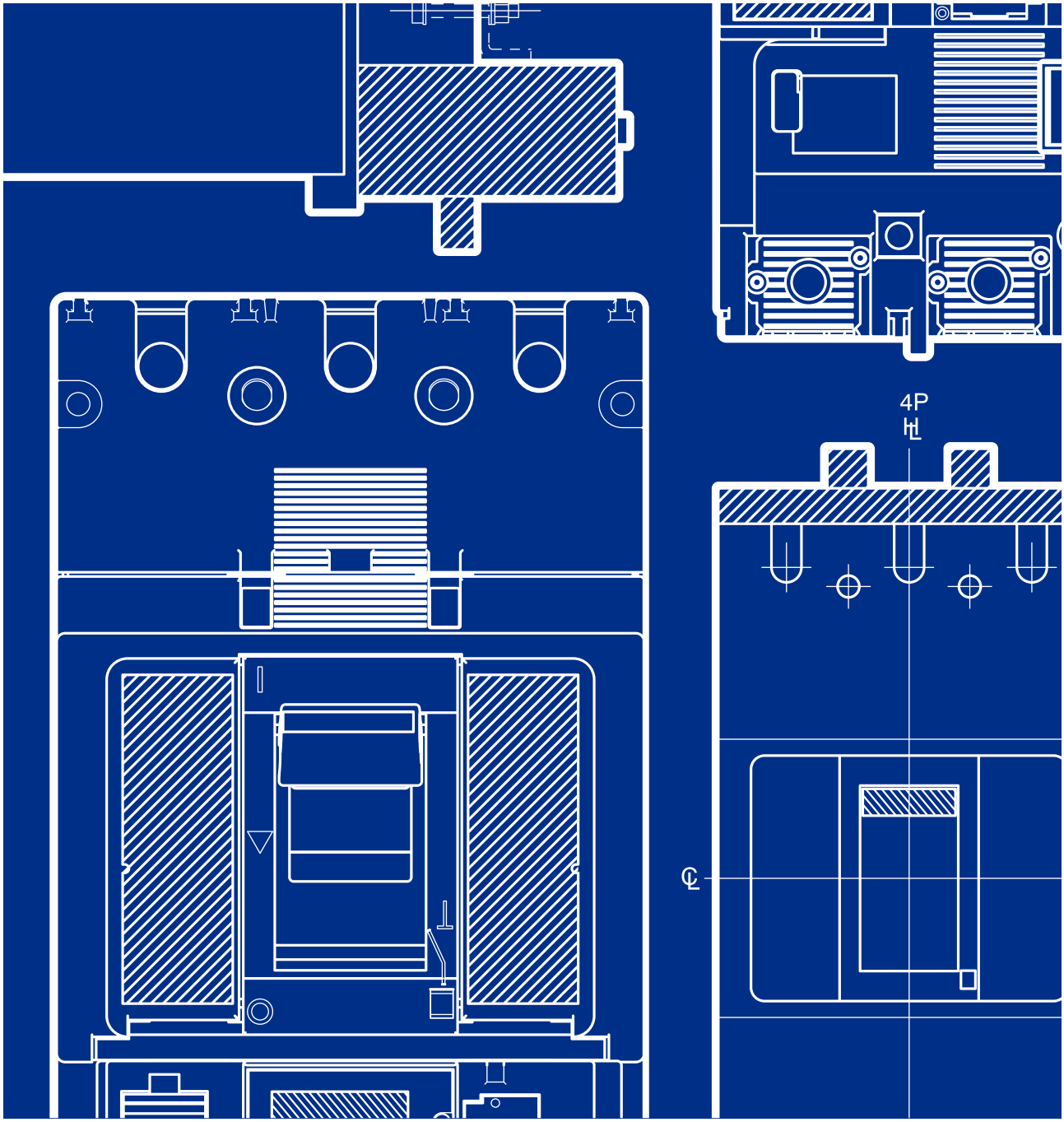
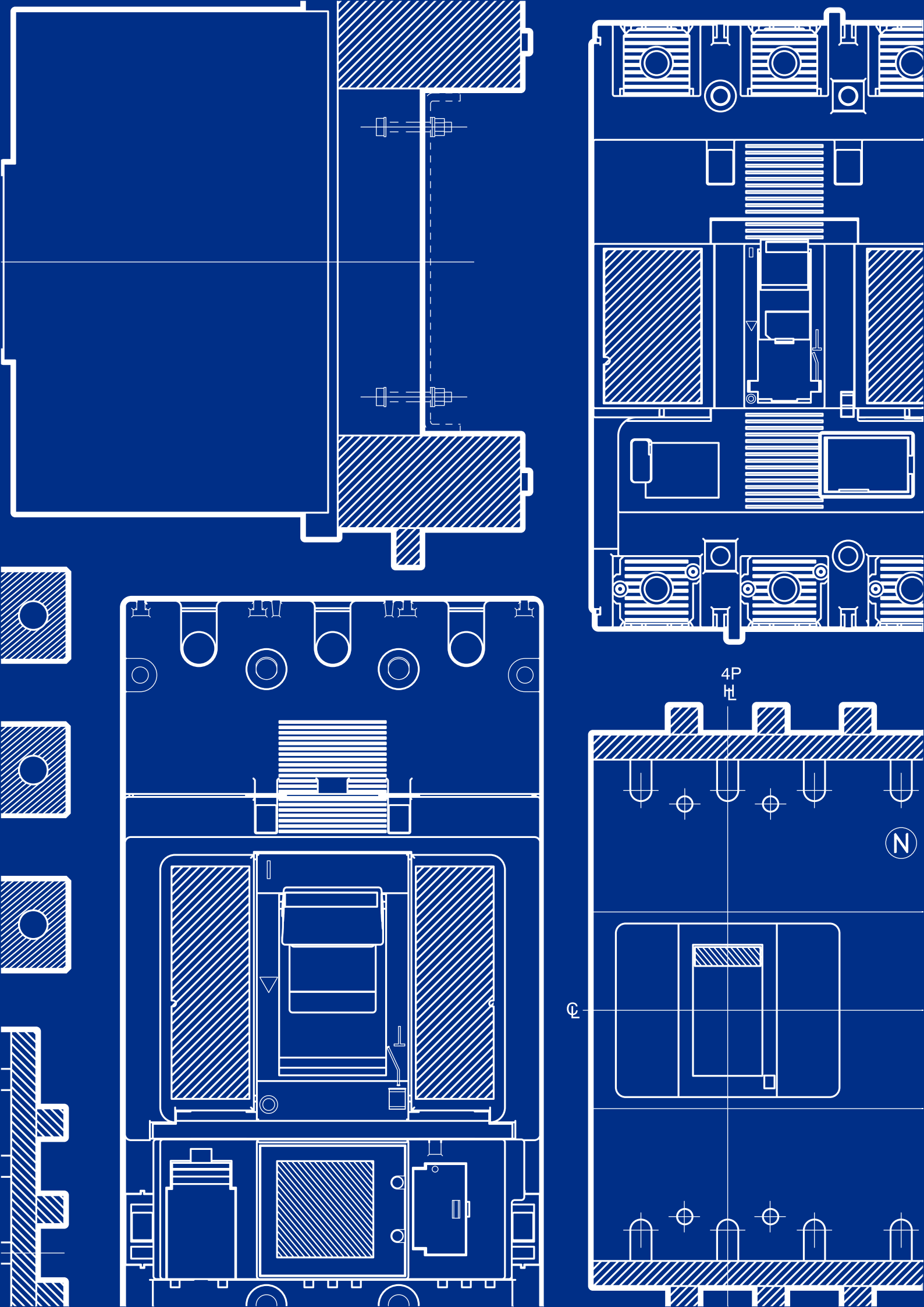
Power Distribution and Protection

Circuit Protection



MCCBs

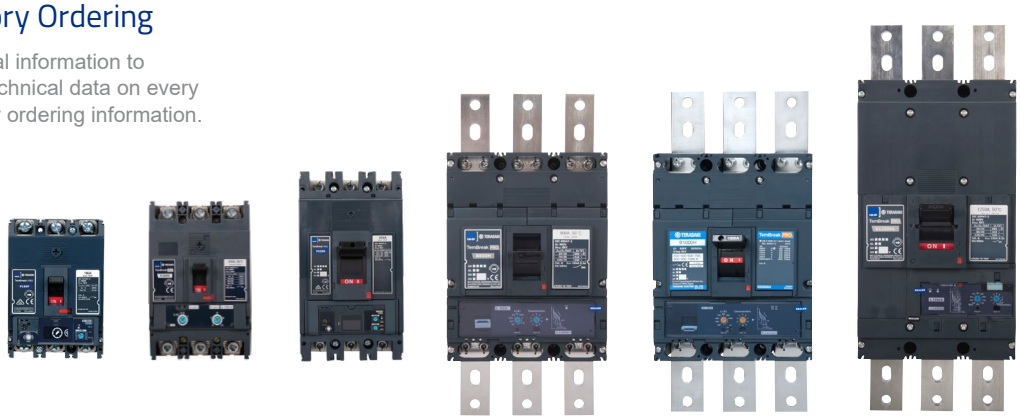
Technical Catalogue 2021


4P
N

Moulded Case Circuit Breakers

MCCBs and Accessory Ordering

Selection guides and general information to choose the right product. Technical data on every MCCB range and accessory ordering information.



P160H (70 kA) P250H (70 kA) P630H (70 kA) B800H (70 kA) B1000H (70 kA) B1250HL (85 kA)

Page 05

MCCB Over Current Relays and Connectivity

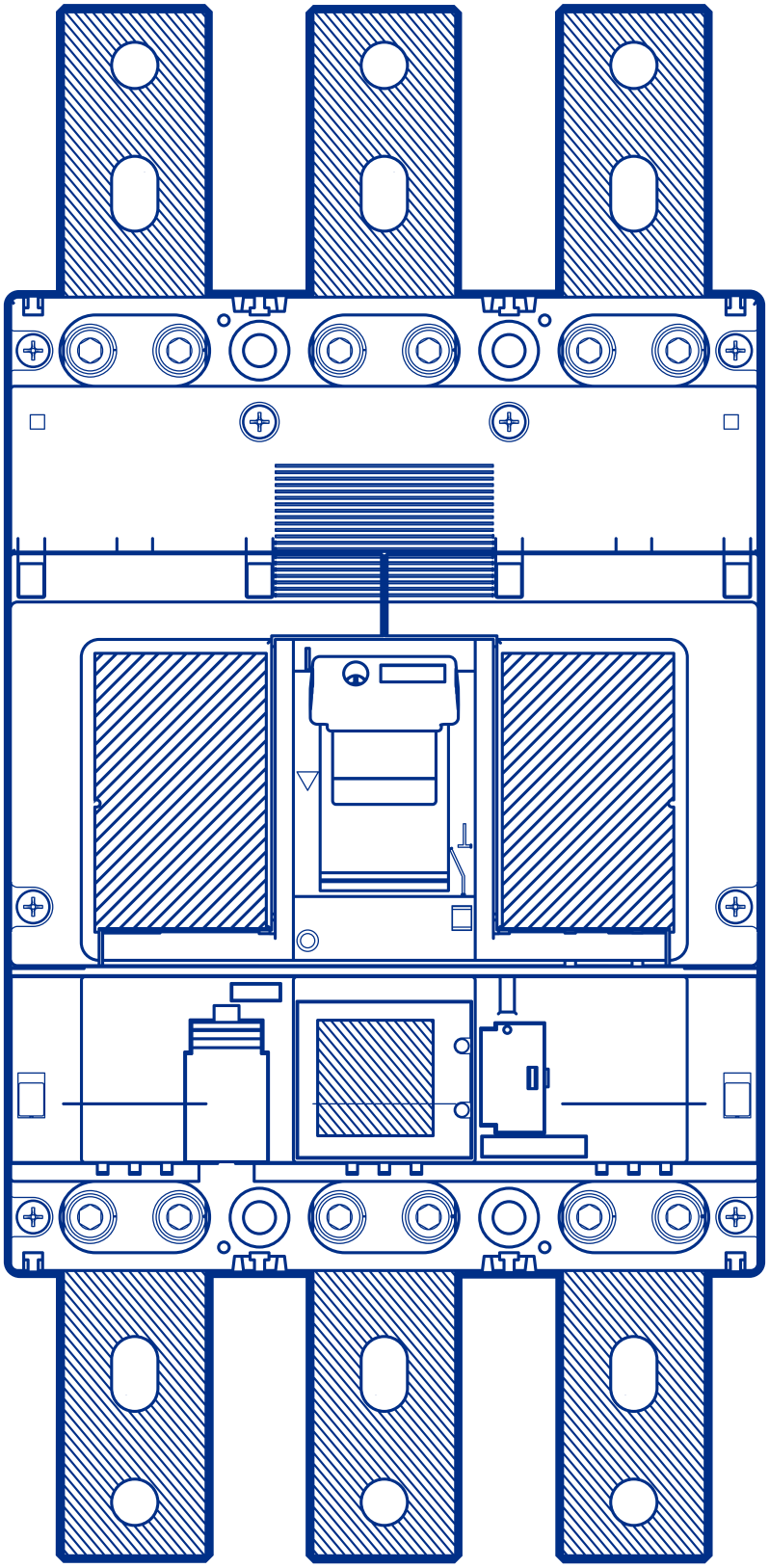
General information technical data on OCRs and connectivity options.

Coming Soon

Accessory Technical Data

Technical data on MCCB Accessories

Coming Soon



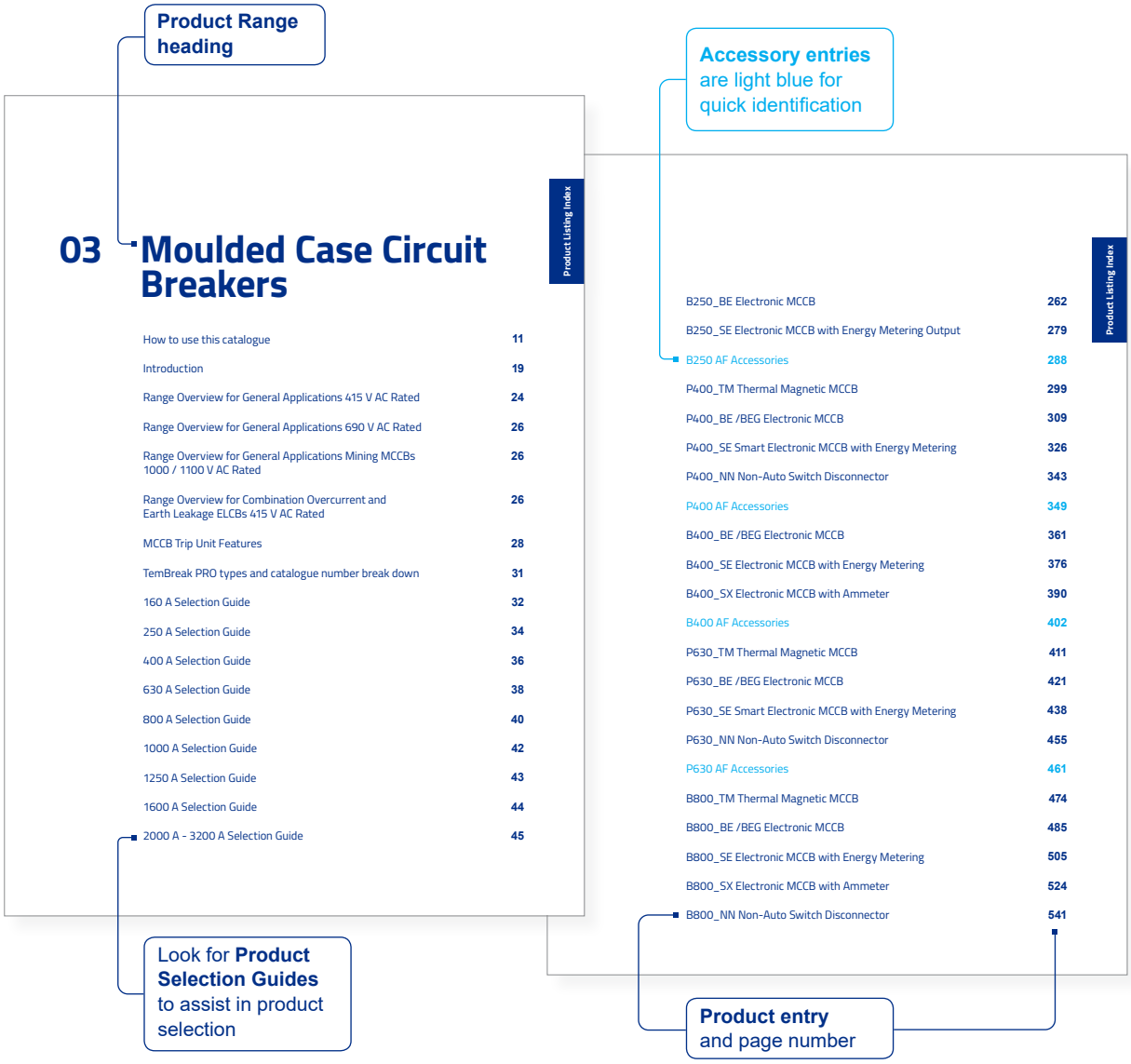
03 Moulded Case Circuit Breakers

How to find products in NHP's Technical Catalogues

- If you know the product name go to section 1
- If you know the the product's Catalogue Number, go to section 2
- If you want to get an overview before selecting a range go to section 3 - Using the Product Selection Guides

1. You know the product name

Go to the front index, search for the product name then proceed to the corresponding page.



2. When you know the Catalogue Number

Refer to the Alphanumeric Index at the rear of each book and locate the Catalogue Number and the corresponding page.

975

Alphanumeric Index

Catalogue Number	Page
B800H4800BEG	515
B800H4800SE	537
B800H4800SX	557
B800H4800TM	504
B800N3630BE	514
B800N3630TM	503
B800N3800BE	514
B800N3800TM	503
B800N4630BE	515
B800N4630TM	504
B800N4800BE	515
B800N4800TM	504
B800P3630BE	516
B800P3630BEG	516
B800P3800BE	516
B800P3800BEG	516
B800P3800SE	536
B800P3800SX	556
B800P4630BE	516
B800P4630BEG	516
B800P4800BE	516
B800P4800BEG	516
B800P4800SE	537
B800P4800SX	557
B800R3630BE	516
B800R3800BE	516
B800R4630BE	517
B800R4800BE	517
D	
DTPF	70, 134, 165, 191, 261, 310, 772, 856, 1004
DTPF12	70, 134, 165, 191, 261, 310, 772, 856, 1004

Catalogue Number	Page
L	
L125PJ3100	758
L125PJ3125	758
L125PJ320	758
L125PJ332	758
L125PJ350	758
L125PJ363	758
L400PE3250RC	775
L400PE3400RC	775
L800PE3630RC	795
L800PE3800RC	795
LOCTITE480	872, 888, 904
P	
P160D23160NN	125
P160D24160NN	125
P160F22100FF	73
P160F22125FF	73
P160F2215FF	73
P160F2220FF	73
P160F2230FF	73
P160F2240FF	73
P160F2250FF	73
P160F2260FF	73
P160F2275FF	73
P160F23100BE	90
P160F23100BEG	90
P160F23100SE	107
P160F23100TM	79
P160F23125TM	79
P160F23160BE	90
P160F23160BEG	90
P160F23160SE	107
P160F23160TM	79
P160F2320TM	79

Catalogue Number	Page
P160F2332TM	79
P160F2340BE	90
P160F2340BEG	90
P160F2340SE	107
P160F2350TM	79
P160F2363TM	79
P160F24100BE	91
P160F24100BEG	92
P160F24100SE	108
P160F24100TM	80
P160F24125TM	80
P160F24160BE	91
P160F24160BEG	92
P160F24160SE	108
P160F24160TM	80
P160F2420SE	108
P160F2420TM	80
P160F2432TM	80
P160F2440BE	91
P160F2440BEG	92
P160F2450TM	80
P160F2463TM	80
P160H23100BE	91
P160H23100BEG	91
P160H23100SE	108
P160H23100TM	80
P160H23125TM	80
P160H23160BE	91
P160H23160BEG	91
P160H23160SE	108
P160H23160TM	80
P160H2320TM	80
P160H2332TM	80
P160H2340BE	91
P160H2340BEG	91
P160H2340SE	108
P160H2350TM	80
P160H2363TM	80

Page References show all instances of the Catalogue Number.

Large Letters assist with quick navigation in the index.

3a. Narrow down your choice to a product range

Find the Product Selection Guide relevant for your search from the front index.

The Product Selection Guides lay out all the product ranges with the most important specifications to differentiate them and help you choose the range that best suits your application.

Product Range Name

Range image representative of the range to quickly identify the range by sight.

4

Circuit Breakers > Miniature Circuit Breakers Selection Guide

MCBs and RCBOs

Miniature Circuit Breakers Selection Guide

		MOD6	DIN-T6	DIN-T10
Application		Residential / Light Commercial	Commercial / Industrial	Commercial / Industrial
Standard		AS / NZS 60898	AS / NZS 60898 AS / NZS 60947-2	AS / NZS 60898 AS / NZS 60947-2
Number of Poles and Module Width		1P - 18 mm 2P - 36 mm 3P - 54 mm	1P - 18 mm 2P - 36 mm 3P - 54 mm	1P - 18 mm 2P - 36 mm 3P - 54 mm 4P - 72 mm
Mounting		DIN Rail	DIN Rail	DIN Rail
Current Ratings		6 A - 63 A	2 A - 63 A	0.5 A - 63 A
Short Circuit Rating		6 kA	6 kA	10 kA
Curve Types		C	C & D	B, C & D
Rated AC Voltage 1P / 2, 3, 4		240 / 415 V	240 / 415 V	240 / 415 V
Rated DC Voltage		48 V 1P 110 V 2P series	48 V 1P 110 V 2P series	48 V 1P 110 V 2P series
Sealable In On-off Position		Yes	Yes	Yes
Trip-free Mechanism		Yes	Yes	Yes
Padlock Facility	Non Captive	Yes	Yes	Yes
	Captive	No	Yes	Yes
Busbar Connection	On-top	Pin	Pin	Pin
	Off-bottom	Fork / Pin	Fork / Pin	Fork / Pin
Terminal Size	On-top	25 mm²	35 mm²	35 mm²
	Off-bottom	25 mm²	35 mm²	35 mm²
Page Number		10	49	79

5

Circuit Breakers > Miniature Circuit Breakers Selection Guide

MCBs and RCBOs

	DIN-T15	DIN-T10H	DIN-T 2-in-1	DIN-T DC	DIN-T Easy-Fit
Application	Commercial / Industrial	Commercial / Industrial	Commercial / Industrial	Commercial / Industrial	Commercial / Industrial
Standard	AS / NZS 60947-2	AS / NZS 60898 AS / NZS 60947-2	AS / NZS 60898 AS / NZS 60947-2	AS / NZS 60898 AS / NZS 60947-2	AS / NZS 60898 AS / NZS 60947-2
Number of Poles and Module Width	1P - 18 mm 2P - 36 mm 3P - 54 mm 4P - 72 mm	1P - 27 mm 2P - 53 mm 3P - 80 mm 4P - 106 mm	1P + 1P - 18 mm 2P - 18 mm 3P - 36 mm 4P - 36 mm	1P - 27 mm 2P - 54 mm 4P - 81 mm	1P - 36 mm 3P - 54 mm
Mounting	DIN Rail	DIN Rail	DIN Rail	DIN Rail	DIN Rail
Current Ratings	0.5 A - 63 A	80 A - 125 A	2 A - 40 A	0.5 A - 63 A	6 A - 63 A
Short Circuit Rating	15 kA - 50 kA	10 kA	6 kA	6 kA T15	6 kA
Curve Types	C	B, C & D	C	B & C	C
Rated AC Voltage 1P / 2, 3, 4	240 / 415 V	240 / 415 V	240 / 415 V	240 / 415 V	240 / 415 V
Rated DC Voltage	48 V 1P 110 V 2P series	125 V 1P 250 V 2P 375 V 3P 500 V 4P	-	250 V 1P 500 V 2P 880 V 4P series	-
Sealable In On-off Position	Yes	Yes	Yes	Yes	Yes
Trip-free Mechanism	Yes	Yes	Yes	Yes	Yes
Padlock Facility — Non Captive	Yes	Yes	Yes	Yes	Yes
Padlock Facility — Captive	Yes	Yes	No	Yes	No
Busbar Connection — On-top	Pin	Pin	Pin	Pin	-
Busbar Connection — Off-bottom	Fork / Pin	Pin	Pin	Fork / Pin	Pin
Terminal Size — On-top	35 mm²	70 mm²	16 mm²	35 mm²	4 mm² 6 A - 20 A 35 mm² 25 A - 63 A
Terminal Size — Off-bottom	35 mm²	70 mm²	16 mm²	35 mm²	35 mm²
Page Number	94	88	57	72	65

Page Reference for the selected range.

Range specifications to compare and select the beft suited product for your application.

3b. Select an MCCB and OCR range

After deciding on the amp rating that suits your application, use the relevant selection guide to select the MCCB and OCR range.

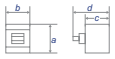
Use the Front index to locate the starting page.

Product ranges are **colour coded** showing the different types of MCCBs.

MCCB and OCR type.

160 A Selection Guide

Key: Thermal Magnetic MCCB; Basic or Standard Electronic MCCB; Electronic Metering MCCB; Non-auto MCCB

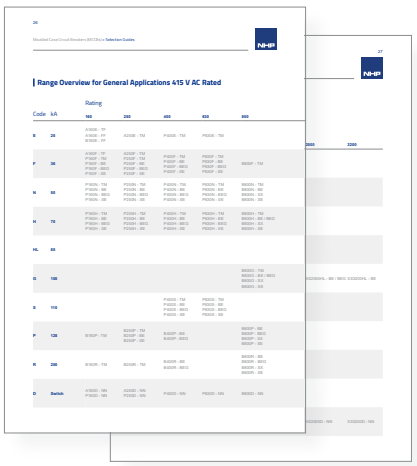
Model	Symbol	Unit	Condition	A160E FF	A160E TF	A160F TF	A160D NN	P160F FF	P160F TM	P160N TM	P160H TM	P160F BE / BEG	P160N BE / BEG	P160H BE / BEG	P160D NN	P160F SE	P160N SE	P160H SE	B160E FF	B160P TM	B160R TM
Selectivity Category	-	-	-	A	A	A	B	A	A	A	A	A	A	A	B	A	A	A	A	A	A
Frame	-	-	-	1	3	3, 4	3, 4	2	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3 , 4	3, 4	3, 4	3, 4	1	3, 4	3, 4
Available Trip Units - Rating	*In*	(A)	-	16, 20, 25	25, 40	25, 40	160	15, 20	20, 32	20, 32	20, 32	40	40	40	160	40	40	40	16, 20, 25	20, 32,	20, 32,
				32, 40, 50	63, 80	63, 80	-	30, 40, 50	50, 63	50, 63	50, 63	100	100	100	-	100	100	100	32, 40, 50	50, 63	50, 63
				63, 80, 100	100, 125	100, 125	-	60, 75	100, 125	100, 125	100, 125	160 [1]	160 [1]	160 [1]	-	160 [1]	160 [1]	160 [1]	63, 80, 100	100, 125	100, 125
				125	160	160	-	100, 125	160 [1]	160 [1]	160 [1]	-	-	-	-	-	-	-	125, 160	160	160
Electrical Characteristics																					
Rated Maximum Operational Voltage	*Ue*	(V)	AC 50 / 60 Hz	240	525	690	690	690	690	690	690	690	690	690	690	690	690	690	240	690	690
		(V)	DC	-	250	250	250	250	250	250	250	-	-	-	250	-	-	-	-	250	250
Rated Insulation Voltage	*Ui*	(V)	-	690	690	690	690	800	800	800	800	800	800	800	800	800	800	800	690	800	800
Rated Impulse Withstand Voltage	*Uimp*	(kV)	-	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
Ultimate Breaking Capacity (IEC, JIS, AS/NZS) AC Voltage	*Icu*	(kA)	690 V AC	-	-	6	-	6	6	6	6	6	6	6	-	6	6	6	-	20	25
			400 / 415 V AC	-	25	36	-	36	36	50	70	36	50	70	-	36	50	70	-	125	200
			240 V AC	25	35	50	-	50	50	85	85	50	85	85	-	50	85	85	25	150	200
DC Voltage	*Icu*	(kA)	250 V DC	-	20	25	-	25	25	40	40	-	-	-	-	-	-	-	-	40	40
			125 V DC	10	30	35	-	-	-	-	-	-	-	-	-	-	-	-	15	-	-
Service Breaking Capacity (IEC, JIS, AS/NZS) AC Voltage	*Ics*	(kA)	690 V AC	-	-	3	-	6	6	6	6	6	6	6	-	6	6	6	-	15	20
			400 / 415 V AC	-	13	20	-	36	36	50	50	36	50	50	-	36	50	50	-	80	135
			220 / 240 V AC	13	18	25	-	50	50	85	85	50	85	85	-	50	85	85	19	85	150
DC Voltage	*Ics*	(kA)	250 V DC	-	10	13	-	19	19	40	40	-	-	-	-	-	-	-	-	150	150
			125 V DC	5	15	20	-	-	-	-	-	-	-	-	-	-	-	-	8	40	40
Short-Time Withstand Current	*Icw*	(kA)	0.3 sec.	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			1 sec.	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-
Protection Function	**Key**																				
Switch (Non-Auto)		■	Standard	-	-	-	■	-	-	-	-	-	-	-	■	-	-	-	-	-	-
FF (Fixed Thermal - Fixed Magnetic)				■	-	-	-	■	-	-	-	-	-	-	-	-	-	-	■	-	-
TF (Adjustable Thermal - Fixed Magnetic)				-	■	■	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TM (Adjustable Thermal - Adjustable Magnetic)				-	-	-	-	-	■	■	■	-	-	-	-	-	-	-	-	■	■
Electronic - Basic (BE / BEG)				-	-	-	-	-	-	-	-	■	■	■	-	-	-	-	-	-	-
Electronic - Smart (SE / SX)				-	-	-	-	-	-	-	-	-	-	-	-	■	■	■	-	-	-
Installation	**Key**																				
Front Connection (FC)		■	Standard	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Extension Bar (FB)		□	Optional	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Cable Tunnel Clamp (FW)		-	Not available	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Rear Connection (RC)				-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□	□
Plug-In (UFX)				-	-	-	-	-	□	□	□	□	□	□	□	□	□	□	-	□	□
Plug-In (PM)				-	-	-	-	-	□	□	□	□	□	□	□	□	□	□	-	□	□
DIN Rail Adapter				-	□	□	□	□	□	□	□	□	□	□	□	□	□	□	-	-	-
Reverse Connection of Supply Possible				Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Dimensions	*a*	(mm)	-	130	130	130	130	130	130	130	130	130	130	130	130	130	130	130	165	165	165
	*b*	(mm)	1 pole	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-	35	-	-
	b	(mm)	2 pole	-	-	-	-	60	-	-	-	-	-	-	-	-	-	-	-	-	-
	b	(mm)	3 pole	-	75	75	75	-	90	90	90	90	90	90	90	90	90	90	-	105	105
	b	(mm)	4 pole	-	100	100	100	-	120	120	120	120	120	120	120	120	120	120	-	140	140
	c	(mm)	-	68	68	68	68	68	68	68	68	65	68	68	68	68	68	68	68	103	103
	d	(mm)	-	95	95	95	95	95	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	92	127	127
Weight	*W*	(kg)	1 pole	0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			2 pole	-	-	-	-	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-
			3 pole	-	0.8	0.8	0.8	-	1	1	1	1	1	1	1	1	1	1	0.3	2.4	2.4
			4 pole	-	-	1	1	-	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	-	3.2	3.2
Operation Options	**Key**																				
Toggle Operation		■	Standard	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Extension Handle or Direct Mount		□	Optional	-	□	□	□	-	□	□	□	□	□	□	□	□	□	□	-	□	□
Motor Operation TPMC		-	Not available	-	□	□	□	-	□	□	□	□	□	□	□	□	□	□	-	□	□
Endurance	Electrical	Cycles	415 V AC	10000	10000	10000	10000	10000	30000	30000	30000	30000	30000	30000	30000	30000	30000	30000	20000	30000	30000
	Mechanical	Cycles	-	20000	20000	20000	20000	20000	50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	30000	30000	30000

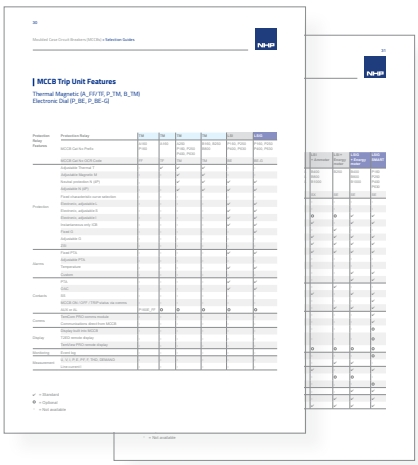
Notes: [1] Rating for Plug-in is 125 A.

MCCB and OCR type.

Notes mark special considerations or exceptions for a specific value.

The most **common voltages** are highlighted to aid quick referencing and readability.





For more information when selecting the MCCB and OCR range, there are more resources in the introduction section like the Range Overview and MCCB Trip Unit Features pages.

Typical Page Layout
(shown below in green)

Each page has consistent elements (e.g. Location Bar, Page Number, Section Name Tab) to assist with navigation.

Typical Product Range Layout

Each section is ordered in a sequential order as described below to help you find relevant information quickly.

- Overview
- Detailed Specifications
- Charts
- Accessories

Overview of Product Range

Location bar helps to identify where you are in the catalogue

Page number

Range name

Large Range Images show a representative sample of the products.

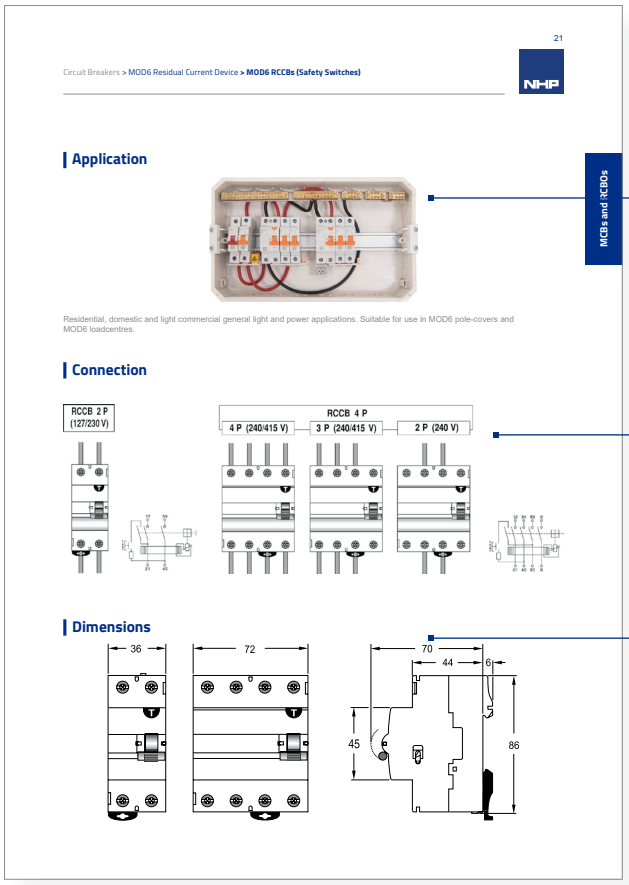
Section Name Tab assist to quick find the product area.

Features and Benefits

Overview Specifications give a technical overview of the product range.

Approvals

As well as the sections shown below, some product ranges show additional information like Design Considerations e.g. product cannot be installed up-side-down, and Warnings, e.g. product is not for DC use.



21

Circuit Breakers > MOD6 Residual Current Device > **MOD6 RCCBs (Safety Switches)**

MCBs and XCBOs

Application

Residential, domestic and light commercial general light and power applications. Suitable for use in MOD6 pole-covers and MOD6 loadcentres.

Connection

RCCB 2 P (127/230 V)

RCCB 4 P

4 P (240/415 V) 3 P (240/415 V) 2 P (240 V)

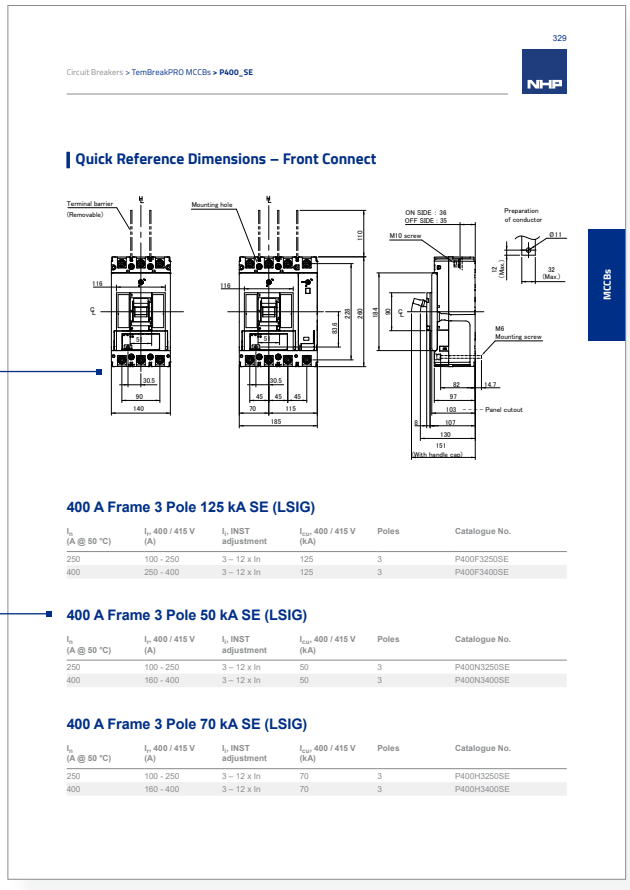
Dimensions

36 72 70 44 6 45 86

Typical **Application** information.

Connection diagrams and information.

Dimension diagrams



329

Circuit Breakers > TemBreakPRO MCCBs > **P400_SE**

MCCBs

Quick Reference Dimensions – Front Connect

Terminal barrier (Removable) Mounting hole ON SIDE : 36 OFF SIDE : 35 M10 screw Preparation of conductor M6 Mounting screw Panel cutout

400 A Frame 3 Pole 125 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, 400 / 415 V (A)	I_r, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	125	3	P400F3250SE
400	250 - 400	3 – 12 x In	125	3	P400F3400SE

400 A Frame 3 Pole 50 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, 400 / 415 V (A)	I_r, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	50	3	P400N3250SE
400	160 - 400	3 – 12 x In	50	3	P400N3400SE

400 A Frame 3 Pole 70 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, 400 / 415 V (A)	I_r, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	70	3	P400H3250SE
400	160 - 400	3 – 12 x In	70	3	P400H3400SE

Quick Reference Dimension Diagram(s) (MCCBs only) shows the most common configuration. Full dimensions are at the end of each product range, e.g. Rear connected with Motor Operator.

Catalogue Number Tables provide information to choose an individual item.

Detailed Specifications of Product Range

Tables group similar specifications together to make it easier to quickly locate information.

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Circuit Breakers > TemBreakPRO MCCBs > P400_SE

Ratings

Component Type	MCCB
Selectivity Category	B
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	400 AF
Trip Unit Rating	250 / 400 A

I_{nc} Rated Current

A @ 30 °C	250	400
A @ 45 °C	250	400
A @ 50 °C	250	400

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	250	400
(W)	11.1	28.4

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
CE Mark	Compliant
Shipping Approvals	Compliant

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Operating Temperature Relative Humidity vwv	Max. permissible ambient temperature 60 °C; Max. permissible humidity 95 % rel.; No Condensation
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 400 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Withdrawable Rack-out Mechanism (Option)
Terminal Type	Bolt-Terminal
Connection Torque	13.7 - 22.5 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	HC Chassis XCP Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	Yes
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

MCCBs

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Smart Electronic LSIG
Temperature Calibration of trip unit	50 °C

Other Features

Pre-trip alarm (PTA)	Yes
ZSI Zone Selective Interlocking	Yes
ACIP Auxiliary Communications Port	Yes
CIP Communications Interface Port	Yes
MIP Maintenance Interface Port	Yes
OAC Optional Alarm Contact	Yes

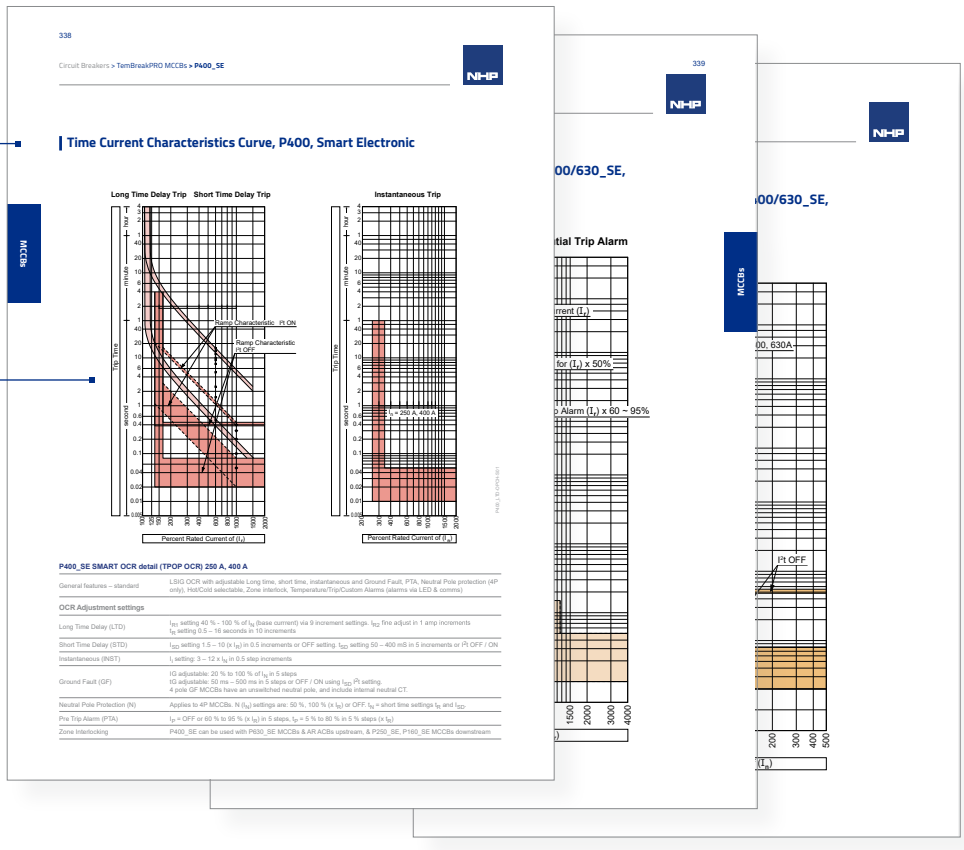
General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	Yes

Charts for the Product Range

Clear **Headings** differentiate often similar looking charts.

Large Charts clearly display detailed information.



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Circuit Breakers > TemBreakPRO MCCBs > P400_SE

Time Current Characteristics Curve, P400, Smart Electronic

P400_SE SMART OCR detail (TPOP OCR) 250 A, 400 A

General features – standard	LSIG OCR with adjustable Long time, short time, instantaneous and Ground Fault, PTA, Neutral Pole protection (4P only), Hot/Cold selectable, Zone Interlock, Temperature/Trip/Custom Alarms (alarms via LED & comms)
OCR Adjustment settings	
Long Time Delay (LTD)	I_{R1}: setting 40 % - 100 % of I_N (base current) via 9 increment settings. I_{R2} fine adjust in 1 amp increments t_R: setting 0.5 – 16 seconds in 10 increments
Short Time Delay (STD)	I_{SD}: setting 1.5 – 10 (x I_R) in 0.5 increments or OFF setting. t_{SD}: setting 50 – 400 mS in 5 increments or Pt OFF / ON
Instantaneous (INST)	I_i: setting: 3 – 12 x I_N in 0.5 step increments
Ground Fault (GF)	IG adjustable: 20 % to 100 % of I_N in 5 steps IG adjustable: 50 ms – 500 ms in 5 steps or OFF / ON using I_{SD} Pt setting. 4 pole GF MCCBs have an unswitched neutral pole, and include internal neutral CT.
Neutral Pole Protection (N)	Applies to 4P MCCBs. N (I_{Nr}) settings are: 50 %, 100 % (x I_R) or OFF. I_R = short time settings I_R and I_{SD}.
Pre Trip Alarm (PTA)	I_P = OFF or 60 % to 95 % (x I_R) in 5 steps, I_P = 5 % to 80 % in 5 % steps (x I_R)
Zone Interlocking	P400_SE can be used with P630_SE MCCBs & AR ACBs upstream, & P250_SE, P160_SE MCCBs downstream

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MCCBs

Pt OFF

Accessories for the Product Range(s)

Accessories are typically grouped together following the product range(s) they apply to.

Location bar is colour coded for accessories to helps identify where you are in the catalogue

Section name tab is colour coded for accessories to quick find product accessory area

Accessory Range Heading explain the product range these accessories apply to.

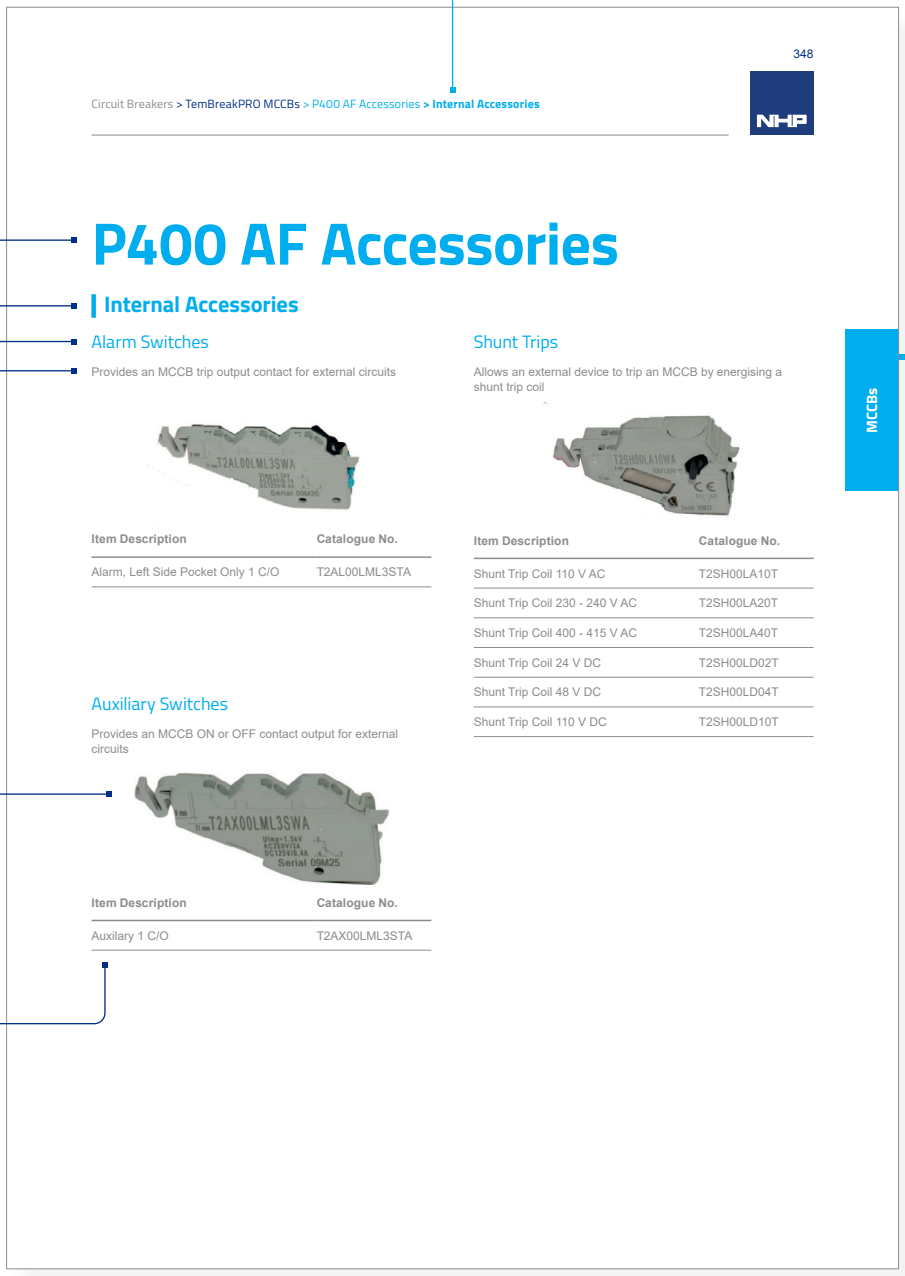
Accessory Category groups similar accessories together.

Accessory Product Name

Accessory Application indicates the purpose.

Large Accessory Images show a representative sample of the accessory.

Catalogue Number Tables provide information to choose an individual item.



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Circuit Breakers > TemBreakPRO MCCBs > P400 AF Accessories > Internal Accessories

P400 AF Accessories

Internal Accessories

MCCBs

Alarm Switches

Provides an MCCB trip output contact for external circuits

Item Description	Catalogue No.
Alarm, Left Side Pocket Only 1 C/O	T2AL00LML3STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00LA10T
Shunt Trip Coil 230 - 240 V AC	T2SH00LA20T
Shunt Trip Coil 400 - 415 V AC	T2SH00LA40T
Shunt Trip Coil 24 V DC	T2SH00LD02T
Shunt Trip Coil 48 V DC	T2SH00LD04T
Shunt Trip Coil 110 V DC	T2SH00LD10T

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxilary 1 C/O	T2AX00LML3STA

Moulded Case Circuit Breakers

Maximise Reliability.
Set Securely, Configure Easily.
Measure and Control Energy.

NHP and Terasaki present the TemBreak PRO range of robust and reliable moulded case circuit breakers and switch-disconnectors.

Designed with extensive user-feedback from many sectors, TemBreak PRO can power and protect the electrical systems of today and connect to the information systems of tomorrow.

From thermal magnetic to advanced “SMART” MCCBs, the range is the most powerful yet from Terasaki.

Networked SMART Switchboard with TBPro

Maximise Reliability, Performance, Functionality

TemBreak PRO is built to interrupt fault currents up to 200,000 Amps, and deliver maximum power at ambient temperatures up to 50 °C. So, whether it's high fault currents or extreme temperatures, TemBreak PRO will protect your electrical system from damage.

- **I_{CS} ratings;** Increased uniformity of breaking capacities across the range.
- Use with confidence in extreme environments.
  Full rating at 50 degrees Celsius.
- Maximise safety.
  Direct opening action
  (recommended by IEC 60204-1 safety of machinery).
- Comply with international specifications.
  All models are DEKRA-certified.

Set Securely, Configure Easily

- Read clearly from distance and angle. **Latest OLED screen technology.**
- Read upright regardless of MCCB orientation. **View can be soft-rotated.**
- Prevent unauthorised parameter changes. **OLED display is removable.**

The TemBreak PRO SMART protection relay deploys the most advanced display technology in switchgear today. The rotatable and removable OLED screen delivers a clear view of circuit measurements, internal settings and event logs and allows easy configuration of settings and alarms.

Accessories

TemBreak PRO has a wide range of accessory solutions for your electrical installation.

- Easy to install.
  Fit motors or handles in under two minutes.
- Simple operation.
  Attach interlocks to the front of the MCCB for reduced depth and fast assembly.
- Reliable.
  Choose the optimal cable - clamp or extension bar for your conductor to ensure reliable terminations.
- Safe and secure
  Protect terminals with covers and barriers. Secure the MCCB with locks for toggles, handles and motors.
- Cost effective.
  Stock one type of auxiliary switch, alarm switch, shut trip and undervoltage trip to fit all frame sizes.

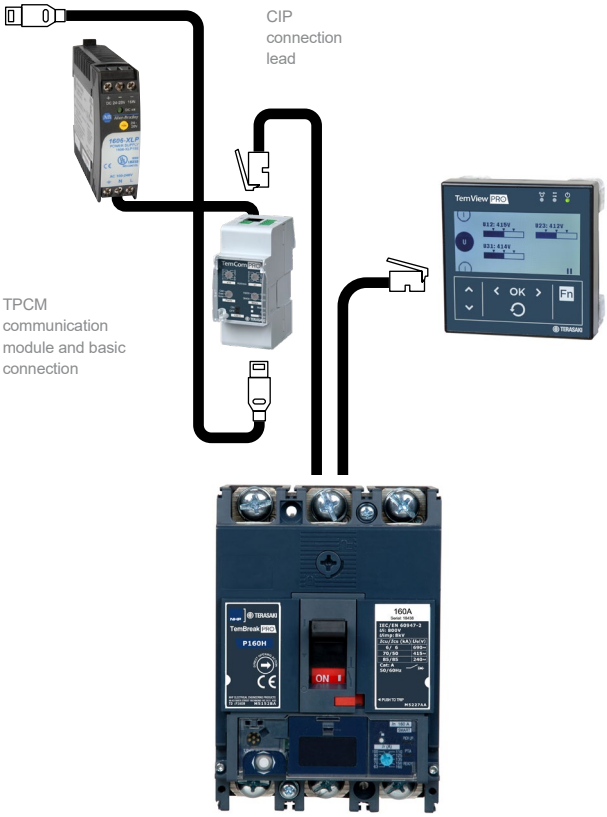
SMART Communications

Modbus Communications Module Application

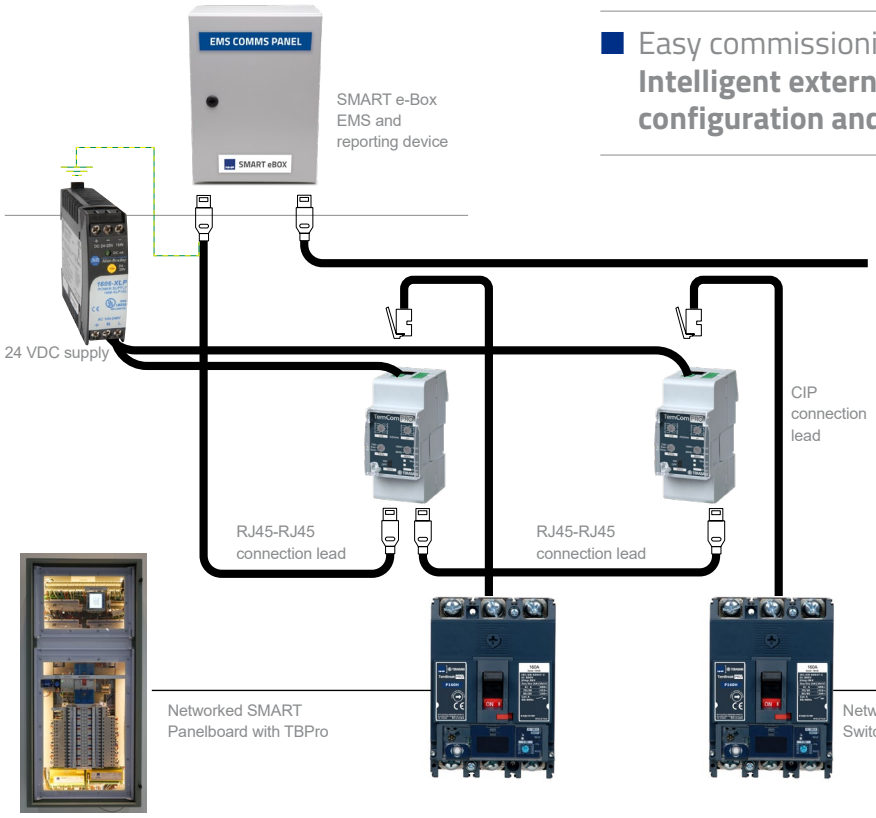
The TPCM communication module for the Smart MCCB enables all the data saved by the Smart MCCB to be shared with a compatible Modbus RTU monitoring system.

SMART Distribution integration

The TPCM communication module can be connected to the Modbus wiring chain using specific cables available as an option. This allows a network of SMART Distribution devices such as SMART panelboards and switchboards featuring TBPro MCCBs to be interfaced into a SCADA system or the NHP SMART eBox energy management system (EMS)



- Visualise your power network. **Huge range of energy management measurements.**
- Integrate into intelligent LV systems. **Modbus and Ethernet communication options.**



- Easy commissioning. **Intelligent external HMI remote configuration and diagnostic capability.**

Range Overview for General Applications 415 V AC Rated

Code	kA	Rating 160	250	400	630	800
E	**25**	A160E - TF A160E - FF B160E - FF	A250E - TM	P400E - TM	P630E - TM	
F	**36**	A160F - TF P160F - TM P160F - BE P160F - BEG P160F - SE	A250F - TM P250F - TM P250F - BE P250F - BEG P250F - SE	P400F - TM P400F - BE P400F - BEG P400F - SE	P630F - TM P630F - BE P630F - BEG P630F - SE	B800F - TM
N	**50**	P160N - TM P160N - BE P160N - BEG P160N - SE	P250N - TM P250N - BE P250N - BEG P250N - SE	P400N - TM P400N - BE P400N - BEG P400N - SE	P630N - TM P630N - BE P630N - BEG P630N - SE	B800N - TM B800N - BE B800N - SX B800N - SE
H	**70**	P160H - TM P160H - BE P160H - BEG P160H - SE	P250H - TM P250H - BE P250H - BEG P250H - SE	P400H - TM P400H - BE P400H - BEG P400H - SE	P630H - TM P630H - BE P630H - BEG P630H - SE	B800H - TM B800H - BE / BEG B800H - SX B800H - SE
HL	**85**					
G	**100**					B800G - TM B800G - BE / BEG B800G - SX B800G - SE
S	**110**			P400S - TM P400S - BE P400S - BEG P400S - SE	P630S - TM P630S - BE P630S - BEG P630S - SE	
P	**125**	B160P - TM	B250P - TM B250P - BE B250P - SE	B400P - BE B400P - BEG		B800P - BE B800P - BEG B800P - SX B800P - SE
R	**200**	B160R - TM	B250R - TM	B400R - BE B400R - BEG		B800R - BE B800R - BEG B800R - SX B800R - SE
D	**Switch**	A160D - NN P160D - NN	A250D - NN P250D - NN	P400D - NN	P630D - NN	B800D - NN

1000	1250	1600	2000	2500	3200
B1000N - BE / BEG B1000N - SX B1000N - SE	B1250N - BE / BEG	B1600N - BE / BEG			
B1000H - BE / BEG B1000H - SX B1000H - SE	B1250H - BE / BEG				
	B1250HL - BE / BEG	B1600HL - BE / BEG	XS2000HL - BE / BEG	XS2500HL - BE / BEG	XS3200HL - BE
B1000D - NN	B1250D - NN	B1600D - NN	XS2000D - NN	XS2500D - NN	XS3200D - NN

Range Overview for General Applications 690 V AC Rated

	Rating		
kA	125	400	800
70	L125 - PJ	L400 - PE	L800 - PE

Range Overview for General Applications Mining MCCBs 1000 / 1100 V AC Rated

	Rating					
kA	125	250	400	630	800	1250
10	VS125 - GJ	VS250 - GJ				
18			VS400 - NE			
20				VS630 - NE	VS800 - NE	
30					VS800 - GE	VS1250 - NE

Range Overview for Combination Overcurrent and Earth Leakage ELCBs 415 V AC Rated

	Rating				
kA	125	250	400	630	800
65	ZS125 - TF	ZS250 - TF			

Protection Relays

TemBreak PRO protection relays provide overcurrent protection, measurement and circuit configuration - all in one device.

The communications, configuration and display modules allow remote access to these functions.

- Save energy.
  Measurements: voltage, current, power, energy, power factor, frequency, demand, THD.

- Setting accuracy.
  Adjust to the nearest Ampere via fine increment adjustment.

MCCB Trip Unit Features

Thermal Magnetic (A_FF/TF, P_TM, B_TM)
Electronic Dial (P_BE, P_BE-G)

Protection Relay Features	Protection Relay	TM	TM	TM	TM	LSI	LSIG
	MCCB Cat No Prefix	A160 P160	A160	A250 P160, P250 P400, P630	B160, B250 B800	P160, P250 P400, P630	P160, P250 P400, P630
	MCCB Cat No OCR Code	FF	TF	TM	TM	BE	BE-G
Protection	Adjustable Thermal T	-	✔	✔	✔	-	-
	Adjustable Magnetic M	-	-	✔	✔	-	-
	Neutral protection N (4P)	-		✔	✔	✔	✔
	Adjustable N (4P)	-	-	✔	✔	✔	✔
	Fixed characteristic curve selection	-	-	-	-	-	-
	Electronic, adjustable L	-	-	-	-	✔	✔
	Electronic, adjustable S	-	-	-	-	✔	✔
	Electronic, adjustable I	-	-	-	-	✔	✔
	Instantaneous only ICB	-	-	-	-	✔	✔
	Fixed G	-	-	-	-	-	✔
	Adjustable G	-	-	-	-	-	-
	ZSI	-	-	-	-	-	-
Alarms	Fixed PTA	-	-	-	-	✔	✔
	Adjustable PTA	-	-	-	-	-	-
	Temperature	-	-	-	-	✔	✔
	Custom	-	-	-	-	-	-
Contacts	PTA	-	-	-	-	✔	✔
	OAC	-	-	-	-	✔	✔
	SS	-	-	-	-	-	-
	MCCB ON / OFF / TRIP status via comms	-	-	-	-	-	-
	AUX or AL	P160F_FF[1)]	O	O	O	O	O
Comms	TemCom PRO comms module	-	-	-	-	-	-
	Communications direct from MCCB	-	-	-	-	-	-
Display	Display built into MCCB	-	-	-	-	-	-
	T2ED remote display	-	-	-	-	-	-
	TemView PRO remote display	-	-	-	-	-	-
Monitoring	Event log	-	-	-	-	-	-
Measurement	U, V, I, P, E, PF, F, THD, DEMAND	-	-	-	-	-	-
	Line current I	-	-	-	-	-	-

1) Only the P160F_FF can accommodate alarms and auxiliaries, the A160_FF cannot.

✔ = Standard

O = Optional

- = Not available

MCCB Trip Unit Features

Basic Electronic 2 Dial (BE)
Electronic SMART (SX and SE)

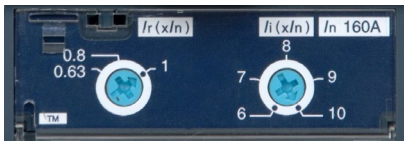
Protection Relay Features	Protection Relay	LSI	LSI / LSIG	LSI	LSI	LSI + Ammeter	LSI + Energy meter	LSIG + Energy meter	LSIG SMART
	MCCB Cat No Prefix	B250	B400, B800, B1000, B1250, B1600, VS800G, VS1250N	VS400N VS630N VS800N	XS2000HL XS2500HL XS3200HL	B400 B800 B1000	B250	B400 B800 B1000	P160 P250 P400 P630
	MCCB Cat No OCR Code	BE	BE	BE	BE	SX	SE	SE	SE
Protection	Adjustable Thermal T	-	-	-	-	-	-	-	-
	Adjustable Magnetic M	-	-	-	-	-	-	-	-
	Neutral protection N (4P)	O	O	-	-	O	O	✔	✔
	Adjustable N (4P)	-	-	-	-	✔	-	✔	✔
	Fixed characteristic curve selection	✔	✔	-	-	-	✔	-	-
	Electronic, adjustable L	✔	✔	✔	✔	✔	✔	✔	✔
	Electronic, adjustable S	-	-	✔	✔	✔	✔	✔	✔
	Electronic, adjustable I	-	-	✔	✔	✔	✔	✔	✔
	Instantaneous only ICB	✔	✔	-	-	-	-	-	-
	Fixed G	-	O	O	O	-	-	-	-
	Adjustable G	-	-	-	-	-	-	✔	✔
	ZSI	-	-	-	-	-	-	✔	✔
Alarms	Fixed PTA	✔	✔	-	-	-	✔	-	-
	Adjustable PTA	-	-	✔	✔	✔	-	✔	✔
	Temperature	-	-	-	-	-	-	-	✔
	Custom	-	-	-	-	-	✔	✔	✔
Contacts	PTA	O	O	O	O	-	-	-	✔
	OAC	-	-	-	-	-	-	-	✔
	SS	-	-	-	-	-	-	-	O
	MCCB ON / OFF / TRIP status via comms	-	-	-	-	-	-	-	O
	AUX or AL	O	O	O	O	O	O	O	O
Comms	TemCom PRO comms module	-	-	-	-	-	-	-	O
	Communications direct from MCCB	-	-	-	-	-	✔	✔	-
Display	Display built into MCCB	-	-	-	-	✔	-	✔	✔
	T2ED remote display	-	-	-	-	-	O	O	-
	TemView PRO remote display	-	-	-	-	-	-	-	O
Monitoring	Event log	-	-	-	-	-	-	✔	✔
Measurement	U, V, I, P, E, PF, F, THD, DEMAND	-	-	-	-	-	✔	✔	✔
	Line current I	-	-	-	-	✔	✔	✔	✔

✔ = Standard

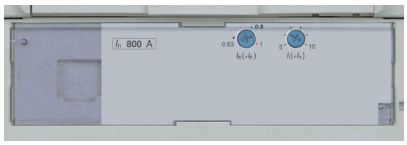
O = Optional

- = Not available

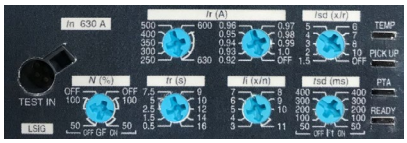
Protection Relay Types



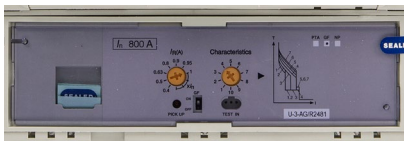
Thermal Magnetic Protection
P_TM



Thermal Magnetic Protection
B_TM



LSI Electronic Protection
P_BE



LSI Protection
B_BE, VS800GE / VS1250NE

LSI + Energy Meter Protection
B_SX / SE

SMART Protection
P_SE

Abbreviation Key

Protection	**T**	Thermal overload protection
	M	Magnetic short-circuit protection
	L	Electronic overload protection, time delayed
	S	Electronic short-circuit protection, time-delayed
	I	Electronic short-circuit protection, instantaneous
	ICB	Instantaneous only Circuit Breaker
	G	Electronic ground-fault protection, time delayed
	N	Neutral pole protection
	ZSI	Zone selective interlocking, compatible with TemPower 2 ACB
	PTA	Pre-trip alarm, time delayed
Contacts	**OAC**	OAC Optional Alarm Contact
	AUX	AUX Status output contact
	AL	AL Trip alarm output contact
	SS	SS Smart switch digital outputs
Measurement	**U**	Phase voltage
	V	Line voltage
	I	Line current
	P	Power
	E	Energy
	PF	Power factor
	F	Frequency
	THD	Total harmonic distortion
	DEMAND	Periodic maxima for current, real power, apparent power and reactive power

TemBreak PRO types and catalogue number construction

P	160	F	2	4	160	BE	G

Model Type

- A Basic applications (160…250 A)
- P Mid to advanced applications (160…630 A)
- B High current, high kA applications (160…1600 A)
- ZS Earth Leakage applications (125…250 A)
- XS Highest current applications (2000…3200 A)

Ampere Frame

125	A
160	A
250	A
400	A
630	A
800	A
1000	A
1250	A
1600	A
2000	A
2500	A
3200	A

Short Circuit Break Capacity I_{CU} (kA)

R	200	kA
L	150	kA
P	125	kA
S	110	kA
G	100	kA
HL	85	kA
H	70	kA
M	65	kA
N	50	kA
F	36	kA
E	25	kA
D	Switch	

Pole Pitch Size (mm) [1)]

- 1 25
- 2 30
- 3 35

No. of Poles

- 1 [7)]
- 2 [8)]
- 3
- 4

Trip Unit Rating (I_n)

I_n x A

Trip Unit Type

TF	Adj Thermal Fix Magnetic [4)]
FF	Fix Thermal Fix Magnetic
TM	Adj Thermal Adj Magnetic
SX	Smart Ammeter [5) 6)]
BE	Basic Electronic [6)]
SE	Smart Energy [6)]
NN	Non-Auto Switch

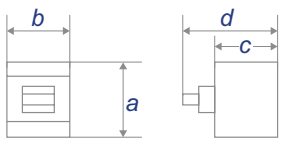
Trip Unit Option

G	Ground Fault [2)]
N	Neutral [2)]
P	Pre-Trip Alarm [3)]
SN	Solid Neutral [9)]

Notice: Not all combinations are possible. Confirm part number combination with NHP for availability.

Notes:
1) 160 AF only.
2) For P_SE versions these features are standard and therefore are not added to the end of the part number.
3) PTA is standard with P electronic models and therefore P is not added to the end of the part number.
4) Only available in A and ZS models.
5) Only available in B models.
6) Not available in A and ZS models.
7) Only available in A and B models (FF only Trip Unit).
8) Not available in A and B models (FF only Trip Unit).
9) ZS Models.

160 A Selection Guide

Model	Symbol	Unit	Condition	A160E FF	A160E TF	A160F TF	A160D NN	P160F FF
Selectivity Category	-	-	-	A	A	A	B	A
Frame	-	-	-	1	3, 4	3, 4	3, 4	2
Available Trip Units - Rating	*In*	(A)	-	16, 20, 25	25, 40	25, 40	160	15, 20
				32, 40, 50	63, 80	63, 80	-	30, 40, 50
				63, 80, 100	100, 125	100, 125	-	60, 75
				125	160	160	-	100, 125
Electrical Characteristics								
Rated Maximum Operational Voltage	*Ue*	(V)	AC 50 / 60 Hz	240	525	690	690	690
		(V)	DC	-	250	250	250	250
Rated Insulation Voltage	*Ui*	(V)	-	690	690	690	690	800
Rated Impulse Withstand Voltage	*Uimp*	(kV)	-	8	8	8	8	8
Ultimate Breaking Capacity (IEC, JIS, AS/NZS)	*Icu*	(kA)	690 V AC	-	-	6	-	6
AC Voltage			400 / 415 V AC	-	25	36	-	36
			240 V AC	25	35	50	-	50
DC Voltage	*Icu*	(kA)	250 V DC	-	20	25	-	25
			125 V DC	10	30	35	-	-
Service Breaking Capacity (IEC, JIS, AS/NZS)	*Ics*	(kA)	690 V AC	-	-	3	-	6
AC Voltage			400 / 415 V AC	-	13	20	-	36
			220 / 240 V AC	13	18	25	-	50
DC Voltage	*Ics*	(kA)	250 V DC	-	10	13	-	19
			125 V DC	5	15	20	-	-
Short-Time Withstand Current	*Icw*	(kA)	0.3 sec.	-	-	-	2	-
			1 sec.	-	-	-	-	-
Protection Function	**Key**							
Switch (Non-Auto)		■	Standard	-	-	-	■	-
FF (Fixed Thermal - Fixed Magnetic)				■	-	-	-	■
TF (Adjustable Thermal - Fixed Magnetic)				-	■	■	-	-
TM (Adjustable Thermal - Adjustable Magnetic)				-	-	-	-	-
Electronic - Basic (BE / BEG)				-	-	-	-	-
Electronic - Smart (SE / SX)				-	-	-	-	-
Installation	**Key**							
Front Connection (FC)		■	Standard	■	■	■	■	■
Extension Bar (FB)		□	Optional	□	□	□	□	□
Cable Tunnel Clamp (FW)		-	Not available	□	□	□	□	□
Rear Connection (RC)				-	□	□	□	□
Plug-In (UPX)				-	-	-	-	-
Plug-In (PM)				-	-	-	-	-
DIN Rail Adapter				-	□	□	□	□
Reverse Connection of Supply Possible				Yes	Yes	Yes	Yes	Yes
Dimensions	*a*	(mm)	-	130	130	130	130	130
	*b*	(mm)	1 pole	25	-	-	-	-
	b	(mm)	2 pole	-	-	-	-	60
	b	(mm)	3 pole	-	75	75	75	-
	b	(mm)	4 pole	-	100	100	100	-
	c	(mm)	-	68	68	68	68	68
	d	(mm)	-	95	95	95	95	95
Weight	*W*	(kg)	1 pole	0.3	-	-	-	-
			2 pole	-	-	-	-	0.7
			3 pole	-	0.8	0.8	0.8	-
			4 pole	-	-	1	1	-
Operation Options	**Key**							
Toggle Operation		■	Standard	■	■	■	■	■
Extension Handle or Direct Mount		□	Optional	-	□	□	□	-
Motor Operation TPMC		-	Not available	-	□	□	□	-
Endurance	Electrical	Cycles	415 V AC	10000	10000	10000	10000	10000
	Mechanical	Cycles	-	20000	20000	20000	20000	20000

Key

Thermal Magnetic MCCB

Basic or Standard Electronic MCCB

Electronic Metering MCCB

Non-auto MCCB

P160F TM	P160N TM	P160H TM	P160F BE / BEG	P160N BE / BEG	P160H BE / BEG	P160D NN	P160F SE	P160N SE	P160H SE	B160E FF	B160P TM	B160R TM
A	A	A	A	A	A	B	A	A	A	A	A	A
3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3 , 4	3, 4	3, 4	3, 4	1	3, 4	3, 4
20, 32	20, 32	20, 32	40	40	40	160	40	40	40	16, 20, 25	20, 32,	20, 32,
50, 63	50, 63	50, 63	100	100	100	-	100	100	100	32, 40, 50	50, 63	50, 63
100, 125	100, 125	100, 125	160 [1]	160 [1]	160 [1]	-	160 [1]	160 [1]	160 [1]	63, 80, 100	100, 125	100, 125
160 [1]	160 [1]	160 [1]								125, 160	160	160
690	690	690	690	690	690	690	690	690	690	240	690	690
250	250	250	-	-	-	250	-	-	-	-	250	250
800	800	800	800	800	800	800	800	800	800	690	800	800
8	8	8	8	8	8	8	8	8	8	8	8	8
6	6	6	6	6	6	-	6	6	6	-	20	25
36	50	70	36	50	70	-	36	50	70	-	125	200
50	85	85	50	85	85	-	50	85	85	25	150	200
25	40	40	-	-	-	-	-	-	-	-	40	40
-	-	-	-	-	-	-	-	-	-	15	-	-
6	6	6	6	6	6	-	6	6	6	-	15	20
36	50	50	36	50	50	-	36	50	50	-	80	135
50	85	85	50	85	85	-	50	85	85	19	85	150
19	40	40	-	-	-	-	-	-	-	-	150	150
-	-	-	-	-	-	-	-	-	-	8	40	40
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	2	-	-	-	-	-	-
-	-	-	-	-	-	■	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	■	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
■	■	■	-	-	-	-	-	-	-	-	■	■
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□	□	□	□	□	□	□	□	□	□	-	-	-
Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
130	130	130	130	130	130	130	130	130	130	165	165	165
-	-	-	-	-	-	-	-	-	-	35	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-
90	90	90	90	90	90	90	90	90	90	-	105	105
120	120	120	120	120	120	120	120	120	120	-	140	140
68	68	68	68	68	68	68	68	68	68	68	103	103
95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	92	127	127
-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-		-	-
1	1	1	1	1	1	1	1	1	1	0.3	2.4	2.4
1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	-	3.2	3.2
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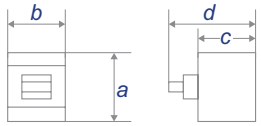
30000	30000	30000	30000	30000	30000	30000	30000	30000	30000	20000	30000	30000
50000	50000	50000	50000	50000	50000	50000	50000	50000	50000	30000	30000	30000

Notes: [1] Rating for Plug-in is 125 A.

250 A Selection Guide

Model	Symbol	Unit	Condition	A250E TM	A250F TM	A250D NN	P250F TM	P250N TM
Selectivity Category	-	-	-	A	A	B	A	A
Number of Poles	-	-	-	3, 4	3, 4	3, 4	3, 4	3, 4
Available Trip Units - Rating	*In*	(A)	-	100, 125	160	250	50, 63	50, 63
				160, 200	200	-	100. 125	100. 125
				250	250	-	160, 200	160, 200
							250	250
Electrical Characteristics								
Rated Maximum Operational Voltage	*Ue*	(V)	AC 50 / 60 Hz	525	690	690	690	690
		(V)	DC	250	250	250	250	250
Rated Insulation Voltage	*Ui*	(V)	-	690	690	690	800	800
Rated Impulse Withstand Voltage	*Uimp*	(kV)	-	8	8	8	8	8
Ultimate Breaking Capacity (IEC, JIS, AS/NZS) AC Voltage	*Icu*	(kA)	690 V AC	-	4	-	6	6
			400 / 415 V AC	25	36	-	36	50
			240 V AC	35	85	-	50	85
DC Voltage	*Icu*	(kA)	250 V DC	15	25	-	25	40
			125 V DC	25	40	-	-	-
Service Breaking Capacity (IEC, JIS, AS/NZS) AC Voltage	*Ics*	(kA)	690 V AC	-	2	-	6	6
			400 / 415 V AC	19	20	-	36	50
			220 / 240 V AC	27	43	-	50	85
DC Voltage	*Ics*	(kA)	250 V DC	12	13	-	19	40
			125 V DC	20	20	-	-	-
Short-Time Withstand Current	*Icw*	(kA)	0.3 sec.	-	-	3	-	-
			1 sec.	-	-	-	-	-
Protection Function	**Key**							
Switch (Non-Auto)		■	Standard	-	-	■	-	-
FF (Fixed Thermal - Fixed Magnetic)				-	-	-	-	-
TF (Adjustable Thermal - Fixed Magnetic)				-	-	-	-	-
TM (Adjustable Thermal - Adjustable Magnetic)				■	■	-	■	■
Electronic - Basic (BE / BEG)				-	-	-	-	-
Electronic - Smart (SE / SEX)				-	-	-	-	-
Installation	**Key**							
Front Connection (FC)		■	Standard	■	■	■	■	■
Extension Bar (FB)		□	Optional	□	□	□	□	□
Cable Tunnel Clamp (FW)		-	Not available	□	□	□	□	□
Rear Connection (RC)				□	□	□	□	□
Plug-In (UPX)				-	-	-	□	□
Plug-In (PM)				-	-	-	□	□
Reverse Connection of Supply Possible				Yes	Yes	Yes	Yes	Yes
Dimensions 	*a*	(mm)	-	165	165	165	165	165
	b	(mm)	3 pole	105	105	105	105	105
	b	(mm)	4 pole	140	140	140	140	140
	c	(mm)	-	68	68	68	68	68
	d	(mm)	-	95	95	95	95	95.5
Weight	*W*	(kg)	3 pole	1.5	1.5	1.5	1.2	1.2
			4 pole	1.9	1.9	1.9	2	2
Operation Options	**Key**							
Toggle Operation		■	Standard	■	■	■	■	■
Extension Handle or Direct Mount		□	Optional	□	□	□	□	□
Motor Operation TPMC		-	Not available	□	□	□	□	□
Endurance	Electrical	Cycles	415 V AC	6000	6000	6000	10000	10000
	Mechanical	Cycles	-	18000	18000	18000	30000	30000

Key

Thermal Magnetic MCCB

Basic or Standard Electronic MCCB

Electronic Metering MCCB

Non-auto MCCB

	P250H TM	P250F BE / BEG	P250N BE / BEG	P250H BE / BEG	P250D NN	P250F SE	P250N SE	P250H SE	B250P TM	B250P BE	B250P SE	B250R TM
	A	A	A	A	B	A	A	A	A	A	A	A
	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4
	50, 63	40	40	40	250	40	40	40	250	40	40	250
	100. 125	100	100	100	-	100	100	100	-	100	100	-
	160, 200	160	160	160	-	160	160	160	-	160	160	-
	250	250	250	250	-	250	250	250	-	250	250	-
	690	690	690	690	690	690	690	690	690	690	690	690
	250	250	250	250	250	250	250	250	250	250	250	250
	800	800	800	800	800	800	800	800	800	800	800	800
	8	8	8	8	8	8	8	8	8	8	8	8
	6	6	6	6	-	6	6	6	20	20	20	25
	70	36	50	70	-	36	50	70	125	125	125	200
	85	50	85	85	-	50	85	85	150	150	150	200
	40	-	-	-	-	-	-	-	40	40	40	40
	-	-	-	-	-	-	-	-	-	-	-	-
	6	6	6	6	-	6	6	6	15	15	15	20
	70	36	50	70	-	36	50	70	85	85	85	150
	85	50	85	85	-	50	85	85	150	150	150	150
	40	-	-	-	-	-	-	-	40	40	40	40
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	3.6	-	-	-	-	-	-	-
	-	-	-	-	■	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	-	-	-	-	-
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	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
	165	165	165	165	165	165	165	165	165	165	165	165
	105	105	105	105	105	105	105	105	105	105	105	105
	140	140	140	140	140	140	140	140	140	140	140	140
	68	68	68	68	68	68	68	68	103	103	103	103
	95.5	95.5	95.5	95.5	95.5	95.5	95.5	95.5	127	127	127	127
	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	2.4	2.4	2.4	2.4
	2	2	2	2	2	2	2	2	3.2	3.2	3.2	3.2
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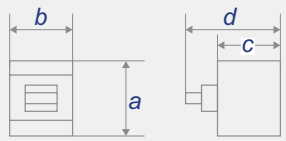
	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000
	30000	30000	30000	30000	30000	30000	30000	30000	30000	30000	30000	30000

400 A Selection Guide

Model	Symbol	Unit	Condition	P400E TM	P400F TM	P400N TM	P400H TM	P400F BE / BEG	P400N BE / BEG
Selectivity Category	-	-	-	A	A	A	A	B	B
Number of Poles	-	-	-	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4
Nominal Current Ratings	*In*	(A)	50 °C	250	250	250	250	250	250
				400	400	400	400	400	400
Electrical Characteristics									
Rated Maximum Operational Voltage	*Ue*	(V)	AC 50 / 60 Hz	690	690	690	690	690	690
		(V)	DC	250	250	250	250	-	-
Rated Insulation Voltage	*Ui*	(V)	-	800	800	800	800	800	800
Rated Impulse Withstand Voltage	*Uimp*	(kV)	-	8	8	8	8	8	8
Ultimate Breaking Capacity (IEC, JIS, AS/NZS) AC Voltage	*Icu*	(kA)	690 V AC	-	7	12	12	7	12
			525 V AC	-	-	-	-	-	-
			440 V AC	-	-	-	-	-	-
			400 / 415 V AC	25	36	50	70	36	50
			240 V AC	35	50	85	100	50	85
DC Voltage	*Icu*	(kA)	250 V DC	25	25	50	50	-	-
Service Breaking Capacity (IEC, JIS, AS/NZS) AC Voltage	*Ics*	(kA)	690 V AC	-	7	12	12	7	12
			525 V AC	-	-	-	-	-	-
			440 V AC	-	-	-	-	-	-
			400 / 415 V AC	25	36	50	70	36	50
			240 V AC	35	50	85	100	50	85
DC Voltage	*Ics*	(kA)	250 V DC	25	25	50	50	-	-
Short-Time Withstand Current	*Icw*	(kA)	0.4 sec	-	-	-	-	5	5
			1 sec.	-	-	-	-	-	-
Protection Function	**Key**								
Switch (Non-Auto)		■	Standard	-	-	-	-	-	-
TM (Adjustable Thermal - Adjustable Magnetic)				■	■	■	■	-	-
Electronic - Basic (BE / BEG)				-	-	-	-	■	■
Electronic - Smart Ammeter (SX)				-	-	-	-	-	-
Electronic - Smart Energy (SE)				-	-	-	-	-	-
Installation	**Key**								
Front Connection (FC)		■	Standard	■	■	■	■	■	■
Extension Bar (FB)		□	Optional	□	□	□	□	□	□
Cable Tunnel Clamp (FW)		-	Not available	□	□	□	□	□	□
Rear Connection (RC)				□	□	□	□	□	□
Plug-In (UPX)				□	□	□	□	□	□
Plug-In (PM)				□	□	□	□	□	□
Reverse Supply Connection	Possible to 440V			Yes	Yes	Yes	Yes	Yes	Yes
Dimensions 	*a*	(mm)	-	260	260	260	260	260	260
	b	(mm)	3 pole	140	140	140	140	140	140
	b	(mm)	4 pole	185	185	185	185	185	185
	c	(mm)	-	103	103	103	103	103	103
	d	(mm)	-	151	151	151	151	151	151
Weight	*W*	(kg)	3 pole	4.3	4.3	4.3	4.3	4.3	4.3
			4 pole	5.7	5.7	5.7	5.7	5.7	5.7
Operation Options	**Key**								
Toggle Operation		■	Standard	■	■	■	■	■	■
Extension Handle or Direct Mount		□	Optional	□	□	□	□	□	□
Motor Operation TPMC		-	Not available	□	□	□	□	□	□
Endurance	Electrical	Cycles	415 V AC	6000	6000	6000	6000	6000	6000
	Mechanical	Cycles	-	15000	15000	15000	15000	15000	15000

Key

Thermal Magnetic MCCB

Basic or Standard Electronic MCCB

Electronic Metering MCCB

Non-auto MCCB

	P400H BE / BEG	P400D NN	P400S TM	P400S BE / BEG	P400F SE	P400N SE	P400H SE	P400S SE	B400P BE	B400R BE	B400P SX	B400R SX	B400P SE	B400R SE
	B	B	A	B	B	B	B	B	B	B	B	B	B	B
	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3,4	3,4	3,4	3,4	3,4	3,4
	250	-	250	250	250	250	250	250	250	250	250	250	250	250
	400	400	400	400	400	400	400	400	400	400	400	400	400	400
	690	690	690	690	690	690	690	690	690	690	690	690	690	690
	-	-	250	-	-	-	-	-	-	-	-	-	-	-
	800	800	800	800	800	800	800	800	800	800	800	800	800	800
	8	8	8	8	8	8	8	8	8	8	8	8	8	8
	12	-	12	12	7	12	12	12	35	50	50	50	50	50
	-	-	-	-	-	-	-	-	45	65	65	65	65	65
	-	-	-	-	-	-	-	-	120	180	180	180	180	180
	70	-	110	110	36	50	70	110	125	200	200	200	200	200
	100	-	125	125	50	85	100	125	150	200	200	200	200	200
	-	-	50	-	-	-	-	-	-	-	-	-	-	-
	12	-	12	12	7	12	12	12	35	50	50	50	50	50
	-	-	-	-	-	-	-	-	45	65	65	65	65	65
	-	-	-	-	-	-	-	-	80	135	135	135	135	135
	70	-	110	110	36	50	70	110	125	150	150	150	150	150
	100	-	125	125	50	85	100	125	150	150	150	150	150	150
	-	-	50	-	-	-	-	-	-	-	-	-	-	-
	5	-	-	5	5	5	5	5	5	5	5	5	5	5
	-	5	-	-	-	-	-	-	-	-	-	-	-	-
	-	■	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	■	-	-	-	-	-	-	-	-	-	-	-
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	□	□	□	□	□	□	□	□	□	□	□	□	□	□
	□	□	□	□	□	□	□	□	□	□	□	□	□	□
	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	260	260	260	260	260	260	260	260	260	260	260	260	260	260
	140	140	140	140	140	140	140	140	140	140	140	140	140	140
	185	185	185	185	185	185	185	185	185	185	185	185	185	185
	103	103	103	103	103	103	103	103	140	140	140	140	140	140
	151	151	151	151	151	151	151	151	182	182	182	182	182	182
	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
	■	■	■	■	■	■	■	■	■	■	■	■	■	■
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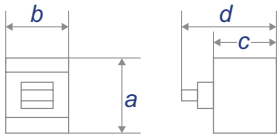
	□	□	□	□	□	□	□	□	□	□	□	□	□	□
	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000	6000
	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000

630 A Selection Guide

Model	Symbol	Unit	Condition	P630E TM	P630F TM	P630N TM	P630H TM
Selectivity Category	-	-	-	A	A	A	A
Number of Poles	-	-	-	3, 4	3, 4	3, 4	3, 4
Nominal Current Ratings	*In*	(A)	50 °C	630 [1]	630 [1]	630 [1]	630 [1]
Electrical Characteristics							
Rated Maximum Operational Voltage	*Ue*	(V)	AC 50 / 60 Hz	690	690	690	690
		(V)	DC	250	250	250	250
Rated Insulation Voltage	*Ui*	(V)	-	800	800	800	800
Rated Impulse Withstand Voltage	*Uimp*	(kV)	-	8	8	8	8
Ultimate Breaking Capacity (IEC, JIS, AS/NZS) AC Voltage	*Icu*	(kA)	690 V AC	-	7	12	12
			400 / 415 V AC	25	36	50	70
			240 V AC	35	50	85	100
DC Voltage	*Icu*	(kA)	250 V DC	25	25	50	50
Service Breaking Capacity (IEC, JIS, AS/NZS) AC Voltage	*Ics*	(kA)	690 V AC	-	7	12	12
			400 / 415 V AC	25	36	50	70
			240 V AC	35	50	85	100
DC Voltage	*Ics*	(kA)	250 V DC	25	25	50	50
Short-Time Withstand Current	*Icw*	(kA)	1 sec.	-	-	-	-
Protection Function	**Key**						
Switch (Non-Auto)		■	Standard	-		-	-
TM (Adjustable Thermal - Adjustable Magnetic)		□	Optional	■	■	■	■
Electronic - Basic (BE / BEG)		-	Not available	-	-	-	-
Electronic - Smart (SE)				-	-	-	-
Installation	**Key**						
Front Connection (FC)		■	Standard	■	■	■	■
Extension Bar (FB)		□	Optional	□	□	□	□
Cable Tunnel Clamp (FW)		-	Not available	□	□	□	□
Rear Connection (RC)				□	□	□	□
Plug-In (UPX)				□	□	□	□
Plug-In (PM)				□	□	□	□
Reverse Supply Connection	Possible to 440 V			Yes	Yes	Yes	Yes
Dimensions	*a*	(mm)	-	260	260	260	260
	b	(mm)	3 pole	140	140	140	140
	b	(mm)	4 pole	185	185	185	185
	c	(mm)	-	103	103	103	103
	d	(mm)	-	151	151	151	151
Weight	*W*	(kg)	3 pole	5	5	5	5
			4 pole	6.6	6.6	6.6	6.6
Operation Options	**Key**						
Toggle Operation		■	Standard	■	■	■	■
Extension Handle or Direct Mount		□	Optional	□	□	□	□
Motor Operation TPMC		-	Not available	□	□	□	□
Endurance	Electrical	Cycles	415 V AC	4000	4000	4000	4000
	Mechanical	Cycles	-	15000	15000	15000	15000



Notes: [1] Thermal magnetic trip units calibrated at 30 °C.

Key

Thermal Magnetic MCCB

Basic or Standard Electronic MCCB

Electronic Metering MCCB

Non-auto MCCB

	P630F BE / BEG	P630N BE / BEG	P630H BE / BEG	P630D NN	P630S TM	P630S BE / BEG	P630F SE	P630N SE	P630H SE	P630S SE
	A	A	A	B	A	A	A	A	A	A
	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4
	630	630	630	630	630	630	630	630	630	630
	690	690	690	690	690	690	690	690	690	690
	-	-	-	-	250	-	-	-	-	-
	800	800	800	800	800	800	800	800	800	800
	8	8	8	8	8	8	8	8	8	8
	7	12	12	-	12	12	7	12	12	12
	36	50	70	-	110	110	36	50	70	110
	50	85	100	-	125	125	50	85	100	125
	-	-	-	-	50	-	-	-	-	-
	7	12	12	-	12	12	7	12	12	12
	36	50	70	-	110	110	36	50	70	110
	50	85	100	-	125	125	50	85	100	125
	-	-	-	-	50	-	-	-	-	-
	-	-	-	7.6	-	-	-	-	-	-
	-	-	-	■	-	-	-	-	-	-
	-	-	-	-	■	-	-	-	-	-
	■	■	■	-	-	■	-	-	-	-
	-	-	-	-	-	-	■	■	■	■
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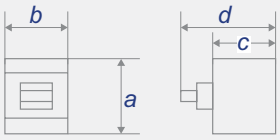
	□	□	□	□	□	□	□	□	□	□
	□	□	□	□	□	□	□	□	□	□
	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	260	260	260	260	260	260	260	260	260	260
	140	140	140	140	140	140	140	140	140	140
	185	185	185	185	185	185	185	185	185	185
	103	103	103	103	103	103	103	103	103	103
	151	151	151	151	151	151	151	151	151	151
	5	5	5	5	5	5	5	5	5	5
	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6	6.6
	■	■	■	■	■	■	■	■	■	■
	□	□	□	□	□	□	□	□	□	□
	□	□	□	□	□	□	□	□	□	□
	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
	15000	15000	15000	15000	15000	15000	15000	15000	15000	15000

800 A Selection Guide

Model	Symbol	Unit	Condition	B800F TM	B800N TM	B800H TM	B800N BE / BEG
Selectivity Category	-	-	-	A	A	A	B
Number of Poles	-	-	-	3	3, 4	3, 4	3, 4
Nominal Current Ratings	*In*	(A)	50 °C	630	630	630	630
				800	800	800	800
Electrical Characteristics							
Rated Maximum Operational Voltage	*Ue*	(V)	AC 50 / 60 Hz	690	690	690	690
		(V)	DC	250	250	250	-
Rated Insulation Voltage	*Ui*	(V)	-	800	800	800	800
Rated Impulse Withstand Voltage	*Uimp*	(kV)	-	8	8	8	8
Ultimate Breaking Capacity (IEC, JIS, AS/NZS) AC Voltage	*Icu*	(kA)	690 V AC	10	20	25	25
			415 / 400 V AC	36	50	70	50
			220 / 240 V AC	50	85	100	85
DC Voltage	*Icu*	(kA)	250 V DC	50	50	50	85
Service Breaking Capacity (IEC, JIS, AS/NZS) AC Voltage	*Ics*	(kA)	690 V AC	10	20	20	20
			415 / 400 V AC	36	50	50	50
			220 / 240 V AC	50	85	75	85
DC Voltage	*Ics*	(kA)	250 V DC	50	50	50	-
Short-Time Withstand Current	*Icw*	(kA)	0.3 sec.	-	-	-	10
Protection - Over Current Release	**Key**						
Switch (Non-Auto)		■	Standard	-	-	-	-
TM (Adjustable Thermal - Adjustable Magnetic)		□	Optional	■	■	■	-
Electronic - Basic		-	Not available	-	-	-	■
Electronic - Smart - Ammeter (SX)				-	-	-	-
Electronic - Smart (SE)				-	-	-	-
Installation	**Key**						
Front Connection (FC)		■	Standard	■	■	■	■
Extension Bar (FB)		□	Optional	□	□	□	□
Rear Connection (RC)		-	Not available	□	□	□	□
Plug-In (PM)				□	□	□	□
Draw-Out (DR)				□	□	□	□
Reverse Supply Connection	Possible to 440 V			Yes	Yes	Yes	Yes
Dimensions 	*a*	(mm)	-	273	273	273	273
	b	(mm)	3 pole	210	210	210	210
	b	(mm)	4 pole	-	280	280	280
	c	(mm)	-	103	103	103	103
	d	(mm)	-	145	145	145	145
Weight	*W*	(kg)	3 pole (630 / 800 A)	8.5 / 8.5	8.5 / 8.5	8.5 / 8.5	8.5 /8.5
			4 pole (630 / 800 A)	-	11.5 / 11.5	11.5 / 11.5	11.5 / 11.5
Operation Options	**Key**						
Toggle Operation		■	Standard	■	■	■	■
Extension Handle or Direct Mount		□	Optional	□	□	□	□
Motor Operation TPMC		-	Not available	□	□	□	□
Endurance	Electrical	Cycles	415 V AC	4000	4000	4000	4000
	Mechanical	Cycles	-	10000	10000	10000	10000

Key

Thermal Magnetic MCCB

Basic or Standard Electronic MCCB

Electronic Metering MCCB

Non-auto MCCB

	B800H BE / BEG	B800D NN	B800G TM	B800G BE	B800P BE	B800R BE	B800H SX	B800H SX	B800P SX	B800H SE	B800P SE
	B		A	B	B	B	B	B	B	B	B
	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4	3, 4
	630	-	630	630	630	630	630	630	630	630	630
	800	800	800	800	800	800	800	800	800	800	800
	690	690	690	690	690	690	690	690	690	690	690
	-	-	-	-	-	-	-	-	-	-	-
	800	800	800	800	800	800	800	800	800	800	800
	8	8	8	8	8	8	8	8	8	8	8
	25	-	25	25	25	25	25	25	25	25	25
	70	-	100	100	125	200	70	70	125	70	125
	100	-	125	125	150	200	100	100	150	100	150
	100	-	50	-	-	-	-	-	-	-	-
	20	-	20	20	20	20	20	20	20	20	20
	50	-	50	50	94	150	50	50	94	50	94
	75	-	125	125	150	150	75	75	150	75	150
	-	-	50	-	-	-	-	-	-	-	-
	-	10	-	10	10	10	10	10	10	10	10
	-	■	-	-	-	-	-	-	-	-	-
	-	-	■	-	-	-	-	-	-	-	-
	■	-	-	■	■	■	-	-	-	-	-
	-	-	-	-	-	-	■	■	■	-	-
	-	-	-	-	-	-	-	-	-	■	■
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	□	□	-	□	-	-	□	□	-	□	-
	□	□	-	□	-	-	□	□	-	□	-
	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	273	273	273	273	273	273	273	273	273	273	273
	210	210	210	210	210	210	210	210	210	210	210
	280	280	280	280	280	280	280	280	280	280	280
	103	103	103	103	140	140	103	103	140	103	140
	145	145	145	145	182	182	145	145	182	145	182
	8.7 / 9.1	8.7 / 9.1	8.5 / 8.5	8.7 / 9.1	13.3 / 14.8	13.3 / 14.8	8.7 / 9.1	8.7 / 9.1	13.3 / 14.8	8.7 / 9.1	13.3 / 14.8
	11.9 / 12.3	11.9 / 12.3	11.5 / 11.5	11.9 / 12.4	16.8 / 18.8	16.8 / 18.9	11.9 / 12.3	11.9 / 12.3	16.8 / 18.8	11.9 / 12.3	16.8 / 18.8
	■	■	■	■	■	■	■	■	■	■	■
	□	□	□	□	□	□	□	□	□	□	□
	□	□	□	□	□	□	□	□	□	□	□
	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000	10000

1000 A Selection Guide

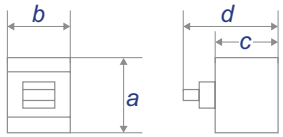
Key

Thermal Magnetic MCCB

Basic or Standard Electronic MCCB

Electronic Metering MCCB

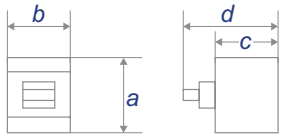
Non-auto MCCB

Model	Symbol	Unit	Condition	B1000N BE	B1000H BE	B1000H SX	B1000H SE	B1000D NN
Selectivity Category	-	-	-	A	A	A	A	B
Number of Poles	-	-	-	3, 4	3, 4	3, 4	3, 4	3, 4
Nominal Current Ratings	*In*	(A)	50 °C	1000	1000	1000	1000	1000
Electrical Characteristics								
Rated Maximum Operational Voltage	*Ue*	(V)	AC 50 / 60 Hz	690	690	690	690	690
		(V)	DC	-	-	-	-	-
Rated Insulation Voltage	*Ui*	(V)	-	800	800	800	800	800
Rated Impulse Withstand Voltage	*Uimp*	(kV)	-	8	8	8	8	8
Ultimate Breaking Capacity (IEC, JIS, AS/NZS) AC Voltage	*Icu*	(kA)	690 V AC	20	25	25	25	-
			415 / 400 V AC	50	70	70	70	-
			220 / 240 V AC	85	100	100	100	-
DC Voltage			250 V DC	-	-	-	-	-
Service Breaking Capacity (IEC, JIS, AS/NZS) AC Voltage	*Ics*	(kA)	690 V AC	15	20	20	20	-
			415 / 400 V AC	38	50	50	50	-
			220 / 240 V AC	65	75	75	75	-
DC Voltage			250 V DC	-	-	-	-	-
Short-Time Withstand Current	*Icw*	(kA)	0.3 sec.	-	-	-	-	10
			1 sec.	-	-	-	-	-
Protection - Over Current Release	**Key**							
Switch (Non-Auto)		■	Standard	-	-	-	-	■
Electronic - Basic		□	Optional	■	■	-	-	-
Electronic - Smart - Ammeter (SX)		-	Not available	-	-	■	-	-
Electronic - Smart (SE)				-	-	-	■	-
Installation	**Key**							
Front Connection (FC)				■	■	■	■	■
Extension Bar (FB)		■	Standard	■	■	■	■	■
Cable Tunnel Clamp (FW)		□	Optional	-	-	-	-	-
Rear Connection (RC)		-	Not available	□	□	□	□	□
Plug-In (PM)				-	-	-	-	-
Draw-Out (DR)				-	-	-	-	-
Reverse Supply Connection	Possible to 440 V			Yes	Yes	Yes	Yes	Yes
Dimensions 	*a*	*(mm)*	-	273	273	273	273	273
	b	*(mm)*	3 pole	210	210	210	210	210
	b	*(mm)*	4 pole	280	280	280	280	280
	c	*(mm)*	-	103	103	103	103	103
	d	*(mm)*	-	145	145	145	145	145
Weight	*W*	*(kg)*	3 pole	11	11	11	11	11
			4 pole	14.8	14.8	14.8	14.8	14.8
			3 pole (630 A)	-	-	-	-	-
			4 pole (630 A)	-	-	-	-	-
Operation Options	**Key**							
Toggle Operation		■	Standard	■	■	■	■	■
Extension Handle or Direct Mount		□	Optional	□	□	□	□	□
Motor Operation TPMC		-	Not available	□	□	□	□	□
Endurance	Electrical	Cycles	415 V AC	4000	4000	4000	4000	4000
	Mechanical	Cycles	-	10000	10000	10000	10000	10000

1250 A Selection Guide

Key

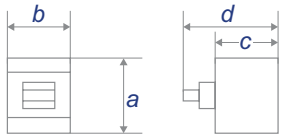
- Thermal Magnetic MCCB
- Basic or Standard Electronic MCCB
- Electronic Metering MCCB
- Non-auto MCCB

Model	Symbol	Unit	Condition	B1250N BE	B1250D NN	B1250HL BE
Selectivity Category	-	-	-	B	B	B
Number of Poles	-	-	-	3	3	3
Nominal Current Ratings	*In*	(A)	50 °C	1250	1250	1250
Electrical Characteristics						
Rated Maximum Operational Voltage	*Ue*	(V)	AC 50 / 60 Hz	690	690	690
		(V)	DC	-	-	-
Rated Insulation Voltage	*Ui*	(V)	-	800	800	800
Rated Impulse Withstand Voltage	*Uimp*	(kV)	-	8	8	8
Ultimate Breaking Capacity (IEC, JIS, AS/NZS) AC Voltage	*Icu*	(kA)	690 V AC	20	-	45
			415 / 400 V AC	50	-	85
			220 / 240 V AC	85	-	125
DC Voltage			250 V DC	-	-	-
Service Breaking Capacity (IEC, JIS, AS/NZS) AC Voltage	*Ics*	(kA)	690 V AC	15	-	34
			415 / 400 V AC	38	-	65
			220 / 240 V AC	65	-	94
DC Voltage			250 V DC	-	-	-
Short-Time Withstand Current	*Icw*	(kA)	0.3 sec.	115	115	115
Protection - Over Current Release	**Key**	■	Standard			
Switch (Non-Auto)		□	Optional	-	■	-
Electronic - Basic		-	Not available	■	-	■
Installation	**Key**					
Front Connection (FC)		■	Standard	■	■	■
Extension Bar (FB)		□	Optional	■	■	■
Cable Tunnel Clamp (FW)		-	Not available	-	-	-
Rear Connection (RC)				□	□	□
Plug-In (PM)				□	□	□
Draw-Out (DR)				-	-	-
Reverse Supply Connection	Possible to 440 V			Yes	Yes	Yes
Dimensions 	*a*	(mm)	-	370	370	370
	b	(mm)	3 pole	210	210	210
	b	(mm)	4 pole	280	280	280
	c	(mm)	-	120	120	120
	d	(mm)	-	171	171	171
Weight	*W*	(kg)	3 pole	19.8	19.8	19.8
			4 pole	25	25	25
			3 pole (630 A)	-	-	-
			4 pole (630 A)	-	-	-
Operation Options	**Key**					
Toggle Operation		■	Standard	■	■	■
Door Mounted (HS, HP) / Breaker Mounted Handle (HB)		□	Optional	□	□	□
Motor Operation (MC)		-	Not available	□	□	□
Endurance	Electrical	Cycles	415 V AC	4000	4000	4000
	Mechanical	Cycles	-	5000	5000	5000

1600 A Selection Guide

Key

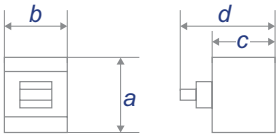
- Thermal Magnetic MCCB
- Basic or Standard Electronic MCCB
- Electronic Metering MCCB
- Non-auto MCCB

Model	Symbol	Unit	Condition	B1600N BE / BEG	B1600D NN	B1600HL BE / BEG
Selectivity Category	-	-	-	B	B	B
Number of Poles	-	-	-	3, 4	3, 4	3, 4
Nominal Current Ratings	*In*	(A)	50 °C	1600	1600	1600
Electrical Characteristics						
Rated Maximum Operational Voltage	*Ue*	(V)	AC 50 / 60 Hz	690	690	690
		(V)	DC	-	-	-
Rated Insulation Voltage	*Ui*	(V)	-	800	800	800
Rated Impulse Withstand Voltage	*Uimp*	(kV)	-	8	8	8
Ultimate Breaking Capacity (IEC, JIS, AS/NZS) AC Voltage	*Icu*	(kA)	690 V AC	20	-	45
			415 / 400 V AC	50	-	85
			220 / 240 V AC	85	-	125
DC Voltage			250 V DC	-	-	-
Service Breaking Capacity (IEC, JIS, AS/NZS) AC Voltage	*Ics*	(kA)	690 V AC	15	-	34
			415 / 400 V AC	38	-	65
			220 / 240 V AC	65	-	94
DC Voltage			250 V DC	-	-	-
Short-Time Withstand Current	*Icw*	(kA)	0.3 Seconds	20	20	20
Protection - Over Current Release	**Key**	■	Standard			
Switch (Non-Auto)		□	Optional	-	■	-
Electronic - Basic		-	Not available	■	-	■
Installation	**Key**					
Front Connection (FC)		■	Standard	■	■	■
Extension Bar (FB)		□	Optional	■	■	■
Cable Tunnel Clamp (FW)		-	Not available	-	-	-
Rear Connection (RC)				□	□	□
Plug-In (PM)				-	-	-
Draw-Out (DR)				-	-	-
Reverse Supply Connection	Possible to 440 V			Yes	Yes	Yes
Dimensions 	*a*	(mm)	-	370	370	370
	b	(mm)	3 pole	210	210	210
	b	(mm)	4 pole	280	280	280
	c	(mm)	-	140	140	140
	d	(mm)	-	191	191	191
Weight	*W*	(kg)	3 pole	27	27	27
			4 pole	35	35	35
			3 pole (630 A)	-	-	-
			4 pole (630 A)	-	-	-
Operation Options	**Key**					
Toggle Operation		■	Standard	■	■	■
Door Mounted (HS, HP) / Breaker Mounted Handle (HB)		□	Optional	□	□	□
Motor Operation (MC)		-	Not available	□	□	□
Endurance	Electrical	Cycles	415 V AC	4000	4000	4000
	Mechanical	Cycles	-	5000	5000	5000

2000 A - 3200 A Selection Guide

Key

- Thermal Magnetic MCCB
- Basic or Standard Electronic MCCB
- Electronic Metering MCCB
- Non-auto MCCB

Model	Symbol	Unit	Condition	XS2000HL BE	XS2500HL BE	XS3200HL BE	XS2000D NN	XS2500D NN
Selectivity Category	-	-	-	B	B	B	B	B
Number of Poles	-	-	-	3 , 4	3 , 4	3	3	3
Nominal Current Ratings	*In*	(A)	50 °C	2000	2500	3200	2000	2500
Electrical Characteristics								
Rated Maximum Operational Voltage	*Ue*	(V)	AC 50 / 60 Hz	690	690	690	690	690
		(V)	DC	-	-	-	-	-
Rated Insulation Voltage	*Ui*	(V)	-	-	-	-	-	-
Rated Impulse Withstand Voltage	*Uimp*	(kV)	-	8	8	8	8	8
Ultimate Breaking Capacity (IEC, JIS, AS/NZS) AC Voltage	*Icu*	(kA)	690 V AC	42	42	42	-	-
			415 / 400 V AC	85	85	85	-	-
			380 V AC	100	100	100	-	-
			220 V AC	125	125	125	-	-
Service Breaking Capacity (IEC, JIS, AS/NZS) AC Voltage	*Ics*	(kA)	690 V AC	42	42	42	-	-
			690 V AC	42	42	42	-	-
			415 / 400 V AC	64	64	64	-	-
			380 V AC	75	75	75	-	-
			220 V AC	94	94	94	-	-
Short-Time Withstand Current	*Icw*	(kA)	0.3 Seconds	42	42	-	42	42
			0.5 Seconds	-	-	38	-	-
Protection - Over Current Release	**Key**							
Switch (Non-Auto)		■	Standard	-	-	■	■	■
Magnetic Only DC		□	Optional	□	□	-	-	-
Electronic - Basic		-	Not available	■	■	-	-	-
Installation	**Key**							
Front Connection (FC)		■	Standard	□	-	-	□	-
Rear Connection (RC)		□	Optional	■	■	■	■	■
Plug-In (PM)		-	Not available	-	-	-	-	-
Draw-Out (DR)				-	-	-	-	-
Reverse Supply Connection	Possible to 440V			Yes	Yes	Yes	Yes	Yes
Dimensions 	*a*	(mm)	-	450	450	450	450	450
	b	(mm)	3 pole	320	320	320	320	320
	b	(mm)	4 pole	429	429	429	429	429
	c	(mm)	-	185	185	185	185	185
	d	(mm)	-	245	245	245	245	245
Weight	*W*	(kg)	3 pole	54	62.5	62.5	54	62.5
			4 pole	57	78.2	78.2	57	78.2
Operation Options	**Key**							
Toggle Operation		■	Standard	■	■	■	■	■
Door Mounted (HS, HP) / Breaker Mounted Handle (HB)		□	Optional	□	□	□	□	□
Motor Operation (MC)		-	Not available	□	□	□	□	□
Endurance	Electrical	Cycles	415 V AC	500	500	500	500	500
	Mechanical	Cycles	-	2500	2500	2500	2500	2500

MCCBs

A160_FF

Single Pole Thermal Magnetic MCCB

- ✔ General purpose power distribution applications
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount as standard with chassis mounting options available
- ✔ Extension bar or tunnel clamp terminal options for application flexibility
- ✔ 1 pole MCCB, compact 25 mm width
- ✔ Front connect screw terminals
- ✔ Suits XEP 630 A chassis, up to 48 poles
- ✔ Panelboard options available
- ✔ Fault rating; 25 kA I_{CU} @ 250 V AC
- ✔ Utilisation ratings from 24 V to 250 V AC and 250 V DC
- ✔ Thermal magnetic trip unit: fixed thermal / fixed magnetic
- ✔ Trip units; 16, 20, 25, 32, 40, 50, 63, 80, 100, 125 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Fixed Thermal, Fixed Magnetic
Trip Unit Rating	16 / 20 / 25 / 32 / 40 / 50 / 63 / 80 / 100 / 125 A
Number of Poles	1
Switching Poles	1P

Short Circuit

Short-Circuit Capacity (Ultimate) @ 240 V AC	**E** 25 kA

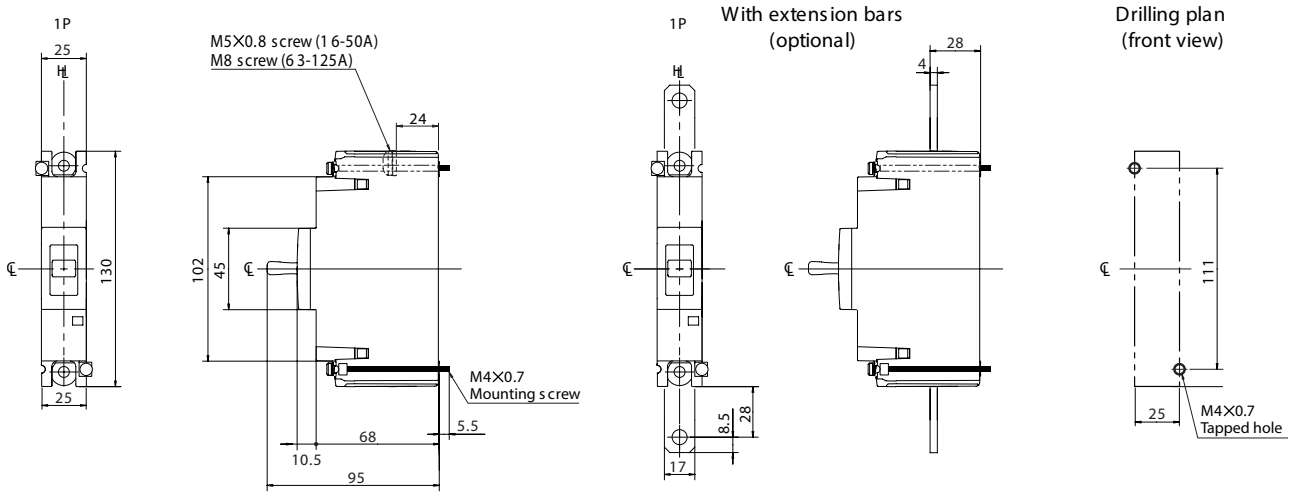
Voltage

Utilisation Voltages	24 V AC to 240 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option)

Quick Reference Dimensions – Front Connect



160 A 1 Pole 25 kA FF (Fixed Thermal - Fixed Magnetic)

I_n (A @ 50 °C)	I_r, Fixed (A)	I_m, Fixed (A)	I_{cu}, 220 /240 V (kA)	Poles	Pole Width (mm)	Catalogue No.
16	16	600	25	1	25	A160E1116FF
20	20	600	25	1	25	A160E1120FF
25	25	600	25	1	25	A160E1125FF
32	32	600	25	1	25	A160E1132FF
40	40	600	25	1	25	A160E1140FF
50	50	600	25	1	25	A160E1150FF
63	63	1000	25	1	25	A160E1163FF
80	80	1000	25	1	25	A160E1180FF
100	100	1500	25	1	25	A160E11100FF
125	125	1500	25	1	25	A160E11125FF

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	1
Switching Poles	1P
Frame Size	160 AF
Trip Unit Rating	16 / 20 / 25 / 32 / 40 / 50 / 63 / 80 / 100 / 125 A

I_n, Rated Current (A)

	16	20	25	32	40	50	63	80	100	125
45ºC	-	-	-	-	-	-	-	-	-	-
50ºC	16	20	25	32	40	50	63	80	100	125
70ºC	-	-	-	-	-	-	-	-		-

U_e, Rated Operational Voltage, AC, max	240 V AC
U_i, Rated Insulation Voltage	690 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC / DC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	Contact NHP
(W)	

Dielectric Strength	2500 V AC

Standards

Standards Compliance	AS/NZS 60947-2 IEC 60947-2
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	1.5 - 35 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option)
Terminal Type	Screw Terminal(s)
Connection Torque	Refer to Installation Manual

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	XEP Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	No
Mounting	-

Physical

Height		130 mm
Width	**1P**	25 mm
Depth (less toggle)		68 mm
Depth (toggle included)		95 mm
Weight	**1P**	0.3 kg
Electrical Life		10000 cycles
Mechanical Life		20000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**E**
Based On AS/NZS 60947.2 and IEC 60947-2	**I_{cu} (Ultimate Breaking Capacity)**	220 / 240 V AC	25
		380 / 400 V AC	-
		415 V AC	-
		440 V AC	-
		690 V AC	-
		1000 V AC	-
		1100 V AC	-
		125 V DC	10
		250 V DC	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	13
		380 / 400 V AC	-
		415 V AC	-
		440V AC	-
		690 V AC	-
		1000 V AC	-
		1100 V AC	-
		125 V DC	5
		250 V DC	-

Trip Unit

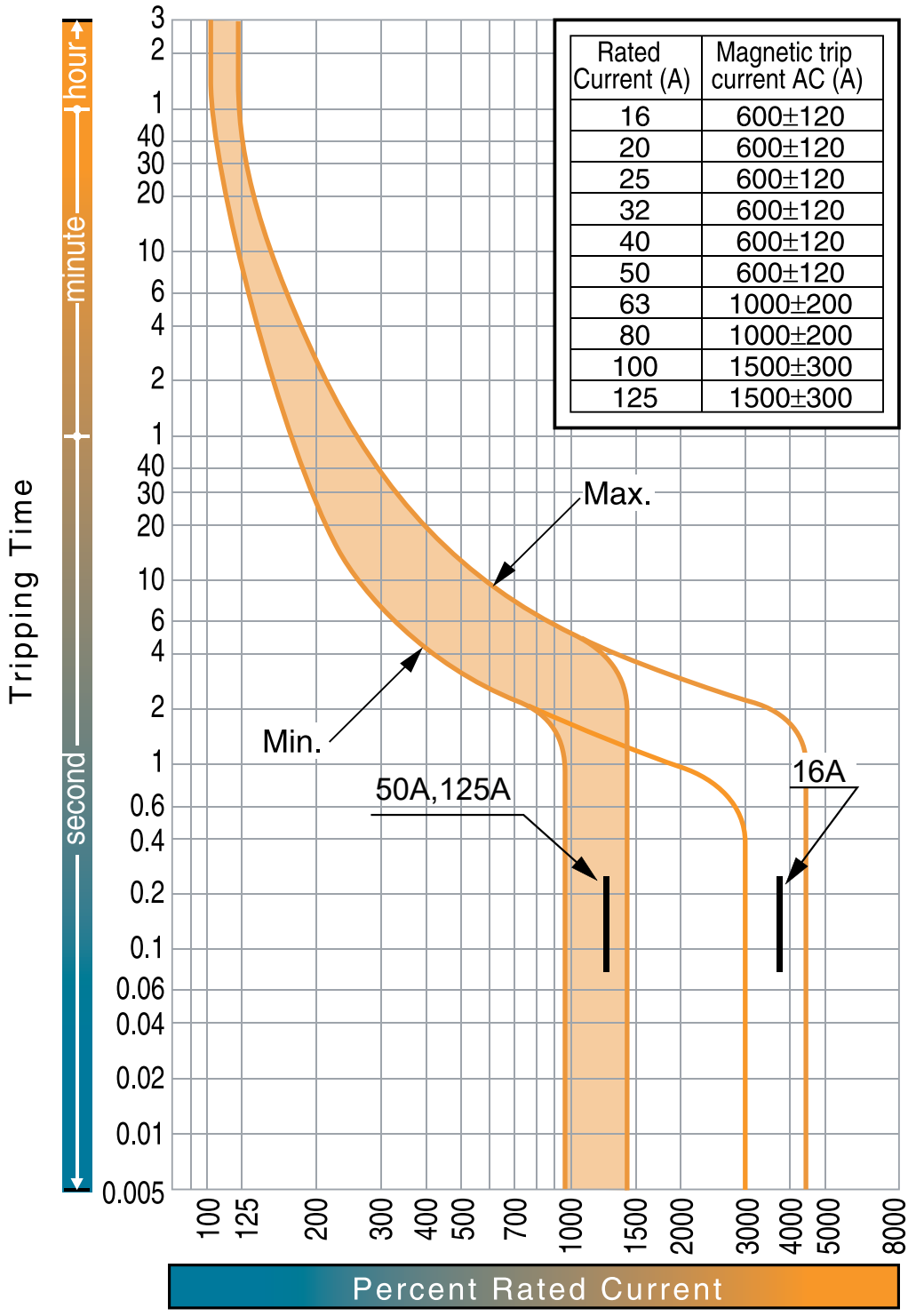
Over Current Protection Function	Yes
Trip Unit Protection Type	Fixed Thermal, Fixed Magnetic
Rated Temperature	50 °C

General Accessories

Auxiliary Switches	No
Alarm Switch	No
Shunt Trip	No
Under Voltage Trip	No
Handle Operators	No
Motor Operator	No
Mechanical Interlock	No
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	No
Interpole Barriers	No
External Panel Display	No

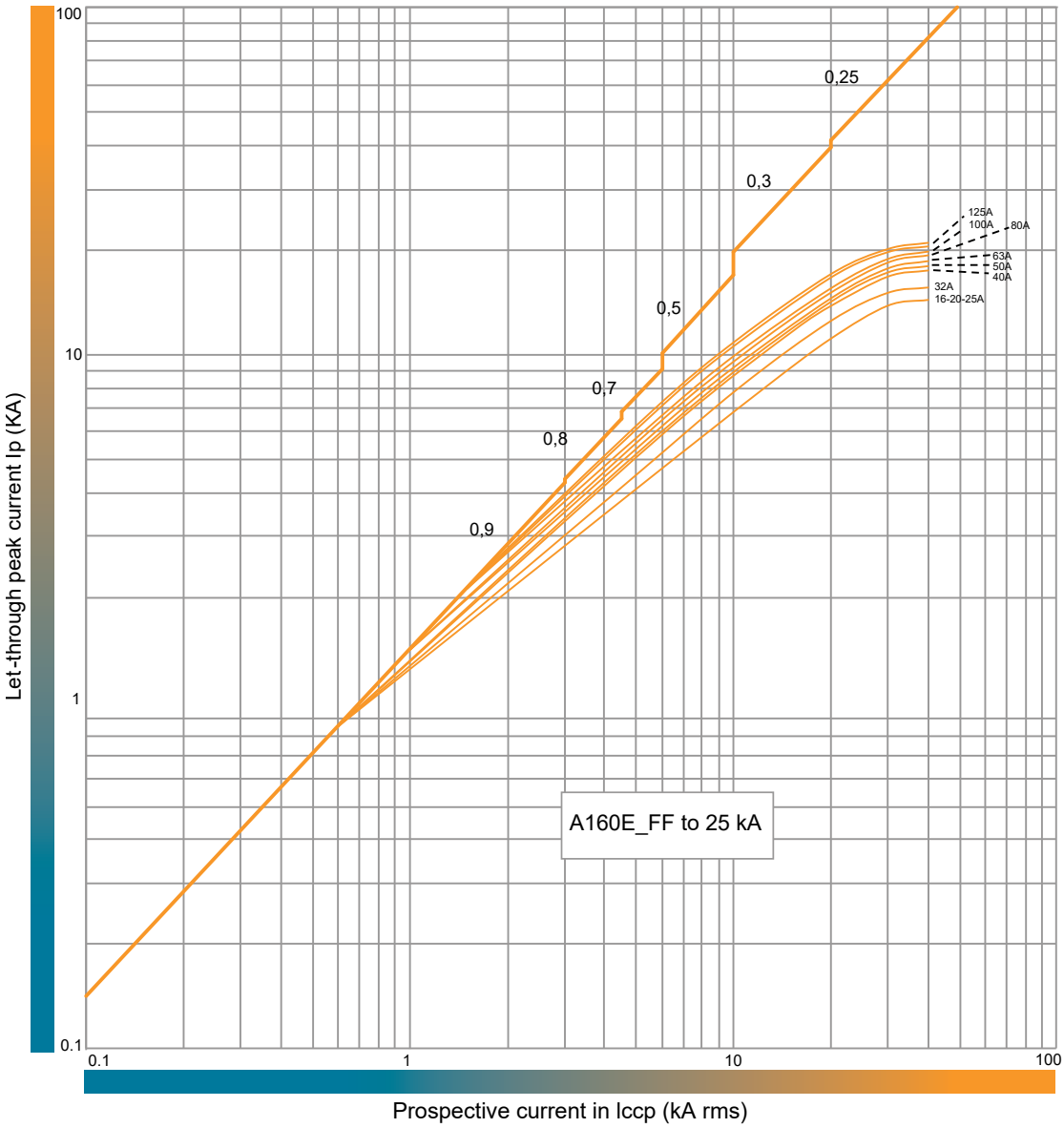
Time Current Characteristics Curve 16 - 125 A, A160E_FF, Fixed Thermal, Fixed Magnetic

Rated Current (A)	Magnetic trip current AC (A)
16	600±120
20	600±120
25	600±120
32	600±120
40	600±120
50	600±120
63	1000±200
80	1000±200
100	1500±300
125	1500±300



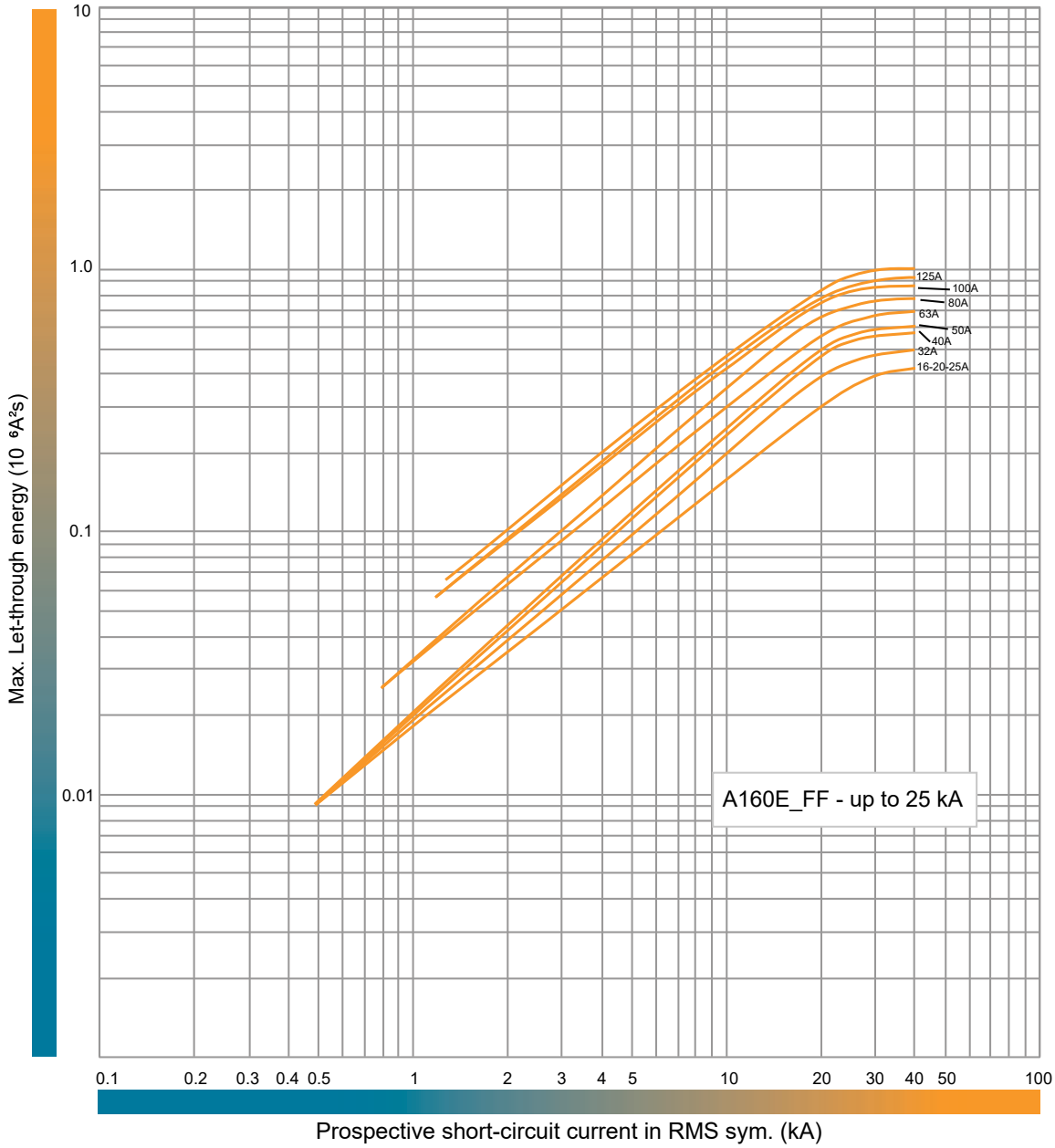
Let-Through Peak Current Curve, A160 FF

A160E_FF: @ 240 V AC, 1 Pole MCCB



Let-Through Energy I²t Curve, A160 FF

A160E_FF: @ 240 V AC, 1 Pole MCCB



A160_TF

Thermal Magnetic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety. Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount as standard, other connection options, DIN rail mount adaptor option available
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ Suits XEP 630 A chassis, with panelboard options
- ✔ Compact: 130 mm H, 68 mm D, 25 mm pole pitch
- ✔ Fault ratings; 25, 36 kA I_{CU} @ 415 V AC
- ✔ Utilisation ratings from 24 V to 690 V AC (refer model), 250 V DC
- ✔ Thermal magnetic trip unit: adjustable thermal / fixed magnetic
- ✔ Trip units; 25, 40, 63, 80, 100, 125, 160 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Adjustable Thermal, Fixed Magnetic
Trip Unit Rating	25 / 40 / 63 / 80 / 100 / 125 / 160 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**E**	25 kA
	F	36 kA

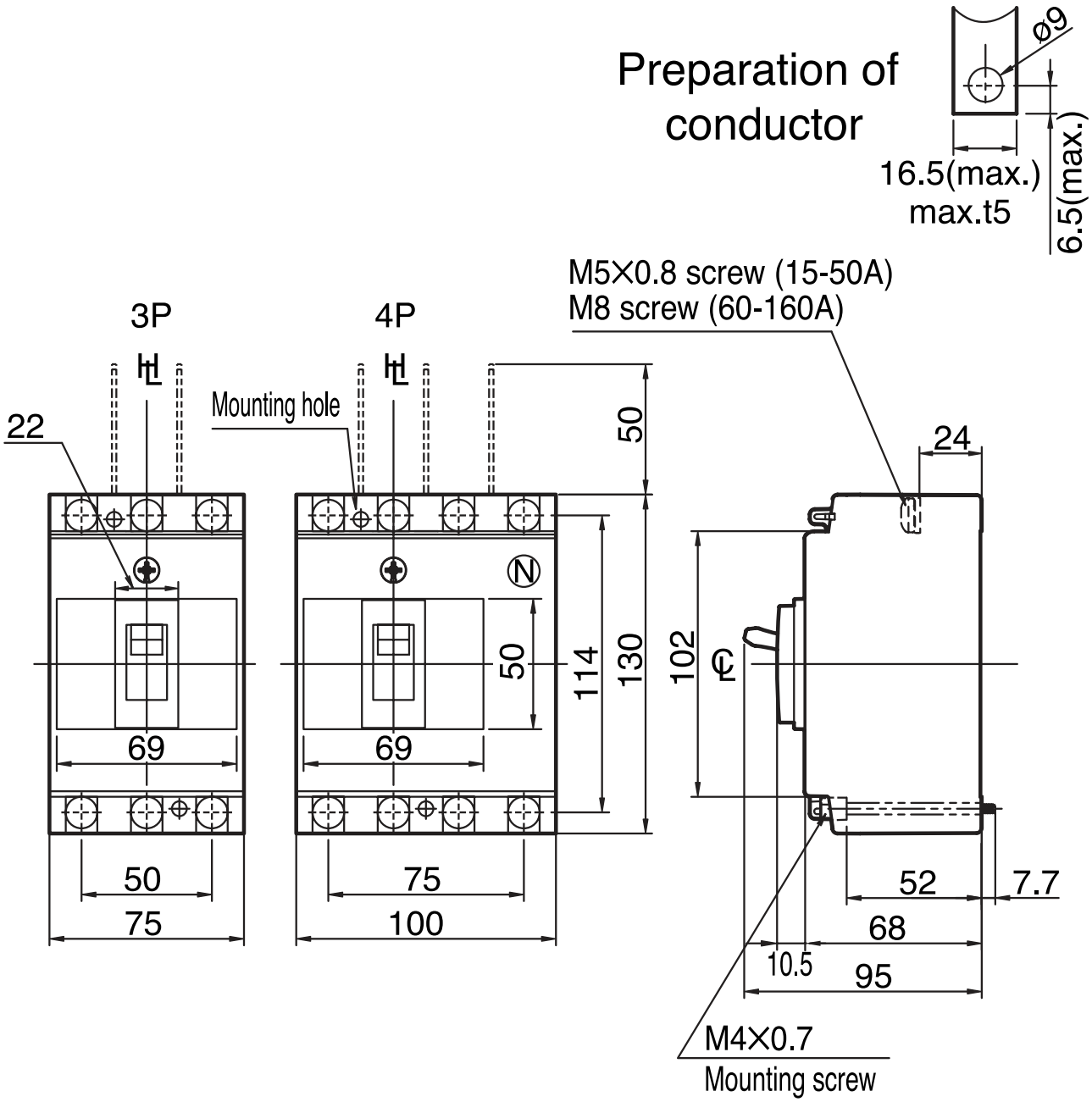
Voltage

Utilisation Voltages	24 V AC to 525 / 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option)

Quick Reference Dimensions – Front Connect



160 A 3 Pole 25 kA TF (Adjustable Thermal - Fixed Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Fixed (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
25	16 - 25	600	25	3	25	A160E1325TF
40	25 - 40	600	25	3	25	A160E1340TF
63	40 - 63	1000	25	3	25	A160E1363TF
80	50 - 80	1000	25	3	25	A160E1380TF
100	63 - 100	1500	25	3	25	A160E13100TF
125	80 - 125	1500	25	3	25	A160E13125TF
160	100 - 160	1600	25	3	25	A160E13160TF

160 A 4 Pole 25 kA TF (Adjustable Thermal - Fixed Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Fixed (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
25	16 - 25	600	25	4	25	A160E1425TF
40	25 - 40	600	25	4	25	A160E1440TF
63	40 - 63	1000	25	4	25	A160E1463TF
80	50 - 80	1000	25	4	25	A160E1480TF
100	63 - 100	1500	25	4	25	A160E14100TF
125	80 - 125	1500	25	4	25	A160E14125TF
160	100 - 160	1600	25	4	25	A160E14160TF

160 A 3 Pole 36 kA TF (Adjustable Thermal - Fixed Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Fixed (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
25	16 - 25	600	36	3	25	A160F1325TF
40	25 - 40	600	36	3	25	A160F1340TF
63	40 - 63	1000	36	3	25	A160F1363TF
80	50 - 80	1000	36	3	25	A160F1380TF
100	63 - 100	1500	36	3	25	A160F13100TF
125	80 - 125	1500	36	3	25	A160F13125TF
160	100 - 160	1600	36	3	25	A160F13160TF

160 A 4 Pole 36 kA TF (Adjustable Thermal - Fixed Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Fixed (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
25	16 - 25	600	36	4	25	A160F1425TF
40	25 - 40	600	36	4	25	A160F1440TF
63	40 - 63	1000	36	4	25	A160F1463TF
80	50 - 80	1000	36	4	25	A160F1480TF
100	63 - 100	1500	36	4	25	A160F14100TF
125	80 - 125	1500	36	4	25	A160F14125TF
160	100 - 160	1600	36	4	25	A160F14160TF

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	160 AF
Trip Unit Rating	25 / 40 / 63 / 80 / 100 / 125 / 160 A

I_n, Rated Current (A)

	25	40	63	80	100	125	160
45ºC	-	-	-	-	-	-	-
50ºC	25	40	63	80	100	125	160
70ºC	-	-	-	-	-	-	-

U_e, Rated Operational Voltage, AC, max (A160E_TF)	525 V AC
U_e, Rated Operational Voltage, AC, max (A160F_TF)	690 V AC
U_i, Rated Insulation Voltage	690 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC / DC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	25	40	63	80	100	125	160
(W)	4.5	3.6	9.8	10.1	11.4	10.9	14.1

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	1.5 - 70 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option)
Terminal Type	Screw Terminal(s) Bolt-Terminal
Connection Torque	Refer to Installation Manual

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	Yes
Suitable for mounting on chassis	XEP Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	No
Mounting	-

Physical

Height		130 mm
Width	**3P**	75 mm
	4P	100 mm
Depth (less toggle)		68 mm
Depth (toggle included)		95 mm
Weight	**3P**	0.8 kg
	4P	1 kg
Electrical Life		10000 cycles
Mechanical Life		20000 cycles

Short-Circuit Capacity

			kA Rating	
			MCCB Type	
		Voltage	E	F
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	35	50
		380 / 400 V AC	25	36
		415 V AC	25	36
		440 V AC	15	25
		690 V AC	-	6
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	30	35
		250 V DC	20	25
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	18	25
		380 / 400 V AC	13	20
		415 V AC	13	20
		440V AC	7.5	13
		690 V AC	-	3
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	15	20
		250 V DC	10	13

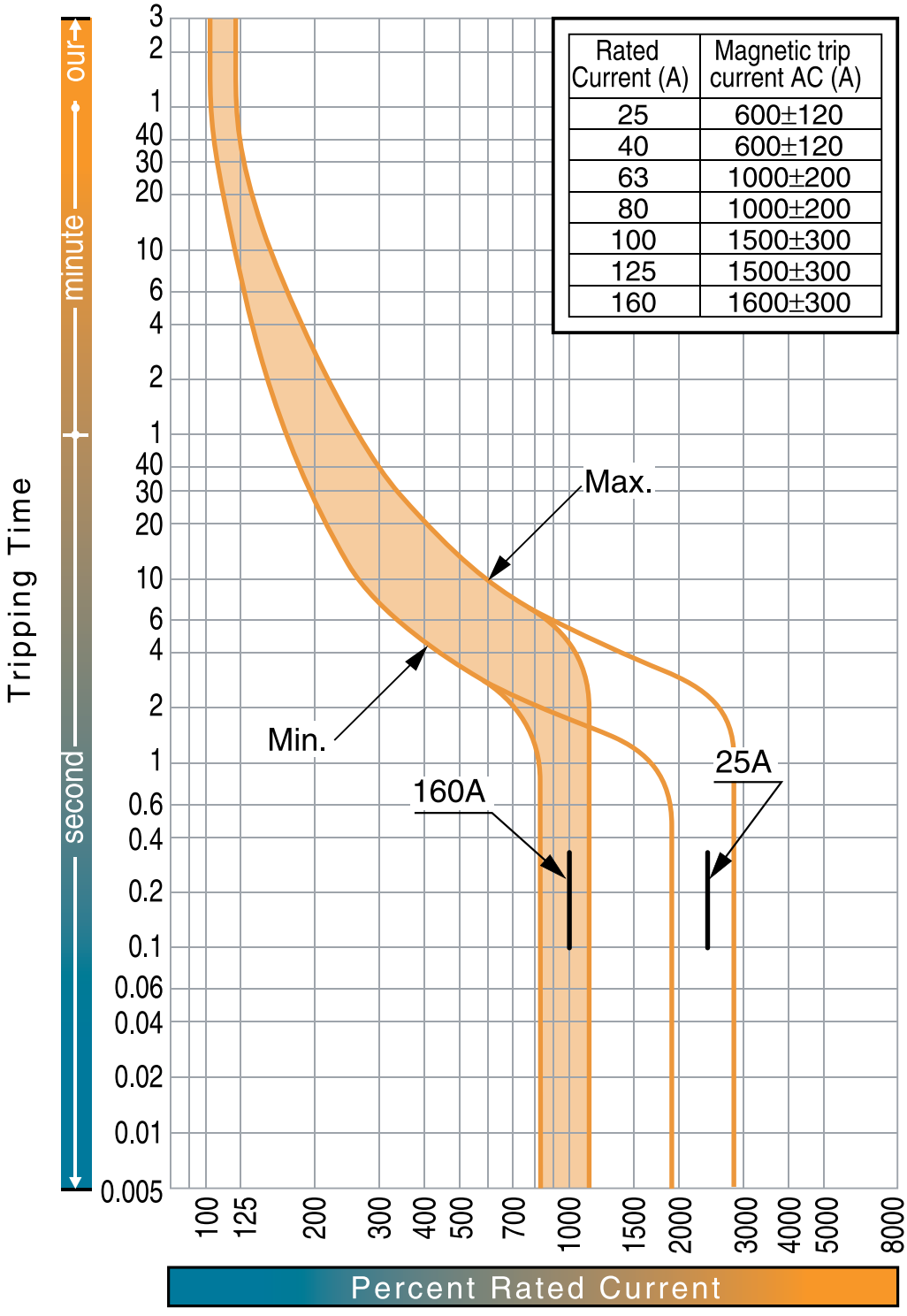
Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Adjustable Thermal, Fixed Magnetic
Rated Temperature	50 °C

General Accessories

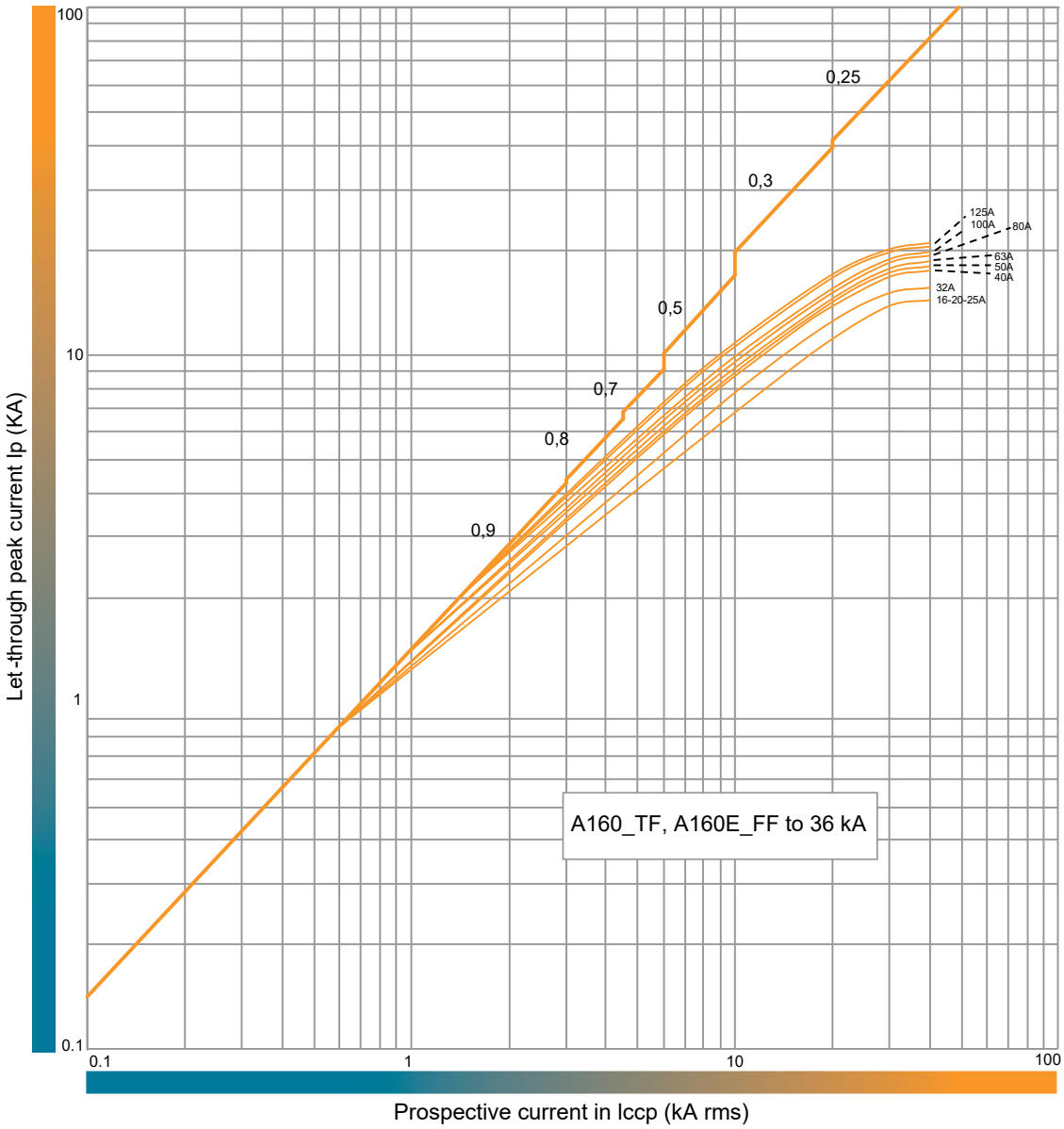
Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	No
Mechanical Interlock	No
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

Time Current Characteristics Curve 25 - 160 A, A160, Adjustable Thermal, Fixed Magnetic



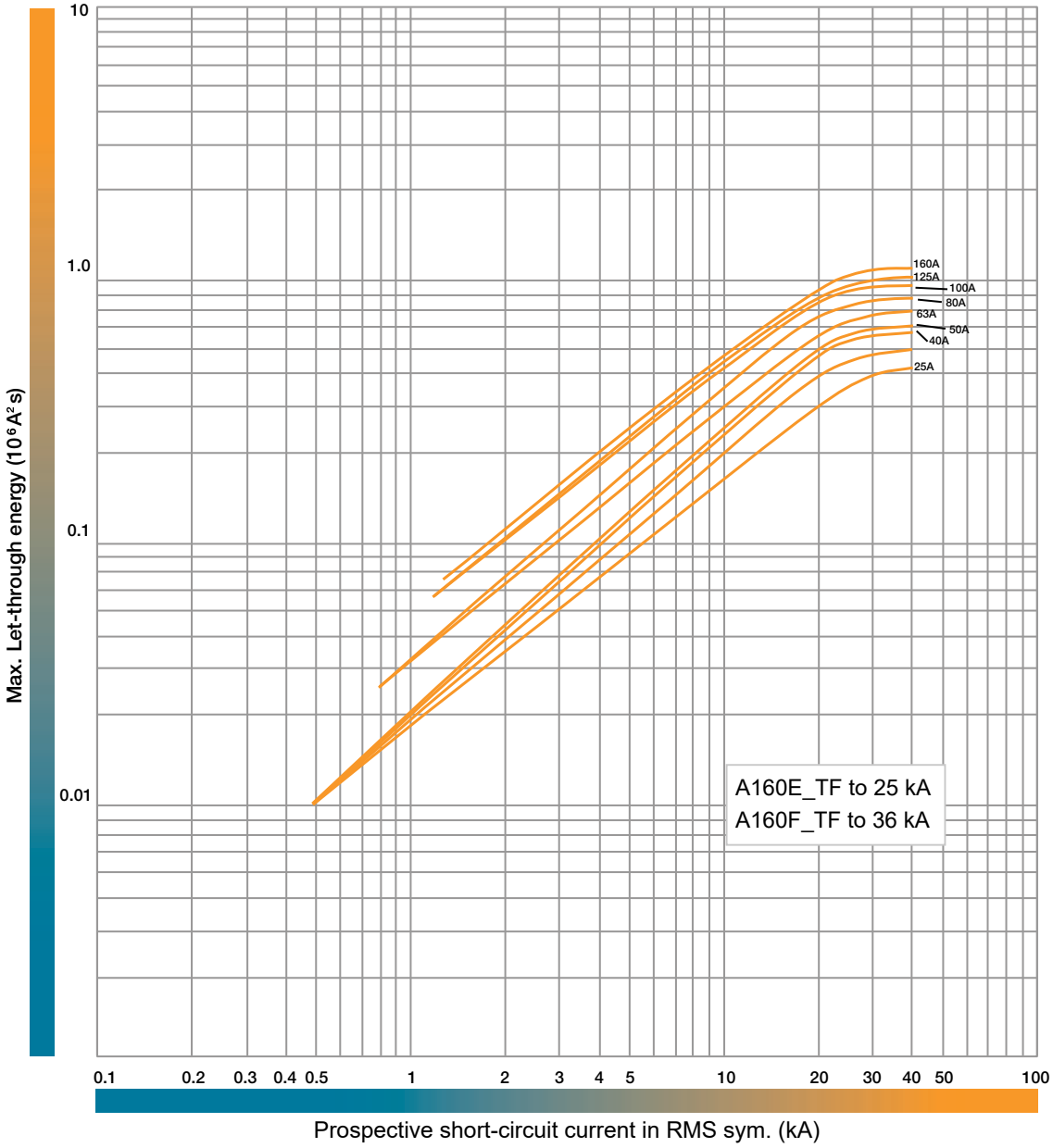
Rated Current (A)	Magnetic trip current AC (A)
25	600±120
40	600±120
63	1000±200
80	1000±200
100	1500±300
125	1500±300
160	1600±300

Let-Through Peak Current Curve, A160 TF, Adjustable Thermal, Fixed Magnetic



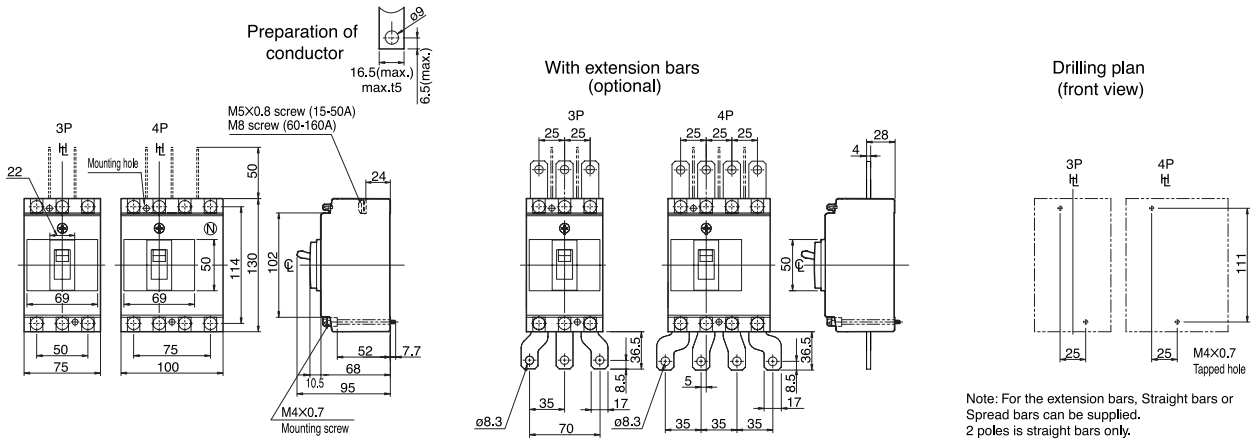
Let-Through Energy I²t Curve, A160 TF, Adjustable Thermal, Fixed Magnetic

A160E_TF, A160F_TF @ 415 V AC



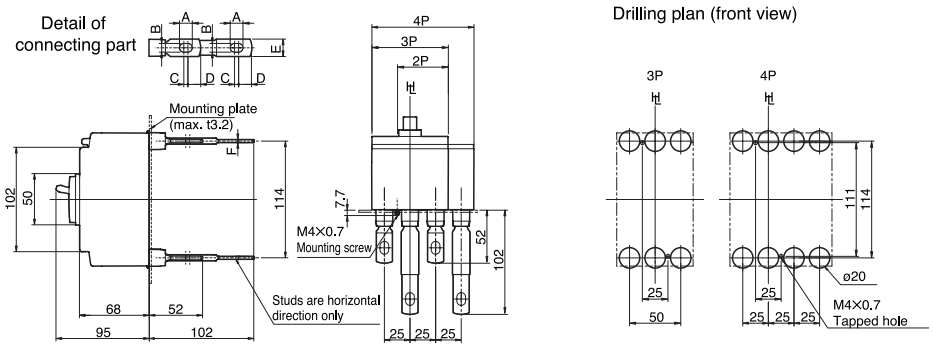
Dimensions A160_TF (mm)

Front Connected



Note: For the extension bars, Straight bars or Spread bars can be supplied.
2 poles is straight bars only.

Rear Connected



Rated current (A)	A	B	C	D	E	F
16-50	10.5	6.5	4	13	16	4
63-160	12.5	8.5	4	13	16	5

Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon.

MCCBs

A160_NN

Non-Auto Switch Disconnector

- ✔ Non-Auto switch disconnector for power distribution
- ✔ AC23 and DC22 ratings for motor starting use
- ✔ No overcurrent protection (isolator only)
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-3, IEC 60947-3 and CE
- ✔ Panel mount as standard, other connection options, DIN rail mount adaptor option available
- ✔ Wide range of accessories for application flexibility
- ✔ Accepts standard MCCB internal and external accessories
- ✔ 3 or 4 pole versions
- ✔ Suits XEP 630 A chassis, with panelboard options
- ✔ Compact: 130 mm H, 68 mm D, 25 mm pole pitch
- ✔ I_{CW}= 2 kA for 0.3 sec: Rated short time withstand rating
- ✔ I_{CM}= 2.8 kA: Rated short circuit making capacity

CE DEKRA On the safe side.

General

Switch Type	Non Auto Switch Disconnector
Number of Poles	3 or 4
Switching Poles	3P or 3P + N

Ratings

Nominal Current	160 A @ 50°C
Motor Starting	AC23 motor starting DC22 motor starting
Icw Rated	Short time withstand
Icm Rated	Ampere making capacity

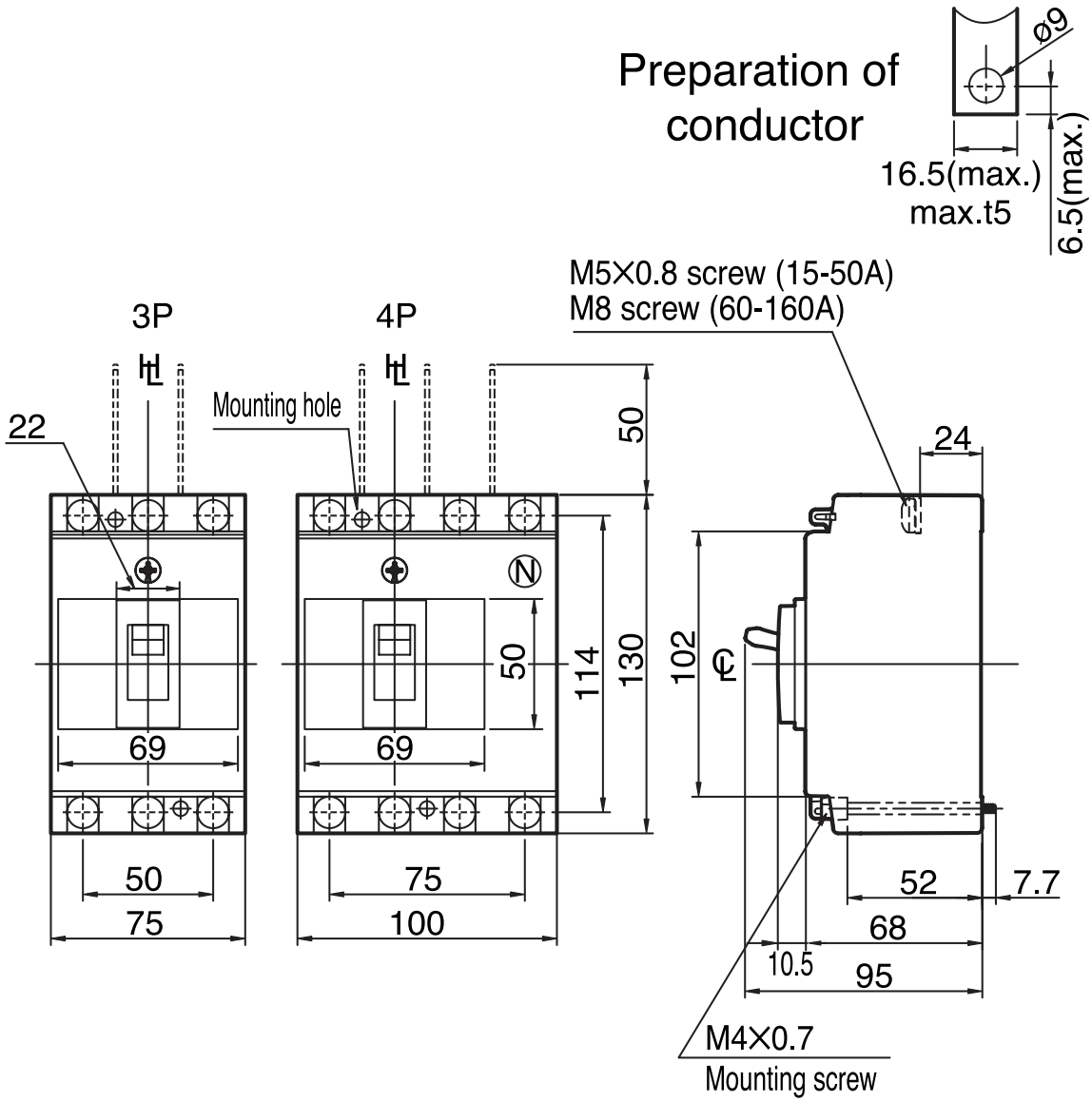
Voltage

Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Accessories and Connections

Options	Front or rear connect Terminal connection options Accepts standard MCCB accessories

Quick Reference Dimensions – Front Connect



160 A 3 Pole NN (Non-auto)

I_n (A @ 50°C)	Poles	Pole Width (mm)	Catalogue No.
160	3	25	A160D13160NN

160 A 4 Pole NN (Non-auto)

I_n (A @ 50°C)	Poles	Pole Width (mm)	Catalogue No.
160	4	25	A160D14160NN

Ratings

Component Type	Non Auto Switch Disconnector
Number of Poles	3 / 4
Switching Poles	3P + N / 3P
Frame Size	160 AF

In, Rated Current

A @ 30 °C	160
A @ 45 °C	160
A @ 50 °C	160

U_e Rated operational voltage AC maximum	690 V AC
U_e Rated operational voltage DC maximum	250 DC
U_i, Rated Insulation Voltage	800 V (rms)
Motor Starting Utilisation Category	AC 23, DC 22
U_{imp}, Impulse Withstand Voltage	8 kV
I_{cw}, Rated Short Circuit Withstand Current 400 / 690 V	2 kA / 0.3 Sec
Rated Frequency	50 / 60 Hz
Pollution Degree	3
AC Power loss per pole at full rated current	9 W @ 160A
Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-3 AS/NZS 60947-3
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	1.5 - 70 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) DIN rail adaptor (Option)
Terminal Type	Screw Terminal(s)
Connection Torque	4.9 - 6.9 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	Yes
Suitable for mounting on chassis	XEP Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		130 mm
Width	**3P**	75 mm
	4P	100 mm
Depth (less toggle)		68 mm
Depth (toggle included)		95.5 mm
Weight	**3P**	0.8 kg
	4P	1.3 kg
Electrical Life		10000 cycles
Mechanical Life		20000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**D**
Based On AS/NZS 60947.2 and IEC 60947-2	**I_{cm} (Short Circuit Making Capacity)**	690 V AC	2.8
	I_{cw} (Short Time Withstand)	0.3 Seconds	2

Trip Unit

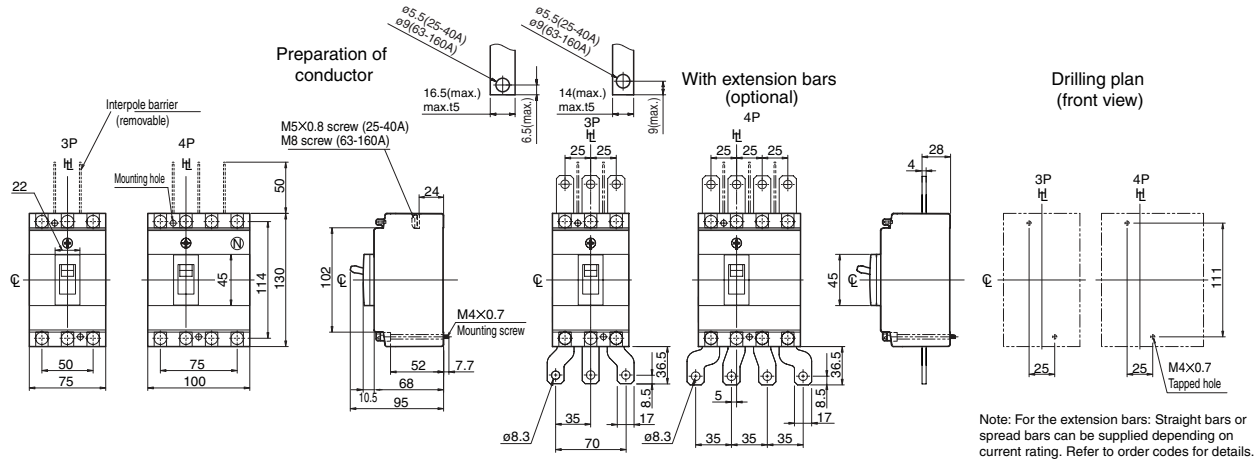
Over Current Protection Function	No
Trip Unit Protection Type	Non-auto Switch Disconnector
Rated Temperature	50 °C

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

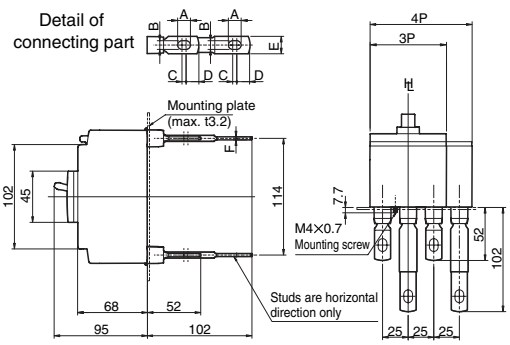
Dimensions A160_NN (mm)

Front Connected



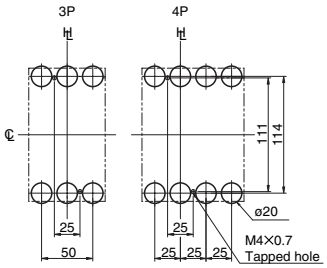
Note: For the extension bars: Straight bars or spread bars can be supplied depending on current rating. Refer to order codes for details.

Rear Connected

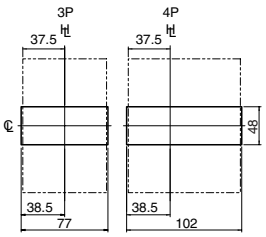


Rated current (A)	A	B	C	D	E	F
16-50	10.5	6.5	4	13	16	4
63-160	12.5	8.5	4	13	16	5

Drilling plan (front view)



Panel cutout (front view)



Panel cutout dimensions shown give an allowance of 1.0mm or more around the handle escutcheon.

A160 AF Accessories

Internal Accessories

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00LA10T
Shunt Trip Coil 230 - 240 V AC	T2SH00LA20T
Shunt Trip Coil 400 - 415 V AC	T2SH00LA40T
Shunt Trip Coil 24 V DC	T2SH00LD02T
Shunt Trip Coil 48 V DC	T2SH00LD04T
Shunt Trip Coil 110 V DC	T2SH00LD10T
Shunt Trip Coil 230 V DC	T2SH00LD20T

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 110 V AC	T2UV00LA10NT
Under Voltage Trip Coil Instant 230 - 240 V AC	T2UV00LA20NT
Under Voltage Trip Coil Instant 400 - 440 V AC	T2UV00LA40NT
Under Voltage Trip Coil Instant 24 V DC	T2UV00LD02NT
Under Voltage Trip Coil Instant 110 V DC	T2UV00LD10NT
Under Voltage Trip Coil Instant 230 V DC	T2UV00LD20NT

Time Delay Operation (500 ms)

When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500 ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delay 110 V AC	T2UV00LA10DS
Under Voltage Trip Coil Time Delay 230 - 240 V AC	T2UV00LA24DS
Under Voltage Trip Coil Time Delay 440 - 450 V AC	T2UV00LA45DS
Under Voltage Trip Coil Time Delay 24 V DC	T2UV00LD02DS
Under Voltage Trip Coil Time Delay 110 V DC	T2UV00LD10DS
Under Voltage Trip Coil Time Delay 230 V DC	T2UV00LD24DS

Auxiliary and Alarm Switches

General Type

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxilary 1 C/O	T2AX00LML3STA

Item Description	Catalogue No.
Alarm, Left Side Pocket Only 1 C/O	T2AL00LML3STA

Operating External Accessories

Operating Handles HB

Door mount or internal mount fixed depth handle for MCCB ON OFF RESET operation

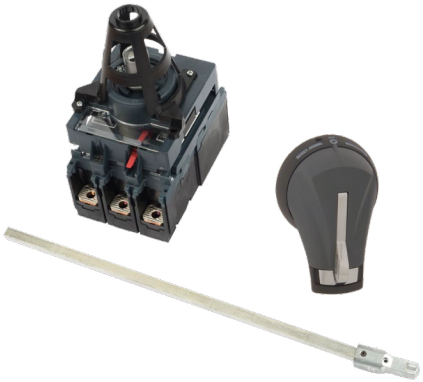
Item Description	Catalogue No.
Handle Direct Mounting for A160 and A250 Black	T2HB16LUR5BN
Handle Direct Mounting for A160 and A250 Red	T2HB16LUR5RN

Locking and Interlocking Accessories

Door Interlocking

Compact Handle TPHS

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation



Item Description	Catalogue No.
Grey, IP55 Handle + 356 mm Shaft, Metal Lock Lever	TPHS16LR5GM
Red/Yellow, IP55 Handle + 356 mm shaft, metal lock lever	TPHS16LR5RM

Square Handle TPHP

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

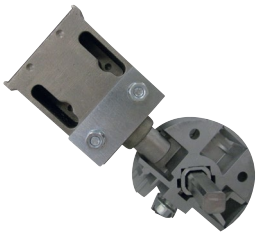
Item Description	Catalogue No.
Handle Square IP65 for A160 Grey / Black	T2HP16LR6BN
Handle Square IP65 for A160 Red / Yellow	T2HP16LR6RN

Handle Options TPHS

A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
HS 90 mm Shaft 125/250 AF	T2HS250SHAFT



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Item Description	Catalogue No.
MCCB/Handle Mechanical Padlock Attachment	TBPHP25PALK

Toggle Locks

Non-captive

Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

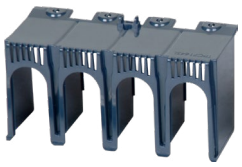
Item Description	Catalogue No.
Toggle Lock with 5 mm x 16.5 mm slot	T2HL25L

Installation External Accessories

Terminal Covers

CF Extended Terminal Covers Front Connect

Provides front, side and internal isolation between poles in the MCCB power terminal area



Item Description	Catalogue No.
1 Pole Single Cover, 50 mm Long, Narrow Cover	T2CF16L1SLHP
3 Pole Single Cover, 50 mm Long, Narrow Cover	T2CF16L3SLHP
4 Pole Single Cover, 50 mm Long, Narrow Cover	T2CF16L4SLHP
1 Pole Set of Two (2) Covers, 50 mm Long, Narrow Covers	T2CF16L1SLNP
3 Pole Set of Two (2) Covers, 50 mm Long, Narrow Covers	T2CF16L3SLNP
4 Pole Set of Two (2) Covers, 50 mm Long, Narrow Covers	T2CF16L4SLNP

Item Description	Catalogue No.
3 Pole Single Cover, 55 mm Long, Wide Cover	T2CF16L3SWHP
4 Pole Single Cover, 55 mm Long, Wide Cover	T2CF16L4SWHP

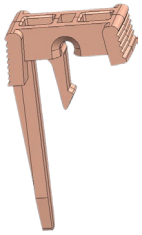
CF Short Terminal Covers Front Connect

Provides front, side and internal isolation between poles in the MCCB power terminal area

Item Description	Catalogue No.
3 Pole Single Cover, 25 mm Long, Narrow Cover	T2CF16L3SSHP
4 Pole Single Cover, 25 mm Long, Narrow Cover	T2CF16L4SSHP

CF Terminal Cover Locking Clip

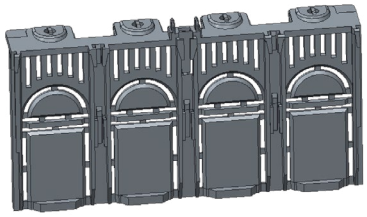
Used with terminal covers to prevent unauthorised removal or access to terminal area



Item Description	Catalogue No.
Terminal Cover Locking Clip Suits A160, P160	T2CF16LL

CS/CR Terminal Covers Blank Flush Type

Provides front finger touch protection with MCCBs used with rear terminals and HC chassis



Item Description	Catalogue No.
Front Connected MCCBs 3 Pole Single Cover	T2CR12L3SHP
Front Connected MCCBs 4 Pole Single Cover	T2CR12L4SHP
Front Connected MCCBs 3 Pole Set of Two (2) Covers	T2CR12L3SP
Front Connected MCCBs 4 Pole Set of Two (2) Covers	T2CR12L4SP

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier (Set of 2) Suits A160, P160	T2BA16L3SH

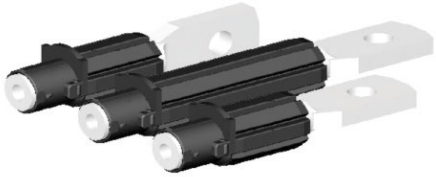
Pole Fillers

A clip in filler 9 mm wide for vacant pole positions for 46 mm DIN cut-outs

Item Description	Catalogue No.
DIN Pole Filler (1 Strip Of 4 Poles, 8 X 9 mm Segments)	DTPF
DIN Pole Filler (1 Strip Of 12 Poles, 24 X 9 mm Segments)	DTPF12

Rear Connect Terminal Studs

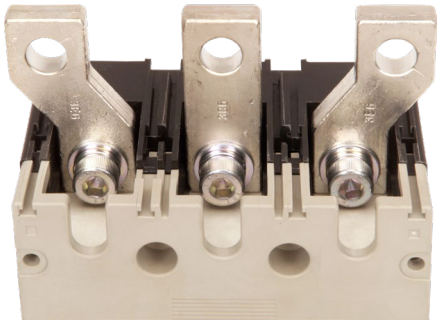
Allows MCCB main connections to be made at the rear of the MCCB



Item Description	Catalogue No.
Rear Connect Terminal Studs 3 Pole Kit, Set of 6 Studs	T2RP12L3SA
Rear Connect Terminal Studs 4 Pole Kit, Set of 8 Studs	T2RP12L4SA

Attached Busbar

Add-on bus bars, allow more or larger conductor connector to an MCCB

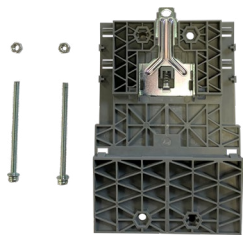


Item Description	Catalogue No.
Attached Busbar 3 Pole, Set of 6, Straight Bars	T2FB12L3SB
Attached Busbar 4 Pole, Set of 8, Straight Bars	T2FB12L4SB

Item Description	Catalogue No.
Attached Busbar 3 Pole, Set of 6, Flanged Bars	T2FB16L3WB
Attached Busbar 4 Pole, Set of 8, Flanged Bars	T2FB16L4WB

DIN Rail Adaptor

Permits an MCCB to mounted onto 45 mm DIN rail for easy mounting and removal



Item Description	Catalogue No.
Metal DIN Rail Adapter	T2DA16L

MCCBs

P160_FF

2 Pole Thermal Magnetic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Accessories; refer range of specific type options
- ✔ 2 pole MCCB
- ✔ Suits XAP chassis, with panelboard options
- ✔ Compact 130 mm H, 68 mm D, 30 mm pole centres (60 mm wide)
- ✔ Fault rating; 36 kA I_{CU} @ 415 V AC
- ✔ 100% I_{CU} / I_{CS} at 36 kA
- ✔ Utilisation ratings from 24 V to 690 V AC, 250 V DC
- ✔ Thermal magnetic trip unit: fixed thermal / fixed magnetic
- ✔ Trip units; 15, 20, 30, 40, 50, 60, 75, 100, 125 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Fixed Thermal, Fixed Magnetic
Trip Unit Rating	15 / 20 / 30 / 40 / 50 / 60 / 75 / 100 / 125 A
Number of Poles	2
Switching Poles	2P

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**F** 36 kA

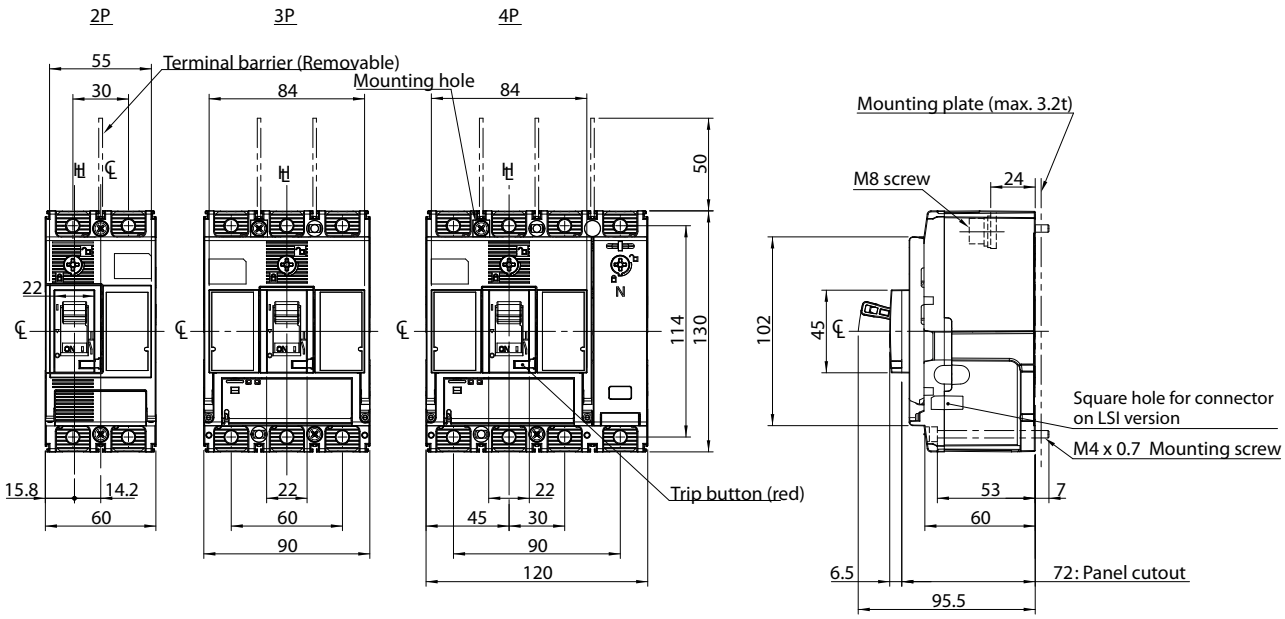
Voltage

Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) DIN rail adaptor (Option)

Quick Reference Dimensions – Front Connect



160 A 2 Pole 36 kA FF (Fixed Thermal - Fixed Magnetic)

I_n (A @ 45 °C)	I_r (A)	I_m (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
15	15	180	36	2	30	P160F2215FF
20	20	240	36	2	30	P160F2220FF
30	30	360	36	2	30	P160F2230FF
40	40	480	36	2	30	P160F2240FF
50	50	600	36	2	30	P160F2250FF
60	60	720	36	2	30	P160F2260FF
75	75	900	36	2	30	P160F2275FF
100	100	1200	36	2	30	P160F22100FF
125	125	1500	36	2	30	P160F22125FF

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	2
Switching Poles	2P
Frame Size	160 AF
Trip Unit Rating	15 / 20 / 30 / 40 / 50 / 60 / 75 / 100 / 125 A

I_n, Rated Current (A)

Contact NHP

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC / DC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

Contact NHP

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	1.5 - 70 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) DIN rail adaptor (Option)
Terminal Type	Bolt-Terminal
Connection Torque	4.9 - 6.9 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	Yes
Suitable for mounting on chassis	XAP Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	No
Mounting	-

Physical

Height		130 mm
Width	**2P**	60 mm
Depth (less toggle)		68 mm
Depth (toggle included)		95.5 mm
Weight	**2P**	0.7 kg
Electrical Life		30000 cycles
Mechanical Life		50000 cycles

Short-Circuit Capacity

		kA Rating
		MCCB Type
	Voltage	**F**
Based On AS/NZS 60947.2 and IEC 60947-2 — I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	50
	380 / 400 V AC	36
	415 V AC	36
	440 V AC	25
	690 V AC	6
	1000 V AC	-
	1100 V AC	-
	125 V DC	-
	250 V DC	25
Based On AS/NZS 60947.2 and IEC 60947-2 — I_{cs} (Service Breaking Capacity)	220 / 240 V AC	50
	380 / 400 V AC	36
	415 V AC	36
	440V AC	25
	690 V AC	6
	1000 V AC	-
	1100 V AC	-
	125 V DC	-
	250 V DC	19

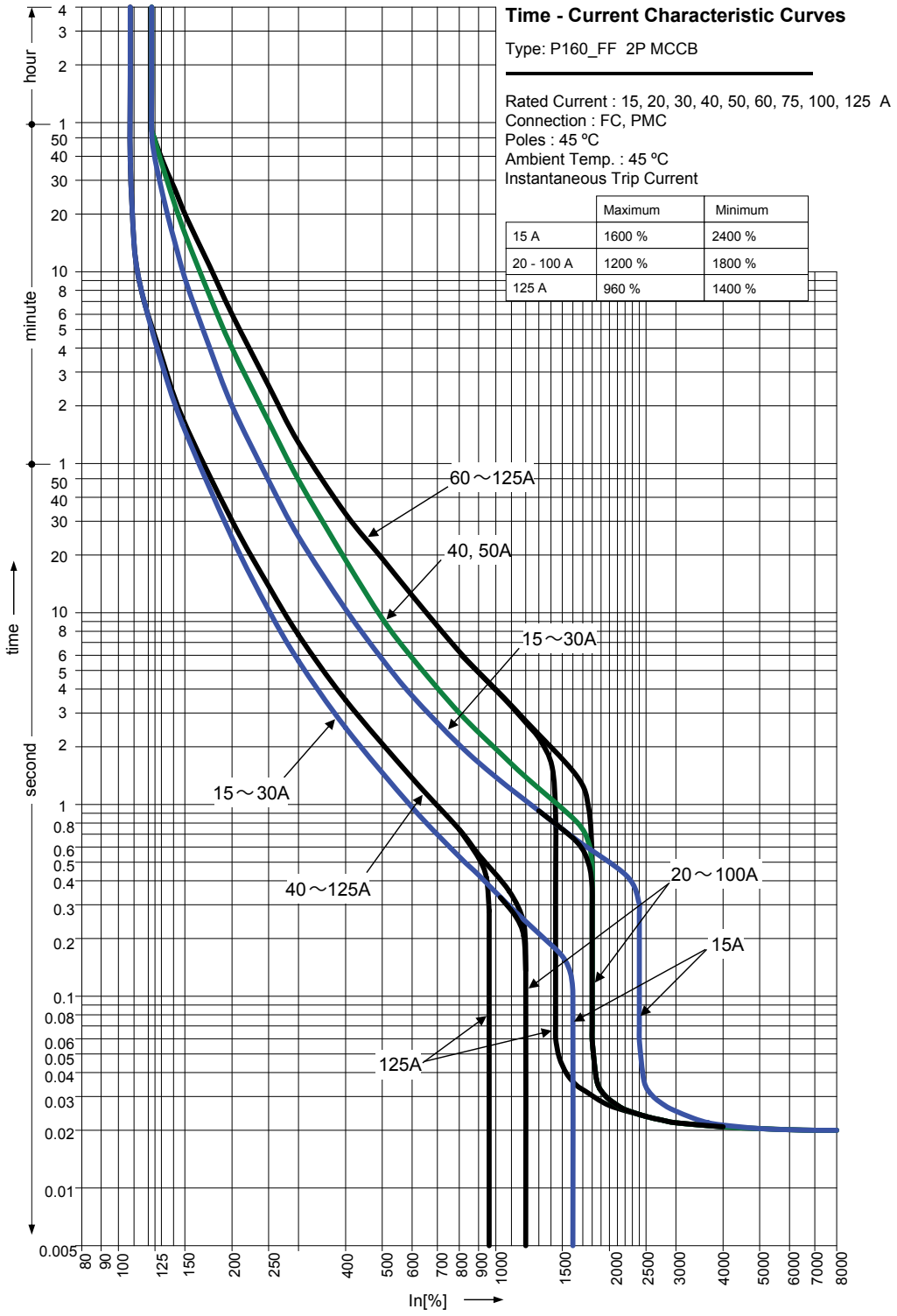
Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Fixed Thermal, Fixed Magnetic
Rated Temperature	45 °C

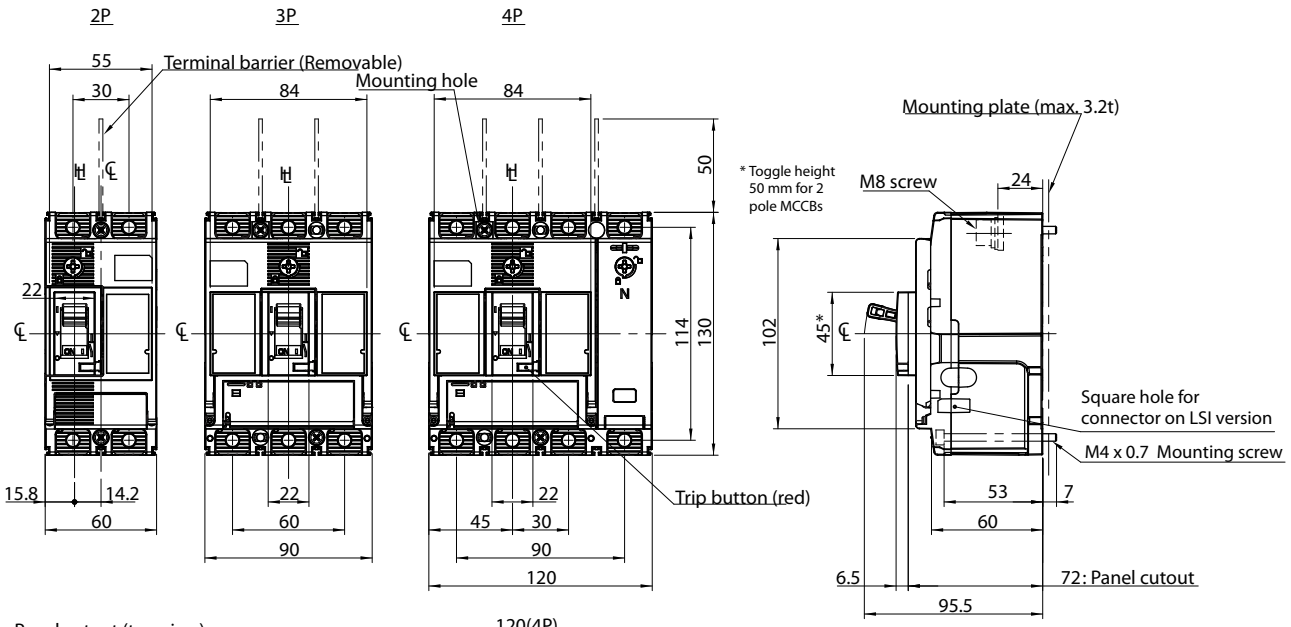
General Accessories

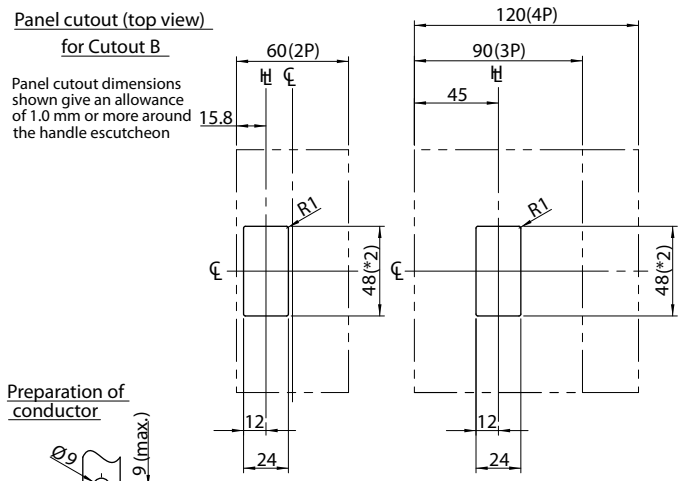
Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	No
Mechanical Interlock	No
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

Time Current Characteristics Curve 15 - 125A, P160 FF, Fixed Thermal and Fixed Magnetic



Dimensions P160_FF/TM/BE/BEG/NN, Front Connect (mm)





(*2) Cutout 52 mm for 2 pole MCCBs

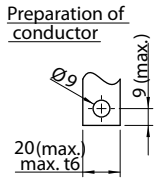
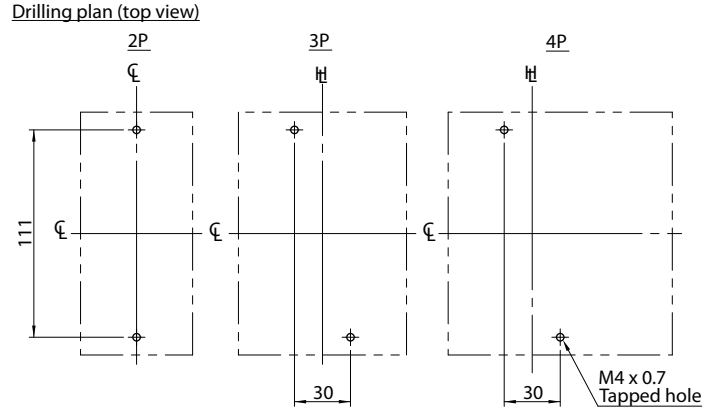


Table for square hole for connector on LSI version

Type of OCR for LSI version	A pole (PAP)		C/N pole (ECP)	
	3P	4P	3P	4P
LSI	Hole	Hole	no	no
LSIG	Hole	Hole	Hole	no



P160_TM

Thermal Magnetic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ Suits XAP chassis, with panelboard options
- ✔ Compact 130 mm H, 68 mm D, 30 mm pole centres
- ✔ Fault ratings; 36, 50 or 70 kA I_{CU} @ 415 V AC
- ✔ 100 % I_{CU} I_{CS} on models up to 50 kA
- ✔ Utilisation ratings from 24 V to 690 V AC, 250 V DC
- ✔ Thermal magnetic trip unit: adjustable thermal / adjustable magnetic
- ✔ Trip units: 20, 32, 50, 63, 100, 125, 160 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Trip Unit Rating	20 / 32 / 50 / 63 / 100 / 125 / 160 A
Number of Poles	3 / 4
Switching Poles	3P + N / 3P

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**F**	36 kA
	N	50 kA
	H	70 kA

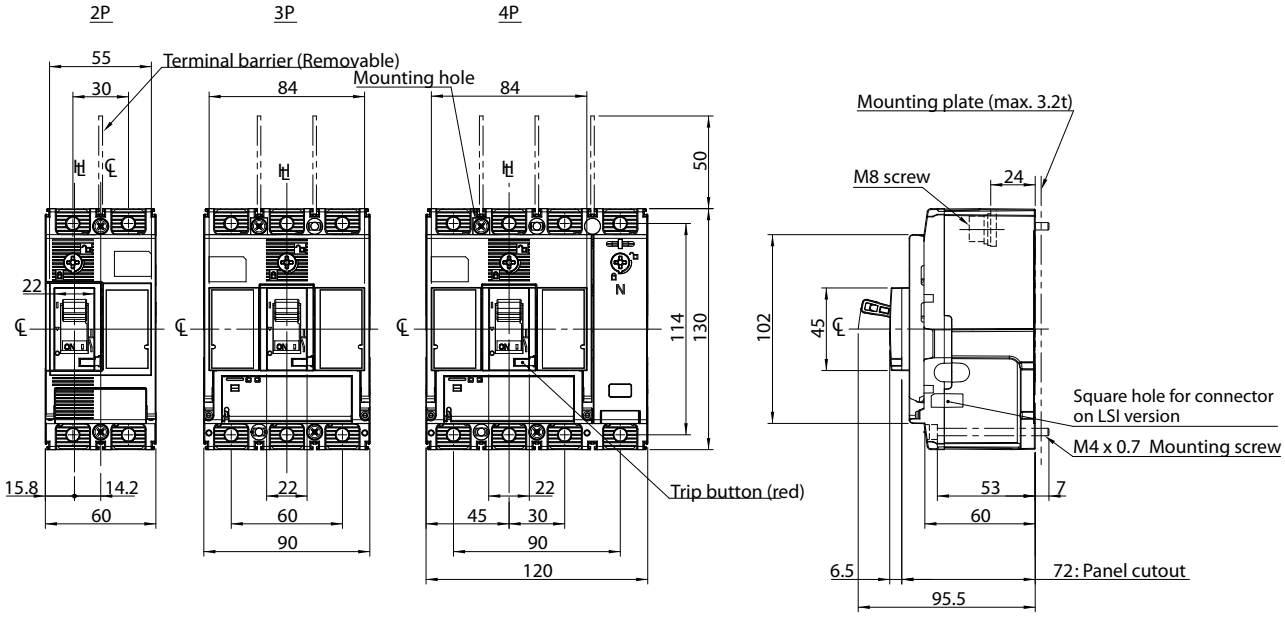
Voltage

Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option) DIN rail adaptor (Option)

Quick Reference Dimensions – Front Connect



160 A 3 Pole 36 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
20	12.5 - 20	120 - 240	36	3	30	P160F2320TM
32	20 - 32	192 - 384	36	3	30	P160F2332TM
50	32 - 50	300 - 600	36	3	30	P160F2350TM
63	50 - 63	378 - 756	36	3	30	P160F2363TM
100	63 - 100	600 - 1200	36	3	30	P160F23100TM
125	80 - 125	750 - 1500	36	3	30	P160F23125TM
160	100 - 160	960 - 1600	36	3	30	P160F23160TM

160 A 3 Pole 50 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
20	12.5 - 20	120 - 240	50	3	30	P160N2320TM
32	20 - 32	192 - 384	50	3	30	P160N2332TM
50	32 - 50	300 - 600	50	3	30	P160N2350TM
63	50 - 63	378 - 756	50	3	30	P160N2363TM
100	63 - 100	600 - 1200	50	3	30	P160N23100TM
125	80 - 125	750 - 1500	50	3	30	P160N23125TM
160	100 - 160	960 - 1600	50	3	30	P160N23160TM

160 A 3 Pole 70 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
20	12.5 - 20	120 - 240	70	3	30	P160H2320TM
32	20 - 32	192 - 384	70	3	30	P160H2332TM
50	32 - 50	300 - 600	70	3	30	P160H2350TM
63	50 - 63	378 - 756	70	3	30	P160H2363TM
100	63 - 100	600 - 1200	70	3	30	P160H23100TM
125	80 - 125	750 - 1500	70	3	30	P160H23125TM
160	100 - 160	960 - 1600	70	3	30	P160H23160TM

160 A 4 Pole 36 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
20	12.5 - 20	120 - 240	36	4	30	P160F2420TM
32	20 - 32	192 - 384	36	4	30	P160F2432TM
50	32 - 50	300 - 600	36	4	30	P160F2450TM
63	50 - 63	378 - 756	36	4	30	P160F2463TM
100	63 - 100	600 - 1200	36	4	30	P160F24100TM
125	80 - 125	750 - 1500	36	4	30	P160F24125TM
160	100 - 160	960 - 1600	36	4	30	P160F24160TM

160 A 4 Pole 50 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
20	12.5 - 20	120 - 240	50	4	30	P160N2420TM
32	20 - 32	192 - 384	50	4	30	P160N2432TM
50	32 - 50	300 - 600	50	4	30	P160N2450TM
63	50 - 63	378 - 756	50	4	30	P160N2463TM
100	63 - 100	600 - 1200	50	4	30	P160N24100TM
125	80 - 125	750 - 1500	50	4	30	P160N24125TM
160	100 - 160	960 - 1600	50	4	30	P160N24160TM

160 A 4 Pole 70 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
20	12.5 - 20	120 - 240	70	4	30	P160H2420TM
32	20 - 32	192 - 384	70	4	30	P160H2432TM
50	32 - 50	300 - 600	70	4	30	P160H2450TM
63	50 - 63	378 - 756	70	4	30	P160H2463TM
100	63 - 100	600 - 1200	70	4	30	P160H24100TM
125	80 - 125	750 - 1500	70	4	30	P160H24125TM
160	100 - 160	960 - 1600	70	4	30	P160H24160TM

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P + N / 3P
Frame Size	160 AF
Trip Unit Rating	20 / 32 / 50 / 63 / 100 / 125 / 160 A
I_n, Rated Current (A)	
Contact NHP	
U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC / DC
Rated Frequency	50 / 60 Hz
Pollution Degree	3
Trip Unit Rating (A) - Power Loss Per Pole (W)	
Contact NHP	
Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	1.5 - 70 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option) DIN rail adaptor (Option)
Terminal Type	Bolt-Terminal Screw Terminal(s)
Connection Torque	4.9 - 6.9 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	Yes
Suitable for mounting on chassis	XAP Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		130 mm
Width	**3P**	90 mm
	4P	120 mm
Depth (less toggle)		68 mm
Depth (toggle included)		95.5 mm
Weight	**3P**	1 kg
	4P	1.3 kg
Electrical Life		30000 cycles
Mechanical Life		50000 cycles

Short-Circuit Capacity

			kA Rating		
			MCCB Type		
		Voltage	**F**	**N**	**H**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	50	85	85
		380 / 400 V AC	36	50	70
		415 V AC	36	50	70
		440 V AC	25	35	50
		690 V AC	6	6	6
		1000 V AC	-	-	-
		1100 V AC	-	-	-
		125 V DC	-	-	-
		250 V DC	25	40	40
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	50	85	85
		380 / 400 V AC	36	50	50
		415 V AC	36	50	50
		440V AC	25	35	35
		690 V AC	6	6	6
		1000 V AC	-	-	-
		1100 V AC	-	-	-
		125 V DC	-	-	-
		250 V DC	19	40	40

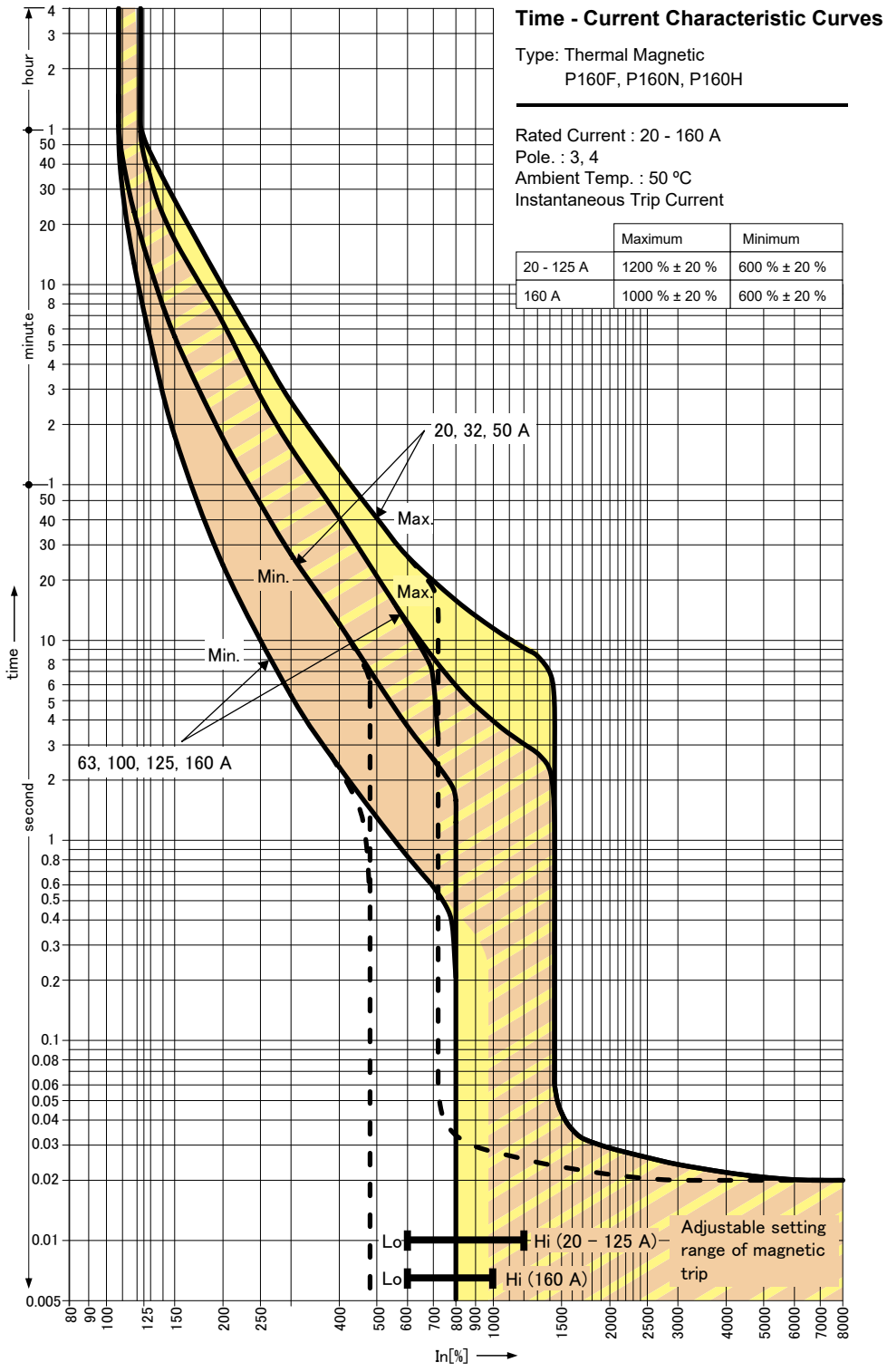
Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Rated Temperature	50 °C

General Accessories

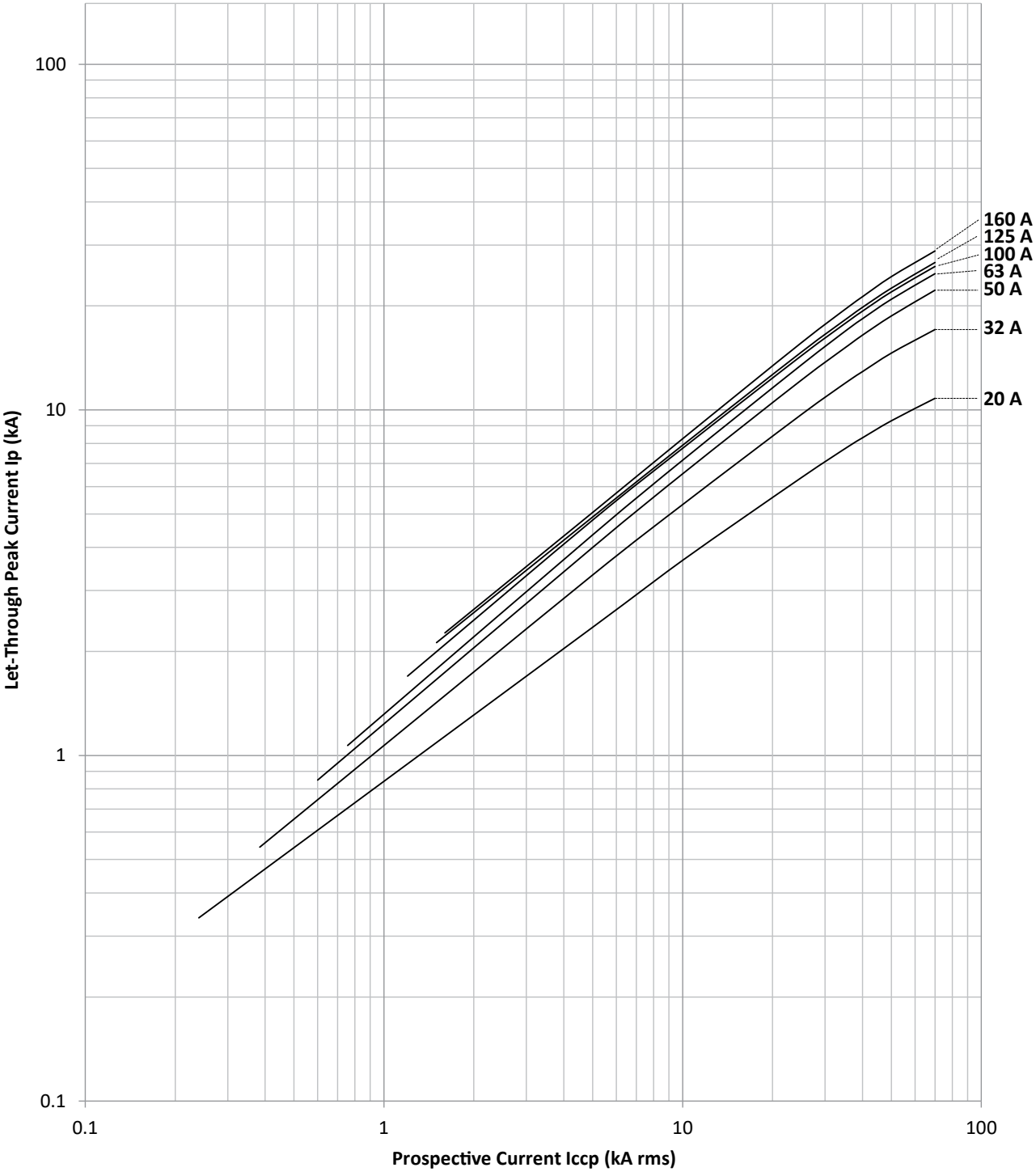
Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

Time Current Characteristics Curve 20 - 160 A, P160, Thermal Magnetic



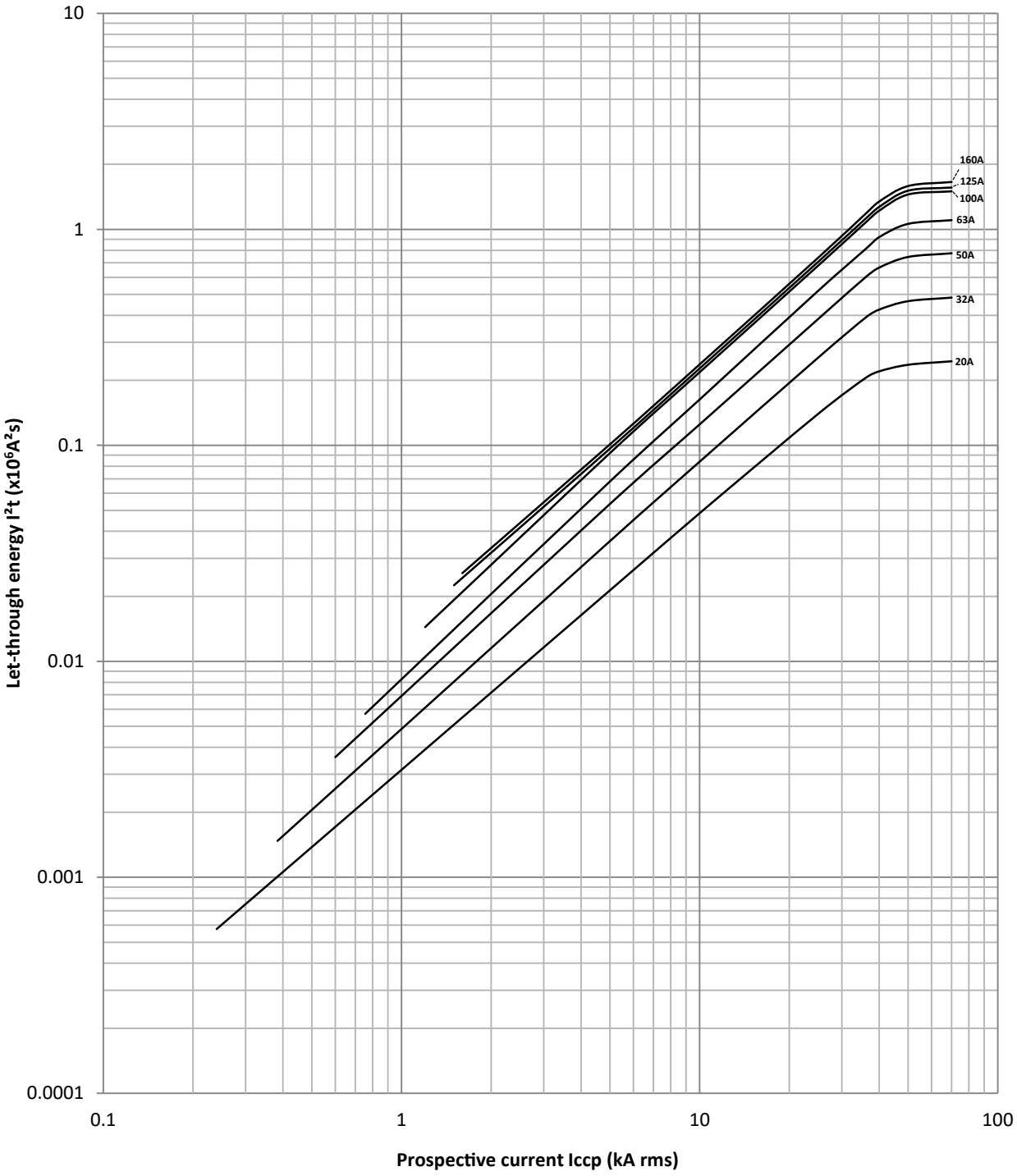
Let-Through Peak Current Curve, P160 TM, 20-160 A, Thermal Magnetic

U = 220 / 380 V AC ~ 240 / 415 V AC
Icc-3Ph according to IEC 60947-2

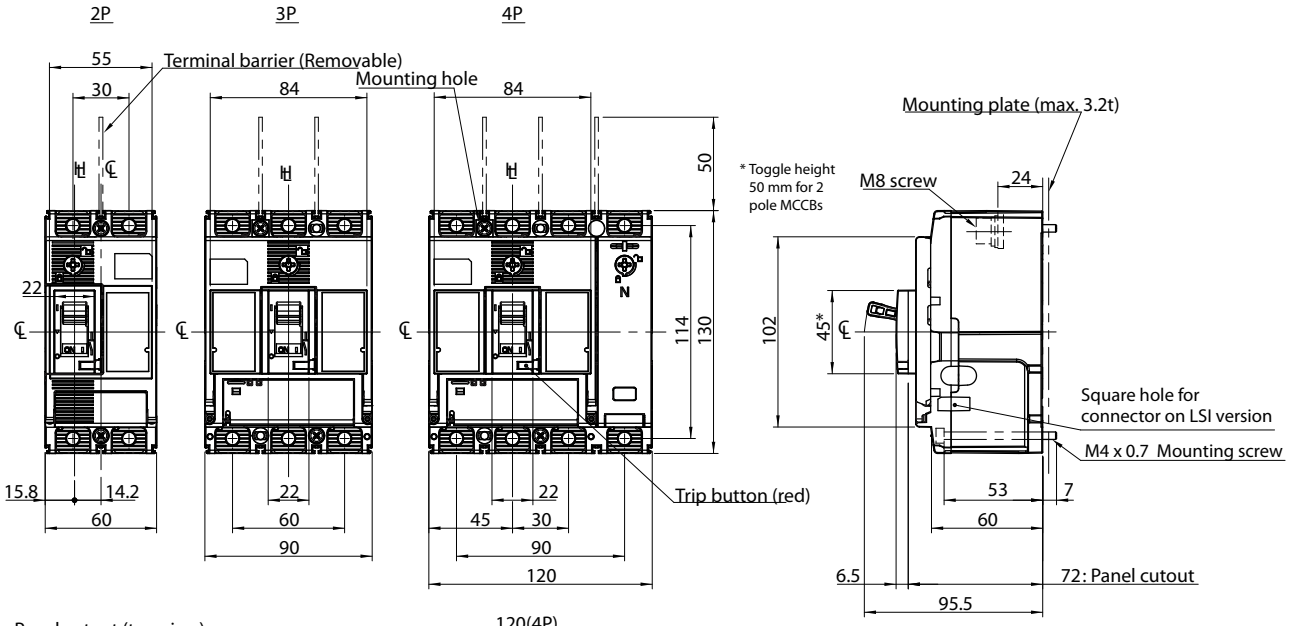


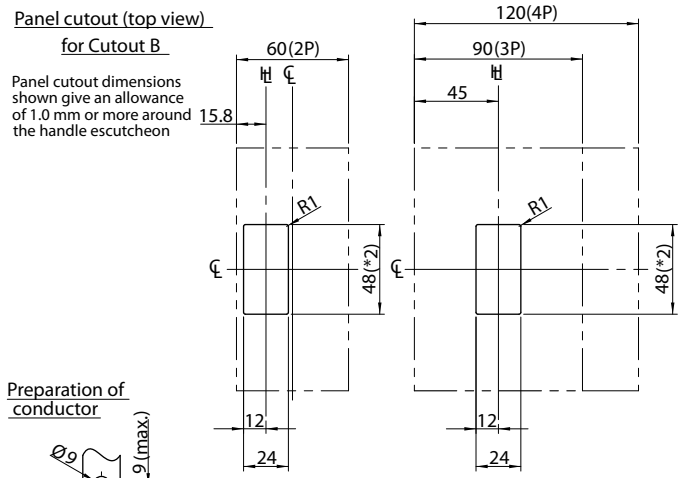
Let-Through Energy I²t Curve, P160 TM, 40-160 A, Thermal Magnetic

U = 220/380 V AC ~ 240/415 V AC
Icc-3Ph according to IEC 60947-2



Dimensions P160_FF/TM/BE/BEG/NN, Front Connect (mm)





(*2) Cutout 52 mm for 2 pole MCCBs

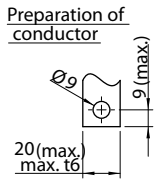
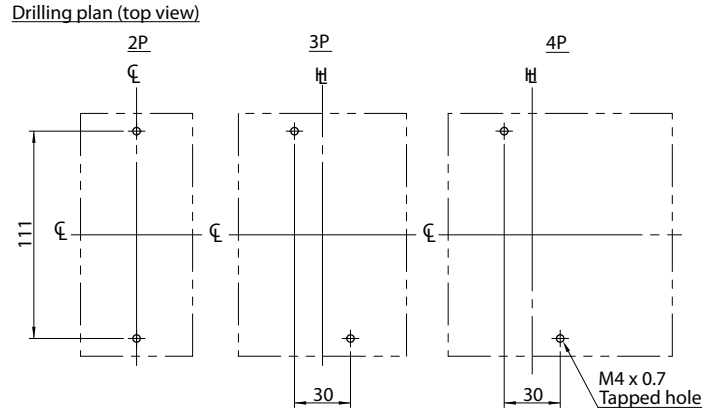
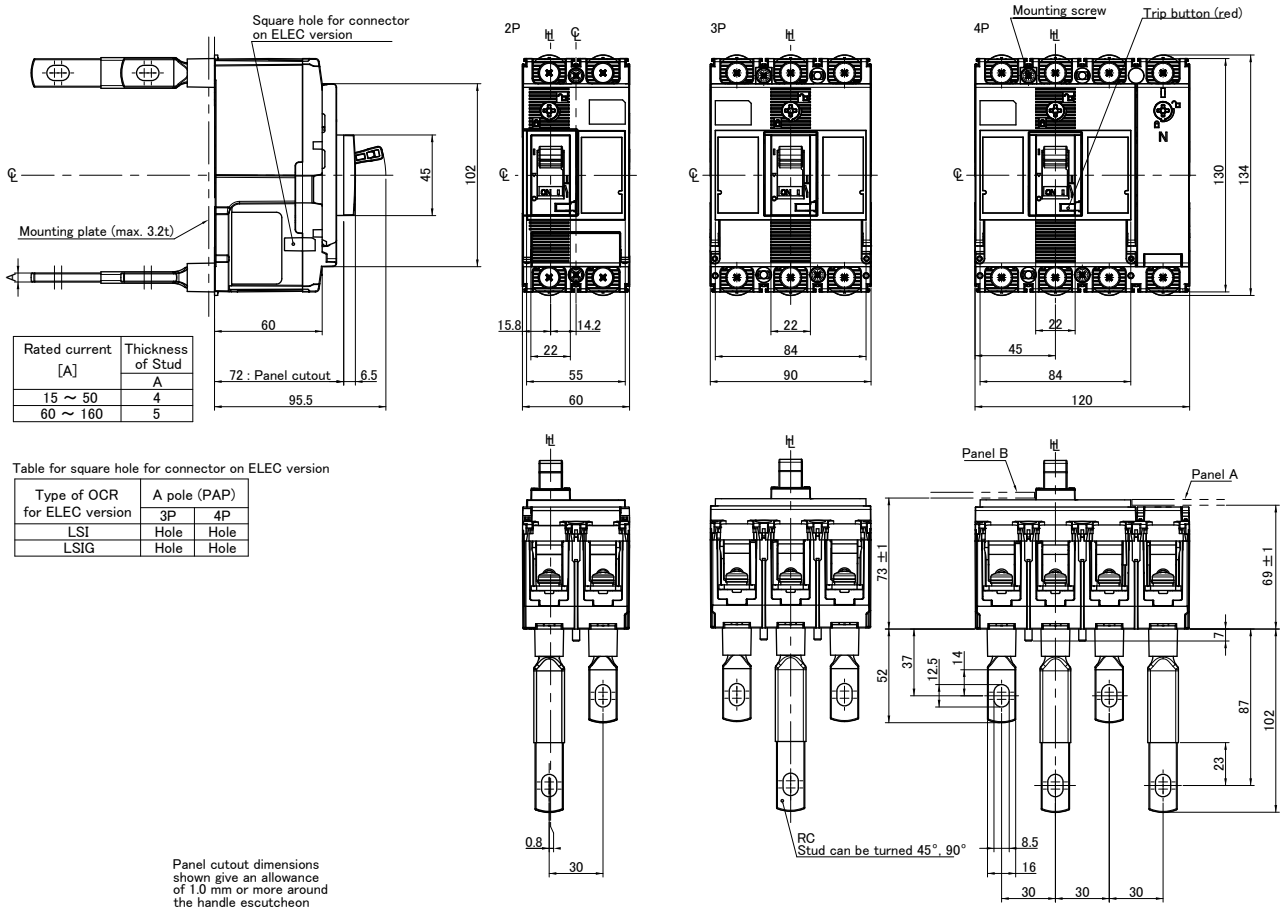


Table for square hole for connector on LSI version

Type of OCR for LSI version	A pole (PAP)		C/N pole (ECP)	
	3P	4P	3P	4P
LSI	Hole	Hole	no	no
LSIG	Hole	Hole	Hole	no



Dimensions P160_TM/BE/BEG/NN, Rear Connect (mm)

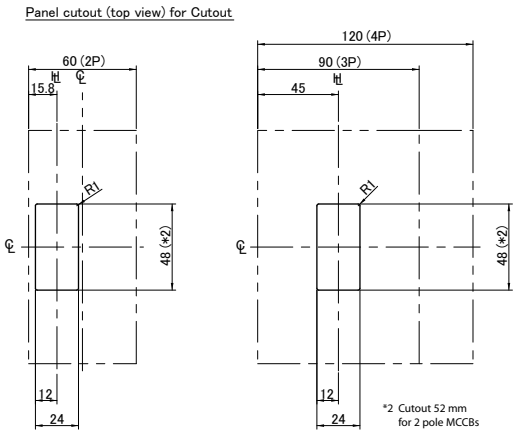


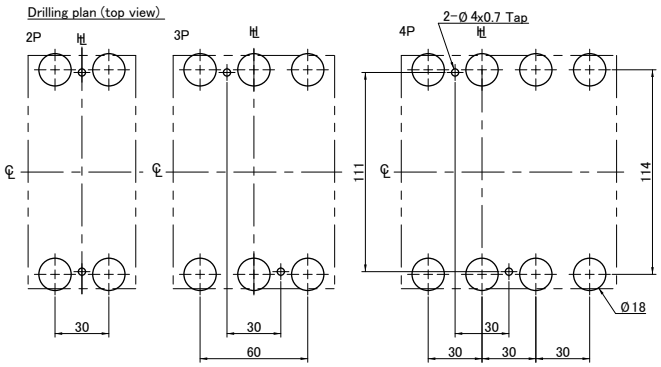
Rated current [A]	Thickness of Stud
	A
15 ～ 50	4
60 ～ 160	5

Table for square hole for connector on ELEC version

Type of OCR for ELEC version	A pole (PAP)	
	3P	4P
LSI	Hole	Hole
LSIG	Hole	Hole

Panel cutout dimensions shown give an allowance of 1.0 mm or more around the handle escutcheon





P160_BE / BEG

Electronic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ Suits XAP chassis, with panelboard options
- ✔ Compact 130 mm H, 68 mm D, 30 mm pole centres
- ✔ Fault ratings; 36, 50 or 70 kA I_{CU} @ 415 V AC
- ✔ 100% I_{CU} / I_{CS} on models up to 50 kA
- ✔ Electronic trip unit: individually adjustable LSI characteristics, and Instantaneous-only trip setting
- ✔ Standard features depend on MCCB model: LSI (BE type) LSIG (BEG type), Neutral protection (4P), Pre-Trip Alarm (all)
- ✔ Trip units; 40 A, 100 A, 160 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type)
Trip Unit Rating	40 / 100 / 160 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**F**	36 kA
	N	50 kA
	H	70 kA

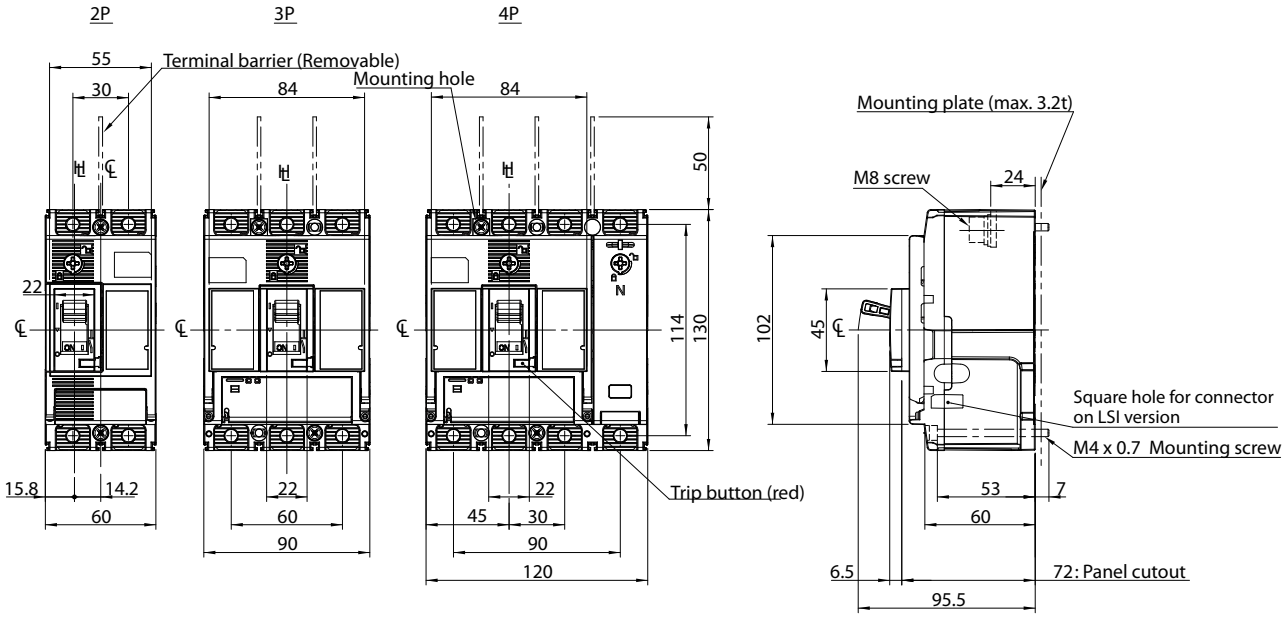
Voltage

Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option) DIN rail adaptor (Option)

Quick Reference Dimensions – Front Connect



160 A 3 Pole 36 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	36	3	30	P160F2340BE
100	40 - 100	3 – 15 x In	36	3	30	P160F23100BE
160	63 - 160	3 – 11 x In	36	3	30	P160F23160BE

160 A 3 Pole 36 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	36	3	30	P160F2340BEG
100	40 - 100	3 – 15 x In	36	3	30	P160F23100BEG
160	63 - 160	3 – 11 x In	36	3	30	P160F23160BEG

160 A 3 Pole 50 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	50	3	30	P160N2340BE
100	40 - 100	3 – 15 x In	50	3	30	P160N23100BE
160	63 - 160	3 – 11 x In	50	3	30	P160N23160BE

160 A 3 Pole 50 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	50	3	30	P160N2340BEG
100	40 - 100	3 – 15 x In	50	3	30	P160N23100BEG
160	63 - 160	3 – 11 x In	50	3	30	P160N23160BEG

160 A 3 Pole 70 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	70	3	30	P160H2340BE
100	40 - 100	3 – 15 x In	70	3	30	P160H23100BE
160	63 - 160	3 – 11 x In	70	3	30	P160H23160BE

160 A 3 Pole 70 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	70	3	30	P160H2340BEG
100	40 - 100	3 – 15 x In	70	3	30	P160H23100BEG
160	63 - 160	3 – 11 x In	70	3	30	P160H23160BEG

160 A 4 Pole 36 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	36	4	30	P160F2440BE
100	40 - 100	3 – 15 x In	36	4	30	P160F24100BE
160	63 - 160	3 – 11 x In	36	4	30	P160F24160BE

160 A 4 Pole 36 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	36	4	30	P160F2440BEG
100	40 - 100	3 – 15 x In	36	4	30	P160F24100BEG
160	63 - 160	3 – 11 x In	36	4	30	P160F24160BEG

160 A 4 Pole 50 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	50	4	30	P160N2440BE
100	40 - 100	3 – 15 x In	50	4	30	P160N24100BE
160	63 - 160	3 – 11 x In	50	4	30	P160N24160BE

160 A 4 Pole 50 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	50	4	30	P160N2440BEG
100	40 - 100	3 – 15 x In	50	4	30	P160N24100BEG
160	63 - 160	3 – 11 x In	50	4	30	P160N24160BEG

160 A 4 Pole 70 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	70	4	30	P160H2440BE
100	40 - 100	3 – 15 x In	70	4	30	P160H24100BE
160	63 - 160	3 – 11 x In	70	4	30	P160H24160BE

160 A 4 Pole 70 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	70	4	30	P160H2440BEG
100	40 - 100	3 – 15 x In	70	4	30	P160H24100BEG
160	63 - 160	3 – 11 x In	70	4	30	P160H24160BEG

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	160 AF
Trip Unit Rating	40 / 100 / 160 A
I_n, Rated Current (A)	
Contact NHP	
U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3
Trip Unit Rating (A) - Power Loss Per Pole (W)	
(A) (W) Contact NHP	
Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	1.5 - 70 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option) DIN rail adaptor (Option)
Terminal Type	Screw Terminal(s) Bolt-Terminal
Connection Torque	4.9 - 6.9 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	Yes
Suitable for mounting on chassis	XAP Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		130 mm
Width	**3P**	90 mm
	4P	120 mm
Depth (less toggle)		68 mm
Depth (toggle included)		95.5 mm
Weight	**3P**	1 kg
	4P	1.3 kg
Electrical Life		30000 cycles
Mechanical Life		50000 cycles

Short-Circuit Capacity

			kA Rating		
			MCCB Type		
		Voltage	F	N	H
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	50	85	85
		380 / 400 V AC	36	50	70
		415 V AC	36	50	70
		440 V AC	25	35	50
		690 V AC	6	6	6
		1000 V AC	-	-	-
		1100 V AC	-	-	-
		125 V DC	-	-	-
		250 V DC	-	-	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	50	85	85
		380 / 400 V AC	36	50	50
		415 V AC	36	50	50
		440V AC	25	35	35
		690 V AC	6	6	6
		1000 V AC	-	-	-
		1100 V AC	-	-	-
		125 V DC	-	-	-
		250 V DC	-	-	-

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type)
Rated Temperature	50 °C

Other Features

Pre-trip alarm (PTA)	Yes
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	Yes
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

BE LSI / BE-G LSIG Over Current Relay

Electronic OCR Unit	General Power Distribution or Motor Starting Applications	
MCCB Types – Basic Features	**LSI**	6 dial OCR, individually adjustable LTD, STD, INST. LED ind: ready, overload, PTA, OCR over-temp
	LSIG	7 dial OCR as above, but with a GF dial for 3P MCCBs, and a GF / N dial for 4P MCCBs
	ICB	Instantaneous-only Circuit Breaker setting option using IR2 dial

OCR Adjustments

P160_BE or P160_BE-G Specific Information

OCR Adjustment Settings	
Long Time Delay (LTD)	I_{R1} setting 40 % - 100 % of I_N (base currrent) via 10 increment dial + I_{R2} fine adjust dial of 9 increments: 0.92 - 1.0
	I_{R2} dial includes an OFF setting which switches LTD and STD to OFF, where an instantaneous only ICB is required
	t_R setting 0.5 – 16 seconds in 10 increments
Short Time Delay (STD)	I_{SD} setting 1.5 – 10 (x I_R) in 9 increments + includes OFF setting. t_{SD} setting 50 – 400 mS in 5 increments
Instantaneous (INST)	I_i setting: 40 A and 100 A : 3, 4, 5, 6, 7, 8, 10, 12, 15 x I_N , 160 A: 3, 4, 5, 6, 7, 8, 9, 10, 11 x I_N
Ground Fault (GF)	I_G fixed at 20 % (40 A: 40 %) of I_N / t_G fixed at 200 mS.4 pole GF MCCBs have an ON / OFF switch using N dial
	4 pole GF MCCBs have an unswitched Neutral pole and an internal 4th CT. No external CTs available
Neutral Pole Protection (N)	N standard with 4P GF types. N settings of: 50 %, 100 % or OFF. t_N = short time settings t_R and I_{SD}
Pre Trip Alarm (PTA)	I_P = 80 % (fixed), t_P = 50 % (fixed)

TBPro(OCR ADJ P160)_dOPCH-S01

Electronic Trip Unit - TemBreak PRO LSI, LSIG, & SMART Overview

Electronic Trip Unit Overview

TemBreak PRO MCCBs equipped with electronic trip units, in addition to protecting against overloads and short circuits, offer flexibility via, individual setting capabity for long time, short time, instantaneous and ground fault characteristics, as well as a host of other standard or optional features. This allows for improved Selectivity combinaions between MCCBs or other circuit breaker types, plus a wide range of electrical measurement and communication functions via the SMART MCCB range. An overview is shown below with 3 types of P160 MCCBs shown as examples.

LSI

LSIG

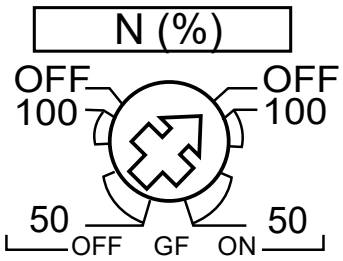
General Features

- There are 3 main Over Current Relay (OCR) types: LSI, LSIG and SMART
- Over Current Relay (OCR) setting by means of rotary dials
- Adjustable current thresholds and time delays for LTD and STD. The instantaneous trip time is fixed, though Ii is fully adjustable
- Over Temperature LED (if OCR temperature exceeds 105 °C)
- PTA Pre Trip Alarm LED
- PICK UP signaling overload alarm LED (> I_r)
- READY LED for normal or abnormal OCR operation
- Optional Ground fault protection for 3 and 4 pole MCCBs
- Adjustable Neutral pole protection on 4 pole MCCBs (Neutral pole located on the right side of MCCB)

SMART

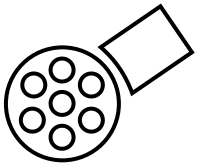
Note that for 4 pole “BE” LSIG MCCBs that have both ground fault and neutral pole protection, the standard GF dial is replaced with the dial type shown on the right, which can switch GF OFF and ON, and set NP protection levels between 50% and 100%, or to OFF.

All TemBreak PRO electronic OCR MCCBs are equipped as standard with PTA and MIP connector sockets for PTA and OCR checker connection.



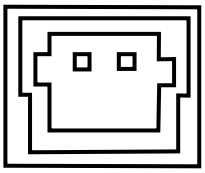
MIP Socket

Maintenance Interface Port – for temporary connection to OCR testing, servicing, and maintenance tools. Located on the right side of the OCR front facia.



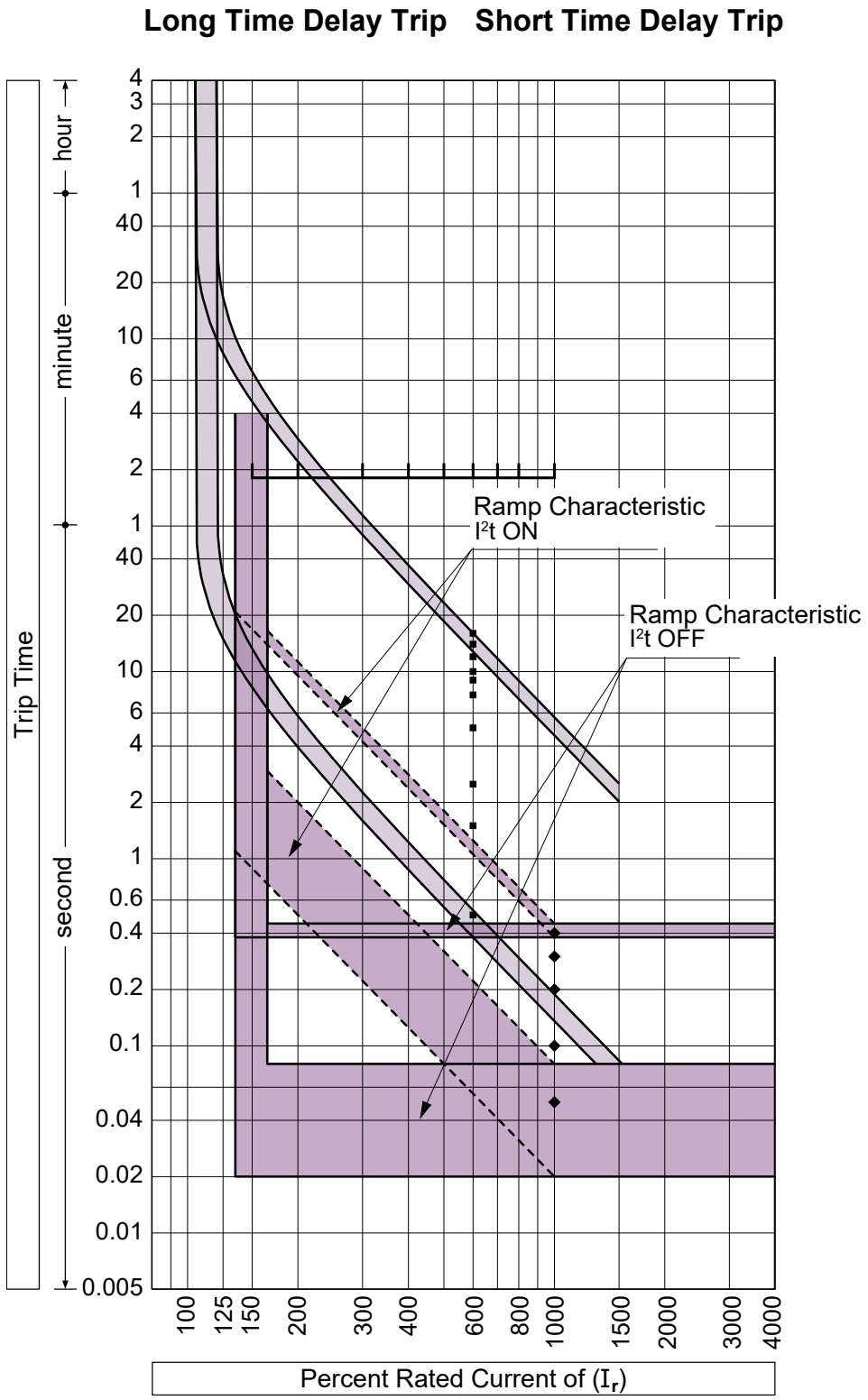
PTA Connector

The PTA connector socket is located on the side of the circuit breaker. This is used to connect an auxiliary circuit signaling the overload pre-alarm output contact. The threshold for this pre-alarm is set at 80% of Ir setting on LSI or LSIG versions and is adjustable on SMART MCCBs.



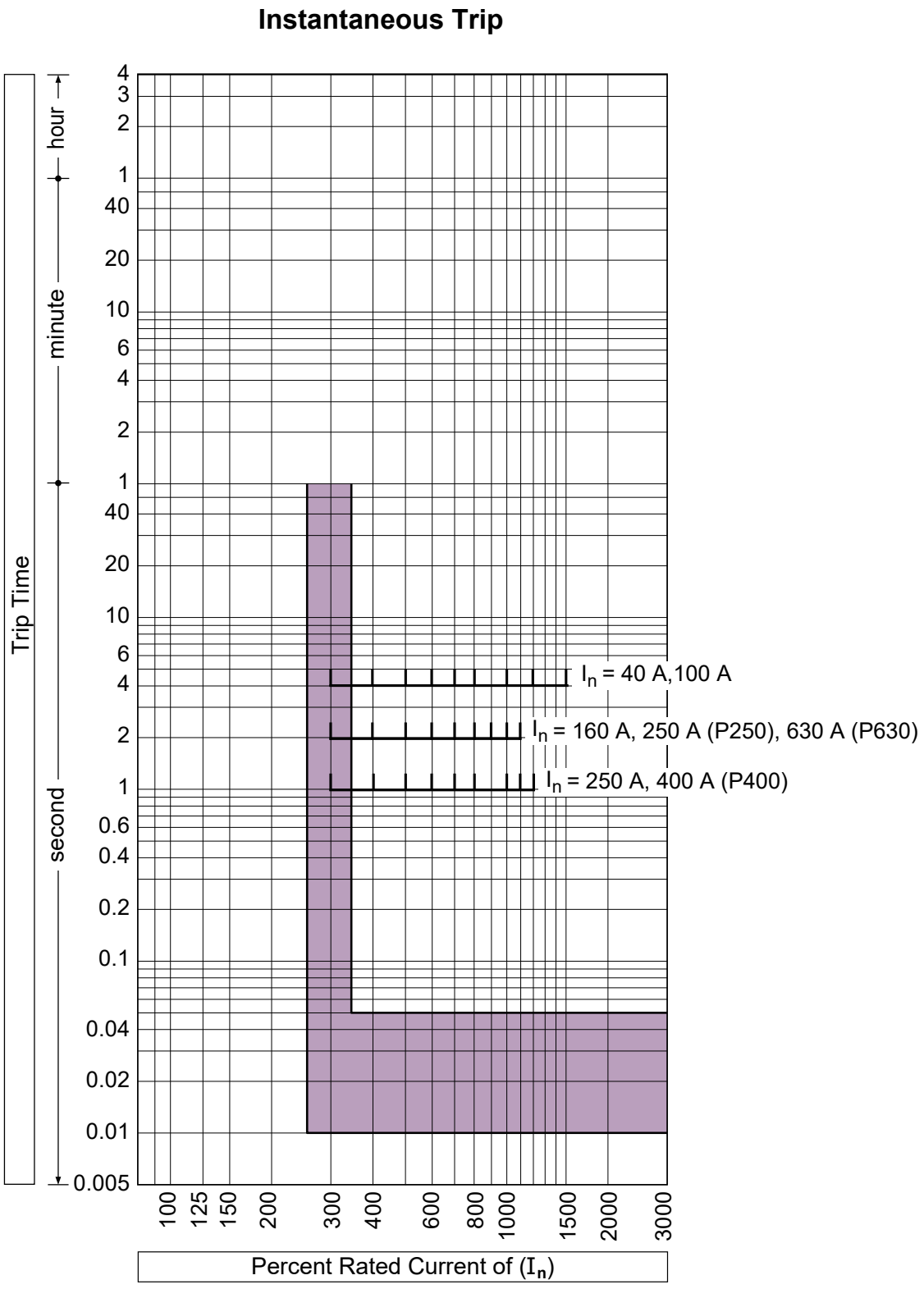
PTA and MIP Connection	LSI (BE)	LSIG (BE-G)	SMART (SE)
PTA : Pre-Alarm Connector Overload	✔	✔	✔
MIP : Socket	✔	✔	✔

Time Current Characteristics Curve, P160/250/400/630, BE/BEG Basic Electronic

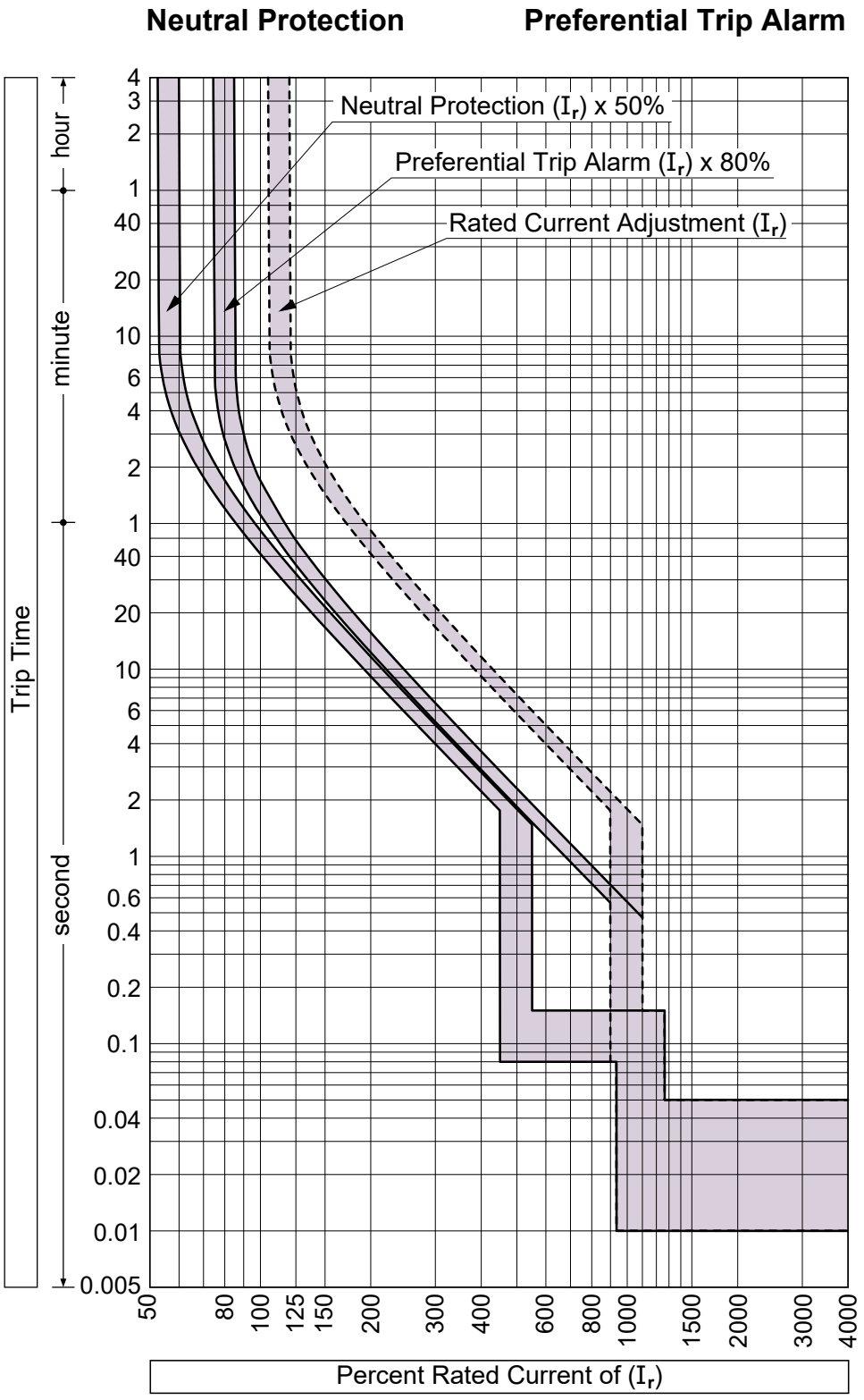


MCCBs

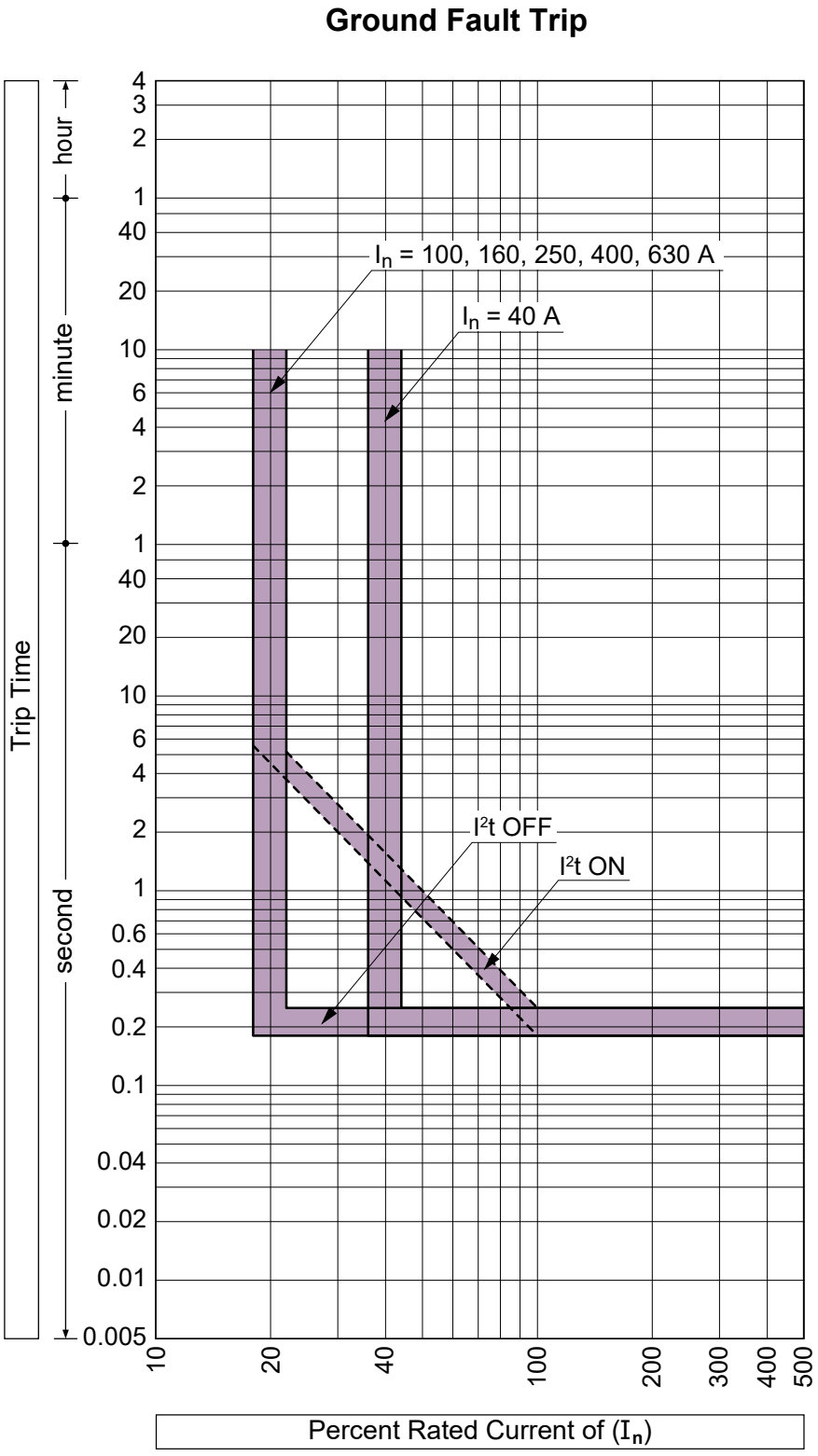
Time Current Characteristics Curve, P160/250/400/630 BE/BEG, Basic Electronic



Time Current Characteristics Curve, P160/250/400/630 BE/BEG, Basic Electronic

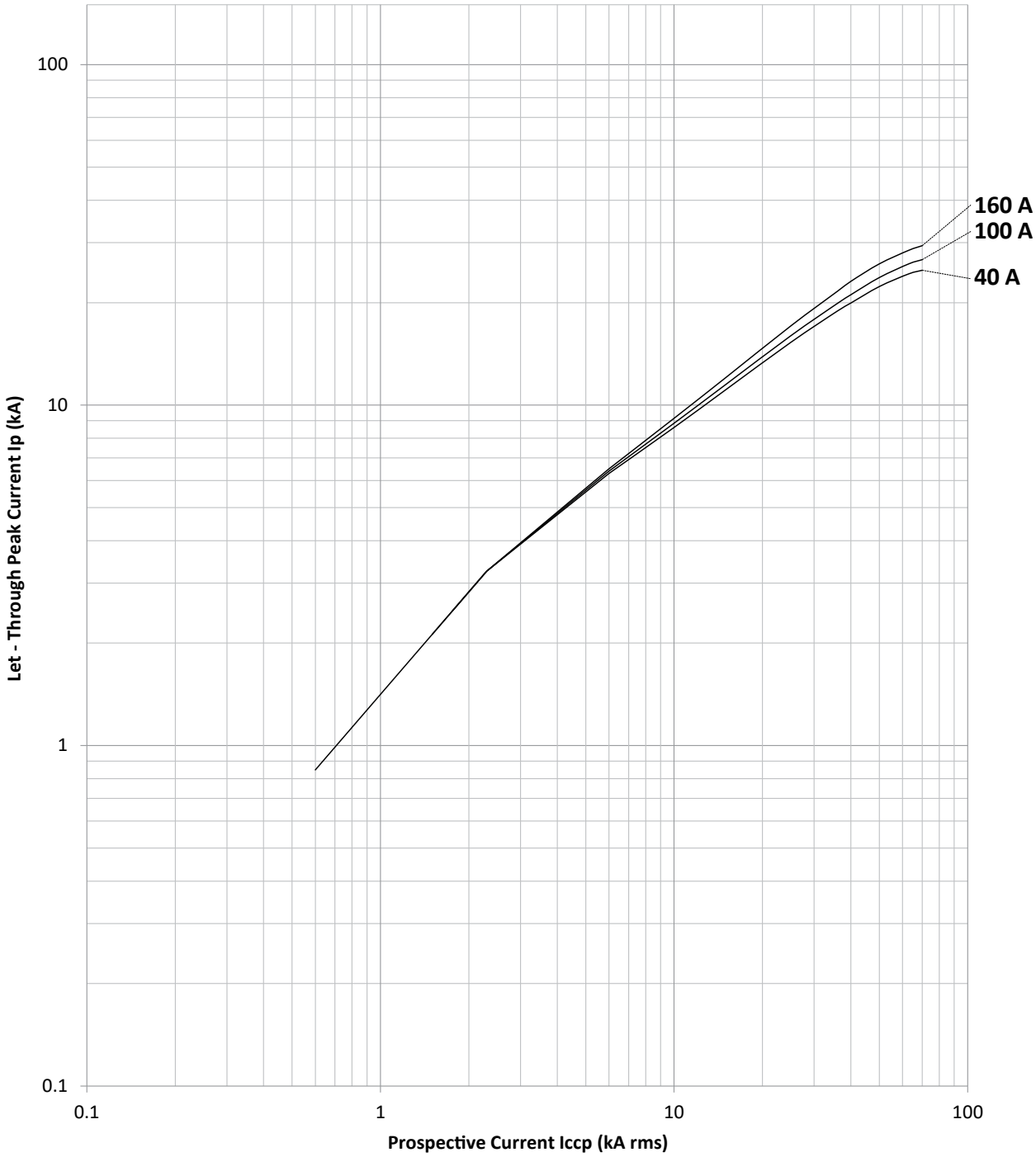


Time Current Characteristics Curve, P160/250/400/630 BEG, Basic Electronic



Let-Through Peak Current Curve, P160 BE/SE, 40-160 A, Basic/Smart Electronic

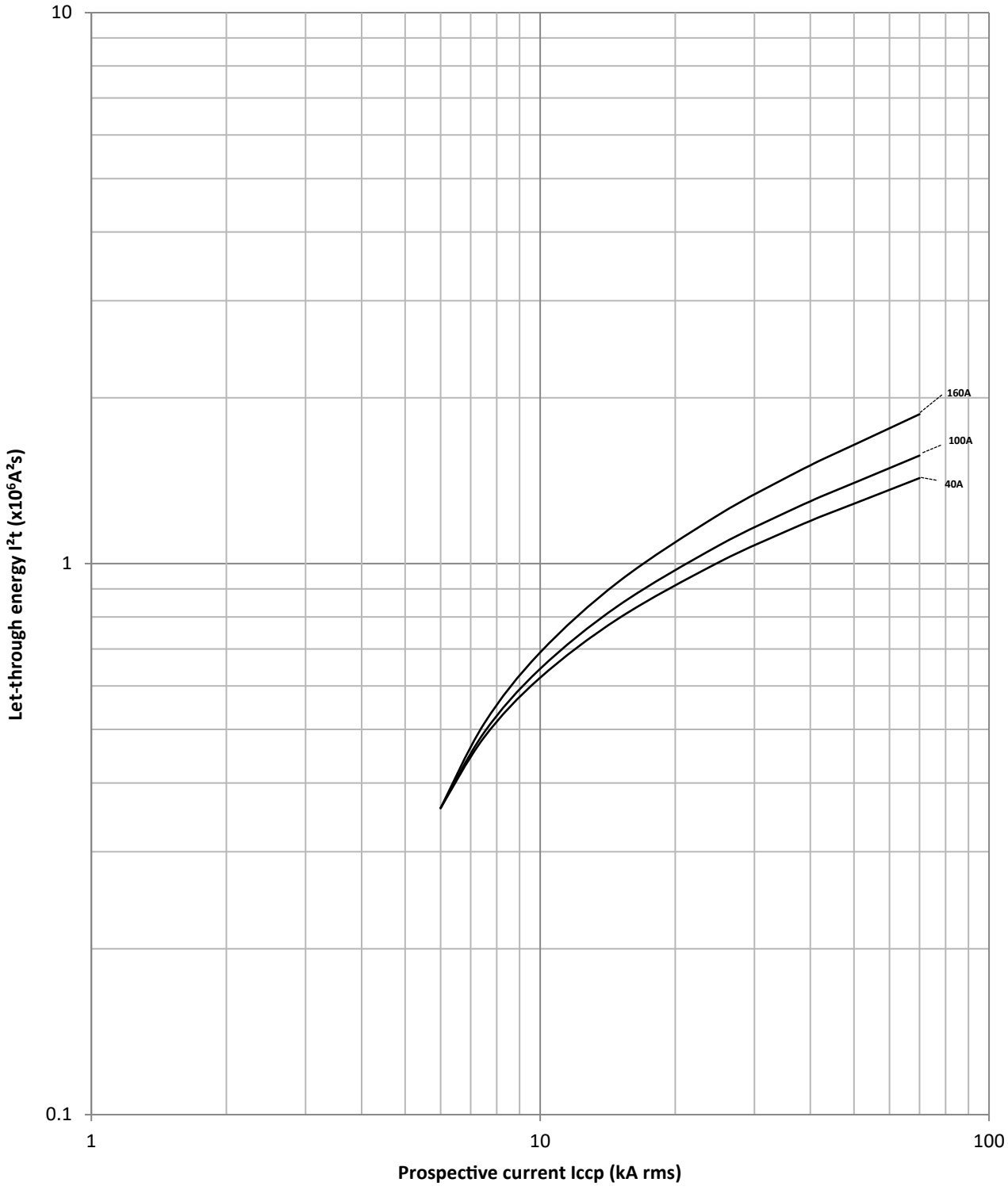
U = 380 V AC ~ 415 V AC
Icc-3Ph according to IEC 60947-2



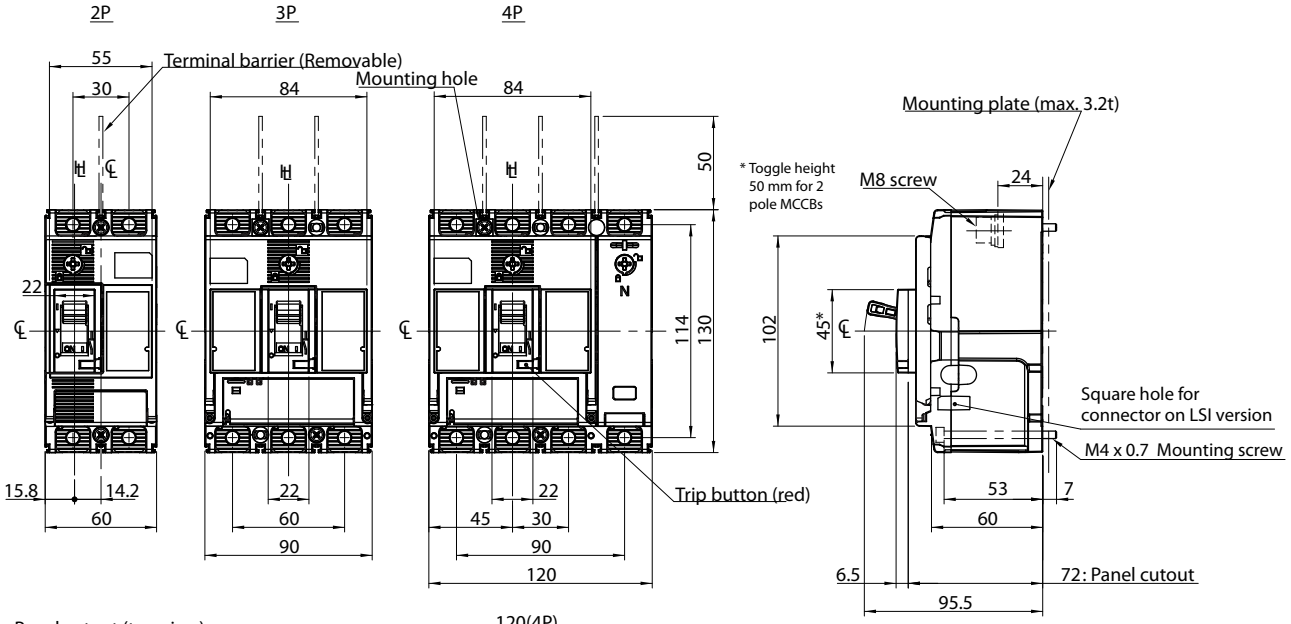
MCCBs

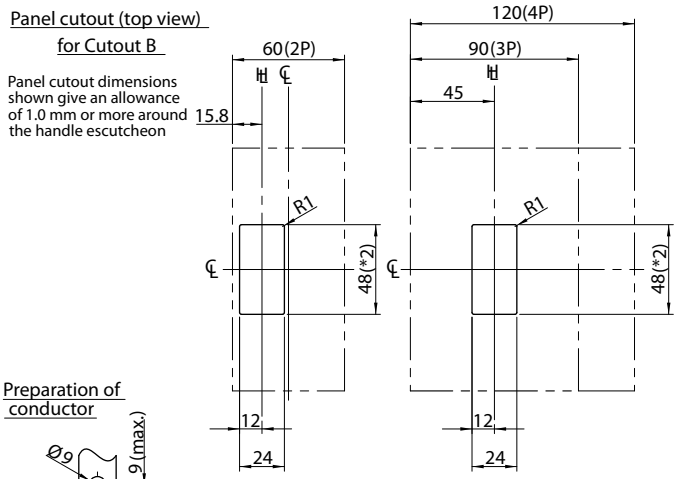
Let-Through Energy I²t Curve, P160 BE/SE, 40-160 A, Basic/Smart Electronic

U = 220/380 V AC ~ 240/415 V AC
Icc-3Ph according to IEC 60947-2



Dimensions P160_FF/TM/BE/BEG/NN, Front Connect (mm)





(*2) Cutout 52 mm for 2 pole MCCBs

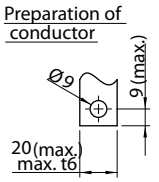
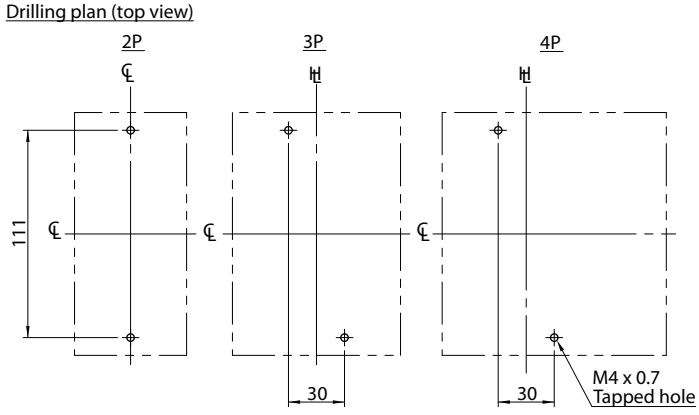
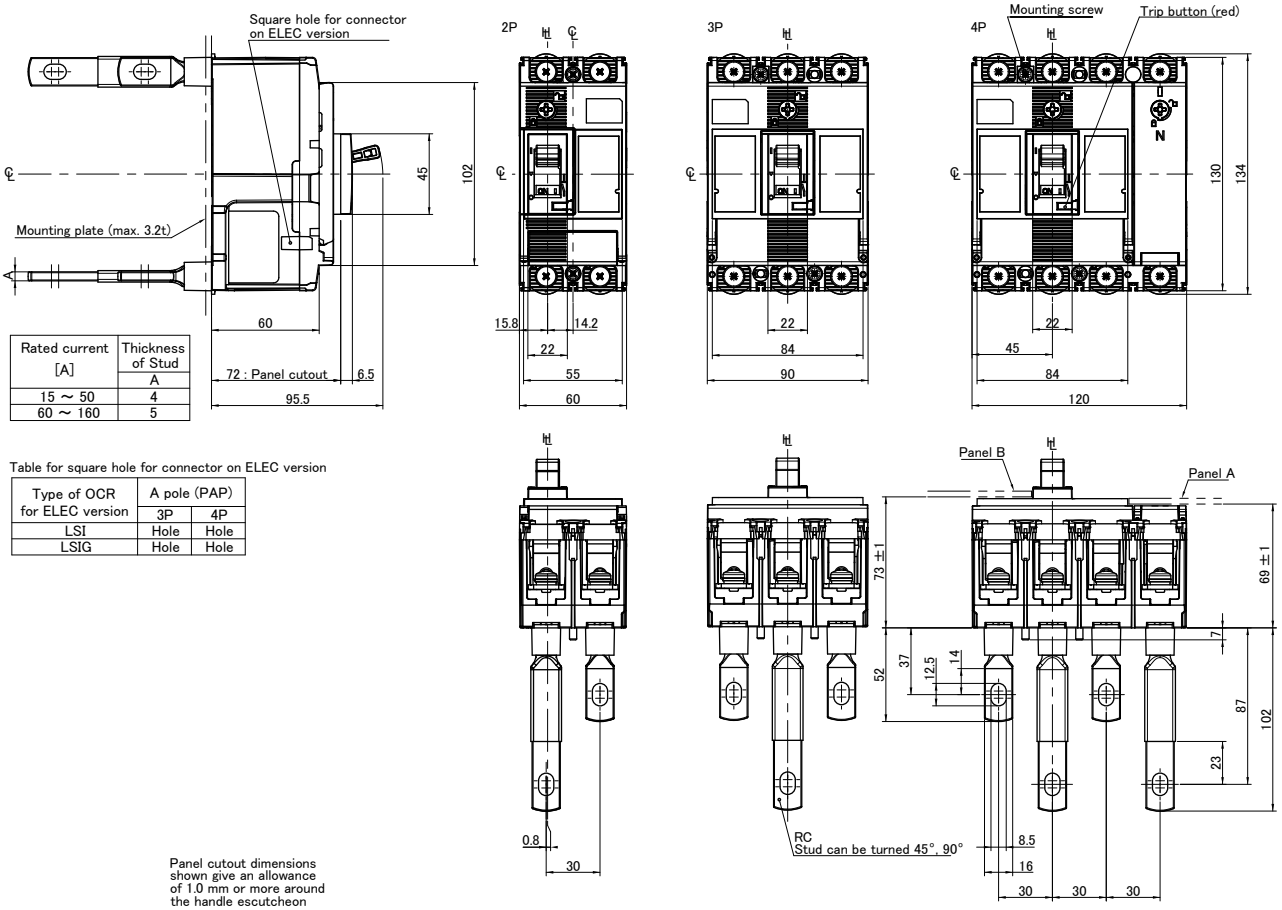


Table for square hole for connector on LSI version

Type of OCR for LSI version	A pole (PAP)		C/N pole (ECP)	
	3P	4P	3P	4P
LSI	Hole	Hole	no	no
LSIG	Hole	Hole	Hole	no



Dimensions P160_TM/BE/BEG/NN, Rear Connect (mm)

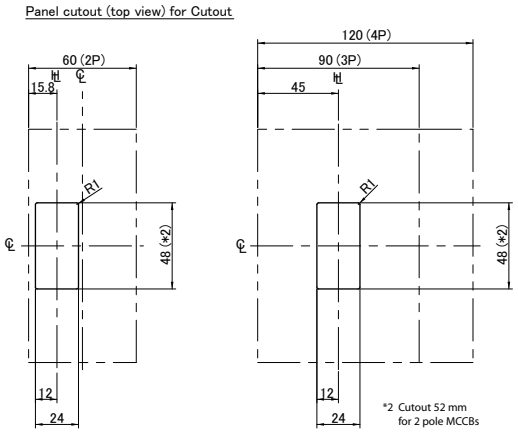


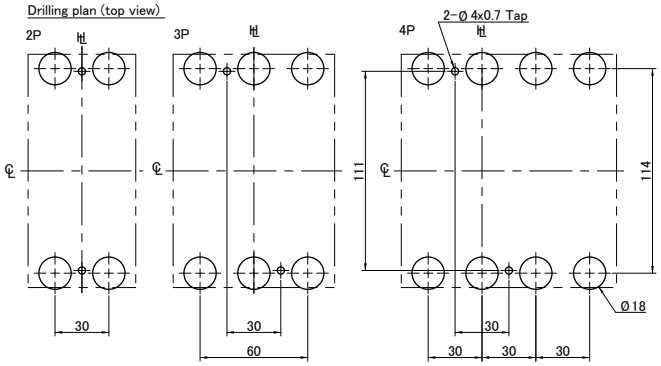
Rated current [A]	Thickness of Stud
	A
15 ～ 50	4
60 ～ 160	5

Table for square hole for connector on ELEC version

Type of OCR for ELEC version	A pole (PAP)	
	3P	4P
LSI	Hole	Hole
LSIG	Hole	Hole

Panel cutout dimensions shown give an allowance of 1.0 mm or more around the handle escutcheon





P160_SE

Smart Electronic MCCB with Energy Metering

- ✔ General purpose power distribution, energy metering and communications, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ 3 or 4 pole versions
- ✔ Suits XAP chassis, with panelboard options
- ✔ Compact 130 mm H, 68 mm D, 30 mm pole centres
- ✔ Fault ratings; 36, 50 or 70 kA I_{CU} @ 415 VAC, 100% I_{CU} / I_{CS} on models up to 50 kA
- ✔ SMART trip unit: adjustable LSIG, communications, V, I, Energy measurement and control
- ✔ Built-in OLED high resolution display, verticle or horizontal viewing
- ✔ Std features; GF trip, NP trip (4P), PTA, ZSI, Temp / Trip / custom alarms
- ✔ Full range of accessories for application flexiabilty, including optional remote display
- ✔ Trip units: 40 A, 100 A, 160 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Smart Electronic LSIG
Trip Unit Rating	40 / 100 / 160 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**F**	36 kA
	N	50 kA
	H	70 kA

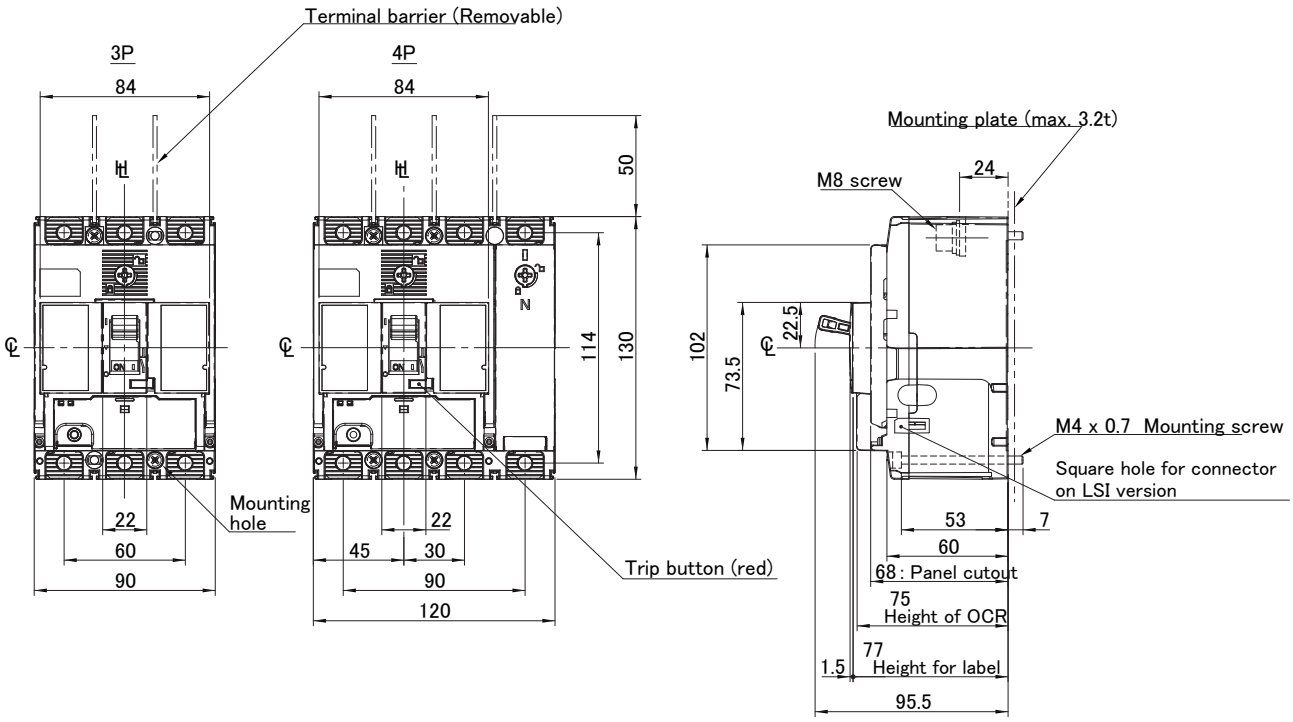
Voltage

Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option) DIN rail adaptor (Option)

Quick Reference Dimensions – Front Connect



160 A 3 Pole 36 kA SE (LSIG)

I_n (A @ 50°C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	36	3	30	P160F2340SE
100	40 - 100	3 – 15 x In	36	3	30	P160F23100SE
160	63 - 160	3 – 11 x In	36	3	30	P160F23160SE

160 A 3 Pole 50 kA SE (LSIG)

I_n (A @ 50°C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	50	3	30	P160N2340SE
100	40 - 100	3 – 15 x In	50	3	30	P160N23100SE
160	63 - 160	3 – 11 x In	50	3	30	P160N23160SE

160 A 3 Pole 70 kA SE (LSIG)

I_n (A @ 50°C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	70	3	30	P160H2340SE
100	40 - 100	3 – 15 x In	70	3	30	P160H23100SE
160	63 - 160	3 – 11 x In	70	3	30	P160H23160SE

160 A 4 Pole 36 kA SE (LSIG)

I_n (A @ 50°C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	36	4	30	P160F2420SE
100	40 - 100	3 – 15 x In	36	4	30	P160F24100SE
160	63 - 160	3 – 11 x In	36	4	30	P160F24160SE

160 A 4 Pole 50 kA SE (LSIG)

I_n (A @ 50°C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	50	4	30	P160N2440SE
100	40 - 100	3 – 15 x In	50	4	30	P160N24100SE
160	63 - 160	3 – 11 x In	50	4	30	P160N24160SE

160 A 4 Pole 70 kA SE (LSIG)

I_n (A @ 50°C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	70	4	30	P160H2440SE
100	40 - 100	3 – 15 x In	70	4	30	P160H24100SE
160	63 - 160	3 – 11 x In	70	4	30	P160H24160SE

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	160 AF
Trip Unit Rating	40 / 100 / 160 A
I_n, Rated Current (A)	

Contact NHP

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3
Trip Unit Rating (A) - Power Loss Per Pole (W)	
(A)	
(W)	Contact NHP
Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	1.5 - 70 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option) DIN rail adaptor (Option)
Terminal Type	Screw Terminal(s) Bolt-Terminal
Connection Torque	4.9 - 6.9 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	Yes
Suitable for mounting on chassis	XAP Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		130 mm
Width	**3P**	90 mm
	4P	120 mm
Depth (less toggle)		68 mm
Depth (toggle included)		95.5 mm
Weight	**3P**	1 kg
	4P	1.3 kg
Electrical Life		30000 cycles
Mechanical Life		50000 cycles

Short-Circuit Capacity

			kA Rating		
			MCCB Type		
		Voltage	F	N	H
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	50	85	85
		380 / 400 V AC	36	50	70
		415 V AC	36	50	70
		440 V AC	25	35	50
		690 V AC	6	6	6
		1000 V AC	-	-	-
		1100 V AC	-	-	-
		125 V DC	-	-	-
		250 V DC	-	-	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	50	85	85
		380 / 400 V AC	36	50	50
		415 V AC	36	50	50
		440V AC	25	35	35
		690 V AC	6	6	6
		1000 V AC	-	-	-
		1100 V AC	-	-	-
		125 V DC	-	-	-
		250 V DC	-	-	-

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Smart Electronic LSIG
Rated Temperature	50 °C

Other Features

Pre-trip alarm (PTA)	Yes
ZSI Zone Selective Interlocking	Yes
ACIP Auxiliary Communications Port	Yes
CIP Communications Interface Port	Yes
MIP Maintenance Interface Port	Yes
OAC Optional Alarm Contact	Yes

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	Yes

MCCBs

Electronic Trip Unit - TemBreak PRO P_SE (LSIG) SMART MCCBs

General Features: TPOU SMART OCR

- Settings by facia dial, joystick and diplay menu
- OCR ready (status) LED
- PTA overload pre-warning LED (adjustable threshold)
- Overload Pick up alarm (> I_r)
- LSIG protection currents and delays adjustable
- GF standard on 3P and 4P MCCBs (3P+N cct use 4P)
- Neutral Pole protection on 4 pole MCCBs (N pole on RHS)
- OCR transparent cover accepts compression seal device

P400 / P630
SMART
MCCB

Below
SMART OCR facia, showing hinged sealable cover, and illuminated "Ready" LED.

P160 / P250
SMART MCCB

TBPro(Electronic-Trip_Unit)_dOPCH-S01

Protection Function	(NP and internal GF CT standard on 4 pole MCCBs)			
L - Long Time Delay trip	S - Short Time Delay trip	I - Instantaneous trip	GF – Ground Fault trip	NP – Neutral Pole Trip

Other Protection and Alarms	
Protection measurement functions	Zone Selective Interlocking, Volts, Amps, Energy, Power, Frequency, others – refer following pages
Tripping alarms, Trip alarms, Customisable and system alarms:	OCR temperature alarm, OCR alarm, Overload alarm, Pre-Trip Alarm, OCR status LED
Historical events:	Outputs & Alarms
Integrated outputs:	Output contact PTA, Output contact OAC

24 VDC supply power, and self powered SMART MCCBs

A SMART OCR needs to be powered via an external 24 V DC power supply to ensure continuous operation of the measurement functions, alarms, communications and setting configuration. However, these funtions can also operate without external power, making the MCCB self powered, if the following minimum requirements are met:

1. If the MCCB main contacts are CLOSED
2. If the minimum current flowing through the circuit breaker is as shown in the table below by OCR trip unit rating.
3. It is ultimately the users choice as to whether control power is to be continuously applied or if the MCCB is to be self powered once there is enough current flowing through the MCCB.

OCR Amperes	1 Powered Pole	2 Powered Poles	3 Powered Poles
40 A	N / A	> 14 A	> 10 A
100 A	> 25 A	> 15 A	> 15 A
160 A	> 32 A	> 16A	> 16 A
250 A	> 50 A	> 25 A	> 25 A
400 A	> 80 A	> 40 A	> 40 A
630 A	> 126 A	> 63 A	> 63 A

TBPro(Electronic-Trip_Unit)_dOPCH-S02

P_SE SMART OCR (TPOU Type)

I_n (A)	Poles	MCCB Type	Protection functions 2)				Alarms			Display		Options		
			LSI 4)	GF 11)	NP 11)	ZSI 5)	PTA 2)	OAC 2)	Display	Measurement and display	Historical data	TPCM	TPED	TPSS
OCR Trip Unit Rating	3 or 4 pole MCCBs	SMART OCR	Long time Short time Instantaneous	Ground Fault (LSIG)	Neutral Pole Protection	Zone Selective Interlocking	Pre Trip Alarm	Alarm output contact 6)	Integral OLED display 3)	7) Volts, Amps, Power P, Power E, PF, F, demand D, THD	Trip and alarm history	Modbus comms module 8)	External display 9)	SMART status auxiliary 10)
40 A 100 A 160 A	3 1)	P160_SE	✔	✔	-	✔	✔	✔	✔	✔	✔	O	O	O
	4	P160_SE	✔	✔	✔	✔	✔	✔	✔	✔	✔	O	O	O
40 A 100 A 160 A 250 A	3 1)	P250_SE	✔	✔	-	✔	✔	✔	✔	✔	✔	O	O	O
	4	P250_SE	✔	✔	✔	✔	✔	✔	✔	✔	✔	O	O	O
250 A 400 A	3 1)	P400_SE	✔	✔	-	✔	✔	✔	✔	✔	✔	O	O	O
	4	P400_SE	✔	✔	✔	✔	✔	✔	✔	✔	✔	O	O	O
630 A	3 1)	P630_SE	✔	✔	-	✔	✔	✔	✔	✔	✔	O	O	O
	4	P630_SE	✔	✔	✔	✔	✔	✔	✔	✔	✔	O	O	O

✔ = Standard supply O = Options - = Not available

Notes

1) 3 pole SMART MCCBs cannot take data from an external neutral in a 3 phase 4 wire system. A 4 pole Smart MCCB is needed for neutral pole referenced data. Neutral pole protection is not available with 3 pole MCCBs.
2) No control power required.
3) 24 VDC control power is supplied to the OCR using the optional cable TPPHQTT140H.
   - If the MCCB is switched to OFF, the supply can be disconnected.
   - If the MCCB has enough current flowing to enable the MCCB to become “self powered” the supply can be disconnected (self powered – refer previous pages).
   - If a communications module TPCM is being supplied with 24 VDC control power, and if the module is connected to the MCCB, there is no need to supply additional control power to the OCR, as the TPCM will supply the SMART MCCB.
4) Hot and cold start characteristic selection available via menu.
5) Zone Selective Interlock input / output cable connector type is TPPHQTT150H. P160_SE SMART MCCBs have 1 output connection only.
6) OAC (Optional Alarm Contact): by using the connection cable TPPHQTT130H, the following selection of output data can be output.
7) Contact output data can be output from only 1 of the items below (user to select)
   - System operation (abnormal operation)
   - OCR abnormal temperature alarm
   - Pre Trip Alarm
   - Any one of 12 custom alarms
8) The 24 VDC control power supplied to the TPCM module is also supplied to the MCCB OCR.
9) Supply 24 VDC control power to the OCR using the optional cable TPPHQTT140H.
   - If using the TPED external display, the optional connector TPPHQTT330 ~ 370H is to be connected between the TPED and the MCCB OCR.
   - If the TPCM comms module is being used, and is supplied with its own 24 VDC control power, there is no need to 24 VDC supply power to the MCCB OCR.
10) The ON / OFF status auxiliary and alarm switch information is communicated into the SMART OCR, and in turn communicated to the TPCM communications module for further communication to other external devices to provide real MCCB main contact status information.
11) Ground fault and Neutral Pole protection MCCBs include an internal 4th pole CT. There are no external CTs for 3 pole MCCBs available.

OCR Control Power Supply

Supply Voltage Tolerance	24 V DC ± 30 %
Consumption	60 mA

OAC Contact Details

Contact Configuration	N / O single contact
Contact Rating	AC / DC, 24 V, 100 mA

P_SE SMART OCR (TPOU Type)

Measurement or Data Type Displayed on Screen		Unit	EC 61557-12 Measurement Accuracy Class	Internal display ✔ = Displayed ✕ = Not displayed	External Display ✔ = Displayed ✕ = Not displayed	Modbus ✔ = Available ✕ = Not available
Current	Instantaneous value per phase and neutral	A	1	✔	✔	✔
	Maximum instantaneous current per phase & neutral	A	1	✔	✔	✔
	Instantaneous rms Ground Fault current	A	1	✔	✔	✔
Voltage	Present value of each line voltage	V	0.5	✔	✔	✔
	Present maximum value	V	0.5	✔	✔	✔
	Present phase voltage value for each phase	V	0.5	✔	✔	✔
Frequency		Hz	0.2	✔	✔	✔
Electrical Power	Active power P	kW	2	✔	✔	✔
	Reactive power Q	kVAR	2	✔	✔	✔
	Apparent power S	kVA	2	✔	✔	✔
Electrical Energy	Active power	kWh	2	✔	✔	✔
	Reactive power	kVARh	2	✔	✔	✔
	Apparent power	kVAh	2	✔	✔	✔
Demand	Power	-	2	✕	✔	✔
	Current	-	1	✕	✔	✔
Power Factor	Present value	Cos Φ	2	✔	✔	✔
Total Harmonic Distortion	Current	THD I	2	✕	✔	✔
	Voltage	THD U	2	✕	✔	✔
Trip History	Fault current value	-	-	✔	✔	✔
	Trip cause and time (for LT, ST, I and GF)	-	-	✔	✔	✔
	Fault current Phase (for LT, ST and I)	-	-	✔	✔	✔
Alarm History	Description and time	-	-	✔	✔	✔

Note
Electric energy, trip history and alarm history are stored in a non volatile memory during a trip operation.

TBPro(P_SE SMART OCR (TPOU Type))_dOPCH_S02

Description of SMART Communications System

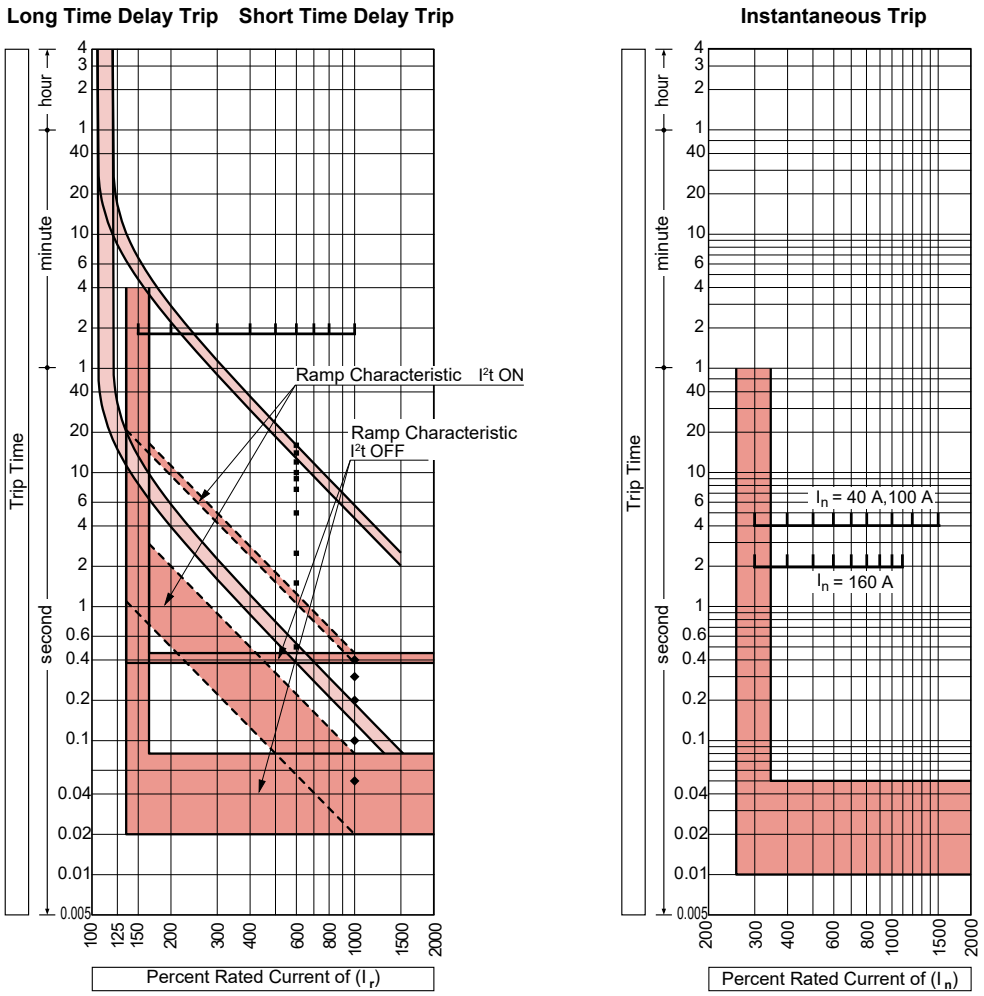
Connection lead connection locations for SMART MCCB Accessories

TBPro(SMART Comms System)_dOPCH_S01

Smart MCCB Abbreviations

ACP	**Auxiliary Communications Port:** Connection of auxiliary connector AX / AL SMART
AL	**Alarm:** auxiliary contact fault signal
AX	**Auxiliary:** auxiliary contact open / closed
CIP	**Communication Interface Port:** mating connector of the remote display
MIP	**Maintenance Interface Port:** To connect to the OCR checker
OAC	**Optional Alarm Contact:** Connection connector optional alarm output contact
PTA	**Pre-Trip Alarm:** prealarm overload and overload prealarm output contact of the connector
OLED	Organic Light-Emitting Diode (OLED)
ZSI	Zone Selective Interlocking (zone selectivity)

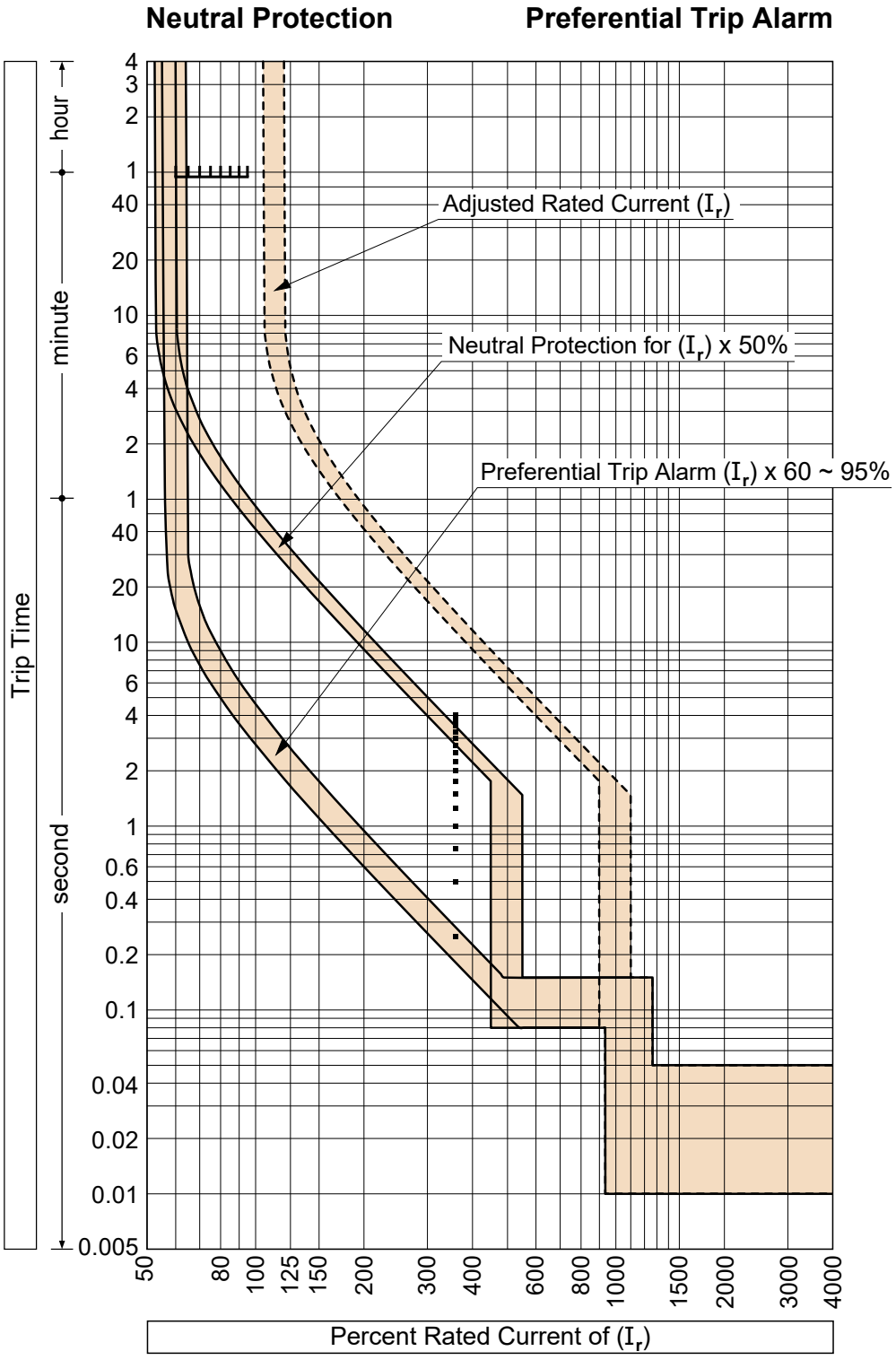
Time Current Characteristics Curve, P160_SE, Smart Electronic



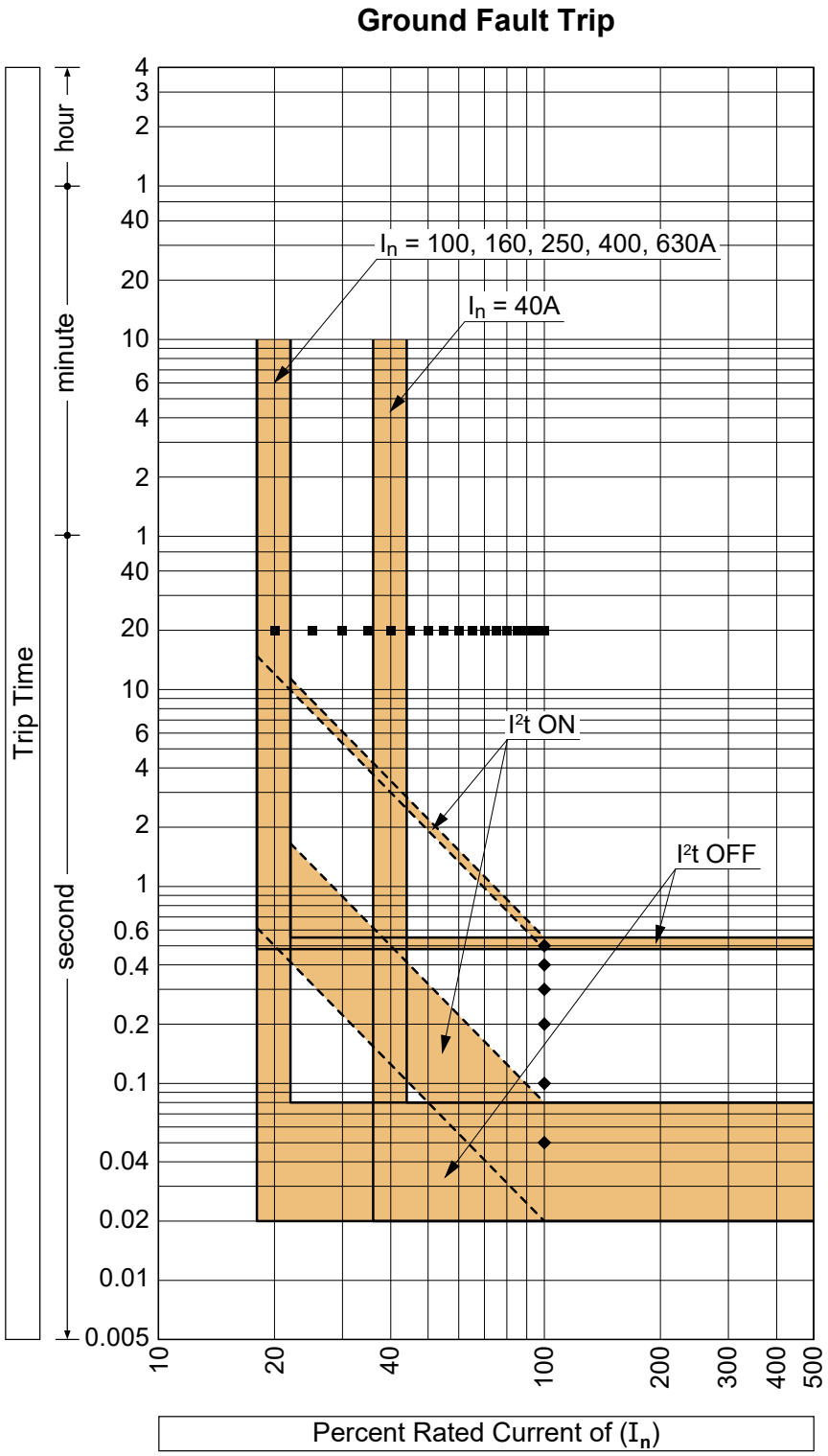
P160_SE SMART OCR Detail (TPOP OCR) 40 A, 100 A, 160 A

General features – standard	LSIG OCR with adjustable Long time, short time, instantaneous and Ground Fault, PTA, Neutral Pole protection (4P only), Hot/Cold selectable, Zone interlock, Temperature/Trip/Custom Alarms (alarms via LED & comms)
OCR Adjustment settings	
Trip units available I_n (A)	40 A, 100 A, 160 A
Long Time Delay (LTD)	I_{R1} setting 40 % - 100 % of I_N (base currrent) via 10 increment settings. I_{R2} fine adjust in 1 amp increments t_R setting 0.5 – 16 seconds in 10 increments
Short Time Delay (STD)	I_{SD} setting 1.5 – 10 (x I_R) in 0.5 increments or OFF setting. t_{SD} setting 50 – 400 mS in 5 increments or I^2t OFF/ON
Instantaneous (INST)	I_i trip unit setting: 40 A and 100 A: 3 – 15 x I_N in 0.5 increments, 160 A: 3 – 11 x I_N in 0.5 increments
Ground Fault (GF)	I_n = 100 A /160 A: I_G adjustable: 20 % to 100 % of I_N in 5 steps (I_n = 40 A: 40 % to 100 % in 5 steps) t_G adjustable: 50 ms – 500 ms in 5 steps or OFF / ON using I_{SD} I^2t setting. 4 pole GF MCCBs have an unswitched neutral pole, and include an internal neutral CT.
Neutral Pole Protection (N)	Applies to 4P MCCBs. N (I_N) settings are: 50 %, 100 % (x I_R) or OFF. t_N = short time settings t_R and I_{SD}.
Pre Trip Alarm (PTA)	I_P = OFF or 60 % to 95 % (x I_R) in 5 steps, t_P = 5 % to 80 % in 5 % steps (x t_R)
Zone Interlocking	P160_SE MCCBs can be used with larger frame MCCBs or ACBs upstream, but not P160 to P160 combinations

Time Current Characteristics Curve, P160,250,400,630_SE, Smart Electronic

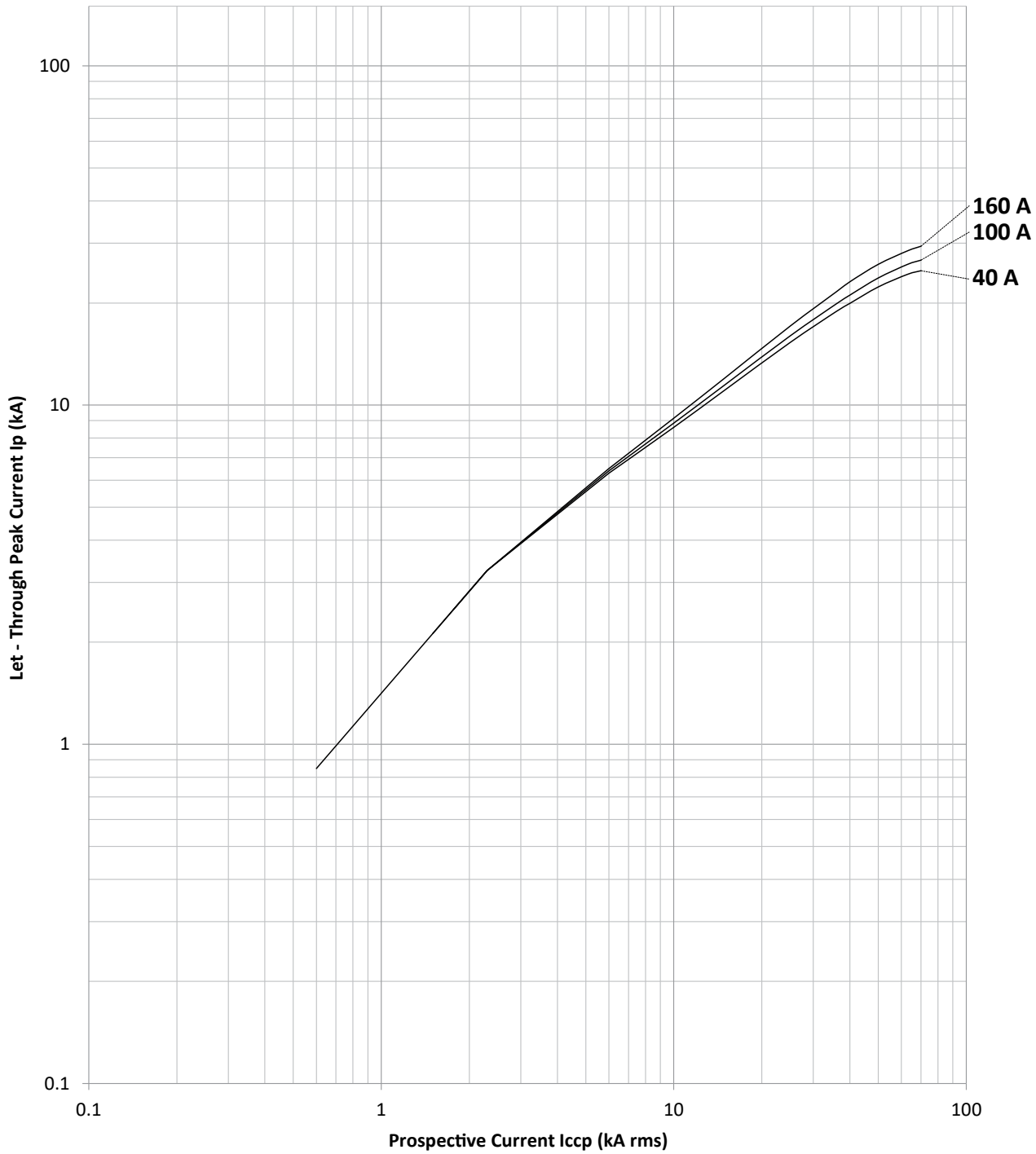


Time Current Characteristics Curve, P160,250,400,630_SE, Smart Electronic



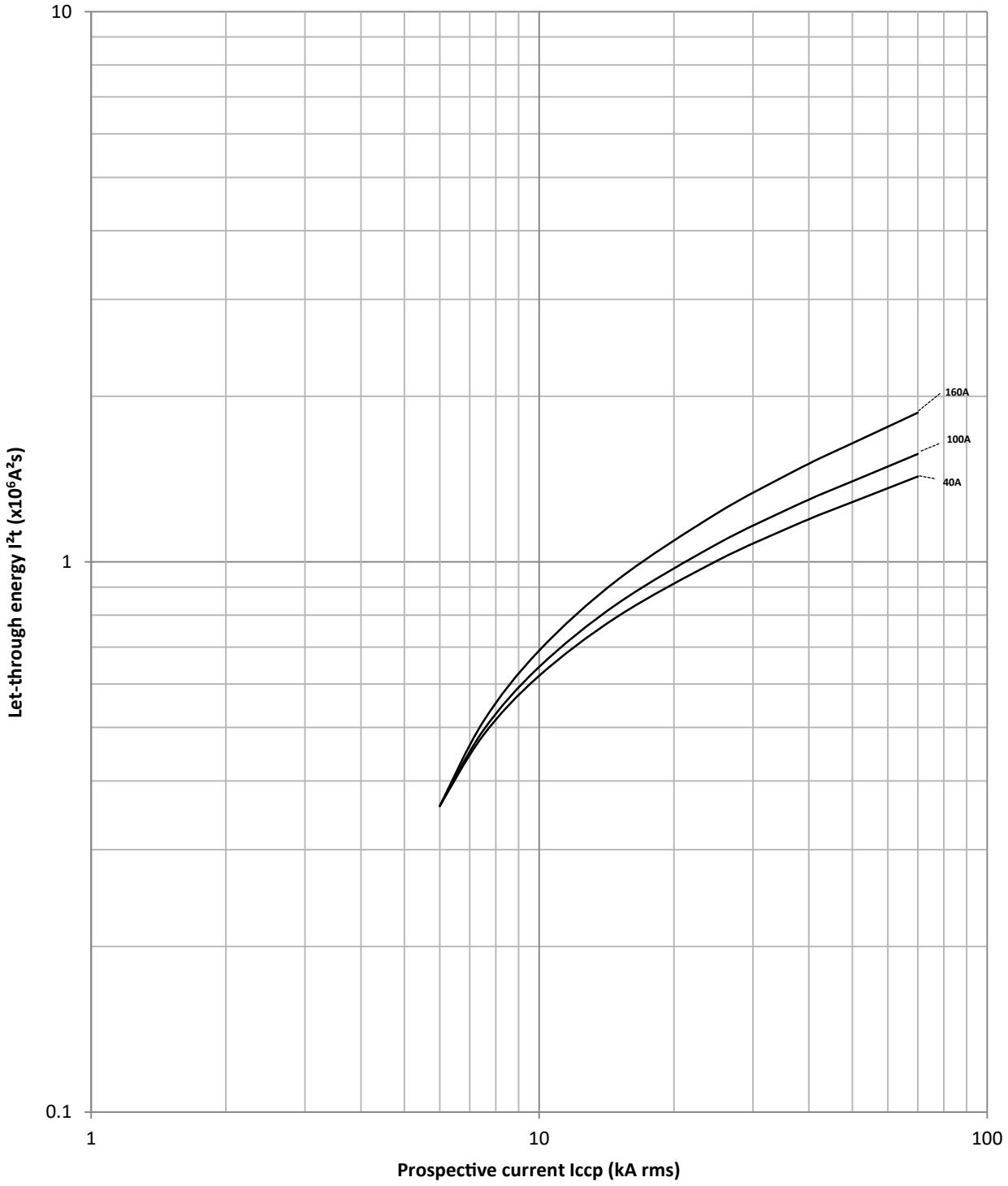
Let-Through Peak Current Curve, P160_BE/SE, 40 - 160 A, Basic/Smart Electronic

U = 380 V AC ~ 415 V AC
Icc-3Ph according to IEC 60947-2

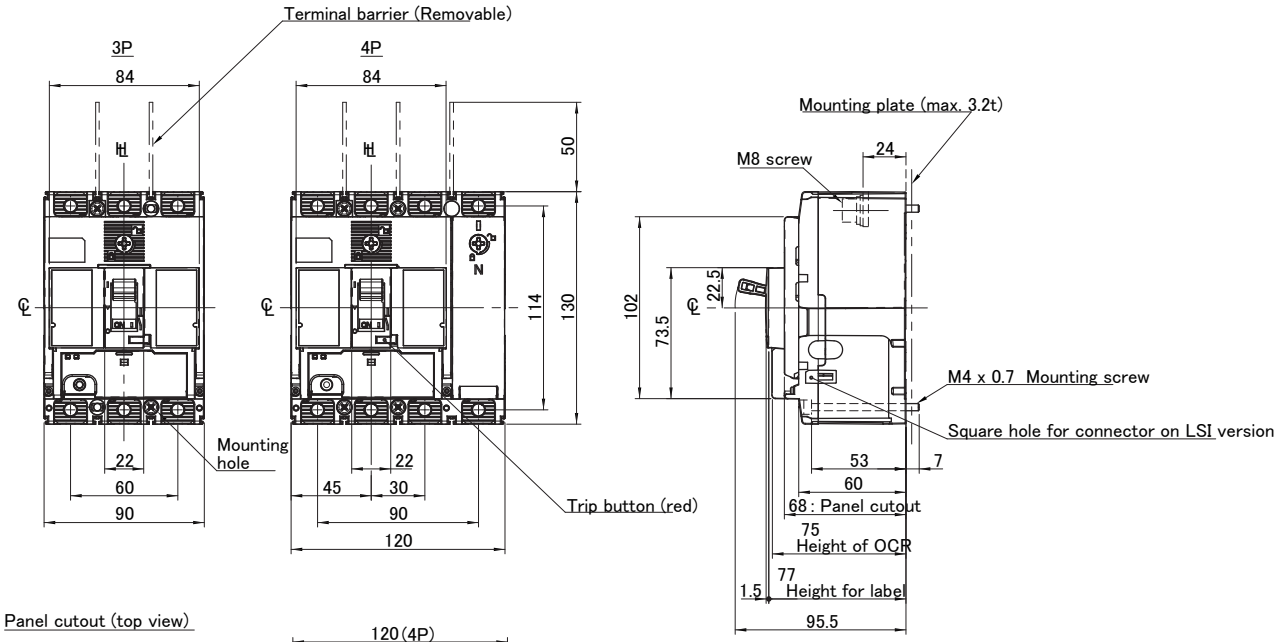


Let-Through Energy I²t Curve, P160_BE/SE, 40 - 160 A, Basic/Smart Electronic

U = 220/380 V AC ~ 240/415 V AC
Icc-3Ph according to IEC 60947-2

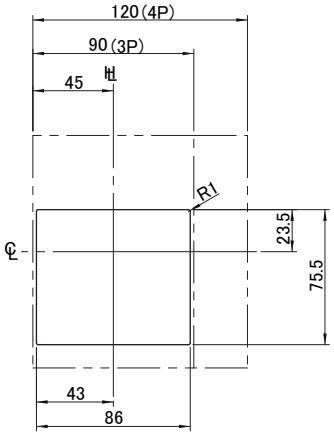


Dimensions P160_SE, Front Connect (mm)

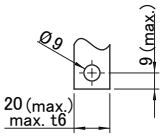


Panel cutout (top view)

Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon



Preparation of conductor



Drilling plan (top view)

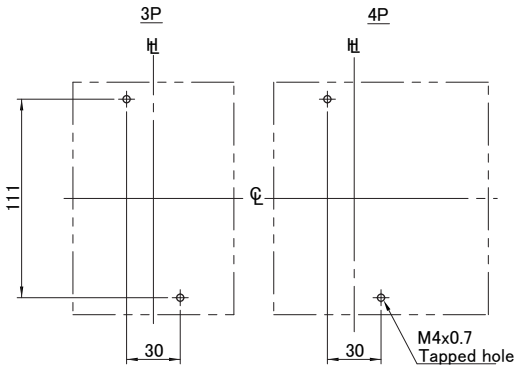


Table for square hole for connector on LSI version

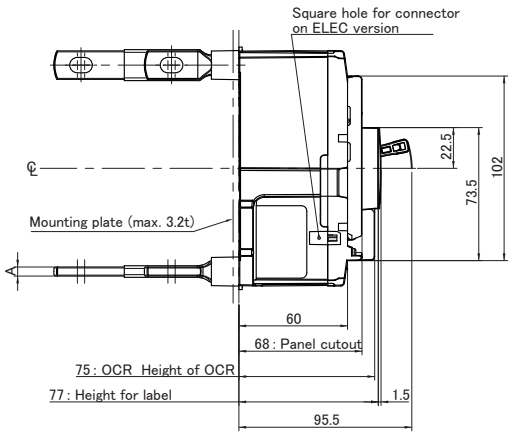
Type of OCR for LSI version	A pole (PAP)		C/N pole (ECP)	
	3P	4P	3P	4P
SMART	Hole	Hole	Hole	no

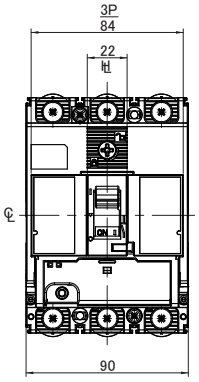
DImensions P160_SE, Rear Connect (mm)

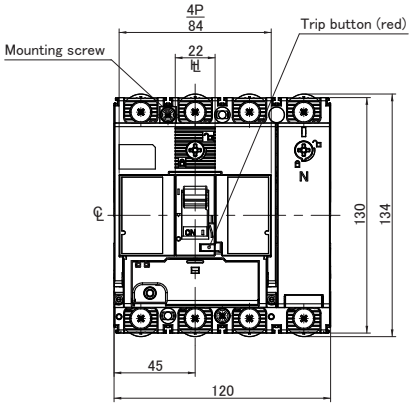
Rated current [A]	Thickness of Stud
	A
15 ～ 50	4
60 ～ 160	5

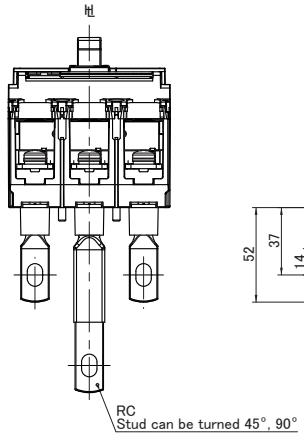
Table for square hole for connector on ELEC version

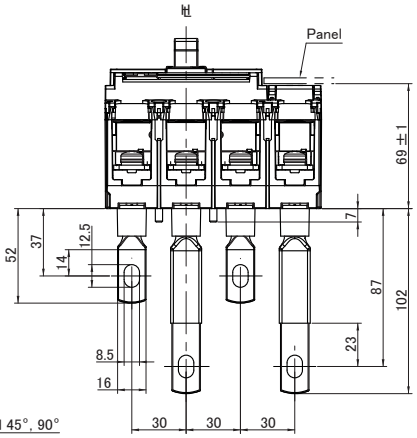
Type of OCR for ELEC version	A pole (PAP)	
	3P	4P
SMART	Hole	Hole



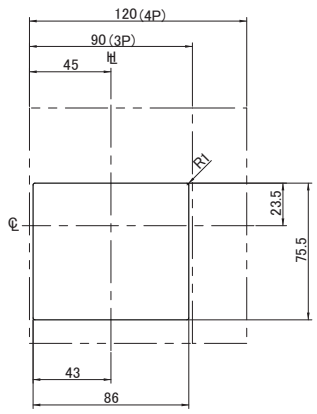






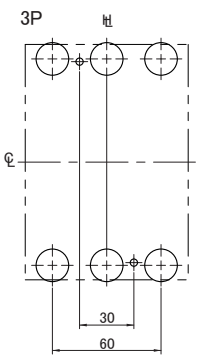


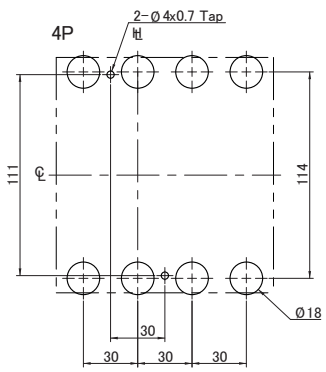
Panel cutout (top view)



Panel cutout dimensions shown give an allowance of 1.0 mm around the handle escutcheon

Drilling plan (top view)





P160_NN

Non-Auto Switch Disconnector

- ✔ Non-Auto switch disconnector for power distribution
- ✔ AC23 and DC22 ratings for motor starting useNo overcurrent protection (isolator only)
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-3, IEC 60947-3 and CE
- ✔ Panel mount standard, other connection options, DIN rail mount adaptor option
- ✔ Wide range of accessories for application flexibility
- ✔ Accepts standard MCCB internal and external accessories
- ✔ 3 or 4 pole versions
- ✔ Suits XAP 630 A chassis, with panelboard options
- ✔ Compact 130 mm H, 68 mm D, 30 mm pole centres
- ✔ I_{CW}= 2 kA for 1 sec: Rated short time withstand rating
- ✔ I_{CM}= 2.8 kA: Rated short circuit making capacity

CE DEKRA On the safe side.

General

Switch Type	Non Auto Switch Disconnector
Number of Poles	3 or 4
Switching Poles	3P or 3P + N

Ratings

Nominal Current	160 A @ 50°C
Motor Starting	AC23 motor starting DC22 motor starting
Icw Rated	Short time withstand
Icm Rated	Ampere making capacity

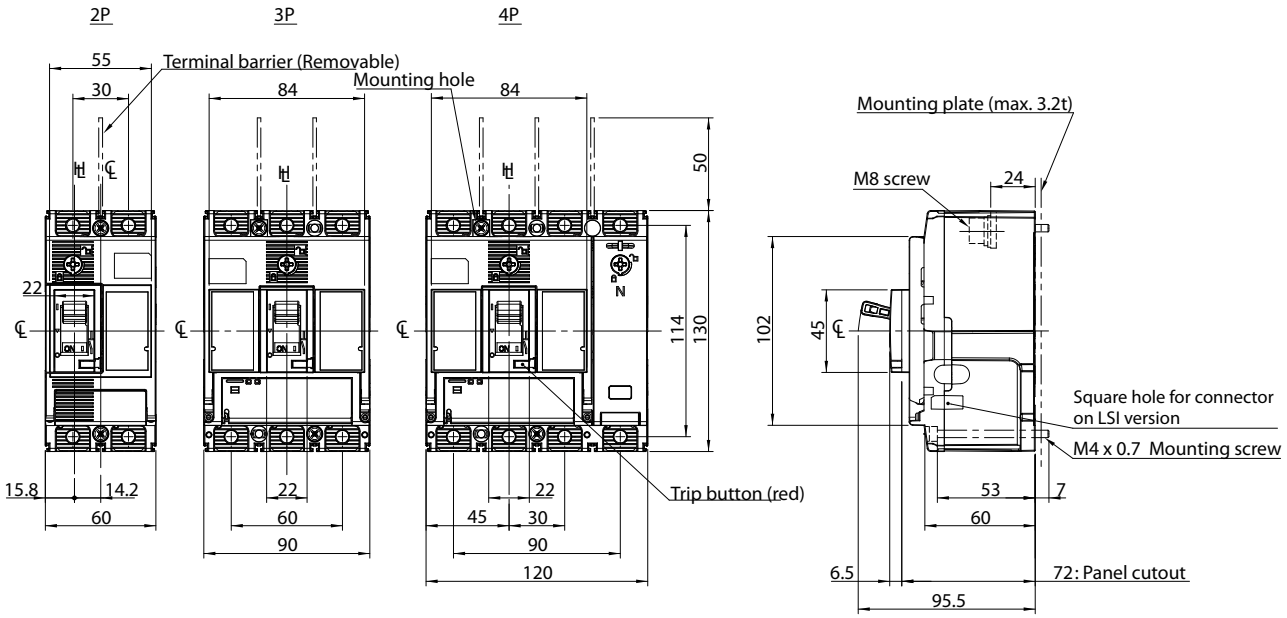
Voltage

Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Accessories and Connections

Options	Front or rear connect Terminal connection options Accepts standard MCCB accessories

Quick Reference Dimensions – Front Connect



160 A 3 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Pole Width (mm)	Catalogue No.
160	3	30	P160D23160NN

160 A 4 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Pole Width (mm)	Catalogue No.
160	4	30	P160D24160NN

Ratings

Component Type	Non Auto Switch Disconnector
Number of Poles	3 / 4
Switching Poles	3P + N / 3P
Frame Size	160 AF
I_n, Rated Current (A)	

Contact NHP

U_e Rated operational voltage AC maximum	690 V AC
U_e Rated operational voltage DC maximum	250 DC
U_i, Rated Insulation Voltage	800 V (rms)
Motor Starting Utilisation Category	AC 23, DC 22
U_{imp}, Impulse Withstand Voltage	8 kV
I_{cw}, Rated Short Circuit Withstand Current 400/690V	2 kA / 1.0 Sec
Rated Frequency	50 / 60 Hz
Pollution Degree	3
AC Power loss per pole at full rated current	Contact NHP
Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-3 AS/NZS 60947-3
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	1.5 - 70 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) DIN rail adaptor (Option)
Terminal Type	Screw Terminal(s)
Connection Torque	4.9 - 6.9 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	Yes
Suitable for mounting on chassis	XAP Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		130 mm
Width	**3P**	90 mm
	4P	120 mm
Depth (less toggle)		68 mm
Depth (toggle included)		95.5 mm
Weight	**3P**	1 kg
	4P	1.3 kg
Electrical Life		30000 cycles
Mechanical Life		50000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**D**
Based On AS/NZS 60947.2 and IEC 60947-2	**I_{cm} (Short Circuit Making Capacity)**	690 V AC	2.8
	I_{cw} (Short Time Withstand)	1.0 Seconds	2

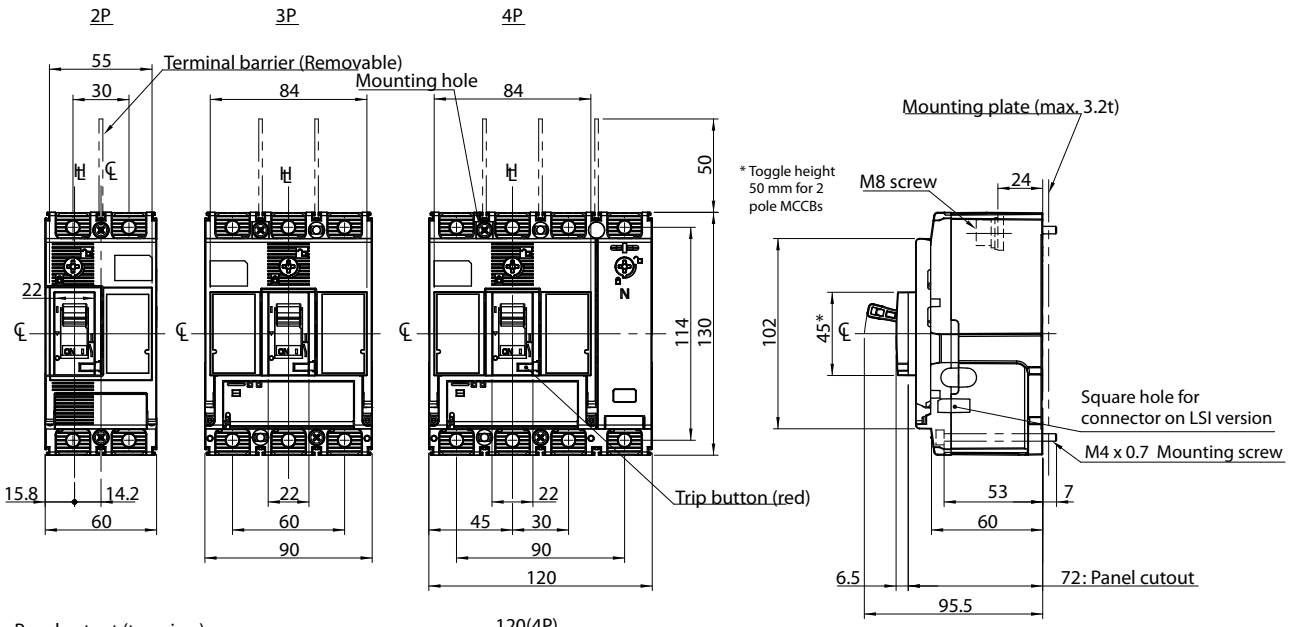
Trip Unit

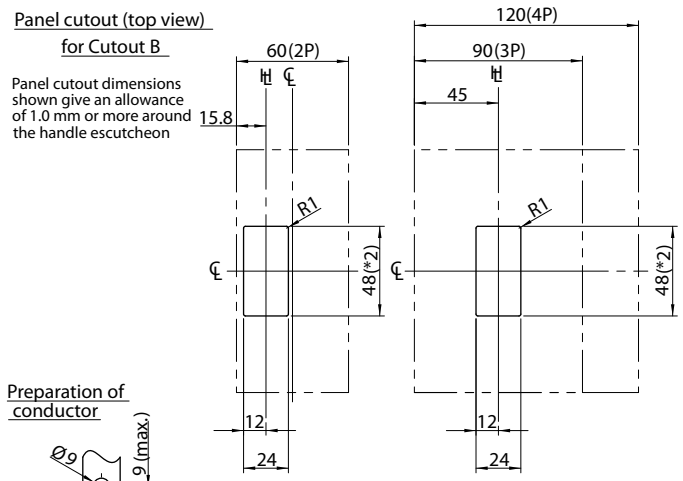
Over Current Protection Function	No
Trip Unit Protection Type	Non-auto Switch Disconnector
Rated Temperature	50 °C

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

Dimensions P160_FF/TM/BE/BEG/NN, Front Connect (mm)





(*2) Cutout 52 mm for 2 pole MCCBs

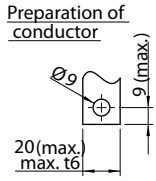
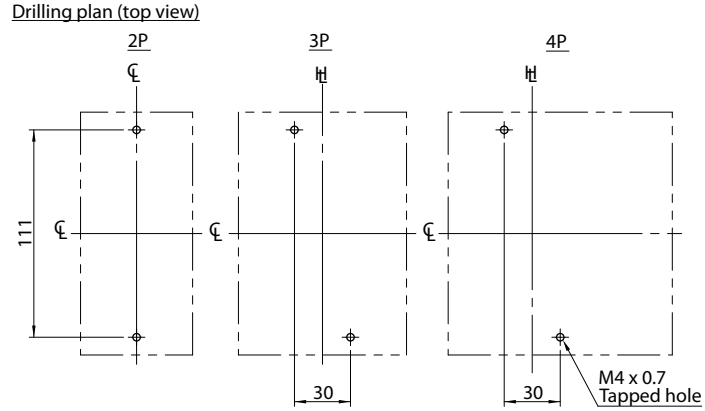
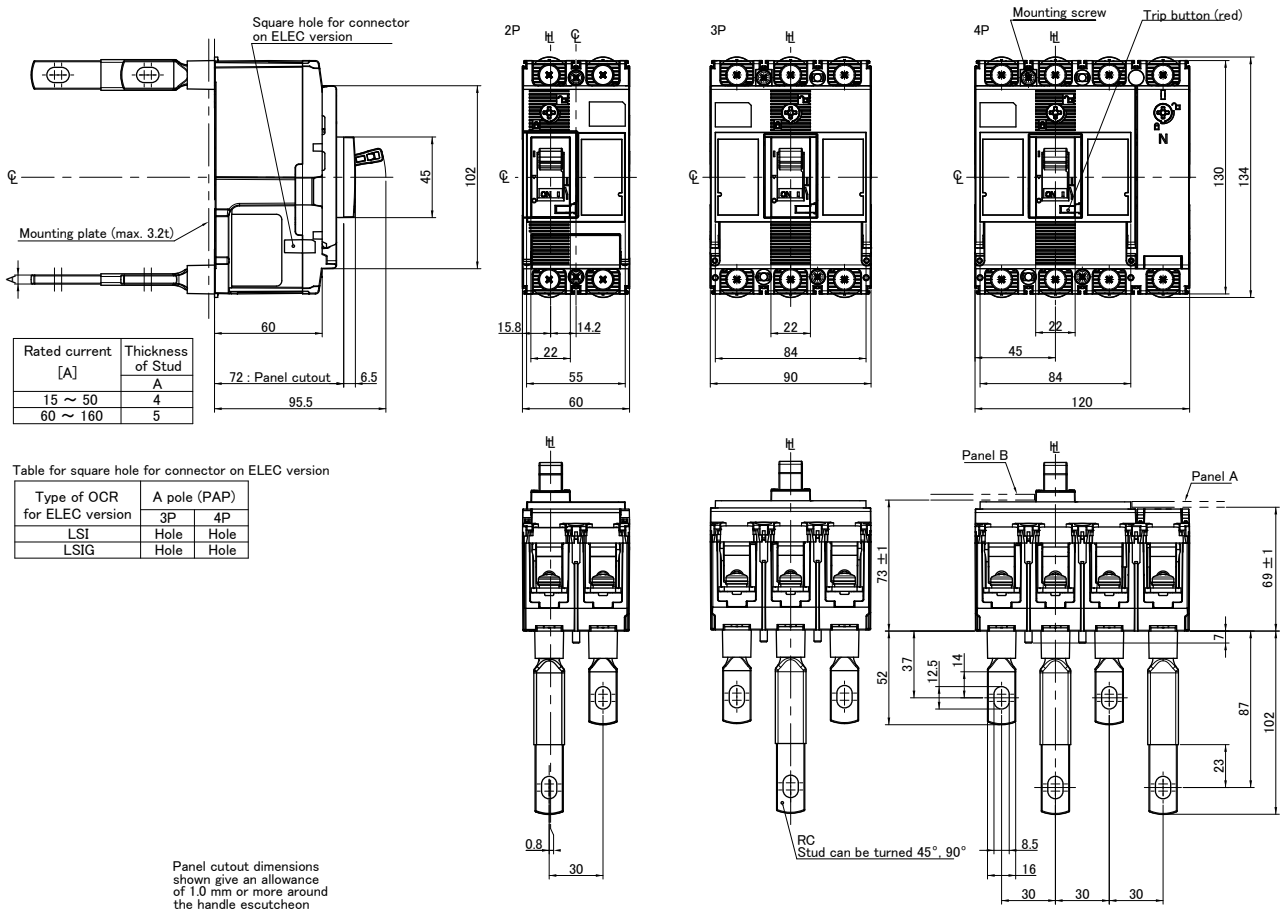


Table for square hole for connector on LSI version

Type of OCR for LSI version	A pole (PAP)		C/N pole (ECP)	
	3P	4P	3P	4P
LSI	Hole	Hole	no	no
LSIG	Hole	Hole	Hole	no



Dimensions P160_TM/BE/BEG/NN, Rear Connect (mm)

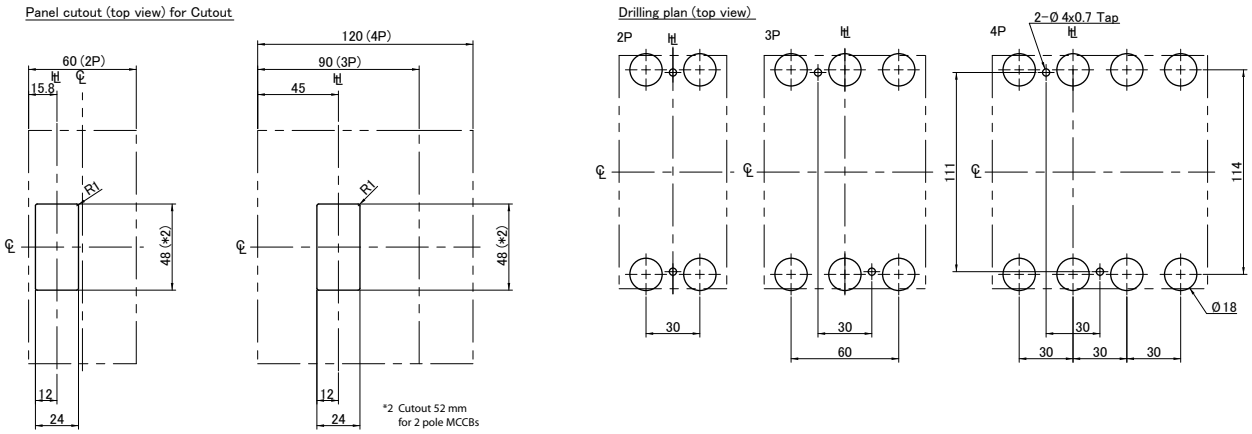


Rated current [A]	Thickness of Stud A
15 ～ 50	4
60 ～ 160	5

Table for square hole for connector on ELEC version

Type of OCR for ELEC version	A pole (PAP)	
	3P	4P
LSI	Hole	Hole
LSIG	Hole	Hole

Panel cutout dimensions shown give an allowance of 1.0 mm or more around the handle escutcheon



P160 AF Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits

Item Description	Catalogue No.
Alarm, Left Side Pocket Only 1 C/O	T2AL00LML3STA

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxilary 1 C/O	T2AX00LML3STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00LA10T
Shunt Trip Coil 230 - 240 V AC	T2SH00LA20T
Shunt Trip Coil 400 - 415 V AC	T2SH00LA40T
Shunt Trip Coil 24 V DC	T2SH00LD02T
Shunt Trip Coil 48 V DC	T2SH00LD04T
Shunt Trip Coil 110 V DC	T2SH00LD10T
Shunt Trip Coil 230 V DC	T2SH00LD20T

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 110 V AC	T2UV00LA10NT
Under Voltage Trip Coil Instant 230 - 240 V AC	T2UV00LA20NT
Under Voltage Trip Coil Instant 400 - 440 V AC	T2UV00LA40NT
Under Voltage Trip Coil Instant 24 V DC	T2UV00LD02NT
Under Voltage Trip Coil Instant 110 V DC	T2UV00LD10NT
Under Voltage Trip Coil Instant 230 V DC	T2UV00LD20NT

Time Delay Operation (500 ms)

When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500 ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delay 110 V AC	T2UV00LA10DS
Under Voltage Trip Coil Time Delay 230 - 240 V AC	T2UV00LA24DS
Under Voltage Trip Coil Time Delay 440 - 450 V AC	T2UV00LA45DS
Under Voltage Trip Coil Time Delay 24 V DC	T2UV00LD02DS
Under Voltage Trip Coil Time Delay 110 V DC	T2UV00LD10DS
Under Voltage Trip Coil Time Delay 230 V DC	T2UV00LD24DS

SMART Status Auxiliary

Suits TemBreak PRO P160_SE – P630_SE
Smart Metering MCCBs

The TPSS SMART auxiliary and Alarm is used with the TemBreak PRO SMART energy and communications MCCB range. The TPSS auxiliary range includes types which allows the SMART MCCB OCR to log and count the number of opening / closing cycles, or count the number of electromechanical (overload) fault trips and
indicate and communicate via Modbus, the actual mechanical ON / OFF or TRIPPED status of the breaker main contacts. The ON / OFF / TRIPPED status of the MCCB is also displayed on the OCR display.

Item Description	Catalogue No.
ON OFF TRIP, Standard Type Use for Applications 125 - 250 V AC	TPSS00MXLSWA
ON OFF TRIP, Micro-current Type Use for Applications 125 V AC / 24-30 V DC	TPSS00MXLRWA
Smart Status Auxiliary AX/AL Cycle - Trip Counter	TPSS00NA

Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

Item Description	Catalogue No.
Grey, IP55 Handle + 356 mm Shaft	TPHS16R5GM
Red/Yellow, IP55 Range + 356 mm Shaft	TPHS16R5RM

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

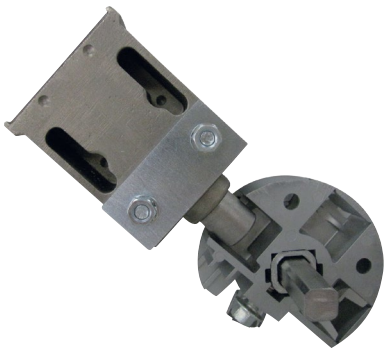
Item Description	Catalogue No.
Grey, IP65 Handle + 445 mm Shaft	TPHP16SR6BN
Red/Yellow, IP65 Handle + 445 mm Shaft	TPHP16SR6RN

Handle Options

A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
HS 90 mm Shaft 125/250 AF	T2HS250SHAFT



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Locking and Interlocking Accessories

Cable Mechanical Interlock

Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 M apart

Item Description	Catalogue No.
Cable Interlock Less Wire. Qty 1. Order 1 Interlock for Each MCCB Used.	TPMW16SCN

Item Description	Catalogue No.
Cable Interlock Wire (1.0 m)	T2MW00SA
Cable Interlock Wire (1.5 m)	T2MW00LA

Link Mechanical Interlock

Prevents simultaneous operation of two horizontally mounted interlocked MCCBs.

Item Description	Catalogue No.
Mechanical Interlock 3 Pole Right Side Section Common Section	TPML16SR3
Mechanical Interlock 3 Pole Left Side Section	TPML16SL3
Mechanical Interlock 4 Pole Left Side Section	TPML16SL4

Toggle Locks

Non-captive

Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Toggle Lock with 5 mm x 16.5 mm slot	T2HL25L

Captive

Contact NHP for Captive Toggle Locks.

MCCBs

Installation External Accessories

Communications Module

The TPCM TemCom PRO communication module for the Smart MCCB enables data saved or monitored by the Smart MCCB to be shared with a compatible Modbus RTU monitoring system. 2 versions are available; a basic modbus module, and another that includes 2 opto isolated configurable I/O contacts for signaling additional devices.

An MCCB side mounting support bracket is supplied for side of the MCCB mounting. The module is also DIN-rail mounting.

- The Modbus communication module includes a 120 Ω termination resistor
- This resistance can be activated / deactivated via a front panel switch
- The module comes in two versions with or without input and output contact

Suits P160_SE, P250_SE, P400_SE, P630_SE SMART MCCBs (An MCCB side mount adaptor is included as standard. The module is also DIN rail mounting as standard)

Item Description	Catalogue No.
Modbus RTU Communication Module, Basic Version, No Extra I/O	TPCM00D02NA
Modbus RTU Communications Module, Basic + 2 Configurable I/O Relay Contacts	TPCM00D02WA

SMART Connection Leads

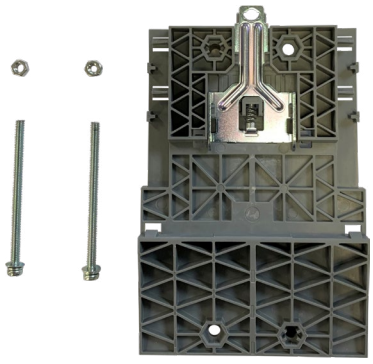
Connection Interface Leads for P_SE SMART MCCBs and TPCM, TPED or 24VDC power

Item Description	Catalogue No.
Connection lead CIP 0.5 m	TPPHQTT330HA

Item Description	Catalogue No.
Connection lead CIP 1.5 m	TPPHQTT340HA
Connection lead CIP 5.0 m	TPPHQTT360HA
Connection Lead CIP 24 V, 1.2 m	TPPHQTT140HA

DIN Rail Adaptor

Permits an MCCB to mounted onto 45mm DIN rail for easy mounting and removal



Item Description	Catalogue No.
Metal Din Rail adapter	TPDA16SA

External Monitor

Suits P160_SE, P250_SE, P400_SE, P630_SE SMART MCCBs

The PRO View TPED door display is an optional accessory which can be used to monitor OCR data and also perform remote setting of Smart MCCB OCR trip unit. Data is communicated via a proprietory protocol from the MCCB to the TPED, so Modbus comms are not required when using the TPED. The TPED can be mounted on a switchboard door or a Concept panelboard escutcheon, with a door in front. An RJ9 CIP connection cable is necessary to provide the connection with the Smart circuit breaker, to its CIP connection socket. A 24 V DC supply is required and the TPED consumption is 85 mA, or a TPCM can be used. The front of the display is protected by a transparent and sealed facia which is rated IP65. The LCD screen is backlit to enable low ambient light reading.

Item Description	Catalogue No.
External Monitor and Configurator for P160_SE to P630_SE MCCBs	TPED00N

SMART Connecton Leads

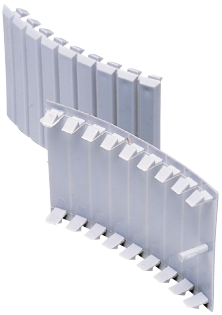
Connection Interface Leads for P_SE SMART MCCBs and TPCM, TPED or 24VDC power

Item Description	Catalogue No.
Connection lead CIP 0.5 m	TPPHQTT330HA

Item Description	Catalogue No.
Connection lead CIP 1.5 m	TPPHQTT340HA
Connection lead CIP 5.0 m	TPPHQTT360HA
Connection Lead CIP 24 V, 1.2 m	TPPHQTT140HA

Pole Fillers

A clip in filler 9 mm wide for vacant pole positions for 46 mm DIN cut-outs

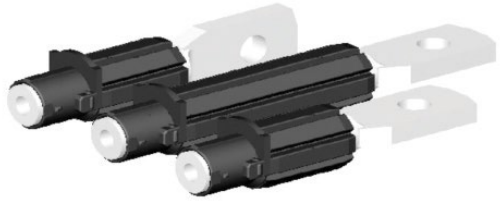


Item Description	Catalogue No.
DIN Pole Filler (1 Strip Of 4 Poles, 8 X 9 mm Segments)	DTPF
DIN Pole Filler (1 Strip Of 12 Poles, 24 X 9 mm Segments)	DTPF12

Item Description	Catalogue No.
Pole Filler 30 mm Wide for 125 AF MCCBs with a 104 mm Cut-out	XAB2

Rear Connection Studs

Allows MCCB main connections to be made at the rear of the MCCB



Item Description	Catalogue No.
Rear Connect Terminal Stud 3 Pole Kit, Set of 3 Rear Studs 160 A	TPRP163SH
Rear Connect Terminal Stud 4 Pole Kit, Set of 4 Rear Studs 160 A	TPRP164SH

SMART Connecton Leads

Optional Alarm Contact or Pre-Trip Alarm connection leads for P_SE SMART MCCBs.

Item Description	Catalogue No.
OAC / PTA connection lead 1.2 m	TPPHQTT130HA

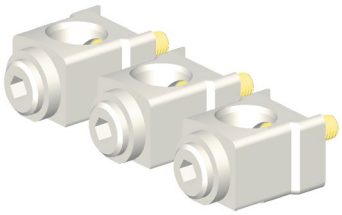
Item Description	Catalogue No.
ZSI - zone selective interlocking connection lead, 1.2 m	TPPHQTT150HA

Item Description	Catalogue No.
Connection lead CIP 0.5 m	TPPHQTT330HA

Item Description	Catalogue No.
Connection lead CIP 1.5 m	TPPHQTT340HA
Connection lead CIP 5.0 m	TPPHQTT360HA
Connection Lead CIP 24 V, 1.2 m	TPPHQTT140HA

Terminal Clamps

Allows cable to be terminated directly to the MCCB and clamped for good connectivity



Item Description	Catalogue No.
Tunnel Clamp Terminal 3 Pole, 3 Clamp Set, 1 Cable Hole, 35 - 120 mm²	TPFW16S3L1H
Tunnel Clamp Terminal 4 Pole, 4 Clamp Set, 1 Cable Hole, 35 - 120 mm²	TPFW16S4L1H
Tunnel Clamp Terminal 3 Pole, 3 Clamp Set, 6 Cable Termination Holes, 4 - 25 mm² Cable	TPFW16S3L6H
Tunnel Clamp Terminal 4 Pole, 4 Clamp Set, 6 Cable Termination Holes, 4 - 25 mm² Cable	TPFW16S4L6H

Terminal Covers

Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area

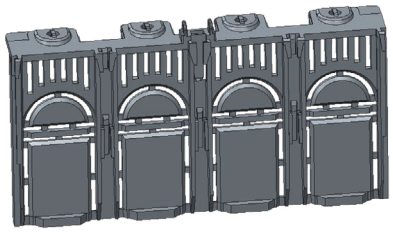
Item Description	Catalogue No.
2 Pole Single Cover, 50 mm Long, Narrow Cover	TPCF162SLNPH
3 Pole Single Cover, 50 mm Long, Narrow Cover	TPCF163SLNPH
4 Pole Single Cover, 50 mm Long, Narrow Cover	TPCF164SLNPH
3 Pole Set of Two (2) Covers, 50 mm Long, Narrow Cover	TPCF163SLNP
4 Pole Set of Two (2) Covers 50 mm Long, Narrow Cover	TPCF164SLNP

Item Description	Catalogue No.
3 or 4 Pole Single Cover, 100 mm Long, Wide “Top Hat”	T2CF253WC

Item Description	Catalogue No.
3 Pole Single Cover, 50 mm Long, Narrow Cover with Rear Earth Barrier	TPCF163SLEPH
4 Pole Single Cover, 50 mm Long, Narrow Cover with Rear Earth Barrier	TPCF164SLEPH

Flush Front Terminal Covers

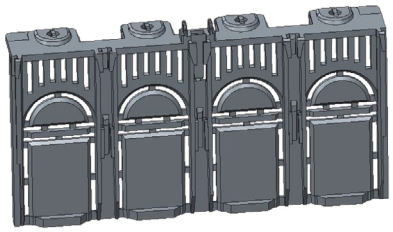
Provides front finger touch protection with MCCBs used with tunnel terminals or chassis



Item Description	Catalogue No.
2 Pole Single Cover	TPCR162SPH
3 Pole Single Cover	TPCS163SPH
4 Pole Single Cover	TPCS164SPH
3 Pole Cover, Set of 2	TPCS163SPB
4 Pole Cover, Set of 2	TPCS164SPB

Rear Connect Terminal Covers

Provides front finger touch protection with MCCBs used with rear terminals and HC chassis



Item Description	Catalogue No.
2 Pole Single Cover	TPCR162SPH
3 Pole Single Cover	TPCR163SPH
4 Pole Single Cover	TPCR164SPH
3 Pole Set of Two (2) Covers	TPCR163SP
4 Pole Set of Two (2) Covers	TPCR164SP

Short Terminal Covers Front Connect

Provides front, side and internal isolation between poles in the MCCB power terminal area

Item Description	Catalogue No.
2 Pole Single Cover, 22 mm Long, Narrow Cover	TPCF162SSNPH
3 Pole Single Cover, 22 mm Long, Narrow Cover	TPCF163SSNPH
4 Pole Single Cover, 22 mm Long, Narrow Cover	TPCF164SSNPH
3 Pole Set of Two (2) Covers, 22 mm Long, Narrow Cover	TPCF163SSNP
4 Pole Set of Two (2) Covers, 22 mm Long, Narrow Cover	TPCF164SSNP

Item Description	Catalogue No.
3 Pole Single Cover, 22 mm Long, Narrow Cover with Rear Earth Barrier	TPCF163SSEPH
4 Pole Single Cover, 22 mm Long, Narrow Cover with Rear Earth Barrier	TPCF164SSEPH

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier (Set of 2) Suits A160, P160	T2BA16L3SH

Terminal Cover Locking Clip

Used with terminal covers to prevent unauthorised removal or access to terminal area

Item Description	Catalogue No.
Terminal Cover Locking Clip Suits P160	TPCF16SL

Motor Operator

Allows remote switching of an MCCB to ON or OFF or resetting tripped MCCBs.

Item Description	Catalogue No.
Motor Operator 110 V AC Suits P160, P250 Only	TPMC25SA10N
Motor Operator 230 - 240 V AC Suits P160, P250 Only	TPMC25SA24N
Motor Operator 24 V DC Suits P160, P250 Only	TPMC25SD02N
Motor Operator 48 V DC Suits P160, P250 Only	TPMC25SD04N
Motor Operator 110 V DC Suits P160, P250 Only	TPMC25SD10N
Motor Operator 230 V DC Suits P160, P250 Only	TPMC25SD20N

B160_FF

Single Pole Thermal Magnetic MCCB

- ✔ General purpose power distribution applications
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard or chassis mounting
- ✔ Extension bar or tunnel clamp terminal options for application flexibility
- ✔ 1 pole MCCB, 35 mm width (250AF)
- ✔ Front connect screw terminals
- ✔ Suits XBP anc XCP chassis
- ✔ Panelboard options
- ✔ Fault rating; 25 kA I_{CU} @ 240 V AC
- ✔ Utilisation ratings from 24 V to 240 V AC and 125 V DC
- ✔ Thermal magnetic trip unit: fixed thermal / fixed magnetic
- ✔ Trip units: 16, 20, 25, 32, 40, 50, 63, 80, 100, 125, 160 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Fixed Thermal, Fixed Magnetic
Trip Unit Rating	16 / 20 / 25 / 32 / 40 / 50 / 63 / 80 / 100 / 125 / 160 A
Number of Poles	1
Switching Poles	1P

Short Circuit

Short-Circuit Capacity (Ultimate) @ 240 V AC	**E**	25 kA

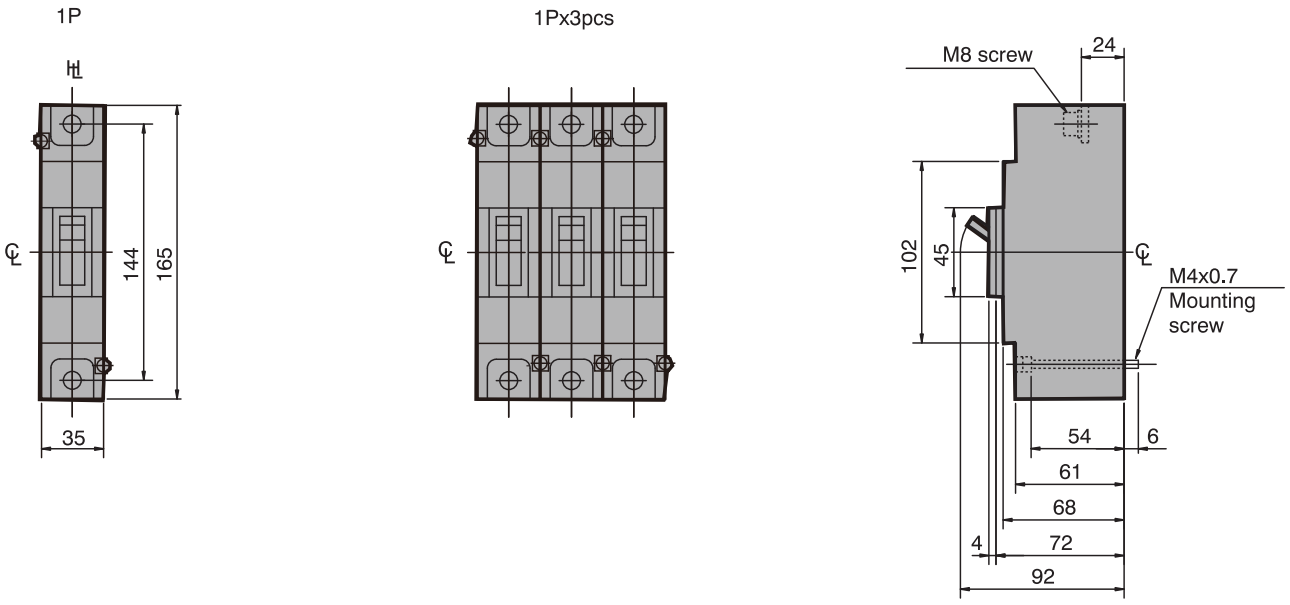
Voltage

Utilisation Voltages	24 V AC to 240 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option)

Quick Reference Dimensions – Front Connect



160 A 1 Pole 25 kA FF (Fixed Thermal - Fixed Magnetic)

I_n (A @ 50 °C)	I_r, Fixed (A)	I_m, Fixed (A)	Poles	Pole Width (mm)	Catalogue No.
16	16	160	1	35	B160E3116FF
20	20	200	1	35	B160E3120FF
25	25	250	1	35	B160E3125FF
32	32	320	1	35	B160E3132FF
40	40	400	1	35	B160E3140FF
50	50	500	1	35	B160E3150FF
63	63	630	1	35	B160E3163FF
80	80	800	1	35	B160E3180FF
100	100	1000	1	35	B160E31100FF
125	125	1250	1	35	B160E31125FF
160	160	1600	1	35	B160E31160FF

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	1
Switching Poles	1P
Frame Size	160 AF
Trip Unit Rating	16 / 20 / 25 / 32 / 40 / 50 / 63 / 80 / 100 / 125 / 160 A

I_n, Rated Current (A)

	16	20	25	32	40	50	63	80	100	125	160
45ºC	-	-	-	-	-	-	-	-	-	-	-
50ºC	16	20	25	32	40	50	63	80	100	125	160
70ºC	12	17	20.5	27	21	40	53	69	84	104	135

U_e, Rated Operational Voltage, AC, max	240 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC / DC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	16	20	25	32	40	50	63	80	100	125	160
(W)	4.41	6.68	7.68	8.79	7.22	5.34	6.8	8.67	9.82	11.1	13.57

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 185 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option)
Terminal Type	Bolt-Terminal
Connection Torque	4.9 - 6.9 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	HC Chassis XBP Chassis XCP Chassis XBPSS Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	No
Mounting	-

Physical

Height		165 mm
Width	**1P**	35 mm
Depth (less toggle)		68 mm
Depth (toggle included)		95.5 mm
Weight	**1P**	0.5 kg
Electrical Life		10000 cycles
Mechanical Life		20000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**E**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	25
		380 / 400 V AC	-
		415 V AC	-
		440 V AC	-
		690 V AC	-
		1000 V AC	-
		1100 V AC	-
		125 V DC	15
		250 V DC	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	13
		380 / 400 V AC	-
		415 V AC	-
		440V AC	-
		690 V AC	-
		1000 V AC	-
		1100 V AC	-
		125 V DC	8
		250 V DC	-

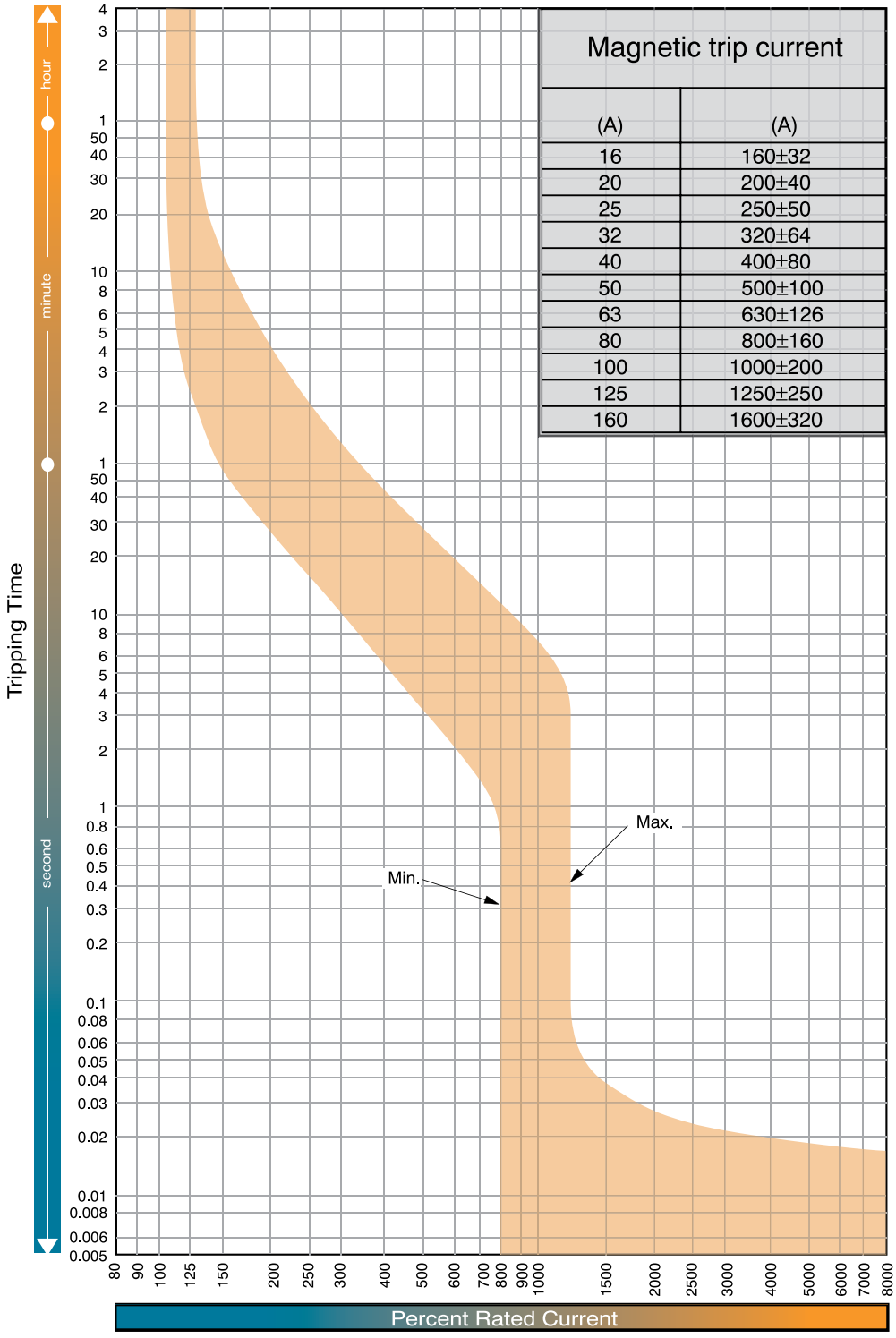
Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Fixed Thermal, Fixed Magnetic
Rated Temperature	50 °C

General Accessories

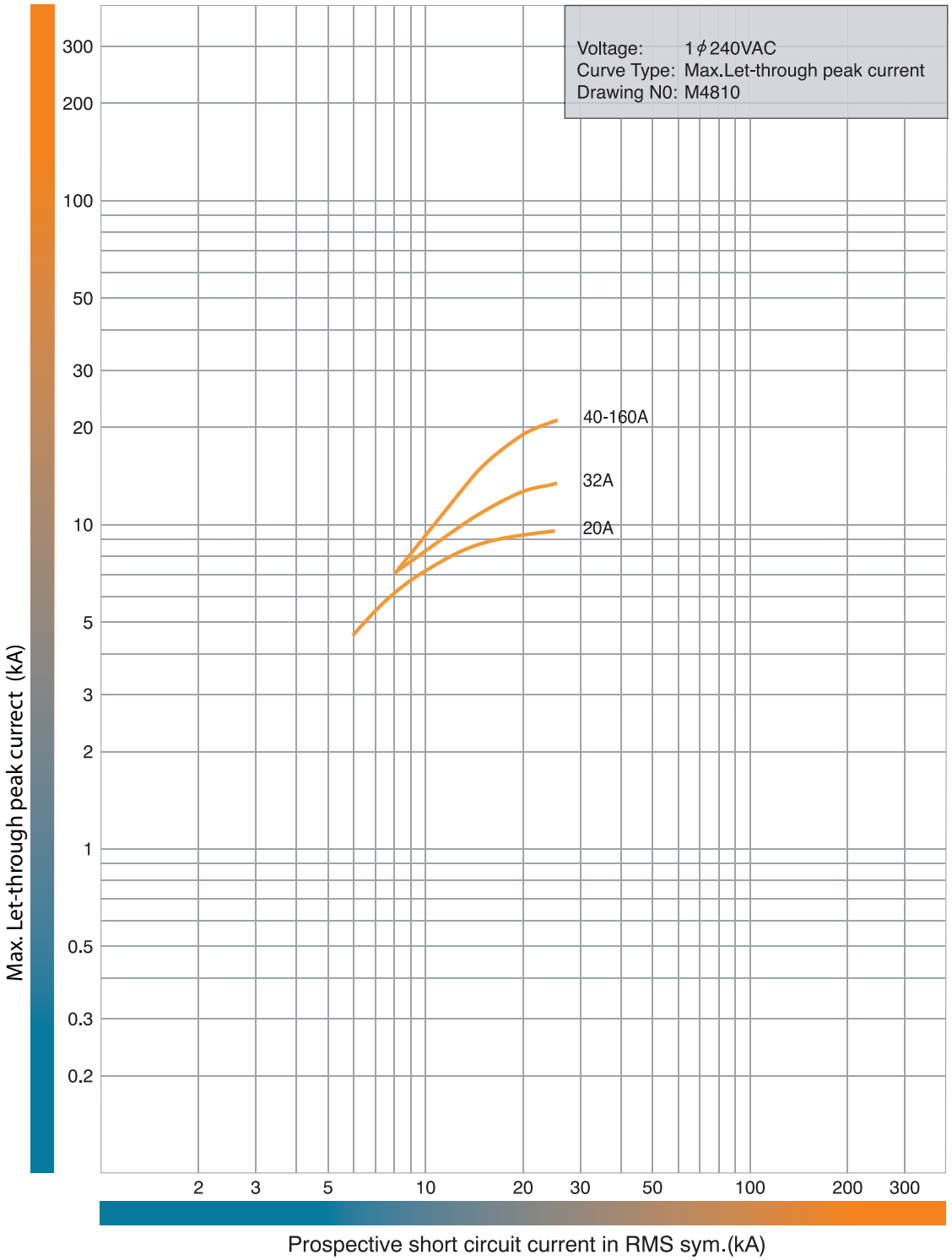
Auxiliary Switches	No
Alarm Switch	No
Shunt Trip	Yes
Under Voltage Trip	No
Handle Operators	No
Motor Operator	No
Mechanical Interlock	No
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	No
External Panel Display	No

Time Current Characteristics Curve B160_FF, Fixed Thermal and Fixed Magnetic

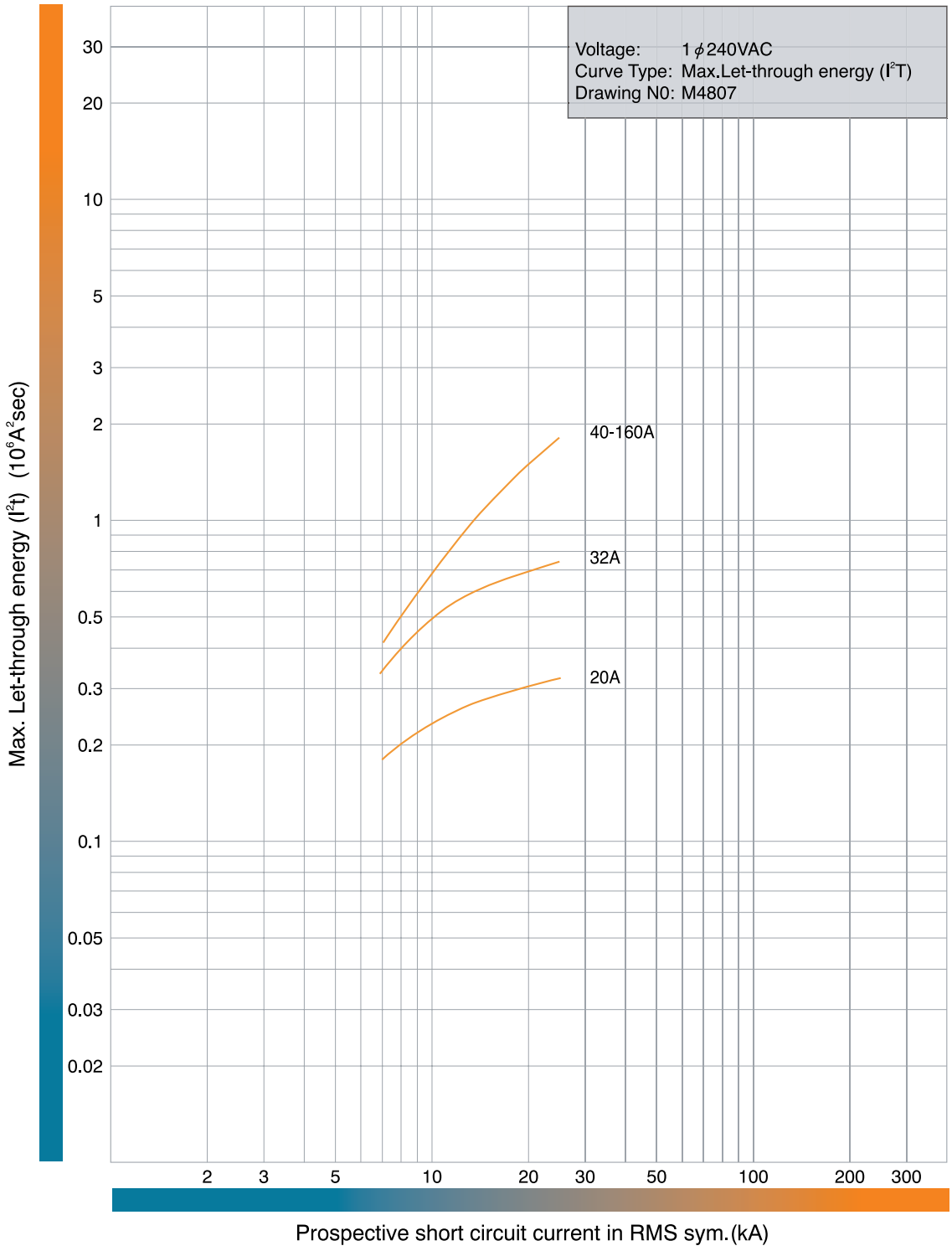


Magnetic trip current	
(A)	(A)
16	160±32
20	200±40
25	250±50
32	320±64
40	400±80
50	500±100
63	630±126
80	800±160
100	1000±200
125	1250±250
160	1600±320

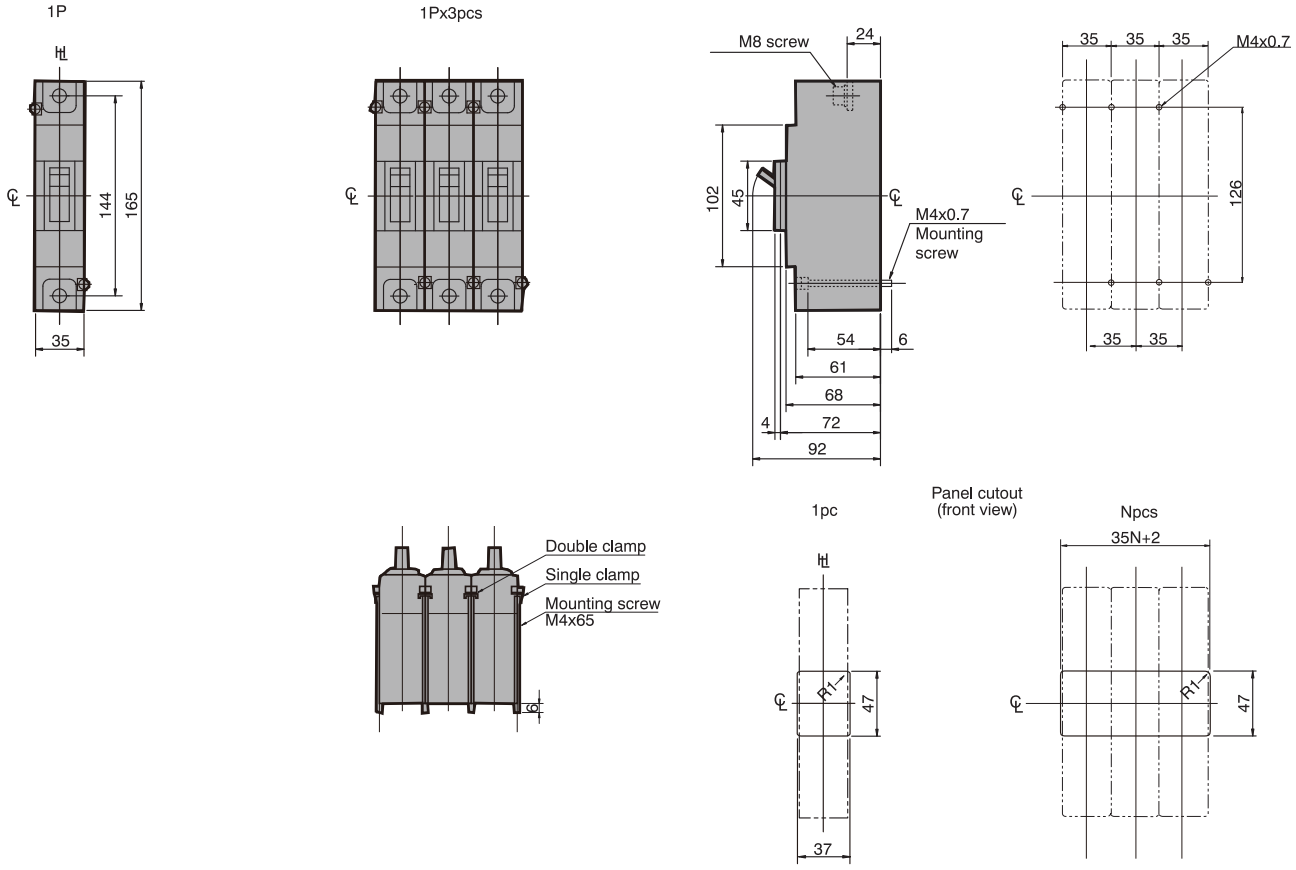
Let-Through Peak Current Curve, B160_FF, 20-160 A, Fixed Thermal and Fixed Magnetic



Let-Through Energy I²t Curve, B160_FF, 20-160 A, Fixed Thermal and Fixed Magnetic



Dimensions B160_FF, Front Connect (mm)



B160_TM

Thermal Magnetic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ Suits HC chassis
- ✔ 165 mm H, 103 mm D, 35 mm pole centres
- ✔ Fault ratings; 125, 200 kA I_{CU} @ 415 V AC
- ✔ Utilisation ratings from 24 V to 690 V AC (refer model), 250 V DC
- ✔ Thermal magnetic trip unit: adjustable thermal / adjustable magnetic
- ✔ Trip units; 20, 32, 50, 63, 100, 125, 160 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Trip Unit Rating	20 / 32 / 50 / 63 / 100 / 125 / 160 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**P**	125 kA
	R	200 kA

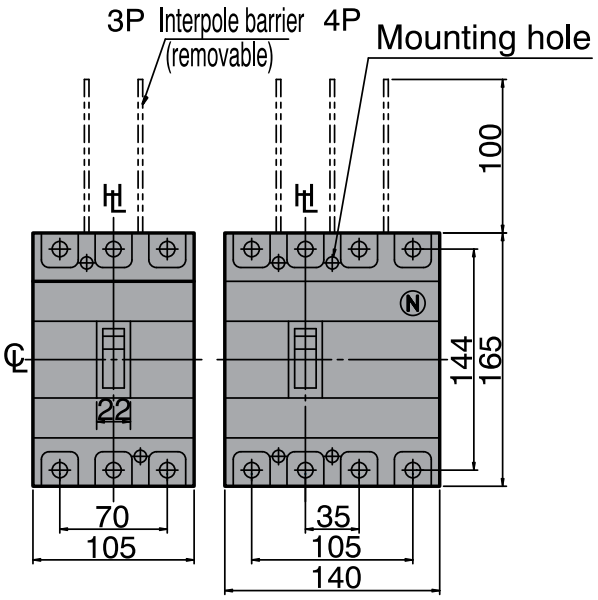
Voltage

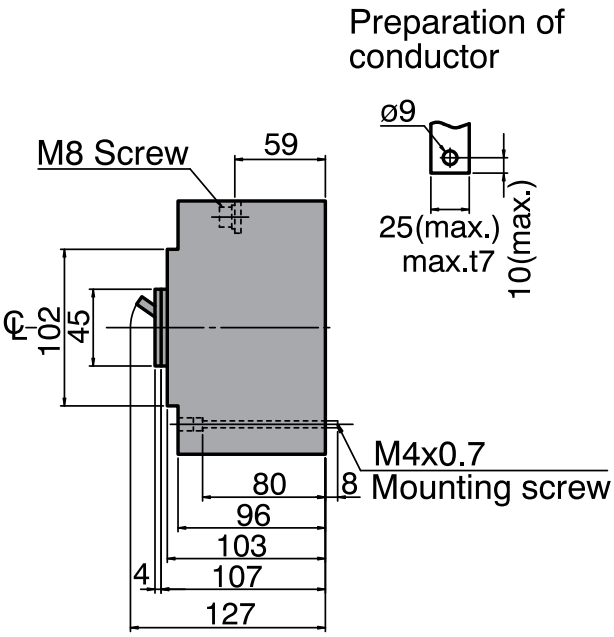
Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option)

Quick Reference Dimensions – Front Connect





160 A 3 Pole 125 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
20	12.5 - 20	120 - 240	125	3	35	B160P3320TM
32	20 - 32	192 - 384	125	3	35	B160P3332TM
50	32 - 50	300 - 600	125	3	35	B160P3350TM
63	40 - 63	378 - 756	125	3	35	B160P3363TM
95	63 - 100	600 - 1200	125	3	35	B160P33100TM
125	80 - 125	750 - 1500	125	3	35	B160P33125TM
160	100 - 160	960 - 2080	125	3	35	B160P33160TM

160 A 3 Pole 200 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
20	12.5 - 20	120 - 240	200	3	35	B160R3320TM
32	20 - 32	192 - 384	200	3	35	B160R3332TM
50	32 - 50	300 - 600	200	3	35	B160R3350TM
63	40 - 63	378 - 756	200	3	35	B160R3363TM
95	63 - 100	600 - 1200	200	3	35	B160R33100TM
125	80 - 125	750 - 1500	200	3	35	B160R33125TM
160	160 - 160	960 - 2080	200	3	35	B160R33160TM

160 A 4 Pole 125 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
20	12.5 - 20	120 - 240	125	4	35	B160P3420TM
32	20 - 32	192 - 384	125	4	35	B160P3432TM
50	32 - 50	300 - 600	125	4	35	B160P3450TM
63	40 - 63	378 - 756	125	4	35	B160P3463TM
95	63 - 100	600 - 1200	125	4	35	B160P34100TM
125	80 - 125	750 - 1500	125	4	35	B160P34125TM
160	100 - 160	960 - 2080	125	4	35	B160P34160TM

160 A 4 Pole 200 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
20	12.5 - 20	120 - 240	200	4	35	B160R3420TM
32	20 - 32	192 - 384	200	4	35	B160R3432TM
50	32 - 50	300 - 600	200	4	35	B160R3450TM
63	40 - 63	378 - 756	200	4	35	B160R3463TM
95	63 - 100	600 - 1200	200	4	35	B160R34100TM
125	80 - 125	750 - 1500	200	4	35	B160R34125TM
160	100 - 160	960 - 2080	200	4	35	B160R34160TM

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	160 AF
Trip Unit Rating	20 / 32 / 50 / 63 / 100 / 125 / 160 A

I_n, Rated Current (A)

	20	32	50	63	100	125	160
45ºC	-	-	-	-	-	-	-
50ºC	20	32	50	63	100	125	160
70ºC	-	-	42	53	86	107	128

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC / DC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	20	32	50	63	100	125	160
(W)	13.73	17.81	7.27	9.39	14.17	16.67	16.66

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 185 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option)
Terminal Type	Bolt-Terminal
Connection Torque	7.8 - 12.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	Yes
Suitable for mounting on chassis	HC Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		165 mm
Width	**3P**	105 mm
	4P	140 mm
Depth (less toggle)		103 mm
Depth (toggle included)		151 mm
Weight	**3P**	1 kg
	4P	1.3 kg
Electrical Life		10000 cycles
Mechanical Life		20000 cycles

Short-Circuit Capacity

			kA Rating	
			MCCB Type	
		Voltage	P	R
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	150	200
		380 / 400 V AC	125	200
		415 V AC	125	200
		440 V AC	120	180
		690 V AC	20	25
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	-	-
		250 V DC	40	40
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	150	150
		380 / 400 V AC	85	150
		415 V AC	85	150
		440V AC	80	135
		690 V AC	15	20
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	-	-
		250 V DC	40	40

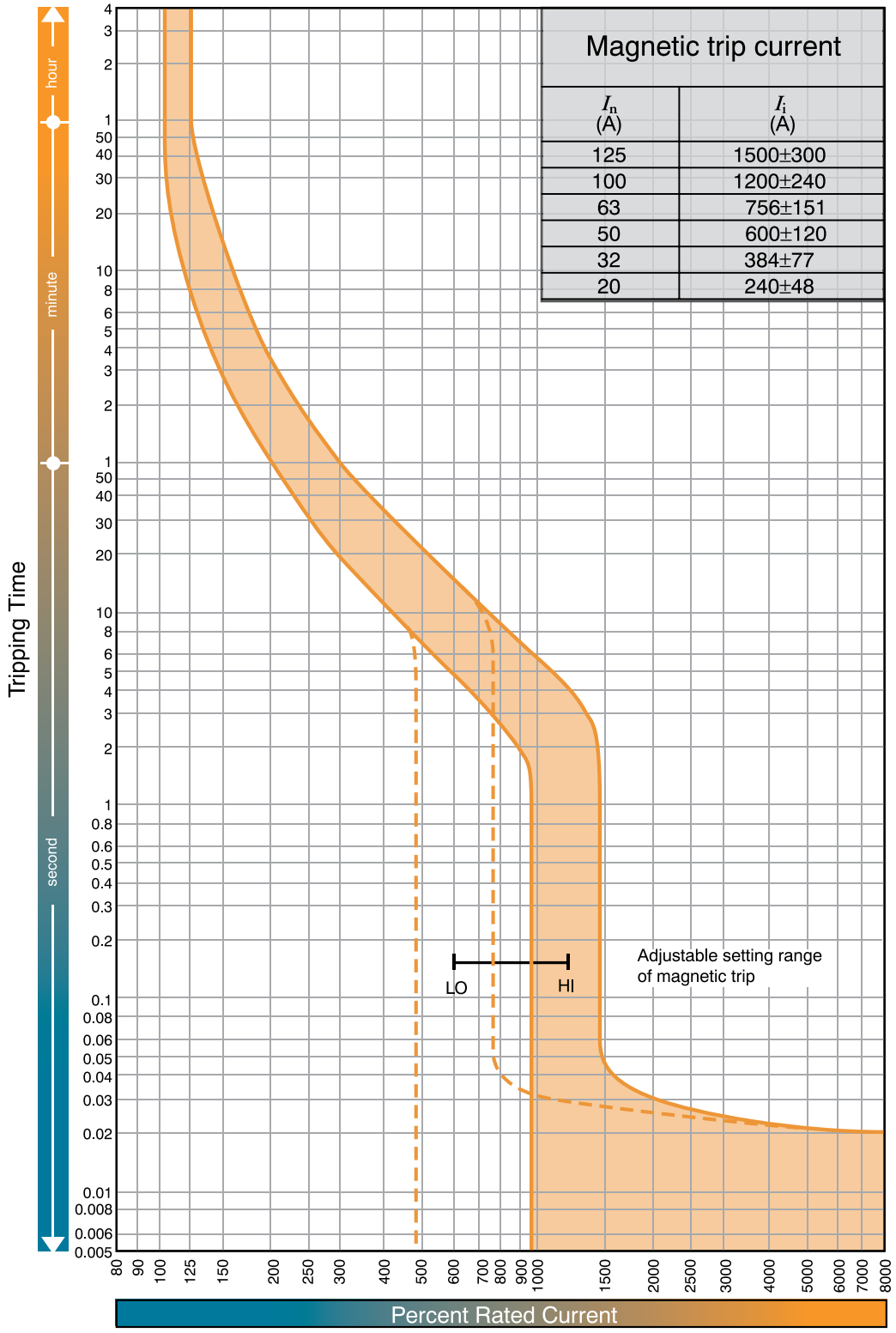
Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Rated Temperature	50 °C

General Accessories

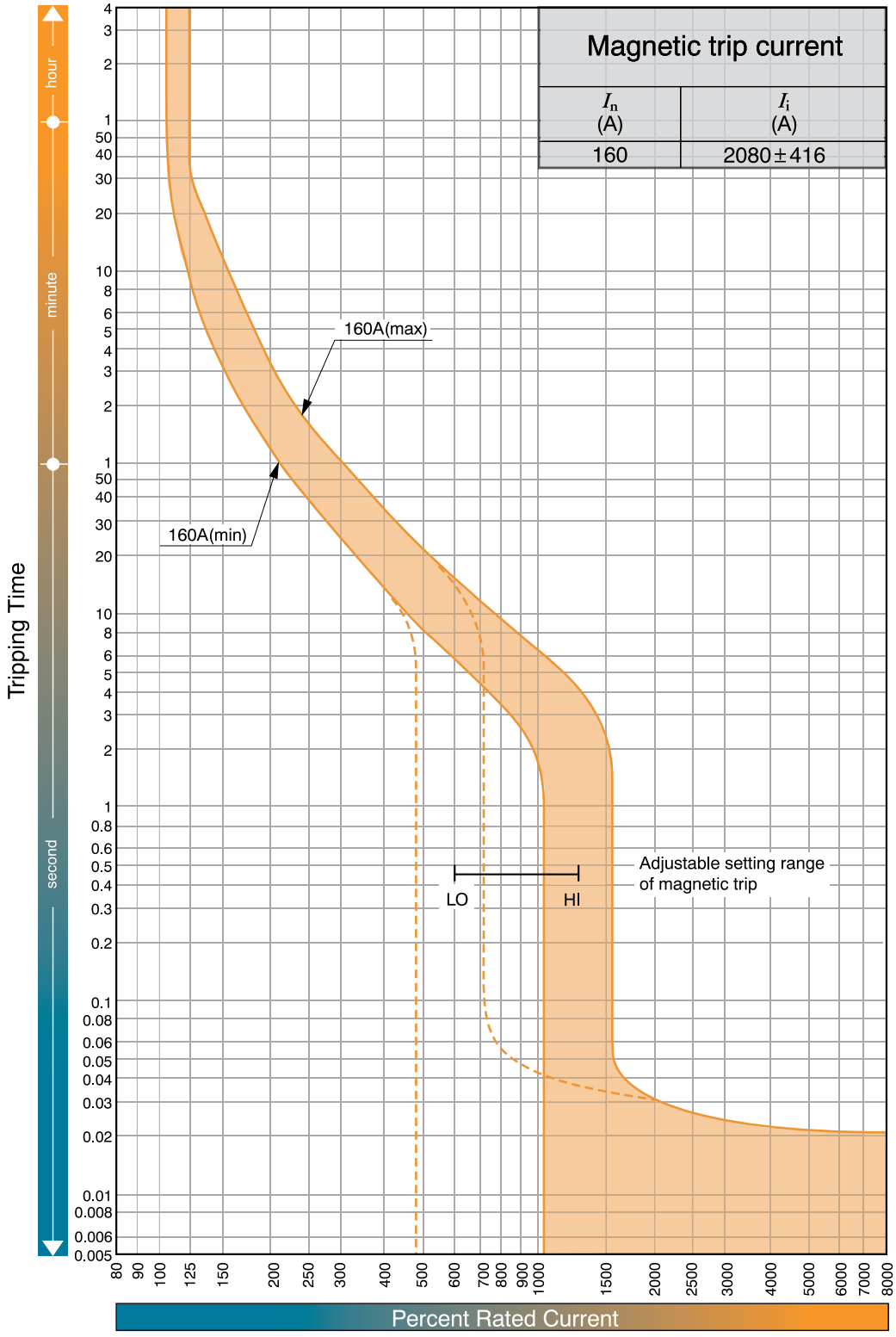
Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

Time Current Characteristics Curve, B160P/R, Thermal Magnetic



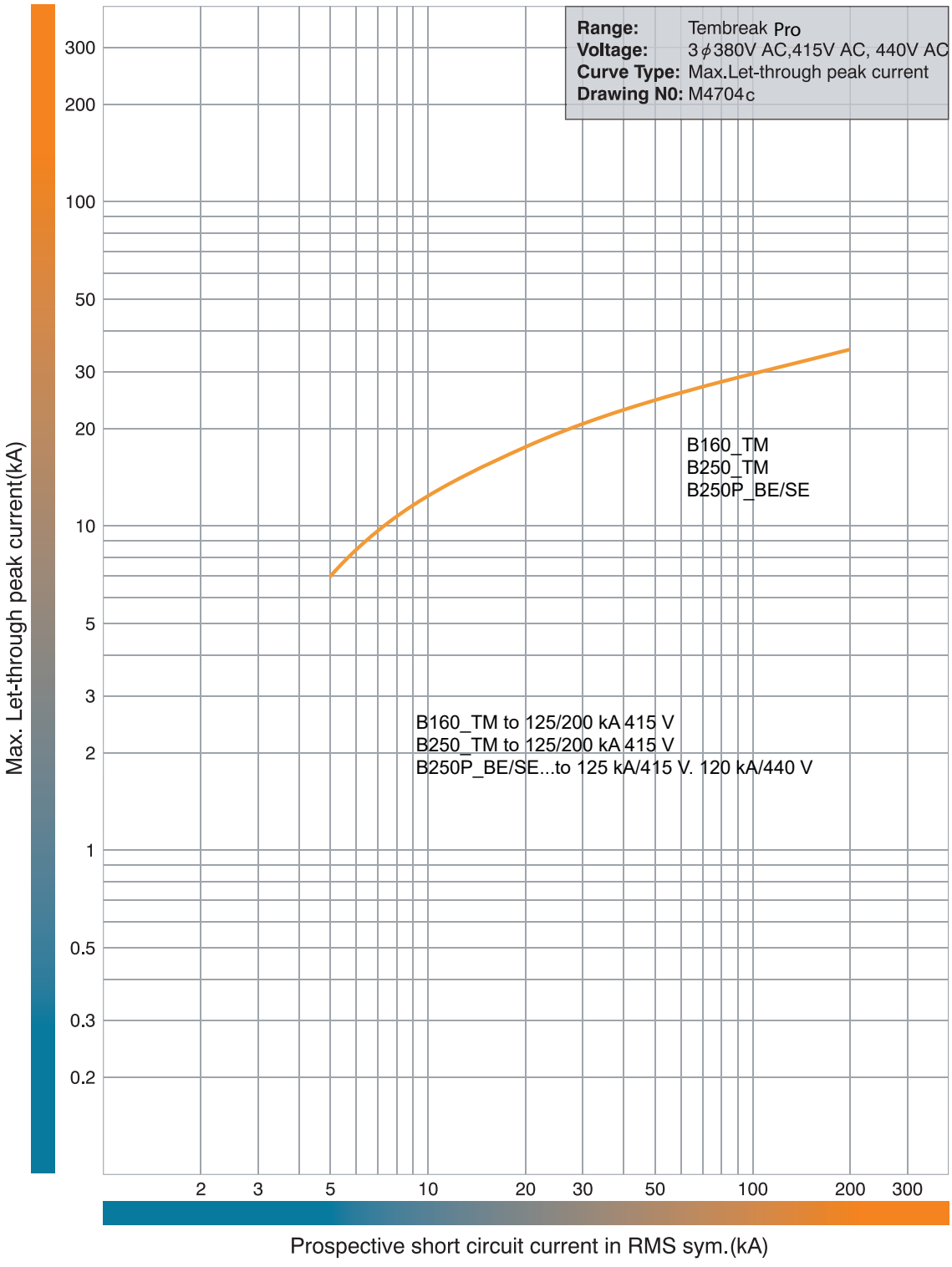
Magnetic trip current	
I_n (A)	I_i (A)
125	1500±300
100	1200±240
63	756±151
50	600±120
32	384±77
20	240±48

Time Current Characteristics Curve, B160P/R, Thermal Magnetic

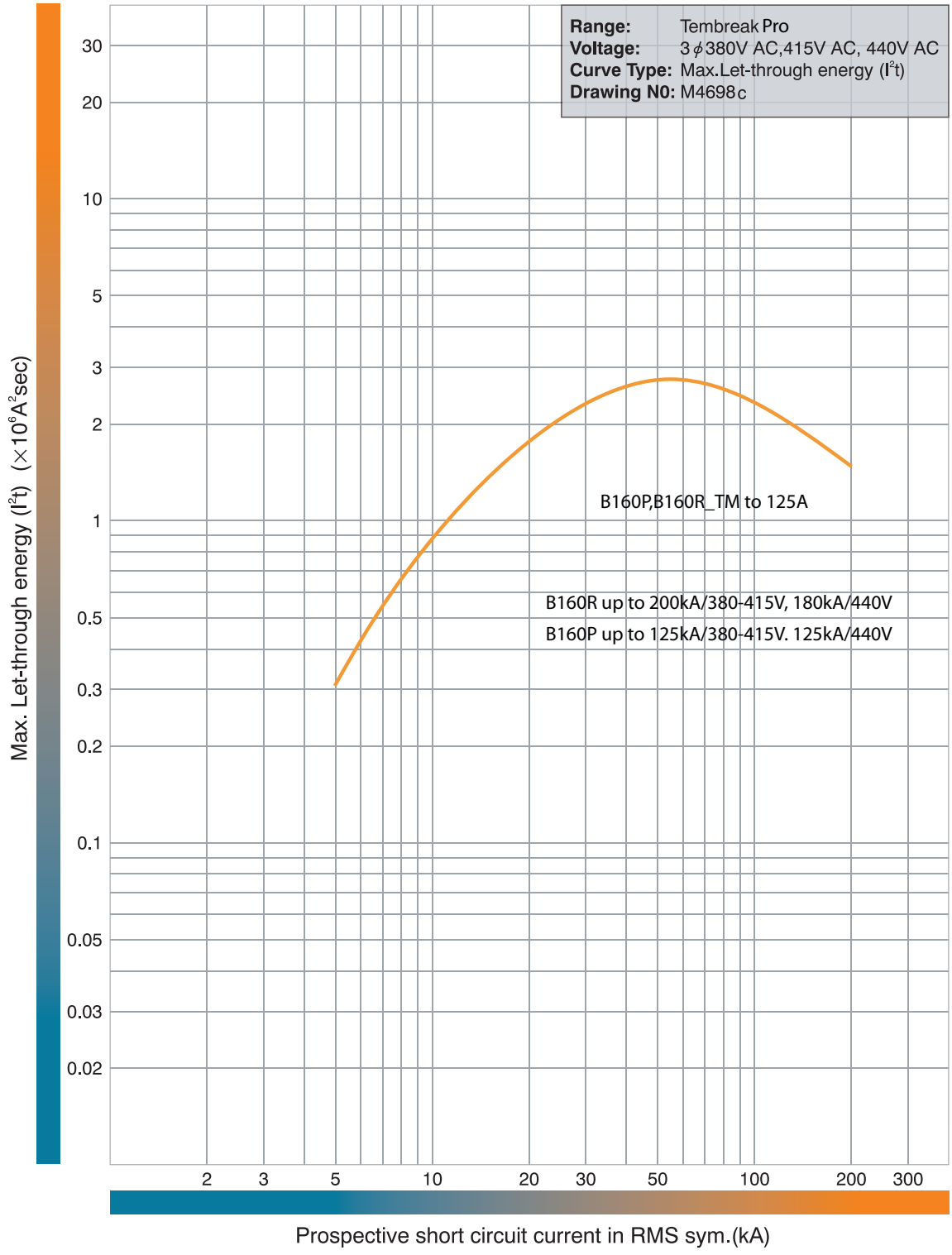


MCCBs

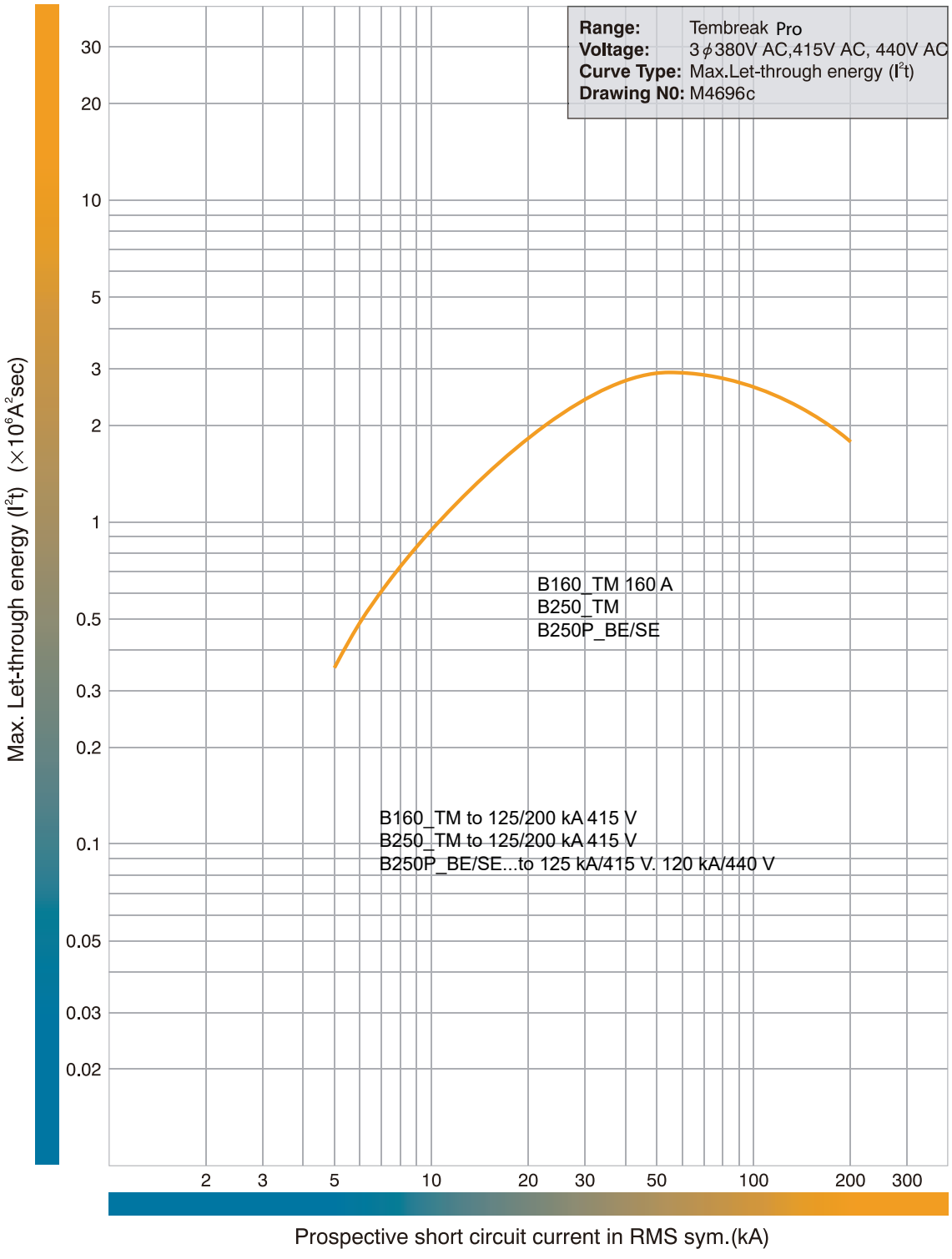
Let-Through Peak Current Curve, B160/250P/R_TM, Thermal Magnetic



Let-Through Energy I²t Curve, B160/250P/R_TM, Thermal Magnetic

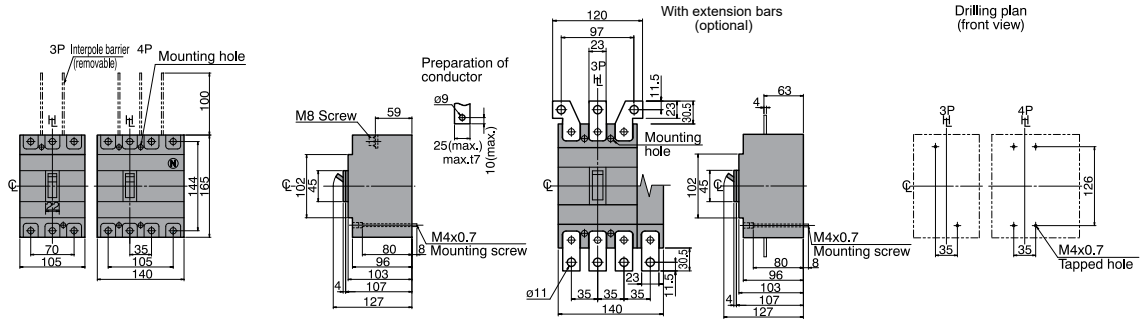


Let-Through Energy I²t Curve, B160/250P/R_TM, Thermal Magnetic

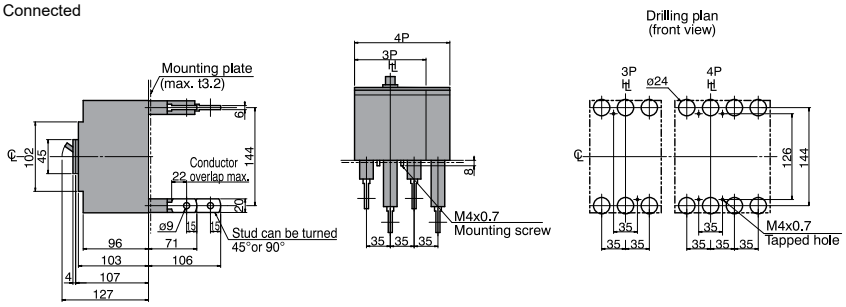


Dimensions B160_TM, B250_BE/TM and L125PJ (mm)

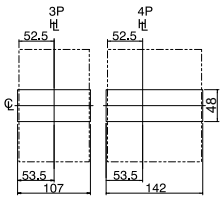
Front Connected



Rear Connected

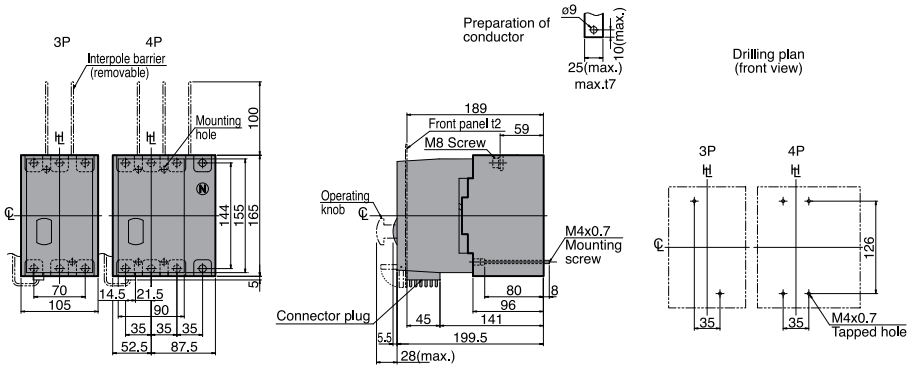


Panel cutout
(front view)

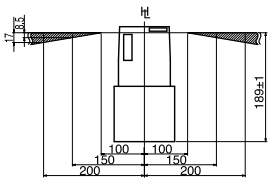


Panel cutout dimensions shown give an allowance of 1.0mm or more around the handle escutcheon.

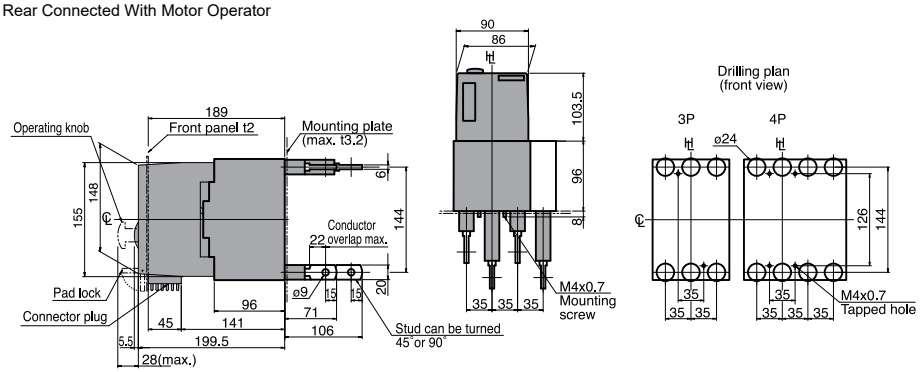
Front Connected With Motor Operator



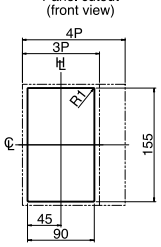
Panel hinge position (hatching area)
bottom view



Rear Connected With Motor Operator



Panel cutout
(front view)



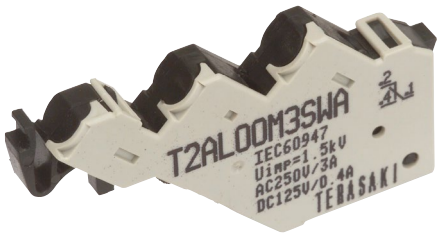
Panel cutout dimensions shown give an allowance of 1.5mm around the handle escutcheon.

B160 AF Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits



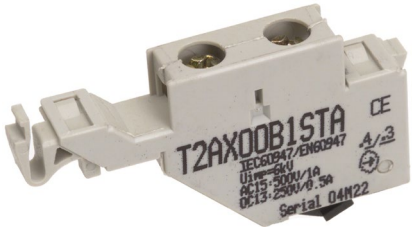
Item Description	Catalogue No.
Alarm Switch 1 C/O	T2AL00M3STA
Alarm Switch 1 C/O Wired	T2AL00M3SWA
Alarm Switch Micro-current 1 C/O	T2AL00M3RTA

Item Description	Catalogue No.
Alarm Switch Heavy Duty 1 N/O	T2AL00B1STA
Alarm Switch Heavy Duty 1 N/C	T2AL00B2STA

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxiliary Switch 1 C/O	T2AX00M3STA
Auxiliary Switch 1 C/O Wired	T2AX00M3SWA
Auxiliary Switch Micro-current 1 C/O	T2AX00M3RTA



Item Description	Catalogue No.
Auxiliary Switch Heavy Duty 1 N/O	T2AX00B1STA
Auxiliary Switch Heavy Duty 1 N/C	T2AX00B2STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00A10TA
Shunt Trip Coil 240 V AC	T2SH00A20TA
Shunt Trip Coil 415 V AC	T2SH00A40TA
Shunt Trip Coil 24 V DC	T2SH00D02TA
Shunt Trip Coil 48 V DC	T2SH00D04TA
Shunt Trip Coil 110 V DC	T2SH00D10TA
Shunt Trip Coil 230 V DC	T2SH00D20TA
Shunt Trip Coil 110 V AC for Use with B160E 1P	T2SH16A10WA
Shunt Trip Coil 240 V AC for Use with B160E 1P	T2SH16A20WA
Shunt Trip Coil 24 V DC for Use with B160E 1P	T2SH16D02WA
Shunt Trip Coil 110 V DC for Use with B160E 1P	T2SH16D10WA
Shunt Trip Coil 230 V DC for Use with B160E 1P	T2SH16D20WA

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 110 V AC	T2UV00A10NTA
Under Voltage Trip Coil Instant 240 V AC	T2UV00A20NTA
Under Voltage Trip Coil Instant 415 V AC	T2UV00A40NTA
Under Voltage Trip Coil Instant 24 V DC	T2UV00D02NTA
Under Voltage Trip Coil Instant 48 V DC	T2UV00D04NTA
Under Voltage Trip Coil Instant 110 V DC	T2UV00D10NTA
Under Voltage Trip Coil Instant 230 V DC	T2UV00D20NTA

Time Delay Operation (500 ms)

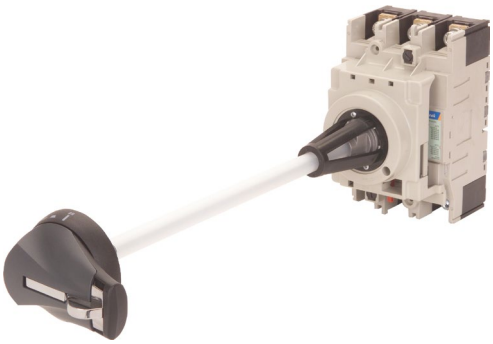
When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500 ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delay 110 V AC 125-630 A 3P	T2UV00A10DSA
Under Voltage Trip Coil Time Delay 200-240 V AC 125-630 A 3P	T2UV00A24DS
Under Voltage Trip Coil Time Delay 380-450 V AC 125-630 A 3P	T2UV00A40DS
Under Voltage Trip Coil Time Delay 24 V DC 125-630 A 3P	T2UV00D02DS
Under Voltage Trip Coil Time Delay 110 V DC 125-630 A 3P	T2UV00D10DS
Under Voltage Trip Coil Time Delay 230 V DC 125-630 A 3P	T2UV00D24DS

Operating External Accessories

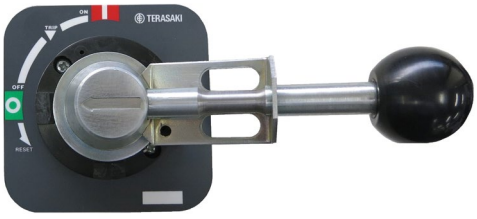
Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

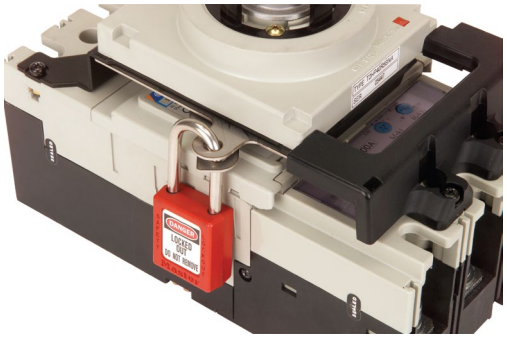


Item Description	Catalogue No.
Door Interlocking Extension Grey, IP55 handle + 356 mm shaft	TPHS25SR5GM
Door Interlocking Extension Red/Yellow, IP55 handle + 356 mm shaft	TPHS25SR5RM

Item Description	Catalogue No.
HS 90 mm Shaft 125/250 AF	T2HS250SHAFT



Item Description	Catalogue No.
Door Interlocking Extension IP65 Metal Handle/Shaft Kit 160/250 AF	T2HP25R6ME



Item Description	Catalogue No.
Door Interlocking Padlck Device/Handle Mechanism 125/250 AF	T2HP25PALK

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

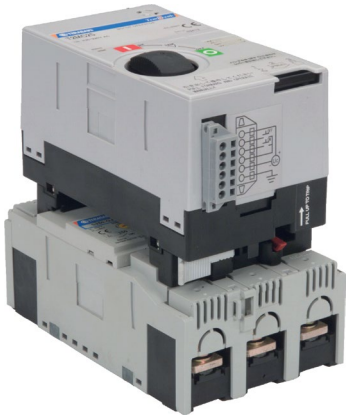
Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

Item Description	Catalogue No.
Door Interlocking Extension IP65 Black Handle/Shaft Kit 160/250 AF	T2HP25R6BN
Door Interlocking Extension IP65 Red Handle/Shaft Kit 160/250 AF	T2HP25R6RN

Motor Operator

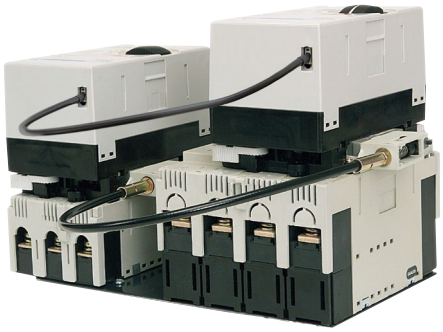
Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs



Item Description	Catalogue No.
Motor Operator 110 V AC 160/250AF	T2MC25A10NB
Motor Operator 240 V AC 160/250 AF	T2MC25A24NB
Motor Operator 24 V DC 160/250 AF	T2MC25D02NB
Motor Operator 48 V DC 160/250AF	T2MC25D04NB
Motor Operator 110 V DC 160/250 AF	T2MC25D10NB

Motor Operator Accessories

Provides electrical interlocking between 2 motors to prevent simultaneous operation



Item Description	Catalogue No.
Motor Interlock Cable (0.5 m) Between T2MC12 and T2MC25/25L	T2MM25L05A
Motor Interlock Cable (1.5 m) Between T2MC12 and T2MC25/25L	T2MM25L15A

Item Description	Catalogue No.
Motor Interlock Cable (0.6 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S06A
Motor Interlock Cable (2.1 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S21A

Locking and Interlocking Accessories

Cable Mechanical Interlock

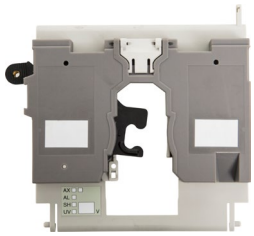
Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 M apart

Item Description	Catalogue No.
Cable Interlock Mechanism for 125 AF and 160/250 AF	T2MW25CA

Item Description	Catalogue No.
Cable Interlock Wire (1.0 m)	T2MW00SA
Cable Interlock Wire (1.5 m)	T2MW00LA

Link Mechanical Interlock

Prevents simultaneous operation of two horizontally mounted interlocked MCCBs.



Item Description	Catalogue No.
Mechanical Interlock Right Link Interlock 160 / 250 AF	T2ML25RA
Mechanical Interlock Left Link Interlock 3P 160 / 250 AF	T2ML25L3A
Mechanical Interlock Left Link Interlock 4P 160 / 250 AF	T2ML25L4A

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option

Item Description	Catalogue No.
Captive Toggle Lock 250 AF	T2HL25CAP

Non-captive

Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Non Captive Toggle Lock 125 / 250 AF	T2HL25B

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches

Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, standard key code, A	440TAKEYE100A
Prosafe, standard key code, B	440TAKEYE100B
Prosafe, standard key code, C	440TAKEYE100C
Prosafe, standard key code, D	440TAKEYE100D
Prosafe, standard key code, E	440TAKEYE100E
Prosafe, standard key code, F	440TAKEYE100F
Prosafe, standard key code, G	440TAKEYE100G
Prosafe, standard key code, H	440TAKEYE100H
Prosafe, Standard Key Code I	440TAKEYE100I
Prosafe, Standard Key Code J	440TAKEYE100J
Prosafe, Standard Key Code K	440TAKEYE100K
Prosafe, Standard Key Code L	440TAKEYE100L
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, Standard Key	440TAKEYE10X

Mounted

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys

Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10BA
Single key shot bolt lock, key not included	440TMSBLE10X

Installation External Accessories

Door Flange

A door mount flange providing a plastic surround for the panel or escutcheon cutout

Item Description	Catalogue No.
Door Flange IP30 Gland and Gasket, 125 AF / 250 AF MCCB	T2DF25A
Door Flange IP30 Gland and Gasket, 125 AF / 250 AF Motor	T2DM25A

Pole Fillers

A clip in filler 9 mm wide for vacant pole positions for 46 mm DIN cut-outs

Item Description	Catalogue No.
DIN Pole Filler (1 Strip Of 12 Poles, 24 X 9 mm Segments)	DTPF12
DIN Pole Filler (1 Strip Of 4 Poles, 8 X 9 mm Segments)	DTPF

Item Description	Catalogue No.
Pole Filler 35 mm Wide for 250 AF MCCBs with a 104 mm Cut-out	XAB3

Terminal Clamps

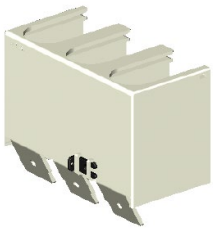
Allows cable to be terminated directly to the MCCB and clamped for good connectivity

Item Description	Catalogue No.
Tunnel Terminal 4 Pole, Set of 8 Clamps, 35 – 120 mm², B160, B250, ZS250	T2FW25L3B
Tunnel Terminal 3 Pole, Set of 6 Clamps, 35 – 120 mm², B160, B250, ZS250	T2FW25L4B

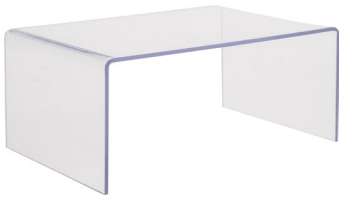
Terminal Covers

Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area



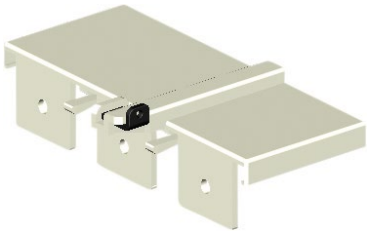
Item Description	Catalogue No.
Extended Terminal Covers Front Connect 3 Pole Single Cover, 55 mm Long, Narrow Cover, B160, B250	T2CF253LLHP
Extended Terminal Covers Front Connect 4 Pole Single Cover, 55 mm Long, Narrow Cover, B160, B250	T2CF254LLHP



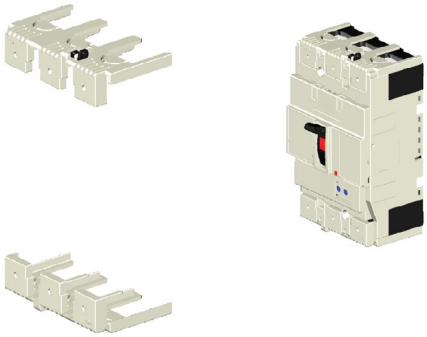
Item Description	Catalogue No.
Extended Terminal Covers Front Connect 3-4 Pole Single Cover, 100 mm Long, Wide “Top Hat, B160, B250	T2CF253WC

Flush Front Terminal Covers

Provides front finger touch protection with MCCBs used with tunnel terminals or chassis



Item Description	Catalogue No.
Flush IP20 Terminal Covers, Front Connected, 1 Pole Cover, Set of 2	T2CS161SP



Item Description	Catalogue No.
3 Pole, Single Cover	T2CS253SHP
4 Pole, Single Cover	T2CS254SHP
1 Pole, Set of Two (2) Covers	T2CS161SP
3 Pole, Set of Two (2) Covers	T2CS253SNP
4 Pole, Set of Two (2) Covers	T2CS254SNP

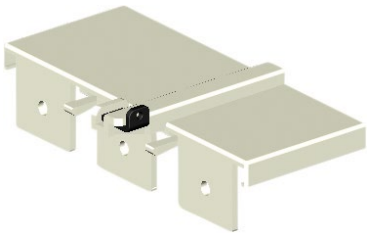
Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier (Set of 2)	T2BA253LH

Rear Connect Terminal Covers

Provides front finger touch protection with MCCBs used with rear terminals and HC chassis



Item Description	Catalogue No.
3 Pole Single Cover	T2CR254SHP
4 Pole Single Cover	T2CR253SHP
3 Pole Covers, Set of 2	T2CR253SNP
4 Pole Covers, Set of 2	T2CR254SNP

Terminal Cover Locking Clip

Used with terminal covers to prevent unauthorised removal or access to terminal area

Item Description	Catalogue No.
Terminal Cover Locking Clip	T2CF00L

Tunnel Clamp Terminals

Allows cable to be terminated directly to the MCCB and clamped for good connectivity

Item Description	Catalogue No.
Tunnel Terminal 4 Pole, Set of 8 Clamps, 35 – 120 mm², B160, B250, ZS250	T2FW25L3B
Tunnel Terminal 3 Pole, Set of 6 Clamps, 35 – 120 mm², B160, B250, ZS250	T2FW25L4B

A250_TM

Thermal Magnetic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount as standard, with other mounting options available
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ Suits XBP chassis, with panelboard options available
- ✔ Compact: 165 mm H, 68 mm D, 35 mm pole pitch
- ✔ Fault ratings; 25, 36 kA I_{CU} @ 415 V AC
- ✔ Utilisation ratings from 24 V to 690 V AC (refer model), 250 V DC
- ✔ Thermal magnetic trip unit: adjustable thermal / adjustable magnetic
- ✔ Trip units: 100, 125, 160, 250 A (refer model)

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Trip Unit Rating	100 / 125 / 160 / 250 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**E**	25 kA
	F	36 kA

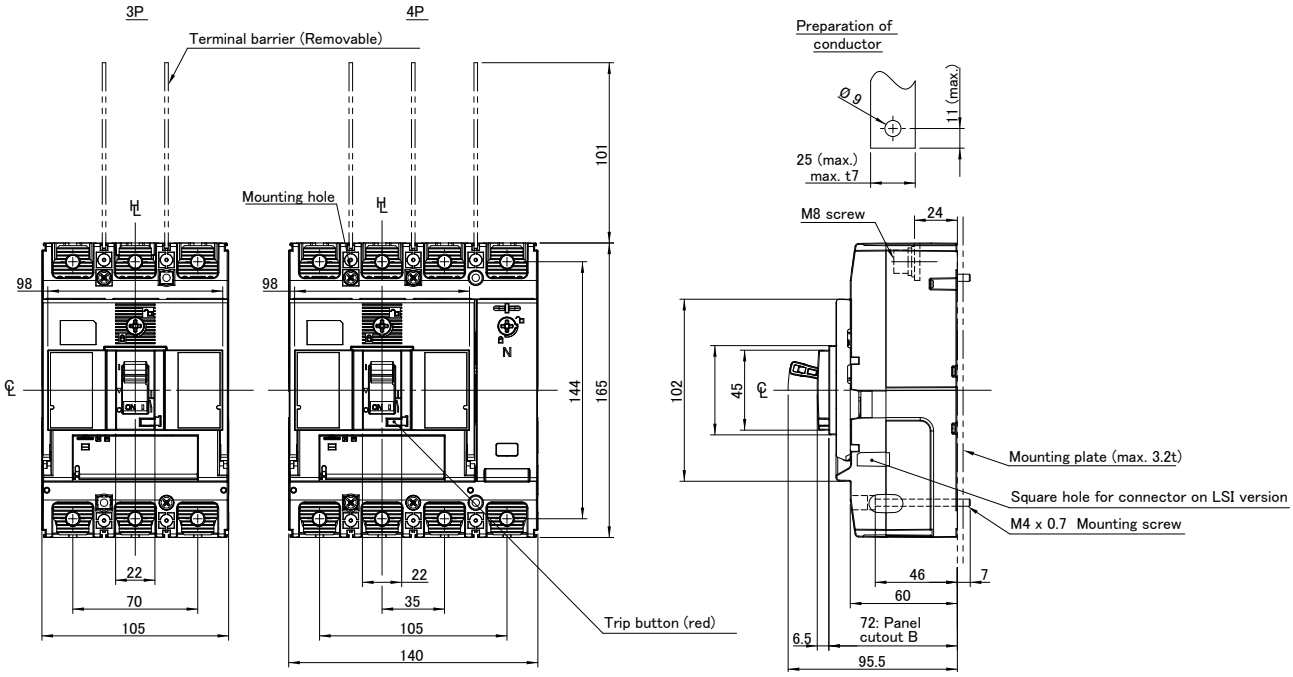
Voltage

Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option)

Quick Reference Dimensions – Front Connect



250 A Frame 3 Pole 25 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
100	63 - 100	500 - 1300	25	3	35	A250E3100TM
125	80 - 125	625 - 1625	25	3	35	A250E3125TM
160	100 - 160	800 - 2080	25	3	35	A250E3160TM
250	158 - 250	1250 - 2750	25	3	35	A250E3250TM

250 A Frame 3 Pole 36 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
160	100 - 160	800 - 2080	36	3	35	A250F3160TM
250	160 - 250	1250 - 2750	36	3	35	A250F3250TM

250 A Frame 4 Pole 25 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
100	63 - 158	500 - 1300	25	4	35	A250E4100TM
125	80 - 160	625 - 1625	25	4	35	A250E4125TM
160	100 - 100	800 - 2080	25	4	35	A250E4160TM
250	158 - 250	1250 - 2750	25	4	35	A250E4250TM

250 A Frame 4 Pole 36 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
160	100 - 160	800 - 2080	36	4	35	A250F4160TM
250	160 - 250	1250 - 2750	36	4	35	A250F4250TM

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	250 AF
Trip Unit Rating	100 / 125 / 160 / 250 A

In, Rated Current

A@30C	100	125	160	250
A@45°C	100	125	160	250
A@50C	100	125	160	250

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	690 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC / DC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	100	125	160	250
(W)	8.9	8.2	11.4	16

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 185 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option)
Terminal Type	Bolt-Terminal
Connection Torque	7.8 - 12.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	HC Chassis XBP Chassis XBPSS Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	No
Mounting	-

Physical

Height		165 mm
Width	**3P**	105 mm
	4P	140 mm
Depth (less toggle)		68 mm
Depth (toggle included)		95 mm
Weight	**3P**	1.5 kg
	4P	1.9 kg
Electrical Life		6000 cycles
Mechanical Life		18000 cycles

Short-Circuit Capacity

			kA Rating	
			MCCB Type	
		Voltage	E	F
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	35	85
		380 / 400 V AC	25	36
		415 V AC	25	36
		440 V AC	15	30
		690 V AC	-	4
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	25	40
		250 V DC	15	25
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	27	43
		380 / 400 V AC	19	20
		415 V AC	19	20
		440V AC	12	15
		690 V AC	-	2
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	20	20
		250 V DC	12	13

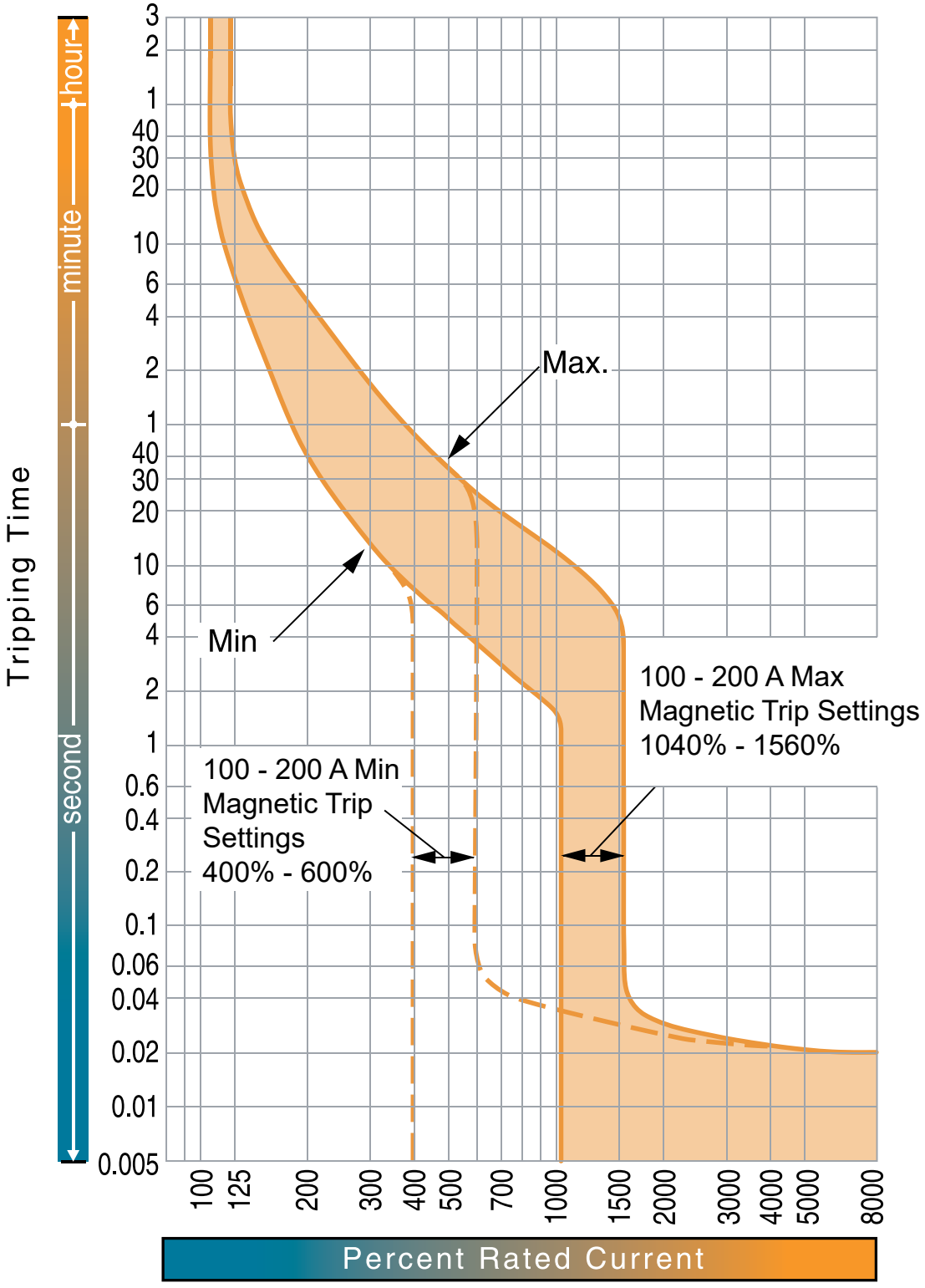
Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Rated Temperature	50 °C

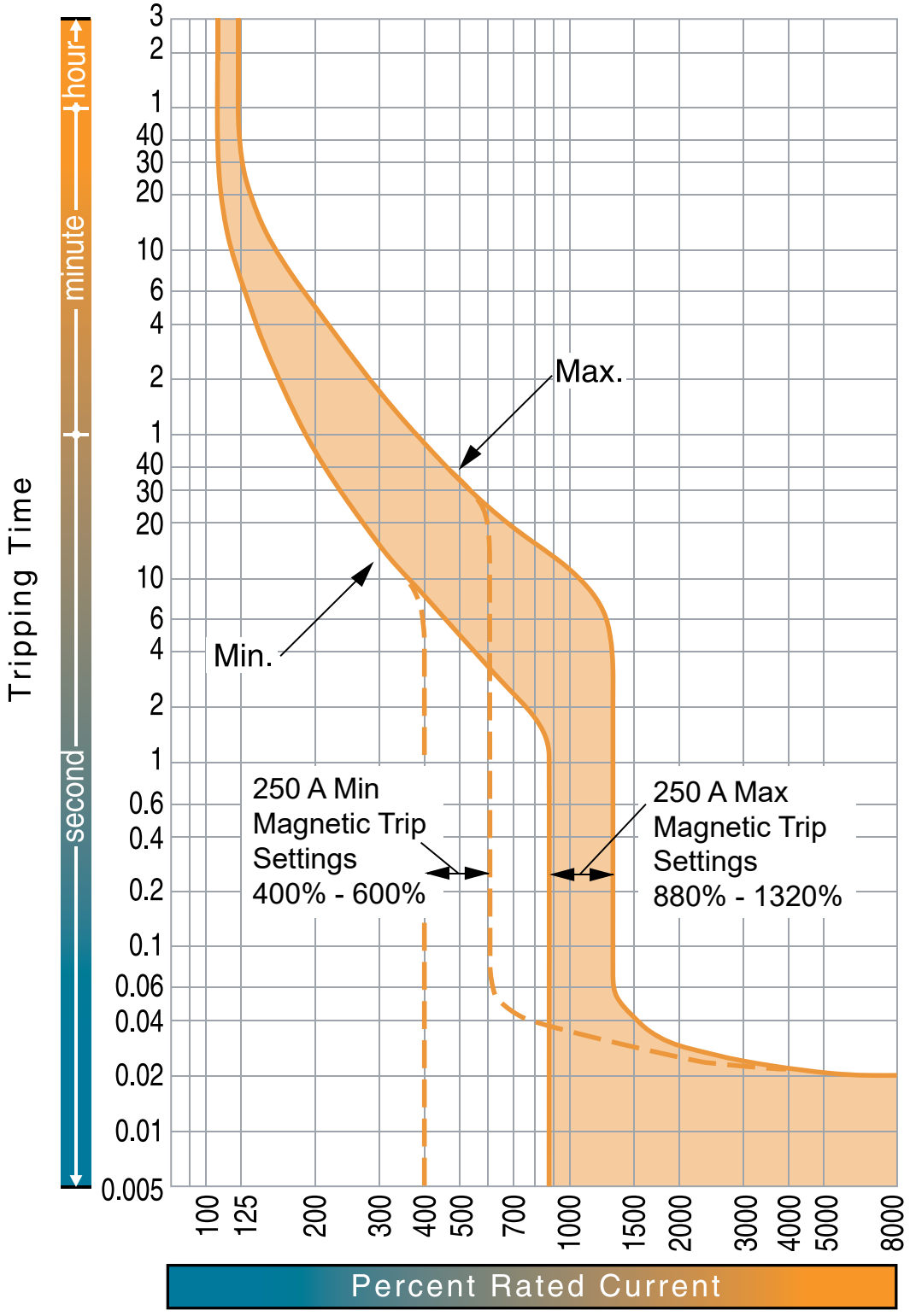
General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

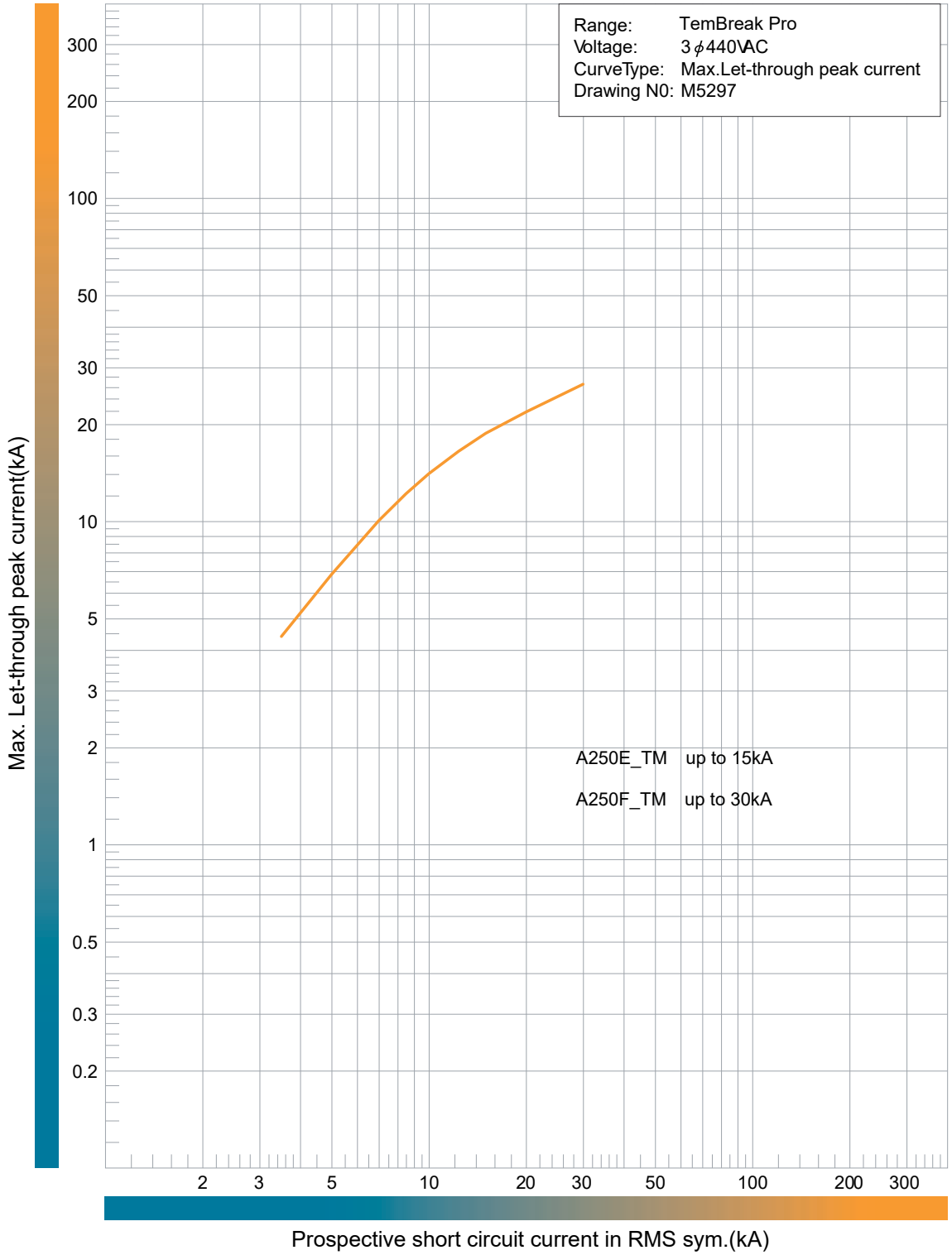
Time Current Characteristics Curve 100 - 200 A, A250, Thermal Magnetic



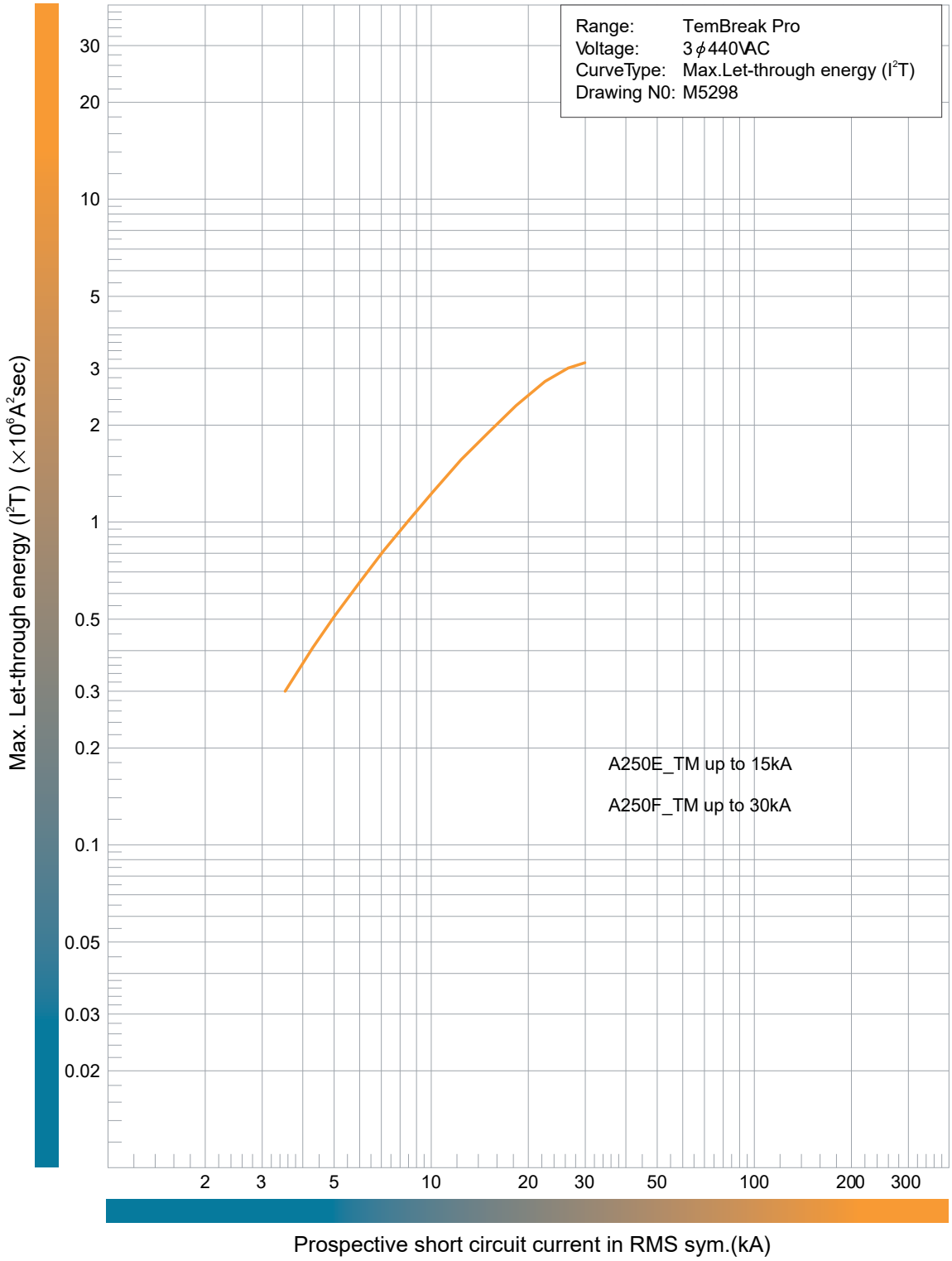
Time Current Characteristics Curve 250 A, A250, Thermal Magnetic



Let-Through Peak Current Curve, A250_TM, Thermal Magnetic



Let-Through Energy I²t Curve, A250_TM, Thermal Magnetic



Dimensions A250_TM, P250_TM/BE/BEG/NN, Front Connect (mm)

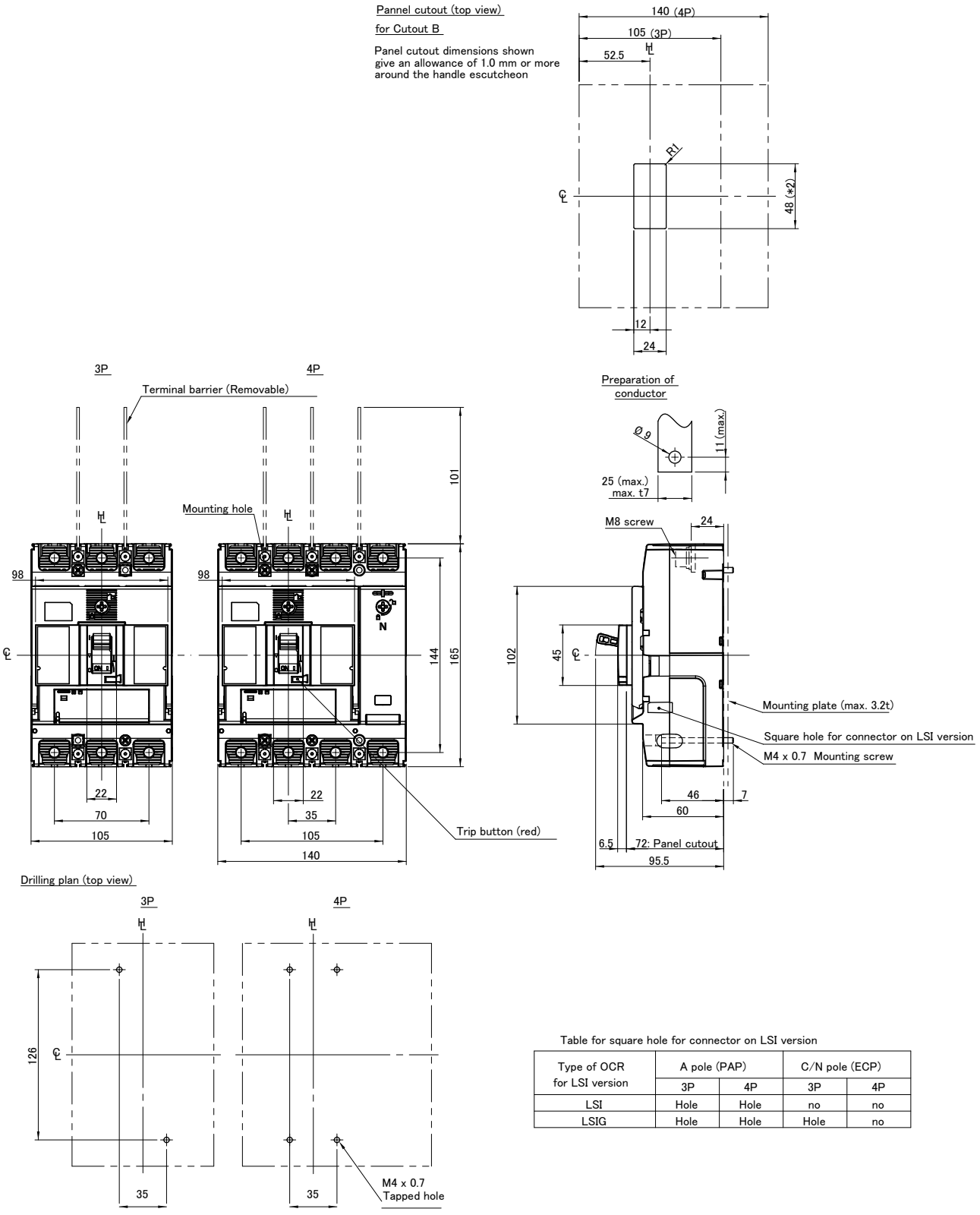
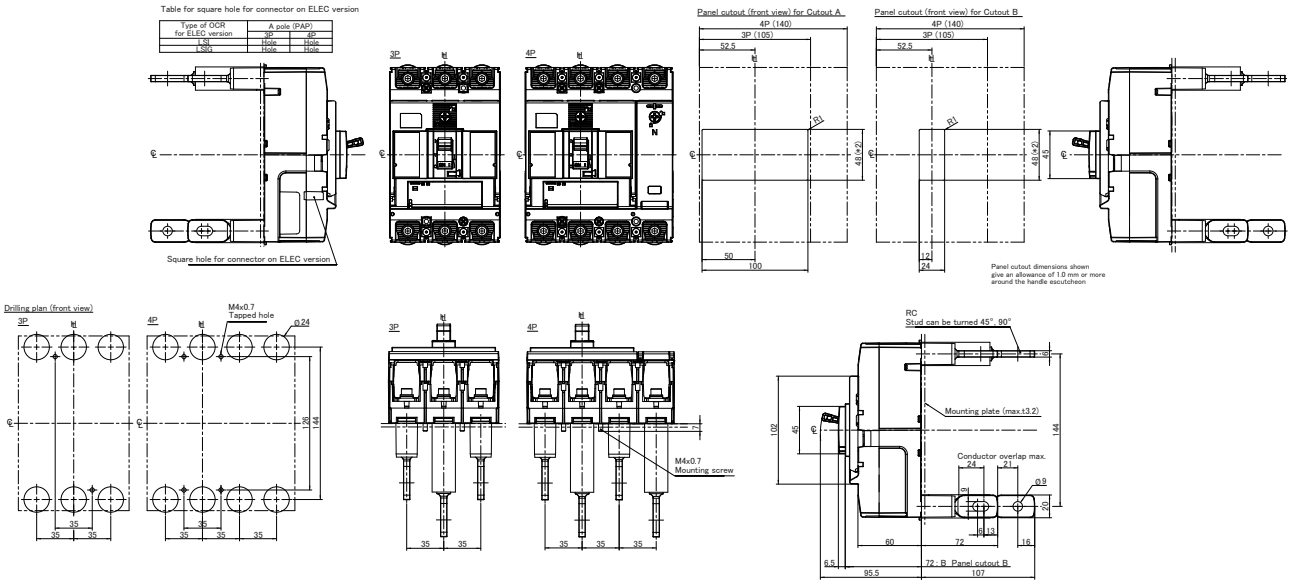


Table for square hole for connector on LSI version

Type of OCR for LSI version	A pole (PAP)		C/N pole (ECP)	
	3P	4P	3P	4P
LSI	Hole	Hole	no	no
LSIG	Hole	Hole	Hole	no

Dimensions A250_TM, P250_TM/BE/BEG/NN, Rear Connect (mm)



A250_NN

Non-Auto Switch Disconnector

- ✔ Non-Auto switch disconnector for power distribution
- ✔ AC23 and DC22 ratings for motor starting use. No overcurrent protection (isolator only)
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-3, IEC 60947-3 and CE
- ✔ Panel mount as standard, other connection options available
- ✔ Wide range of accessories for application flexibility, including OFF padlock device
- ✔ Accepts standard MCCB internal and external accessories
- ✔ 3 or 4 pole versions
- ✔ Suits XBP chassis, with panelboard options
- ✔ Compact 165 mm H, 68 mm D, 35 mm pole centres
- ✔ I_{CW}= 3 kA for 0.3 sec: Rated short time withstand rating
- ✔ I_{CM}= 6 kA: Rated short circuit making capacity

CE DEKRA On the safe side.

General

Switch Type	Non Auto Switch Disconnector
Number of Poles	3 or 4
Switching Poles	3P or 3P + N

Ratings

Nominal Current	250 A @ 50 °C
Motor Starting	AC23 motor starting DC22 motor starting
Icw Rated	Short time withstand
Icm Rated	Ampere making capacity

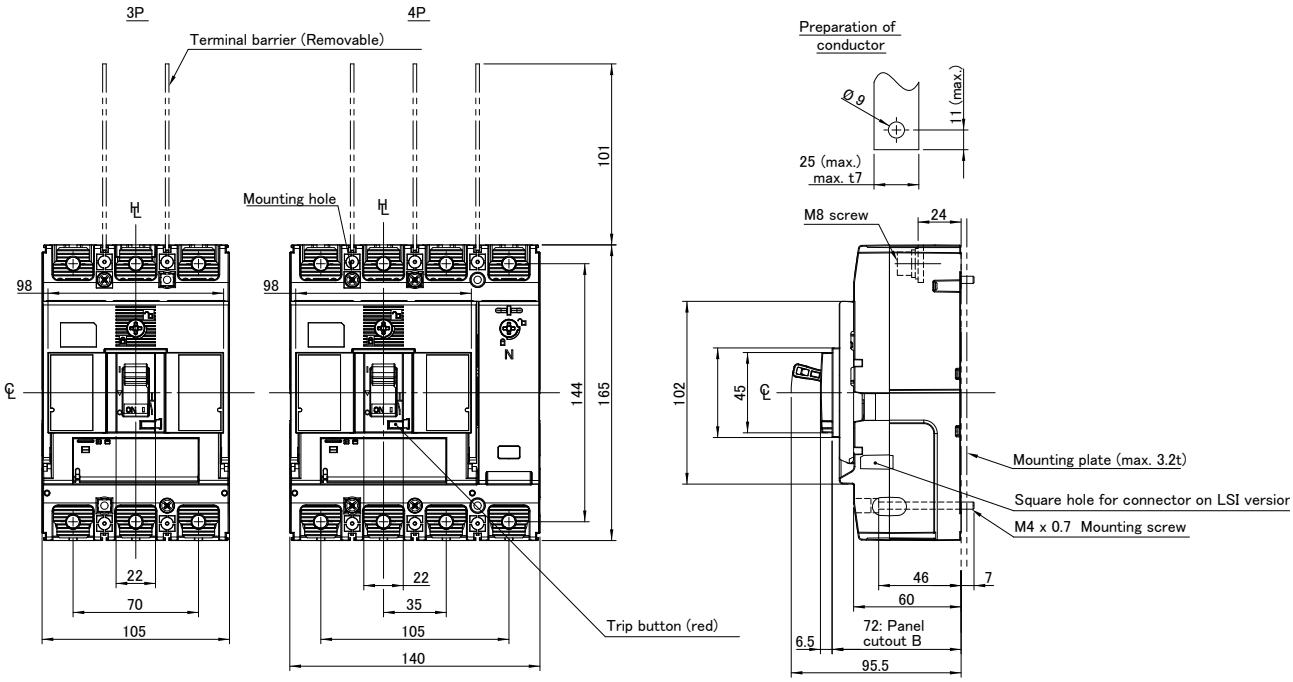
Voltage

Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Accessories and Connections

Options	Front or rear connect Terminal connection options Accepts standard MCCB accessories

Quick Reference Dimensions – Front Connect



250 A Frame 3 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Pole Width (mm)	Catalogue No.
250	3	35	A250D3250NN

Ratings

Component Type	Non Auto Switch Disconnector
Number of Poles	3
Switching Poles	3P
Frame Size	250 AF

I_n, Rated Current	
A @ 30 °C	250
A @ 45 °C	250
A @ 50 °C	250

U_e Rated operational voltage AC maximum	690 V AC
U_e Rated operational voltage DC maximum	250 DC
U_i, Rated Insulation Voltage	800 V (rms)
Motor Starting Utilisation Category	AC 23, DC 22
U_{imp}, Impulse Withstand Voltage	8 kV
Icw, Rated Short Circuit Withstand Current 400/690V	3 kA / 0.3 Sec
Rated Frequency	50 / 60 Hz
Pollution Degree	3
AC Power loss per pole at full rated current	16 W @ 250 A
Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-3 AS/NZS 60947-3
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 185 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option)
Terminal Type	Bolt-Terminal
Connection Torque	7.8 - 12.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	XBSS Chassis HC Chassis XBP Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		165 mm
Width	**3P**	105 mm
Depth (less toggle)		68 mm
Depth (toggle included)		95 mm
Weight	**3P**	1.5 kg
Electrical Life		10000 cycles
Mechanical Life		10000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**D**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cm} (Short Circuit Making Capacity)	690 V AC	6
	I_{cw} (Short Time Withstand)	0.3 Seconds	3

Trip Unit

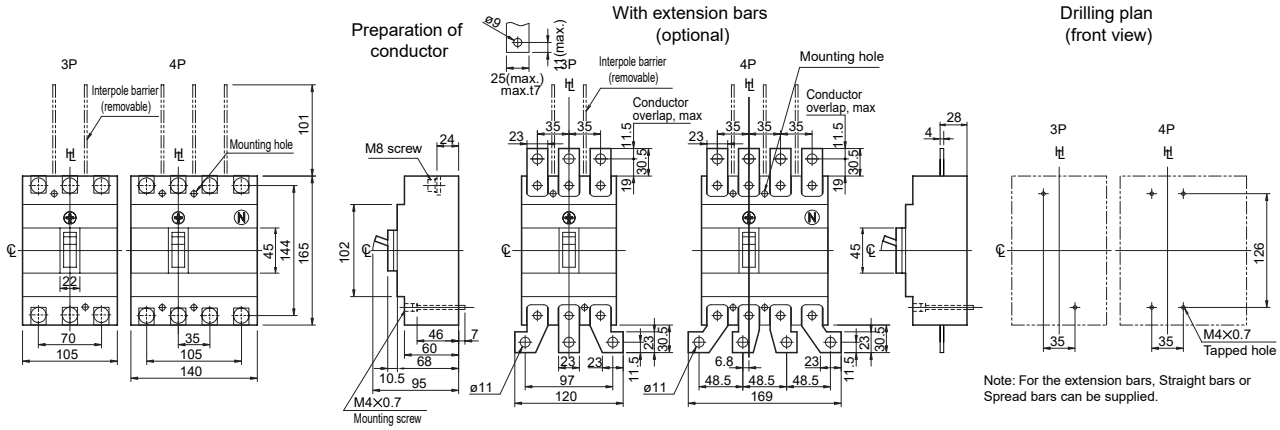
Over Current Protection Function	No
Trip Unit Protection Type	Non-auto Switch Disconnector
Rated Temperature	50 °C

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

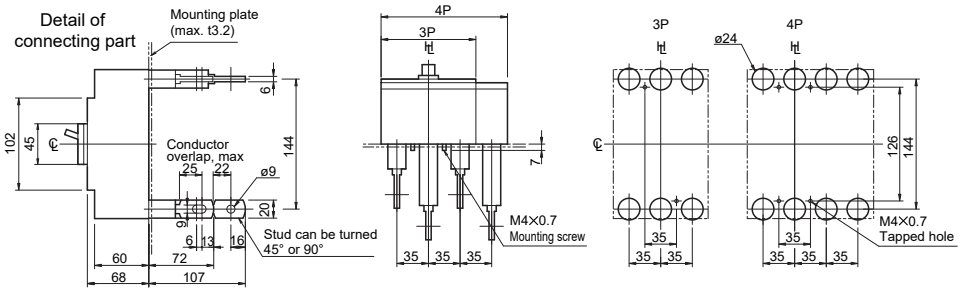
Dimensions A250_NN, Front Connect (mm)

Front Connected

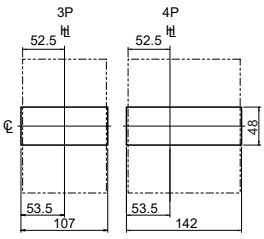


Note: For the extension bars, Straight bars or Spread bars can be supplied.

Rear Connected



Panel cutout (front view)



Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon.

A250 AF Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits

Item Description	Catalogue No.
Alarm, Left Side Pocket Only 1 C/O	T2AL00LML3STA

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxilary 1 C/O	T2AX00LML3STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00LA10T
Shunt Trip Coil 230 - 240 V AC	T2SH00LA20T
Shunt Trip Coil 400 - 415 V AC	T2SH00LA40T
Shunt Trip Coil 24 V DC	T2SH00LD02T
Shunt Trip Coil 48 V DC	T2SH00LD04T
Shunt Trip Coil 110 V DC	T2SH00LD10T
Shunt Trip Coil 230 V DC	T2SH00LD20T

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 110 V AC	T2UV00LA10NT
Under Voltage Trip Coil Instant 230 - 240 V AC	T2UV00LA20NT
Under Voltage Trip Coil Instant 400 - 440 V AC	T2UV00LA40NT
Under Voltage Trip Coil Instant 24 V DC	T2UV00LD02NT
Under Voltage Trip Coil Instant 110 V DC	T2UV00LD10NT
Under Voltage Trip Coil Instant 230 V DC	T2UV00LD20NT

Time Delay Operation (500 ms)

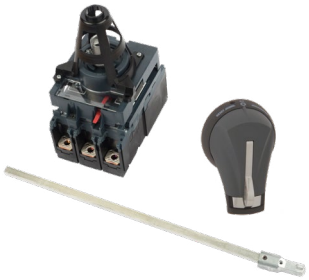
When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500 ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delay 110 V AC	T2UV00LA10DS
Under Voltage Trip Coil Time Delay 230 - 240 V AC	T2UV00LA24DS
Under Voltage Trip Coil Time Delay 440 - 450 V AC	T2UV00LA45DS
Under Voltage Trip Coil Time Delay 24 V DC	T2UV00LD02DS
Under Voltage Trip Coil Time Delay 110 V DC	T2UV00LD10DS
Under Voltage Trip Coil Time Delay 230 V DC	T2UV00LD24DS

Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation



Item Description	Catalogue No.
TPHS Compact Handle Grey, IP55 Handle + 356 mm Shaft, Metal Lock Lever	TPHS25LR5GM
TPHS Compact Handle Red/Yellow, IP55 Handle + 356 mm Shaft, Metal Lock Lever	TPHS25LR5RM

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

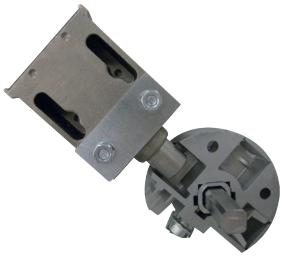
Item Description	Catalogue No.
TPHP Square Handle Grey, IP65 Handle + 445 mm Shaft	T2HP25LR6BNP
TPHP Square Handle Red/Yellow, IP65 Handle + 445 mm Shaft	T2HP25LR6RNP

Handle Options

A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
HS 90 mm Shaft 125/250 AF	T2HS250SHAFT



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Item Description	Catalogue No.
MCCB / Handle Mechanical Padlock Attachment	TBPHP25PALK

Motor Operator

Allows remote switching of an MCCB to ON or OFF or resetting tripped MCCBs.

Item Description	Catalogue No.
Motor Operators 110 V AC A250 MCCBs only	T2MC25LA10NP
Motor Operators 230 - 240 V AC A250 MCCBs only	T2MC25LA24NP
Motor Operators 24 V DC A250 MCCBs only	T2MC25LD02NP
Motor Operators 48 V DC A250 MCCBs only	T2MC25LD04NP
Motor Operators 110 V DC A250 MCCBs only	T2MC25LD10NP
Motor Operators 230 V DC A250 MCCBs only	T2MC25LD20NP

MCCBs

Locking and Interlocking Accessories

Cable Mechanical Interlock

Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 M apart

Item Description	Catalogue No.
Cable Interlock Less Wire. Qty 1. Order 1 Interlock for Each MCCB Used.	T2MW25LCP

Item Description	Catalogue No.
Cable Interlock Wire (1.0 m)	T2MW00SA
Cable Interlock Wire (1.5 m)	T2MW00LA

Link Mechanical Interlock

Prevents simultaneous operation of two horizontally mounted interlocked MCCBs.

Item Description	Catalogue No.
Mechanical Interlock 3 Pole Right Side Section Common Section	T2ML25LRP
Mechanical Interlock 3 Pole Left Side Section	T2ML25LL3P
Mechanical Interlock 4 Pole Left Side Section	T2ML25LL4P

Toggle Locks

Non-captive

Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Toggle Lock with 5 mm x 16.5 mm slot	T2HL25L

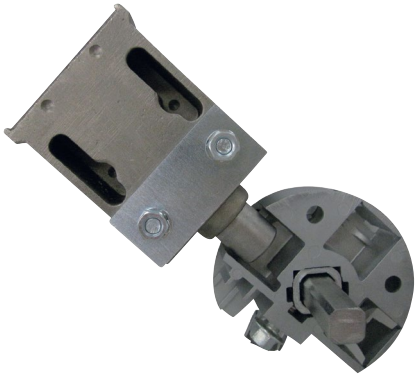
Captive

Contact NHP for Captive Toggle Locks.

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Mounted

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

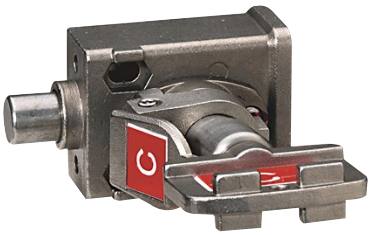
Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, Standard Key	440TAKEYE10X

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys



Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10BA
Single key shot bolt lock, key not included	440TMSBLE10X

Installation External Accessories

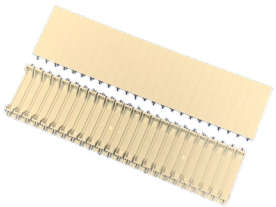
Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier, Set of Two (2) 250 AF	T2BA25L3SH

Pole Fillers

A clip in filler 9 mm wide for vacant pole positions for 46 mm DIN cut-outs

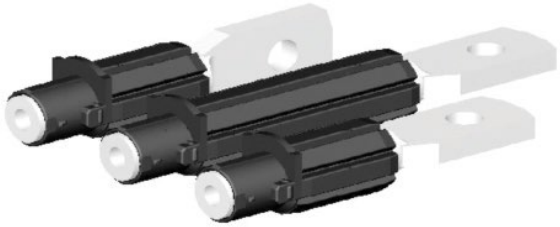


Item Description	Catalogue No.
DIN Pole Filler (1 Strip Of 12 Poles, 24 X 9 mm Segments)	DTPF12
DIN Pole Filler (1 Strip Of 4 Poles, 8 X 9 mm Segments)	DTPF

Item Description	Catalogue No.
Pole Filler 35 mm Wide for 250 AF MCCBs with a 104 mm Cut-out	XAB3

Rear Connection Studs

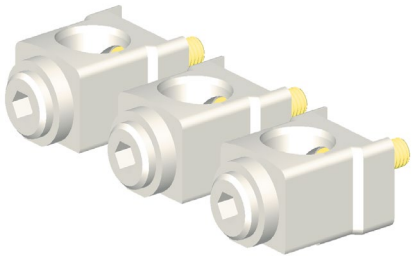
Allows MCCB main connections to be made at the rear of the MCCB



Item Description	Catalogue No.
Rear Connect Terminal Studs 3 Pole Kit, Set of 6 Studs P250	T2RP25L3SA
Rear Connect Terminal Studs 4 Pole Kit, Set of 8 Studs P250	T2RP25L4SA

Tunnel Clamp Terminals

Allows cable to be terminated directly to the MCCB and clamped for good connectivity

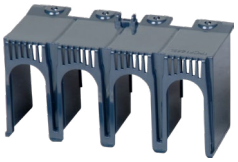


Item Description	Catalogue No.
3 Pole, Set of 3 Clamps, 35 - 120 mm²	T2FW25LS3A
4 Pole, Set of 4 Clamps, 35 -120 mm²	T2FW25LS4A

Terminal Covers

Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area



Item Description	Catalogue No.
3 Pole Single Cover, 55 mm Long, Narrow Cover	T2CF25L3SLHP
4 Pole Single Cover, 55 mm Long, Narrow Cover	T2CF25L4SLHP
3 Pole Set of Two (2) Covers, 55 mm Long, Narrow Covers	T2CF25L3SLNP
4 Pole Set of Two (2) Covers, 55 mm Long, Narrow Covers	T2CF25L4SLNP
3 Pole Single Cover, 55 mm Long, Narrow Cover with Rear Earth Barrier	T2CF25L3SLEP
4 Pole Single Cover, 55 mm Long, Narrow Cover with Rear Earth Barrier	T2CF25L4SLEP

Item Description	Catalogue No.
3 Pole Single Cover, 55 mm Long, Wide Cover	T2CF25L3SWHP
4 Pole Single Cover, 55 mm Long, Wide Cover	T2CF25L4SWHP
3 Pole Set of Two (2) Covers, 55 mm Long, Wide Cover	T2CF25L3SWNP
4 Pole Set of Two (2) Covers, 55 mm Long, Wide Cover	T2CF25L4SWNP

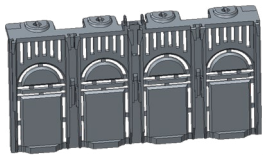
Flush Front Terminal Covers

Provides front finger touch protection with MCCBs used with tunnel terminals or chassis

Item Description	Catalogue No.
3 Pole Single Cover	T2CS25L3SHP
4 Pole Single Cover	T2CS25L4SHP
3 Pole Covers Set of Two (2)	T2CS25L3SP
4 Pole Covers Set of Two (2)	T2CS25L4SP

Rear Connect Terminal Covers

Provides front finger touch protection with MCCBs used with rear terminals and HC chassis



Item Description	Catalogue No.
3 Pole Single Cover	T2CR25L3SHP
4 Pole Single Cover	T2CR25L4SHP
3 Pole Covers, Set of 2	T2CR25L3SP
4 Pole Covers, Set of 2	T2CR25L4SP

Short Terminal Covers Front Connect

Provides front, side and internal isolation between poles in the MCCB power terminal area

Item Description	Catalogue No.
3 Pole Single Cover, 25 mm Long, Narrow Cover	T2CF25L3SSHP
4 Pole Single Cover, 25 mm Long, Narrow Cover	T2CF25L4SSHP
3 Pole Set of Two (2) Covers, 25 mm Long, Narrow Cover	T2CF25L3SSNP
4 Pole Set of Two (2) Covers, 25 mm Long, Narrow Cover	T2CF25L4SSNP

Terminal Cover Locking Clip

Used with terminal covers to prevent unauthorised removal or access to terminal area

Item Description	Catalogue No.
Terminal Cover Locking Clip Suits A250, P250	T2CF25LL

P250_TM

Thermal Magnetic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ Suits XBP and XCP chassis, with panelboard options
- ✔ Compact 165 mm H, 68 mm D, 35 mm pole centres
- ✔ Fault ratings; 36, 50 or 70 kA I_{CU} @ 415 V AC
- ✔ 100% I_{CU} / I_{CS} on models up to 50 kA
- ✔ Utilisation ratings from 24 V to 690 V AC, 250 V DC
- ✔ Thermal magnetic trip unit: adjustable thermal / adjustable magnetic
- ✔ Trip units: 50, 63, 100, 125, 160, 250 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Trip Unit Rating	50 / 63 / 100 / 125 / 160 / 250 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**F**	36 kA
	N	50 kA
	H	70 kA

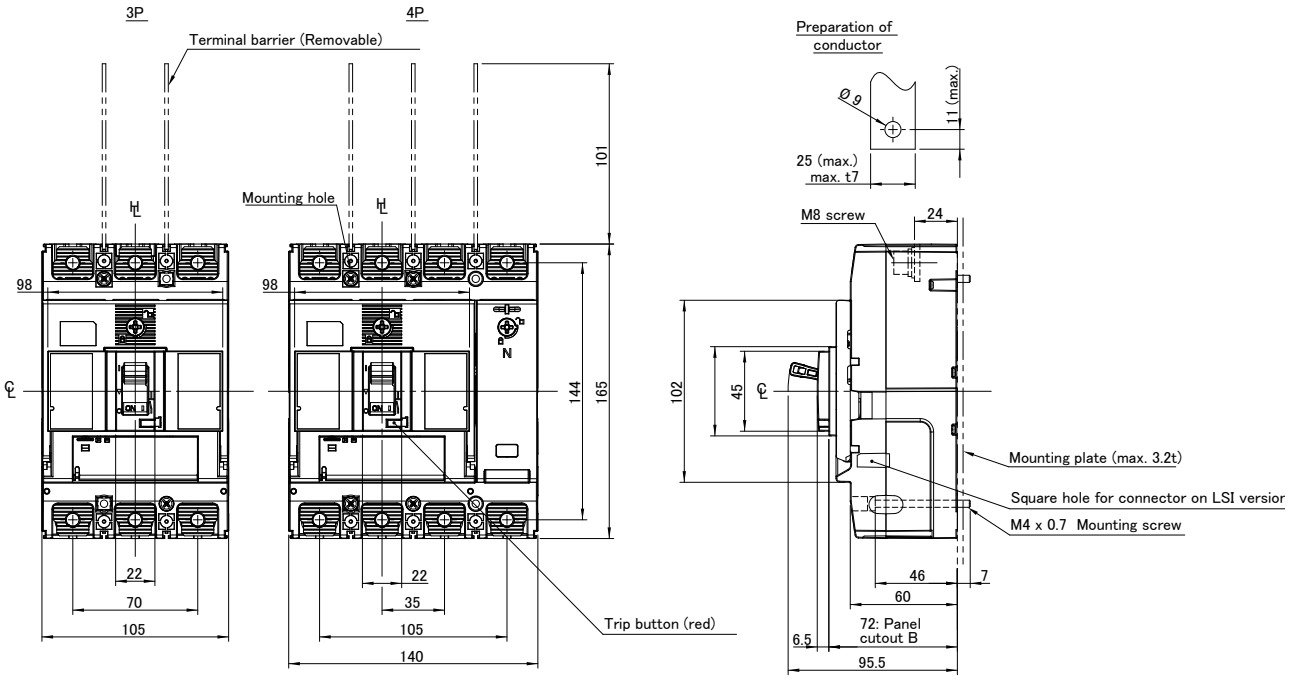
Voltage

Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option) Withdrawable TPDR

Quick Reference Dimensions – Front Connect



250 A Frame 3 Pole 36 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
50	32 - 50	300 - 650	36	3	35	P250F350TM
63	40 - 63	378 - 819	36	3	35	P250F363TM
100	63 - 100	600 - 1300	36	3	35	P250F3100TM
125	80 - 125	750 - 1625	36	3	35	P250F3125TM
160	100 - 160	960 - 2080	36	3	35	P250F3160TM
250	160 - 250	1500 - 2500	36	3	35	P250F3250TM

250 A Frame 3 Pole 50 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
50	32 - 50	300 - 650	50	3	35	P250N350TM
63	40 - 63	378 - 819	50	3	35	P250N363TM
100	63 - 100	600 - 1300	50	3	35	P250N3100TM
125	80 - 125	750 - 1625	50	3	35	P250N3125TM
160	100 - 160	960 - 2080	50	3	35	P250N3160TM
250	160 - 250	1500 - 2500	50	3	35	P250N3250TM

250 A Frame 3 Pole 70 kA TM (Thermal Magnetic)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
50	32 - 50	300 - 650	70	3	35	P250H350TM
63	40 - 63	378 - 819	70	3	35	P250H363TM
100	63 - 100	600 - 1300	70	3	35	P250H3100TM
125	80 - 125	750 - 1625	70	3	35	P250H3125TM
160	100 - 160	960 - 2080	70	3	35	P250H3160TM
250	160 - 250	1500 - 2500	70	3	35	P250H3250TM

250 A Frame 4 Pole 36 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
50	32 - 50	300 - 650	36	4	35	P250F450TM
63	40 - 63	378 - 819	36	4	35	P250F463TM
100	63 - 100	600 - 1300	36	4	35	P250F4100TM
125	80 - 125	750 - 1625	36	4	35	P250F4125TM
160	100 - 160	960 - 2080	36	4	35	P250F4160TM
250	160 - 250	1500 - 2500	36	4	35	P250F4250TM

250 A Frame 4 Pole 50 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
50	32 - 50	300 - 650	50	4	35	P250N450TM
63	40 - 63	378 - 819	50	4	35	P250N463TM
100	63 - 100	600 - 1300	50	4	35	P250N4100TM
125	80 - 125	750 - 1625	50	4	35	P250N4125TM
160	100 - 160	960 - 2080	50	4	35	P250N4160TM
250	160 - 250	1500 - 2500	50	4	35	P250N4250TM

250 A Frame 4 Pole 70 kA TM (Thermal Magnetic)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
50	32 - 50	300 - 650	70	4	35	P250H450TM
63	40 - 63	378 - 819	70	4	35	P250H463TM
100	63 - 100	600 - 1300	70	4	35	P250H4100TM
125	80 - 125	750 - 1625	70	4	35	P250H4125TM
160	100 - 160	960 - 2080	70	4	35	P250H4160TM
250	160 - 250	1500 - 2500	70	4	35	P250H4250TM

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	250 AF
Trip Unit Rating	50 / 63 / 100 / 125 / 160 / 250 A
I_n, Rated Current (A)	
Contact NHP	
U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC / DC
Rated Frequency	50 / 60 Hz
Pollution Degree	3
Trip Unit Rating (A) - Power Loss Per Pole (W)	
(A) (W) Contact NHP	
Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 185 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option) Withdrawable TPDR
Terminal Type	Bolt-Terminal
Connection Torque	7.8 - 12.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	XBP Chassis XCP Chassis XBPSS Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		165 mm
Width	**3P**	105 mm
	4P	140 mm
Depth (less toggle)		68 mm
Depth (toggle included)		95.5 mm
Weight	**3P**	1.5 kg
	4P	2 kg
Electrical Life		10000 cycles
Mechanical Life		30000 cycles

Short-Circuit Capacity

			kA Rating		
			MCCB Type		
		Voltage	F	N	H
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	230 / 240 V AC	50	85	85
		400 V AC	36	85	85
		415 V AC	36	50	70
		440 V AC	25	36	50
		690 V AC	6	6	6
		1000 V AC	-	-	-
		1100 V AC	-	-	-
		125 V DC	-	-	-
		250 V DC	25	40	40
	I_{cs} (Service Breaking Capacity)	230 / 240 V AC	50	85	85
		400 V AC	36	50	50
		415 V AC	36	36	50
		440V AC	25	36	40
		690 V AC	6	6	6
		1000 V AC	-	-	-
		1100 V AC	-	-	-
		125 V DC	-	-	-
		250 V DC	19	40	40

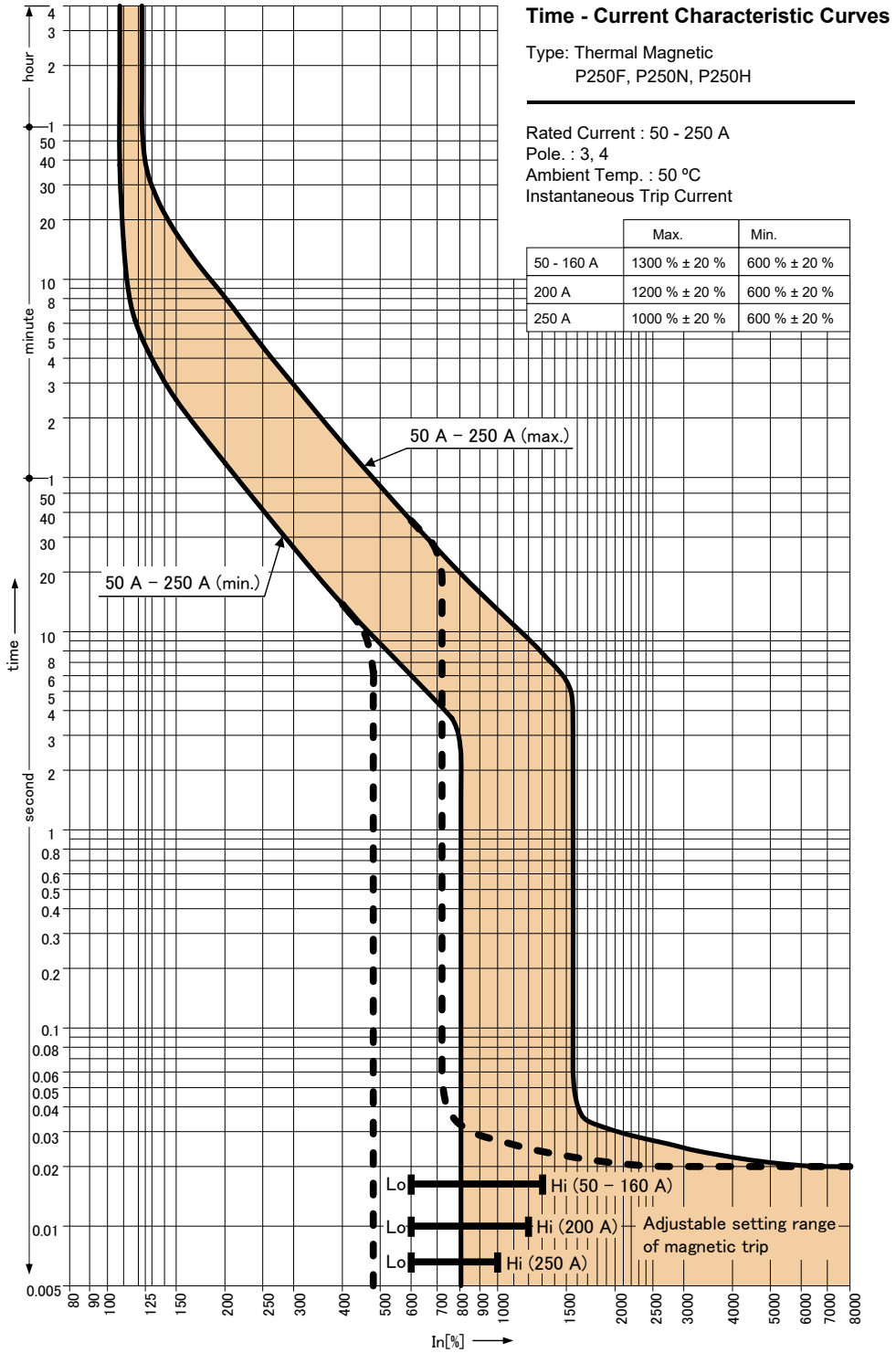
Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Rated Temperature	50 °C

General Accessories

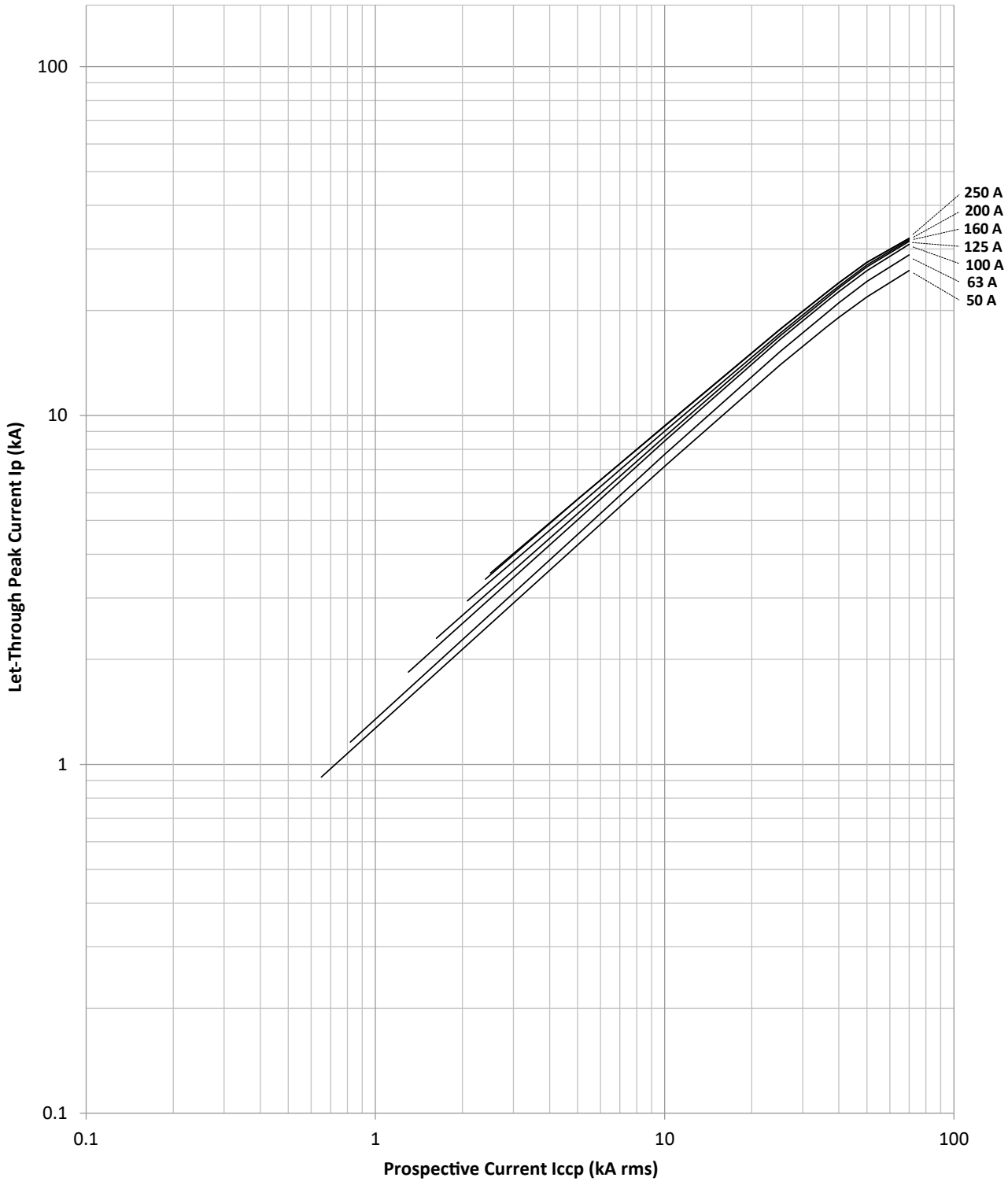
Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

Time Current Characteristics Curve 50 - 250 A, P250, Thermal Magnetic



Let-Through Peak Current Curve, P250_TM, Thermal Magnetic

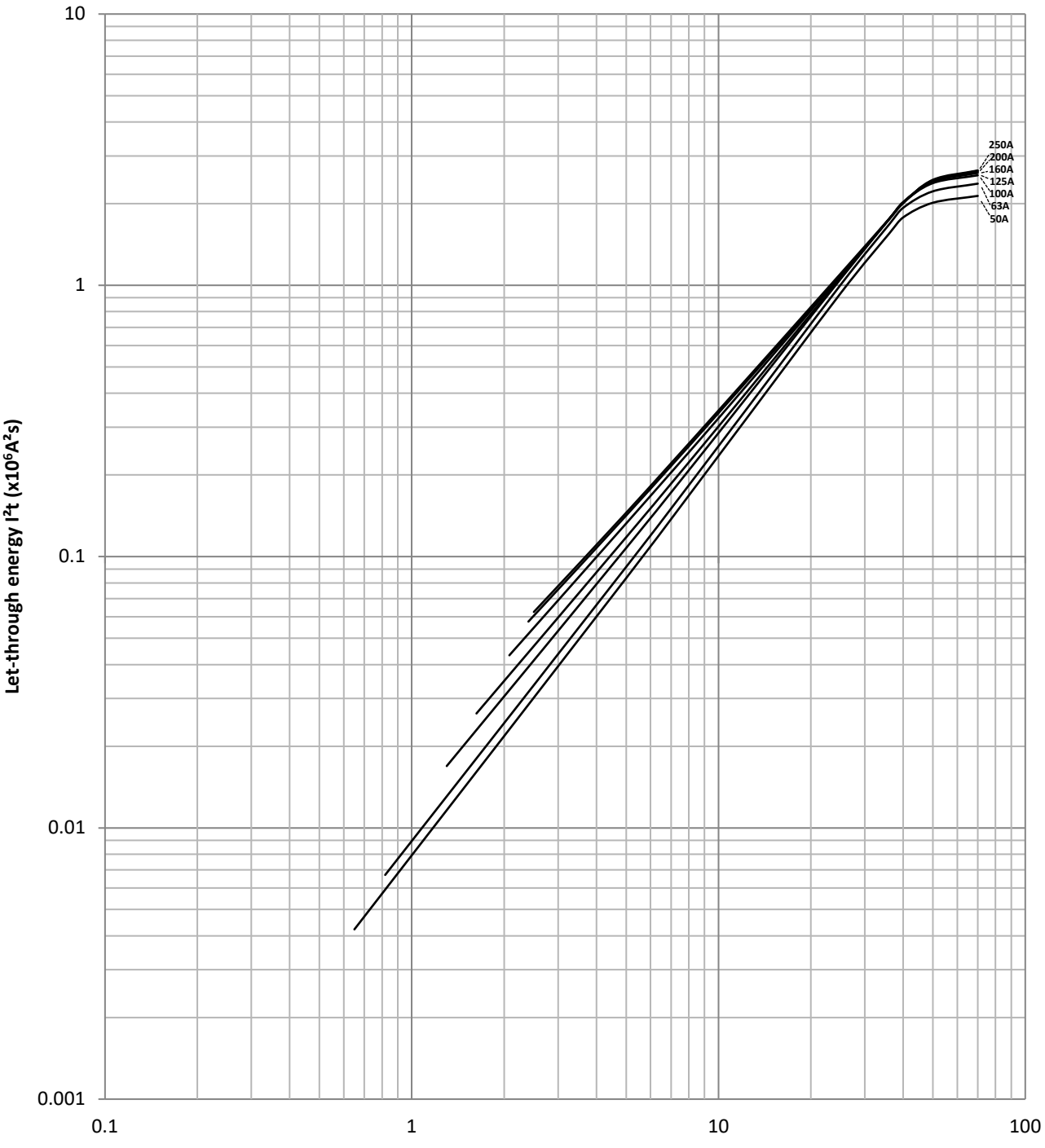
U = 380 V AC ~ 415 V AC
Icc-1Ph, Icc-3Ph/N, Icc-3Ph according to IEC 60947-2



MCCBs

Let-Through Energy I²t Curve, P250_TM, Thermal Magnetic

U = 220/380 V AC ~ 240/415 V AC
Icc-1Ph, Icc-3Ph, Icc-3Ph/N according to IEC 60947-2



Dimensions A250_TM, P250_TM/BE/BEG/NN, Front Connect (mm)

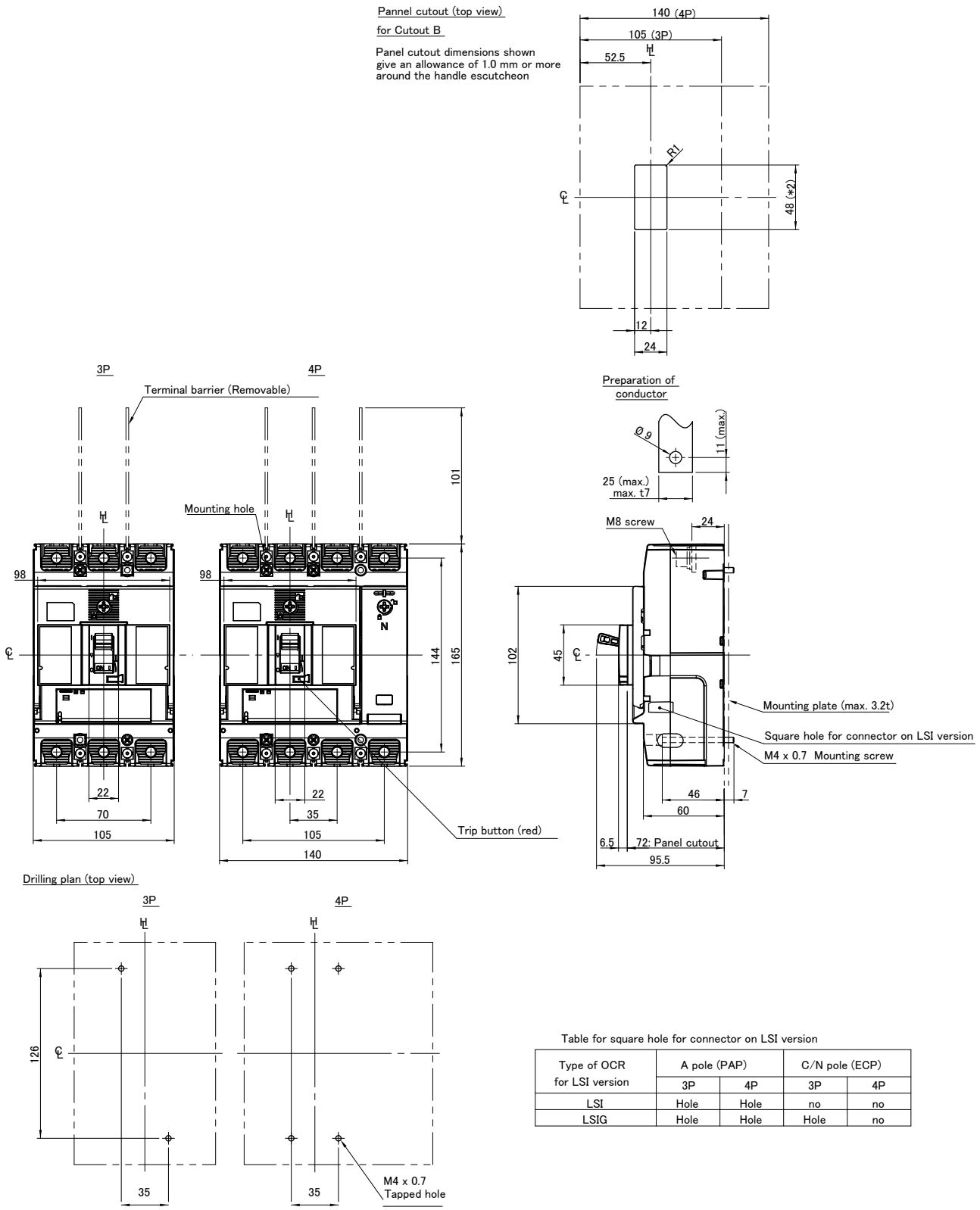
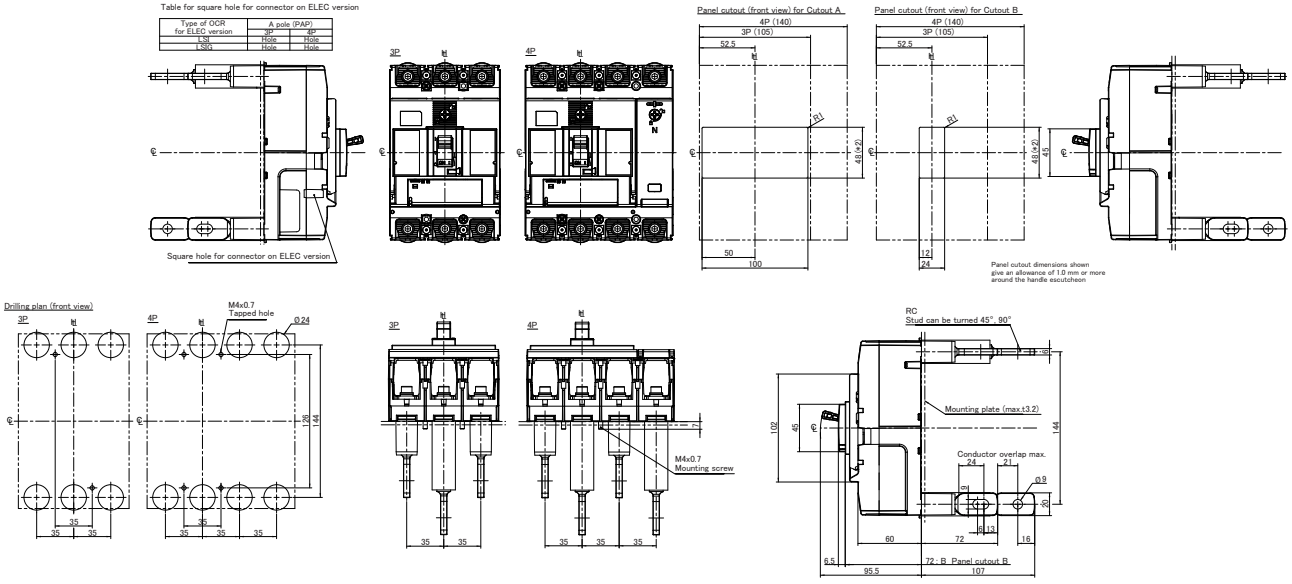


Table for square hole for connector on LSI version

Type of OCR for LSI version	A pole (PAP)		C/N pole (ECP)	
	3P	4P	3P	4P
LSI	Hole	Hole	no	no
LSIG	Hole	Hole	Hole	no

Dimensions A250_TM, P250_TM/BE/BEG/NN, Rear Connect (mm)



P250_BE / BEG

Electronic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ Suits XBP and XCP chassis, with panelboard options
- ✔ Compact 165 mm H, 68 mm D, 35 mm pole centres
- ✔ Fault ratings; 36, 50 or 70 kA I_{CU} @ 415 V AC
- ✔ 100 % I_{CU} / I_{CS} on models up to 50 kA
- ✔ Electronic trip unit: individually adjustable LSI characteristics, and Instantaneous-only trip setting
- ✔ Standard features depending on MCCB model: LSI (BE type), LSIG (BEG type), Neutral protection (4P), Pre-Trip Alarm (all)
- ✔ Trip units: 40 A, 100 A, 160 A, 250 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type)
Trip Unit Rating	40 / 100 / 160 / 250 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**F**	36 kA
	N	50 kA
	H	70 kA

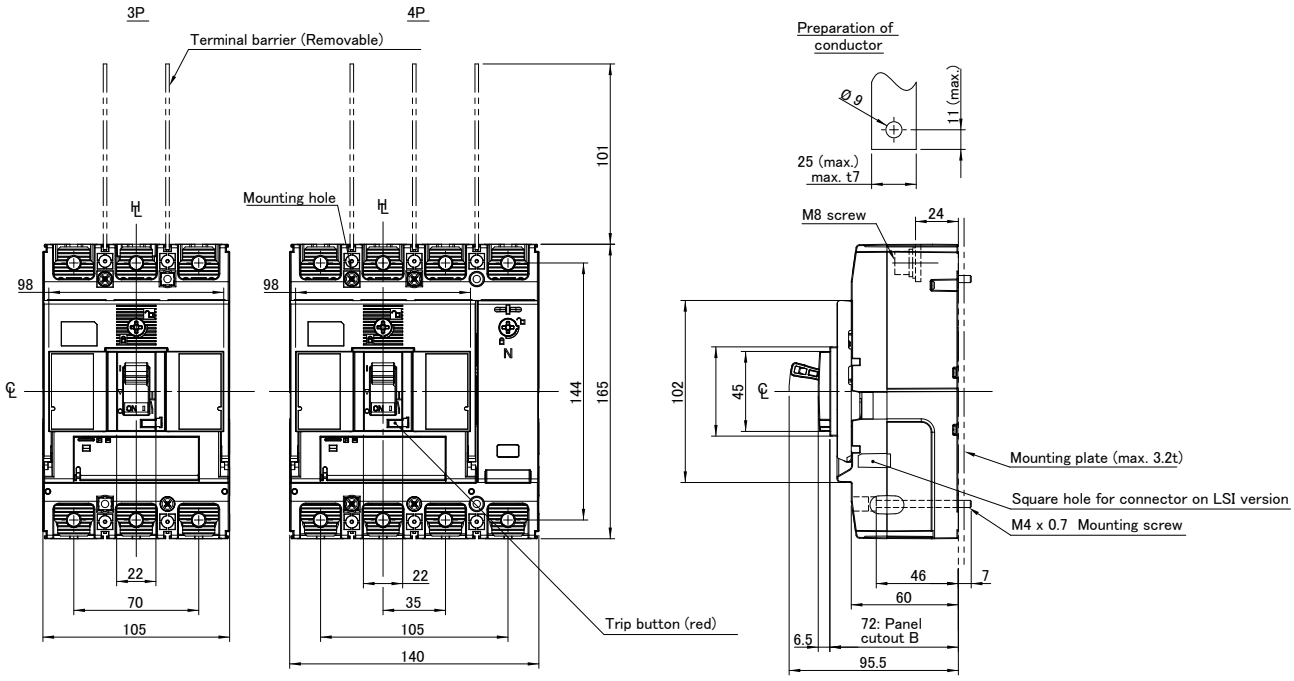
Voltage

Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option) Withdrawable TPDR

Quick Reference Dimensions – Front Connect



250 A Frame 3 Pole 36 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	36	3	35	P250F340BE
100	40 - 100	3 – 15 x In	36	3	35	P250F3100BE
160	64 - 160	3 – 11 x In	36	3	35	P250F3160BE
250	100 - 250	3 – 11 x In	36	3	35	P250F3250BE

250 A Frame 3 Pole 36 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	36	3	35	P250F340BEG
100	40 - 100	3 – 15 x In	36	3	35	P250F3100BEG
160	64 - 160	3 – 11 x In	36	3	35	P250F3160BEG
250	100 - 250	3 – 11 x In	36	3	35	P250F3250BEG

250 A Frame 3 Pole 50 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	50	3	35	P250N340BE
100	40 - 100	3 – 15 x In	50	3	35	P250N3100BE
160	64 - 160	3 – 11 x In	50	3	35	P250N3160BE
250	100 - 250	3 – 11 x In	50	3	35	P250N3250BE

250 A Frame 3 Pole 50 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	50	3	35	P250N340BEG
100	40 - 100	3 – 15 x In	50	3	35	P250N3100BEG
160	64 - 160	3 – 11 x In	50	3	35	P250N3160BEG
250	100 - 250	3 – 11 x In	50	3	35	P250N3250BEG

250 A Frame 3 Pole 70 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	70	3	35	P250H340BE
100	40 - 100	3 – 15 x In	70	3	35	P250H3100BE
160	64 - 160	3 – 11 x In	70	3	35	P250H3160BE
250	100 - 250	3 – 11 x In	70	3	35	P250H3250BE

250 A Frame 3 Pole 70 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	70	3	35	P250H340BEG
100	40 - 100	3 – 15 x In	70	3	35	P250H3100BEG
160	64 - 160	3 – 11 x In	70	3	35	P250H3160BEG
250	100 - 250	3 – 11 x In	70	3	35	P250H3250BEG

250 A Frame 4 Pole 36 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	36	4	35	P250F440BE
100	40 - 100	3 – 15 x In	36	4	35	P250F4100BE
160	64 - 160	3 – 11 x In	36	4	35	P250F4160BE
250	100 - 250	3 – 11 x In	36	4	35	P250F4250BE

250 A Frame 4 Pole 36 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	36	4	35	P250F440BEG
100	40 - 100	3 – 15 x In	36	4	35	P250F4100BEG
160	64 - 160	3 – 11 x In	36	4	35	P250F4160BEG
250	100 - 250	3 – 11 x In	36	4	35	P250F4250BEG

250 A Frame 4 Pole 50 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	50	4	35	P250N440BE
100	40 - 100	3 – 15 x In	50	4	35	P250N4100BE
160	64 - 160	3 – 11 x In	50	4	35	P250N4160BE
250	100 - 250	3 – 11 x In	50	4	35	P250N4250BE

250 A Frame 4 Pole 50 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	50	4	35	P250N440BEG
100	40 - 100	3 – 15 x In	50	4	35	P250N4100BEG
160	64 - 160	3 – 11 x In	50	4	35	P250N4160BEG
250	100 - 250	3 – 11 x In	50	4	35	P250N4250BEG

250 A Frame 4 Pole 70 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	70	4	35	P250H440BE
100	40 - 100	3 – 15 x In	70	4	35	P250H4100BE
160	64 - 160	3 – 11 x In	70	4	35	P250H4160BE
250	100 - 250	3 – 11 x In	70	4	35	P250H4250BE

250 A Frame 4 Pole 70 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	70	4	35	P250H440BEG
100	40 - 100	3 – 15 x In	70	4	35	P250H4100BEG
160	64 - 160	3 – 11 x In	70	4	35	P250H4160BEG
250	100 - 250	3 – 11 x In	70	4	35	P250H4250BEG

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	250 AF
Trip Unit Rating	40 / 100 / 160 / 250 A
I_n, Rated Current (A)	
Contact NHP	
U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3
Trip Unit Rating (A) - Power Loss Per Pole (W)	
(A) (W) Contact NHP	
Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 185 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option) Withdrawable TPDR
Terminal Type	Bolt-Terminal
Connection Torque	7.8 - 12.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	XBP Chassis XCP Chassis XBPSS Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		165 mm
Width	**3P**	105 mm
	4P	140 mm
Depth (less toggle)		68 mm
Depth (toggle included)		95.5 mm
Weight	**3P**	1.5 kg
	4P	2 kg
Electrical Life		10000 cycles
Mechanical Life		30000 cycles

Short-Circuit Capacity

			kA Rating		
			MCCB Type		
		Voltage	**F**	**N**	**H**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	50	85	85
		380 / 400 V AC	36	50	70
		415 V AC	36	50	70
		440 V AC	25	36	50
		690 V AC	6	6	6
		1000 V AC	-	-	-
		1100 V AC	-	-	-
		125 V DC	-	-	-
		250 V DC	-	-	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	50	85	85
		380 / 400 V AC	36	50	50
		415 V AC	36	50	50
		440V AC	25	36	40
		690 V AC	6	6	6
		1000 V AC	-	-	-
		1100 V AC	-	-	-
		125 V DC	-	-	-
		250 V DC	-	-	-

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type)
Rated Temperature	50 °C

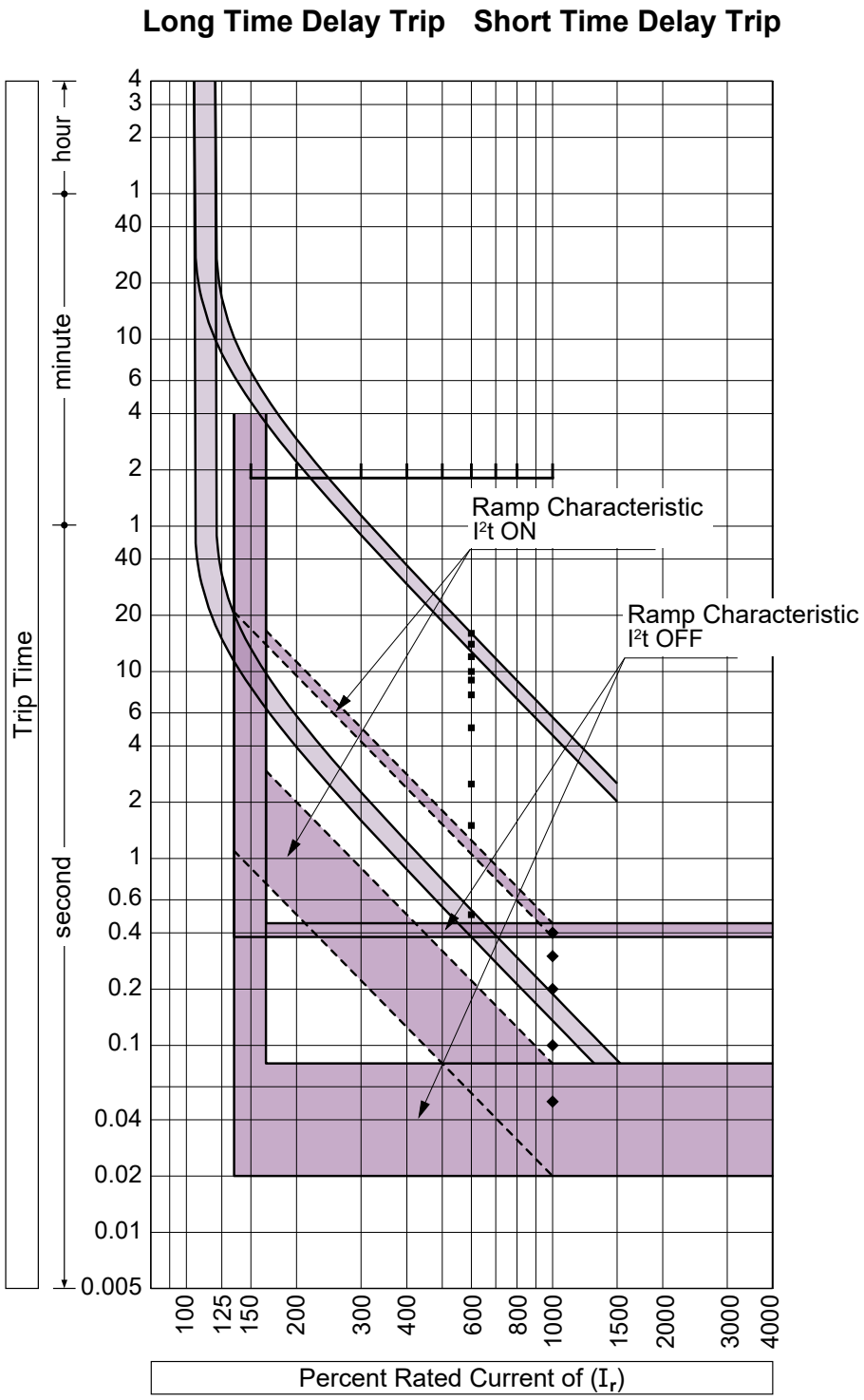
Other Features

Pre-trip alarm (PTA)	Yes
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	Yes
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

Time Current Characteristics Curve, P160,250,400,630_BE/BEG, Basic Electronic



BE LSI / BE-G LSIG Over Current Relay

Electronic OCR Unit	General Power Distribution or Motor Starting Applications	
MCCB Types – Basic Features	**LSI**	6 dial OCR, individually adjustable LTD, STD, INST. LED ind: ready, overload, PTA, OCR over-temp
	LSIG	7 dial OCR as above, but with a GF dial for 3P MCCBs, and a GF / N dial for 4P MCCBs
	ICB	Instantaneous-only Circuit Breaker setting option using IR2 dial

OCR Adjustments

P250_BE or P250_BE-G Specific Information

OCR Adjustment Settings	
Long Time Delay (LTD)	I_{R1} setting 40 % - 100 % of I_N (base currrent) via 10 increment dial + I_{R2} fine adjust dial of 9 increments: 0.92 - 1.0
	IR2 dial includes an OFF setting which switches LTD and STD to OFF, where an instantaneous only ICB is required
	tR setting 0.5 – 16 seconds in 10 increments
Short Time Delay (STD)	I_{SD} setting 1.5 – 10 (x I_R) in 9 increments + includes OFF setting. t_{SD} setting 50 – 400 mS in 5 increments
Instantaneous (INST)	I_i setting: 40 A and 100 A : 3, 4, 5, 6, 7, 8, 10, 12, 15 x I_N , 160 A: 3, 4, 5, 6, 7, 8, 9, 10, 11 x I_N
Ground Fault (GF)	I_G fixed at 20 % (40 A: 40 %) of I_N / t_G fixed at 200 mS. 4 pole GF MCCBs have an ON / OFF switch using N dial.
	4 pole GF MCCBs have an unswitched Neutral pole and an internal 4th CT. No external CTs available
Neutral Pole Protection (N)	N standard with 4P GF types. N settings of: 50 %, 100% or OFF. t_N = short time settings t_R and I_{SD}.
Pre Trip Alarm (PTA)	I_P = 80 % (fixed), t_P = 50 % (fixed)

TBPro(OCR ADJ P250)_dOPCH-S01

Electronic Trip Unit - TemBreak PRO LSI, LSIG, & SMART Overview

Electronic Trip Unit Overview

TemBreak PRO MCCBs equipped with electronic trip units, in addition to protecting against overloads and short circuits, offer flexibility via, individual setting capabity for long time, short time, instantaneous and ground fault characteristics, as well as a host of other standard or optional features. This allows for improved Selectivity combinaions between MCCBs or other circuit breaker types, plus a wide range of electrical measurement and communication functions via the SMART MCCB range. An overview is shown below with 3 types of P160 MCCBs shown as examples.

LSI

LSIG

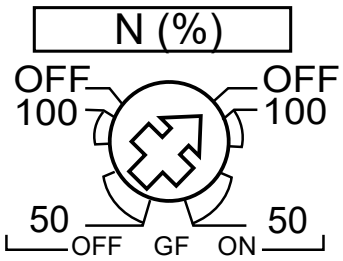
General Features

- There are 3 main Over Current Relay (OCR) types: LSI, LSIG and SMART
- Over Current Relay (OCR) setting by means of rotary dials
- Adjustable current thresholds and time delays for LTD and STD. The instantaneous trip time is fixed, though Ii is fully adjustable
- Over Temperature LED (if OCR temperature exceeds 105 °C)
- PTA Pre Trip Alarm LED
- PICK UP signaling overload alarm LED (> I_r)
- READY LED for normal or abnormal OCR operation
- Optional Ground fault protection for 3 and 4 pole MCCBs
- Adjustable Neutral pole protection on 4 pole MCCBs (Neutral pole located on the right side of MCCB)

SMART

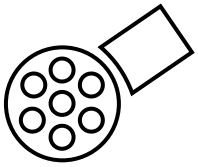
Note that for 4 pole “BE” LSIG MCCBs that have both ground fault and neutral pole protection, the standard GF dial is replaced with the dial type shown on the right, which can switch GF OFF and ON, and set NP protection levels between 50% and 100%, or to OFF.

All TemBreak PRO electronic OCR MCCBs are equipped as standard with PTA and MIP connector sockets for PTA and OCR checker connection.



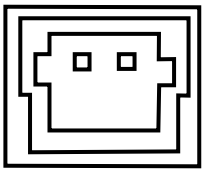
MIP Socket

Maintenance Interface Port – for temporary connection to OCR testing, servicing, and maintenance tools. Located on the right side of the OCR front facia.



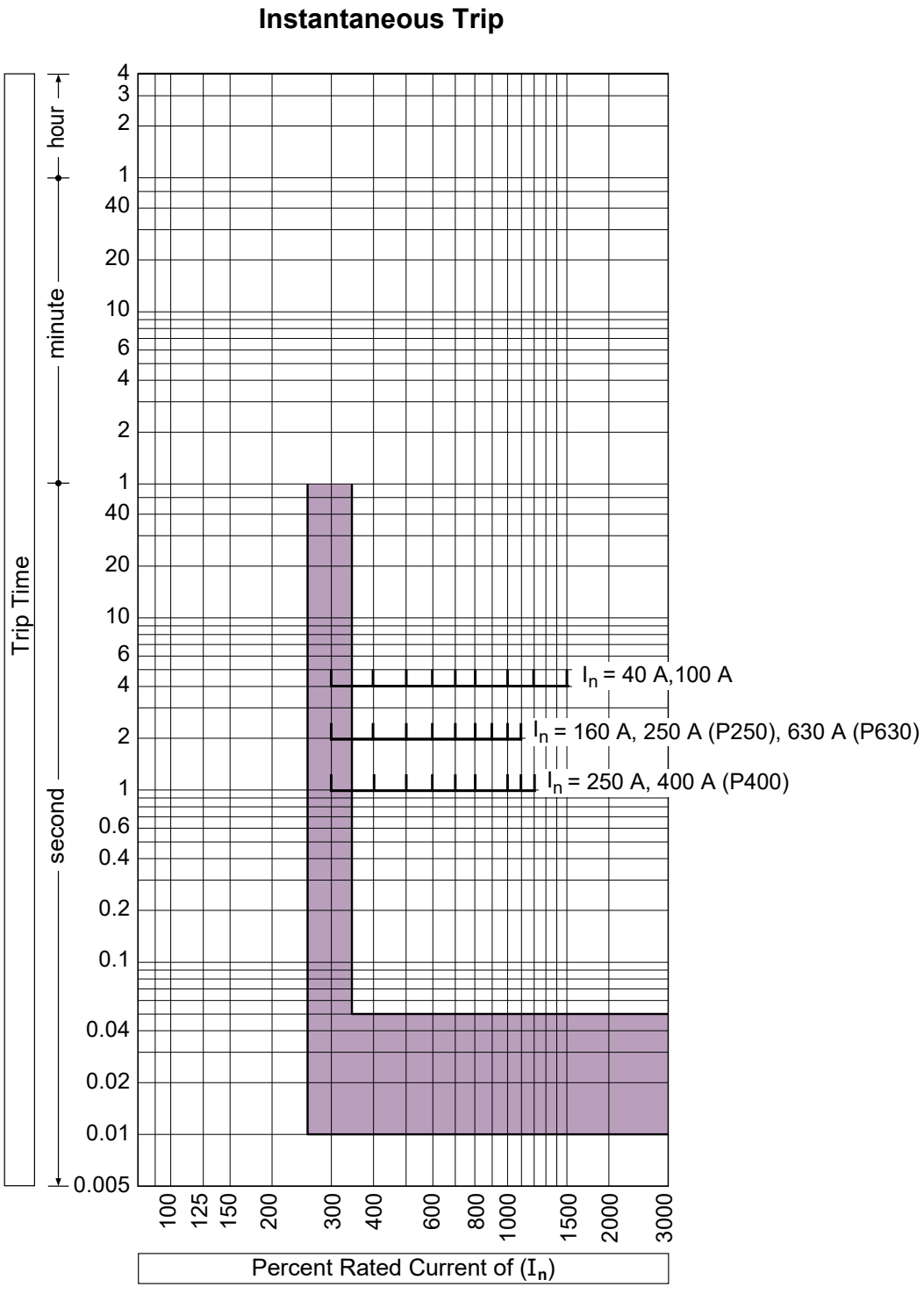
PTA Connector

The PTA connector socket is located on the side of the circuit breaker. This is used to connect an auxiliary circuit signaling the overload pre-alarm output contact. The threshold for this pre-alarm is set at 80% of Ir setting on LSI or LSIG versions and is adjustable on SMART MCCBs.



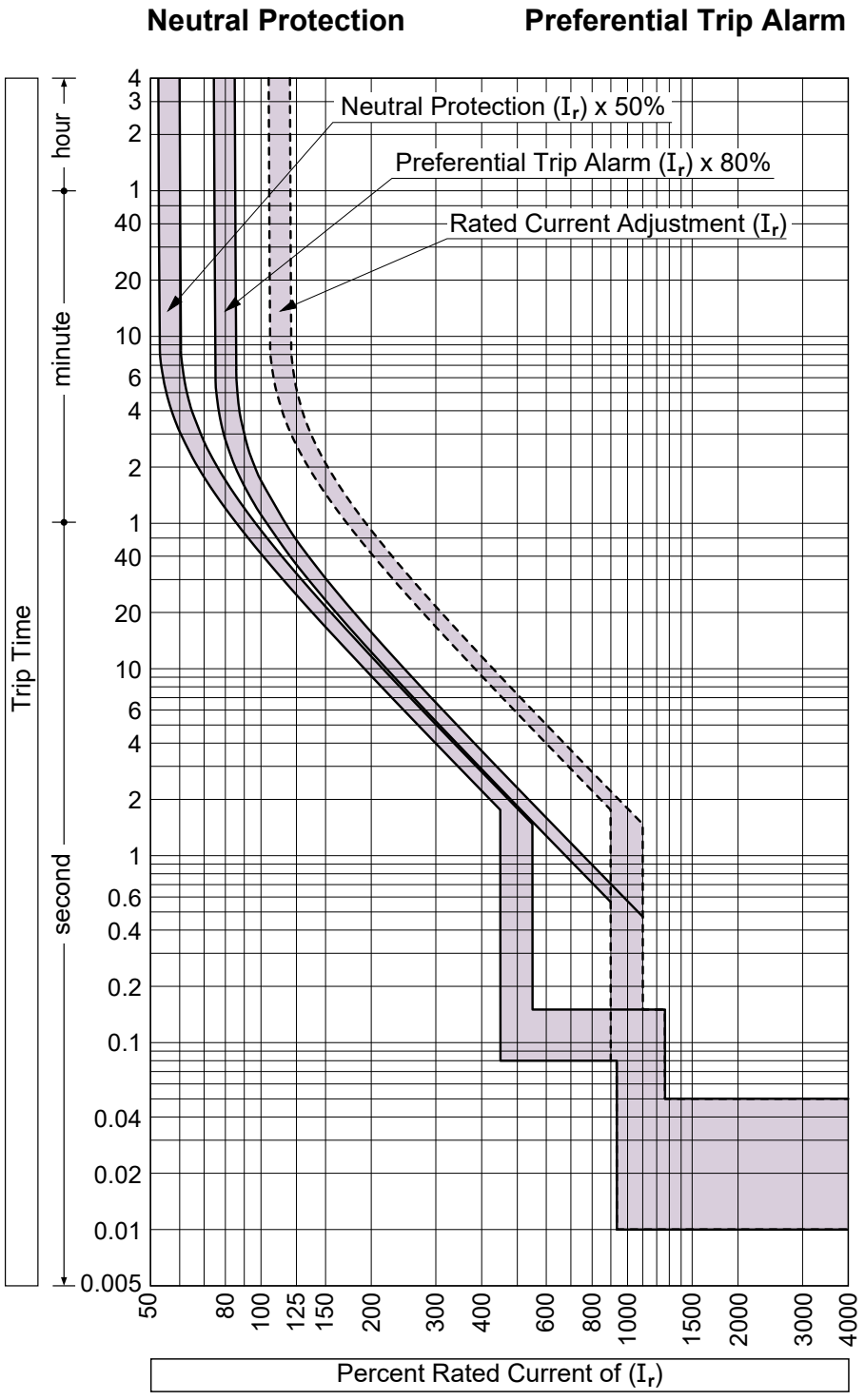
PTA and MIP Connection	LSI (BE)	LSIG (BE-G)	SMART (SE)
PTA : Pre-Alarm Connector Overload	✔	✔	✔
MIP : Socket	✔	✔	✔

Time Current Characteristics Curve, P160,250,400,630_BE/BEG, Basic Electronic

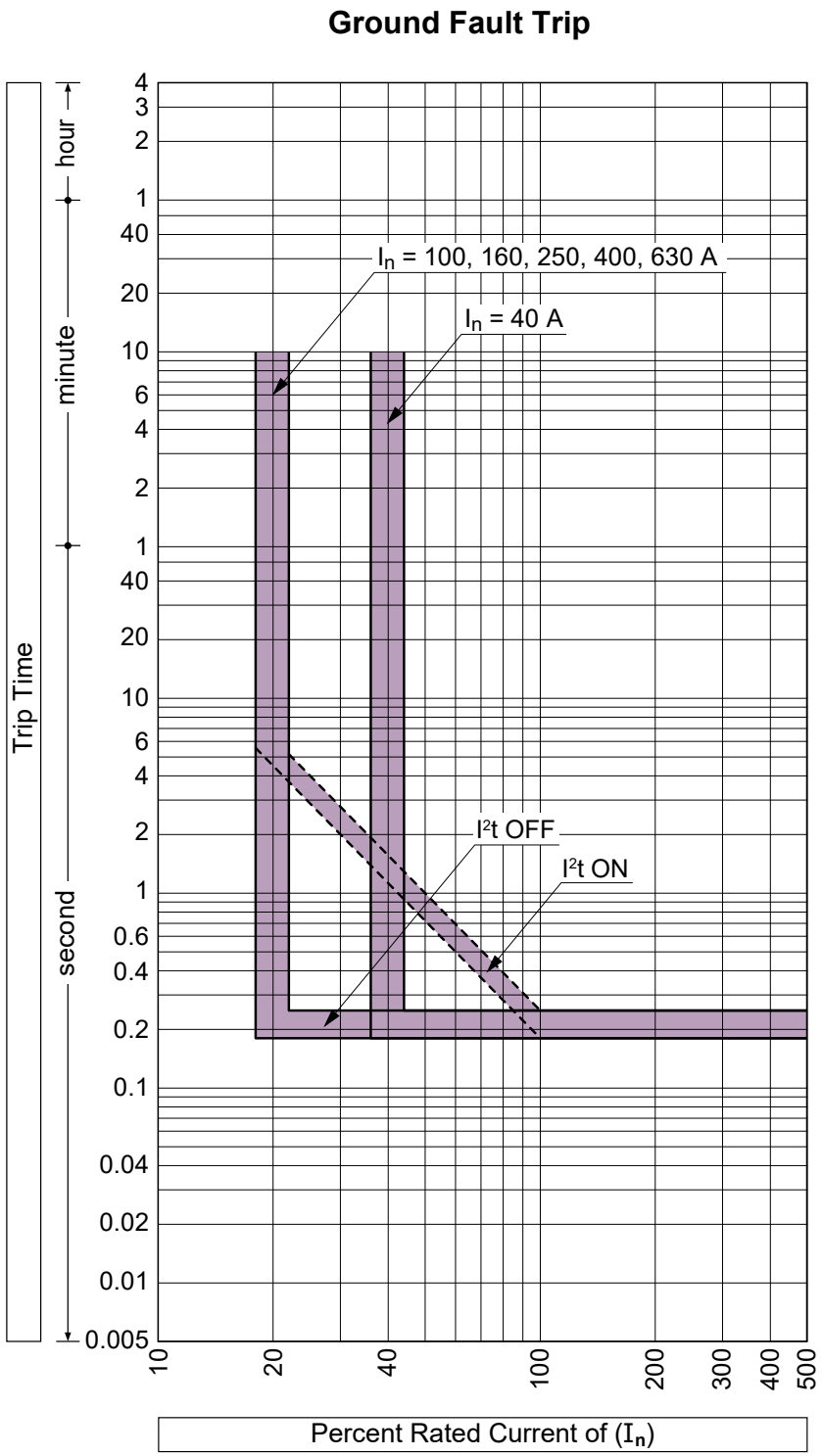


MCCBs

Time Current Characteristics Curve, P160,250,400,630_BE/BEG, Basic Electronic

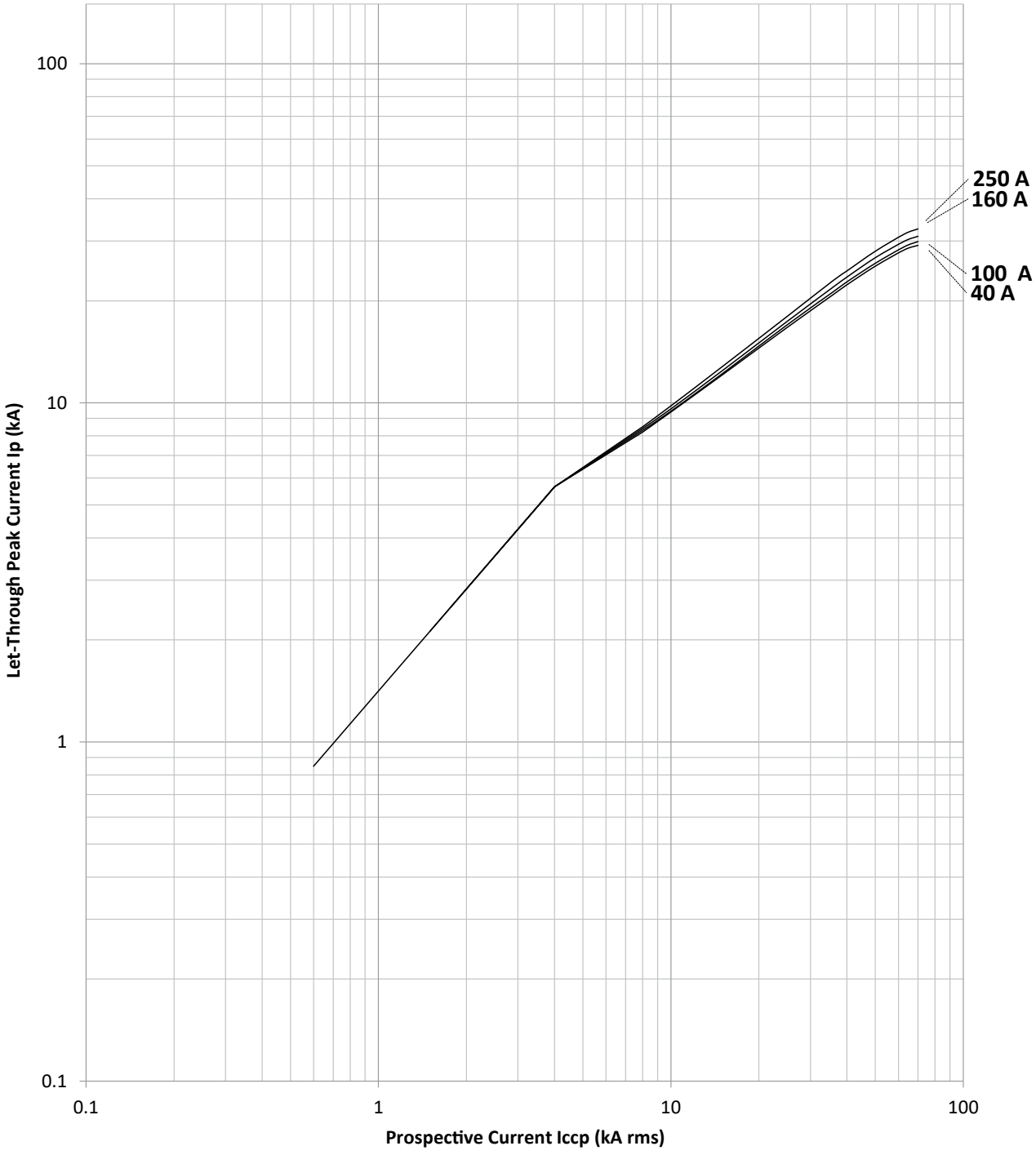


Time Current Characteristics Curve, P160,250,400,630_BEG, Basic Electronic



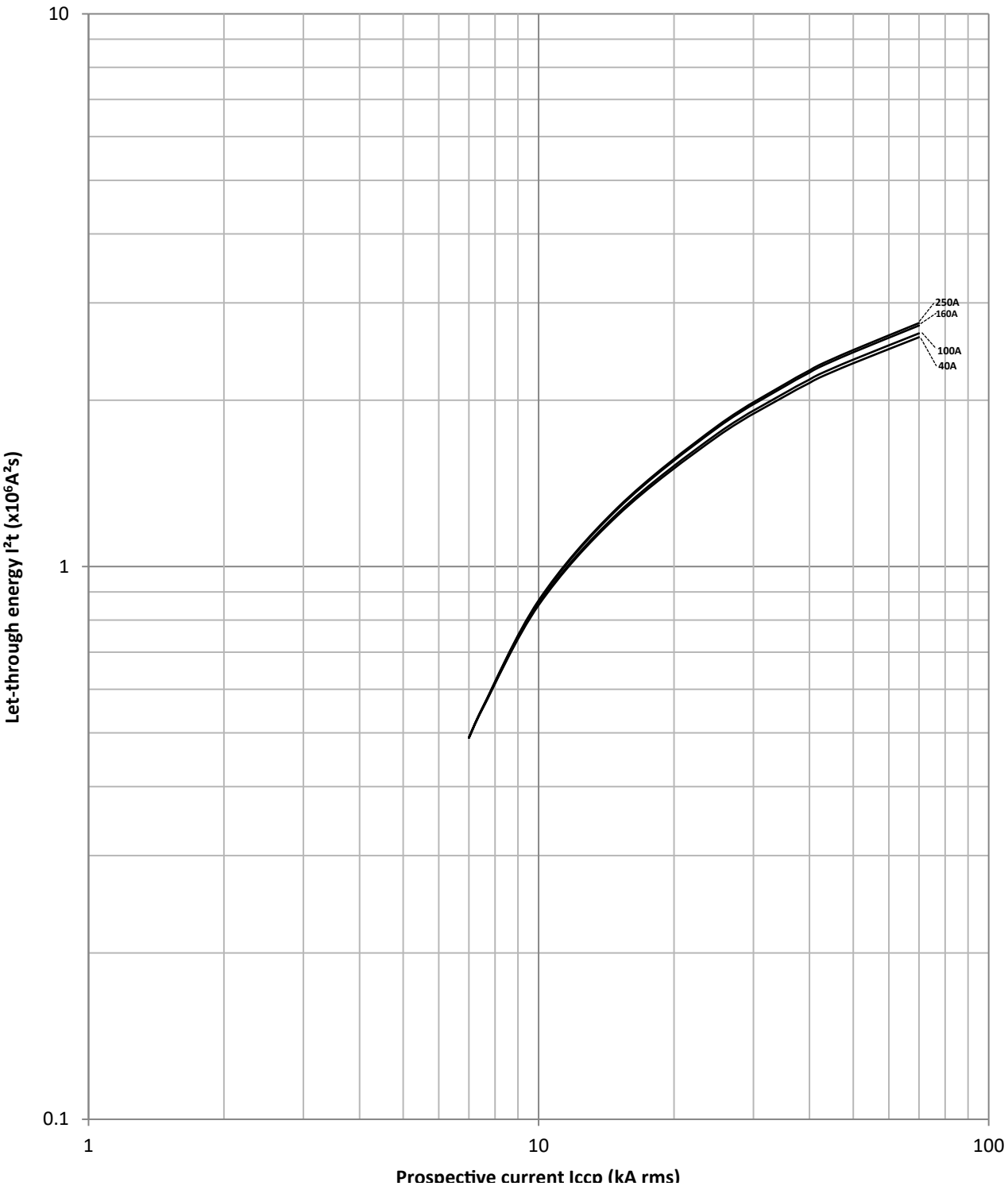
Let-Through Peak Current Curve, P250_BE/SE, 40-250 A, Basic/Smart Electronic

U = 380 V AC ~ 415 V AC
Icc-3Ph according to IEC 60947-2



Let-Through Energy I²t Curve, P250_BE/SE, Basic/Smart Electronic

U = 220/380 V AC ~ 240/415 V AC
Icc-1Ph;Icc-3Ph;Icc-3Ph/N according to IEC 60947-2



Dimensions A250_TM, P250_TM/BE/BEG/NN, Front Connect (mm)

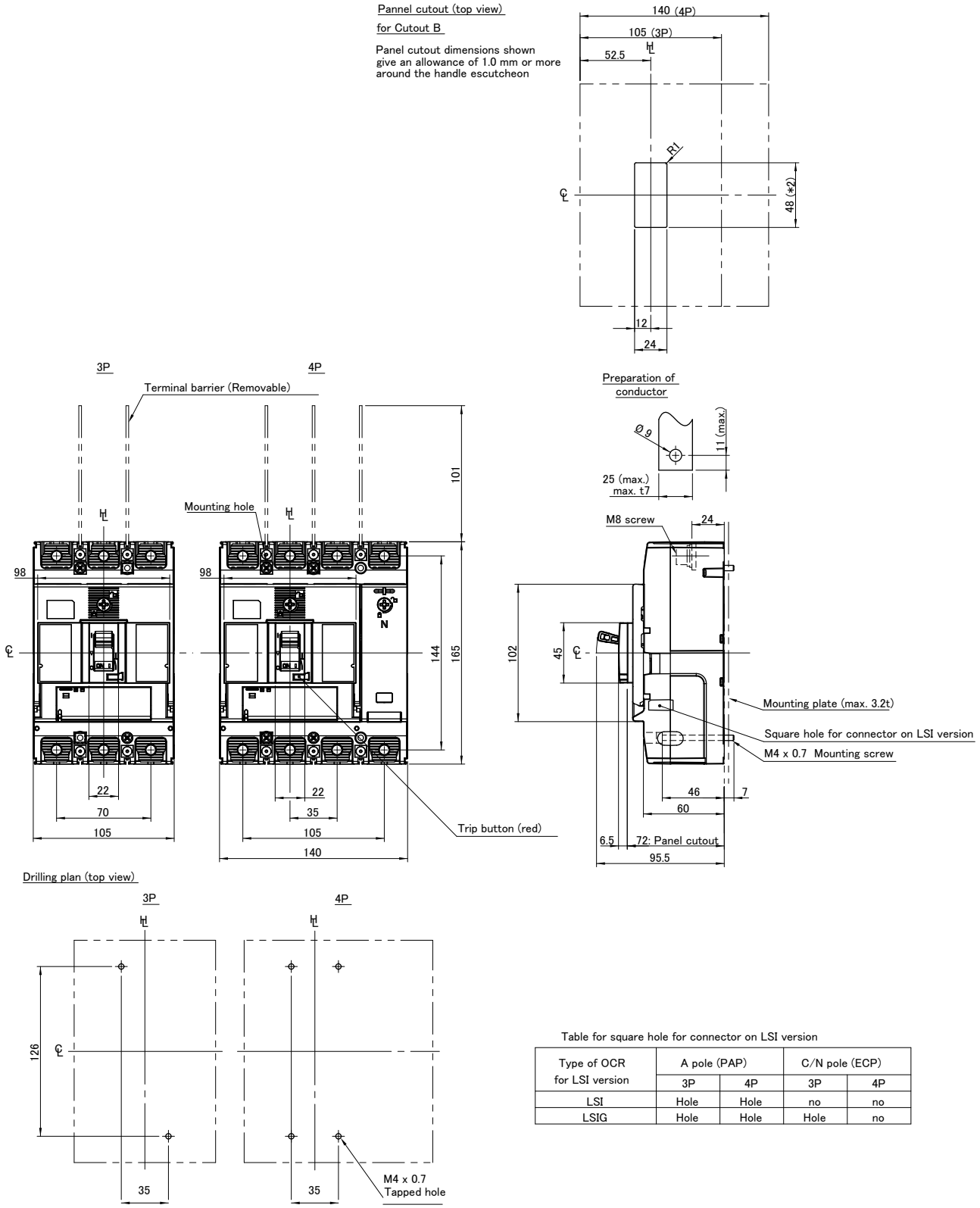
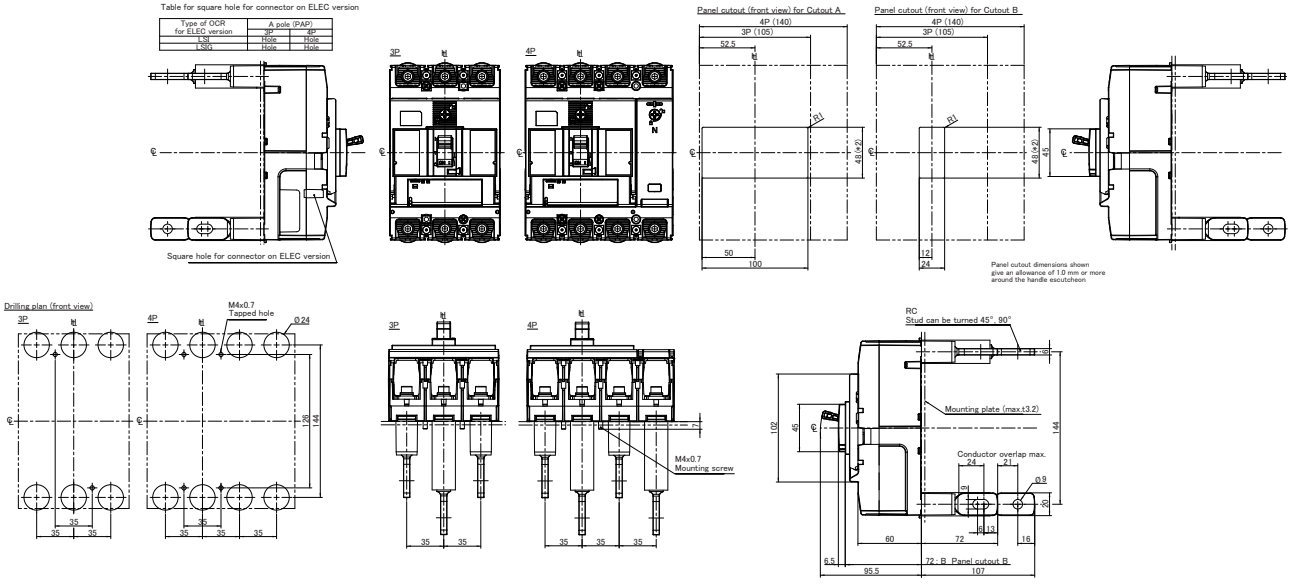


Table for square hole for connector on LSI version

Type of OCR for LSI version	A pole (PAP)		C/N pole (ECP)	
	3P	4P	3P	4P
LSI	Hole	Hole	no	no
LSIG	Hole	Hole	Hole	no

Dimensions A250_TM, P250_TM/BE/BEG/NN, Rear Connect (mm)



MCCBs

P250_SE

Smart Electronic MCCB with Energy Metering

- ✔ General purpose power distribution, energy metering and communications, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ 3 or 4 pole versions
- ✔ Suits XBP and XCP chassis, with panelboard options
- ✔ Compact 165 mm H, 68 mm D, 35 mm pole centres
- ✔ Fault ratings; 36, 50 or 70 kA I_{CU} @ 415 V AC, 100 % I_{CU} / I_{CS} on models up to 50 kA
- ✔ SMART trip unit: adjustable LSIG, communications, V, I, Energy measurement and control
- ✔ Built-in OLED high resolution display, vertical or horizontal viewing
- ✔ Std features; GF trip, NP trip (4P), PTA, ZSI, Temp / Trip / custom alarms
- ✔ Full range of accessories for application flexibility, including optional remote display
- ✔ Trip units: 40 A, 100 A, 160 A, 250 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Smart Electronic LSIG
Trip Unit Rating	40 / 100 / 160 / 250 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**F**	36 kA
	N	50 kA
	H	70 kA

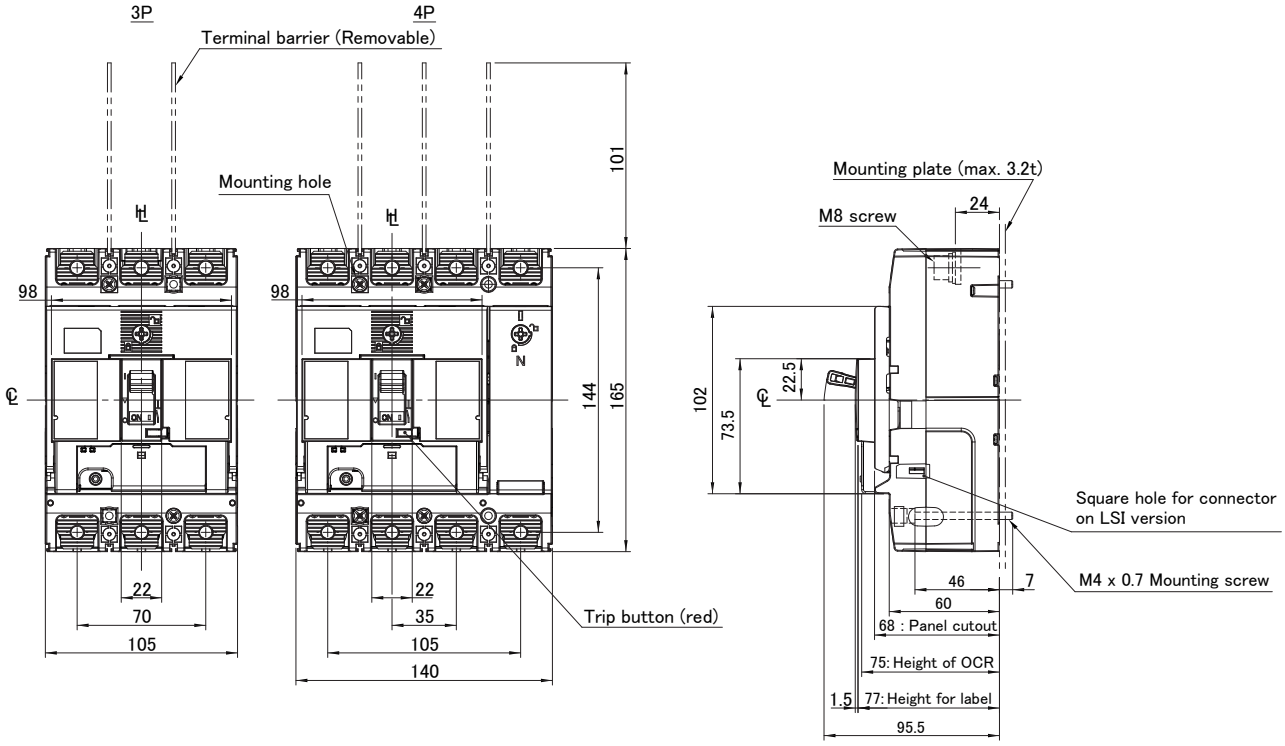
Voltage

Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option) Withdrawable TPDR

Quick Reference Dimensions – Front Connect



250 A Frame 3 Pole 36 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	36	3	35	P250F340SE
100	40 - 100	3 – 15 x In	36	3	35	P250F3100SE
160	63 - 160	3 – 11 x In	36	3	35	P250F3160SE
250	100 - 250	3 – 11 x In	36	3	35	P250F3250SE

250 A Frame 3 Pole 50 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	50	3	35	P250N340SE
100	40 - 100	3 – 15 x In	50	3	35	P250N3100SE
160	63 - 160	3 – 11 x In	50	3	35	P250N3160SE
250	100 - 250	3 – 11 x In	50	3	35	P250N3250SE

250 A Frame 3 Pole 70 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	70	3	35	P250H340SE
100	40 - 100	3 – 15 x In	70	3	35	P250H3100SE
160	63 - 160	3 – 11 x In	70	3	35	P250H3160SE
250	100 - 250	3 – 11 x In	70	3	35	P250H3250SE

250 A Frame 4 Pole 36 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	36	4	35	P250F440SE
100	40 - 100	3 – 15 x In	36	4	35	P250F4100SE
160	63 - 160	3 – 11 x In	36	4	35	P250F4160SE
250	100 - 250	3 – 11 x In	36	4	35	P250F4250SE

250 A Frame 4 Pole 50 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	50	4	35	P250N440SE
100	40 - 100	3 – 15 x In	50	4	35	P250N4100SE
160	63 - 160	3 – 11 x In	50	4	35	P250N4160SE
250	100 - 250	3 – 11 x In	50	4	35	P250N4250SE

250 A Frame 4 Pole 70 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	3 – 15 x In	70	4	35	P250H440SE
100	40 - 100	3 – 15 x In	70	4	35	P250H4100SE
160	63 - 160	3 – 11 x In	70	4	35	P250H4160SE
250	100 - 250	3 – 11 x In	70	4	35	P250H4250SE

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	250 AF
Trip Unit Rating	40 / 100 / 160 / 250 A
I_n, Rated Current (A)	
Contact NHP	
U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3
Trip Unit Rating (A) - Power Loss Per Pole (W)	
(A) (W) Contact NHP	
Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 185 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option) Withdrawable TPDR
Terminal Type	Bolt-Terminal
Connection Torque	7.8 - 12.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	XBP Chassis XCP Chassis XBPSS Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		165 mm
Width	**3P**	105 mm
	4P	140 mm
Depth (less toggle)		68 mm
Depth (toggle included)		95.5 mm
Weight	**3P**	1.5 kg
	4P	2 kg
Electrical Life		10000 cycles
Mechanical Life		30000 cycles

Short-Circuit Capacity

			kA Rating		
			MCCB Type		
		Voltage	F	N	H
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	50	85	85
		380 / 400 V AC	36	50	70
		415 V AC	36	50	70
		440 V AC	25	36	50
		690 V AC	6	6	6
		1000 V AC	-	-	-
		1100 V AC	-	-	-
		125 V DC	-	-	-
		250 V DC	-	-	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	50	85	85
		380 / 400 V AC	36	50	50
		415 V AC	36	50	50
		440V AC	25	36	40
		690 V AC	6	6	6
		1000 V AC	-	-	-
		1100 V AC	-	-	-
		125 V DC	-	-	-
		250 V DC	-	-	-

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Smart Electronic LSIG
Rated Temperature	50 °C

Other Features

Pre-trip alarm (PTA)	Yes
ZSI Zone Selective Interlocking	Yes
ACIP Auxiliary Communications Port	Yes
CIP Communications Interface Port	Yes
MIP Maintenance Interface Port	Yes
OAC Optional Alarm Contact	Yes

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	Yes

Electronic Trip Unit - TemBreak PRO P_SE (LSIG) SMART MCCBs

General Features: TPOU SMART OCR

- Settings by facia dial, joystick and diplay menu
- OCR ready (status) LED
- PTA overload pre-warning LED (adjustable threshold)
- Overload Pick up alarm (> I_r)
- LSIG protection currents and delays adjustable
- GF standard on 3P and 4P MCCBs (3P+N cct use 4P)
- Neutral Pole protection on 4 pole MCCBs (N pole on RHS)
- OCR transparent cover accepts compression seal device

P400 / P630
SMART
MCCB

Below
SMART OCR facia, showing hinged sealable cover, and illuminated "Ready" LED.

P160 / P250
SMART MCCB

TBPro(Electronic-Trip_Unit)_dOPCH-S01

Protection Function	(NP and internal GF CT standard on 4 pole MCCBs)			
L - Long Time Delay trip	S - Short Time Delay trip	I - Instantaneous trip	GF – Ground Fault trip	NP – Neutral Pole Trip

Other Protection and Alarms	
Protection measurement functions	Zone Selective Interlocking, Volts, Amps, Energy, Power, Frequency, others – refer following pages
Tripping alarms, Trip alarms, Customisable and system alarms:	OCR temperature alarm, OCR alarm, Overload alarm, Pre-Trip Alarm, OCR status LED
Historical events:	Outputs & Alarms
Integrated outputs:	Output contact PTA, Output contact OAC

24 VDC supply power, and self powered SMART MCCBs

A SMART OCR needs to be powered via an external 24 V DC power supply to ensure continuous operation of the measurement functions, alarms, communications and setting configuration. However, these funtions can also operate without external power, making the MCCB self powered, if the following minimum requirements are met:

1. If the MCCB main contacts are CLOSED
2. If the minimum current flowing through the circuit breaker is as shown in the table below by OCR trip unit rating.
3. It is ultimately the users choice as to whether control power is to be continuously applied or if the MCCB is to be self powered once there is enough current flowing through the MCCB.

OCR Amperes	1 Powered Pole	2 Powered Poles	3 Powered Poles
40 A	N / A	> 14 A	> 10 A
100 A	> 25 A	> 15 A	> 15 A
160 A	> 32 A	> 16A	> 16 A
250 A	> 50 A	> 25 A	> 25 A
400 A	> 80 A	> 40 A	> 40 A
630 A	> 126 A	> 63 A	> 63 A

TBPro(Electronic-Trip_Unit)_dOPCH-S02

Description of SMART Communications System

Connection lead connection locations for SMART MCCB Accessories

TPCM00D02W

RJ45 connector required for Modbus communications with external devices. User to source RJ45 connectors.

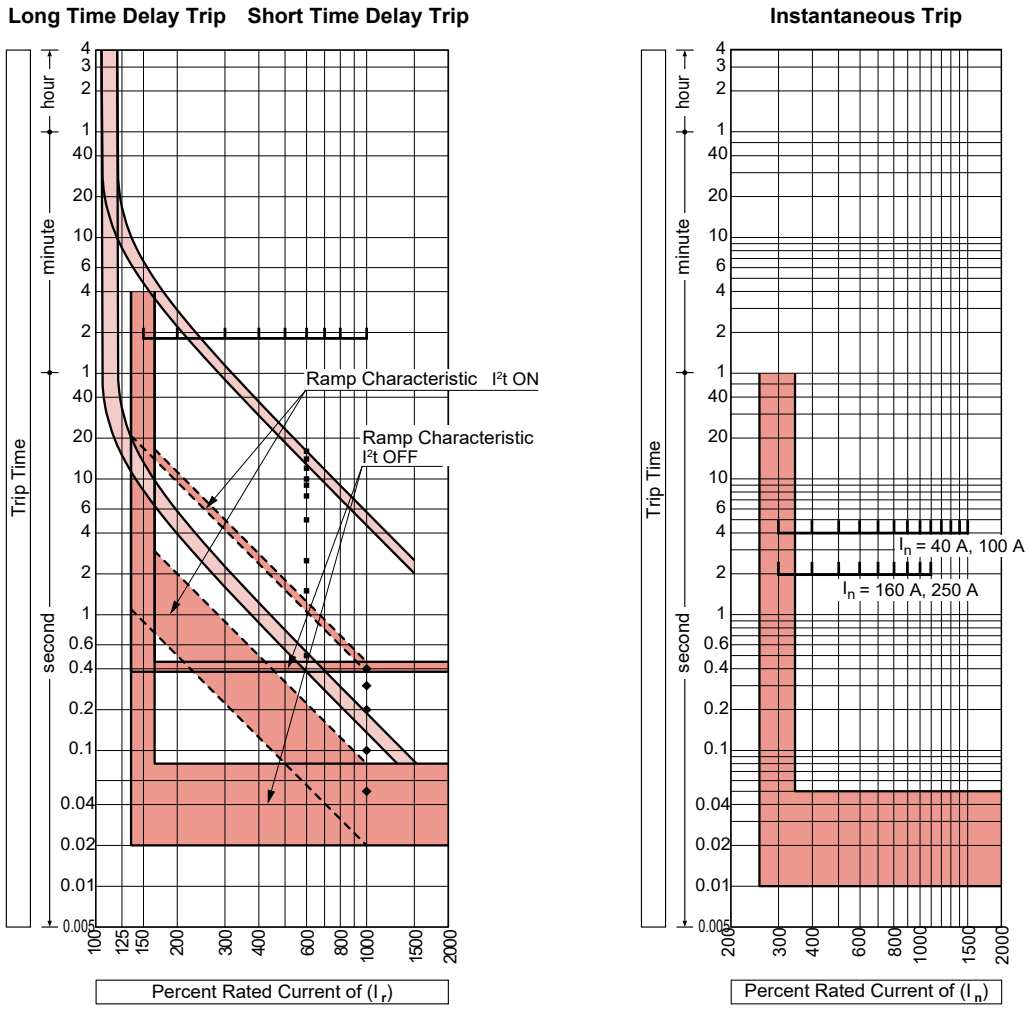
MCCB side mount bracket supplied with TPCM module as standard

Smart MCCB Abbreviations

ACP	**Auxiliary Communications Port:** Connection of auxiliary connector AX / AL SMART
AL	**Alarm:** auxiliary contact fault signal
AX	**Auxiliary:** auxiliary contact open / closed
CIP	**Communication Interface Port:** mating connector of the remote display
MIP	**Maintenance Interface Port:** To connect to the OCR checker
OAC	**Optional Alarm Contact:** Connection connector optional alarm output contact
PTA	**Pre-Trip Alarm:** prealarm overload and overload prealarm output contact of the connector
OLED	Organic Light-Emitting Diode (OLED)
ZSI	Zone Selective Interlocking (zone selectivity)

MCCBs

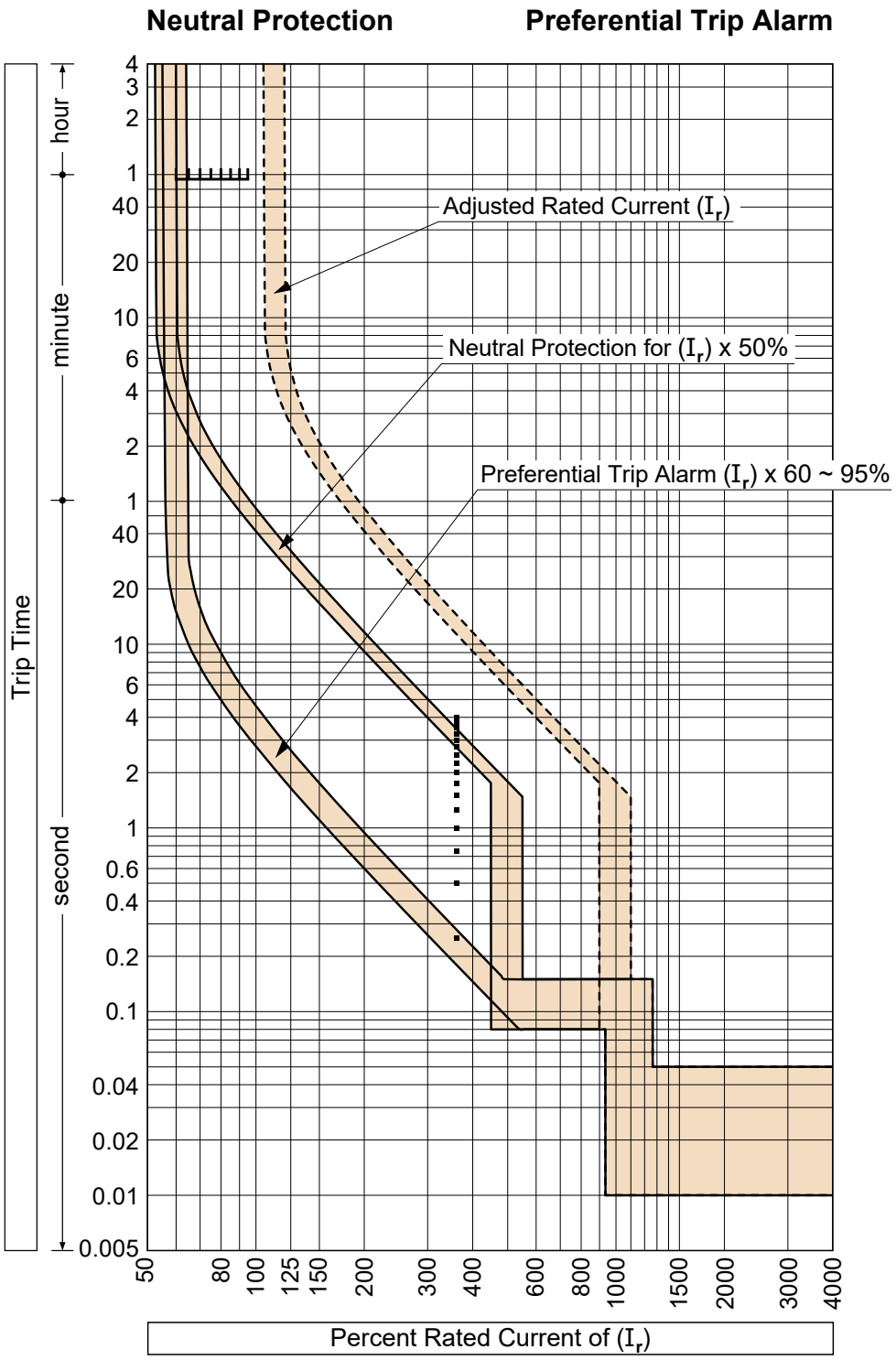
Time Current Characteristics Curve, P250_SE, Smart Electronic



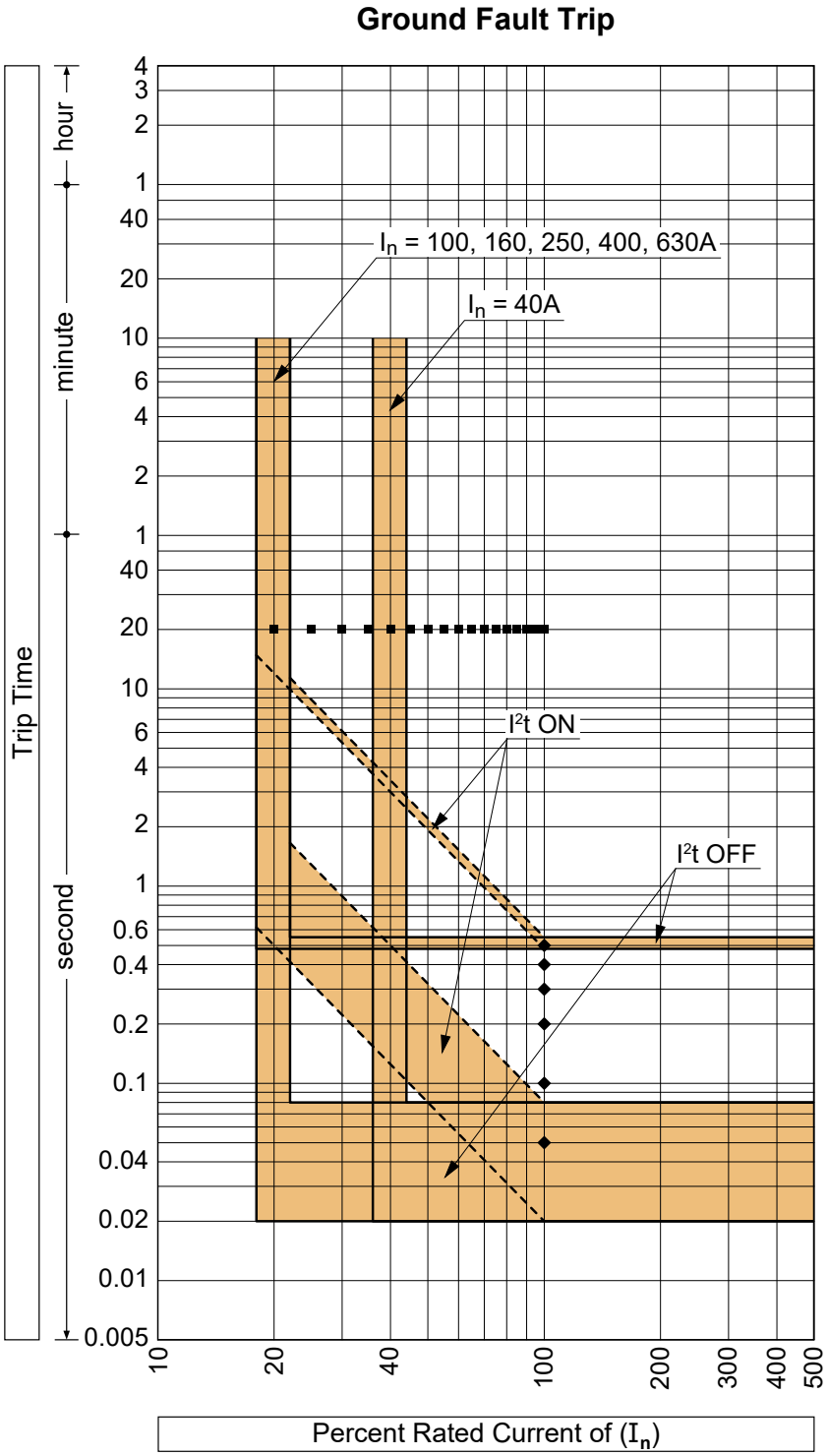
P250_SE SMART OCR detail (TPOP OCR) 40 A, 100 A, 160 A, 250 A

General features – standard	LSIG OCR with adjustable Long time, short time, instantaneous and Ground Fault, PTA, Neutral Pole protection (4P only), Hot/Cold selectable, Zone interlock, Temperature/Trip/Custom Alarms (alarms via LED & comms)
OCR Adjustment settings	
Long Time Delay (LTD)	I_{R1} setting 40 % - 100 % of I_N (base currrent) via 10 increment settings: 40 A, 100 A, 160 A, 9 increments for 250 A I_{R2} fine adjust in 1 amp increments t_R setting 0.5 – 16 seconds in 10 increments
Short Time Delay (STD)	I_{SD} setting 1.5 – 10 (x I_R) in 0.5 increments or OFF setting. t_{SD} setting 50 – 400 mS in 5 increments or I^2t OFF/ON
Instantaneous (INST)	I_i trip unit setting: 40 A and 100 A: 3 – 15 x I_N in 0.5 increments, 160 A and 250 A: 3 – 11 x I_N in 0.5 increments
Ground Fault (GF)	I_n = 100 A / 160 A / 250 A: I_G adjustable: 20 % to 100 % of I_N in 5 steps (I_n = 40 A: 40 % to 100 % in 5 steps) t_G adjustable: 50 ms – 500 ms in 5 steps or OFF / ON using I_{SD} I^2t setting. 4 pole GF MCCBs have an unswitched neutral pole, and include an internal neutral CT.
Neutral Pole Protection (N)	Applies to 4P MCCBs. N (I_N) settings are: 50 %, 100 % (x I_R) or OFF. t_N = short time settings t_R and I_{SD}.
Pre Trip Alarm (PTA)	IP = OFF or 60 % to 95 % (x IR) in 5 steps, tP = 5 % to 80 % in 5 % steps (x tR)
Zone Interlocking	P250_SE can be used with P400_SE / P630_SE MCCBs & AR ACBs upstream & P160_SE MCCBs downstream

Time Current Characteristics Curve, P160,250,400,630_SE, Smart Electronic

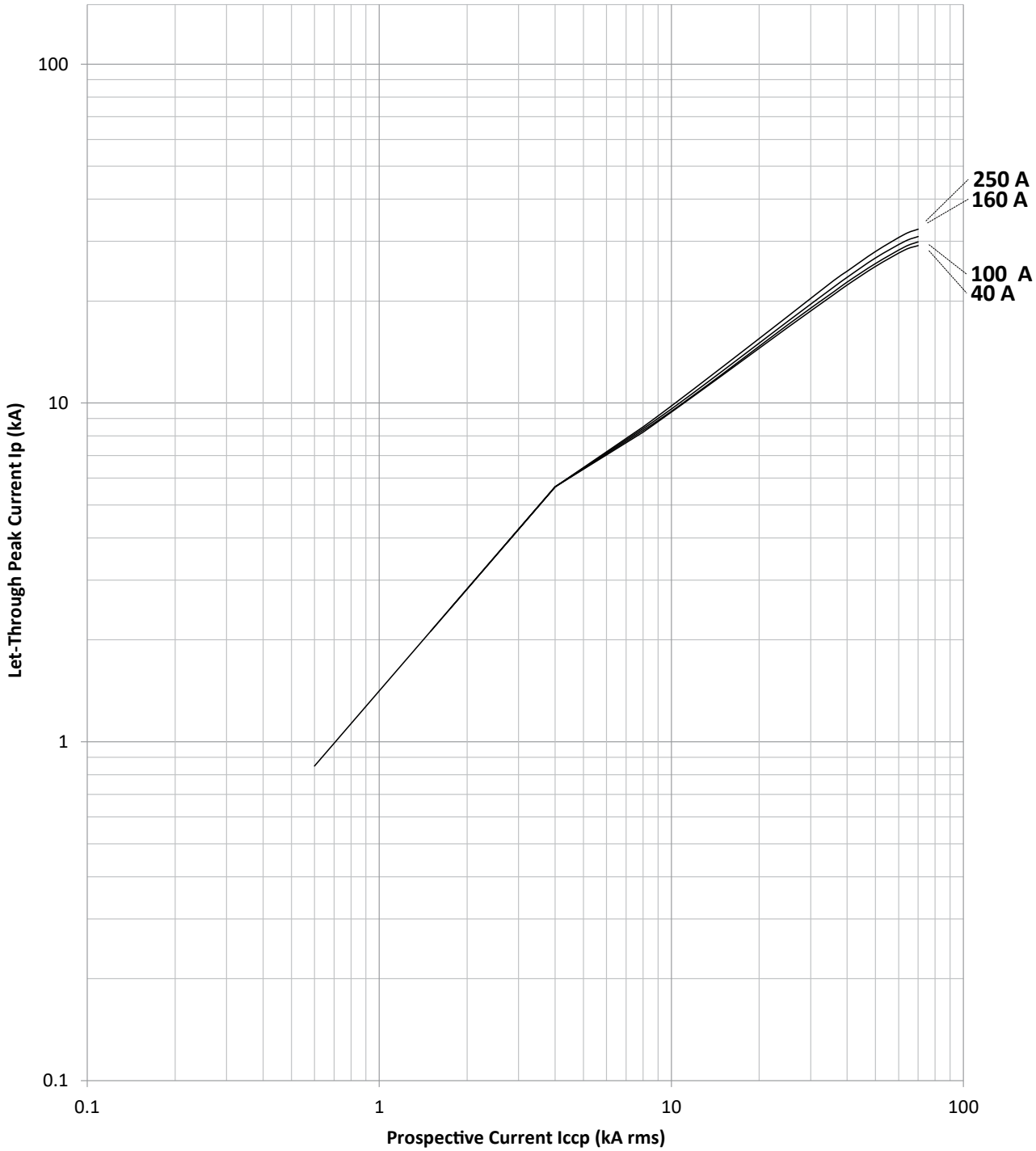


Time Current Characteristics Curve, P160,250,400,630_SE, Smart Electronic



Let-Through Peak Current Curve, P250_BE/SE, 40 - 250 A, Basic/Smart Electronic

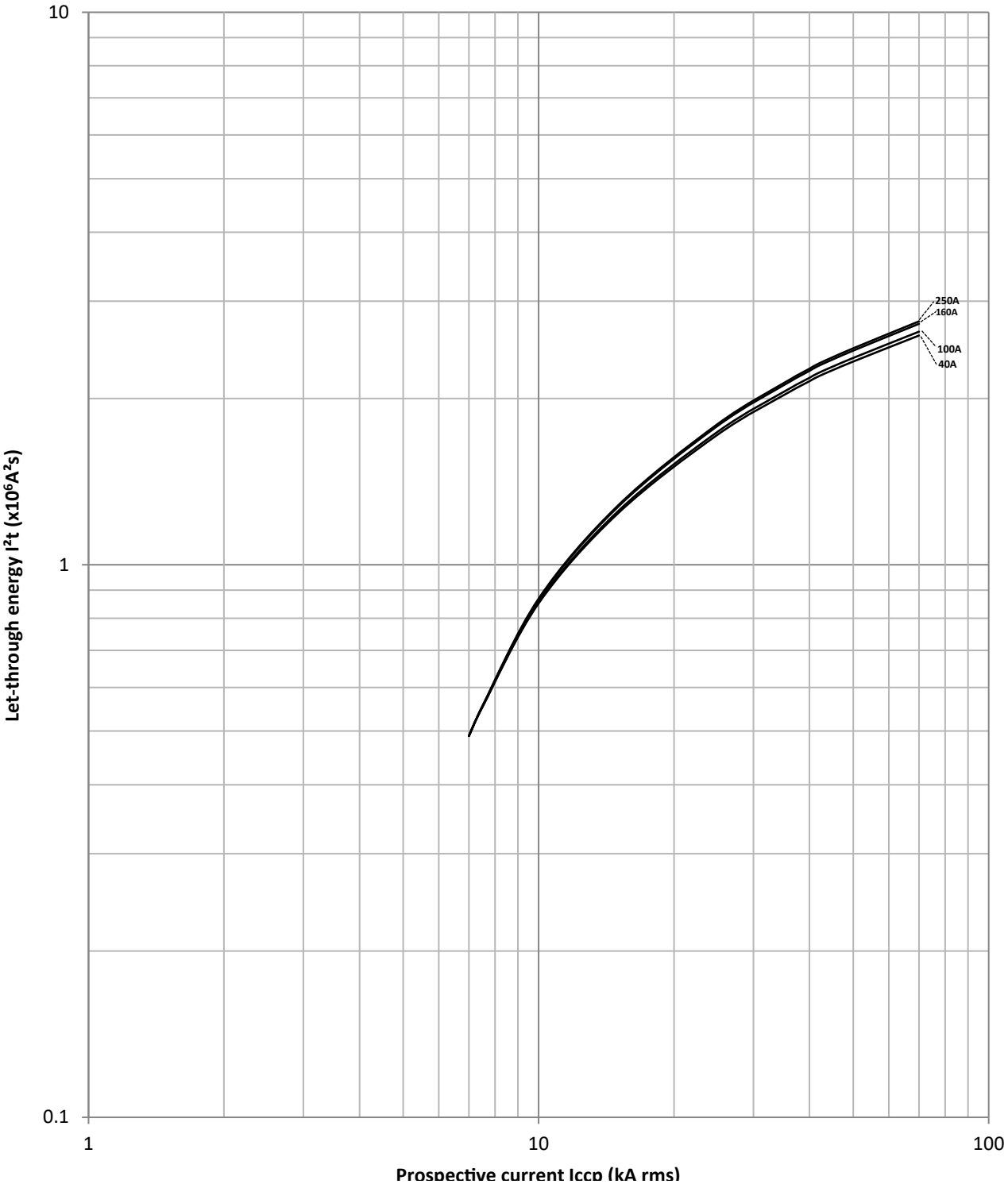
U = 380 V AC ~ 415 V AC
Icc-3Ph according to IEC 60947-2



MCCBs

Let-Through Energy I²t Curve, P250_BE/SE, Basic/Smart Electronic

U = 220/380 V AC ~ 240/415 V AC
Icc-1Ph;Icc-3Ph;Icc-3Ph/N according to IEC 60947-2



Dimensions P250_SE, Front Connect (mm)

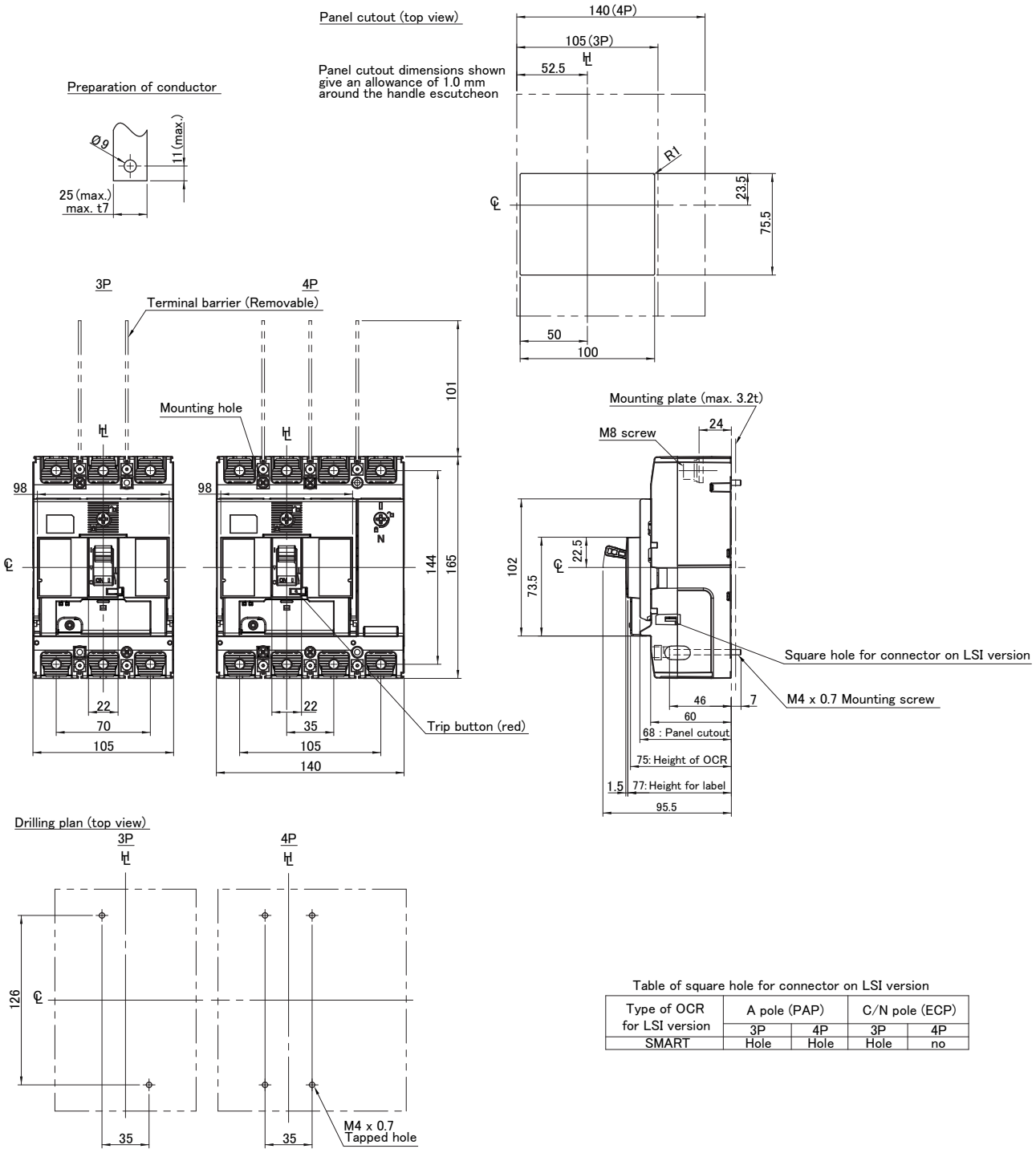
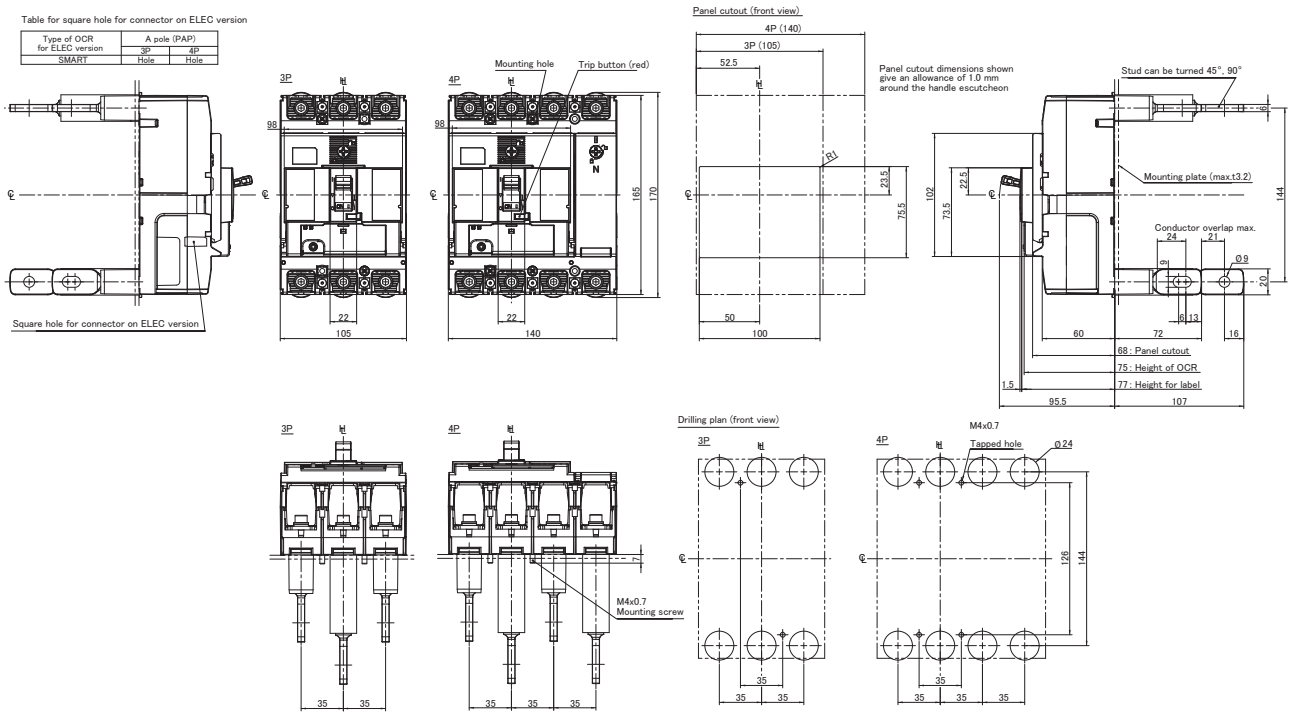


Table of square hole for connector on LSI version

Type of OCR for LSI version	A pole (PAP)		C/N pole (ECP)	
	3P	4P	3P	4P
SMART	Hole	Hole	Hole	no

MCCBs

Dimensions P250_SE, Rear Connect (mm)



P250_NN

Non-Auto Switch Disconnector

- ✔ Non-Auto switch disconnector for power distribution
- ✔ AC23 and DC22 ratings for motor starting use
- ✔ No overcurrent protection (isolator only)
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-3, IEC 60947-3 and CE
- ✔ Panel mount standard, other connection options
- ✔ Wide range of accessories for application flexibility, including OFF padlock device
- ✔ Accepts standard MCCB internal and external accessories
- ✔ 3 or 4 pole versions
- ✔ Suits XBP and XCP chassis, with panelboard options
- ✔ Compact 165 mm H, 68 mm D, 35 mm pole centres
- ✔ I_{CW} = 3.6 kA for 1.0 sec: Rated short time withstand rating
- ✔ I_{CM} = 5 kA: Rated short circuit making capacity

CE DEKRA On the safe side.

General

Switch Type	Non Auto Switch Disconnector
Number of Poles	3 or 4
Switching Poles	3P or 3P + N

Ratings

Nominal Current	250 A @ 50°C
Motor Starting	AC23 motor starting DC22 motor starting
Icw Rated	Short time withstand
Icm Rated	Ampere making capacity

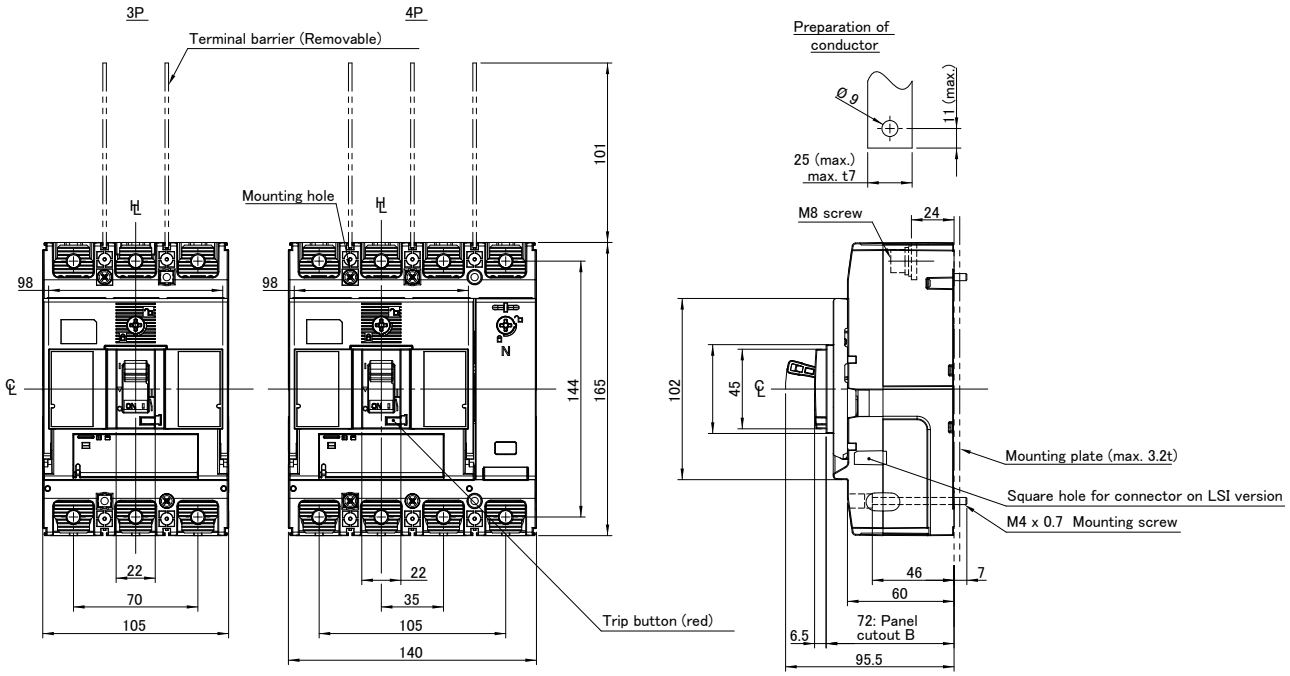
Voltage

Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Accessories and Connections

Options	Front or rear connect Terminal connection options Accepts standard MCCB accessories

Quick Reference Dimensions – Front Connect



250 A Frame 3 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Pole Width (mm)	Catalogue No.
250	3	35	P250D3250NN

250 A Frame 4 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Pole Width (mm)	Catalogue No.
250	4	35	P250D4250NN

Ratings

Component Type	Non Auto Switch Disconnector
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	250 AF

I_n, Rated Current (A)

Contact NHP

U_e Rated operational voltage AC maximum	690 V AC
U_e Rated operational voltage DC maximum	250 DC
U_i, Rated Insulation Voltage	800 V (rms)
Motor Starting Utilisation Category	AC 23, DC 22
U_{imp}, Impulse Withstand Voltage	8 kV
Icw, Rated Short Circuit Withstand Current 400/690V	3.6 kA / 1 Sec
Rated Frequency	50 / 60 Hz
Pollution Degree	3
AC Power loss per pole at full rated current	Contact NHP
Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-3 AS/NZS 60947-3
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 185 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option)
Terminal Type	Bolt-Terminal
Connection Torque	7.8 - 12.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	XBP Chassis XCP Chassis XBPSS Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	Yes
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		165 mm
Width	**3P**	105 mm
	4P	140 mm
Depth (less toggle)		68 mm
Depth (toggle included)		95.5 mm
Weight	**3P**	1.5 kg
	4P	2.0 kg
Electrical Life		10000 cycles
Mechanical Life		30000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	D
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cm} (Short Circuit Making Capacity)	690 V AC	5
	I_{cw} (Short Time Withstand)	1.0 Seconds	3.6

Trip Unit

Over Current Protection Function	No
Trip Unit Protection Type	Non-auto Switch Disconnector
Rated Temperature	50 °C

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

Dimensions A250_TM, P250_TM/BE/BEG/NN, Front Connect (mm)

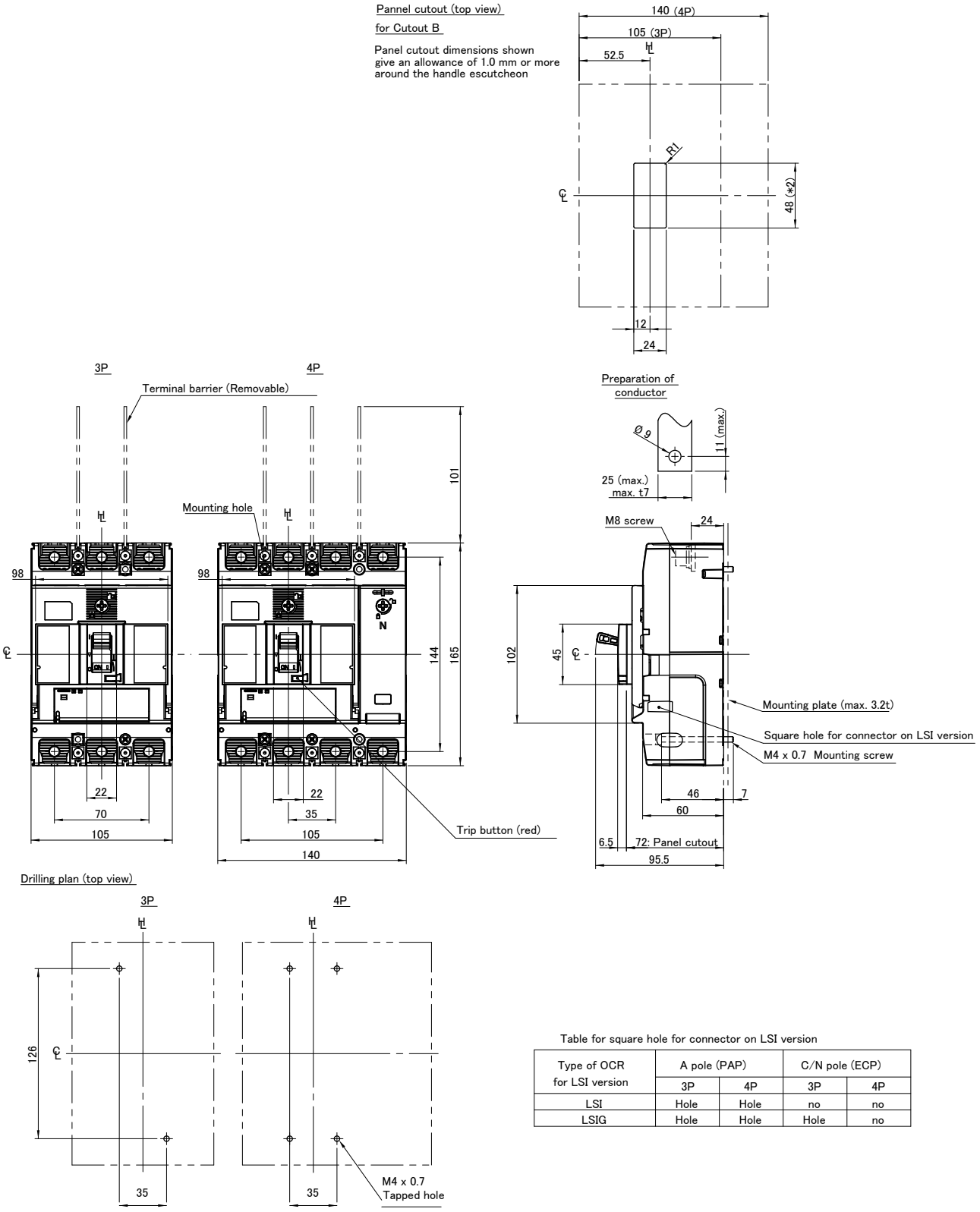
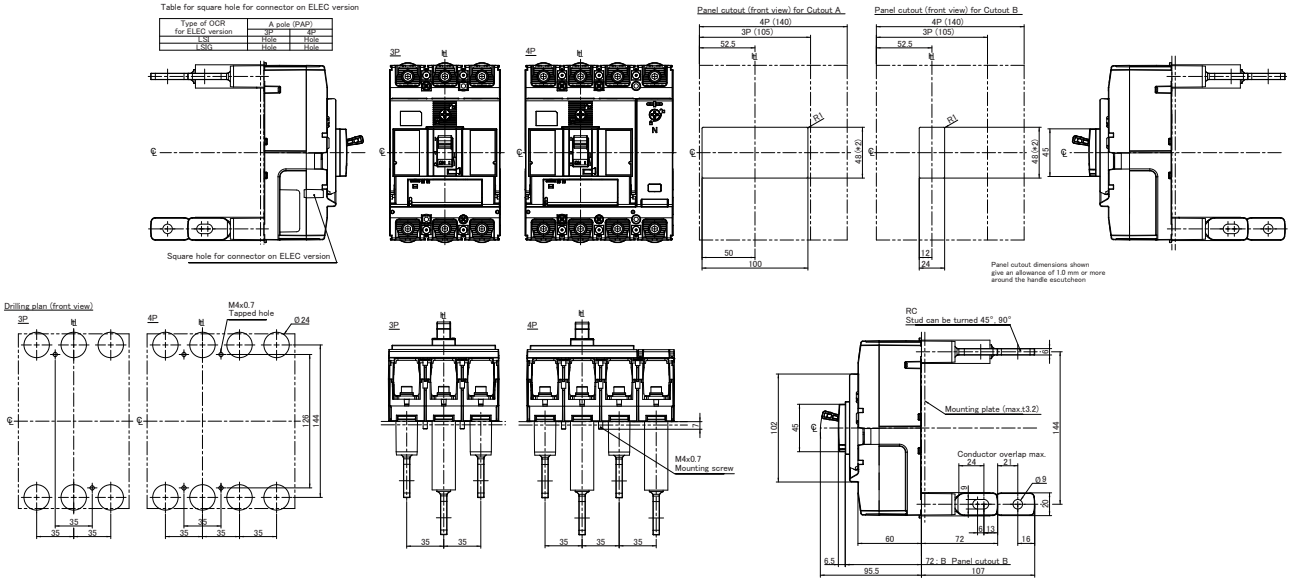


Table for square hole for connector on LSI version

Type of OCR for LSI version	A pole (PAP)		C/N pole (ECP)	
	3P	4P	3P	4P
LSI	Hole	Hole	no	no
LSIG	Hole	Hole	Hole	no

Dimensions A250_TM, P250_TM/BE/BEG/NN, Rear Connect (mm)



P250 AF Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits

Item Description	Catalogue No.
Alarm, Left Side Pocket Only 1 C/O	T2AL00LML3STA

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxilary 1 C/O	T2AX00LML3STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00LA10T
Shunt Trip Coil 230 - 240 V AC	T2SH00LA20T
Shunt Trip Coil 400 - 415 V AC	T2SH00LA40T
Shunt Trip Coil 24 V DC	T2SH00LD02T
Shunt Trip Coil 48 V DC	T2SH00LD04T
Shunt Trip Coil 230 V DC	T2SH00LD20T

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 110 V AC	T2UV00LA10NT
Under Voltage Trip Coil Instant 230 - 240 V AC	T2UV00LA20NT
Under Voltage Trip Coil Instant 400 - 440 V AC	T2UV00LA40NT
Under Voltage Trip Coil Instant 24 V DC	T2UV00LD02NT
Under Voltage Trip Coil Instant 110 V DC	T2UV00LD10NT
Under Voltage Trip Coil Instant 230 V DC	T2UV00LD20NT

Time Delay Operation (500 ms)

When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500 ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delay 110 V AC	T2UV00LA10DS
Under Voltage Trip Coil Time Delay 230 - 240 V AC	T2UV00LA24DS
Under Voltage Trip Coil Time Delay 440 - 450 V AC	T2UV00LA45DS
Under Voltage Trip Coil Time Delay 24 V DC	T2UV00LD02DS
Under Voltage Trip Coil Time Delay 110 V DC	T2UV00LD10DS
Under Voltage Trip Coil Time Delay 230 V DC	T2UV00LD24DS

SMART Status Auxiliary

Suits TemBreak PRO P160_SE – P630_SE Smart Metering MCCBs

The TPSS SMART auxiliary and Alarm is used with the TemBreak PRO SMART energy and communications MCCB range. The TPSS auxiliary range includes types which allows the SMART MCCB OCR to log and count the number of opening / closing cycles, or count the number of electromechanical (overload) fault trips and
indicate and communicate via Modbus, the actual mechanical ON / OFF or TRIPPED status of the breaker main contacts. The ON / OFF / TRIPPED status of the MCCB is also displayed on the OCR display.

Item Description	Catalogue No.
ON OFF TRIP, Standard Type Use for Applications 125 - 250 V AC	TPSS00MXLSWA
ON OFF TRIP, Micro-current Type Use for Applications 125 V AC / 24 - 30 V DC	TPSS00MXLRWA
Smart Status Auxiliary AX/AL Cycle - Trip Counter	TPSS00NA

Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

Item Description	Catalogue No.
TPHS Compact Handle Grey, IP55 Handle + 356 mm Shaft	TPHS25R5GM
Red/Yellow, IP55 handle + 356 mm shaft	TPHS25R5RM

Handle - Direct Mount

Door mount or internal mount fixed depth handle for MCCB ON OFF RESET operation

Item Description	Catalogue No.
Operating Handles Grey/Black P250	TPHB255UR5BN
Operating Handles Red/Yellow P250	TPHB255UR5RN

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

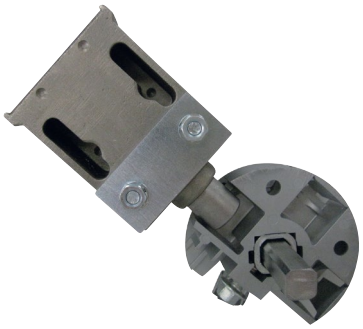
Item Description	Catalogue No.
TPHS Compact Handle Grey, IP65 Handle + 445 mm Shaft	TPHP25SR6BN
TPHS Compact Handle Red/ Yellow, IP65 Handle + 445 mm Shaft	TPHP25SR6RN

Handle Options

A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
HS 90 mm Shaft 125/250 AF	T2HS250SHAFT



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

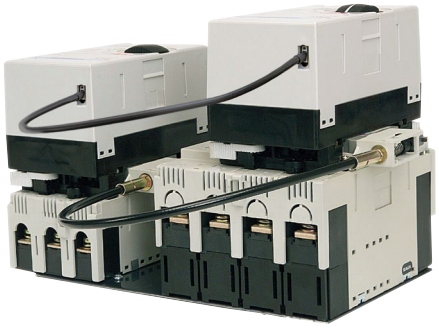
Motor Operator

Allows remote switching of an MCCB to ON or OFF or resetting tripped MCCBs.

Item Description	Catalogue No.
Motor Operator 110 V AC Suits P160, P250 Only	TPMC25SA10N
Motor Operator 230 - 240 V AC Suits P160, P250 Only	TPMC25SA24N
Motor Operator 24 V DC Suits P160, P250 Only	TPMC25SD02N
Motor Operator 48 V DC Suits P160, P250 Only	TPMC25SD04N
Motor Operator 110 V DC Suits P160, P250 Only	TPMC25SD10N
Motor Operator 230 V DC Suits P160, P250 Only	TPMC25SD20N

Motor Operator Accessories

Provides electrical interlocking between 2 motors to prevent simultaneous operation



Item Description	Catalogue No.
Motor Interlock Cable (0.5 m) Between T2MC12 and T2MC25/25L	T2MM25L05A
Motor Interlock Cable (1.5 m) Between T2MC12 and T2MC25/25L	T2MM25L15A

Item Description	Catalogue No.
Motor Interlock Cable (0.6 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S06A
Motor Interlock Cable (2.1 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S21A

Locking and Interlocking Accessories

Cable Mechanical Interlock

Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 M apart

Item Description	Catalogue No.
Interlock less wire. Order 1 interlock for each MCCB used	TPMW25SCN

Item Description	Catalogue No.
Cable Interlock Wire (1.0 m)	T2MW00SA
Cable Interlock Wire (1.5 m)	T2MW00LA

Link Mechanical Interlock

Prevents simultaneous operation of two horizontally mounted interlocked MCCBs.

Item Description	Catalogue No.
Link Interlock 3 Pole Left Side Section	TPML25SL3
Link Interlock 3 Pole Right Side Section	TPML25SL4
Common 3 or 4 pole right side section	TPML25SR3

Toggle Locks

Non-captive

Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Toggle Lock with 5 mm x 16.5 mm slot	T2HL25L

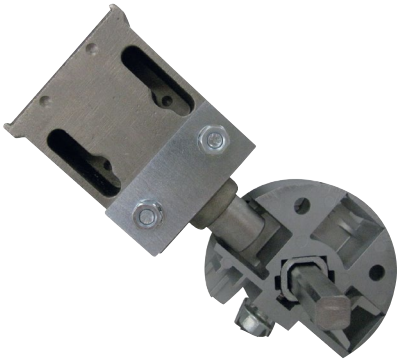
Captive

Contact NHP for Captive Toggle Locks.

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Mounting

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

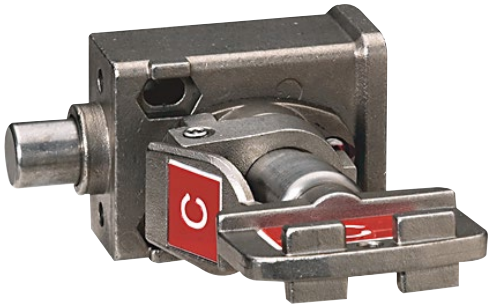
Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, Standard Key	440TAKEYE10X
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code L	440TAKEYE100L
Prosafe, Standard Key Code K	440TAKEYE100K
Prosafe, Standard Key Code J	440TAKEYE100J
Prosafe, Standard Key Code I	440TAKEYE100I
Prosafe, standard key code, H	440TAKEYE100H
Prosafe, standard key code, G	440TAKEYE100G
Prosafe, standard key code, F	440TAKEYE100F
Prosafe, standard key code, E	440TAKEYE100E
Prosafe, standard key code, D	440TAKEYE100D
Prosafe, standard key code, C	440TAKEYE100C
Prosafe, standard key code, B	440TAKEYE100B
Prosafe, standard key code, A	440TAKEYE100A

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys



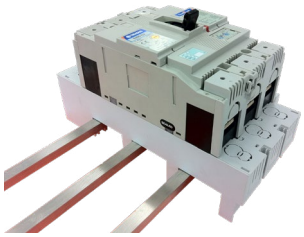
Item Description	Catalogue No.
Single key shot bolt lock, key not included	440TMSBLE10X
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10BA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100A

MCCBs

Installation External Accessories

60 mm ACS Busbar System

A base which allows an MCCBs line side to be plugged onto 60 mm 3 phase ACS busbar



Item Description	Catalogue No.
60 mm ACS Busbar System MCCB Mounting Adapter 225 A Rated, for 3 Pole MCCBs	32592

Door Flange

A door mount flange providing a plastic surround for the panel or escutcheon cutout

Item Description	Catalogue No.
Door Flange IP30 Gland and Gasket, 125 AF / 250 AF MCCB	T2DF25A
Door Flange IP30 Gland and Gasket, 125 AF / 250 AF Motor	T2DM25A

Extension Bars

Add-on bus bars, allow more or larger conductor connector to an MCCB

Item Description	Catalogue No.
3 Pole, Set of 6, Straight Bars	TPFB163SBC
4 Pole, Set of 8, Straight Bars	TPFB164SBC

Communications Module

The TPCM TemCom PRO communication module for the Smart MCCB enables data saved or monitored by the Smart MCCB to be shared with a compatible Modbus RTU monitoring system. 2 versions are available; a basic modbus module, and another that includes 2 opto isolated configurable I/O contacts for signaling additional devices.

An MCCB side mounting support bracket is supplied for side of the MCCB mounting. The module is also DIN-rail mounting.

- The Modbus communication module includes a 120 Ω termination resistor
- This resistance can be activated / deactivated via a front panel switch
- The module comes in two versions with or without input and output contact

Suits P160_SE, P250_SE, P400_SE, P630_SE SMART MCCBs (An MCCB side mount adaptor is included as standard. The module is also DIN rail mounting as standard)

Item Description	Catalogue No.
Modbus RTU Communication Module, Basic Version, No Extra I/O	TPCM00D02NA
Modbus RTU Communications Module, Basic + 2 Configurable I/O Relay Contacts	TPCM00D02WA

SMART Connection Leads

Connection Interface Leads for P_SE SMART MCCBs and TPCM, TPED or 24VDC power

Item Description	Catalogue No.
Connection lead CIP 0.5 m	TPPHQTT330HA

Item Description	Catalogue No.
Connection lead CIP 1.5 m	TPPHQTT340HA
Connection lead CIP 5.0 m	TPPHQTT360HA
Connection Lead CIP 24 V, 1.2 m	TPPHQTT140HA

Extenstion Bars

Add-on bus bars, allow more or larger conductor connector to an MCCB

Item Description	Catalogue No.
Attached Bars,1 Pole, Set of 2, Straight Bars, B160, B250, ZS250	T2FB251BA

Item Description	Catalogue No.
Attached Bars, 3 Pole, Set of 3, Straight Bars, B160, B250, ZS250	T2FB25L3SH
Attached Bars, 4 Pole, Set of 4, Straight Bars, B160, B250, ZS250	T2FB25L4SH
Attached Bars, 3 Pole, Set of 3, Flanged Bars, B160, B250, ZS250	T2FB25L3WH
Attached Bars, 4 Pole, Set of 4, Flanged Bars, B160, B250, ZS250	T2FB25L4WH

External Monitor

Suits P160_SE, P250_SE, P400_SE, P630_SE SMART MCCBs

The PRO View TPED door display is an optional accessory which can be used to monitor OCR data and also perform remote setting of Smart MCCB OCR trip unit. Data is communicated via a proprietory protocol from the MCCB to the TPED, so Modbus comms are not required when using the TPED. The TPED can be mounted on a switchboard door or a Concept panelboard escutcheon, with a door in front. An RJ9 CIP connection cable is necessary to provide the connection with the Smart circuit breaker, to its CIP connection socket. A 24 V DC supply is required and the TPED consumption is 85 mA, or a TPCM can be used. The front of the display is protected by a transparent and sealed facia which is rated IP65. The LCD screen is backlit to enable low ambient light reading.

Item Description	Catalogue No.
External Monitor and Configurator for P160_SE to P630_SE MCCBs	TPED00N

SMART Connection Leads

Connection Interface Leads for P_SE SMART MCCBs and TPCM, TPED or 24 V DC power

Item Description	Catalogue No.
Connection lead CIP 0.5 m	TPPHQTT330HA

Item Description	Catalogue No.
Connection lead CIP 1.5 m	TPPHQTT340HA
Connection lead CIP 5.0 m	TPPHQTT360HA
Connection Lead CIP 24 V, 1.2 m	TPPHQTT140HA

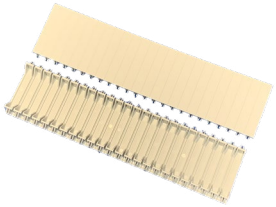
Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier, Set of Two (2), 250 AF	T2BA25L3SH

Pole Fillers

A clip in filler 9 mm wide for vacant pole positions for 46 mm DIN cut-outs



Item Description	Catalogue No.
DIN Pole Filler (1 Strip Of 12 Poles, 24 X 9 mm Segments)	DTPF12
DIN Pole Filler (1 Strip Of 4 Poles, 8 X 9 mm Segments)	DTPF

Item Description	Catalogue No.
Pole Filler 35 mm Wide for 250 AF MCCBs with a 104 mm Cut-out	XAB3

Rear Connection Studs

Allows MCCB main connections to be made at the rear of the MCCB

Item Description	Catalogue No.
Rear Connect Terminal Studs 3 Pole Kit, Set of 6 Studs P250	T2RP25L3SA
Rear Connect Terminal Studs 4 Pole Kit, Set of 8 Studs P250	T2RP25L4SA

SMART Connection Leads

Optional Alarm Contact or Pre-Trip Alarm connection leads for P_SE SMART MCCBs.

Item Description	Catalogue No.
OAC / PTA connection lead 1.2 m	TPPHQTT130HA

Item Description	Catalogue No.
ZSI - zone selective interlocking connection lead, 1.2 m	TPPHQTT150HA

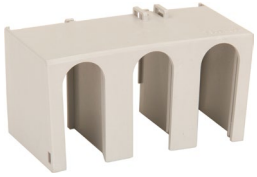
Item Description	Catalogue No.
Connection lead CIP 0.5 m	TPPHQTT330HA

Item Description	Catalogue No.
Connection lead CIP 1.5 m	TPPHQTT340HA
Connection lead CIP 5.0 m	TPPHQTT360HA
Connection Lead CIP 24 V, 1.2 m	TPPHQTT140HA

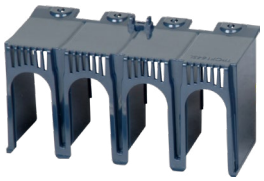
Terminal Covers

Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area



Item Description	Catalogue No.
Extended Terminal Covers Front Connect 1 Pole Cover, Set of 2, 55 mm Long, Narrow Cover	T2CF161SLNG



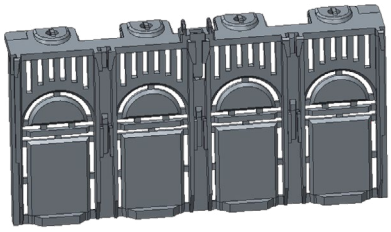
Item Description	Catalogue No.
3 Pole Single Cover, 55 mm Long, Narrow Cover	T2CF25L3SLHP
4 Pole Single Cover, 55 mm Long, Narrow Cover	T2CF25L4SLHP
3 Pole Set of Two (2) Covers, 55 mm Long, Narrow Cover	T2CF25L3SLNP
4 Pole Set of Two (2) Covers, 55 mm Long, Narrow Cover	T2CF25L4SLNP
3 Pole Single Cover, 55 mm Long, Narrow Cover with Rear Earth Barrier	T2CF25L3SLEP
4 Pole Single Cover, 55 mm Long, Narrow Cover with Rear Earth Barrier	T2CF25L4SLEP

Item Description	Catalogue No.
3 Pole Single Cover, 55 mm Long, Wide Cover	T2CF25L3SWHP
4 Pole Single Cover, 55 mm Long, Wide Cover	T2CF25L4SWHP
3 Pole Set of Two (2) Covers, 55 mm Long, Wide Cover	T2CF25L3SWNP
4 Pole Set of Two (2) Covers, 55 mm Long, Wide Cover	T2CF25L4SWNP

Flushed Front Terminal Covers

Provides front finger touch protection with MCCBs used with tunnel terminals or chassis

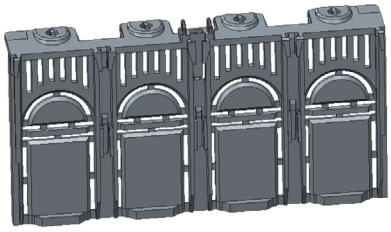
Item Description	Catalogue No.
Flush IP20 Terminal Covers - Front Connected MCCBs 1 Pole Cover, Set of 2	T2CS161SG



Item Description	Catalogue No.
3 Pole Single Cover	T2CS25L3SHP
4 Pole Single Cover	T2CS25L4SHP
3 Pole Covers, Set of 2	T2CS25L3SP
4 Pole Covers, Set of 2	T2CS25L4SP

Rear Connect Terminal Covers

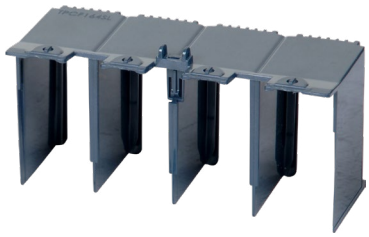
Provides front finger touch protection with MCCBs used with rear terminals and HC chassis



Item Description	Catalogue No.
3 Pole Single Cover	T2CR25L3SHP
4 Pole Single Cover	T2CR25L4SHP
3 Pole Covers, Set of 2	T2CR25L3SP
4 Pole Covers, Set of 2	T2CR25L4SP

Short Terminal Covers Front Connect

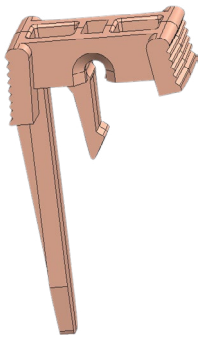
Provides front, side and internal isolation between poles in the MCCB power terminal area



Item Description	Catalogue No.
3 Pole Single Cover, 25 mm Long, Narrow Cover	T2CF25L3SSHP
4 Pole Single Cover, 25 mm Long, Narrow Cover	T2CF25L4SSHP
3 Pole Cover Set of 2, 25 mm Long, Narrow Cover	T2CF25L3SSNP
4 Pole Cover Set of 2, 25 mm Long, Narrow Cover	T2CF25L4SSNP

Terminal Cover Locking Clip

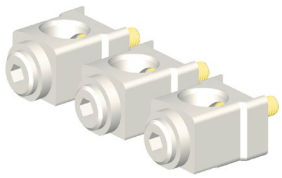
Used with terminal covers to prevent unauthorised removal or access to terminal area



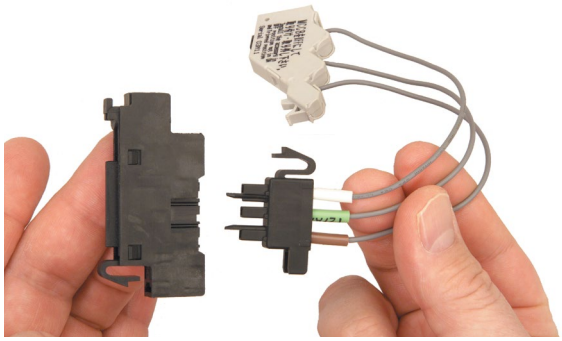
Item Description	Catalogue No.
Terminal Cover Locking Clip Suits A250, P250	T2CF25LL

Tunnel Clamp Terminals

Allows cable to be terminated directly to the MCCB and clamped for good connectivity



Item Description	Catalogue No.
Tunnel Clamp Terminals 3 Pole, Set of 3 Clamps, 35 - 120 mm²	T2FW25LS3A
Tunnel Clamp Terminals 4 Pole, Set of 4 Clamps, 35 -120 mm²	T2FW25LS4A



Item Description	Catalogue No.
3 Pin Plug and Socket for Aux/Alarms – for MCCB and Base	2H6959CAA1
3 Pin Plug and Socket for Shunt/UVT – for MCCB and Base	2H6959CBA1
Control Wiring Plugs and Sockets for Withdrawable and Plug-in MCCBs, 3 Pin Socket for Panel Mount Version	T2TP003A

MCCBs

B250_TM

Thermal Magnetic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ Suits HC chassis
- ✔ 165 mm H, 103 mm D, 35 mm pole centres
- ✔ Fault rating; 125, 200 kA I_{CU} @ 415 V AC
- ✔ Utilisation ratings from 24 V to 690 V AC (refer model), 250 V DC
- ✔ Thermal magnetic trip unit: adjustable thermal / adjustable magnetic
- ✔ Trip units: 20, 32, 50, 63, 100, 125, 160, 250 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Trip Unit Rating	250 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**P**	125 kA
	R	200 kA

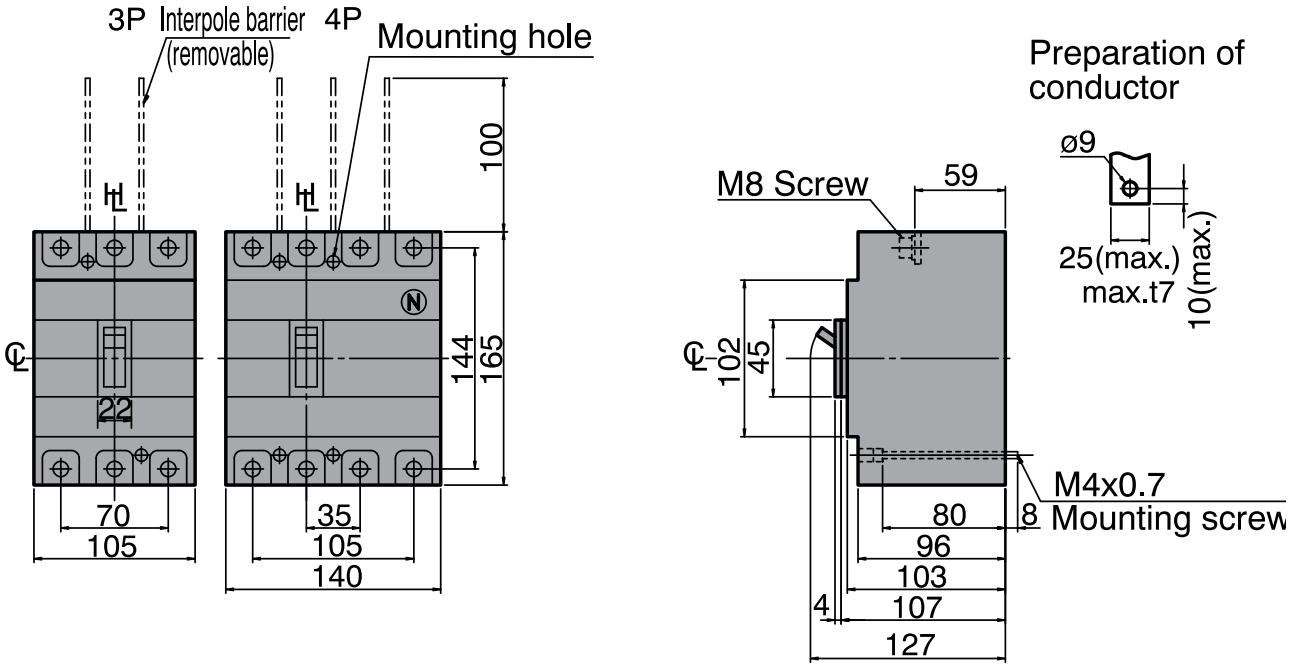
Voltage

Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option)

Quick Reference Dimensions – Front Connect



250 A Frame 3 Pole 125 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, (kA)	Poles	Pole Width (mm)	Catalogue No.
250	160 - 250	1500 - 2500	125	3	35	B250P3250TM

250 A Frame 3 Pole 200 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, (kA)	Poles	Pole Width (mm)	Catalogue No.
250	160 - 250	1500 - 2500	200	3	35	B250R3250TM

250 A Frame 4 Pole 125 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, (kA)	Poles	Pole Width (mm)	Catalogue No.
250	160 - 250	1500 - 2500	125	4	35	B250P4250TM

250 A Frame 4 Pole 200 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, (kA)	Poles	Pole Width (mm)	Catalogue No.
250	160 - 250	1500 - 2500	200	4	35	B250R4250TM

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	250 AF
Trip Unit Rating	250 A

I_n, Rated Current (A)	
45ºC	250
50ºC	-
70ºC	250
	-

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC / DC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)	
(A)	250
(W)	25

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 185 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option)
Terminal Type	Bolt-Terminal
Connection Torque	7.8 - 12.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	HC Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		165 mm
Width	**3P**	105 mm
	4P	140 mm
Depth (less toggle)		103 mm
Depth (toggle included)		127 mm
Weight	**3P**	2.4 kg
	4P	3.2 / 2.4 kg
Electrical Life		10000 cycles
Mechanical Life		20000 cycles

Short-Circuit Capacity

			kA Rating	
			MCCB Type	
		Voltage	P	R
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	150	200
		380 / 400 V AC	125	200
		415 V AC	125	200
		440 V AC	85	180
		690 V AC	20	25
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	-	-
		250 V DC	40	40
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	150	150
		380 / 400 V AC	85	150
		415 V AC	85	150
		440V AC	80	135
		690 V AC	15	20
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	-	-
		250 V DC	40	40

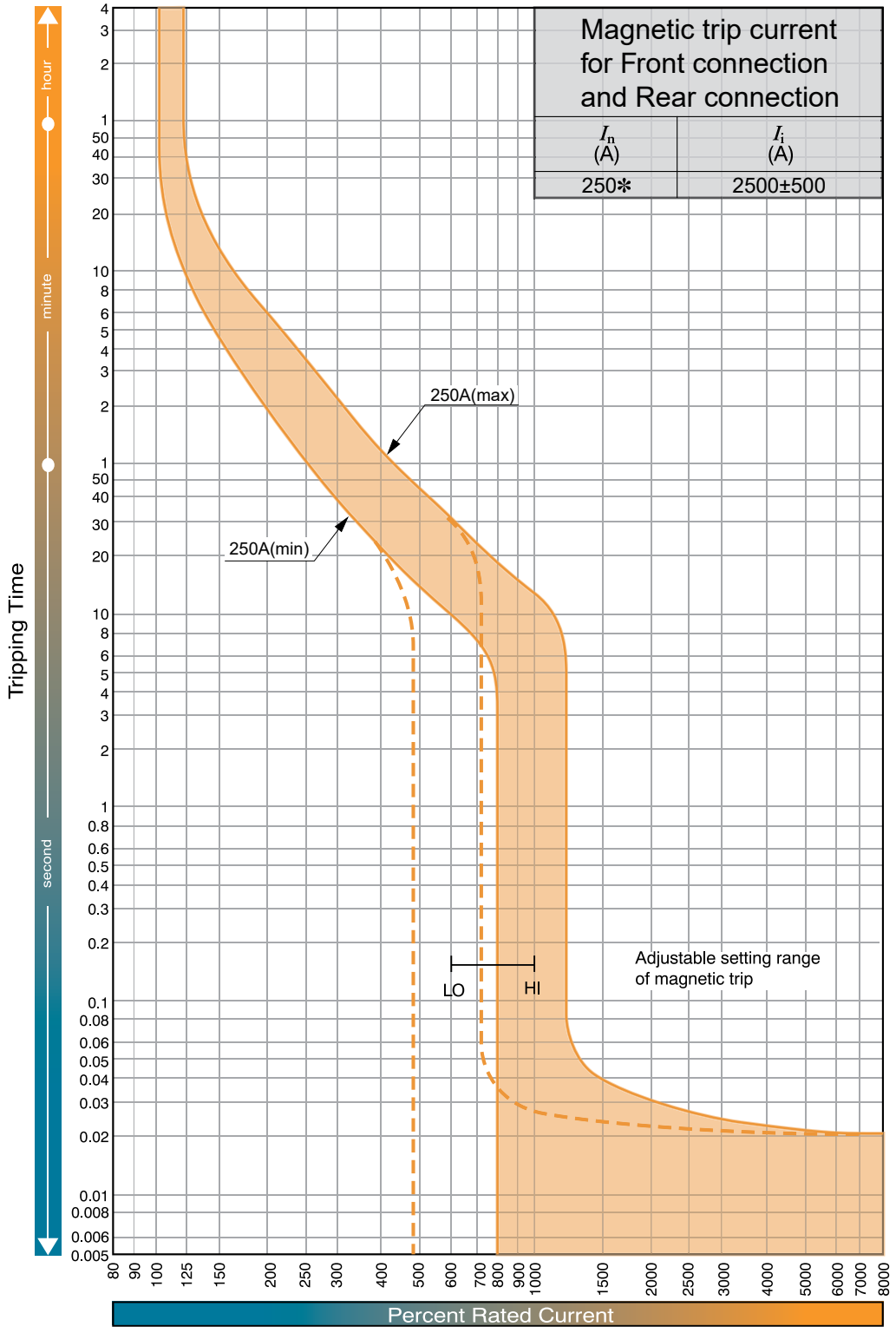
Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Rated Temperature	50 °C

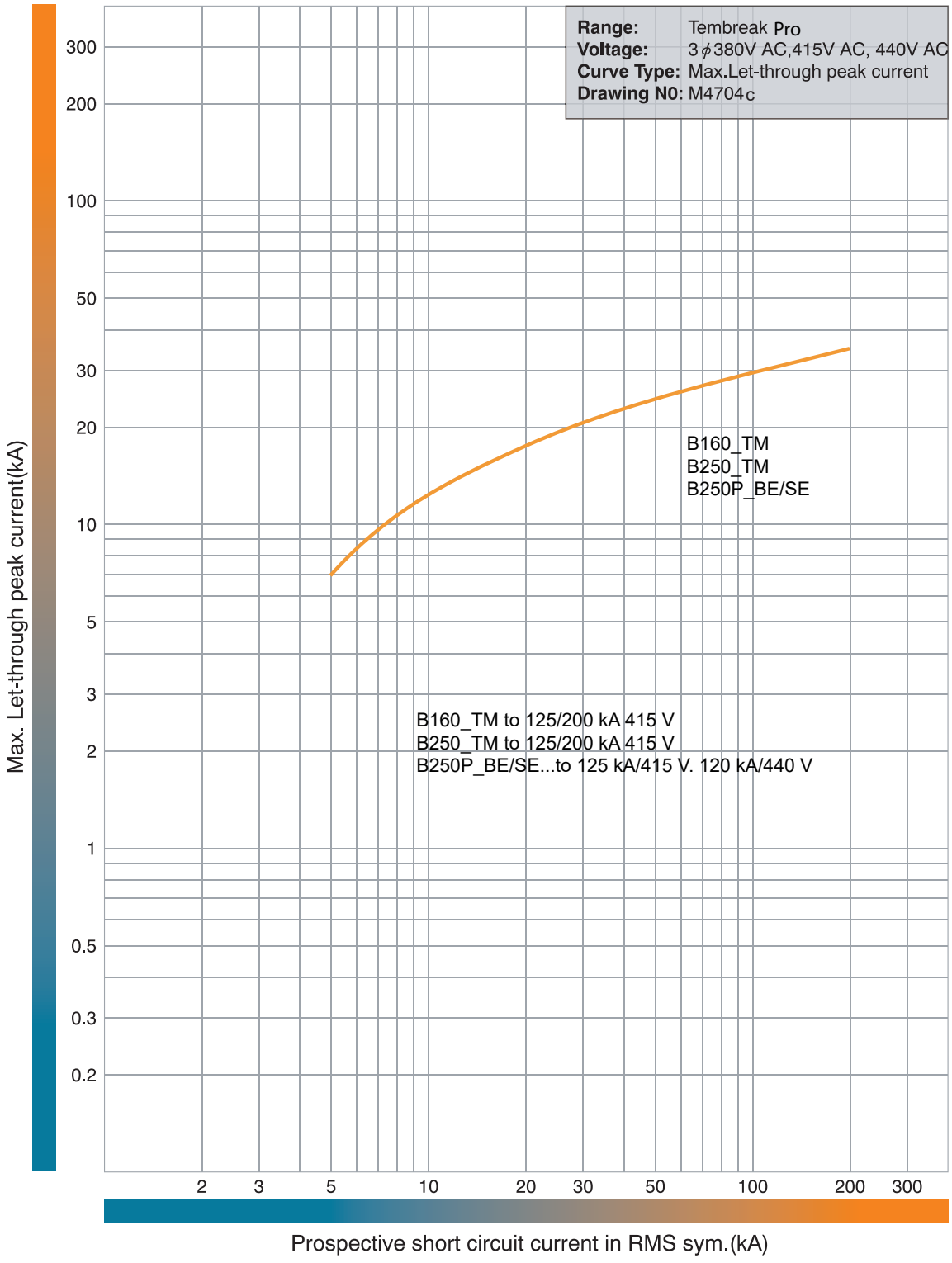
General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

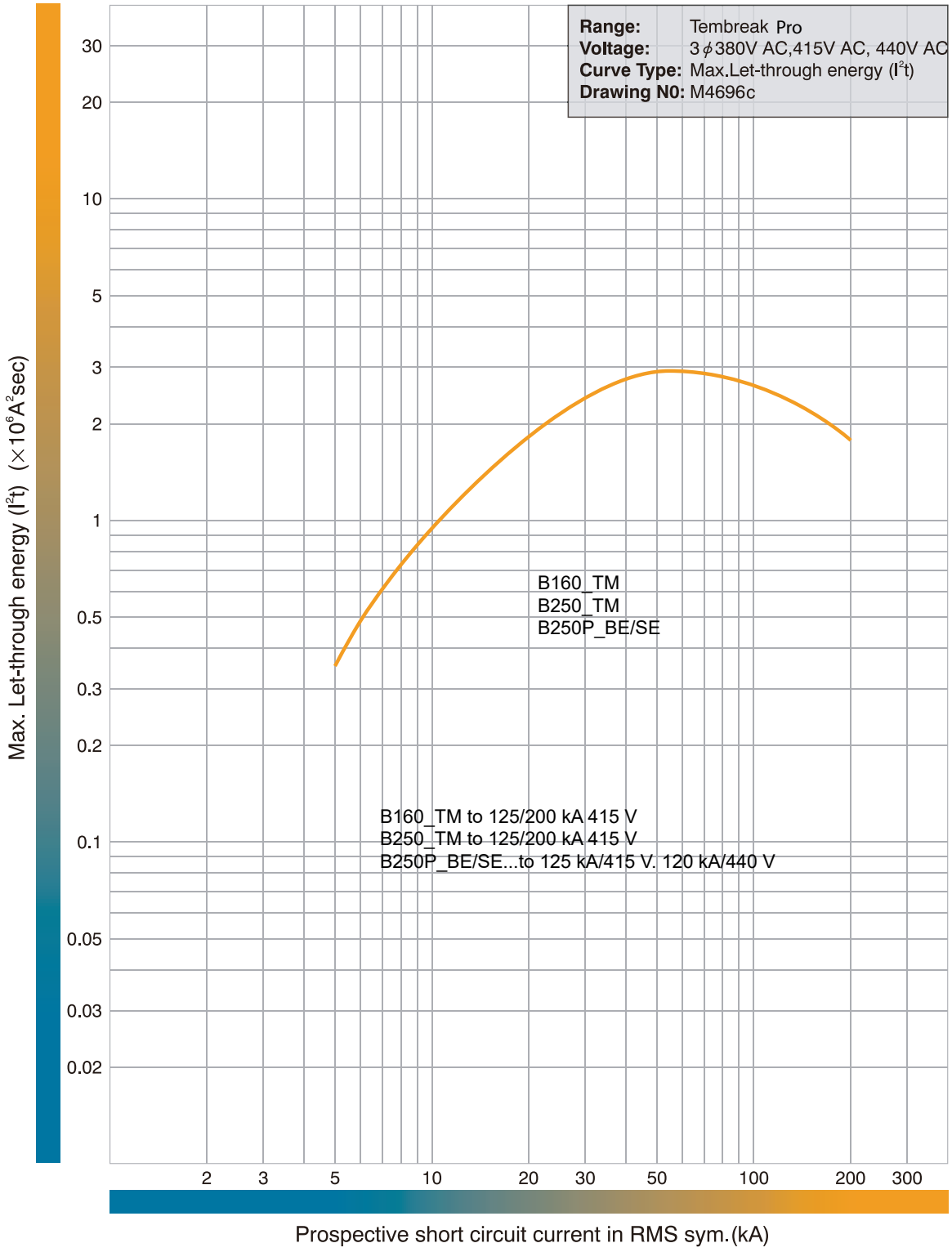
Time Current Characteristics Curve 250 A, B250, Thermal Magnetic



Let-Through Peak Current Curve, B160/250P/R_TM, Thermal Magnetic

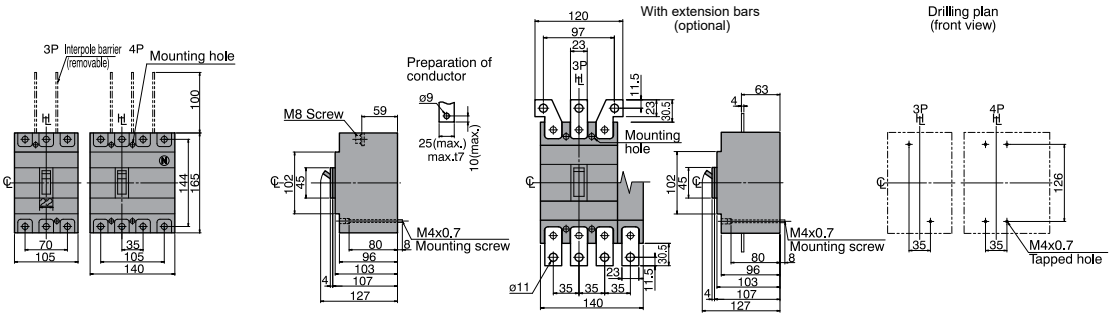


Let-Through Energy I²t Curve, B160/250P/R_TM, Thermal Magnetic

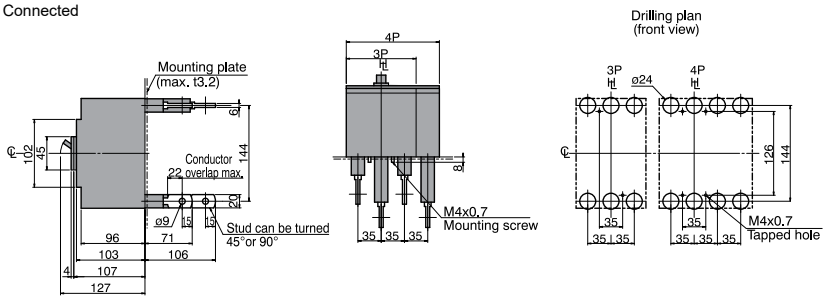


Dimensions B160_TM, B250_BE/TM and L125PJ (mm)

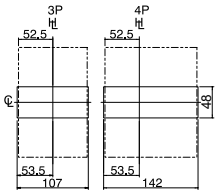
Front Connected



Rear Connected

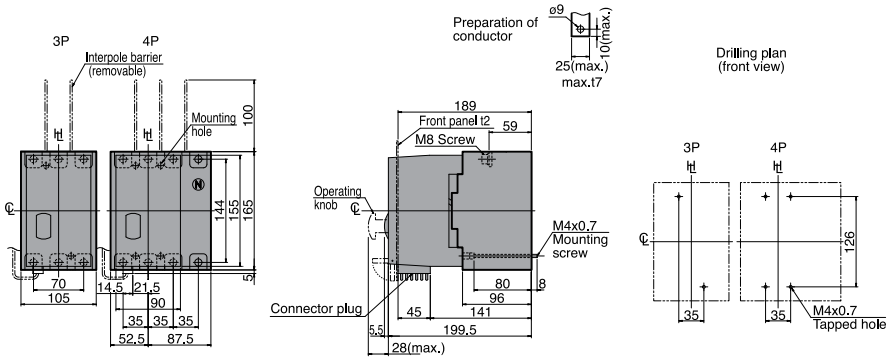


Panel cutout (front view)

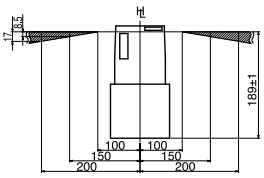


Panel cutout dimensions shown give an allowance of 1.0mm or more around the handle escutcheon.

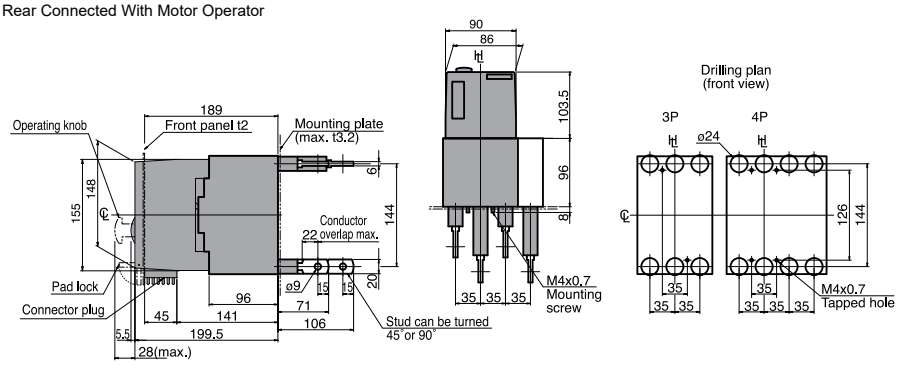
Front Connected With Motor Operator



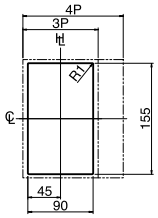
Panel hinge position (hatching area) bottom view



Rear Connected With Motor Operator



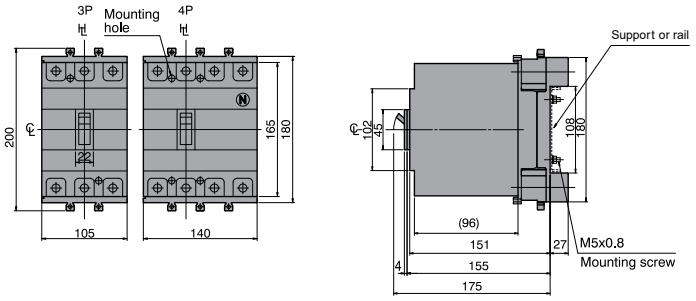
Panel cutout (front view)



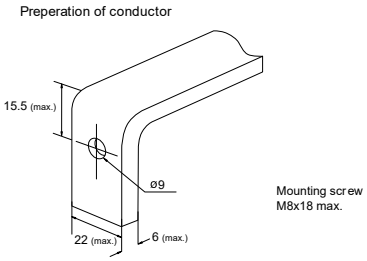
Panel cutout dimensions shown give an allowance of 1.5mm around the handle escutcheon.

Dimensions B160_TM, B250_BE/TM and L125PJ, Plug-In (mm)

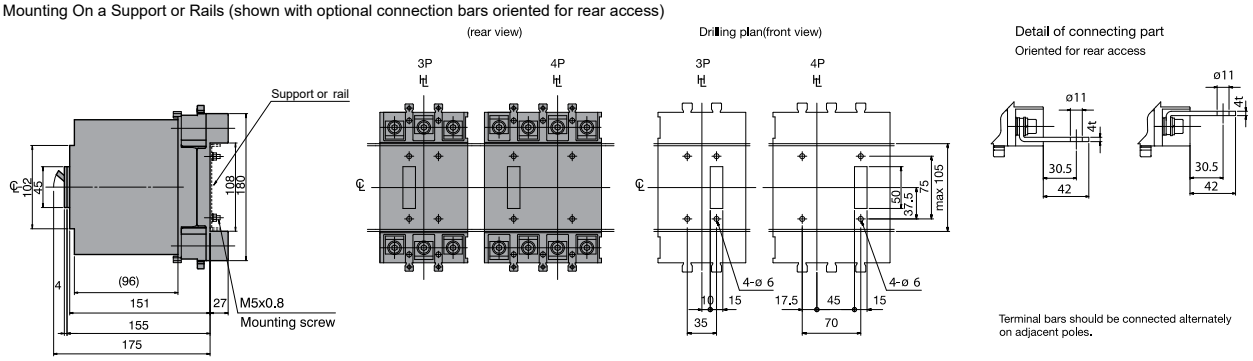
Outline Dimensions



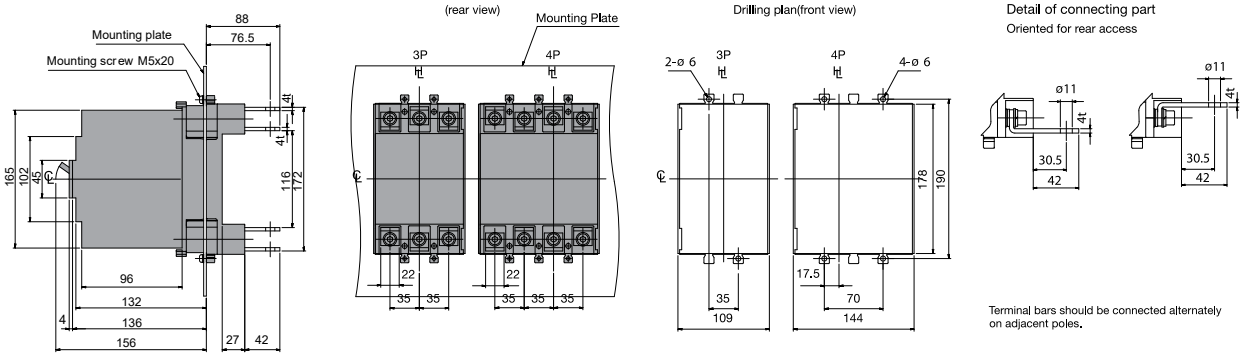
Termination of Busbar



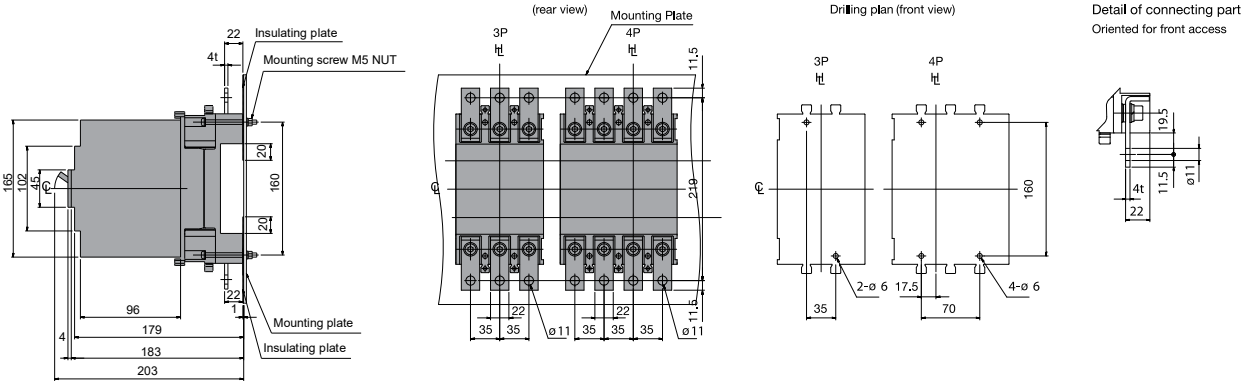
Mounting On a Support or Rails (shown with optional connection bars oriented for rear access)



Mounting Through the Backplate (shown with optional connection bars oriented for rear access)



Mounting on the Backplate (optional connection bars must be oriented for front access)



B250_BE

Electronic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ Suits HC chassis
- ✔ 165 mm H, 103 mm D, 35 mm pole centres
- ✔ Fault rating; 125 kA I_{CU} @ 415 V AC
- ✔ Electronic trip unit: 8 preset characteristic curve selection dial and base current adjustment dial (160 A trip unit: 5 settings)
- ✔ Standard features include and instantaneous-only setting
- ✔ Trip units: 40 A, 125 A, 160 A, 250 A

General

Trip Unit Protection Type	Electronic LSI (BE Type)
Trip Unit Rating	40 / 125 / 160 / 250 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**P** 125 kA

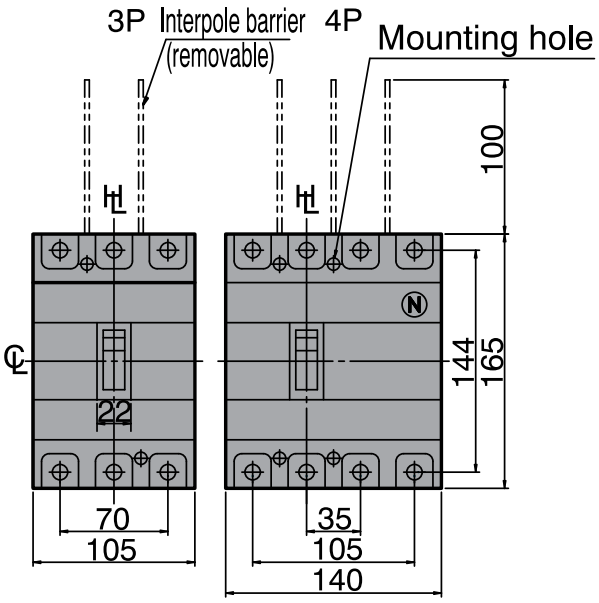
Voltage

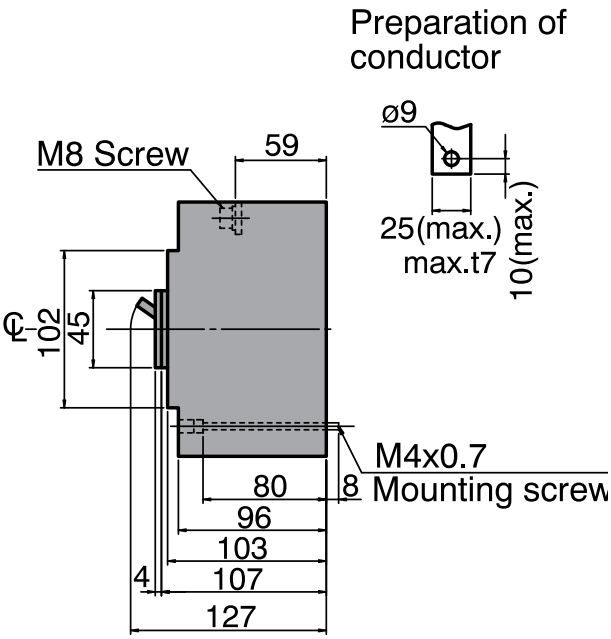
Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option)

Quick Reference Dimensions – Front Connect





250 A Frame 3 Pole 125 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	125	3	35	B250P340BE
125	50 - 125	125	3	35	B250P3125BE
250	100 - 250	125	3	35	B250P3250BE

250 A Frame 4 Pole 125 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	125	4	35	B250P440BE
125	50 - 125	125	4	35	B250P4125BE
250	100 - 250	125	4	35	B250P4250BE

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	250 AF
Trip Unit Rating	40 / 125 / 250 A

I_n, Rated Current (A)

	40	125	160	250
45ºC	40	125	160	250
50ºC	40	125	160	237.5
70ºC	40	125	160	200

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	40	125	160	250
(W)	0.64	6.24	10.23	25

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 185 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option)
Terminal Type	Bolt-Terminal
Connection Torque	7.8 - 12.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	HC Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		165 mm
Width	**3P**	105 mm
	4P	140 mm
Depth (less toggle)		103 mm
Depth (toggle included)		127 mm
Weight	**3P**	2.4 kg
	4P	3.2 kg
Electrical Life		10000 cycles
Mechanical Life		20000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**P**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	150
		380 / 400 V AC	125
		415 V AC	125
		440 V AC	120
		690 V AC	20
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	150
		380 / 400 V AC	85
		415 V AC	85
		440V AC	80
		690 V AC	15
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI (BE Type)
Rated Temperature	45 °C

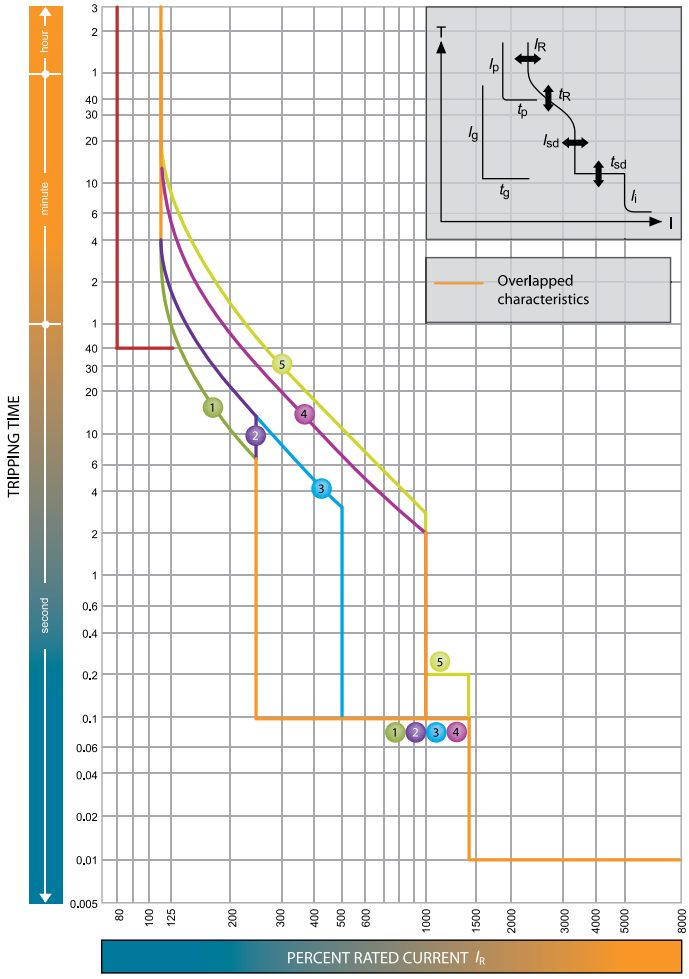
Other Features

Pre-trip alarm (PTA)	Yes
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

Characteristic Curves 1 to 5, B250_BE 40 A, Basic Electronic



B250P31125BE_OPCH-S03

Characteristics For I_R Rated 40 A: B250P_BE [3]

LTD Pick Up Current I_R (A)		16 – 20 – 25 – 32 – 36 – 38 – 40 A (7 steps)					30 A (fixed)	40 A (fixed)	Instantaneous only
		Standard Curves 1 - 5					Additional special application curves next pages		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8** [1]
LTD t_R (S)		11	21	21	5	7.5	1	2.5	-
		at 200 % x I_R			at 600 % x I_R		at 90 A	at 120 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n)					250 A	300 A	520 A
OCR Options									
Pre Trip Alarm (PTA)	I_P x I_R	0.8					0.8		
	I_p (S)	40					40		
Neutral Pole Protection (NP)	I_N x I_R	1.0 [2]					1.0 [2]		
	t_N (S)	$t_N = t_R$					$t_N = t_R$		

Notes

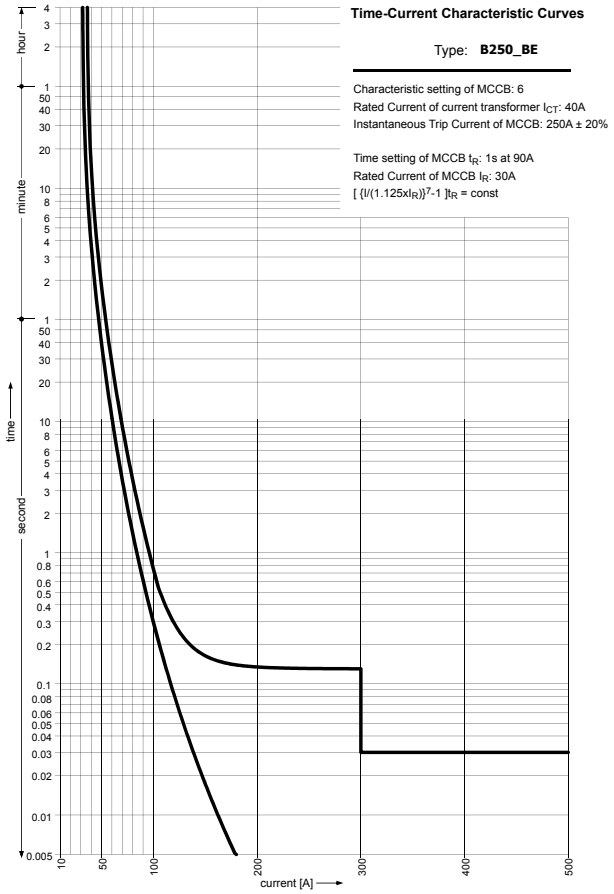
1) *Ii* max. = 13 x I_n

2) Characteristic of neutral protection (t_N vs. I_N) is identical to characteristic of phase protection (t_R vs. I_R)

3) Energy Metering MCCBs: B250P_SE have 5 selectable characteristic curves. Non metering B250P_BE MCCBs have 8 curves

Characteristic Curves 6 and 7, B250_BE 40 A, Basic Electronic

6



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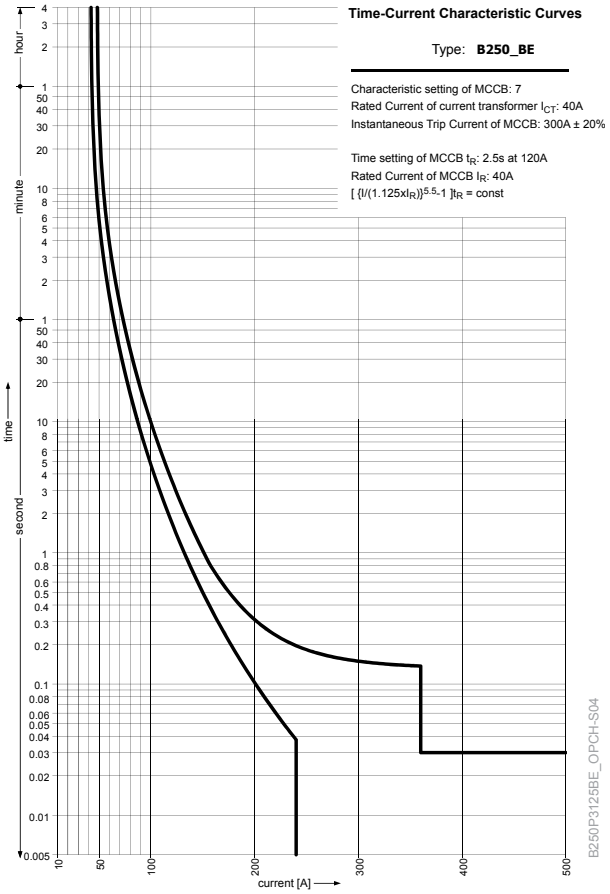


Characteristics For 40 A I_R Rated B250P_BE [2]

LTD Pick Up Current I_R (A)		16 – 20 – 25 – 32 – 36 – 38 – 40 A (7 steps)					30 A (fixed)	40 A (fixed)	Instantaneous only
		Standard Curves 1 - 5					Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8** [1]
LTD t_R (S)		11	21	21	5	7.5	1	2.5	-
		at 200 % x I_R			at 600 % x I_R		at 90 A	at 120 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n)					250 A	300 A	520 A
OCR Options		PTA, NP					PTA, NP		

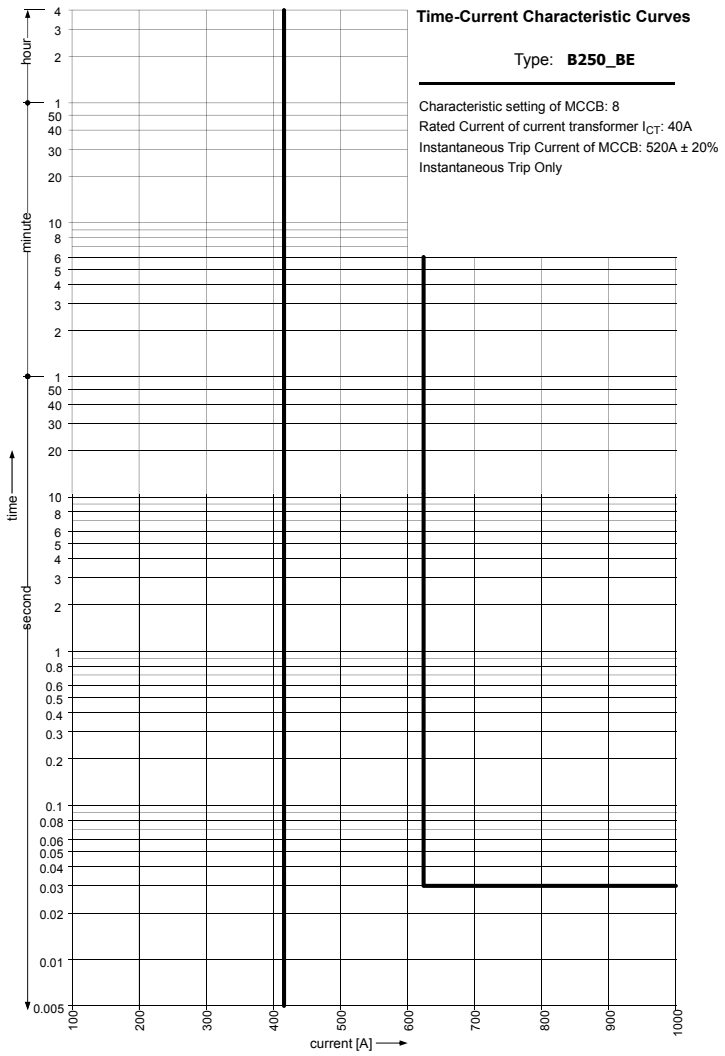
Notes

1) Instantaneous, curve 8, next page

2) B250P_SE metering MCCBs include as standard curves 1 to 5, but not curves 6, 7, and 8

Characteristic Curve 8, B250_BE 40 A, Basic Electronic

8



B250P3126BE_OPCH-S05

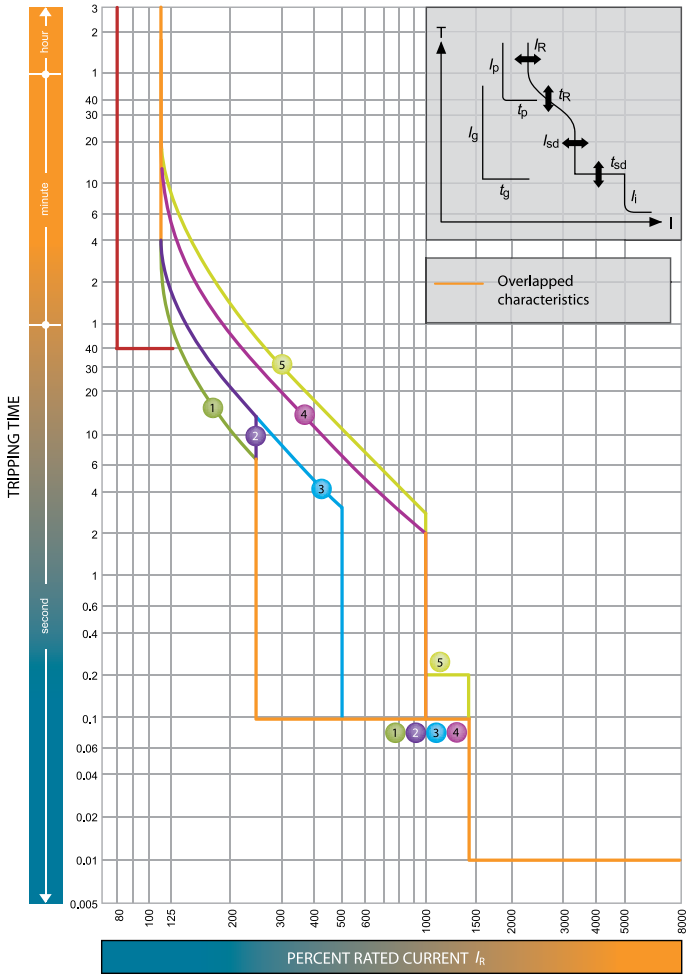
Characteristics For 40 A I_R Rated B250P_BE [2)]

LTD Pick Up Current I_R (A)		16 – 20 – 25 – 32 – 36 – 38 – 40 A (7 steps)					30 A (fixed)	40 A (fixed)	Instantaneous only
		Standard Curves 1 - 5					Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
LTD t_R (S)		11	21	21	5	7.5	1	2.5	-
		at 200 % x I_R			at 600 % x I_R		at 90 A	at 120 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n)					250 A	300 A	520 A
OCR Options		PTA, NP					PTA, NP		

Notes

1) B250P_SE metering MCCBs include as standard curves 1 to 5, but not curves 6, 7, and 8

Characteristic Curves 1 to 5, B250_BE 125 A, Basic Electronic



B250P3125BE_OPCH-S06

Characteristics For I_R Rated 125 A: B250P_BE [3]

LTD Pick Up Current I_R (A)		50 – 62 – 78 – 100 – 112 – 118 – 125 (7 step)					100 A (fixed)	125 A (fixed)	Instantaneous only
		Standard Curves 1 - 5					Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8** [1]
LTD t_R (S)		11	21	21	5	7.5	1	2.5	-
		at 200 % x I_R			at 600 % x I_R		at 300 A	at 375 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n)					650 A	700 A	1625 A
OCR Options									
Pre Trip Alarm (PTA)	I_P x I_R	0.8					0.8		
	I_p (S)	40					40		
Neutral Pole Protection (NP)	I_N x I_R	1.0 [2]					1.0 [2]		
	t_N (S)	$t_N = t_R$					$t_N = t_R$		

Notes

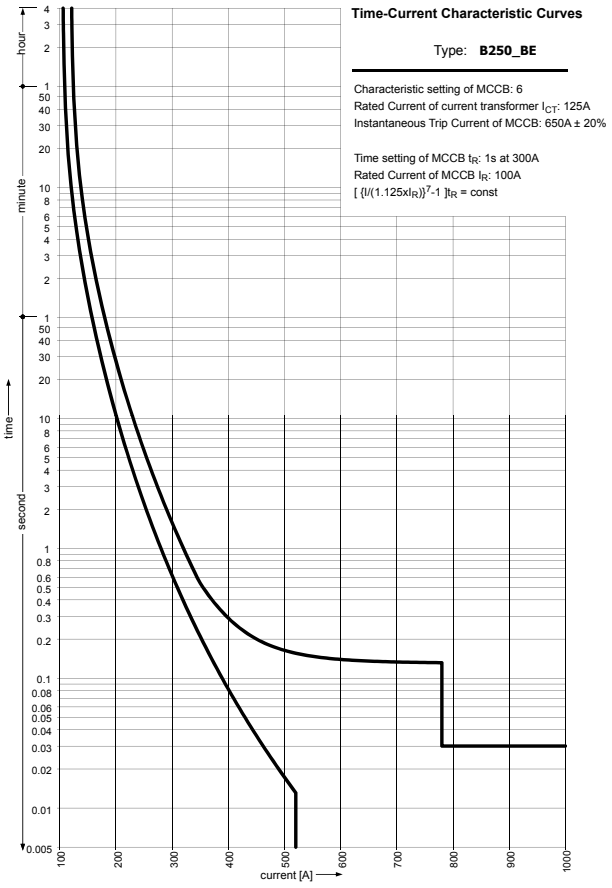
1) *Ii* max. = 13 x I_n

2) Characteristic of neutral protection (t_N vs. I_N) is identical to characteristic of phase protection (t_R vs. I_R)

3) Energy Metering MCCBs: B250P_SE have 5 selectable characteristic curves. Non metering B250P_BE MCCBs have 8 curves

Characteristic Curves 6 and 7, B250_BE 125 A, Basic Electronic

6



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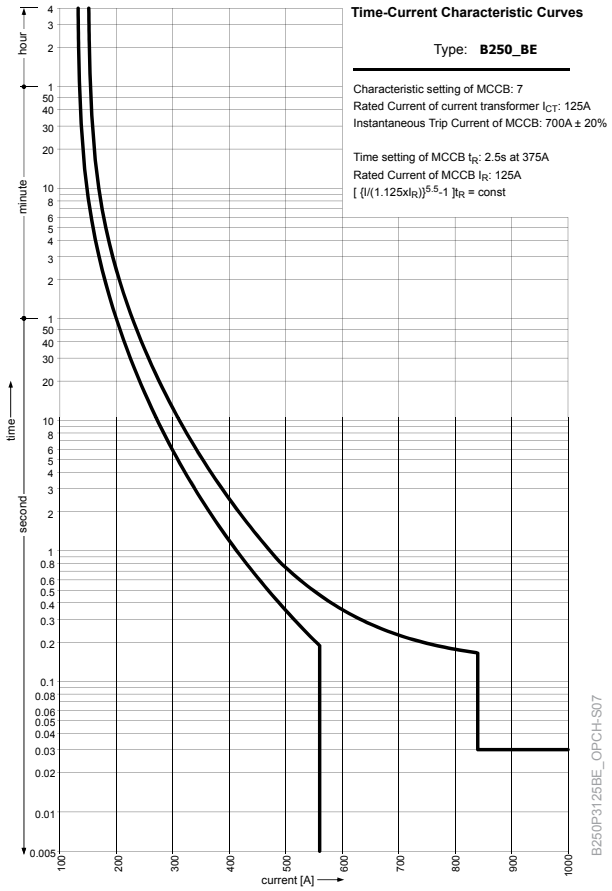


Characteristics For 125 A I_R Rated B250P_BE [2]

LTD Pick Up Current I_R (A)		50 – 62 – 78 – 100 – 112 – 118 – 125 (7 step)					100 A (fixed)	125 A (fixed)	Instantaneous only
		Standard Curves 1 - 5					Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8** [1]
LTD t_R (S)		11	21	21	5	7.5	1	2.5	-
		at 200 % x I_R			at 600 % x I_R		at 300 A	at 375 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n)					650 A	700 A	1625 A
OCR Options		PTA, NP					PTA, NP		

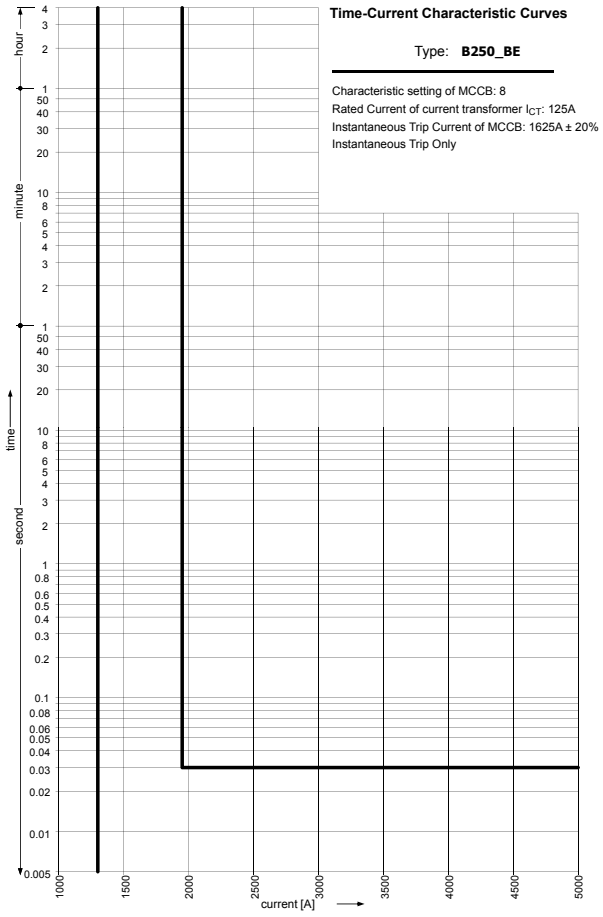
Notes

1) Instantaneous, curve 8, next page

2) B250P_SE metering MCCBs include as standard curves 1 to 5, but not curves 6, 7, and 8

Characteristic Curve 8, B250_BE 125 A, Basic Electronic

8



B250P3125BE_OPCH-S08

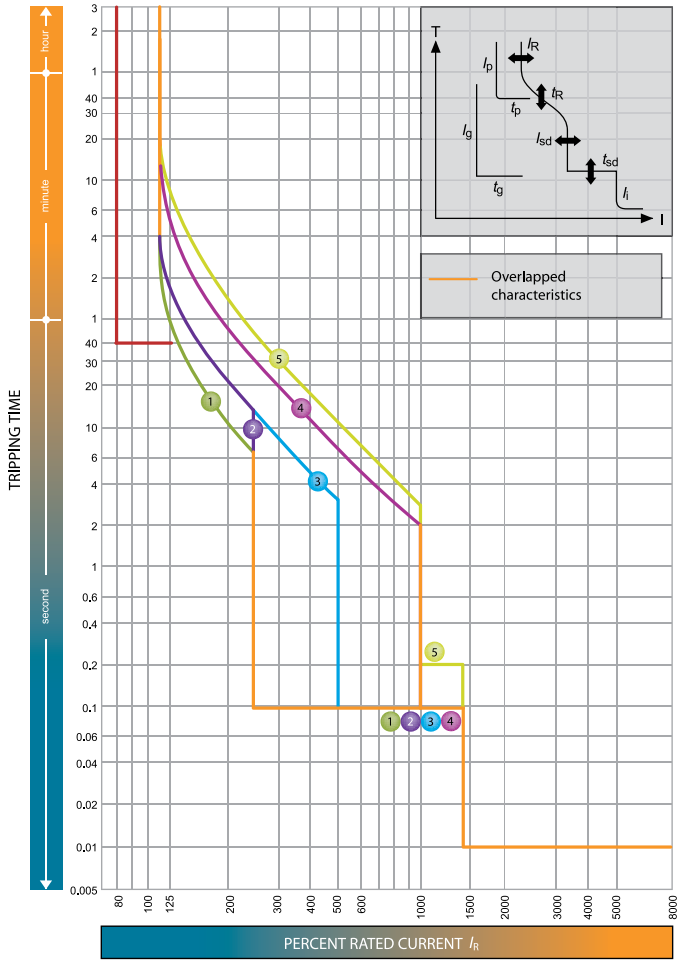
Characteristics For 125 A I_R Rated B250P_BE [1)]

LTD Pick Up Current I_R (A)		50 – 62 – 78 – 100 – 112 – 118 – 125 (7 step)					100 A (fixed)	125 A (fixed)	Instantaneous only
		Standard Curves 1 - 5					Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
LTD t_R (S)		11	21	21	5	7.5	1	2.5	-
		at 200 % x I_R			at 600 % x I_R		at 300 A	at 375 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n)					650 A	700 A	1625 A
OCR Options		PTA, NP					PTA, NP		

Notes

1) B250P_SE metering MCCBs include as standard curves 1 to 5, but not curves 6, 7, and 8

Characteristic Curves 1 to 5, B250_BE 250 A, Basic Electronic



Characteristics For I_R Rated 250 A: B250P_BE [3) 4)]

LTD Pick Up Current I_R (A)		100 – 125 – 157 – 200 – 225 – 237 – 250 (7 step)					200 A (fixed)	250 A (fixed)	Instantaneous only
		Standard Curves 1 - 5					Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8** [1)]
LTD t_R (S)		11	21	21	5	7.5	1	2.5	-
		at 200 % x I_R			at 600 % x I_R		at 600 A	at 750 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n)					800 A	1000 A	3250 A
OCR Options		PTA, NP					PTA, NP		
OCR Options									
Pre Trip Alarm (PTA)	I_P x I_R	0.8					0.8		
	I_p (S)	40					40		
Neutral Pole Protection (NP)	I_N x I_R	1.0 [2)]					1.0 [2)]		
	t_N (S)	$t_N = t_R$					$t_N = t_R$		

Notes

1) Ii max. = 13 x In.

2) Characteristic of neutral protection (t_N vs. I_N) is identical to characteristic of phase protection (t_R vs. I_R).

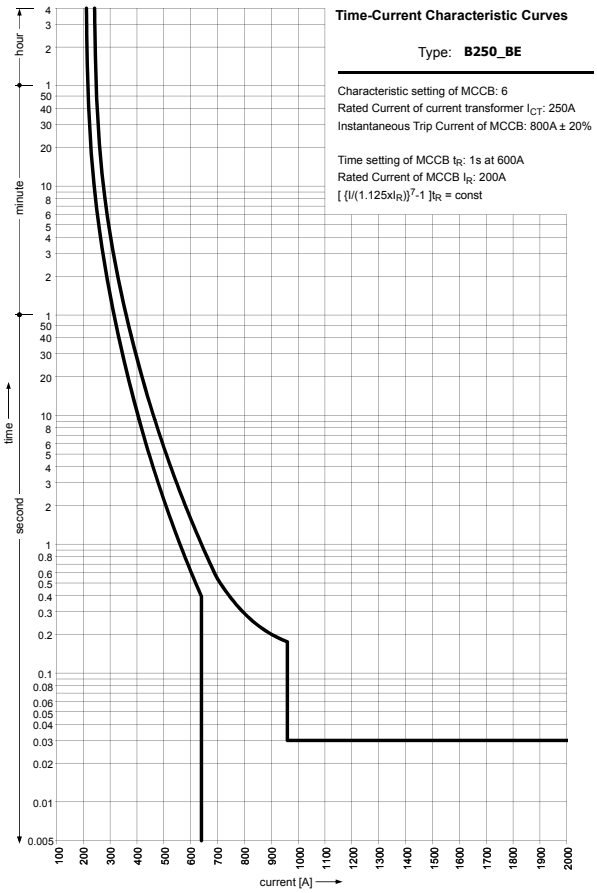
3) Energy Metering MCCBs: B250P_SE have 5 selectable characteristic curves. Non metering B250P_BE MCCBs have 8 curves.

4) For plug-in MCCBs (PM), the maximum setting for I_R should be less than 225 A. When I_N = 250 A, I_R should be derated to I_N x 0.9 or less.

MCCBs

Characteristic Curves 6 and 7, B250_BE 250 A, Basic Electronic

6



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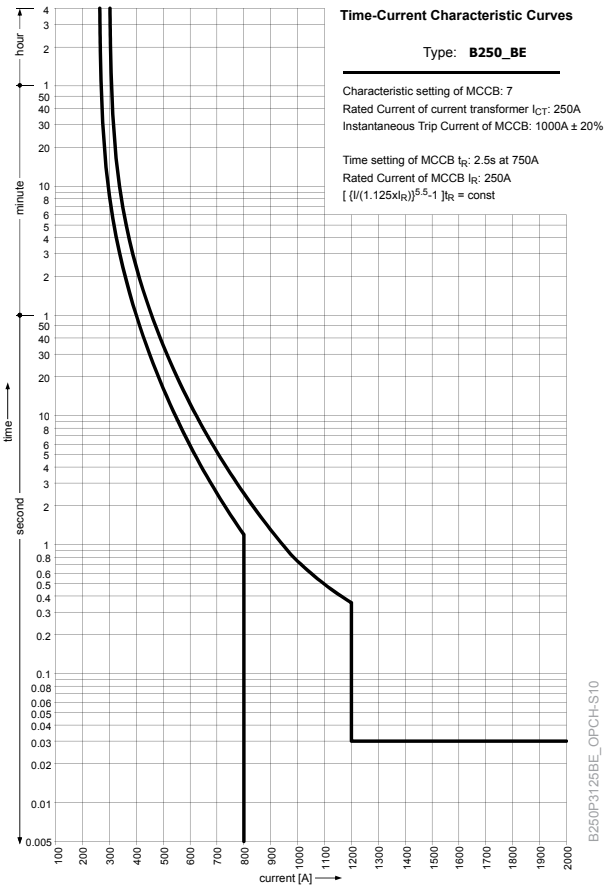


B250P3125BE_OPCH-S10

Characteristics For 250 A I_R Rated B250P_BE [2]

LTD Pick Up Current I_R (A)		100 – 125 – 157 – 200 – 225 – 237 – 250 (7 step)					200 A (fixed)	250 A (fixed)	Instantaneous only
		Standard Curves 1 - 5					Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8** [1]
LTD t_R (S)		11	21	21	5	7.5	1	2.5	-
		at 200 % x I_R			at 600 % x I_R		at 600 A	at 750 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n)					800 A	1000 A	3250 A
OCR Options		PTA, NP					PTA, NP		

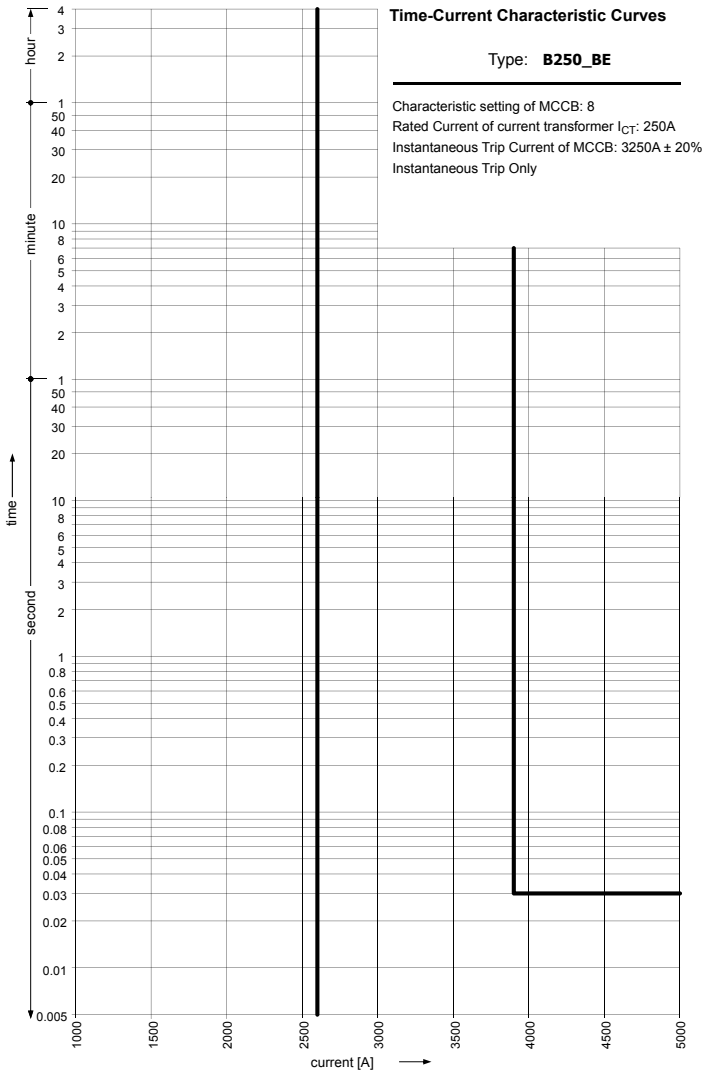
Notes

1) Instantaneous, curve 8, next page

2) B250P_SE metering MCCBs include as standard curves 1 to 5, but not curves 6, 7, and 8

Characteristic Curve 8, B250_BE 250 A, Basic Electronic

8



B250P3125BE_OPCH-S11

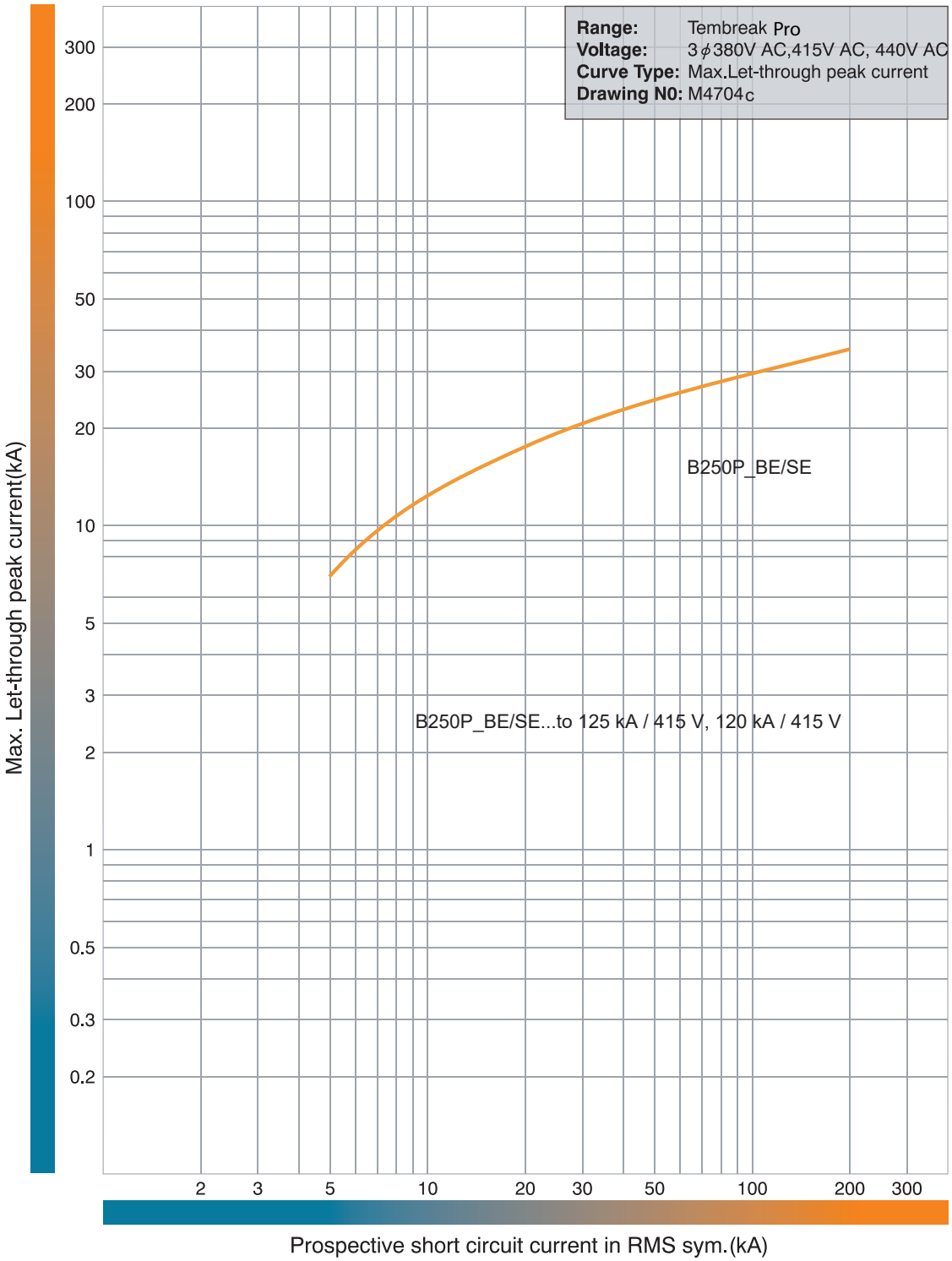
Characteristics For 250 A I_R Rated B250P_BE [1)]

LTD Pick Up Current I_R (A)		100 – 125 – 157 – 200 – 225 – 237 – 250 (7 step)					200 A (fixed)	250 A (fixed)	Instantaneous only
		Standard Curves 1 - 5					Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
LTD t_R (S)		11	21	21	5	7.5	1	2.5	-
		at 200 % x I_R			at 600 % x I_R		at 600 A	at 750 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n)					800 A	1000 A	3250 A
OCR Options		PTA, NP					PTA, NP		

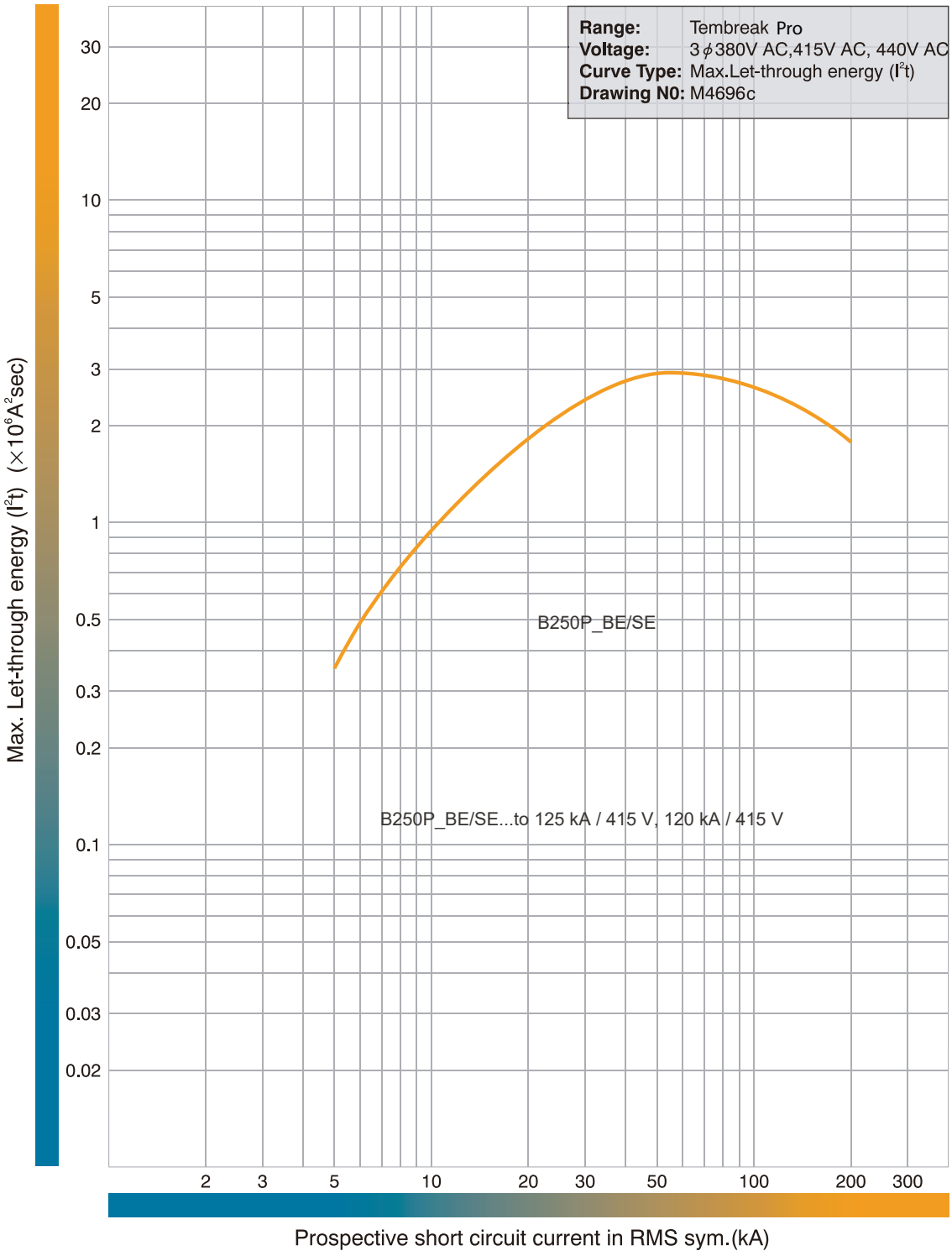
Notes

1) B250P_SE metering MCCBs include as standard curves 1 to 5, but not curves 6, 7, and 8

Let-Through Peak Current Curve, B250 BE/SE, Electronic

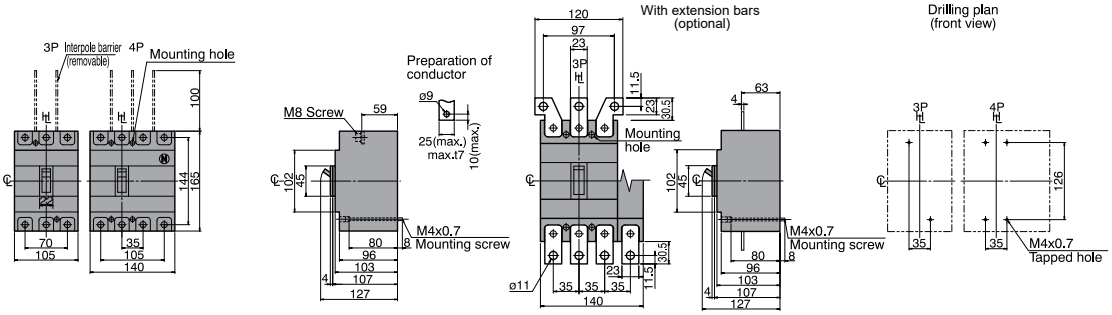


Let-Through Energy I²t Curve, B250 BE/SE, Electronic

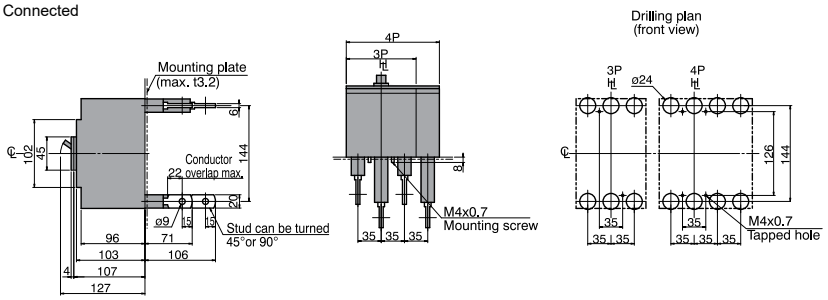


Dimensions B160_TM, B250_BE/TM and L125PJ (mm)

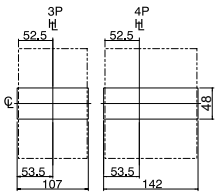
Front Connected



Rear Connected

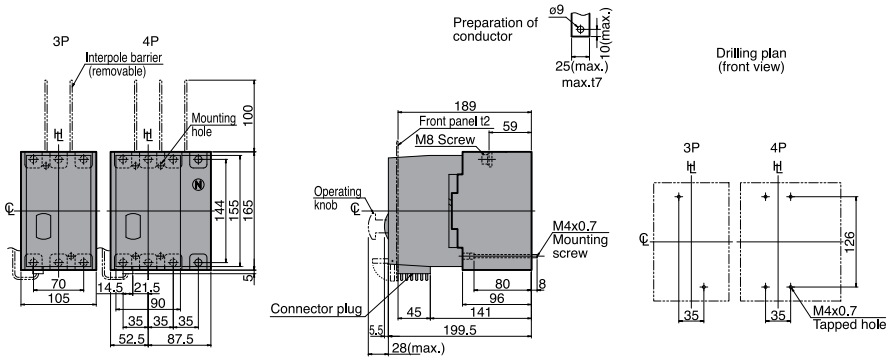


Panel cutout (front view)

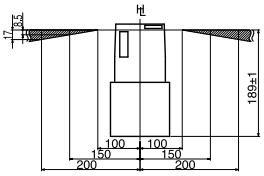


Panel cutout dimensions shown give an allowance of 1.0mm or more around the handle escutcheon.

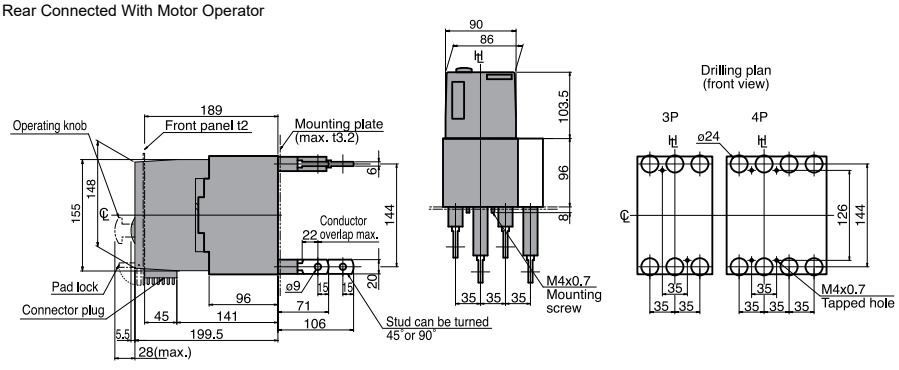
Front Connected With Motor Operator



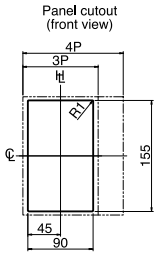
Panel hinge position (hatching area) bottom view



Rear Connected With Motor Operator



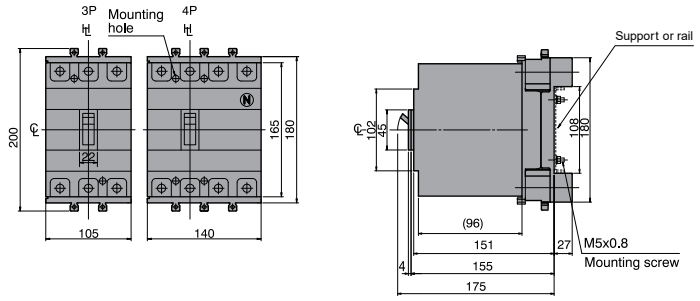
Panel cutout (front view)



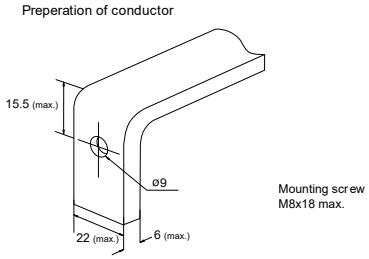
Panel cutout dimensions shown give an allowance of 1.5mm around the handle escutcheon.

Dimensions B160_TM, B250_BE/TM and L125PJ, Plug-In (mm)

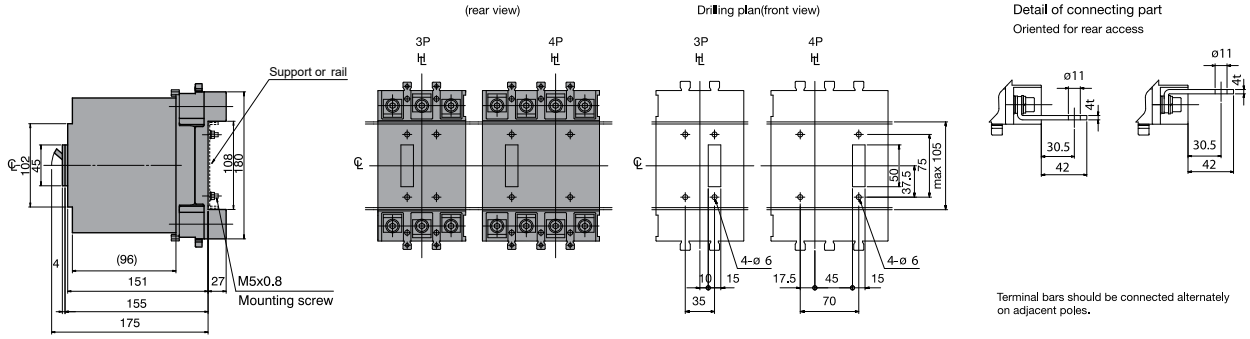
Outline Dimensions



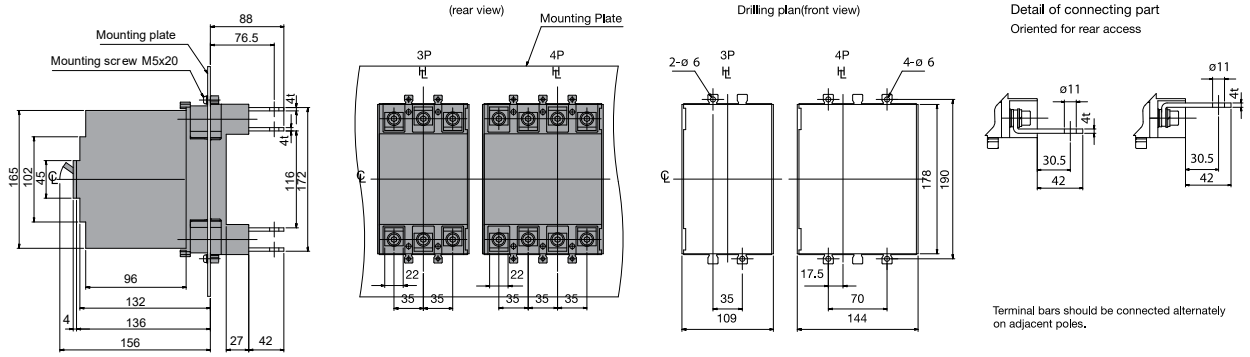
Termination of Busbar



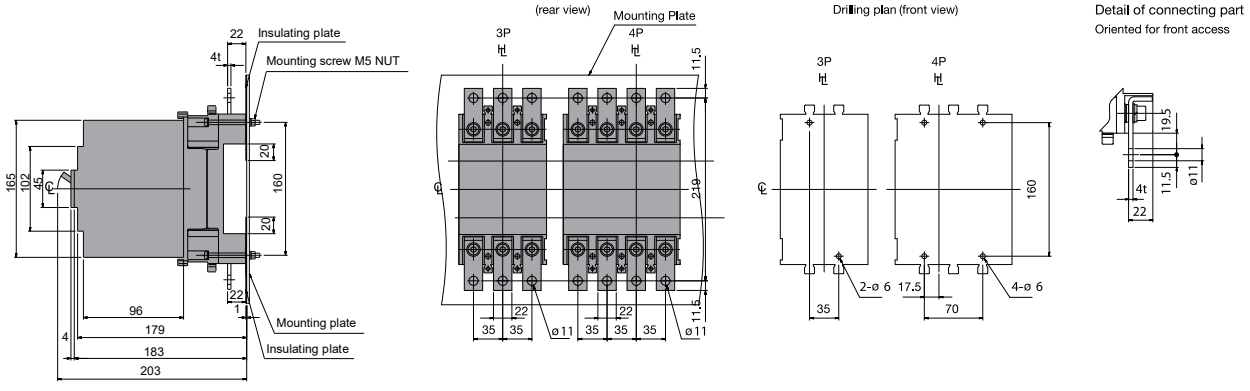
Mounting On a Support or Rails (shown with optional connection bars oriented for rear access)



Mounting Through the Backplate (shown with optional connection bars oriented for rear access)



Mounting on the Backplate (optional connection bars must be oriented for front access)



B250_SE

Electronic MCCB with Energy Metering Output

- ✔ General purpose power distribution, energy metering and communications, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ 3 or 4 pole versions
- ✔ Suits HC chassis
- ✔ 165 mm H, 103 mm D, 35 mm pole centres
- ✔ Fault ratings; 125 kA I_{CU} @ 415 VAC
- ✔ Energy metering LSI trip unit: Modbus communications, V, I, Energy measurement output
- ✔ Electronic trip unit: 5 preset characteristic curve selection dial and base current adjustment dial
- ✔ Display: door mount display (T2ED) available for external metering and monitoring
- ✔ Full range of accessories for application flexibility
- ✔ Trip units; 40 A, 125 A, 160 A, 250 A

General

Trip Unit Protection Type	Electronic LSI Energy Metering Modbus RTU 485 Communications Output
Trip Unit Rating	40 / 125 / 160 / 250 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**P** 125 kA

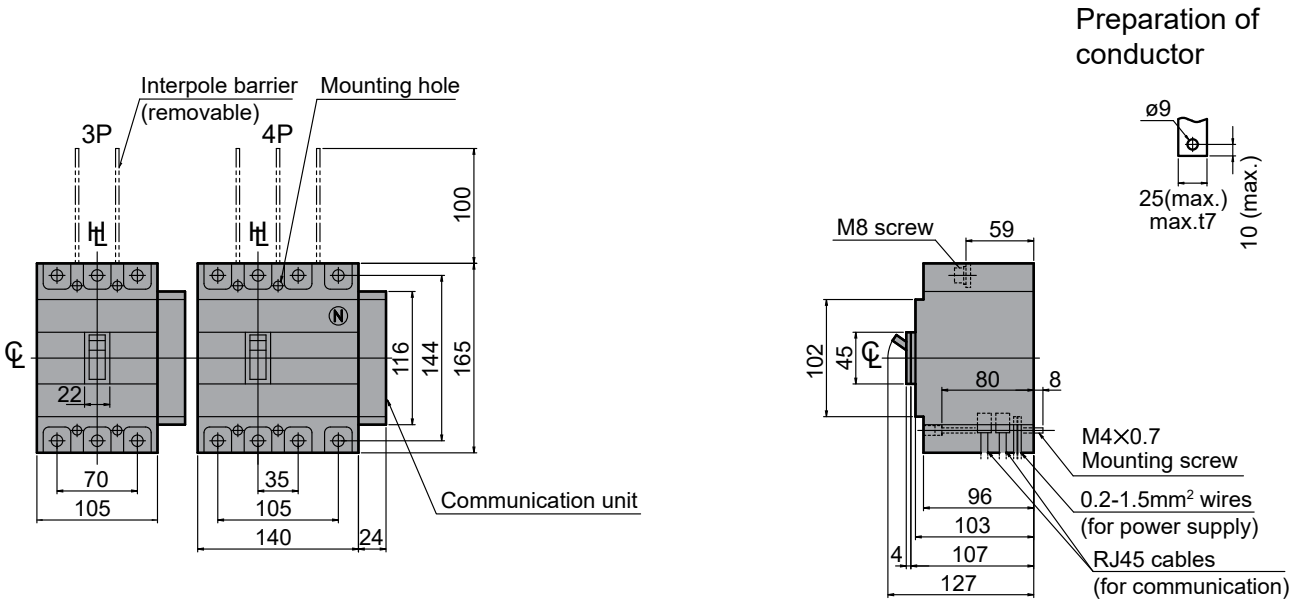
Voltage

Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option)

Quick Reference Dimensions – Front Connect



250 A Frame 3 Pole 125 kA SE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	125	3	35	B250P340SE
125	50 - 125	125	3	35	B250P3125SE
250	100 - 250	125	3	35	B250P3250SE

250 A Frame 4 Pole 125 kA SE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Pole Width (mm)	Catalogue No.
40	16 - 40	125	4	35	B250P440SE
125	50 - 125	125	4	35	B250P4125SE
250	100 - 250	125	4	35	B250P4250SE

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	250 AF
Trip Unit Rating	40 / 125 / 160 / 250 A

I_n, Rated Current (A)

	40	125	160	250
45ºC	40	125	160	250
50ºC	40	125	160	237.5
70ºC	40	125	160	200

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	40	125	160	250
(W)	0.64	6.24	10.23	25

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 185 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option)
Terminal Type	Bolt-Terminal
Connection Torque	7.8 - 12.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	HC Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	No
Mounting	-

Physical

Height		165 mm
Width	**3P**	129 mm
	4P	164 mm
Depth (less toggle)		103 mm
Depth (toggle included)		151 mm
Weight	**3P**	2.4 kg
	4P	3.2 kg
Electrical Life		10000 cycles
Mechanical Life		20000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**P**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	150
		380 / 400 V AC	125
		415 V AC	125
		440 V AC	120
		690 V AC	20
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	150
		380 / 400 V AC	85
		415 V AC	85
		440V AC	80
		690 V AC	15
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI Energy Metering Modbus RTU 485 Communications Output
Rated Temperature	45 °C

Other Features

Pre-trip alarm (PTA)	Option
ZSI Zone Selective Interlocking	-
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	Yes

B250P_SE

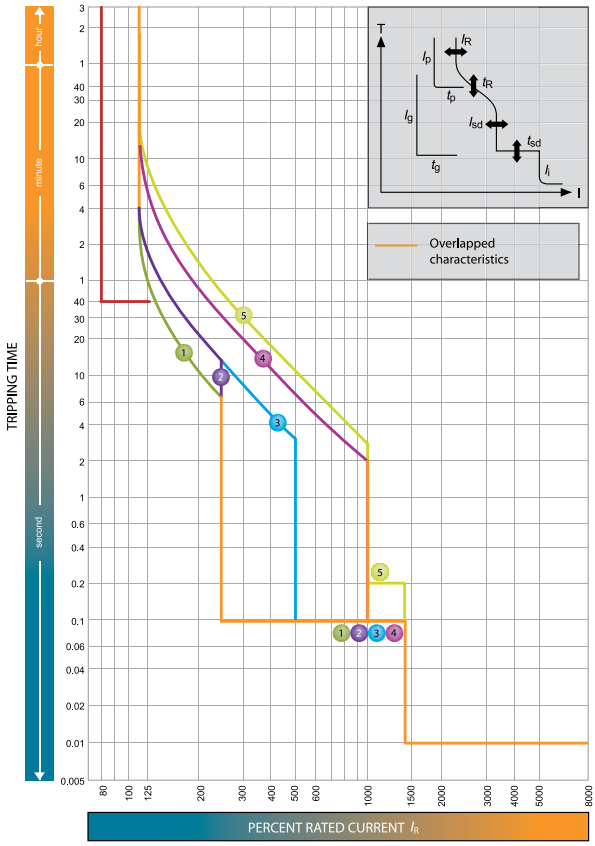
TBPro(B250P_SE Comms and Options)_dOPCH-S01

Communications MCCB Versions and Options

	Feature		Stocked
			B250P_SE
OCR Type Fitted			XOW-2S-AC
Protective Function	■ Long time-delay trip ■ Short time-delay trip ■ Instantaneous trip	A	✔
	Ground fault trip	GF	-
	N-phase protection	NP	-
	Phase rotation protection	NS	-
Alarm Function	Pre-trip alarm	PTA	-
Integral Display	Integral LCD display		-
Selectivity function	Zone Interlock	Z	-
Measurement / Event Indication	■ Load current, Line voltage ■ Electrical power ■ Demand Electric power ■ Electrical energy ■ Power factor, Frequency ■ Trip event log ■ Alarm event log	-	✔
	Electrical energy pulse	W	-
	Harmonic current	H	-
Miscellaneous	Modbus RTU RS-485 comms	C	✔
	Can set OCR settings via Modbus		-
	External display meter option	I	✔
	Test function	-	-
	Indication via output contact	Y	-
	External 24 V DC supply required	-	✔
	Can use OCR checker type TNS2	-	✔

Measurement / Event (Accuracy)		Modbus Communication Function
Load Current (±1 %)	Present value for each phase	✔
	Present max value	✔ Only the phase with highest current is measured
Line Voltage (±0.5 %)	Present value of each line voltage	✔
	Present maximum value	✔
	Present phase voltage value for each phase	✔ Only applies to 4 pole breakers
Electrical Power (±2 %)	Present value of active power	✔
	Present value of reactive power	✔
	Present value of apparent power	✔
Demand Electric Power (±2 %)	Demand value of active power	✔
	Demand value of reactive power	✔
	Demand value of apparent power	✔
	Maximum demand value of active power	✔
Electrical Energy (±2%)	Active electrical energy	✔
	Reactive electrical energy	✔
	Apparent electrical energy	✔
Power Factor (±2 %)	Present value	✔
Frequency (±0.1Hz)	Present value	✔
Trip Event Log	Fault current	✔
	Indication of cause	✔
Alarm Event Log	Cause of alarm, Indication of operated value	✔

Time Current Characteristics Curve 40 - 125 - 250 A, B250, Energy Metering Electronic



B250P440SE_dOPCH-S01

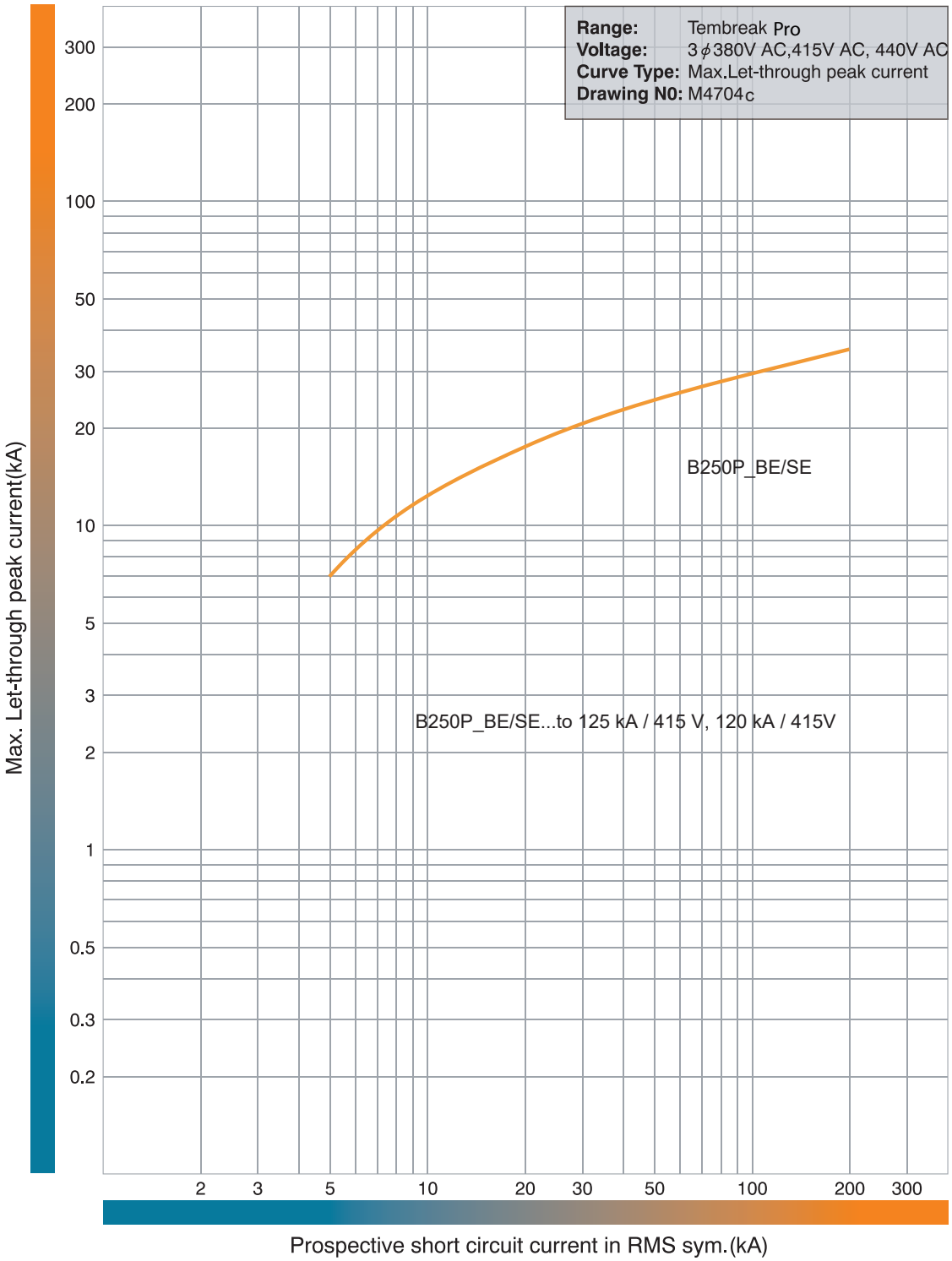
Setting Characteristics For Trip Units I_R Rated 40 A or 125 A or 250 A: B250P_SE [3]

LTD Pick Up Current I_R = 40 A		**16 – 20 – 25 – 32 – 36 – 38 – 40 A (7 steps)**				
LTD Pick Up Current I_R = 125 A		**50 – 62 – 78 – 100 – 112 – 118 – 125 A (7 steps)**				
LTD Pick Up Current I_R =250 A		**100 – 125 – 157 – 200 – 225 – 237 – 250 A (7 steps)**				
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**
LTD t_R (S)		11	21	21	5	7.5
		at 200% x I_R			at 600% x I_R	
STD	I_{sd} x I_R	2.5	2.5	5	10	10
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2
INST I_i x I_R		14 (Maximum of 13 x I_n)				
OCR Options						
Pre Trip Alarm (PTA)	I_P x I_R	0.8				
	I_p (S)	40				
Neutral Pole Protection (NP)	I_N x I_R	1.0 [2]				
	t_N (S)	$t_N = t_R$				

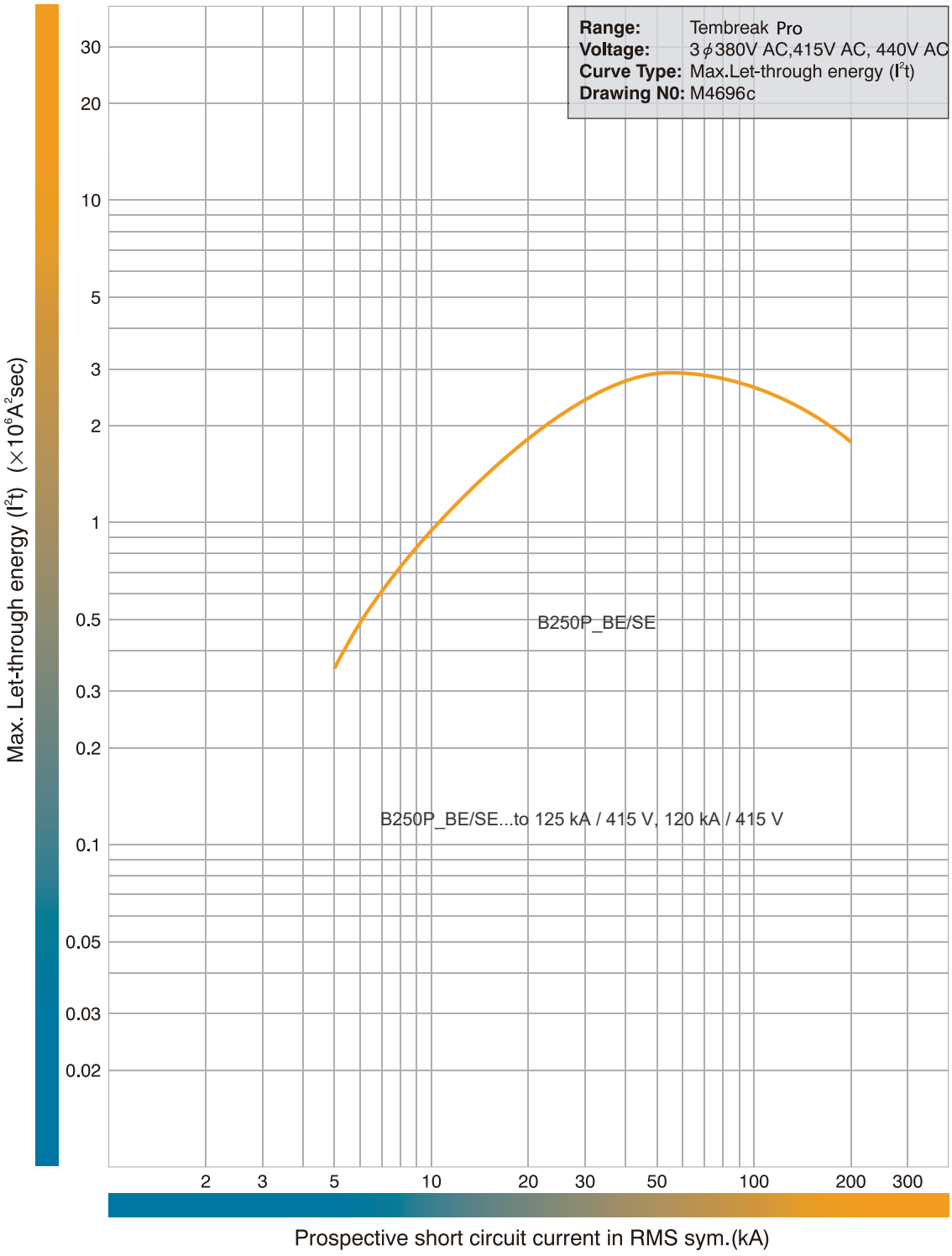
Notes

1) I_i max. = 13 x I_n.
2) Characteristic of neutral protection (t_N vs. I_N) is identical to characteristic of phase protection (t_R vs. I_R) for 4 pole MCCBs
3) Energy Metering MCCBs B250P_SE have 5 selectable characteristic curves, where B250P_BE standard OCR types have 8.

Let-Through Peak Current Curve, B250_BE/SE, Electronic

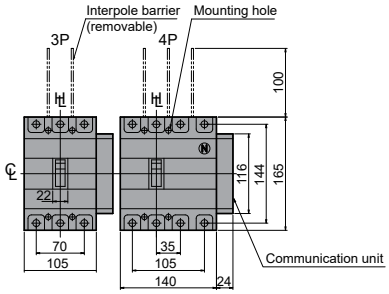


Let-Through Energy I²t Curve, B250_BE/SE, Electronic

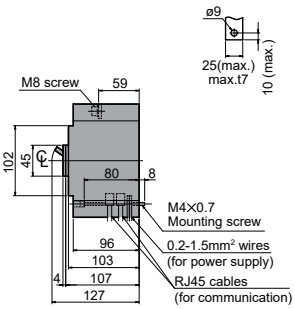


Dimensions B250_SE, Front Connect (mm)

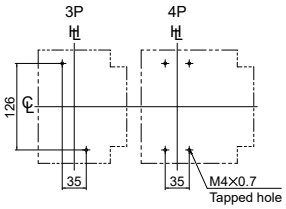
Front Connected



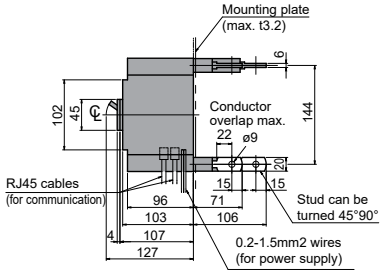
Preparation of conductor



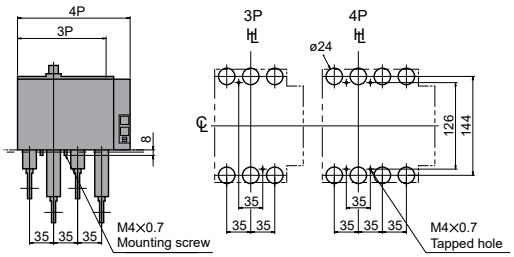
Drilling plan (front view)



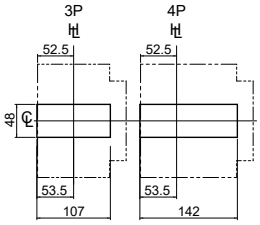
Rear Connected



Drilling plan (front view)

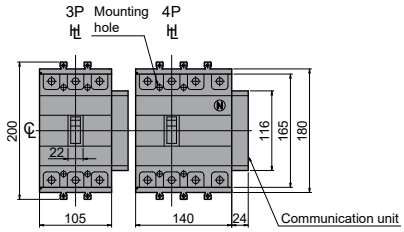


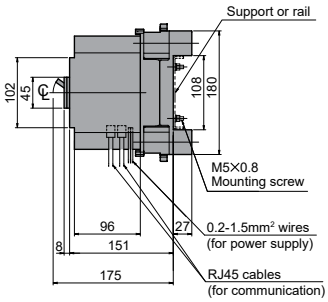
Panel cutout (front view)



Panel cutout dimensions shown give an allowance of 1.0mm or more around the handle escutcheon.

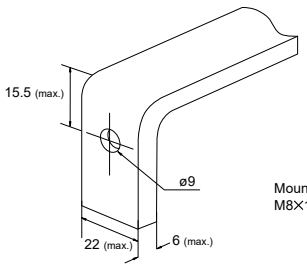
Plug-In



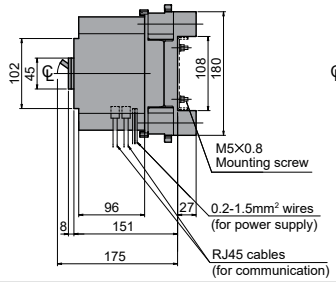


Termination of Busbar

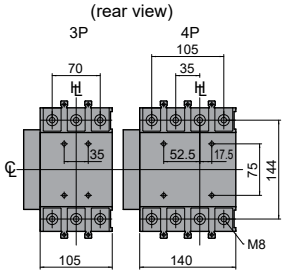
Preperation of conductor



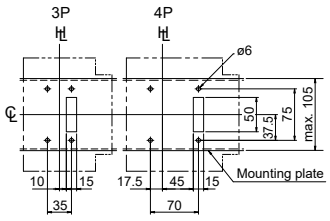
Mounting On A Support or Rails (shown with optional connection bars oriented for rear access)



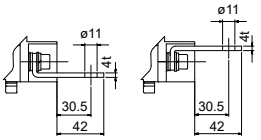
(rear view)



Drilling plan (front view)



Detail of connecting part
Oriented for rear access



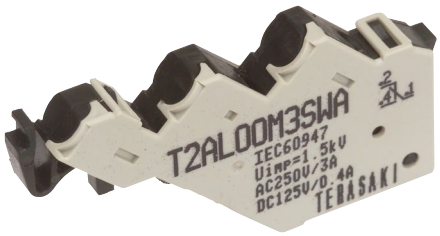
Terminal bars should be connected alternately on adjacent poles.

B250 AF Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits



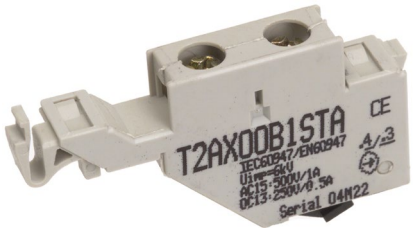
Item Description	Catalogue No.
Alarm Switch 1C/O	T2AL00M3STA
Alarm Switch 1C/O Wired	T2AL00M3SWA
Alarm Switch Micro-current 1C/O	T2AL00M3RTA

Item Description	Catalogue No.
Alarm Switch Heavy Duty 1N/O	T2AL00B1STA
Alarm Switch Heavy Duty 1N/C	T2AL00B2STA

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxiliary Switch 1C/O	T2AX00M3STA
Auxiliary Switch 1C/O Wired	T2AX00M3SWA
Auxiliary Switch Micro-current 1C/O	T2AX00M3RTA



Item Description	Catalogue No.
Auxiliary Switch Heavy Duty 1N/O	T2AX00B1STA
Auxiliary Switch Heavy Duty 1N/C	T2AX00B2STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00A10TA
Shunt Trip Coil 240 V AC	T2SH00A20TA
Shunt Trip Coil 415 V AC	T2SH00A40TA
Shunt Trip Coil 24 V DC	T2SH00D02TA
Shunt Trip Coil 48 V DC	T2SH00D04TA
Shunt Trip Coil 110 V DC	T2SH00D10TA
Shunt Trip Coil 230 V DC	T2SH00D20TA

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 110 V AC	T2UV00A10NTA
Under Voltage Trip Coil Instant 240 V AC	T2UV00A20NTA
Under Voltage Trip Coil Instant 415 V AC	T2UV00A40NTA
Under Voltage Trip Coil Instant 24 V DC	T2UV00D02NTA
Under Voltage Trip Coil Instant 48 V DC	T2UV00D04NTA
Under Voltage Trip Coil Instant 110 V DC	T2UV00D10NTA
Under Voltage Trip Coil Instant 230 V DC	T2UV00D20NTA

Time Delay Operation (500 ms)

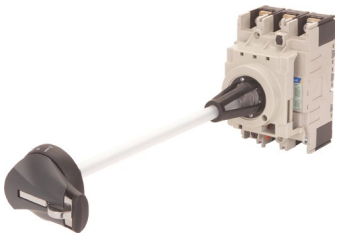
When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500 ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delay 110 V AC 125-630 A 3P	T2UV00A10DSA
Under Voltage Trip Coil Time Delay 200-240 V AC 125-630 A 3P	T2UV00A24DS
Under Voltage Trip Coil Time Delay 380-450 V AC 125-630 A 3P	T2UV00A40DS
Under Voltage Trip Coil Time Delay 24 V DC 125-630 A 3P	T2UV00D02DS
Under Voltage Trip Coil Time Delay 110 V DC 125-630 A 3P	T2UV00D10DS
Under Voltage Trip Coil Time Delay 230 V DC 125-630 A 3P	T2UV00D24DS

Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation



Item Description	Catalogue No.
Door Interlocking Extension Grey, IP55 handle + 356mm shaft	TPHS25SR5GM
Door Interlocking Extension Red/Yellow, IP55 handle + 356mm shaft	TPHS25SR5RM

Item Description	Catalogue No.
Door Interlocking Extension IP65 Metal Handle/Shaft Kit 160/250 AF	T2HP25R6ME

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

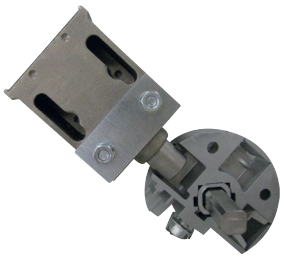
Item Description	Catalogue No.
Door Interlocking Extension IP65 Black Handle/Shaft Kit 160/250 AF	T2HP25R6BN
Door Interlocking Extension IP65 Red Handle/Shaft Kit 160/250 AF	T2HP25R6RN

Handle Options

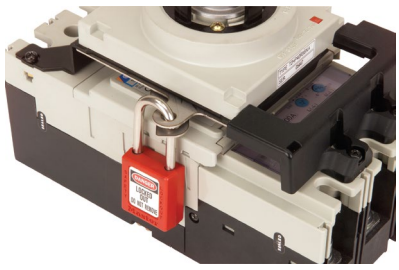
A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
HS 90 mm Shaft 125/250 AF	T2HS250SHAFT



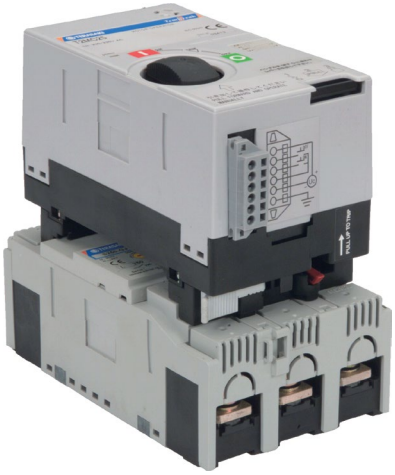
Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702



Item Description	Catalogue No.
Door Interlocking Padlck Device/Handle Mechanism 125/250 AF	T2HP25PALK

Motor Operator

Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs



Item Description	Catalogue No.
Motor Operator 110 V AC 160/250AF	T2MC25A10NB
Motor Operator 240 V AC 160/250 AF	T2MC25A24NB
Motor Operator 24 V DC 160/250 AF	T2MC25D02NB
Motor Operator 48 V DC 160/250AF	T2MC25D04NB
Motor Operator 110 V DC 160/250 AF	T2MC25D10NB

Motor Operator Accessories

Provides electrical interlocking between 2 motors to prevent simultaneous operation

Item Description	Catalogue No.
Motor Interlock Cable (0.5 m) Between T2MC12 and T2MC25/25L	T2MM25L05A
Motor Interlock Cable (1.5 m) Between T2MC12 and T2MC25/25L	T2MM25L15A

Item Description	Catalogue No.
Motor Interlock Cable (0.6 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S06A
Motor Interlock Cable (2.1 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S21A

Locking and Interlocking Accessories

Cable Mechanical Interlock

Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 m apart

Item Description	Catalogue No.
Cable Interlock Mechanism for 125 AF and 160/250 AF	T2MW25CA

Item Description	Catalogue No.
Cable Interlock Wire (1.0 m)	T2MW00SA
Cable Interlock Wire (1.5 m)	T2MW00LA

Link Mechanical Interlock

Prevents simultaneous operation of two horizontally mounted interlocked MCCBs.

Item Description	Catalogue No.
Mechanical Interlock Right Link Interlock 160/250 AF	T2ML25RA
Mechanical Interlock Left Link Interlock 3P 160/250 AF	T2ML25L3A
Mechanical Interlock Left Link Interlock 4P 160/250 AF	T2ML25L4A

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option

Item Description	Catalogue No.
Captive Toggle Lock 250 AF	T2HL25CAP

Non-captive

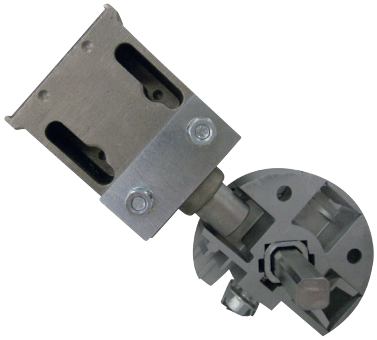
Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Non Captive Toggle Lock 125/250 AF	T2HL25B

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Mounted

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

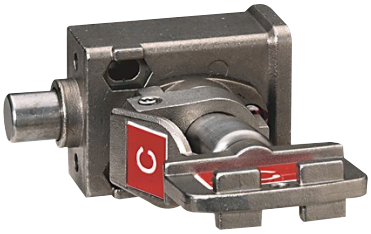
Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, standard key code, A	440TAKEYE100A
Prosafe, standard key code, B	440TAKEYE100B
Prosafe, standard key code, C	440TAKEYE100C
Prosafe, standard key code, D	440TAKEYE100D
Prosafe, standard key code, E	440TAKEYE100E
Prosafe, standard key code, F	440TAKEYE100F
Prosafe, standard key code, G	440TAKEYE100G
Prosafe, standard key code, H	440TAKEYE100H
Prosafe, Standard Key Code I	440TAKEYE100I
Prosafe, Standard Key Code J	440TAKEYE100J
Prosafe, Standard Key Code K	440TAKEYE100K
Prosafe, Standard Key Code L	440TAKEYE100L
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, Standard Key	440TAKEYE10X

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys



Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10BA
Single key shot bolt lock, key not included	440TMSBLE10X

Installation External Accessories

Door Flange

A door mount flange providing a plastic surround for the panel or escutcheon cutout

Item Description	Catalogue No.
Door Flange IP30 Gland and Gasket, 125 AF / 250 AF MCCB	T2DF25A
Door Flange IP30 Gland and Gasket, 125 AF / 250 AF Motor	T2DM25A

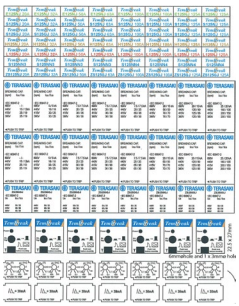
External Monitor

A door display which indicates energy and other data from an energy meter B_SE MCCB

Item Description	Catalogue No.
External Switchboard Door Digital Display (Suits both TB2 MCCBs and AR ACBs)	T2ED00D02NNA

Identification Labels

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation



Item Description	Catalogue No.
Door Interlocking Label Sheet 250 AF	T25CAPLAB

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier 250 A AF	T2BA253LH

OCR Sealing Cover

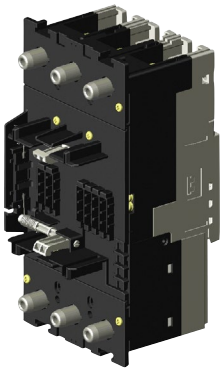
A device that allows a user to seal the OCR cover using a compression seal

Item Description	Catalogue No.
Trip Unit Seal Kit,Thermal Magnetic, B160, B250, ZS250	T2SF25NTA
Trip Unit Seal Kit, Electronic, vB160, B250, ZS250	T2SF25NEA

Plug-in MCCBs

Plug-in B160_TM/BE, B250_TM/BE

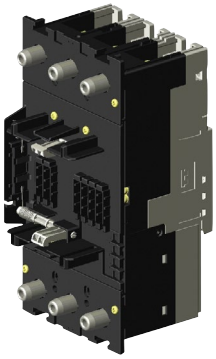
The MCCB via rear plugs, is plugged onto a fixed base for its line and load connections.



Item Description	Catalogue No.
Plug In Convertion kit, 3 Pole, B160_TM, B250_TM	2H6940CBA
Plug In Convertion kit, 4 Pole, B160_TM, B250_TM	2H6941CBA

Plug-in B160_TM, B250_TM

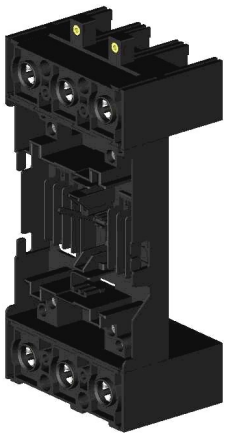
The MCCB via rear plugs, is plugged onto a fixed base for its line and load connections.



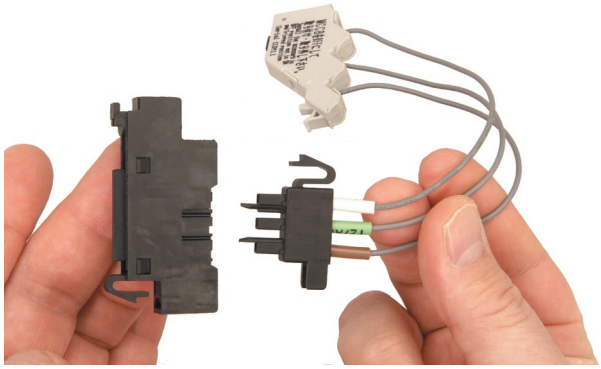
Item Description	Catalogue No.
Plug In Convertion kit, 3 Pole, B250P_SE	2H6940CAB
Plug In Convertion kit, 4 Pole, B250P_SE	2H6941CAB

Plug-in Mounting Bases

The MCCB via rear plugs, is plugged onto a fixed base for its line and load connections



Item Description	Catalogue No.
Plug-In 3P Base, IP20 160/250 AF	T2PM25A3A
Plug-In 4P Base, IP20 160/250 AF	T2PM25A4A



Item Description	Catalogue No.
3 Pin Plug and Socket for Aux/Alarms – for MCCB and Base	2H6959CAA1
3 Pin Plug and Socket for Shunt/UVT – for MCCB and Base	2H6959CBA1
Control Wiring Plugs and Sockets for Withdrawable and Plug-in MCCBs, 3 Pin Socket for Panel Mount Version	T2TP003A

Pole Fillers

A door mount flange providing a plastic surround for the panel or escutcheon cutout

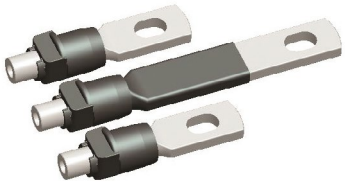
Item Description	Catalogue No.
Door Flange IP30 Gland and Gasket, 125 AF / 250 AF MCCB	T2DF25A
Door Flange IP30 Gland and Gasket, 125 AF / 250 AF Motor	T2DM25A

Item Description	Catalogue No.
DIN Pole Filler (1 Strip Of 4 Poles, 8 X 9 mm Segments)	DTPF
DIN Pole Filler (1 Strip Of 12 Poles, 24 X 9 mm Segments)	DTPF12

Item Description	Catalogue No.
Pole Filler 35 mm Wide for 250 AF MCCBs with a 104 mm Cut-out	XAB3

Rear Connection Studs

Allows MCCB main connections to be made at the rear of the MCCB

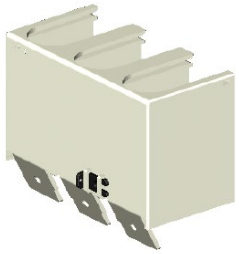


Item Description	Catalogue No.
Rear Studs Connect 3 Pole Kit, Set of 6 Studs, B160, B250, ZS250	T2RP253LA
Rear Connect Terminal Studs 4 Pole Kit, Set of 8 Studs, B160, B250, ZS250	T2RP254LB

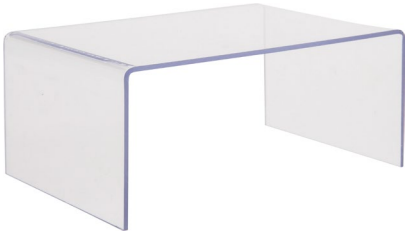
Terminal Covers

Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area



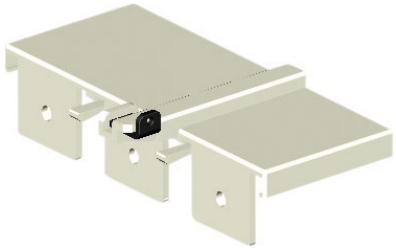
Item Description	Catalogue No.
Extended Terminal Covers Front Connect 3 Pole Single Cover, 55 mm Long, Narrow Cover, B160, B250	T2CF253LLHP
Extended Terminal Covers Front Connect 4 Pole Single Cover, 55 mm Long, Narrow Cover, B160, B250	T2CF254LLHP



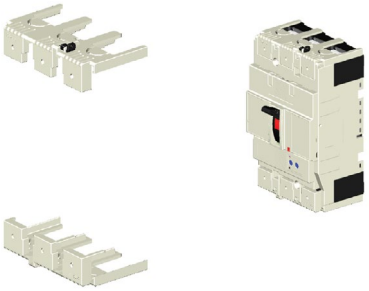
Item Description	Catalogue No.
Extended Terminal Covers Front Connect 3-4 Pole Single Cover, 100 mm Long, Wide “Top Hat, B160, B250	T2CF253WC

Flush Front Terminal Covers

Provides front finger touch protection with MCCBs used with tunnel terminals or chassis



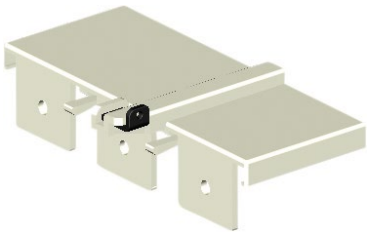
Item Description	Catalogue No.
1 Pole Cover, Set of 2	T2CS161SP



Item Description	Catalogue No.
3 Pole, Single Cover	T2CS253SHP
4 Pole, Single Cover	T2CS254SHP
1 Pole, Set of Two (2) Covers	T2CS161SP
3 Pole, Set of Two (2) Covers	T2CS253SNP
4 Pole, Set of Two (2) Covers	T2CS254SNP

Rear Connect Terminal Covers

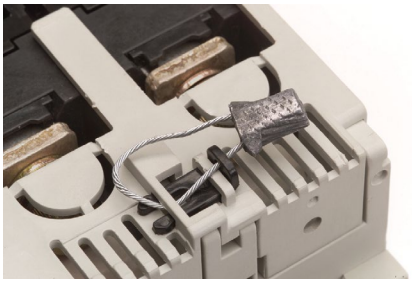
Provides front finger touch protection with MCCBs used with rear terminals and HC chassis



Item Description	Catalogue No.
4 Pole Single Cover, B160, B250, ZS250	T2CR253SHP
3 Pole Single Cover, B160, B250, ZS251	T2CR254SHP
4 Pole Cover, Set of 2, B160, B250, ZS250	T2CR253SNP
3 Pole Cover, Set of 2, B160, B250, ZS251	T2CR254SNP

Terminal Cover Locking Clip

Used with terminal covers to prevent unauthorised removal or access to terminal area



Item Description	Catalogue No.
Terminal Cover Locking Clip	T2CF00L

Tunnel Clamp Terminals

Allows cable to be terminated directly to the MCCB and clamped for good connectivity

Item Description	Catalogue No.
Tunnel Terminal 4 Pole, Set of 8 Clamps, 35 – 120 mm², B160, B250, ZS250	T2FW25L3B
Tunnel Terminal 3 Pole, Set of 6 Clamps, 35 – 120 mm², B160, B250, ZS250	T2FW25L4B

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier (Set of 2)	T2BA253LH

MCCBs

P400_TM

Thermal Magnetic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ Suits XCP chassis
- ✔ 260 mm (H), 103 mm (D), 45 mm pole centres
- ✔ Fault ratings; 25, 36, 50, 70, 110 kA I_{CU} @ 415 V AC
- ✔ 100 % I_{CU} / I_{CS} on models up to 110 kA
- ✔ Utilisation ratings from 24 V to 690 V AC, 250 V DC
- ✔ Thermal magnetic trip unit: adjustable thermal / adjustable magnetic
- ✔ Trip units; 250 A, 400 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Trip Unit Rating	250 / 400 A
Number of Poles	3 / 4
Switching Poles	3P + N / 3P

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**E**	25 kA
	F	36 kA
	N	50 kA
	H	70 kA
	S	110 kA

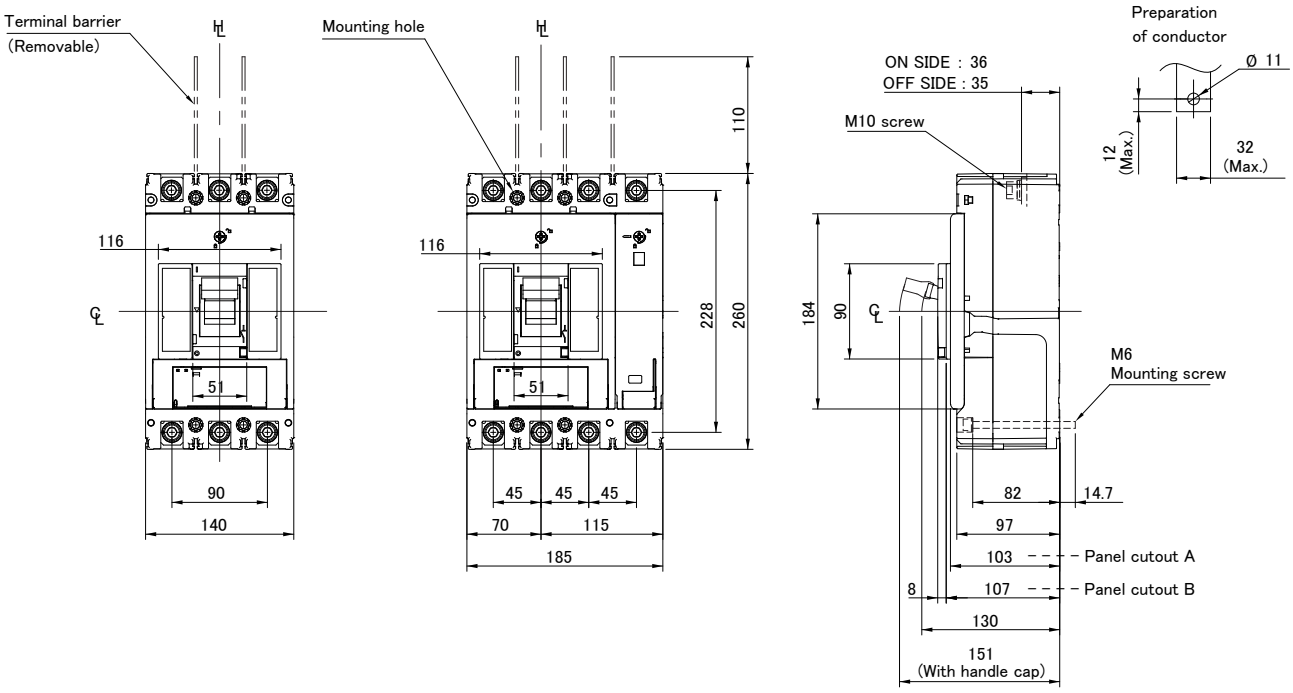
Voltage

Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Withdrawable Rack-out Mechanism (Option)

Quick Reference Dimensions – Front Connect



400 A Frame 3 Pole 25 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	157 - 250	1250 - 2000	25	3	P400E3250TM
400	252 - 400	2000 - 4000	25	3	P400E3400TM

400 A Frame 3 Pole 36 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	157 - 250	1250 - 2500	36	3	P400F3250TM
400	252 - 400	2000 - 4000	36	3	P400F3400TM

400 A Frame 3 Pole 50 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	157 - 250	1250 - 2500	50	3	P400N3250TM
400	252 - 400	2000 - 4000	50	3	P400N3400TM

400 A Frame 3 Pole 70 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	157 - 250	1250 - 2500	70	3	P400H3250TM
400	252 - 400	2000 - 4000	70	3	P400H3400TM

400 A Frame 3 Pole 110 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
400	157 - 250	1250 - 2500	110	3	P400S3400TM
250	252 - 400	2000 - 4000	110	3	P400S3250TM

400 A Frame 4 Pole 25 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	157 - 250	1250 - 2500	25	4	P400E4250TM
400	252 - 400	2000 - 4000	25	4	P400E4400TM

400 A Frame 4 Pole 36 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	157 - 250	1250 - 2500	36	4	P400F4250TM
400	252 - 400	2000 - 4000	36	4	P400F4400TM

400 A Frame 4 Pole 50 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	157 - 250	1250,,	50	4	P400N4250TM
400	252 - 400	2000,,	50	4	P400N4400TM

400 A Frame 4 Pole 70 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	157 - 250	1250 - 2500	70	4	P400H4250TM
400	252 - 400	2000 - 4000	70	4	P400H4400TM

400 A Frame 4 Pole 110 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	157 - 250	1250 - 2500	110	4	P400S4250TM
400	252 - 400	2000 - 4000	110	4	P400S4400TM

Ratings

Component Type	MCCB
Selectivity Category	B
Number of Poles	3 / 4
Switching Poles	3P + N / 3P
Frame Size	400 AF
Trip Unit Rating	250 / 400 A

I_n, Rated Current (A)

	250	400
45ºC	-	-
50ºC	250	400
70ºC	226	368

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC / DC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W) [1)]

(A)	250	400
(W)	22.3	42.4

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 400 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Withdrawable Rack-out Mechanism (Option)
Terminal Type	Bolt-Terminal
Connection Torque	13.7 - 22.5 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	XCP Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	Yes
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Notes: 1) Contact NHP for DC watts loss data.

Physical

Height		260 mm
Width	**3P**	140 mm
	4P	185 mm
Depth (less toggle)		103 mm
Depth (toggle included)		151 mm
Weight	**3P**	4.3 kg
	4P	5.7 kg
Electrical Life		6000 cycles
Mechanical Life		15000 cycles

Short-Circuit Capacity

			kA Rating				
			MCCB Type				
		Voltage	**E**	**F**	**N**	**H**	**S**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	35	50	85	100	125
		380 / 400 V AC	25	36	50	70	110
		415 V AC	25	36	50	70	110
		440 V AC	22	30	45	65	100
		690 V AC	-	7	12	12	12
		1000 V AC	-	-	-	-	-
		1100 V AC	-	-	-	-	-
		125 V DC	-	-	-	-	-
		250 V DC	25	25	50	50	50
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	35	50	85	100	125
		380 / 400 V AC	25	36	50	70	110
		415 V AC	25	36	50	70	110
		440V AC	22	30	45	65	100
		690 V AC	-	7	12	12	12
		1000 V AC	-	-	-	-	-
		1100 V AC	-	-	-	-	-
		125 V DC	-	-	-	-	-
		250 V DC	25	25	50	50	50

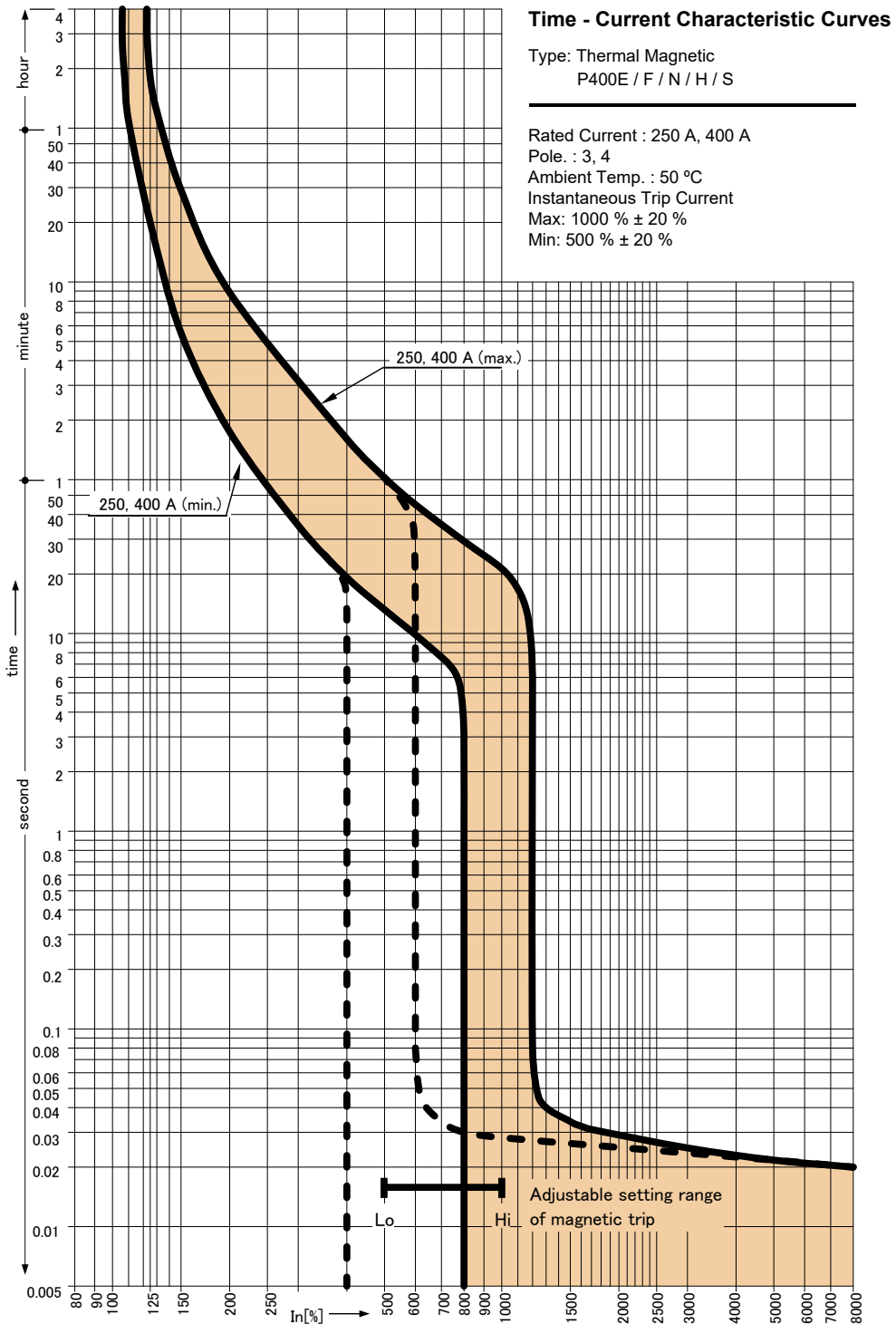
Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Rated Temperature	50 °C

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

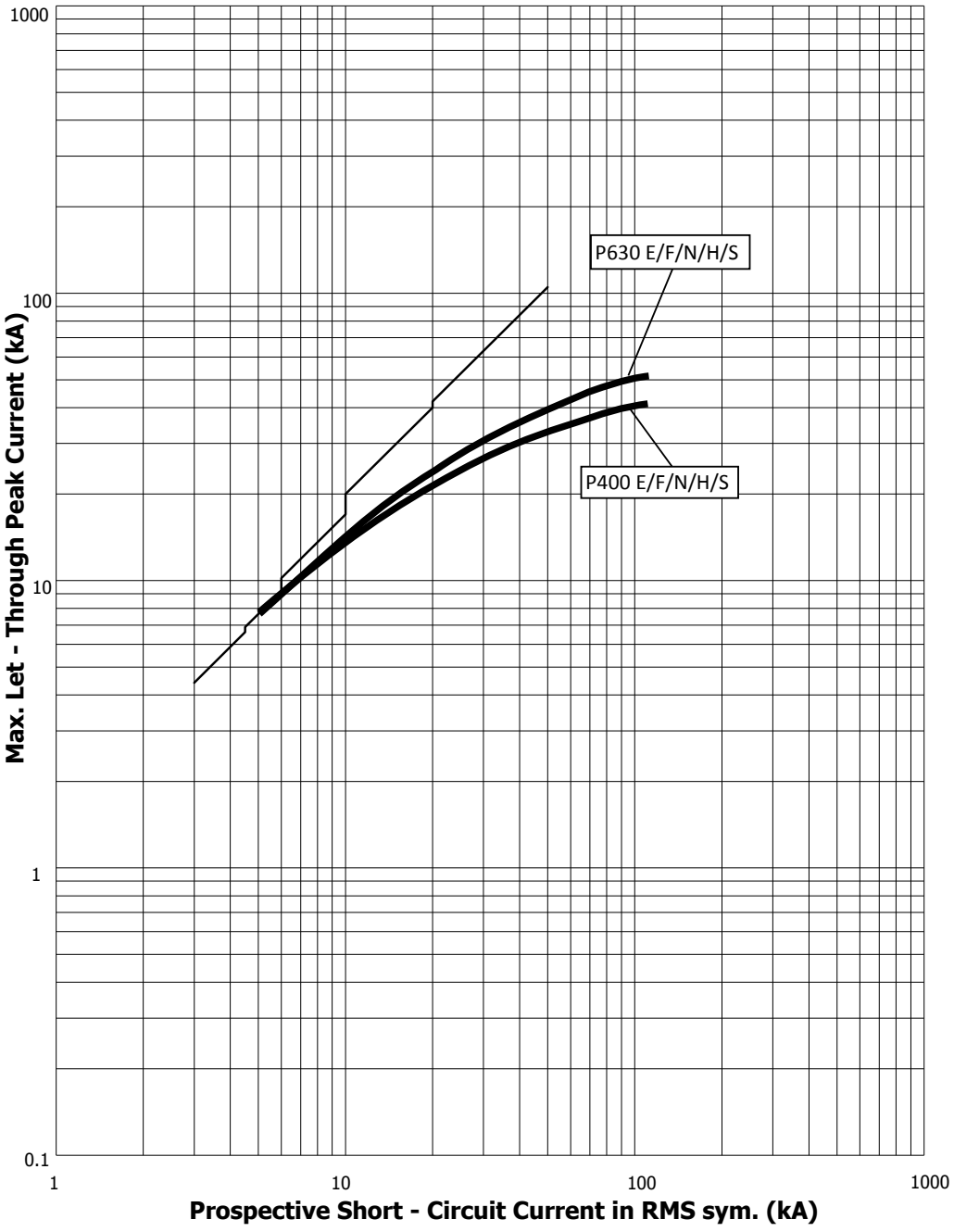
Time Current Characteristics Curve 250 - 400 A, P400, Thermal Magnetic



Let-Through Peak Current Curve, P400,630_BE/TM/SE, Thermal Magnetic / Electronic

P630 E/F/N/H/S
P400 E/F/N/H/S

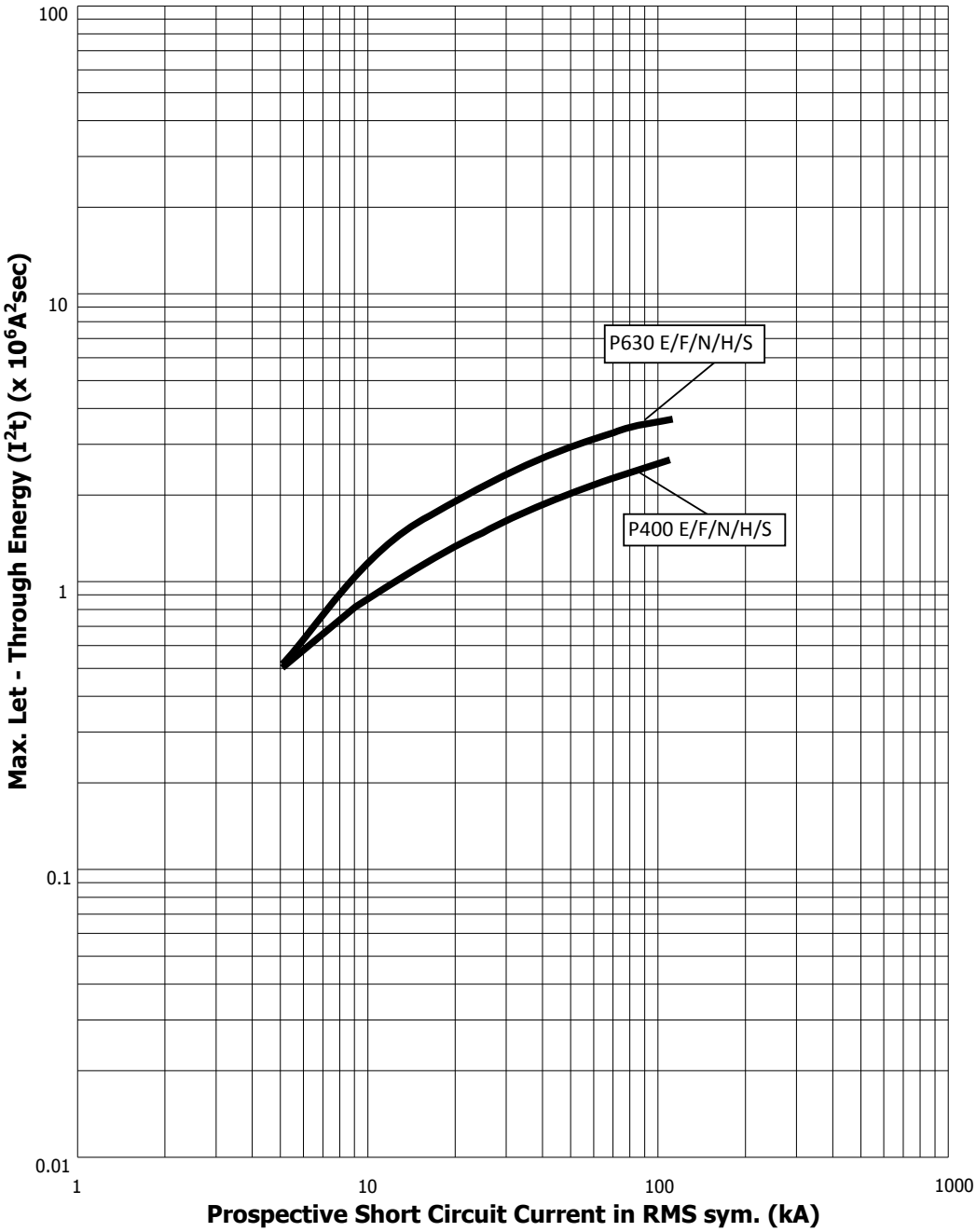
Rated Operational Voltage 380 / 415 V AC
Recovery Voltage 457 V AC --- 415 × 110 %



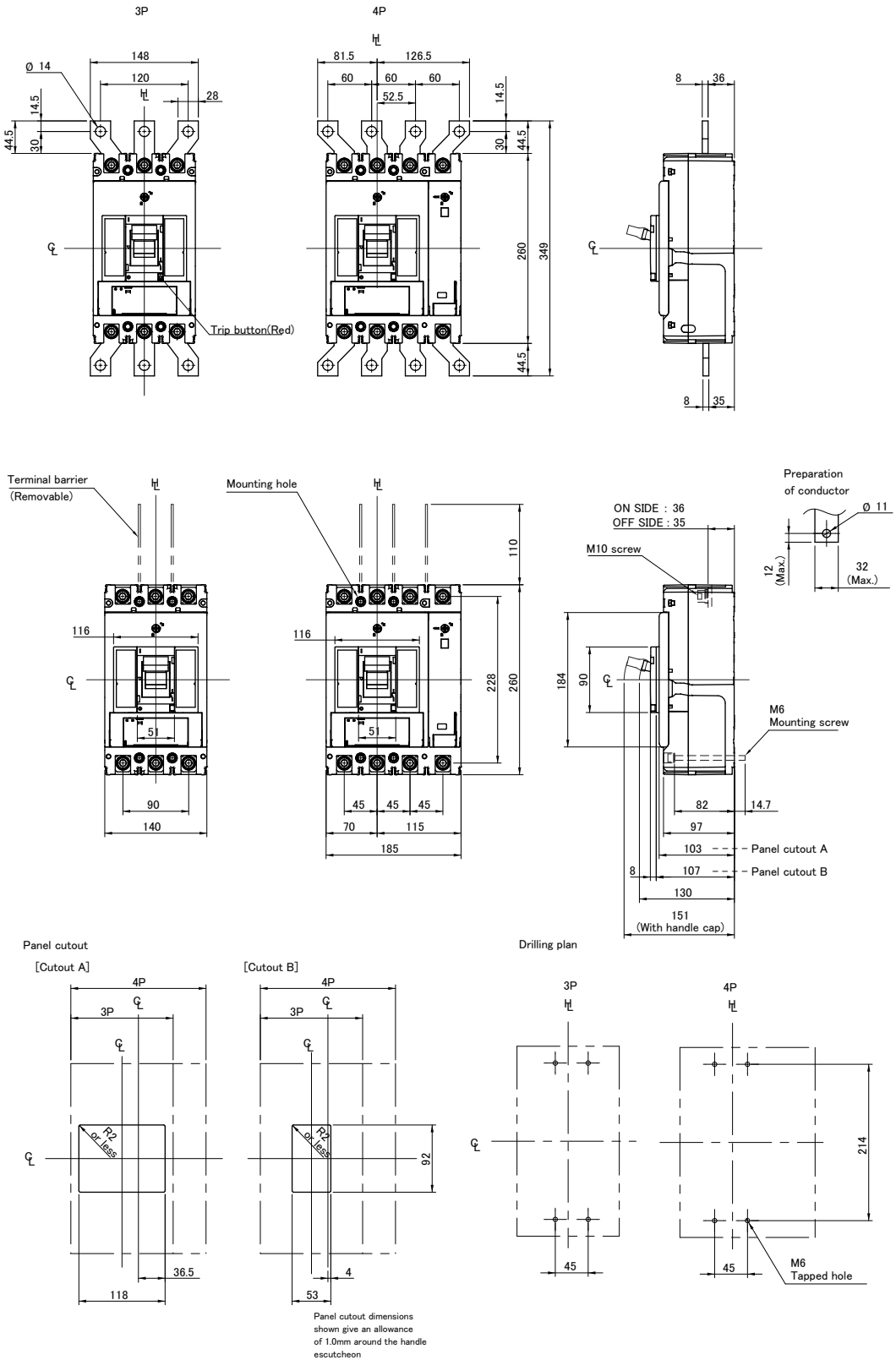
Let-Through Energy I²t Curve, P400,630_BE/TM/SE, Thermal Magnetic / Electronic

P630 E/F/N/H/S
P400 E/F/N/H/S

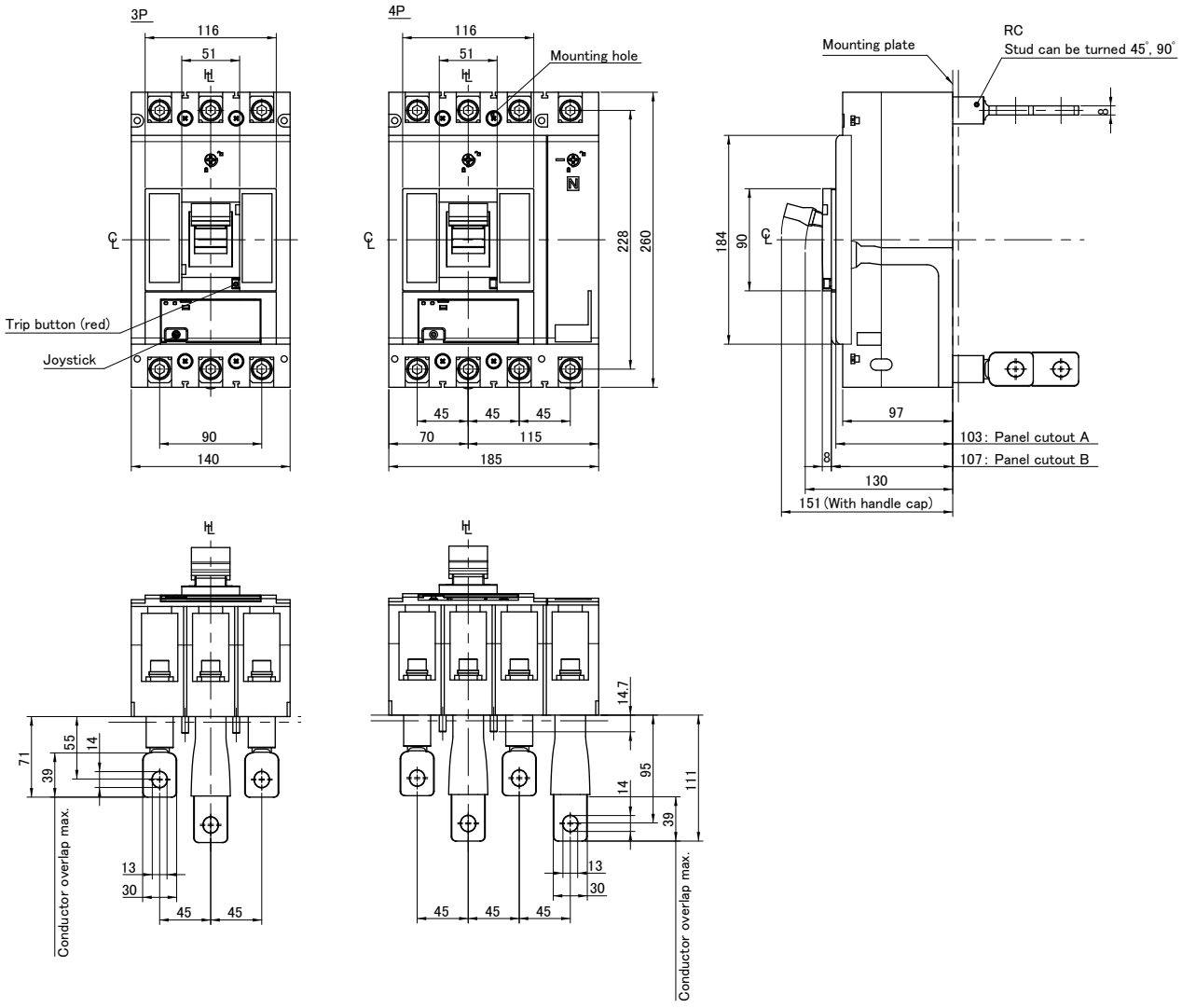
Rated Operational Voltage 380 / 415 V AC
Recovery Voltage 457 V AC --- 415 × 110 %

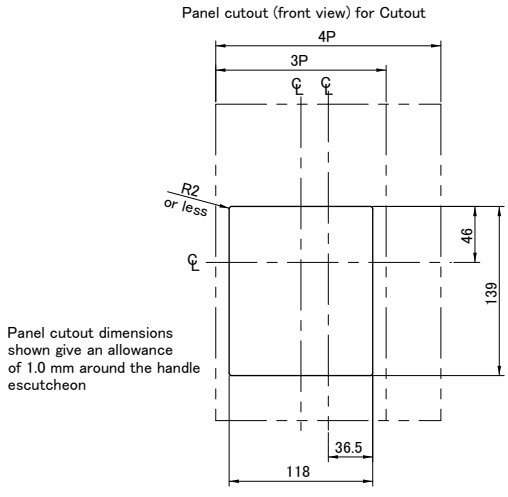


Dimensions P400_TM/BE/NN, Front Connect (mm)

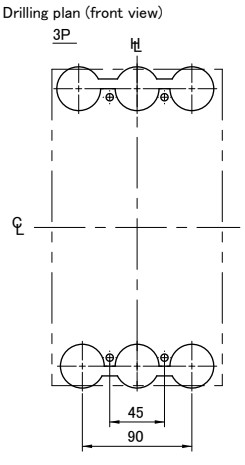


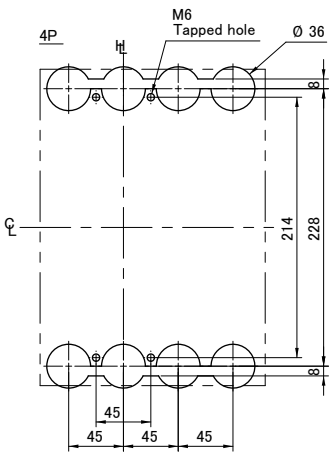
Dimensions P400_TM/BE/NN, Rear Connect (mm)





Panel cutout dimensions shown give an allowance of 1.0 mm around the handle escutcheon





P400_BE / BEG

Electronic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safetyDirect opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ Suits XCP chassis
- ✔ 260 mm (H), 103 mm (D), 45 mm pole centres
- ✔ Fault ratings; 36, 50, 70, 110 kA I_{CU} @ 415 VAC
- ✔ 100% I_{CU} / I_{CS} on models up to 110 kA
- ✔ Electronic trip unit: individually adjustable LSI characteristics, and Instantaneous-only trip setting
- ✔ Standard features depending on MCCB model: LSI(BE type) LSIG (BEG type), Neutral protection (4P), Pre-Trip Alarm (all)
- ✔ Trip units; 250 A, 400 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type)
Trip Unit Rating	250 / 400 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**F**	36 kA
	N	50 kA
	H	70 kA
	S	110 kA

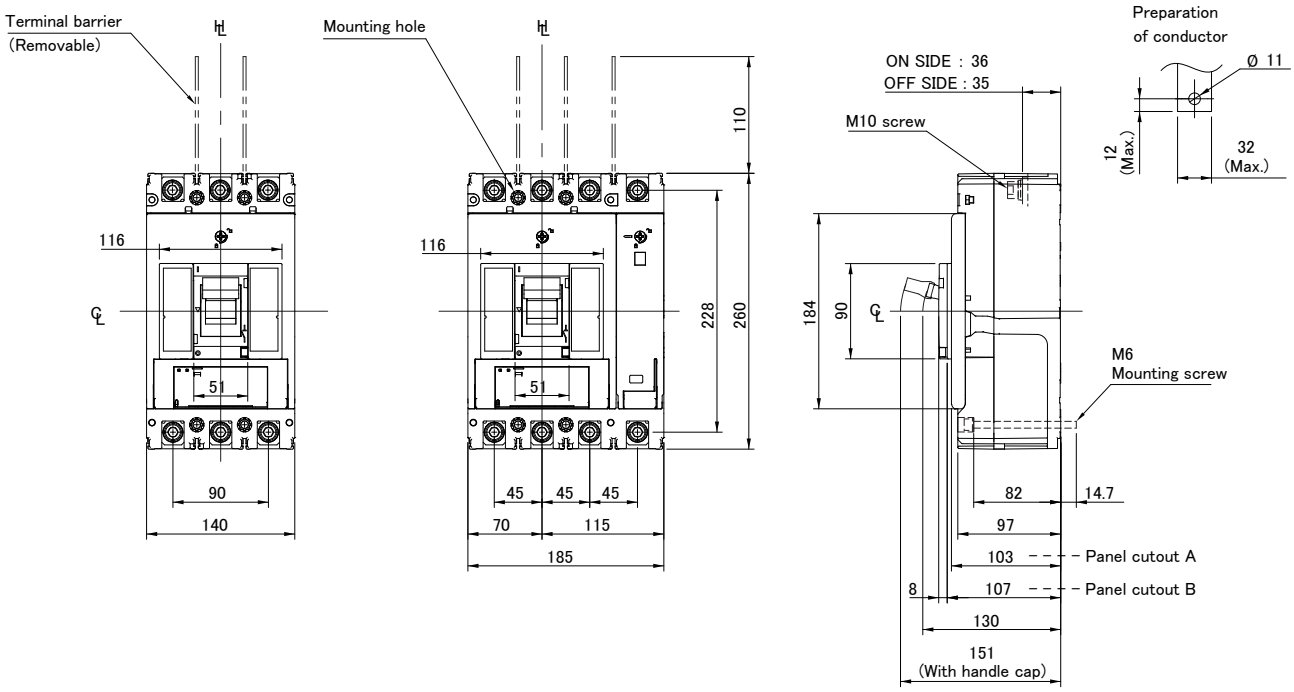
Voltage

Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Withdrawable Rack-out Mechanism (Option)

Quick Reference Dimensions – Front Connect



400 A Frame 3 Pole 36 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	36	3	P400F3250BE
400	160 - 400	3 – 12 x In	36	3	P400F3400BE

400 A Frame 3 Pole 36 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	36	3	P400F3250BEG
400	160 - 400	3 – 12 x In	36	3	P400F3400BEG

400 A Frame 3 Pole 50 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	50	3	P400N3250BE
400	160 - 400	3 – 12 x In	50	3	P400N3400BE

400 A Frame 3 Pole 50 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	50	3	P400N3250BEG
400	160 - 400	3 – 12 x In	50	3	P400N3400BEG

400 A Frame 3 Pole 70 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	70	3	P400H3250BE
400	160 - 400	3 – 12 x In	70	3	P400H3400BE

400 A Frame 3 Pole 70 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	70	3	P400H3250BEG
400	160 - 400	3 – 12 x In	70	3	P400H3400BEG

400 A Frame 3 Pole 110 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	110	3	P400S3250BE
400	160 - 400	3 – 12 x In	110	3	P400S3400BE

400 A Frame 3 Pole 110 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	110	3	P400S3250BEG
400	160 - 400	3 – 12 x In	110	3	P400S3400BEG

400 A Frame 4 Pole 36 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	36	4	P400F4250BE
400	160 - 400	3 – 12 x In	36	4	P400F4400BE

400 A Frame 4 Pole 36 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	36	4	P400F4250BEG
400	160 - 400	3 – 12 x In	36	4	P400F4400BEG

400 A Frame 4 Pole 50 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	50	4	P400N4250BE
400	160 - 400	3 – 12 x In	50	4	P400N4400BE

400 A Frame 4 Pole 50 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	50	4	P400N4250BEG
400	160 - 400	3 – 12 x In	50	4	P400N4400BEG

400 A Frame 4 Pole 70 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	70	4	P400H4250BE
400	160 - 400	3 – 12 x In	70	4	P400H4400BE

400 A Frame 4 Pole 70 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	70	4	P400H4250BEG
400	160 - 400	3 – 12 x In	70	4	P400H4400BEG

400 A Frame 4 Pole 110 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	110	4	P400S4250BE
400	160 - 400	3 – 12 x In	110	4	P400S4400BE

400 A Frame 4 Pole 110 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	110	4	P400S4250BEG
400	160 - 400	3 – 12 x In	110	4	P400S4400BEG

Ratings

Component Type	MCCB
Selectivity Category	B
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	400 AF
Trip Unit Rating	250 / 400 A

I_n, Rated Current (A)

	250	400
45ºC	250	400
50ºC	250	400
70ºC	250	318.5

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	250	400
(W)	11	28.4

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 400 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Withdrawable Rack-out Mechanism (Option)
Terminal Type	Bolt-Terminal
Connection Torque	13.7 - 22.5 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	XCP Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	Yes
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		260 mm
Width	**3P**	140 mm
	4P	185 mm
Depth (less toggle)		103 mm
Depth (toggle included)		145 mm
Weight	**3P**	4.3 kg
	4P	5.7 kg
Electrical Life		6000 cycles
Mechanical Life		15000 cycles

Short-Circuit Capacity

			kA Rating			
			MCCB Type			
		Voltage	F	N	H	S
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	50	85	100	125
		380 / 400 V AC	36	50	70	110
		415 V AC	36	50	70	110
		440 V AC	30	45	65	100
		690 V AC	7	12	12	12
		1000 V AC	-	-	-	-
		1100 V AC	-	-	-	-
		125 V DC	-	-	-	-
		250 V DC	-	-	-	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	50	85	100	125
		380 / 400 V AC	36	50	70	110
		415 V AC	36	50	70	110
		440V AC	30	45	65	100
		690 V AC	7	12	12	12
		1000 V AC	-	-	-	-
		1100 V AC	-	-	-	-
		125 V DC	-	-	-	-
		250 V DC	-	-	-	-
	I_{cw} (Short Time Withstand)	0.4 Seconds	5	5	5	5

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type)
Rated Temperature	60 °C

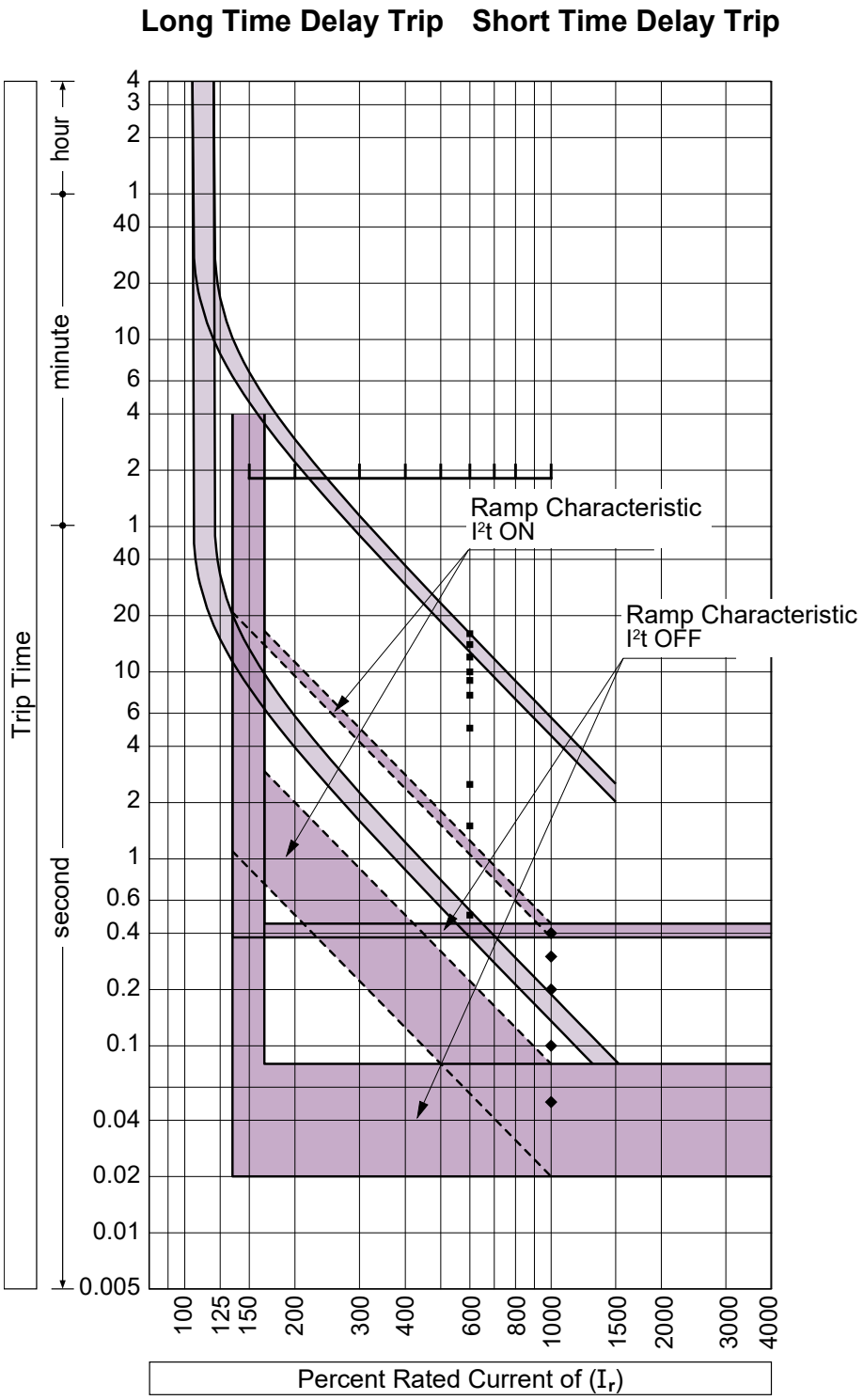
Other Features

Pre-trip alarm (PTA)	Yes
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	Yes
OAC Optional Alarm Contact	No

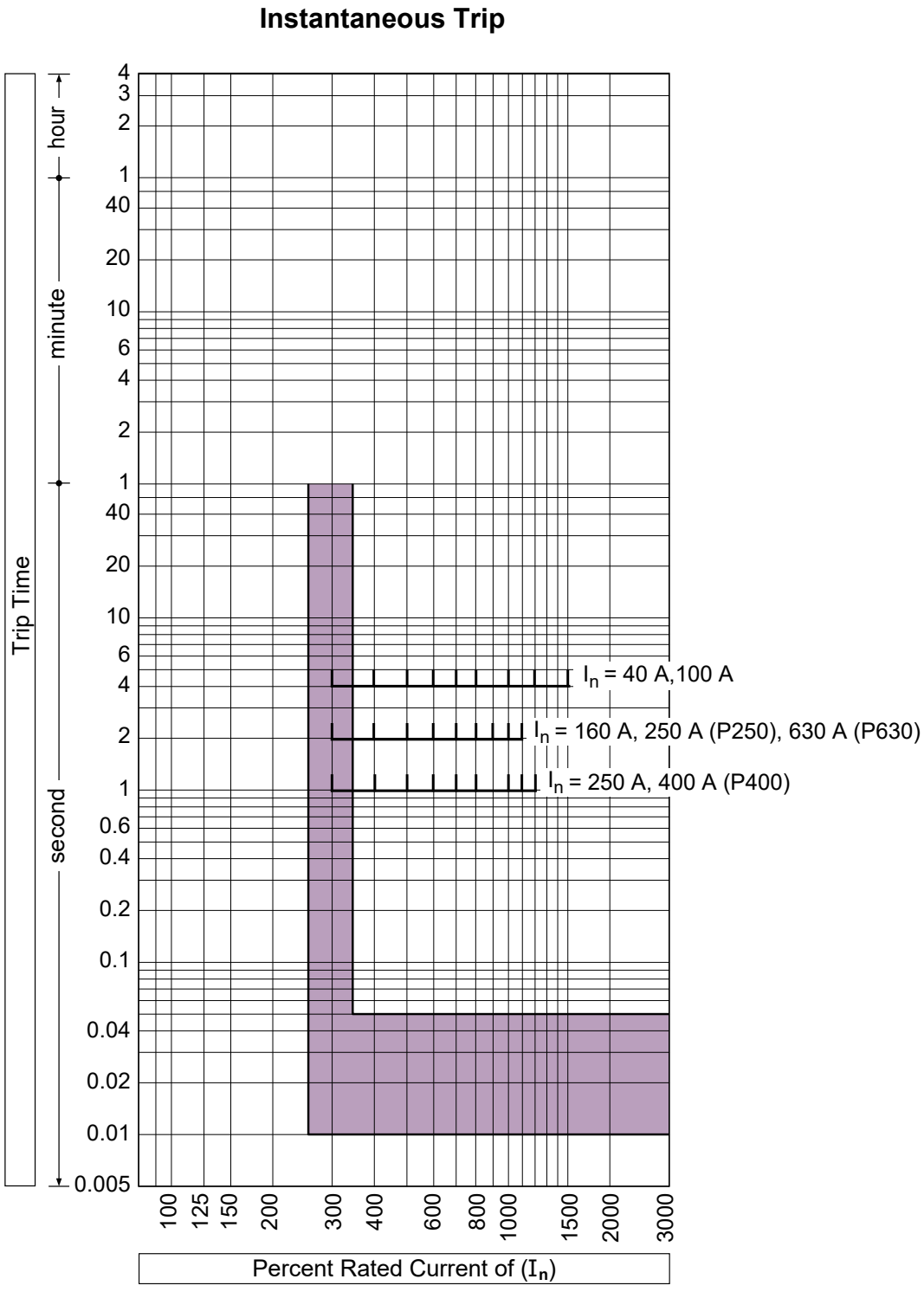
General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

Time Current Characteristics Curve, P160,250,400,630_BE/BEG Basic Electronic



Time Current Characteristics Curve, P160,250,400,630_BE/BEG, Basic Electronic



BE LSI / BE-G LSIG Over Current Relay

Electronic OCR Unit	General Power Distribution or Motor Starting Applications	
MCCB Types – Basic Features	**LSI**	6 dial OCR, individually adjustable LTD, STD, INST. LED ind: ready, overload, PTA, OCR over-temp
	LSIG	7 dial OCR as above, but with a GF dial for 3P MCCBs, and a GF / N dial for 4P MCCBs
	ICB	Instantaneous-only Circuit Breaker setting option using IR2 dial

OCR Adjustments

P400_BE or P400_BE-G Specific Information

OCR Adjustment Settings	
Long Time Delay (LTD)	I_{R1} setting 40 % - 100 % of I_N (base currrent) via 9 increment dial + I_{R2} fine adjust dial of 9 increments: 0.92 - 1.0
	I_{R2} dial includes an OFF setting which switches LTD and STD to OFF, where an instantaneous only ICB is required
	t_R setting 0.5 – 16 seconds in 9 increments
Short Time Delay (STD)	I_{SD} setting 1.5 – 10 (x I_R) in 9 increments + includes OFF setting. t_{SD} setting 50 – 400 mS in 5 increments
Instantaneous (INST)	I_i setting: 250 A and 400 A : 3, 4, 5, 6, 7, 8, 10, 11, 12 x I_N
Ground Fault (GF)	I_G fixed at 20 % (40 A: 40 %) of I_N / t_G fixed at 200 mS. 4 pole GF MCCBs have an ON / OFF switch using N dial.
	4 pole GF MCCBs have an unswitched Neutral pole and an internal 4th CT. No external CTs available
Neutral Pole Protection (N)	N standard with 4P GF types. N settings of: 50 %, 100% or OFF. t_N = short time settings t_R and I_{SD}.
Pre Trip Alarm (PTA)	I_P = 80 % (fixed), t_P = 50 % (fixed)

TBPro(OCR ADJ P400)_dOPCH-S01

Electronic Trip Unit - TemBreak PRO LSI, LSIG, & SMART Overview

Electronic Trip Unit Overview

TemBreak PRO MCCBs equipped with electronic trip units, in addition to protecting against overloads and short circuits, offer flexibility via, individual setting capabity for long time, short time, instantaneous and ground fault characteristics, as well as a host of other standard or optional features. This allows for improved Selectivity combinaions between MCCBs or other circuit breaker types, plus a wide range of electrical measurement and communication functions via the SMART MCCB range. An overview is shown below with 3 types of P160 MCCBs shown as examples.

LSI

LSIG

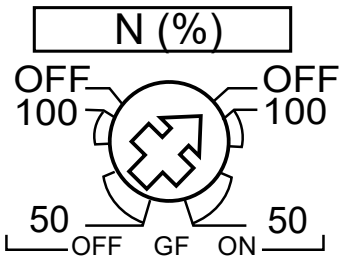
General Features

- There are 3 main Over Current Relay (OCR) types: LSI, LSIG and SMART
- Over Current Relay (OCR) setting by means of rotary dials
- Adjustable current thresholds and time delays for LTD and STD. The instantaneous trip time is fixed, though Ii is fully adjustable
- Over Temperature LED (if OCR temperature exceeds 105 °C)
- PTA Pre Trip Alarm LED
- PICK UP signaling overload alarm LED (> I_r)
- READY LED for normal or abnormal OCR operation
- Optional Ground fault protection for 3 and 4 pole MCCBs
- Adjustable Neutral pole protection on 4 pole MCCBs (Neutral pole located on the right side of MCCB)

SMART

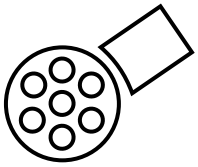
Note that for 4 pole “BE” LSIG MCCBs that have both ground fault and neutral pole protection, the standard GF dial is replaced with the dial type shown on the right, which can switch GF OFF and ON, and set NP protection levels between 50% and 100%, or to OFF.

All TemBreak PRO electronic OCR MCCBs are equipped as standard with PTA and MIP connector sockets for PTA and OCR checker connection.



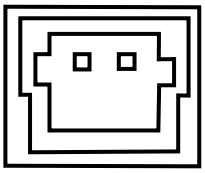
MIP Socket

Maintenance Interface Port – for temporary connection to OCR testing, servicing, and maintenance tools. Located on the right side of the OCR front facia.



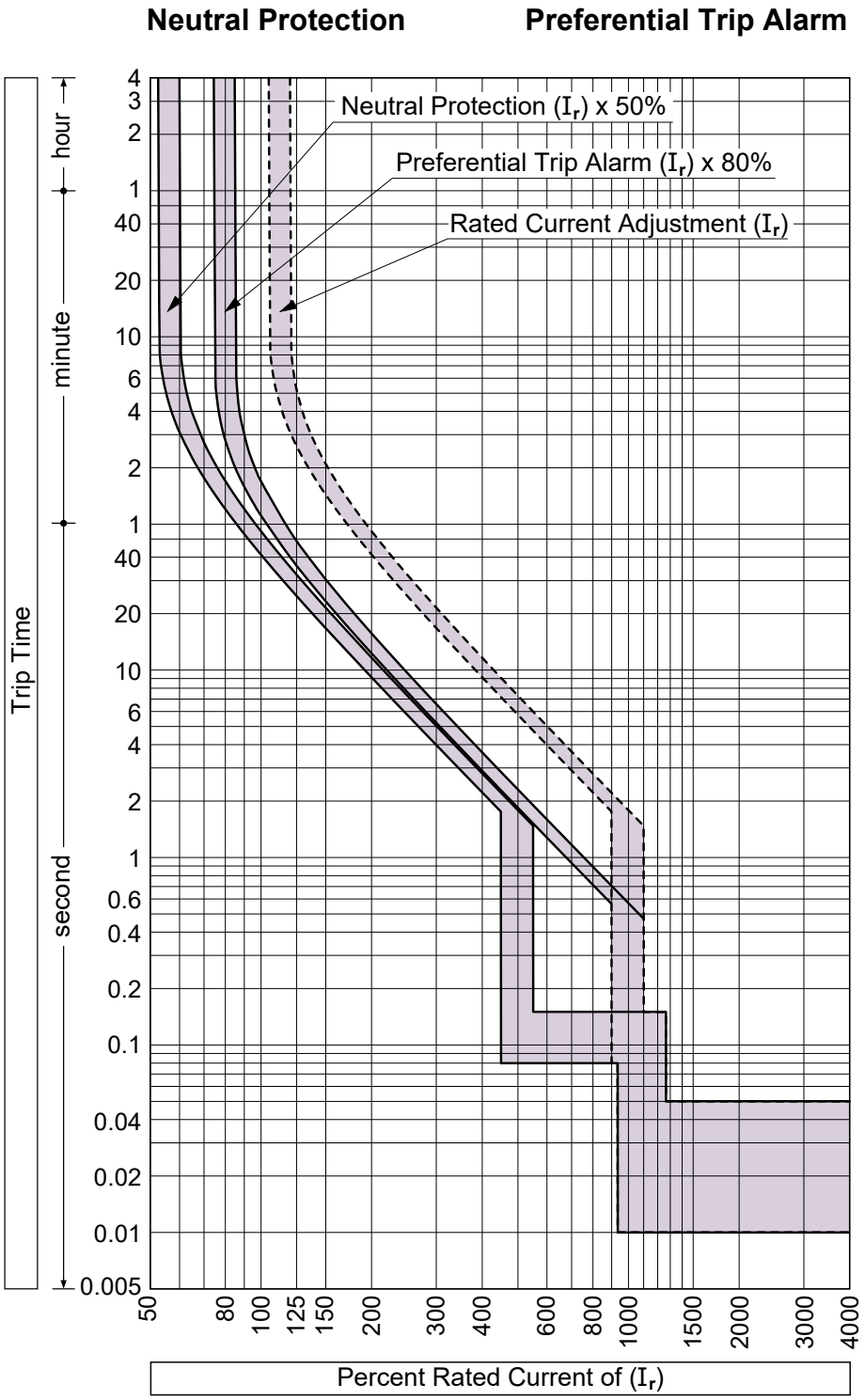
PTA Connector

The PTA connector socket is located on the side of the circuit breaker. This is used to connect an auxiliary circuit signaling the overload pre-alarm output contact. The threshold for this pre-alarm is set at 80% of Ir setting on LSI or LSIG versions and is adjustable on SMART MCCBs.

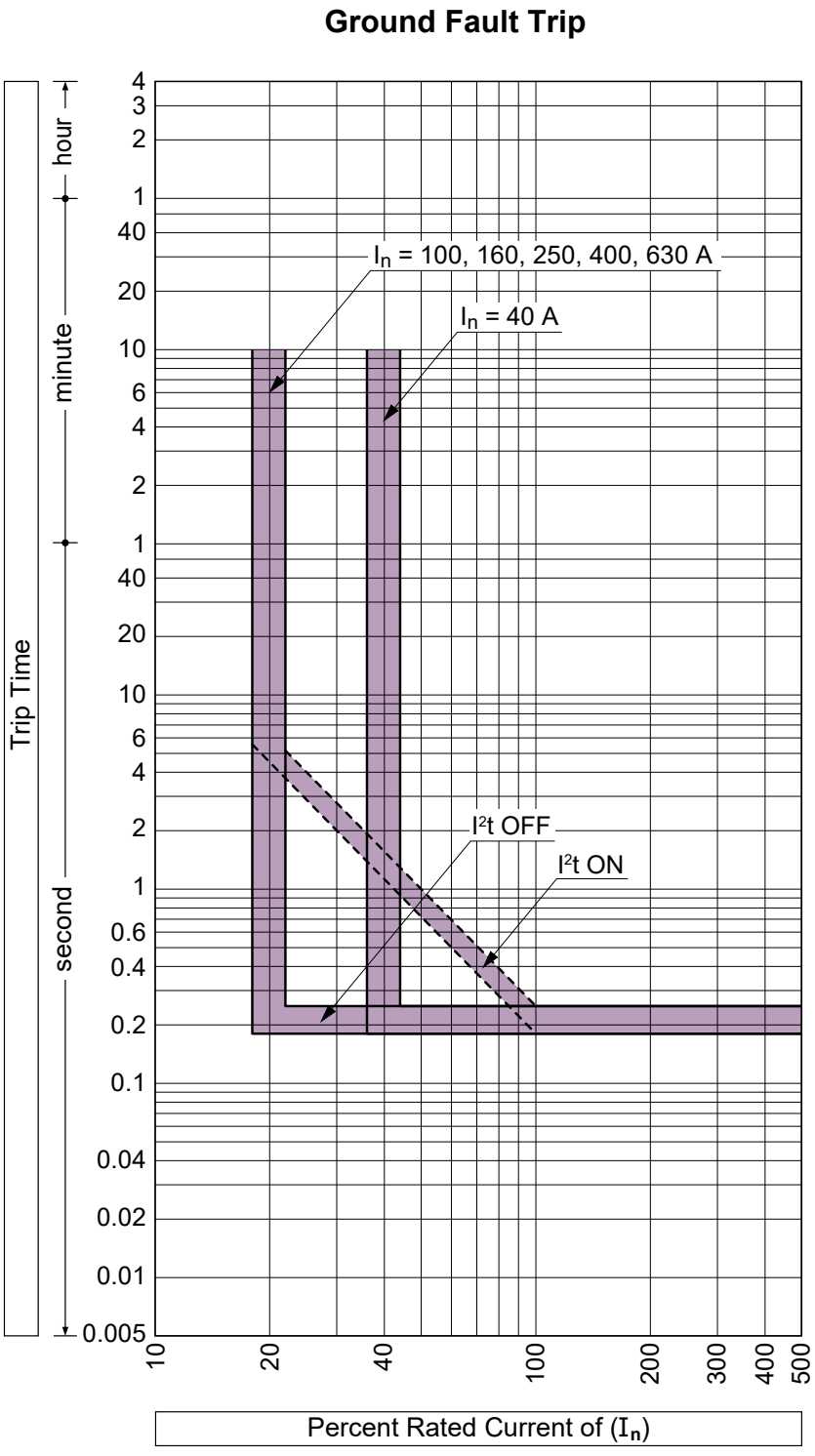


PTA and MIP Connection	LSI (BE)	LSIG (BE-G)	SMART (SE)
PTA : Pre-Alarm Connector Overload	✔	✔	✔
MIP : Socket	✔	✔	✔

Time Current Characteristics Curve, P160,250,400,630_BE/BEG, Basic Electronic



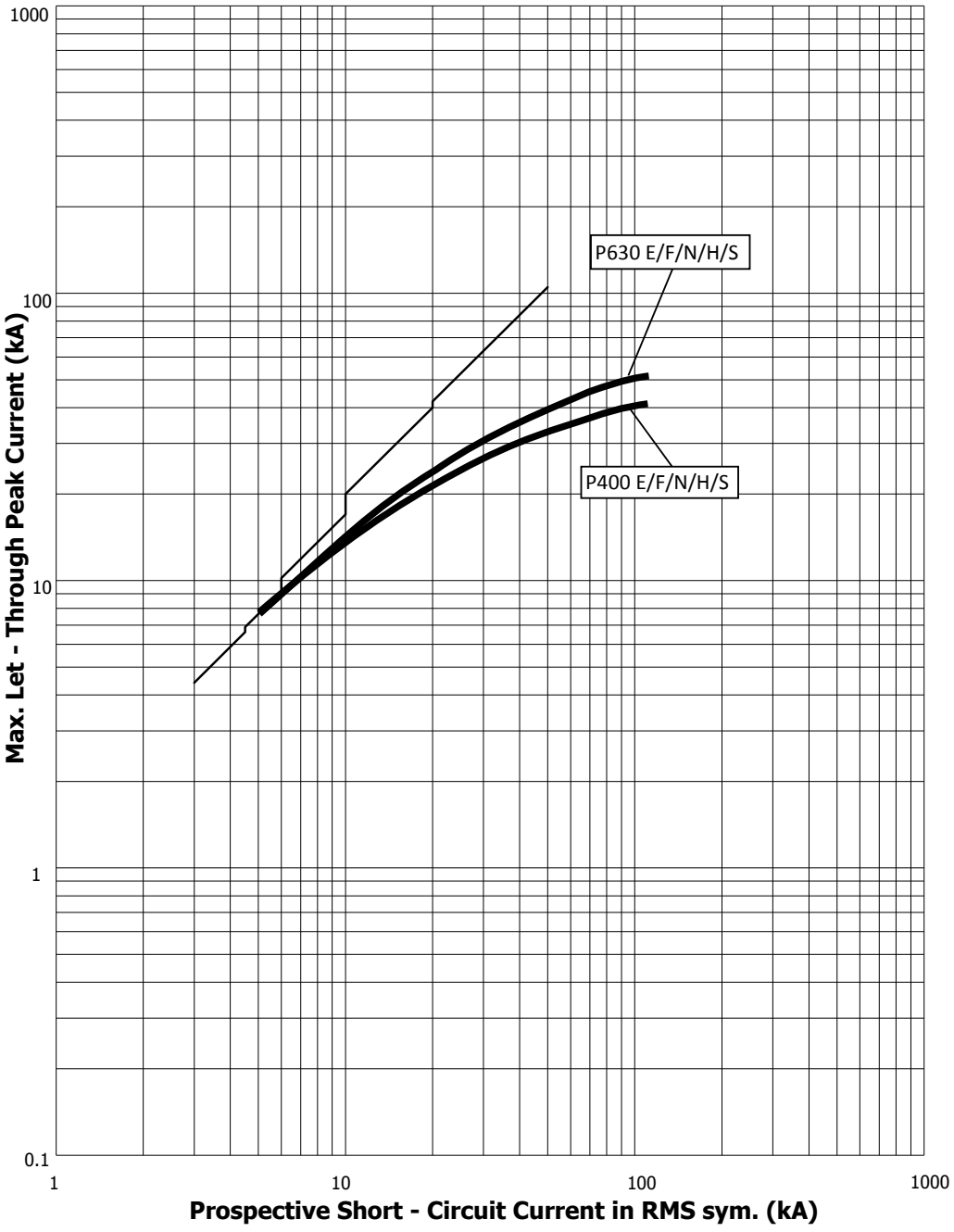
Time Current Characteristics Curve, P160,250,400,630_BEG, Basic Electronic



Let-Through Peak Current Curve, P400,630_BE/TM/SE, Thermal Magnetic / Electronic

P630 E/F/N/H/S
P400 E/F/N/H/S

Rated Operational Voltage 380 / 415 V AC
Recovery Voltage 457 V AC --- 415 × 110 %

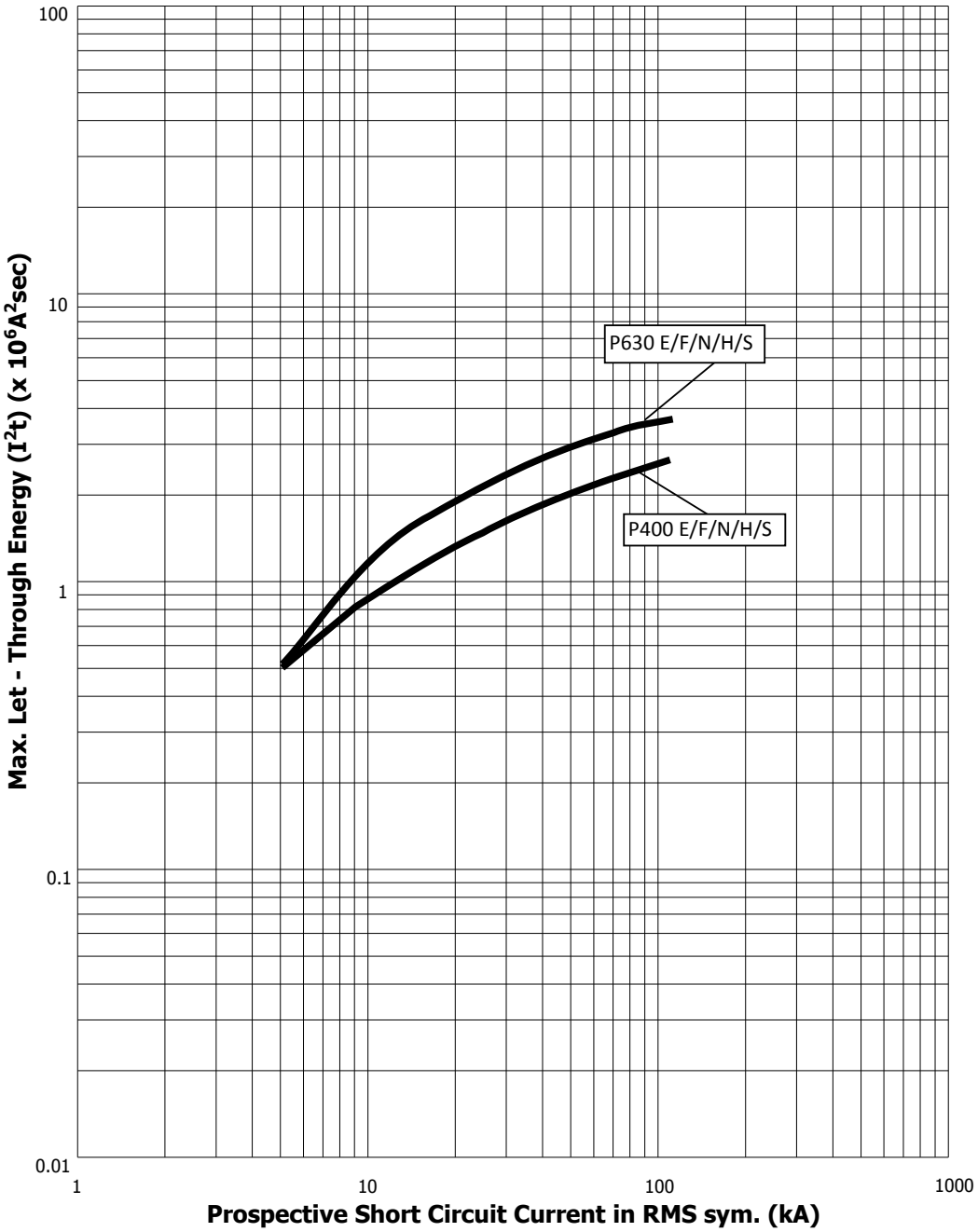


MCCBs

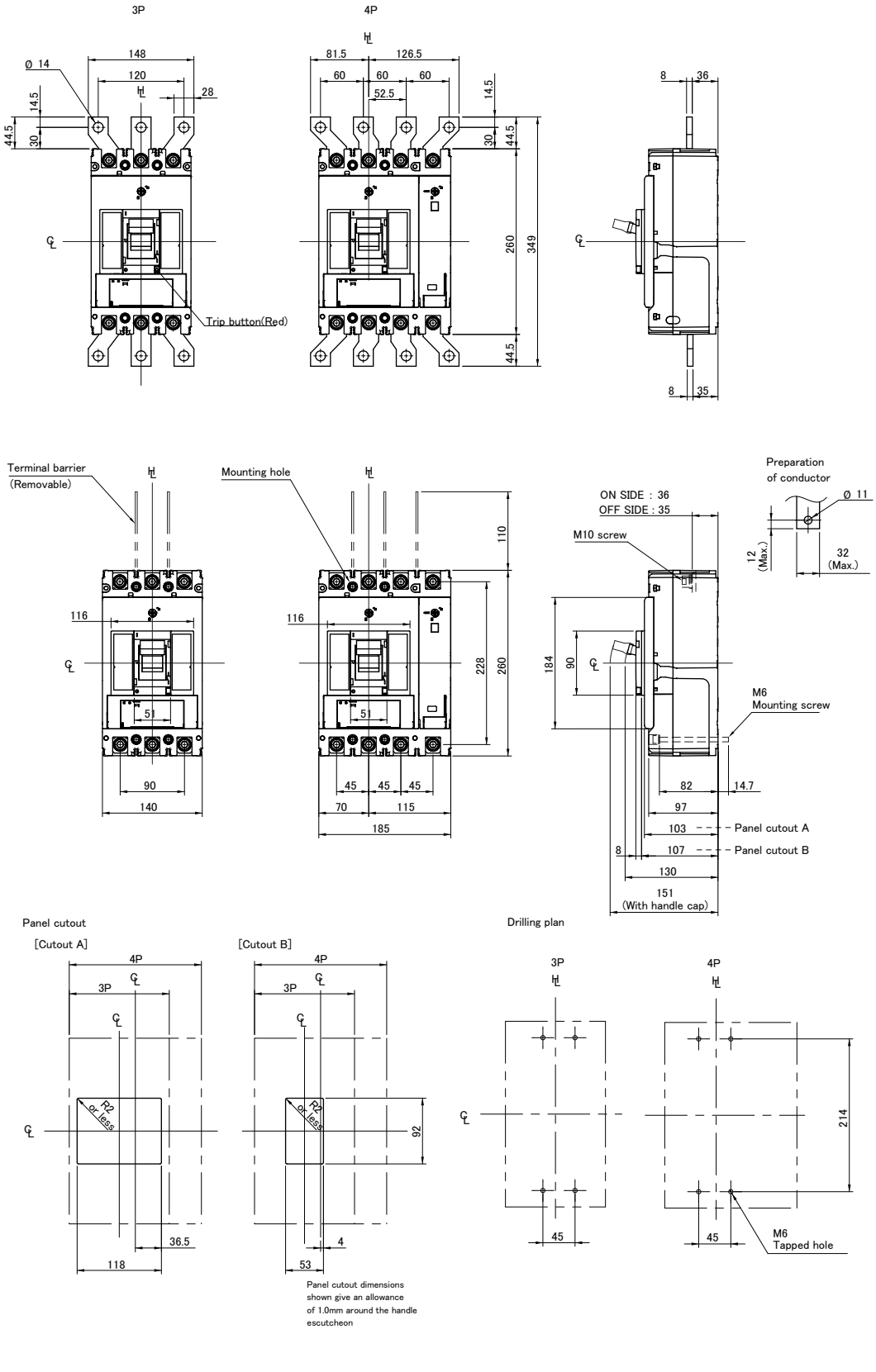
Let-Through Energy I²t Curve, P400,630_BE/TM/SE, Thermal Magnetic / Electronic

P630 E/F/N/H/S
P400 E/F/N/H/S

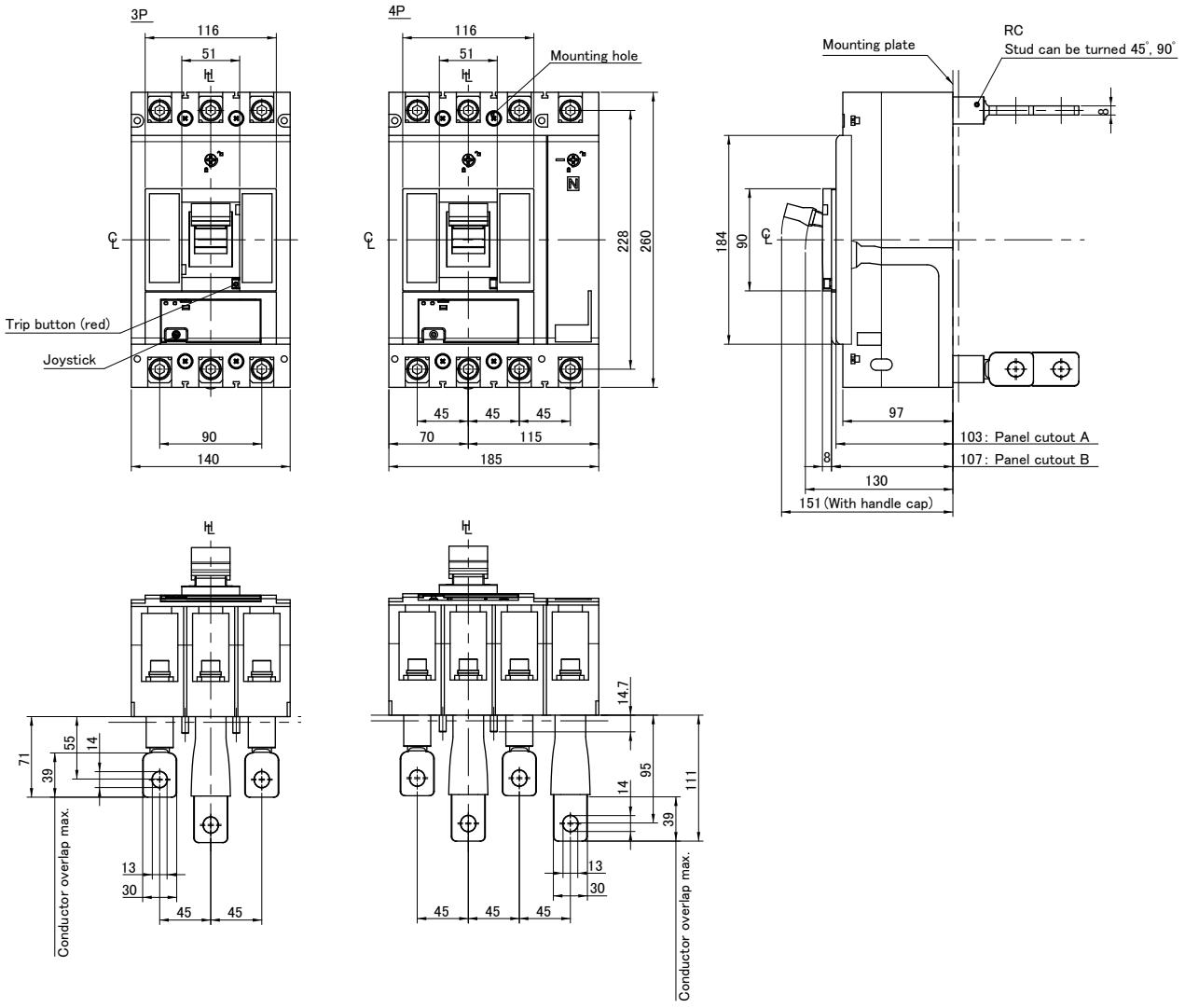
Rated Operational Voltage 380 / 415 V AC
Recovery Voltage 457 V AC --- 415 × 110 %

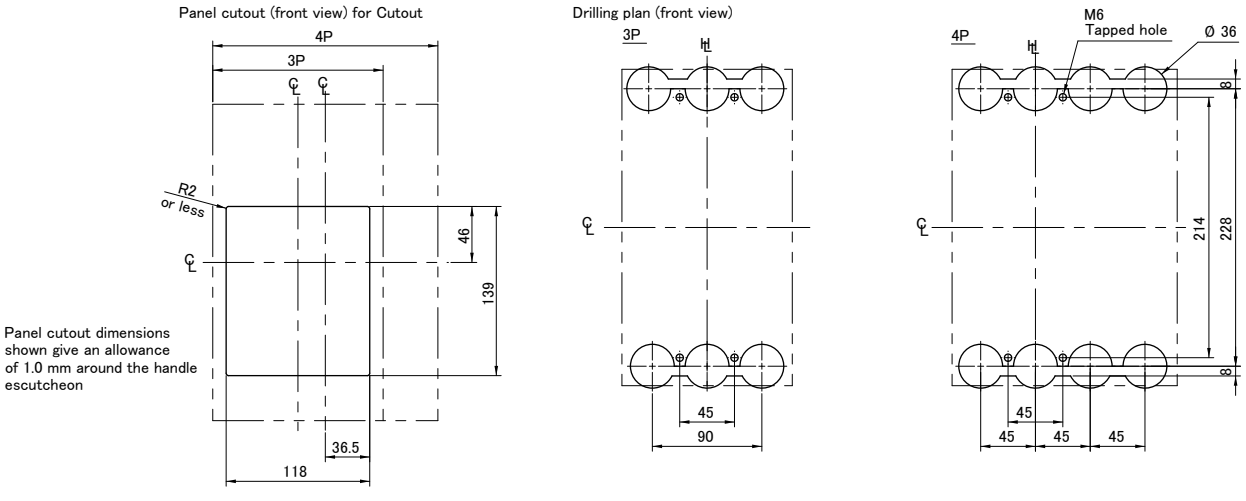


Dimensions P400_TM/BE/NN, Front Connect (mm)



Dimensions P400_TM/BE/NN, Rear Connect (mm)





Panel cutout dimensions shown give an allowance of 1.0 mm around the handle escutcheon

P400_SE

Smart Electronic MCCB with Energy Metering

- ✔ General purpose power distribution, energy metering and communications, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ 3 or 4 pole versions
- ✔ Suits XCP chassis
- ✔ 260 mm (H), 103 mm (D), 45 mm pole centres
- ✔ Fault ratings; 36, 50, 70, 110 kA I_{CU} @ 415 V AC, 100% I_{CU} / I_{CS} up to 110 kA
- ✔ SMART trip unit: adjustable LSIG, communications, V, I, Energy measurement and control
- ✔ Built-in OLED high resolution display, vertical or horizontal viewing
- ✔ Std features; GF trip, NP trip (4P), PTA, ZSI, Temp / Trip / custom alarms
- ✔ Full range of accessories for application flexibility, including optional remote display
- ✔ Trip units; 250 A, 400 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Smart Electronic LSIG
Trip Unit Rating	250 / 400 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @415 V AC	**F**	36 kA
	N	50 kA
	H	70 kA
	S	110 kA

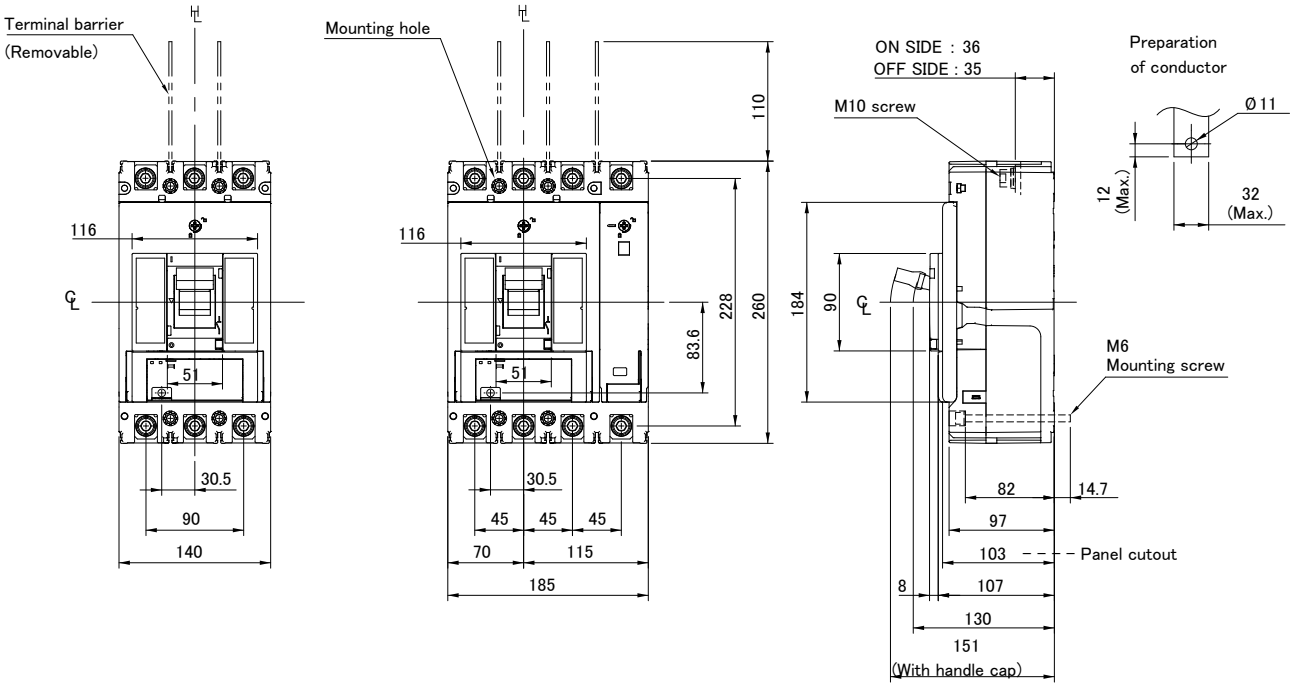
Voltage

Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Withdrawable Rack-out Mechanism (Option)

Quick Reference Dimensions – Front Connect



400 A Frame 3 Pole 36 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, 400 / 415 V (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	36	3	P400F3250SE
400	250 - 400	3 – 12 x In	36	3	P400F3400SE

400 A Frame 3 Pole 50 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, 400 / 415 V (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	50	3	P400N3250SE
400	160 - 400	3 – 12 x In	50	3	P400N3400SE

400 A Frame 3 Pole 70 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, 400 / 415 V (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	70	3	P400H3250SE
400	160 - 400	3 – 12 x In	70	3	P400H3400SE

400 A Frame 3 Pole 110 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, 400 / 415 V (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	110	3	P400S3250SE
400	160 - 400	3 – 12 x In	110	3	P400S3400SE

400 A Frame 4 Pole 36 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, 400 / 415 V (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	36	4	P400F4250SE
400	160 - 400	3 – 12 x In	36	4	P400F4400SE

400 A Frame 4 Pole 50 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, 400 / 415 V (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	50	4	P400N4250SE
400	160 - 400	3 – 12 x In	50	4	P400N4400SE

400 A Frame 4 Pole 70 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, 400 / 415 V (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	70	4	P400H4250SE
400	160 - 400	3 – 12 x In	70	4	P400H4400SE

400 A Frame 4 Pole 110 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, 400 / 415 V (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	3 – 12 x In	110	4	P400S4250SE
400	160 - 400	3 – 12 x In	110	4	P400S4400SE

Ratings

Component Type	MCCB
Selectivity Category	B
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	400 AF
Trip Unit Rating	250 / 400 A

I_n, Rated Current (A)

	250	400
45ºC	250	400
50ºC	250	400
70ºC	250	312

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	250	400
(W)	11.1	28.4

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 400 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Withdrawable Rack-out Mechanism (Option)
Terminal Type	Bolt-Terminal
Connection Torque	13.7 - 22.5 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	XCP Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	Yes
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		260 mm
Width	**3P**	140 mm
	4P	185 mm
Depth (less toggle)		103 mm
Depth (toggle included)		145 mm
Weight	**3P**	4.3 kg
	4P	5.7 kg
Electrical Life		6000 cycles
Mechanical Life		15000 cycles

Short-Circuit Capacity

			kA Rating			
			MCCB Type			
		Voltage	F	N	H	S
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	50	85	100	125
		380 / 400 V AC	36	50	70	110
		415 V AC	36	50	70	110
		440 V AC	30	45	65	100
		690 V AC	7	12	12	12
		1000 V AC	-	-	-	-
		1100 V AC	-	-	-	-
		125 V DC	-	-	-	-
		250 V DC	-	-	-	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	50	85	100	125
		380 / 400 V AC	36	50	70	110
		415 V AC	36	50	70	110
		440V AC	30	45	65	100
		690 V AC	7	12	12	12
		1000 V AC	-	-	-	-
		1100 V AC	-	-	-	-
		125 V DC	-	-	-	-
		250 V DC	-	-	-	-
	I_{cw} (Short Time Withstand)	0.4 Seconds	5	5	5	5

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Smart Electronic LSIG
Rated Temperature	60 °C

Other Features

Pre-trip alarm (PTA)	Yes
ZSI Zone Selective Interlocking	Yes
ACIP Auxiliary Communications Port	Yes
CIP Communications Interface Port	Yes
MIP Maintenance Interface Port	Yes
OAC Optional Alarm Contact	Yes

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	Yes

MCCBs

Electronic Trip Unit - TemBreak PRO P_SE (LSIG) SMART MCCBs

General Features: TPOU SMART OCR

- Settings by facia dial, joystick and diplay menu
- OCR ready (status) LED
- PTA overload pre-warning LED (adjustable threshold)
- Overload Pick up alarm (> I_r)
- LSIG protection currents and delays adjustable
- GF standard on 3P and 4P MCCBs (3P+N cct use 4P)
- Neutral Pole protection on 4 pole MCCBs (N pole on RHS)
- OCR transparent cover accepts compression seal device

P400 / P630
SMART
MCCB

Below
SMART OCR facia, showing hinged sealable cover, and illuminated "Ready" LED.

P160 / P250
SMART MCCB

TBPro(Electronic-Trip_Unit)_dOPCH-S01

Protection Function	(NP and internal GF CT standard on 4 pole MCCBs)			
L - Long Time Delay trip	S - Short Time Delay trip	I - Instantaneous trip	GF – Ground Fault trip	NP – Neutral Pole Trip

Other Protection and Alarms	
Protection measurement functions	Zone Selective Interlocking, Volts, Amps, Energy, Power, Frequency, others – refer following pages
Tripping alarms, Trip alarms, Customisable and system alarms:	OCR temperature alarm, OCR alarm, Overload alarm, Pre-Trip Alarm, OCR status LED
Historical events:	Outputs & Alarms
Integrated outputs:	Output contact PTA, Output contact OAC

24 VDC supply power, and self powered SMART MCCBs

A SMART OCR needs to be powered via an external 24 V DC power supply to ensure continuous operation of the measurement functions, alarms, communications and setting configuration. However, these funtions can also operate without external power, making the MCCB self powered, if the following minimum requirements are met:

1. If the MCCB main contacts are CLOSED
2. If the minimum current flowing through the circuit breaker is as shown in the table below by OCR trip unit rating.
3. It is ultimately the users choice as to whether control power is to be continuously applied or if the MCCB is to be self powered once there is enough current flowing through the MCCB.

OCR Amperes	1 Powered Pole	2 Powered Poles	3 Powered Poles
40 A	N / A	> 14 A	> 10 A
100 A	> 25 A	> 15 A	> 15 A
160 A	> 32 A	> 16A	> 16 A
250 A	> 50 A	> 25 A	> 25 A
400 A	> 80 A	> 40 A	> 40 A
630 A	> 126 A	> 63 A	> 63 A

TBPro(Electronic-Trip_Unit)_dOPCH-S02

MCCBs

P_SE SMART OCR (TPOU Type)

I_n (A)	Poles	MCCB Type	Protection functions 2)				Alarms			Display		Options		
			LSI 4)	GF 11)	NP 11)	ZSI 5)	PTA 2)	OAC 2)	Display	Measurement and display	Historical data	TPCM	TPED	TPSS
OCR Trip Unit Rating	3 or 4 pole MCCBs	SMART OCR	Long time Short time Instantaneous	Ground Fault (LSIG)	Neutral Pole Protection	Zone Selective Interlocking	Pre Trip Alarm	Alarm output contact 6)	Integral OLED display 3)	7) Volts, Amps, Power P, Power E, PF, F, demand D, THD	Trip and alarm history	Modbus comms module 8)	External display 9)	SMART status auxiliary 10)
40 A 100 A 160 A	3 1)	P160_SE	✔	✔	-	✔	✔	✔	✔	✔	✔	O	O	O
	4	P160_SE	✔	✔	✔	✔	✔	✔	✔	✔	✔	O	O	O
40 A 100 A 160 A 250 A	3 1)	P250_SE	✔	✔	-	✔	✔	✔	✔	✔	✔	O	O	O
	4	P250_SE	✔	✔	✔	✔	✔	✔	✔	✔	✔	O	O	O
250 A 400 A	3 1)	P400_SE	✔	✔	-	✔	✔	✔	✔	✔	✔	O	O	O
	4	P400_SE	✔	✔	✔	✔	✔	✔	✔	✔	✔	O	O	O
630 A	3 1)	P630_SE	✔	✔	-	✔	✔	✔	✔	✔	✔	O	O	O
	4	P630_SE	✔	✔	✔	✔	✔	✔	✔	✔	✔	O	O	O

✔ = Standard supply O = Options - = Not available

Notes

1) 3 pole SMART MCCBs cannot take data from an external neutral in a 3 phase 4 wire system. A 4 pole Smart MCCB is needed for neutral pole referenced data. Neutral pole protection is not available with 3 pole MCCBs.
2) No control power required.
3) 24 VDC control power is supplied to the OCR using the optional cable TPPHQTT140H.
   - If the MCCB is switched to OFF, the supply can be disconnected.
   - If the MCCB has enough current flowing to enable the MCCB to become "self powered" the supply can be disconnected (self powered – refer previous pages).
   - If a communications module TPCM is being supplied with 24 VDC control power, and if the module is connected to the MCCB, there is no need to supply additional control power to the OCR, as the TPCM will supply the SMART MCCB.
4) Hot and cold start characteristic selection available via menu.
5) Zone Selective Interlock input / output cable connector type is TPPHQTT150H. P160_SE SMART MCCBs have 1 output connection only.
6) OAC (Optional Alarm Contact): by using the connection cable TPPHQTT130H, the following selection of output data can be output.
7) Contact output data can be output from only 1 of the items below (user to select)
   - System operation (abnormal operation)
   - OCR abnormal temperature alarm
   - Pre Trip Alarm
   - Any one of 12 custom alarms
8) The 24 VDC control power supplied to the TPCM module is also supplied to the MCCB OCR.
9) Supply 24 VDC control power to the OCR using the optional cable TPPHQTT140H.
   - If using the TPED external display, the optional connector TPPHQTT330 ~ 370H is to be connected between the TPED and the MCCB OCR.
   - If the TPCM comms module is being used, and is supplied with its own 24 VDC control power, there is no need to 24 VDC supply power to the MCCB OCR.
10) The ON / OFF status auxiliary and alarm switch information is communicated into the SMART OCR, and in turn communicated to the TPCM communications module for further communication to other external devices to provide real MCCB main contact status information.
11) Ground fault and Neutral Pole protection MCCBs include an internal 4th pole CT. There are no external CTs for 3 pole MCCBs available.

OCR Control Power Supply

Supply Voltage Tolerance	24 V DC ± 30 %
Consumption	60 mA

OAC Contact Details

Contact Configuration	N / O single contact
Contact Rating	AC / DC, 24 V, 100 mA

P_SE SMART OCR (TPOU Type)

Measurement or Data Type Displayed on Screen		Unit	EC 61557-12 Measurement Accuracy Class	Internal display ✔ = Displayed ✕ = Not displayed	External Display ✔ = Displayed ✕ = Not displayed	Modbus ✔ = Available ✕ = Not available
Current	Instantaneous value per phase and neutral	A	1	✔	✔	✔
	Maximum instantaneous current per phase & neutral	A	1	✔	✔	✔
	Instantaneous rms Ground Fault current	A	1	✔	✔	✔
Voltage	Present value of each line voltage	V	0.5	✔	✔	✔
	Present maximum value	V	0.5	✔	✔	✔
	Present phase voltage value for each phase	V	0.5	✔	✔	✔
Frequency		Hz	0.2	✔	✔	✔
Electrical Power	Active power P	kW	2	✔	✔	✔
	Reactive power Q	kVAR	2	✔	✔	✔
	Apparent power S	kVA	2	✔	✔	✔
Electrical Energy	Active power	kWh	2	✔	✔	✔
	Reactive power	kVARh	2	✔	✔	✔
	Apparent power	kVAh	2	✔	✔	✔
Demand	Power	-	2	✕	✔	✔
	Current	-	1	✕	✔	✔
Power Factor	Present value	Cos Φ	2	✔	✔	✔
Total Harmonic Distortion	Current	THD I	2	✕	✔	✔
	Voltage	THD U	2	✕	✔	✔
Trip History	Fault current value	-	-	✔	✔	✔
	Trip cause and time (for LT, ST, I and GF)	-	-	✔	✔	✔
	Fault current Phase (for LT, ST and I)	-	-	✔	✔	✔
Alarm History	Description and time	-	-	✔	✔	✔

Note
Electric energy, trip history and alarm history are stored in a non volatile memory during a trip operation.

TBPro(P_SE SMART OCR (TPOU Type))_dOPCH_S02

MCCBs

Description of SMART Communications System

Connection lead connection locations for SMART MCCB Accessories

TPCM00D02W

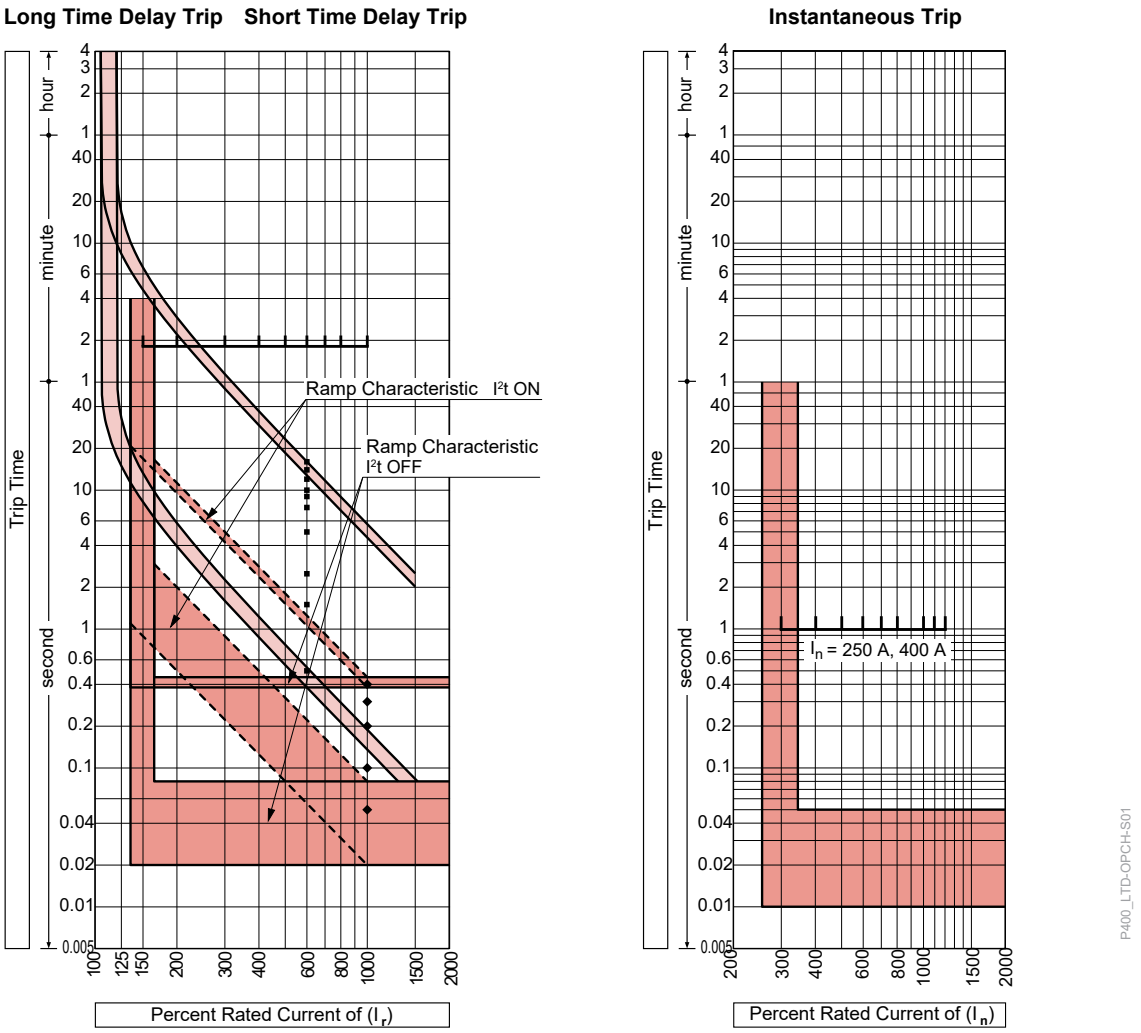
RJ45 connector required for Modbus communications with external devices. User to source RJ45 connectors.

MCCB side mount bracket supplied with TPCM module as standard

Smart MCCB Abbreviations

ACP	**Auxiliary Communications Port:** Connection of auxiliary connector AX / AL SMART
AL	**Alarm:** auxiliary contact fault signal
AX	**Auxiliary:** auxiliary contact open / closed
CIP	**Communication Interface Port:** mating connector of the remote display
MIP	**Maintenance Interface Port:** To connect to the OCR checker
OAC	**Optional Alarm Contact:** Connection connector optional alarm output contact
PTA	**Pre-Trip Alarm:** prealarm overload and overload prealarm output contact of the connector
OLED	Organic Light-Emitting Diode (OLED)
ZSI	Zone Selective Interlocking (zone selectivity)

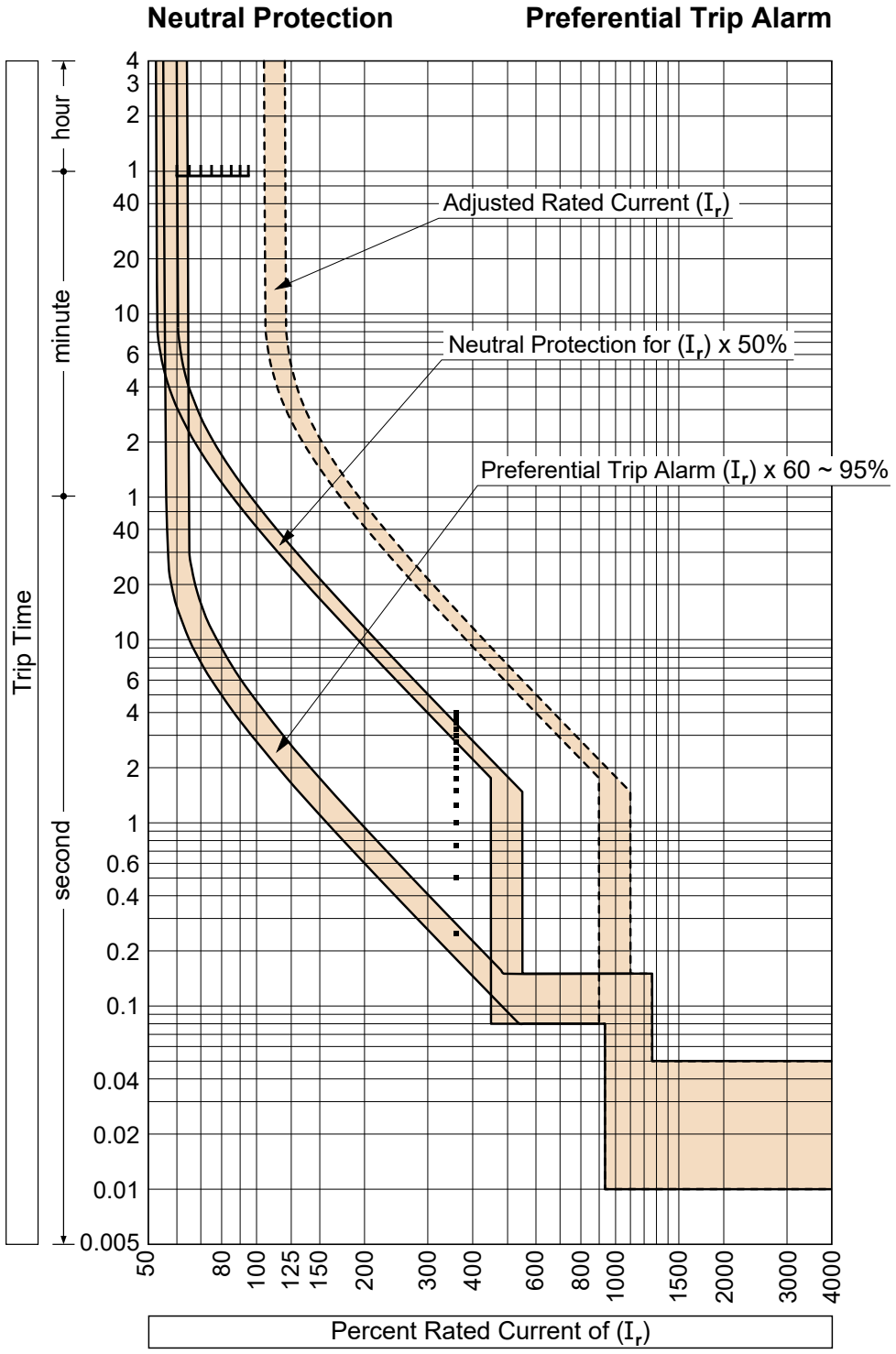
Time Current Characteristics Curve, P400, Smart Electronic



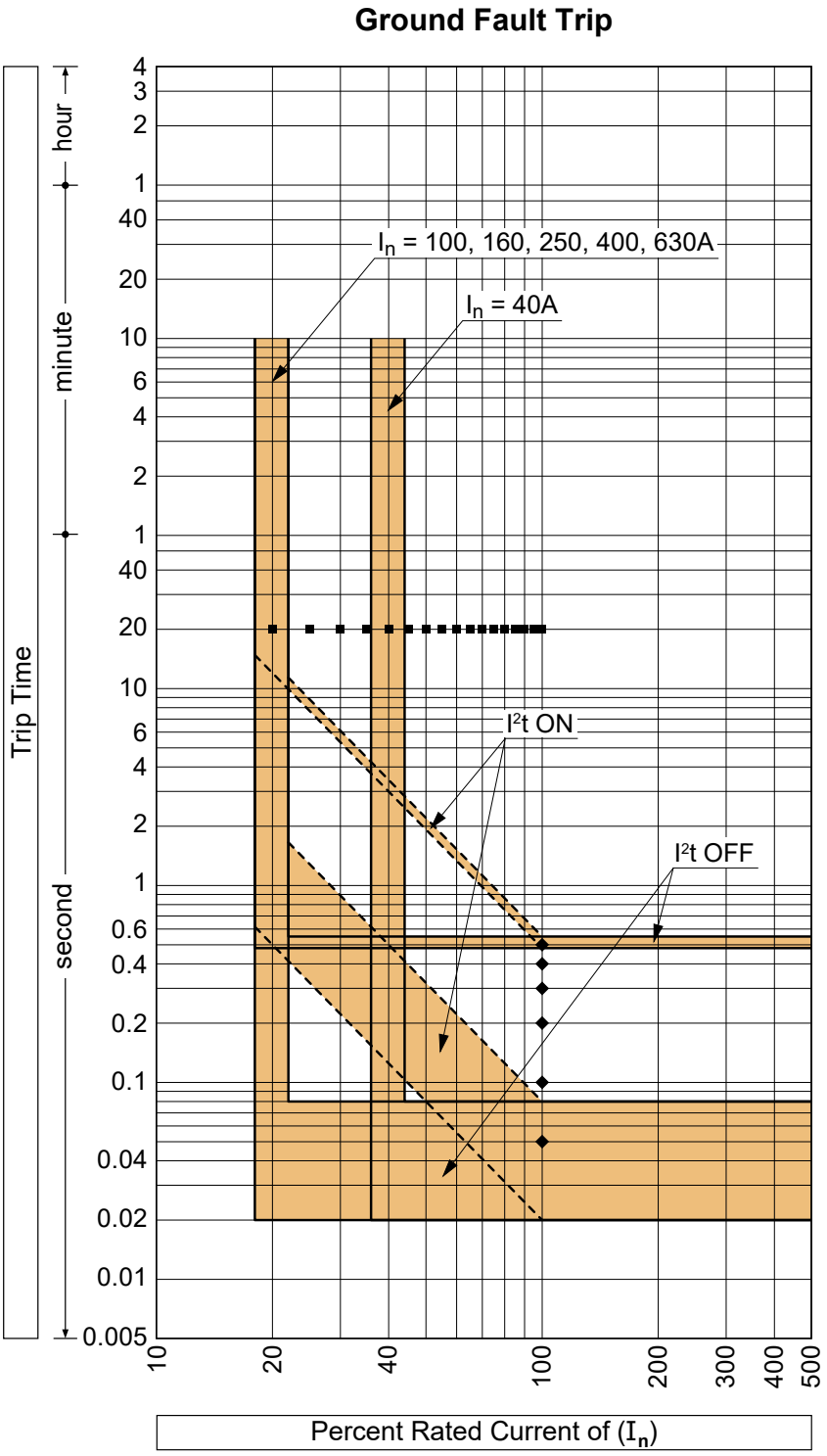
P400_SE SMART OCR detail (TPOP OCR) 250 A, 400 A

General features – standard	LSIG OCR with adjustable Long time, short time, instantaneous and Ground Fault, PTA, Neutral Pole protection (4P only), Hot/Cold selectable, Zone interlock, Temperature/Trip/Custom Alarms (alarms via LED & comms)
OCR Adjustment settings	
Long Time Delay (LTD)	I_{R1} setting 40 % - 100 % of I_N (base currrent) via 9 increment settings. I_{R2} fine adjust in 1 amp increments t_R setting 0.5 – 16 seconds in 10 increments
Short Time Delay (STD)	I_{SD} setting 1.5 – 10 (x I_R) in 0.5 increments or OFF setting. t_{SD} setting 50 – 400 mS in 5 increments or I^2t OFF / ON
Instantaneous (INST)	I_i setting: 3 – 12 x I_N in 0.5 step increments
Ground Fault (GF)	IG adjustable: 20 % to 100 % of I_N in 5 steps tG adjustable: 50 ms – 500 ms in 5 steps or OFF / ON using I_{SD} I^2t setting. 4 pole GF MCCBs have an unswitched neutral pole, and include internal neutral CT.
Neutral Pole Protection (N)	Applies to 4P MCCBs. N (I_N) settings are: 50 %, 100 % (x I_R) or OFF. t_N = short time settings t_R and I_{SD}.
Pre Trip Alarm (PTA)	I_P = OFF or 60 % to 95 % (x I_R) in 5 steps, t_P = 5 % to 80 % in 5 % steps (x t_R)
Zone Interlocking	P400_SE can be used with P630_SE MCCBs & AR ACBs upstream, & P250_SE, P160_SE MCCBs downstream

Time Current Characteristics Curve, P160/250/400/630_SE, Smart Electronic



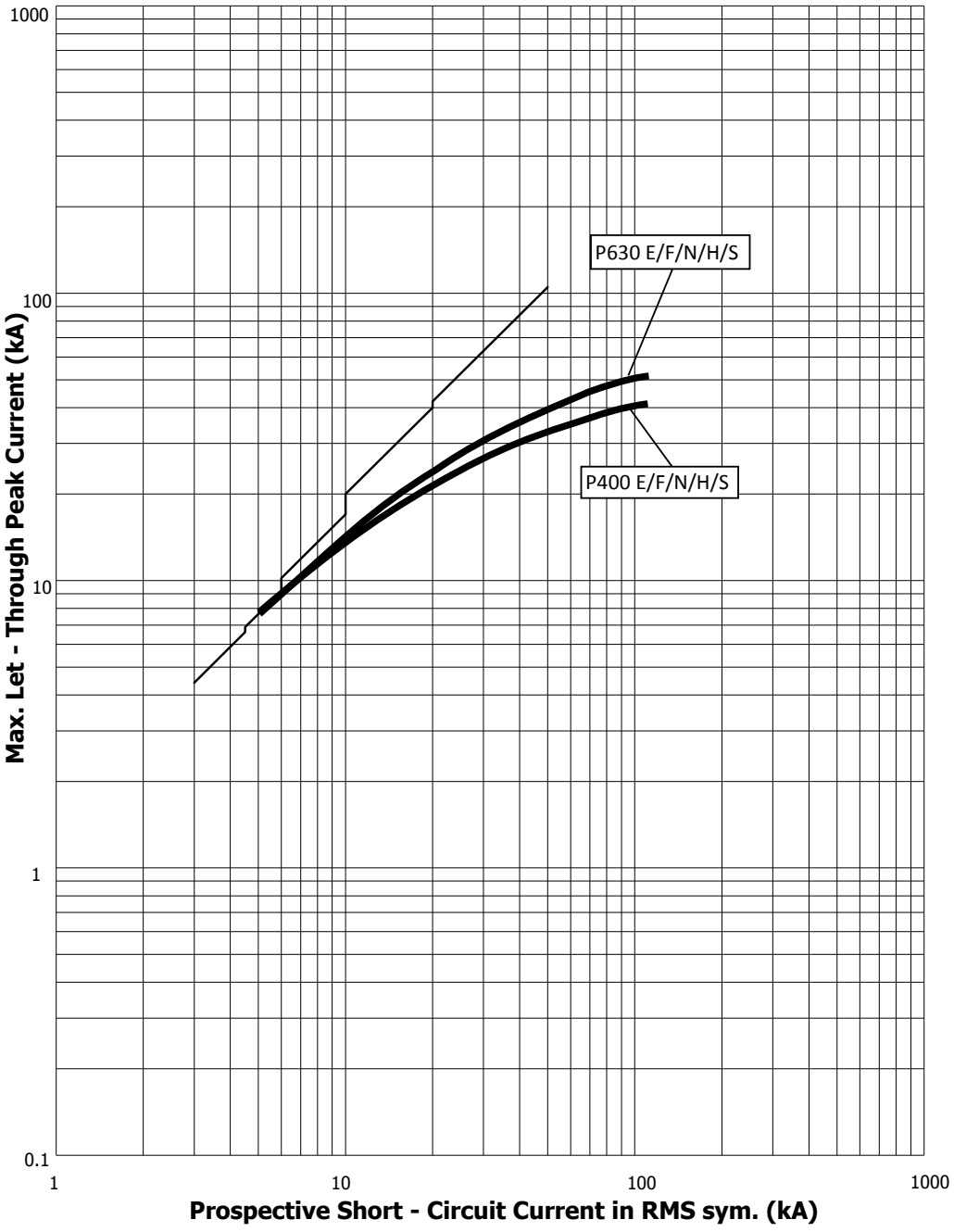
Time Current Characteristics Curve, P160/250/400/630_SE, Smart Electronic



Let-Through Peak Current Curve, P400/630_BE/TM/SE, Thermal Magnetic / Electronic

P630 E/F/N/H/S
P400 E/F/N/H/S

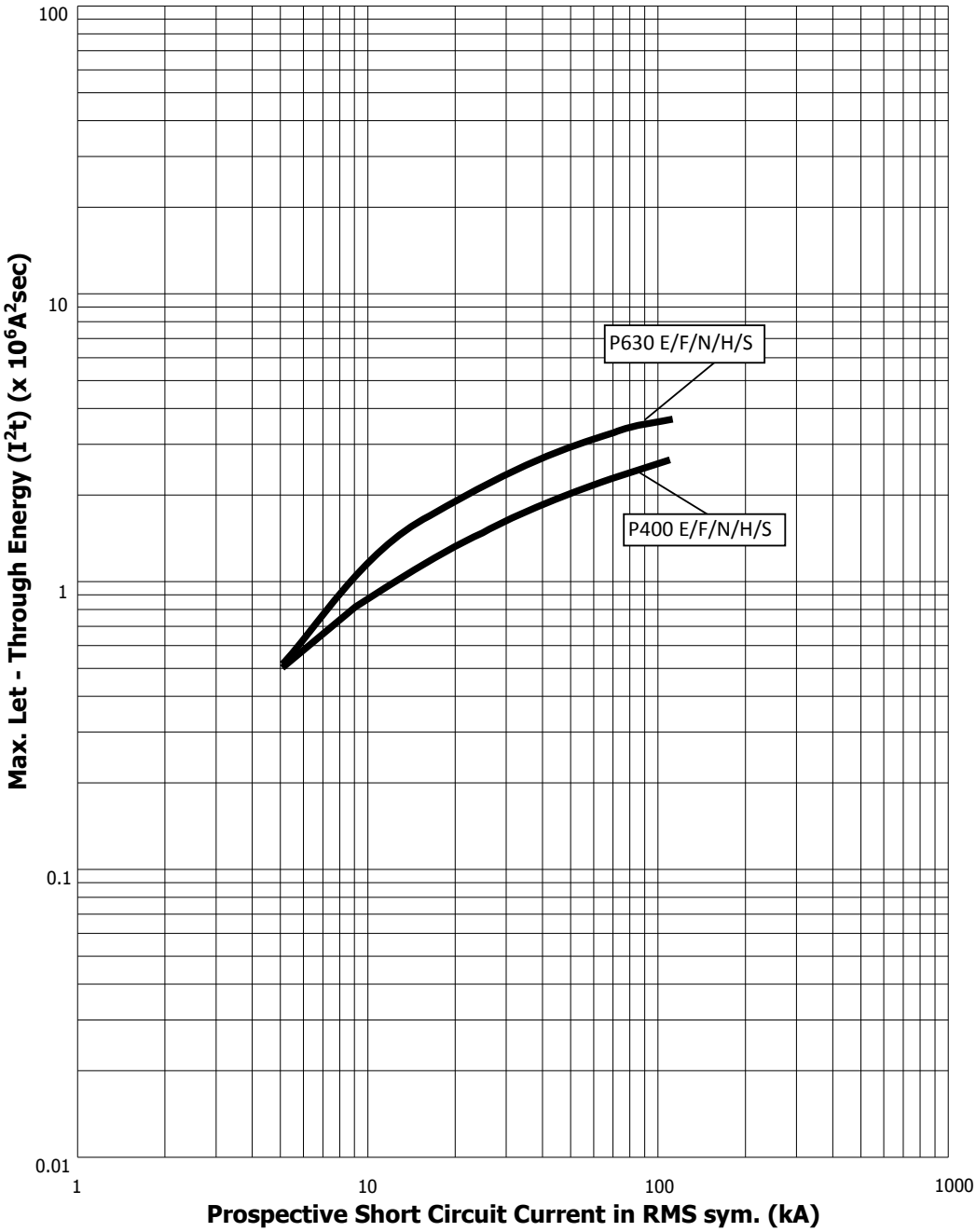
Rated Operational Voltage 380 / 415 V AC
Recovery Voltage 457 V AC --- 415 × 110 %



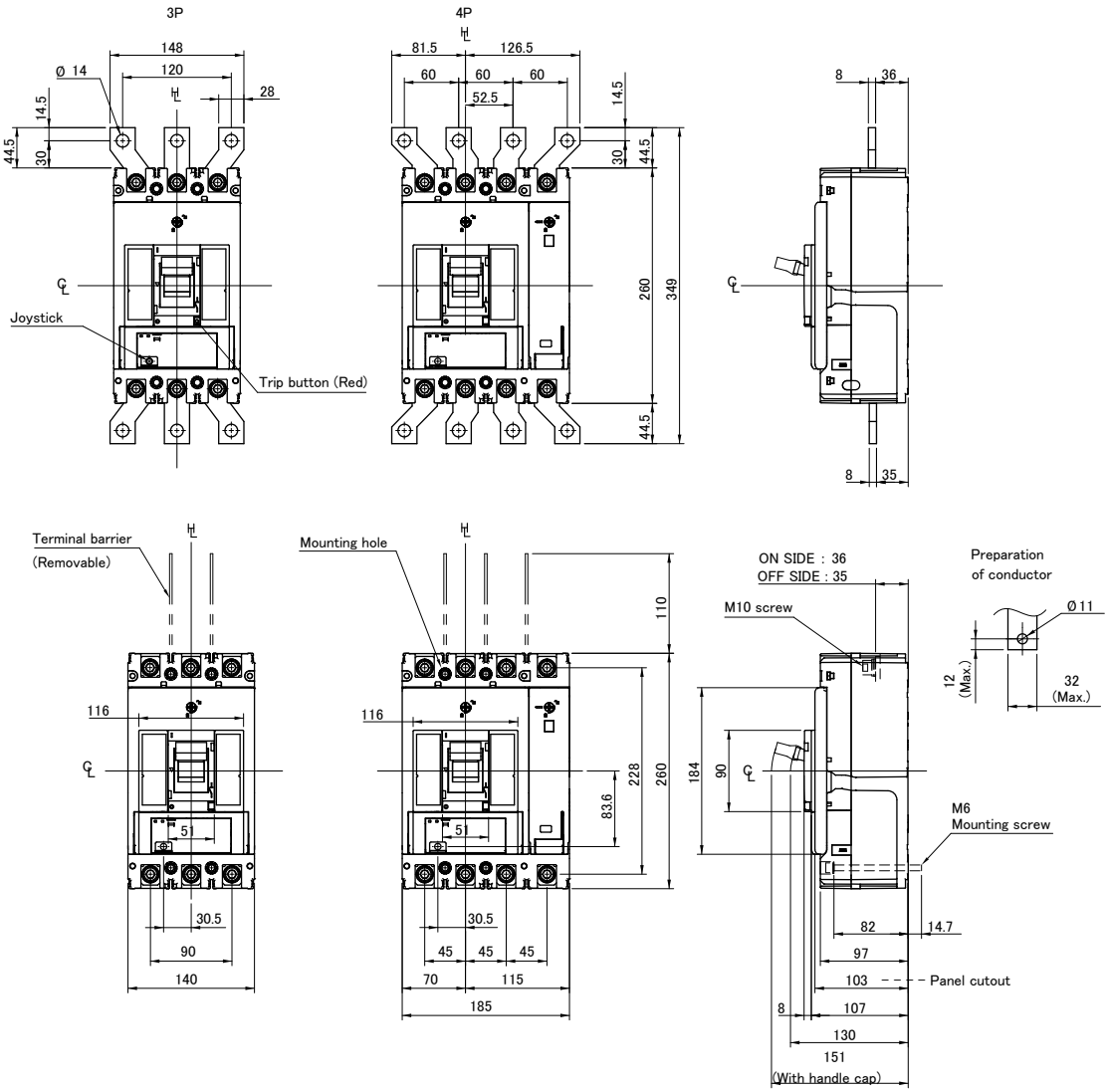
Let-Through Energy I²t Curve, P400/630_BE/TM/SE, Thermal Magnetic / Electronic

P630 E/F/N/H/S
P400 E/F/N/H/S

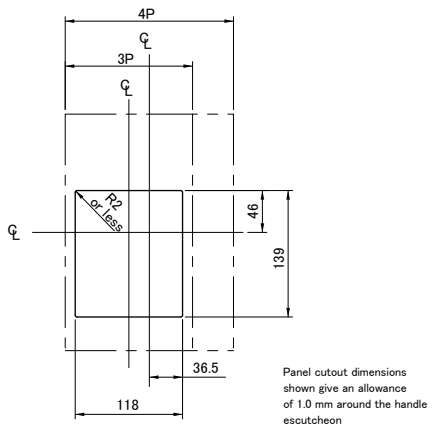
Rated Operational Voltage 380 / 415 V AC
Recovery Voltage 457 V AC --- 415 × 110 %



Dimensions P400, Smart Electronic, Front Connect (mm)

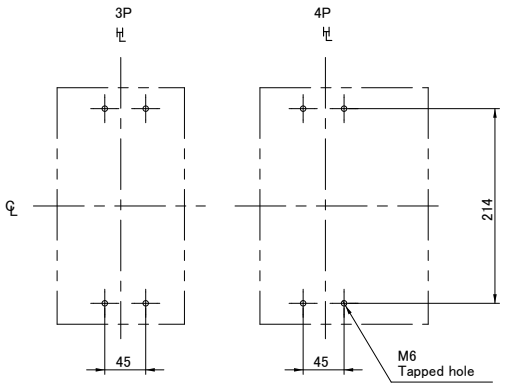


Panel cutout

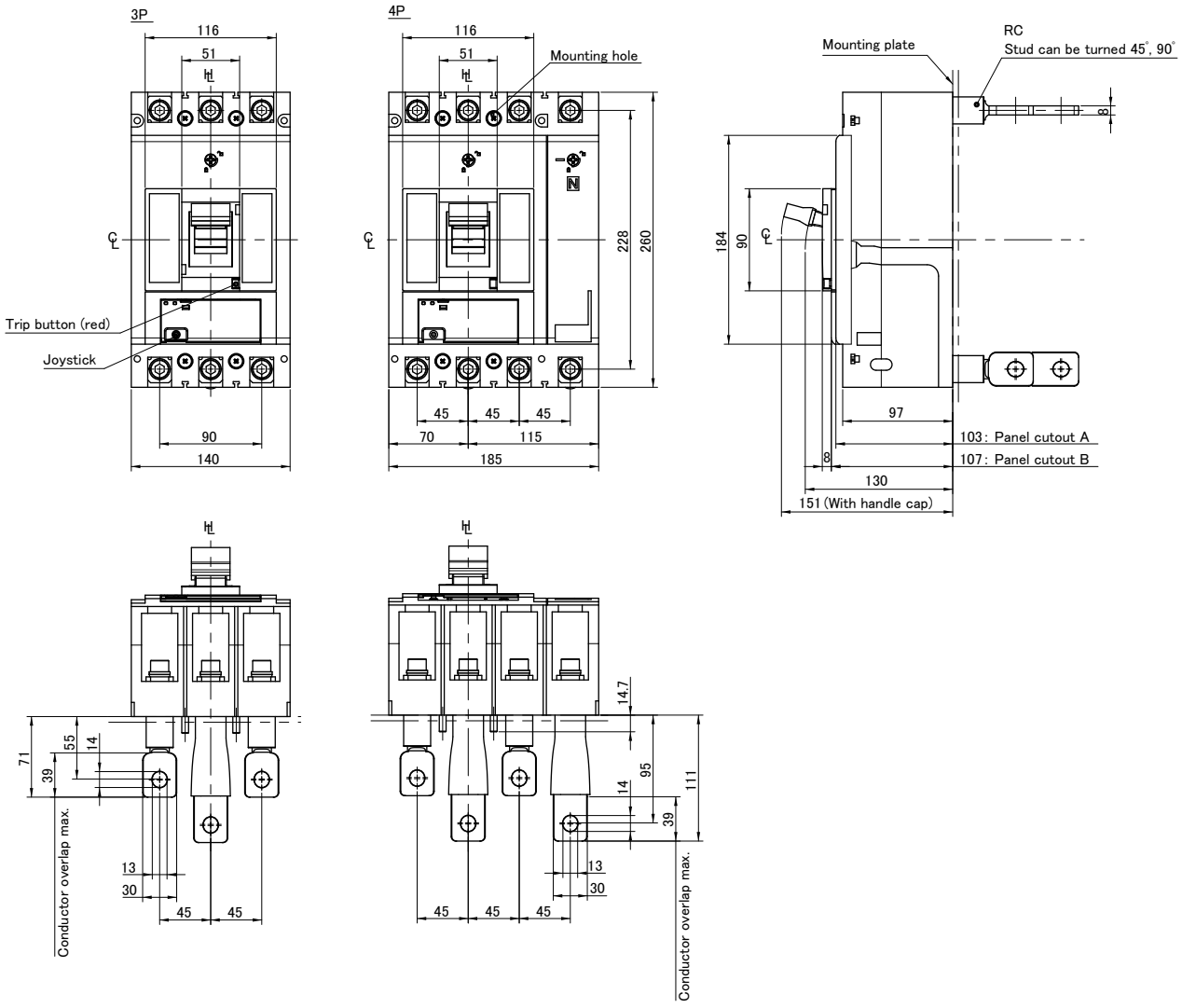


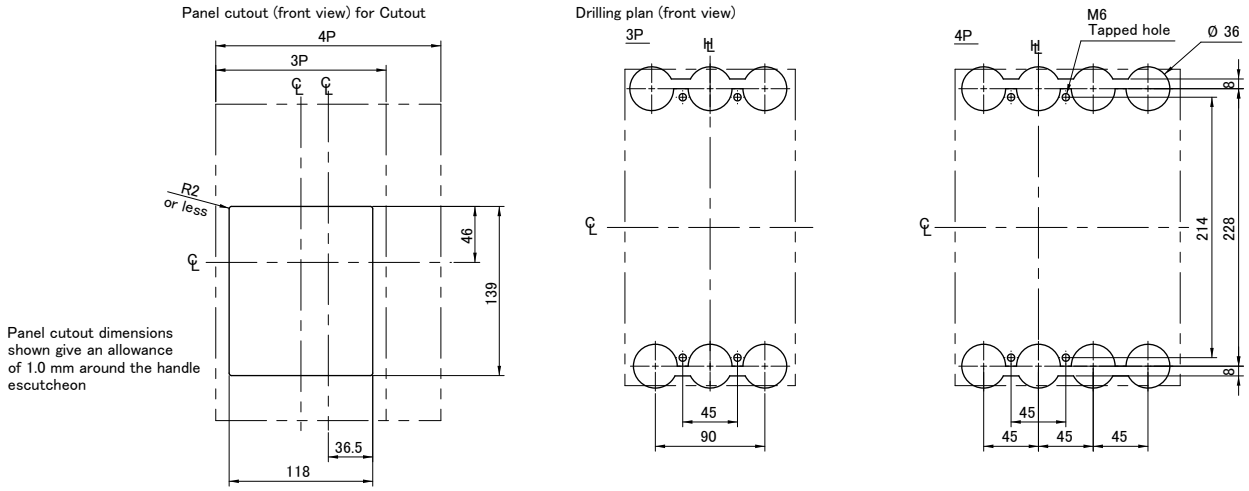
Panel cutout dimensions shown give an allowance of 1.0 mm around the handle escutcheon

Drilling plan



Dimensions P400_TM/BE/NN, Rear Connect (mm)





P400_NN

Non-Auto Switch Disconnector

- ✔ Non-Auto switch disconnector for power distribution
- ✔ AC23 and DC22 ratings for motor starting use
- ✔ No overcurrent protection (isolator only)
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-3, IEC 60947-3 and CE
- ✔ Panel mount standard, other connection options
- ✔ Wide range of accessories for application flexibility, including OFF padlock device
- ✔ Accepts standard MCCB internal and external accessories
- ✔ 3 or 4 pole versions
- ✔ Suits XCP chassis
- ✔ 260 mm (H), 103 mm (D), 45 mm pole centres
- ✔ I_{CW}= 5 kA for 1.0 sec: Rated short time withstand rating
- ✔ I_{CM}= 7.6 kA: Rated short circuit making capacity

CE DEKRA On the safe side.

General

Switch Type	Non Auto Switch Disconnector
Number of Poles	3 or 4
Switching Poles	3P or 3P + N

Ratings

Nominal Current	400 A @ 60 °C
Motor Starting	AC23 motor starting DC22 motor starting
Icw Rated	Short time withstand
Icm Rated	Ampere making capacity

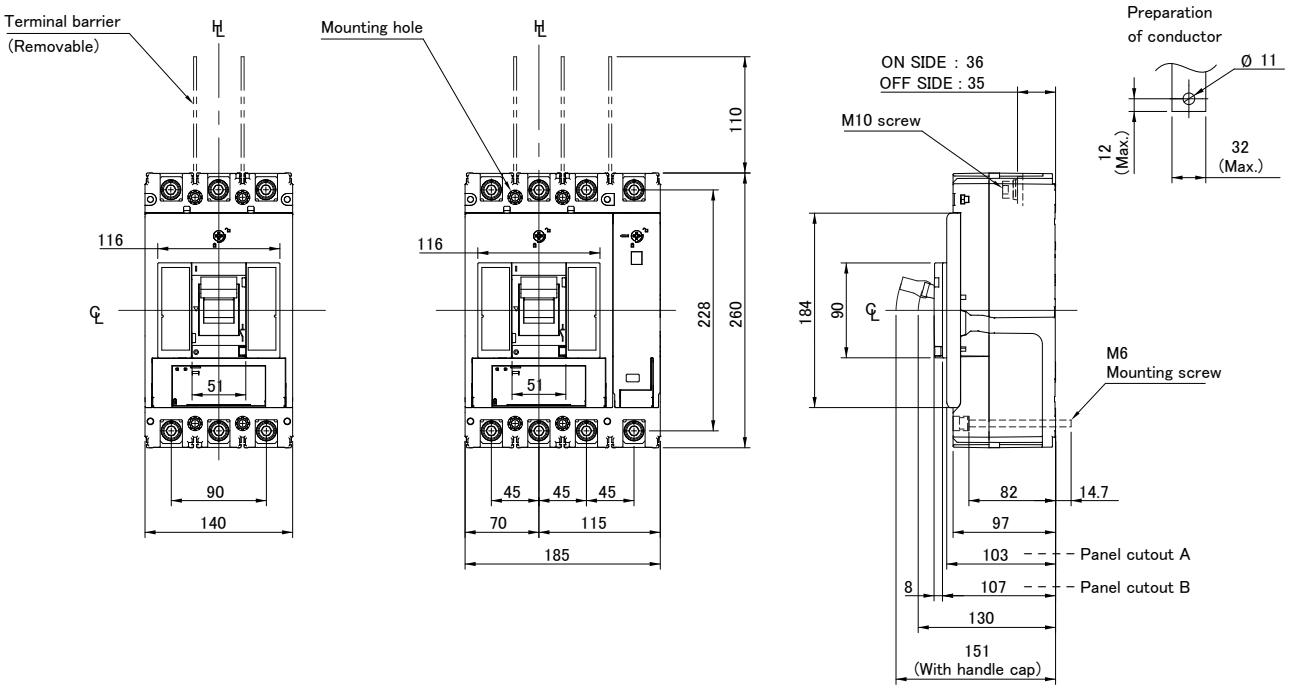
Voltage

Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Accessories and Connections

Options	Front or rear connect Terminal connection options Accepts standard MCCB accessories

Quick Reference Dimensions – Front Connect



400 A Frame 3 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Catalogue No.
400	3	P400D3400NN

400 A Frame 4 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Catalogue No.
400	4	P400D4400NN

Ratings

Component Type	Non Auto Switch Disconnector
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	400 AF

I_n, Rated Current (A)	400
45ºC	400
50ºC	400
70ºC	312

Ue Rated operational voltage AC maximum	690 V AC
Ue Rated operational voltage DC maximum	250 DC
U_i, Rated Insulation Voltage	800 V (rms)
Motor Starting Utilisation Category	AC 23, DC 22
U_{imp}, Impulse Withstand Voltage	8 kV
Icw, Rated Short Circuit Withstand Current 400/690V	5 kA / 1 Sec
Rated Frequency	50 / 60 Hz
Pollution Degree	3
AC Power loss per pole at full rated current	28 W @ 400 A Contact NHP for DC data
Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-3 AS/NZS 60947-3
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 400 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option) Withdrawable Rack-out Mechanism (Option)
Terminal Type	Bolt-Terminal
Connection Torque	13.7 - 22.5 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	XCP Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	Yes
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		260 mm
Width	**3P**	140 mm
	4P	185 mm
Depth (less toggle)		103 mm
Depth (toggle included)		145 mm
Weight	**3P**	5.4 kg
	4P	7.2 kg
Electrical Life		6000 cycles
Mechanical Life		15000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**D**
Based On AS/NZS 60947.2 and IEC 60947-2	**I_{cm} (Short Circuit Making Capacity)**	690 V AC	7.6
	I_{cw} (Short Time Withstand)	1.0 Seconds	5

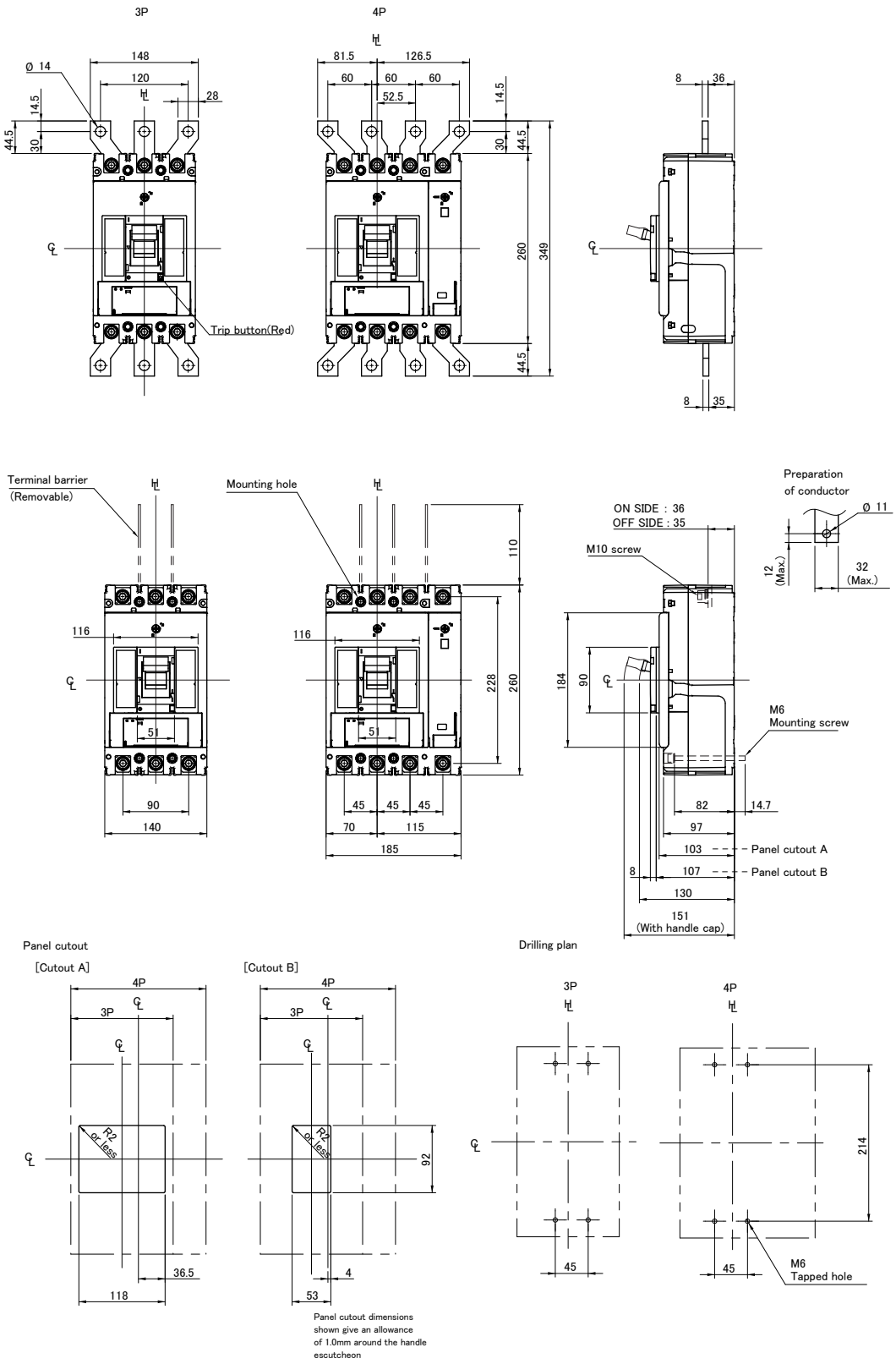
Trip Unit

Over Current Protection Function	No
Trip Unit Protection Type	Non-auto Switch Disconnector
Rated Temperature	60 °C

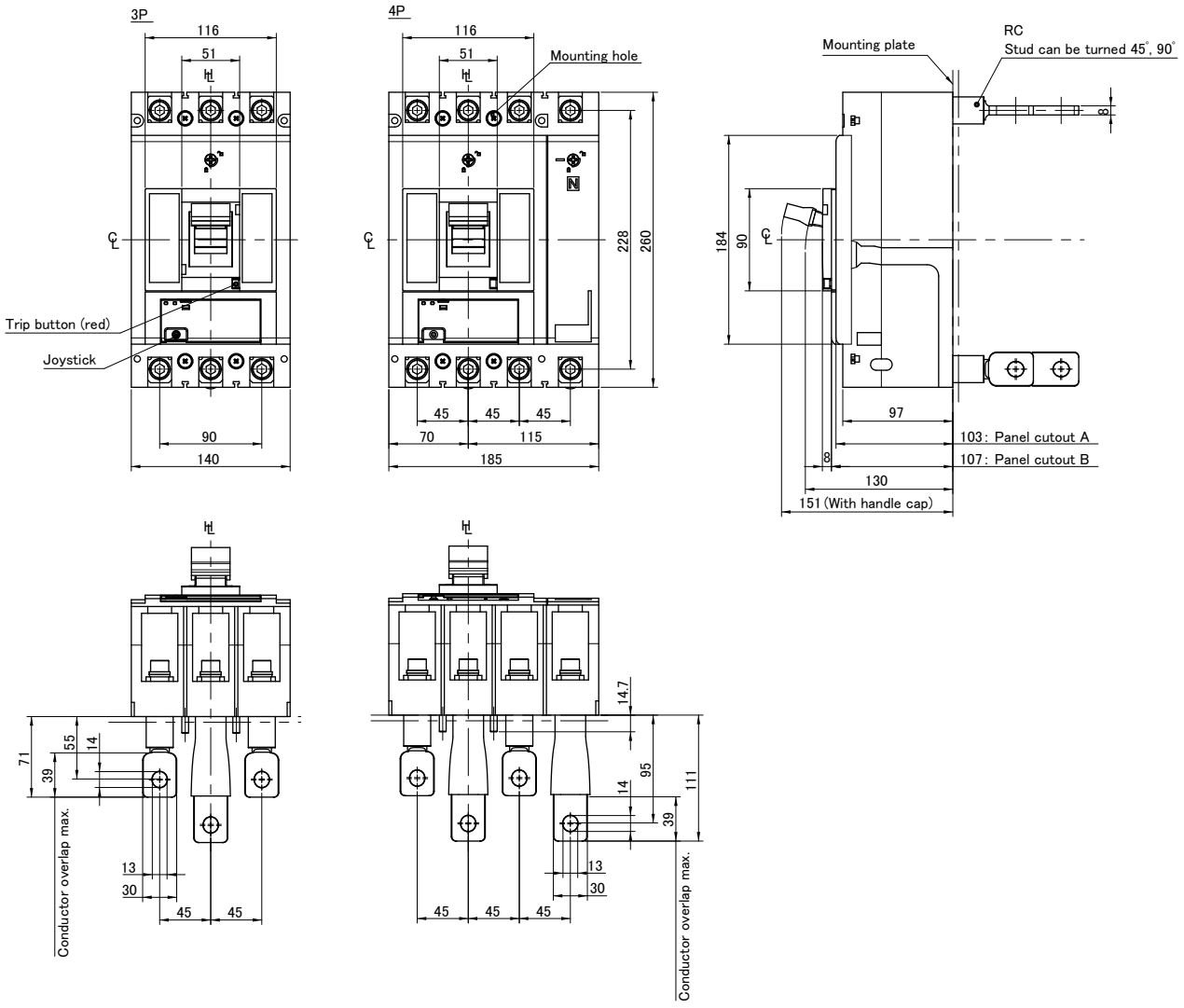
General Accessories

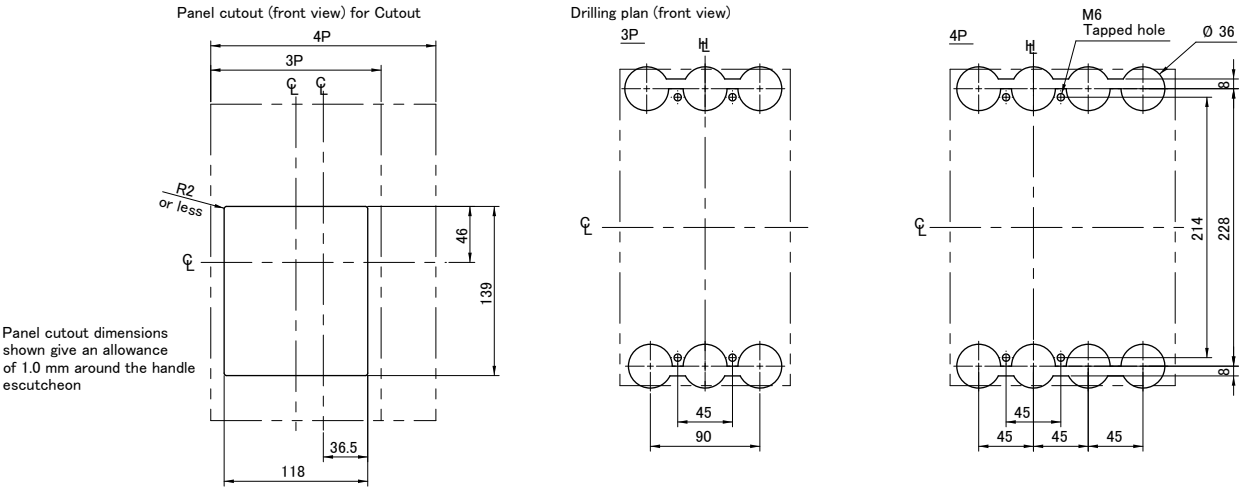
Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

Dimensions P400 _TM/BE/NN, Front Connect (mm)



Dimensions P400_TM/BE/NN, Rear Connect (mm)





P400 AF Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits

Item Description	Catalogue No.
Alarm, Left Side Pocket Only 1 C/O	T2AL00LML3STA

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxilary 1 C/O	T2AX00LML3STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00LA10T
Shunt Trip Coil 230 - 240 V AC	T2SH00LA20T
Shunt Trip Coil 400 - 415 V AC	T2SH00LA40T
Shunt Trip Coil 24 V DC	T2SH00LD02T
Shunt Trip Coil 48 V DC	T2SH00LD04T
Shunt Trip Coil 110 V DC	T2SH00LD10T

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
110 V AC	T2UV00LA10NT
230 - 240 V AC	T2UV00LA20NT
400 - 440 V AC	T2UV00LA40NT
24 V DC	T2UV00LD02NT
110 V DC	T2UV00LD10NT
230 V DC	T2UV00LD20NT

Time Delay Operation (500 ms)

When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500 ms time delay

Item Description	Catalogue No.
Time Delay. 110 V AC	T2UV00LA10DS
Time Delay, 230 - 240 V AC	T2UV00LA24DS
Time Delay, 440 - 450 V AC	T2UV00LA45DS
Time Delay, 24 V DC	T2UV00LD02DS
Time Delay, 110 V DC	T2UV00LD10DS
Time Delay, 230 V DC	T2UV00LD24DS
Time Delay. 4 Pole, 110 V AC	T2UV00LA10DL
Time Delay, 4 Pole, 230 - 240 V AC	T2UV00LA24DL
Time Delay, 4 Pole, 380 - 415 V AC	T2UV00LA40DL
Time Delay, 4 Pole, 440 - 450 V AC	T2UV00LA45DL
Time Delay, 4 Pole, 24 V DC	T2UV00LD02DL
Time Delay, 4 Pole, 110 V DC	T2UV00LD10DL
Time Delay, 4 Pole, 230 V DC	T2UV00LD24DL

SMART Status Auxiliary

Suits TemBreak PRO P160_SE – P630_SE Smart Metering MCCBs

The TPSS SMART auxiliary and Alarm is used with the TemBreak PRO SMART energy and communications MCCB range. The TPSS auxiliary range includes types which allows the SMART MCCB OCR to log and count the number of opening / closing cycles, or count the number of electromechanical (overload) fault trips and
indicate and communicate via Modbus, the actual mechanical ON / OFF or TRIPPED status of the breaker main contacts. The ON / OFF / TRIPPED status of the MCCB is also displayed on the OCR display.

Item Description	Catalogue No.
ON OFF TRIP, Standard Type Use for Applications 125 - 250 V AC	TPSS00MXLSWA
ON OFF TRIP, Micro-current Type Use for Applications 125 V AC / 24 - 30 V DC	TPSS00MXLRWA
Smart Status Auxiliary AX/AL Cycle - Trip Counter	TPSS00NA

Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

Item Description	Catalogue No.
TPHS Compact Handle Red/Yellow, IP55 Handle + 356 mm Shaft	TPHS63R5GM
Red/Yellow, IP55 Handle + 356 mm shaft	TPHS63R5RM

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

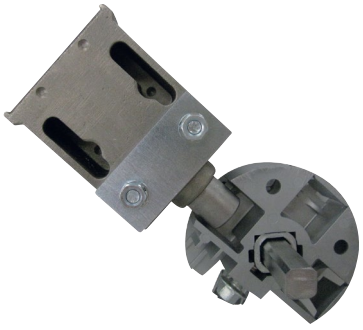
Item Description	Catalogue No.
TPHS Compact Handle Grey, IP65 Handle + 445 mm Shaft	TPHP63SR6BN
TPHS Compact Handle Red/Yellow, IP65 Handle + 445 mm Shaft	TPHP63SR6RN

Handle Options

A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
TPHS Handle Options 390 mm T Pin Shaft – no Flexi Coupling 400/630 AF	T2HS400SHAFT



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

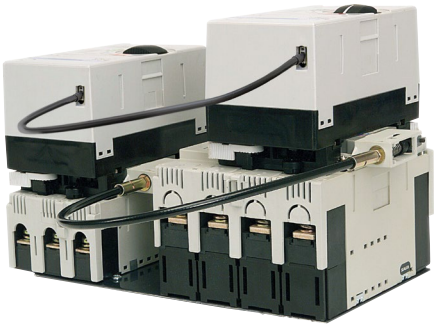
Motor Operator

Allows remote switching of an MCCB to ON or OFF or resetting tripped MCCBs.

Item Description	Catalogue No.
Motor Operators 110-240 V AC 400/630 AF	TPMC63SA10N
Motor Operators 24-48 V DC 400/630 AF	TPMC63SD02N
Motor Operators 110 V DC 400/630 AF	TPMC63SD10N

Motor Operator Accessories

Provides electrical interlocking between 2 motors to prevent simultaneous operation



Item Description	Catalogue No.
Motor Interlock Cable (0.6 m) Between Any 400/630/1000 AF MCCB Motor	T2MM40L06A
Motor Interlock Cable (2.1 m) Between Any 400/630/1000 AF MCCB Motor	T2MM40L21A

Item Description	Catalogue No.
Motor Interlock Cable (0.6 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S06A
Motor Interlock Cable (2.1 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S21A

Locking and Interlocking Accessories

Cable Mechanical Interlock

Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 m apart

Item Description	Catalogue No.
Cable Interlock Interlock Kit Less Wire. For Use with motors Only, 400/630 AF	TPMW63SCM
Cable Interlock Interlock Kit Less Wire. For Use with handles Only, 400/630 AF	TPMW63SCH

Item Description	Catalogue No.
Cable Interlock Wire (1.0 m)	T2MW00SA
Cable Interlock Wire (1.5 m)	T2MW00LA

Link Mechanical Interlock

Prevents simultaneous operation of two horizontally mounted interlocked MCCBs.

Item Description	Catalogue No.
3 Pole, Left Side Section, For Motorised Operation ONLY, 400/630 AF	TPML63SL3M
4 Pole, Left Side Section, For Motorised Operation ONLY, 400/630 AF	TPML63SL4M
Common 3 or 4 Pole, For Motorised Operation ONLY, 400/630 AF	TPML63SR3M
3 Pole, Left Side Section, For Use With Handles ONLY, 400/630 AF	TPML63SL3H
4 Pole, Left Side Section, For Use With Handles ONLY, 400/630 AF	TPML63SL4H
Common 3 or 4 Pole, Right Side Section, For Use With Handles ONLY, 400/630 AF	TPML63SR3H

Toggle Locks

Non-captive

Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Toggle Locks Includes 5 mm x 16.5 mm Slot for a Padlock or Hasp, 400/630AF	TPHL63SA

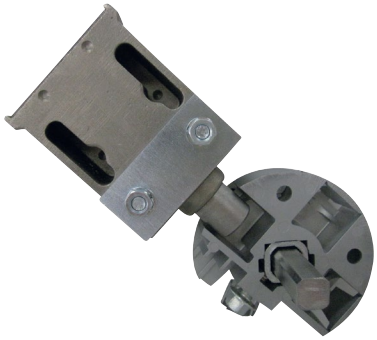
Captive

Contact NHP for Captive Toggle Locks.

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Mounted

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, standard key code, F	440TAKEYE100F
Prosafe, standard key code, G	440TAKEYE100G
Prosafe, standard key code, H	440TAKEYE100H
Prosafe, Standard Key Code I	440TAKEYE100I
Prosafe, Standard Key Code J	440TAKEYE100J
Prosafe, Standard Key Code K	440TAKEYE100K
Prosafe, Standard Key Code L	440TAKEYE100L
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, Standard Key	440TAKEYE10X

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys

Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100A
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10BA
Single key shot bolt lock, key not included	440TMSBLE10X

Extension Bars

Add-on bus bars, allow more or larger conductor connector to an MCCB

Item Description	Catalogue No.
3 Pole, set of 3, flanged bars 400A	TPFB403WHA
3 Pole, set of 3, flanged bars 630A	TPFB463WHC
4 Pole, set of 4, flanged bars 630A	TPFB464WHC

MCCBs

Installation External Accessories

Communications Module

The TPCM TemCom PRO communication module for the Smart MCCB enables data saved or monitored by the Smart MCCB to be shared with a compatible Modbus RTU monitoring system. 2 versions are available; a basic modbus module, and another that includes 2 opto isolated configurable I/O contacts for signaling additional devices.

An MCCB side mounting support bracket is supplied for side of the MCCB mounting. The module is also DIN-rail mounting.

- The Modbus communication module includes a 120 Ω termination resistor
- This resistance can be activated / deactivated via a front panel switch
- The module comes in two versions with or without input and output contact

Suits P160_SE, P250_SE, P400_SE, P630_SE SMART MCCBs (An MCCB side mount adaptor is included as standard. The module is also DIN rail mounting as standard)

Item Description	Catalogue No.
Modbus RTU Communication Module, Basic Version, No Extra I/O	TPCM00D02NA
Modbus RTU Communications Module, Basic + 2 Configurable I/O Relay Contacts	TPCM00D02WA

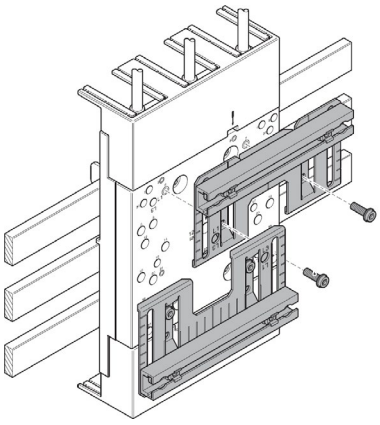
SMART Connection Leads

SMART CIP connection leads TPPHQTT Connection Interface Leads for P_SE SMART MCCBs and TPCM, TPED or 24VDC power

Item Description	Catalogue No.
CIP Connect Lead 0.5 m for P400, P630 MCCBs	TPPHQTT430HA
CIP Connect Lead 1.5 m for P400, P630 MCCBs	TPPHQTT440HA
CIP Connect Lead 5.0 m for P400, P630 MCCBs	TPPHQTT460HA
CIP 24 V DC Supply Lead 1.2 m for P400, P630 MCCBs	TPPHQTT160HA

60 mm ACS Busbar System

A base which allows an MCCBs line side to be plugged onto 60 mm 3 phase ACS busbar



Item Description	Catalogue No.
Busbar Adapter, 3P, 30 A, 184 mm x 320 mm 400/630 AF	32004
Adapter plate for 32004, to Suit Terasaki 400/630 AF 3/4P MCCB	32982

External Monitor

Suits P160_SE, P250_SE, P400_SE, P630_SE SMART MCCBs

The PRO View TPED door display is an optional accessory which can be used to monitor OCR data and also perform remote setting of Smart MCCB OCR trip unit. Data is communicated via a proprietory protocol from the MCCB to the TPED, so Modbus comms are not required when using the TPED. The TPED can be mounted on a switchboard door or a Concept panelboard escutcheon, with a door in front. An RJ9 CIP connection cable is necessary to provide the connection with the Smart circuit breaker, to its CIP connection socket. A 24 V DC supply is required and the TPED consumption is 85 mA, or a TPCM can be used. The front of the display is protected by a transparent and sealed facia which is rated IP65. The LCD screen is backlit to enable low ambient light reading.

Item Description	Catalogue No.
External Monitor and Configurator for P160_SE to P630_SE MCCBs	TPED00N

SMART Connection Leads

SMART CIP connection leads TPPHQTT Connection Interface Leads for P_SE SMART MCCBs and TPCM, TPED or 24VDC power

Item Description	Catalogue No.
CIP Connect Lead 0.5 m for P400, P630 MCCBs	TPPHQTT430HA
CIP Connect Lead 1.5 m for P400, P630 MCCBs	TPPHQTT440HA
CIP Connect Lead 5.0 m for P400, P630 MCCBs	TPPHQTT460HA
CIP 24 V DC Supply Lead 1.2 m for P400, P630 MCCBs	TPPHQTT160HA

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier Interpole Barrier (Qty 2), B800, B1000, ZS630, ZS800	T2BA403SH

Door Flange

A door mount flange providing a plastic surround for the panel or escutcheon cutout

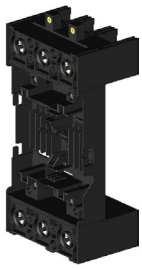
Item Description	Catalogue No.
Door Flange IP20 DR FLG 400/630A MCCB	T2DF40A
Door Flange IP30 DR FLG 400/630A MOT	T2DM40A

Plug-in MCCBs

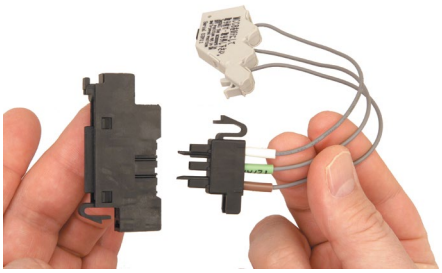
Plug-in Mounting Bases

The MCCB via rear plugs, is plugged onto a fixed base for its line and load connections.

Item Description	Catalogue No.
Plug in conversion kit, 3P, P400, E400, S400	2H6847CAAK
Plug in conversion kit, 4P, P400, E400, S400	2H6848CAAK



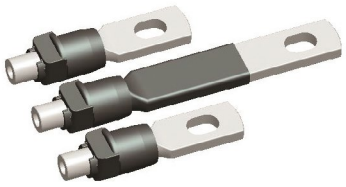
Item Description	Catalogue No.
Plug-in Mounting Base 3P Base 400/630 AF	T2PM40A3A
Plug-in Mounting Base 4P Base 400/630 AF	T2PM40A4A



Item Description	Catalogue No.
Withdrawable and Plug-in MCCB 3 Pin Plug for Aux/Alarms – for MCCB Side	2H6959CCA
Withdrawable and Plug-in MCCB 3 Pin Plug for Shunt/UVT – for MCCB Side	2H6959CDA
Control Wiring Plugs and Sockets for Withdrawable and Plug-in MCCBs, 3 Pin Socket for Panel Mount Version	T2TP003A

Rear Connection Studs

Allows MCCB main connections to be made at the rear of the MCCB



Item Description	Catalogue No.
Rear Connect Terminal Studs 3 Pole Kit, 400A, Set of 6 Studs, 400/630 AF	T2RP403SA
Rear Connect Terminal Studs 4 Pole Kit, 630A, Set of 8 Studs, 400/630 AF	T2RP404SA

Item Description	Catalogue No.
Rear Connect Terminal Studs 3 Pole Kit, 630A, Set of 6 Studs, 400/630 AF	T2RP463SA

CF Terminal Cover Locking Clip

Used with terminal covers to prevent unauthorised removal or access to terminal area

Item Description	Catalogue No.
Terminal Cover Locking Clip Suits P400, P630	TPCF63SL

SMART Connection Leads

Optional Alarm Contact or Pre-Trip Alarm connection leads for P_SE SMART MCCBs.

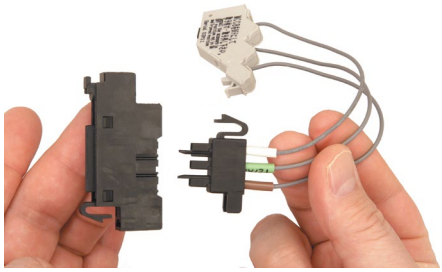
Item Description	Catalogue No.
OAC / PTA connection lead 1.2 m	TPPHQTT130HA

Item Description	Catalogue No.
ZSI - zone selective interlocking connection lead, 1.2 m	TPPHQTT150HA

Item Description	Catalogue No.
CIP Connect Lead 0.5 m for P400, P630 MCCBs	TPPHQTT430HA
CIP Connect Lead 1.5 m for P400, P630 MCCBs	TPPHQTT440HA
CIP Connect Lead 5.0 m for P400, P630 MCCBs	TPPHQTT460HA
CIP 24 V DC Supply Lead 1.2 m for P400, P630 MCCBs	TPPHQTT160HA

Withdrawable MCCBs

A plug-in MCCB equipped with a cylindrical lever rack-in rack out metal assembly



Item Description	Catalogue No.
Withdrawable and Plug-in MCCB 3 Pin Plug for Aux/Alarms – for MCCB Side	2H6959CCA
Withdrawable and Plug-in MCCB 3 Pin Plug for Shunt/UVT – for MCCB Side	2H6959CDA
Control Wiring Plugs and Sockets for Withdrawable and Plug-in MCCBs, 3 Pin Socket for Panel Mount Version	T2TP003A

Terminal Covers

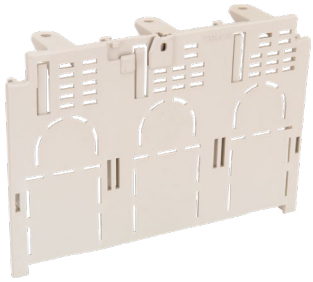
Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area

Item Description	Catalogue No.
3 Pole Single Cover, 140 mm Width, Narrow Cover, 400/630 AF	TPCF633SLNPH
4 Pole Single Cover, 185mm Width, Narrow Cover, 400/630 AF	TPCF634SLNPH
3 Pole, Set of Two (2) Covers, 140 mm Width, Narrow Cover, 400/630 AF	TPCF633SLNP
4 Pole, Set of Two (2) Covers, 185mm Width, Narrow Cover, 400/630 AF	TPCF634SLNP
3 Pole Single Cover, 180mm Width, Wide Cover, 400/630 AF	TPCF633SWNPH
4 Pole Single Cover, 238mm Width, Wide Cover, 400/630 AF	TPCF634SWNPH
3 Pole, Set of Two (2) Covers, 180mm Width, Wide Cover, 400/630 AF	TPCF633SWNP
4 Pole, Set of Two (2) Covers, 238mm Width, Wide Cover, 400/630 AF	TPCF634SWNP
3 Pole Single Cover, 140mm Width, Narrow Cover with Rear Earth Barrier, 400/630 AF	TPCF633SLEPH
4 Pole Single Cover, 185mm Width, Narrow Cover with Rear Earth Barrier, 400/630 AF	TPCF634SLEPH
3 Pole Single Cover, 180mm Width, Wide Cover with Rear Earth Barrier 400/630 AF	TPCF633SWEPH
4 Pole Single Cover, 238mm Width, Wide Cover with Rear Earth Barrier 400/630 AF	TPCF634SWEPH

Rear Connect Terminal Covers

Provides front finger touch protection with MCCBs used with rear terminals and HC chassis



Item Description	Catalogue No.
3 Pole Single Cover, 400/630AF	TPCR633SPH
4 Pole Single Cover, 400/630AF	TPCR634SPH
3 Pole, Set of Two (2) Covers, 400/630AF	TPCR633SP
4 Pole, Set of Two (2) Covers, 400/630AF	TPCR634SP

Tunnel Clamp Terminals

Allows cable to be terminated directly to the MCCB and clamped for good connectivity

Item Description	Catalogue No.
Tunnel Clamp Terminals 3 Pole, Set of 3 Clamps, External Mounting, 2 Hole, 35 mm² to 300 mm², 400/630 AF	TPFW63S3L2H
Tunnel Clamp Terminals 3 Pole, Set of 3 Clamps, Internal Mounting, 1 Hole, 35 mm² to 300 mm², 400/630 AF	TPFW63S3S1H
Tunnel Clamp Terminals 4 Pole, Set of 4 Clamps, External Mounting, 2 Hole, 35 mm² to 300 mm², 400/630 AF	TPFW63S4L2H
Tunnel Clamp Terminals 4 Pole, Set of 4 Clamps, Internal Mounting, 1 Hole, 35 mm² to 300 mm², 400/630 AF	TPFW63S4S1H

B400_BE / BEG

Electronic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safetyDirect opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ 260 mm (H), 140 mm (D), 45 mm pole centres
- ✔ Fault ratings; 125, 200 kA I_{CU} @ 415 V AC
- ✔ Electronic trip unit: 10 preset characteristic curve selection dial and base current adjustment dial
- ✔ Standard features include and instantaneous-only setting
- ✔ Trip units; 250 A, 400 A

General

Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type)
Trip Unit Rating	250 / 400 A
Number of Poles	3 / 4
Switching Poles	3P + N / 3P

Short Circuit

Short-Circuit Capacity (Ultimate) @415 V AC	**P**	125 kA
	R	200 kA

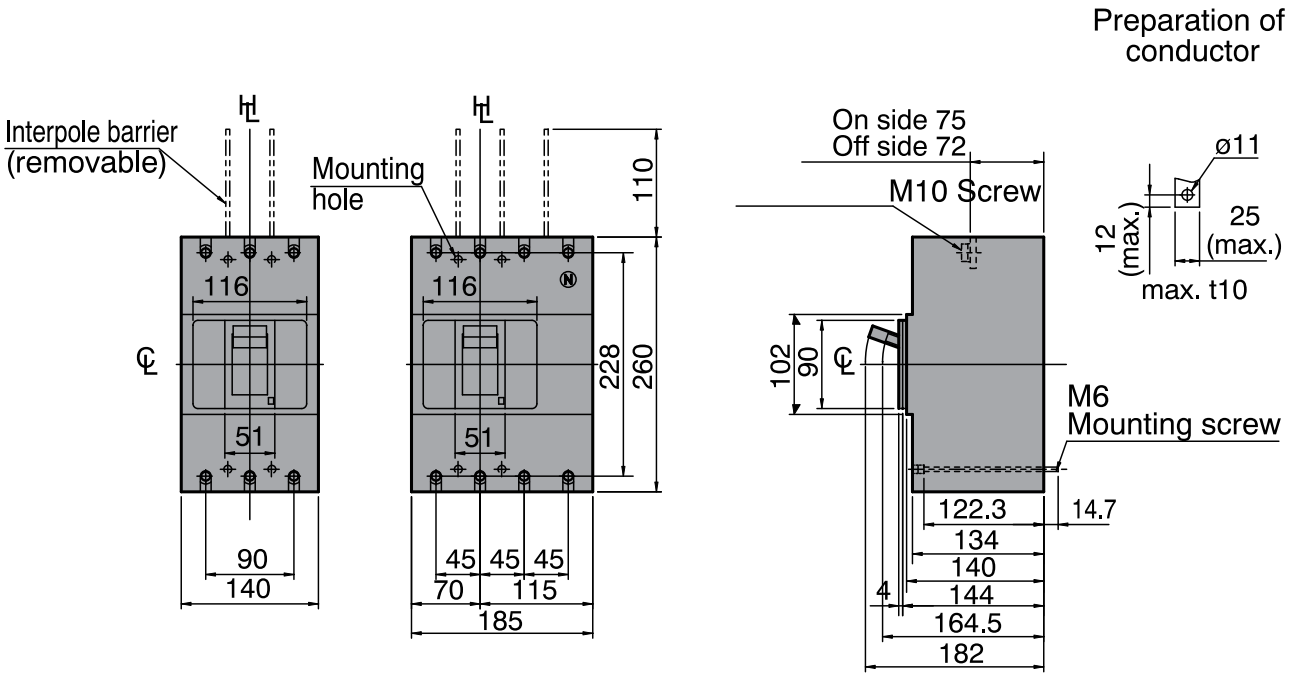
Voltage

Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option)

Quick Reference Dimensions – Front Connect



400 A Frame 3 Pole 125 kA BE (LSI)

I_n (A @ 50 °C)	I_r, 400 / 415 V (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
400	160 - 400	125	3	B400P3400BE
250	100 - 250	125	3	B400P3250BE

400 A Frame 3 Pole 125 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, 400 / 415 V (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
400	160 - 400	125	3	B400P3400BEG

400 A Frame 3 Pole 200 kA BE (LSI)

I_n (A @ 50 °C)	I_r, 400 / 415 V (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	200	3	B400R3250BE
400	160 - 400	200	3	B400R3400BE

400 A Frame 4 Pole 125 kA BE (LSI)

I_n (A @ 50 °C)	I_r, 400 / 415 V (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	125	4	B400P4250BE
400	160 - 400	125	4	B400P4400BE

400 A Frame 4 Pole 125 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, 400 / 415 V (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
400	160 - 400	125	4	B400P4400BEG

400 A Frame 4 Pole 200 kA BE (LSI)

I_n (A @ 50 °C)	I_r, 400 / 415 V (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	200	4	B400R4250BE
400	160 - 400	200	4	B400R4400BE

Ratings

Component Type	MCCB
Selectivity Category	B
Number of Poles	3 / 4
Switching Poles	3P + N / 3P
Frame Size	400 AF
Trip Unit Rating	250 / 400 A

I_n, Rated Current (A)

	250	400
45ºC	250	400
50ºC	250	400
70ºC	158	158

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	250	400
(W)	18.23	46.67

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 %RH

Connection

Cable Cross Section	35 - 400 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option)
Terminal Type	Bolt-Terminal
Connection Torque	13.7 - 22.5 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		260 mm
Width	**3P**	140 mm
	4P	185 mm
Depth (less toggle)		140 mm
Depth (toggle included)		182 mm
Weight	**3P**	4.3 kg
	4P	5.7 kg
Electrical Life		6000 cycles
Mechanical Life		15000 cycles

Short-Circuit Capacity

			kA Rating	
			MCCB Type	
		Voltage	P	R
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	150	200
		380 / 400 V AC	125	200
		415 V AC	125	200
		440 V AC	120	180
		690 V AC	35	50
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	-	-
		250 V DC	-	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	150	150
		380 / 400 V AC	85	150
		415 V AC	85	150
		440V AC	80	135
		690 V AC	35	50
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	-	-
		250 V DC	-	-
	I_{cw} (Short Time Withstand)	0.3 Seconds	5	5

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type)
Rated Temperature	50 °C

Other Features

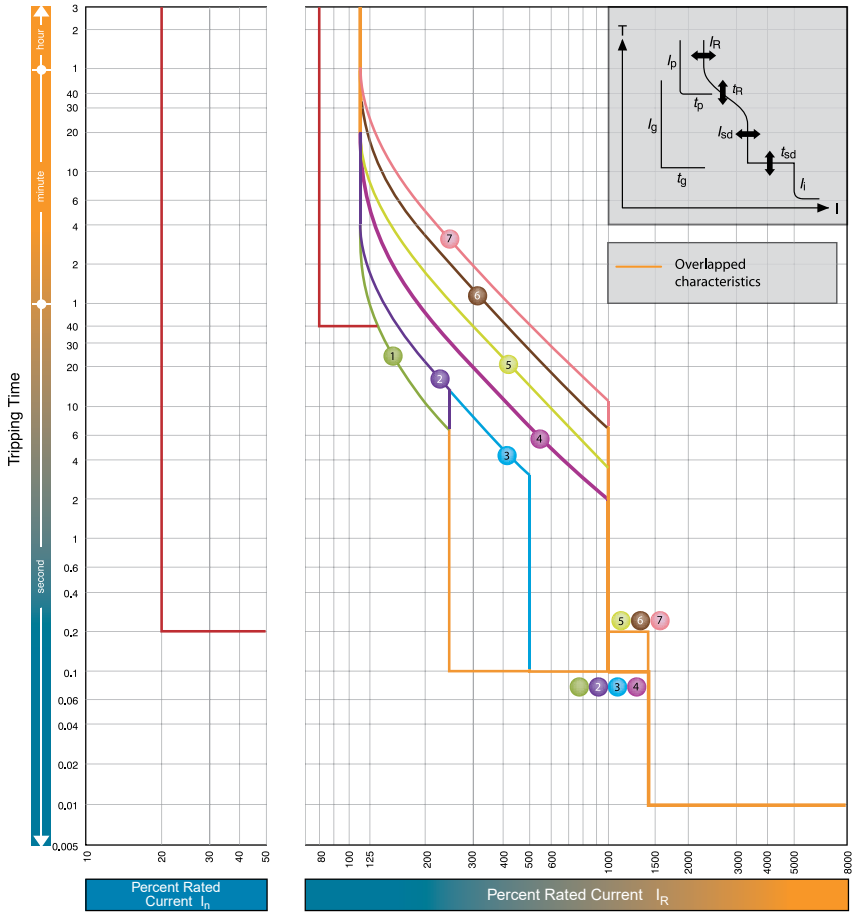
Pre-trip alarm (PTA)	Option
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

MCCBs

Characteristic Curves 1 to 7, B400_BE, L400PE 250 A, Basic Electronic



B250P3125BE_OPCH-S12

Characteristics For I_R Rated 250 A: B400P_BE, B400R_BE, L400PE

LTD Pick Up Current I_R (A)		100 – 125 – 157 – 200 – 225 – 237 – 250 (7 step)							200 A (fixed)	250 A (fixed)	Instantaneous only
		Standard Curves 1 - 7							Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10** [2]
LTD t_R (S)		11	21	21	5	10	19	29	1	2.5	-
		at 200 % x I_R			at 600 % x I_R				at 600 A	at 750 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	0.2	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n) [2]							800 A	1000 A	3250 A
OCR Options											
Pre Trip Alarm (PTA)	I_P x I_R	0.8							0.8		
	I_p (S)	40							40		
Ground Fault (GF) [1]	I_G x I_N	0.2							0.2		
	t_G (S)	0.2							0.2		
Neutral Pole Protection (NP)	I_N x I_R	1.0 / 0.5 [3]							1.0 / 0.5 [3]		
	t_N (S)	$t_N = t_R$							$t_N = t_R$		

Notes

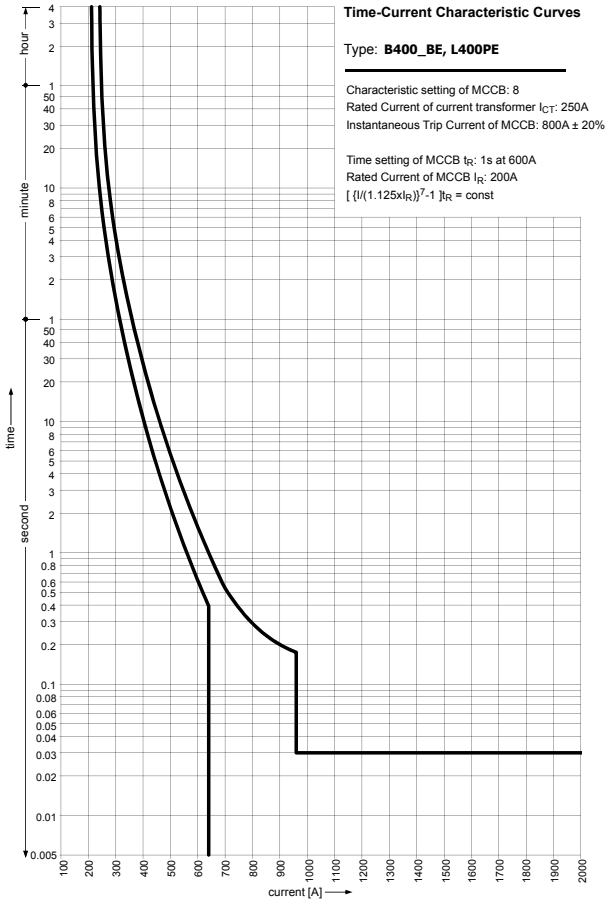
1) GF is not available when In is 250 A. Choose a 400 A rated MCCB, and adjust it down to 250 A or lower

2) I_i max. = 13 x I_n

3) 1.0 x I_R or 0.5 x I_R can be selected. Characteristic of neutral (t_N vs. I_N) is identical to characteristic of phase protection (t_R vs. I_R)

Characteristic Curves 8 and 9, B400_BE, L400PE 250 A, Basic Electronic

8



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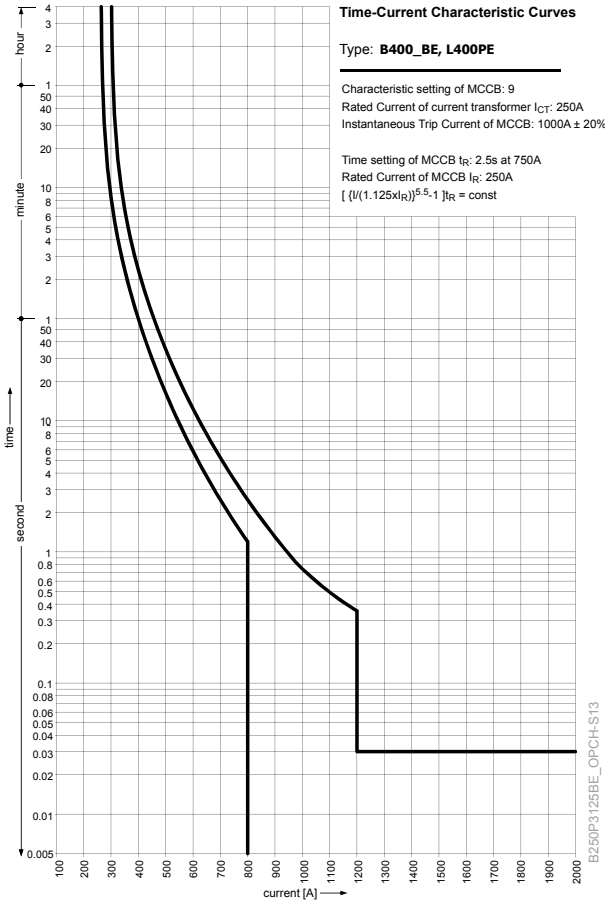


Characteristics For 250 A I_R Rated B400P_BE, B400R_BE, L400PE

LTD Pick Up Current I_R (A)		100 – 125 – 157 – 200 – 225 – 237 – 250 (7 step)							200 A (fixed)	250 A (fixed)	Instantaneous only
		Standard Curves 1 - 7							Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10** [1]
LTD t_R (S)		11	21	21	5	10	10	29	1	2.5	-
		at 200 % x I_R			at 600 % x I_R				at 600 A	at 750 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	0.2	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n)							800 A	1000 A	3250 A
OCR Options		PTA, NP, GF							PTA, NP, GF		

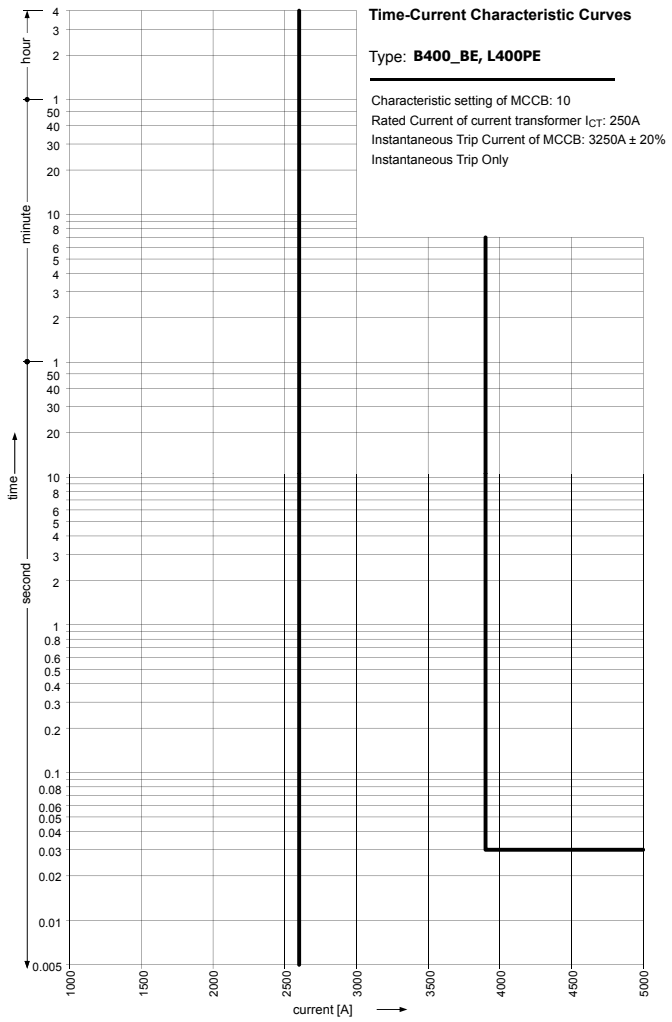
Notes

1) Instantaneous, curve 10, next page

MCCBs

Characteristic Curve 10, B400_BE, L400PE 250 A, Basic Electronic

10

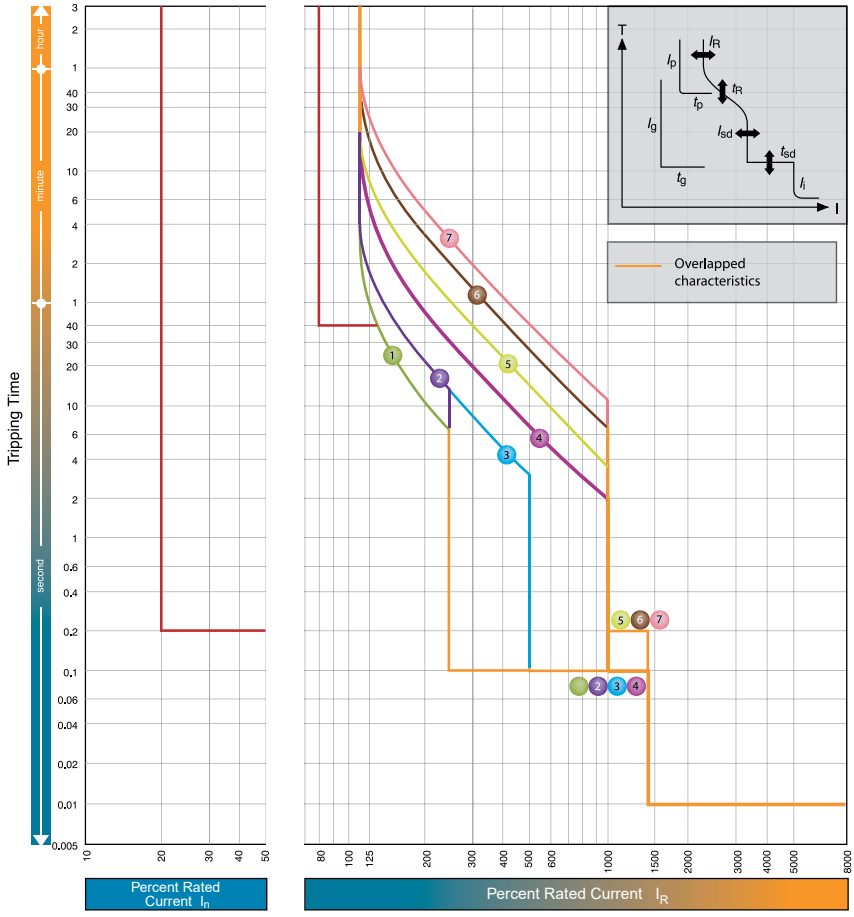


B250P3125BE_OPCH-S14

Characteristics For 250 A I_R Rated B400P_BE, B400R_BE, L400PE

LTD Pick Up Current I_R (A)		100 – 125 – 157 – 200 – 225 – 237 – 250 (7 step)							200 A (fixed)	250 A (fixed)	Instantaneous only
		Standard Curves 1 - 7							Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
LTD t_R (S)		11	21	21	5	10	10	29	1	2.5	-
		at 200 % x I_R			at 600 % x I_R				at 600 A	at 750 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	0.2	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n)							800 A	1000 A	3250 A
OCR Options		PTA, NP, GF							PTA, NP, GF		

Characteristic Curves 1 to 7, B400_BE, L400PE 400 A, Basic Electronic



Characteristics For I_R Rated 400 A: B400P_BE, B400R_BE, L400PE

LTD Pick Up Current I_R (A)		160 – 200 – 252 – 320 – 360 – 380 – 400 (7 step)							320 A (fixed)	400 A (fixed)	Instantaneous only
		Standard Curves 1 - 7							Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10** [1]
LTD t_R (S)		11	21	21	5	10	10	29	2.5	4	-
		at 200 % x I_R			at 600 % x I_R				at 960 A	at 1200 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	0.2	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n) [2]							1280 A	1600 A	5200 A
OCR Options											
Pre Trip Alarm (PTA)	I_P x I_R	0.8							0.8		
	I_p (S)	40							40		
Ground Fault (GF) [1]	I_G x I_N	0.2							0.2		
	t_G (S)	0.2							0.2		
Neutral Pole Protection (NP)	I_N x I_R	1.0 / 0.5 [2]							1.0 / 0.5 [2]		
	t_N (S)	$t_N = t_R$							$t_N = t_R$		

Notes

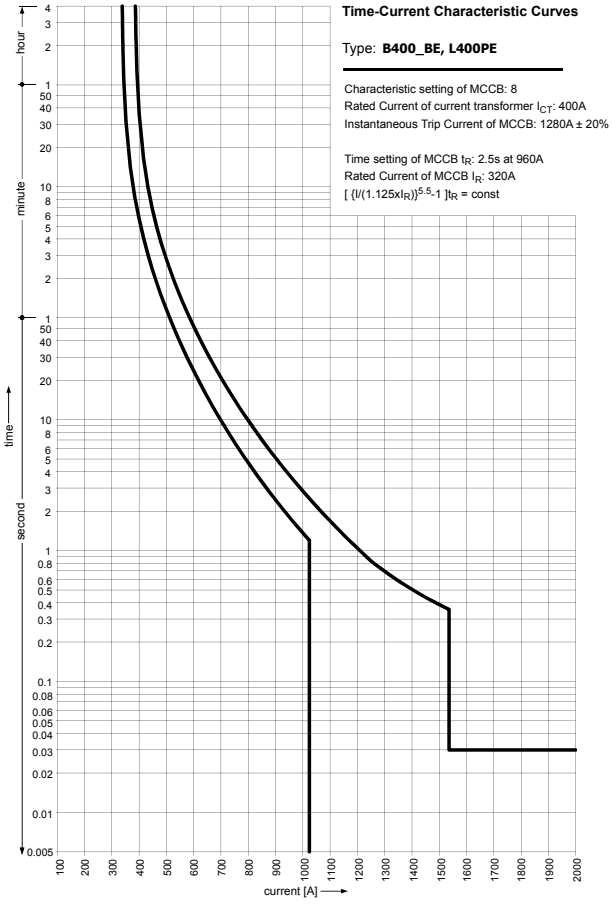
1) *Ii* max. = 13 x I_n

2) 1.0 x I_R or 0.5 x I_R can be selected. Characteristic of neutral (t_N vs. I_N) is identical to characteristic of phase protection (t_R vs. I_R)

MCCBs

Characteristic Curves 8 and 9, B400_BE, L400PE 400 A, Basic Electronic

8



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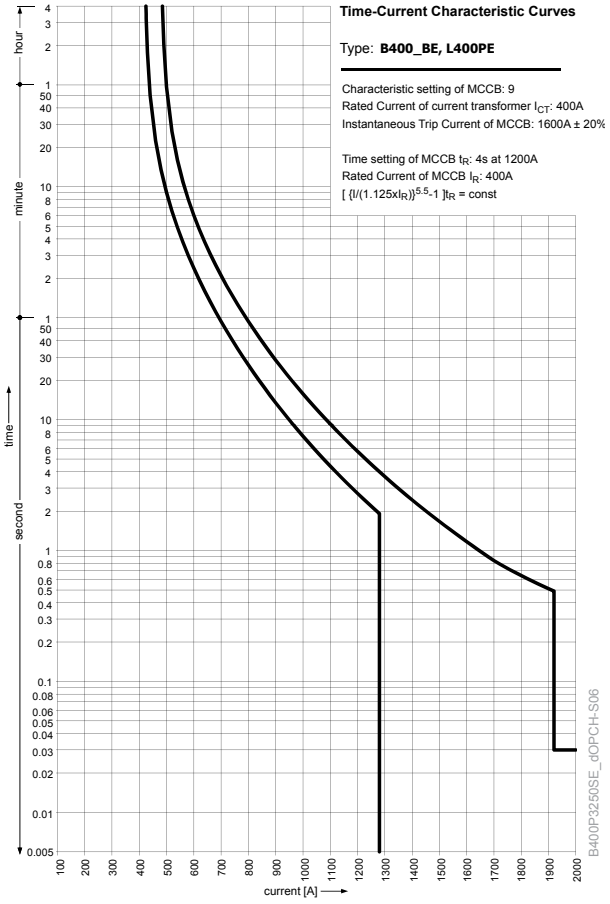


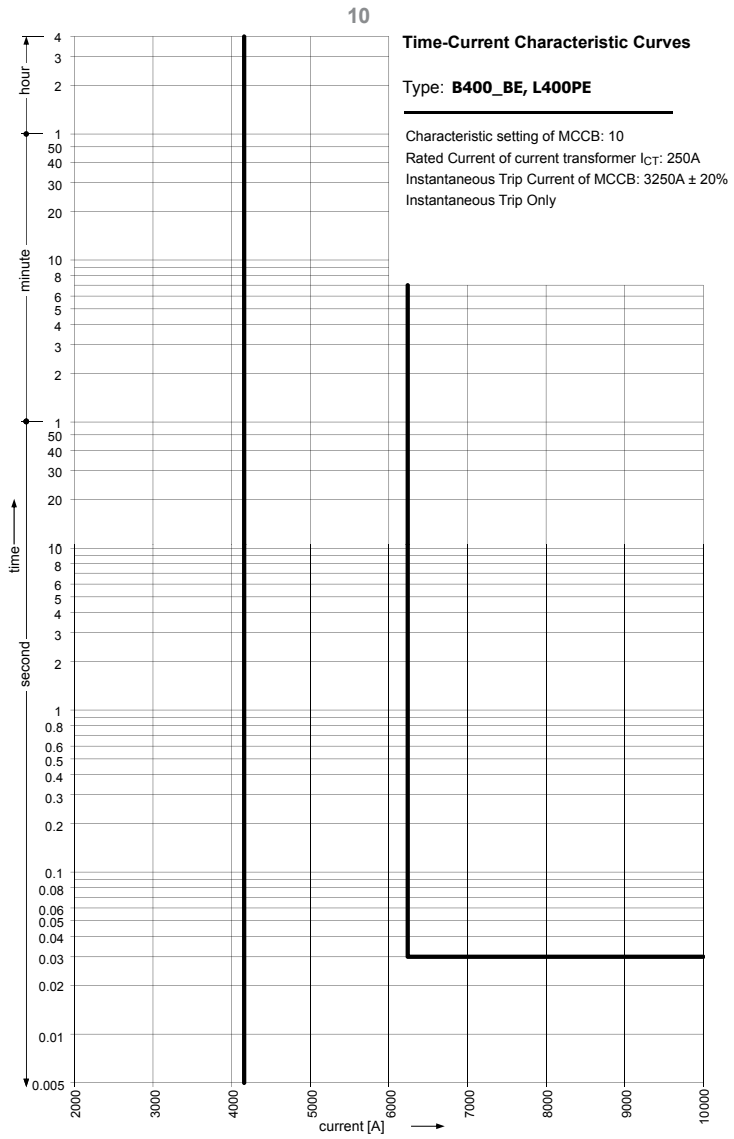
Characteristics For 400 A I_R Rated B400P_BE, B400R_BE, L400PE

LTD Pick Up Current I_R (A)		160 – 200 – 252 – 320 – 360 – 380 – 400 (7 step)							320 A (fixed)	400 A (fixed)	Instantaneous only
		Standard Curves 1 - 7							Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10** [1]
LTD t_R (S)		11	21	21	5	10	10	29	2.5	4	-
		at 200 % x I_R			at 600 % x I_R				at 960 A	at 1200 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	0.2	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n)							1280 A	1600 A	5200 A
OCR Options		PTA, NP, GF							PTA, NP, GF		

Notes

1) Instantaneous, curve 10, next page

Characteristic Curve 10, B400_BE, L400PE 400 A, Basic Electronic



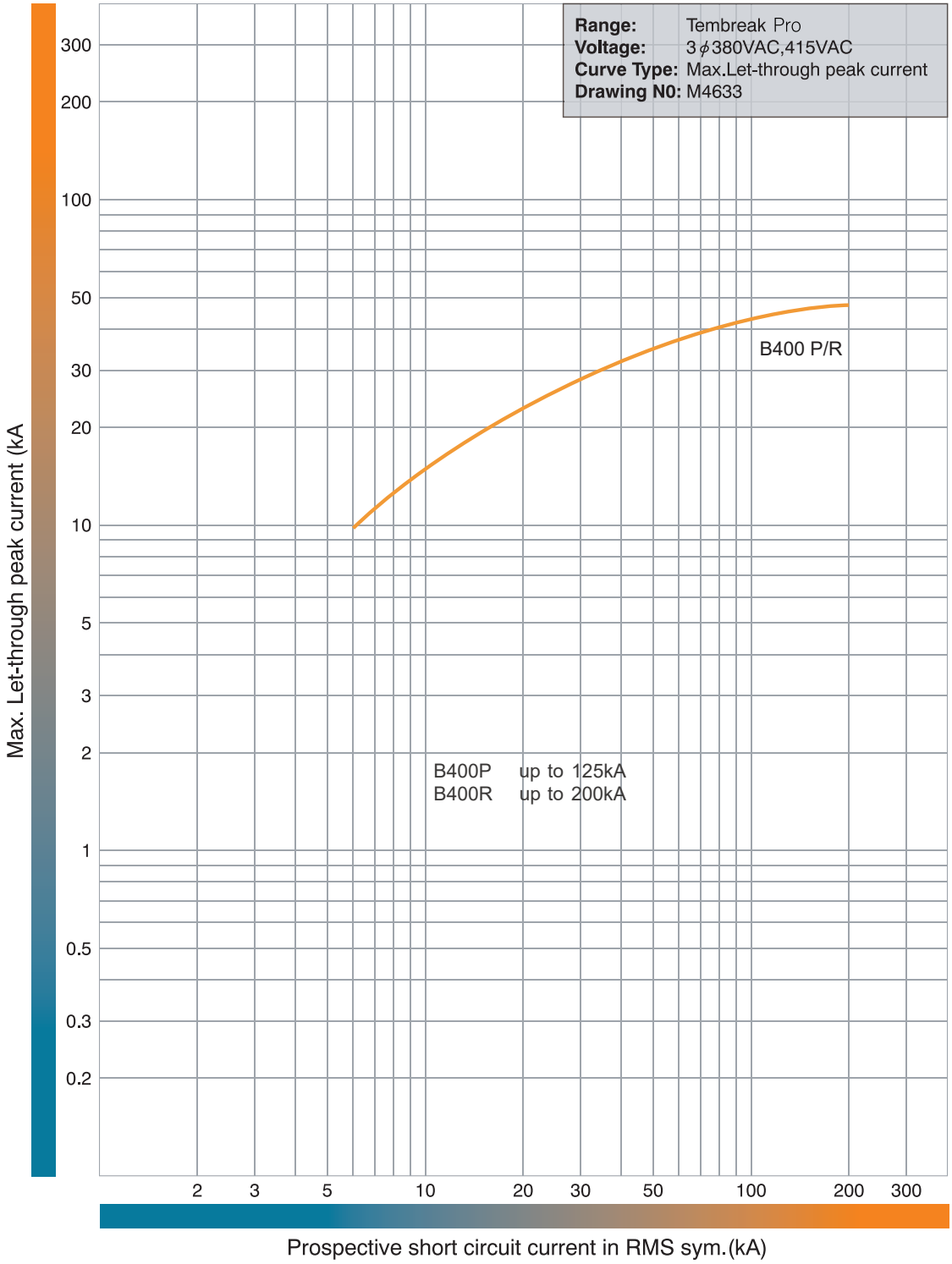
B400P3250SE_dOPCH-S07

Characteristics For 400 A I_R Rated B400P_BE, B400R_BE, L400PE

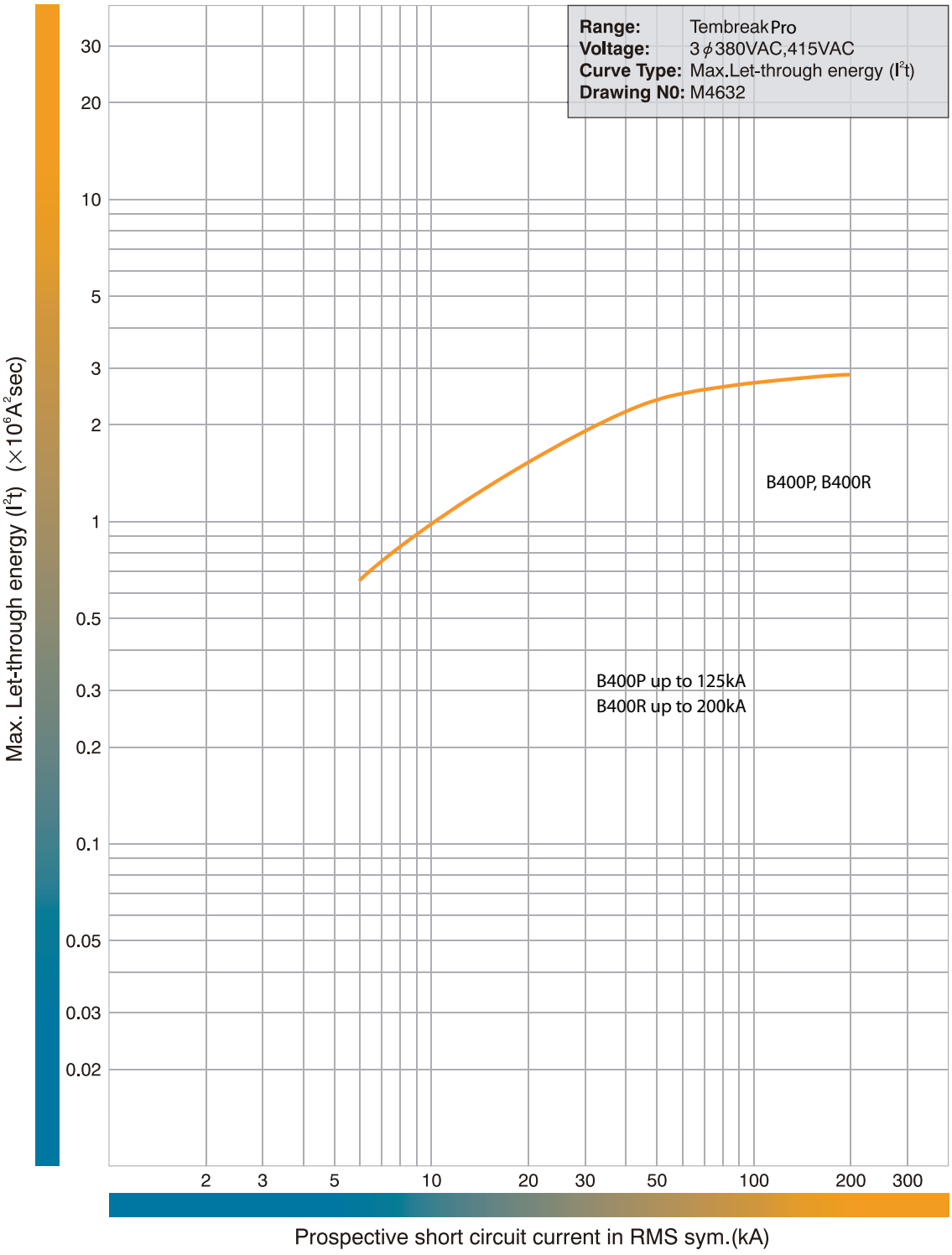
LTD Pick Up Current I_R (A)		160 – 200 – 252 – 320 – 360 – 380 – 400 (7 step)							320 A (fixed)	400 A (fixed)	Instantaneous only
		Standard Curves 1 - 7							Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
LTD t_R (S)		11	21	21	5	10	10	29	2.5	4	-
		at 200 % x I_R			at 600 % x I_R				at 960 A	at 1200 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	0.2	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n)							1280 A	1600 A	5200 A
OCR Options		PTA, NP, GF							PTA, NP, GF		

MCCBs

Let-Through Peak Current Curve, B400_BE/BEG/SX/SE Electronic

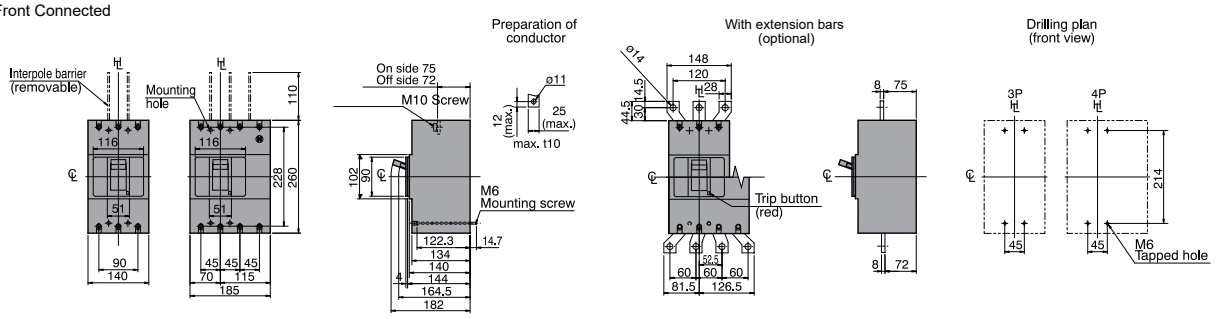


Let-Through Energy I²t Curve, B400_BE/BEG, Basic Electronic

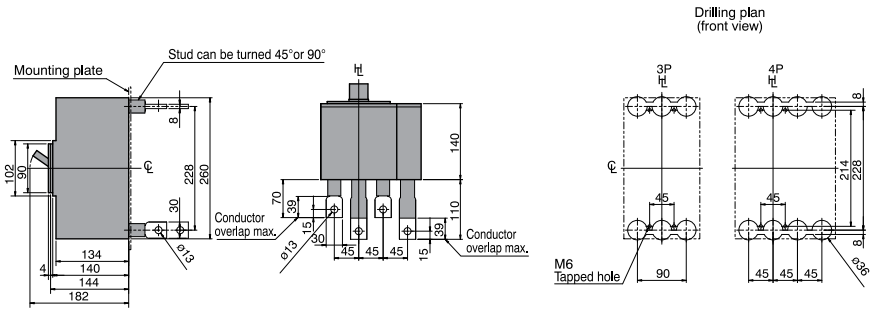


Dimensions B400P_BE/BEG/SE/SX, Electronic, Front Connect (mm)

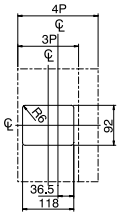
Front Connected



Rear Connected

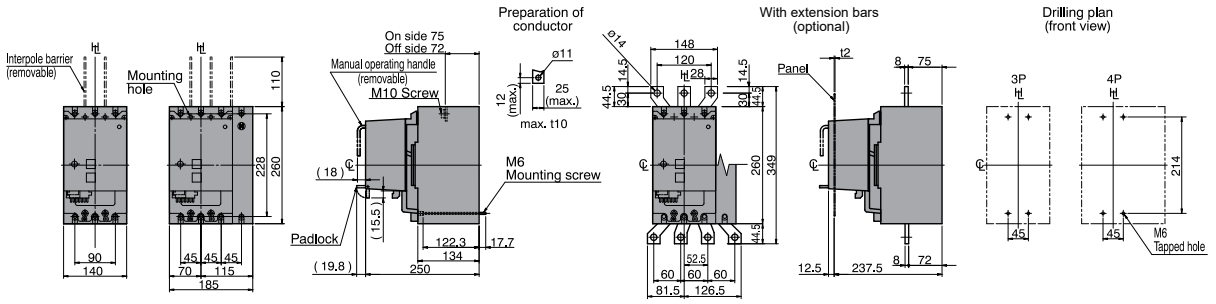


Panel cutout (front view)

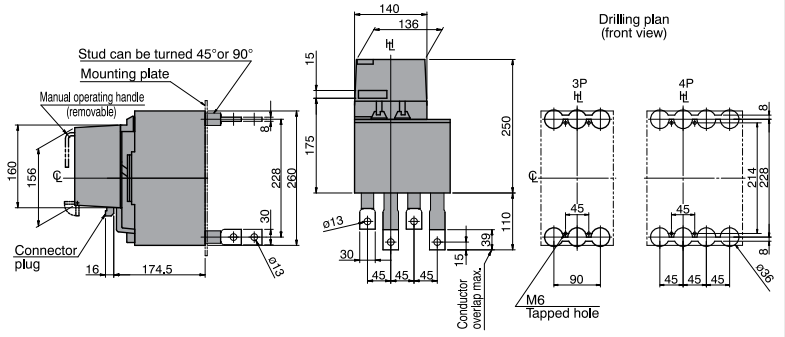


Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon.

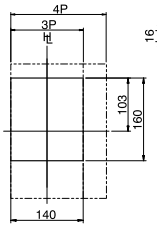
Front Connected With Motor Operator



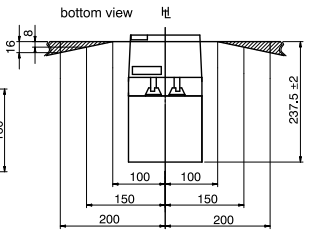
Rear Connected With Motor Operator



Panel cutout (front view)



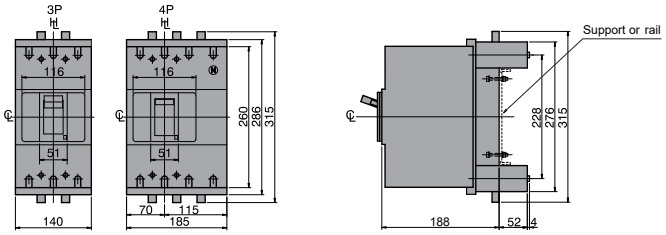
Panel hinge position (hatching area)



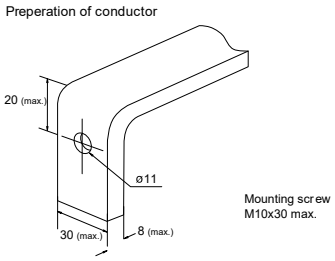
Panel cutout dimensions shown give an allowance of 1.5mm around motor operator

Dimensions B400_BE/BEG/SE/SX, Electronic, Plug-In (mm)

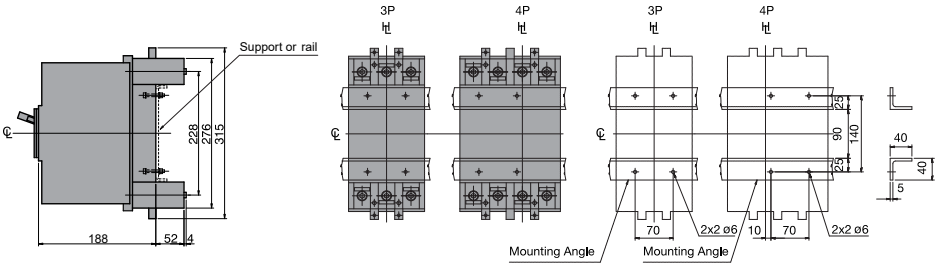
Outline Dimensions



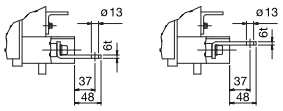
Termination of Busbar



Mounting On a Support or Rails (shown with optional connection bars oriented for rear access)

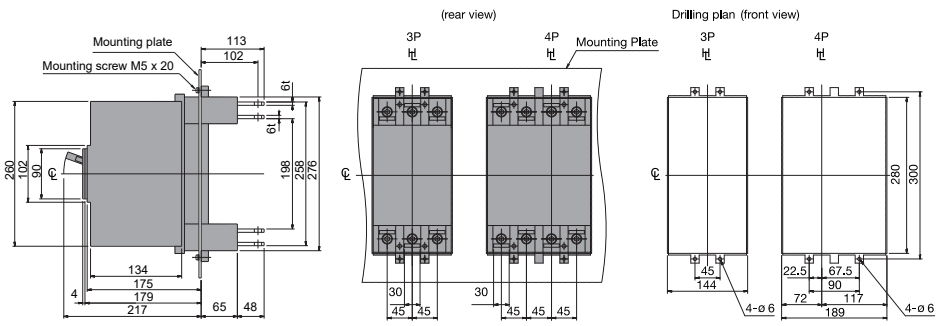


Detail of connecting part
Oriented for rear access

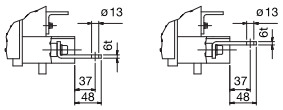


Terminal bars should be connected alternately on adjacent poles.

Mounting Through the Backplate (shown with optional connection bars oriented for rear access)

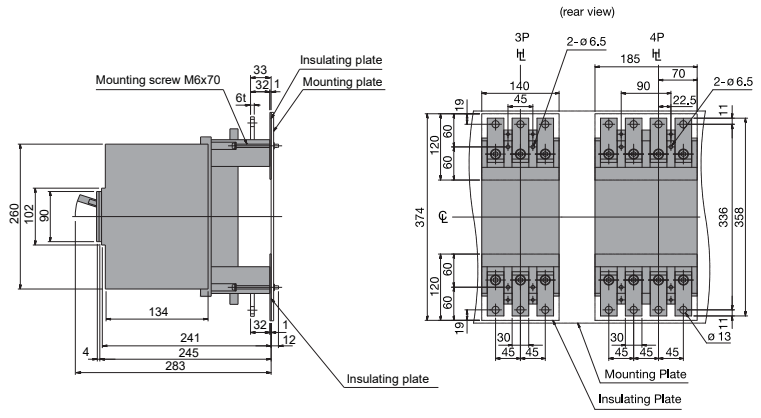


Detail of connecting part
Oriented for rear access

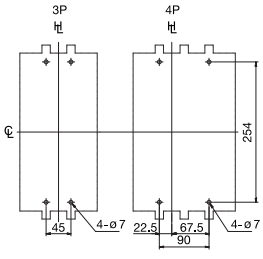


Terminal bars should be connected alternately on adjacent poles.

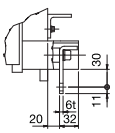
Mounting on the Backplate (optional connection bars must be oriented for front access)



Drilling plan (front view)



Detail of connecting part
Oriented for front access



B400_SX

Smart Electronic Ammeter

- ✔ General purpose power distribution, motor starting, Integral Ammeter
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ 3 or 4 pole versions
- ✔ 260 mm (H), 140 mm (D), 45 mm pole centres
- ✔ Fault ratings; 125, 200 kA I_{CU} @ 415 VAC
- ✔ Built-in LED back-lit display, individual LSI settings adjustment
- ✔ Display indicates Amps and allows settings changes via an onboard menu
- ✔ Full range of accessories for application flexibility
- ✔ Trip units; 250 A, 400 A

General

Trip Unit Protection Type	Electronic LSI with Ammeter
Trip Unit Rating	250 / 400 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @415 V AC	**P**	125 kA
	R	200 kA

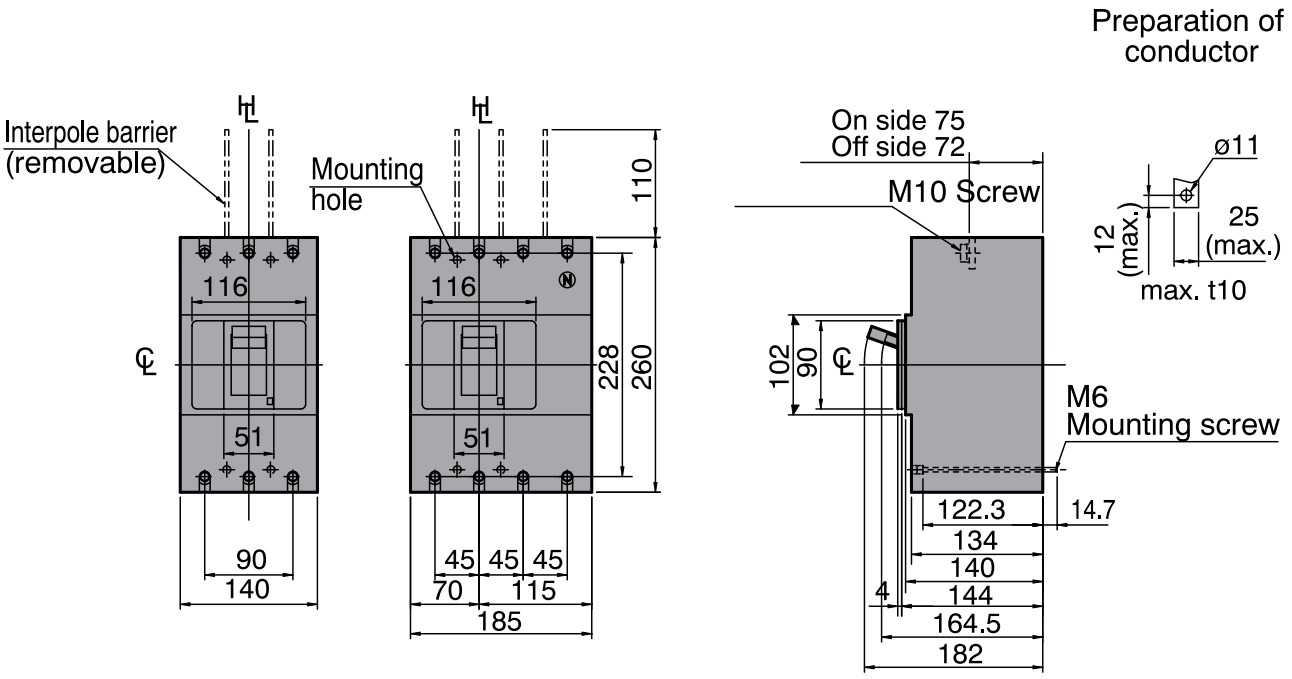
Voltage

Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in PM (Option)

Quick Reference Dimensions – Front Connect



400 A Frame 3 Pole 125 kA SX (LSI)

I_n (A @ 50 °C)	I_r, (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	125	3	B400P3250SX
400	160 - 400	125	3	B400P3400SX

400 A Frame 3 Pole 200 kA SX (LSI)

I_n (A @ 50 °C)	I_r, (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	200	3	B400R3250SX
400	160 - 400	200	3	B400R3400SX

400 A Frame 4 Pole 125 kA SX (LSI)

I_n (A @ 50 °C)	I_r, (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	125	4	B400P4250SX
400	160 - 400	125	4	B400P4400SX

400 A Frame 4 Pole 200 kA SX (LSI)

I_n (A @ 50 °C)	I_r, (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	200	4	B400R4250SX
400	160 - 400	200	4	B400R4400SX

Ratings

Component Type	MCCB
Selectivity Category	B
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	400 AF
Trip Unit Rating	250 / 400 A

I_n, Rated Current (A)

A @ 30 °C	250	400
A @ 45 °C	250	400
A @ 50 °C	250	400

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	250	400
(W)	18.23	46.67

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 %RH

Connection

Cable Cross Section	35 - 400 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in PM (Option)
Terminal Type	Bolt-Terminal
Connection Torque	13.7 - 22.5 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		260 mm
Width	**3P**	140 mm
	4P	185 mm
Depth (less toggle)		140 mm
Depth (toggle included)		182 mm
Weight	**3P**	4.3 kg
	4P	4.3 kg
Electrical Life		6000 cycles
Mechanical Life		15000 cycles

Short-Circuit Capacity

			kA Rating	
			MCCB Type	
		Voltage	P	R
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	150	200
		380 / 400 V AC	125	200
		415 V AC	125	200
		440 V AC	120	180
		690 V AC	35	50
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	-	-
		250 V DC	-	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	150	150
		380 / 400 V AC	85	150
		415 V AC	85	150
		440V AC	80	135
		690 V AC	35	50
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	-	-
		250 V DC	-	-
	I_{cw} (Short Time Withstand)	0.3 Seconds	5	5

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI with Ammeter
Rated Temperature	50 °C

Other Features

Pre-trip alarm (PTA)	No
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

B400_SX, B400_SE, B800_SX, B800_SE, B1000_SX, B1000_SE (400AF to 1000AF)

TBPro(B400_SE,SX Comms options)_dOPCH-S01

Communications MCCB Versions and Options

			B400_SX to B1000_SX	B400_SE to B1000_SE
	Feature		**Smart Electronic Ammeter Display**	**Smart Electronic Energy Display**
OCR Type Fitted			XOW-1L-AC	XOW-1S-BAPGNSCWH
Protective Function	■ Adjustable Long time ■ Adjustable Short time ■ Adjustable Instantaneous	A	✔	✔
	Ground fault trip	GF	-	✔ For trip units 250 A to 1000 A
	N-phase protection	NP	-	✔
	Phase rotation protection	NS	-	✔
Alarm Function	Pre-trip alarm	PTA	-	✔
Integral Display	Integral LCD display		✔	✔
	Backlit display		-	✔
Selectivity function	Zone Interlock	Z	-	-
Measurement / Event Indication	Current			✔
	■ Line voltage ■ Electrical power ■ Electrical energy ■ Power factor ■ Demand electrical power	-	-	✔
	Electrical energy pulse	W	-	✔
	Harmonic current	H	-	✔
	Trip event log		✔	✔
	Alarm event log		✔	✔
Miscellaneous	Modbus RTU RS-485 comms	C	-	✔
	Can set OCR settings via Modbus		-	✔
	External display meter option	I	-	✔
	Test function	-	✔	✔
	Indication via output contact	Y	-	✔
	External 24 V DC supply required	-	✔	✔
	Can use OCR checker type TNS2	-	✔	✔

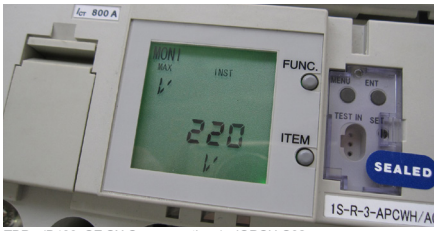
Measurement / Integral Meter Event Indication and Accuracy		**Modbus Communication Function**
Load Current (± 1.5 %)	Present value for each phase	✔ Ground fault current and phase rotation current can be displayed with XOW – SE OCRs
	Present max value	✔ The phase with highest current is measured only
Line Voltage (± 1.0 %)	Present value of each line voltage	✔
	Present maximum value	✔
	Present phase voltage value for each phase	✔ Only 4 pole breakers have this feature
Harmonic Current (± 2.5 %)	Present value of 3rd, 5th, 7th, to the 19th	-
	harmonic current for each phase	✔
Electrical Power (± 2.5 %)	Present active power	✔
Demand Electric Power (± 2.5 %)	Demand active power	✔
	Maximum demand value of active power	✔
Electrical Energy (± 2.5 %)	Active electrical energy	✔
Power Factor (± 5 %)	Present value	✔
Trip Event Log	Fault current (± 1.5 %)	✔
	Indication of cause	✔
Alarm Event Log	Cause of alarm, Indication of operated value	✔

Note: Electrical energy is stored every 2 hours and the fault current and cause of fault are stored every time a fault occurs, in a flash memory.

MCCBs

Over Current Relay Settings

Applicable MCCB Types	CT Rated Primary Current I_{CT}
B400, with SX or SE suffix	250 A
	400 A
B800, with SX or SE suffix	630 A
	800 A
B1000, with SX or SE suffix	1000 A



TBPro(B400_SE,SX Comms options)_dOPCH-S02

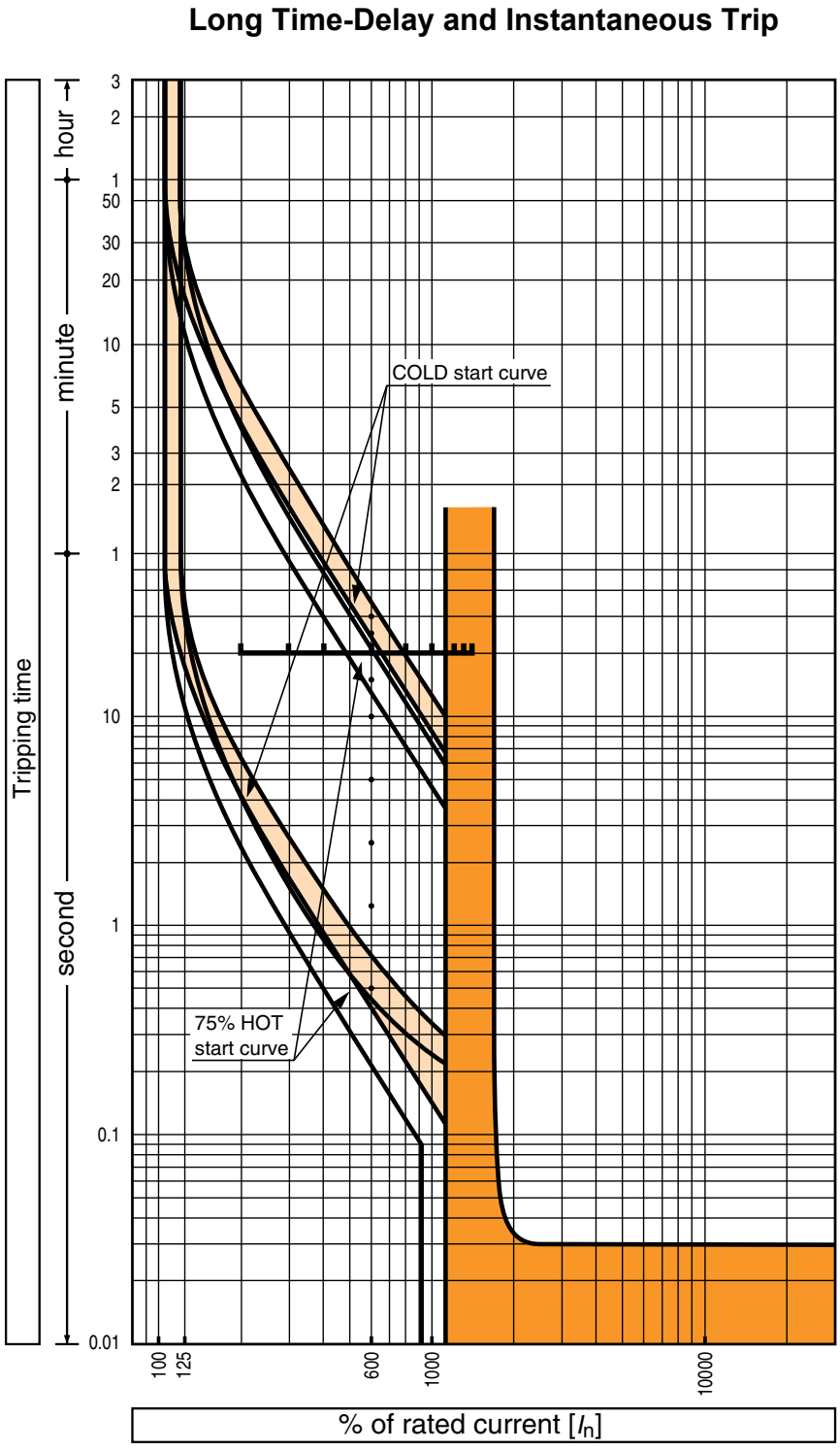
Left
Integrated LCD display standard with B400, 800, 1000_SX/SE MCCBs.

Protective Function [4] Rated Current (A)		**Symbol** I_n	**Setting Range (Bold Is Factory Default)** [I_{CT}] x (0.5 - 0.63 - 0.8 - 1.0)
Long Time-Delay Trip LT	Pick-up current (A)	I_R	[I_n] x (0.8 - 0.85 - 0.9 - 0.95 - 1.0)
			Non tripping at not more than [I_R] x 1.05
			Tripping at more than [I_R] x 1.05 and not more than [I_R] x 1.2
	Time-delay (s)	t_R	(0.5 - 1.25 - 2.5 - 5 - 10 - 15 - 20 - 25 - 30 sec) at 600 % of [I_R]
			Applies to all MCCBs except S630 and S1000 settings which are: (0.5 - 1.25 - 2.5 - 5 - 10 - 15 - 16 sec)
			Time-delay setting tolerance: ± 20 %, + 0.13 s – 0 s
	COLD / HOT	-	COLD / HOT
Short Time-Delay Trip ST	Pick-up current (A)	I_{sd}	[I_n] x (1 - 1.5 - 2 - 2.5 - 3 - 4 - 6 - 8 - 10 - NON)
			Applies to all MCCBs except S630 and S1000 settings which are: (1 - 1.5 - 2 - 2.5 - 3 - 4 - 6 - 8 - NON). 2)
			Current setting tolerance: ± 15 %
	Time-delay (s)	t_{ds}	I^2t OFF: 0.05-0.1-0.2-0.3 s (Definite time characteristic), Time-delay setting tolerance: + 50 ms – 20 ms
			I^2t ON: 0.05 - 0.1 - 0.2 - 0.3s (Ramp characteristic at less than 1000 % of [I_n], Definite time characteristic at 1000 % or more of [I_n])
	I^2t ramp characteristic	-	OFF / ON
Instantaneous Trip INST	Pick-up current (A)	I_i	[I_n] x (2 - 3 - 4 - 6 - 8 - 10 - 12 - 13 - 14 - NON) [1) 2)]
			Current setting tolerance: ±20 %
Ground Fault Trip GF (250 A, 400 A, 630 A, 800 A, 1000 A)	Pick-up current (A)	I_g	[I_{CT}] x (0.2 - 0.3 - 0.4 - NON)
			Current setting tolerance: ± 20 %
	Time-delay (s)	t_G	I^2t OFF: 0.1 - 0.2 - 0.3 - 0.4 - 0.8 s (Definite time characteristic)
			Time-delay setting tolerance: + 50 ms – 20 ms
			I^2t ON: 0.1 - 0.2 - 0.3 - 0.4 - 0.8 s (Ramp characteristic at less than 40 % of [I_{CT}], Definite time characteristic at 40 % or more of [I_{CT}])
	I^2t ramp characteristic	-	OFF / ON
	Mode	-	TRIP / OFF [3)]
N-Phase Protection NP	Pick-up current (A)	I_N	[I_{CT}] x (0.4 - 0.5 - 0.63 - 0.8 - 1.0 - NON)
			• Non tripping at not more than [I_N] x 1.05
			• Tripping at more than [I_N] x 1.05 and not more than [I_N] x 1.2
	Time-delay (s)	t_N	Tripping at 600 % of [I_N] with LT time-delay [t_R].
	COLD / HOT	-	COLD / HOT
Phase Rotation Protection NS	Pick-up current (A)	I_{NS}	[I_n] x (0.2 - 0.3 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8 - 0.9 - 1.0)
			Current setting tolerance: ± 10 %
	Time-delay (s)	t_{NS}	(0.4 - 0.8 - 1.2 - 1.6 - 2.0 - 2.4 - 2.8 - 3.2 - 3.6 - 4.0) (sec) at 150 % of [I_{NS}]
			Time-delay setting tolerance: ± 20 %, + 0.13 s –0 s
	Mode	-	TRIP / OFF [3)]
Pre-Trip Alarm PTA	Pick-up current (A)	I_p	[I_n] x (0.7 - 0.8 - 0.9 - 1.0)
			Current setting tolerance: ±10%
	Time-delay (s)	t_p	5 - 10 - 15 - 20 - 40 - 60 - 80 - 120 - 160 - 200 s more than [I_P]
			Time-delay setting tolerance: ±10%, +0.1 s –0 s
	Mode	-	AL / OFF 3)

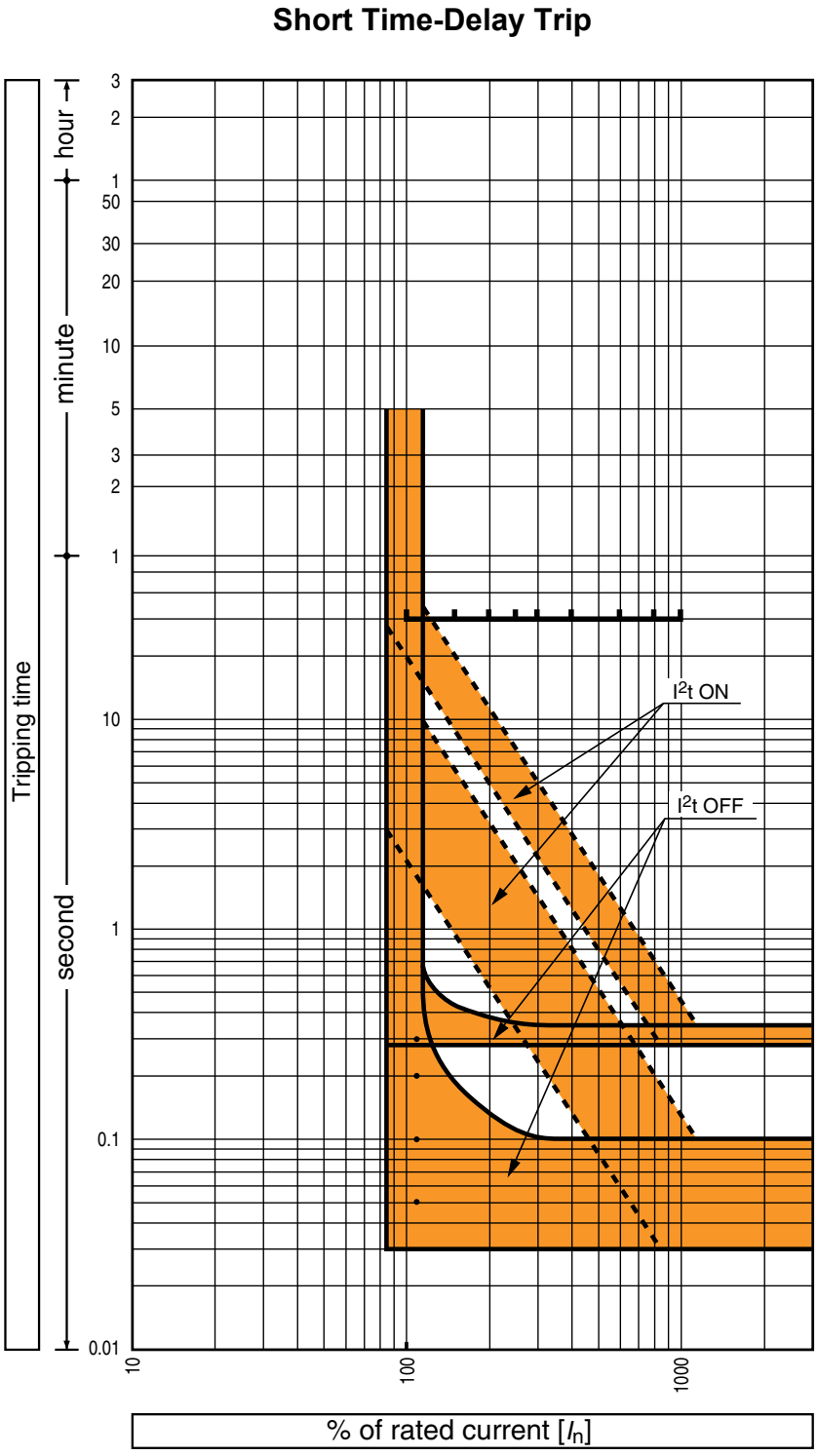
Notes

1) The maximum pick-up current is set to 1300% x [ICT] for B400_SX/SE, 1000 % x [ICT] for B1000H_SX/SE, 1200 % x [I_{CT}] for B800_SX/SE.
2) If the short time delay setting is NON, the instantaneous trip setting cannot be NON. If the instantaneous setting is NON, the short time setting cannot be NON.
3) Selecting "OFF" disables the protective functions. Unless otherwise specified when ordering, the settings will default to those underlined in the table above.
4) The protective functions of XOW Over Current Relays can be tested using the Terasaki TNS2 OCR checker. The checker can be used to check Long time, Short time, Instantaneous, and Ground Fault settings of the MCCB.

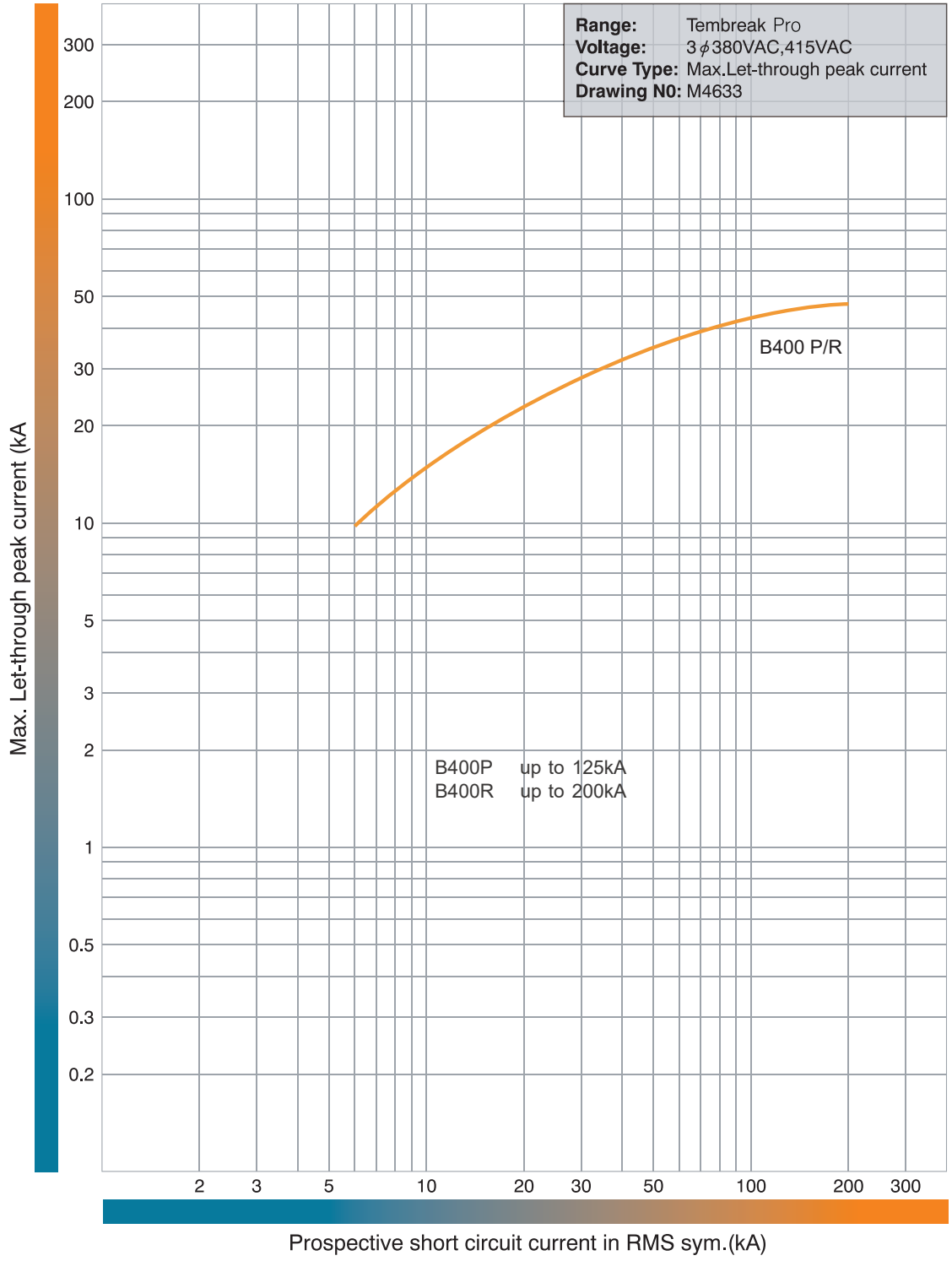
Time Current Characteristics Curve, B400/800/1000_SX/SE Electronic with Ammeter



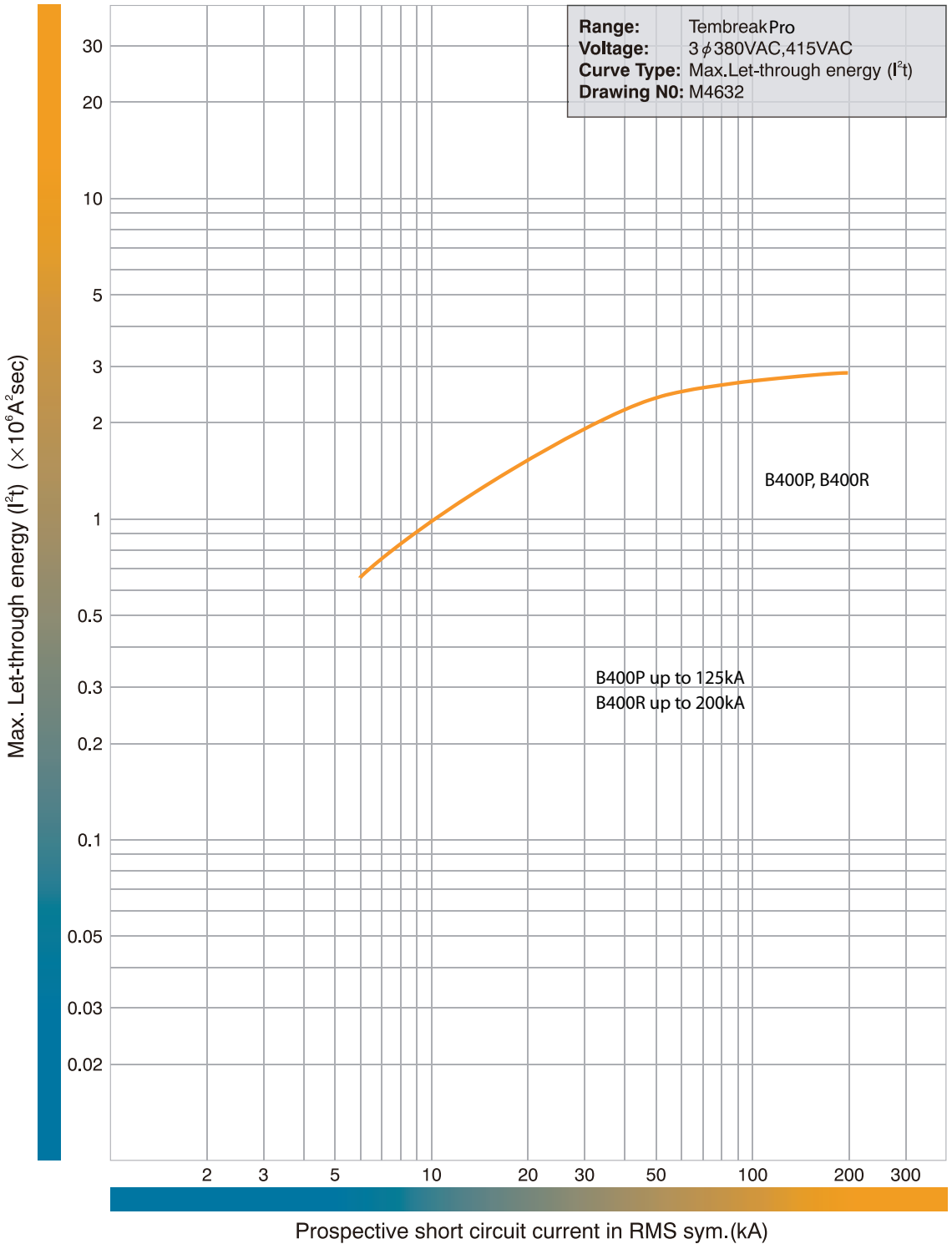
Time Current Characteristics Curve, B400/800/1000_SX Electronic with Ammeter



Let-Through Peak Current Curve, B400_BE/BEG/SX/SE Electronic

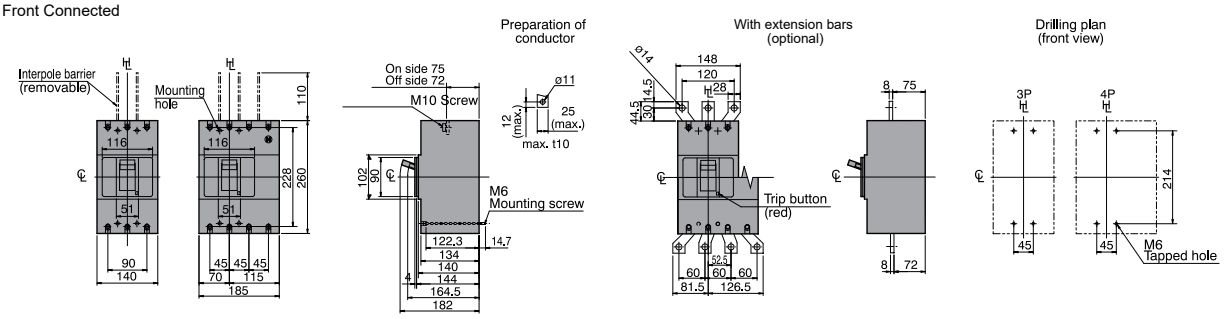


Let-Through Energy I²t Curve, B400_BE/BEG, Basic Electronic

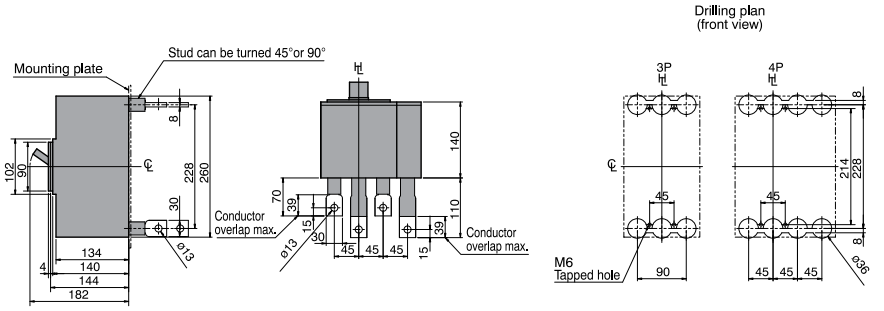


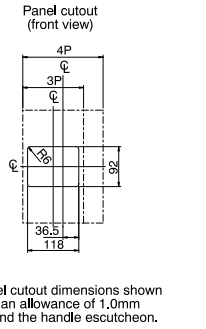
Dimensions B400P_BE/BEG/SE/SX, Electronic, Front Connect (mm)

Front Connected



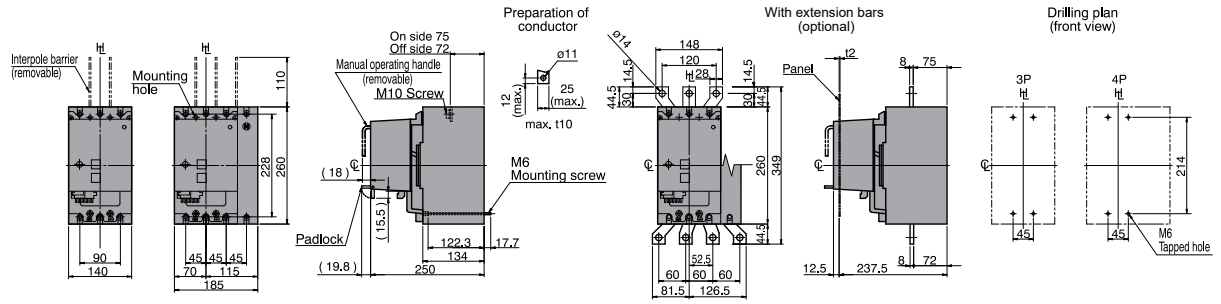
Rear Connected



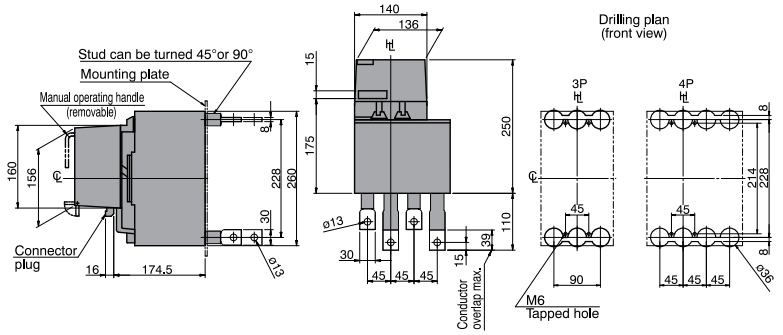


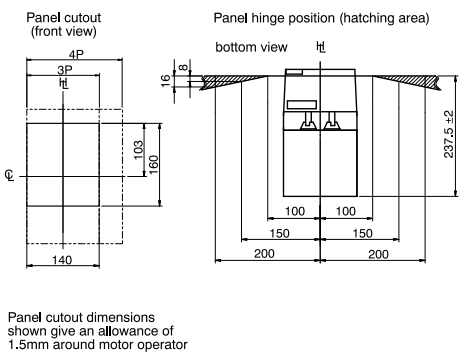
Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon.

Front Connected With Motor Operator



Rear Connected With Motor Operator

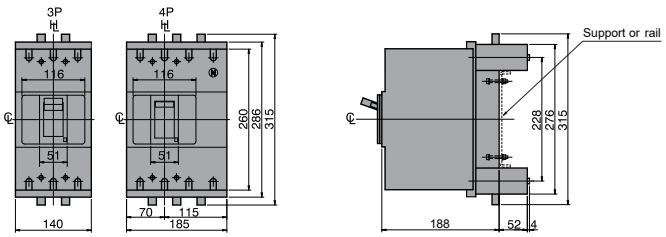




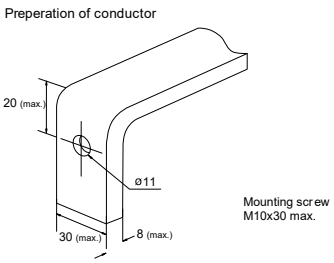
Panel cutout dimensions shown give an allowance of 1.5mm around motor operator

Dimensions B400_BE/BEG/SE/SX, Electronic, Plug-In (mm)

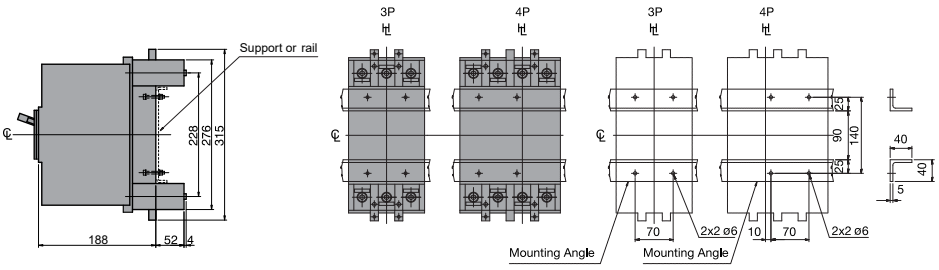
Outline Dimensions



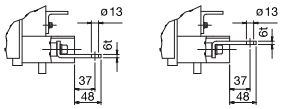
Termination of Busbar



Mounting On a Support or Rails (shown with optional connection bars oriented for rear access)

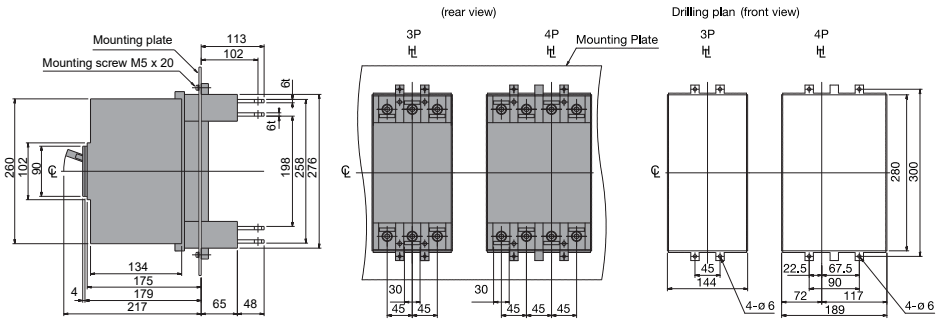


Detail of connecting part
Oriented for rear access

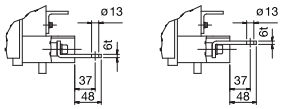


Terminal bars should be connected alternately on adjacent poles.

Mounting Through the Backplate (shown with optional connection bars oriented for rear access)

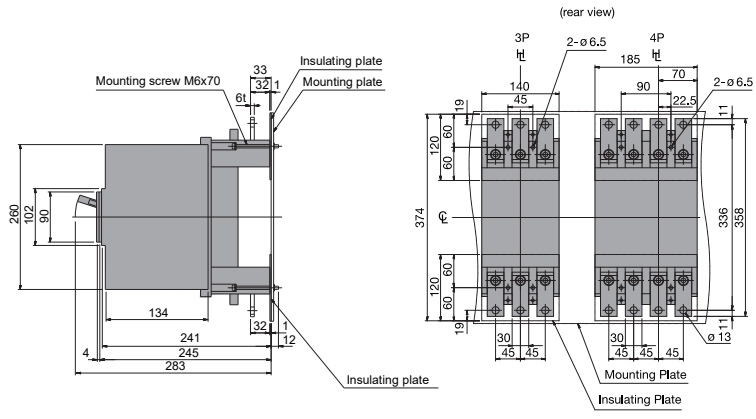


Detail of connecting part
Oriented for rear access

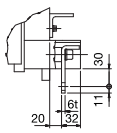


Terminal bars should be connected alternately on adjacent poles.

Mounting on the Backplate (optional connection bars must be oriented for front access)



Detail of connecting part
Oriented for front access



B400_SE

Smart Electronic Energy

- ✔ General purpose power distribution, energy metering and communications, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ 3 or 4 pole versions
- ✔ 260 mm (H), 140 mm (D), 45 mm pole centres
- ✔ Fault ratings; 125, 200 kA I_{CU} @ 415 V AC
- ✔ Energy metering LSIG trip unit: Modbus communications, V, I, Energy measurement output
- ✔ Built-in LED back-lit display, onboard menu for full LSIG and settings adjustment and data viewing
- ✔ Display: door mount display (T2ED) available for external metering and monitoring
- ✔ Full range of accessories for application flexibility
- ✔ Trip units; 250 A, 400 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Electronic LSIG Energy Metering Modbus RTU 485 Communications Output
Trip Unit Rating	250 / 400 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**P**	125 kA
	R	200 kA

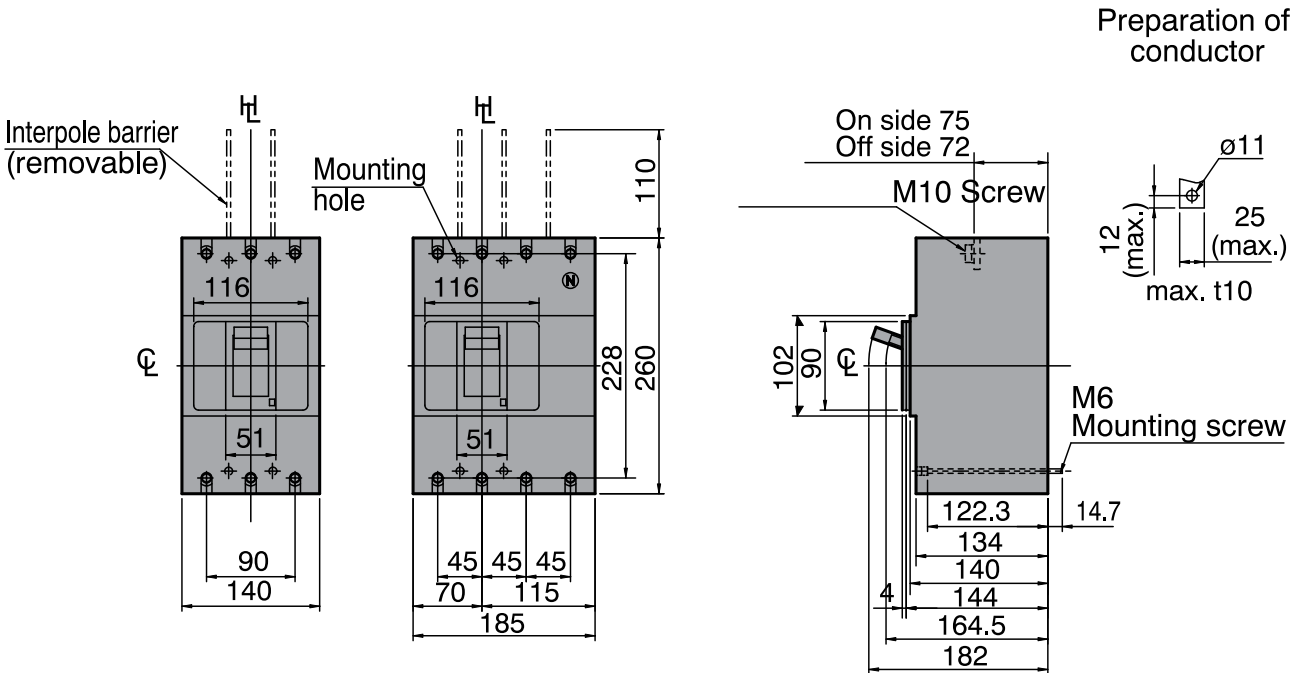
Voltage

Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in PM (Option)

Quick Reference Dimensions – Front Connect



400 A Frame 3 Pole 125 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	125	3	B400P3250SE
400	160 - 400	125	3	B400P3400SE

400 A Frame 3 Pole 200 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	200	3	B400R3250SE
400	160 - 400	200	3	B400R3400SE

400 A Frame 4 Pole 125 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	125	4	B400P4250SE
400	160 - 400	125	4	B400P4400SE

400 A Frame 4 Pole 200 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
250	100 - 250	200	4	B400R4250SE
400	160 - 400	200	4	B400R4400SE

Ratings

Component Type	MCCB
Selectivity Category	B
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	400 AF
Trip Unit Rating	250 / 400 A

I_n, Rated Current (A)

	250	400
45ºC	250	400
50ºC	250	400
70ºC	158	158

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	250	400
(W)	18.23	46.67

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 %RH

Connection

Cable Cross Section	35 - 400 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in PM (Option)
Terminal Type	Bolt-Terminal
Connection Torque	13.7 - 22.5 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		260 mm
Width	**3P**	140 mm
	4P	185 mm
Depth (less toggle)		140 mm
Depth (toggle included)		182 mm
Weight	**3P**	4.3 kg
	4P	4.3 kg
Electrical Life		6000 cycles
Mechanical Life		15000 cycles

Short-Circuit Capacity

			kA Rating	
			MCCB Type	
		Voltage	P	R
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	150	200
		380 / 400 V AC	125	200
		415 V AC	125	200
		440 V AC	120	180
		690 V AC	35	50
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	-	-
		250 V DC	-	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	150	150
		380 / 400 V AC	85	150
		415 V AC	85	150
		440V AC	80	135
		690 V AC	35	50
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	-	-
		250 V DC	-	-
	I_{cw} (Short Time Withstand)	0.3 Seconds	5	5

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSIG Energy Metering Modbus RTU 485 Communications Output
Rated Temperature	50 °C

Other Features

Pre-trip alarm (PTA)	Yes
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	Yes

B400_SX, B400_SE, B800_SX, B800_SE, B1000_SX, B1000_SE (400AF to 1000AF)

TBPro(B400_SE,SX Comms options)_dOPCH-S01

Communications MCCB Versions and Options

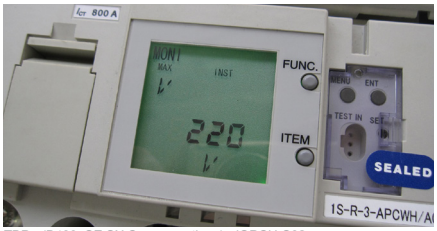
			B400_SX to B1000_SX	B400_SE to B1000_SE
	Feature		**Smart Electronic Ammeter Display**	**Smart Electronic Energy Display**
OCR Type Fitted			XOW-1L-AC	XOW-1S-BAPGNSCWH
Protective Function	■ Adjustable Long time ■ Adjustable Short time ■ Adjustable Instantaneous	A	✔	✔
	Ground fault trip	GF	-	✔ For trip units 250 A to 1000 A
	N-phase protection	NP	-	✔
	Phase rotation protection	NS	-	✔
Alarm Function	Pre-trip alarm	PTA	-	✔
Integral Display	Integral LCD display		✔	✔
	Backlit display		-	✔
Selectivity function	Zone Interlock	Z	-	-
Measurement / Event Indication	Current			✔
	■ Line voltage ■ Electrical power ■ Electrical energy ■ Power factor ■ Demand electrical power	-	-	✔
	Electrical energy pulse	W	-	✔
	Harmonic current	H	-	✔
	Trip event log		✔	✔
	Alarm event log		✔	✔
Miscellaneous	Modbus RTU RS-485 comms	C	-	✔
	Can set OCR settings via Modbus		-	✔
	External display meter option	I	-	✔
	Test function	-	✔	✔
	Indication via output contact	Y	-	✔
	External 24 V DC supply required	-	✔	✔
	Can use OCR checker type TNS2	-	✔	✔

Measurement / Integral Meter Event Indication and Accuracy		**Modbus Communication Function**
Load Current (± 1.5 %)	Present value for each phase	✔ Ground fault current and phase rotation current can be displayed with XOW – SE OCRs
	Present max value	✔ The phase with highest current is measured only
Line Voltage (± 1.0 %)	Present value of each line voltage	✔
	Present maximum value	✔
	Present phase voltage value for each phase	✔ Only 4 pole breakers have this feature
Harmonic Current (± 2.5 %)	Present value of 3rd, 5th, 7th, to the 19th	-
	harmonic current for each phase	✔
Electrical Power (± 2.5 %)	Present active power	✔
Demand Electric Power (± 2.5 %)	Demand active power	✔
	Maximum demand value of active power	✔
Electrical Energy (± 2.5 %)	Active electrical energy	✔
Power Factor (± 5 %)	Present value	✔
Trip Event Log	Fault current (± 1.5 %)	✔
	Indication of cause	✔
Alarm Event Log	Cause of alarm, Indication of operated value	✔

Note: Electrical energy is stored every 2 hours and the fault current and cause of fault are stored every time a fault occurs, in a flash memory.

Over Current Relay Settings

Applicable MCCB Types	CT Rated Primary Current I_{CT}
B400, with SX or SE suffix	250 A
	400 A
B800, with SX or SE suffix	630 A
	800 A
B1000, with SX or SE suffix	1000 A



TBPro(B400_SE,SX Comms options)_dOPCH-S02

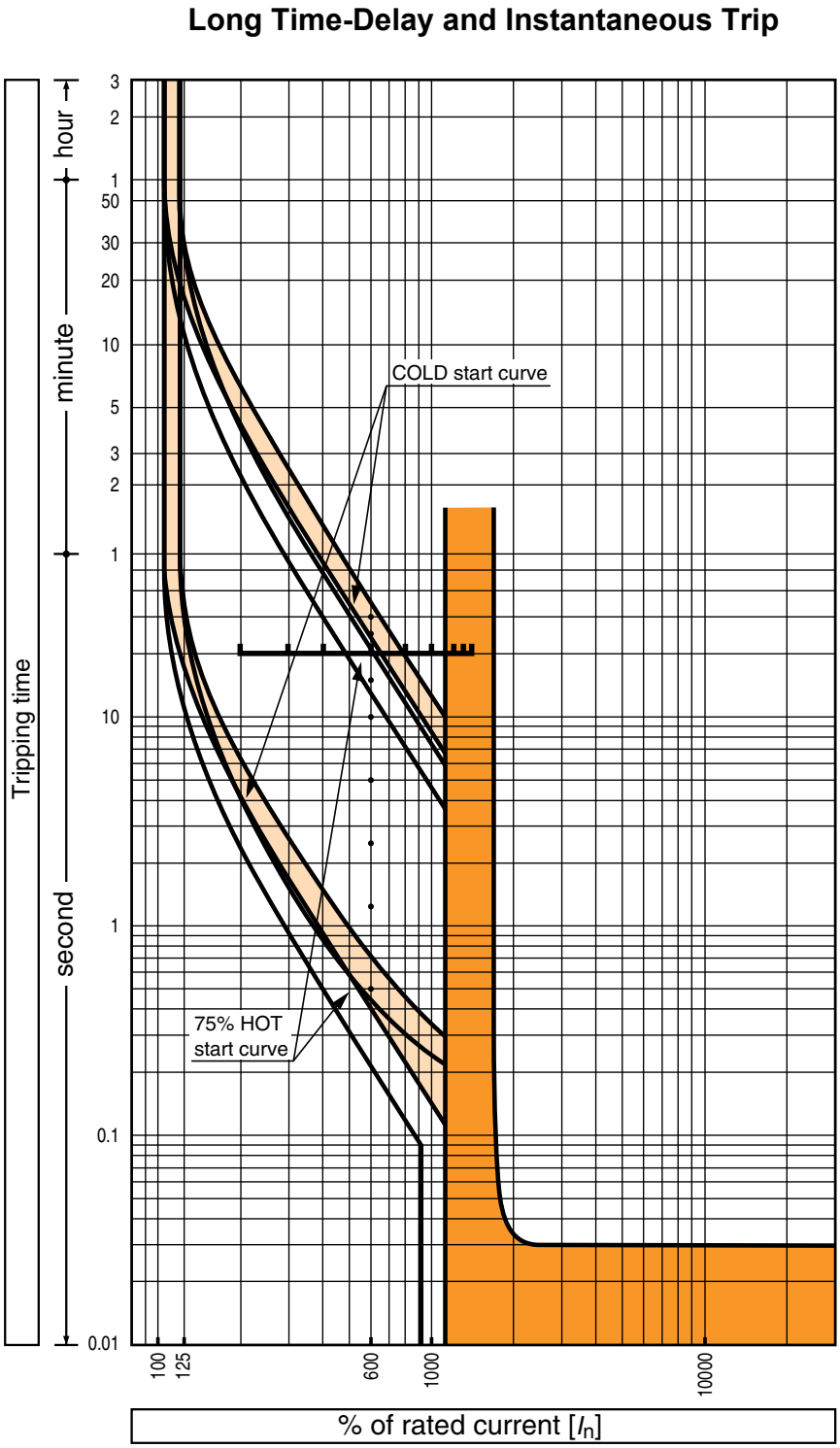
Left
Integrated LCD display standard with B400, 800, 1000_SX/ SE MCCBs.

Protective Function [4] Rated Current (A)		**Symbol** I_n	**Setting Range (Bold Is Factory Default)** [I_{CT}] x (0.5 - 0.63 - 0.8 - 1.0)
Long Time-Delay Trip LT	Pick-up current (A)	I_R	[I_n] x (0.8 - 0.85 - 0.9 - 0.95 - 1.0)
			Non tripping at not more than [I_R] x 1.05
			Tripping at more than [I_R] x 1.05 and not more than [I_R] x 1.2
	Time-delay (s)	t_R	(0.5 - 1.25 - 2.5 - 5 - 10 - 15 - 20 - 25 - 30 sec) at 600 % of [I_R]
			Applies to all MCCBs except S630 and S1000 settings which are: (0.5 - 1.25 - 2.5 - 5 - 10 - 15 - 16 sec)
			Time-delay setting tolerance: ± 20 %, + 0.13 s – 0 s
	COLD / HOT	-	COLD / HOT
Short Time-Delay Trip ST	Pick-up current (A)	I_{sd}	[I_n] x (1 - 1.5 - 2 - 2.5 - 3 - 4 - 6 - 8 - 10 - NON)
			Applies to all MCCBs except S630 and S1000 settings which are: (1 - 1.5 - 2 - 2.5 - 3 - 4 - 6 - 8 - NON). 2)
			Current setting tolerance: ± 15 %
	Time-delay (s)	t_{ds}	I^2t OFF: 0.05-0.1-0.2-0.3 s (Definite time characteristic), Time-delay setting tolerance: + 50 ms – 20 ms
			I^2t ON: 0.05 - 0.1 - 0.2 - 0.3s (Ramp characteristic at less than 1000 % of [I_n], Definite time characteristic at 1000 % or more of [I_n])
	I^2t ramp characteristic	-	OFF / ON
Instantaneous Trip INST	Pick-up current (A)	I_i	[I_n] x (2 - 3 - 4 - 6 - 8 - 10 - 12 - 13 - 14 - NON) [1) 2)]
			Current setting tolerance: ±20 %
Ground Fault Trip GF (250 A, 400 A, 630 A, 800 A, 1000 A)	Pick-up current (A)	I_g	[I_{CT}] x (0.2 - 0.3 - 0.4 - NON)
			Current setting tolerance: ± 20 %
	Time-delay (s)	t_G	I^2t OFF: 0.1 - 0.2 - 0.3 - 0.4 - 0.8 s (Definite time characteristic)
			Time-delay setting tolerance: + 50 ms – 20 ms
			I^2t ON: 0.1 - 0.2 - 0.3 - 0.4 - 0.8 s (Ramp characteristic at less than 40 % of [I_{CT}], Definite time characteristic at 40 % or more of [I_{CT}])
	I^2t ramp characteristic	-	OFF / ON
	Mode	-	TRIP / OFF [3)]
N-Phase Protection NP	Pick-up current (A)	I_N	[I_{CT}] x (0.4 - 0.5 - 0.63 - 0.8 - 1.0 - NON)
			• Non tripping at not more than [I_N] x 1.05
			• Tripping at more than [I_N] x 1.05 and not more than [I_N] x 1.2
	Time-delay (s)	t_N	Tripping at 600 % of [I_N] with LT time-delay [t_R].
	COLD / HOT	-	COLD / HOT
Phase Rotation Protection NS	Pick-up current (A)	I_{NS}	[I_n] x (0.2 - 0.3 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8 - 0.9 - 1.0)
			Current setting tolerance: ± 10 %
	Time-delay (s)	t_{NS}	(0.4 - 0.8 - 1.2 - 1.6 - 2.0 - 2.4 - 2.8 - 3.2 - 3.6 - 4.0) (sec) at 150 % of [I_{NS}]
			Time-delay setting tolerance: ± 20 %, + 0.13 s –0 s
	Mode	-	TRIP / OFF [3)]
Pre-Trip Alarm PTA	Pick-up current (A)	I_p	[I_n] x (0.7 - 0.8 - 0.9 - 1.0)
			Current setting tolerance: ±10%
	Time-delay (s)	t_p	5 - 10 - 15 - 20 - 40 - 60 - 80 - 120 - 160 - 200 s more than [I_P]
			Time-delay setting tolerance: ±10%, +0.1 s –0 s
	Mode	-	AL / OFF 3)

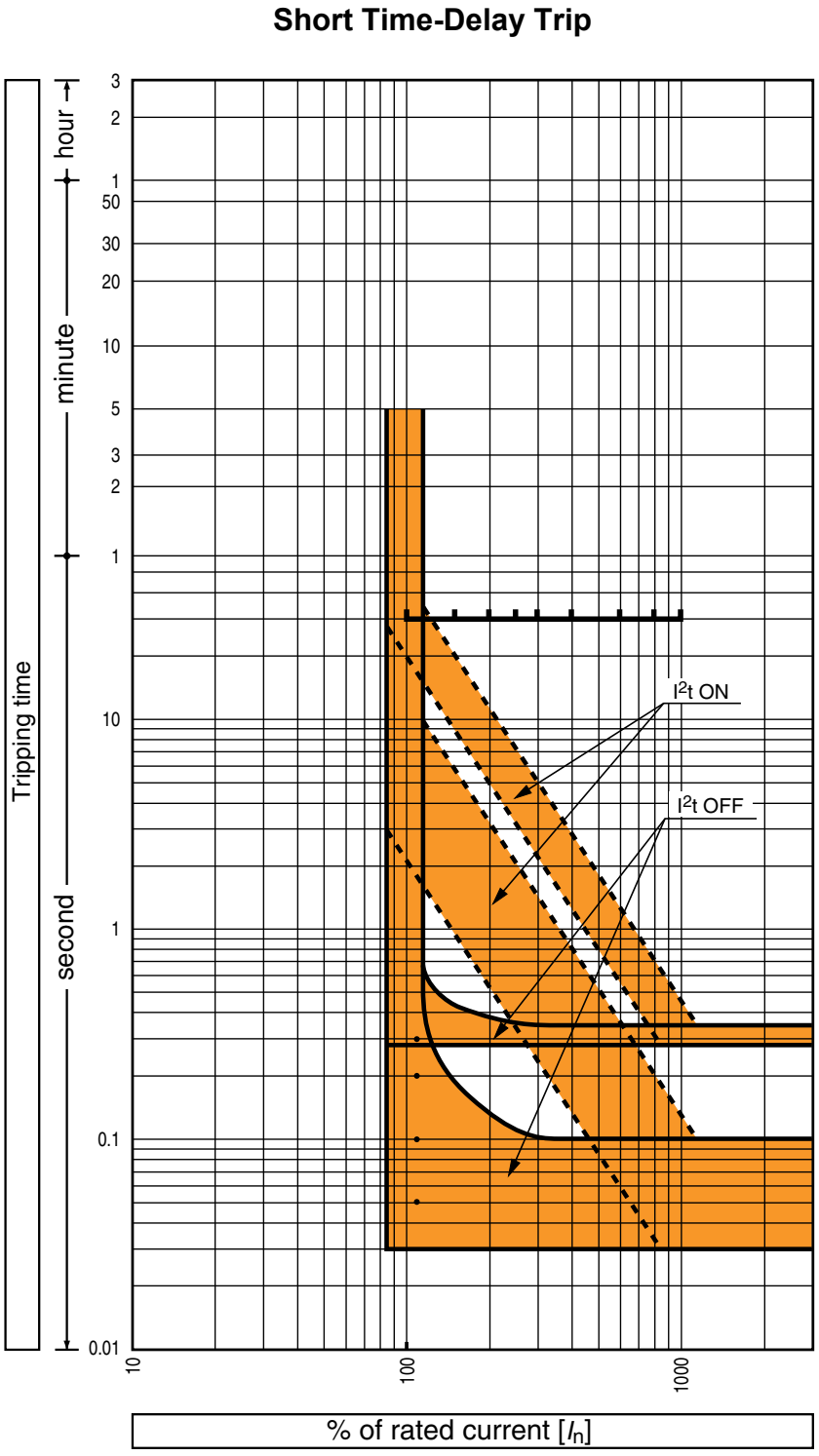
Notes

1) The maximum pick-up current is set to 1300% x [ICT] for B400_SX/SE, 1000 % x [ICT] for B1000H_SX/SE, 1200 % x [I_{CT}] for B800_SX/SE.
2) If the short time delay setting is NON, the instantaneous trip setting cannot be NON. If the instantaneous setting is NON, the short time setting cannot be NON.
3) Selecting "OFF" disables the protective functions. Unless otherwise specified when ordering, the settings will default to those underlined in the table above.
4) The protective functions of XOW Over Current Relays can be tested using the Terasaki TNS2 OCR checker. The checker can be used to check Long time, Short time, Instantaneous, and Ground Fault settings of the MCCB.

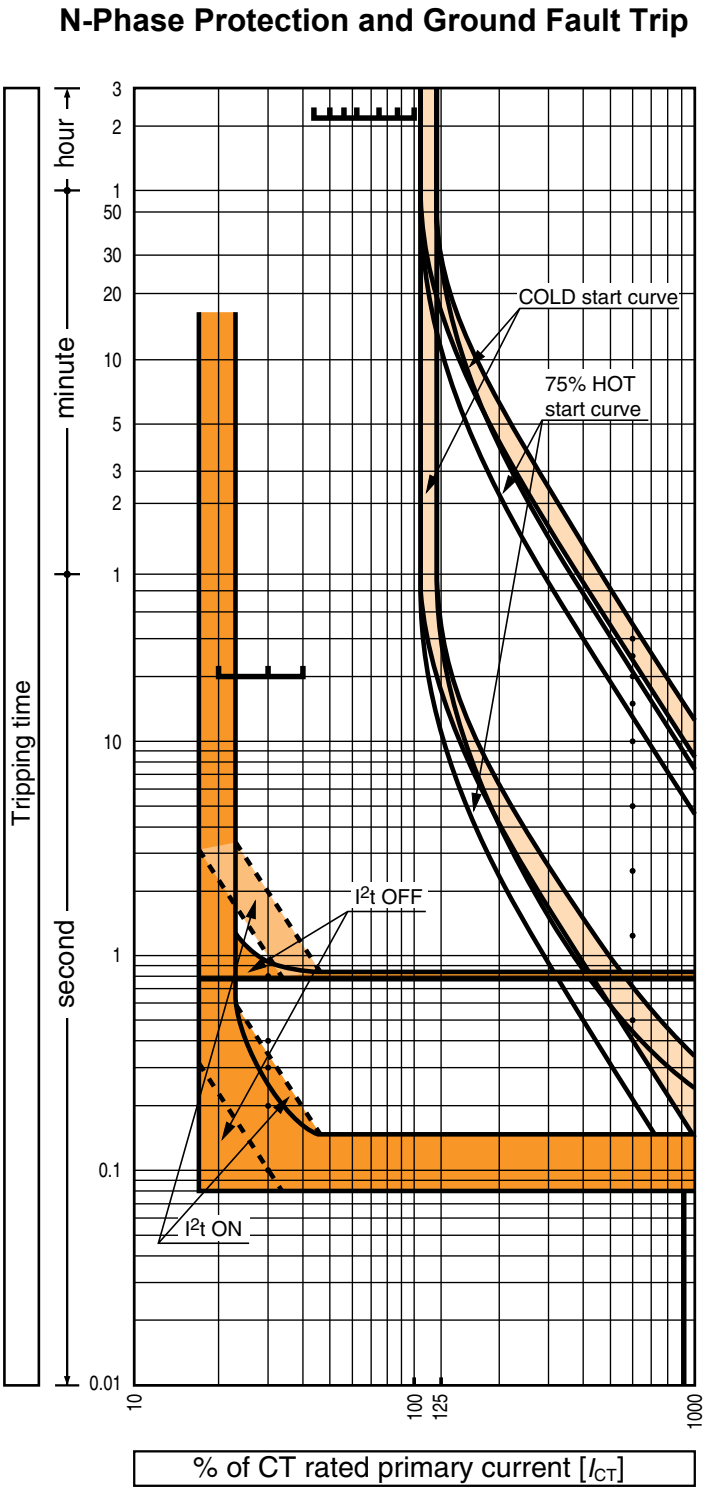
Time Current Characteristics Curve, B400,800,1000_SE, Energy Metering Electronic



Time Current Characteristics Curve, B400,800,1000_SE, Energy Metering Electronic

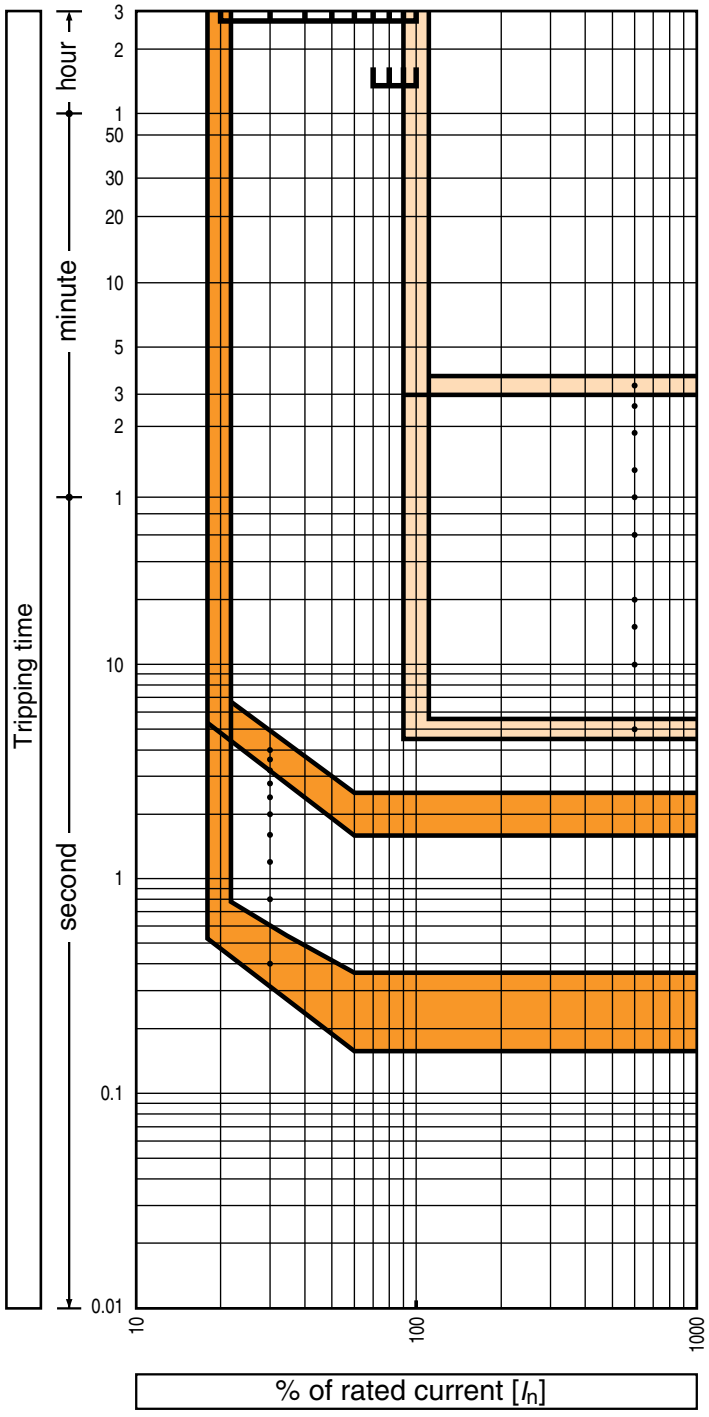


Time Current Characteristics Curve, B400,800,1000_SE, Energy Metering Electronic

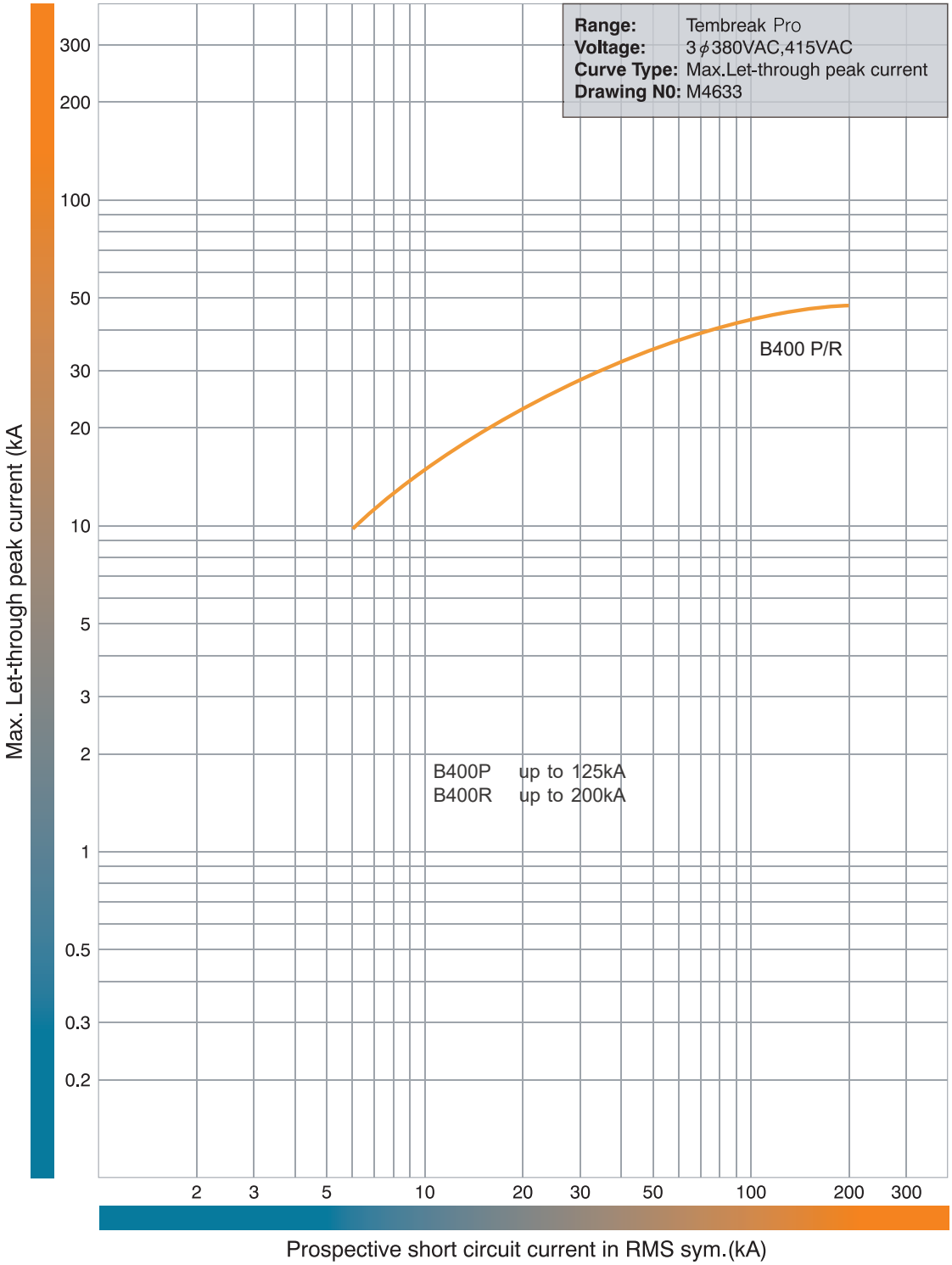


Time Current Characteristics Curve, B400,800,1000_SE, Energy Metering Electronic

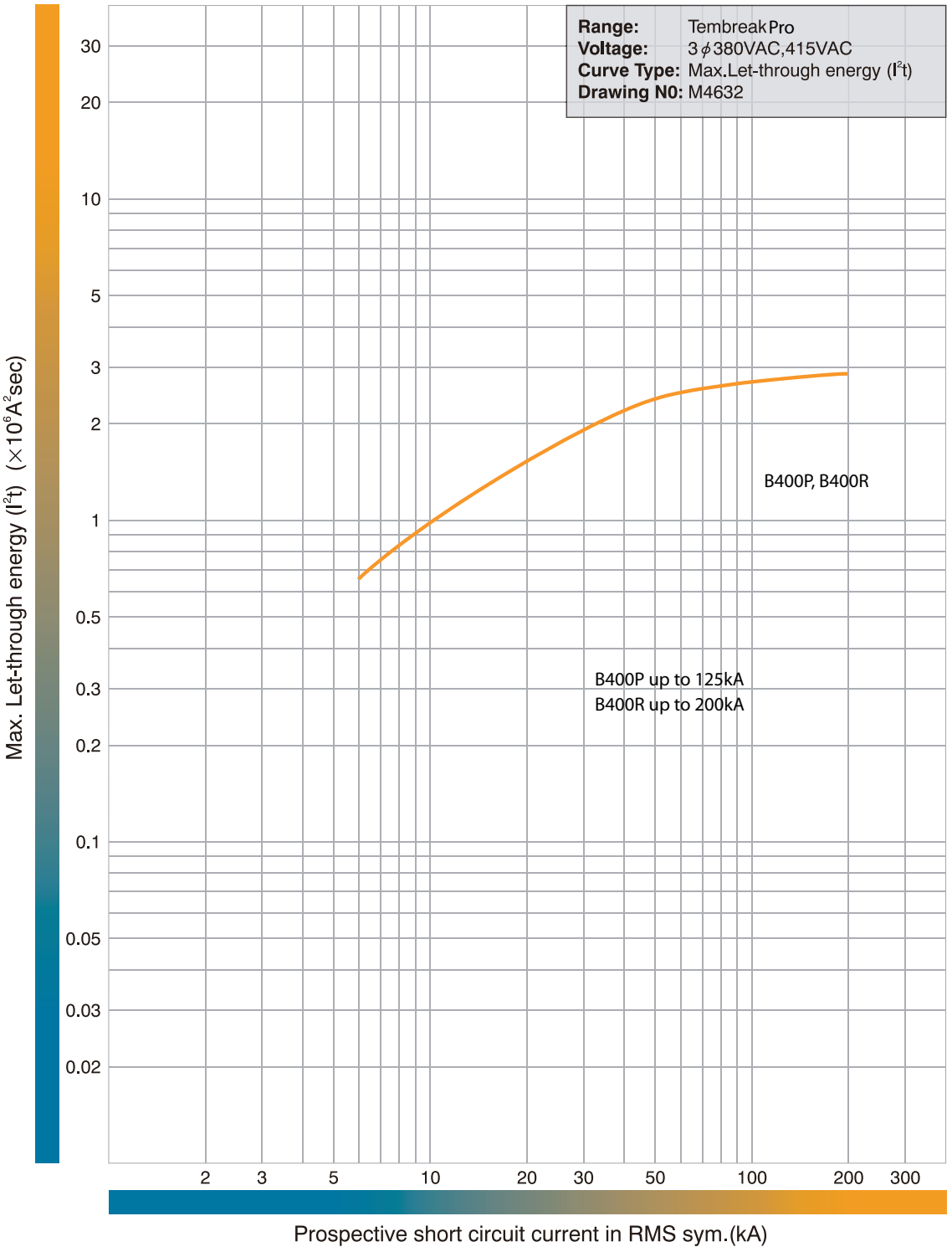
Phase Rotation Protection and Pre-Trip Alarm



Let-Through Peak Current Curve, B400_BE/BEG/SX/SE Electronic

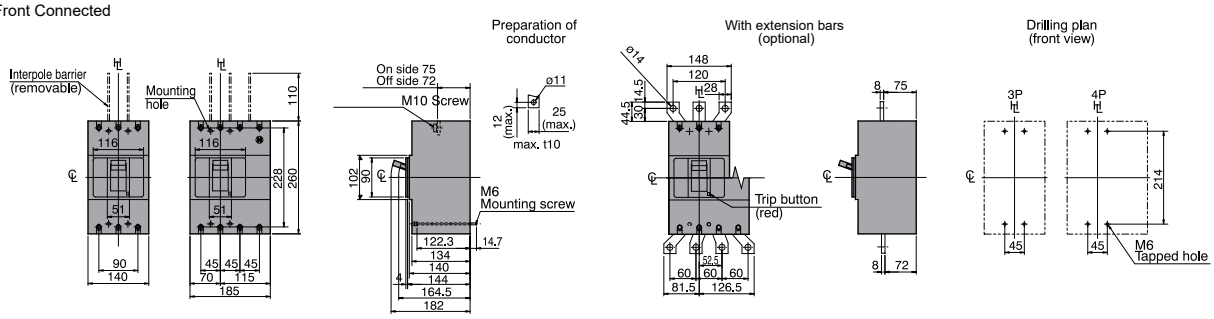


Let-Through Energy I²t Curve, B400_BE/BEG, Basic Electronic

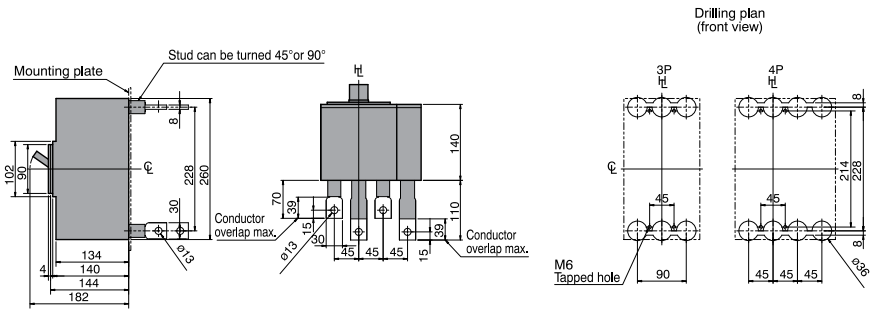


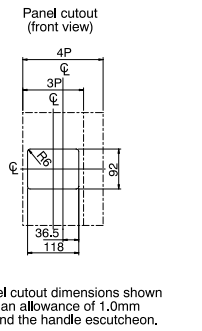
Dimensions B400P_BE/BEG/SE/SX, Electronic, Front Connect (mm)

Front Connected



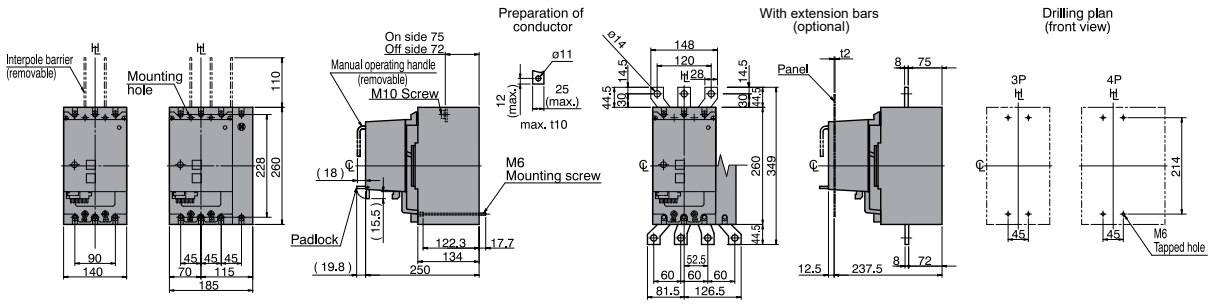
Rear Connected



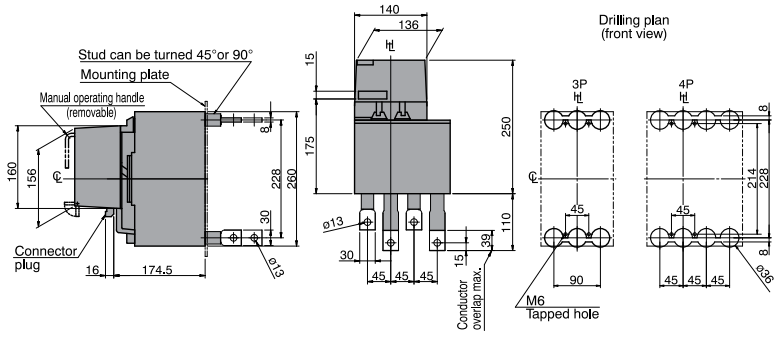


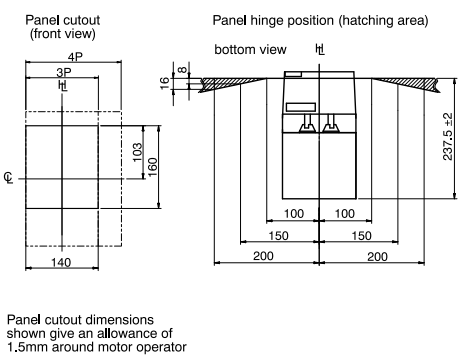
Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon.

Front Connected With Motor Operator



Rear Connected With Motor Operator

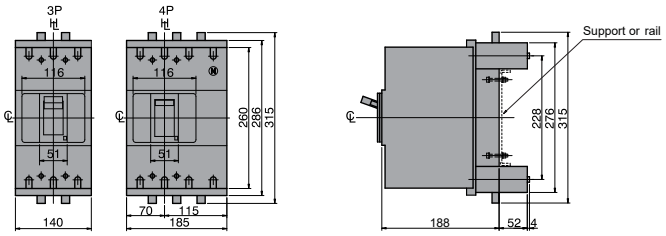




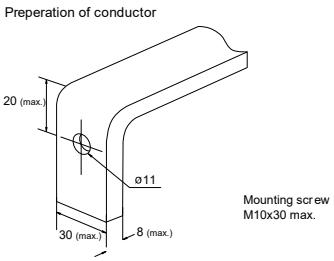
Panel cutout dimensions shown give an allowance of 1.5mm around motor operator

Dimensions B400_BE/BEG/SE/SX, Electronic, Plug-In (mm)

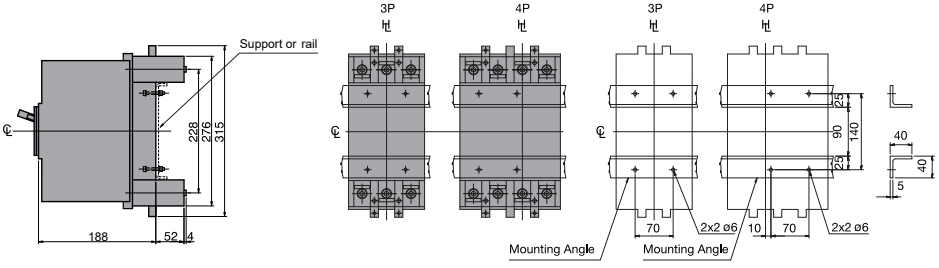
Outline Dimensions



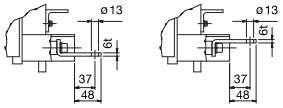
Termination of Busbar



Mounting On a Support or Rails (shown with optional connection bars oriented for rear access)

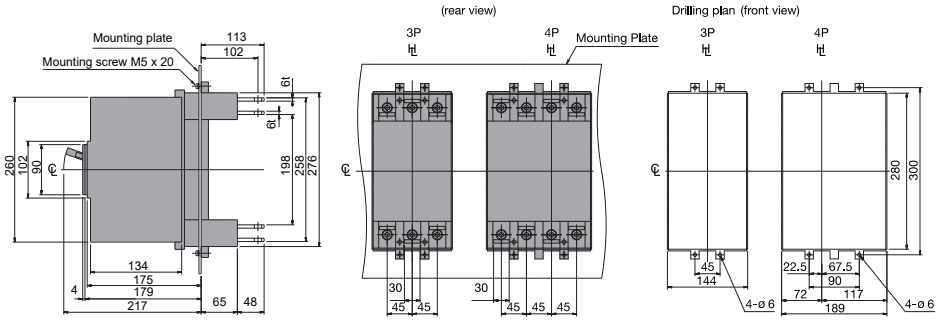


Detail of connecting part
Oriented for rear access

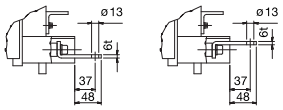


Terminal bars should be connected alternately on adjacent poles.

Mounting Through the Backplate (shown with optional connection bars oriented for rear access)

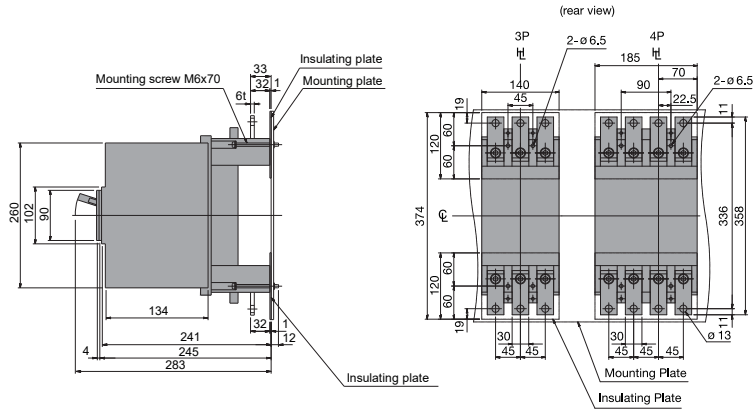


Detail of connecting part
Oriented for rear access

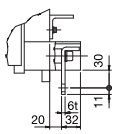


Terminal bars should be connected alternately on adjacent poles.

Mounting on the Backplate (optional connection bars must be oriented for front access)



Detail of connecting part
Oriented for front access

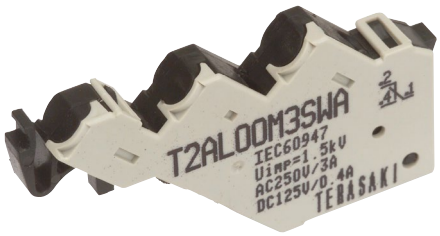


B400 AF Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits



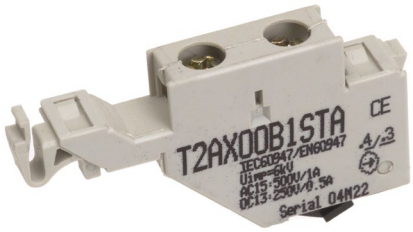
Item Description	Catalogue No.
Alarm Switch 1 C/O	T2AL00M3STA
Alarm Switch 1 C/O Wired	T2AL00M3SWA
Alarm Switch Micro-current 1 C/O	T2AL00M3RTA

Item Description	Catalogue No.
Alarm Switch Heavy Duty 1 N/O	T2AL00B1STA
Alarm Switch Heavy Duty 1 N/C	T2AL00B2STA

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxiliary Switch 1 C/O	T2AX00M3STA
Auxiliary Switch 1 C/O Wired	T2AX00M3SWA
Auxiliary Switch Micro-current 1 C/O	T2AX00M3RTA



Item Description	Catalogue No.
Auxiliary Switch Heavy Duty 1 N/O	T2AX00B1STA
Auxiliary Switch Heavy Duty 1 N/C	T2AX00B2STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 24 V DC for Use with B160E 1P	T2SH16D02WA
Shunt Trip Coil 110 V DC for Use with B160E 1P	T2SH16D10WA
Shunt Trip Coil 230 V DC for Use with B160E 1P	T2SH16D20WA
Shunt Trip Coil 110 V AC	T2SH00A10TA
Shunt Trip Coil 240 V AC	T2SH00A20TA
Shunt Trip Coil 415 V AC	T2SH00A40TA
Shunt Trip Coil 24 V DC	T2SH00D02TA
Shunt Trip Coil 48 V DC	T2SH00D04TA
Shunt Trip Coil 110 V DC	T2SH00D10TA
Shunt Trip Coil 230 V DC	T2SH00D20TA

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 110 V AC	T2UV00A10NTA
Under Voltage Trip Coil Instant 240 V AC	T2UV00A20NTA
Under Voltage Trip Coil Instant 415 V AC	T2UV00A40NTA
Under Voltage Trip Coil Instant 24 V DC	T2UV00D02NTA
Under Voltage Trip Coil Instant 48 V DC	T2UV00D04NTA
Under Voltage Trip Coil Instant 110 V DC	T2UV00D10NTA
Under Voltage Trip Coil Instant 230 V DC	T2UV00D20NTA

Time Delay Operation (500 ms)

When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500 ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delay 110 V AC 125-630 A 3P	T2UV00A10DSA
Under Voltage Trip Coil Time Delay 200-240 V AC 125-630 A 3P	T2UV00A24DS
Under Voltage Trip Coil Time Delay 380-450 V AC 125-630 A 3P	T2UV00A40DS
Under Voltage Trip Coil Time Delay 24 V DC 125-630 A 3P	T2UV00D02DS
Under Voltage Trip Coil Time Delay 110 V DC 125-630 A 3P	T2UV00D10DS
Under Voltage Trip Coil Time Delay 230 V DC 125-630 A 3P	T2UV00D24DS

Operating External Accessories

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

Item Description	Catalogue No.
T2HP Square Handle Grey, IP65 Handle + 445 mm Shaft	T2HP40R6BN
T2HP Square Handle Red/Yellow, IP65 Handle + 445 mm Shaft	T2HP40R6RN

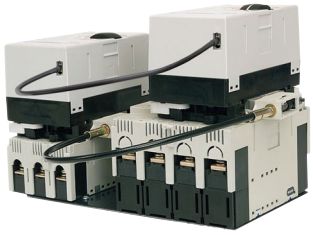
Motor Operator

Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
Motor Operator 110/240 V AC 400/630 AF	T2MC40A10NB
Motor Operator 24/48 V DC 400/630 AF	T2MC40D02NB
Motor Operator 110 V DC 400/630 AF	T2MC40D10NB

Motor Operator Accessories

Provides electrical interlocking between 2 motors to prevent simultaneous operation



Item Description	Catalogue No.
Motor Interlock Cable (0.6 m) Between Any 400/630/1000 AF MCCB Motor	T2MM40L06A
Motor Interlock Cable (2.1 m) Between Any 400/630/1000 AF MCCB Motor	T2MM40L21A

Item Description	Catalogue No.
Motor Interlock Cable (0.6m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S06A
Motor Interlock Cable (2.1m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S21A

MCCBs

Locking and Interlocking Accessories

Cable Mechanical Interlock

Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 M apart

Item Description	Catalogue No.
Cable Interlock Mechanism for 400/630 AF	T2MW40CB
Cable Interlock Mechanism for Use when a Handle is Installed 400/630 AF	T2MWH40CB

Item Description	Catalogue No.
Cable Interlock Wire (1.0 m)	T2MW00SA
Cable Interlock Wire (1.5 m)	T2MW00LA

Link Mechanical Interlock

Prevents simultaneous operation of two horizontally mounted interlocked MCCBs.

Item Description	Catalogue No.
Link Interlock 3 or 4 Pole Right Side Section	T2ML40RB
Link Interlock 3 Pole Left Side Section	T2ML40L3B
Link Interlock 4 Pole Left Side Section	T2ML40L4B
Link Interlock Right Link Interlock 4P For Use with Handle 400/630 AF	T2MLH40RB
Link Interlock Left Link Interlock 3P For Use with Handle 400/630 AF	T2MLH40L3B
Link Interlock Left Link Interlock 4P For Use with Handle 400/630 AF	T2MLH40L4B

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option

Item Description	Catalogue No.
Captive Toggle Lock 400/630 AF	T2HL40CAP

Non-captive

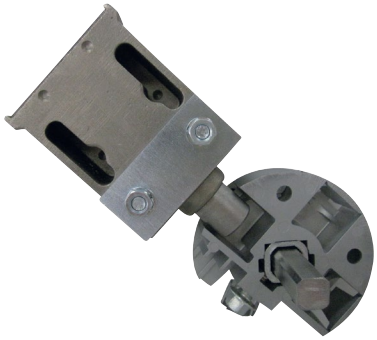
Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Non Captive Toggle Lock 400/630 AF	T2HL40A

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Mounted

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, standard key code, F	440TAKEYE100F
Prosafe, standard key code, G	440TAKEYE100G
Prosafe, standard key code, H	440TAKEYE100H
Prosafe, Standard Key Code I	440TAKEYE100I
Prosafe, Standard Key Code J	440TAKEYE100J
Prosafe, Standard Key Code K	440TAKEYE100K
Prosafe, Standard Key Code L	440TAKEYE100L
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, Standard Key	440TAKEYE10X

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys

Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE100A
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE10BA
Single key shot bolt lock, key not included	440TMSBLE10X

Installation External Accessories

Door Flange

A door mount flange providing a plastic surround for the panel or escutcheon cutout

Item Description	Catalogue No.
Door Flange IP20 DR FLG 400/630A MCCB	T2DF40A
Door Flange IP30 DR FLG 400/630A MOT	T2DM40A

External Neutral CT

Optional Ground Fault sensing neutral pole Current Transformer for B series GF MCCBs

Item Description	Catalogue No.
Ground Fault Neutral Phase Current Transformer 400 A	T2GB40N04A

External Monitor

A door display which indicates energy and other data from an energy meter B_SE MCCB

Item Description	Catalogue No.
External Switchboard Door Digital Display (Suits both TB2 MCCBs and AR ACBs)	T2ED00D02NNA

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier Interpole Barrier (Qty 2), B800, B1000, ZS630, ZS800	T2BA403SH

Plug-in MCCBs

Plug-in Mounting Bases

The MCCB via rear plugs, is plugged onto a fixed base for its line and load connections.

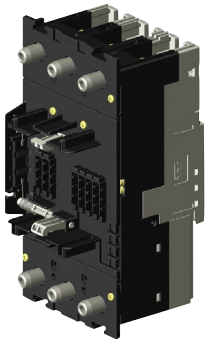
Ordering information

Includes MCCB plugs and other parts for converting an MCCB to a plug-in MCCB. The kA rating of a T2PM plug in MCCB is the same as standard front connected MCCBs.

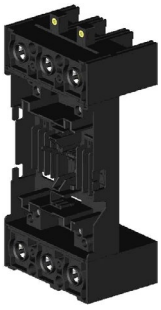
Mounting bases and internal accessory plugs and sockets are ordered seperately.

Plug in bases, IP20, includes rear insulation screen. The base includes terminal studs which are suitable for front or rear connection. Interpole barriers can be used with bases, not terminal covers.

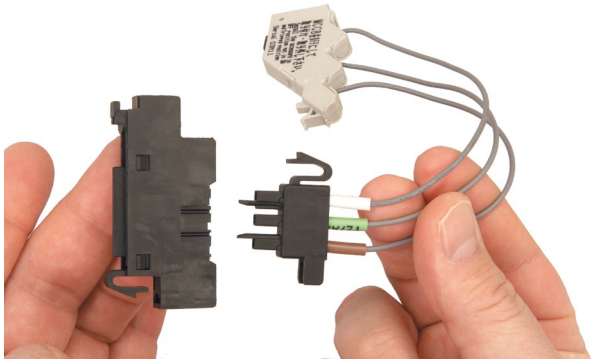
Note:
1) Up to 4 control wiring plug kits can be used in a base.
2) Standard Internal accessories are used with the above plugs and sockets



Item Description	Catalogue No.
Plug-in MCCB, 3 Pole Kit, B400/L400	2M0405CAAK
Plug-in MCCB, 4 Pole Kit, B400/L400	2M0406CAAK



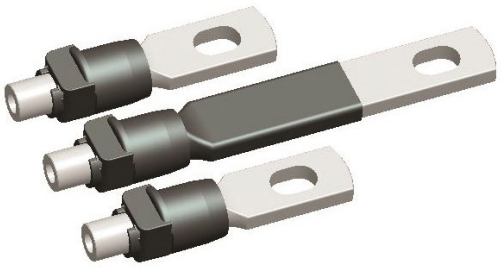
Item Description	Catalogue No.
Plug-in Mounting Base 3P Base 400/630 AF	T2PM40A3A
Plug-in Mounting Base 4P Base 400/630 AF	T2PM40A4A



Item Description	Catalogue No.
3 Pin Plug and Socket for Aux/Alarms – for MCCB and Base	2H6959CAA1
3 Pin Plug and Socket for Shunt/UVT – for MCCB and Base	2H6959CBA1
Control Wiring Plugs and Sockets for Withdrawable and Plug-in MCCBs, 3 Pin Socket for Panel Mount Version	T2TP003A

Rear Connection Studs

Allows MCCB main connections to be made at the rear of the MCCB

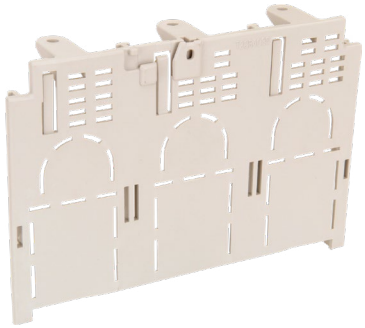


Item Description	Catalogue No.
Rear Connect Terminal Stud 3 Pole Kit, Set of 6 Studs	T2RP403LA
Rear Connect Terminal Stud 4 Pole Kit, Set of 8 Studs	T2RP404LA

Terminal Covers

Flush Front or Rear Connect Terminal Covers

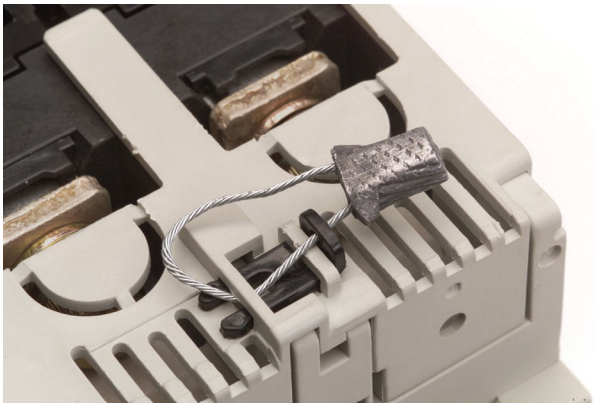
Provides front finger touch protection with MCCBs used with rear terminals and HC chassis



Item Description	Catalogue No.
Flush Front or Rear Connect Terminal Covers 3 Pole Single Cover, 400 AF	T2CR403SHP
Flush Front or Rear Connect Terminal Covers 4 Pole Single Cover, 400 AF	T2CR404SHP
Flush Front or Rear Connect Terminal Covers 3 Pole, Set of Two (2) Covers, 400 AF	T2CR403SP
Flush Front or Rear Connect Terminal Covers 4 Pole, Set of Two (2) Covers, 400 AF	T2CR404SP

Terminal Cover Locking Clip

Used with terminal covers to prevent unauthorised removal or access to terminal area



Item Description	Catalogue No.
Terminal Cover Locking Clip	T2CF00L

Tunnel Clamp Terminals

Allows cable to be terminated directly to the MCCB and clamped for good connectivity

Item Description	Catalogue No.
Tunnel Terminal 3P 400/630 AF (6 pcs)	T2FW40L3A
Tunnel Terminal 4P 400/630 AF (8 pcs)	T2FW40L4A

Extension Bars

Add-on bus bars, allow more or larger conductor connector to an MCCB

Item Description	Catalogue No.
3 Pole, set of 3, flanged bars 400A	TPFB403WHA
3 Pole, set of 3, flanged bars 630A	TPFB463WHC
4 Pole, set of 4, flanged bars 630A	TPFB464WHC

P630_TM

Thermal Magnetic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ 260 mm (H), 103 mm (D), 45 mm pole centres
- ✔ Fault ratings; 25, 36, 50, 70, 110 kA I_{CU} @ 415 V AC
- ✔ 100% I_{CU} / I_{CS} on models up to 110 kA
- ✔ Utilisation ratings from 24 V to 690 VAC, 250 VDC
- ✔ Thermal magnetic trip unit: adjustable thermal / adjustable magnetic
- ✔ Trip unit; 630 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Trip Unit Rating	630 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**E**	25 kA
	F	36 kA
	N	50 kA
	H	70 kA
	S	110 kA

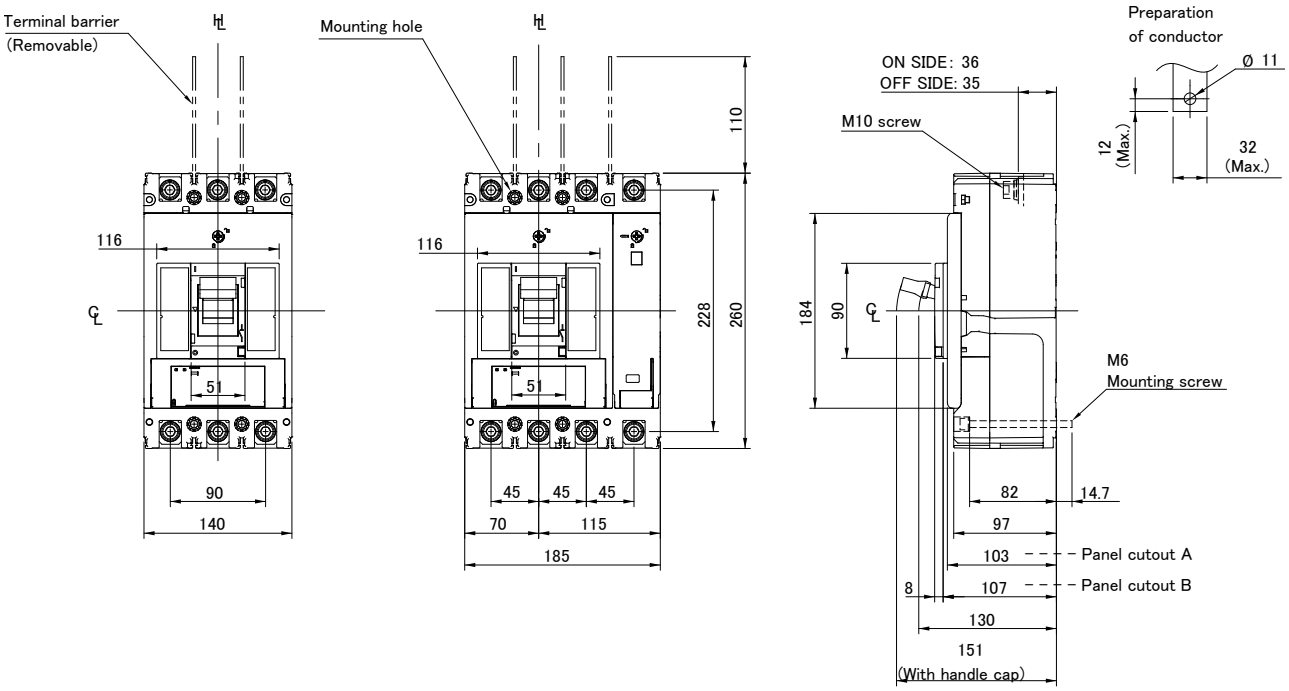
Voltage

Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option)

Quick Reference Dimensions – Front Connect



630 A Frame 3 Pole 25 kA TM (Thermal Magnetic)

I_n (A @ 30 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	396 - 630	2520 - 5040	25	3	P630E3630TM

630 A Frame 3 Pole 36 kA TM (Thermal Magnetic)

I_n (A @ 30 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	396 - 630	2520 - 5040	36	3	P630F3630TM

630 A Frame 3 Pole 50 kA TM (Thermal Magnetic)

I_n (A @ 30 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	396 - 630	2520 - 5040	50	3	P630N3630TM

630 A Frame 3 Pole 70 kA TM (Thermal Magnetic)

I_n (A @ 30 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	396 - 630	2520 - 5040	70	3	P630H3630TM

630 A Frame 3 Pole 110 kA TM (Thermal Magnetic)

I_n (A @ 30 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	396 - 630	2520 - 5040	110	3	P630S3630TM

630 A Frame 4 Pole 25 kA TM (Thermal Magnetic)

I_n (A @ 30 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	396 - 630	2520 - 5040	25	4	P630E4630TM

630 A Frame 4 Pole 36 kA TM (Thermal Magnetic)

I_n (A @ 30 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	396 - 630	2520 - 5040	36	4	P630F4630TM

630 A Frame 4 Pole 50 kA TM (Thermal Magnetic)

I_n (A @ 30 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	396 - 630	2520 - 5040	50	4	P630N4630TM

630 A Frame 4 Pole 70 kA TM (Thermal Magnetic)

I_n (A @ 30 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	396 - 630	2520 - 5040	70	4	P630H4630TM

630 A Frame 4 Pole 110 kA TM (Thermal Magnetic)

I_n (A @ 30 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	396 - 630	2520 - 5040	110	4	P630S4630TM

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	630 AF
Trip Unit Rating	630 A

I_n, Rated Current	
A @ 30 °C	630
A @ 45 °C	577
A @ 50 °C	560

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC/DC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)	
(A)	630
(W)	52

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 400 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option)
Terminal Type	Bolt-Terminal
Connection Torque	13.7 - 22.5 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	-
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		260 mm
Width	**3P**	140 mm
	4P	185 mm
Depth (less toggle)		103 mm
Depth (toggle included)		151 mm
Weight	**3P**	5 kg
	4P	6.6 kg
Electrical Life		4000 cycles
Mechanical Life		15000 cycles

Short-Circuit Capacity

			kA Rating				
			MCCB Type				
		Voltage	E	F	N	H	S
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	35	50	85	100	125
		380 / 400 V AC	25	36	50	70	110
		415 V AC	25	36	50	70	110
		440 V AC	22	30	45	65	100
		690 V AC	-	7	12	12	12
		1000 V AC	-	-	-	-	-
		1100 V AC	-	-	-	-	-
		125 V DC	-	-	-	-	-
		250 V DC	25	25	50	50	50
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	35	50	85	100	125
		380 / 400 V AC	25	36	50	70	110
		415 V AC	25	36	50	70	110
		440V AC	22	30	45	65	100
		690 V AC	-	7	12	12	12
		1000 V AC	-	-	-	-	-
		1100 V AC	-	-	-	-	-
		125 V DC	-	-	-	-	-
		250 V DC	25	25	50	50	50

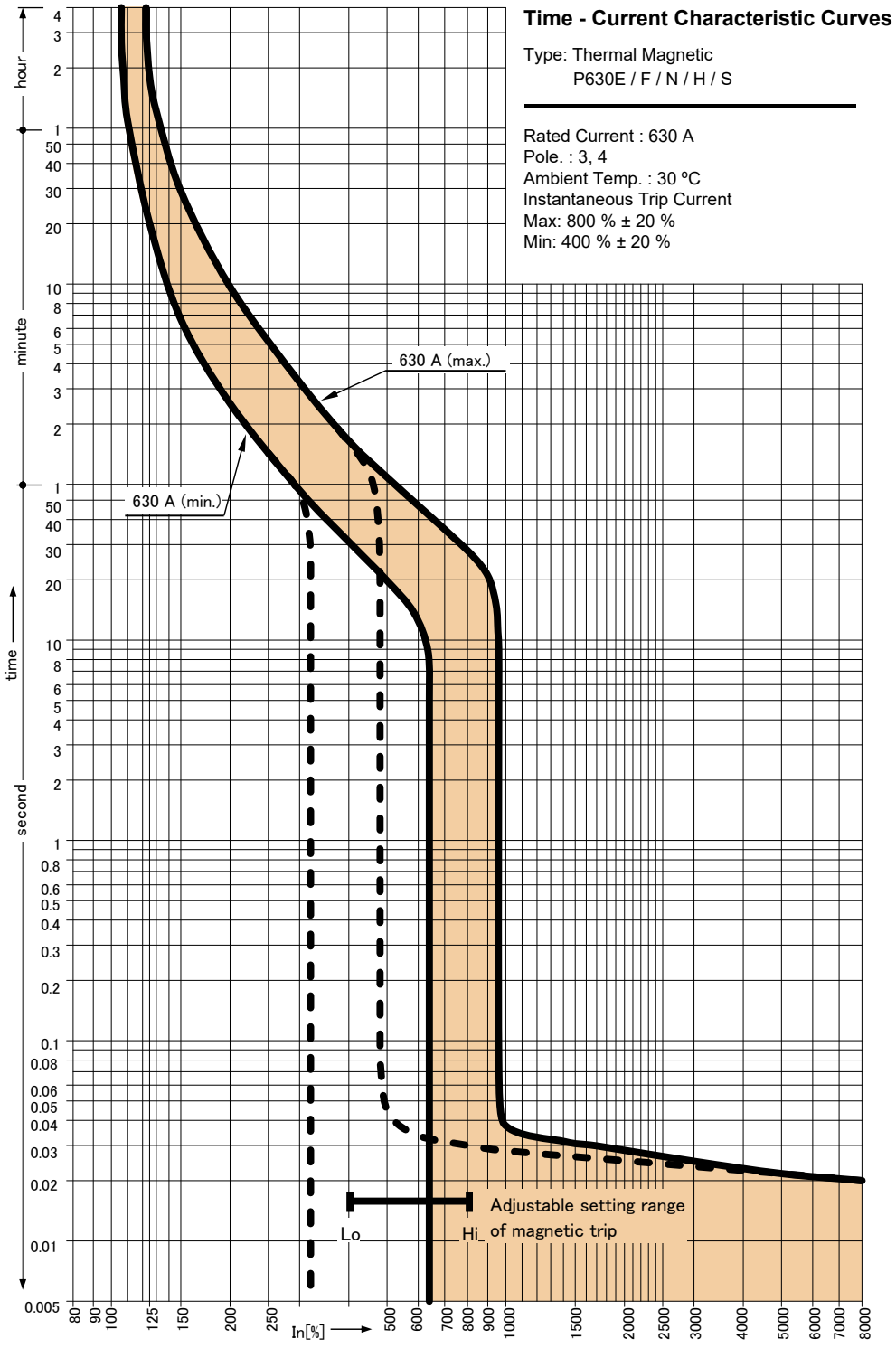
Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Rated Temperature	30 °C

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

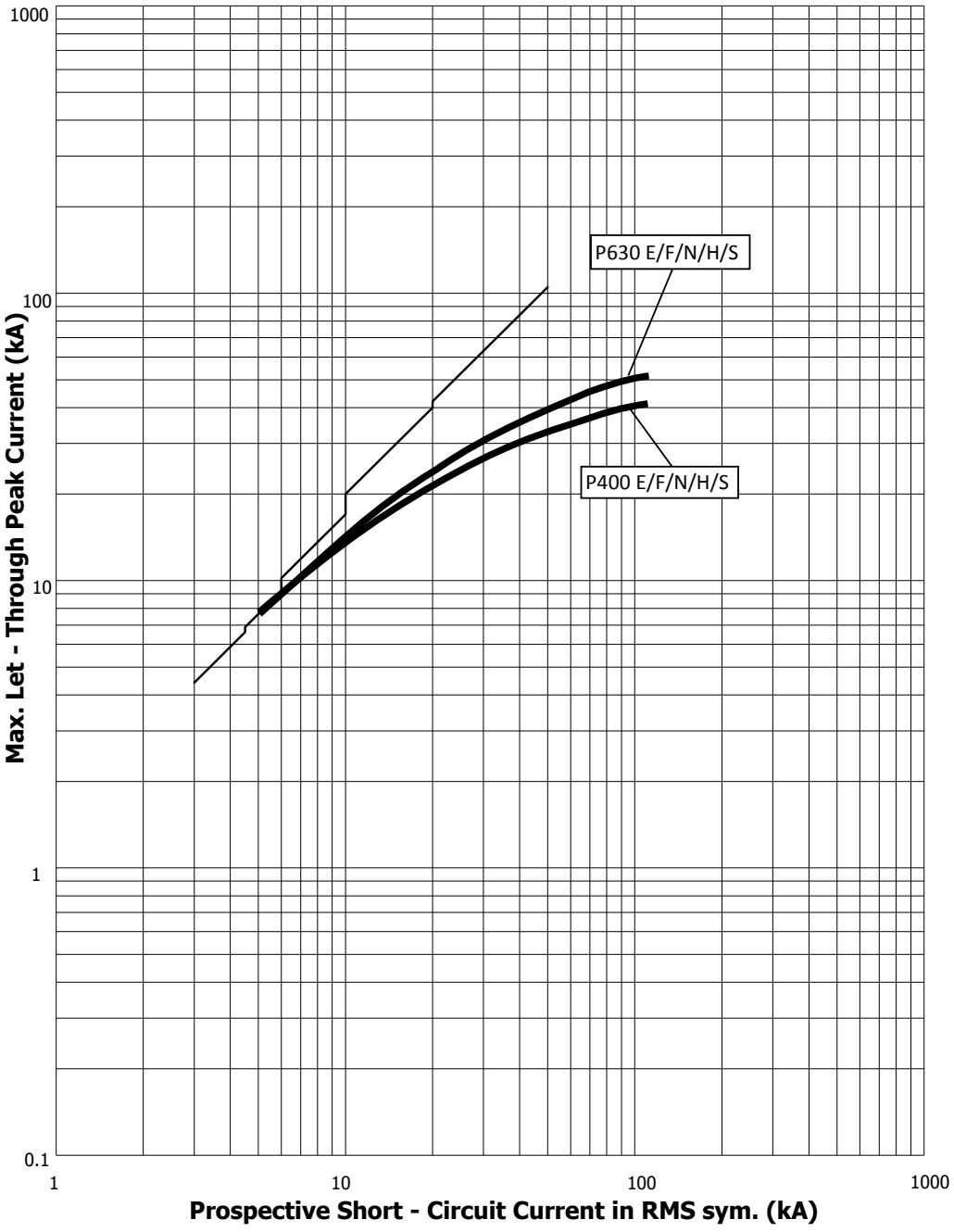
Time Current Curve, P630_TM, 630 A, Thermal Magnetic



Let-Through Peak Current Curve, P400,630_BE/TM/SE, Thermal Magnetic / Electronic

P630 E/F/N/H/S
P400 E/F/N/H/S

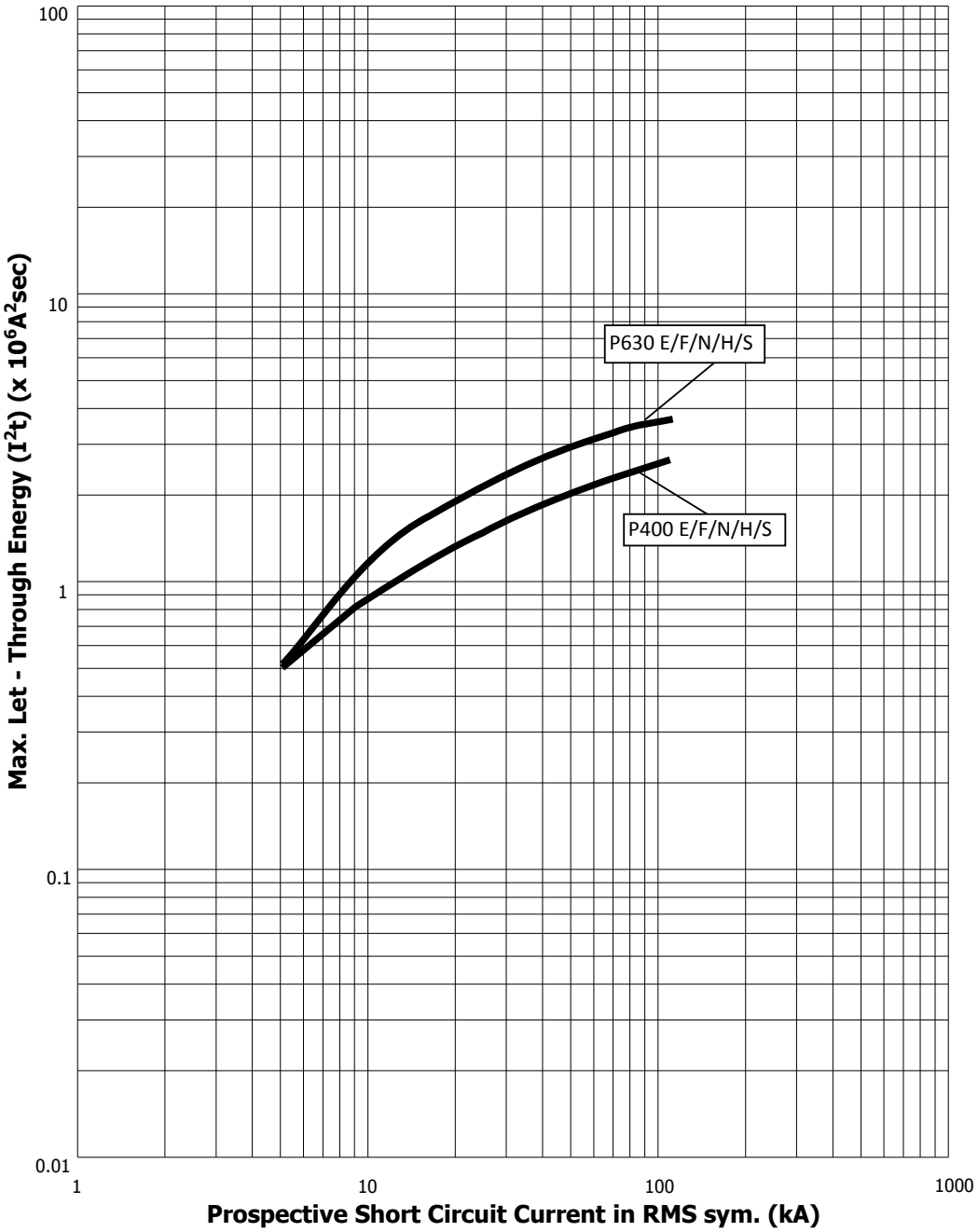
Rated Operational Voltage 380 / 415 V AC
Recovery Voltage 457 V AC --- 415 × 110 %



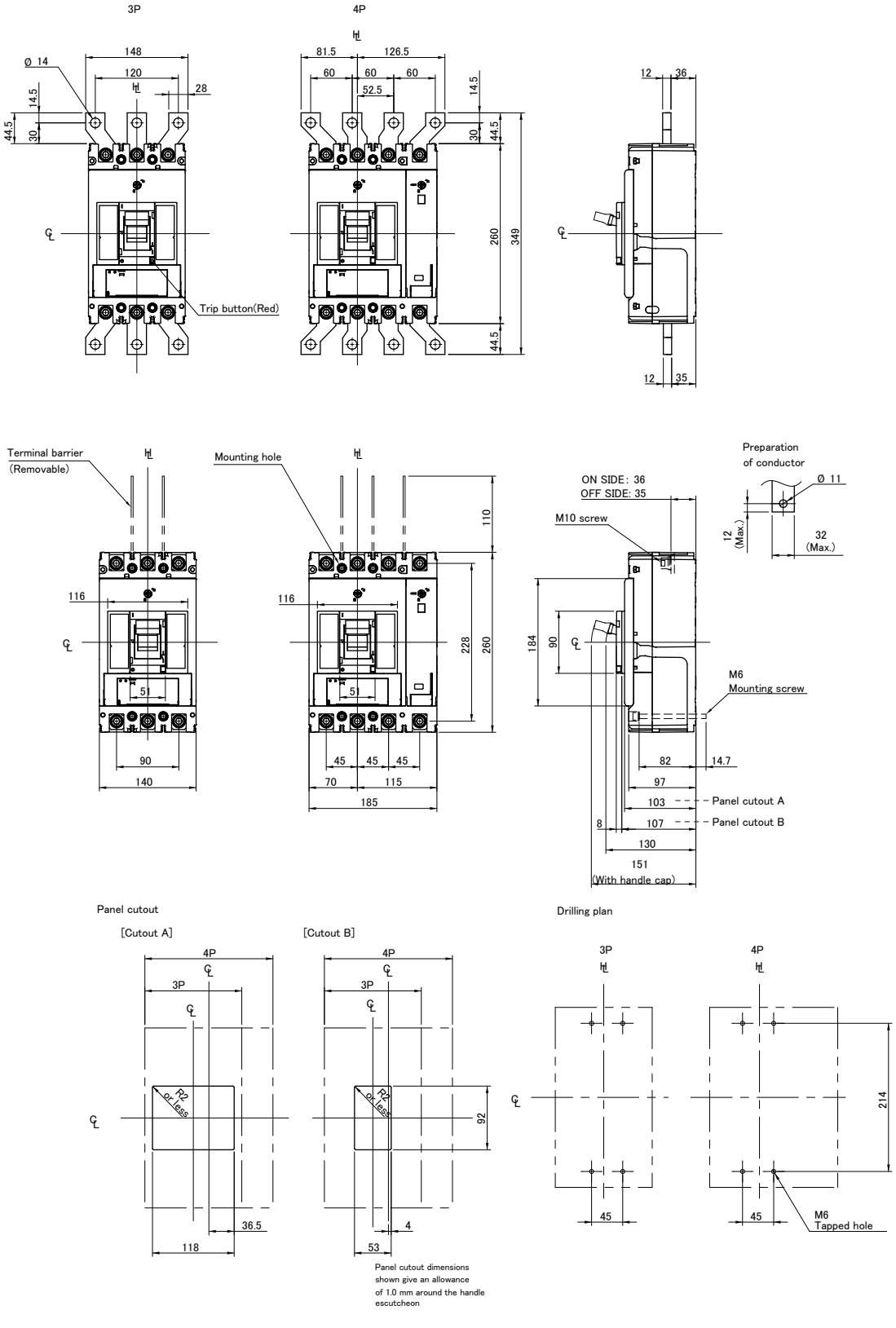
Let-Through Energy I²t Curve, P400,630_BE/TM/SE, Thermal Magnetic / Electronic

P630 E/F/N/H/S
P400 E/F/N/H/S

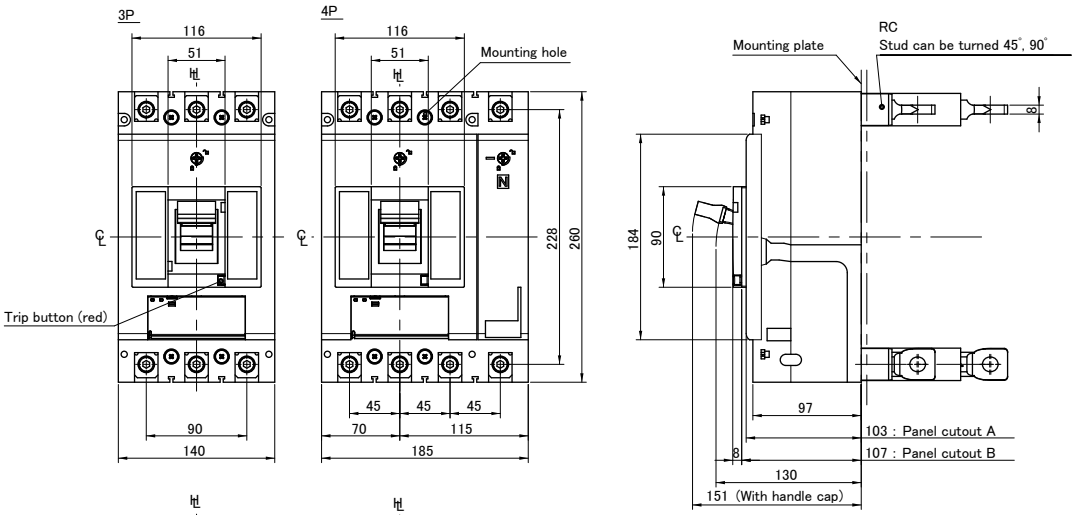
Rated Operational Voltage 380 / 415 V AC
Recovery Voltage 457 V AC --- 415 × 110 %

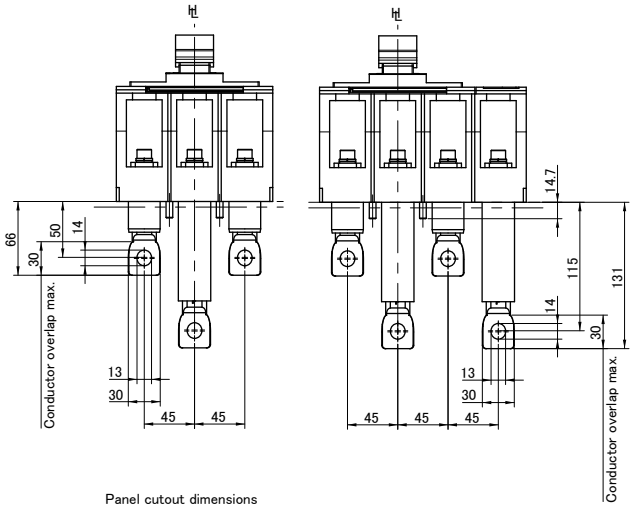


Dimensions P400,630_TM/BE/NN, Front Connect (mm)



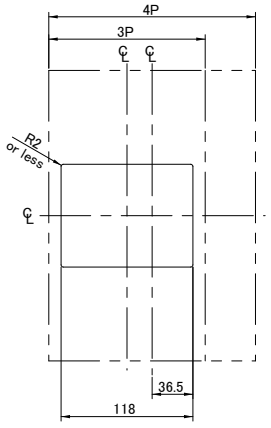
Dimensions P400,630_TM/BE/NN, Rear Connect (mm)



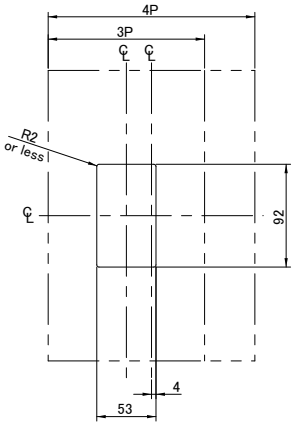


Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon

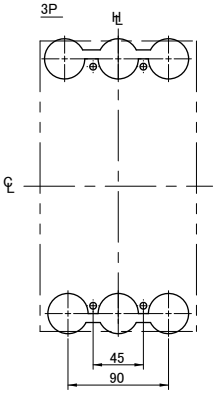
Panel cutout (front view) for Cutout A

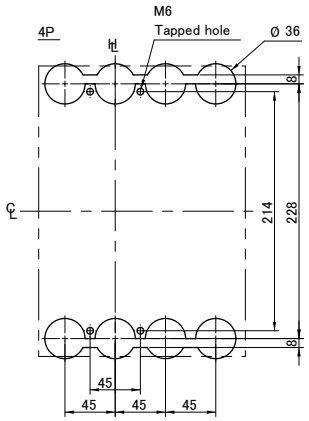


Panel cutout (front view) for Cutout B



Drilling plan (front view)





MCCBs

P630_BE / BEG

Electronic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ 260 mm (H), 103 mm (D), 45 mm pole centres
- ✔ Fault ratings; 36, 50, 70 or 110 kA I_{CU} @ 415 VAC
- ✔ 100% I_{CU} / I_{CS} up to 110 kA
- ✔ Electronic trip unit: individually adjustable LSI characteristics, and Instantaneous-only trip setting
- ✔ Standard features depending on MCCB model:LSI (BE) LSIG (BEG),Neutral protection (4P), Pre-Trip Alarm (all)
- ✔ Trip unit; 630 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type)
Trip Unit Rating	630 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**F**	36 kA
	N	50 kA
	H	70 kA
	S	110 kA

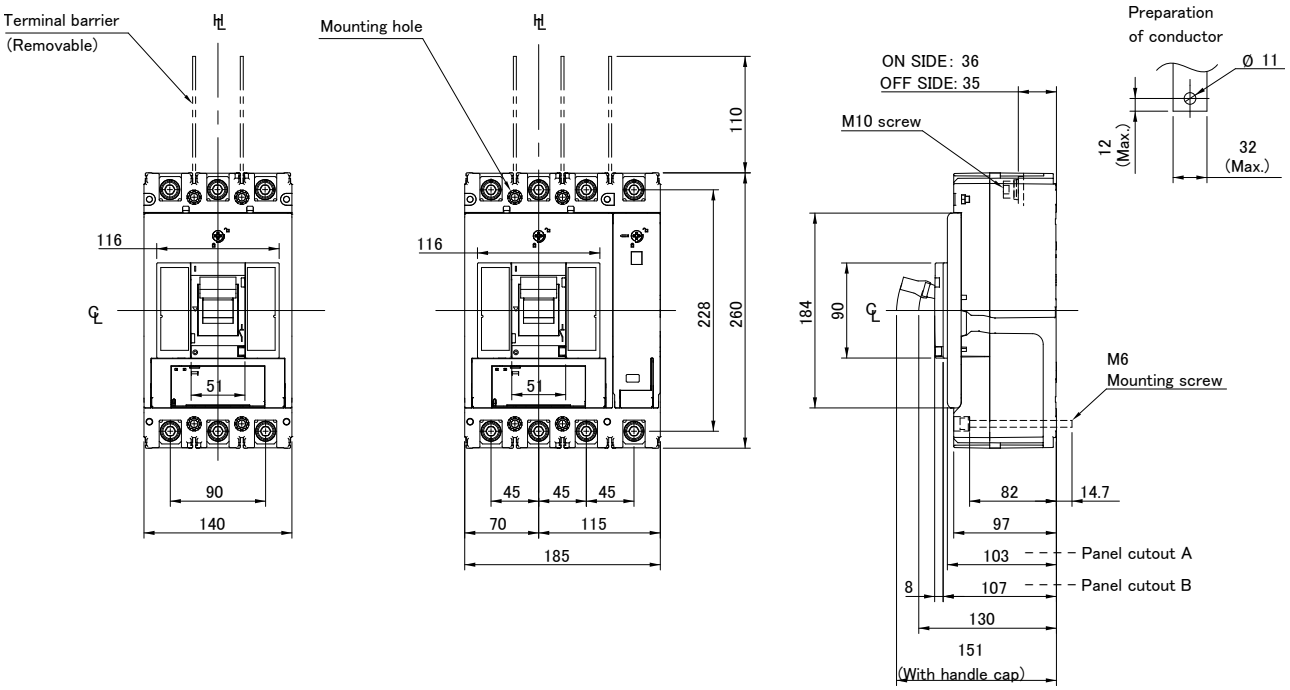
Voltage

Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option)

Quick Reference Dimensions – Front Connect



630 A Frame 3 Pole 36 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	36	3	P630F3630BE

630 A Frame 3 Pole 36 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	36	3	P630F3630BEG

630 A Frame 3 Pole 50 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	50	3	P630N3630BE

630 A Frame 3 Pole 50 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	50	3	P630N3630BEG

630 A Frame 3 Pole 70 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	70	3	P630H3630BE

630 A Frame 3 Pole 70 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	70	3	P630H3630BEG

630 A Frame 3 Pole 110 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	110	3	P630S3630BE

630 A Frame 3 Pole 110 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	110	3	P630S3630BEG

630 A Frame 4 Pole 36 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	36	4	P630F4630BE

630 A Frame 4 Pole 36 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	36	4	P630F4630BEG

630 A Frame 4 Pole 50 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	50	4	P630N4630BE

630 A Frame 4 Pole 50 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	50	4	P630N4630BEG

630 A Frame 4 Pole 70 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	70	4	P630H4630BE

630 A Frame 4 Pole 70 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	70	4	P630H4630BEG

630 A Frame 4 Pole 110 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	110	4	P630S4630BE

630 A Frame 4 Pole 110 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	110	4	P630S4630BEG

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	630 AF
Trip Unit Rating	630 A

I_n, Rated Current (A)	
	630
45ºC	630
50ºC	630
70ºC	400

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)	
(A)	630
(W)	52

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 400 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option)
Terminal Type	Bolt-Terminal
Connection Torque	13.7 - 22.5 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	-
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		260 mm
Width	**3P**	140 mm
	4P	185 mm
Depth (less toggle)		103 mm
Depth (toggle included)		145 mm
Weight	**3P**	5 kg
	4P	6.6 kg
Electrical Life		4000 cycles
Mechanical Life		15000 cycles

Short-Circuit Capacity

			kA Rating			
			MCCB Type			
		Voltage	F	N	H	S
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	50	85	100	125
		380 / 400 V AC	36	50	70	110
		415 V AC	36	50	70	110
		440 V AC	30	45	65	100
		690 V AC	7	12	12	12
		1000 V AC	-	-	-	-
		1100 V AC	-	-	-	-
		125 V DC	-	-	-	-
		250 V DC	-	-	-	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	50	85	100	125
		380 / 400 V AC	36	50	70	110
		415 V AC	36	50	70	110
		440V AC	30	45	65	100
		690 V AC	7	12	12	12
		1000 V AC	-	-	-	-
		1100 V AC	-	-	-	-
		125 V DC	-	-	-	-
		250 V DC	-	-	-	-

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type)
Rated Temperature	50 °C

Other Features

Pre-trip alarm (PTA)	Yes
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	Yes
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

BE LSI / BE-G LSIG Over Current Relay

Electronic OCR Unit	General Power Distribution or Motor Starting Applications	
MCCB Types – Basic Features	**LSI**	6 dial OCR, individually adjustable LTD, STD, INST. LED ind: ready, overload, PTA, OCR over-temp
	LSIG	7 dial OCR as above, but with a GF dial for 3P MCCBs, and a GF / N dial for 4P MCCBs
	ICB	Instantaneous-only Circuit Breaker setting option using IR2 dial

OCR Adjustments

P630_BE or P630_BE-G Specific Information

OCR Adjustment Settings	
Long Time Delay (LTD)	I_{R1} setting 40 % - 100 % of I_N (base currrent) via 8 increment dial + I_R2 fine adjust dial of 9 increments: 0.92 - 1.0
	I_{R2} dial includes an OFF setting which switches LTD and STD to OFF, when an instantaneous only ICB is required
	t_R setting 0.5 – 16 seconds in 10 increments
Short Time Delay (STD)	I_{SD} setting 1.5 – 10 (x I_R) in 9 increments + includes OFF setting. t_{SD} setting 50 – 400 mS in 5 increments
Instantaneous (INST)	I_i setting: 630 A : 3, 4, 5, 6, 7, 8, 9, 10, 11 x I_N
Ground Fault (GF)	I_G fixed at 20 % of I_N / t_G fixed at 200 mS. 4 pole GF MCCBs have an ON / OFF switch using N dial
	4 pole GF MCCBs have an unswitched Neutral pole and an internal 4th CT. No external CTs available
Neutral Pole Protection (N)	N standard with 4P GF types. N settings of: 50 %, 100 % or OFF. t_N = short time settings t_R and I_{SD}.
Pre Trip Alarm (PTA)	I_P = 80 % (fixed), t_P = 50 % (fixed)

TBPro(OCR ADJ P630)_dOPCH-S01

Electronic Trip Unit - TemBreak PRO LSI, LSIG, & SMART Overview

Electronic Trip Unit Overview

TemBreak PRO MCCBs equipped with electronic trip units, in addition to protecting against overloads and short circuits, offer flexibility via, individual setting capabity for long time, short time, instantaneous and ground fault characteristics, as well as a host of other standard or optional features. This allows for improved Selectivity combinaions between MCCBs or other circuit breaker types, plus a wide range of electrical measurement and communication functions via the SMART MCCB range. An overview is shown below with 3 types of P160 MCCBs shown as examples.

LSI

LSIG

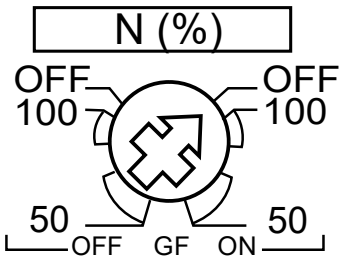
General Features

- There are 3 main Over Current Relay (OCR) types: LSI, LSIG and SMART
- Over Current Relay (OCR) setting by means of rotary dials
- Adjustable current thresholds and time delays for LTD and STD. The instantaneous trip time is fixed, though Ii is fully adjustable
- Over Temperature LED (if OCR temperature exceeds 105 °C)
- PTA Pre Trip Alarm LED
- PICK UP signaling overload alarm LED (> I_r)
- READY LED for normal or abnormal OCR operation
- Optional Ground fault protection for 3 and 4 pole MCCBs
- Adjustable Neutral pole protection on 4 pole MCCBs (Neutral pole located on the right side of MCCB)

SMART

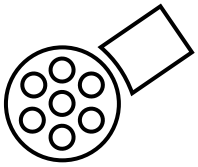
Note that for 4 pole “BE” LSIG MCCBs that have both ground fault and neutral pole protection, the standard GF dial is replaced with the dial type shown on the right, which can switch GF OFF and ON, and set NP protection levels between 50% and 100%, or to OFF.

All TemBreak PRO electronic OCR MCCBs are equipped as standard with PTA and MIP connector sockets for PTA and OCR checker connection.



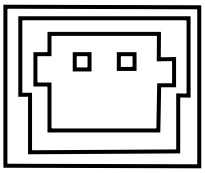
MIP Socket

Maintenance Interface Port – for temporary connection to OCR testing, servicing, and maintenance tools. Located on the right side of the OCR front facia.



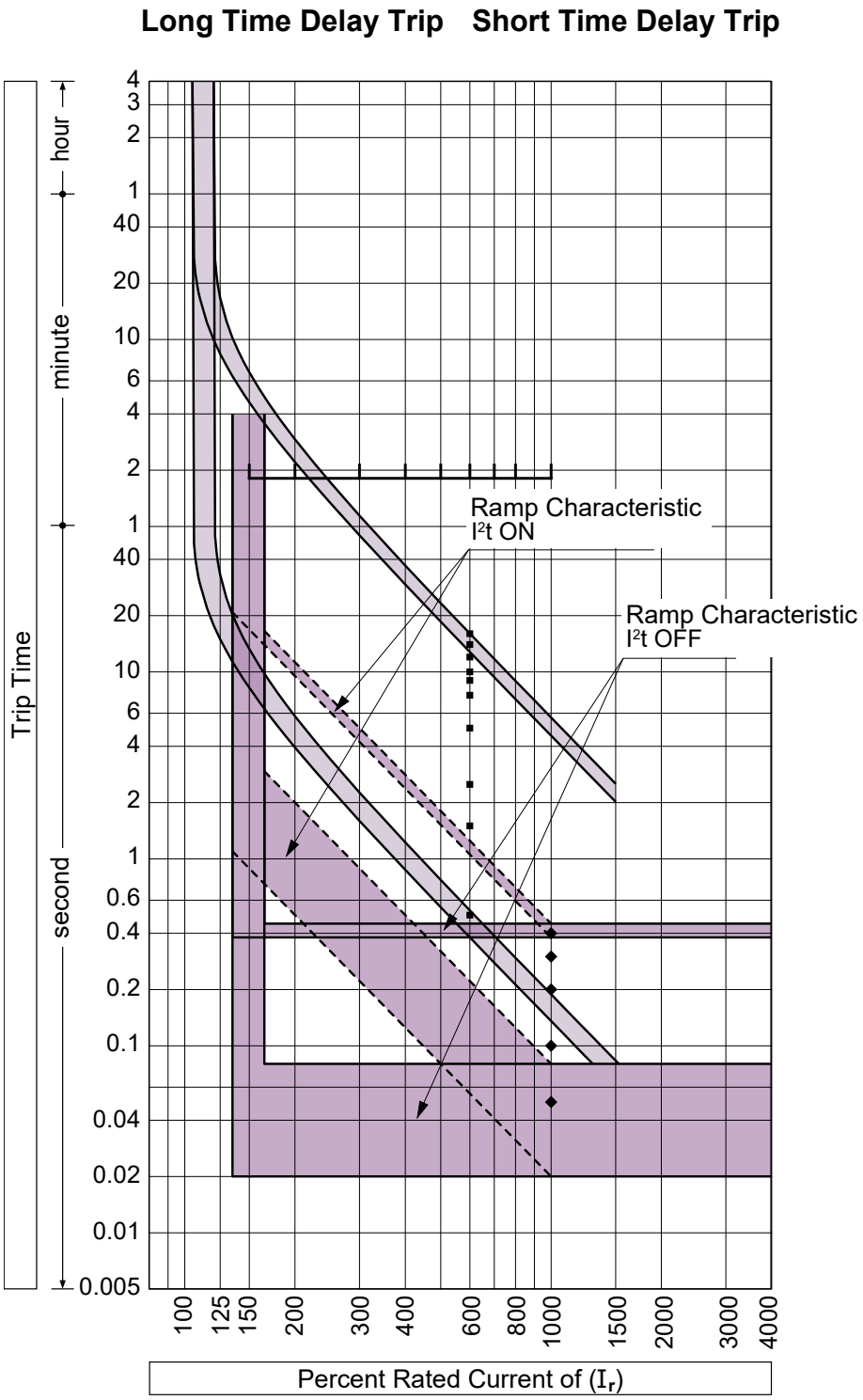
PTA Connector

The PTA connector socket is located on the side of the circuit breaker. This is used to connect an auxiliary circuit signaling the overload pre-alarm output contact. The threshold for this pre-alarm is set at 80% of Ir setting on LSI or LSIG versions and is adjustable on SMART MCCBs.



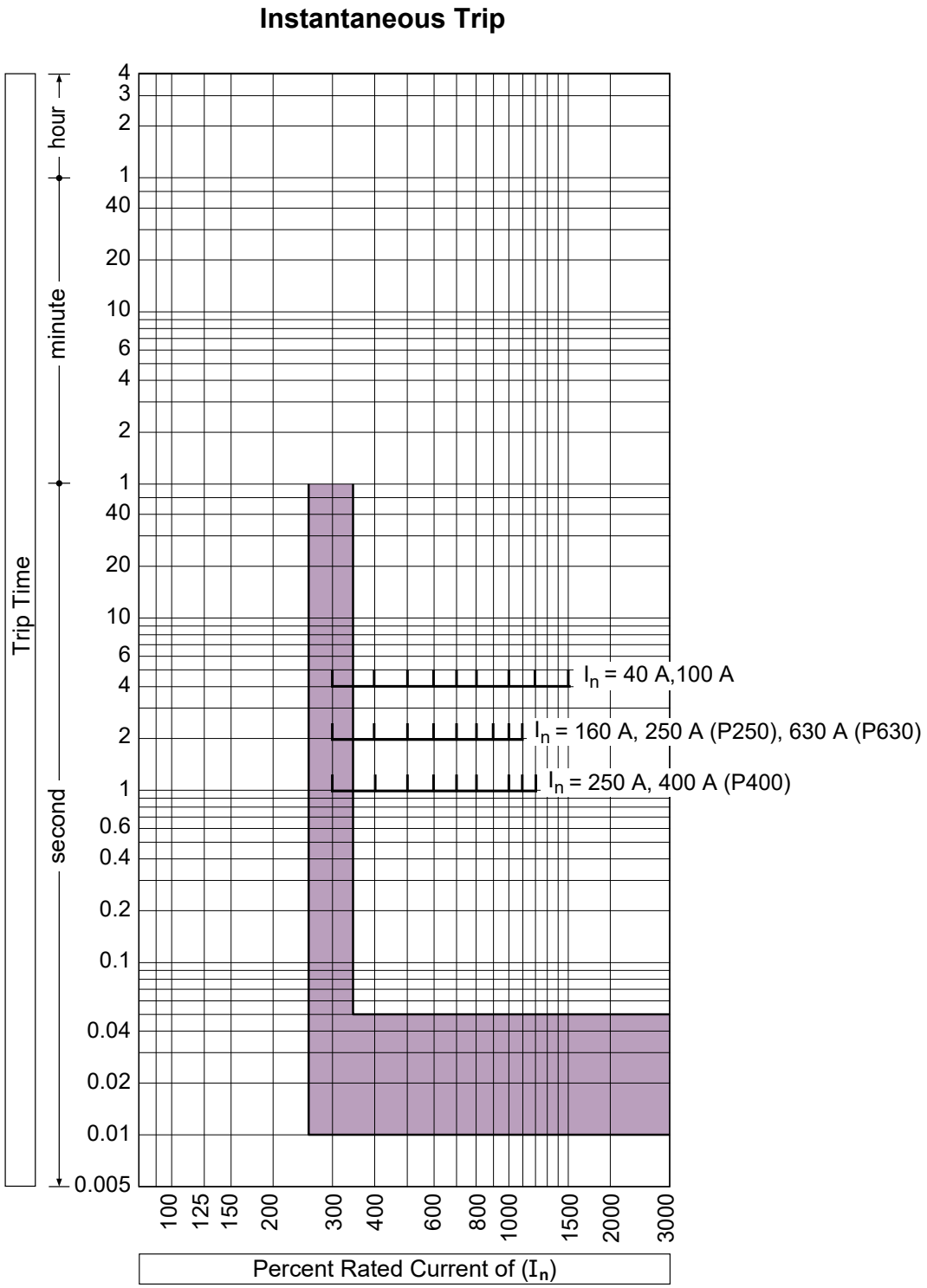
PTA and MIP Connection	LSI (BE)	LSIG (BE-G)	SMART (SE)
PTA : Pre-Alarm Connector Overload	✔	✔	✔
MIP : Socket	✔	✔	✔

Time Current Characteristics Curve, P160,250,400,630_BE/BEG Basic Electronic

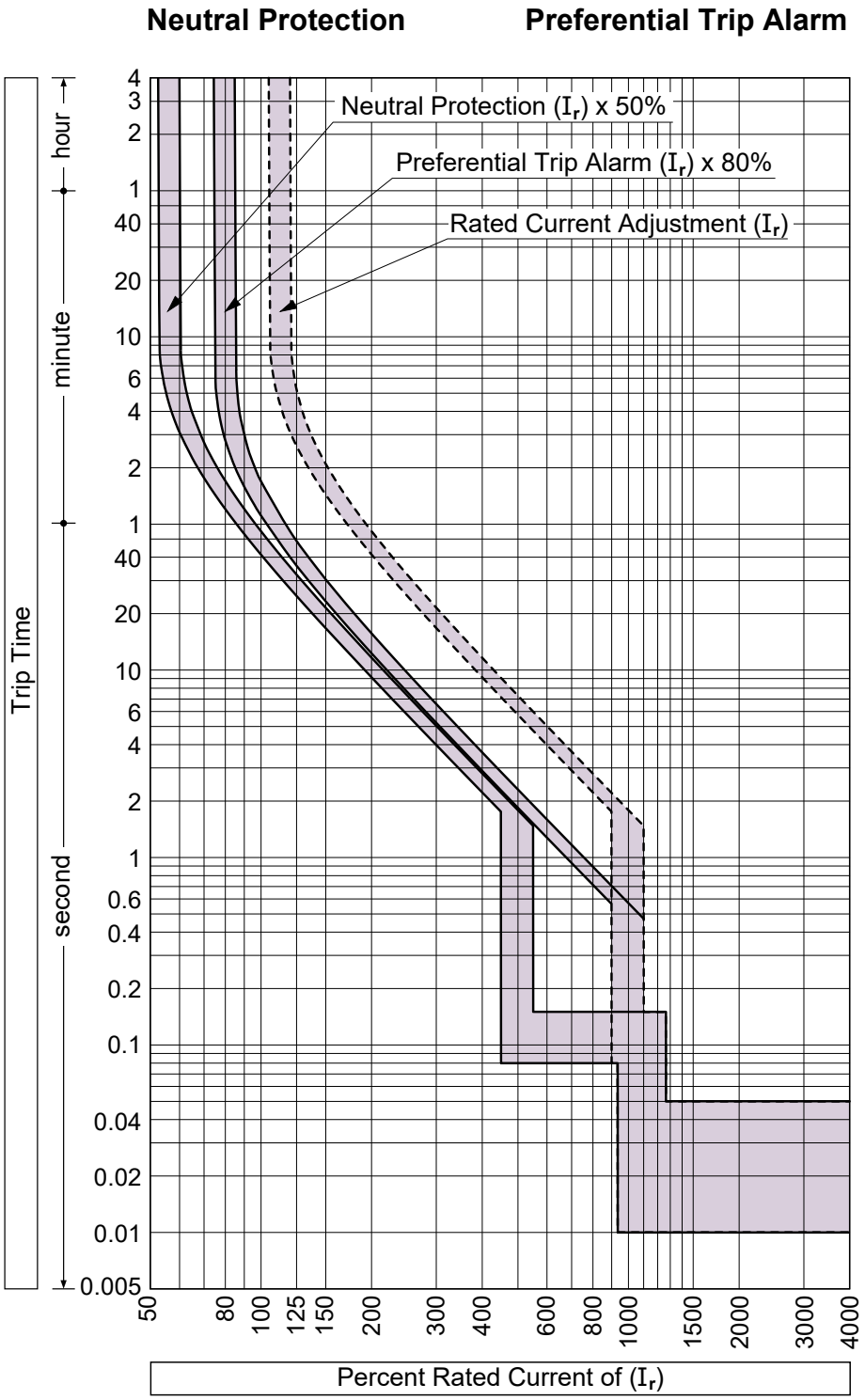


MCCBs

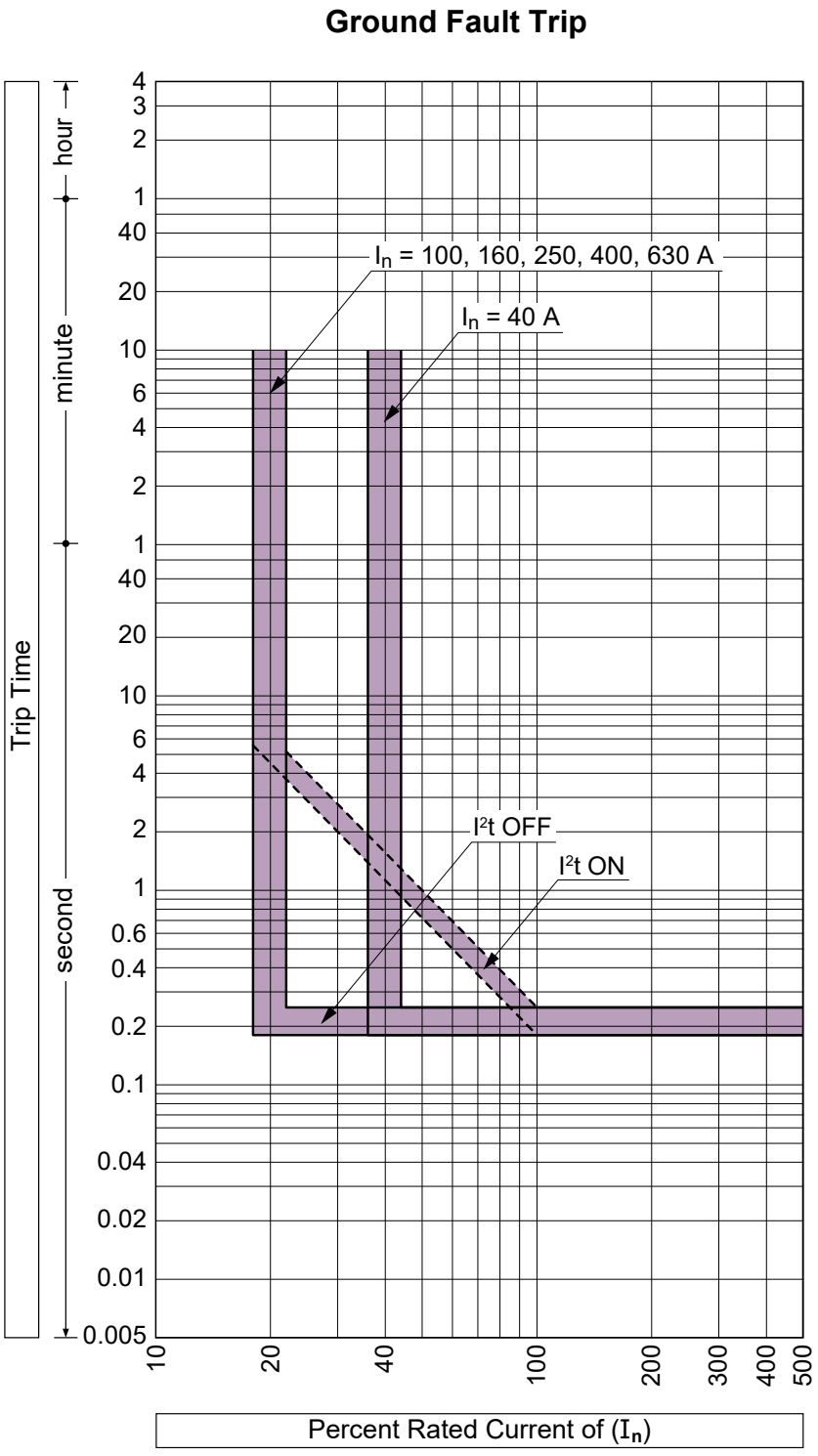
Time Current Characteristics Curve, P160,250,400,630_BE/BEG, Basic Electronic



Time Current Characteristics Curve, P160,250,400,630_BE/BEG, Basic Electronic



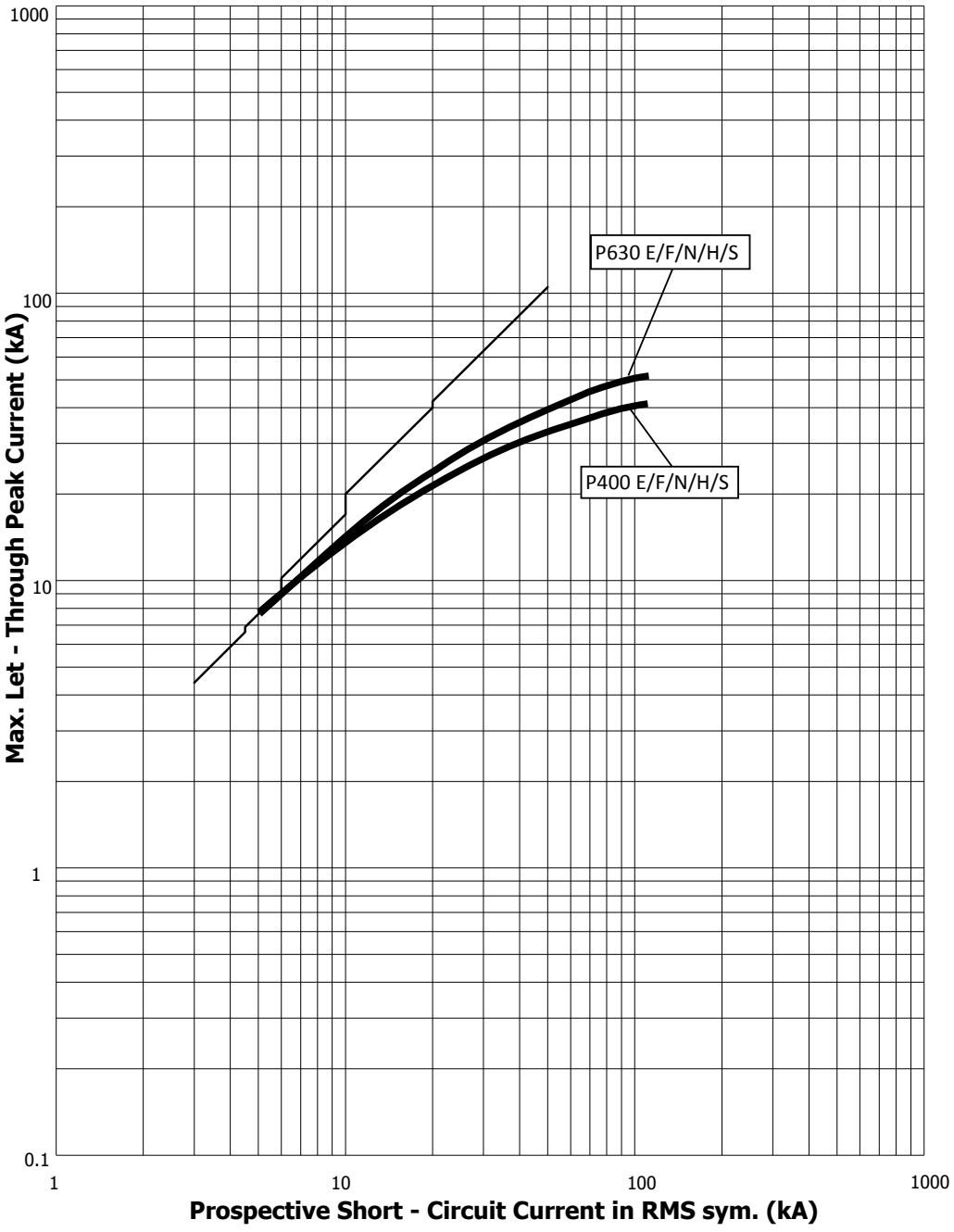
Time Current Characteristics Curve, P160,250,400,630_BEG, Basic Electronic



Let-Through Peak Current Curve, P400,630_BE/TM/SE, Thermal Magnetic / Electronic

P630 E/F/N/H/S
P400 E/F/N/H/S

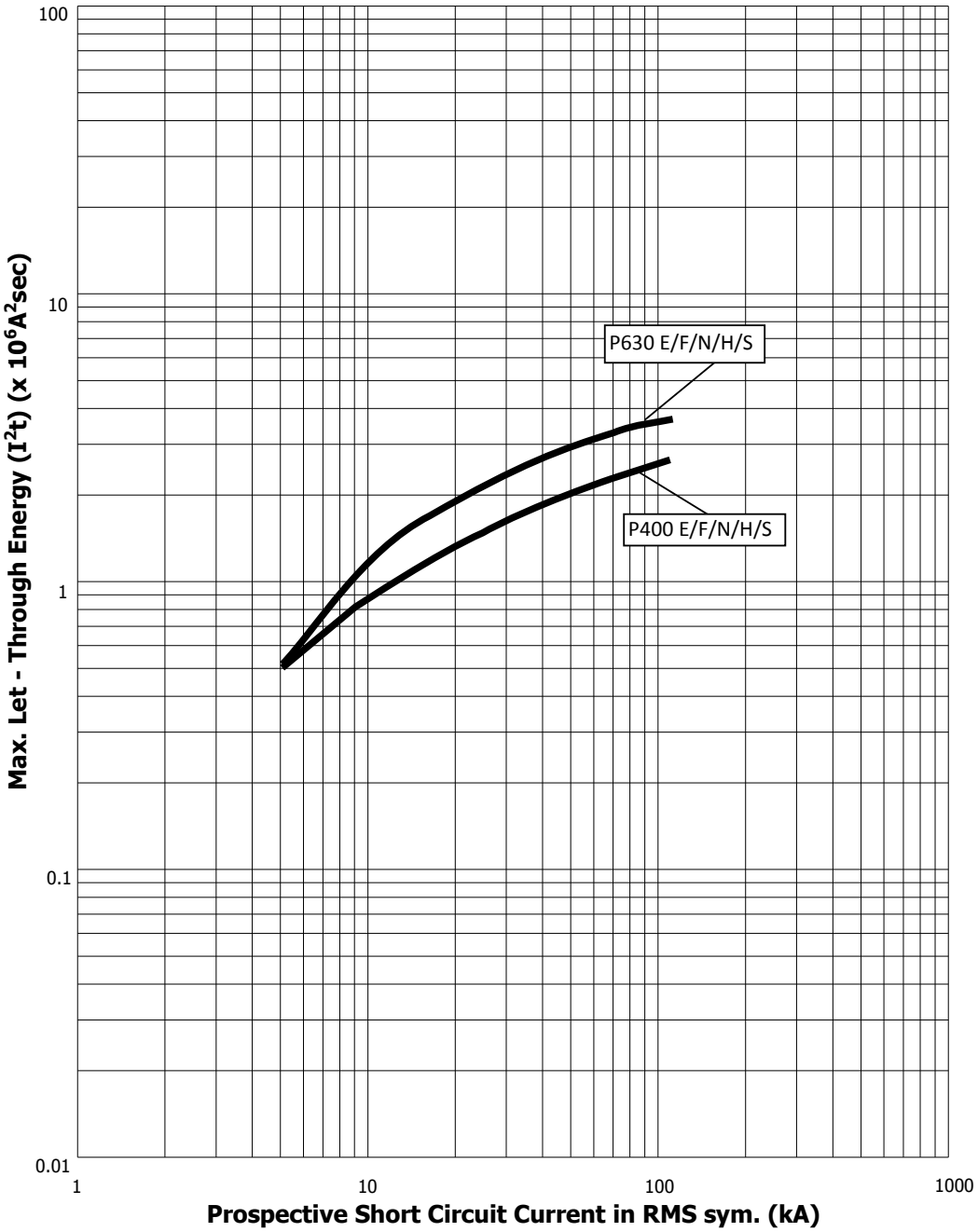
Rated Operational Voltage 380 / 415 V AC
Recovery Voltage 457 V AC --- 415 × 110 %



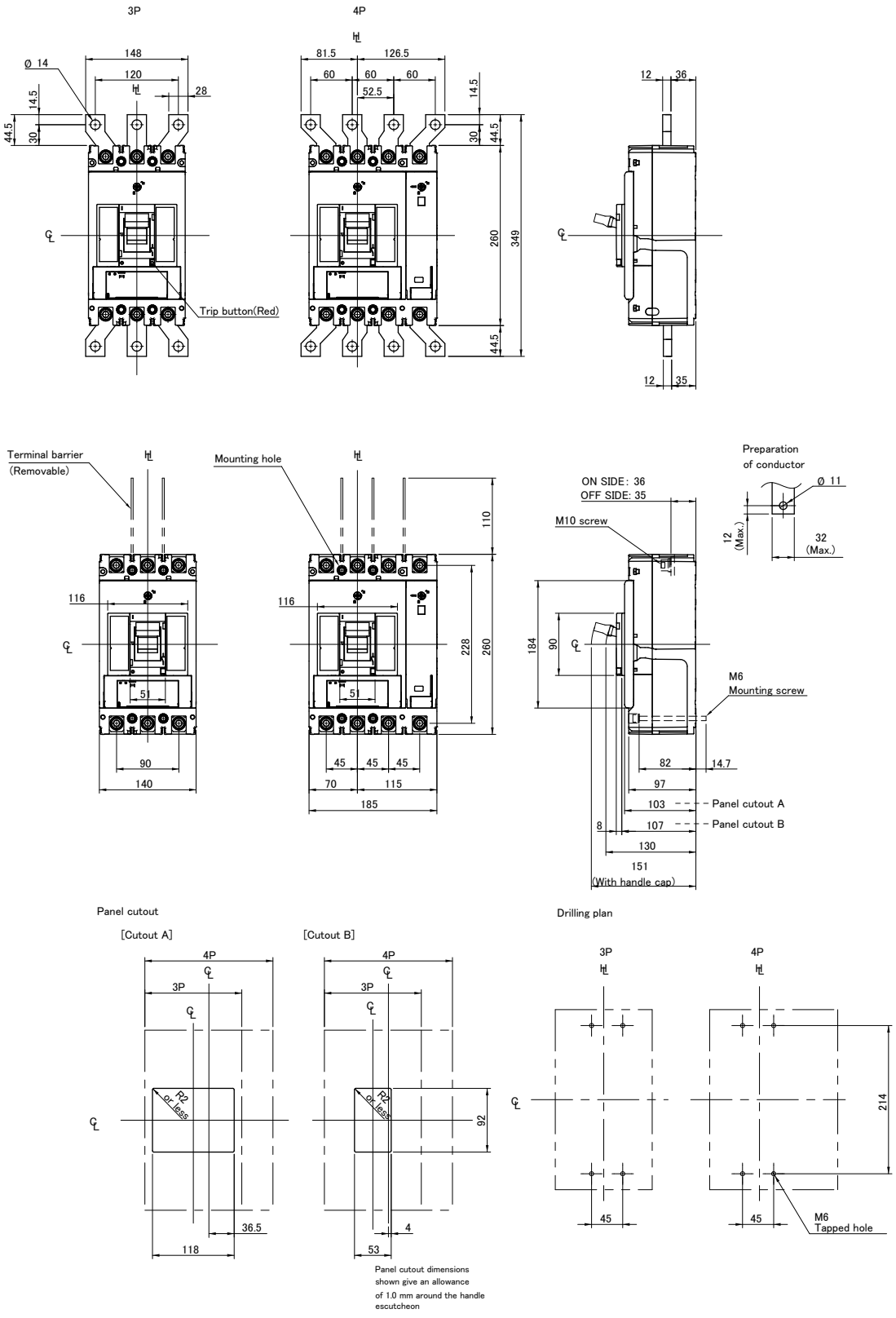
Let-Through Energy I²t Curve, P400,630_BE/TM/SE, Thermal Magnetic / Electronic

P630 E/F/N/H/S
P400 E/F/N/H/S

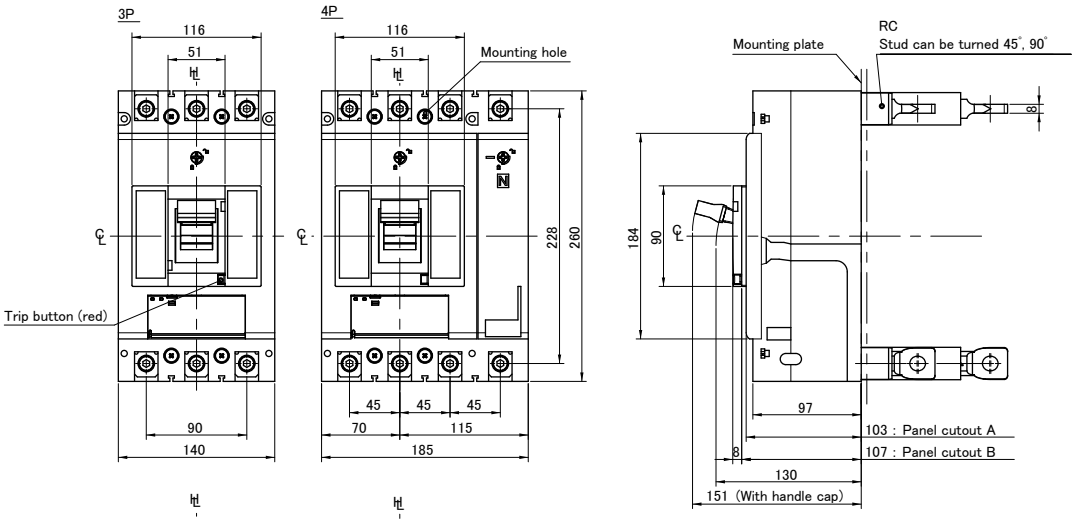
Rated Operational Voltage 380 / 415 V AC
Recovery Voltage 457 V AC --- 415 × 110 %

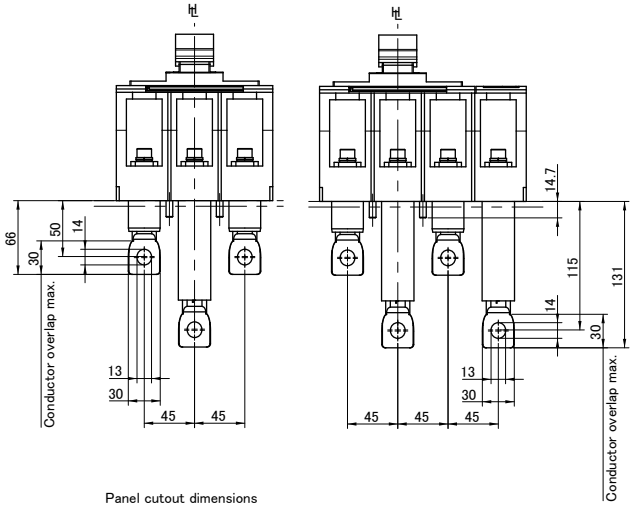


Dimensions P400,630_TM/BE/NN, Front Connect (mm)



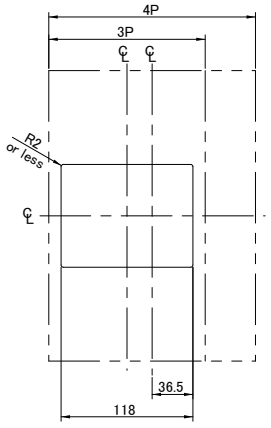
Dimensions P400,630_TM/BE/NN, Rear Connect (mm)



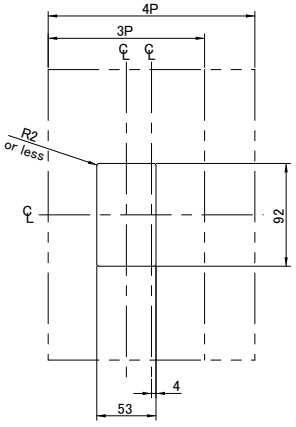


Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon

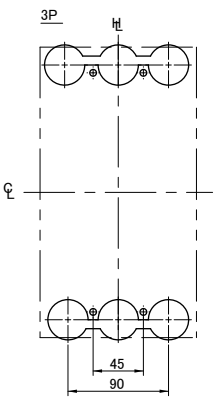
Panel cutout (front view) for Cutout A

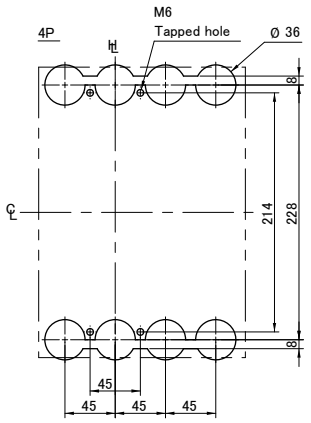


Panel cutout (front view) for Cutout B



Drilling plan (front view)





P630_SE

Smart Electronic MCCB with Energy Metering

- ✔ General purpose power distribution, energy metering and communications, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ 3 or 4 pole versions
- ✔ 260 mm (H), 103 mm (D), 45 mm pole centres
- ✔ Fault ratings; 36, 50, 70, 110 kA I_{CU} @ 415 V AC, 100% I_{CU} / I_{CS} on models up to 110 kA
- ✔ SMART trip unit: adjustable LSIG, communications, V, I, Energy measurement and control
- ✔ Built-in OLED high resolution display, vertical or horizontal viewing
- ✔ Std features; GF trip, NP trip (4P), PTA, ZSI, Temp / Trip / custom alarms
- ✔ Full range of accessories for application flexibility, including optional remote display
- ✔ Trip units; 630 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Smart Electronic LSIG
Trip Unit Rating	630 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @415 V AC	**F**	36 kA
	N	50 kA
	H	70 kA
	S	110 kA

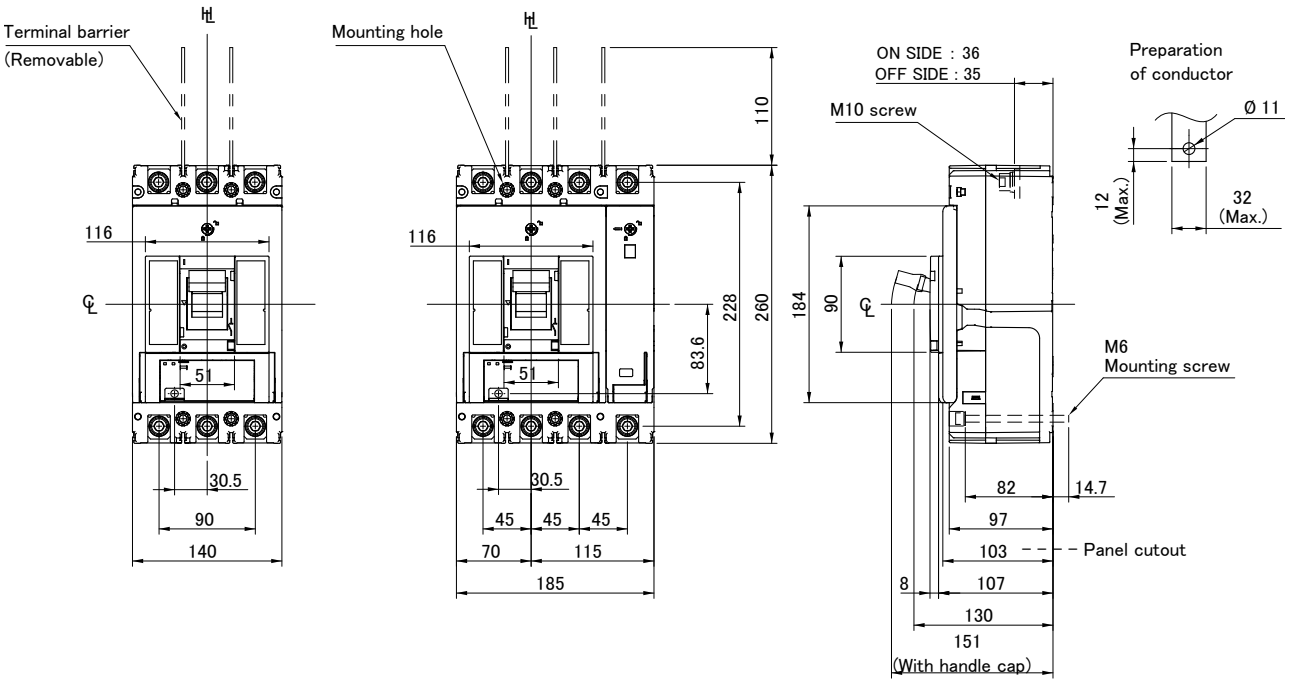
Voltage

Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option)

Quick Reference Dimensions – Front Connect



630 A Frame 3 Pole 36 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	36	3	P630F3630SE

630 A Frame 3 Pole 50 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	50	3	P630N3630SE

630 A Frame 3 Pole 70 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	70	3	P630H3630SE

630 A Frame 3 Pole 110 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	110	3	P630S3630SE

630 A Frame 4 Pole 36 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	36	4	P630F4630SE

630 A Frame 4 Pole 50 kA SE (LSI/G)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	50	4	P630N4630SE

630 A Frame 4 Pole 70 kA SE (LSI/G)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	70	4	P630H4630SE

630 A Frame 4 Pole 110 kA SE (LSI/G)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_i, INST adjustment	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	250 - 630	3 – 11 x In	110	4	P630S4630SE

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	630 AF
Trip Unit Rating	630 A

I_n, Rated Current	
A @ 30 °C	630
A @ 45 °C	630
A @ 50 °C	630

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)	
(A)	630
(W)	52

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 400 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option)
Terminal Type	Bolt-Terminal
Connection Torque	13.7 - 22.5 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	-
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		260 mm
Width	**3P**	140 mm
	4P	185 mm
Depth (less toggle)		103 mm
Depth (toggle included)		145 mm
Weight	**3P**	5 kg
	4P	6.6 kg
Electrical Life		4000 cycles
Mechanical Life		15000 cycles

Short-Circuit Capacity

			kA Rating			
			MCCB Type			
		Voltage	F	N	H	S
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	50	85	100	125
		380 / 400 V AC	36	50	70	110
		415 V AC	36	50	70	110
		440 V AC	30	45	65	100
		690 V AC	7	12	12	12
		1000 V AC	-	-	-	-
		1100 V AC	-	-	-	-
		125 V DC	-	-	-	-
		250 V DC	-	-	-	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	50	85	100	125
		380 / 400 V AC	36	50	70	110
		415 V AC	36	50	70	110
		440V AC	30	45	65	100
		690 V AC	7	12	12	12
		1000 V AC	-	-	-	-
		1100 V AC	-	-	-	-
		125 V DC	-	-	-	-
		250 V DC	-	-	-	-

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Smart Electronic LSIG
Rated Temperature	50 °C

Other Features

Pre-trip alarm (PTA)	Yes
ZSI Zone Selective Interlocking	Yes
ACIP Auxiliary Communications Port	Yes
CIP Communications Interface Port	Yes
MIP Maintenance Interface Port	Yes
OAC Optional Alarm Contact	Yes

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	Yes

MCCBs

Electronic Trip Unit - TemBreak PRO P_SE (LSIG) SMART MCCBs

General Features: TPOU SMART OCR

- Settings by facia dial, joystick and diplay menu
- OCR ready (status) LED
- PTA overload pre-warning LED (adjustable threshold)
- Overload Pick up alarm (> I_r)
- LSIG protection currents and delays adjustable
- GF standard on 3P and 4P MCCBs (3P+N cct use 4P)
- Neutral Pole protection on 4 pole MCCBs (N pole on RHS)
- OCR transparent cover accepts compression seal device

P400 / P630
SMART
MCCB

Below
SMART OCR facia, showing hinged sealable cover, and illuminated "Ready" LED.

P160 / P250
SMART MCCB

TBPro(Electronic-Trip_Unit)_dOPCH-S01

Protection Function	(NP and internal GF CT standard on 4 pole MCCBs)			
L - Long Time Delay trip	S - Short Time Delay trip	I - Instantaneous trip	GF – Ground Fault trip	NP – Neutral Pole Trip

Other Protection and Alarms	
Protection measurement functions	Zone Selective Interlocking, Volts, Amps, Energy, Power, Frequency, others – refer following pages
Tripping alarms, Trip alarms, Customisable and system alarms:	OCR temperature alarm, OCR alarm, Overload alarm, Pre-Trip Alarm, OCR status LED
Historical events:	Outputs & Alarms
Integrated outputs:	Output contact PTA, Output contact OAC

24 VDC supply power, and self powered SMART MCCBs

A SMART OCR needs to be powered via an external 24 V DC power supply to ensure continuous operation of the measurement functions, alarms, communications and setting configuration. However, these funtions can also operate without external power, making the MCCB self powered, if the following minimum requirements are met:

1. If the MCCB main contacts are CLOSED
2. If the minimum current flowing through the circuit breaker is as shown in the table below by OCR trip unit rating.
3. It is ultimately the users choice as to whether control power is to be continuously applied or if the MCCB is to be self powered once there is enough current flowing through the MCCB.

OCR Amperes	1 Powered Pole	2 Powered Poles	3 Powered Poles
40 A	N / A	> 14 A	> 10 A
100 A	> 25 A	> 15 A	> 15 A
160 A	> 32 A	> 16A	> 16 A
250 A	> 50 A	> 25 A	> 25 A
400 A	> 80 A	> 40 A	> 40 A
630 A	> 126 A	> 63 A	> 63 A

TBPro(Electronic-Trip_Unit)_dOPCH-S02

MCCBs

P_SE SMART OCR (TPOU Type)

I_n (A)	Poles	MCCB Type	Protection functions 2)				Alarms			Display		Options		
			LSI 4)	GF 11)	NP 11)	ZSI 5)	PTA 2)	OAC 2)	Display	Measurement and display	Historical data	TPCM	TPED	TPSS
OCR Trip Unit Rating	3 or 4 pole MCCBs	SMART OCR	Long time Short time Instantaneous	Ground Fault (LSIG)	Neutral Pole Protection	Zone Selective Interlocking	Pre Trip Alarm	Alarm output contact 6)	Integral OLED display 3)	7) Volts, Amps, Power P, Power E, PF, F, demand D, THD	Trip and alarm history	Modbus comms module 8)	External display 9)	SMART status auxiliary 10)
40 A 100 A 160 A	3 1)	P160_SE	✔	✔	-	✔	✔	✔	✔	✔	✔	O	O	O
	4	P160_SE	✔	✔	✔	✔	✔	✔	✔	✔	✔	O	O	O
40 A 100 A 160 A 250 A	3 1)	P250_SE	✔	✔	-	✔	✔	✔	✔	✔	✔	O	O	O
	4	P250_SE	✔	✔	✔	✔	✔	✔	✔	✔	✔	O	O	O
250 A 400 A	3 1)	P400_SE	✔	✔	-	✔	✔	✔	✔	✔	✔	O	O	O
	4	P400_SE	✔	✔	✔	✔	✔	✔	✔	✔	✔	O	O	O
630 A	3 1)	P630_SE	✔	✔	-	✔	✔	✔	✔	✔	✔	O	O	O
	4	P630_SE	✔	✔	✔	✔	✔	✔	✔	✔	✔	O	O	O

✔ = Standard supply O = Options - = Not available

Notes

1) 3 pole SMART MCCBs cannot take data from an external neutral in a 3 phase 4 wire system. A 4 pole Smart MCCB is needed for neutral pole referenced data. Neutral pole protection is not available with 3 pole MCCBs.
2) No control power required.
3) 24 VDC control power is supplied to the OCR using the optional cable TPPHQTT140H.
   - If the MCCB is switched to OFF, the supply can be disconnected.
   - If the MCCB has enough current flowing to enable the MCCB to become "self powered" the supply can be disconnected (self powered – refer previous pages).
   - If a communications module TPCM is being supplied with 24 VDC control power, and if the module is connected to the MCCB, there is no need to supply additional control power to the OCR, as the TPCM will supply the SMART MCCB.
4) Hot and cold start characteristic selection available via menu.
5) Zone Selective Interlock input / output cable connector type is TPPHQTT150H. P160_SE SMART MCCBs have 1 output connection only.
6) OAC (Optional Alarm Contact): by using the connection cable TPPHQTT130H, the following selection of output data can be output.
7) Contact output data can be output from only 1 of the items below (user to select)
   - System operation (abnormal operation)
   - OCR abnormal temperature alarm
   - Pre Trip Alarm
   - Any one of 12 custom alarms
8) The 24 VDC control power supplied to the TPCM module is also supplied to the MCCB OCR.
9) Supply 24 VDC control power to the OCR using the optional cable TPPHQTT140H.
   - If using the TPED external display, the optional connector TPPHQTT330 ~ 370H is to be connected between the TPED and the MCCB OCR.
   - If the TPCM comms module is being used, and is supplied with its own 24 VDC control power, there is no need to 24 VDC supply power to the MCCB OCR.
10) The ON / OFF status auxiliary and alarm switch information is communicated into the SMART OCR, and in turn communicated to the TPCM communications module for further communication to other external devices to provide real MCCB main contact status information.
11) Ground fault and Neutral Pole protection MCCBs include an internal 4th pole CT. There are no external CTs for 3 pole MCCBs available.

OCR Control Power Supply

Supply Voltage Tolerance	24 V DC ± 30 %
Consumption	60 mA

OAC Contact Details

Contact Configuration	N / O single contact
Contact Rating	AC / DC, 24 V, 100 mA

P_SE SMART OCR (TPOU Type)

Measurement or Data Type Displayed on Screen		Unit	EC 61557-12 Measurement Accuracy Class	Internal display ✔ = Displayed ✕ = Not displayed	External Display ✔ = Displayed ✕ = Not displayed	Modbus ✔ = Available ✕ = Not available
Current	Instantaneous value per phase and neutral	A	1	✔	✔	✔
	Maximum instantaneous current per phase & neutral	A	1	✔	✔	✔
	Instantaneous rms Ground Fault current	A	1	✔	✔	✔
Voltage	Present value of each line voltage	V	0.5	✔	✔	✔
	Present maximum value	V	0.5	✔	✔	✔
	Present phase voltage value for each phase	V	0.5	✔	✔	✔
Frequency		Hz	0.2	✔	✔	✔
Electrical Power	Active power P	kW	2	✔	✔	✔
	Reactive power Q	kVAR	2	✔	✔	✔
	Apparent power S	kVA	2	✔	✔	✔
Electrical Energy	Active power	kWh	2	✔	✔	✔
	Reactive power	kVARh	2	✔	✔	✔
	Apparent power	kVAh	2	✔	✔	✔
Demand	Power	-	2	✕	✔	✔
	Current	-	1	✕	✔	✔
Power Factor	Present value	Cos Φ	2	✔	✔	✔
Total Harmonic Distortion	Current	THD I	2	✕	✔	✔
	Voltage	THD U	2	✕	✔	✔
Trip History	Fault current value	-	-	✔	✔	✔
	Trip cause and time (for LT, ST, I and GF)	-	-	✔	✔	✔
	Fault current Phase (for LT, ST and I)	-	-	✔	✔	✔
Alarm History	Description and time	-	-	✔	✔	✔

Note
Electric energy, trip history and alarm history are stored in a non volatile memory during a trip operation.

TBPro(P_SE SMART OCR (TPOU Type))_dOPCH_S02

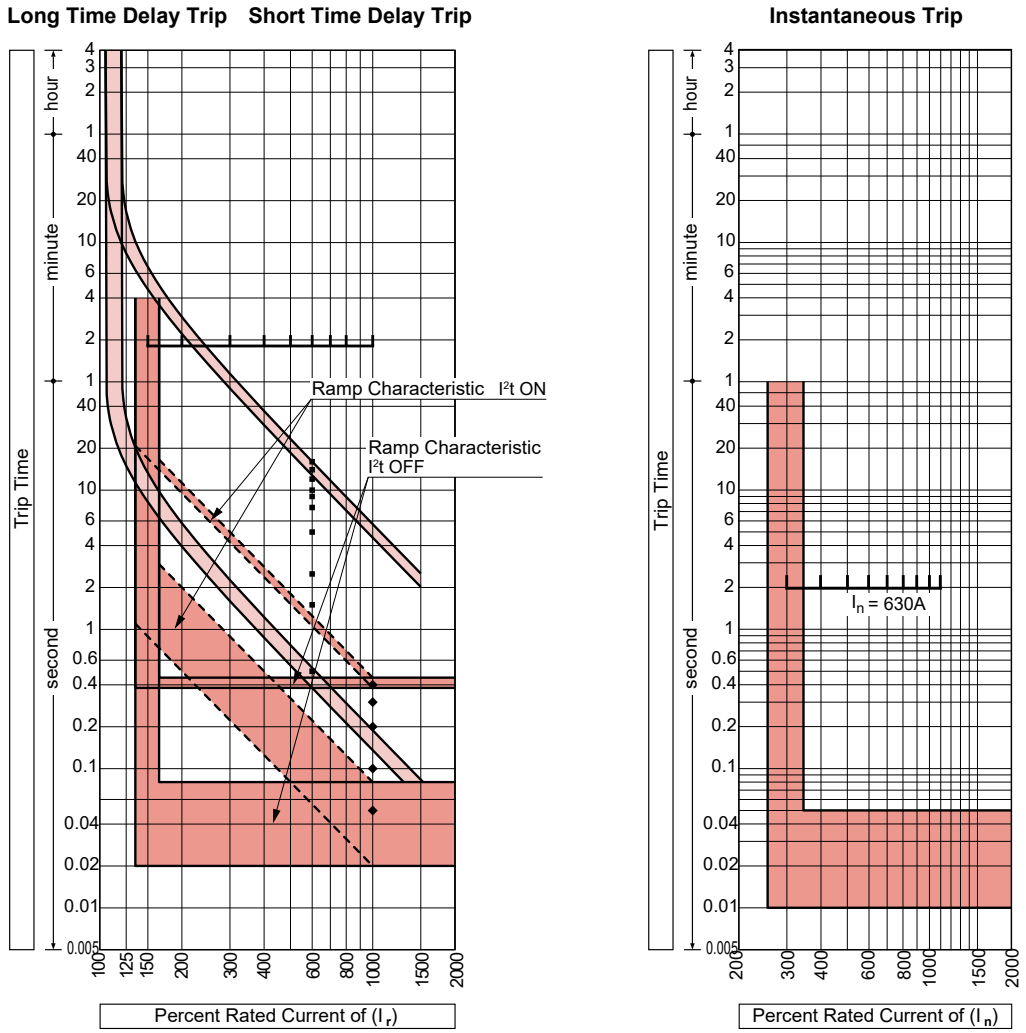
Description of SMART Communications System

Connection lead connection locations for SMART MCCB Accessories

Smart MCCB Abbreviations

ACP	**Auxiliary Communications Port:** Connection of auxiliary connector AX / AL SMART
AL	**Alarm:** auxiliary contact fault signal
AX	**Auxiliary:** auxiliary contact open / closed
CIP	**Communication Interface Port:** mating connector of the remote display
MIP	**Maintenance Interface Port:** To connect to the OCR checker
OAC	**Optional Alarm Contact:** Connection connector optional alarm output contact
PTA	**Pre-Trip Alarm:** prealarm overload and overload prealarm output contact of the connector
OLED	Organic Light-Emitting Diode (OLED)
ZSI	Zone Selective Interlocking (zone selectivity)

Time Current Characteristics Curve, P630, Smart Electronic

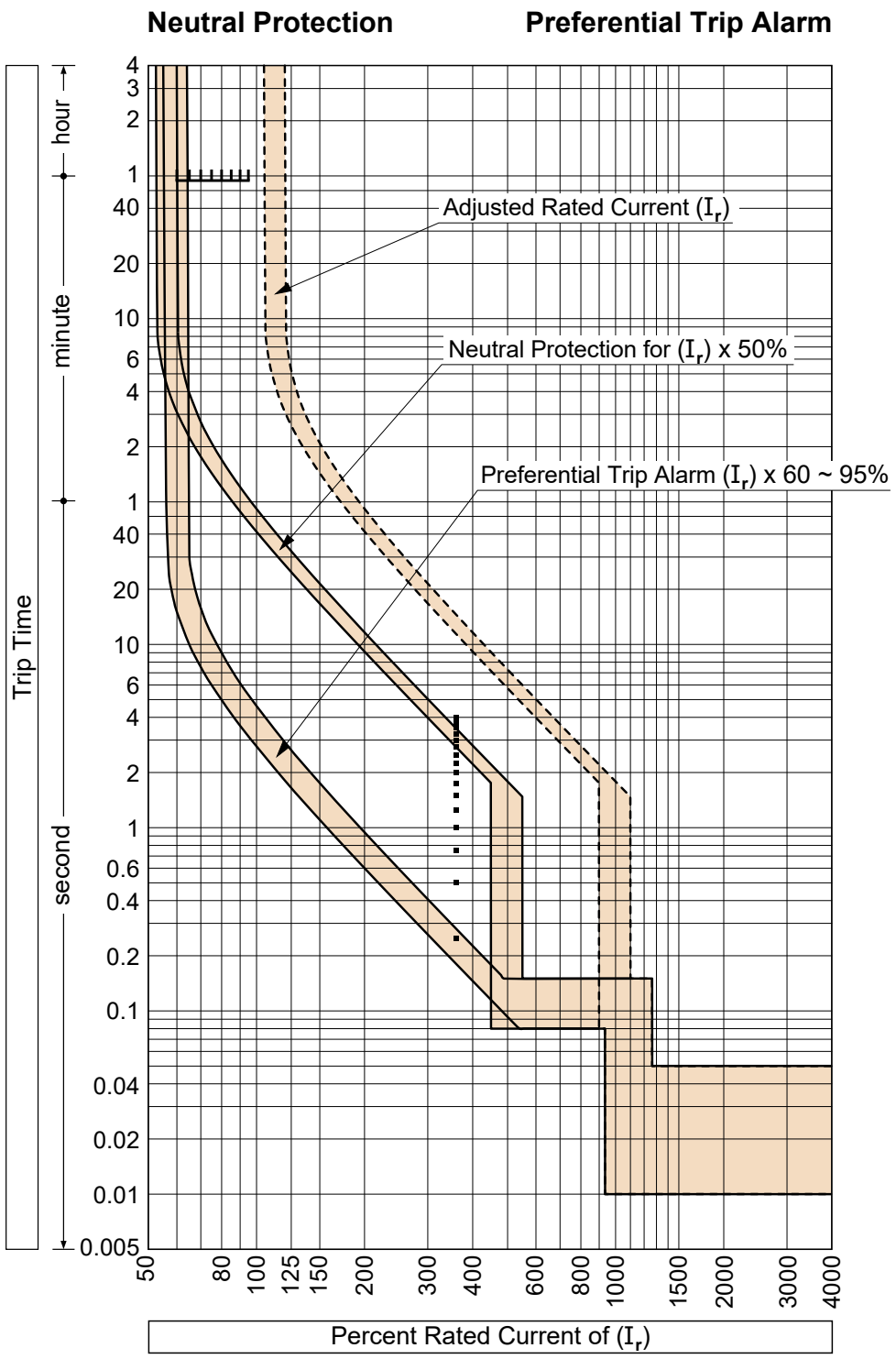


P630_LTD-OPCH-S01

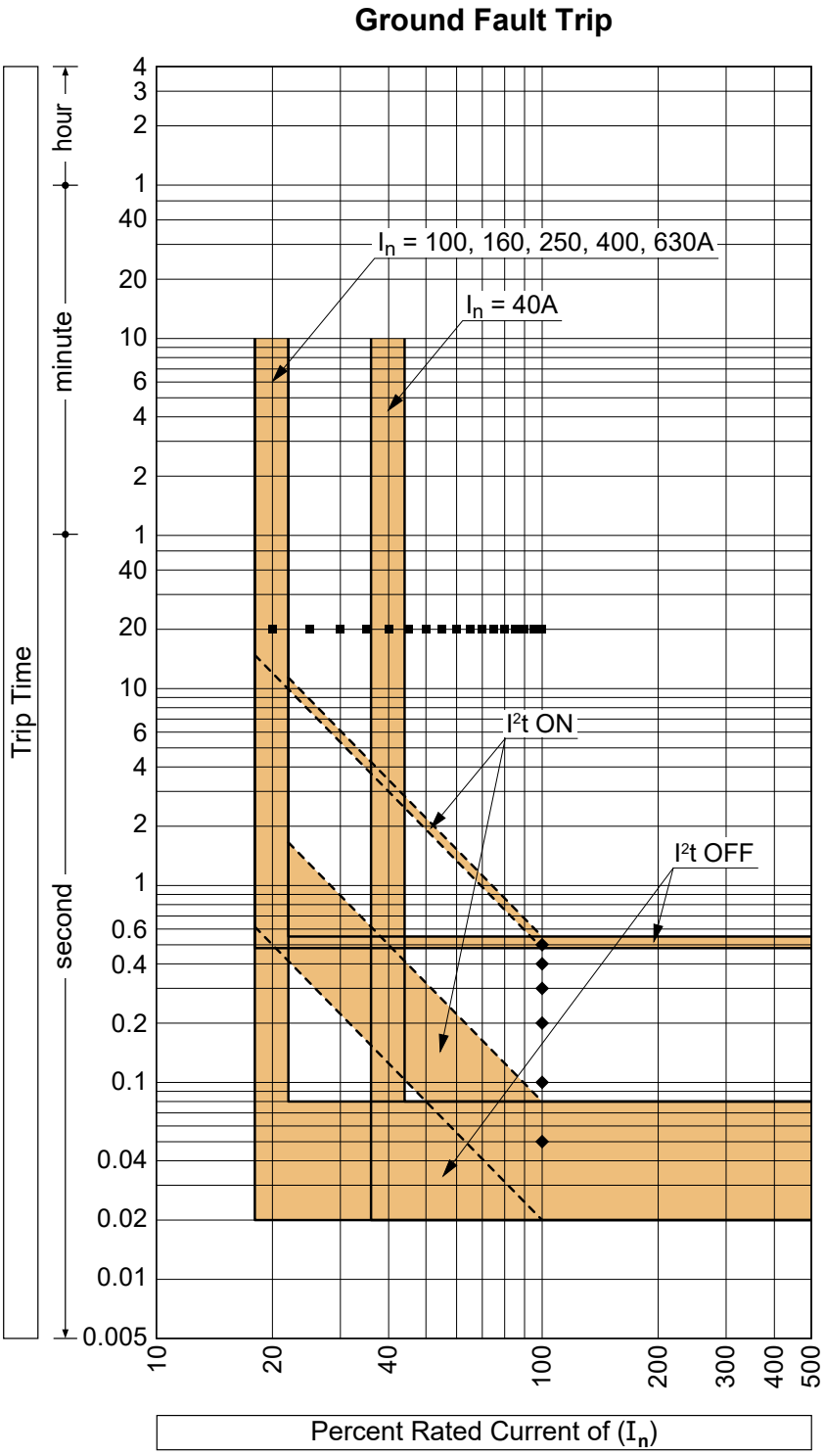
P630_SE SMART OCR detail (TPOP OCR) 30 A

General features – standard	LSIG OCR with adjustable Long time, short time, instantaneous and Ground Fault, PTA, Neutral Pole protection (4P only), Hot/Cold selectable, Zone interlock, Temperature/Trip/Custom Alarms (alarms via LED & comms)
OCR Adjustment settings	
Long Time Delay (LTD)	I_{R1} setting 40 % - 100 % of I_N (base currrent) via 8 increment settings. I_{R2} fine adjust in 1 amp increments t_R setting 0.5 – 16 seconds in 10 increments
Short Time Delay (STD)	I_{SD} setting 1.5 – 10 (x I_R) in 0.5 increments or OFF setting. tSD setting 50 – 400 mS in 5 increments or I^2t OFF / ON
Instantaneous (INST)	I_i setting: 3 – 11 x I_N in 0.5 step increments
Ground Fault (GF)	I_G adjustable: 20 % to 100 % of I_N in 5 steps t_G adjustable: 50 ms – 500 ms in 5 steps or OFF / ON using I_{SD} I^2t setting. 4 pole GF MCCBs have an unswitched neutral pole, and include internal neutral CT.
Neutral Pole Protection (N)	Applies to 4P MCCBs. N (I_N) settings are: 50 %, 100 % (x I_R) or OFF. t_N = short time settings t_R and I_{SD}.
Pre Trip Alarm (PTA)	I_P = OFF or 60 % to 95 % (x I_R) in 5 steps, t_P = 5 % to 80 % in 5 % steps (x t_R)
Zone Interlocking	P630_SE can be used with AR ACBs upstream, and P400_SE, P250_SE, P160_SE MCCBs downstream

Time Current Characteristics Curve, P160,250,400,630_SE, Smart Electronic



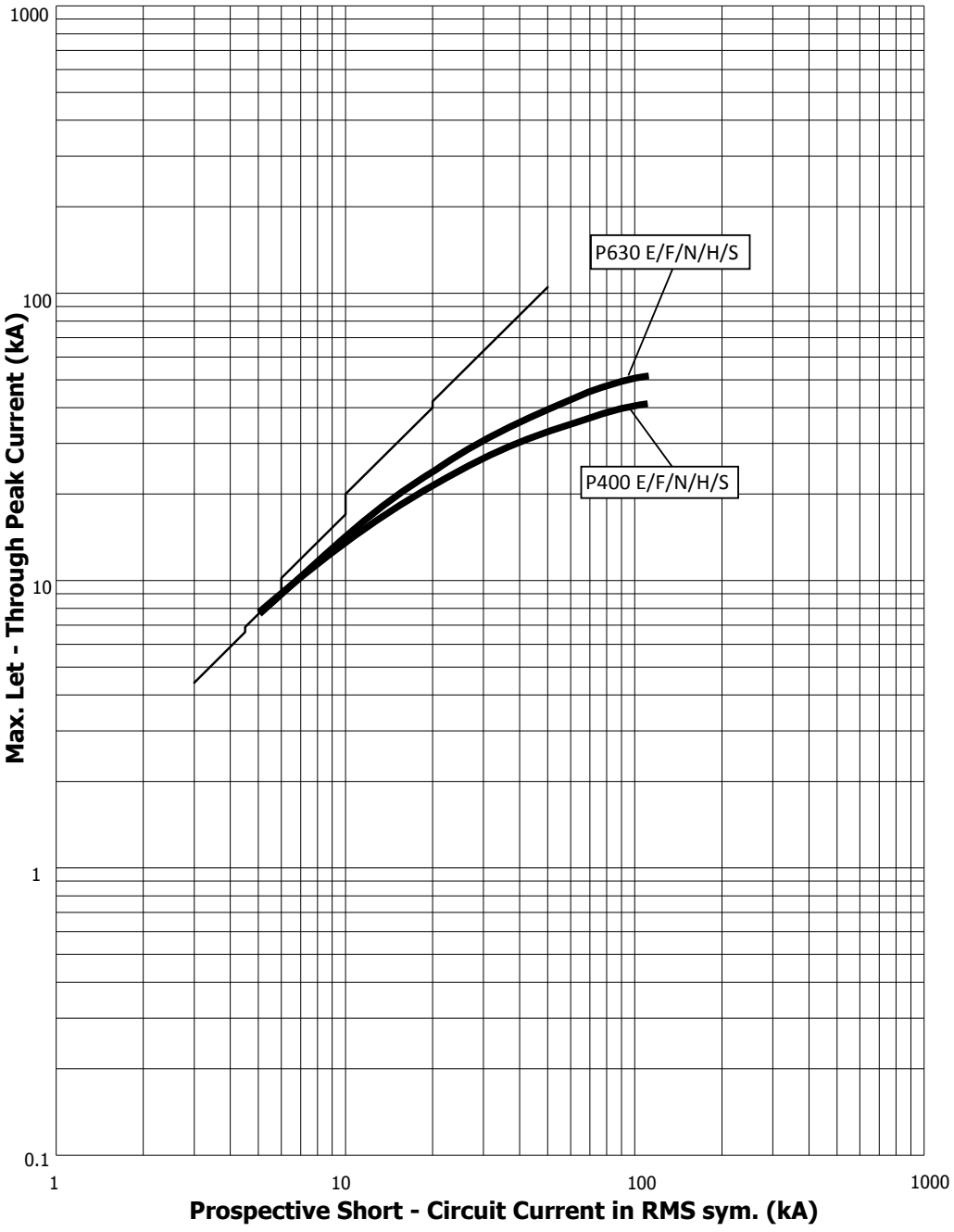
Time Current Characteristics Curve, P160,250,400,630_SE, Smart Electronic



Let-Through Peak Current Curve, P400,630_BE/TM/SE, Thermal Magnetic / Electronic

P630 E/F/N/H/S
P400 E/F/N/H/S

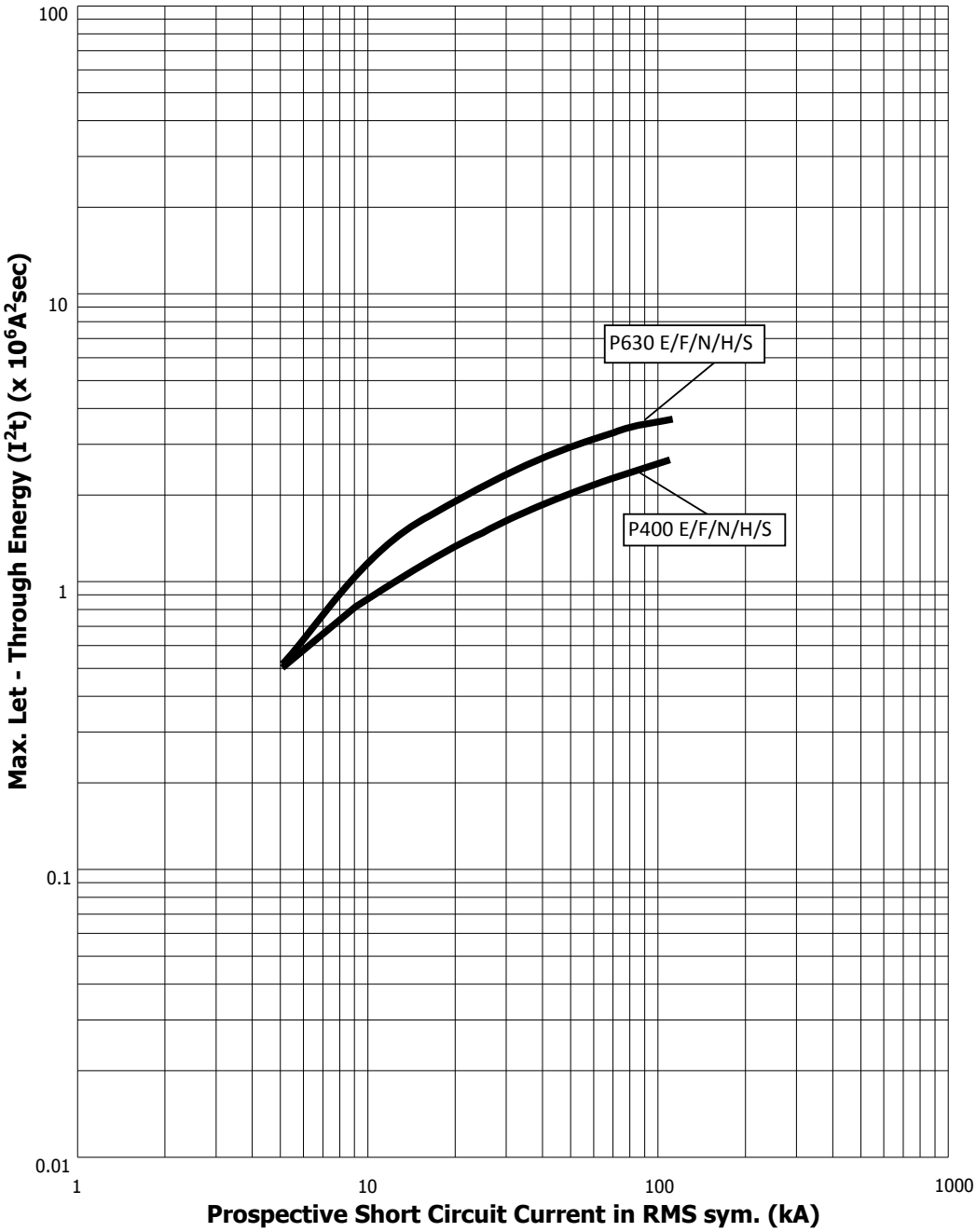
Rated Operational Voltage 380 / 415 V AC
Recovery Voltage 457 V AC --- 415 × 110 %



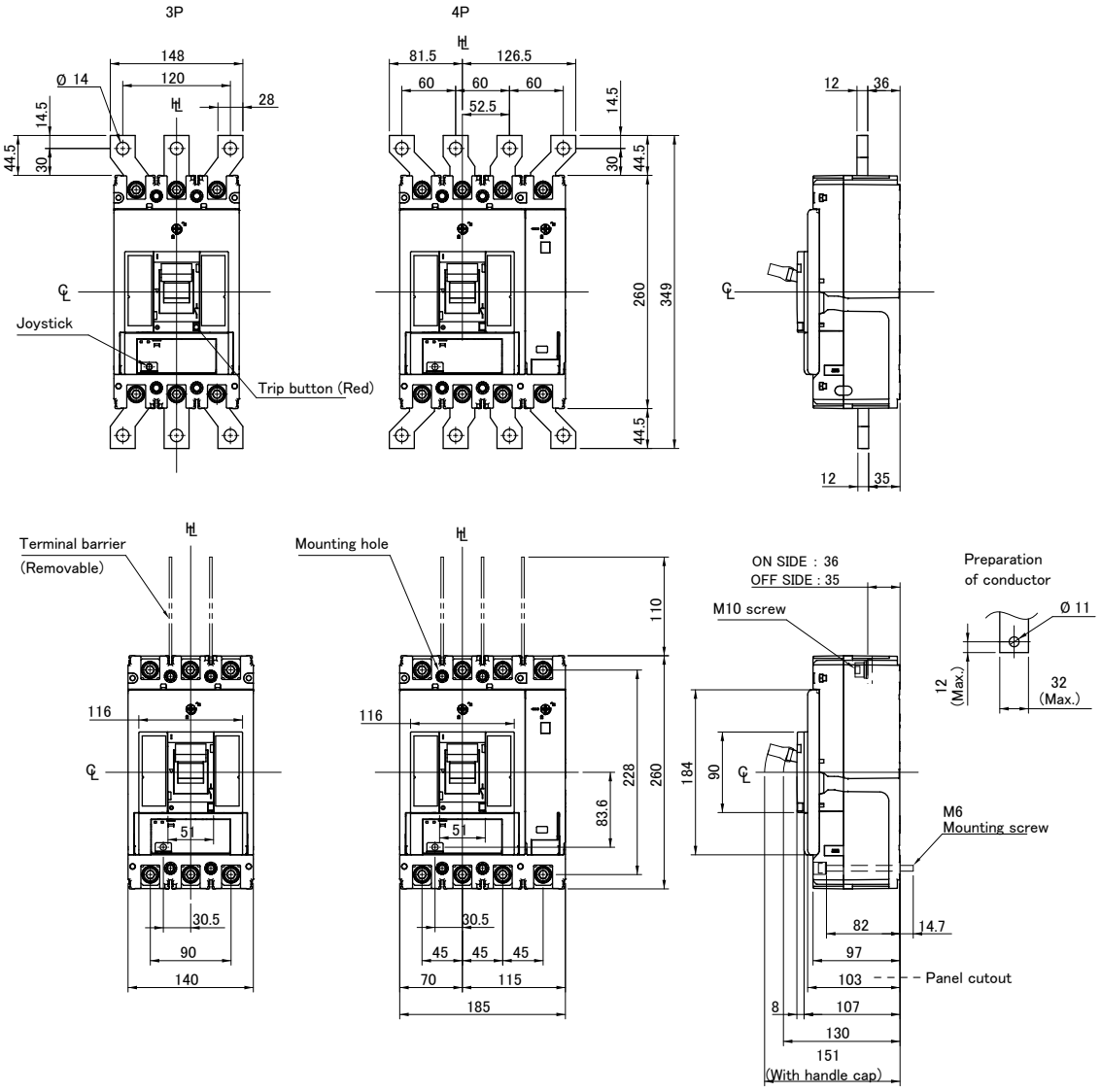
Let-Through Energy I²t Curve, P400,630_BE/TM/SE, Thermal Magnetic / Electronic

P630 E/F/N/H/S
P400 E/F/N/H/S

Rated Operational Voltage 380 / 415 V AC
Recovery Voltage 457 V AC --- 415 × 110 %

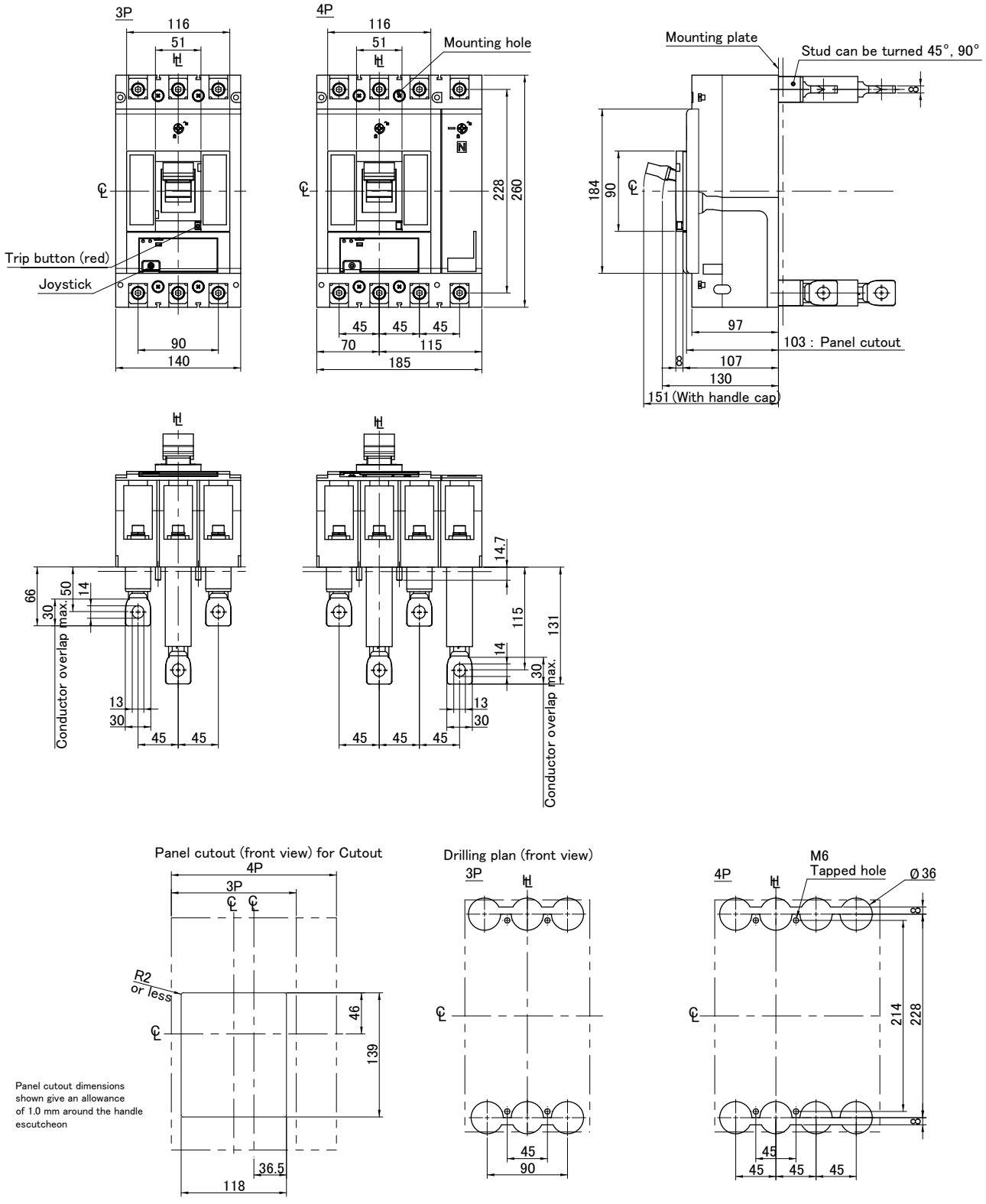


Dimensions P400,630_TM/BE/SE/NN, Front Connect (mm)



Panel cutout dimensions shown give an allowance of 1.0 mm around the handle escutcheon

Dimensions P400,630_TM/BE/SE/NN, Rear Connected (mm)



Panel cutout dimensions shown give an allowance of 1.0 mm around the handle escutcheon

P630_NN

Non-Auto Switch Disconnector

- ✔ Non-Auto switch disconnector for power distribution
- ✔ AC23 and DC22 ratings for motor starting use
- ✔ No overcurrent protection (isolator only)
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-3, IEC 60947-3 and CE
- ✔ Panel mount standard, other connection options
- ✔ Wide range of accessories for application flexibility, including OFF padlock device
- ✔ Accepts standard MCCB internal and external accessories
- ✔ 3 or 4 pole versions
- ✔ 260 mm (H), 103 mm (D), 45 mm pole centres
- ✔ I_{CW}= 7.6 kA for 1.0 sec: Rated short time withstand rating
- ✔ I_{CM}= 13 kA: Rated short circuit making capacity

CE DEKRA On the safe side.

General

Switch Type	Non Auto Switch Disconnector
Number of Poles	3 or 4
Switching Poles	3P or 3P + N

Ratings

Nominal Current	630 A @50°C
Motor Starting	AC23 motor starting DC22 motor starting
Icw Rated	Short time withstand
Icm Rated	Ampere making capacity

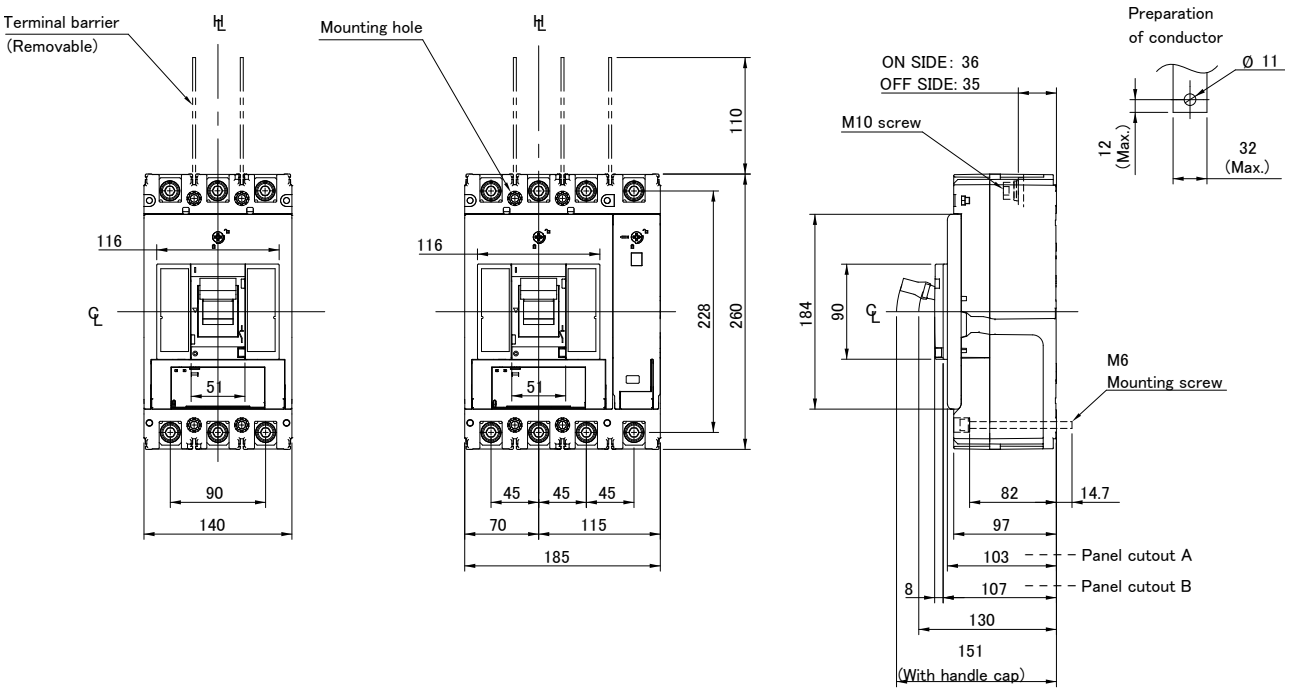
Voltage

Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Accessories and Connections

Options	Front or rear connect Terminal connection options Accepts standard MCCB accessories

Quick Reference Dimensions – Front Connect



630 A Frame 3 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Catalogue No.
630	3	P630D3630NN

630 A Frame 4 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Catalogue No.
630	4	P630D4630NN

Ratings

Component Type	Non Auto Switch Disconnector
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	630 AF

I_n, Rated Current	
A @ 30 °C	630
A @ 45 °C	630
A @ 50 °C	630

U_e Rated operational voltage AC maximum	690 V AC
U_e Rated operational voltage DC maximum	250 DC
U_i, Rated Insulation Voltage	800 V (rms)
Motor Starting Utilisation Category	AC 23, DC 22
U_{imp}, Impulse Withstand Voltage	8 kV
I_{cw}, Rated Short Circuit Withstand Current 400/690V	6 kA / 1 Sec
Rated Frequency	50 / 60 Hz
Pollution Degree	3
AC Power loss per pole at full rated current	52 W @ 630 A
Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-3 AS/NZS 60947-3
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 %RH

Connection

Cable Cross Section	35 - 400 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option) Plug-in PM (Option)
Terminal Type	Bolt-Terminal
Connection Torque	13.7 - 22.5 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	‘
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		260 mm
Width	**3P**	140 mm
	4P	185 mm
Depth (less toggle)		103 mm
Depth (toggle included)		145 mm
Weight	**3P**	5 kg
	4P	6.6 kg
Electrical Life		4000 cycles
Mechanical Life		20000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**D**
Based On AS/NZS 60947.2 and IEC 60947-2	**I_{cm} (Short Circuit Making Capacity)**	690 V AC	13
	I_{cw} (Short Time Withstand)	1.0 Seconds	7.6

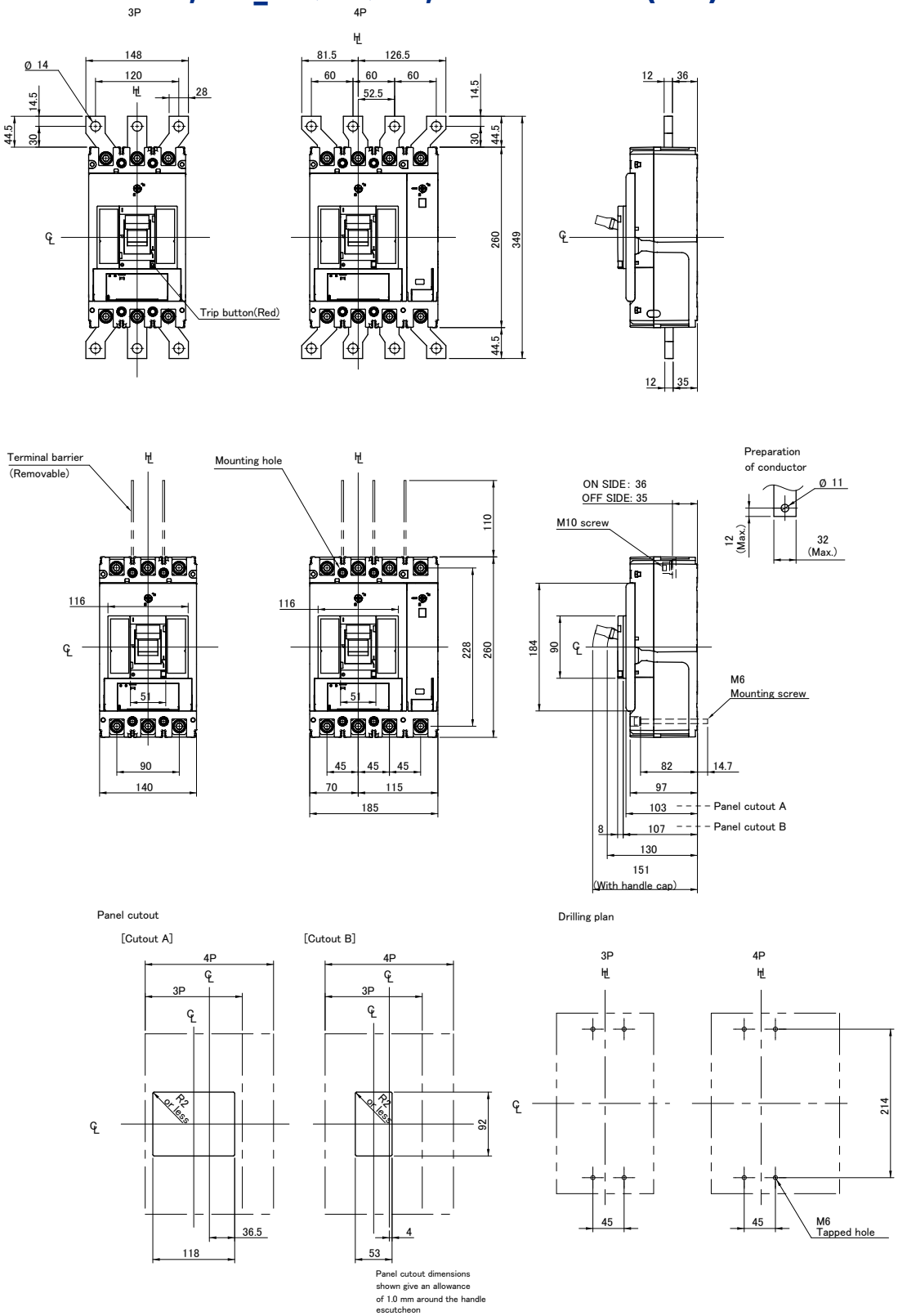
Trip Unit

Over Current Protection Function	No
Trip Unit Protection Type	Non-auto Switch Disconnector
Rated Temperature	50 °C

General Accessories

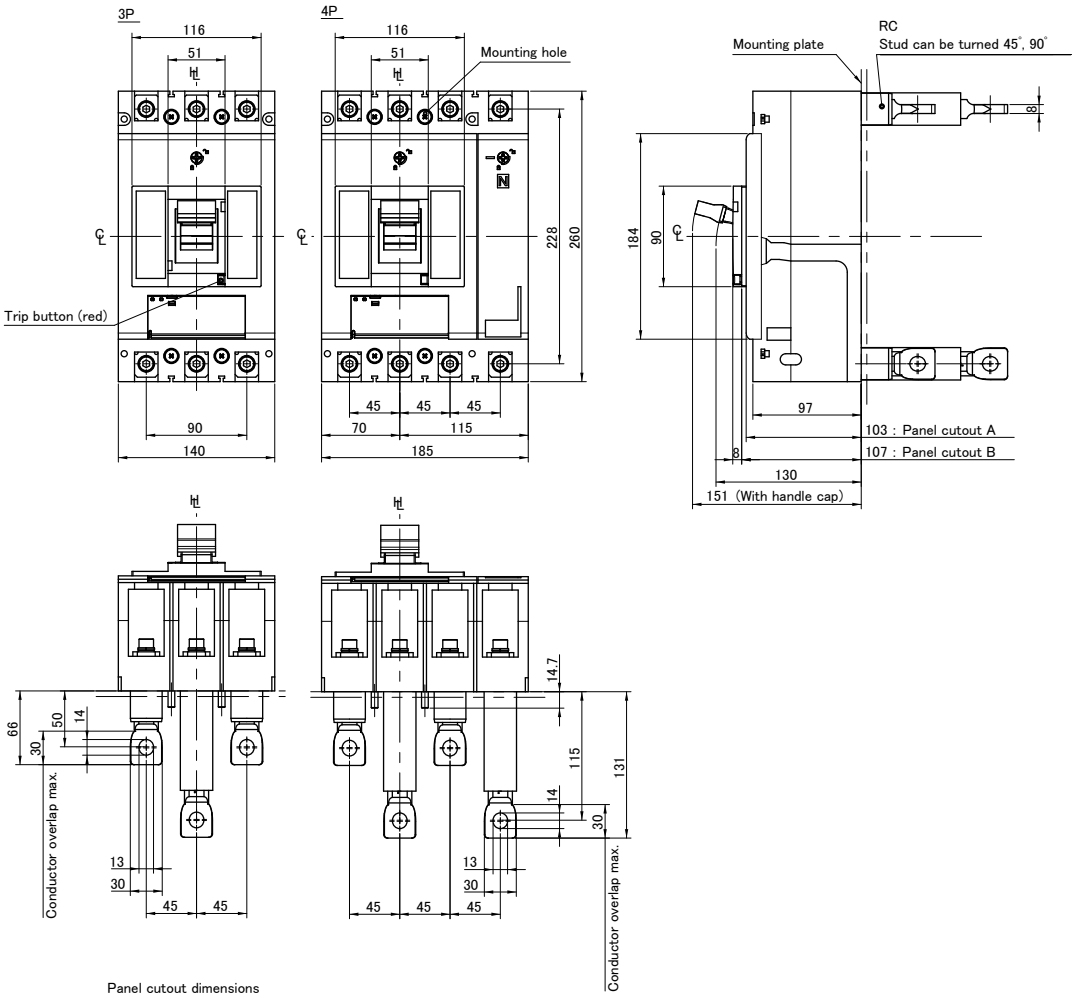
Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

Dimensions P400,630_TM/BE/NN, Front Connect (mm)



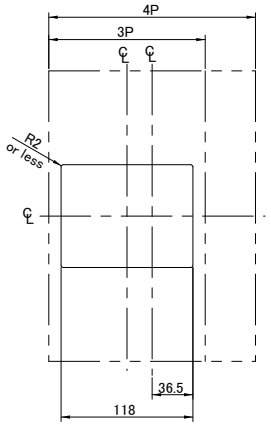
Panel cutout dimensions shown give an allowance of 1.0 mm around the handle escutcheon

Dimensions P400,630_TM/BE/NN, Rear Connect (mm)

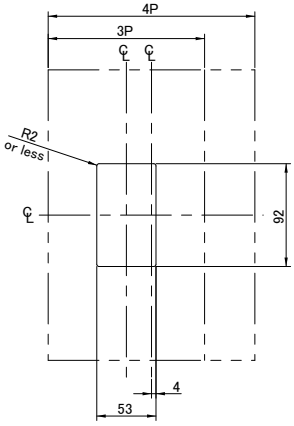


Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon

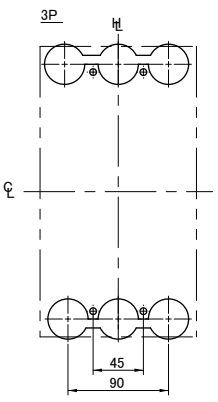
Panel cutout (front view) for Cutout A

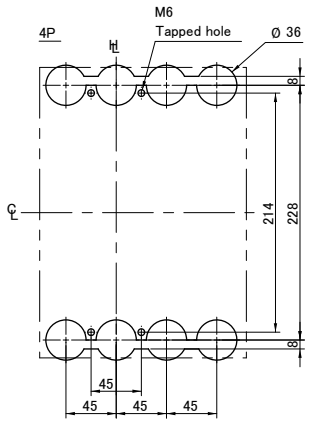


Panel cutout (front view) for Cutout B



Drilling plan (front view)





P630 AF Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits

Item Description	Catalogue No.
Alarm, Left Side Pocket Only 1 C/O	T2AL00LML3STA

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxilary 1 C/O	T2AX00LML3STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00LA10T
Shunt Trip Coil 230 - 240 V AC	T2SH00LA20T
Shunt Trip Coil 400 - 415 V AC	T2SH00LA40T
Shunt Trip Coil 24 V DC	T2SH00LD02T
Shunt Trip Coil 48 V DC	T2SH00LD04T
Shunt Trip Coil 110 V DC	T2SH00LD10T

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
110 V AC	T2UV00LA10NT
230 - 240 V AC	T2UV00LA20NT
400 - 440 V AC	T2UV00LA40NT
24 V DC	T2UV00LD02NT
110 V DC	T2UV00LD10NT
230 V DC	T2UV00LD20NT

Time Delay Operation (500 ms)

When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500 ms time delay

Item Description	Catalogue No.
Time Delay. 110 V AC	T2UV00LA10DS
Time Delay, 230 - 240 V AC	T2UV00LA24DS
Time Delay, 440 - 450 V AC	T2UV00LA45DS
Time Delay, 24 V DC	T2UV00LD02DS
Time Delay, 110 V DC	T2UV00LD10DS
Time Delay, 230 V DC	T2UV00LD24DS
Time Delay. 4 Pole, 110 V AC	T2UV00LA10DL
Time Delay, 4 Pole, 230 - 240 V AC	T2UV00LA24DL
Time Delay, 4 Pole, 380 - 415 V AC	T2UV00LA40DL
Time Delay, 4 Pole, 440 - 450 V AC	T2UV00LA45DL
Time Delay, 4 Pole, 24 V DC	T2UV00LD02DL
Time Delay, 4 Pole, 110 V DC	T2UV00LD10DL
Time Delay, 4 Pole, 230 V DC	T2UV00LD24DL

SMART Status Auxiliary

Suits TemBreak PRO P160_SE – P630_SE Smart Metering MCCBs

The TPSS SMART auxiliary and Alarm is used with the TemBreak PRO SMART energy and communications MCCB range. The TPSS auxiliary range includes types which allows the SMART MCCB OCR to log and count the number of opening / closing cycles, or count the number of electromechanical (overload) fault trips and
indicate and communicate via Modbus, the actual mechanical ON / OFF or TRIPPED status of the breaker main contacts. The ON / OFF / TRIPPED status of the MCCB is also displayed on the OCR display.

Item Description	Catalogue No.
ON OFF TRIP, Standard Type Use for Applications 125 - 250 V AC	TPSS00MXLSWA
ON OFF TRIP, Micro-current Type Use for Applications 125 V AC / 24 - 30 V DC	TPSS00MXLRWA
Smart Status Auxiliary AX/AL Cycle - Trip Counter	TPSS00NA

Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

Item Description	Catalogue No.
TPHS Compact Handle Red/Yellow, IP55 Handle + 356 mm Shaft	TPHS63R5GM
Red/Yellow, IP55 Handle + 356 mm shaft	TPHS63R5RM

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

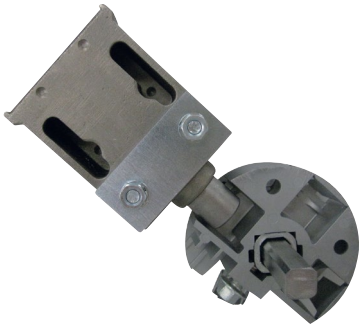
Item Description	Catalogue No.
TPHS Compact Handle Grey, IP65 Handle + 445 mm Shaft	TPHP25SR6BN
TPHS Compact Handle Red/Yellow, IP65 Handle + 445 mm Shaft	TPHP25SR6RN

Handle Options

A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
TPHS Handle Options 390 mm T Pin Shaft – no Flexi Coupling 400/630 AF	T2HS400SHAFT



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

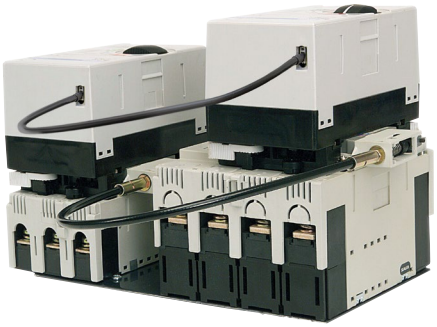
Motor Operator

Allows remote switching of an MCCB to ON or OFF or resetting tripped MCCBs.

Item Description	Catalogue No.
Motor Operators 110-240 V AC 400/630 AF	TPMC63SA10N
Motor Operators 24-48 V DC 400/630 AF	TPMC63SD02N
Motor Operators 110 V DC 400/630 AF	TPMC63SD10N

Motor Operator Accessories

Provides electrical interlocking between 2 motors to prevent simultaneous operation



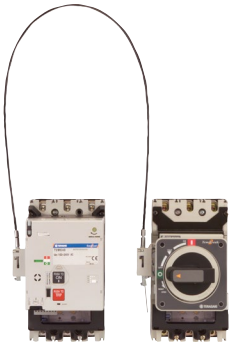
Item Description	Catalogue No.
Motor Interlock Cable (0.6 m) Between Any 400/630/1000 AF MCCB Motor	T2MM40L06A
Motor Interlock Cable (2.1 m) Between Any 400/630/1000 AF MCCB Motor	T2MM40L21A

Item Description	Catalogue No.
Motor Interlock Cable (0.6 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S06A
Motor Interlock Cable (2.1 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S21A

Locking and Interlocking Accessories

Cable Mechanical Interlock

Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 m apart



Item Description	Catalogue No.
Cable Interlock Interlock Kit Less Wire. For Use with motors Only, 400/630 AF	TPMW63SCM
Cable Interlock Interlock Kit Less Wire. For Use with handles Only, 400/630 AF	TPMW63SCH

Item Description	Catalogue No.
Cable Interlock Wire (1.0 m)	T2MW00SA
Cable Interlock Wire (1.5 m)	T2MW00LA

Link Mechanical Interlock

Prevents simultaneous operation of two horizontally mounted interlocked MCCBs.

Item Description	Catalogue No.
3 Pole, Left Side Section, For Motorised Operation ONLY, 400/630 AF	TPML63SL3M
4 Pole, Left Side Section, For Motorised Operation ONLY, 400/630 AF	TPML63SL4M
Common 3 or 4 Pole, For Motorised Operation ONLY, 400/630 AF	TPML63SR3M
3 Pole, Left Side Section, For Use With Handles ONLY, 400/630 AF	TPML63SL3H
4 Pole, Left Side Section, For Use With Handles ONLY, 400/630 AF	TPML63SL4H
Common 3 or 4 Pole, Right Side Section, For Use With Handles ONLY, 400/630 AF	TPML63SR3H

Toggle Locks

Non-captive

Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Toggle Locks Includes 5 mm x 16.5 mm Slot for a Padlock or Hasp, 400/630AF	TPHL63SA

Captive

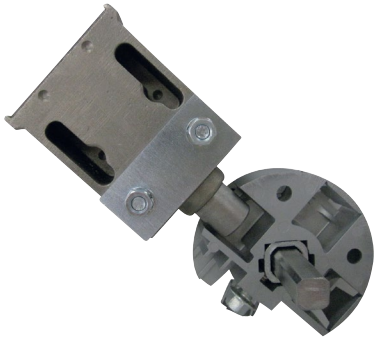
Contact NHP for Captive Toggle Locks.

MCCBs

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Mounted

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, standard key code, F	440TAKEYE100F
Prosafe, standard key code, G	440TAKEYE100G
Prosafe, standard key code, H	440TAKEYE100H
Prosafe, Standard Key Code I	440TAKEYE100I
Prosafe, Standard Key Code J	440TAKEYE100J
Prosafe, Standard Key Code K	440TAKEYE100K
Prosafe, Standard Key Code L	440TAKEYE100L
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, Standard Key	440TAKEYE10X

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys

Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100A
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10BA
Single key shot bolt lock, key not included	440TMSBLE10X

Installation External Accessories

Communications Module

The TPCM TemCom PRO communication module for the Smart MCCB enables data saved or monitored by the Smart MCCB to be shared with a compatible Modbus RTU monitoring system. 2 versions are available; a basic modbus module, and another that includes 2 opto isolated configurable I/O contacts for signaling additional devices.

An MCCB side mounting support bracket is supplied for side of the MCCB mounting. The module is also DIN-rail mounting.

- The Modbus communication module includes a 120 Ω termination resistor
- This resistance can be activated / deactivated via a front panel switch
- The module comes in two versions with or without input and output contact

Suits P160_SE, P250_SE, P400_SE, P630_SE SMART MCCBs (An MCCB side mount adaptor is included as standard. The module is also DIN rail mounting as standard)

Item Description	Catalogue No.
Modbus RTU Communication Module, Basic Version, No Extra I/O	TPCM00D02NA
Modbus RTU Communications Module, Basic + 2 Configurable I/O Relay Contacts	TPCM00D02WA

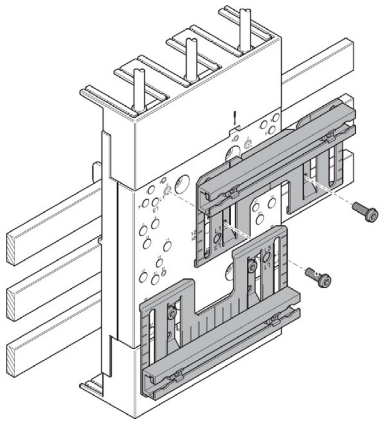
SMART Connection Leads

Optional Alarm Contact or Pre-Trip Alarm connection leads for P_SE SMART MCCBs.

Item Description	Catalogue No.
CIP Connect Lead 0.5 m for P400, P630 MCCBs	TPPHQTT430HA
CIP 24 V DC Supply Lead 1.2 m for P400, P630 MCCBs	TPPHQTT160HA
CIP Connect Lead 1.5 m for P400, P630 MCCBs	TPPHQTT440HA
CIP Connect Lead 5.0 m for P400, P630 MCCBs	TPPHQTT460HA

60 mm ACS Busbar System

A base which allows an MCCBs line side to be plugged onto 60 mm 3 phase ACS busbar



Item Description	Catalogue No.
Busbar Adapter, 3P, 30 A, 184 mm x 320 mm 400/630 AF	32004
Adapter plate for 32004, to Suit Terasaki 400/630 AF 3/4P MCCB	32982

Door Flange

A door mount flange providing a plastic surround for the panel or escutcheon cutout

Item Description	Catalogue No.
Door Flange IP20 DR FLG 400/630A MCCB	T2DF40A
Door Flange IP30 DR FLG 400/630A MOT	T2DM40A

External Monitor

Suits P160_SE, P250_SE, P400_SE, P630_SE SMART MCCBs

The PRO View TPED door display is an optional accessory which can be used to monitor OCR data and also perform remote setting of Smart MCCB OCR trip unit. Data is communicated via a proprietory protocol from the MCCB to the TPED, so Modbus comms are not required when using the TPED. The TPED can be mounted on a switchboard door or a Concept panelboard escutcheon, with a door in front. An RJ9 CIP connection cable is necessary to provide the connection with the Smart circuit breaker, to its CIP connection socket. A 24 V DC supply is required and the TPED consumption is 85 mA, or a TPCM can be used. The front of the display is protected by a transparent and sealed facia which is rated IP65. The LCD screen is backlit to enable low ambient light reading.

Item Description	Catalogue No.
External Monitor and Configurator for P160_SE to P630_SE MCCBs	TPED00N

SMART Connection Leads

Optional Alarm Contact or Pre-Trip Alarm connection leads for P_SE SMART MCCBs.

Item Description	Catalogue No.
OAC / PTA connection lead 1.2 m	TPPHQTT130HA

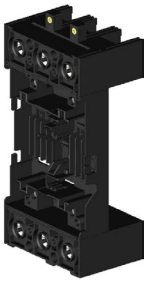
Item Description	Catalogue No.
ZSI - zone selective interlocking connection lead, 1.2 m	TPPHQTT150HA

Item Description	Catalogue No.
CIP Connect Lead 0.5 m for P400, P630 MCCBs	TPPHQTT430HA
CIP 24 V DC Supply Lead 1.2 m for P400, P630 MCCBs	TPPHQTT160HA
CIP Connect Lead 1.5 m for P400, P630 MCCBs	TPPHQTT440HA
CIP Connect Lead 5.0 m for P400, P630 MCCBs	TPPHQTT460HA

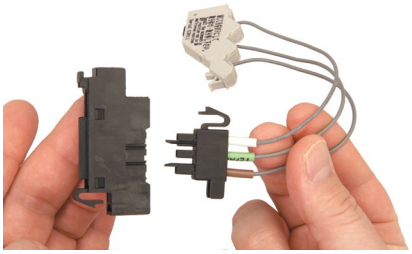
Plug-in MCCBs

Plug-in Mounting Bases

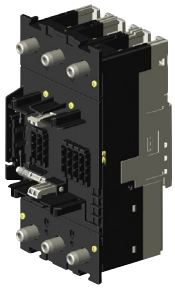
The MCCB via rear plugs, is plugged onto a fixed base for its line and load connections



Item Description	Catalogue No.
Plug-in Mounting Base 3P Base 400/630 AF	T2PM40A3A
Plug-in Mounting Base 4P Base 400/630 AF	T2PM40A4A



Item Description	Catalogue No.
3 Pin Plug and Socket for Aux/Alarms – for MCCB and Base	2H6959CAA1
3 Pin Plug and Socket for Shunt/UVT – for MCCB and Base	2H6959CBA1
Control Wiring Plugs and Sockets for Withdrawable and Plug-in MCCBs, 3 Pin Socket for Panel Mount Version	T2TP003A



Item Description	Catalogue No.
Plug in conversion kit, 3P, P630, E630, S630	2H7234CAAK
Plug in conversion kit, 4P, P630, E630, S630	2H7235CAAK

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier Interpole Barrier (Qty 2), B800, B1000, ZS630, ZS800	T2BA403SH

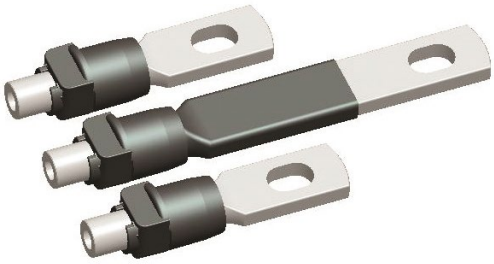
SMART Connecton Leads

Optional Alarm Contact or Pre-Trip Alarm connection leads for P_SE SMART MCCBs.

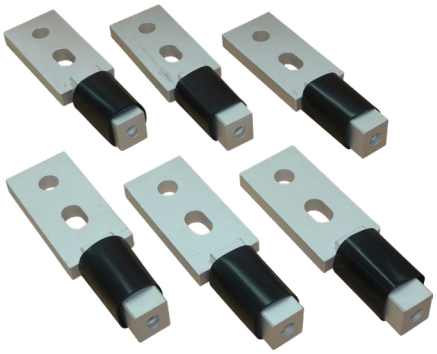
Item Description	Catalogue No.
CIP Connect Lead 0.5 m for P400, P630 MCCBs	TPPHQTT430HA
CIP 24 V DC Supply Lead 1.2 m for P400, P630 MCCBs	TPPHQTT160HA
CIP Connect Lead 1.5 m for P400, P630 MCCBs	TPPHQTT440HA
CIP Connect Lead 5.0 m for P400, P630 MCCBs	TPPHQTT460HA

Rear Connection Studs

Allows MCCB main connections to be made at the rear of the MCCB

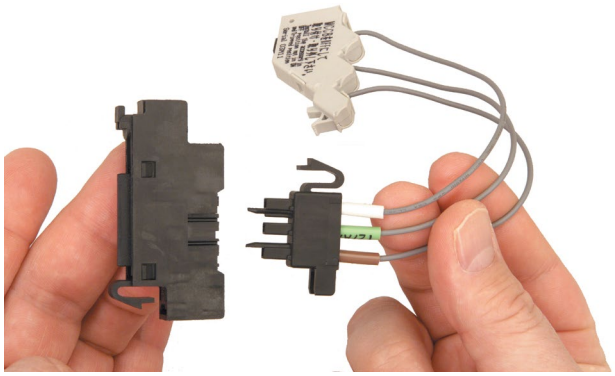


Item Description	Catalogue No.
Rear Connect Terminal Studs 3 Pole Kit, 400A, Set of 6 Studs, 400/630 AF	T2RP403SA
Rear Connect Terminal Studs 4 Pole Kit, 630A, Set of 8 Studs, 400/630 AF	T2RP404SA



Item Description	Catalogue No.
Rear Connect Terminal Studs 3 Pole Kit, 630A, Set of 6 Studs, 400/630 AF	T2RP463SA

Withdrawable MCCBs



Item Description	Catalogue No.
Withdrawable and Plug-in MCCB 3 Pin Plug for Aux/Alarms – for MCCB Side	2H6959CCA
Withdrawable and Plug-in MCCB 3 Pin Plug for Shunt/UVT – for MCCB Side	2H6959CDA
Control Wiring Plugs and Sockets for Withdrawable and Plug-in MCCBs, 3 Pin Socket for Panel Mount Version	T2TP003A

Terminal Covers

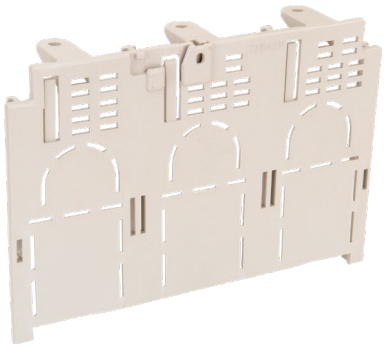
Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area

Item Description	Catalogue No.
3 Pole Single Cover, 140 mm Width, Narrow Cover, 400/630 AF	TPCF633SLNPH
4 Pole Single Cover, 185mm Width, Narrow Cover, 400/630 AF	TPCF634SLNPH
3 Pole, Set of Two (2) Covers, 140 mm Width, Narrow Cover, 400/630 AF	TPCF633SLNP
4 Pole, Set of Two (2) Covers, 185mm Width, Narrow Cover, 400/630 AF	TPCF634SLNP
3 Pole Single Cover, 180mm Width, Wide Cover, 400/630 AF	TPCF633SWNPH
4 Pole Single Cover, 238mm Width, Wide Cover, 400/630 AF	TPCF634SWNPH
3 Pole, Set of Two (2) Covers, 180mm Width, Wide Cover, 400/630 AF	TPCF633SWNP
4 Pole, Set of Two (2) Covers, 238mm Width, Wide Cover, 400/630 AF	TPCF634SWNP
3 Pole Single Cover, 140mm Width, Narrow Cover with Rear Earth Barrier, 400/630 AF	TPCF633SLEPH
4 Pole Single Cover, 185mm Width, Narrow Cover with Rear Earth Barrier, 400/630 AF	TPCF634SLEPH
3 Pole Single Cover, 180mm Width, Wide Cover with Rear Earth Barrier 400/630 AF	TPCF633SWEPH
4 Pole Single Cover, 238mm Width, Wide Cover with Rear Earth Barrier 400/630 AF	TPCF634SWEPH

Flush Front Terminal Covers

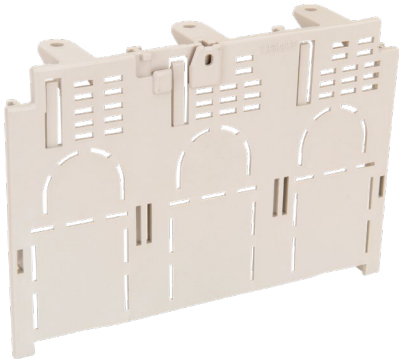
Provides front finger touch protection with MCCBs used with tunnel terminals or chassis



Item Description	Catalogue No.
Flush Front Terminal Covers 3 Pole Single Cover, 400 / 630AF	TPCS633SPH
Flush Front Terminal Covers 4 Pole Single Cover, 400 / 630AF	TPCS634SPH

Rear Connect Terminal Covers

Provides front finger touch protection with MCCBs used with rear terminals and HC chassis



Item Description	Catalogue No.
3 Pole Single Cover, 400/630AF	TPCR633SPH
4 Pole Single Cover, 400/630AF	TPCR634SPH
3 Pole, Set of Two (2) Covers, 400/630AF	TPCR633SP
4 Pole, Set of Two (2) Covers, 400/630AF	TPCR634SP

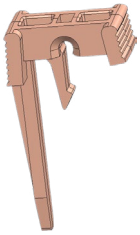
Tunnel Clamp Terminals

Allows cable to be terminated directly to the MCCB and clamped for good connectivity

Item Description	Catalogue No.
Tunnel Clamp Terminals 3 Pole, Set of 3 Clamps, External Mounting, 2 Hole, 35 mm² to 300 mm², 400/630 AF	TPFW63S3L2H
Tunnel Clamp Terminals 3 Pole, Set of 3 Clamps, Internal Mounting, 1 Hole, 35 mm² to 300 mm², 400/630 AF	TPFW63S3S1H
Tunnel Clamp Terminals 4 Pole, Set of 4 Clamps, External Mounting, 2 Hole, 35 mm² to 300 mm², 400/630 AF	TPFW63S4L2H
Tunnel Clamp Terminals 4 Pole, Set of 4 Clamps, Internal Mounting, 1 Hole, 35 mm² to 300 mm², 400/630 AF	TPFW63S4S1H

CF Terminal Cover Locking Clip

Used with terminal covers to prevent unauthorised removal or access to terminal area



Item Description	Catalogue No.
Terminal Cover Locking Clip Suits P400, P630	TPCF63SL

Extension Bars

Add-on bus bars, allow more or larger conductor connector to an MCCB

Item Description	Catalogue No.
3 Pole, set of 3, flanged bars 400 A	TPFB403WHA
3 Pole, set of 3, flanged bars 630 A	TPFB463WHC
4 Pole, set of 4, flanged bars 630 A	TPFB464WHC

B800_TM

Thermal Magnetic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ Suits HC chassis, 1250 A - 2200 A main bar options
- ✔ 273 mm (H), 103 mm (D), 70 mm pole centres
- ✔ Fault ratings; 36, 50, 70, 100 kA I_{CU} @ 415 VAC
- ✔ 100% I_{CU} / I_{CS} on models up to 50 kA
- ✔ Utilisation ratings from 24 V to 690 VAC, 250 VDC
- ✔ Thermal magnetic trip unit: adjustable thermal / adjustable magnetic
- ✔ Trip unit; 630 A, 800 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Trip Unit Rating	630 / 800 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @415 V AC	**F**	36 kA
	N	50 kA
	H	70 kA

Voltage

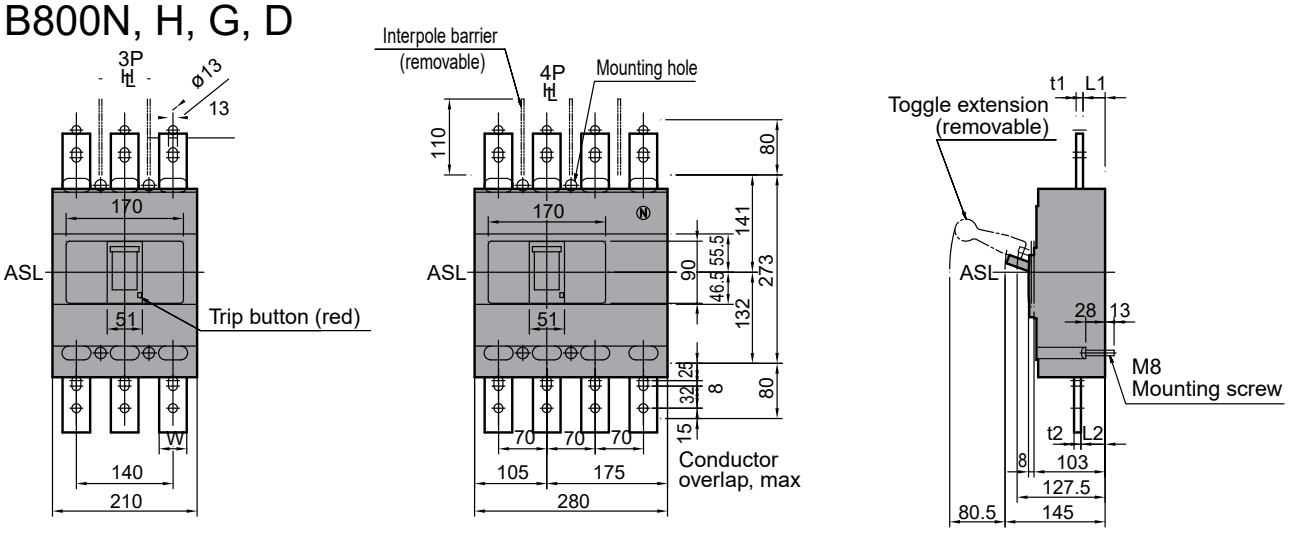
Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Rear Connection (Option) Plug-in PM (Option) Extension Bar Draw-out (Option)

Quick Reference Dimensions – Front Connect

B800N, H, G, D



800 A Frame 3 Pole 36 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	396 - 630	3150 - 6300	36	3	B800F3630TM
800	504 - 800	4000 - 8000	36	3	B800F3800TM

800 A Frame 3 Pole 50 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	396 - 630	3150 - 6300	50	3	B800N3630TM
800	504 - 800	4000 - 8000	50	3	B800N3800TM

800 A Frame 3 Pole 70 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	396 - 630	3150 - 6300	70	3	B800H3630TM
800	504 - 800	4000 - 8000	70	3	B800H3800TM

800 A Frame 4 Pole 36 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	396 - 630	3150 - 6300	36	4	B800F4630TM
800	504 - 800	4000 - 8000	36	4	B800F4800TM

800 A Frame 4 Pole 50 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	396 - 630	3150 - 6300	50	4	B800N4630TM
800	504 - 800	4000 - 8000	50	4	B800N4800TM

800 A Frame 4 Pole 70 kA TM (Thermal Magnetic)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	396 - 630	3150 - 6300	70	4	B800H4630TM
800	504 - 800	4000 - 8000	70	4	B800H4800TM

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	800 AF
Trip Unit Rating	630 / 800 A

I_n, Rated Current (A)

	630	800
45ºC	-	-
50ºC	630	800
70ºC	-	

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC/DC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	630	800
(W)	70.75	93.33

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection Rear Connection (Option) Plug-in PM (Option) Extension Bar Draw-out (Option)
Terminal Type	Extension Bar With Bolt holes
Connection Torque	40.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	HC Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	Yes
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		273 mm
Width	**3P**	210 mm
	4P	280 mm
Depth (less toggle)		103 mm
Depth (toggle included)		145 mm
Weight	**3P**	8.5 / 9.1 kg
	4P	12.3 kg
Electrical Life		4000 cycles
Mechanical Life		10000 cycles

Short-Circuit Capacity

			kA Rating			
			MCCB Type			
		Voltage	F	N	H	G
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	50	85	100	125
		380 / 400 V AC	36	50	70	100
		415 V AC	36	50	70	100
		440 V AC	30	50	65	85
		690 V AC	10	20	25	25
		1000 V AC	-	-	-	-
		1100 V AC	-	-	-	-
		125 V DC	-	-	-	-
		250 V DC	50	50	50	50
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	50	85	75	125
		380 / 400 V AC	36	50	50	50
		415 V AC	36	50	50	50
		440V AC	30	50	50	50
		690 V AC	10	20	20	20
		1000 V AC	-	-	-	-
		1100 V AC	-	-	-	-
		125 V DC	-	-	-	-
		250 V DC	50	50	50	50

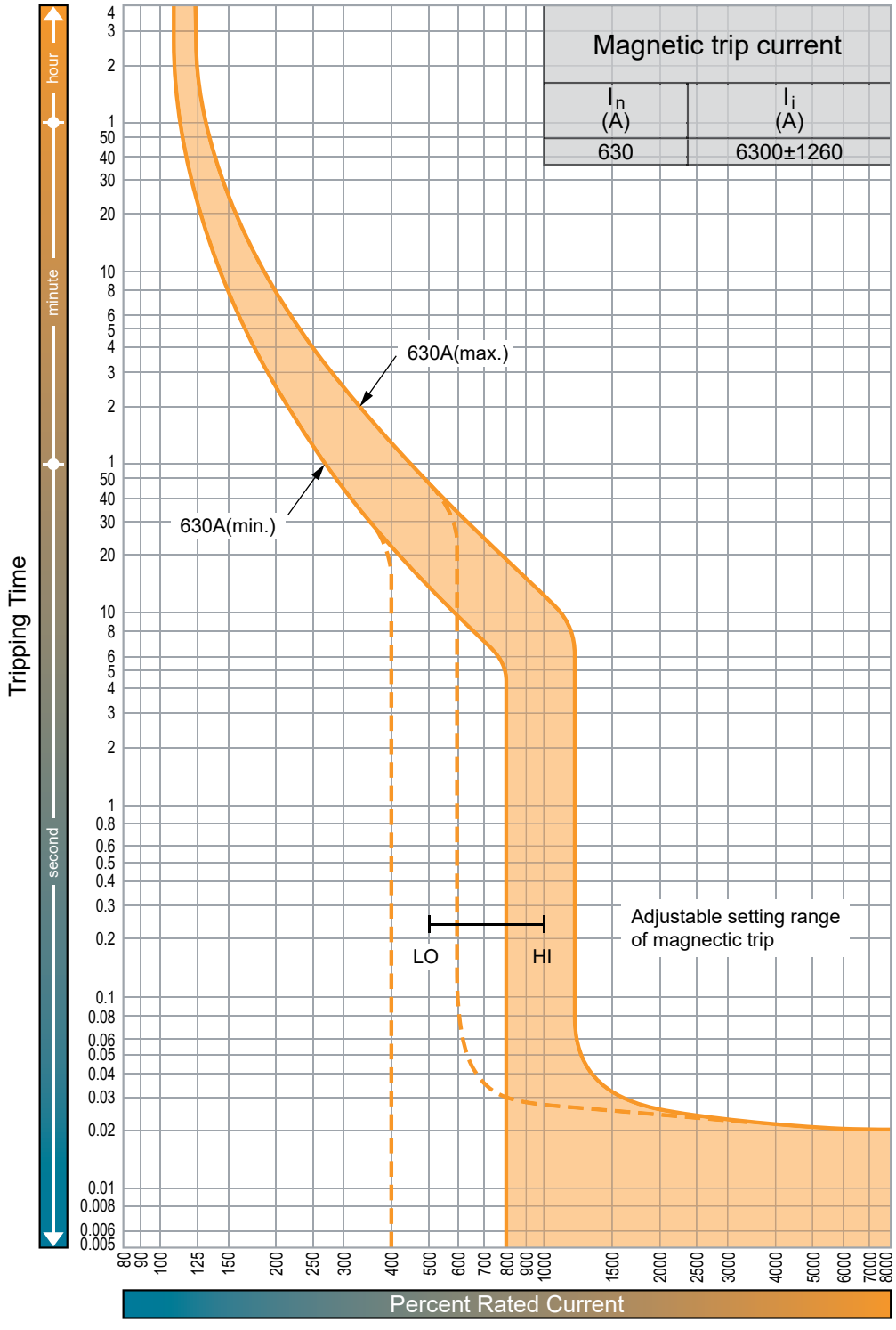
Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Rated Temperature	50 °C

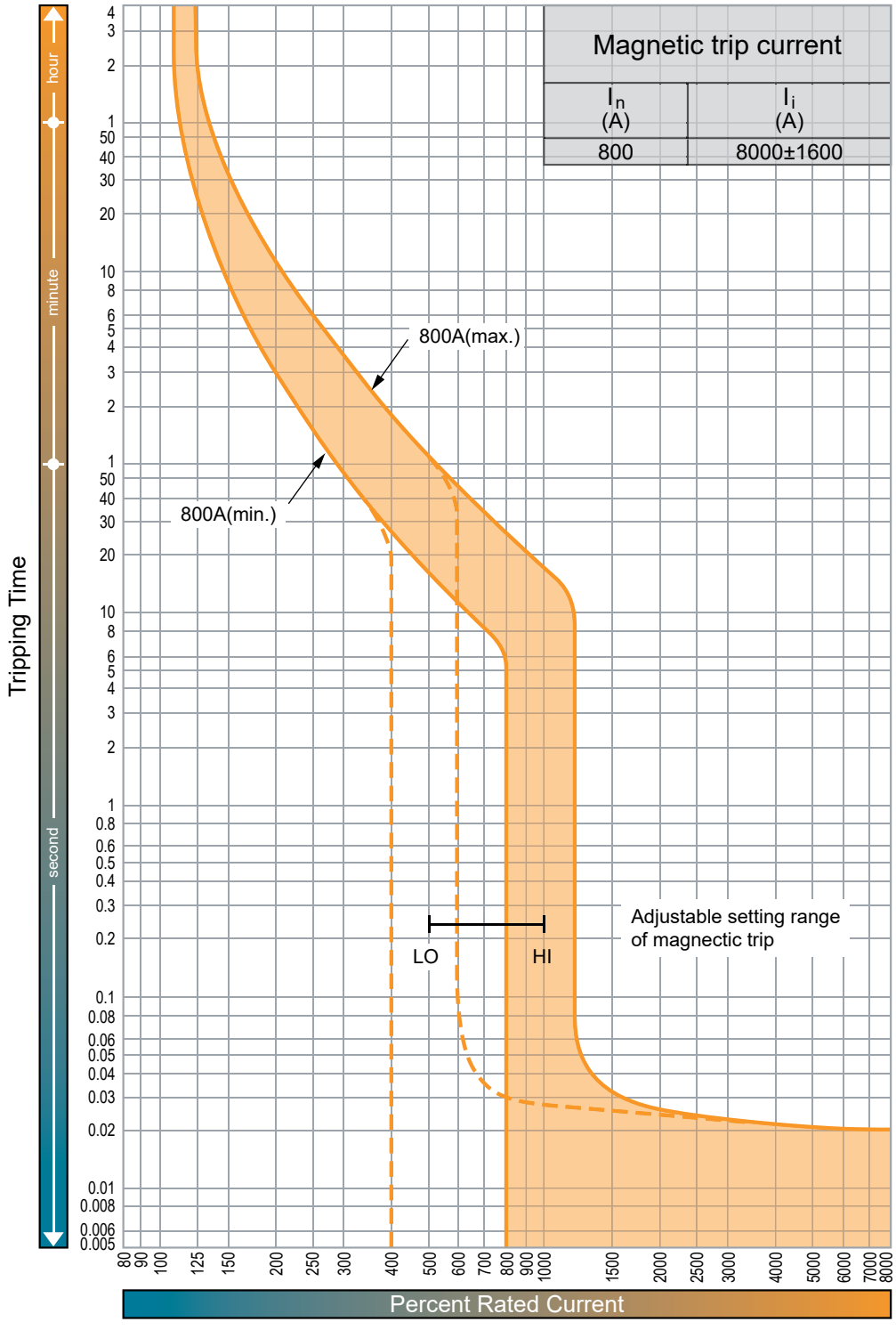
General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	Yes

Time Current Characteristics Curve 630 A, B800, Thermal Magnetic

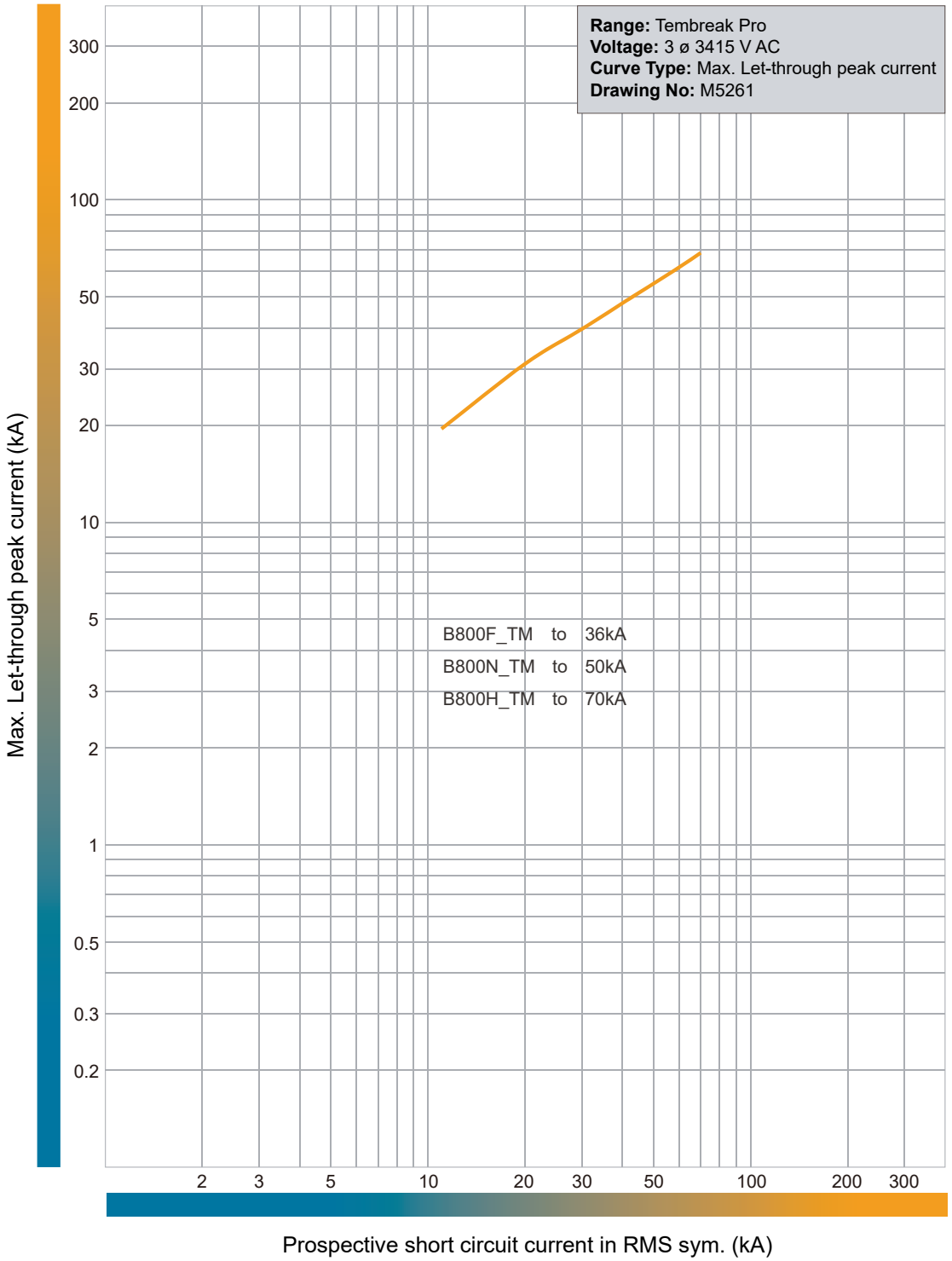


Time Current Characteristics Curve 800 A, B800, Thermal Magnetic

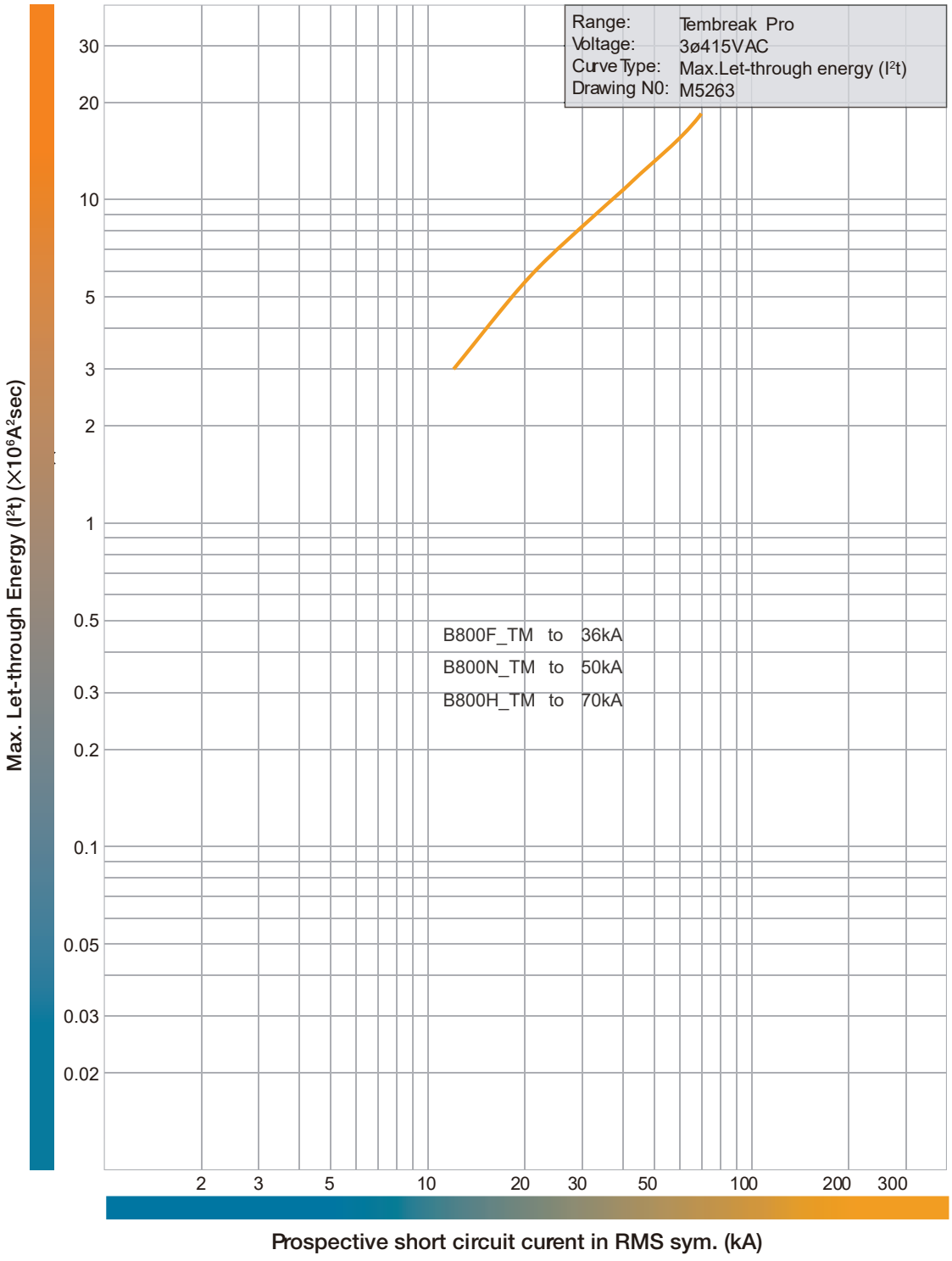


MCCBs

Let-Through Peak Current Curve, B800_TM, Thermal Magnetic

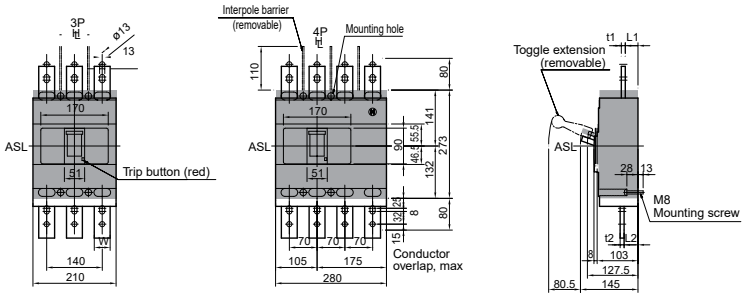


Let-Through Energy I²t Curve, B800_TM, Thermal Magnetic

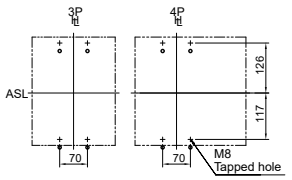


Dimensions B800F, N, H, G_TM/NN/BE/BEG/SE/SX (mm)

Front Connected With Extension Bars (Optional)

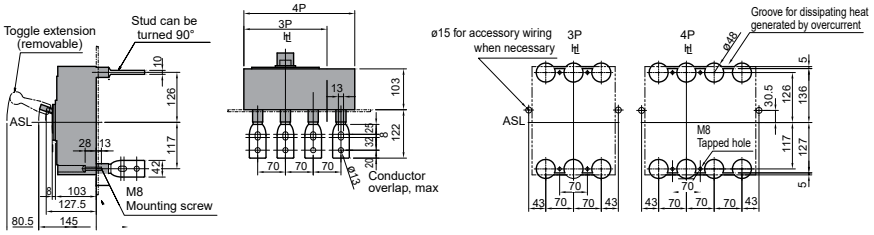


Drilling plan (front view)



Breaker Type	Rated Current	t1	t2	L1	L2	W
B800_TM,	630A	8	8	32	34	40
B800_NN	800A	10	10	32	35	40
B800_BE	630A	8	8	32	36	40
	800A	10	10	32	36	40

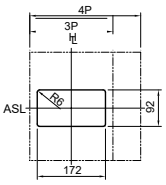
Rear Connected



Drilling plan (front view)

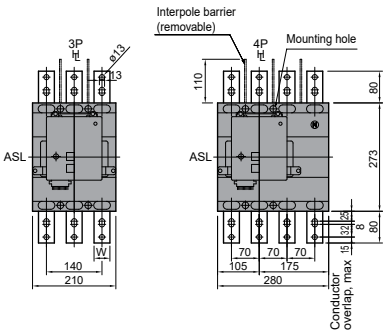
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel cutout (front view)

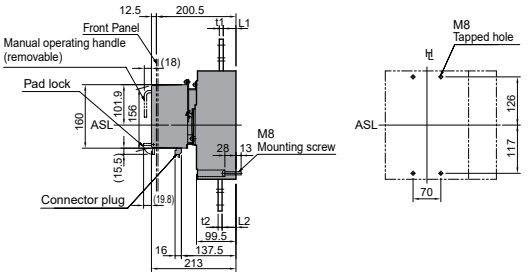


Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon.

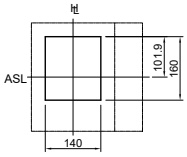
Front Connected With Motor Operator



Drilling plan (front view)

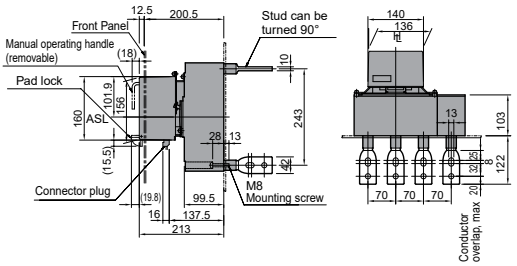


Panel cutout (front view)

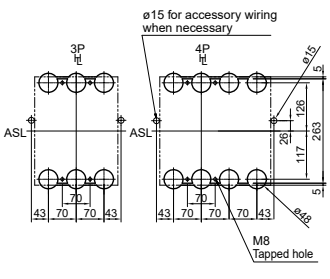


Panel cutout dimensions shown give an allowance of 1.5mm around motor operator.

Rear Connected With Motor Operator

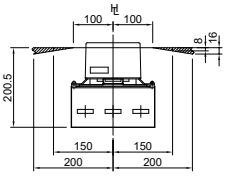


Drilling plan (front view)



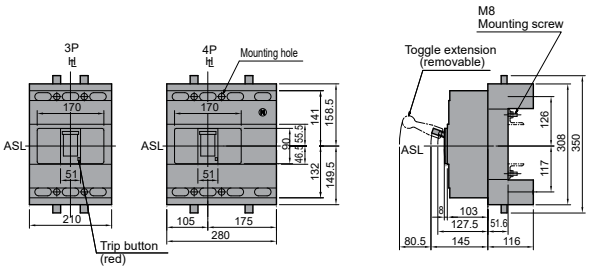
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel hinge position (hatching area) (bottom view)

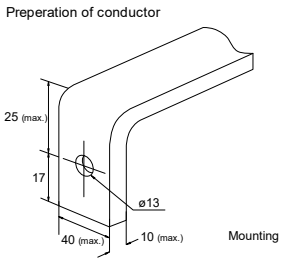


Dimensions B800F, N, H, G_TM/NN/BE/BEG/SE/SX Plug-in (mm)

Outline Dimensions

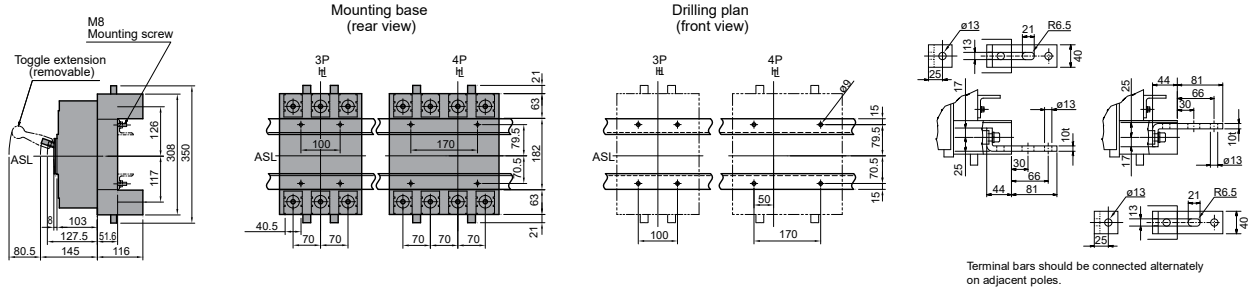


Termination of Busbar



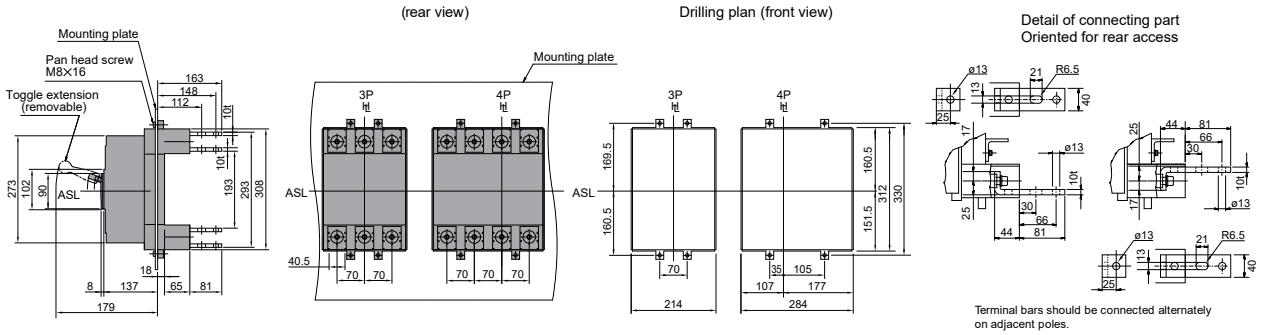
Mounting screw M12×25 max. Hex. sec. head bolt.

Mounting On a Support or Rails



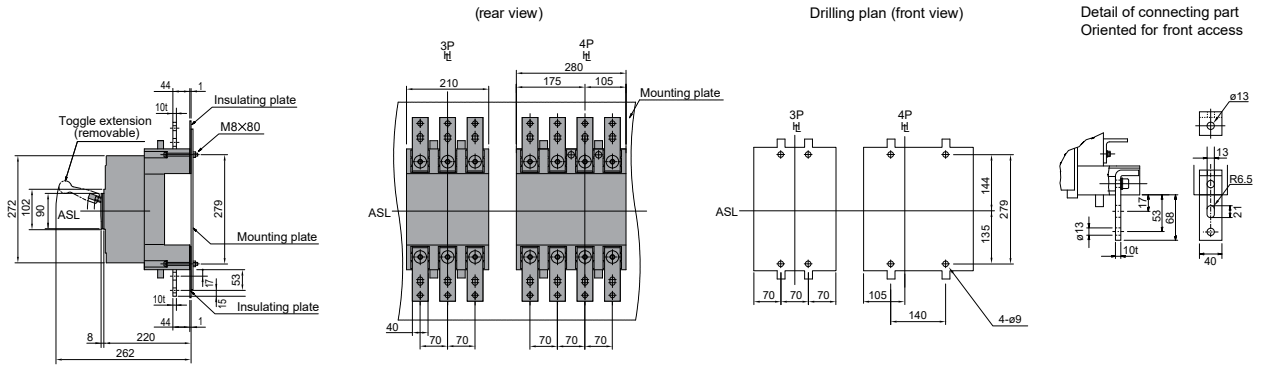
Terminal bars should be connected alternately on adjacent poles.

Mounting Through the Backplate (shown with optional connection bars oriented for rear access)



Terminal bars should be connected alternately on adjacent poles.

Mounting on the Backplate (optional connection bars must be oriented for front access)



B800_BE / BEG

Electronic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ 273 mm (H), B800N, H, G: 103 mm (D), B800R, P: 140 mm (D), 70 mm pole centres
- ✔ Fault ratings; 50, 70, 100, 125, 200 kA I_{CU} @ 415 V AC
- ✔ Electronic trip unit: 10 preset characteristic curve selection dial and base current adjustment dial
- ✔ Standard features include and instantaneous-only setting
- ✔ Trip units; 630 A, 800 A

General

Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type) [1)]
Trip Unit Rating	630 / 800 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**N**	50 kA
	H	70 kA
	G	100 kA
	P	125 kA
	R	200 kA

Voltage

Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

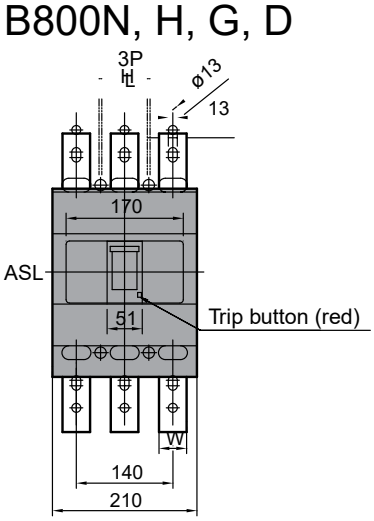
Connections

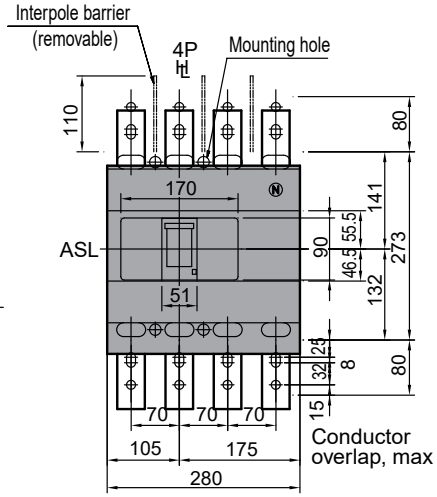
Connection Mode	Front Connection Rear Connection (Option) Extension Bar Draw-out (Option)

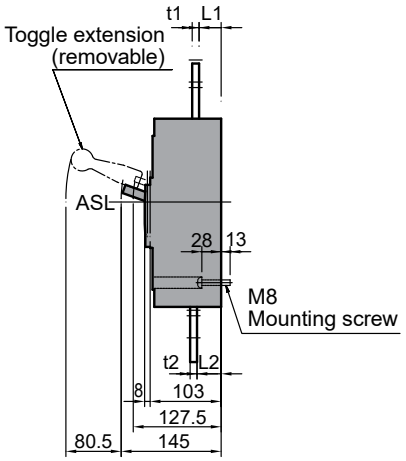
Notes: 1) When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Quick Reference Dimensions – Front Connect

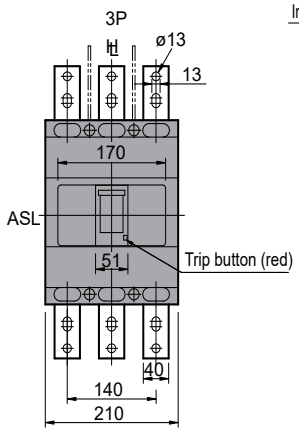
B800N, H, G, D

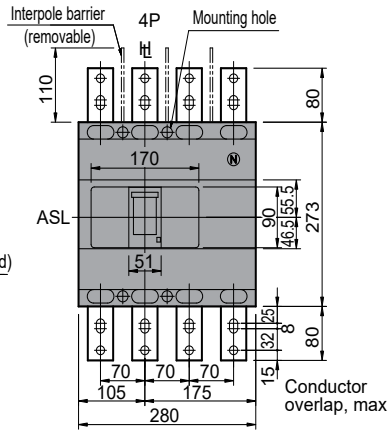


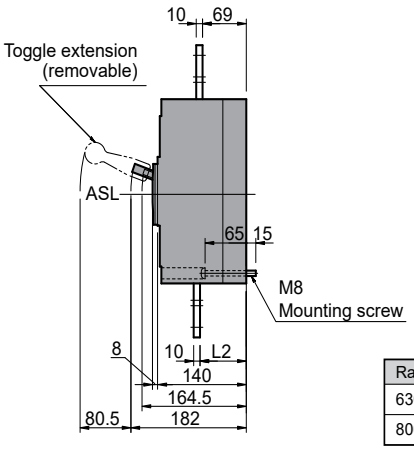




B800P, R







Rated current	L2
630A	73
800A	74

800 A Frame 3 Pole 50 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	252 - 630	50	3	B800N3630BE
800	320 - 800	50	3	B800N3800BE

800 A Frame 3 Pole 70 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	252 - 630	70	3	B800H3630BE
800	320 - 800	70	3	B800H3800BE

800 A Frame 3 Pole 70 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	252 - 630	70	3	B800H3630BEG
800	320 - 800	70	3	B800H3800BEG

800 A Frame 3 Pole 100 kA BE (LSI)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	252 - 630	100	3	B800G3630BE
800	320 - 800	100	3	B800G3800BE

800 A Frame 3 Pole 125 kA BE (LSI)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	252 - 630	125	3	B800P3630BE
800	320 - 800	125	3	B800P3800BE

800 A Frame 3 Pole 125 kA BEG (LSIG)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	252 - 630	125	3	B800P3630BEG
800	320 - 800	125	3	B800P3800BEG

800 A Frame 3 Pole 200 kA BE (LSI)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	252 - 630	200	3	B800R3630BE
800	320 - 800	200	3	B800R3800BE

800 A Frame 4 Pole 50 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	252 - 630	50	4	B800N4630BE
800	320 - 800	50	4	B800N4800BE

800 A Frame 4 Pole 70 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	252 - 630	70	4	B800H4630BE
800	320 - 800	70	4	B800H4800BE

800 A Frame 4 Pole 70 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	252 - 630	70	4	B800H4630BEG
800	320 - 800	70	4	B800H4800BEG

800 A Frame 4 Pole 100 kA BE (LSI)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	252 - 630	100	4	B800G4630BE
800	320 - 800	100	4	B800G4800BE

800 A Frame 4 Pole 125 kA BE (LSI)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	252 - 630	125	4	B800P4630BE
800	320 - 800	125	4	B800P4800BE

800 A Frame 4 Pole 125 kA BEG (LSIG)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	252 - 630	125	4	B800P4630BEG
800	320 - 800	125	4	B800P4800BEG

800 A Frame 4 Pole 200 kA BE (LSI)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
630	252 - 630	200	4	B800R4630BE
800	320 - 800	200	4	B800R4800BE

Notes: When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Ratings

Component Type	MCCB
Selectivity Category	B
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	800 AF
Trip Unit Rating	630 / 800 A

I_n, Rated Current (A)		
N/H	630	800
45ºC	630	800
50ºC	630	800
70ºC	397	397
G/P/R	630	800
45ºC	630	800
50ºC	630	720
70ºC	397	397

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W) N/H/G		
(A)	630	800
(W)	51.45	93.33
Trip Unit Rating (A) - Power Loss Per Pole (W) P/R		
(A)	630	800
(W)	64.31	93.33

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection Rear Connection (Option) Extension Bar Draw-out (Option)
Terminal Type	Extension Bar With Bolt holes
Connection Torque	40.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	HC Chassis, Except B800P / R
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height			273 mm
Width	**3P**		210 mm
	4P		280 mm
Depth (less toggle)		**B800N, H, G**	103 mm
		B800P, R	140 mm
Depth (toggle included)		**B800N, H, G**	145 mm
		B800P, R	182 mm
Weight	**3P**	**B800N, H, G**	9.1 kg
		B800P, R	14.8 kg
	4P	**B800N, H, G**	12.3 kg
		B800P, R	18.8 kg
Electrical Life			4000 cycles
Mechanical Life			10000 cycles

Short-Circuit Capacity

			kA Rating				
			MCCB Type				
		Voltage	**N**	**H**	**G**	**P**	**R**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	85	100	125	150	200
		380 / 400 V AC	50	70	100	125	200
		415 V AC	50	70	100	125	200
		440 V AC	50	65	85	125	180
		690 V AC	20	25	25	25	25
		1000 V AC	-	-	-	-	-
		1100 V AC	-	-	-	-	-
		125 V DC	-	-	-	-	-
		250 V DC	-	-	-	-	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	85	75	125	150	150
		380 / 400 V AC	50	50	50	94	150
		415 V AC	50	50	50	94	150
		440V AC	50	50	50	94	135
		690 V AC	20	20	20	20	20
		1000 V AC	-	-	-	-	-
		1100 V AC	-	-	-	-	-
		125 V DC	-	-	-	-	-
		250 V DC	-	-	-	-	-
	I_{cw} (Short Time Withstand)		10	10	10	10	10

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type)
Rated Temperature	50 °C

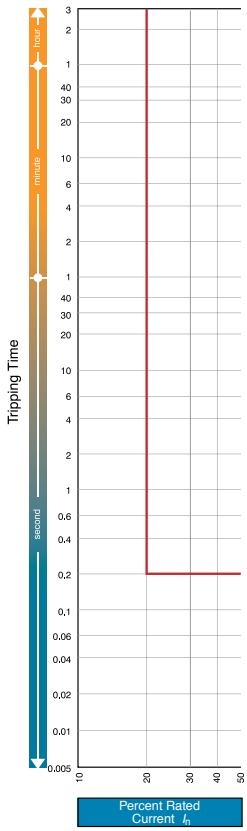
Other Features

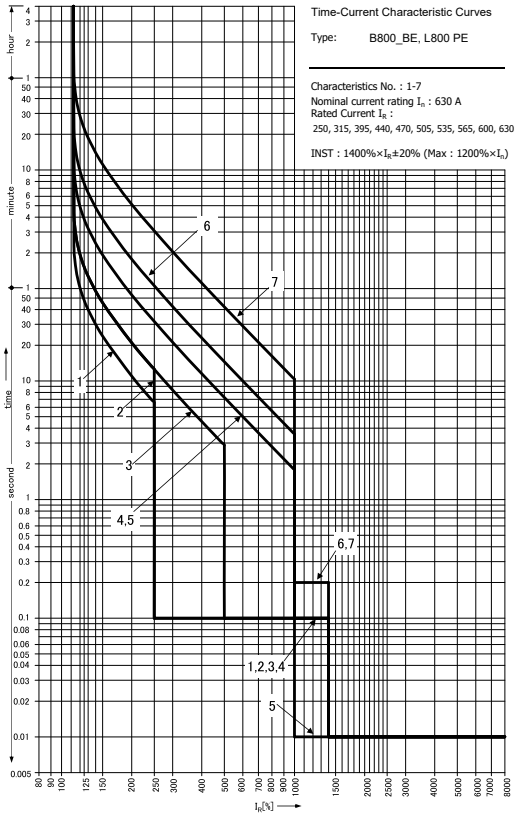
Pre-trip alarm (PTA)	Option
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

Characteristic Curves 1 to 7, B800_BE, B800_BEG, L800PE 630 A, Basic Electronic





B800P3800SE_dOPCH-S07

Characteristics For I_R Rated 630 A: B800N_BE, B800H_BE, B800P_BE, B800R_BE

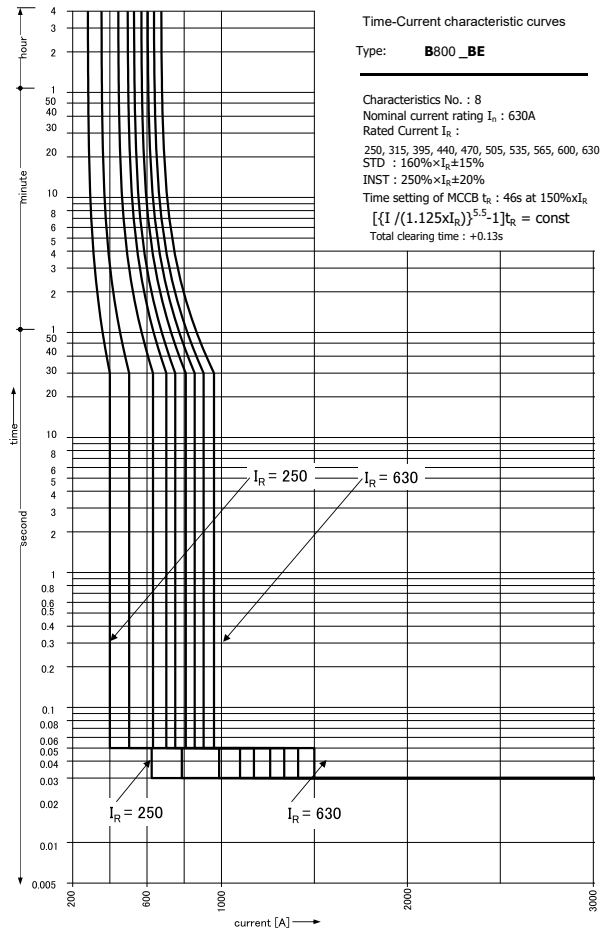
LTD Pick Up Current I_R (A)		**250 – 315 – 395 – 440 – 470 – 505 – 535 – 565 – 600 – 630 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8** [4]	**9** [4]	**10** [3, 4]
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)		2.5	10	12
OCR Options											
Pre Trip Alarm (PTA)	I_P x I_R	0.8									
	I_p (S)	40									
Ground Fault (GF) [2]	I_G x I_N	0.2									
	t_G (S)	0.2									
Neutral Pole Protection (NP)	I_N x I_R	1.0 / 0.5 [1]									
	t_N (S)	$t_N = t_R$									

Notes

1) 1.0 x I_R or 0.5 x I_R can be selected. Characteristic of neutral protection (t_N vs. I_N) is identical to characteristic of phase protection (t_R vs. I_R).
2) When GF is specified for 3 pole MCCBs, a terminal block is fitted as standard for external neutral CT connection for 3 phase 4 wire systems. Refer terminal block details on following pages. 4 pole GF MCCBs include an internal 4th CT standard, so no user connection is required.
3) Characteristic 10 is instantaneous only.
4) Curves 8, 9, 10 shown on following pages.

Characteristic Curves 8 and 9, B800_BE, B800_BEG, L800PE 630 A, Basic Electronic

8



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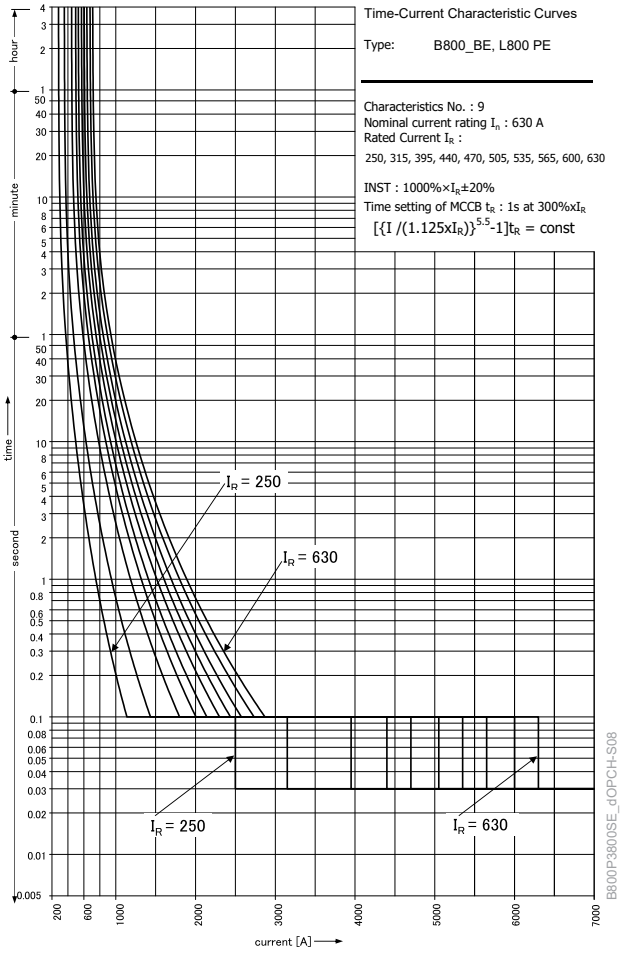
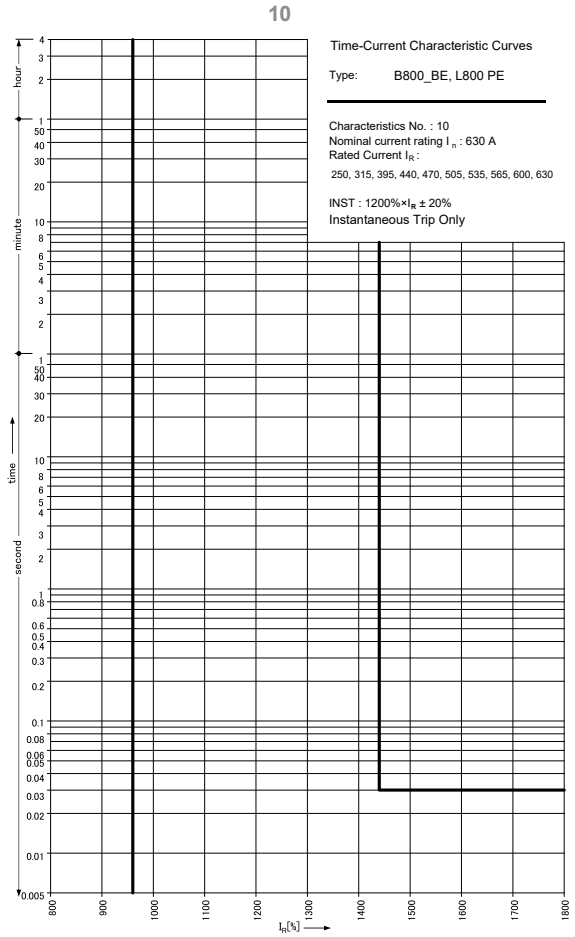


Characteristics For I_R Rated 630 A: B800N_BE, B800H_BE, B800P_BE, B800R_BE, L800PE

LTD Pick Up Current I_R (A)		**250 – 315 – 395 – 440 – 470 – 505 – 535 – 565 – 600 – 630 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)			10	12
OCR Options		PTA, GF, NP									

Characteristic Curve 10, B800_BE, B800_BEG, L800PE 630 A, Basic Electronic



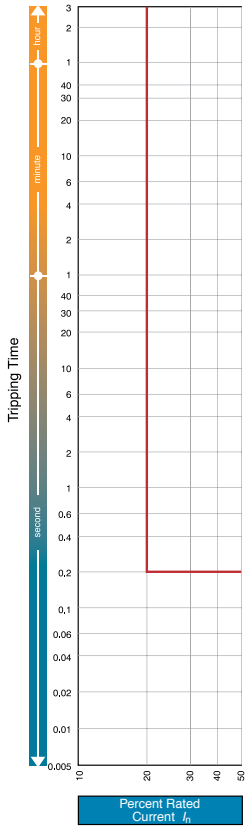
B800P3800SE_dOPCH-S09

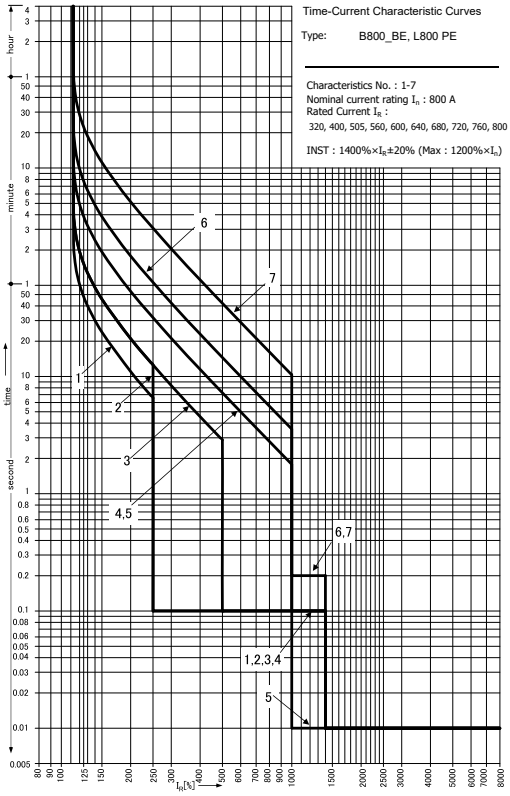
Characteristics For I_R Rated 630 A: B800N_BE, B800H_BE, B800P_BE, B800R_BE, L800PE

LTD Pick Up Current I_R (A)		**250 – 315 – 395 – 440 – 470 – 505 – 535 – 565 – 600 – 630 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)		2.5	10	12
OCR Options		PTA, GF, NP									

MCCBs

Characteristic Curves 1 to 7, B800_BE, B800_BEG, L800PE 800 A IR MCCBs





B800P3800SE_dOPCH-S10

Characteristics For I_R Rated 800 A: B800N_BE, B800H_BE, B800P_BE, B800R_BE, L800PE

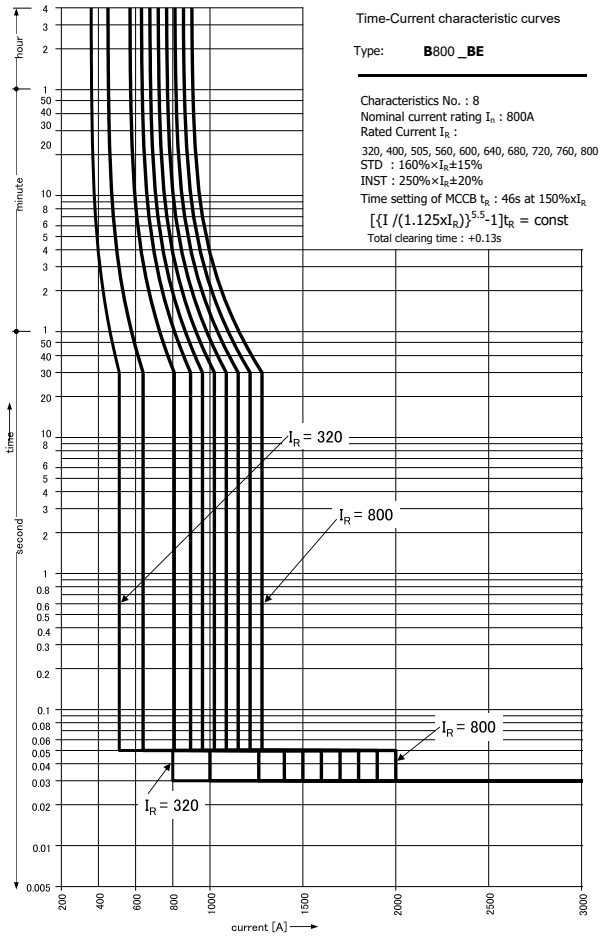
LTD Pick Up Current I_R (A)		**320 – 400 – 505 – 560 – 600 – 640 – 680 – 720 – 760 – 800 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8** [4]	**9** [4]	**10** [3, 4]
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 3 x I_R		-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)		2.5	10	12
OCR Options											
Pre Trip Alarm (PTA)	I_P x I_R	0.8									
	I_p (S)	40									
Ground Fault (GF) [2]	I_G x I_N	0.2									
	t_G (S)	0.2									
Neutral Pole Protection (NP)	I_N x I_R	1.0 / 0.5 [1]									
	t_N (S)	$t_N = t_R$									

Notes

1) 1.0 x I_R or 0.5 x I_R can be selected. Characteristic of neutral protection (t_N vs. I_N) is identical to characteristic of phase protection (t_R vs. I_R).
2) When GF is specified for 3 pole MCCBs, a terminal block is fitted as standard for external neutral CT connection for 3 phase 4 wire systems. Refer terminal block details on following pages. 4 pole GF MCCBs include an internal 4th CT standard, so no user connection is required.
3) Characteristic 10 is instantaneous only.
4) Curves 8, 9, 10 shown on following pages.

Characteristic Curves 8 and 9, B800_BE, B800_BEG, L800PE 800 A IR MCCBs

8



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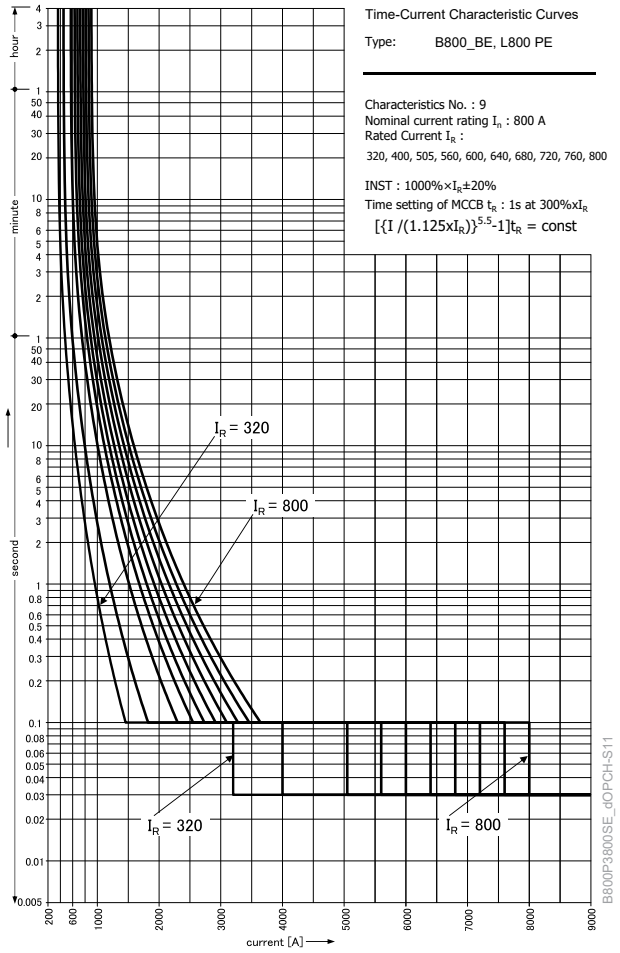
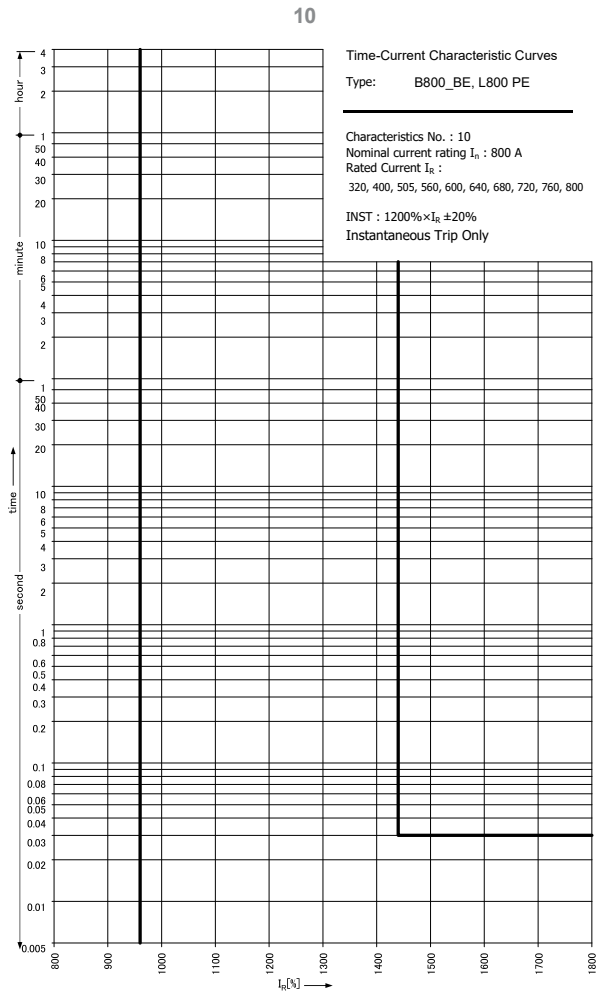


Characteristics For I_R Rated 800 A: B800N_BE, B800H_BE, B800P_BE, B800R_BE, L800PE

LTD Pick Up Current I_R (A)		**320 – 400 – 505 – 560 – 600 – 640 – 680 – 720 – 760 – 800 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)			2.5	10	12
OCR Options		PTA, GF, NP									

Characteristic Curve 10, B800_BE, B800_BEG, L800PE 800 A IR MCCBs

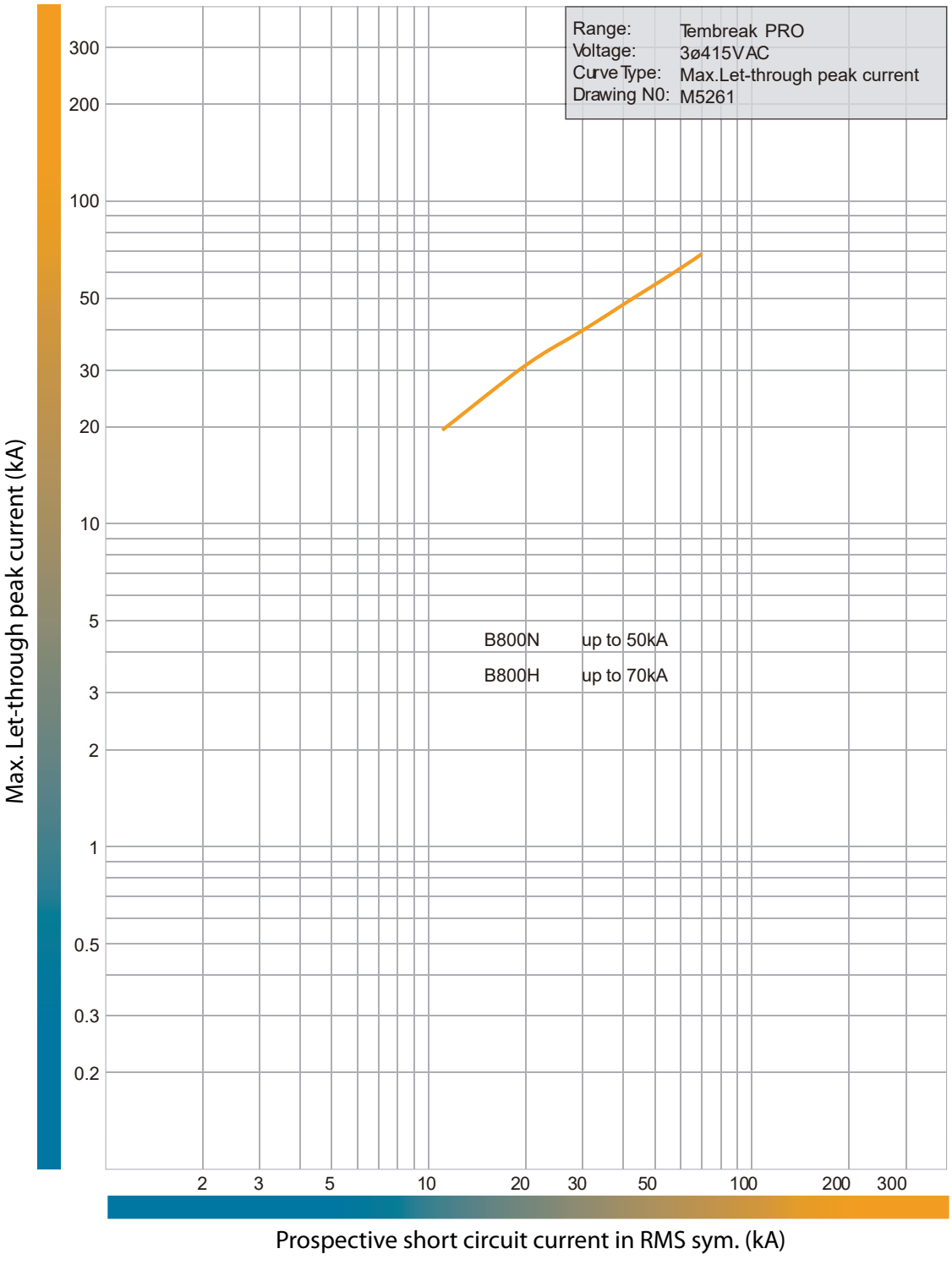


B800P3800SE_dOPCH-S12

Characteristics For I_R Rated 800 A: B800N_BE, B800H_BE, B800P_BE, B800R_BE, L800PE

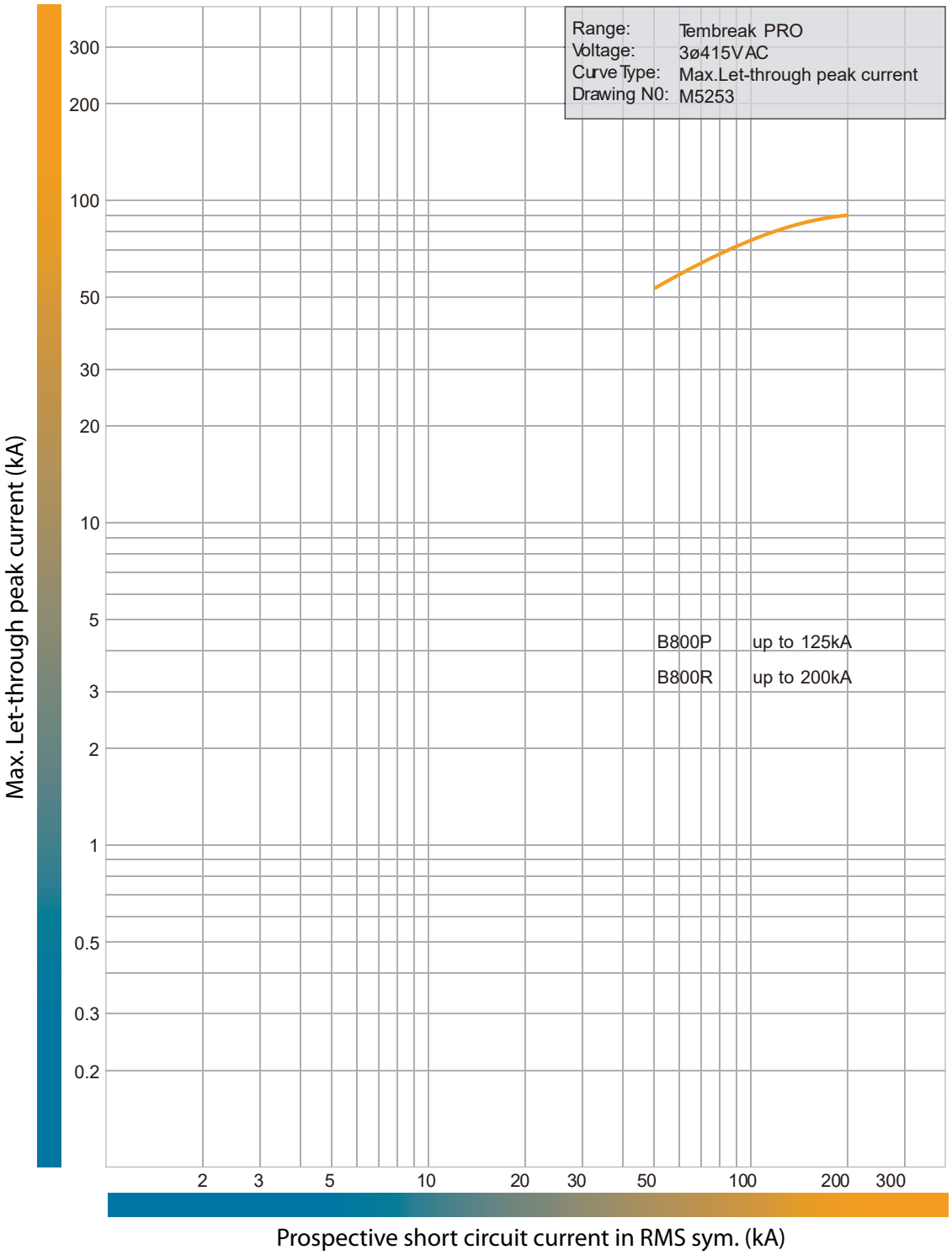
LTD Pick Up Current I_R (A)		**320 – 400 – 505 – 560 – 600 – 640 – 680 – 720 – 760 – 800 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 200% x I_R			at 600% x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)			2.5	10	12
OCR Options		PTA, GF, NP									

Let-Through Peak Current Curve, B800_BE/BEG/SX/SE, Electronic

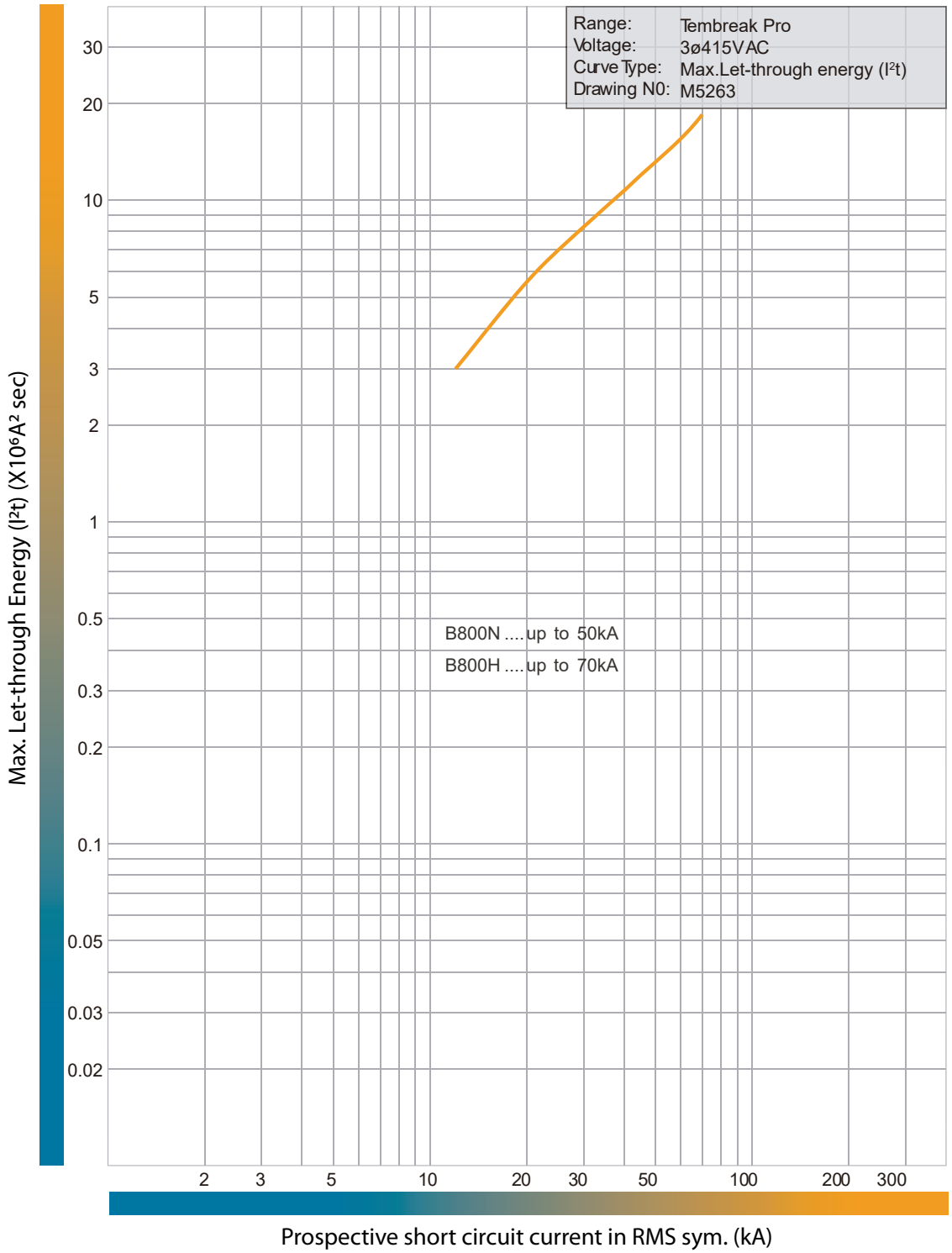


MCCBs

Let-Through Peak Current Curve, B800_BE/SX/SE, Electronic

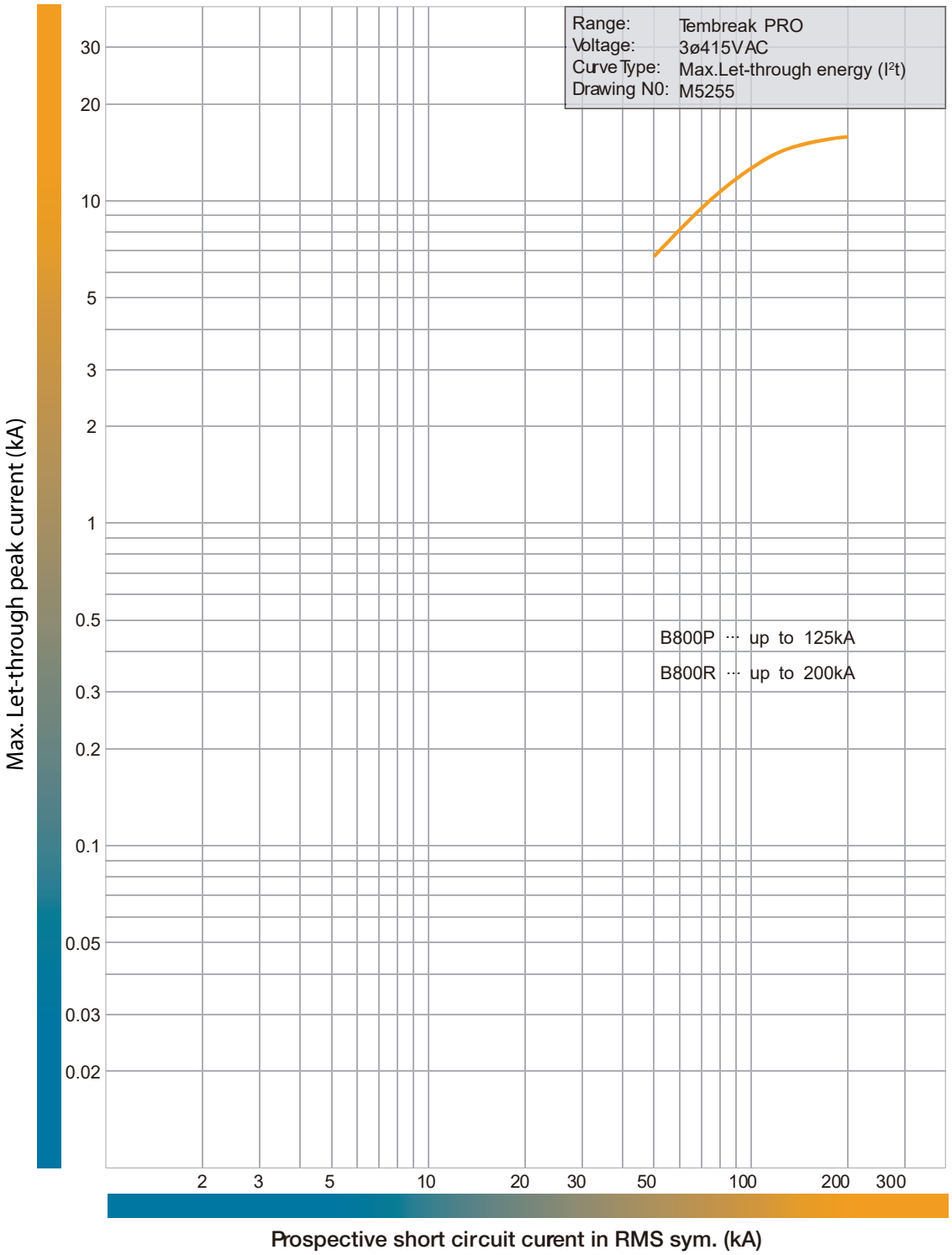


Let-Through Energy I²t Curve, B800_BE/BEG/SX/SE, Electronic



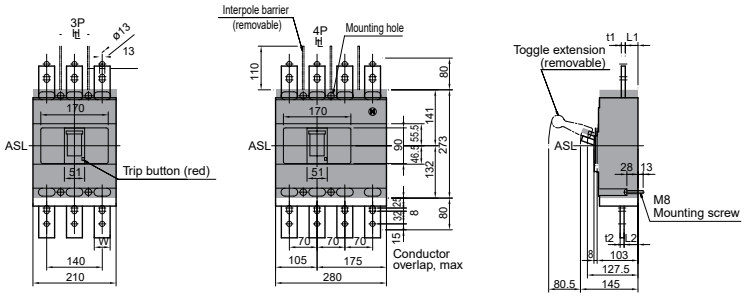
MCCBs

Let-Through Energy I²t Curve, B800_BE/SX/SE, Electronic

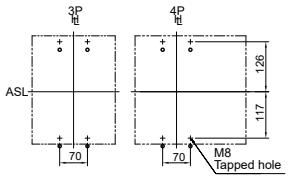


Dimensions B800F, N, H, G_TM/NN/BE/BEG/SE/SX (mm)

Front Connected With Extension Bars (Optional)

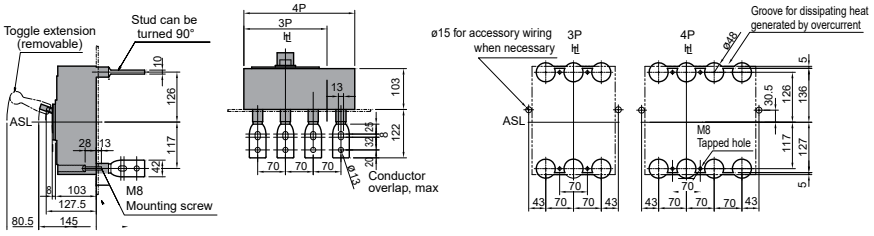


Drilling plan (front view)



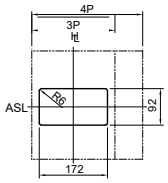
Breaker Type	Rated Current	t1	t2	L1	L2	W
B800_TM, B800_NN	630A	8	8	32	34	40
	800A	10	10	32	35	40
B800_BE	630A	8	8	32	36	40
	800A	10	10	32	36	40

Rear Connected



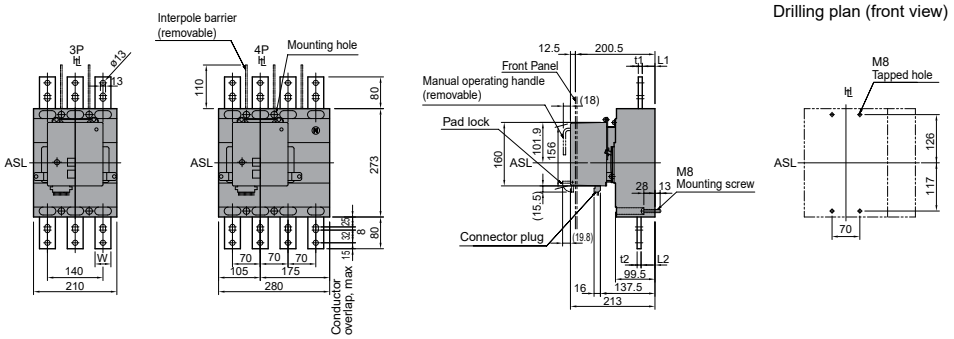
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel cutout (front view)

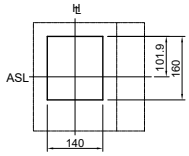


Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon.

Front Connected With Motor Operator

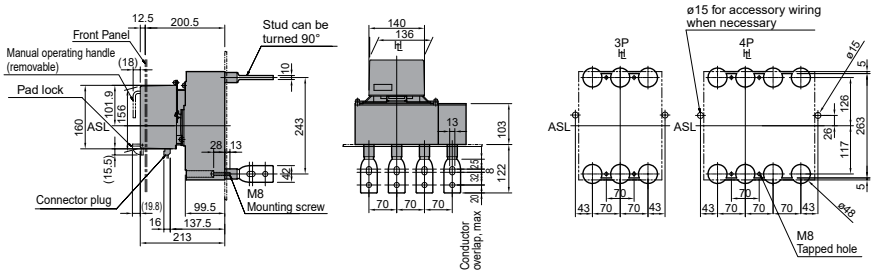


Panel cutout (front view)



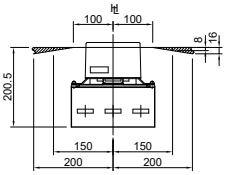
Panel cutout dimensions shown give an allowance of 1.5mm around motor operator.

Rear Connected With Motor Operator



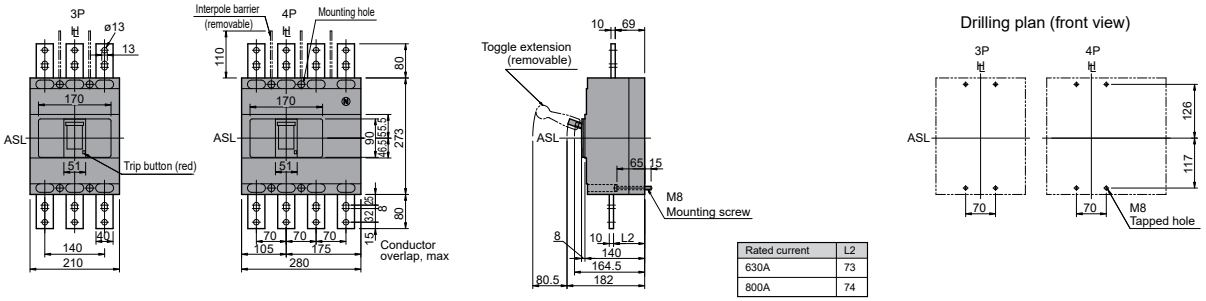
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel hinge position (hatching area) (bottom view)



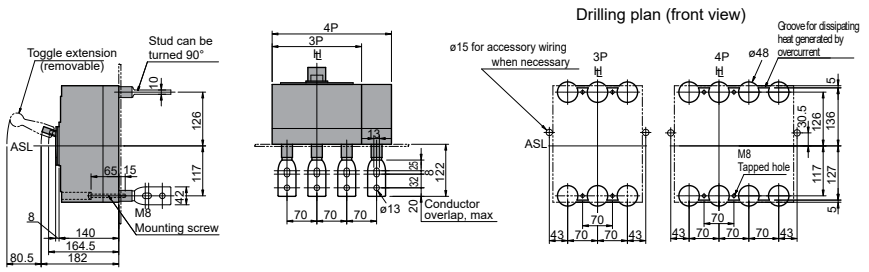
Dimensions B800P, R_BE/SE/SX (mm)

Front Connected



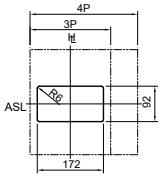
Rated current	L2
630A	73
800A	74

Rear Connected



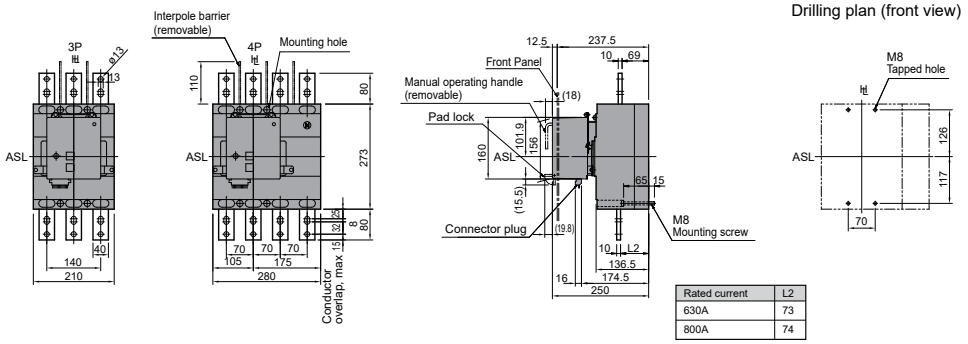
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel cutout (front view)



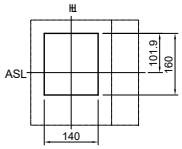
Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon.

Front Connected With Motor Operator



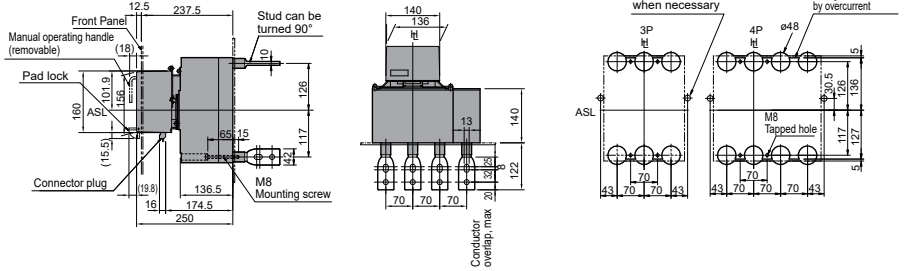
Rated current	L2
630A	73
800A	74

Panel cutout (front view)



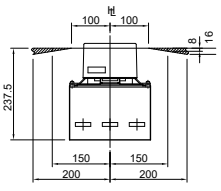
Panel cutout dimensions shown give an allowance of 1.5mm around motor operator.

Rear Connected With Motor Operator



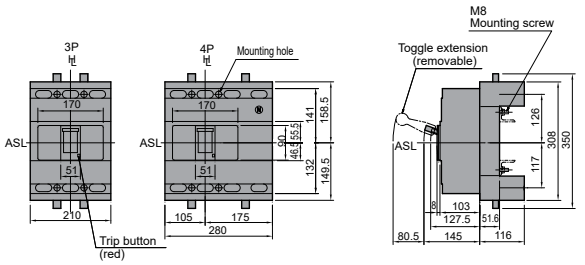
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel hinge position (hatching area) (bottom view)

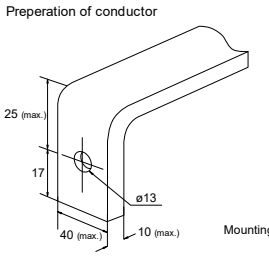


Dimensions B800F, N, H, G_TM/NN/BE/BEG/SE/SX Plug-in (mm)

Outline Dimensions

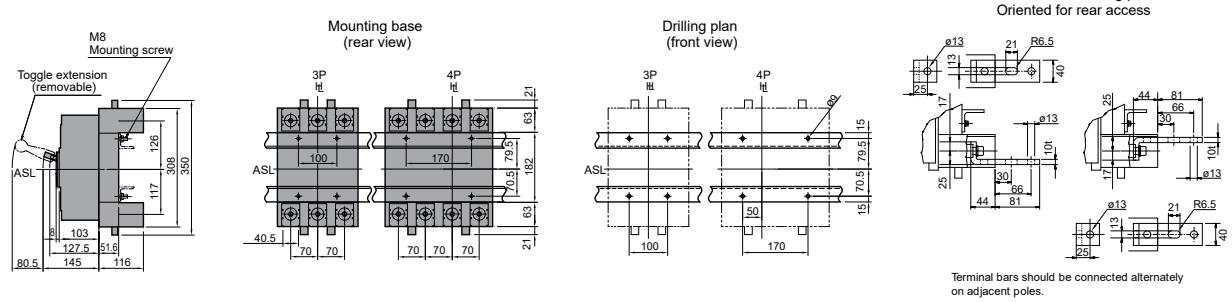


Termination of Busbar



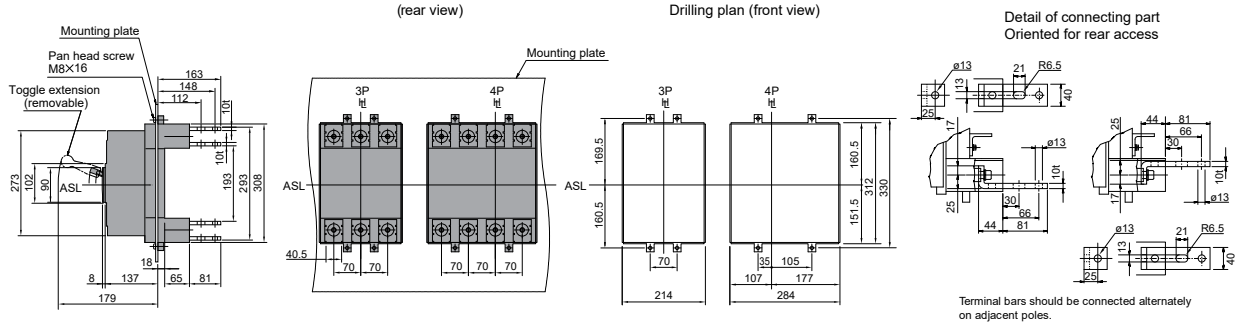
Mounting screw M12×25 max. Hex. sec. head bolt.

Mounting On a Support or Rails



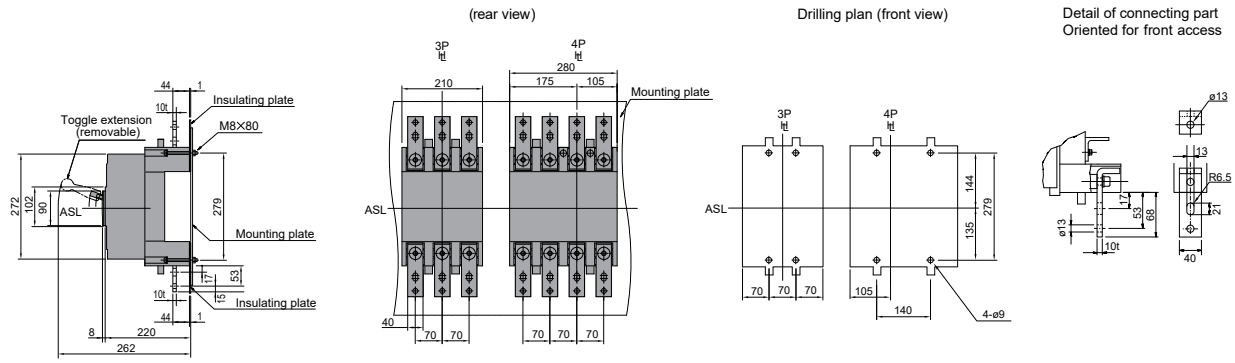
Terminal bars should be connected alternately on adjacent poles.

Mounting Through the Backplate (shown with optional connection bars oriented for rear access)



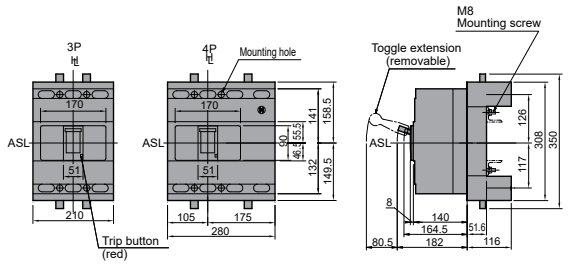
Terminal bars should be connected alternately on adjacent poles.

Mounting on the Backplate (optional connection bars must be oriented for front access)

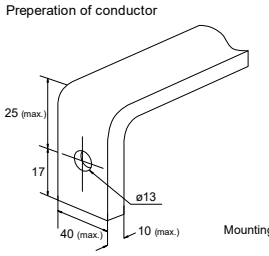


Dimensions B800P, R_BE/BEG/SE/SX, Plug-in (mm)

Outline Dimensions

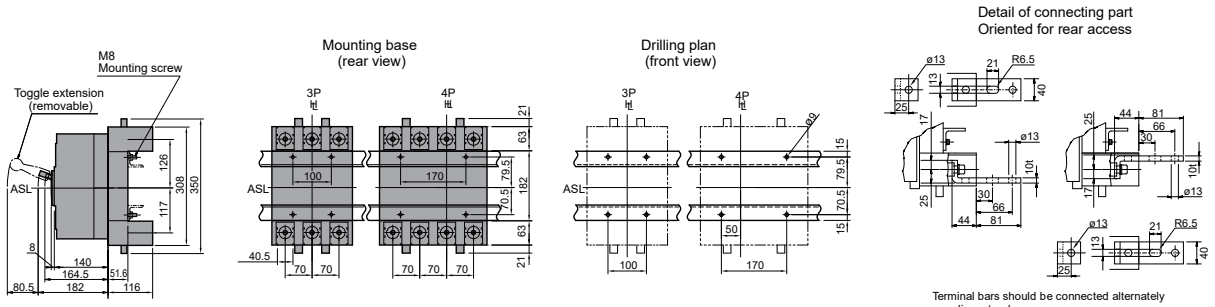


Termination of Busbar



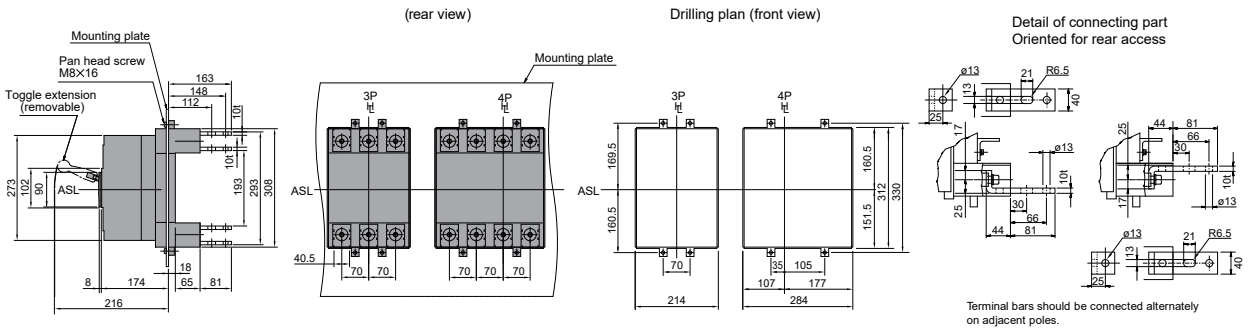
Mounting screw M12X25 max. Hex. sec. head bolt.

Mounting On a Support or Rails



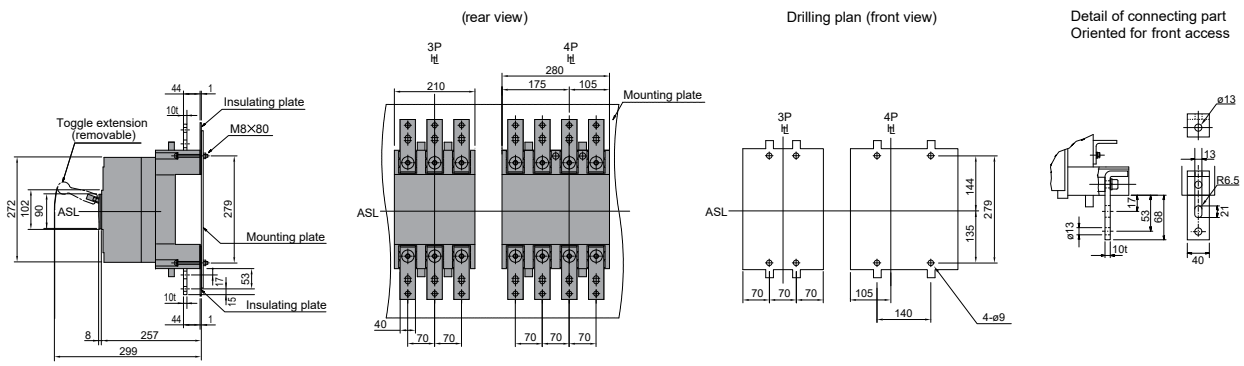
Terminal bars should be connected alternately on adjacent poles.

Mounting Through the Backplate (shown with optional connection bars oriented for rear access)



Terminal bars should be connected alternately on adjacent poles.

Mounting On the Backplate (optional connection bars must be oriented for front access)



B800_SX

Electronic MCCB with Ammeter

- ✔ General purpose power distribution, motor starting, Integral Ammeter
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ 3 or 4 pole versions
- ✔ Suits HC chassis, 1250 A - 2200 A main bar options (except for 800P_SX)
- ✔ 273 mm (H), B800H_SX: 103 mm (D), B800P_SX: 140 mm (D), 70 mm pole centres
- ✔ Fault ratings; 70, 125 kA I_{CU} @ 415 V AC
- ✔ Built-in LED back-lit display, individual LSI settings adjustment
- ✔ Display indicates Amps and allows settings changes via an onboard menu
- ✔ Full range of accessories for application flexibility
- ✔ Trip units; 630 A, 800 A

General

Trip Unit Protection Type	Electronic LSI with Ammeter [1)]
Trip Unit Rating	630, 800 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @415 V AC	**H**	70 kA
	P	125 kA

Voltage

Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

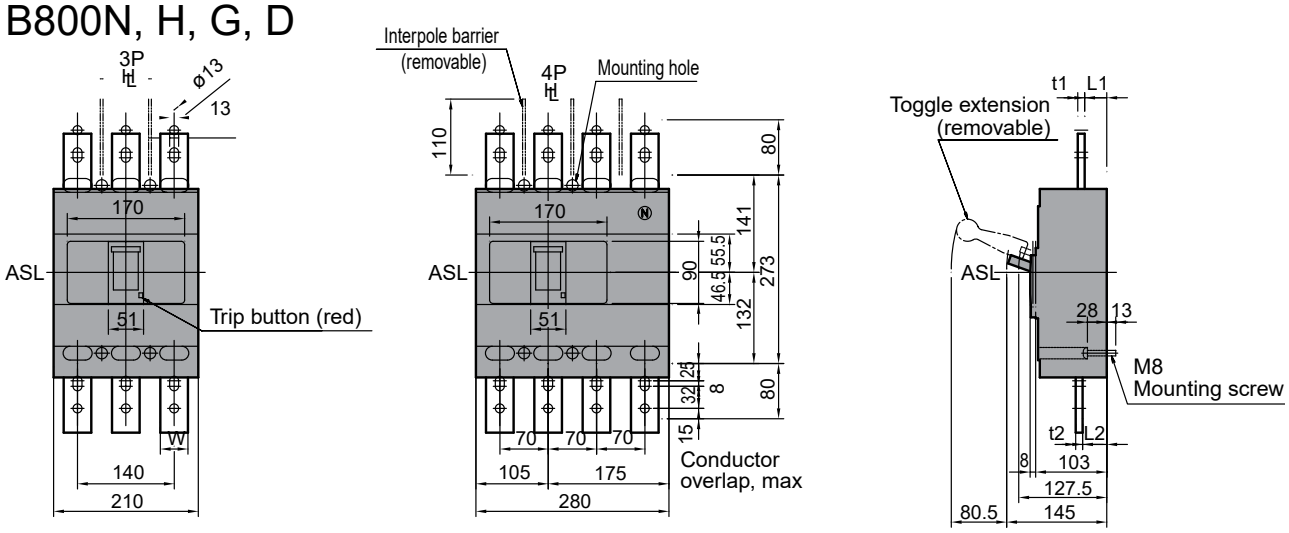
Connections

Connection Mode	Front Connection Rear Connection (Option) Plug-in PM (Option) Extension Bar

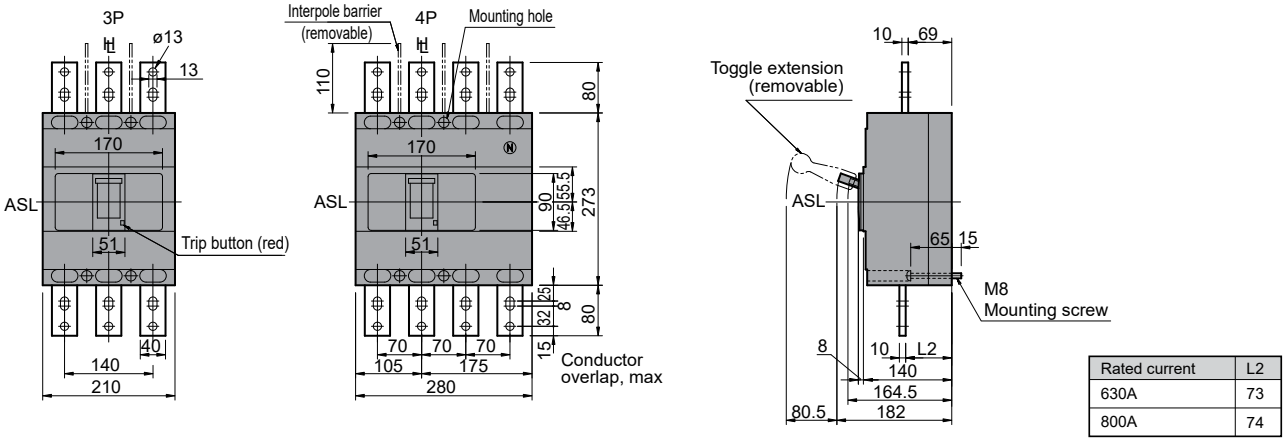
Notes: 1) When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Quick Reference Dimensions – Front Connect

B800N, H, G, D



B800P, R



Rated current	L2
630A	73
800A	74

800 A Frame 3 Pole 50 kA SX (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
800	320 - 800	50	3	B800N3800SX

800 A Frame 3 Pole 70 kA SX (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
800	320 - 800	70	3	B800H3800SX

800 A Frame 3 Pole 125 kA SX (LSI)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
800	320 - 800	125	3	B800P3800SX

800 A Frame 4 Pole 50 kA SX (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
800	320 - 800	50	4	B800N4800SX

800 A Frame 4 Pole 70 kA SX (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
800	320 - 800	70	4	B800H4800SX

800 A Frame 4 Pole 125 kA SX (LSI)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
800	320 - 800	125	4	B800P4800SX

Notes: When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Ratings

Component Type	MCCB
Selectivity Category	B
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	800 AF
Trip Unit Rating	630, 800 A

I_n, Rated Current (A)	
N/H	800
45ºC	800
50ºC	800
70ºC	397
G/P/R	800
45ºC	800
50ºC	720
70ºC	397

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)		
(A)	630	800
(W)	64.31	93.33

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection Rear Connection (Option) Plug-in PM (Option) Extension Bar
Terminal Type	Extension Bar With Bolt holes
Connection Torque	40.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	HC Chassis, Except B800P / R
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height			273 mm
Width	**3P**		210 mm
	4P		280 mm
Depth (less toggle)		**B800H**	103 mm
		B800P	140 mm
Depth (toggle included)		**B800H**	145 mm
		B800P	182 mm
Weight	**3P**	**B800H**	9.1 kg
		B800P	14.8 kg
	4P	**B800H**	12.3 kg
		B800P	18.8 kg
Electrical Life			4000 cycles
Mechanical Life			10000 cycles

Short-Circuit Capacity

			kA Rating	
			MCCB Type	
		Voltage	**H**	**P**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	100	150
		380 / 400 V AC	70	125
		415 V AC	70	125
		440 V AC	65	125
		690 V AC	25	25
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	-	-
		250 V DC	-	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	85	150
		380 / 400 V AC	50	94
		415 V AC	50	94
		440V AC	50	94
		690 V AC	20	20
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	-	-
		250 V DC	-	-
	I_{cw} (Short Time Withstand)	0.3 Seconds	10	10

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI with Ammeter
Rated Temperature	50 °C

Other Features

Pre-trip alarm (PTA)	No
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

B400_SX, B400_SE, B800_SX, B800_SE, B1000_SX, B1000_SE (400AF to 1000AF)

TBPro(B400_SE,SX Comms options)_dOPCH-S01

Communications MCCB Versions and Options

			B400_SX to B1000_SX	B400_SE to B1000_SE
	Feature		**Smart Electronic Ammeter Display**	**Smart Electronic Energy Display**
OCR Type Fitted			XOW-1L-AC	XOW-1S-BAPGNSCWH
Protective Function	■ Adjustable Long time ■ Adjustable Short time ■ Adjustable Instantaneous	A	✔	✔
	Ground fault trip	GF	-	✔ For trip units 250 A to 1000 A
	N-phase protection	NP	-	✔
	Phase rotation protection	NS	-	✔
Alarm Function	Pre-trip alarm	PTA	-	✔
Integral Display	Integral LCD display		✔	✔
	Backlit display		-	✔
Selectivity function	Zone Interlock	Z	-	-
Measurement / Event Indication	Current			✔
	■ Line voltage ■ Electrical power ■ Electrical energy ■ Power factor ■ Demand electrical power	-	-	✔
	Electrical energy pulse	W	-	✔
	Harmonic current	H	-	✔
	Trip event log		✔	✔
	Alarm event log		✔	✔
Miscellaneous	Modbus RTU RS-485 comms	C	-	✔
	Can set OCR settings via Modbus		-	✔
	External display meter option	I	-	✔
	Test function	-	✔	✔
	Indication via output contact	Y	-	✔
	External 24 V DC supply required	-	✔	✔
	Can use OCR checker type TNS2	-	✔	✔

Measurement / Integral Meter Event Indication and Accuracy		**Modbus Communication Function**
Load Current (± 1.5 %)	Present value for each phase	✔ Ground fault current and phase rotation current can be displayed with XOW – SE OCRs
	Present max value	✔ The phase with highest current is measured only
Line Voltage (± 1.0 %)	Present value of each line voltage	✔
	Present maximum value	✔
	Present phase voltage value for each phase	✔ Only 4 pole breakers have this feature
Harmonic Current (± 2.5 %)	Present value of 3rd, 5th, 7th, to the 19th	-
	harmonic current for each phase	✔
Electrical Power (± 2.5 %)	Present active power	✔
Demand Electric Power (± 2.5 %)	Demand active power	✔
	Maximum demand value of active power	✔
Electrical Energy (± 2.5 %)	Active electrical energy	✔
Power Factor (± 5 %)	Present value	✔
Trip Event Log	Fault current (± 1.5 %)	✔
	Indication of cause	✔
Alarm Event Log	Cause of alarm, Indication of operated value	✔

Note: Electrical energy is stored every 2 hours and the fault current and cause of fault are stored every time a fault occurs, in a flash memory.

Over Current Relay Settings

Applicable MCCB Types	CT Rated Primary Current I_{CT}
B400, with SX or SE suffix	250 A
	400 A
B800, with SX or SE suffix	630 A
	800 A
B1000, with SX or SE suffix	1000 A

TBPro(B400_SE,SX Comms options)_dOPCH-S02

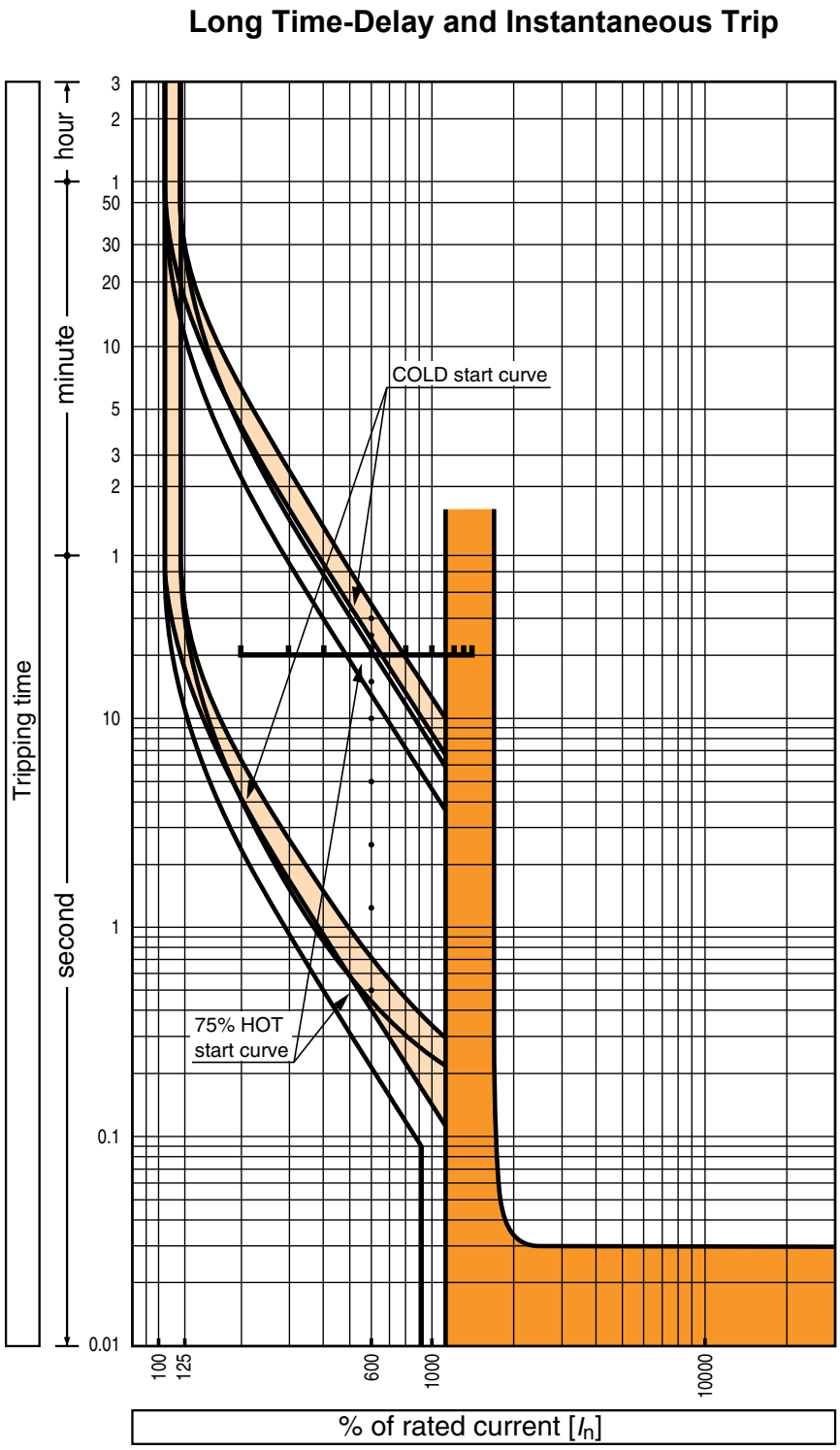
Left
Integrated LCD display standard with B400, 800, 1000_SX/ SE MCCBs.

Protective Function [4]		**Symbol**	**Setting Range (Bold Is Factory Default)**
Rated Current (A)		I_n	$[I_{CT}]$ x (0.5 - 0.63 - 0.8 - 1.0)
Long Time-Delay Trip LT	Pick-up current (A)	I_R	$[I_n]$ x (0.8 - 0.85 - 0.9 - 0.95 - 1.0)
			Non tripping at not more than $[I_R]$ x 1.05
			Tripping at more than $[I_R]$ x 1.05 and not more than $[I_R]$ x 1.2
	Time-delay (s)	t_R	(0.5 - 1.25 - 2.5 - 5 - 10 - 15 - 20 - 25 - 30 sec) at 600 % of $[I_R]$
			Applies to all MCCBs except S630 and S1000 settings which are: (0.5 - 1.25 - 2.5 - 5 - 10 - 15 - 16 sec)
			Time-delay setting tolerance: ± 20 %, + 0.13 s – 0 s
	COLD / HOT	-	COLD / HOT
Short Time-Delay Trip ST	Pick-up current (A)	I_{sd}	$[I_n]$ x (1 - 1.5 - 2 - 2.5 - 3 - 4 - 6 - 8 - 10 - NON)
			Applies to all MCCBs except S630 and S1000 settings which are: (1 - 1.5 - 2 - 2.5 - 3 - 4 - 6 - 8 - NON). 2)
			Current setting tolerance: ± 15 %
	Time-delay (s)	t_{ds}	I^2t OFF: 0.05-0.1-0.2-0.3 s (Definite time characteristic), Time-delay setting tolerance: + 50 ms – 20 ms
			I^2t ON: 0.05 - 0.1 - 0.2 - 0.3s (Ramp characteristic at less than 1000 % of $[I_n]$, Definite time characteristic at 1000 % or more of $[I_n]$)
	I^2t ramp characteristic	-	OFF / ON
Instantaneous Trip INST	Pick-up current (A)	I_i	$[I_n]$ x (2 - 3 - 4 - 6 - 8 - 10 - 12 - 13 - 14 - NON) [1) 2)]
			Current setting tolerance: ±20 %
Ground Fault Trip GF **(250 A, 400 A, 630 A, 800 A, 1000 A)**	Pick-up current (A)	I_g	$[I_{CT}]$ x (0.2 - 0.3 - 0.4 - NON)
			Current setting tolerance: ± 20 %
	Time-delay (s)	t_G	I^2t OFF: 0.1 - 0.2 - 0.3 - 0.4 - 0.8 s (Definite time characteristic)
			Time-delay setting tolerance: + 50 ms – 20 ms
			I^2t ON: 0.1 - 0.2 - 0.3 - 0.4 - 0.8 s (Ramp characteristic at less than 40 % of $[I_{CT}]$, Definite time characteristic at 40 % or more of $[I_{CT}]$)
	I^2t ramp characteristic	-	OFF / ON
	Mode	-	TRIP / OFF [3)]
N-Phase Protection NP	Pick-up current (A)	I_N	$[I_{CT}]$ x (0.4 - 0.5 - 0.63 - 0.8 - 1.0 - NON)
			• Non tripping at not more than $[I_N]$ x 1.05
			• Tripping at more than $[I_N]$ x 1.05 and not more than $[I_N]$ x 1.2
	Time-delay (s)	t_N	Tripping at 600 % of $[I_N]$ with LT time-delay $[t_R]$.
	COLD / HOT	-	COLD / HOT
Phase Rotation Protection NS	Pick-up current (A)	I_{NS}	$[I_n]$ x (0.2 - 0.3 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8 - 0.9 - 1.0)
			Current setting tolerance: ± 10 %
	Time-delay (s)	t_{NS}	(0.4 - 0.8 - 1.2 - 1.6 - 2.0 - 2.4 - 2.8 - 3.2 - 3.6 - 4.0) (sec) at 150 % of $[I_{NS}]$
			Time-delay setting tolerance: ± 20 %, + 0.13 s –0 s
	Mode	-	TRIP / OFF [3)]
Pre-Trip Alarm PTA	Pick-up current (A)	I_p	$[I_n]$ x (0.7 - 0.8 - 0.9 - 1.0)
			Current setting tolerance: ±10%
	Time-delay (s)	t_p	5 - 10 - 15 - 20 - 40 - 60 - 80 - 120 - 160 - 200 s more than $[I_P]$
			Time-delay setting tolerance: ±10%, +0.1 s –0 s
	Mode	-	AL / OFF 3)

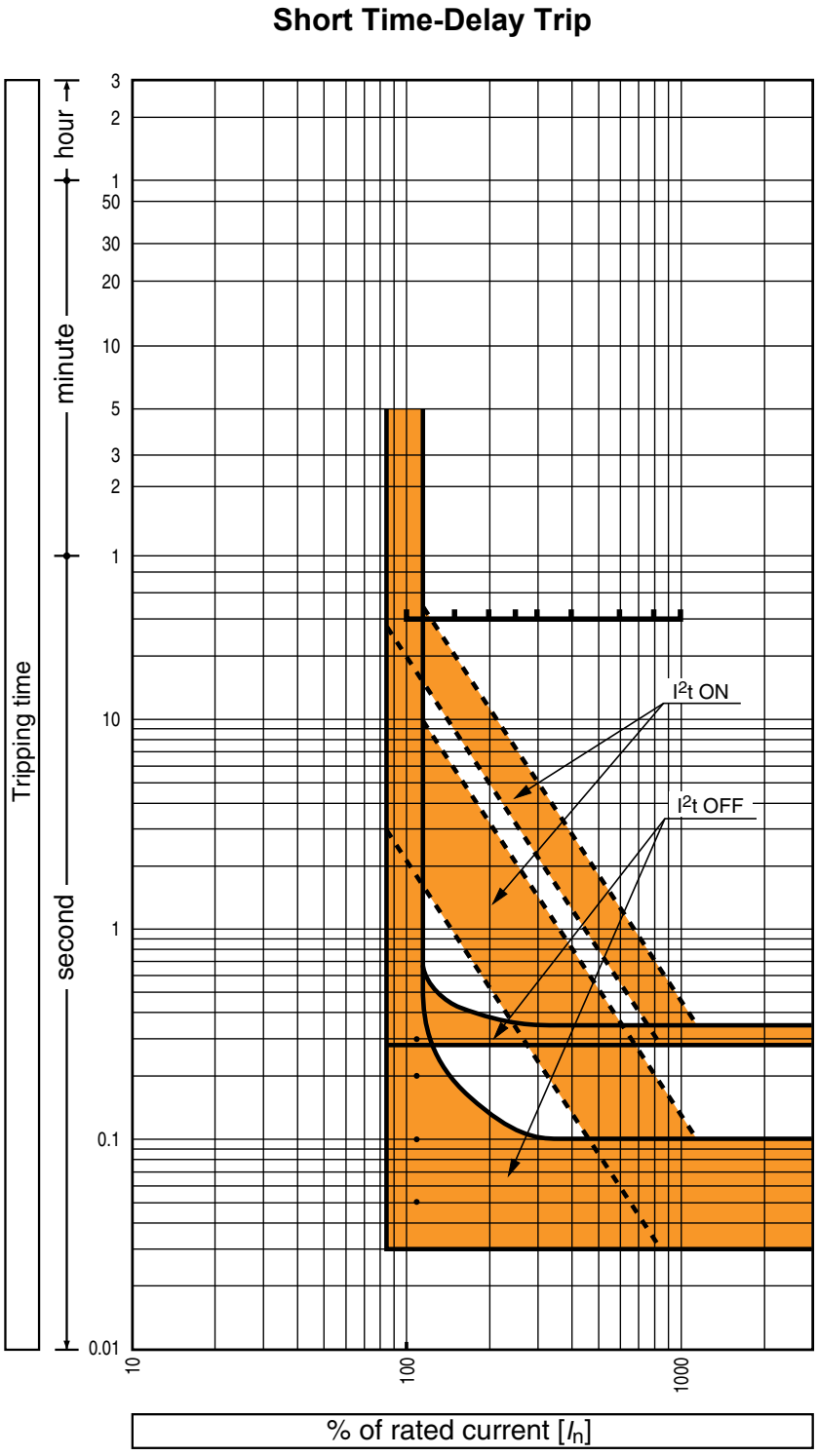
Notes

1) The maximum pick-up current is set to 1300% x [ICT] for B400_SX/SE, 1000 % x [ICT] for B1000H_SX/SE, 1200 % x $[I_{CT}]$ for B800_SX/SE.
2) If the short time delay setting is NON, the instantaneous trip setting cannot be NON. If the instantaneous setting is NON, the short time setting cannot be NON.
3) Selecting "OFF" disables the protective functions. Unless otherwise specified when ordering, the settings will default to those underlined in the table above.
4) The protective functions of XOW Over Current Relays can be tested using the Terasaki TNS2 OCR checker. The checker can be used to check Long time, Short time, Instantaneous, and Ground Fault settings of the MCCB.

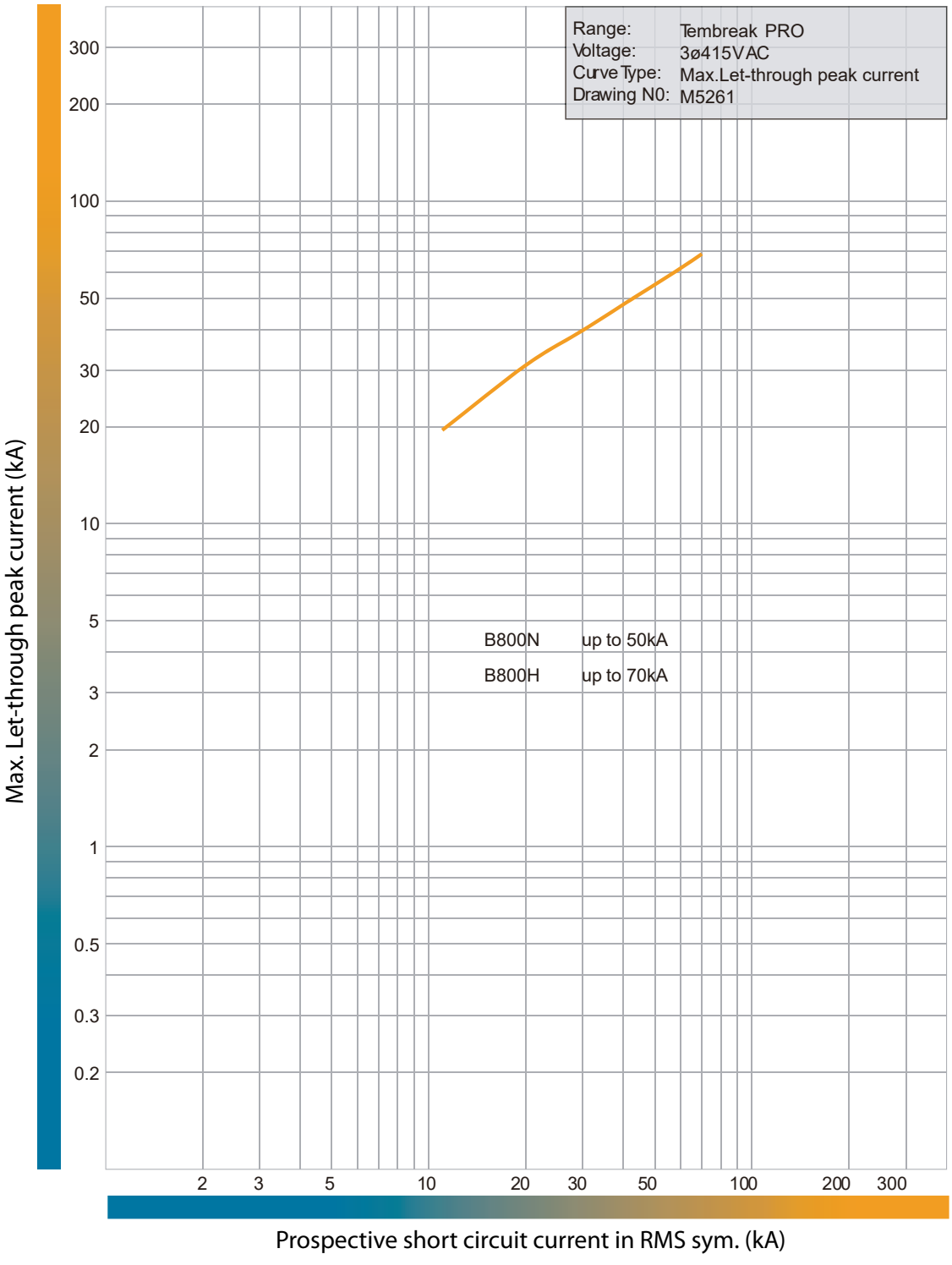
Time Current Characteristics Curve, B400,800,1000_SX/SE Electronic with Ammeter



Time Current Characteristics Curve, B400,800,1000_SX Electronic with Ammeter

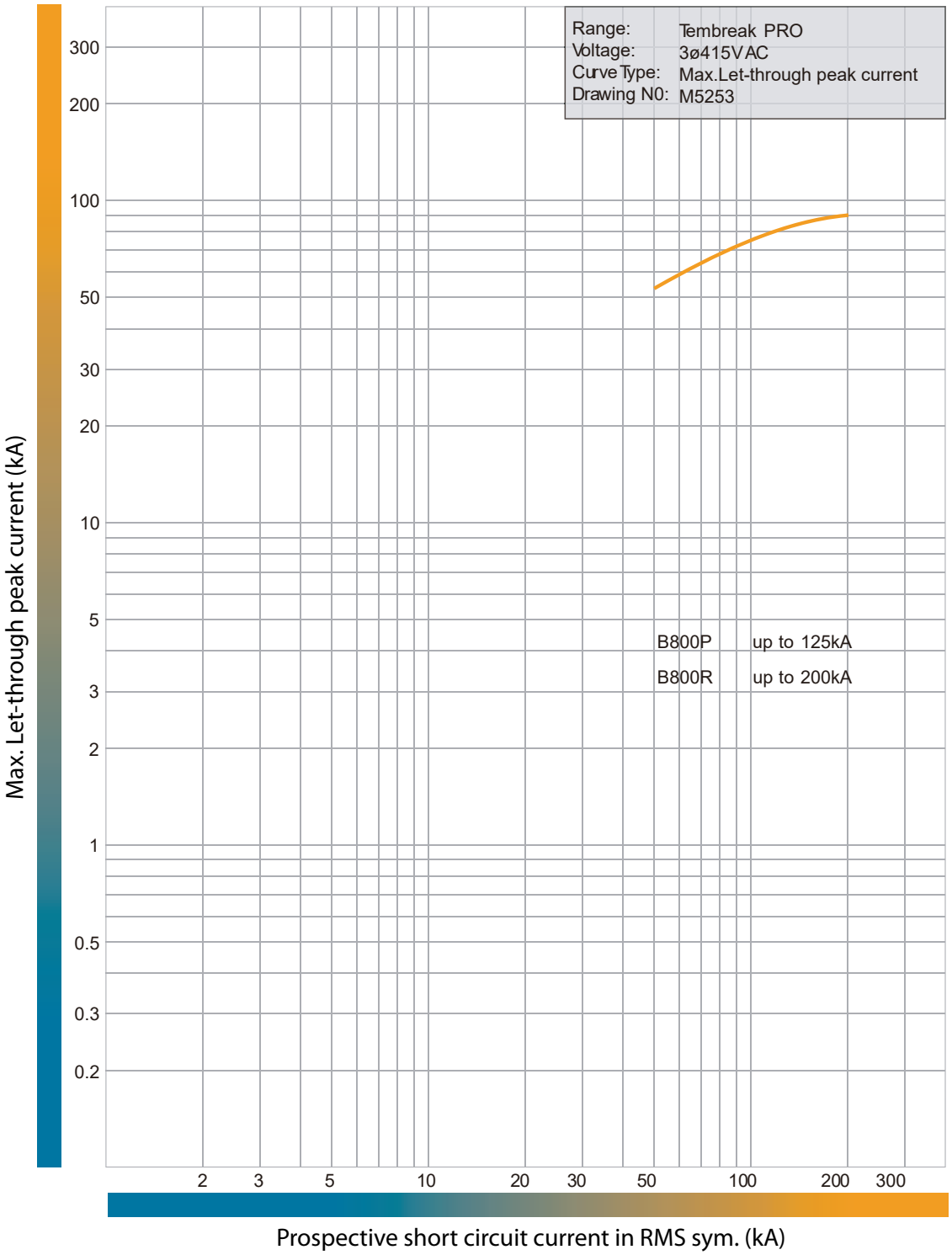


Let-Through Peak Current Curve, B800_BE/BEG/SX/SE, Electronic

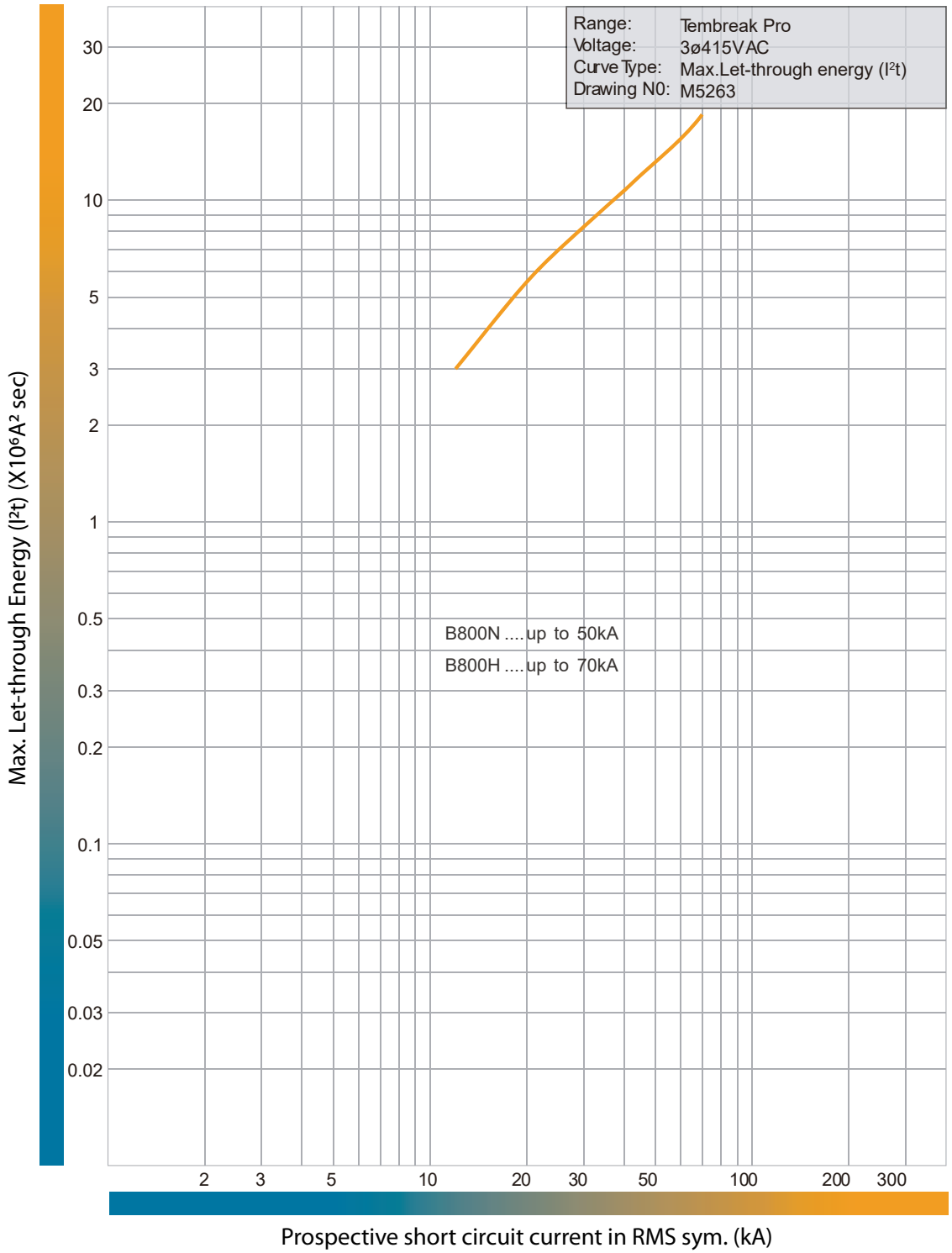


MCCBs

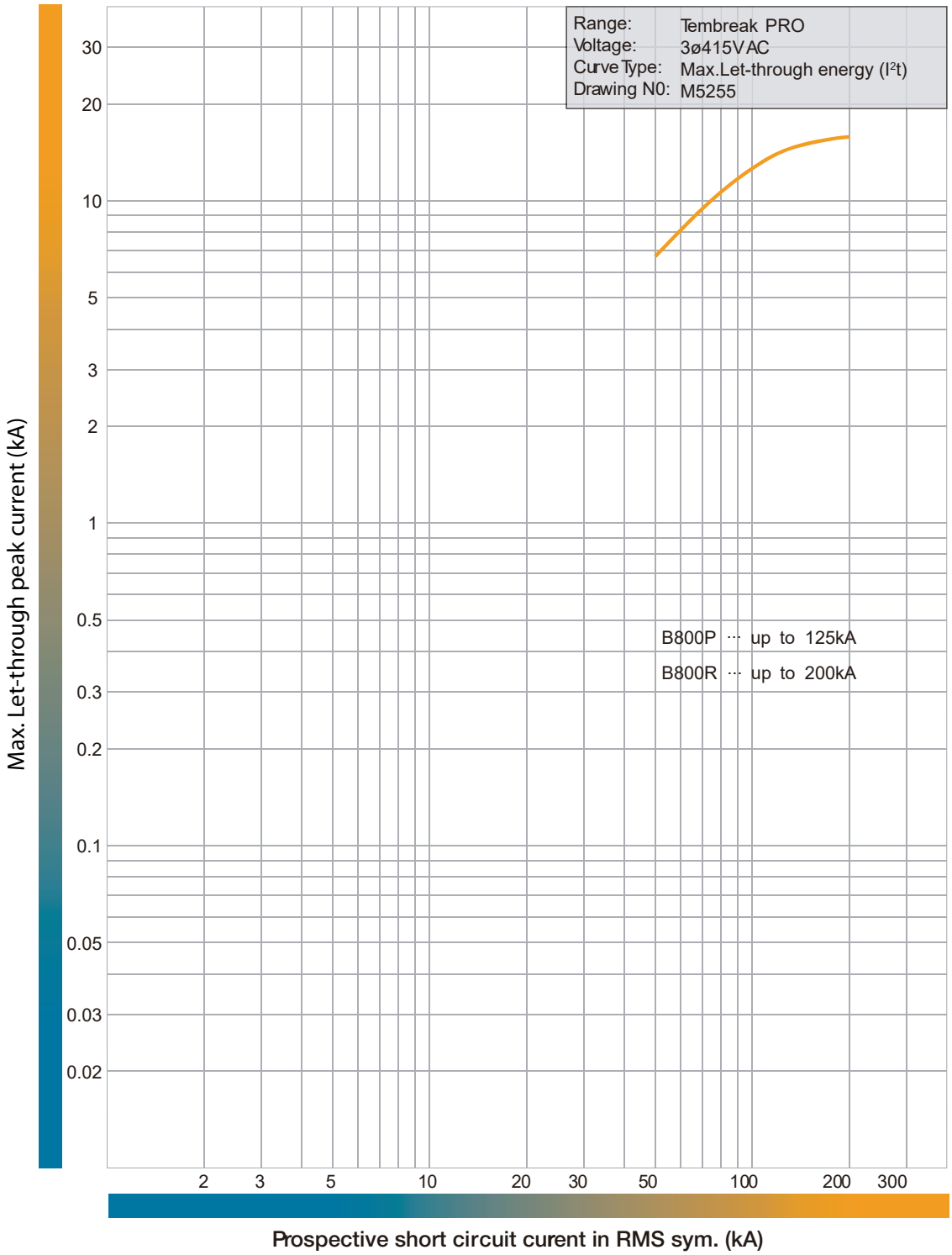
Let-Through Peak Current Curve, B800_BE/SX/SE, Electronic



Let-Through Energy I²t Curve, B800_BE/BEG/SX/SE, Electronic

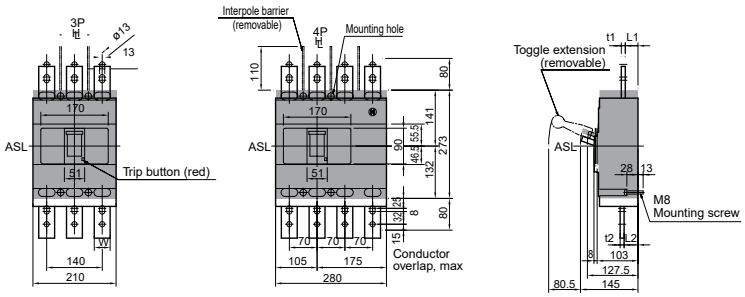


Let-Through Energy I²t Curve, B800_BE/SX/SE, Electronic

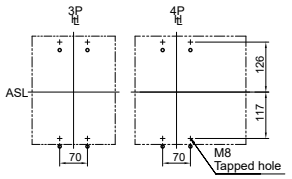


Dimensions B800F, N, H, G_TM/NN/BE/BEG/SE/SX (mm)

Front Connected With Extension Bars (Optional)

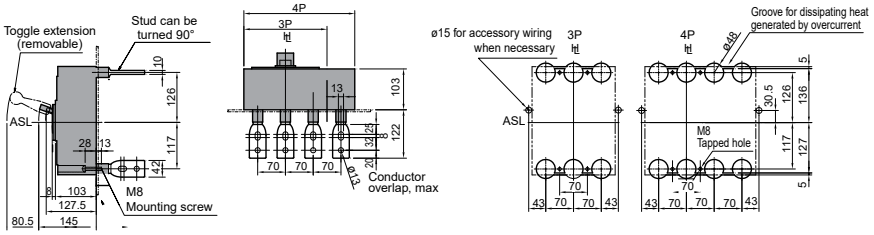


Drilling plan (front view)



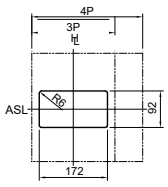
Breaker Type	Rated Current	t1	t2	L1	L2	W
B800_TM, B800_NN	630A	8	8	32	34	40
	800A	10	10	32	35	40
B800_BE	630A	8	8	32	36	40
	800A	10	10	32	36	40

Rear Connected



Drilling plan (front view)

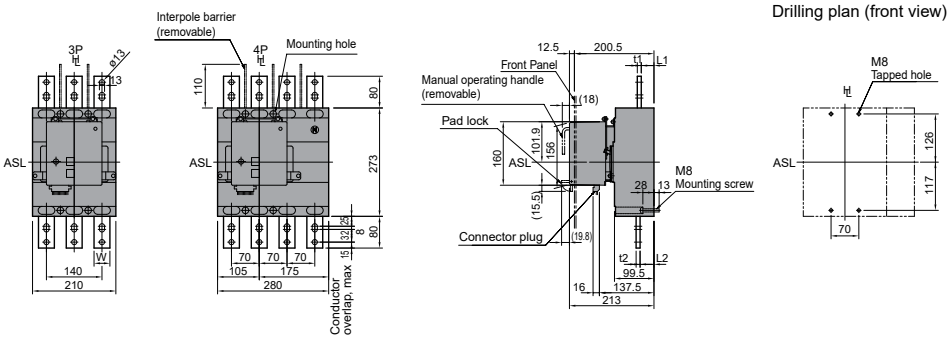
Panel cutout (front view)



Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon.

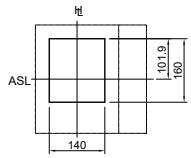
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Front Connected With Motor Operator



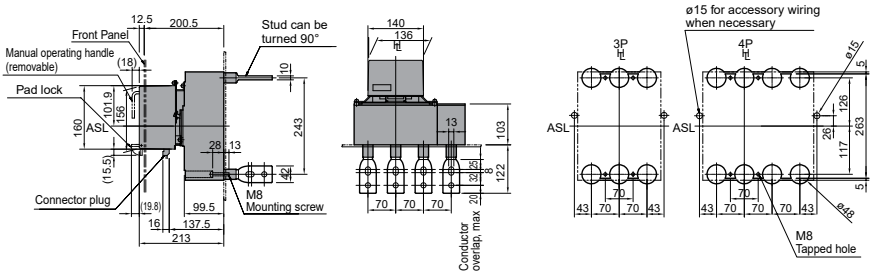
Drilling plan (front view)

Panel cutout (front view)



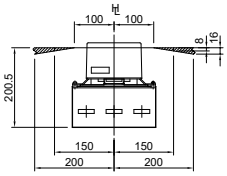
Panel cutout dimensions shown give an allowance of 1.5mm around motor operator.

Rear Connected With Motor Operator



Drilling plan (front view)

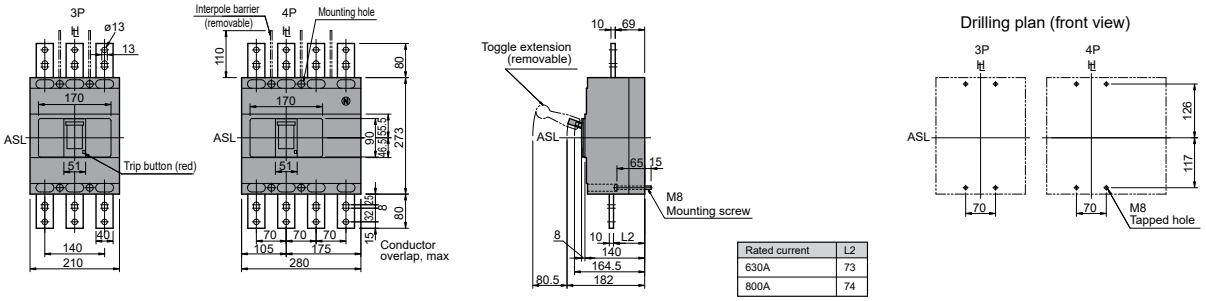
Panel hinge position (hatching area) (bottom view)



Note: Studs are factory installed in horizontal direction both on the line and load sides.

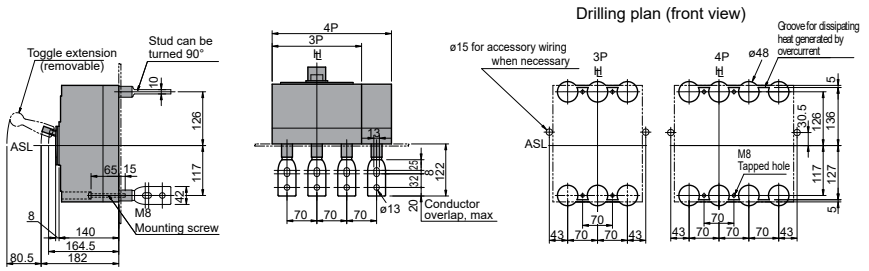
Dimensions B800P,R_BE/SE/SX (mm)

Front Connected



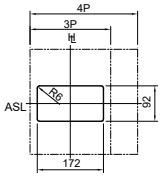
Rated current	L2
630A	73
800A	74

Rear Connected



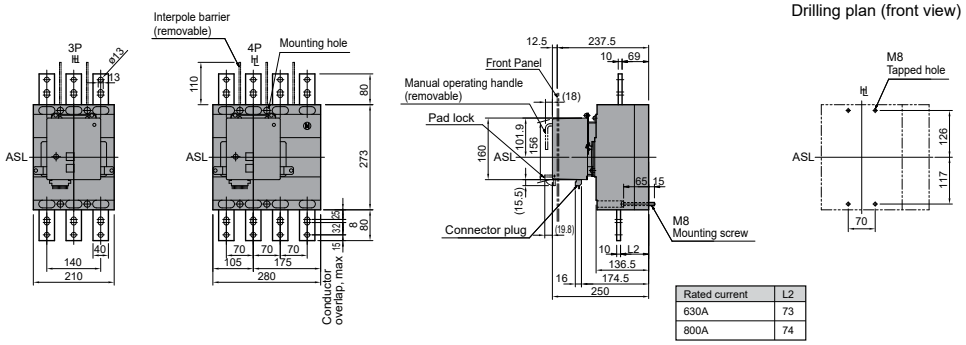
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel cutout (front view)



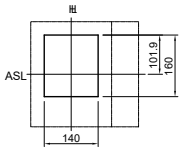
Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon.

Front Connected With Motor Operator



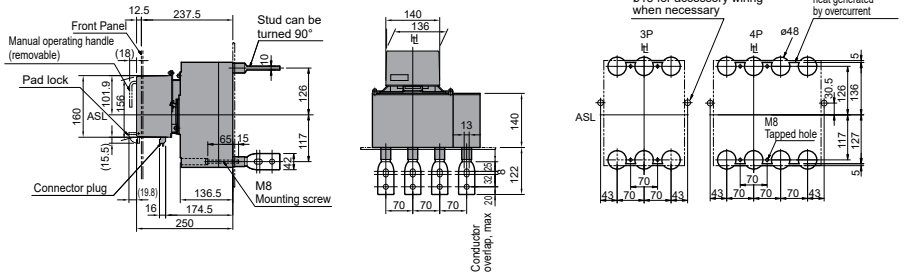
Rated current	L2
630A	73
800A	74

Panel cutout (front view)



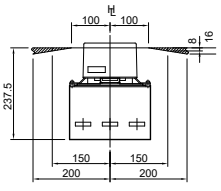
Panel cutout dimensions shown give an allowance of 1.5mm around motor operator.

Rear Connected With Motor Operator



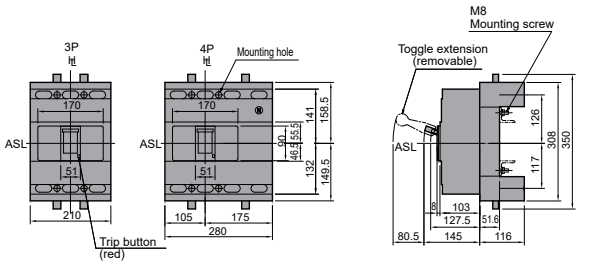
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel hinge position (hatching area) (bottom view)

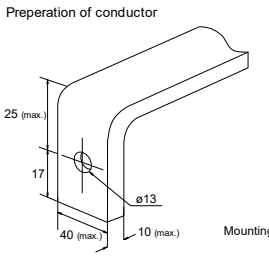


Dimensions B800F, N, H, G_TM/NN/BE/BEG/SE/SX Plug-in (mm)

Outline Dimensions

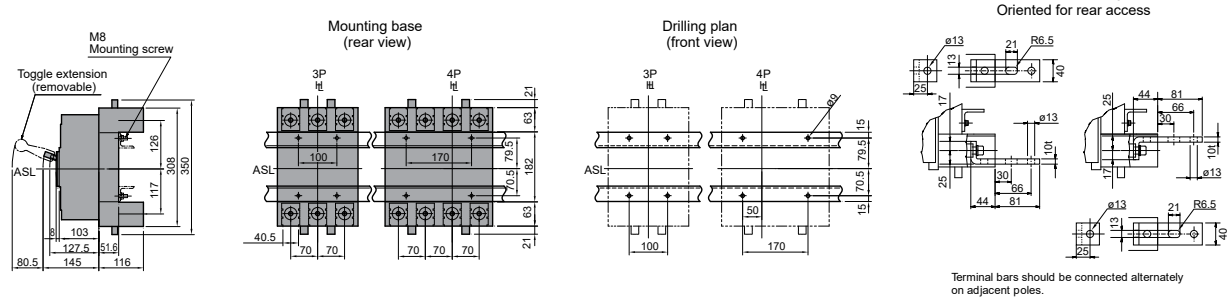


Termination of Busbar



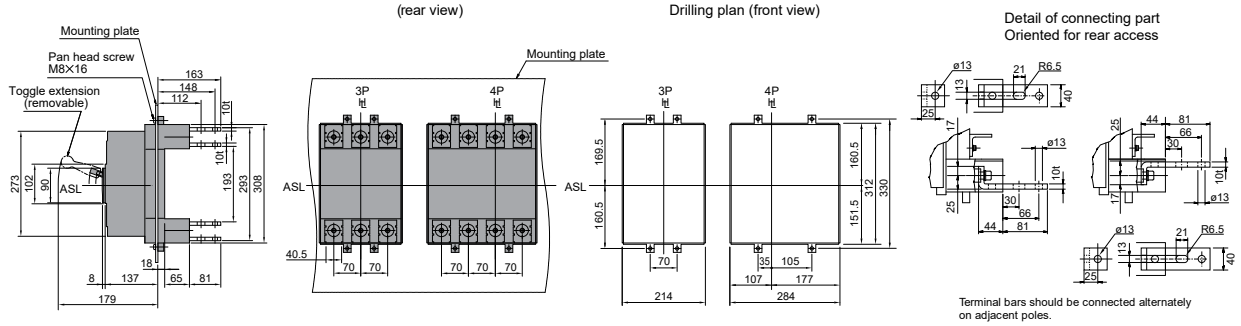
Mounting screw M12×25 max. Hex. sec. head bolt.

Mounting On a Support or Rails



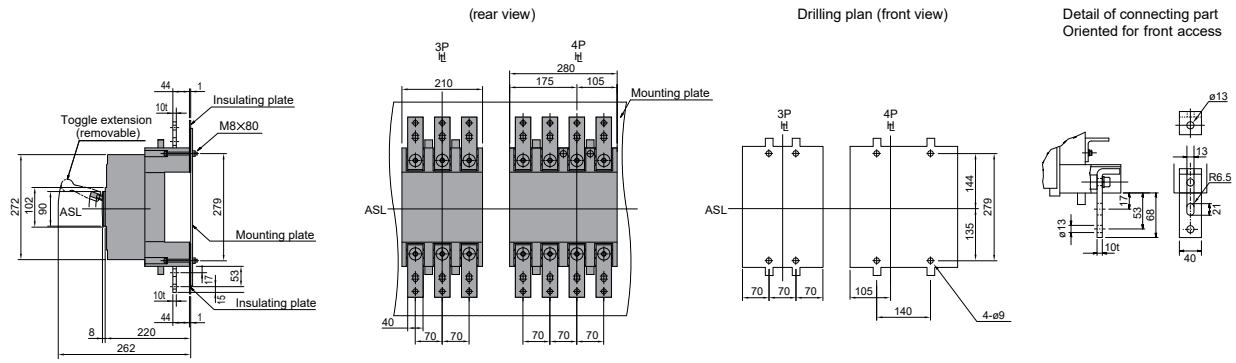
Terminal bars should be connected alternately on adjacent poles.

Mounting Through the Backplate (shown with optional connection bars oriented for rear access)



Terminal bars should be connected alternately on adjacent poles.

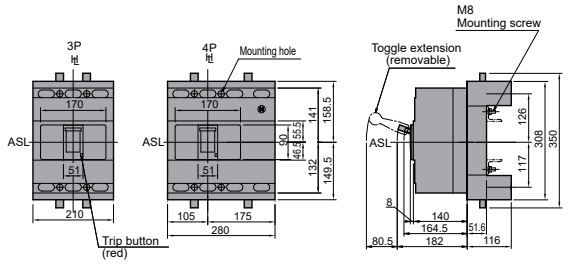
Mounting on the Backplate (optional connection bars must be oriented for front access)



MCCBs

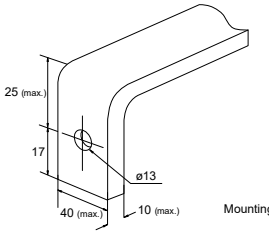
Dimensions B800P, R_BE/BEG/SE/SX, Plug-in (mm)

Outline Dimensions



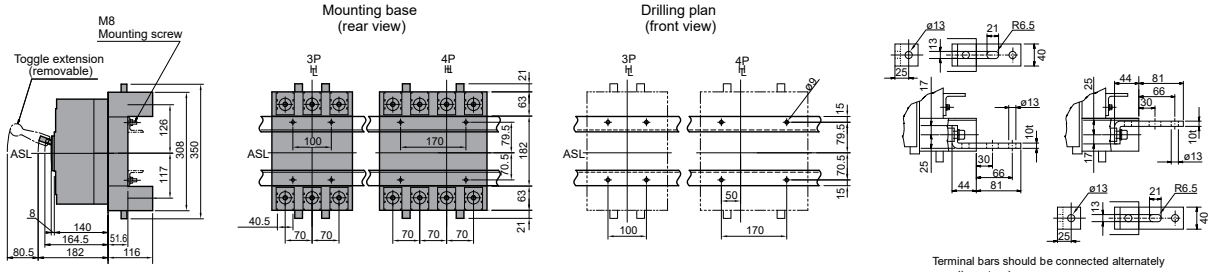
Termination of Busbar

Preperation of conductor



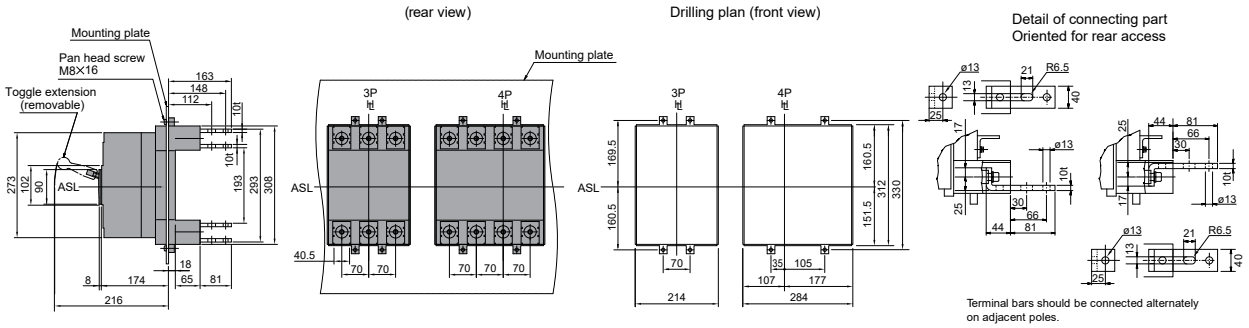
Mounting screw M12X25 max. Hex. sec. head bolt.

Mounting On a Support or Rails



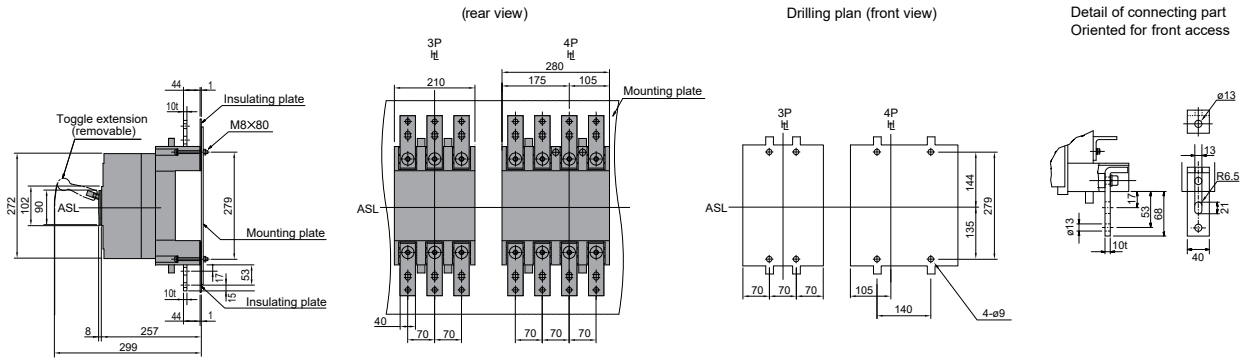
Terminal bars should be connected alternately on adjacent poles.

Mounting Through the Backplate (shown with optional connection bars oriented for rear access)



Terminal bars should be connected alternately on adjacent poles.

Mounting On the Backplate (optional connection bars must be oriented for front access)



B800_SE

Electronic MCCB with Energy Metering

- ✔ General purpose power distribution, energy metering and communications, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ 3 or 4 pole versions
- ✔ Suits HC chassis, 1250 A - 2200 A main bar options (except 800P_SE)
- ✔ 273 mm (H), B800H: 103 mm / B800P: 140mm (D), 70 mm pole centres
- ✔ Fault ratings; 70, 125 kA I_{cu} @ 415 V AC
- ✔ Energy metering LSIG trip unit: Modbus communications, V, I, Energy measurement output
- ✔ Built-in LED back-lit display, onboard menu for full LSIG and settings adjustment and data viewing
- ✔ Display: door mount display (T2ED) available for external metering and monitoring
- ✔ Full range of accessories for application flexibility
- ✔ Trip units; 630 A, 800 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Electronic LSIG Energy Metering [1]
Trip Unit Rating	800 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**H**	70 kA
	P	125 kA

Voltage

Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

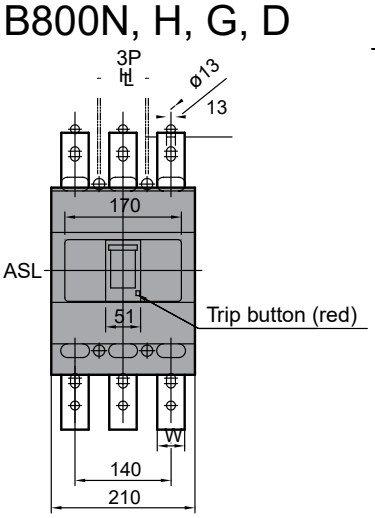
Connections

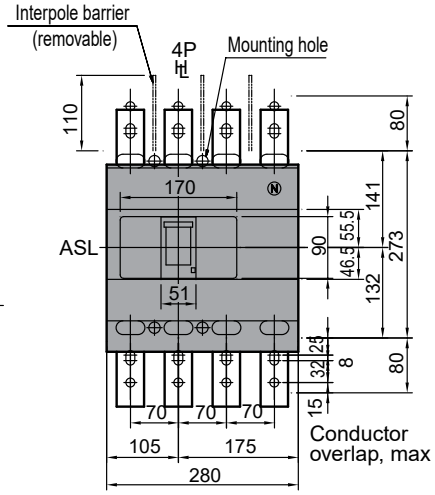
Connection Mode	Front Connection Rear Connection (Option) Plug-in PM (Option) Extension Bar

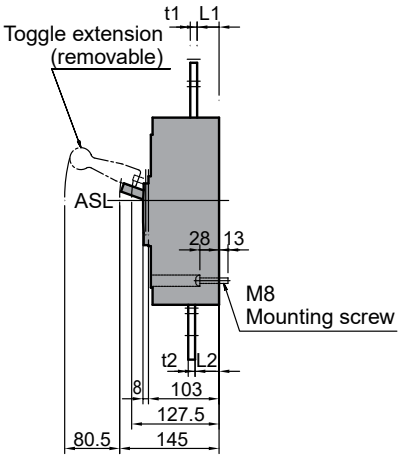
Notes: 1) When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Quick Reference Dimensions – Front Connect

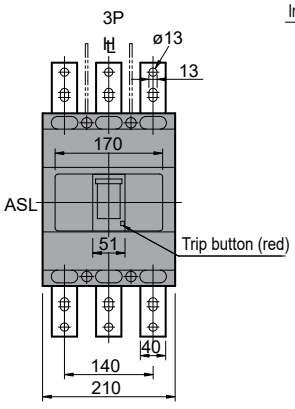
B800N, H, G, D

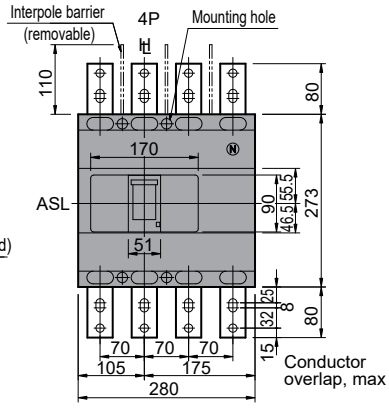


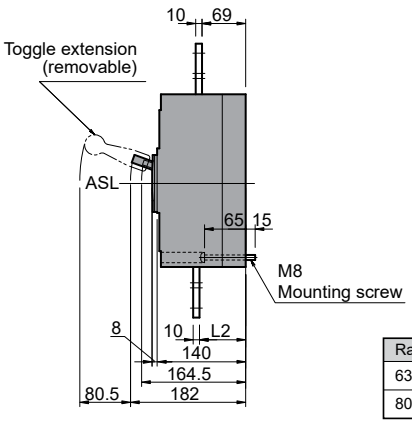




B800P, R







Rated current	L2
630A	73
800A	74

800 A Frame 3 Pole 50 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
800	320 - 800	50	3	B800N3800SE

800 A Frame 3 Pole 70 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
800	320 - 800	70	3	B800H3800SE

800 A Frame 3 Pole 125 kA SE (LSIG)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
800	320 - 800	125	3	B800P3800SE

800 A Frame 4 Pole 50 kA SE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
800	320 - 800	50	4	B800N4800SE

800 A Frame 4 Pole 70 kA SE (LSI/G)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
800	320 - 800	70	4	B800H4800SE

800 A Frame 4 Pole 125 kA SE (LSIG)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
800	320 - 800	125	4	B800P4800SE

Notes: When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Ratings

Component Type	MCCB
Selectivity Category	B
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	800 AF
Trip Unit Rating	800 A

I_n, Rated Current (A)	
N/H	800
45ºC	800
50ºC	800
70ºC	397
G/P/R	800
45ºC	800
50ºC	720
70ºC	397

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)	
(A)	800
(W)	93.33

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 %RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection Rear Connection (Option) Plug-in PM (Option) Extension Bar
Terminal Type	Extension Bar With Bolt holes
Connection Torque	40.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	HC Chassis, Except B800P / R
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height			273 mm
Width	**3P**		210 mm
	4P		280 mm
Depth (less toggle)		**B800H**	103 mm
		B800P	140 mm
Depth (toggle included)		**B800H**	145 mm
		B800P	182 mm
Weight	**3P**	**B800H**	9.1 kg
		B800P	14.8 kg
	4P	**B800H**	12.3 kg
		B800P	18.8 kg
Electrical Life			4000 cycles
Mechanical Life			10000 cycles

Short-Circuit Capacity

			kA Rating	
			MCCB Type	
		Voltage	H	P
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	100	150
		380 / 400 V AC	70	125
		415 V AC	70	125
		440 V AC	65	125
		690 V AC	25	25
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	-	-
		250 DC	-	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	85	150
		380 / 400 V AC	50	94
		415 V AC	50	94
		440V AC	50	94
		690 V AC	20	20
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	-	-
		250 V DC	-	-
	I_{cw} (Short Time Withstand)	0.3 Seconds	10	10

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSIG Energy Metering
Rated Temperature	50 °C

Other Features

Pre-trip alarm (PTA)	Yes
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	Yes

B400_SX, B400_SE, B800_SX, B800_SE, B1000_SX, B1000_SE (400AF to 1000AF)

TBPro(B400_SE,SX Comms options)_dOPCH-S01

Communications MCCB Versions and Options

			B400_SX to B1000_SX	B400_SE to B1000_SE
	Feature		**Smart Electronic Ammeter Display**	**Smart Electronic Energy Display**
OCR Type Fitted			XOW-1L-AC	XOW-1S-BAPGNSCWH
Protective Function	■ Adjustable Long time ■ Adjustable Short time ■ Adjustable Instantaneous	A	✔	✔
	Ground fault trip	GF	-	✔ For trip units 250 A to 1000 A
	N-phase protection	NP	-	✔
	Phase rotation protection	NS	-	✔
Alarm Function	Pre-trip alarm	PTA	-	✔
Integral Display	Integral LCD display		✔	✔
	Backlit display		-	✔
Selectivity function	Zone Interlock	Z	-	-
Measurement / Event Indication	Current			✔
	■ Line voltage ■ Electrical power ■ Electrical energy ■ Power factor ■ Demand electrical power	-	-	✔
	Electrical energy pulse	W	-	✔
	Harmonic current	H	-	✔
	Trip event log		✔	✔
	Alarm event log		✔	✔
Miscellaneous	Modbus RTU RS-485 comms	C	-	✔
	Can set OCR settings via Modbus		-	✔
	External display meter option	I	-	✔
	Test function	-	✔	✔
	Indication via output contact	Y	-	✔
	External 24 V DC supply required	-	✔	✔
	Can use OCR checker type TNS2	-	✔	✔

Measurement / Integral Meter Event Indication and Accuracy		**Modbus Communication Function**
Load Current (± 1.5 %)	Present value for each phase	✔ Ground fault current and phase rotation current can be displayed with XOW – SE OCRs
	Present max value	✔ The phase with highest current is measured only
Line Voltage (± 1.0 %)	Present value of each line voltage	✔
	Present maximum value	✔
	Present phase voltage value for each phase	✔ Only 4 pole breakers have this feature
Harmonic Current (± 2.5 %)	Present value of 3rd, 5th, 7th, to the 19th	-
	harmonic current for each phase	✔
Electrical Power (± 2.5 %)	Present active power	✔
Demand Electric Power (± 2.5 %)	Demand active power	✔
	Maximum demand value of active power	✔
Electrical Energy (± 2.5 %)	Active electrical energy	✔
Power Factor (± 5 %)	Present value	✔
Trip Event Log	Fault current (± 1.5 %)	✔
	Indication of cause	✔
Alarm Event Log	Cause of alarm, Indication of operated value	✔

Note: Electrical energy is stored every 2 hours and the fault current and cause of fault are stored every time a fault occurs, in a flash memory.

Over Current Relay Settings

Applicable MCCB Types	CT Rated Primary Current I_{CT}
B400, with SX or SE suffix	250 A
	400 A
B800, with SX or SE suffix	630 A
	800 A
B1000, with SX or SE suffix	1000 A

TBPro(B400_SE,SX Comms options)_dOPCH-S02

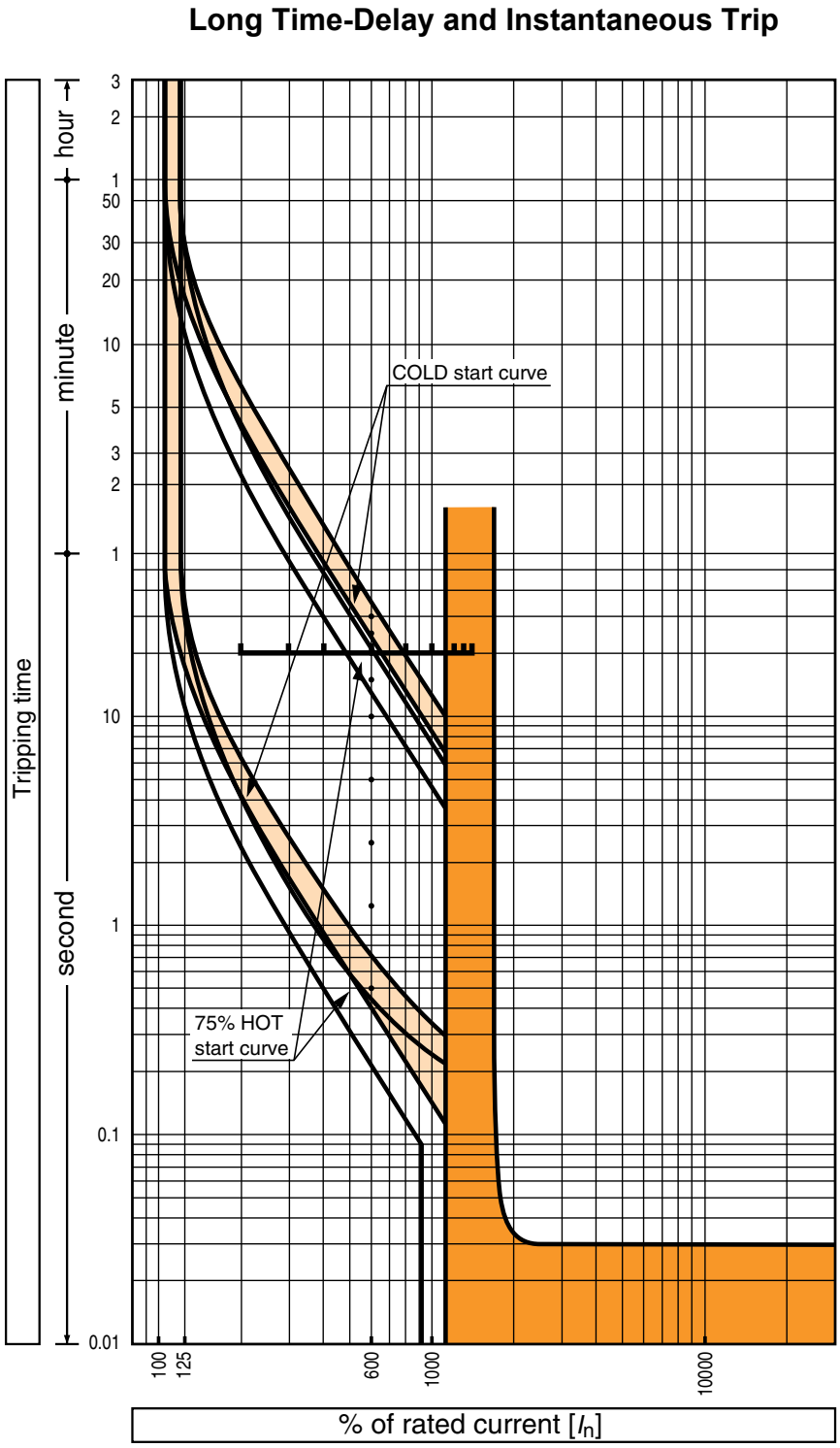
Left
Integrated LCD display standard with B400, 800, 1000_SX/SE MCCBs.

Protective Function [4] Rated Current (A)		**Symbol** I_n	**Setting Range (Bold Is Factory Default)** [I_{CT}] x (0.5 - 0.63 - 0.8 - 1.0)
Long Time-Delay Trip LT	Pick-up current (A)	I_R	[I_n] x (0.8 - 0.85 - 0.9 - 0.95 - 1.0)
			Non tripping at not more than [I_R] x 1.05
			Tripping at more than [I_R] x 1.05 and not more than [I_R] x 1.2
	Time-delay (s)	t_R	(0.5 - 1.25 - 2.5 - 5 - 10 - 15 - 20 - 25 - 30 sec) at 600 % of [I_R]
			Applies to all MCCBs except S630 and S1000 settings which are: (0.5 - 1.25 - 2.5 - 5 - 10 - 15 - 16 sec)
			Time-delay setting tolerance: ± 20 %, + 0.13 s – 0 s
	COLD / HOT	-	COLD / HOT
Short Time-Delay Trip ST	Pick-up current (A)	I_{sd}	[I_n] x (1 - 1.5 - 2 - 2.5 - 3 - 4 - 6 - 8 - 10 - NON)
			Applies to all MCCBs except S630 and S1000 settings which are: (1 - 1.5 - 2 - 2.5 - 3 - 4 - 6 - 8 - NON). 2)
			Current setting tolerance: ± 15 %
	Time-delay (s)	t_{ds}	I^2t OFF: 0.05-0.1-0.2-0.3 s (Definite time characteristic), Time-delay setting tolerance: + 50 ms – 20 ms
			I^2t ON: 0.05 - 0.1 - 0.2 - 0.3s (Ramp characteristic at less than 1000 % of [I_n], Definite time characteristic at 1000 % or more of [I_n])
	I^2t ramp characteristic	-	OFF / ON
Instantaneous Trip INST	Pick-up current (A)	I_i	[I_n] x (2 - 3 - 4 - 6 - 8 - 10 - 12 - 13 - 14 - NON) [1) 2)]
			Current setting tolerance: ±20 %
Ground Fault Trip GF **(250 A, 400 A, 630 A, 800 A, 1000 A)**	Pick-up current (A)	I_g	[I_{CT}] x (0.2 - 0.3 - 0.4 - NON)
			Current setting tolerance: ± 20 %
	Time-delay (s)	t_G	I^2t OFF: 0.1 - 0.2 - 0.3 - 0.4 - 0.8 s (Definite time characteristic)
			Time-delay setting tolerance: + 50 ms – 20 ms
			I^2t ON: 0.1 - 0.2 - 0.3 - 0.4 - 0.8 s (Ramp characteristic at less than 40 % of [I_{CT}], Definite time characteristic at 40 % or more of [I_{CT}])
	I^2t ramp characteristic	-	OFF / ON
	Mode	-	TRIP / OFF [3)]
N-Phase Protection NP	Pick-up current (A)	I_N	[I_{CT}] x (0.4 - 0.5 - 0.63 - 0.8 - 1.0 - NON)
			• Non tripping at not more than [I_N] x 1.05
			• Tripping at more than [I_N] x 1.05 and not more than [I_N] x 1.2
	Time-delay (s)	t_N	Tripping at 600 % of [I_N] with LT time-delay [t_R].
	COLD / HOT	-	COLD / HOT
Phase Rotation Protection NS	Pick-up current (A)	I_{NS}	[I_n] x (0.2 - 0.3 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8 - 0.9 - 1.0)
			Current setting tolerance: ± 10 %
	Time-delay (s)	t_{NS}	(0.4 - 0.8 - 1.2 - 1.6 - 2.0 - 2.4 - 2.8 - 3.2 - 3.6 - 4.0) (sec) at 150 % of [I_{NS}]
			Time-delay setting tolerance: ± 20 %, + 0.13 s –0 s
	Mode	-	TRIP / OFF [3)]
Pre-Trip Alarm PTA	Pick-up current (A)	I_p	[I_n] x (0.7 - 0.8 - 0.9 - 1.0)
			Current setting tolerance: ±10%
	Time-delay (s)	t_p	5 - 10 - 15 - 20 - 40 - 60 - 80 - 120 - 160 - 200 s more than [I_P]
			Time-delay setting tolerance: ±10%, +0.1 s –0 s
	Mode	-	AL / OFF 3)

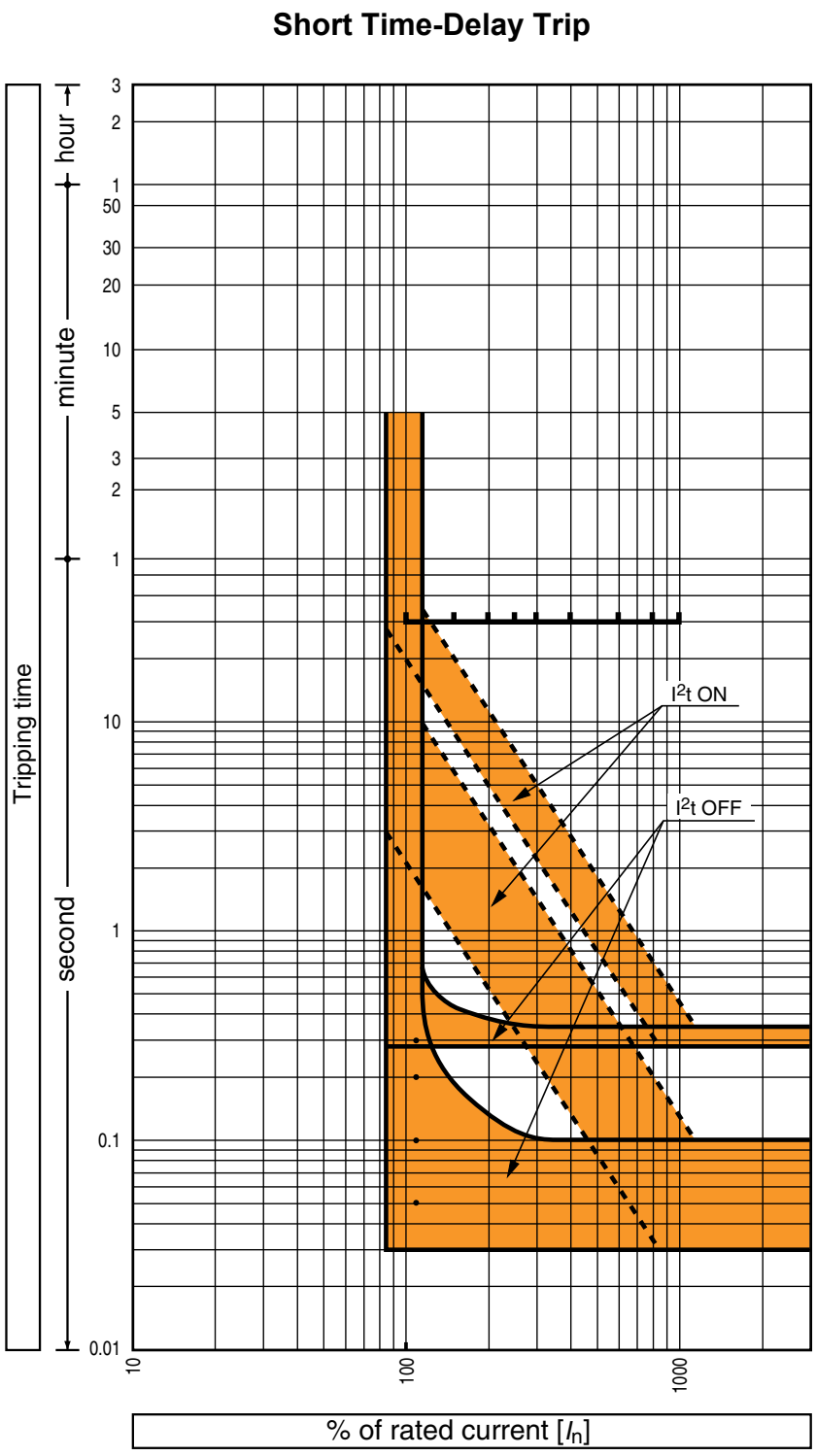
Notes

1) The maximum pick-up current is set to 1300% x [ICT] for B400_SX/SE, 1000 % x [ICT] for B1000H_SX/SE, 1200 % x [I_{CT}] for B800_SX/SE.
2) If the short time delay setting is NON, the instantaneous trip setting cannot be NON. If the instantaneous setting is NON, the short time setting cannot be NON.
3) Selecting "OFF" disables the protective functions. Unless otherwise specified when ordering, the settings will default to those underlined in the table above.
4) The protective functions of XOW Over Current Relays can be tested using the Terasaki TNS2 OCR checker. The checker can be used to check Long time, Short time, Instantaneous, and Ground Fault settings of the MCCB.

Time Current Characteristics Curve, B400,800,1000_SE/SX Energy Metering Electronic

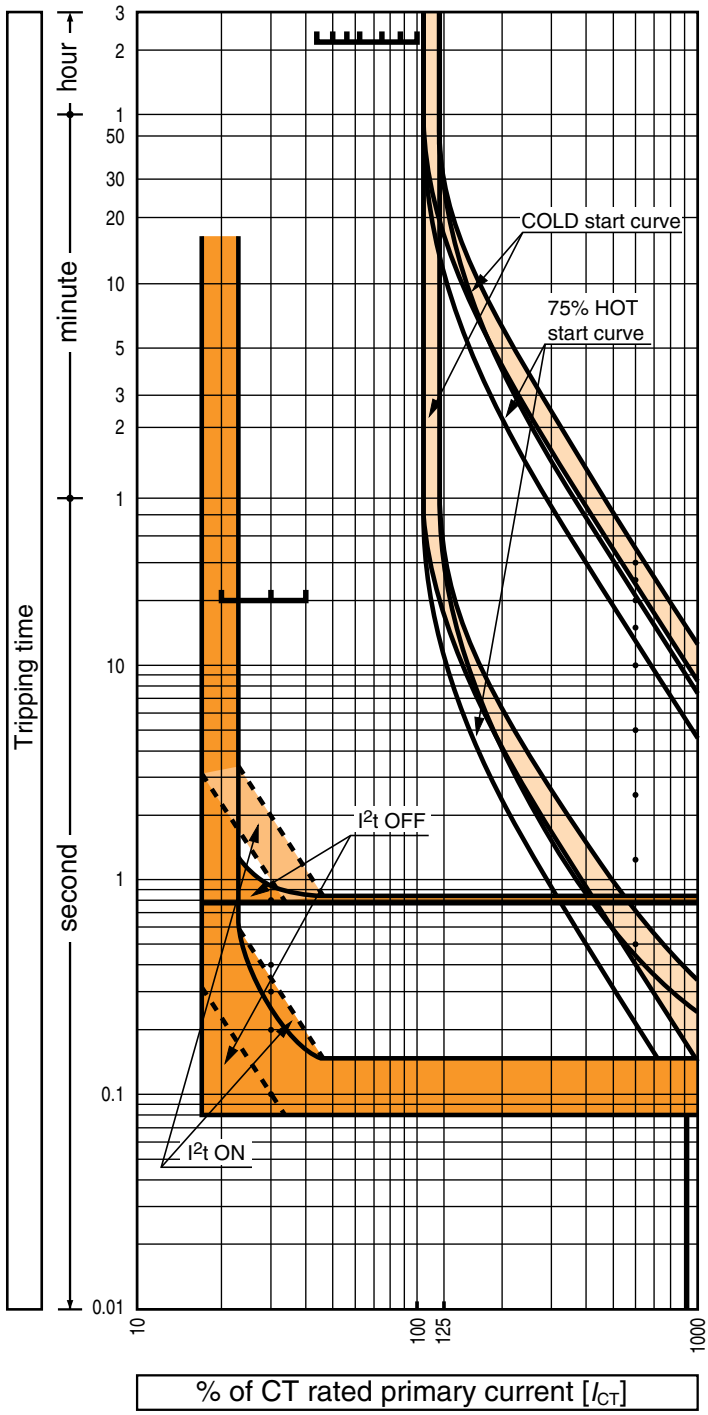


Time Current Characteristics Curve, B400,800,1000_SE Energy Metering Electronic



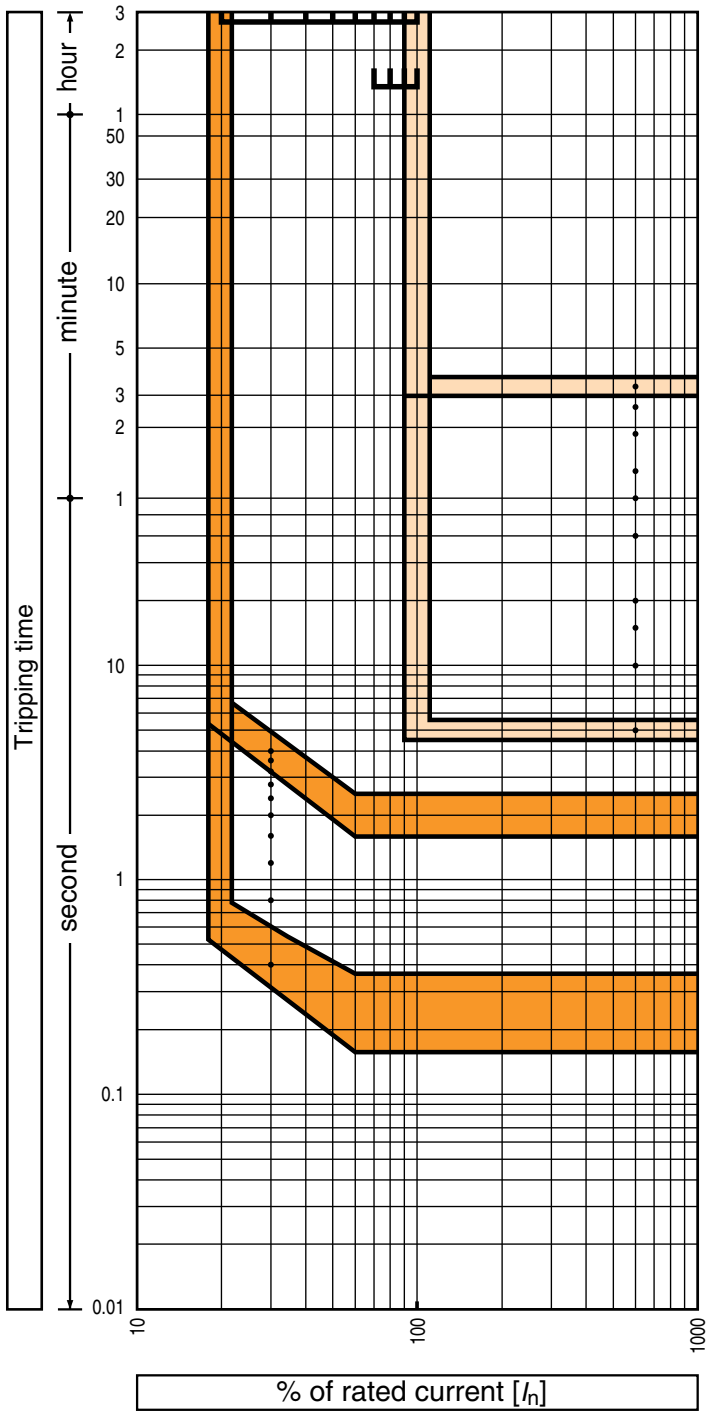
Time Current Characteristics Curve, B400,800,1000_SE Energy Metering Electronic

N-Phase Protection and Ground Fault Trip



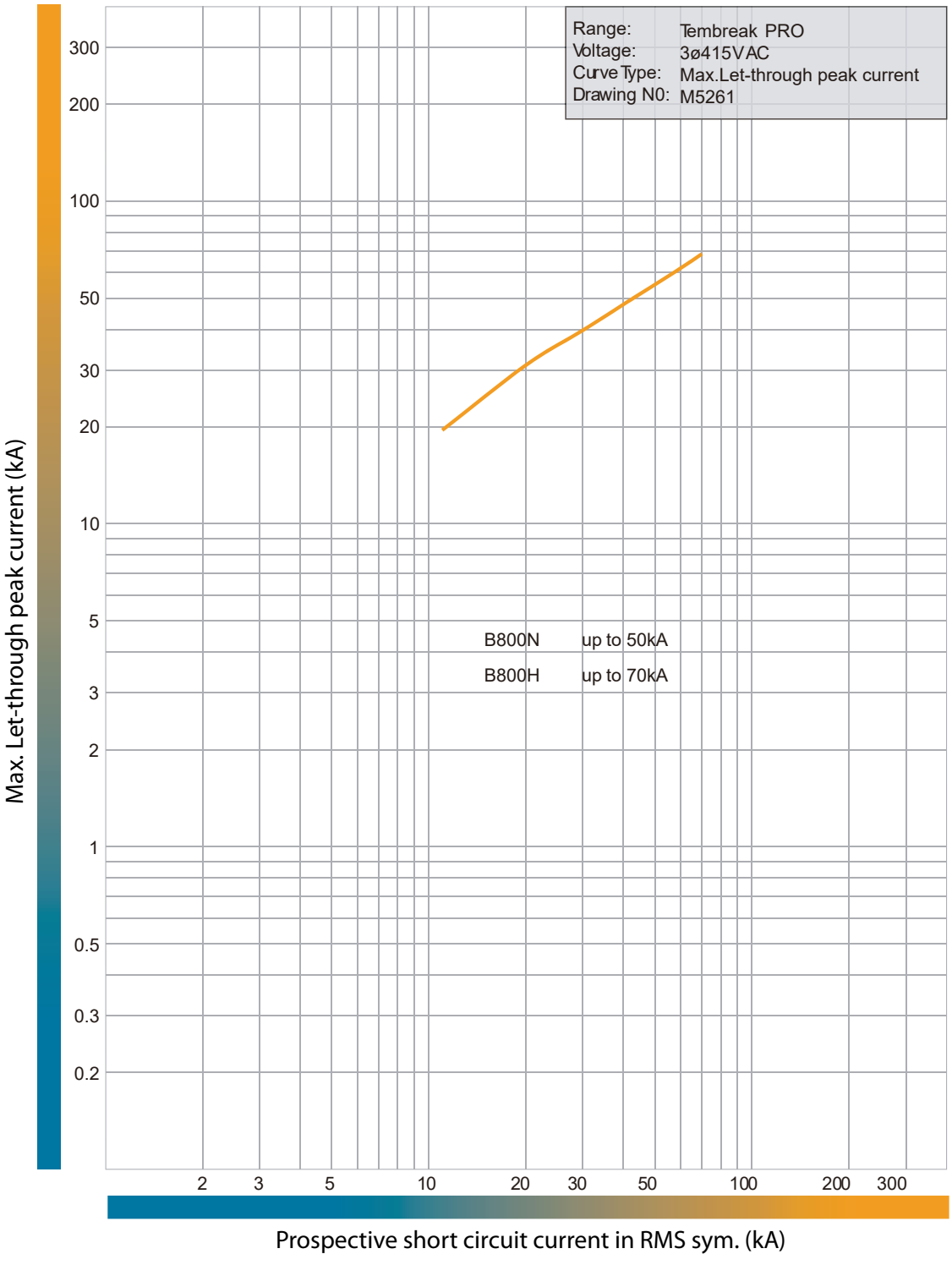
Time Current Characteristics Curve, B400,800,1000_SE Energy Metering Electronic

Phase Rotation Protection and Pre-Trip Alarm

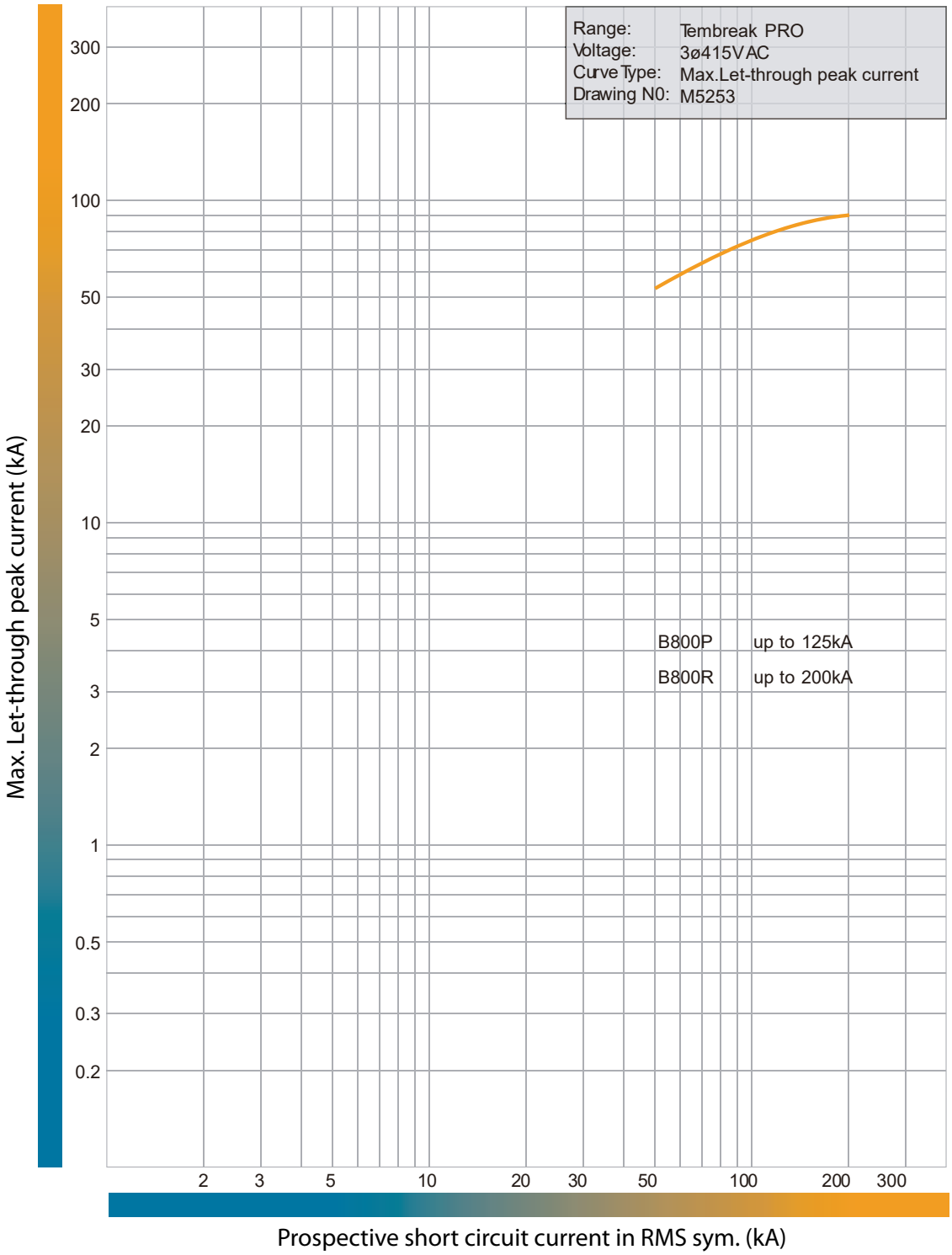


MCCBs

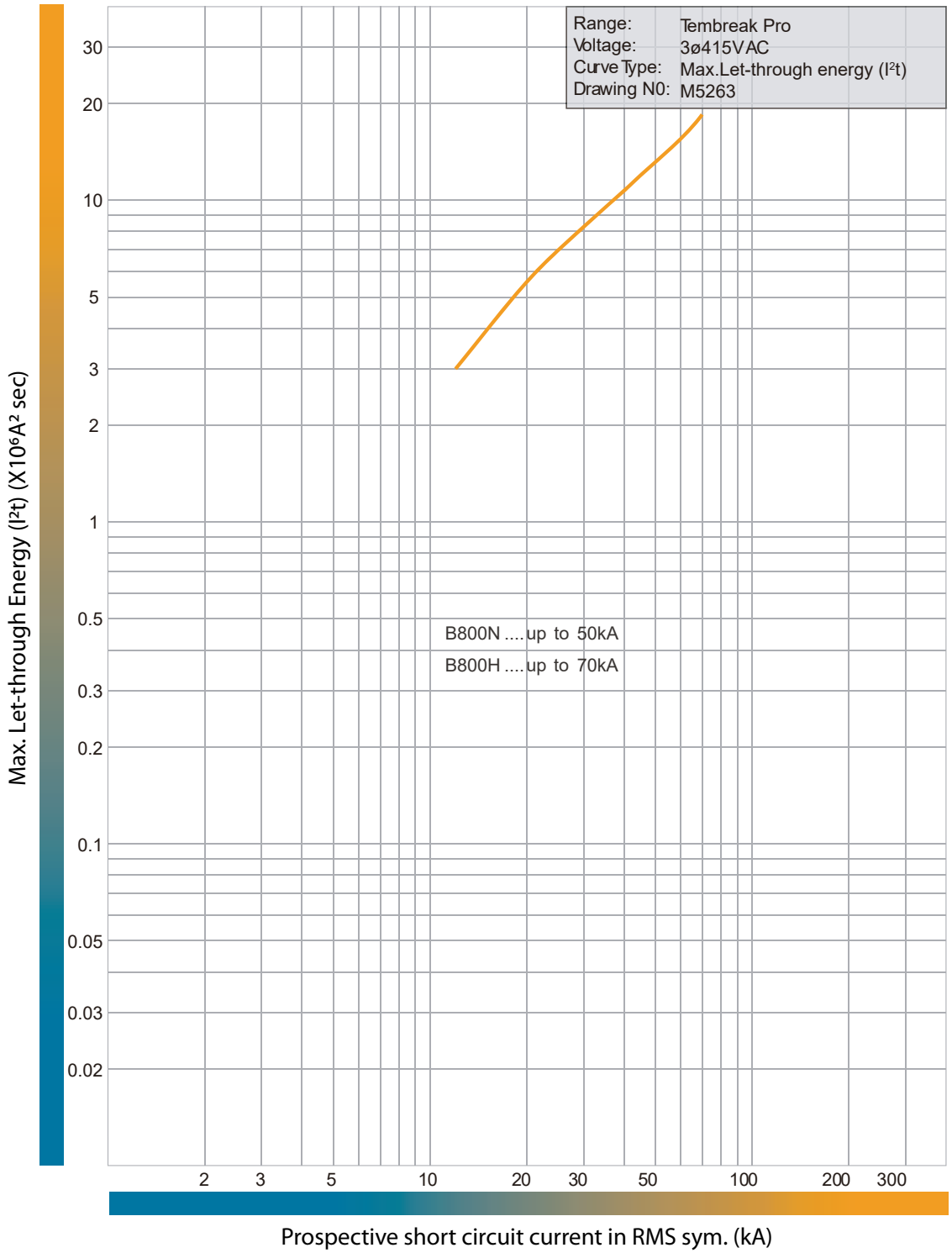
Let-Through Peak Current Curve, B800_BE/BEG/SX/SE, Electronic



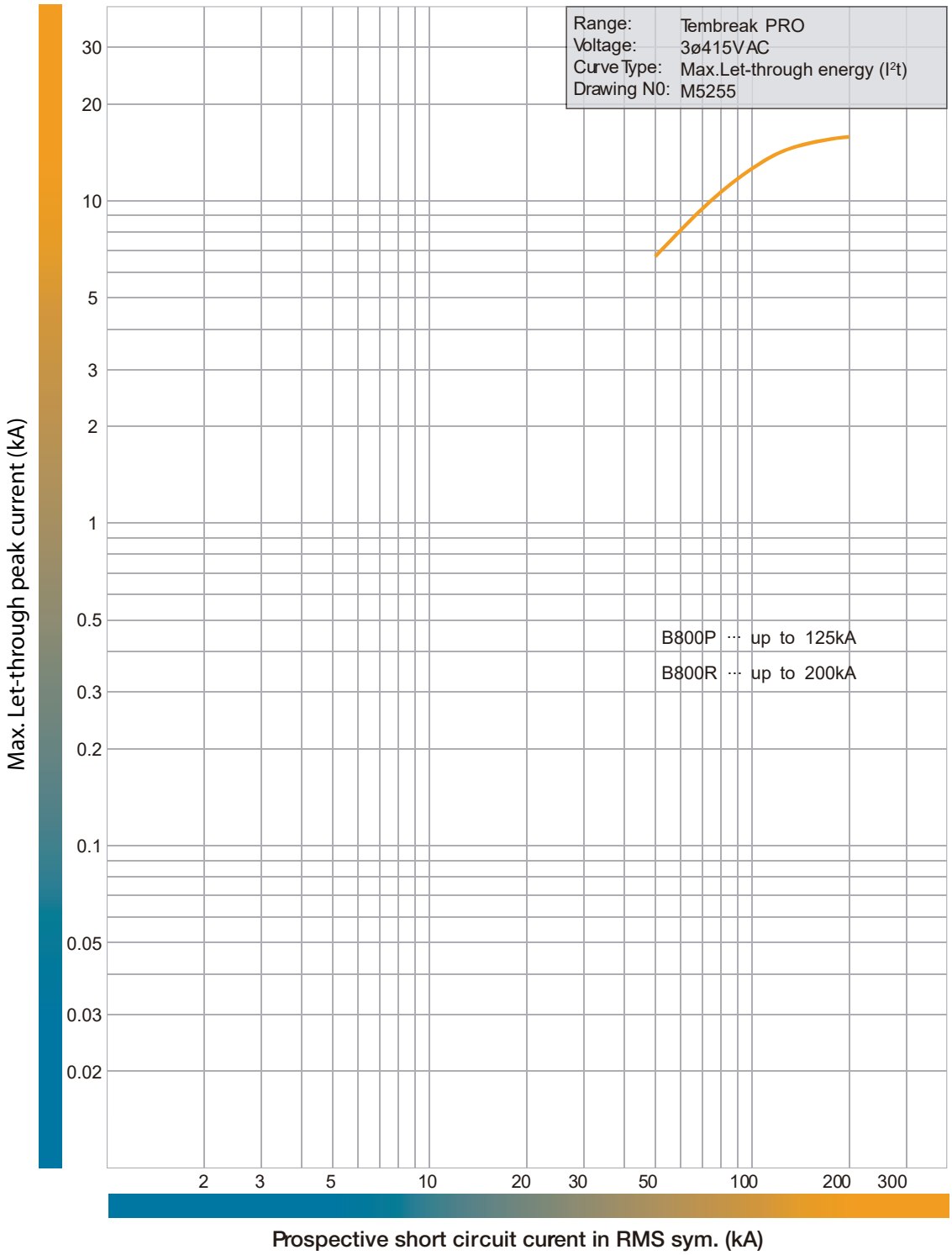
Let-Through Peak Current Curve, B800_BE/SX/SE, Electronic



Let-Through Energy I²t Curve, B800_BE/BEG/SX/SE, Electronic

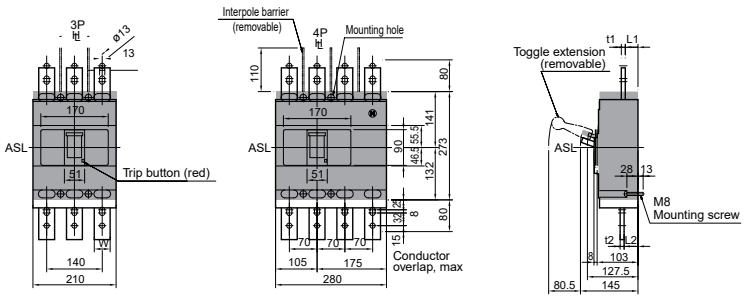


Let-Through Energy I²t Curve, B800_BE/SX/SE, Electronic

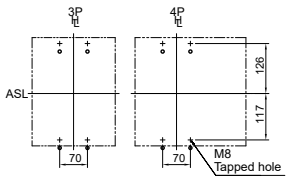


Dimensions B800F, N, H, G_TM/NN/BE/BEG/SE/SX (mm)

Front Connected With Extension Bars (Optional)

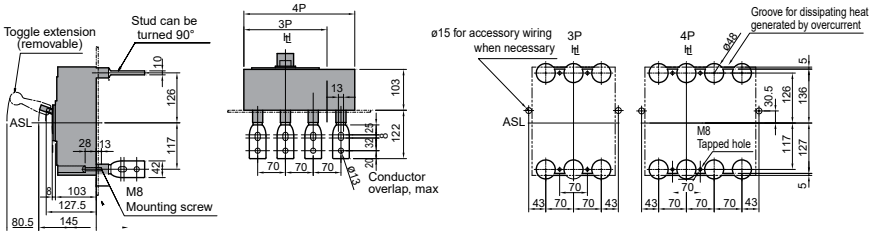


Drilling plan (front view)



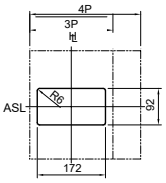
Breaker Type	Rated Current	t1	t2	L1	L2	W
B800_TM, B800_NN	630A	8	8	32	34	40
	800A	10	10	32	35	40
B800_BE	630A	8	8	32	36	40
	800A	10	10	32	36	40

Rear Connected



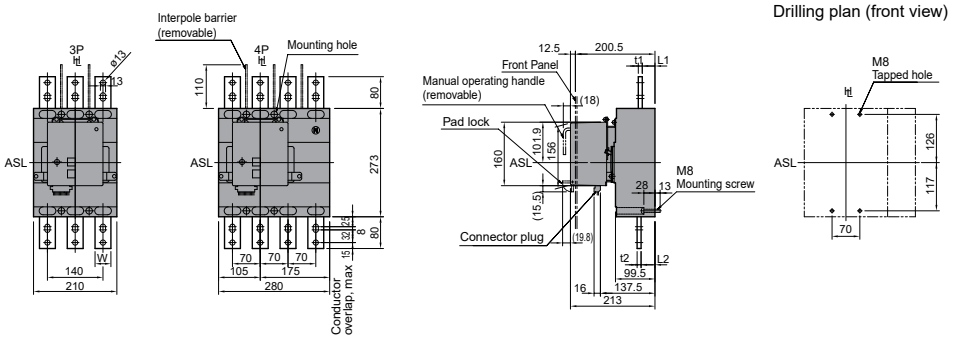
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel cutout (front view)

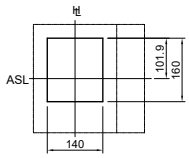


Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon.

Front Connected With Motor Operator

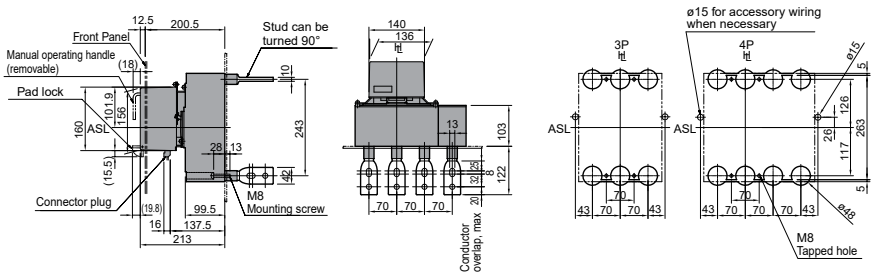


Panel cutout (front view)



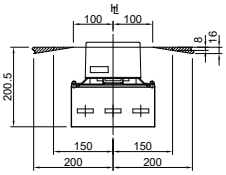
Panel cutout dimensions shown give an allowance of 1.5mm around motor operator.

Rear Connected With Motor Operator



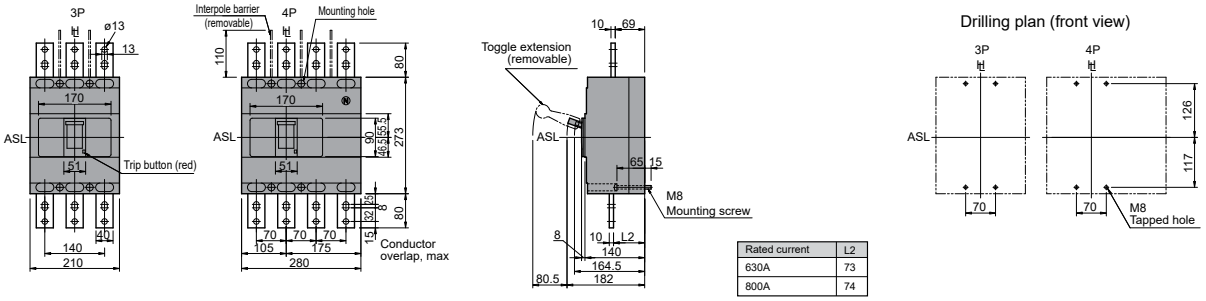
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel hinge position (hatching area) (bottom view)



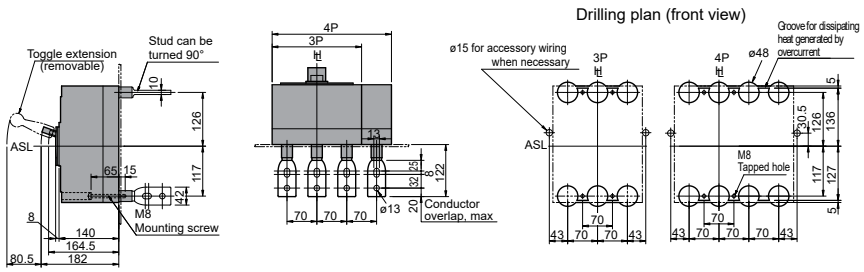
Dimensions B800P, R_BE/SE/SX (mm)

Front Connected



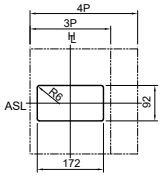
Rated current	L2
630A	73
800A	74

Rear Connected



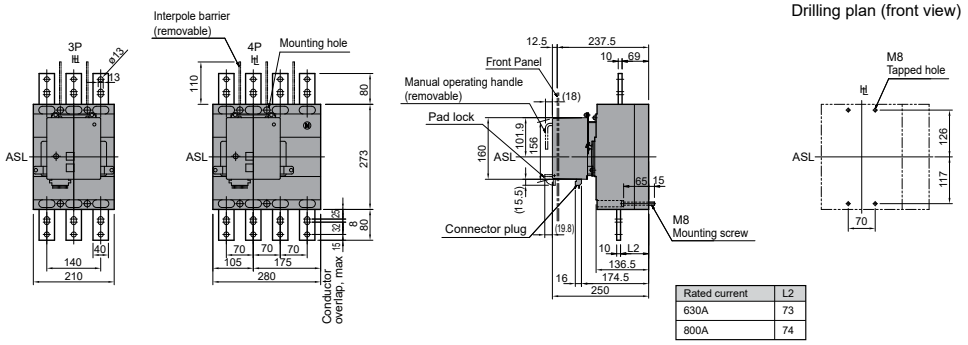
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel cutout (front view)



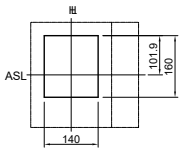
Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon.

Front Connected With Motor Operator



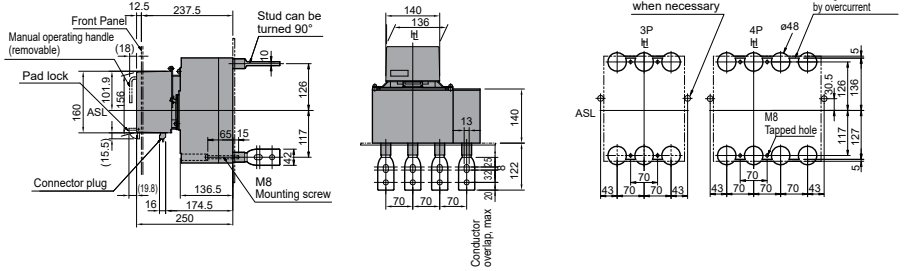
Rated current	L2
630A	73
800A	74

Panel cutout (front view)



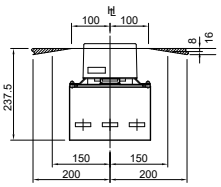
Panel cutout dimensions shown give an allowance of 1.5mm around motor operator.

Rear Connected With Motor Operator



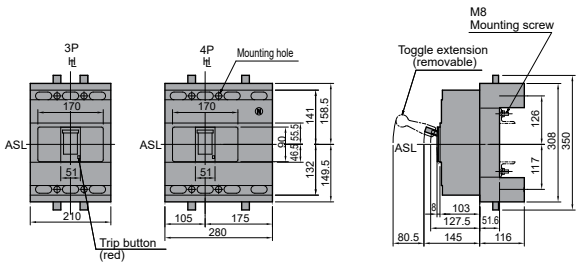
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel hinge position (hatching area) (bottom view)

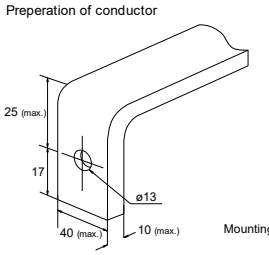


Dimensions B800F, N, H, G_TM/NN/BE/BEG/SE/SX Plug-in (mm)

Outline Dimensions

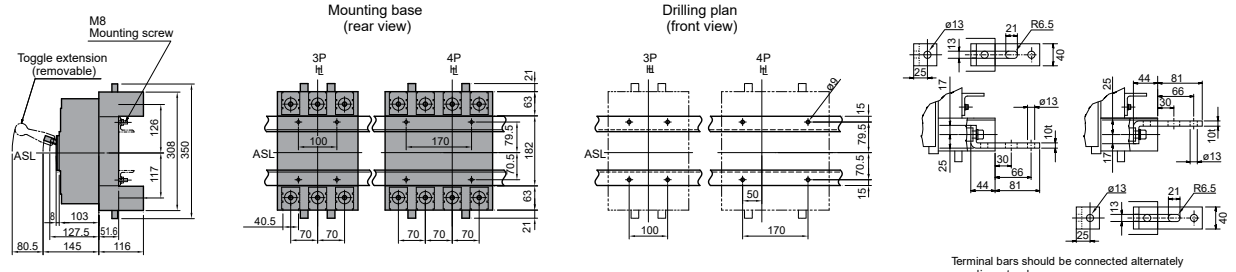


Termination of Busbar



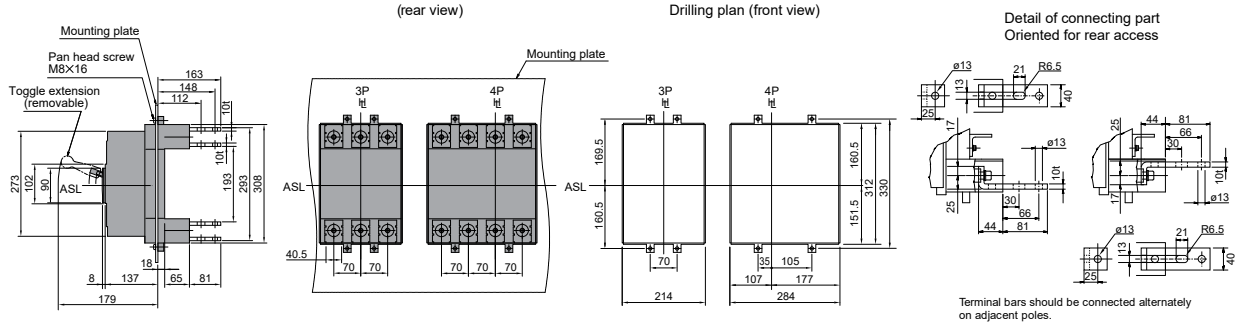
Mounting screw M12×25 max. Hex. sec. head bolt.

Mounting On a Support or Rails



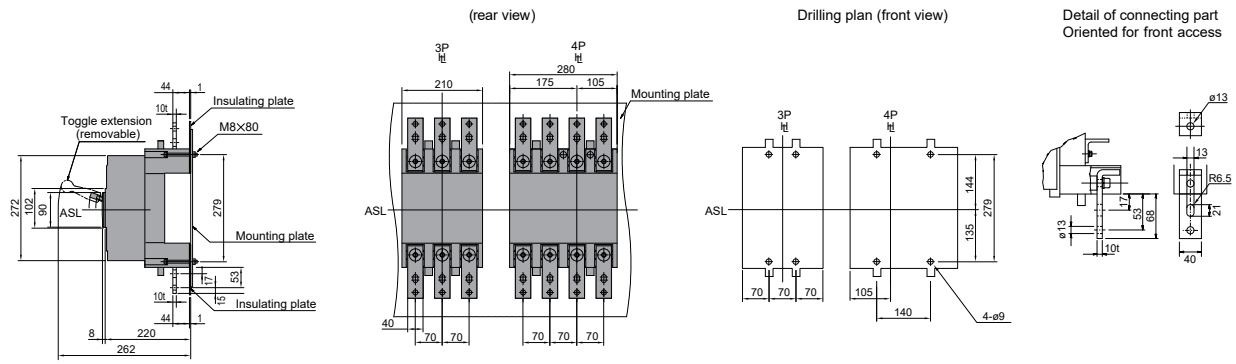
Terminal bars should be connected alternately on adjacent poles.

Mounting Through the Backplate (shown with optional connection bars oriented for rear access)



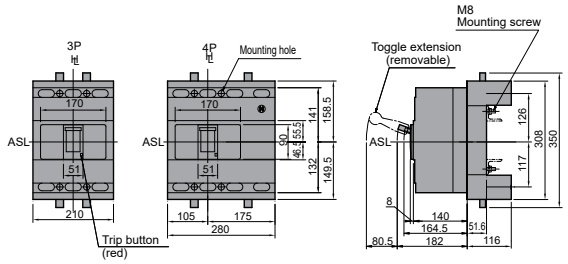
Terminal bars should be connected alternately on adjacent poles.

Mounting on the Backplate (optional connection bars must be oriented for front access)



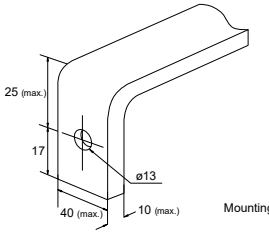
Dimensions B800P, R_BE/BEG/SE/SX, Plug-in (mm)

Outline Dimensions



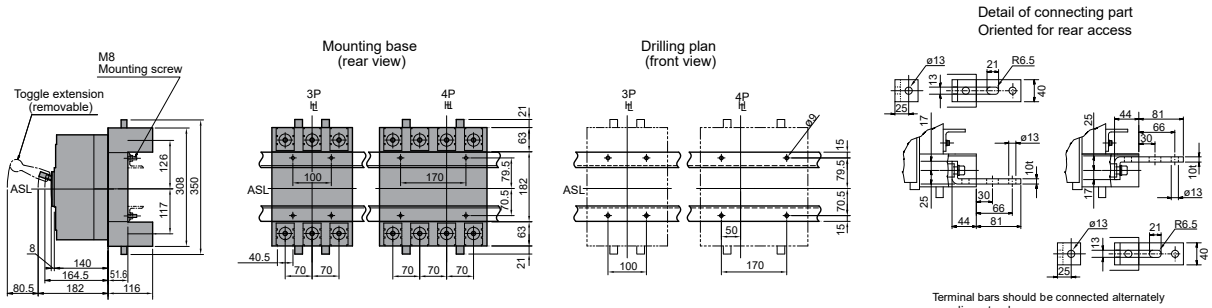
Termination of Busbar

Preperation of conductor

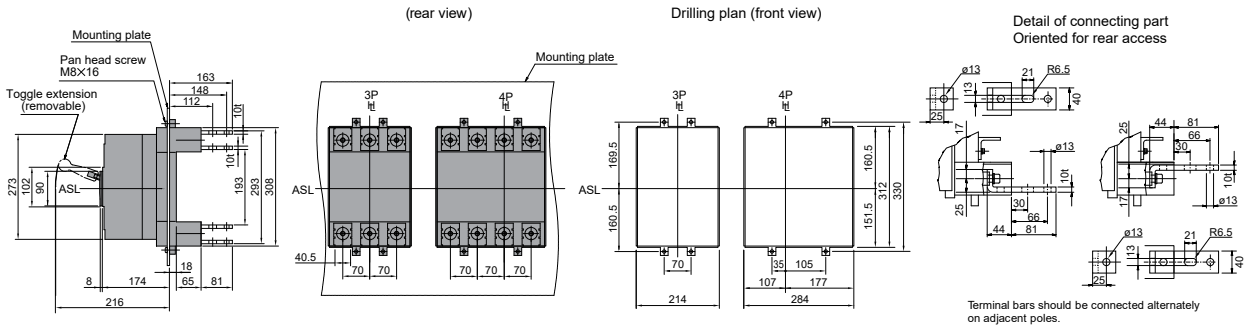


Mounting screw M12X25 max. Hex. sec. head bolt.

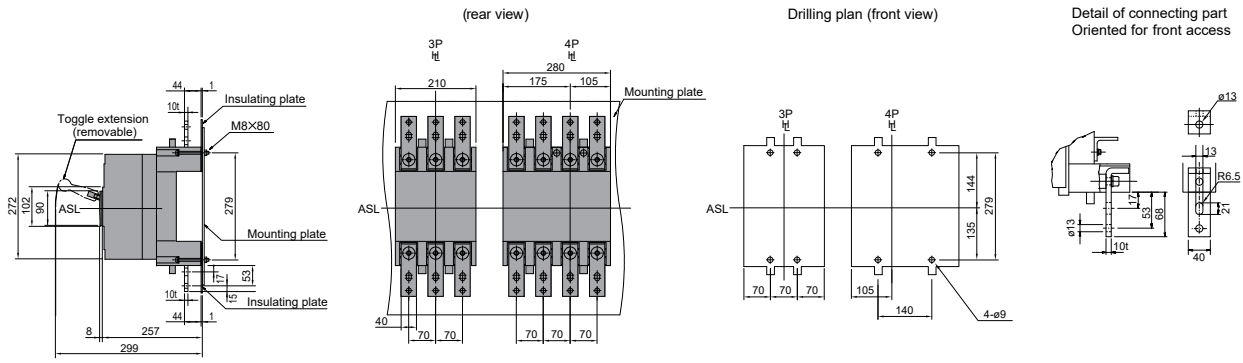
Mounting On a Support or Rails



Mounting Through the Backplate (shown with optional connection bars oriented for rear access)



Mounting On the Backplate (optional connection bars must be oriented for front access)



B800_NN

Non-Auto Switch Disconnector

- ✔ Non-Auto switch disconnector for power distribution
- ✔ AC23 and DC22 ratings for motor starting use
- ✔ No overcurrent protection (isolator only)
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-3, IEC 60947-3 and CE
- ✔ Panel mount standard, other connection options
- ✔ Wide range of accessories for application flexibility, including OFF padlock device
- ✔ Accepts standard MCCB internal and external accessories
- ✔ 3 or 4 pole versions
- ✔ Suits HC chassis, 1250 A - 2200 A main bar options
- ✔ 273 mm (H), 103 mm (D), 70 mm pole centres
- ✔ I_{cw} = 10 kA for 0.3 sec: Rated short time withstand rating
- ✔ I_{cm} = 17 kA: Rated short circuit making capacity

CE DEKRA On the safe side.

General

Switch Type	Non Auto Switch Disconnector
Number of Poles	3 or 4
Switching Poles	3P or 3P + N

Ratings

Nominal Current	800 A @ 50 °C
Motor Starting	AC23 motor starting DC22 motor starting
Icw Rated	Short time withstand
Icm Rated	Ampere making capacity

Voltage

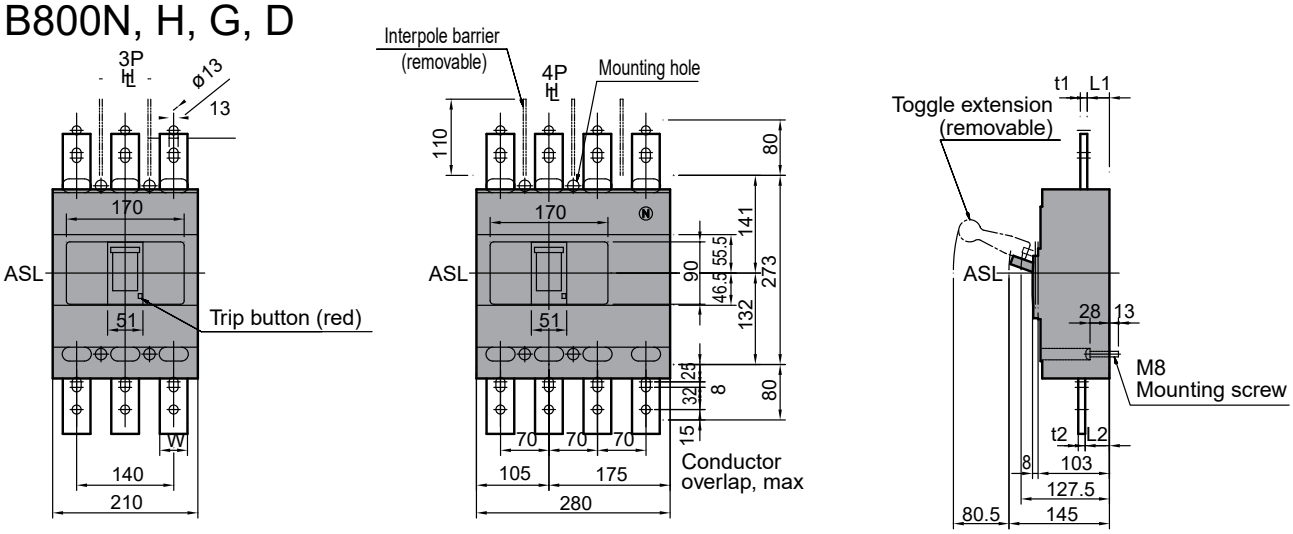
Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Accessories and Connections

Options	Front or rear connect Terminal connection options Accepts standard MCCB accessories

Quick Reference Dimensions – Front Connect

B800N, H, G, D



800 A Frame 3 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Catalogue No.
800	3	B800D3800NN

800 A Frame 4 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Catalogue No.
800	4	B800D4800NN

Ratings

Component Type	Non Auto Switch Disconnector
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	800 AF

I_n, Rated Current	
A @ 30 °C	800
A @ 45 °C	800
A @ 50 °C	800

U_e Rated operational voltage AC maximum	690 V AC
U_e Rated operational voltage DC maximum	250 DC
U_i, Rated Insulation Voltage	800 V (rms)
Motor Starting Utilisation Category	AC 23, DC 22
U_{imp}, Impulse Withstand Voltage	8 kV
Icw, Rated Short Circuit Withstand Current 400 / 690 V	10 kA / 0.3 Sec
Rated Frequency	50 / 60 Hz
Pollution Degree	3
AC Power loss per pole at full rated current	93.33 W @ 800 A
Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-3 AS/NZS 60947-3
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection Rear Connection (Option) Plug-in PM (Option) Extension Bar Draw-out (Option)
Terminal Type	Extension Bar With Bolt holes
Connection Torque	40.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	HC Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	Yes
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		273 mm
Width	**3P**	210 mm
	4P	280 mm
Depth (less toggle)		103 mm
Depth (toggle included)		145 mm
Weight	**3P**	8.5 kg
	4P	11.5 kg
Electrical Life		4000 cycles
Mechanical Life		10000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**D**
Based On AS/NZS 60947.2 and IEC 60947-2	**I_{cm} (Short Circuit Making Capacity)**	690 V AC	17
	I_{cw} (Short Time Withstand)	0.3 Seconds	10

Trip Unit

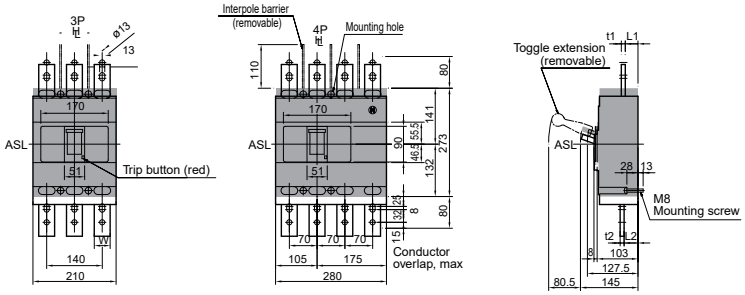
Over Current Protection Function	No
Trip Unit Protection Type	Non-auto Switch Disconnector
Rated Temperature	50 °C

General Accessories

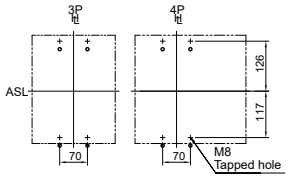
Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	Yes

Dimensions B800F, N, H, G_TM/NN/BE/BEG/SE/SX, B800D_NN (mm)

Front Connected With Extension Bars (Optional)

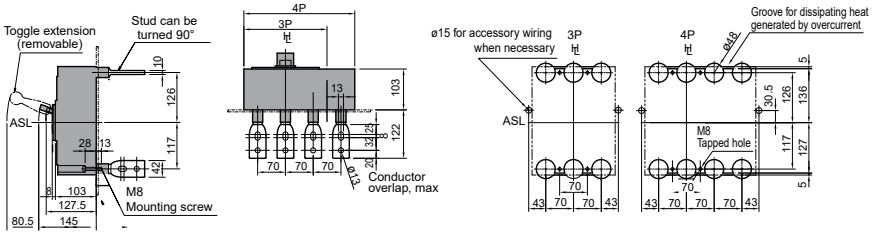


Drilling plan (front view)



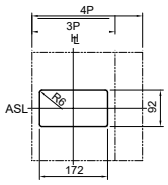
Breaker Type	Rated Current	t1	t2	L1	L2	W
B800_TM,	630A	8	8	32	34	40
B800_NN	800A	10	10	32	35	40
B800_BE	630A	8	8	32	36	40
	800A	10	10	32	36	40

Rear Connected



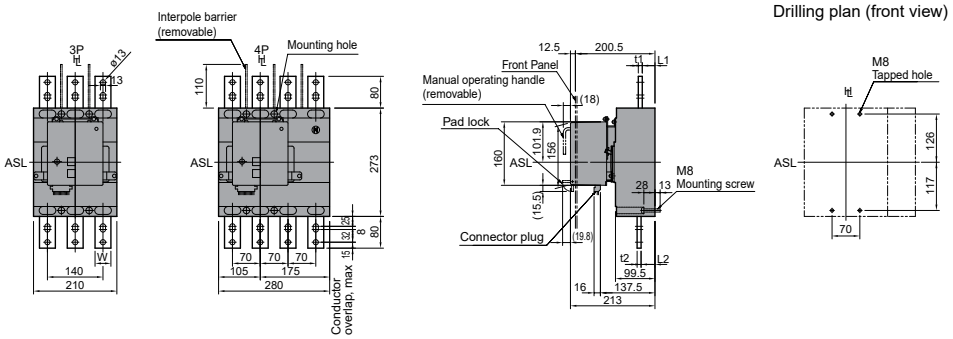
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel cutout (front view)

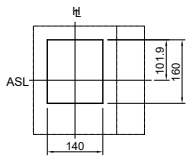


Panel cutout dimensions shown give an allowance of 1.0mm around the handle escutcheon.

Front Connected With Motor Operator

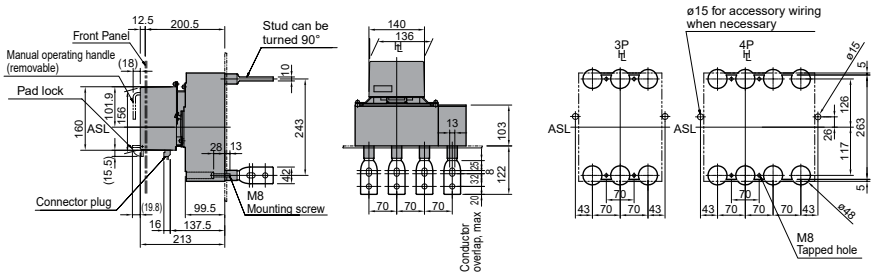


Panel cutout (front view)



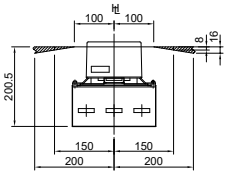
Panel cutout dimensions shown give an allowance of 1.5mm around motor operator.

Rear Connected With Motor Operator



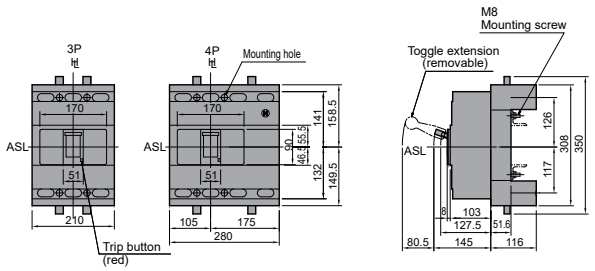
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel hinge position (hatching area) (bottom view)

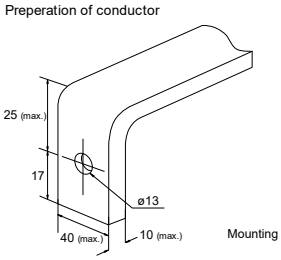


Dimensions B800F, N, H, G_TM/NN/BE/BEG/SE/SX Plug-in (mm)

Outline Dimensions

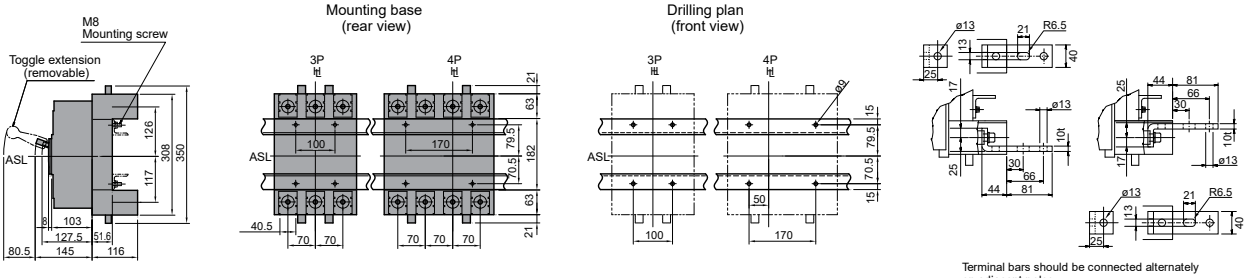


Termination of Busbar



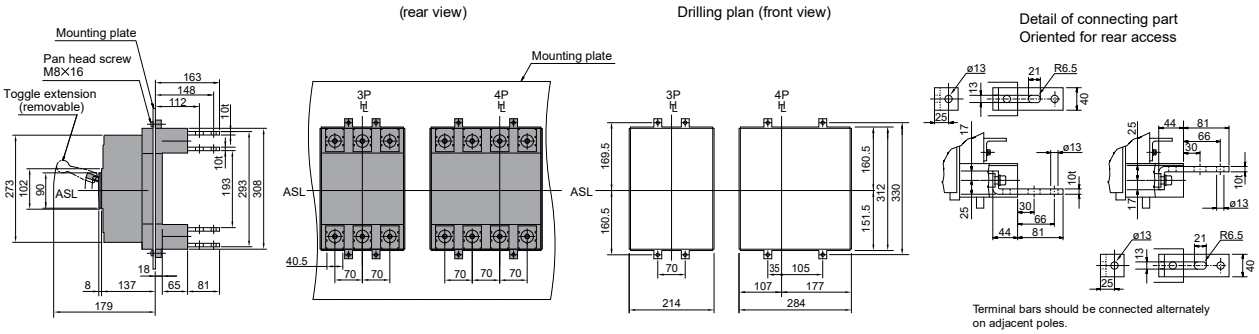
Mounting screw M12×25 max. Hex. sec. head bolt.

Mounting On a Support or Rails



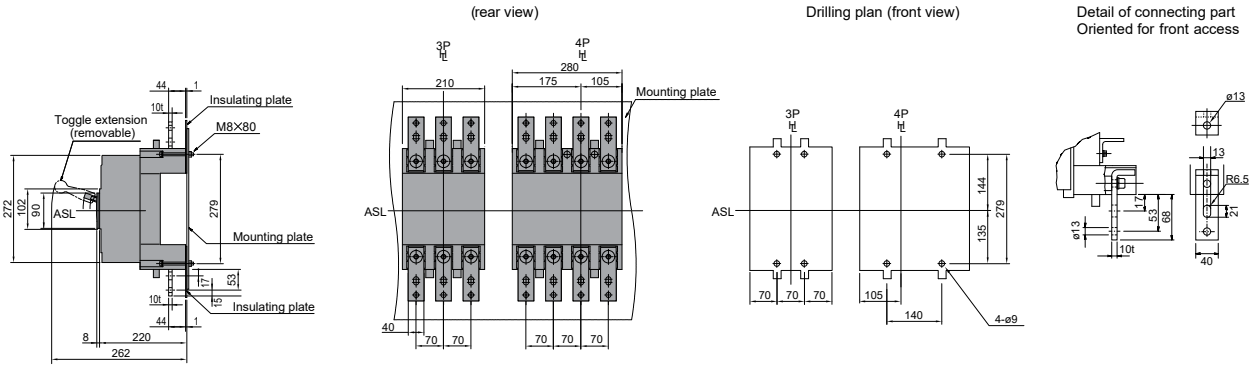
Terminal bars should be connected alternately on adjacent poles.

Mounting Through the Backplate (shown with optional connection bars oriented for rear access)



Terminal bars should be connected alternately on adjacent poles.

Mounting on the Backplate (optional connection bars must be oriented for front access)

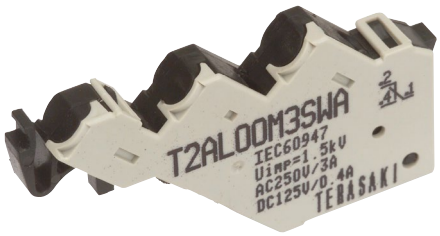


B800 AF Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits



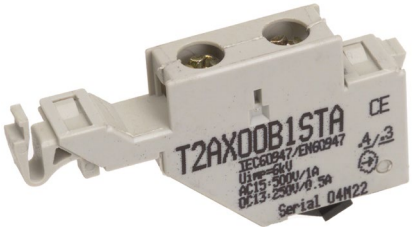
Item Description	Catalogue No.
Alarm Switch 1 C/O	T2AL00M3STA
Alarm Switch 1 C/O Wired	T2AL00M3SWA
Alarm Switch Micro-current 1 C/O	T2AL00M3RTA

Item Description	Catalogue No.
Alarm Switch Heavy Duty 1 N/O	T2AL00B1STA
Alarm Switch Heavy Duty 1 N/C	T2AL00B2STA

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxiliary Switch 1C/O	T2AX00M3STA
Auxiliary Switch 1C/O Wired	T2AX00M3SWA
Auxiliary and Alarm Switches 1 C/O 2nd Auxiliary with 700 mm Leads	T2AX00M4SWA
Auxiliary and Alarm Switches 1 C/O 3rd Auxiliary with 700 mm Leads	T2AX00M5SWA
Auxiliary Switch Micro-current 1 C/O	T2AX00M3RTA



Item Description	Catalogue No.
Auxiliary Switch Heavy Duty 1 N/O	T2AX00B1STA
Auxiliary Switch Heavy Duty 1 N/C	T2AX00B2STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00A10TA
Shunt Trip Coil 240 V AC	T2SH00A20TA
Shunt Trip Coil 415 V AC	T2SH00A40TA
Shunt Trip Coil 12V DC	T2SH00D01TA
Shunt Trip Coil 24 V DC	T2SH00D02TA
Shunt Trip Coil 48 V DC	T2SH00D04TA
Shunt Trip Coil 110 V DC	T2SH00D10TA
Shunt Trip Coil 230 V DC	T2SH00D20TA

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 800-1600 A 110 V AC	T2UV80A10NTA
Under Voltage Trip Coil Instant 800-1600 A 240 V AC	T2UV80A20NTA
Under Voltage Trip Coil Instant 800-1600 A 415 V AC	T2UV80A40NTA
Under Voltage Trip Coil Instant 800-1600 A 24 V DC	T2UV80D02NTA
Under Voltage Trip Coil Instant 800-1600 A 48 V DC	T2UV80D04NTA
Under Voltage Trip Coil Instant 800-1600 A 110 V DC	T2UV80D10NTA
Under Voltage Trip Coil Instant 800-1600 A 230 V DC	T2UV80D24NTA

Time Delay Operation (500 ms)

When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delayed 800-1600 A 110 V AC	T2UV80A10DSA
Under Voltage Trip Coil Time Delayed 800-1600 A 230-240 V AC	T2UV80A24DSA
Under Voltage Trip Coil Time Delayed 800-1600 A 380-450 V AC	T2UV80A40DSA
Under Voltage Trip Coil Time Delayed 800-1600 A 24 V DC	T2UV80D02DSA
Under Voltage Trip Coil Time Delayed 800-1600 A 110 V DC	T2UV80D10DSA
Under Voltage Trip Coil Time Delayed 800-1600 A 230 V DC	T2UV80D24DSA

Operating External Accessories

Handle - Compact

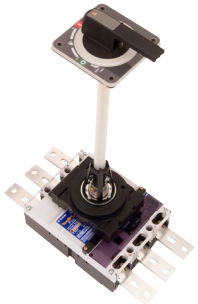
Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

Item Description	Catalogue No.
T2HS Compact Handle Grey, IP65 Handle + 320 mm Shaft 800/1000 AF	T2HS80F6BM

Item Description	Catalogue No.
Metal Compact Handle Silver IP65 Handle + 320 mm Shaft 800/1000 AF	T2HP80R6ME

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation



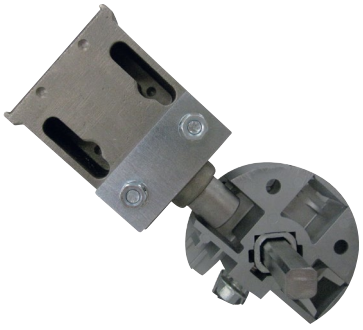
Item Description	Catalogue No.
T2HP Square Handle Grey, IP65 Handle + 445 mm Shaft 800/1000 AF	T2HP80R6BN
T2HP Square Handle Red/Yellow, IP65 Handle + 445 mm Shaft 800/1000 AF	T2HP80R6RN

Handle Options

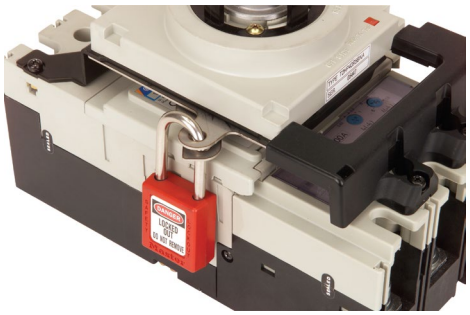
A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
TPHS Handle Options 390 mm T Pin Shaft – no Flexi Coupling 400/630 AF	T2HS400SHAFT



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702



Item Description	Catalogue No.
T2HS Handle Options MCCB/Handle Mechanical Padlock Attachment	T2HP80PALK

Item Description	Catalogue No.
T2HS Handle Options MCCB toggle extension Lever	2A2272BAB

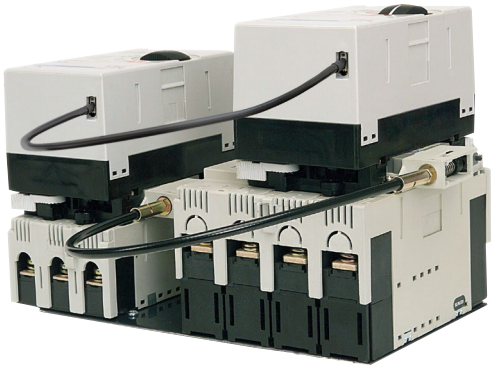
Motor Operator

Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
Motor Operators, 110-240 V AC, B800, B1000, ZS630, ZS800	T2MC80A10NP
Motor Operators, 110 V DC, B800, B1000, ZS630, ZS801	T2MC80D10NP
Motor Operators, 24-48 V DC, B800, B1000, ZS630, ZS802	T2MC80D02NP

Motor Operator Accessories

Provides electrical interlocking between 2 motors to prevent simultaneous operation



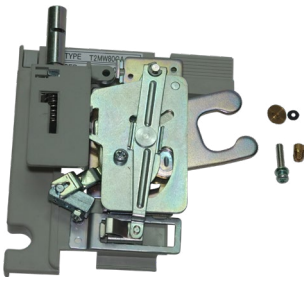
Item Description	Catalogue No.
Motor Interlock Cable (0.6 m) Between Any 400/630/1000 AF MCCB Motor	T2MM40L06A
Motor Interlock Cable (2.1 m) Between Any 400/630/1000 AF MCCB Motor	T2MM40L21A

Item Description	Catalogue No.
Motor Interlock Cable (0.6 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S06A
Motor Interlock Cable (2.1 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S21A

Locking and Interlocking Accessories

Cable Mechanical Interlock

Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 M apart



Item Description	Catalogue No.
Cable Interlock Mechanism for 800/1000 AF	T2MW80CA

Item Description	Catalogue No.
Cable Interlock Wire (1.0 m)	T2MW00SA
Cable Interlock Wire (1.5 m)	T2MW00LA

Link Mechanical Interlock

Prevents simultaneous operation of two horizontally mounted interlocked MCCBs.

Item Description	Catalogue No.
Mechanical Interlock Right Link Interlock 3/4P 800/1000 AF	T2ML80RA
Mechanical Interlock Left Link Interlock 3P 800/1000 AF	T2ML80L3A
Mechanical Interlock Left Link Interlock 3P/4P 800/1000 AF	T2ML80L4A

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option

Item Description	Catalogue No.
Toggle Locks captive Lock with Single 8 mm Hole B800/B1000 AF	T2PL80UN

Non-captive

Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

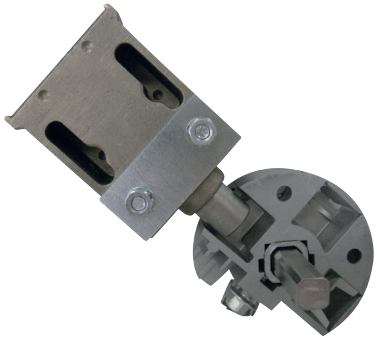
Item Description	Catalogue No.
Non Captive Toggle Lock 400/630 AF	T2HL40A

MCCBs

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Mounted

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, standard key code, A	440TAKEYE100A
Prosafe, standard key code, B	440TAKEYE100B
Prosafe, standard key code, C	440TAKEYE100C
Prosafe, standard key code, D	440TAKEYE100D
Prosafe, standard key code, E	440TAKEYE100E
Prosafe, standard key code, F	440TAKEYE100F
Prosafe, standard key code, G	440TAKEYE100G
Prosafe, standard key code, H	440TAKEYE100H
Prosafe, Standard Key Code I	440TAKEYE100I
Prosafe, Standard Key Code J	440TAKEYE100J
Prosafe, Standard Key Code K	440TAKEYE100K
Prosafe, Standard Key Code L	440TAKEYE100L
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, Standard Key	440TAKEYE10X

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys

Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100A
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10BA
Single key shot bolt lock, key not included	440TMSBLE10X

Installation External Accessories

Door Flange

A door mount flange providing a plastic surround for the panel or escutcheon cutout

Item Description	Catalogue No.
Door Flange IP20 DR FLG 400/630 A MCCB	T2DF40A
Door Flange IP30 DR FLG 400/630 A MOT	T2DM40A

External Monitor

A door display which indicates energy and other data from an energy meter B_SE MCCB

Item Description	Catalogue No.
External Switchboard Door Digital Display (Suits both TB2 MCCBs and AR ACBs)	T2ED00D02NNA

External Neutral CT

Optional Ground Fault sensing neutral pole Current Transformer for B series GF MCCBs

Item Description	Catalogue No.
TB2 Ground Fault Neutral Phase Current Transformer 630A	T2GB40N06A
External Neutral CT 800 A Optional Neutral CT for 3 Pole Ground Fault MCCBs	T2GB40N08A

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier Interpole Barrier (Qty 2), B800, B1000, ZS630, ZS800	T2BA403SH

Plug-in MCCBs

Plug-in MCCB conversion kit

The MCCB via rear plugs, is plugged onto a fixed base for its line and load connections.

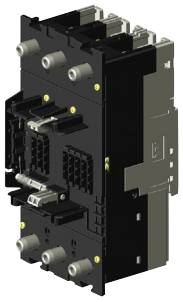
Ordering information

Includes MCCB plugs and other parts for converting an MCCB to a plug-in MCCB. The kA rating of a T2PM plug in MCCB is the same as standard front connected MCCBs.

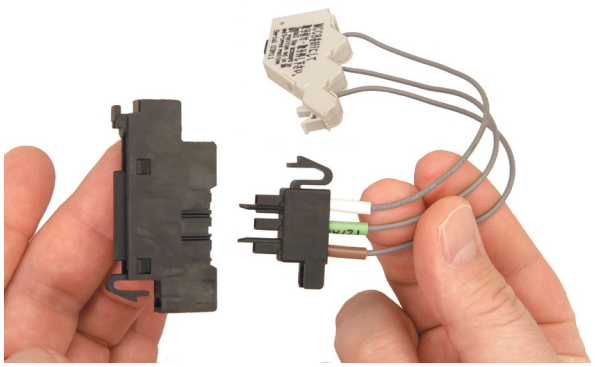
Mounting bases and internal accessory plugs and sockets are ordered seperately.

Plug in bases, IP20, includes rear insulation screen. The base includes terminal studs which are suitable for front or rear connection. Interpole barriers can be used with bases, not terminal covers.

Note:
1) Up to 4 control wiring plug kits can be used in a base.
2) Standard Internal accessories are used with the above plugs and sockets



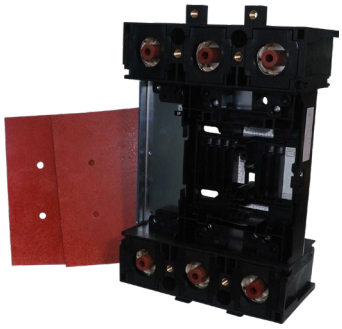
Item Description	Catalogue No.
Plug in conversion kit, 3P, B800, S800	2M1158CAA
Plug in conversion kit, 4P, B800, S800	2M1158CBA



Item Description	Catalogue No.
3 Pin Plug and Socket for Aux/Alarms – for MCCB and Base	2H6959CAA1
3 Pin Plug and Socket for Shunt/UVT – for MCCB and Base	2H6959CBA1

PM Plug-in Mounting Base B800F_TM

The MCCB via rear plugs, is plugged onto a fixed base for its line and load connections



Item Description	Catalogue No.
Plug-in Mounting Bases (IP20 over Sockets) 3 Pole Kit B800F, N, H, S, D	T2PM80A3A
Plug-in Mounting Bases (IP20 over Sockets) 4 Pole Kit B800F, N, H, S, D	T2PM80A4A

Rear Connection Studs

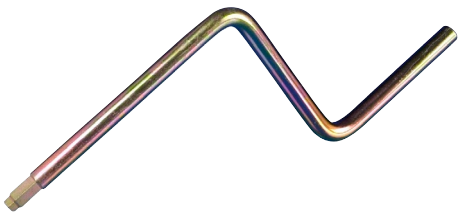
Allows MCCB main connections to be made at the rear of the MCCB

Item Description	Catalogue No.
Rear Connect Terminal Studs 3 Pole Kit, Set of 6 Studs B800, B1000, ZS630, ZS800 AF	T2RP803SA
Rear Connect Terminal Studs 4 Pole Kit, Set of 8 Studs B800, B1000, ZS630, ZS800 AF	T2RP804SA
Rear Connect Terminal Studs 3 Pole Kit, Set of 6 Studs B800P,R	T2RP803LA
Rear Connect Terminal Studs 4 Pole Kit, Set of 8 Studs B800P,R	T2RP804LA

Withdrawable MCCBs

A plug-in MCCB equipped with a cylindrical lever rack-in rack out metal assembly

Item Description	Catalogue No.
Plug Kit for Rear of MCCB 3 Pole 800/1000 AF	2M2869CAA
T2PM Plug-in Base and Carriage Kit 3 Pole 800/1000 AF	2M2867CBA
Internal Metal Frame for MCCB Body 3 Pole, 800/1000 AF	2G1335CAA
Plug Kit for Rear of MCCB 4 Pole 800/1000 AF	2M2869CBA
T2PM Plug-in Base and Carriage Kit 4 Pole 800/1000 AF	2M2868CBA
Internal Metal Frame for MCCB Body 4 Pole, 800/1000 AF	2G1335CBA



Item Description	Catalogue No.
MCCB / ACB Racking Handle	1H3813DAA

Terminal Covers

Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area

Item Description	Catalogue No.
3 Pole Single Cover, Suits B800F, N, H, G, B1000, ZS630, ZS800 AF	T2CF803SLHP
4 Pole Single Cover, Suits B800F, N, H, G, B1000, ZS630, ZS800 AF	T2CF804SLHP
3 Pole, Set of Two (2) Covers, Suits B800F, N, H, G, B1000, ZS630, ZS800 AF	T2CF803SLNP
4 Pole, Set of Two (2) Covers, Suits B800F, N, H, G, B1000, ZS630, ZS800 AF	T2CF804SLNP

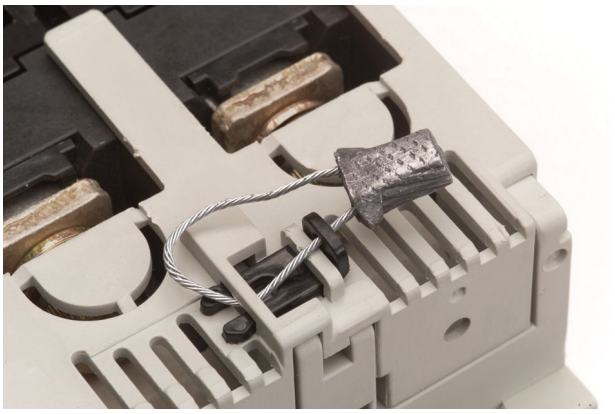
Flush Front or Rear Connect Terminal Covers

Provides front finger touch protection with MCCBs used for flush front, rear terminal or HC chassis

Item Description	Catalogue No.
3 Pole Single Cover, Suits B800F, N, H G, B1000, ZS630, ZS800 AF	T2CR803SHP
4 Pole Single Cover, Suits B800F, N, H G, B1000, ZS630, ZS800 AF	T2CR804SHP
3 Pole, Set of Two (2) Covers, Suits B800F, N, H G, B1000, ZS630, ZS800 AF	T2CR803SNP
4 Pole, Set of Two (2) Covers, Suits B800F, N, H G, B1000, ZS630, ZS800 AF	T2CR804SNP
3 Pole Single Cover Suits B800P, R	T2CR803LHP
4 Pole Single Cover Suits B800P, R	T2CR804LHP
3 Pole, Set of Two (2) Covers, Suits B800P, R	T2CR803LNP
4 Pole, Set of Two (2) Covers, Suits B800P, R	T2CR804LNP

Terminal Cover Locking Clips

Used with terminal covers to prevent unauthorised removal or access to terminal area



Item Description	Catalogue No.
Terminal Cover Locking Clip	T2CF00L

B1000_BE / BEG

Electronic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ 273 mm (H), 103 mm (D), 70 mm pole centres
- ✔ Fault ratings; 50, 70, kA I_{cu} @ 415 V AC
- ✔ Electronic trip unit: 10 preset characteristic curve selection dial and base current adjustment dial
- ✔ Standard features include and instantaneous-only setting
- ✔ Trip unit; 1000 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type) [1)]
Trip Unit Rating	1000 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**N**	50 kA
	H	70 kA

Voltage

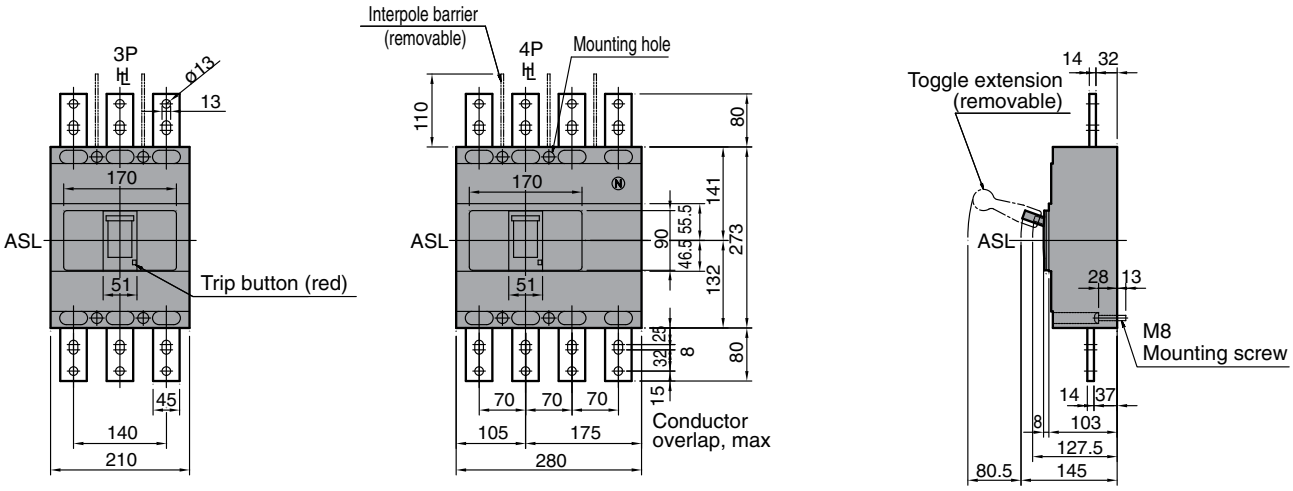
Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Rear Connection (Option) Extension Bar

Notes: 1) When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Quick Reference Dimensions – Front Connect



1000 A Frame 3 Pole 50 kA BE (LSI)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1000	400 - 1000	50	3	B1000N31000BE

1000 A Frame 3 Pole 70 kA BE (LSI)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1000	400 - 1000	70	3	B1000H31000BE

1000 A Frame 3 Pole 70 kA BEG (LSIG)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1000	400 - 1000	70	3	B1000H31000BEG

1000 A Frame 4 Pole 50 kA BE (LSI)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1000	400 - 1000	50	4	B1000N41000BE

1000 A Frame 4 Pole 70 kA BE (LSI)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1000	400 - 1000	70	4	B1000H41000BE

1000 A Frame 4 Pole 70 kA BEG (LSIG)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1000	400 - 1000	70	4	B1000H41000BEG

Notes: When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	1000 AF
Trip Unit Rating	1000 A

I_n, Rated Current (A)	
	1000
45ºC	1000
50ºC	900
70ºC	500

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)	
(A)	1000
(W)	106.67

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection Rear Connection (Option) Extension Bar
Terminal Type	Extension Bar With Bolt holes
Connection Torque	40.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	No
Mounting	-

Physical

Height		273 mm
Width	**3P**	210 mm
	4P	280 mm
Depth (less toggle)		103 mm
Depth (toggle included)		145 mm
Weight	**3P**	11 kg
	4P	14.8 kg
Electrical Life		4000 cycles
Mechanical Life		10000 cycles

Short-Circuit Capacity

			kA Rating	
			MCCB Type	
		Voltage	N	H
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	85	100
		380 / 400 V AC	50	70
		415 V AC	50	70
		440 V AC	45	65
		690 V AC	20	25
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	-	-
		250 V DC	-	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	65	75
		380 / 400 V AC	38	50
		415 V AC	38	50
		440V AC	34	50
		690 V AC	15	20
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	-	-
		250 V DC	-	-

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type)
Rated Temperature	45 °C

Other Features

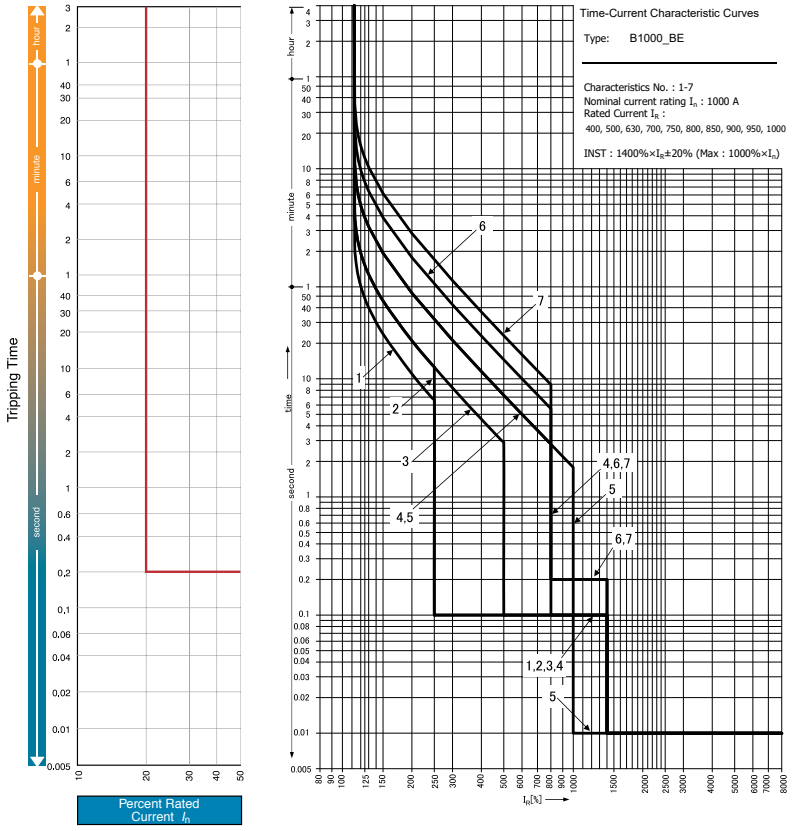
Pre-trip alarm (PTA)	Option
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	Yes

MCCBs

Time Current Characteristics Curve 400 - 1000 A, B1000_BE/BEG, Basic Electronic



B1000_BE_curve1-7-OPCH-S01

Characteristics For I_R Rated 1000 A: B1000N_BE, B1000H_BE

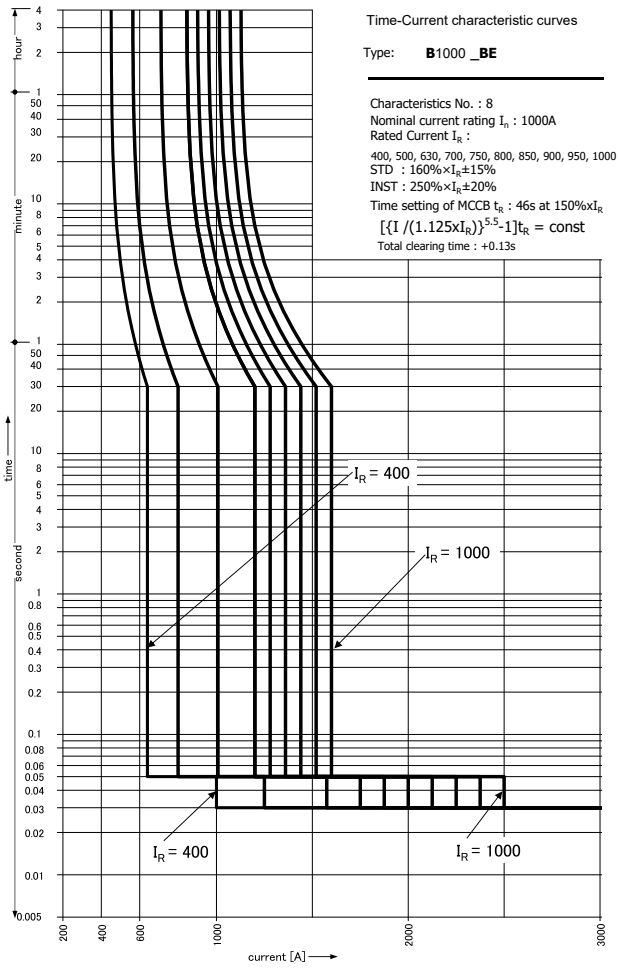
LTD Pick Up Current I_R (A)		**400 – 500 – 630 – 700 – 750 – 800 – 850 – 900 – 950 - 1000 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8** [4]	**9** [4]	**10** [3, 4]
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 10 x I_n)				10	14 (Max. of 10 x I_n)		2.5	10	12
OCR Options											
Pre Trip Alarm (PTA)	I_P x I_R	0.8									
	I_p (S)	40									
Ground Fault (GF) [2]	I_G x I_N	0.2									
	t_G (S)	0.2									
Neutral Pole Protection (NP)	I_N x I_R	1.0 / 0.5 [1]									
	t_N (S)	$t_N = t_R$									

Notes

1) 1.0 x I_R or 0.5 x I_R can be selected. Characteristic of neutral protection (t_N vs. I_N) is identical to characteristic of phase protection (t_R vs. I_R).
2) When GF is specified for 3 pole MCCBs, a terminal block is fitted as standard for external neutral CT connection for 3 phase 4 wire systems. Refer terminal block details on following pages. 4 pole GF MCCBs include an internal 4th CT standard, so no user connection is required.
3) Characteristic 10 is instantaneous only.
4) Curves 8, 9, 10 shown on following pages.

Time Current Characteristics Curve 400 - 1000 A, B1000_BE/BEG, Basic Electronic

8



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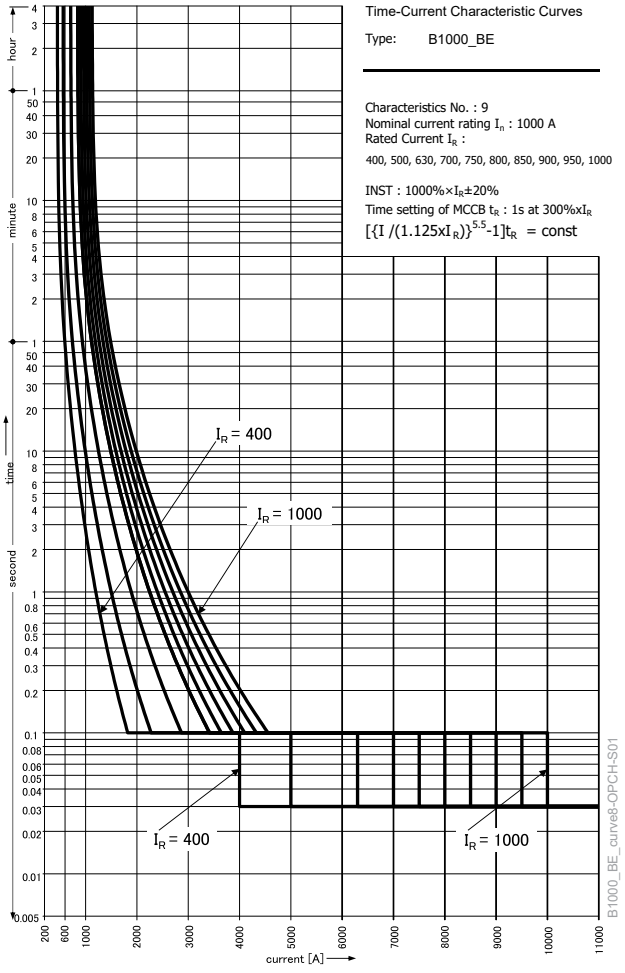


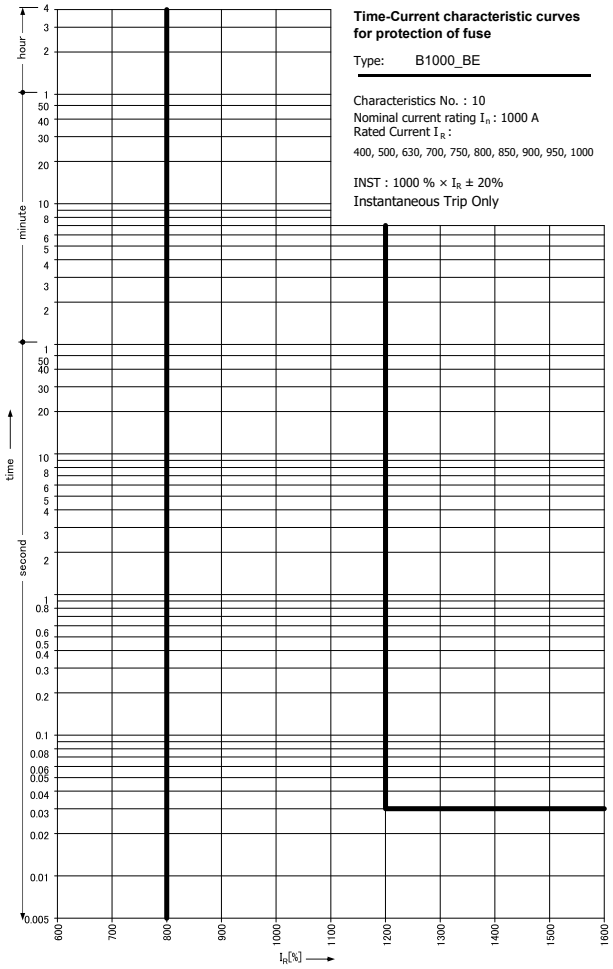
Characteristics For I_R Rated 1000 A: B1000N_BE, B1000H_BE

LTD Pick Up Current I_R (A)		**400 – 500 – 630 – 700 – 750 – 800 – 850 – 900 – 950 - 1000 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)		2.5	10	12
OCR Options		PTA, GF, NP									

MCCBs

Time Current Curve, B1000, 400 - 1000 A, Basic Electronic

10

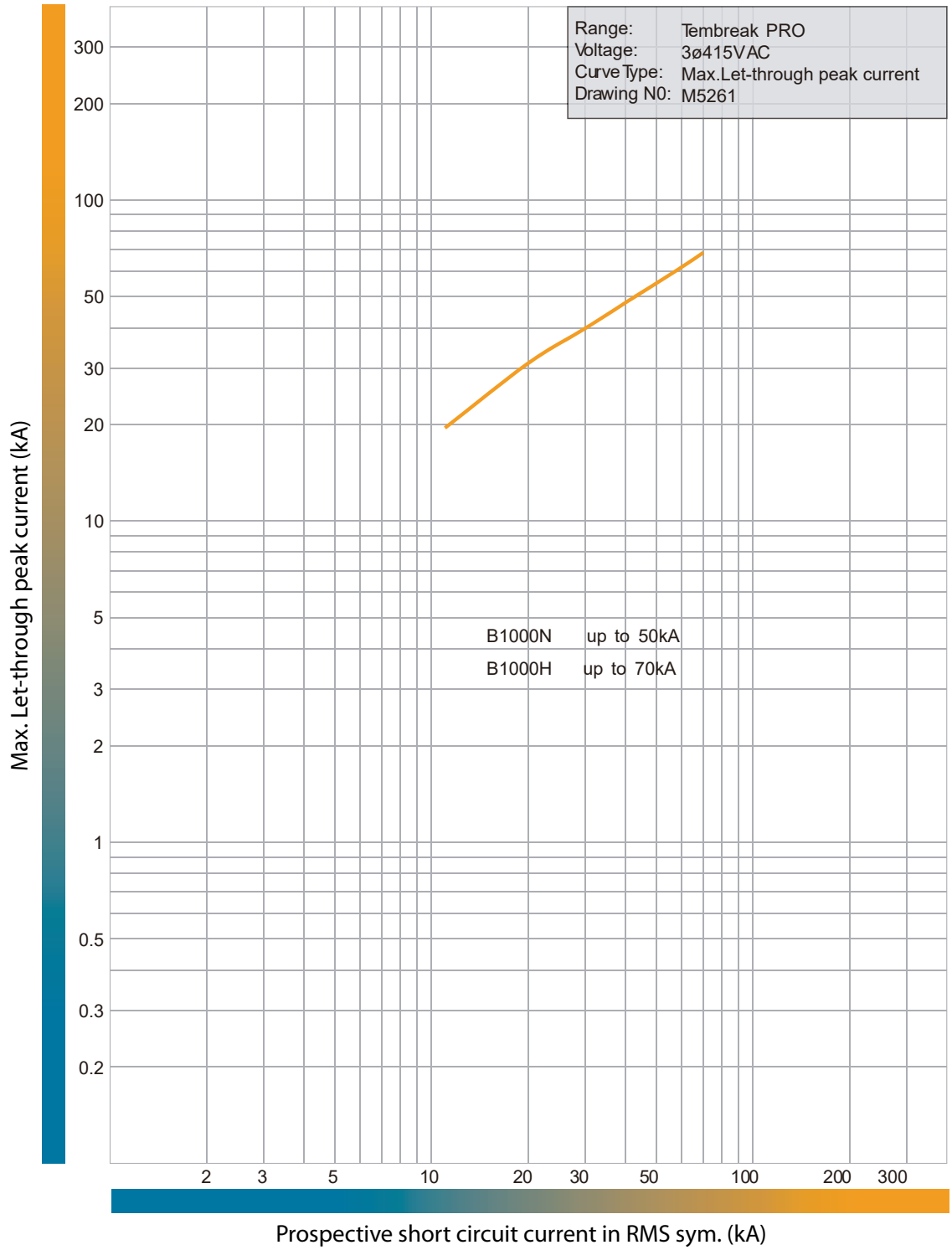


B1000_BE -OPCH-S01

Characteristics For I_R Rated 1000 A: B1000N_BE, B1000H_BE

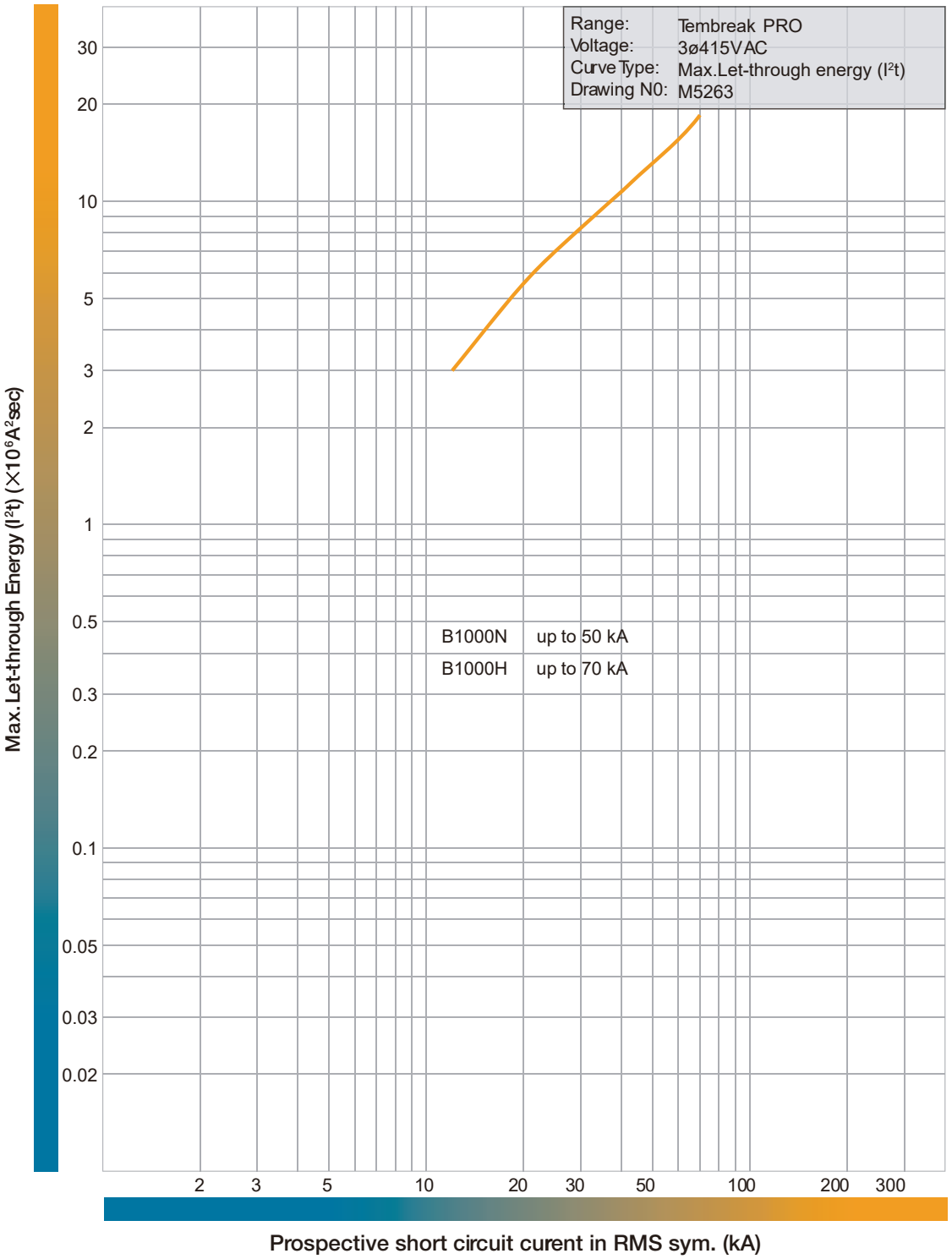
LTD Pick Up Current I_R (A)		**400 – 500 – 630 – 700 – 750 – 800 – 850 – 900 – 950 - 1000 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)		2.5	10	12
OCR Options		PTA, GF, NP									

Let-Through Peak Current Curve, B1000_BE/BEG/SX/SE, Electronic



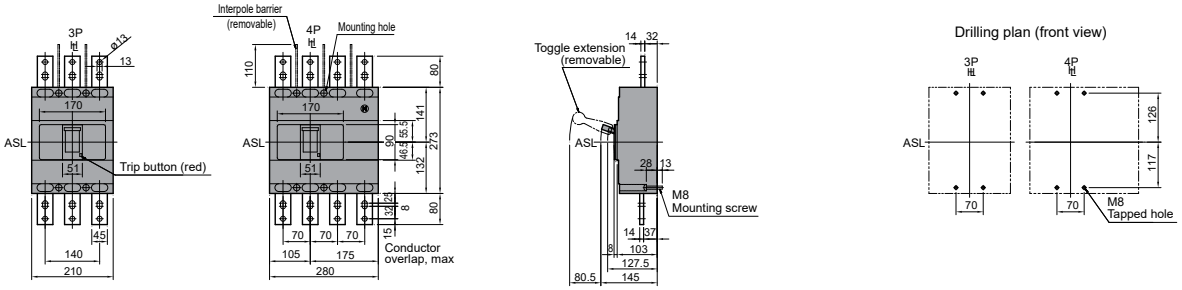
MCCBs

Let-Through Energy I²t Curve, B1000_BE/BEG/SX/SE, Electronic

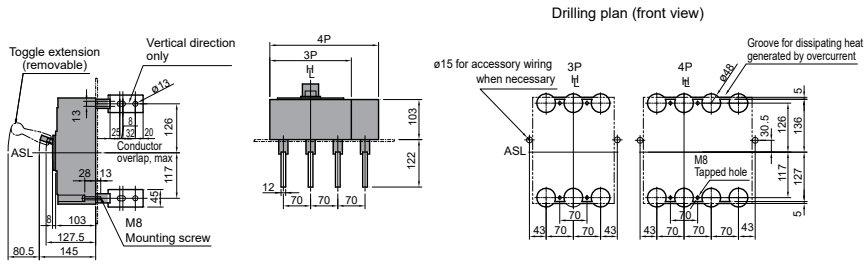


Dimensions B1000_NN/BE/BEG/SE/SX (mm)

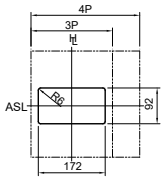
Front Connected



Rear Connected

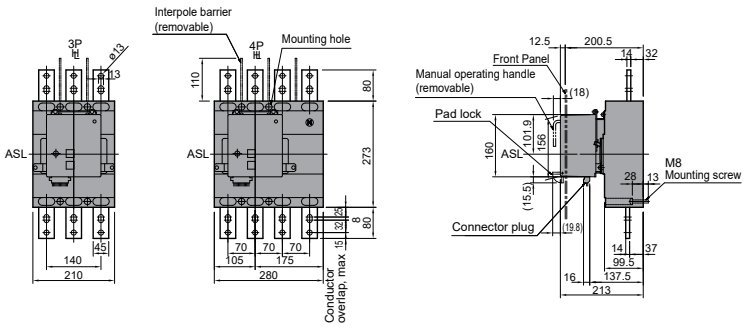


Panel cutout (front view)

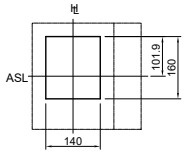


Panel cutout dimensions shown give an allowance of 1.0 mm around the handle escutcheon.

Front Connected With Motor Operator

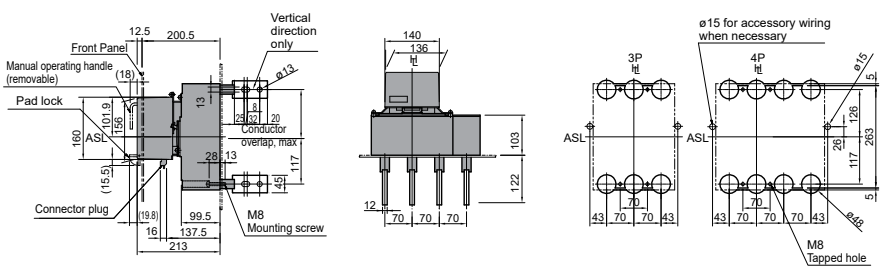


Panel cutout (front view)



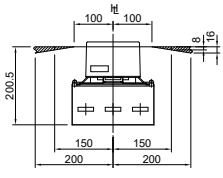
Panel cutout dimensions shown give an allowance of 1.5 mm around motor operator.

Rear Connected With Motor Operator



Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel hinge position (hatching area) (bottom view)



B1000_SX

Electronic MCCB with Ammeter

- ✔ General purpose power distribution, motor starting, Integral Ammeter
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ 3 or 4 pole versions
- ✔ 273 mm (H), 103 mm (D), 70 mm pole centres
- ✔ Fault rating; 70 kA I_{cu} @ 415 V AC
- ✔ Built-in LED back-lit display, individual LSI settings adjustment
- ✔ Display indicates Amps and allows settings changes via an onboard menu
- ✔ Full range of accessories for application flexibility
- ✔ Trip unit; 1000 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Electronic LSI with Ammeter [1)]
Trip Unit Rating	1000 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @415 V AC	**H** 70 kA

Voltage

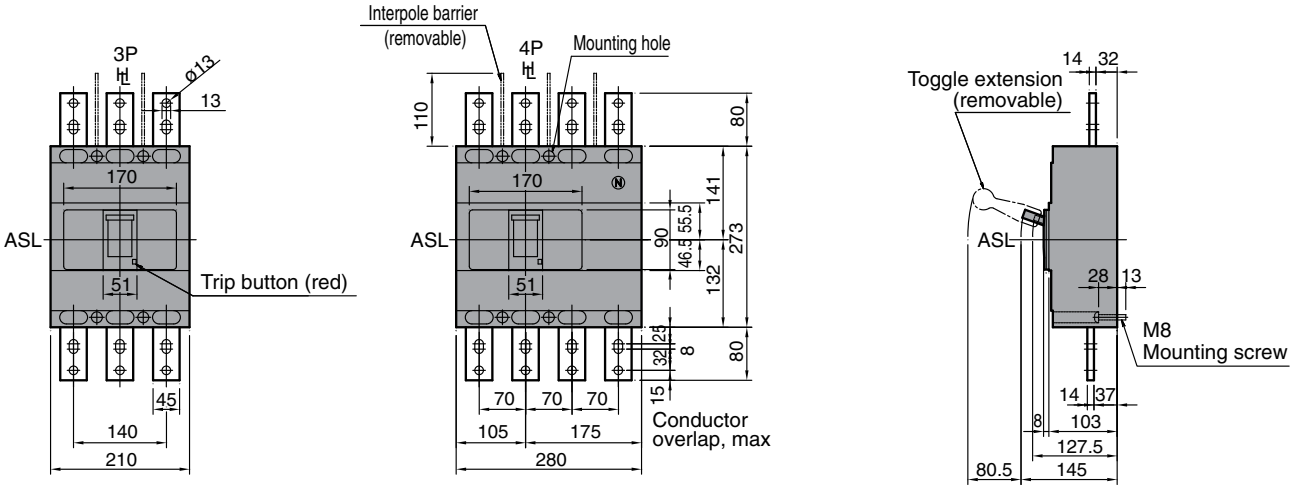
Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Rear Connection (Option) Plug-in UPX (Option) Extension Bar

Notes: 1) When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Quick Reference Dimensions – Front Connect



1000 A Frame 3 Pole 70 kA SX (LSI)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1000	400 - 1000	70	3	B1000H31000SX

1000 A Frame 4 Pole 70 kA SX (LSI)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1000	400 - 1000	70	4	B1000H41000SX

Notes: When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	1000 AF
Trip Unit Rating	1000 A

I_n, Rated Current (A)	
	1000
45ºC	1000
50ºC	900
70ºC	500

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)	
(A)	1000
(W)	106.67

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 %RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection Rear Connection (Option) Plug-in UPX (Option) Extension Bar
Terminal Type	Extension Bar With Bolt holes
Connection Torque	40.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	No
Mounting	-

Physical

Height		273 mm
Width	**3P**	210 mm
	4P	280 mm
Depth (less toggle)		103 mm
Depth (toggle included)		145 mm
Weight	**3P**	11 kg
	4P	14.8 kg
Electrical Life		4000 cycles
Mechanical Life		10000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**H**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	100
		380 / 400 V AC	70
		415 V AC	70
		440 V AC	65
		690 V AC	25
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	75
		380 / 400 V AC	50
		415 V AC	50
		440V AC	50
		690 V AC	20
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI with Ammeter
Rated Temperature	45 °C

Other Features

Pre-trip alarm (PTA)	No
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

B400_SX, B400_SE, B800_SX, B800_SE, B1000_SX, B1000_SE (400AF to 1000AF)

TBPro(B400_SE,SX Comms options)_dOPCH-S01

Communications MCCB Versions and Options

			B400_SX to B1000_SX	B400_SE to B1000_SE
	Feature		**Smart Electronic Ammeter Display**	**Smart Electronic Energy Display**
OCR Type Fitted			XOW-1L-AC	XOW-1S-BAPGNSCWH
Protective Function	■ Adjustable Long time ■ Adjustable Short time ■ Adjustable Instantaneous	A	✔	✔
	Ground fault trip	GF	-	✔ For trip units 250 A to 1000 A
	N-phase protection	NP	-	✔
	Phase rotation protection	NS	-	✔
Alarm Function	Pre-trip alarm	PTA	-	✔
Integral Display	Integral LCD display		✔	✔
	Backlit display		-	✔
Selectivity function	Zone Interlock	Z	-	-
Measurement / Event Indication	Current			✔
	■ Line voltage ■ Electrical power ■ Electrical energy ■ Power factor ■ Demand electrical power	-	-	✔
	Electrical energy pulse	W	-	✔
	Harmonic current	H	-	✔
	Trip event log		✔	✔
	Alarm event log		✔	✔
Miscellaneous	Modbus RTU RS-485 comms	C	-	✔
	Can set OCR settings via Modbus		-	✔
	External display meter option	I	-	✔
	Test function	-	✔	✔
	Indication via output contact	Y	-	✔
	External 24 V DC supply required	-	✔	✔
	Can use OCR checker type TNS2	-	✔	✔

Measurement / Integral Meter Event Indication and Accuracy		**Modbus Communication Function**
Load Current (± 1.5 %)	Present value for each phase	✔ Ground fault current and phase rotation current can be displayed with XOW – SE OCRs
	Present max value	✔ The phase with highest current is measured only
Line Voltage (± 1.0 %)	Present value of each line voltage	✔
	Present maximum value	✔
	Present phase voltage value for each phase	✔ Only 4 pole breakers have this feature
Harmonic Current (± 2.5 %)	Present value of 3rd, 5th, 7th, to the 19th	-
	harmonic current for each phase	✔
Electrical Power (± 2.5 %)	Present active power	✔
Demand Electric Power (± 2.5 %)	Demand active power	✔
	Maximum demand value of active power	✔
Electrical Energy (± 2.5 %)	Active electrical energy	✔
Power Factor (± 5 %)	Present value	✔
Trip Event Log	Fault current (± 1.5 %)	✔
	Indication of cause	✔
Alarm Event Log	Cause of alarm, Indication of operated value	✔

Note: Electrical energy is stored every 2 hours and the fault current and cause of fault are stored every time a fault occurs, in a flash memory.

Over Current Relay Settings

Applicable MCCB Types	CT Rated Primary Current I_{CT}
B400, with SX or SE suffix	250 A
	400 A
B800, with SX or SE suffix	630 A
	800 A
B1000, with SX or SE suffix	1000 A

TBPro(B400_SE,SX Comms options)_dOPCH-S02

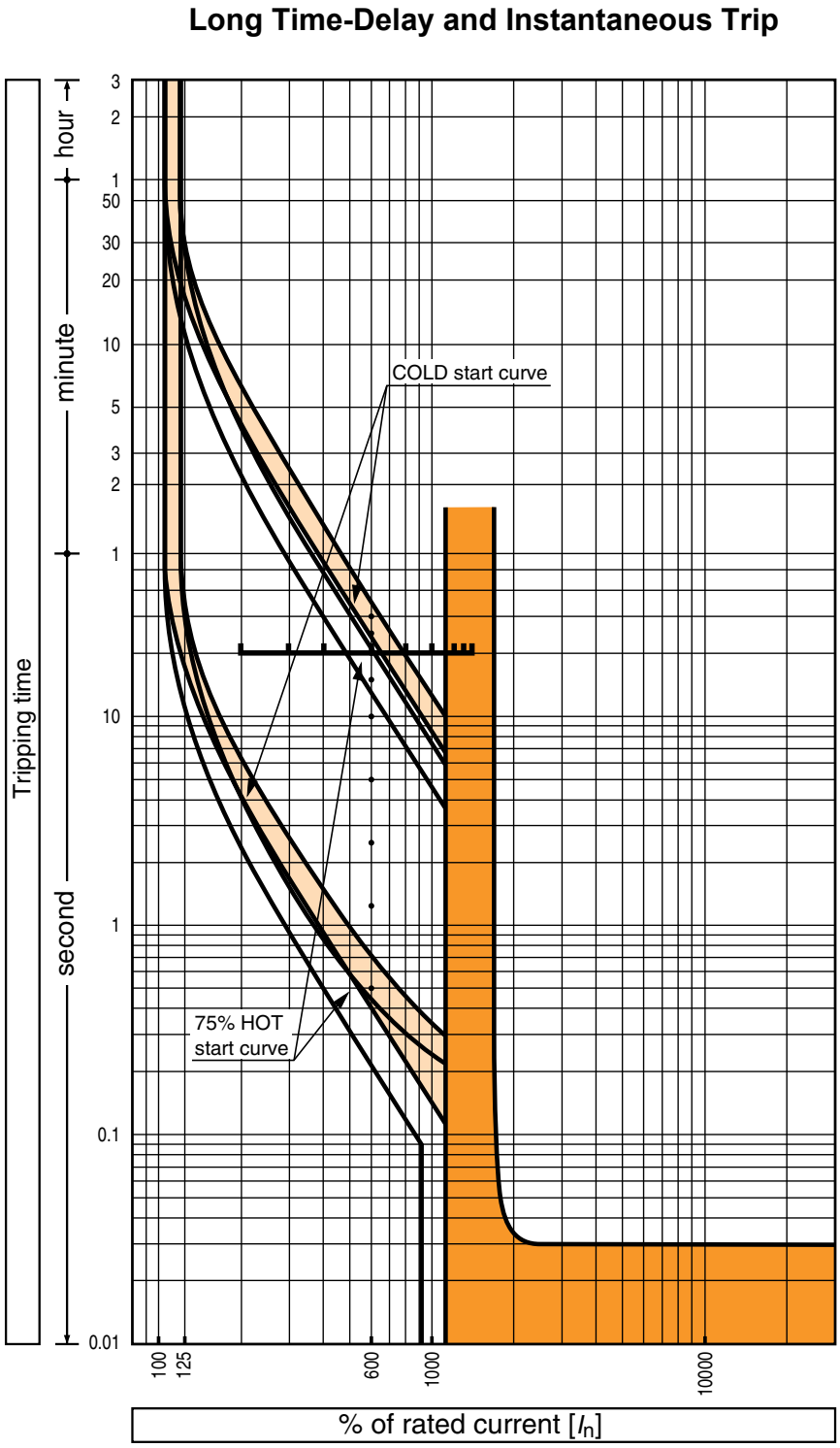
Left
Integrated LCD display standard with B400, 800, 1000_SX/SE MCCBs.

Protective Function [4] Rated Current (A)		**Symbol** I_n	**Setting Range (Bold Is Factory Default)** [I_{CT}] x (0.5 - 0.63 - 0.8 - 1.0)
Long Time-Delay Trip LT	Pick-up current (A)	I_R	[I_n] x (0.8 - 0.85 - 0.9 - 0.95 - 1.0)
			Non tripping at not more than [I_R] x 1.05
			Tripping at more than [I_R] x 1.05 and not more than [I_R] x 1.2
	Time-delay (s)	t_R	(0.5 - 1.25 - 2.5 - 5 - 10 - 15 - 20 - 25 - 30 sec) at 600 % of [I_R]
			Applies to all MCCBs except S630 and S1000 settings which are: (0.5 - 1.25 - 2.5 - 5 - 10 - 15 - 16 sec)
			Time-delay setting tolerance: ± 20 %, + 0.13 s – 0 s
	COLD / HOT	-	COLD / HOT
Short Time-Delay Trip ST	Pick-up current (A)	I_{sd}	[I_n] x (1 - 1.5 - 2 - 2.5 - 3 - 4 - 6 - 8 - 10 - NON)
			Applies to all MCCBs except S630 and S1000 settings which are: (1 - 1.5 - 2 - 2.5 - 3 - 4 - 6 - 8 - NON). 2)
			Current setting tolerance: ± 15 %
	Time-delay (s)	t_{ds}	I^2t OFF: 0.05-0.1-0.2-0.3 s (Definite time characteristic), Time-delay setting tolerance: + 50 ms – 20 ms
			I^2t ON: 0.05 - 0.1 - 0.2 - 0.3s (Ramp characteristic at less than 1000 % of [I_n], Definite time characteristic at 1000 % or more of [I_n])
	I^2t ramp characteristic	-	OFF / ON
Instantaneous Trip INST	Pick-up current (A)	I_i	[I_n] x (2 - 3 - 4 - 6 - 8 - 10 - 12 - 13 - 14 - NON) [1) 2)]
			Current setting tolerance: ±20 %
Ground Fault Trip GF (250 A, 400 A, 630 A, 800 A, 1000 A)	Pick-up current (A)	I_g	[I_{CT}] x (0.2 - 0.3 - 0.4 - NON)
			Current setting tolerance: ± 20 %
	Time-delay (s)	t_G	I^2t OFF: 0.1 - 0.2 - 0.3 - 0.4 - 0.8 s (Definite time characteristic)
			Time-delay setting tolerance: + 50 ms – 20 ms
			I^2t ON: 0.1 - 0.2 - 0.3 - 0.4 - 0.8 s (Ramp characteristic at less than 40 % of [I_{CT}], Definite time characteristic at 40 % or more of [I_{CT}])
	I^2t ramp characteristic	-	OFF / ON
	Mode	-	TRIP / OFF [3)]
N-Phase Protection NP	Pick-up current (A)	I_N	[I_{CT}] x (0.4 - 0.5 - 0.63 - 0.8 - 1.0 - NON)
			• Non tripping at not more than [I_N] x 1.05
			• Tripping at more than [I_N] x 1.05 and not more than [I_N] x 1.2
	Time-delay (s)	t_N	Tripping at 600 % of [I_N] with LT time-delay [t_R].
	COLD / HOT	-	COLD / HOT
Phase Rotation Protection NS	Pick-up current (A)	I_{NS}	[I_n] x (0.2 - 0.3 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8 - 0.9 - 1.0)
			Current setting tolerance: ± 10 %
	Time-delay (s)	t_{NS}	(0.4 - 0.8 - 1.2 - 1.6 - 2.0 - 2.4 - 2.8 - 3.2 - 3.6 - 4.0) (sec) at 150 % of [I_{NS}]
			Time-delay setting tolerance: ± 20 %, + 0.13 s –0 s
	Mode	-	TRIP / OFF [3)]
Pre-Trip Alarm PTA	Pick-up current (A)	I_p	[I_n] x (0.7 - 0.8 - 0.9 - 1.0)
			Current setting tolerance: ±10%
	Time-delay (s)	t_p	5 - 10 - 15 - 20 - 40 - 60 - 80 - 120 - 160 - 200 s more than [I_P]
			Time-delay setting tolerance: ±10%, +0.1 s –0 s
	Mode	-	AL / OFF 3)

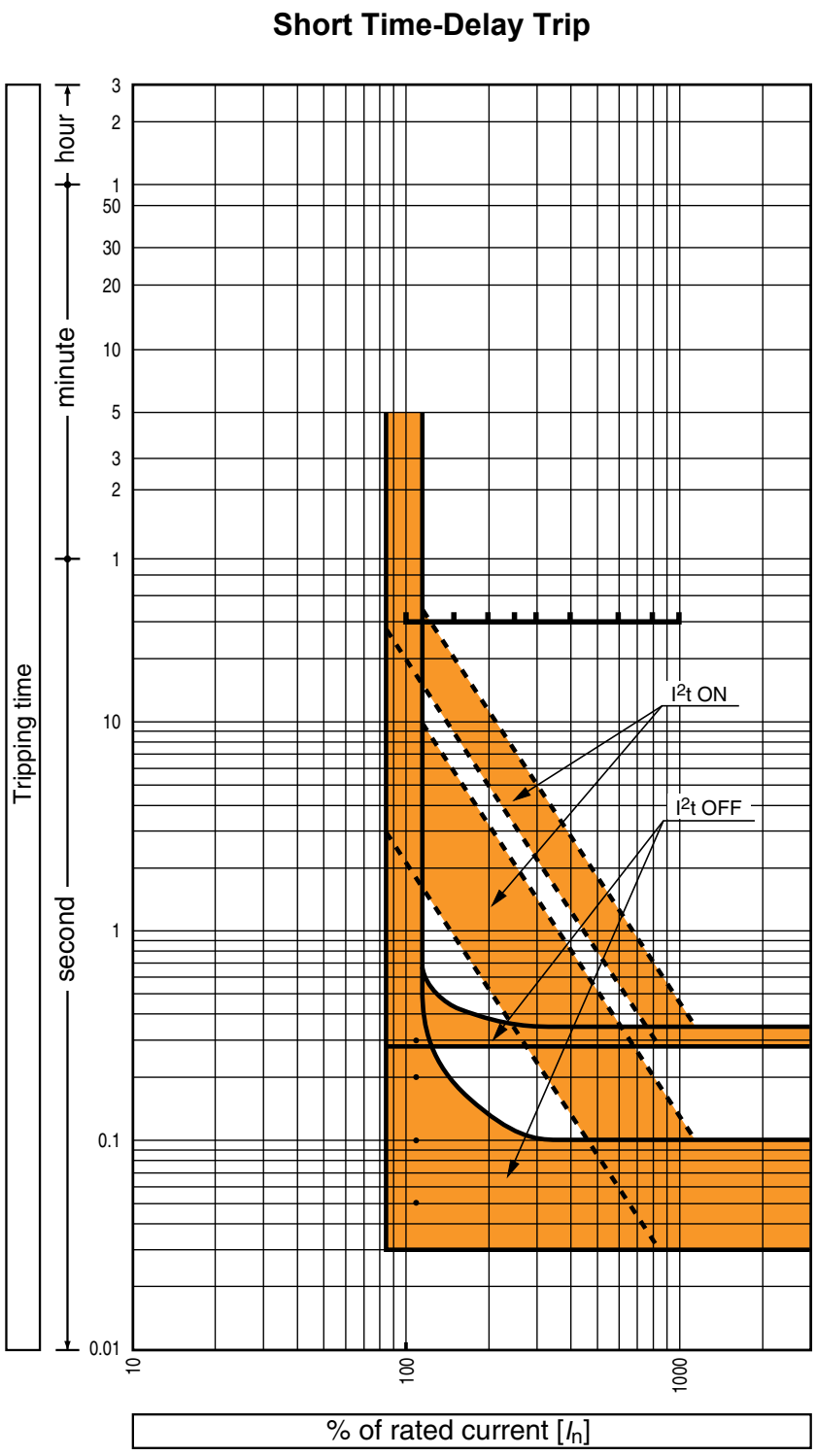
Notes

1) The maximum pick-up current is set to 1300% x [ICT] for B400_SX/SE, 1000 % x [ICT] for B1000H_SX/SE, 1200 % x [I_{CT}] for B800_SX/SE.
2) If the short time delay setting is NON, the instantaneous trip setting cannot be NON. If the instantaneous setting is NON, the short time setting cannot be NON.
3) Selecting "OFF" disables the protective functions. Unless otherwise specified when ordering, the settings will default to those underlined in the table above.
4) The protective functions of XOW Over Current Relays can be tested using the Terasaki TNS2 OCR checker. The checker can be used to check Long time, Short time, Instantaneous, and Ground Fault settings of the MCCB.

Time Current Characteristics Curve, B400,800,1000_SX/SE Electronic with Ammeter

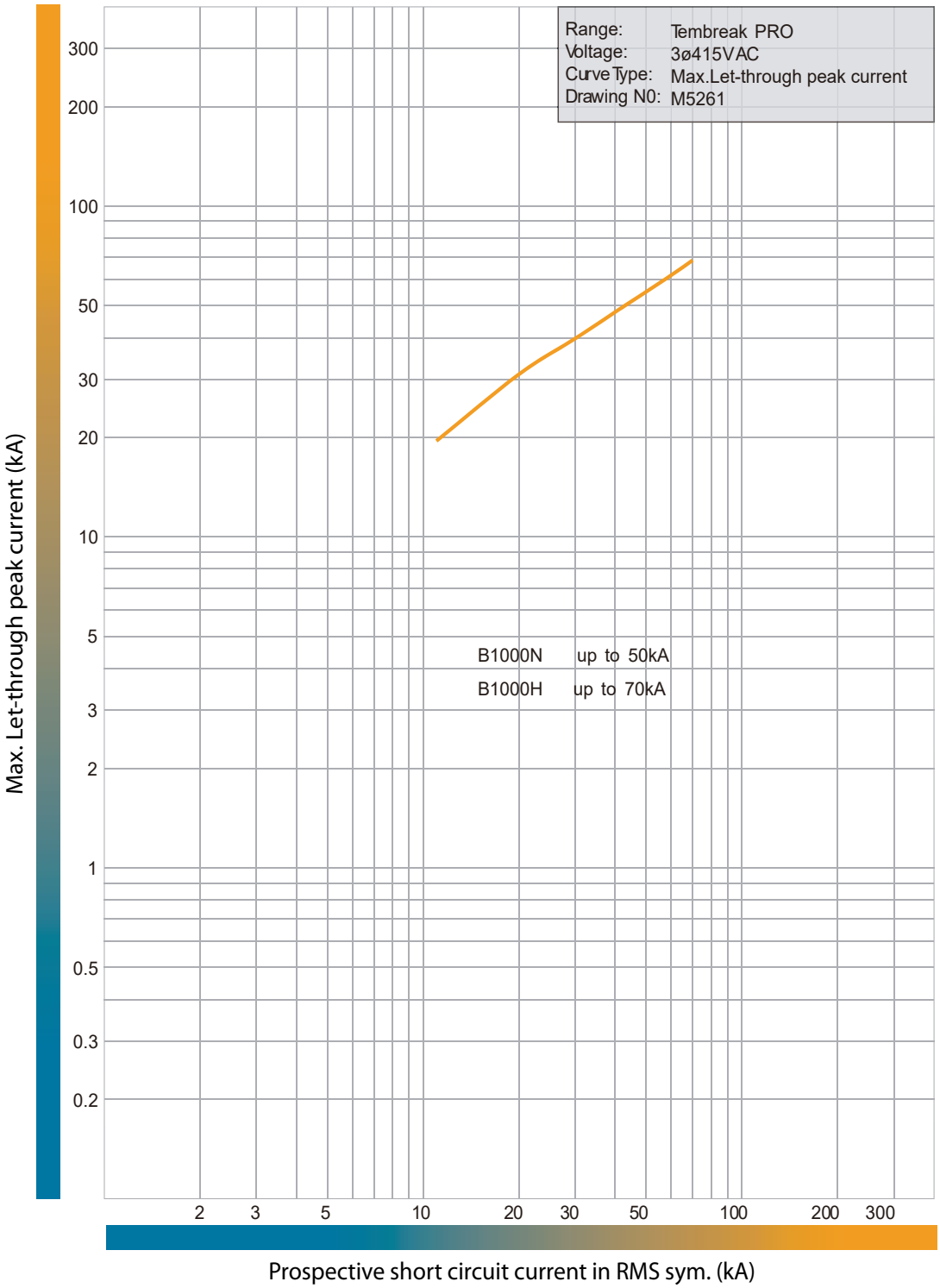


Time Current Characteristics Curve, B400,800,1000_SX Electronic with Ammeter

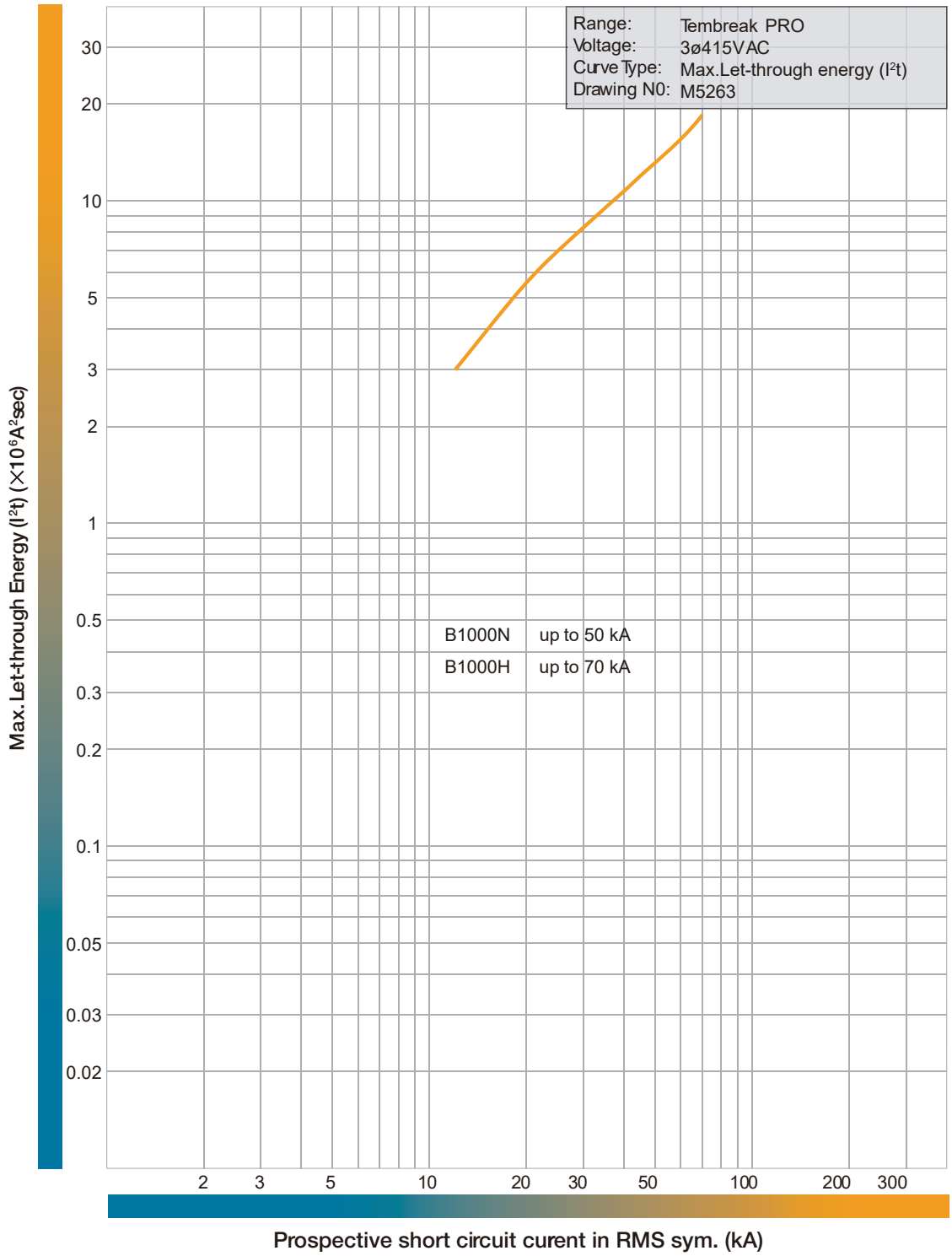


MCCBs

Let-Through Peak Current Curve, B1000_BE/BEG/SX/SE, Electronic

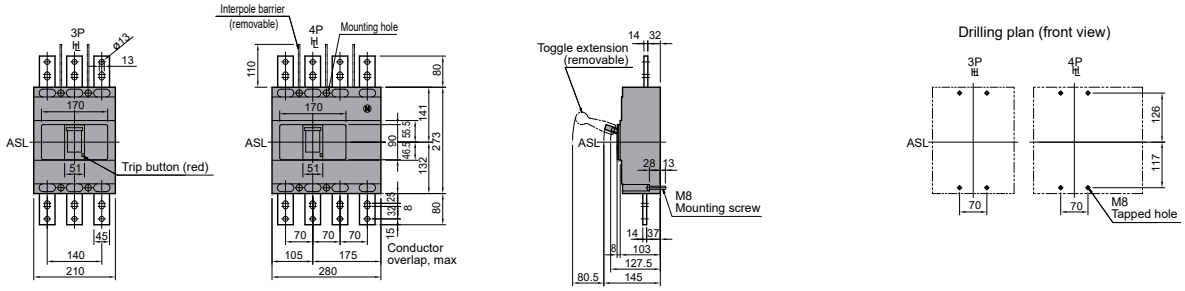


Let-Through Energy I²t Curve, B1000_BE/BEG/SX/SE, Electronic

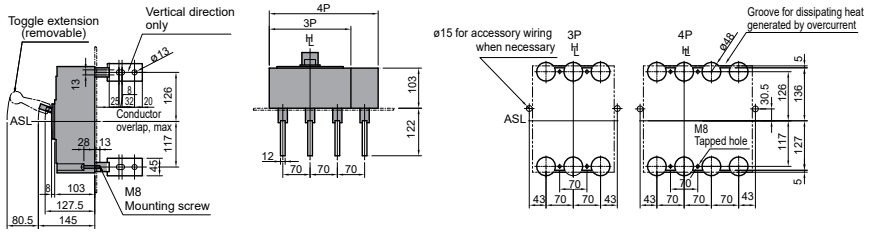


Dimensions B1000_NN/BE/BEG/SE/SX (mm)

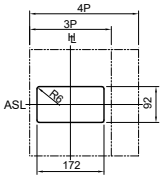
Front Connected



Rear Connected

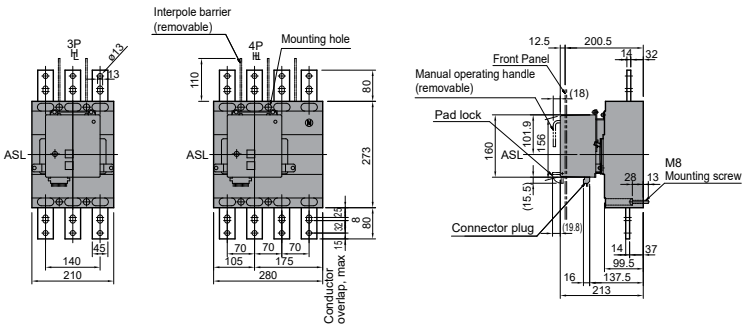


Panel cutout (front view)

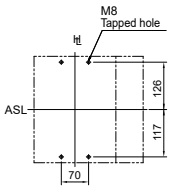


Panel cutout dimensions shown give an allowance of 1.0 mm around the handle escutcheon.

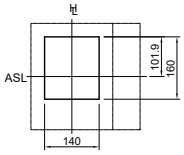
Front Connected With Motor Operator



Drilling plan (front view)

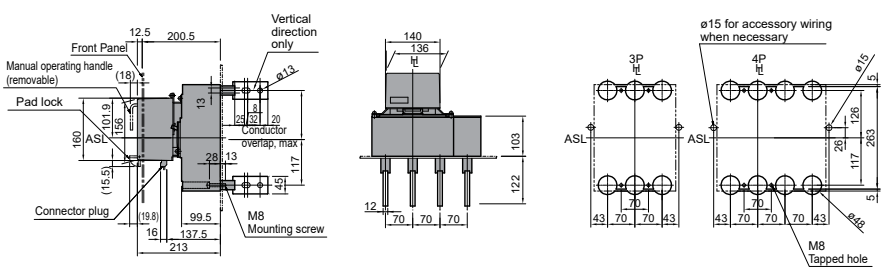


Panel cutout (front view)



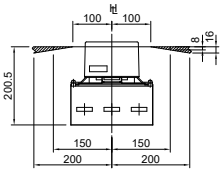
Panel cutout dimensions shown give an allowance of 1.5 mm around motor operator.

Rear Connected With Motor Operator



Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel hinge position (hatching area) (bottom view)



B1000_SE

Electronic MCCB with Energy Metering

- ✔ General purpose power distribution, energy metering and communications, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ 3 or 4 pole versions
- ✔ 273 mm (H), 103 mm (D), 70 mm pole centres
- ✔ Fault rating; 70 kA I_{CU} @ 415 V AC
- ✔ Energy metering LSIG trip unit: Modbus communications, V, I, Energy measurement output
- ✔ Built-in LED back-lit display, onboard menu for full LSIG and settings adjustment and data viewing
- ✔ Display: door mount display (T2ED) available for external metering and monitoring
- ✔ Full range of accessories for application flexibility
- ✔ Trip unit; 1000 A

General

Trip Unit Protection Type	Electronic LSIG Energy Metering [1]
Trip Unit Rating	1000 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**H** 70 kA

Voltage

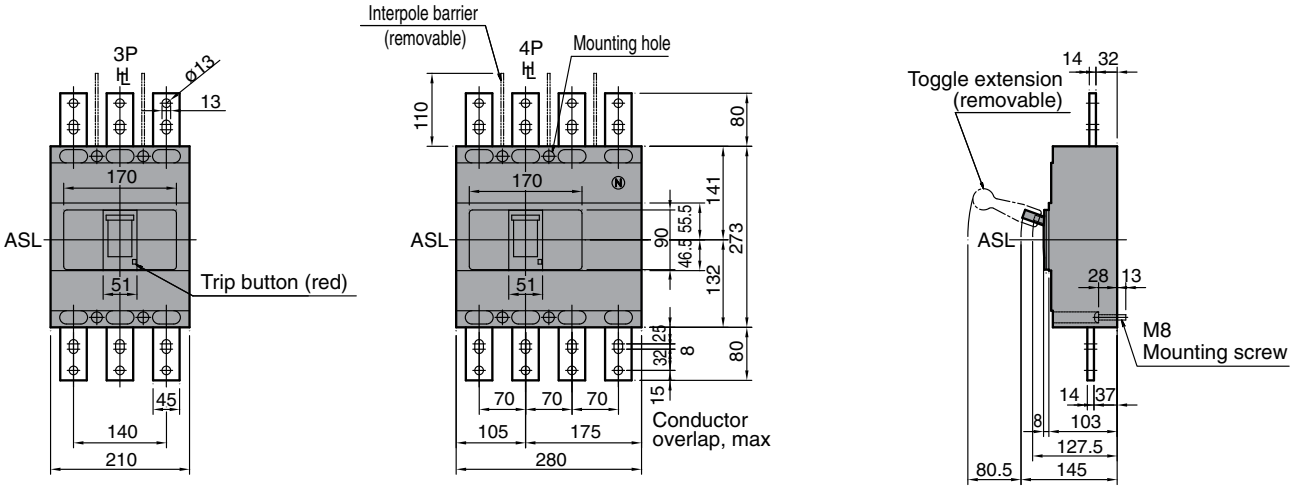
Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Rear Connection (Option) Plug-in UPX (Option) Extension Bar

Notes: 1) When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Quick Reference Dimensions – Front Connect



1000 A Frame 3 Pole 70 kA SE (LSIG)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1000	400 - 1000	70	3	B1000H31000SE

1000 A Frame 4 Pole 70 kA SE (LSIG)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1000	400 - 1000	70	4	B1000H41000SE

Notes: When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	1000 AF
Trip Unit Rating	1000 A

I_n, Rated Current (A)

	1000
45ºC	1000
50ºC	900
70ºC	500

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	1000
(W)	106.67

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 %RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection Rear Connection (Option) Plug-in UPX (Option) Extension Bar
Terminal Type	Extension Bar With Bolt holes
Connection Torque	40.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	No
Mounting	-

Physical

Height		273 mm
Width	**3P**	210 mm
	4P	280 mm
Depth (less toggle)		103 mm
Depth (toggle included)		145 mm
Weight	**3P**	11 kg
	4P	14.8 kg
Electrical Life		4000 cycles
Mechanical Life		10000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**H**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	100
		380 / 400 V AC	70
		415 V AC	70
		440 V AC	65
		690 V AC	25
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	75
		380 / 400 V AC	50
		415 V AC	50
		440V AC	50
		690 V AC	20
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSIG Energy Metering
Rated Temperature	45 °C

Other Features

Pre-trip alarm (PTA)	Option
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	Yes

B400_SX, B400_SE, B800_SX, B800_SE, B1000_SX, B1000_SE (400AF to 1000AF)

TBPro(B400_SE,SX Comms options)_dOPCH-S01

Communications MCCB Versions and Options

			B400_SX to B1000_SX	B400_SE to B1000_SE
	Feature		**Smart Electronic Ammeter Display**	**Smart Electronic Energy Display**
OCR Type Fitted			XOW-1L-AC	XOW-1S-BAPGNSCWH
Protective Function	■ Adjustable Long time ■ Adjustable Short time ■ Adjustable Instantaneous	A	✔	✔
	Ground fault trip	GF	-	✔ For trip units 250 A to 1000 A
	N-phase protection	NP	-	✔
	Phase rotation protection	NS	-	✔
Alarm Function	Pre-trip alarm	PTA	-	✔
Integral Display	Integral LCD display		✔	✔
	Backlit display		-	✔
Selectivity function	Zone Interlock	Z	-	-
Measurement / Event Indication	Current			✔
	■ Line voltage ■ Electrical power ■ Electrical energy ■ Power factor ■ Demand electrical power	-	-	✔
	Electrical energy pulse	W	-	✔
	Harmonic current	H	-	✔
	Trip event log		✔	✔
	Alarm event log		✔	✔
Miscellaneous	Modbus RTU RS-485 comms	C	-	✔
	Can set OCR settings via Modbus		-	✔
	External display meter option	I	-	✔
	Test function	-	✔	✔
	Indication via output contact	Y	-	✔
	External 24 V DC supply required	-	✔	✔
	Can use OCR checker type TNS2	-	✔	✔

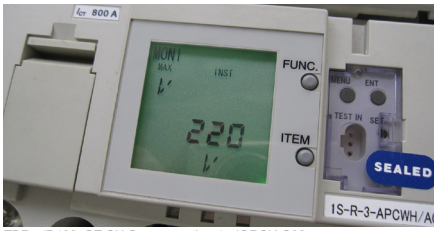
Measurement / Integral Meter Event Indication and Accuracy		**Modbus Communication Function**
Load Current (± 1.5 %)	Present value for each phase	✔ Ground fault current and phase rotation current can be displayed with XOW – SE OCRs
	Present max value	✔ The phase with highest current is measured only
Line Voltage (± 1.0 %)	Present value of each line voltage	✔
	Present maximum value	✔
	Present phase voltage value for each phase	✔ Only 4 pole breakers have this feature
Harmonic Current (± 2.5 %)	Present value of 3rd, 5th, 7th, to the 19th	-
	harmonic current for each phase	✔
Electrical Power (± 2.5 %)	Present active power	✔
Demand Electric Power (± 2.5 %)	Demand active power	✔
	Maximum demand value of active power	✔
Electrical Energy (± 2.5 %)	Active electrical energy	✔
Power Factor (± 5 %)	Present value	✔
Trip Event Log	Fault current (± 1.5 %)	✔
	Indication of cause	✔
Alarm Event Log	Cause of alarm, Indication of operated value	✔

Note: Electrical energy is stored every 2 hours and the fault current and cause of fault are stored every time a fault occurs, in a flash memory.

MCCBs

Over Current Relay Settings

Applicable MCCB Types	CT Rated Primary Current I_{CT}
B400, with SX or SE suffix	250 A
	400 A
B800, with SX or SE suffix	630 A
	800 A
B1000, with SX or SE suffix	1000 A



TBPro(B400_SE,SX Comms options)_dOPCH-S02

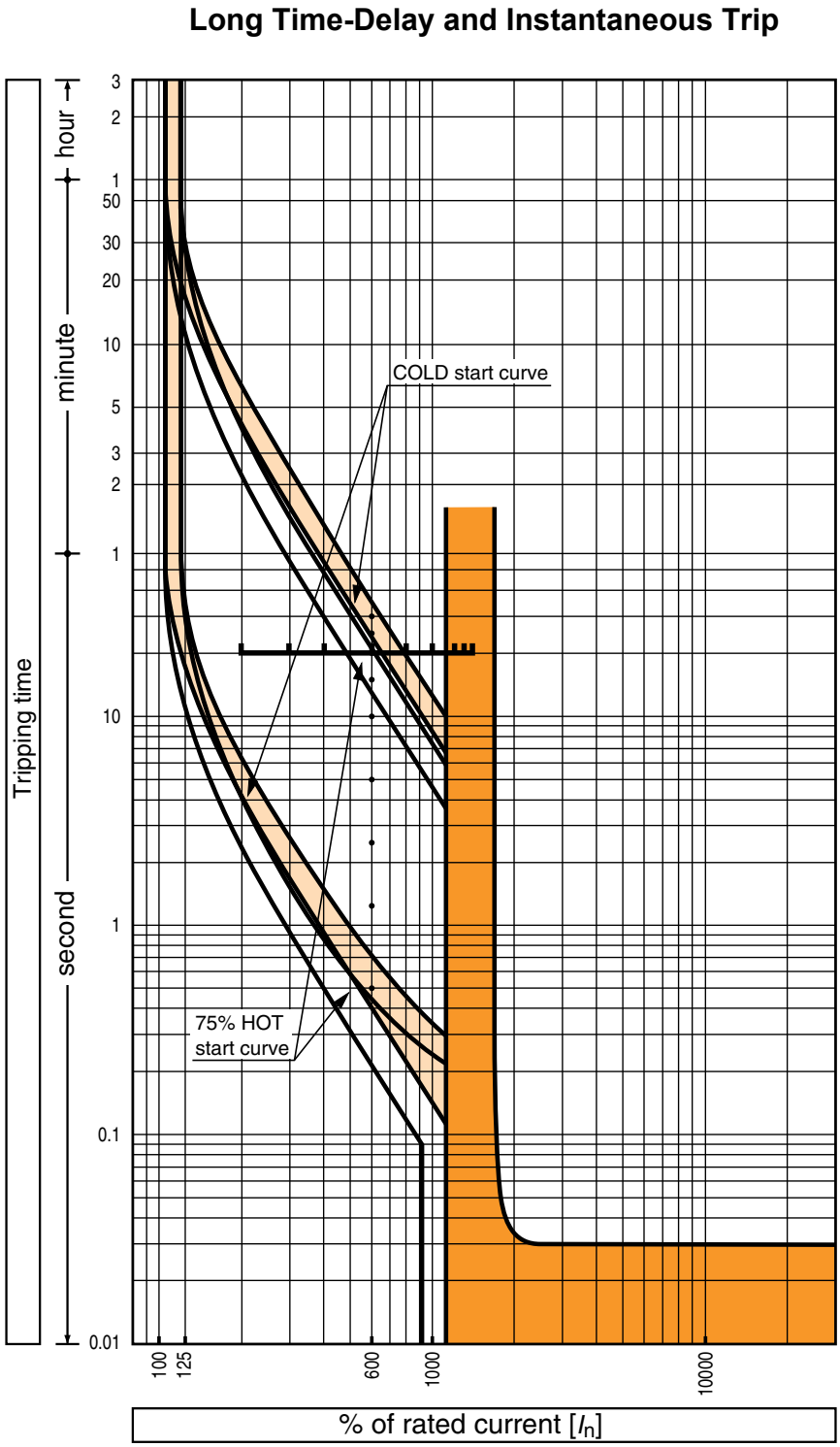
Left
Integrated LCD display standard with B400, 800, 1000_SX/ SE MCCBs.

Protective Function [4] Rated Current (A)		**Symbol** I_n	**Setting Range (Bold Is Factory Default)** [I_{CT}] x (0.5 - 0.63 - 0.8 - 1.0)
Long Time-Delay Trip LT	Pick-up current (A)	I_R	[I_n] x (0.8 - 0.85 - 0.9 - 0.95 - 1.0)
			Non tripping at not more than [I_R] x 1.05
			Tripping at more than [I_R] x 1.05 and not more than [I_R] x 1.2
	Time-delay (s)	t_R	(0.5 - 1.25 - 2.5 - 5 - 10 - 15 - 20 - 25 - 30 sec) at 600 % of [I_R]
			Applies to all MCCBs except S630 and S1000 settings which are: (0.5 - 1.25 - 2.5 - 5 - 10 - 15 - 16 sec)
			Time-delay setting tolerance: ± 20 %, + 0.13 s – 0 s
	COLD / HOT	-	COLD / HOT
Short Time-Delay Trip ST	Pick-up current (A)	I_{sd}	[I_n] x (1 - 1.5 - 2 - 2.5 - 3 - 4 - 6 - 8 - 10 - NON)
			Applies to all MCCBs except S630 and S1000 settings which are: (1 - 1.5 - 2 - 2.5 - 3 - 4 - 6 - 8 - NON). 2)
			Current setting tolerance: ± 15 %
	Time-delay (s)	t_{ds}	I^2t OFF: 0.05-0.1-0.2-0.3 s (Definite time characteristic), Time-delay setting tolerance: + 50 ms – 20 ms
			I^2t ON: 0.05 - 0.1 - 0.2 - 0.3s (Ramp characteristic at less than 1000 % of [I_n], Definite time characteristic at 1000 % or more of [I_n])
	I^2t ramp characteristic	-	OFF / ON
Instantaneous Trip INST	Pick-up current (A)	I_i	[I_n] x (2 - 3 - 4 - 6 - 8 - 10 - 12 - 13 - 14 - NON) [1) 2)]
			Current setting tolerance: ±20 %
Ground Fault Trip GF **(250 A, 400 A, 630 A, 800 A, 1000 A)**	Pick-up current (A)	I_g	[I_{CT}] x (0.2 - 0.3 - 0.4 - NON)
			Current setting tolerance: ± 20 %
	Time-delay (s)	t_G	I^2t OFF: 0.1 - 0.2 - 0.3 - 0.4 - 0.8 s (Definite time characteristic)
			Time-delay setting tolerance: + 50 ms – 20 ms
			I^2t ON: 0.1 - 0.2 - 0.3 - 0.4 - 0.8 s (Ramp characteristic at less than 40 % of [I_{CT}], Definite time characteristic at 40 % or more of [I_{CT}])
	I^2t ramp characteristic	-	OFF / ON
	Mode	-	TRIP / OFF [3)]
N-Phase Protection NP	Pick-up current (A)	I_N	[I_{CT}] x (0.4 - 0.5 - 0.63 - 0.8 - 1.0 - NON)
			• Non tripping at not more than [I_N] x 1.05
			• Tripping at more than [I_N] x 1.05 and not more than [I_N] x 1.2
	Time-delay (s)	t_N	Tripping at 600 % of [I_N] with LT time-delay [t_R].
	COLD / HOT	-	COLD / HOT
Phase Rotation Protection NS	Pick-up current (A)	I_{NS}	[I_n] x (0.2 - 0.3 - 0.4 - 0.5 - 0.6 - 0.7 - 0.8 - 0.9 - 1.0)
			Current setting tolerance: ± 10 %
	Time-delay (s)	t_{NS}	(0.4 - 0.8 - 1.2 - 1.6 - 2.0 - 2.4 - 2.8 - 3.2 - 3.6 - 4.0) (sec) at 150 % of [I_{NS}]
			Time-delay setting tolerance: ± 20 %, + 0.13 s –0 s
	Mode	-	TRIP / OFF [3)]
Pre-Trip Alarm PTA	Pick-up current (A)	I_p	[I_n] x (0.7 - 0.8 - 0.9 - 1.0)
			Current setting tolerance: ±10%
	Time-delay (s)	t_p	5 - 10 - 15 - 20 - 40 - 60 - 80 - 120 - 160 - 200 s more than [I_P]
			Time-delay setting tolerance: ±10%, +0.1 s –0 s
	Mode	-	AL / OFF 3)

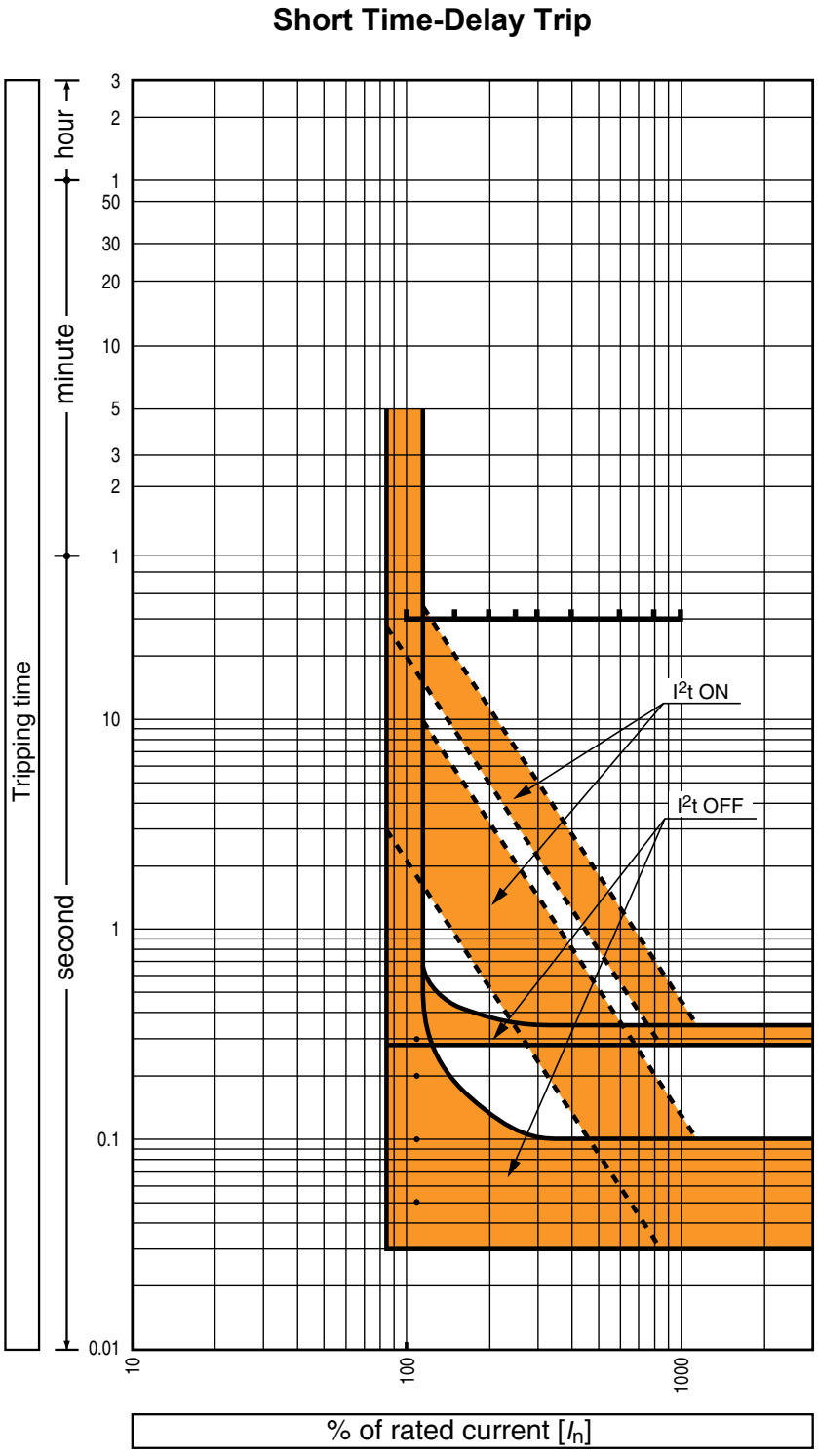
Notes

1) The maximum pick-up current is set to 1300% x [ICT] for B400_SX/SE, 1000 % x [ICT] for B1000H_SX/SE, 1200 % x [I_{CT}] for B800_SX/SE.
2) If the short time delay setting is NON, the instantaneous trip setting cannot be NON. If the instantaneous setting is NON, the short time setting cannot be NON.
3) Selecting "OFF" disables the protective functions. Unless otherwise specified when ordering, the settings will default to those underlined in the table above.
4) The protective functions of XOW Over Current Relays can be tested using the Terasaki TNS2 OCR checker. The checker can be used to check Long time, Short time, Instantaneous, and Ground Fault settings of the MCCB.

Time Current Characteristics Curve, B400,800,1000_SX/SE Electronic with Ammeter

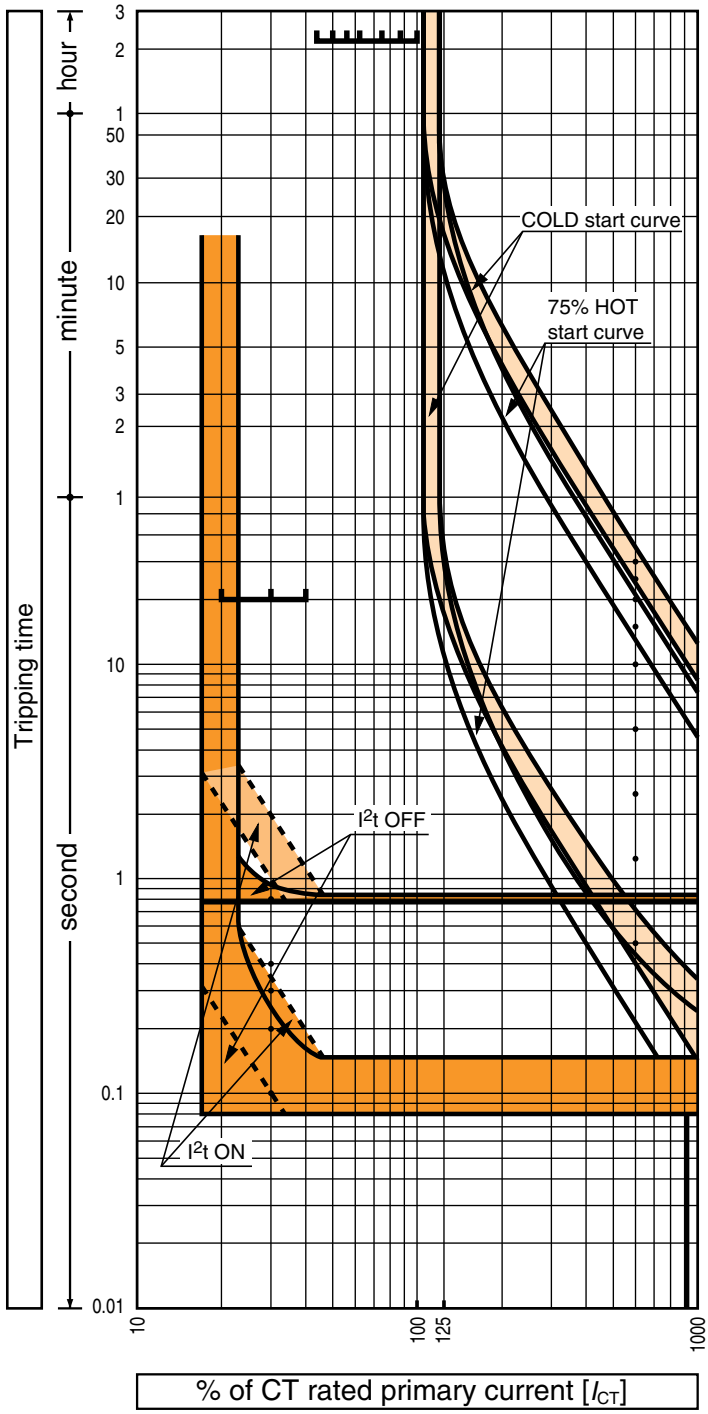


Time Current Characteristics Curve, B400,800,1000_SE Energy Metering Electronic



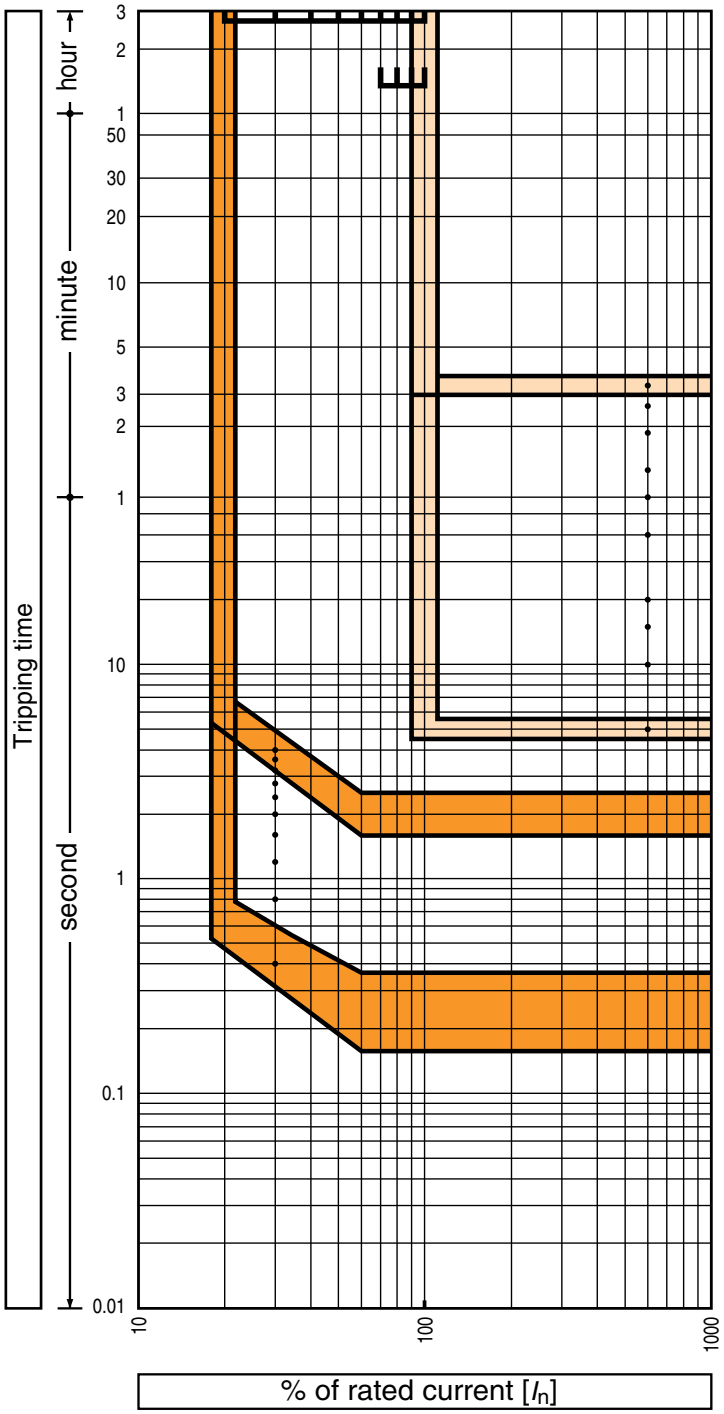
Time Current Characteristics Curve, B400,800,1000_SE Energy Metering Electronic

N-Phase Protection and Ground Fault Trip

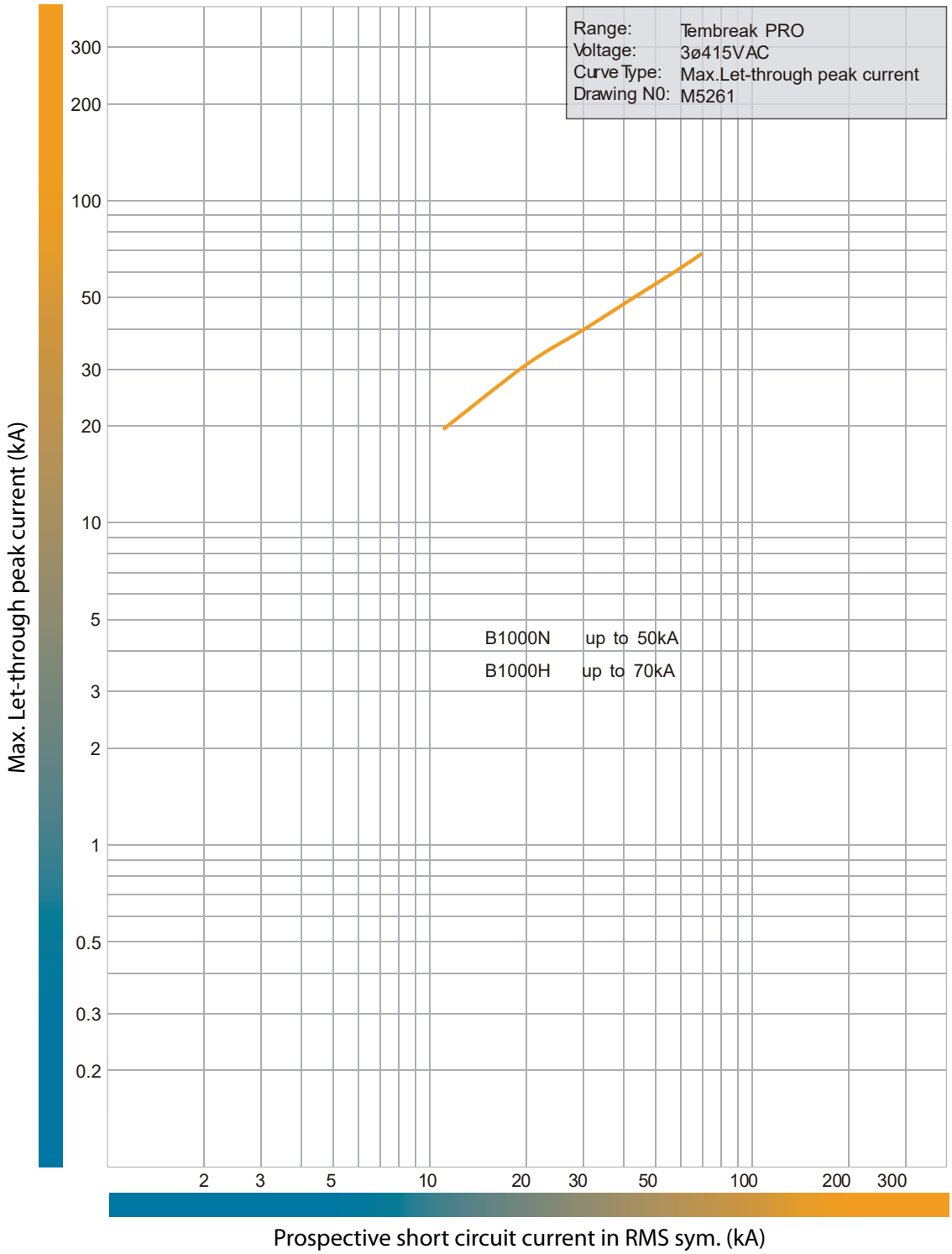


Time Current Characteristics Curve, B400,800,1000_SE Energy Metering Electronic

Phase Rotation Protection and Pre-Trip Alarm

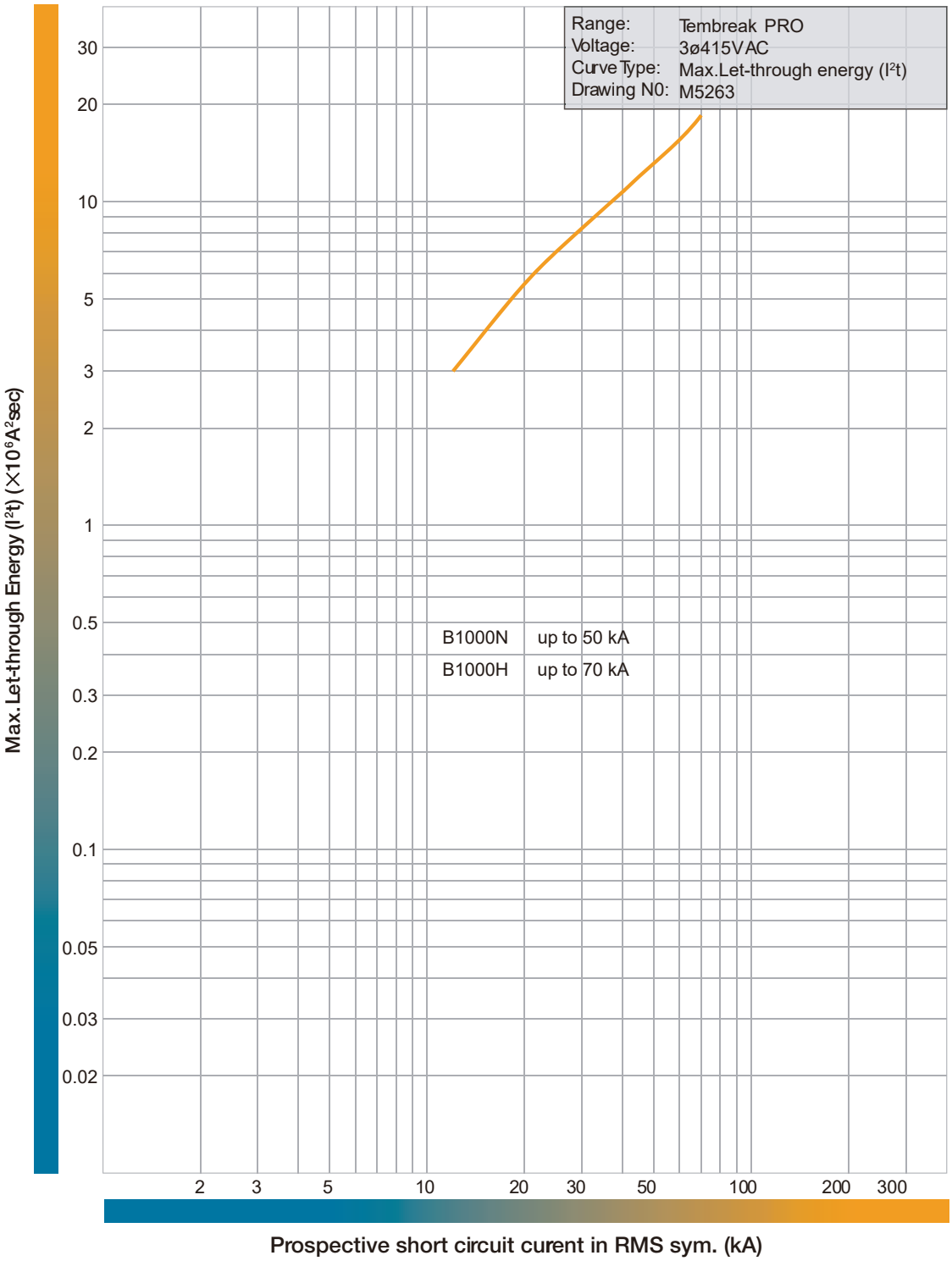


Let-Through Peak Current Curve, B1000_BE/BEG/SX/SE, Electronic



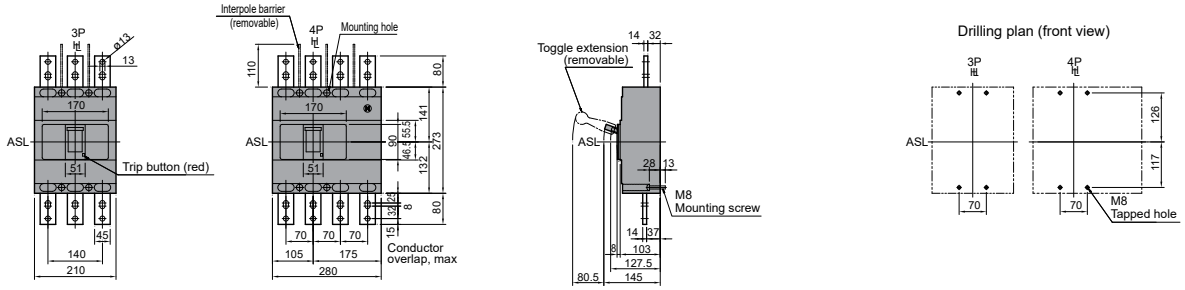
MCCBs

Let-Through Energy I²t Curve, B1000_BE/BEG/SX/SE, Electronic

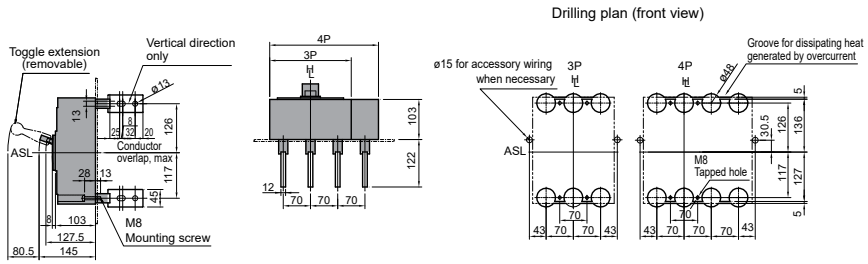


Dimensions B1000_NN/BE/BEG/SE/SX (mm)

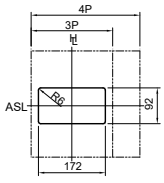
Front Connected



Rear Connected

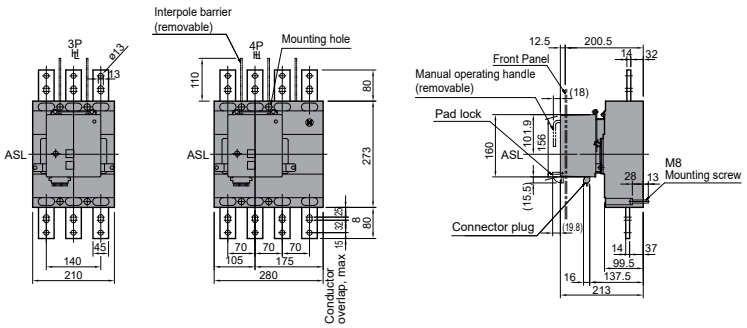


Panel cutout (front view)

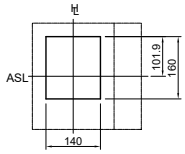


Panel cutout dimensions shown give an allowance of 1.0 mm around the handle escutcheon.

Front Connected With Motor Operator

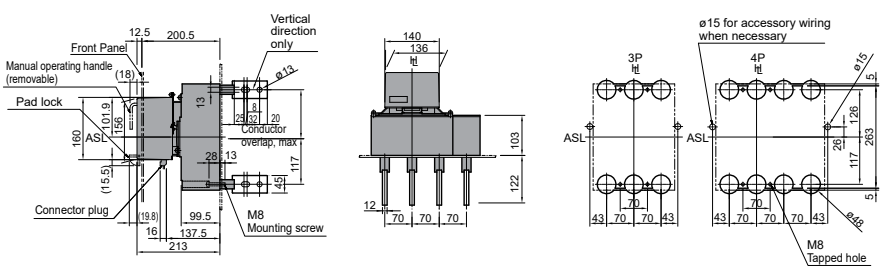


Panel cutout (front view)



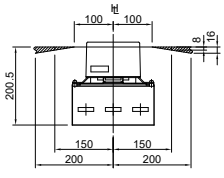
Panel cutout dimensions shown give an allowance of 1.5 mm around motor operator.

Rear Connected With Motor Operator



Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel hinge position (hatching area) (bottom view)



B1000_NN

Non-Auto Switch Disconnector

- ✔ Non-Auto switch disconnector for power distribution
- ✔ AC23 and DC22 ratings for motor starting use
- ✔ No overcurrent protection (isolator only)
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-3, IEC 60947-3 and CE
- ✔ Panel mount standard, other connection options
- ✔ Wide range of accessories for application flexibility, including OFF padlock device
- ✔ Accepts standard MCCB internal and external accessories
- ✔ 3 or 4 pole versions
- ✔ 273 mm (H), 103 mm (D), 70 mm pole centres
- ✔ I_{cw} = 10 kA for 0.3 sec: Rated short time withstand rating
- ✔ I_{cw} = 17 kA: Rated short circuit making capacity

CE DEKRA On the safe side.

General

Switch Type	Non Auto Switch Disconnector
Number of Poles	3 or 4
Switching Poles	3P or 3P + N

Ratings

Nominal Current	1000 A @ 45°C
Motor Starting	AC23 motor starting DC22 motor starting
Icw Rated	Short time withstand
Icm Rated	Ampere making capacity

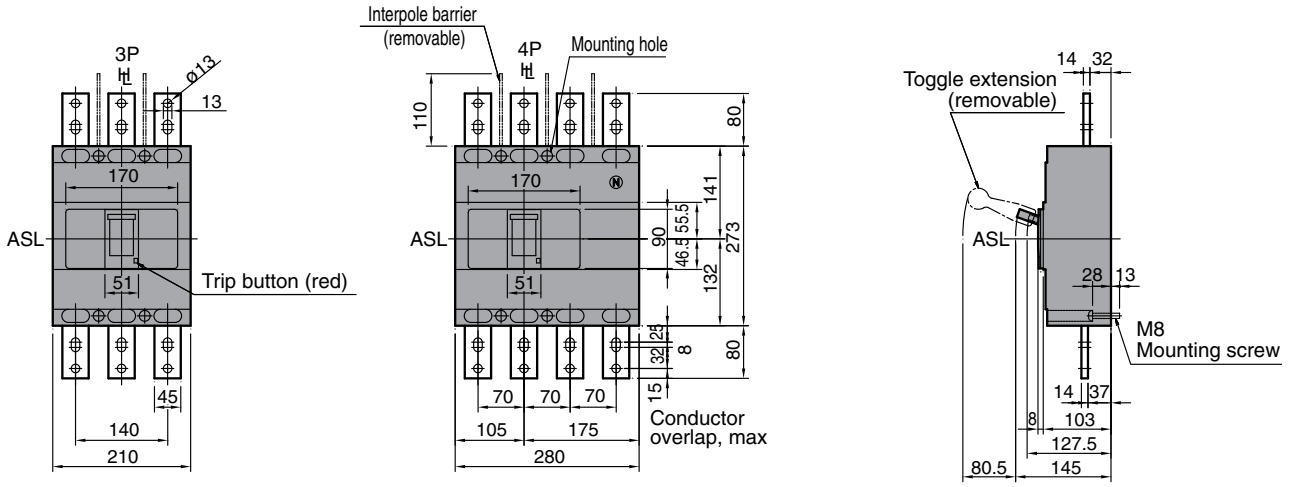
Voltage

Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Accessories and Connections

Options	Front or rear connect Terminal connection options Accepts standard MCCB accessories

Quick Reference Dimensions – Front Connect



1000 A Frame 3 Pole NN (Non-auto)

I_n (A @ 45 °C)	Poles	Catalogue No.
1000	3	B1000D31000NN

1000 A Frame 4 Pole NN (Non-auto)

I_n (A @ 45 °C)	Poles	Catalogue No.
1000	4	B1000D41000NN

Ratings

Component Type	Non Auto Switch Disconnector
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	1000 AF

I_n, Rated Current (A)	1000
45ºC	1000
50ºC	900
70ºC	500

Ue Rated operational voltage AC maximum	690 V AC
Ue Rated operational voltage DC maximum	250 DC
U_i, Rated Insulation Voltage	800 V (rms)
Motor Starting Utilisation Category	AC 23, DC 22
U_{imp}, Impulse Withstand Voltage	8 kV
Icw, Rated Short Circuit Withstand Current 400/690V	10 kA / 0.3 Sec
Rated Frequency	50 / 60 Hz
Pollution Degree	3
AC Power loss per pole at full rated current	99 W @ 1000 A
Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-3 AS/NZS 60947-3
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 %RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection Rear Connection (Option) Plug-in UPX (Option) Extension Bar
Terminal Type	Extension Bar With Bolt holes
Connection Torque	40.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	Option
Mounting	-

Physical

Height		273 mm
Width	**3P**	210 mm
	4P	280 mm
Depth (less toggle)		103 mm
Depth (toggle included)		145 mm
Weight	**3P**	10.4 kg
	4P	14 kg
Electrical Life		4000 cycles
Mechanical Life		10000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**D**
Based On AS/NZS 60947.2 and IEC 60947-2	**I_{cm} (Short Circuit Making Capacity)**	220 / 240 V AC	17
	I_{cw} (Short Time Withstand)	0.3 Seconds	10

Trip Unit

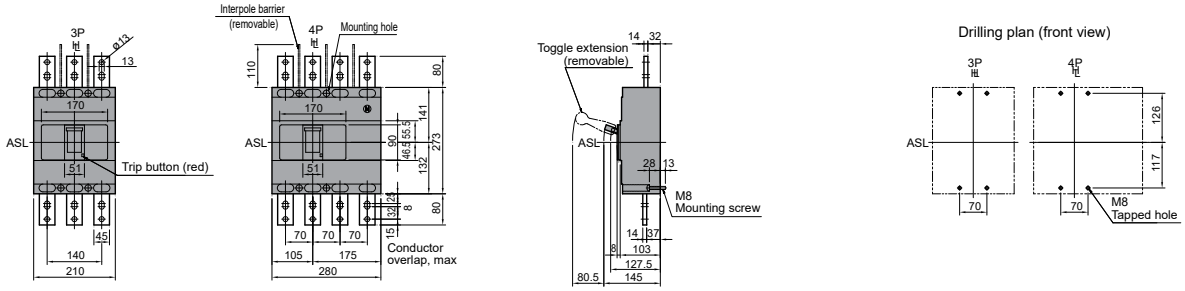
Over Current Protection Function	No
Trip Unit Protection Type	Non-auto Switch Disconnector
Rated Temperature	50 °C

General Accessories

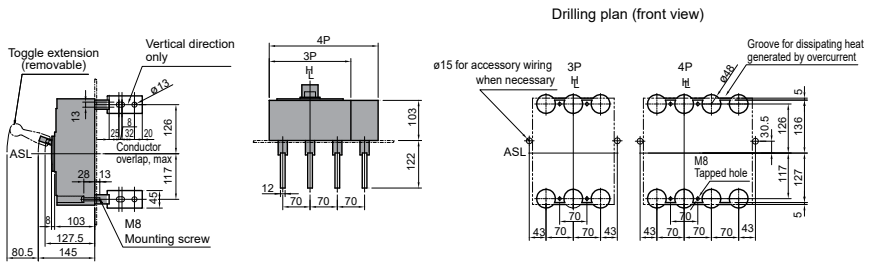
Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	Yes

Dimensions B1000_NN/BE/BEG/SE/SX (mm)

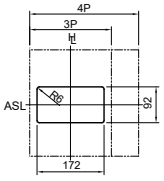
Front Connected



Rear Connected

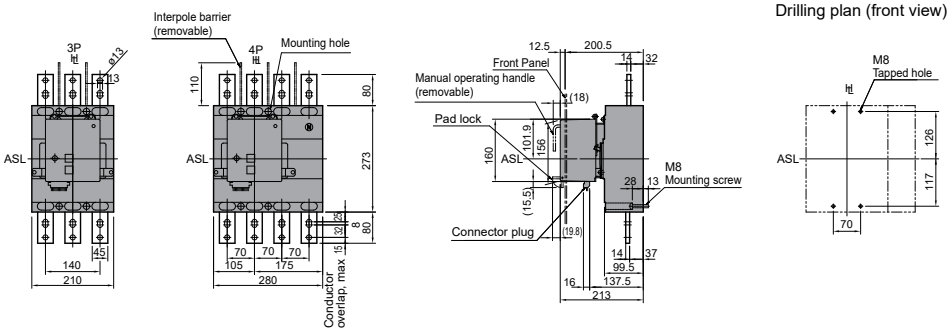


Panel cutout (front view)

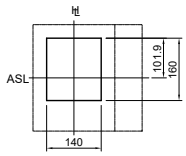


Panel cutout dimensions shown give an allowance of 1.0 mm around the handle escutcheon.

Front Connected With Motor Operator

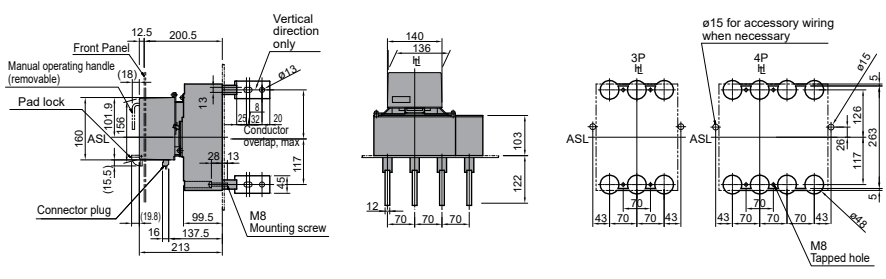


Panel cutout (front view)



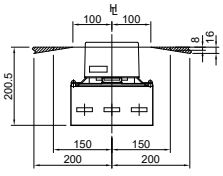
Panel cutout dimensions shown give an allowance of 1.5 mm around motor operator.

Rear Connected With Motor Operator



Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel hinge position (hatching area) (bottom view)

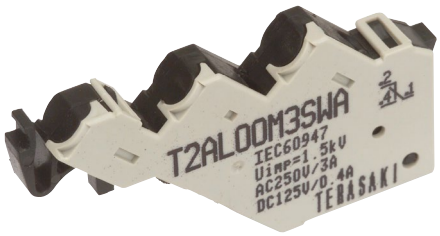


B1000 AF Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits



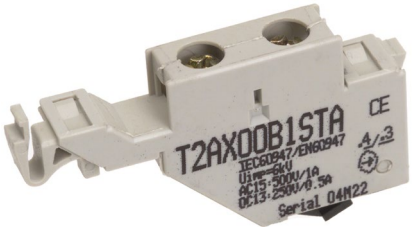
Item Description	Catalogue No.
Alarm Switch 1 C/O	T2AL00M3STA
Alarm Switch 1 C/O Wired	T2AL00M3SWA
Alarm Switch Micro-current 1 C/O	T2AL00M3RTA

Item Description	Catalogue No.
Alarm Switch Heavy Duty 1 N/O	T2AL00B1STA
Alarm Switch Heavy Duty 1 N/C	T2AL00B2STA

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxiliary Switch 1 C/O	T2AX00M3STA
Auxiliary Switch 1 C/O Wired	T2AX00M3SWA
Auxiliary and Alarm Switches 1 C/O 2nd Auxiliary with 700 mm Leads	T2AX00M4SWA
Auxiliary and Alarm Switches 1 C/O 3rd Auxiliary with 700 mm Leads	T2AX00M5SWA
Auxiliary Switch Micro-current 1 C/O	T2AX00M3RTA



Item Description	Catalogue No.
Auxiliary Switch Heavy Duty 1 N/O	T2AX00B1STA
Auxiliary Switch Heavy Duty 1 N/C	T2AX00B2STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00A10TA
Shunt Trip Coil 240 V AC	T2SH00A20TA
Shunt Trip Coil 415 V AC	T2SH00A40TA
Shunt Trip Coil 12V DC	T2SH00D01TA
Shunt Trip Coil 24 V DC	T2SH00D02TA
Shunt Trip Coil 48 V DC	T2SH00D04TA
Shunt Trip Coil 110 V DC	T2SH00D10TA
Shunt Trip Coil 230 V DC	T2SH00D20TA

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 800-1600 A 110 V AC	T2UV80A10NTA
Under Voltage Trip Coil Instant 800-1600 A 240 V AC	T2UV80A20NTA
Under Voltage Trip Coil Instant 800-1600 A 415 V AC	T2UV80A40NTA
Under Voltage Trip Coil Instant 800-1600 A 24 V DC	T2UV80D02NTA
Under Voltage Trip Coil Instant 800-1600 A 48 V DC	T2UV80D04NTA
Under Voltage Trip Coil Instant 800-1600 A 110 V DC	T2UV80D10NTA
Under Voltage Trip Coil Instant 800-1600 A 230 V DC	T2UV80D24NTA

Time Delay Operation (500 ms)

When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delayed 800-1600 A 110 V AC	T2UV80A10DSA
Under Voltage Trip Coil Time Delayed 800-1600 A 230-240 V AC	T2UV80A24DSA
Under Voltage Trip Coil Time Delayed 800-1600 A 380-450 V AC	T2UV80A40DSA
Under Voltage Trip Coil Time Delayed 800-1600 A 24 V DC	T2UV80D02DSA
Under Voltage Trip Coil Time Delayed 800-1600 A 110 V DC	T2UV80D10DSA
Under Voltage Trip Coil Time Delayed 800-1600 A 230 V DC	T2UV80D24DSA

Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

Item Description	Catalogue No.
T2HS Compact Handle Grey, IP65 Handle + 320 mm Shaft 800/1000 AF	T2HS80F6BM

Item Description	Catalogue No.
Metal Compact Handle Silver IP65 Handle + 320 mm Shaft 800/1000 AF	T2HP80R6ME

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

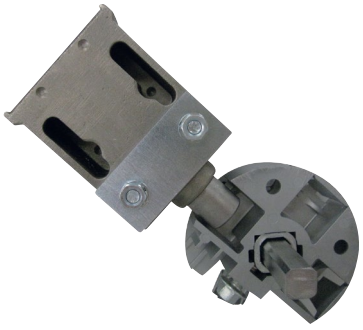
Item Description	Catalogue No.
T2HP Square Handle Grey, IP65 Handle + 445 mm Shaft 800/1000 AF	T2HP80R6BN
T2HP Square Handle Red/Yellow, IP65 Handle + 445 mm Shaft 800/1000 AF	T2HP80R6RN

Handle Options

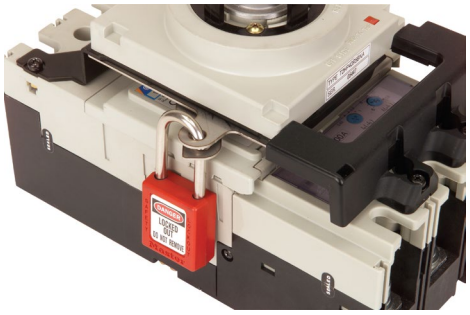
A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
TPHS Handle Options 390 mm T Pin Shaft – no Flexi Coupling 400/630 AF	T2HS400SHAFT



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702



Item Description	Catalogue No.
T2HS Handle Options MCCB/Handle Mechanical Padlock Attachment	T2HP80PALK

Item Description	Catalogue No.
T2HS Handle Options MCCB toggle extension Lever	2A2272BAB

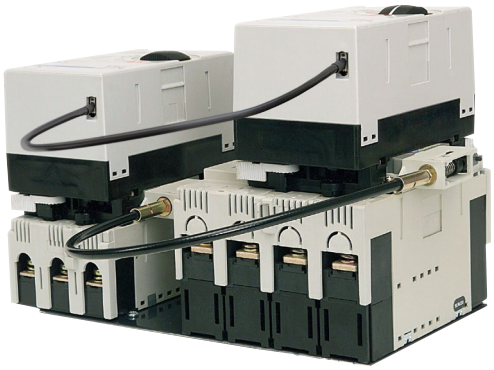
Motor Operator

Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
Motor Operators, 110-240 V AC, B800, B1000, ZS630, ZS800	T2MC80A10NP
Motor Operators, 110 V DC, B800, B1000, ZS630, ZS801	T2MC80D10NP
Motor Operators, 24-48 V DC, B800, B1000, ZS630, ZS802	T2MC80D02NP

Motor Operator Accessories

Provides electrical interlocking between 2 motors to prevent simultaneous operation



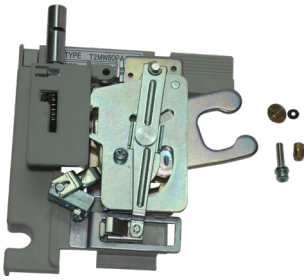
Item Description	Catalogue No.
Motor Interlock Cable (0.6 m) Between Any 400/630/1000 AF MCCB Motor	T2MM40L06A
Motor Interlock Cable (2.1 m) Between Any 400/630/1000 AF MCCB Motor	T2MM40L21A

Item Description	Catalogue No.
Motor Interlock Cable (0.6 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S06A
Motor Interlock Cable (2.1 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S21A

Locking and Interlocking Accessories

Cable Mechanical Interlock

Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 M apart



Item Description	Catalogue No.
Cable Interlock Mechanism for 800/1000 AF	T2MW80CA

Item Description	Catalogue No.
Cable Interlock Wire (1.0 m)	T2MW00SA
Cable Interlock Wire (1.5 m)	T2MW00LA

Link Mechanical Interlock

Prevents simultaneous operation of two horizontally mounted interlocked MCCBs.

Item Description	Catalogue No.
Mechanical Interlock Right Link Interlock 3/4P 800/1000 AF	T2ML80RA
Mechanical Interlock Left Link Interlock 3P 800/1000 AF	T2ML80L3A
Mechanical Interlock Left Link Interlock 3P/4P 800/1000 AF	T2ML80L4A

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option

Item Description	Catalogue No.
Toggle Locks captive Lock with Single 8 mm Hole B800/B1000 AF	T2PL80UN

Non-captive

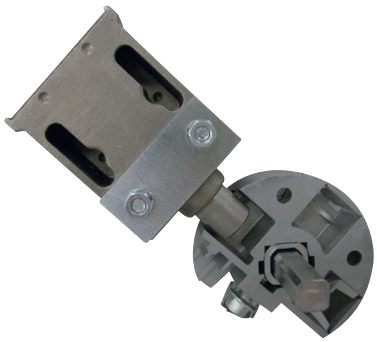
Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Non Captive Toggle Lock 400/630 AF	T2HL40A

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Mounted

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, standard key code, A	440TAKEYE100A
Prosafe, standard key code, B	440TAKEYE100B
Prosafe, standard key code, C	440TAKEYE100C
Prosafe, standard key code, D	440TAKEYE100D
Prosafe, standard key code, E	440TAKEYE100E
Prosafe, standard key code, F	440TAKEYE100F
Prosafe, standard key code, G	440TAKEYE100G
Prosafe, standard key code, H	440TAKEYE100H
Prosafe, Standard Key Code I	440TAKEYE100I
Prosafe, Standard Key Code J	440TAKEYE100J
Prosafe, Standard Key Code K	440TAKEYE100K
Prosafe, Standard Key Code L	440TAKEYE100L
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, Standard Key	440TAKEYE10X

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys

Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100A
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10BA
Single key shot bolt lock, key not included	440TMSBLE10X

Installation External Accessories

Door Flange

A door mount flange providing a plastic surround for the panel or escutcheon cutout

Item Description	Catalogue No.
Door Flange IP20 DR FLG 400/630 A MCCB	T2DF40A
Door Flange IP30 DR FLG 400/630 A MOT	T2DM40A

External Monitor

A door display which indicates energy and other data from an energy meter B_SE MCCB

Item Description	Catalogue No.
External Switchboard Door Digital Display (Suits both TB2 MCCBs and AR ACBs)	T2ED00D02NNA

External Neutral CT

Optional Ground Fault sensing neutral pole Current Transformer for B series GF MCCBs

Item Description	Catalogue No.
External Neutral CT 800 A Optional Neutral CT for 3 Pole Ground Fault MCCBs	T2GB40N08A
External Neutral CT 1000 A Optional Neutral CT for 3 Pole Ground Fault MCCBs	T2GBX6N10A

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier Interpole Barrier (Qty 2), B800, B1000, ZS630, ZS800	T2BA403SH

Rear Connection Studs

Allows MCCB main connections to be made at the rear of the MCCB

Item Description	Catalogue No.
Rear Connect Terminal Studs 3 Pole Kit, Set of 6 Studs B800, B1000, ZS630, ZS800 AF	T2RP803SA
Rear Connect Terminal Studs 4 Pole Kit, Set of 8 Studs B800, B1000, ZS630, ZS800 AF	T2RP804SA

Item Description	Catalogue No.
Rear Connect Terminal Studs 3 Pole Kit, Set of 6 Studs	T2RPX03SA
Rear Connect Terminal Studs 4 Pole Kit, Set of 8 Studs	T2RPX04SA

Terminal Covers

Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area

Item Description	Catalogue No.
3 Pole Single Cover, Suits B800F, N, H, G, B1000, ZS630, ZS800 AF	T2CF803SLHP
4 Pole Single Cover, Suits B800F, N, H, G, B1000, ZS630, ZS800 AF	T2CF804SLHP
3 Pole, Set of Two (2) Covers, Suits B800F, N, H, G, B1000, ZS630, ZS800 AF	T2CF803SLNP
4 Pole, Set of Two (2) Covers, Suits B800F, N, H, G, B1000, ZS630, ZS800 AF	T2CF804SLNP

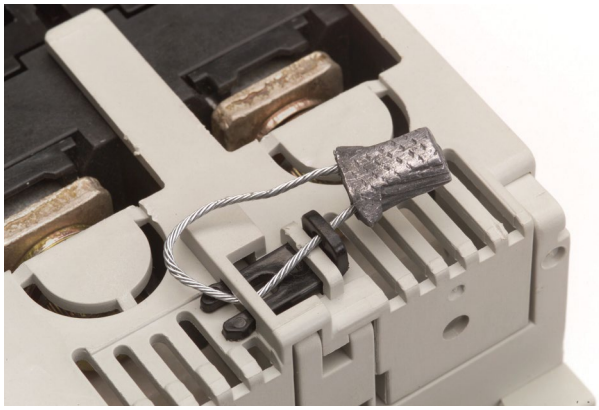
Flush Front or Rear Connect Terminal Covers

Provides front finger touch protection with MCCBs used for flush front, rear terminal or HC chassis

Item Description	Catalogue No.
Rear Connect Terminal Cover RC 3 Pole Single Cover , Suits B800F, N, H, G, B1000, ZS630, ZS800 AF	T2CR803SHP
Rear Connect Terminal Cover RC 4 Pole Single Cover , Suits B800F, N, H, G, B1000, ZS630, ZS800 AF	T2CR804SHP
Rear Connect Terminal Cover RC 3 Pole Single Cover, Suits B800F, N, H, G, B1000, ZS630, ZS800 AF	T2CR803SNP
Rear Connect Terminal Cover RC 4 Pole Single Cover, Suits B800F, N, H, G, B1000, ZS630, ZS800 AF	T2CR804SNP

Terminal Cover Locking Clip

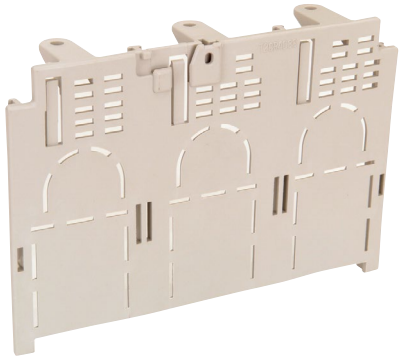
Used with terminal covers to prevent unauthorised removal or access to terminal area



Item Description	Catalogue No.
Terminal Cover Locking Clip	T2CF00L

Terminal Covers for Plug-in Base

Provides front finger touch protection with MCCBs used with rear terminals and HC chassis



Item Description	Catalogue No.
Terminal Cover Rear Connect 3P S800 QTY 2	T2CB803G
Terminal Cover Rear Connect 4P S800 QTY 2	T2CB804G

B1250_BE / BEG

Electronic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ 370 mm (H), 120 mm (D), 70 mm pole centres
- ✔ Fault ratings; 50, 85, kA I_{cu} @ 415 V AC
- ✔ Electronic trip unit: 10 preset characteristic curve selection dial and base current adjustment dial
- ✔ Standard features include and instantaneous-only setting
- ✔ Trip unit; 1250 A

General

Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type) [1)]
Trip Unit Rating	1250 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @415 V AC	**N**	50 kA
	H	70 kA
	HL	85 kA

Voltage

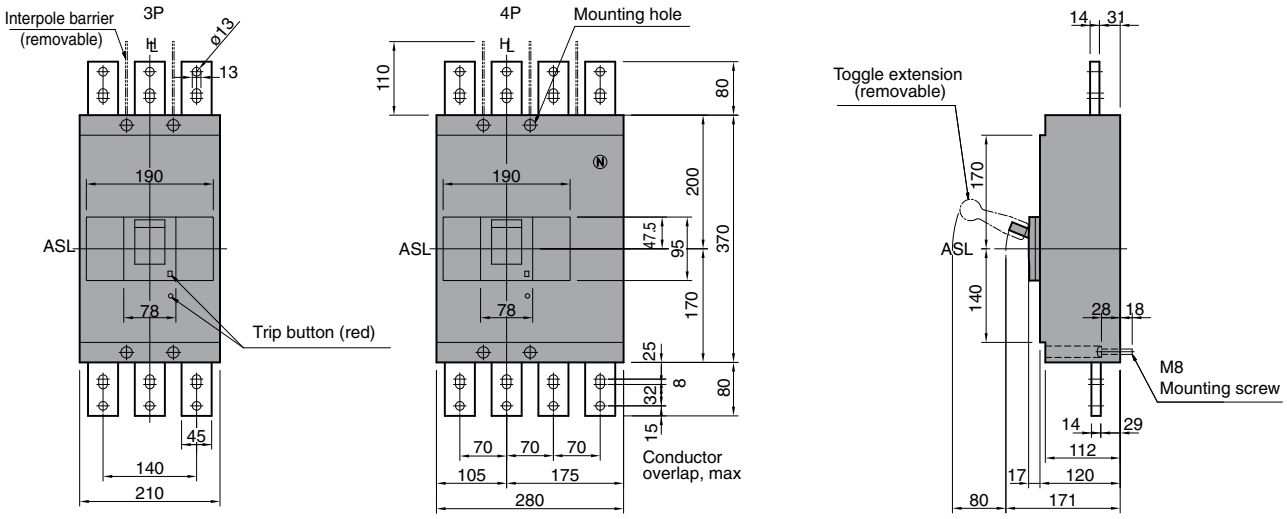
Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Rear Connection (Option) Plug-in PM (Option)

Notes: 1) When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Quick Reference Dimensions – Front Connect



1250 A Frame 3 Pole 50 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1250	500 - 1250	50	3	B1250N31250BE

1250 A Frame 3 Pole 70 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1250	500 - 1250	70	3	B1250H31250BE

1250 A Frame 3 Pole 85 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1250	500 - 1250	85	3	B1250HL31250BE

1250 A Frame 3 Pole 70 kA BE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1250	500 - 1250	70	3	B1250H31250BEG

1250 A Frame 3 Pole 85 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1250	500 - 1250	85	3	B1250HL31250BEG

1250 A Frame 4 Pole 50 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1250	500 - 1250	50	4	B1250N41250BE

1250 A Frame 4 Pole 70 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1250	500 - 1250	70	4	B1250H41250BE

1250 A Frame 4 Pole 85 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1250	500 - 1250	85	4	B1250HL41250BE

1250 A Frame 4 Pole 70 kA BE (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1250	500 - 1250	70	4	B1250H41250BEG

1250 A Frame 4 Pole 85 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1250	500 - 1250	85	4	B1250HL41250BEG

Notes: When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Ratings

Component Type	MCCB
Selectivity Category	B
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	1250 AF
Trip Unit Rating	1250 A

I_n, Rated Current	
A @ 30 °C	1250
A @ 45 °C	1250
A @ 50 °C	1250

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)	
(A)	1250
(W)	90

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection Rear Connection (Option) Plug-in PM (Option)
Terminal Type	Extension Bar With Bolt holes
Connection Torque	40.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	HC Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		370 mm
Width	**3P**	210 mm
	4P	280 mm
Depth (less toggle)		140 mm
Depth (toggle included)		191 mm
Weight	**3P**	19.8 kg
	4P	25 / 35 kg
Electrical Life		4000 cycles
Mechanical Life		5000 cycles

Short-Circuit Capacity

			kA Rating		
			MCCB Type		
		Voltage	N	H	HL
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	85	100	125
		380 / 400 V AC	50	70	100
		415 V AC	50	70	85
		440 V AC	45	65	85
		690 V AC	20	25	45
		1000 V AC	-	-	-
		1100 V AC	-	-	-
		125 V DC	-	-	-
		250 V DC	-	-	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	65	75	94
		380 / 400 V AC	38	50	75
		415 V AC	38	50	65
		440V AC	34	50	65
		690 V AC	15	20	34
		1000 V AC	-	-	-
		1100 V AC	-	-	-
		125 V DC	-	-	-
		250 V DC	-	-	-
	I_{cw} (Short Time Withstand)	0.3 Seconds	15	15	15

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type)
Rated Temperature	50 °C

Other Features

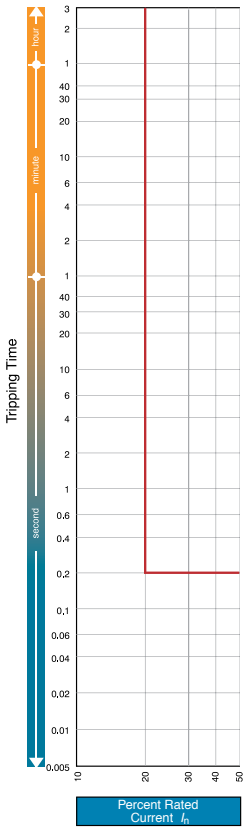
Pre-trip alarm (PTA)	Option
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

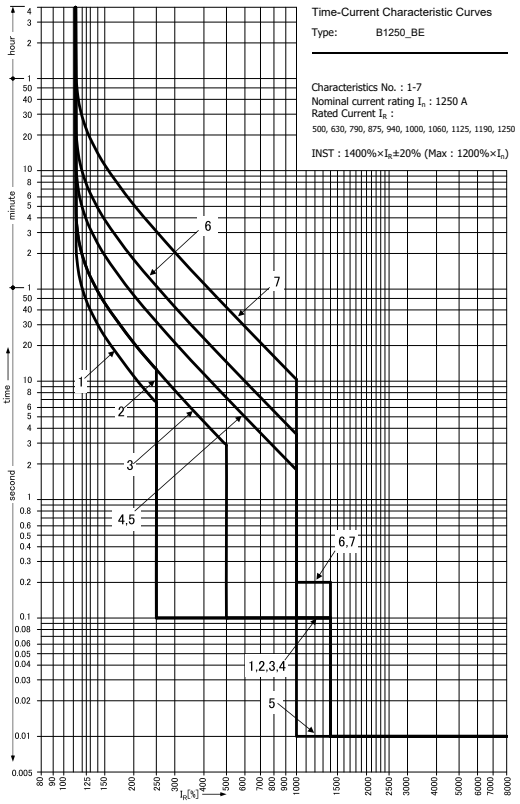
General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam or cable type	Yes
Locking Devices	Yes
Terminal Covers	No
Interpole Barriers	Yes
External Panel Display	No

MCCBs

Time Current Characteristics Curves 1 - 7, B1250_BE, B1250_BEG, 500 - 1250 A, Basic Electronic





B1250_BE_curves 1-7-OPCH-S01

Characteristics For I_R Rated 1250 A: B1250N, B1250HL

LTD Pick Up Current I_R (A)		**500 – 630 – 790 – 875 – 940 – 1000 – 1060 – 1125 – 1190 – 1250 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8** [4]	**9** [4]	**10** [3, 4]
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)		2.5	10	12
OCR Options											
Pre Trip Alarm (PTA)	I_P x I_R	0.8									
	I_p (S)	40									
Ground Fault (GF) [2]	I_G x I_N	0.2									
	t_G (S)	0.2									
Neutral Pole Protection (NP)	I_N x I_R	1.0 / 0.5 [1]									
	t_N (S)	$t_N = t_R$									

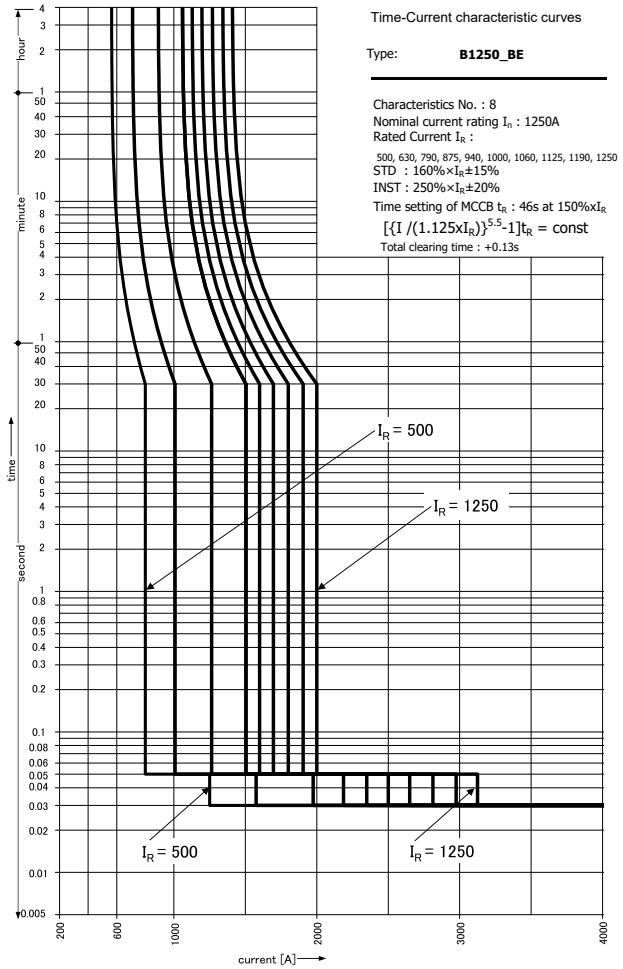
Notes

1) 1.0 x I_R or 0.5 x I_R can be selected. Characteristic of neutral protection (t_N vs. I_N) is identical to characteristic of phase protection (t_R vs. I_R).
2) When GF is specified for 3 pole MCCBs, a terminal block is fitted as standard for external neutral CT connection for 3 phase 4 wire systems. Refer terminal block details on following pages. 4 pole GF MCCBs include an internal 4th CT standard, so no user connection is required.
3) Characteristic 10 is instantaneous only.
4) Curves 8, 9, 10 shown on following pages.

- VS800GE and VS1250NE MCCBs include 7 standard characteristic curves, not 10. Some of the curves also differ to the above. Refer VS800GE / VS1250NE data.

Time Current Characteristics Curves 8 - 9, B1250_BE, B1250_BEG, 500 - 1250 A, Basic Electronic

8



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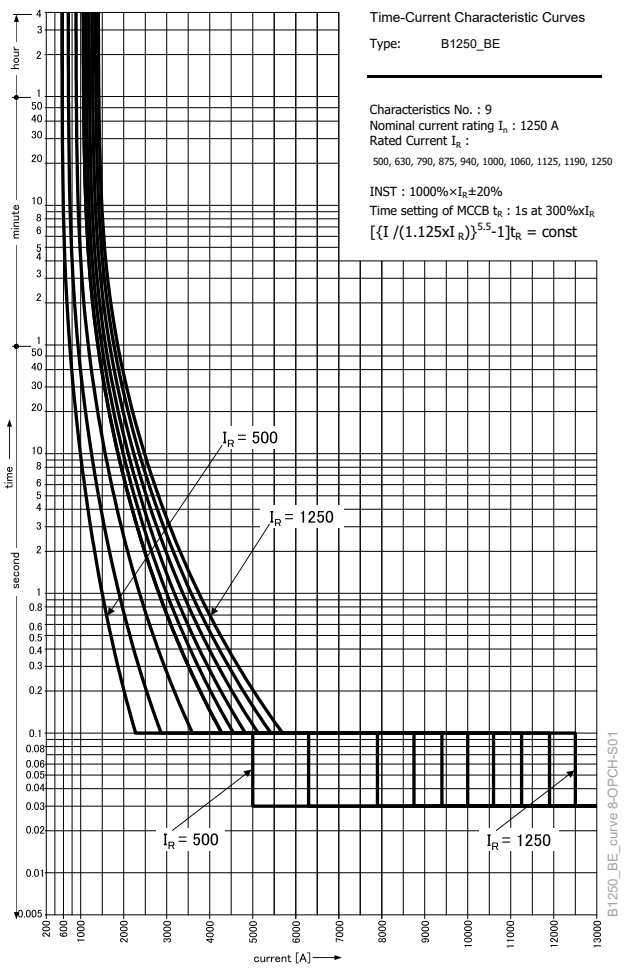
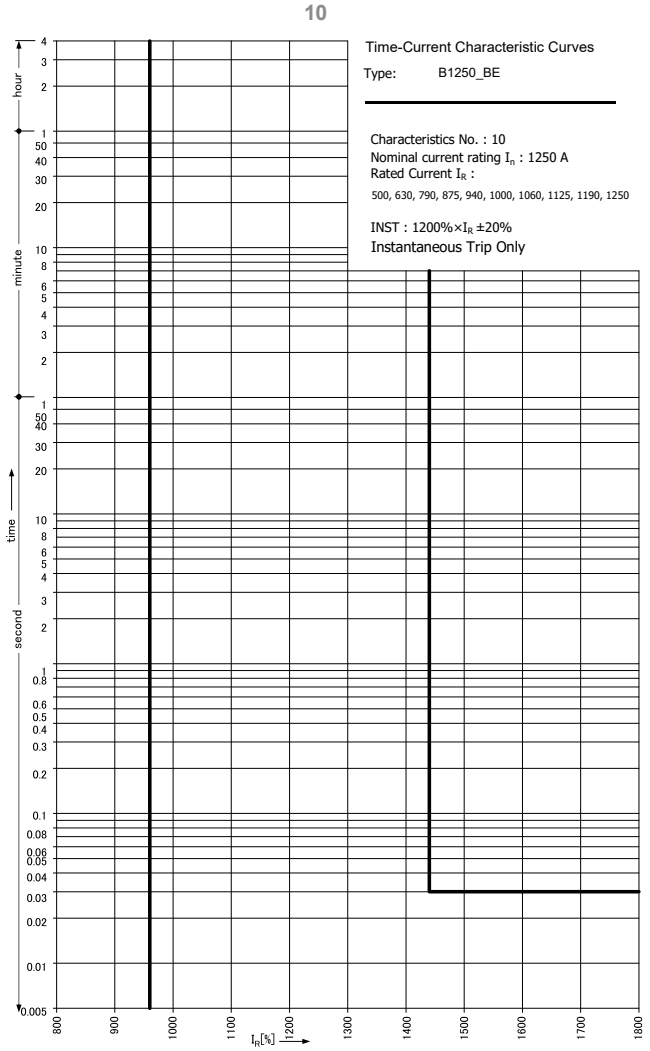


Characteristics For I_R Rated 1250 A: B1250N, B1250HL

LTD Pick Up Current I_R (A)		**500 – 630 – 790 – 875 – 940 – 1000 – 1060 – 1125 – 1190 – 1250 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)		2.5	10	12
OCR Options		PTA, GF, NP									

Time Current Characteristics Curve 10, 500 - 1250 A, B1250_BE/BEG, Basic Electronic

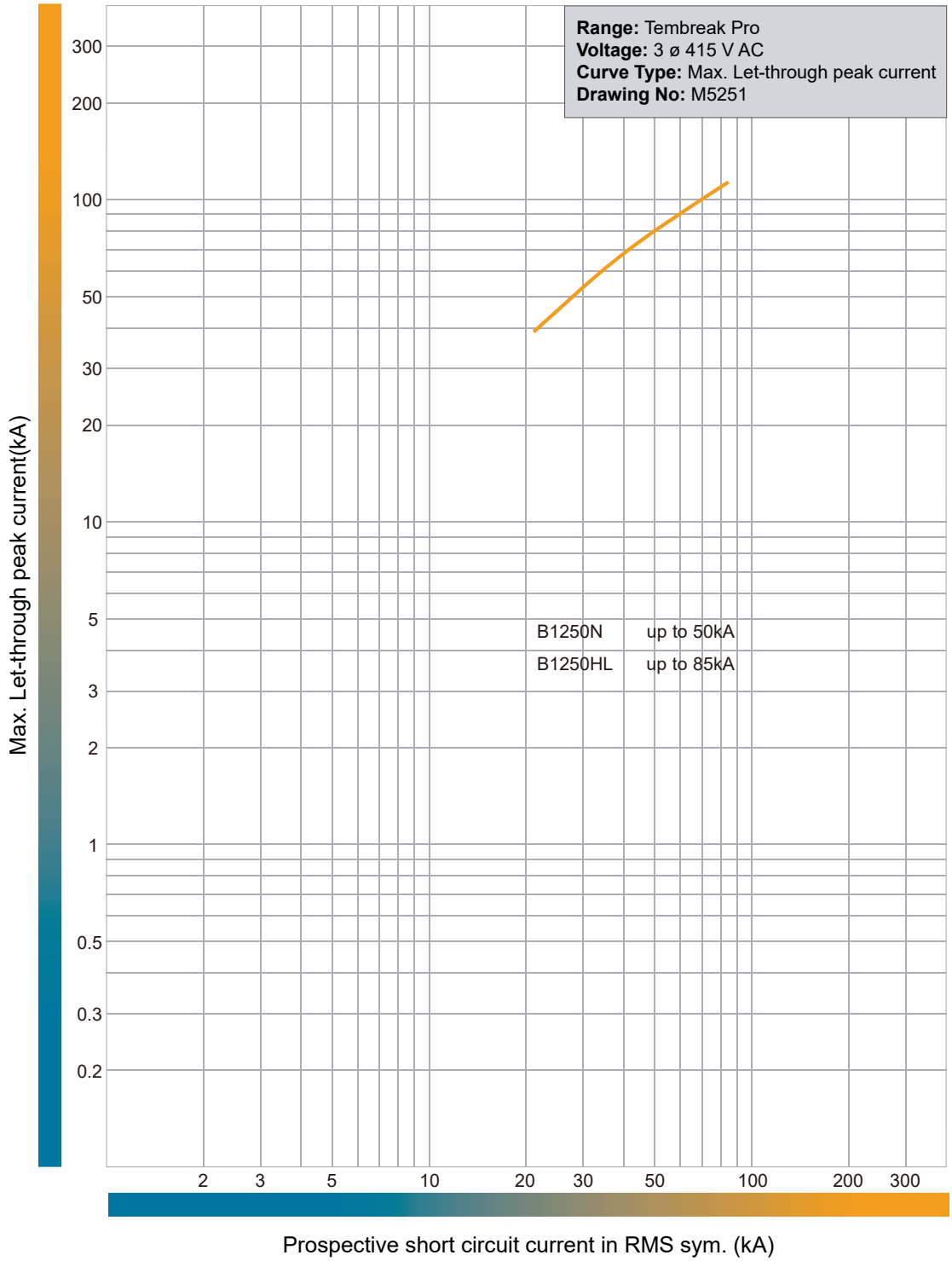


B1250_BE_curve 10-OPCH-S01

Characteristics For I_R Rated 1250 A: B1250N, B1250HL

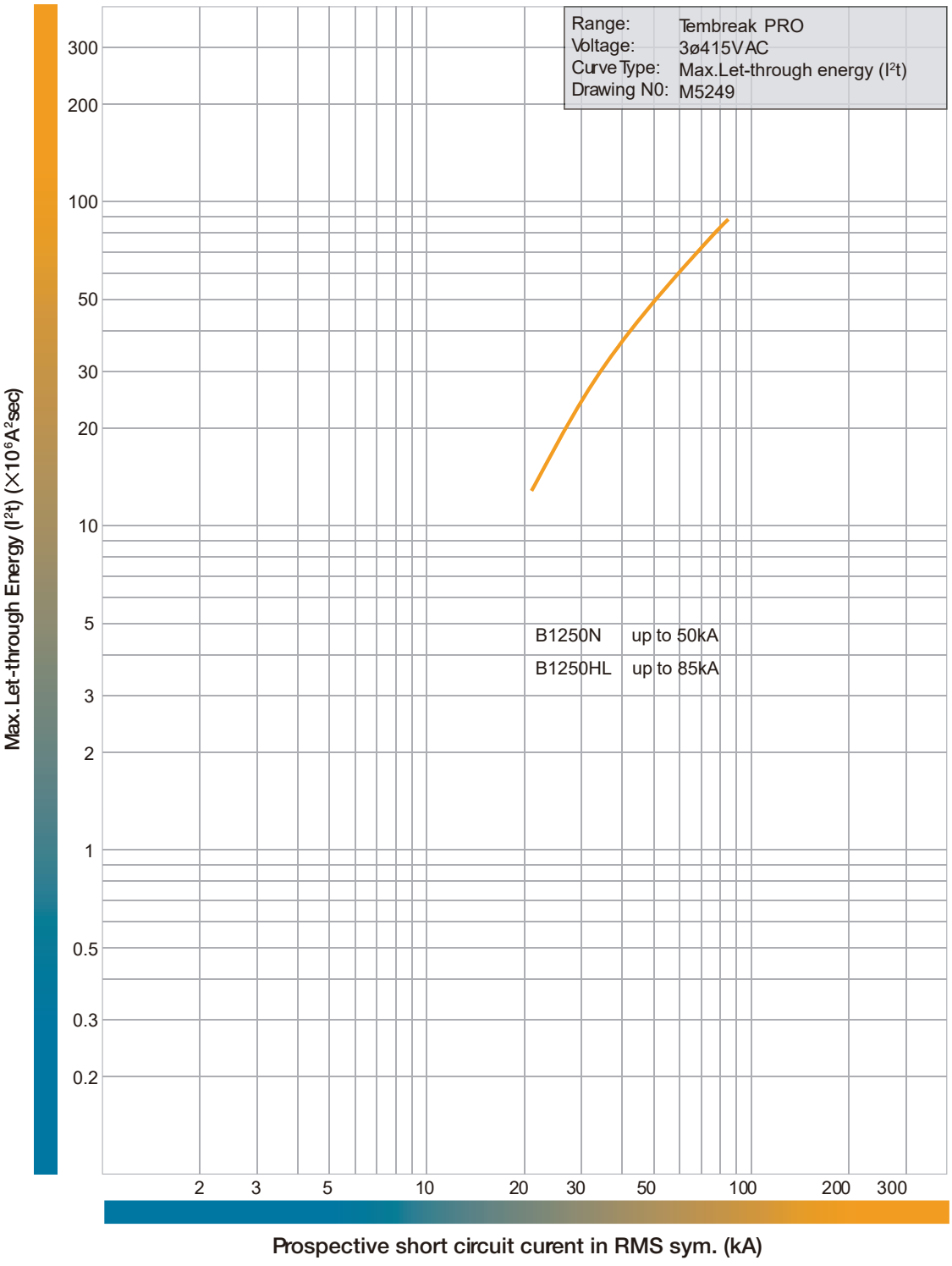
LTD Pick Up Current I_R (A)		**500 – 630 – 790 – 875 – 940 – 1000 – 1060 – 1125 – 1190 - 1250 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)		2.5	10	12
OCR Options		PTA, GF, NP									

Let-Through Peak Current Curve, B1250_BE, B1250_BEG, Basic Electronic



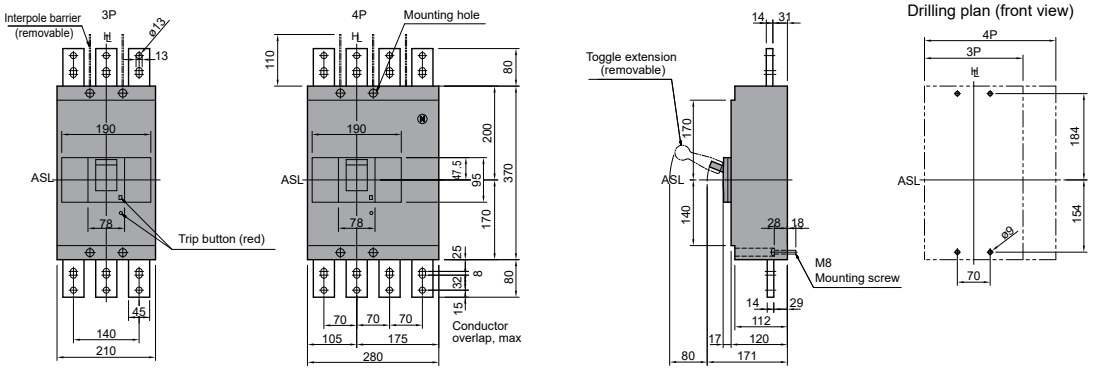
MCCBs

Let-Through Energy I²t Curve, B1250_BE, B1250_BEG, Basic Electronic



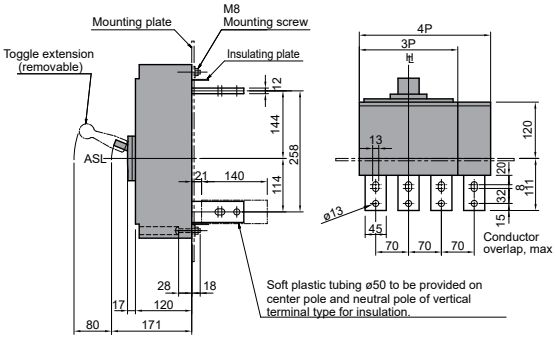
Dimensions B1250_NN/BE/BEG (mm)

Front Connected

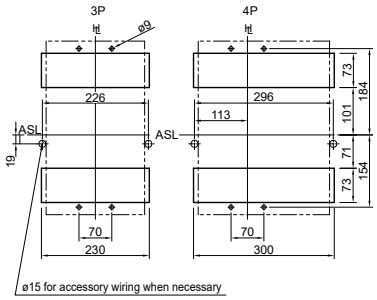


Drilling plan (front view)

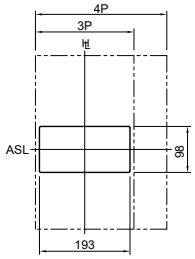
Rear Connected



Drilling plan (front view)



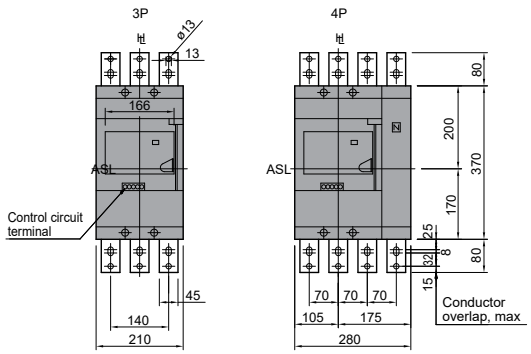
Panel cutout (front view)



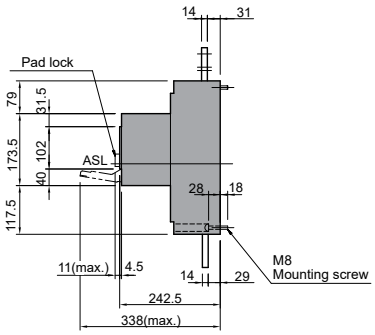
Panel cutout dimensions shown give an allowance of 1.5 mm around the handle escutcheon.

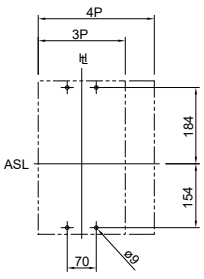
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Front Connected With Motor Operator

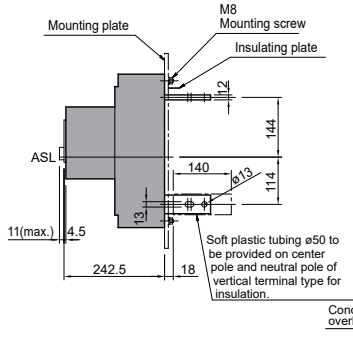


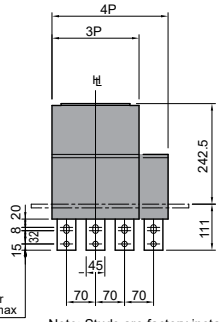
Drilling plan (front view)



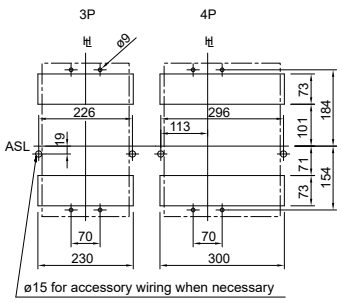


Rear Connected With Motor Operator

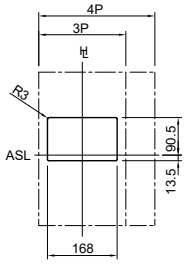




Drilling plan (front view)



Panel cutout (front view)

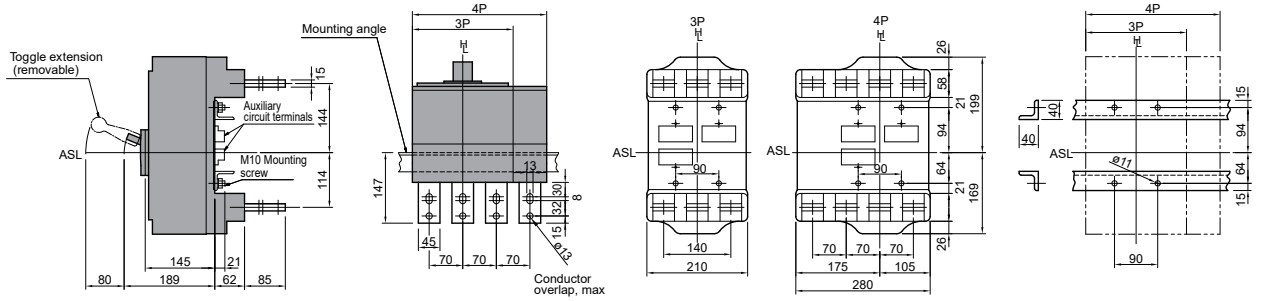


Panel cutout dimensions shown give an allowance of 1.0 mm around motor operator.

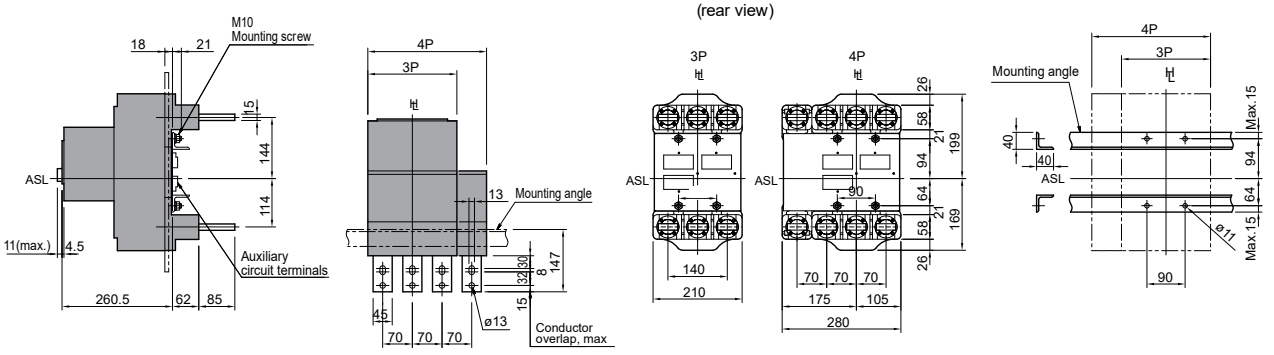
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Dimensions B1250_NN/BE/BEG, Plug-in (mm)

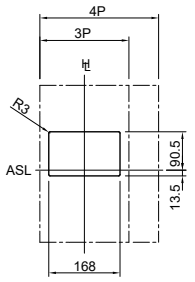
Plug-In



Plug-In With Motor Operator



Panel cutout (front view)



Panel cutout dimensions shown give an allowance of 1.0mm around motor operator.

B1250_NN

Non-Auto Switch Disconnector

- ✔ Non-Auto switch disconnector for power distribution
- ✔ AC23 and DC22 ratings for motor starting use
- ✔ No overcurrent protection (isolator only)
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-3, IEC 60947-3 and CE
- ✔ Panel mount standard, other connection options
- ✔ Wide range of accessories for application flexibility, including OFF padlock device
- ✔ Accepts standard MCCB internal and external accessories
- ✔ 3 or 4 pole versions
- ✔ Suits HC chassis, 1250 A - 2200 A main bar options
- ✔ 370 mm (H), 120 mm (D), 70 mm pole centres
- ✔ I_{cw} = 15 kA for 0.3 sec: Rated short time withstand rating
- ✔ I_{cm} = 32 kA: Rated short circuit making capacity

CE DEKRA On the safe side.

General

Switch Type	Non Auto Switch Disconnector
Number of Poles	3 or 4
Switching Poles	3P or 3P + N

Ratings

Nominal Current	1250 A @50°C
Motor Starting	AC23 motor starting DC22 motor starting
Icw Rated	Short time withstand
Icm Rated	Ampere making capacity

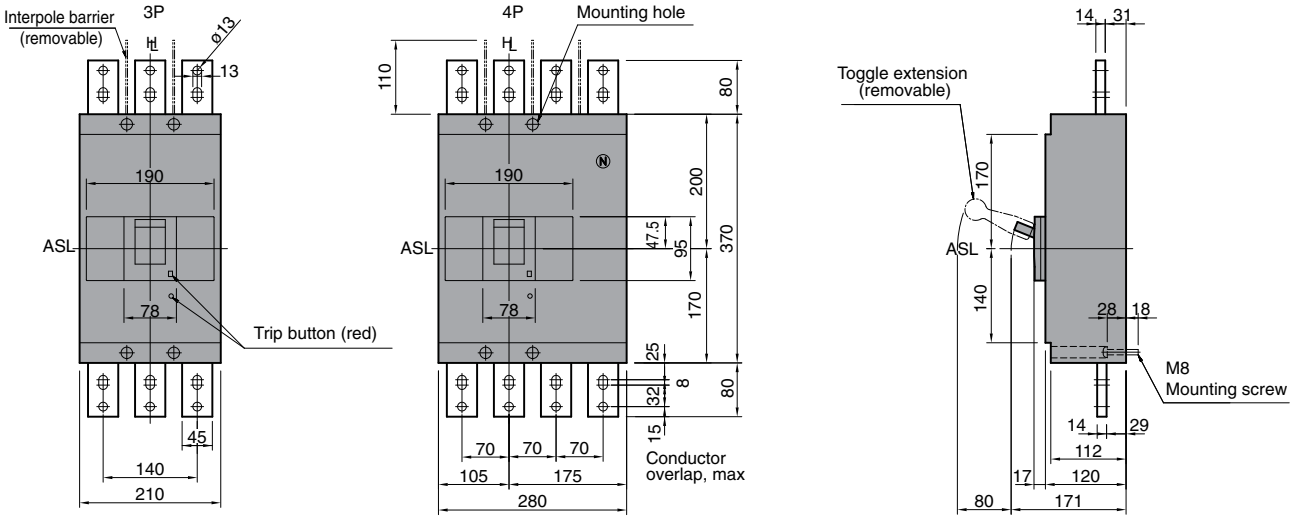
Voltage

Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Accessories and Connections

Options	Front or rear connect Terminal connection options Accepts standard MCCB accessories

Quick Reference Dimensions – Front Connect



1250 A Frame 3 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Catalogue No.
1250	3	B1250D31250NN

1250 A Frame 4 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Catalogue No.
1250	4	B1250D41250NN

Ratings

Component Type	Non Auto Switch Disconnector
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	1250 AF

I_n, Rated Current	
A @ 30 °C	1250
A @ 45 °C	1250
A @ 50 °C	1250

U_e Rated operational voltage AC maximum	690 V AC
U_e Rated operational voltage DC maximum	250 DC
U_i, Rated Insulation Voltage	800 V (rms)
Motor Starting Utilisation Category	AC 23, DC 22
U_{imp}, Impulse Withstand Voltage	8 kV
Icw, Rated Short Circuit Withstand Current 400 / 690 V	15 kA / 0.3 Sec
Rated Frequency	50 / 60 Hz
Pollution Degree	3
AC Power loss per pole at full rated current	90 W @ 1250 A
Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-3 AS/NZS 60947-3
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection Rear Connection (Option) Plug-in PM (Option) Extension Bar
Terminal Type	Extension Bar With Bolt holes
Connection Torque	40.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	HC Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	Yes
Mounting	-

Physical

Height		370 mm
Width	**3P**	210 mm
	4P	280 mm
Depth (less toggle)		120 mm
Depth (toggle included)		171 mm
Weight	**3P**	18.2 kg
	4P	23.4 kg
Electrical Life		4000 cycles
Mechanical Life		5000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**D**
15Based On AS/NZS 60947.2 and IEC 60947-2	**I_{cm} (Short Circuit Making Capacity)**	690 V AC	32
	I_{cw} (Short Time Withstand)	0.3 Seconds	15

Trip Unit

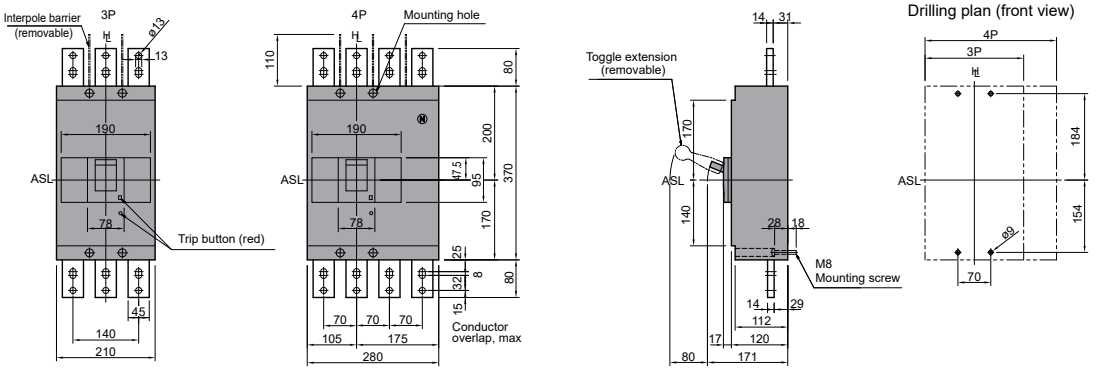
Over Current Protection Function	No
Trip Unit Protection Type	Non-auto Switch Disconnector
Rated Temperature	50 °C

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	Yes
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

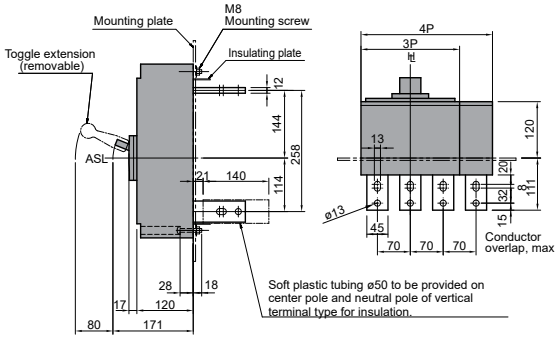
Dimensions B1250_NN/BE/BEG (mm)

Front Connected

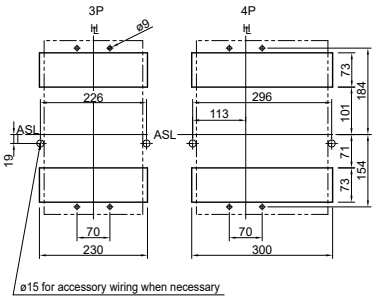


Drilling plan (front view)

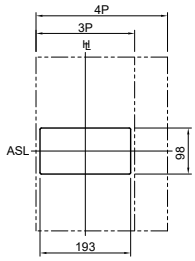
Rear Connected



Drilling plan (front view)



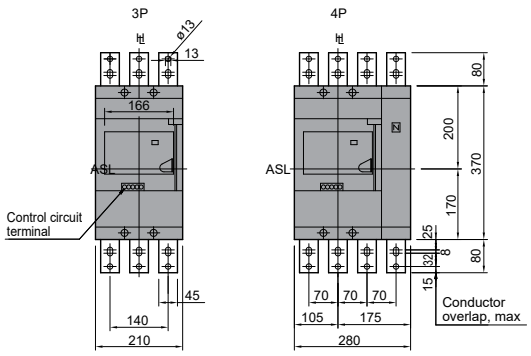
Panel cutout (front view)

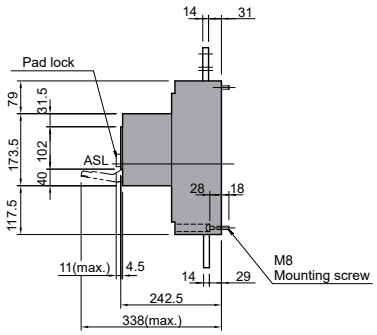


Panel cutout dimensions shown give an allowance of 1.5 mm around the handle escutcheon.

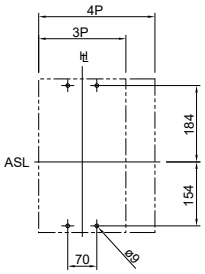
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Front Connected With Motor Operator

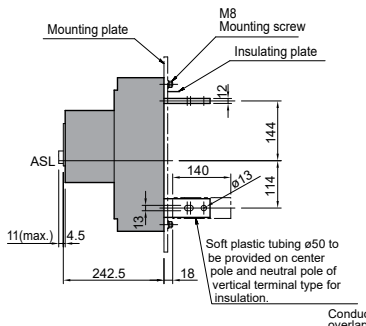


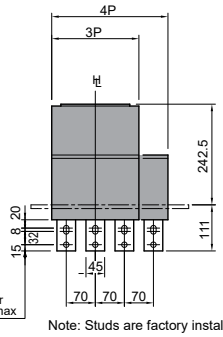


Drilling plan (front view)

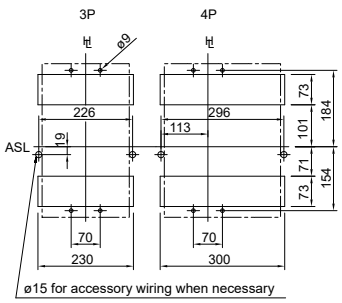


Rear Connected With Motor Operator

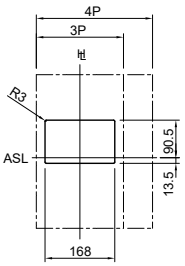




Drilling plan (front view)



Panel cutout (front view)

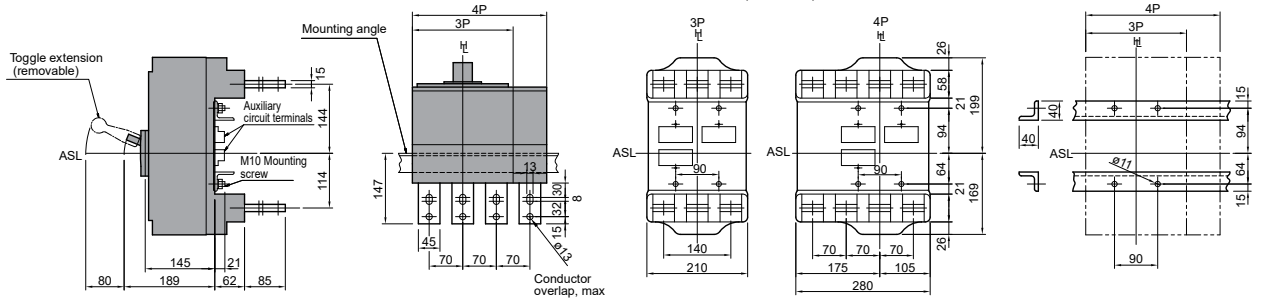


Panel cutout dimensions shown give an allowance of 1.0 mm around motor operator.

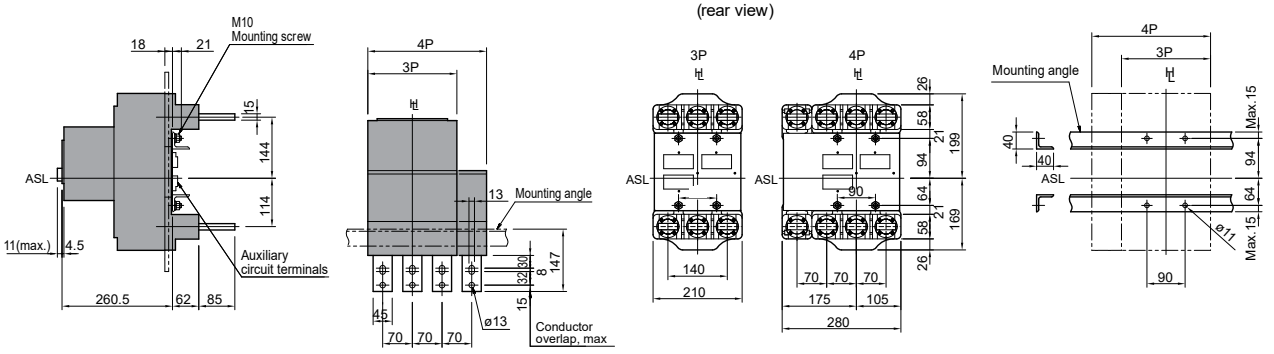
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Dimensions B1250_NN/BE/BEG, Plug-in (mm)

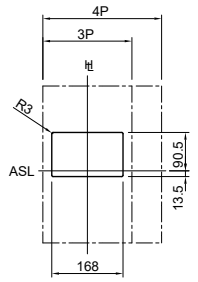
Plug-In



Plug-In With Motor Operator



Panel cutout (front view)



Panel cutout dimensions shown give an allowance of 1.0mm around motor operator.

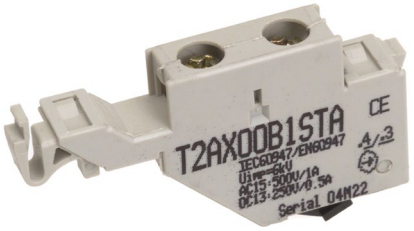
B1250 AF Accessories

Internal Accessories

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxiliary Switch 1 C/O	T2AX00M3STA
Auxiliary Switch 1 C/O Wired	T2AX00M3SWA
Auxiliary and Alarm Switches 1 C/O 2nd Auxiliary with 700 mm Leads	T2AX00M4SWA
Auxiliary and Alarm Switches 1 C/O 3rd Auxiliary with 700 mm Leads	T2AX00M5SWA
Auxiliary Switch Micro-current 1 C/O	T2AX00M3RTA



Item Description	Catalogue No.
Auxiliary Switch Heavy Duty 1 N/O	T2AX00B1STA
Auxiliary Switch Heavy Duty 1 N/C	T2AX00B2STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00A10TA
Shunt Trip Coil 240 V AC	T2SH00A20TA
Shunt Trip Coil 415 V AC	T2SH00A40TA
Shunt Trip Coil 12V DC	T2SH00D01TA
Shunt Trip Coil 24 V DC	T2SH00D02TA
Shunt Trip Coil 48 V DC	T2SH00D04TA
Shunt Trip Coil 110 V DC	T2SH00D10TA
Shunt Trip Coil 230 V DC	T2SH00D20TA

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 800-1600 A 110 V AC	T2UV80A10NTA
Under Voltage Trip Coil Instant v800-1600 A 240 V AC	T2UV80A20NTA
Under Voltage Trip Coil Instant 800-1600 A 415 V AC	T2UV80A40NTA
Under Voltage Trip Coil Instant 800-1600 A 24 V DC	T2UV80D02NTA
Under Voltage Trip Coil Instant 800-1600 A 48 V DC	T2UV80D04NTA
Under Voltage Trip Coil Instant 800-1600 A 110 V DC	T2UV80D10NTA
Under Voltage Trip Coil Instant 800-1600 A 230 V DC	T2UV80D24NTA

Time Delay Operation (500 ms)

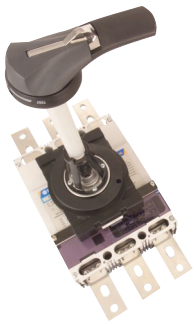
When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delayed 110 V AC	T2UVX6A10DSA
Under Voltage Trip Coil Time Delayed 230-240 V AC	T2UVX6A24DSA
Under Voltage Trip Coil Time Delayed 380-450 V AC	T2UVX6A40DSA
Under Voltage Trip Coil Time Delayed 24 V DC	T2UVX6D02DSA
Under Voltage Trip Coil Time Delayed 110 V DC	T2UVX6D10DSA
Under Voltage Trip Coil Time Delayed 230 V AC	T2UVX6D24DSA

Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

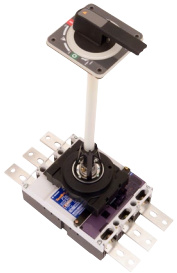


Item Description	Catalogue No.
T2HS Compact Handle Grey, IP65 Handle + 320 mm Shaft 1250/1600 AF	TPHSX6F65BM
T2HS Compact Handle Red/Yellow, IP65 Handle + 320 mm Shaft 1250/1600 AF	TPHSX6F65RM

Item Description	Catalogue No.
Metal Compact Handle Silver IP65 Handle + 320 mm Shaft 1250/1600 AF	T2HPX6R6ME

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation



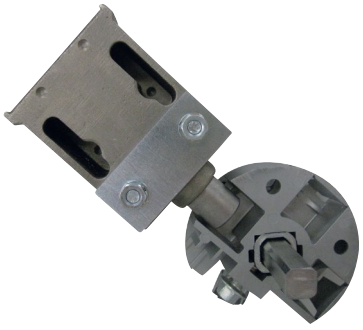
Item Description	Catalogue No.
T2HP Square Handle Grey, IP65 Handle + 445 mm Shaft 1250/1600 AF	T2HPX6R6BN
T2HP Square Handle Red/Yellow, IP65 Handle + 445 mm Shaft 1250/1600 AF	T2HPX6R6RN

Handle Options

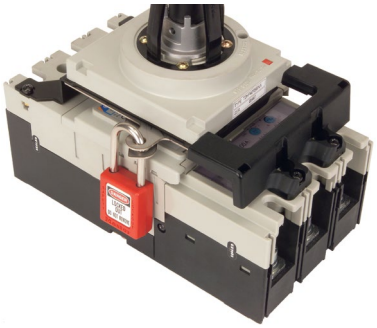
A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
TPHS Handle Options 390 mm T Pin Shaft – no Flexi Coupling 400/630 AF	T2HS400SHAFT



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702



Item Description	Catalogue No.
TB1 HP Handle Mechanism Padlock Off Device 1250/1600 AF	T1HPX6PALK

Item Description	Catalogue No.
T2HS Handle Options MCCB toggle extension Lever	2A2272BAB

Motor Operator

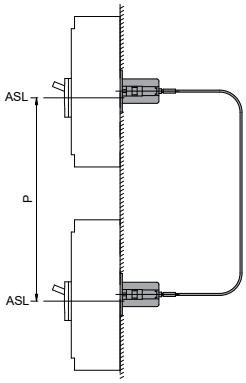
Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
Motor Operators 110 V AC 1250/1600 AF	T2MCX6A10NP
Motor Operators 240 V AC 1250/1600 AF	T2MCX6A24NP
Motor Operators 24 V DC 1250/1600 AF	T2MCX6D02NP

Locking and Interlocking Accessories

Cable Mechanical Interlock

Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 m apart – NHP factory installation only.



Item Description	Catalogue No.
1 x 1250 A Non Auto, 3 Pole + 1 Rear Interlock Mechanism	B1250D31250NNCI
1 x 1250 A Non Auto, 4 Pole + 1 Rear Interlock Mechanism	B1250D41250NNCI
1 x 1250 A MCCB 85 kA, 3 Pole + 1 x Rear Interlock Mechanism	B1250HL31250BECI
1 x 1250 A MCCB 85 kA, 4 Pole + 1 x Rear Interlock Mechanism	B1250HL41250BECI
1 x 1250 A MCCB 50 kA, 3 Pole + 1 x Rear Interlock Mechanism	B1250N31250BECI
1 x 1250 A MCCB 50 kA, 4 Pole + 1 x Rear Interlock Mechanism	B1250N41250BECI

Link Mechanical Interlock

Mechanical interlock – Rear Cable type Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 M apart.

Item Description	Catalogue No.
Mechanical Interlocks 1.5 m Cable for Interlock Mechanism. 1 Required Only – Customer Fit	UXKC0020A

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option

Item Description	Catalogue No.
Captive Lock Attachment with 2 x 8 mm Holes 1250/1600 AF	T2PLX6UN

Non-captive

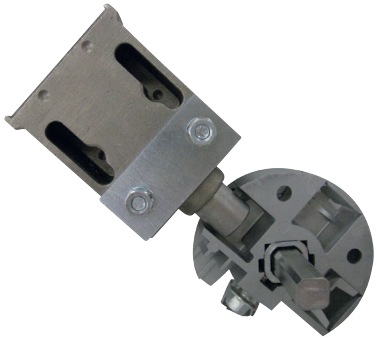
Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Non Captive Toggle Lock 1250/1600 AF	T2HLX6A

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Mounted

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, standard key code, A	440TAKEYE100A
Prosafe, standard key code, B	440TAKEYE100B
Prosafe, standard key code, C	440TAKEYE100C
Prosafe, standard key code, D	440TAKEYE100D
Prosafe, standard key code, E	440TAKEYE100E
Prosafe, standard key code, F	440TAKEYE100F
Prosafe, standard key code, G	440TAKEYE100G
Prosafe, standard key code, H	440TAKEYE100H
Prosafe, Standard Key Code I	440TAKEYE100I
Prosafe, Standard Key Code J	440TAKEYE100J
Prosafe, Standard Key Code K	440TAKEYE100K
Prosafe, Standard Key Code L	440TAKEYE100L
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, Standard Key	440TAKEYE10X

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys

Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100A
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10BA
Single key shot bolt lock, key not included	440TMSBLE10X

Installation External Accessories

External Neutral CT

Optional Ground Fault sensing neutral pole Current Transformer for B series GF MCCBs

Item Description	Catalogue No.
External Neutral CT 1250 A Optional Neutral CT for 3 Pole Ground Fault MCCBs 1250/1600 AF	T2GBX6N12A
External Neutral CT 1600 A Optional Neutral CT for 3 Pole Ground Fault MCCBs 1250/1600 AF	T2GBX6N16A

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier Interpole Barrier (Qty 2), B800, B1000, ZS630, ZS800	T2BA403SH

Terminal Covers

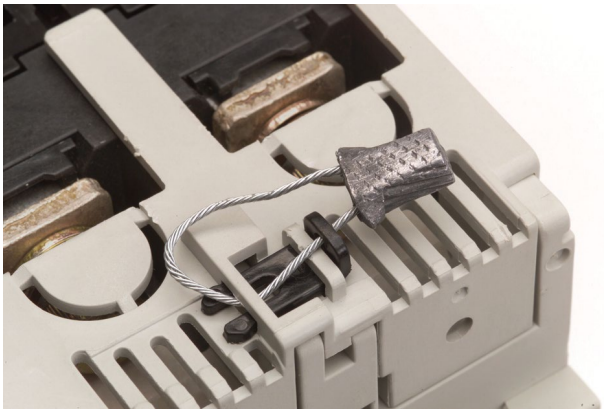
Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area

Item Description	Catalogue No.
3 Pole Single Cover 1250 AF	T2CFX33SLHP
4 Pole Single Cover 1250 AF	T2CFX34SLHP
3 Pole, Set of Two (2) Covers 1250 AF	T2CFX33SLNP
4 Pole, Set of Two (2) Covers 1250 AF	T2CFX34SLNP

Terminal Cover Locking Clip

Used with terminal covers to prevent unauthorised removal or access to terminal area



Item Description	Catalogue No.
Terminal Cover Locking Clip	T2CF00L

Plug-in MCCBs

Plug-in Mounting Bases and MCCB Plugs [1)]

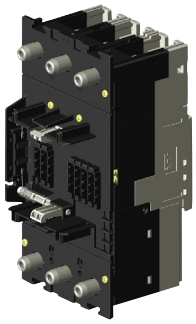
The MCCB via rear plugs, is plugged onto a fixed base for its line and load connections

Ordering information

Converting a 1250 A MCCB to a plug in type, includes fitting plugs (Tulip Blocks) and other parts to the rear of the MCCB, as well as removing the internally connected front connect tags.

Mounting bases and internal accessory plugs and sockets are ordered seperately. While fitting the plugs to the MCCB is NHP factory fit only, other items such as the T2PM base, and internal accessory plugs and sockets are customer assembled/installed items.

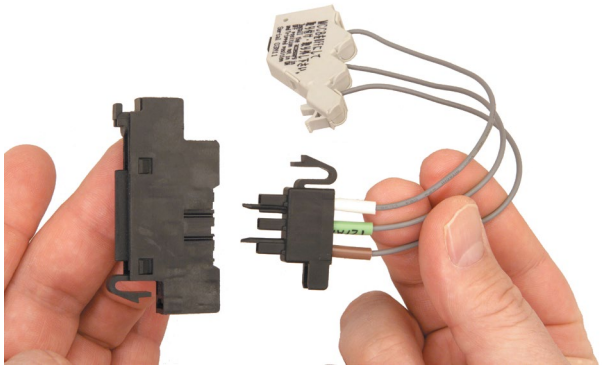
The kA rating of a T2PM plug in MCCB remains the same as standard front connected MCCBs.



Item Description	Catalogue No.
Plug-in MCCB 3 Pole Kit – NHP factory Fit Only 1250 AF	2M1404CABK
Plug-in MCCB 4 Pole Kit - NHP factory Fit Only 1250 AF	2M1404CBBK

Item Description	Catalogue No.
Plug-in Mounting Bases 3 Pole Kit 1250 AF	T2PM1250A3A
Plug-in Mounting Bases 4 Pole Kit 1250 AF	T2PM1250A4A

Note:
1) The conversion kits for the MCCB to install the rear plug “tulip blocks” are factory fit only.



Item Description	Catalogue No.
Auxiliary Connection Block 5C for X2-X8	UXYB0004A
Auxiliary Connection Block 5C for X4-X8	UXYC0005A
Plug-in MCCB Mounting Bolts, Used to Mount Plug-in Base. (Qty 1, Order as Required 3)	2B1551CAAK

B1600_BE / BEG

Electronic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ 370 mm (H), 140 mm (D), 70 mm pole centres
- ✔ Fault ratings; 50, 85, kA I_{cu} @ 415 V AC
- ✔ Electronic trip unit: 10 preset characteristic curve selection dial and base current adjustment dial
- ✔ Standard features include and instantaneous-only setting
- ✔ Trip unit; 1600 A

General

Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type) [1)]
Trip Unit Rating	1600 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @415 V AC	**N**	50 kA
	HL	85 kA

Voltage

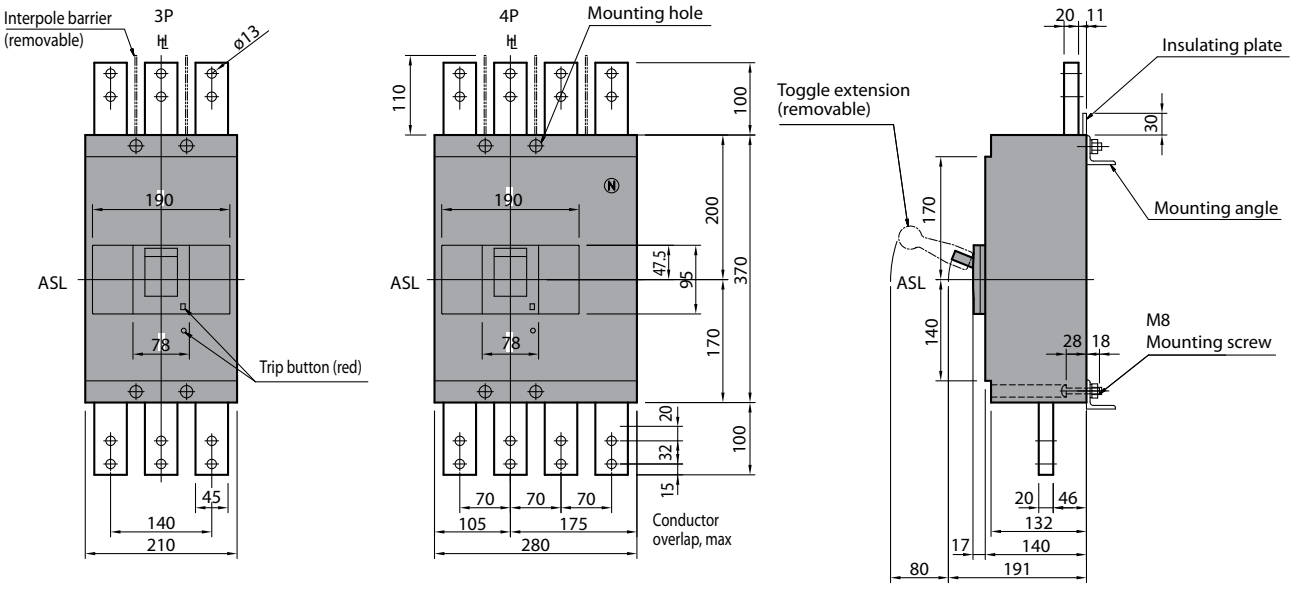
Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Rear Connection (Option) Extension Bar

Notes: 1) When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Quick Reference Dimensions – Front Connect



1600 A Frame 3 Pole 50 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1600	640 - 1600	50	3	B1600N31600BE

1600 A Frame 3 Pole 85 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1600	640 - 1600	85	3	B1600HL31600BE

1600 A Frame 3 Pole 85 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1600	640 - 1600	85	3	B1600HL31600BEG

1600 A Frame 4 Pole 50 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1600	640 - 1600	50	4	B1600N41600BE

1600 A Frame 4 Pole 85 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1600	640 - 1600	85	4	B1600HL41600BE

1600 A Frame 4 Pole 85 kA BEG (LSIG)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
1600	640 - 1600	85	4	B1600HL41600BEG

Notes: When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Ratings

Component Type	MCCB
Selectivity Category	B
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	1600 AF
Trip Unit Rating	1600 A

I_n, Rated Current	
A @ 30 °C	1600
A @ 45 °C	1600
A @ 50 °C	1600

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)	
(A)	1600
(W)	133.33

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection Rear Connection (Option) Extension Bar
Terminal Type	Extension Bar With Bolt holes
Connection Torque	40.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	No
Mounting	-

Physical

Height		370 mm
Width	**3P**	280 mm
	4P	280 mm
Depth (less toggle)		140 mm
Depth (toggle included)		191 mm
Weight	**3P**	27 kg
	4P	35 kg
Electrical Life		2000 cycles
Mechanical Life		5000 cycles

Short-Circuit Capacity

			kA Rating	
			MCCB Type	
		Voltage	N	HL
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	85	125
		380 / 400 V AC	50	100
		415 V AC	50	85
		440 V AC	45	85
		690 V AC	20	45
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	-	-
		250 V DC	-	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	65	94
		380 / 400 V AC	38	75
		415 V AC	38	65
		440V AC	34	65
		690 V AC	15	34
		1000 V AC	-	-
		1100 V AC	-	-
		125 V DC	-	-
		250 V DC	-	-
	I_{cw} (Short Time Withstand)	0.3 Seconds	20	20

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type)
Rated Temperature	50 °C

Other Features

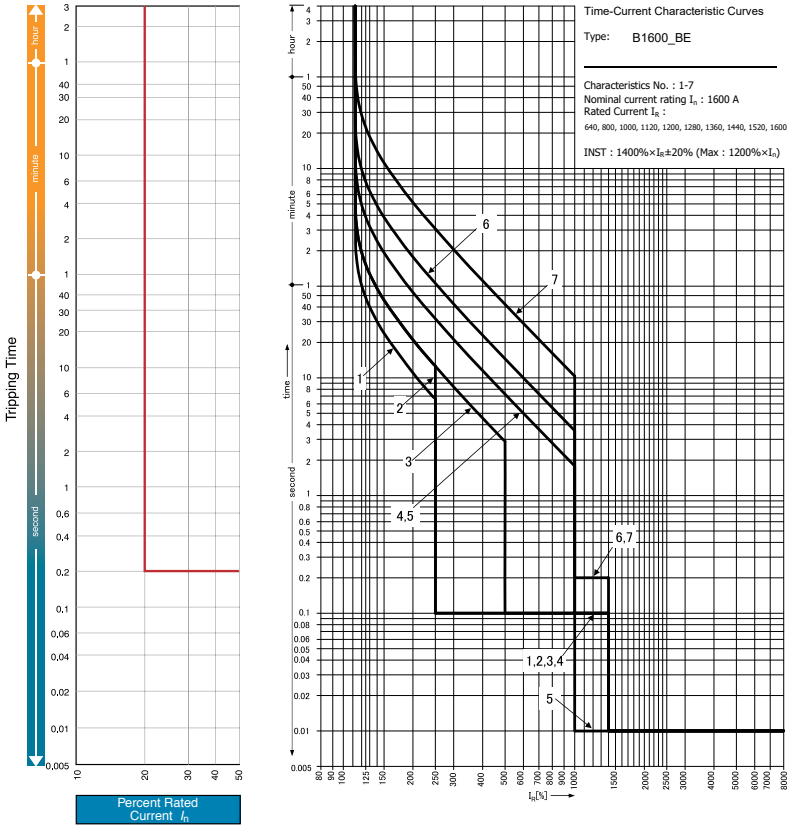
Pre-trip alarm (PTA)	Yes
ZSI Zone Selective Interlocking	Yes
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam or cable type	Yes
Locking Devices	Yes
Terminal Covers	No
Interpole Barriers	Yes
External Panel Display	No

MCCBs

Time Current Characteristics Curves 1 - 7, B1600_BE/BEG, 640 - 1600 A, Basic Electronic



B1600_BE_curves 1-7-OPCH-S01

Characteristics For I_R Rated 1600 A: B1600N, B1600HL

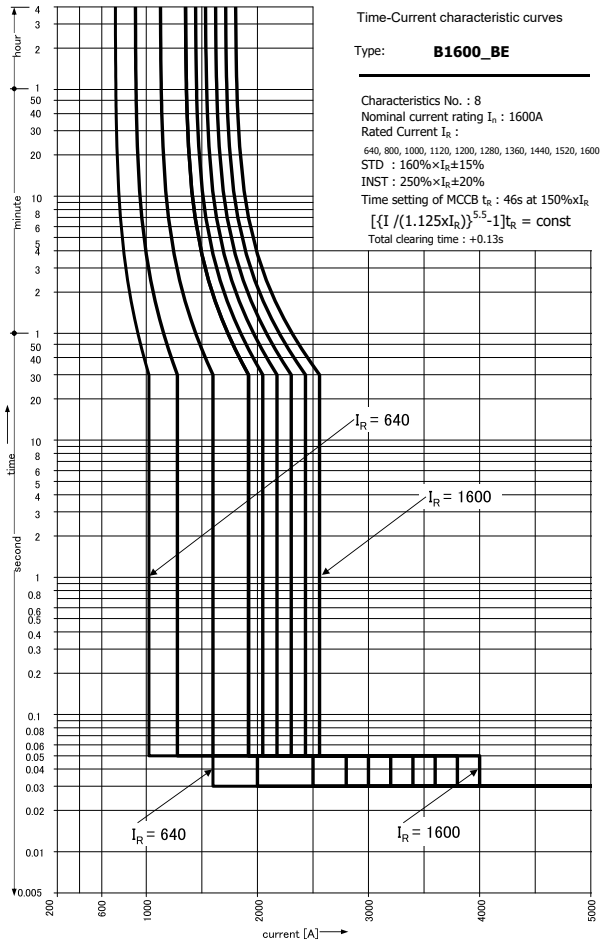
LTD Pick Up Current I_R (A)		**640 – 800 – 1000 – 1120 – 1200 – 1280 – 1360 – 1440 – 1520 – 1600 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8** [4]	**9** [4]	**10** [3, 4]
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)		2.5	10	12
OCR Options											
Pre Trip Alarm (PTA)	I_P x I_R	0.8									
	I_p (S)	40									
Ground Fault (GF) [2]	I_G x I_N	0.2									
	t_G (S)	0.2									
Neutral Pole Protection (NP)	I_N x I_R	1.0 / 0.5 [1]									
	t_N (S)	$t_N = t_R$									

Notes

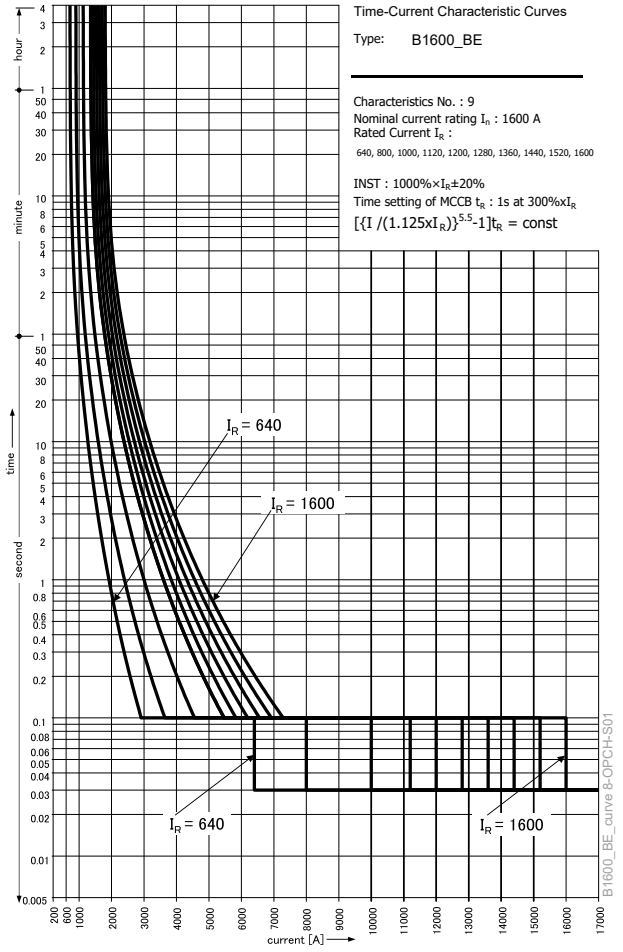
1) 1.0 x I_R or 0.5 x I_R can be selected. Characteristic of neutral protection (t_N vs. I_N) is identical to characteristic of phase protection (t_R vs. I_R).
2) When GF is specified for 3 pole MCCBs, a terminal block is fitted as standard for external neutral CT connection for 3 phase 4 wire systems. Refer terminal block details on following pages. 4 pole GF MCCBs include an internal 4th CT standard, so no user connection is required.
3) Characteristic 10 is instantaneous only.
4) Curves 8, 9, 10 shown on following pages.

Time Current Characteristics Curves 8 - 9, B1600_BE/BEG, 640 - 1600 A, Basic Electronic

8



9

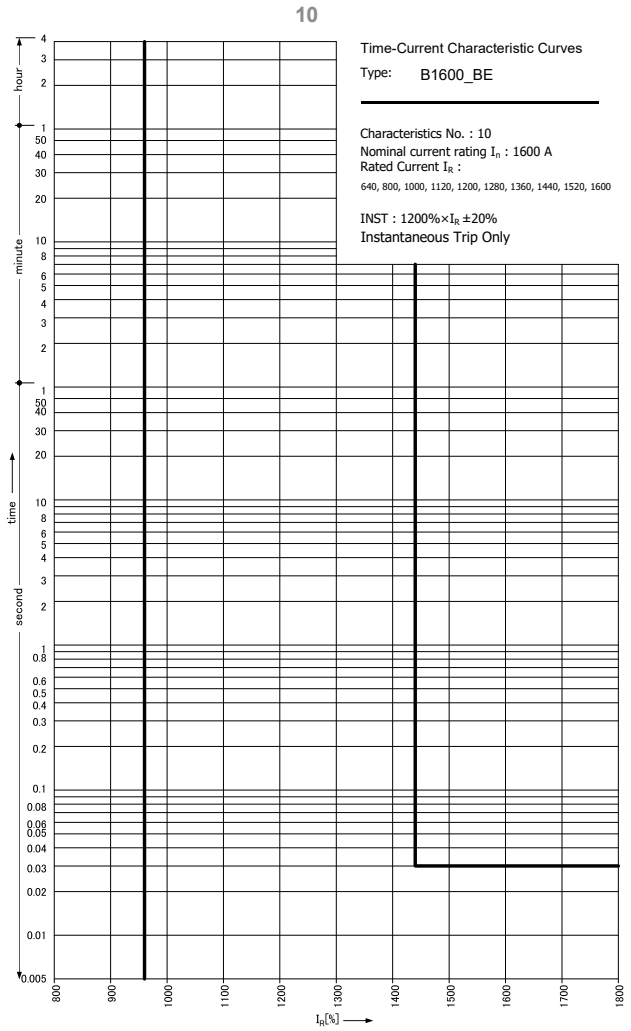


Characteristics For I_R Rated 1600 A B1600N, B1600HL

LTD Pick Up Current I_R (A)		**640 – 800 – 1000 – 1120 – 1200 – 1280 – 1360 – 1440 – 1520 – 1600 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)		2.5	10	12
OCR Options		PTA, GF, NP									

MCCBs

Time Current Characteristics Curve 10, 640 - 1600 A, B1600_BE/BEG, 640 - 1600 A, Basic Electronic

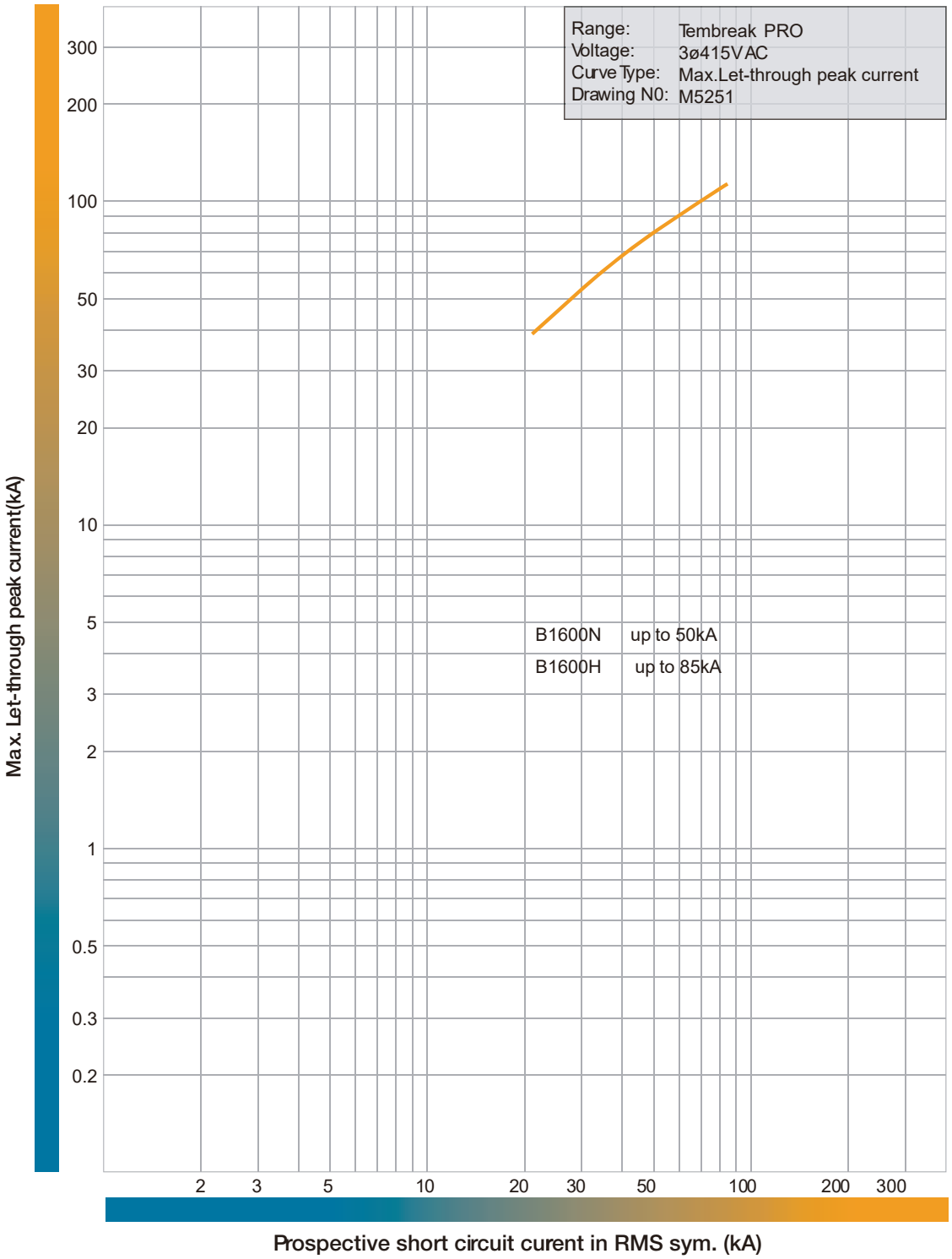


B1600_BE_curve 10-OPCH-S01

Characteristics For I_R Rated 1600 A: B1600N, B1600HL

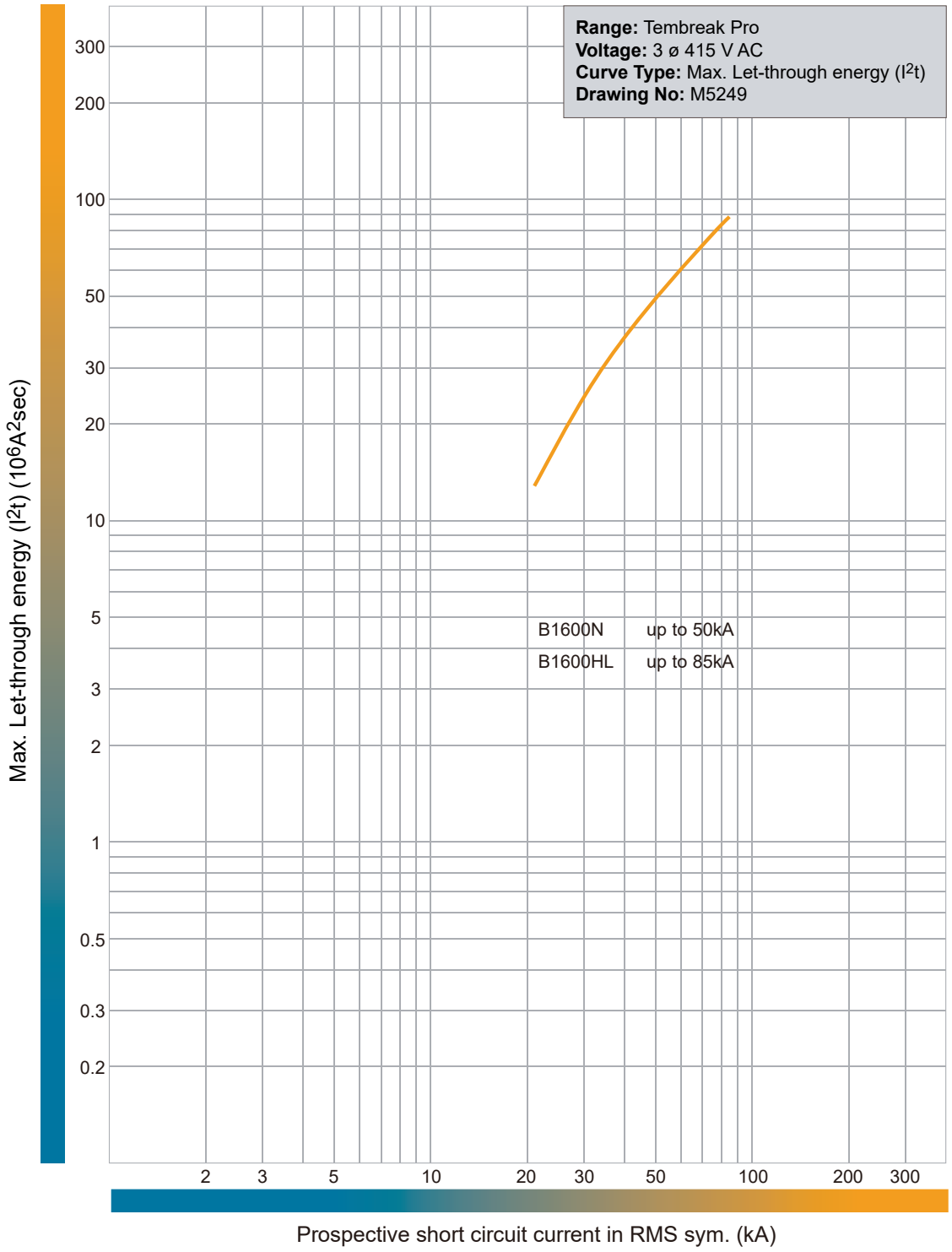
LTD Pick Up Current I_R (A)		**640 – 800 – 1000 – 1120 – 1200 – 1280 – 1360 – 1440 – 1520 – 1600 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)		2.5	10	12
OCR Options		PTA, GF, NP									

Let-Through Peak Current Curve, B1600_BE/BEG, Basic Electronic



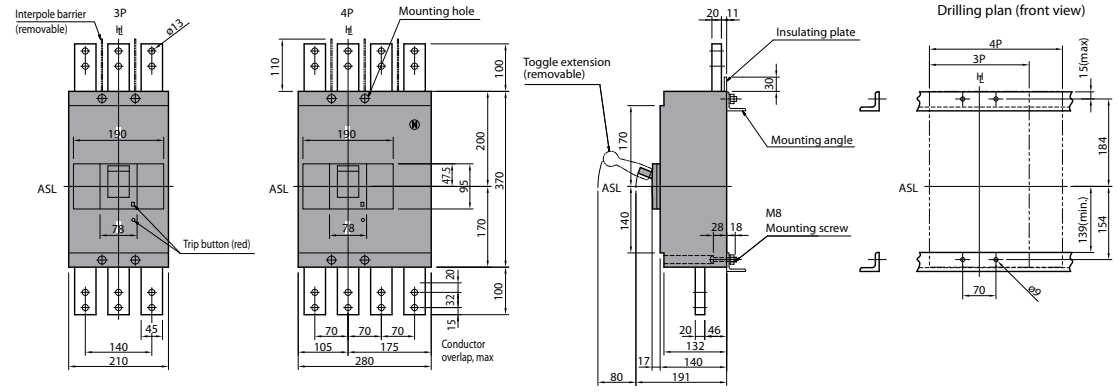
MCCBs

Let-Through Energy I²t Curve, B1600_BE/BEG, Basic Electronic

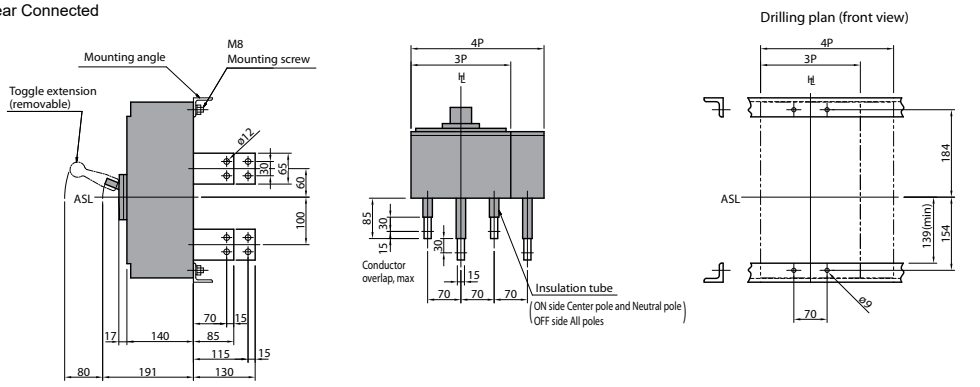


Dimensions B1600_NN/BE/BEG (mm)

Front Connected

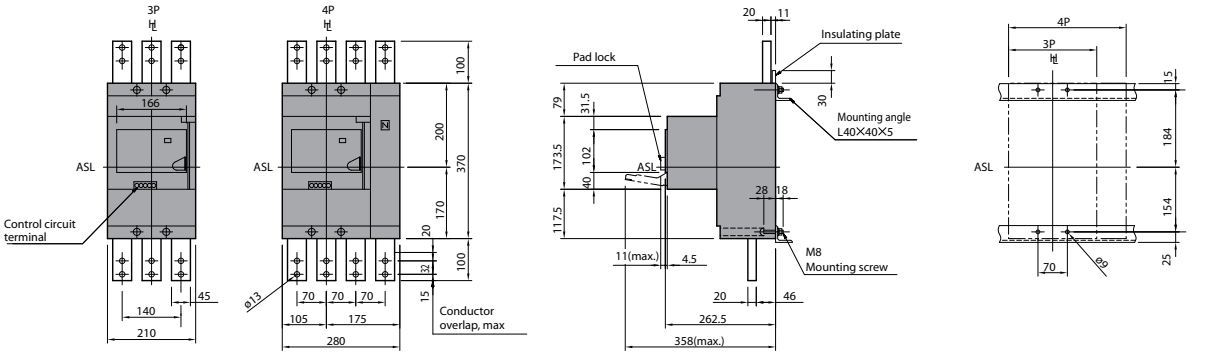


Rear Connected

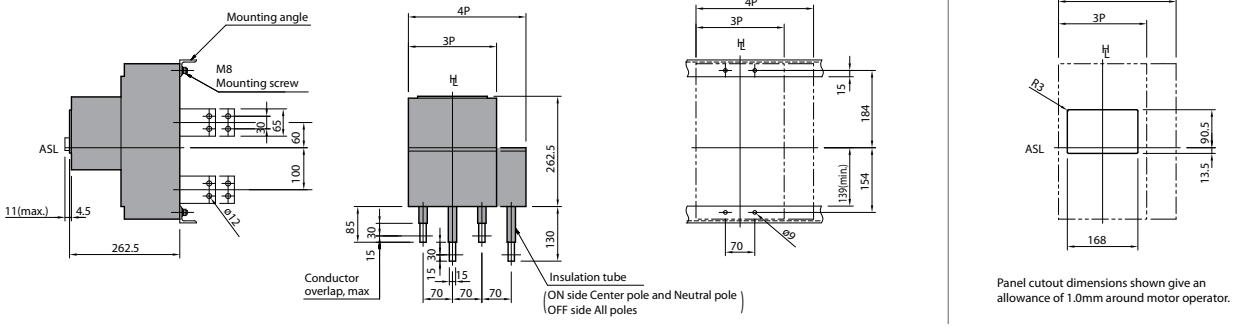


Panel cutout dimensions shown give an allowance of 1.5mm around the handle escutcheon.

Front Connected With Motor Operator



Rear Connected With Motor Operator



Panel cutout dimensions shown give an allowance of 1.0mm around motor operator.

B1600_NN

Non-Auto Switch Disconnector

- ✔ Non-Auto switch disconnector for power distribution
- ✔ AC23 and DC22 ratings for motor starting use
- ✔ No overcurrent protection (isolator only)
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-3, IEC 60947-3 and CE
- ✔ Panel mount standard, other connection options
- ✔ Wide range of accessories for application flexibility, including OFF padlock device
- ✔ Accepts standard MCCB internal and external accessories
- ✔ 3 or 4 pole versions
- ✔ 370 mm (H), 140 mm (D), 70 mm pole centres
- ✔ I_{cw} = 45 kA for 0.3 sec: Rated short time withstand rating
- ✔ I_{cm} = 20 kA: Rated short circuit making capacity

CE DEKRA On the safe side.

General

Switch Type	Non Auto Switch Disconnector
Number of Poles	3 or 4
Switching Poles	3P or 3P + N

Ratings

Nominal Current	1600 A @ 50°C
Motor Starting	AC23 motor starting DC22 motor starting
Icw Rated	Short time withstand
Icm Rated	Ampere making capacity

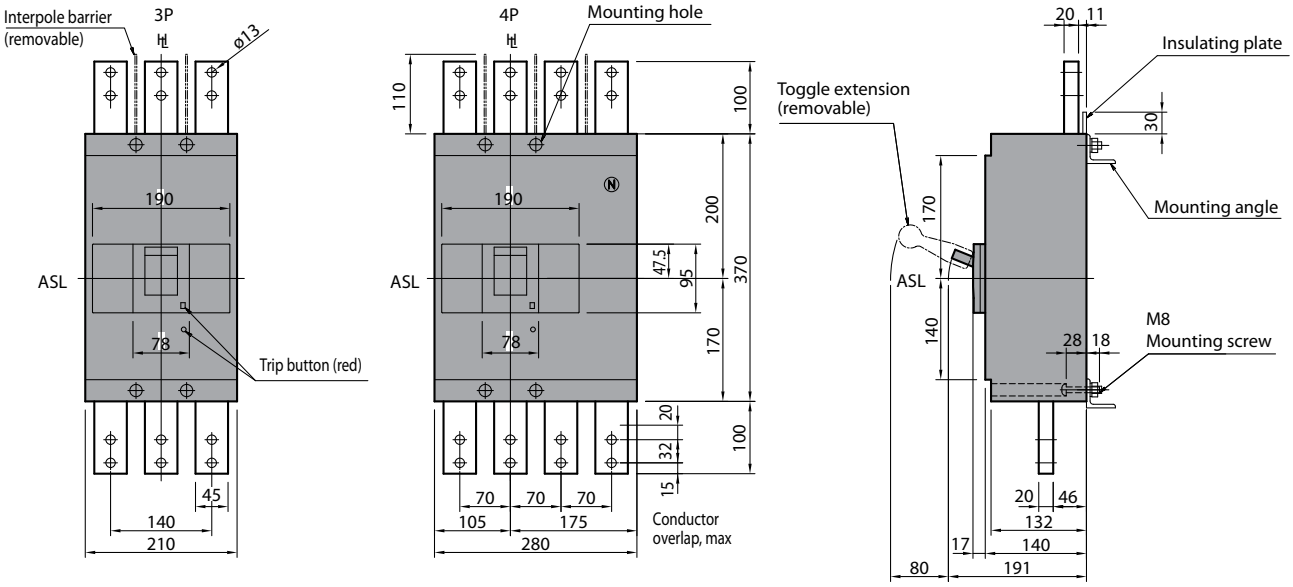
Voltage

Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Accessories and Connections

Options	Front or rear connect Terminal connection options Accepts standard MCCB accessories

Quick Reference Dimensions – Front Connect



1600 A Frame 3 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Catalogue No.
1600	3	B1600D31600NN

1600 A Frame 4 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Catalogue No.
1600	4	B1600D41600NN

Ratings

Component Type	Non Auto Switch Disconnector
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	1600 AF
I_n, Rated Current	
A @ 30 °C	1600
A @ 45 °C	1600
A @ 50 °C	1600
U_e Rated operational voltage AC maximum	690 V AC
U_e Rated operational voltage DC maximum	250 DC
U_i, Rated Insulation Voltage	800 V (rms)
Motor Starting Utilisation Category	AC 23, DC 22
U_{imp}, Impulse Withstand Voltage	8 kV
Icw, Rated Short Circuit Withstand Current 400/690V	20 kA / 0.3 Sec
Rated Frequency	50 / 60 Hz
Pollution Degree	3
AC Power loss per pole at full rated current	133.33 W @ 1600 A
Dielectric Strength	2000 V AC

Standards

Standards Compliance	IEC 60947-3 AS/NZS 60947-3
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 %RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection Rear Connection (Option) Extension Bar
Terminal Type	Extension Bar With Bolt holes
Connection Torque	40.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	No
Mounting	-

Physical

Height		370 mm
Width	**3P**	280 mm
	4P	280 mm
Depth (less toggle)		140 mm
Depth (toggle included)		191 mm
Weight	**3P**	27 kg
	4P	35 kg
Electrical Life		2000 cycles
Mechanical Life		5000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**D**
Based On AS/NZS 60947.2 and IEC 60947-2	**I_{cm} (Short Circuit Making Capacity)**	690 V AC	45
	I_{cw} (Short Time Withstand)	0.3 Seconds	20

Trip Unit

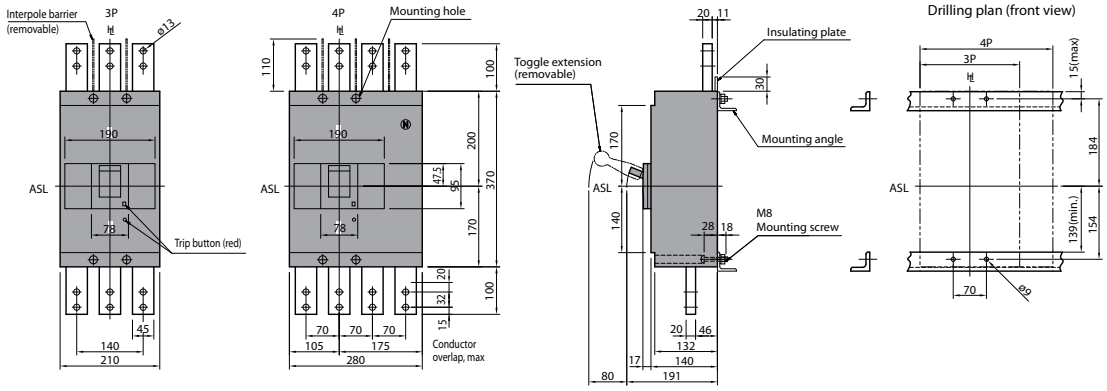
Over Current Protection Function	No
Trip Unit Protection Type	Non-auto Switch Disconnector
Rated Temperature	50 °C

General Accessories

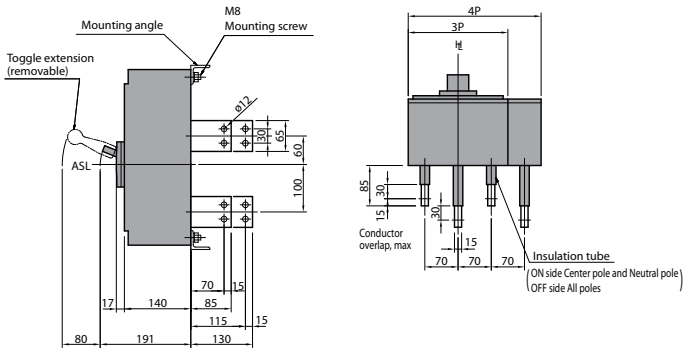
Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	No
Interpole Barriers	Yes
External Panel Display	No

Dimensions B1600_NN/BE/BEG (mm)

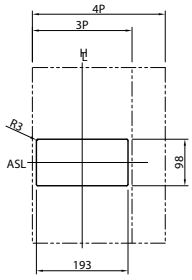
Front Connected



Rear Connected

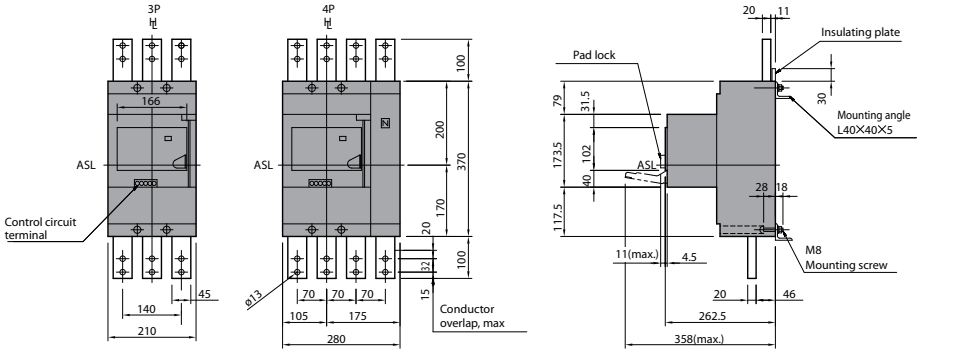


Panel cutout (front view)

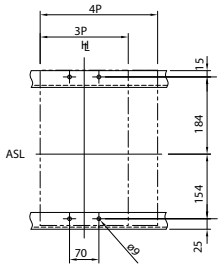


Panel cutout dimensions shown give an allowance of 1.5mm around the handle escutcheon.

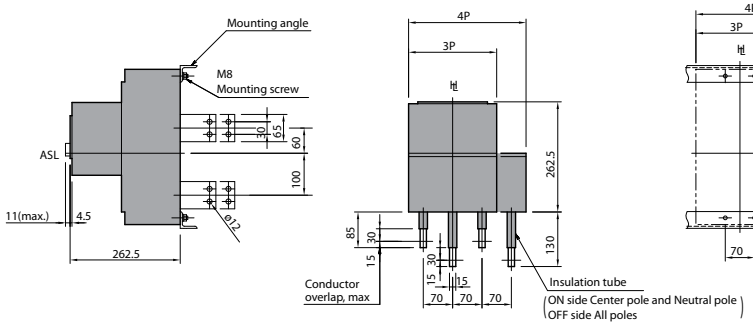
Front Connected With Motor Operator



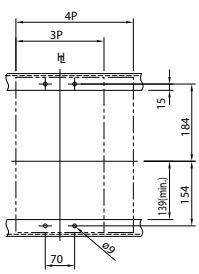
Drilling plan (front view)



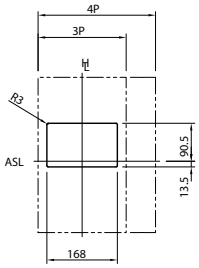
Rear Connected With Motor Operator



Drilling plan (front view)



Panel cutout (front view)



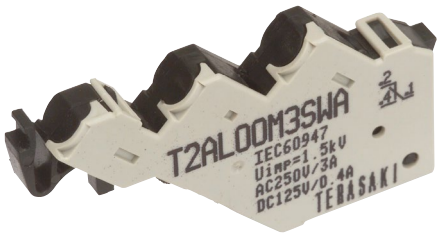
Panel cutout dimensions shown give an allowance of 1.0mm around motor operator.

B1600 AF Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits



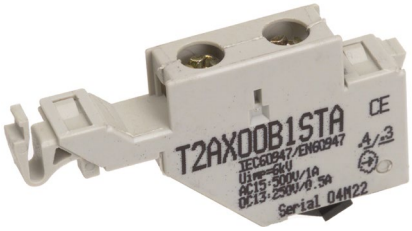
Item Description	Catalogue No.
Alarm Switch 1 C/O	T2AL00M3STA
Alarm Switch 1 C/O Wired	T2AL00M3SWA
Alarm Switch Micro-current 1C/O	T2AL00M3RTA

Item Description	Catalogue No.
Alarm Switch Heavy Duty 1 N/O	T2AL00B1STA
Alarm Switch Heavy Duty 1 N/C	T2AL00B2STA

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxiliary Switch 1 C/O	T2AX00M3STA
Auxiliary Switch 1 C/O Wired	T2AX00M3SWA
Auxiliary and Alarm Switches 1 C/O 2nd Auxiliary with 700 mm Leads	T2AX00M4SWA
Auxiliary and Alarm Switches 1 C/O 3rd Auxiliary with 700 mm Leads	T2AX00M5SWA
Auxiliary Switch Micro-current 1 C/O	T2AX00M3RTA



Item Description	Catalogue No.
Auxiliary Switch Heavy Duty 1 N/O	T2AX00B1STA
Auxiliary Switch Heavy Duty 1 N/C	T2AX00B2STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00A10TA
Shunt Trip Coil 240 V AC	T2SH00A20TA
Shunt Trip Coil 415 V AC	T2SH00A40TA
Shunt Trip Coil 12V DC	T2SH00D01TA
Shunt Trip Coil 24 V DC	T2SH00D02TA
Shunt Trip Coil 48 V DC	T2SH00D04TA
Shunt Trip Coil 110 V DC	T2SH00D10TA
Shunt Trip Coil 230 V DC	T2SH00D20TA

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 800-1600 A 110 V AC	T2UV80A10NTA
Under Voltage Trip Coil Instant 800-1600 A 240 V AC	T2UV80A20NTA
Under Voltage Trip Coil Instant 800-1600 A 415 V AC	T2UV80A40NTA
Under Voltage Trip Coil Instant 800-1600 A 24 V DC	T2UV80D02NTA
Under Voltage Trip Coil Instant 800-1600 A 48 V DC	T2UV80D04NTA
Under Voltage Trip Coil Instant 800-1600 A 110 V DC	T2UV80D10NTA
Under Voltage Trip Coil Instant 800-1600 A 230 V DC	T2UV80D24NTA

Time Delay Operation (500 ms)

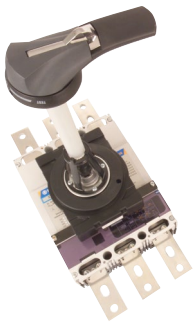
When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delayed 110 V AC	T2UVX6A10DSA
Under Voltage Trip Coil Time Delayed 230-240 V AC	T2UVX6A24DSA
Under Voltage Trip Coil Time Delayed 380-450 V AC	T2UVX6A40DSA
Under Voltage Trip Coil Time Delayed 24 V DC	T2UVX6D02DSA
Under Voltage Trip Coil Time Delayed 110 V DC	T2UVX6D10DSA
Under Voltage Trip Coil Time Delayed 230 V AC	T2UVX6D24DSA

Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

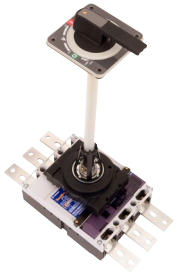


Item Description	Catalogue No.
T2HS Compact Handle Grey, IP65 Handle + 320 mm Shaft 1250/1600 AF	TPHSX6F65BM
T2HS Compact Handle Red/Yellow, IP65 Handle + 320 mm Shaft 1250/1600 AF	TPHSX6F65RM

Item Description	Catalogue No.
Metal Compact Handle Silver IP65 Handle + 320 mm Shaft 1250/1600 AF	T2HPX6R6ME

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation



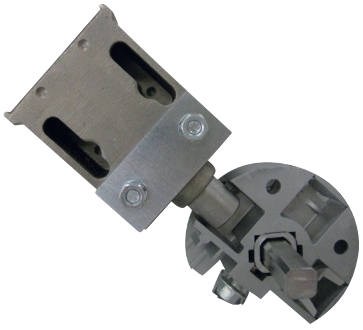
Item Description	Catalogue No.
T2HP Square Handle Grey, IP65 Handle + 445 mm Shaft 1250/1600 AF	T2HPX6R6BN
T2HP Square Handle Red/Yellow, IP65 Handle + 445 mm Shaft 1250/1600 AF	T2HPX6R6RN

Handle Options

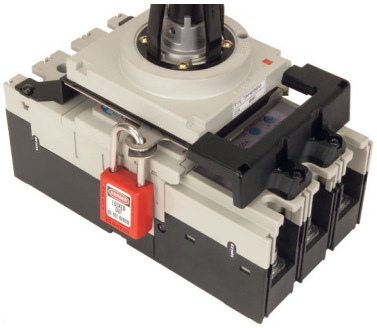
A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
TPHS Handle Options 390 mm T Pin Shaft – no Flexi Coupling 400/630 AF	T2HS400SHAFT



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702



Item Description	Catalogue No.
TB1 HP Handle Mechanism Padlock Off Device 1250/1600 AF	T1HPX6PALK

Item Description	Catalogue No.
T2HS Handle Options MCCB toggle extension Lever	2A2272BAB

Motor Operator

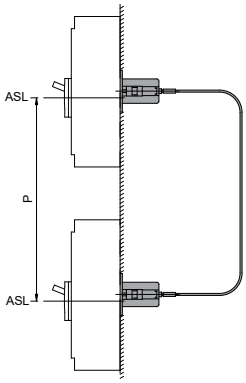
Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
Motor Operators 110 V AC 1250/1600 AF	T2MCX6A10NP
Motor Operators 240 V AC 1250/1600 AF	T2MCX6A24NP
Motor Operators 24 V DC 1250/1600 AF	T2MCX6D02NP

Locking and Interlocking Accessories

Cable Mechanical Interlock

Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 m apart – NHP factory installation only.



Item Description	Catalogue No.
1 x 1600 A Non Auto, 3 Pole + 1 Rear Interlock Mechanism	B1600D31600NNCI
1 x 1600 A Non Auto, 4 Pole + 1 Rear Interlock Mechanism	B1600D41600NNCI
1 x 1600 A MCCB 85 kA, 3 Pole + 1 x Rear Interlock Mechanism	B1600HL31600BECI
1 x 1600 A MCCB 85 kA, 4 Pole + 1 x Rear Interlock Mechanism	B1600HL41600BECI
1 x 1600 A MCCB 50 kA, 3 Pole + 1 x Rear Interlock Mechanism	B1600N31600BECI
1 x 1600 A MCCB 50 kA, 4 Pole + 1 x Rear Interlock Mechanism	B1600N41600BECI

Link Mechanical Interlock

Mechanical interlock – Rear Cable type Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 M apart.

Item Description	Catalogue No.
Mechanical Interlocks 1.5 m Cable for Interlock Mechanism. 1 Required Only – Customer Fit	UXKC0020A

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option

Item Description	Catalogue No.
Captive Lock Attachment with 2 x 8 mm Holes 1250/1600 AF	T2PLX6UN

Non-captive

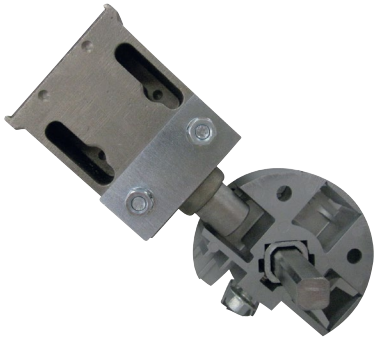
Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Non Captive Toggle Lock 1250/1600 AF	T2HLX6A

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Mounted

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, standard key code, A	440TAKEYE100A
Prosafe, standard key code, B	440TAKEYE100B
Prosafe, standard key code, C	440TAKEYE100C
Prosafe, standard key code, D	440TAKEYE100D
Prosafe, standard key code, E	440TAKEYE100E
Prosafe, standard key code, F	440TAKEYE100F
Prosafe, standard key code, G	440TAKEYE100G
Prosafe, standard key code, H	440TAKEYE100H
Prosafe, Standard Key Code I	440TAKEYE100I
Prosafe, Standard Key Code J	440TAKEYE100J
Prosafe, Standard Key Code K	440TAKEYE100K
Prosafe, Standard Key Code L	440TAKEYE100L
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, Standard Key	440TAKEYE10X

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys

Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100A
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10BA
Single key shot bolt lock, key not included	440TMSBLE10X

MCCBs

Installation External Accessories

External Neutral CT

Optional Ground Fault sensing neutral pole Current Transformer for B series GF MCCBs

Item Description	Catalogue No.
External Neutral CT 1250 A Optional Neutral CT for 3 Pole Ground Fault MCCBs 1250/1600 AF	T2GBX6N12A
External Neutral CT 1600 A Optional Neutral CT for 3 Pole Ground Fault MCCBs 1250/1600 AF	T2GBX6N16A

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier Interpole Barrier (Qty 1), B800, B1000, ZS630, ZS800	T2BA403SH

XS2000_BE /BEG

Electronic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ Front or rear connect option
- ✔ 450 mm (H), 185 mm (D), 105 mm pole centres
- ✔ Fault rating; 85 kA I_{cu} @ 415 V AC
- ✔ Electronic trip unit: Individual dial setting adjustments of LSI settings
- ✔ Options include GF or PTA
- ✔ Trip unit; 2000 A

CE DEKRA On the safe side.

General

Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type) [1]
Trip Unit Rating	2000 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @415 V AC	**HL** 85 kA

Voltage

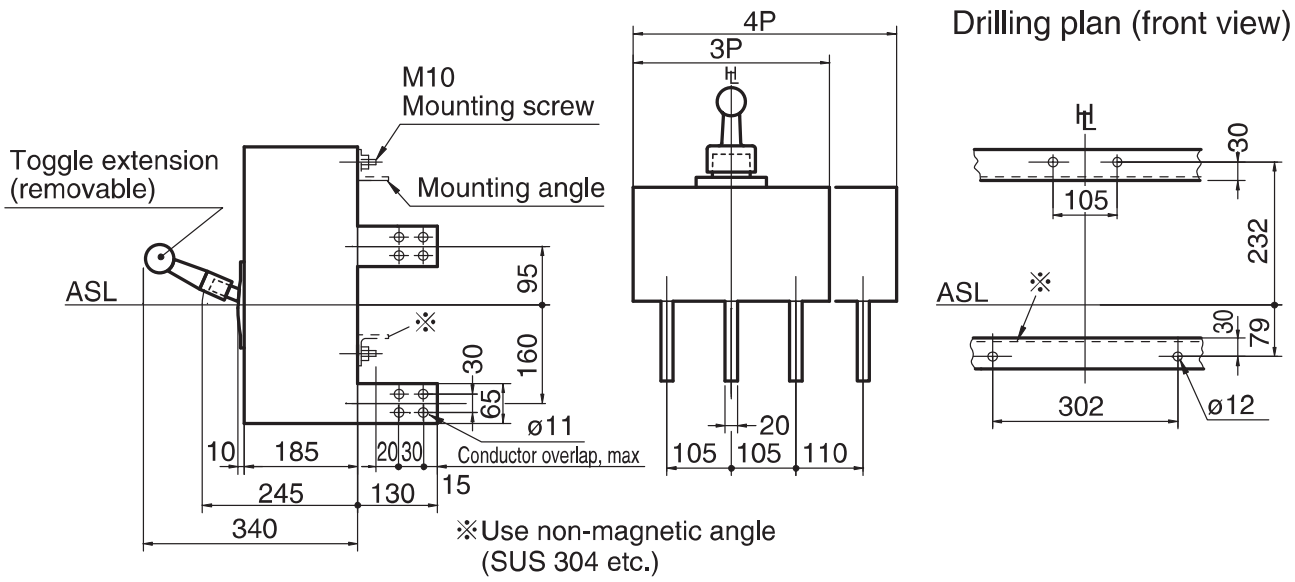
Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection (Option) Rear Connection (Standard)

Notes: 1) When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Quick Reference Dimensions – Rear Connect



2000 A Frame 3 Pole 85 kA BE (LSI)

I_n Rated Current at 45 °C (A @ 45 °C)	I_r Adjustable (A)	I_{cu} @ 400 / 415 V (kA)	Poles	Catalogue No.
2000	1000 - 2000	85	3	XS2000HL32000BE

2000 A Frame 3 Pole 85 kA BEG (LSIG)

I_n Rated Current at 45 °C (A @ 45 °C)	I_r Adjustable (A)	I_{cu} @ 400 / 415 V (kA)	Poles	Catalogue No.
2000	1000 - 2000	85	3	XS2000HL32000BEG

2000 A Frame 4 Pole 85 kA BE (LSI)

I_n Rated Current at 45 °C (A @ 45 °C)	I_r Adjustable (A)	I_{cu} @ 400 / 415 V (kA)	Poles	Catalogue No.
2000	1000 - 2000	85	4	XS2000HL42000BE

2000 A Frame 4 Pole 85 kA BEG (LSIG)

I_n Rated Current at 45 °C (A @ 45 °C)	I_r Adjustable (A)	I_{cu} @ 400 / 415 V (kA)	Poles	Catalogue No.
2000	1000 - 2000	85	4	XS2000HL42000BEG

Ratings

Component Type	MCCB
Selectivity Category	B
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	2000 AF
Trip Unit Rating	2000 A

I_n, Rated Current (A)	
	2000
45ºC	2000
50ºC	2000
70ºC	-

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)	
(A)	2000
(W)	76

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection (Option) Rear Connection (Standard)
Terminal Type	Extension Bar With Bolt holes
Connection Torque	22.5 - 37.2 Nm

Installation Types

Suitable for Panel Mounting	No
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	No
Mounting	Suitable for angle bracket mounting

Physical

Height		450 mm
Width	**3P**	320 mm
	4P	429 mm
Depth (less toggle)		185 mm
Depth (toggle included)		245 mm
Weight	**3P**	54 kg
	4P	67 kg
Electrical Life		500 cycles
Mechanical Life		2500 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	HL
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	125
		380 V AC	100
		400 / 415 V AC	100/85
		440 V AC	85
		690 V AC	45
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	94
		380 / 400 V AC	75
		415 V AC	65
		440V AC	65
		690 V AC	42
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-
	I_{cw} (Short Time Withstand)	0.3 Seconds	42

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type)
Rated Temperature	50 °C

Other Features

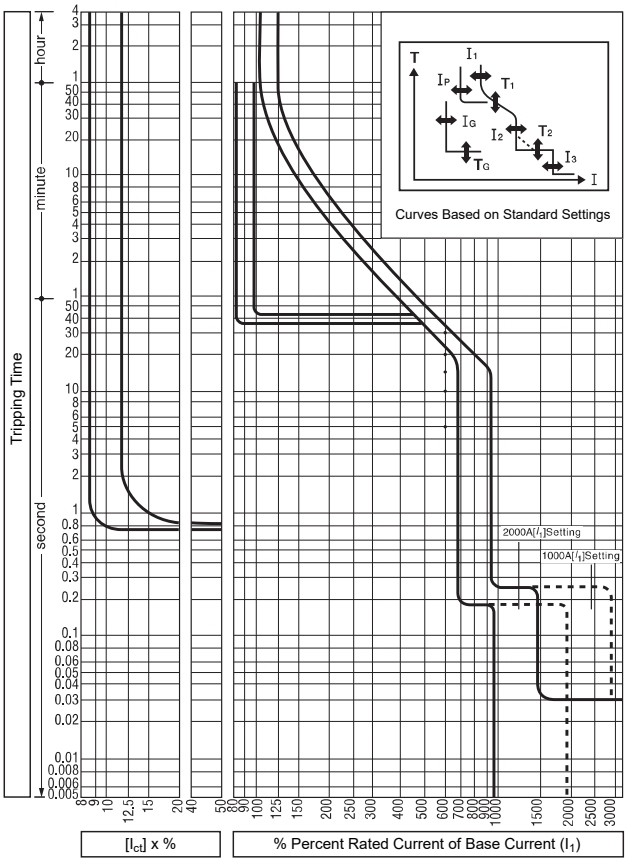
Pre-trip alarm (PTA)	Refer NHP
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam or cable type	Yes
Locking Devices	Yes
Terminal Covers	No
Interpole Barriers	No
External Panel Display	No

MCCBs

Time Current Characteristic Curve, XS2000HL, Basic Electronic



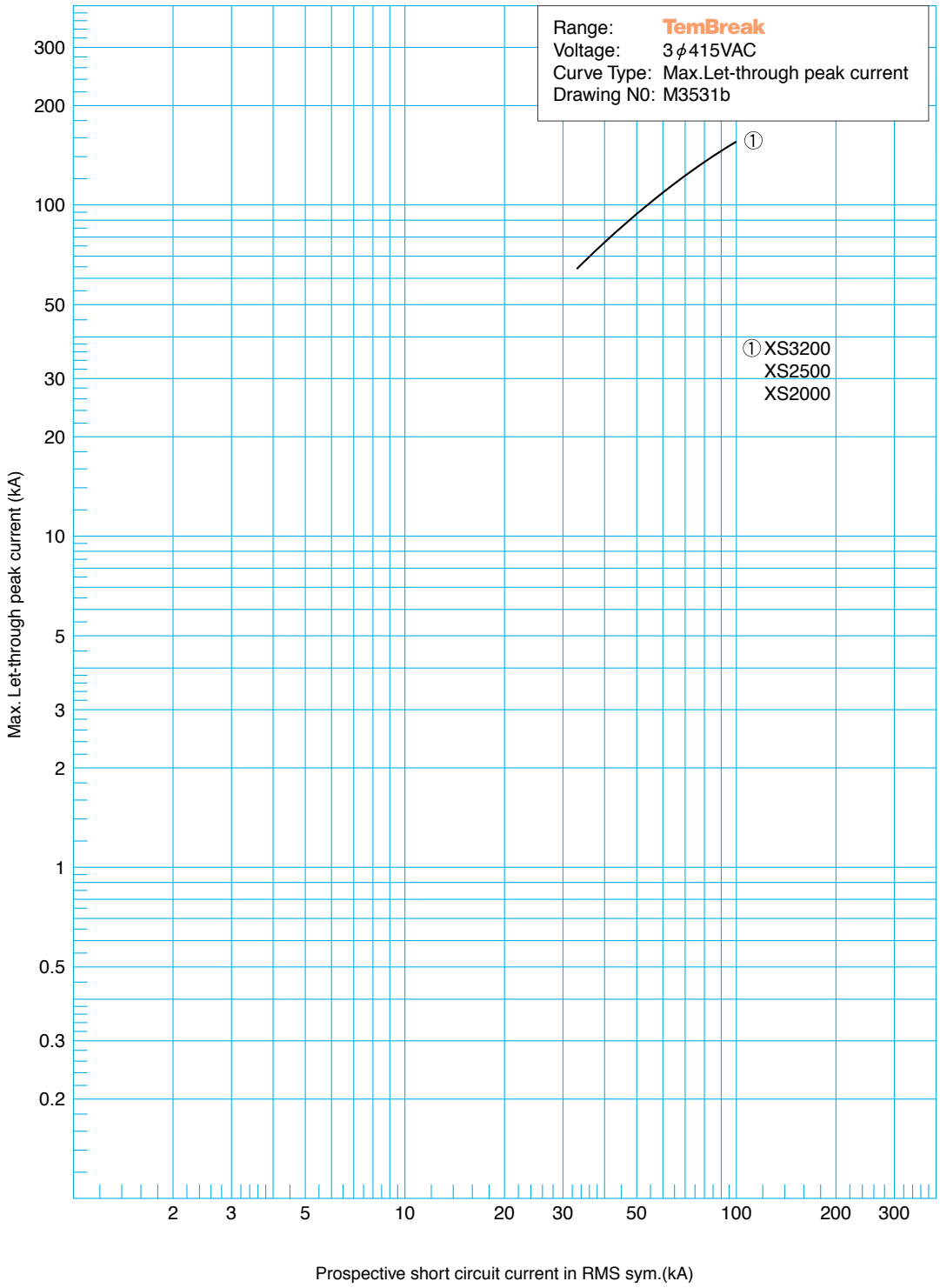
XS2000HL32000BE_dOPCH-S01

XOS Over Current Tripping Characteristics: XS2000HL, XS2500HL

CT rated current (A) (I_n)	2000, 2500
Base current setting (A) (I_O)	(I_n) x (0.63-0.8-**1.0**)
Long time-delay pick-up current (A): (I_1)	(I_O) x (0.8 - 0.85 - 0.9 - 0.95 - **1.0**). Non-trip at (I_1) setting x 105 % and below. Trips at 125 % and above
Long time-delay time settings (S) (T_1)	(5 - 10 - 15 - **20** - 30) at (I_1) x 600 % current. Setting tolerance ± 20 %
Short time-delay pick-up current (A): (I_2)	(I_O) x (2 - 4 - 6 - 8 - **10**). Setting tolerance ± 15 %
Short time-delay time settings (S) (T_2)	Opening time (**0.1**, 0.15, 0.2, 0.25, 0.3) in the definite time-delay. Total clearing time is +50 ms and resettable time - 20 ms for the time-delay setting
Instantaneous trip pick-up current (A) (I_3)	Continuously adjustable from (Io) x (3 to 12). Setting tolerance ± 20 %
• Pre-trip alarm pick-up current (A) (I_P)	(I_1) x (0.7, 0.8, **0.9**, 1.0). Setting tolerance ±10 %
• Pre-trip alarm time setting (S) (T_P)	40 fixed definite time-delay. Setting tolerance ±10 %
• Ground fault trip pick-up current (A) (I_G)	Continuously adjustable from (I_N) x (**0.1** to 0.4). Setting tolerance ± 15 %
• Ground fault trip time setting (S) (T_G)	Opening time (0.1 - 0.2 - **0.3** - 0.4 - 0.8) in the definite time-delay. Total clearing time is +50 ms and resettable time is - 20 ms for the time-delay settings

Notes
- Optional.
- **BOLD** values represent factory default settings.

Let-Through Peak Current Curve, XS2000,2500,3200_BE Basic Electronic



MCCB Operating Characteristics VS400 - 800NE, XS2000 - 3200 MCCBs[1)]

XOS OCR Characteristics

MCCB Type	LTD	STD	INST	I^2T Ramp	Pick-up LED	Test Port	PTA	GFT
	Standard Feature						Ordering Option	
VS400NE [2)]	✔	✔	✔	✔	✔	✔	O	O
VS630NE [2)]	✔	✔	✔	✔	✔	✔	O	O
VS800NE [2)]	✔	✔	✔	✔	✔	✔	O	O
XS2000HL	✔	✔	✔	✔	✔	✔	O	O
XS2500HL	✔	✔	✔	✔	✔	✔	O	O
XS3200HL	✔	✔	✔	✔	✔	✔	O	-

Standard and Optional Settings and Features: XOS OCR

Setting Type		Application	Standard or Optional Settings for VS400 – 800 and XS2000-3200 MCCBs
LTD	Long Time Delay	Overload protection, True RMS	Standard
STD	Short Time Delay	Short circuit protection and selectivity	Standard
INST	Instantaneous	Short circuit protection, fast acting	Standard
I2t Ramp	-	Provides easier grading with downstream fuses	Standard
Pick-up LED	-	Illuminates on LTD overload, flashes on PTA pick-up	Standard
Test Port	-	Facility for TNS-2 OCR checker for calibration checking	Standard
PTA	Pre-Trip Alarm	Useful for load shedding applications	Option
GFT	Ground Fault Trip	Protection against ground faults	Option, not available for XS3200

Access to Setting Dials

To adjust the settings on the electronic TemBreak MCCB, the protective cover seal on the front of the breaker must be broken, and the cover fixing screws removed. To adjust the individual trip settings, turn the setting dials or the base current DIP switches with a flat bladed screwdriver.

Align any setting required between the black dots marked on the dial.

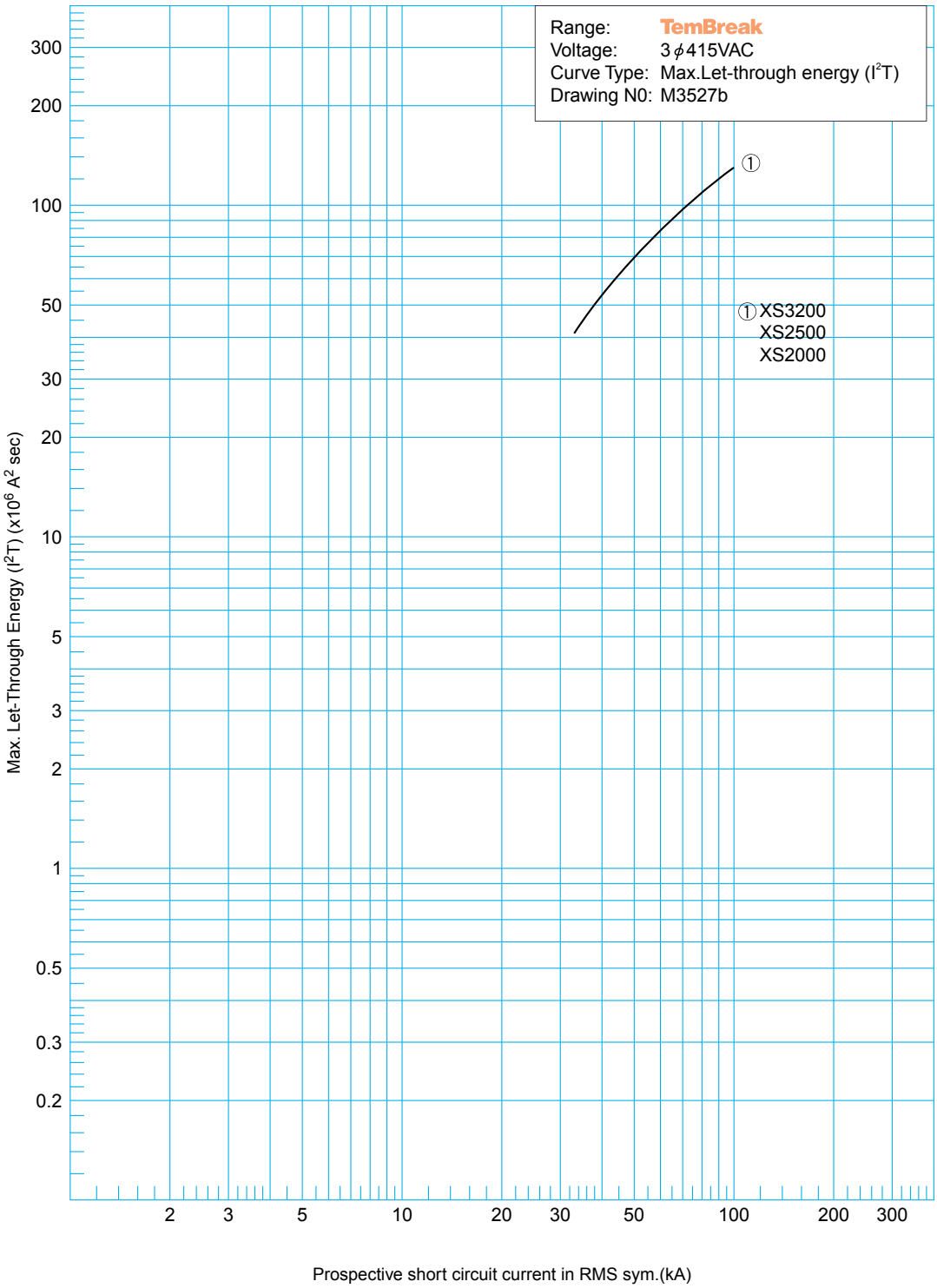
Dial settings are in increments. Replacement sealing stickers are provided in a cavity under the MCCB OCR cover. Refer diagrams on following pages for further details.

VS400NE_dOPCH-S02

Left
3200 AF Electronic MCCB.

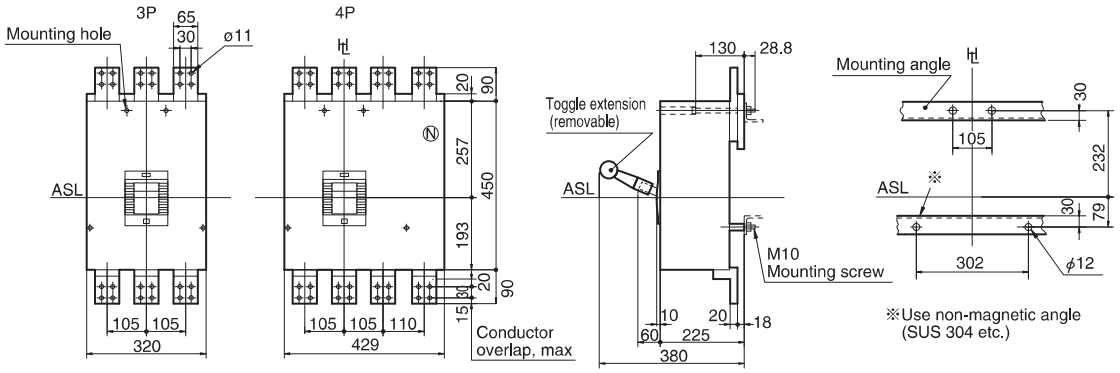
Notes
1) VS400-800 and XS2000-3200 are TemBreak 1 based MCCBs.
2) VS MCCB types are 1000 / 1100 V AC rated Mining MCCBs.

Let-Through Energy I²t Curve, XS2000,2500,3200_BE, Basic Electronic

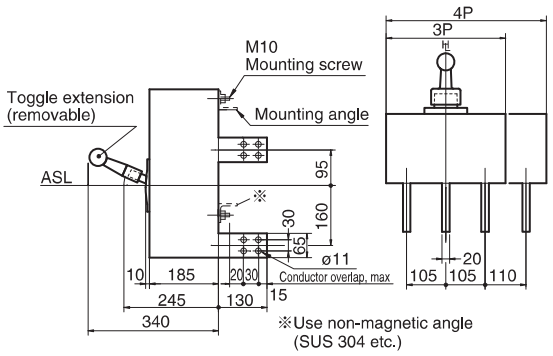


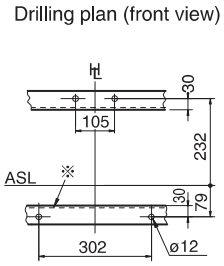
Dimensions XS2000_NN/BE/BEG (mm)

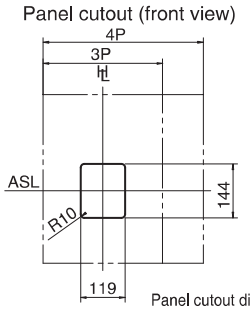
Front Connected



Rear Connected



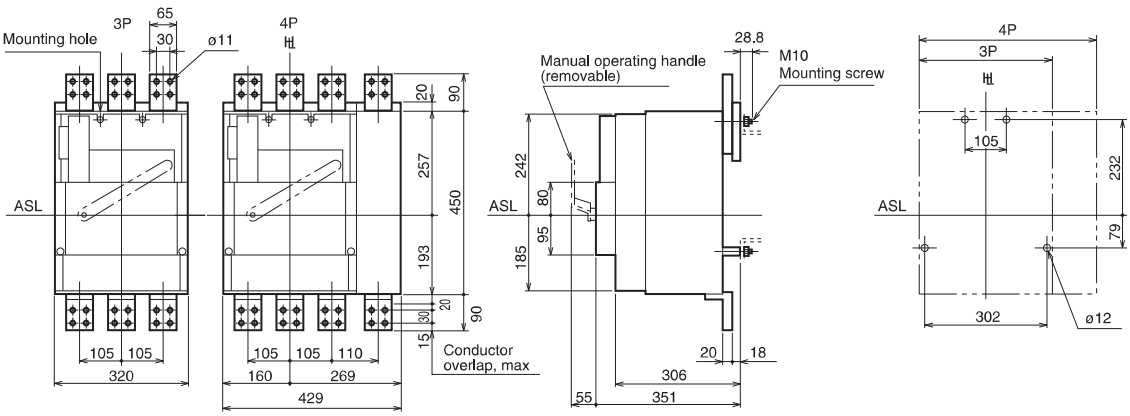




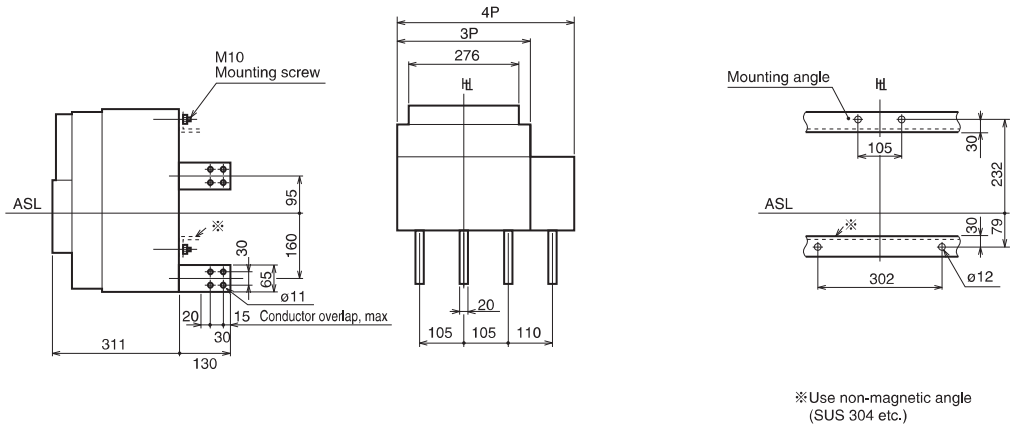
Panel cutout dimensions shown give an allowance of 2 mm around the handle escutcheon.

Dimensions XS2000_NN/BE/BEG with motor operator (mm)

Front Connected



Rear Connected



XS2000_NN

Non-Auto Switch Disconnector

- ✔ Non-Auto switch disconnector for power distribution
- ✔ AC23 and DC22 ratings for motor starting use
- ✔ No overcurrent protection (isolator only)
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-3, IEC 60947-3 and CE
- ✔ Panel mount standard, other connection options
- ✔ Wide range of accessories for application flexibility, including OFF padlock device
- ✔ Accepts standard MCCB internal and external accessories
- ✔ 3 or 4 pole versions
- ✔ Front or rear connect option
- ✔ 450 mm (H), 185 mm (D), 105 mm pole centres
- ✔ I_{cw} = 35 kA for 0.3 sec: Rated short time withstand rating
- ✔ I_{cm} = 90 kA: Rated short circuit making capacity

CE DEKRA On the safe side.

General

Switch Type	Non Auto Switch Disconnector
Number of Poles	3 or 4
Switching Poles	3P or 3P + N

Ratings

Nominal Current	2000 A @50°C
Motor Starting	AC23 motor starting DC22 motor starting
Icw Rated	Short time withstand
Icm Rated	Ampere making capacity

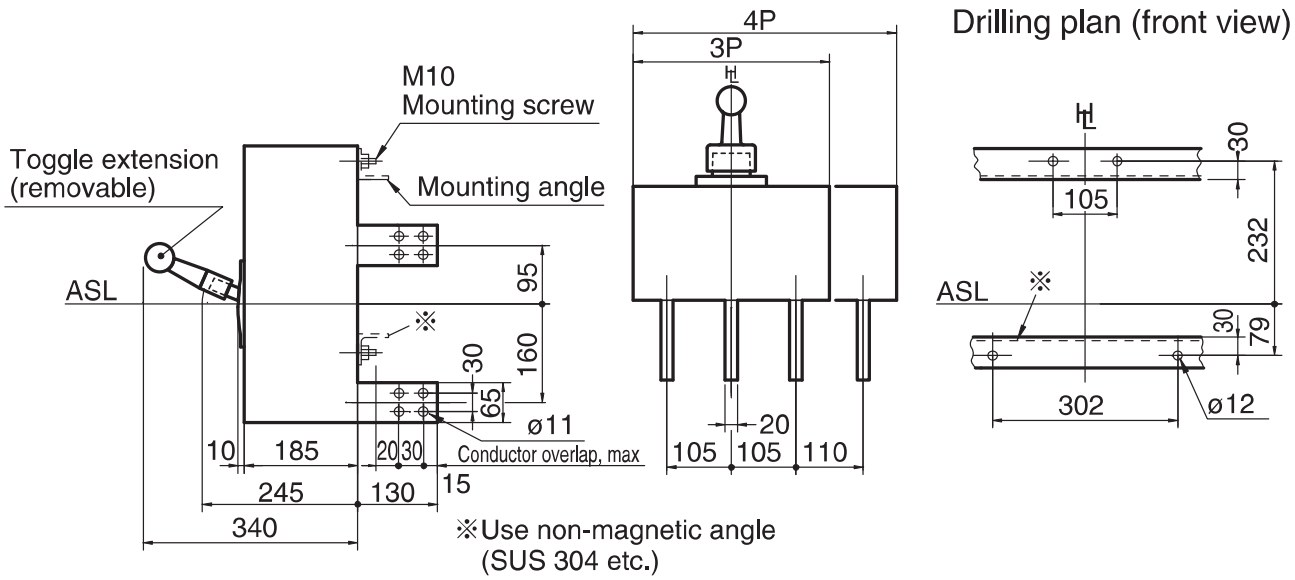
Voltage

Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Accessories and Connections

Options	Front or rear connect Terminal connection options Accepts standard MCCB accessories

Quick Reference Dimensions – Rear Connect



2000 A Frame 3 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Catalogue No.
2000	3	XS2000D32000NN

2000 A Frame 4 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Catalogue No.
2000	4	XS2000D42000NN

Ratings

Component Type	Non Auto Switch Disconnector
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	2000 AF

I_n, Rated Current	
A @ 30 °C	2000
A @ 45 °C	2000
A @ 50 °C	2000

U_e Rated operational voltage AC maximum	690 V AC
U_e Rated operational voltage DC maximum	250 DC
U_i, Rated Insulation Voltage	800 V (rms)
Motor Starting Utilisation Category	AC 23, DC 22
U_{imp}, Impulse Withstand Voltage	8 kV
I_{cw}, Rated Short Circuit Withstand Current 400/690V	35 kA / 0.3 Sec
Rated Frequency	50 / 60 Hz
Pollution Degree	3
AC Power loss per pole at full rated current	109 W @ 2000 A
Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-3 AS/NZS 60947-3
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection (Option) Rear Connection (Standard)
Terminal Type	Extension Bar With Bolt holes
Connection Torque	22.5 - 37.2 Nm

Installation Types

Suitable for Panel Mounting	No
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	No
Mounting	Suitable for angle bracket mounting

Physical

Height		450 mm
Width	**3P**	320 mm
	4P	429 mm
Depth (less toggle)		185 mm
Depth (toggle included)		245 mm
Weight	**3P**	60 kg
	4P	64.8 kg
Electrical Life		500 cycles
Mechanical Life		2500 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**D**
Based On AS/NZS 60947.2 and IEC 60947-2	**I_{cm} (Short Circuit Making Capacity)**	690 V AC	90
	I_{cw} (Short Time Withstand)	0.3 Seconds	35

Trip Unit

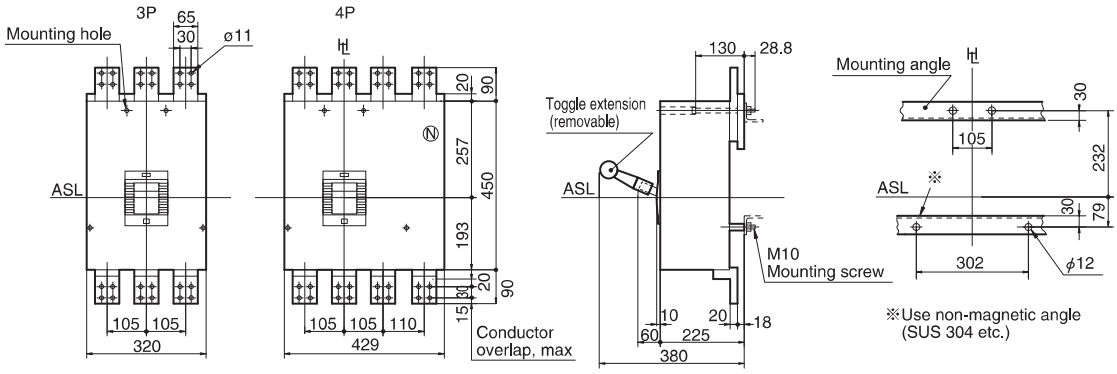
Over Current Protection Function	No
Trip Unit Protection Type	Non-auto Switch Disconnector
Rated Temperature	50 °C

General Accessories

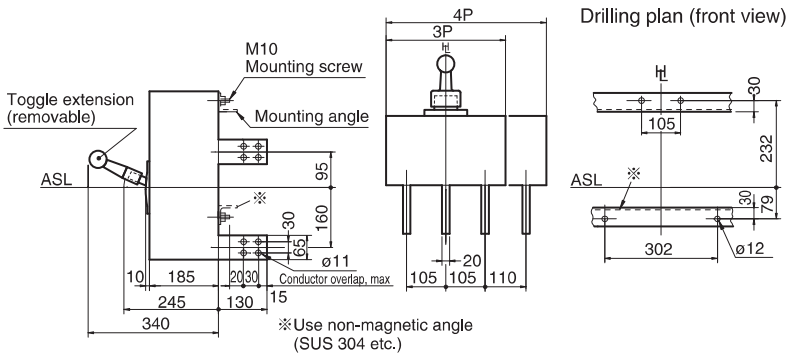
Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam or cable type	Yes
Locking Devices	Yes
Terminal Covers	No
Interpole Barriers	No
External Panel Display	No

Dimensions XS2000_NN/BE/BEG (mm)

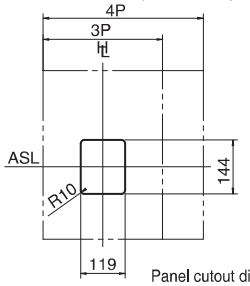
Front Connected



Rear Connected



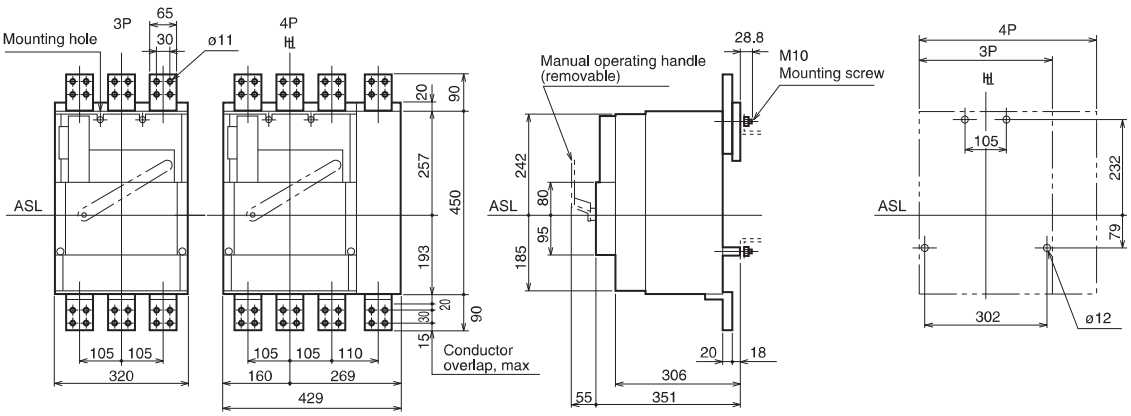
Panel cutout (front view)



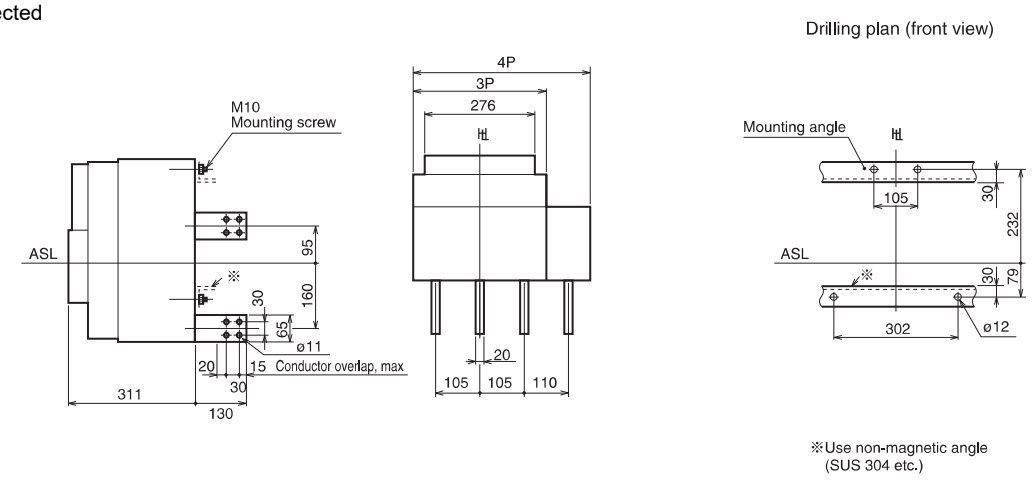
Panel cutout dimensions shown give an allowance of 2 mm around the handle escutcheon.

Dimensions XS2000_NN/BE/BEG with motor operator (mm)

Front Connected



Rear Connected

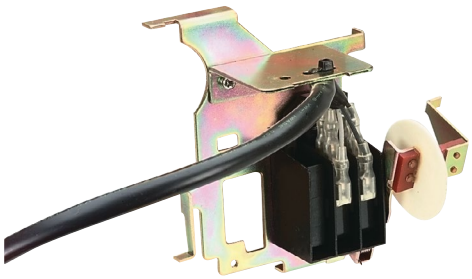


XS2000 AF Accessories

Internal Accessories

Alarm Switches

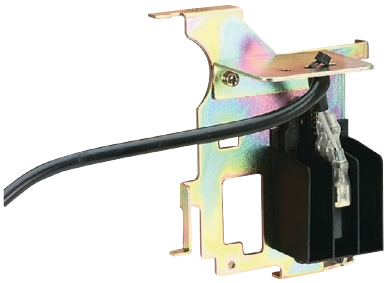
Provides an MCCB trip output contact for external circuits



Item Description	Catalogue No.
Alarm Switch Right Side XS2000/2500/3200 AF	UXLB0012C

Auxiliary Switches

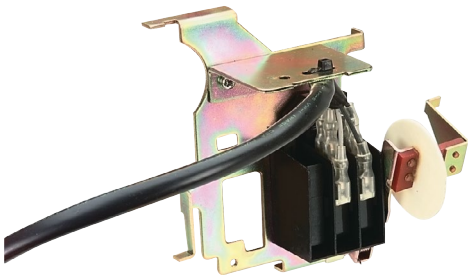
Provides an MCCB ON or OFF contact output for external circuits



Item Description	Catalogue No.
Auxiliary Switch 1C Right Side XS2000/2500/3200	UXXB0013C
Auxiliary Switch 2C Right Side XS2000/2500/3200	UXXB0014C
Auxiliary Switch 3C Right Side XS2000/2500/3200	UXXB0015C
Auxiliary Switch 4C Right Side XS2000/2500/3200	UXXB0016C
Auxiliary Switch 5C Right Side XS2000/2500/3200	UXXB0017C
Auxiliary Switch 6C Right Side XS2000/2500/3200	UXXB0018C

Auxiliary / Alarm Combination

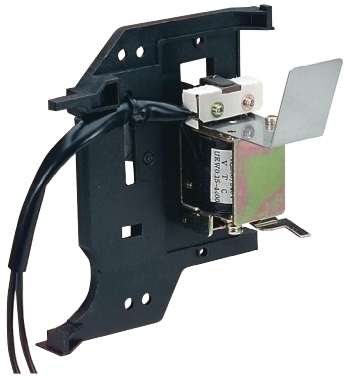
Provides an MCCB trip output contact for external circuits



Item Description	Catalogue No.
Alarm/Auxiliary Switch 1C Right Side XS2000/2500/3200 AF	UXLB0019D
Alarm/Auxiliary Switch 2C Right Side XS2000/2500/3200 AF	UXLB0020C
Alarm/Auxiliary Switch 3C Right Side XS2000/2500/3200 AF	UXLB0021C
Alarm/Auxiliary Switch 5C Right Side X20-X25	UXLB0023C

Shunt Trips

Allows an external device to trip an MCCB by energizing a shunt trip coil

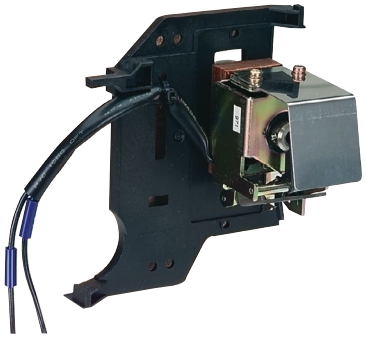


Item Description	Catalogue No.
TB1 Shunt Trip Coil 24 V AC XS2000/2500/3200 AF	2H1532BAA
Shunt Trip 48 V AC for X20-X25	2H1533BAA
TB1 Shunt Trip Coil 110 V AC / DC XS2000/2500/3200 AF	2H1526BAA
TB1 Shunt Trip Coil 240 V AC XS2000/2500/3200 AF	2H1527BAA
Shunt Trip 12 V DC for X20-X25	2H1528BAA
TB1 Shunt Trip Coil 24 V DC XS2000/2500/3200 AF	2H1529BAA
Shunt Trip 48 V DC for X20-X25	2H1530BAA
TB1 Shunt Trip Coil 200 V DC XS2000/2500/3200 AF	2H1531BAA

Undervoltage Trips

Controller Required

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB



Item Description	Catalogue No.
Undervoltage Trip Coil AC XS2000/2500/3200 AF	2H1509BAA

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Instant Undervoltage Controller 110 V AC XS3200 AF	UXUB0013B
Instant Undervoltage Controller 230-480 V AC XS3200 AF	UXUB0014B
Instant Undervoltage Controller 440 V AC XS3200 AF	UXUB0015B
Time Delay Undervoltage Controller 200-230 V DC XS3200 AF	UXUB0038B

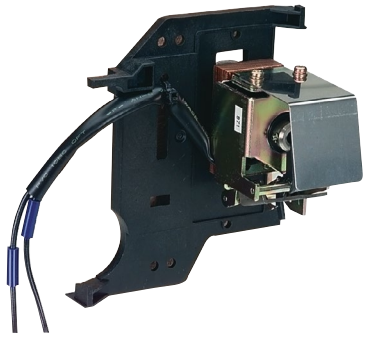
Time Delay Operation (500 ms)

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Time Delay Undervoltage Controller 110 V AC XS3200 AF	UXUB0016B
Time Delay Undervoltage Controller 230-480 V AC XS3200 AF	UXUB0017B
Time Delay Undervoltage Controller 440 V AC XS3200 AF	UXUB0018B

No Controller Required

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

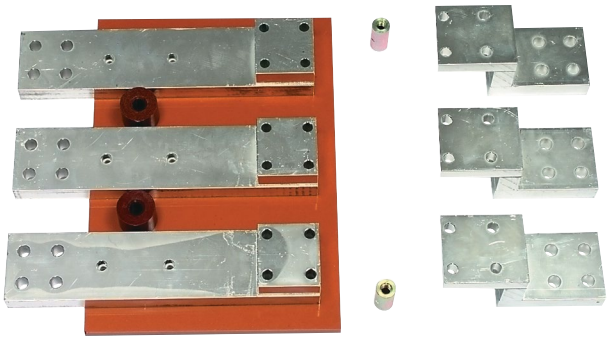


Item Description	Catalogue No.
Under Voltage Trip Coil 24 V DC XS2000/2500/3200 AF	2H1511BAA
Under Voltage Trip Coil 48 V DC XS2000/2500/3200 AF	2H1512BAA
Under Voltage Trip Coil 60 V DC XS2000/2500/3200 AF	2H1513BAA
Under Voltage Trip Coil 100/230 V DC XS2000/2500/3200 AF (Controller Required for 230 V)	2H1510BAA

Operating External Accessories

Attached Tags for Front Connect

Add-on bus bars, allow more or larger conductor connector to an MCCB



Item Description	Catalogue No.
Attached Tags for Front Connect – NHP Factory Fit - 3 Pole Front Connect Mounting Bolts	TXRD0005A
Attached Tags for Front Connect – NHP Factory Fit - 3 Pole Attached Busbars Factory Fit	TXRD0003A

Motor Operator

Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
XMB Motor Operator 110 V AC XS/2000/2500/3200 AF	UXMB0006B
XMB Motor Operator 240 V AC XS/2000/2500/3200 AF	UXMB0008B
XMB Motor Operator 110 V DC XS/2000/2500/3200 AF	UXMB0009B

Locking and Interlocking Accessories

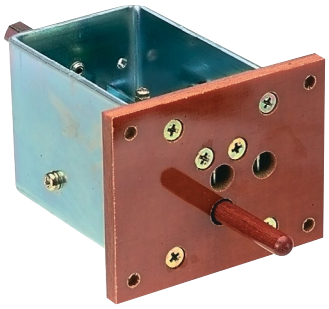
Mechanical Interlock - Rear Walking Beam

Prevents simultaneous operation of two horizontally mounted interlocked MCCBs.

Item Description	Catalogue No.
Mechanical Interlocks – NHP Factory Fit - 3 Pole Walking Beam Interlock	UXKC0012A
Mechanical Interlocks – NHP Factory Fit - 4 Pole Walking Beam Interlock	UXKC0013A

Mechanical Interlock - Cable Type

Mechanical interlock – Rear Cable type Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 M apart.



Item Description	Catalogue No.
Mechanical Interlocks – NHP Factory Fit 3 or 4 Pole Cable Interlock. 1 Required for Each MCCB	UXKC0025B

Item Description	Catalogue No.
Mechanical Interlocks 1.5 m Cable for Interlock Mechanism. 1 Required Only – Customer Fit	UXKC0020A

Door Interlocking - Direct Mount Handle

Door mount or internal mount fixed depth handle for MCCB ON OFF RESET operation

Item Description	Catalogue No.
Panel Mount Handle XS2000/2500/3200 AF	XFE10

Toggle Extension Handle

Provides an extension to the standard toggle for additional leverage on larger MCCBs

Item Description	Catalogue No.
Handle Extension XS2000/2500/3200 AF	UXHB0001B

Toggle Locks

Non-captive

Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON.

Item Description	Catalogue No.
Non Captive Padlock Attachment XS2000/2500/3200 AF	UXKB0001A

Installation External Accessories

External Neutral CT

Optional Ground Fault sensing neutral pole Current Transformer for B series GF MCCBs

Item Description	Catalogue No.
CT 4TH 630A X6	UXOY0001A
CT 4TH 800A X8	UXOY0002A
CT 4TH 1000A X12	UXOY0003A
CT 4TH 1250A X12	UXOY0004A
CT 4TH 1600A X16	UXOY0005A
TB1 Ground Fault Neutral Phase Current Transformer 2000A	UXOY0006A
TB1 Ground Fault Neutral Phase Current Transformer 2500A	UXOY0007A

OCR Sealing Cover

A device that allows a user to seal the OCR cover using a compression seal

Item Description	Catalogue No.
OCR Trip Unit Sealing Kit XS2000/2500/3200 AF	XS2000OCRSK

MCCBs

XS2500_BE /BEG

Electronic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole versions
- ✔ Rear connect terminals only
- ✔ 450 mm (H), 185 mm (D), 105 mm pole centres
- ✔ Fault rating; 85 kA I_{cu} @ 415 V AC
- ✔ LSI setting: individual adjustment for the Long time, Short time, and Instantaneous parameters
- ✔ Options include GF or PTA
- ✔ Trip unit; 2500 A

General

Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type) [1]
Trip Unit Rating	2500 A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**HL** 85 kA

Voltage

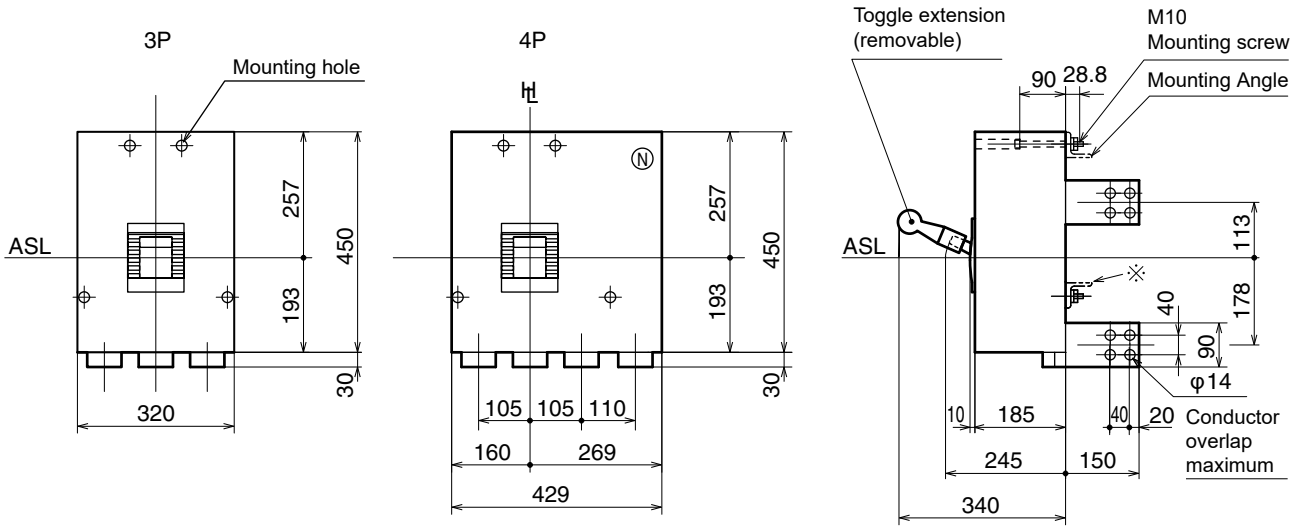
Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Rear Connection (Standard)

Notes: 1) When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Quick Reference Dimensions – Rear Connect



2500 A Frame 3 Pole 85 kA BE (LSI)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
2500	1250 - 2500	85	3	XS2500HL32500BE

2500 A Frame 4 Pole 85 kA BEG (LSIG)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
2500	1250 - 2500	85	3	XS2500HL32500BEG

2500 A Frame 4 Pole 85 kA BE (LSI)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
2500	1250 - 2500	85	4	XS2500HL42500BE

2500 A Frame 4 Pole 85 kA BEG (LSIG)

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
2500	1250 - 2500	85	4	XS2500HL42500BEG

Notes: When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Ratings

Component Type	MCCB
Selectivity Category	B
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	2500 AF
Trip Unit Rating	2500 A

I_n, Rated Current (A)	
	2500
45ºC	2500
50ºC	2250
70ºC	-

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)	
(A)	2500
(W)	119

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Rear Connection (Standard)
Terminal Type	Extension Bar With Bolt holes
Connection Torque	22.5 - 37.2 Nm

Installation Types

Suitable for Panel Mounting	No
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	No
Mounting	Suitable for angle bracket mounting

Physical

Height		450 mm
Width	**3P**	320 mm
	4P	429 mm
Depth (less toggle)		185 mm
Depth (toggle included)		245 mm
Weight	**3P**	64 kg
	4P	78.2 kg
Electrical Life		500 cycles
Mechanical Life		2500 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	HL
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	125
		380 V AC	100
		400 / 415 V AC	85
		440 V AC	85
		690 V AC	45
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	94
		380 / 400 V AC	75
		415 V AC	65
		440V AC	65
		690 V AC	42
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-
	I_{cw} (Short Time Withstand)	0.3 Seconds	42

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI (BE Type) or LSIG (BEG Type)
Rated Temperature	45 °C

Other Features

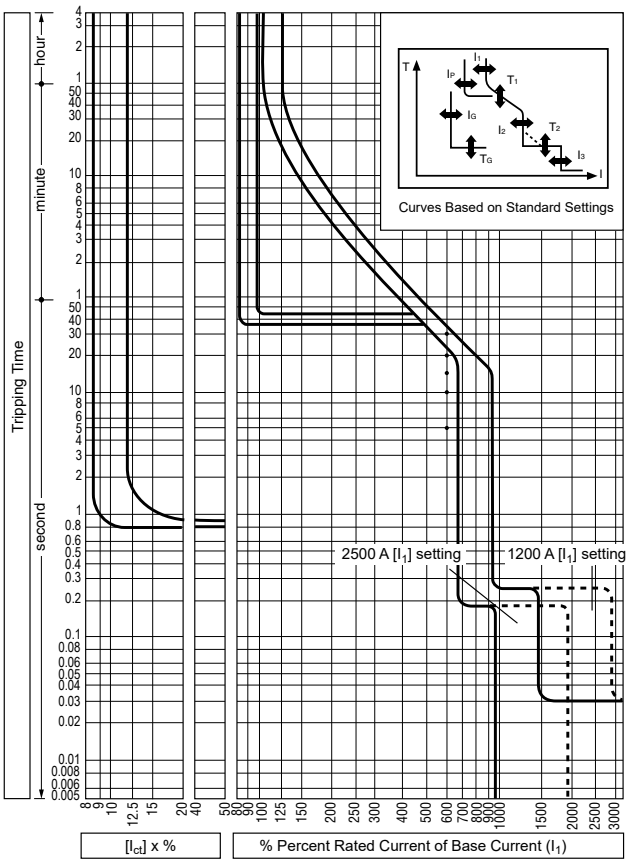
Pre-trip alarm (PTA)	Contact NHP
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam or cable type	Yes
Locking Devices	Yes
Terminal Covers	No
Interpole Barriers	No
External Panel Display	No

MCCBs

Time Current Characteristic Curve, XS2500HL, Basic Electronic



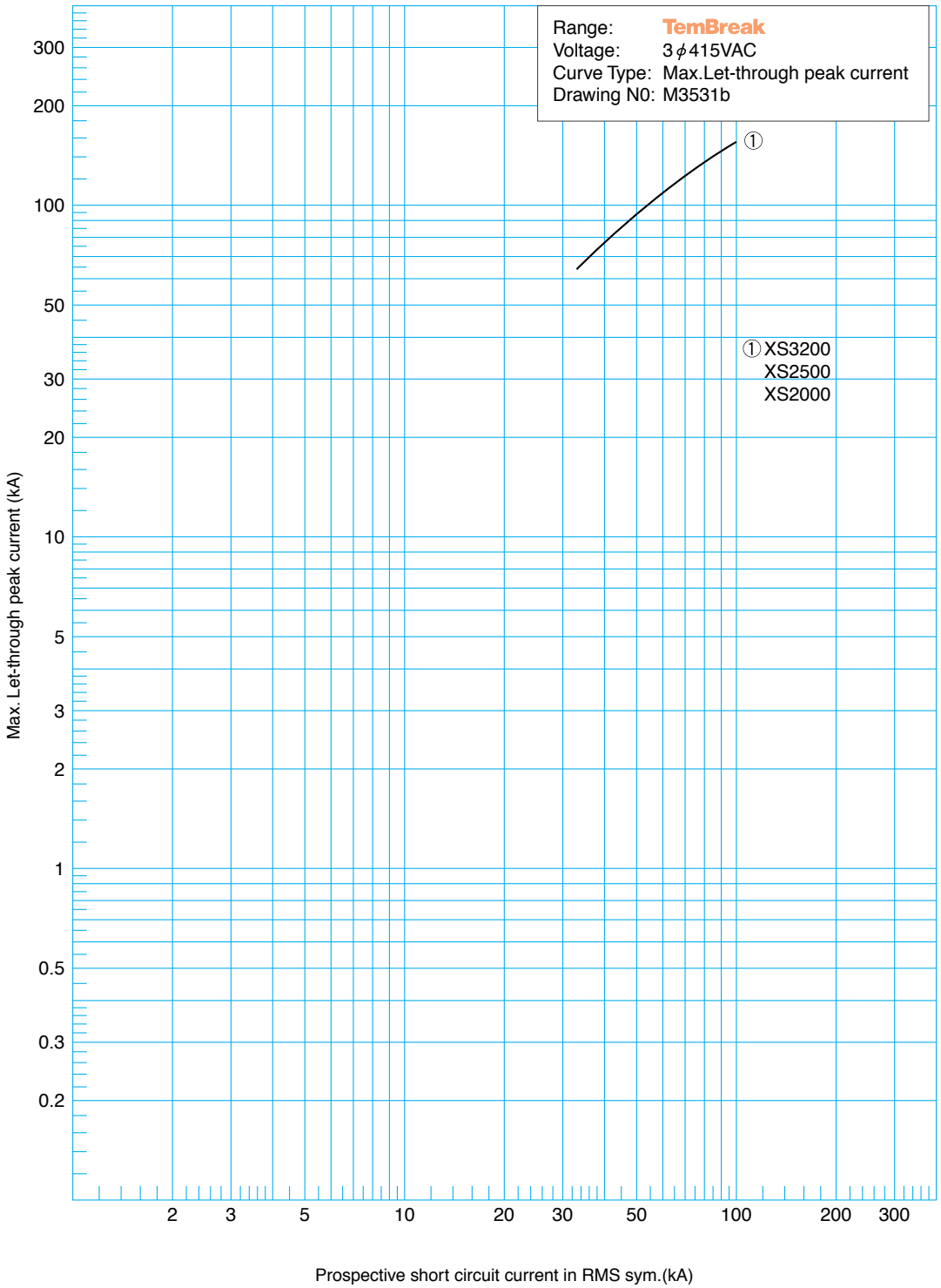
XS2500HL32500BE_dOPCH-S01

XOS Over Current Tripping Characteristics: XS2500HL

CT rated current (A) (I_n)	2500
Base current setting (A) (I_O)	(I_n) x (0.63-0.8-**1.0**)
Long time-delay pick-up current (A): (I_1)	(I_O) x (0.8 - 0.85 - 0.9 - 0.95 - **1.0**). Non-trip at (I_1) setting x 105 % and below. Trips at 125 % and above
Long time-delay time settings (S) (T_1)	(5 - 10 - 15 - **20** - 30) at (I_1) x 600 % current. Setting tolerance ± 20 %
Short time-delay pick-up current (A): (I_2)	(I_O) x (2 - 4 - 6 - 8 - **10**). Setting tolerance ± 15 %
Short time-delay time settings (S) (T_2)	Opening time (**0.1**, 0.15, 0.2, 0.25, 0.3) in the definite time-delay. Total clearing time is +50 ms and resettable time - 20 ms for the time-delay setting
Instantaneous trip pick-up current (A) (I_3)	Continuously adjustable from (Io) x (3 to 12). Setting tolerance ± 20 %
• Pre-trip alarm pick-up current (A) (I_P)	(I_1) x (0.7, 0.8, **0.9**, 1.0). Setting tolerance ±10 %
• Pre-trip alarm time setting (S) (T_P)	40 fixed definite time-delay. Setting tolerance ±10 %
• Ground fault trip pick-up current (A) (I_G)	Continuously adjustable from (I_N) x (**0.1** to 0.4). Setting tolerance ± 15 %
• Ground fault trip time setting (S) (T_G)	Opening time (0.1 - 0.2 - **0.3** - 0.4 - 0.8) in the definite time-delay. Total clearing time is +50 ms and resettable time is - 20 ms for the time-delay settings

Notes
- Optional.
- **BOLD** values represent factory default settings.

Let-Through Peak Current Curve, XS2000,2500,3200_BE Basic Electronic



MCCBs

MCCB Operating Characteristics VS400 - 800NE, XS2000 - 3200 MCCBs[1)]

XOS OCR Characteristics

MCCB Type	LTD	STD	INST	I^2T Ramp	Pick-up LED	Test Port	PTA	GFT
	Standard Feature						Ordering Option	
VS400NE [2)]	✔	✔	✔	✔	✔	✔	O	O
VS630NE [2)]	✔	✔	✔	✔	✔	✔	O	O
VS800NE [2)]	✔	✔	✔	✔	✔	✔	O	O
XS2000HL	✔	✔	✔	✔	✔	✔	O	O
XS2500HL	✔	✔	✔	✔	✔	✔	O	O
XS3200HL	✔	✔	✔	✔	✔	✔	O	-

Standard and Optional Settings and Features: XOS OCR

Setting Type		Application	Standard or Optional Settings for VS400 – 800 and XS2000-3200 MCCBs
LTD	Long Time Delay	Overload protection, True RMS	Standard
STD	Short Time Delay	Short circuit protection and selectivity	Standard
INST	Instantaneous	Short circuit protection, fast acting	Standard
I2t Ramp	-	Provides easier grading with downstream fuses	Standard
Pick-up LED	-	Illuminates on LTD overload, flashes on PTA pick-up	Standard
Test Port	-	Facility for TNS-2 OCR checker for calibration checking	Standard
PTA	Pre-Trip Alarm	Useful for load shedding applications	Option
GFT	Ground Fault Trip	Protection against ground faults	Option, not available for XS3200

Access to Setting Dials

To adjust the settings on the electronic TemBreak MCCB, the protective cover seal on the front of the breaker must be broken, and the cover fixing screws removed. To adjust the individual trip settings, turn the setting dials or the base current DIP switches with a flat bladed screwdriver.

Align any setting required between the black dots marked on the dial.

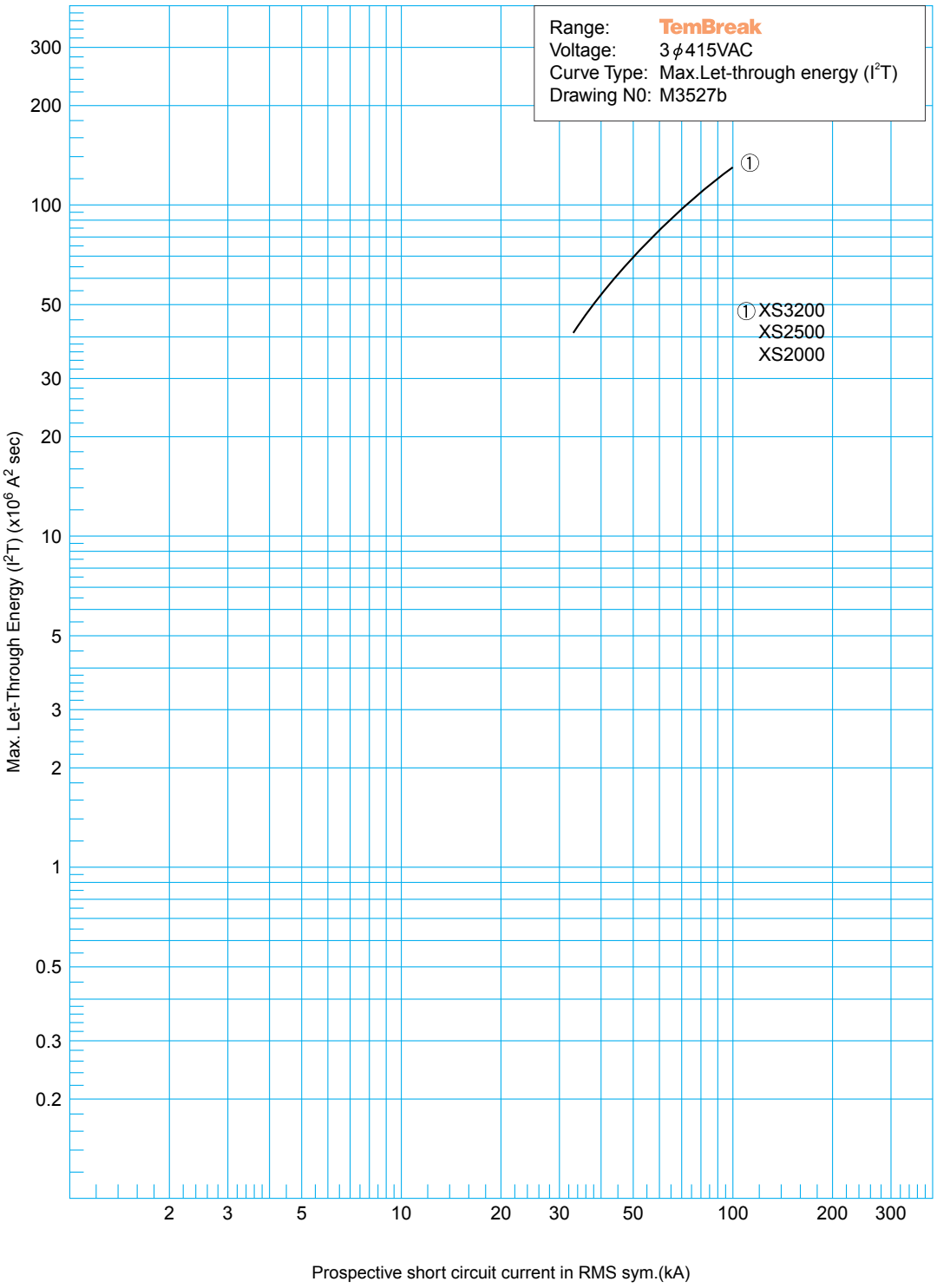
Dial settings are in increments. Replacement sealing stickers are provided in a cavity under the MCCB OCR cover. Refer diagrams on following pages for further details.

VS400NE_dOPCH-S02

Left
3200 AF Electronic MCCB.

Notes
1) VS400-800 and XS2000-3200 are TemBreak 1 based MCCBs.
2) VS MCCB types are 1000 / 1100 V AC rated Mining MCCBs.

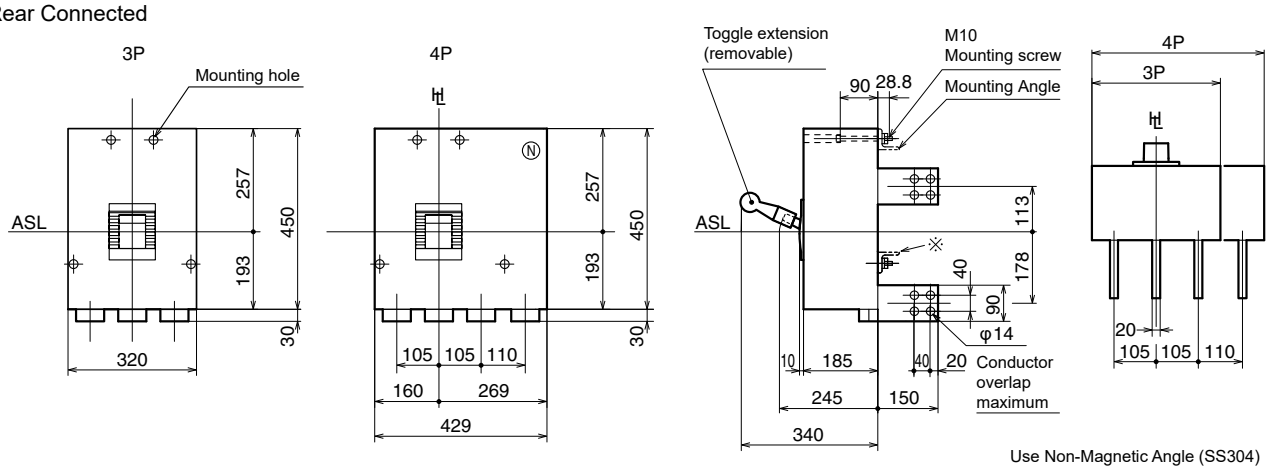
Let-Through Energy I²t Curve, XS2000,2500,3200_BE, Basic Electronic



MCCBs

Dimensions XS2500,XS3200_NN/BE/BEG (mm)

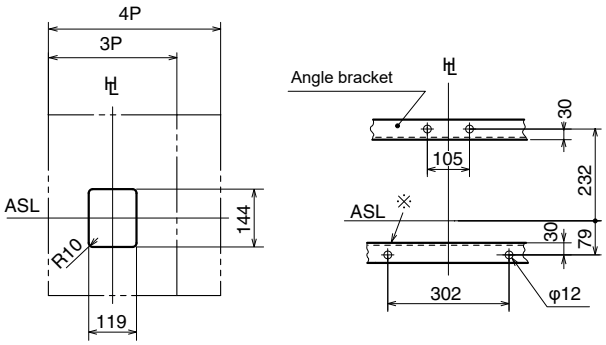
Rear Connected



Use Non-Magnetic Angle (SS304)

Panel Cutout (Front View)

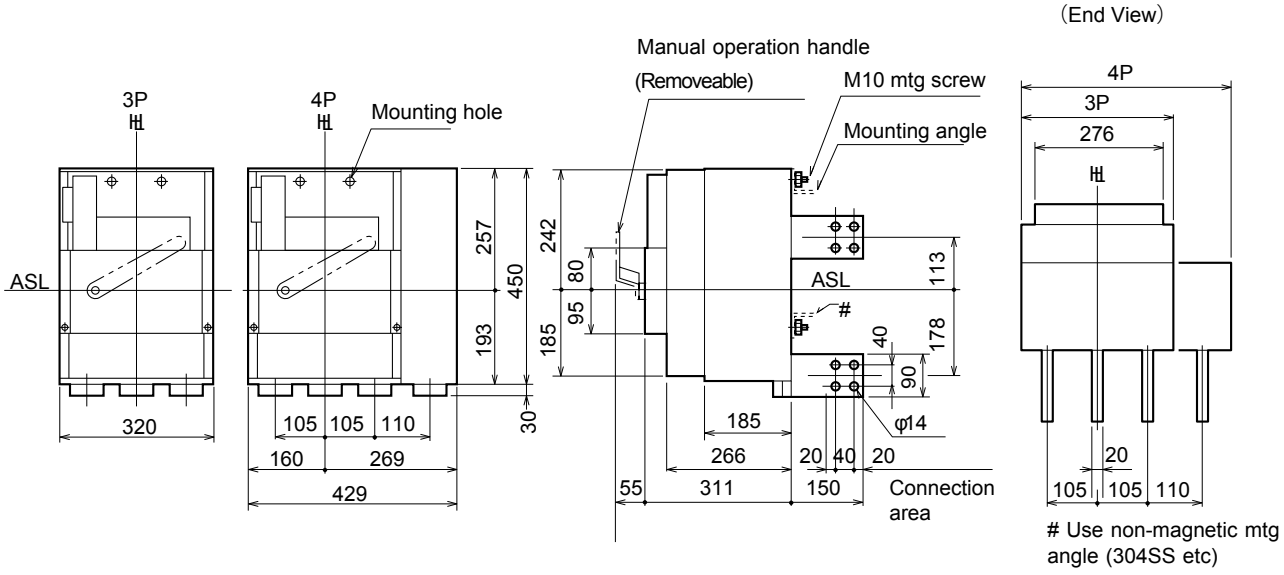
Drilling Plan



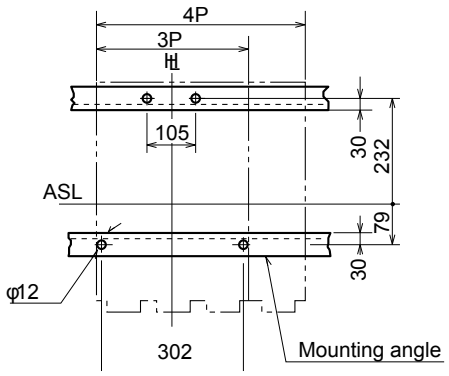
Panel cutout dimensions shown, give an allowance of 2 mm around the handle excutcheon

Use Non-Magnetic Angle (SS304)

Dimensions XS2500,XS3200_NN/BE/BEG with motor operator (mm)



Mounting dimensions (front view)



XS2500_NN

Non-Auto Switch Disconnector

- ✔ Non-Auto switch disconnector for power distribution
- ✔ AC23 and DC22 ratings for motor starting use
- ✔ No overcurrent protection (isolator only)
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-3, IEC 60947-3 and CE
- ✔ Panel mount standard, other connection options
- ✔ Wide range of accessories for application flexibility, including OFF padlock device
- ✔ Accepts standard MCCB internal and external accessories
- ✔ 3 or 4 pole versions
- ✔ Rear connect terminals only
- ✔ 450 mm (H), 185 mm (D), 105 mm pole centres
- ✔ I_{cw} = 35 kA for 0.3 sec: Rated short time withstand rating
- ✔ I_{cm} = 90 kA: Rated short circuit making capacity

CE DEKRA On the safe side.

General

Switch Type	Non Auto Switch Disconnector
Number of Poles	3 or 4
Switching Poles	3P or 3P + N

Ratings

Nominal Current	2500 A @50°C
Motor Starting	AC23 motor starting DC22 motor starting
Icw Rated	Short time withstand
Icm Rated	Ampere making capacity

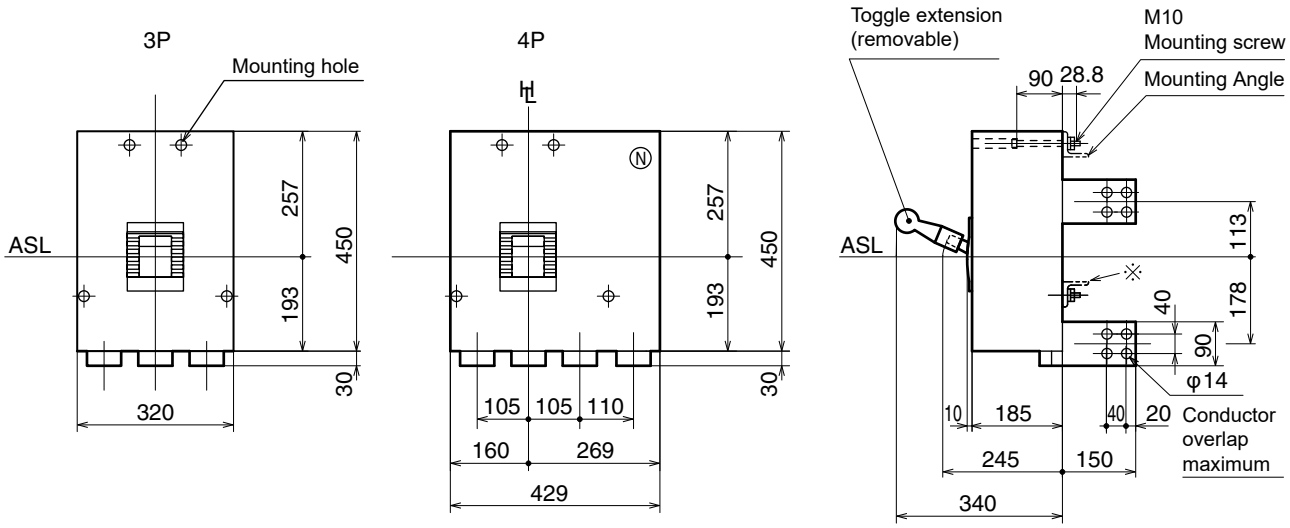
Voltage

Utilisation Voltages	24 V AC to 690 V AC, 250 V DC
Rated Frequency	50 / 60 Hz

Accessories and Connections

Options	Rear connection (standard) Terminal connection options Accepts standard MCCB accessories

Quick Reference Dimensions – Rear Connect



2500 A Frame 3 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Catalogue No.
2500	3	XS2500D32500NN

2500 A Frame 4 Pole NN (Non-auto)

I_n (A @ 50 °C)	Poles	Catalogue No.
2500	4	XS2500D42500NN

Ratings

Component Type	Non Auto Switch Disconnector
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	3200 AF
I_n, Rated Current	
A @ 30 °C	2500
A @ 45 °C	2500
A @ 50 °C	2500
U_e Rated operational voltage AC maximum	690 V AC
U_e Rated operational voltage DC maximum	250 DC
U_i, Rated Insulation Voltage	800 V (rms)
Motor Starting Utilisation Category	AC 23, DC 22
U_{imp}, Impulse Withstand Voltage	8 kV
Icw, Rated Short Circuit Withstand Current 400/690V	35 kA / 0.3 Sec
Rated Frequency	50 / 60 Hz
Pollution Degree	3
AC Power loss per pole at full rated current	119 W @ 2500 A
Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-3 AS/NZS 60947-3
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 %RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Rear Connection (Standard)
Terminal Type	Extension Bar With Bolt holes
Connection Torque	22.5 - 37.2 Nm

Installation Types

Suitable for Panel Mounting	No
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	No
Mounting	Suitable for angle bracket mounting

Physical

Height		450 mm
Width	**3P**	320 mm
	4P	429 mm
Depth (less toggle)		185 mm
Depth (toggle included)		245 mm
Weight	**3P**	60 kg
	4P	64.8 kg
Electrical Life		500 cycles
Mechanical Life		2500 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	D
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cm} (Short Circuit Making Capacity)	690 V AC	90
	I_{cw} (Short Time Withstand)	0.3 Seconds	35

Trip Unit

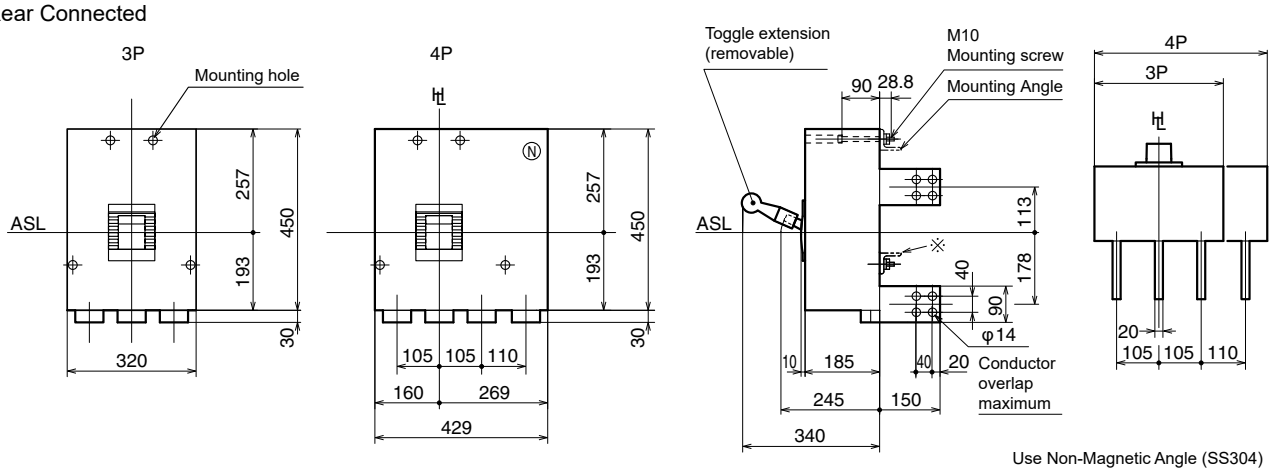
Over Current Protection Function	No
Trip Unit Protection Type	Non-auto Switch Disconnector
Rated Temperature	50 °C

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam or cable type	Yes
Locking Devices	Yes
Terminal Covers	No
Interpole Barriers	No
External Panel Display	No

Dimensions XS2500,XS3200_NN/BE/BEG (mm)

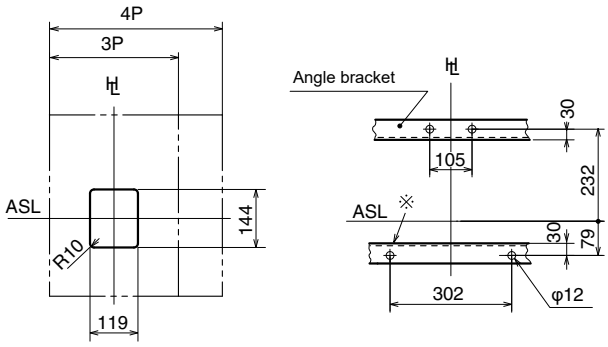
Rear Connected



Use Non-Magnetic Angle (SS304)

Panel Cutout (Front View)

Drilling Plan

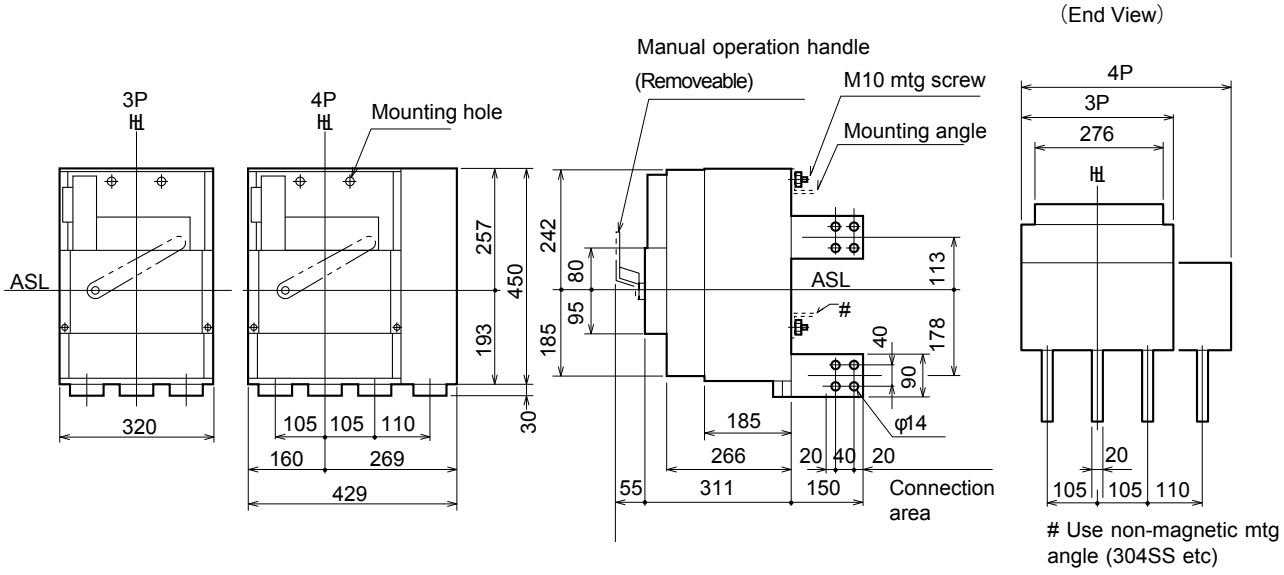


Panel cutout dimensions shown, give an allowance of 2 mm around the handle excutcheon

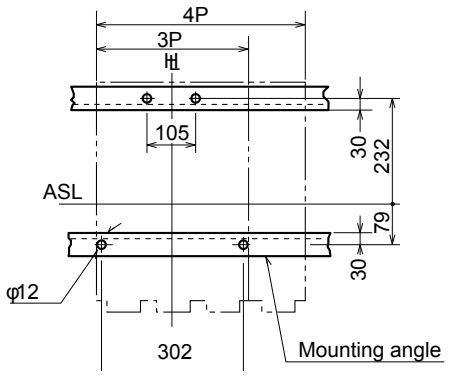
Use Non-Magnetic Angle (SS304)

MCCBs

Dimensions XS2500,XS3200_NN/BE/BEG with motor operator (mm)



Mounting dimensions (front view)

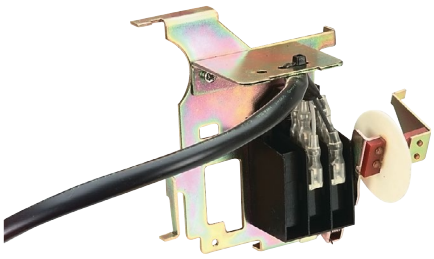


XS2500 AF Accessories

Internal Accessories

Alarm Switches

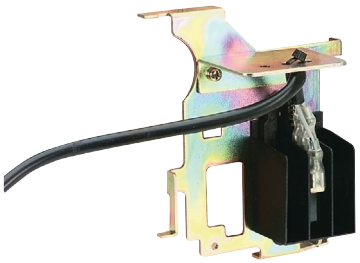
Provides an MCCB trip output contact for external circuits



Item Description	Catalogue No.
Alarm Switch Right Side XS2000/2500/3200 AF	UXLB0012C

Auxiliary Switches

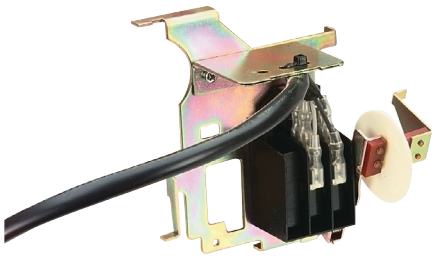
Provides an MCCB ON or OFF contact output for external circuits



Item Description	Catalogue No.
Auxiliary Switch 1C Right Side XS2000/2500/3200	UXXB0013C
Auxiliary Switch 2C Right Side XS2000/2500/3200	UXXB0014C
Auxiliary Switch 3C Right Side XS2000/2500/3200	UXXB0015C
Auxiliary Switch 4C Right Side XS2000/2500/3200	UXXB0016C
Auxiliary Switch 5C Right Side XS2000/2500/3200	UXXB0017C
Auxiliary Switch 6C Right Side XS2000/2500/3200	UXXB0018C

Auxiliary / Alarm Combination

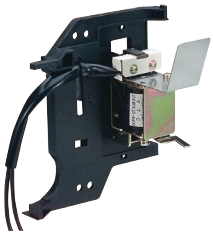
Provides an MCCB trip output contact for external circuits



Item Description	Catalogue No.
Alarm/Auxiliary Switch 1C Right Side XS2000/2500/3200 AF	UXLB0019D
Alarm/Auxiliary Switch 2C Right Side XS2000/2500/3200 AF	UXLB0020C
Alarm/Auxiliary Switch 3C Right Side XS2000/2500/3200 AF	UXLB0021C

Shunt Trips

Allows an external device to trip an MCCB by energizing a shunt trip coil

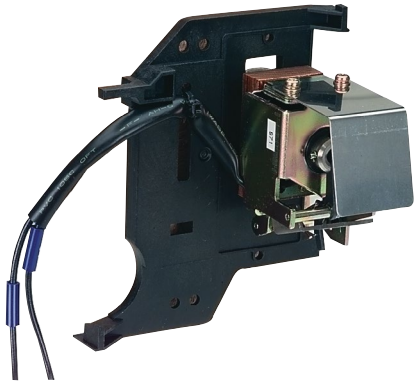


Item Description	Catalogue No.
TB1 Shunt Trip Coil 24 V AC XS2000/2500/3200 AF	2H1532BAA
Shunt Trip 48 V AC for X20-X25	2H1533BAA
TB1 Shunt Trip Coil 110 V AC/DC XS2000/2500/3200 AF	2H1526BAA
TB1 Shunt Trip Coil 240 V AC XS2000/2500/3200 AF	2H1527BAA
Shunt Trip 12 V DC for X20-X25	2H1528BAA
TB1 Shunt Trip Coil 24 V DC XS2000/2500/3200 AF	2H1529BAA
Shunt Trip 48 V DC for X20-X25	2H1530BAA
TB1 Shunt Trip Coil 200 V DC XS2000/2500/3200 AF	2H1531BAA

Undervoltage Trips

Controller Required

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB



Item Description	Catalogue No.
Undervoltage Trip Coil AC XS2000/2500/3200 AF	2H1509BAA

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Instant Undervoltage Controller 110 V AC XS3200 AF	UXUB0013B
Instant Undervoltage Controller 230-480 V AC XS3200 AF	UXUB0014B
Instant Undervoltage Controller 440 V AC XS3200 AF	UXUB0015B
Time Delay Undervoltage Controller 200-230 V DC XS3200 AF	UXUB0038B

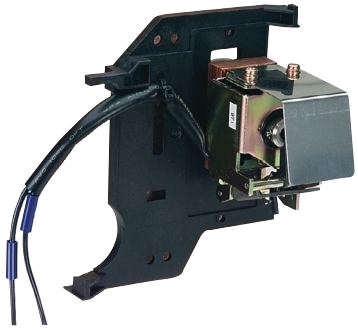
Time Delay Operation (500 ms)

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Time Delay Undervoltage Controller 110 V AC XS3200 AF	UXUB0016B
Time Delay Undervoltage Controller 230-480 V AC XS3200 AF	UXUB0017B
Time Delay Undervoltage Controller 440 V AC XS3200 AF	UXUB0018B

No Controller Required

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB



Item Description	Catalogue No.
Under Voltage Trip Coil 24 V DC XS2000/2500/3200 AF	2H1511BAA
Under Voltage Trip Coil 48 V DC XS2000/2500/3200 AF	2H1512BAA
Under Voltage Trip Coil 60 V DC XS2000/2500/3200 AF	2H1513BAA
Under Voltage Trip Coil 100/230 V DC XS2000/2500/3200 AF (Controller Required for 230 V)	2H1510BAA

Locking and Interlocking Accessories

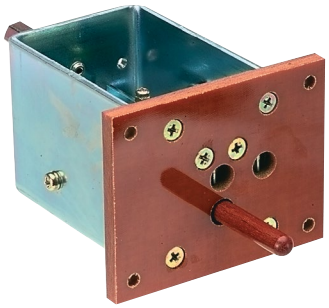
Mechanical Interlock - Rear Walking Beam

Prevents simultaneous operation of two horizontally mounted interlocked MCCBs.

Item Description	Catalogue No.
Mechanical Interlocks – NHP Factory Fit - 3 Pole Walking Beam Interlock	UXKC0012A
Mechanical Interlocks – NHP Factory Fit - 4 Pole Walking Beam Interlock	UXKC0013A

Mechanical Interlock - Cable Type

Mechanical interlock – Rear Cable type Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 M apart.



Item Description	Catalogue No.
Mechanical Interlocks – NHP Factory Fit 3 or 4 Pole Cable Interlock. 1 Required for Each MCCB	UXKC0025B

Item Description	Catalogue No.
Mechanical Interlocks 1.5 m Cable for Interlock Mechanism. 1 Required Only – Customer Fit	UXKC0020A

Toggle Locks

Non-captive

Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON.

Item Description	Catalogue No.
Non Captive Padlock Attachment XS2000/2500/3200 AF	UXKB0001A

Operating External Accessories

Motor Operator

Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
XMB Motor Operator 110 V AC XS/2000/2500/3200 AF	UXMB0006B
XMB Motor Operator 240 V AC XS/2000/2500/3200 AF	UXMB0008B
XMB Motor Operator 110 V DC XS/2000/2500/3200 AF	UXMB0009B

Installation External Accessories

External Neutral CT

Optional Ground Fault sensing neutral pole Current Transformer for B series GF MCCBs

Item Description	Catalogue No.
CT 4TH 630A X6	UXOY0001A
CT 4TH 800A X8	UXOY0002A
CT 4TH 1000A X12	UXOY0003A
CT 4TH 1250A X12	UXOY0004A
CT 4TH 1600A X16	UXOY0005A
TB1 Ground Fault Neutral Phase Current Transformer 2000 A	UXOY0006A
TB1 Ground Fault Neutral Phase Current Transformer 2500 A	UXOY0007A

OCR Sealing Cover

A device that allows a user to seal the OCR cover using a compression seal

Item Description	Catalogue No.
OCR Trip Unit Sealing Kit XS2000/2500/3200 AF	XS2000OCRSK

MCCBs

XS3200_BE

Electronic MCCB

- ✔ General purpose power distribution, motor starting
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 pole only
- ✔ Rear connect terminals only
- ✔ 450 mm (H), 185 mm (D), 105 mm pole centres
- ✔ Fault rating; 85 kA I_{cu} @ 415 V AC
- ✔ LSI setting: individual adjustment for the Long time, Short time, and Instantaneous parameters
- ✔ Options include PTA, contact NHP
- ✔ Trip unit; 3200 A

General

Trip Unit Protection Type	Electronic LSI (BE Type)
Trip Unit Rating	3200 A
Number of Poles	3
Switching Poles	3P

Short Circuit

Short-Circuit Capacity (Ultimate) @ 415 V AC	**HL** 85 kA

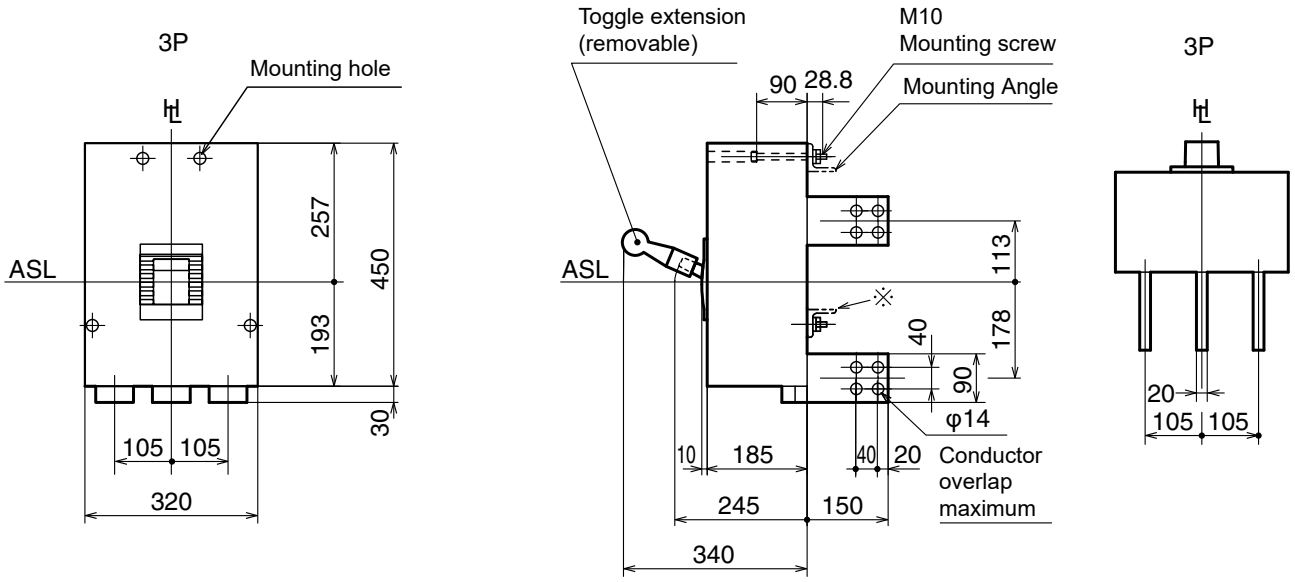
Voltage

Utilisation Voltages	24 V AC to 690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Rear Connection (Standard)

Quick Reference Dimensions – Rear Connect



3200 A Frame 3 Pole 85 kA BE (LSI)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
3200	1600 - 3200	85	3	XS3200HL33200BE

Ratings

Component Type	MCCB
Selectivity Category	B
Number of Poles	3
Switching Poles	3P
Frame Size	3200 AF
Trip Unit Rating	3200 A

I_n, Rated Current	
A @ 30 °C	3200
A @ 45 °C	3200
A @ 50 °C	2720

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)	
(A)	3200
(W)	195

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Rear Connection (Standard)
Terminal Type	Extension Bar With Bolt holes
Connection Torque	22.5 - 37.2 Nm

Installation Types

Suitable for Panel Mounting	No
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	No
Mounting	Suitable for angle bracket mounting

Physical

Height		450 mm
Width	**3P**	320 mm
Depth (less toggle)		185 mm
Depth (toggle included)		245 mm
Weight	**3P**	65 kg
Electrical Life		500 cycles
Mechanical Life		2500 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**HL**
Based On AS/NZS 60947.2 and IEC 60947-2	Icu (Ultimate Breaking Capacity)	220 / 240 V AC	125
		380 V AC	100
		400 / 415 V AC	100/65
		440 V AC	85
		690 V AC	45
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-
	Ics (Service Breaking Capcity)	220 / 240 V AC	94
		380 / 400 V AC	75
		415 V AC	65
		440V AC	65
		690 V AC	42
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-
	Icw (Short Time Withstand)	0.3 Seconds	42
		0.5 Seconds	38

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI (BE Type)
Rated Temperature	50 °C

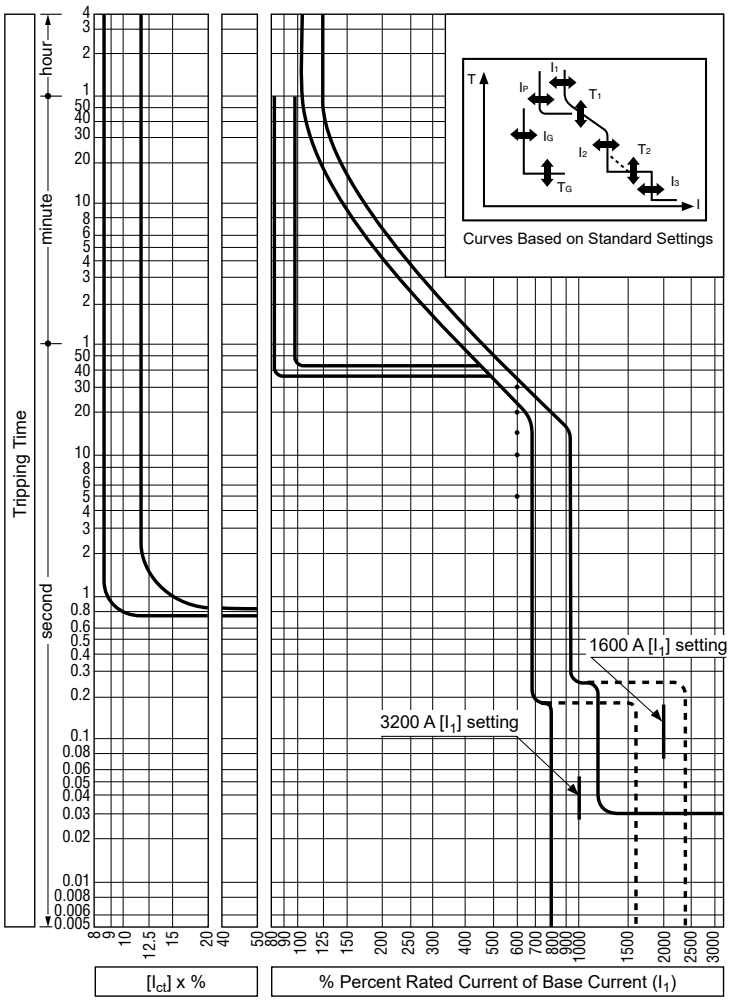
Other Features

Pre-trip alarm (PTA)	Option, contact NHP
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam or cable type	Yes
Locking Devices	Yes
Terminal Covers	No
Interpole Barriers	No
External Panel Display	No

XOS Over Current Tripping Characteristics: XS2500HL, XS3200HL



XS3200HL33200BE_dOPCH-S01

XOS Over Current Tripping Characteristics: XS3200HL

CT rated current (A) (I_n)	3200
Base current setting (A) (I_O)	(I_n) x (0.63-0.8-**1.0**)
Long time-delay pick-up current (A): (I_1)	(I_O) x (0.8-0.85-0.9-0.95-**1.0**). Non-trip at (I_1) setting x 105 % and below. Trips at 125 % and above.
Long time-delay time settings (S) (T_1)	(5-10-15-**20**-30) at (I_1) x 600 % current. Setting tolerance ± 20 %
Short time-delay pick-up current (A): (I_2)	(I_O) x (2-4-6-8-**10**). Setting tolerance ± 15 %
Short time-delay time settings (S) (T_2)	Opening time (**0.1**, 0.15, 0.2, 0.25, 0.3) in the definite time-delay. Total clearing time is +50 ms and resettable time - 20 ms for the time-delay setting
Instantaneous trip pick-up current (A) (I_3)	Continuously adjustable from (I_O) x (3 to 12). Setting tolerance ± 20 %
• Pre-trip alarm pick-up current (A) (I_P)	(I_1) x (0.7, 0.8, **0.9**, 1.0). Setting tolerance ±10 %
• Pre-trip alarm time setting (S) (T_P)	40 fixed definite time-delay. Setting tolerance ±10 %
• Ground fault trip pick-up current (A) (I_G)	Continuously adjustable from (I_N) x (0.1 to 0.4). Setting tolerance ± 15 %
• Ground fault trip time setting (S) (T_G)	Opening time (0.1-0.2-0.3-0.4-0.8) in the definite time-delay. Total clearing time is +50 ms and resettable time is - 20 ms for the time-delay settings

Notes
- Optional.
- **BOLD** values represent factory default settings.

MCCB Operating Characteristics VS400 - 800NE, XS2000 - 3200 MCCBs[1)]

XOS OCR Characteristics

MCCB Type	LTD	STD	INST	I^2T Ramp	Pick-up LED	Test Port	PTA	GFT
	Standard Feature						Ordering Option	
VS400NE [2)]	✔	✔	✔	✔	✔	✔	O	O
VS630NE [2)]	✔	✔	✔	✔	✔	✔	O	O
VS800NE [2)]	✔	✔	✔	✔	✔	✔	O	O
XS2000HL	✔	✔	✔	✔	✔	✔	O	O
XS2500HL	✔	✔	✔	✔	✔	✔	O	O
XS3200HL	✔	✔	✔	✔	✔	✔	O	-

Standard and Optional Settings and Features: XOS OCR

Setting Type		Application	Standard or Optional Settings for VS400 – 800 and XS2000-3200 MCCBs
LTD	Long Time Delay	Overload protection, True RMS	Standard
STD	Short Time Delay	Short circuit protection and selectivity	Standard
INST	Instantaneous	Short circuit protection, fast acting	Standard
I2t Ramp	-	Provides easier grading with downstream fuses	Standard
Pick-up LED	-	Illuminates on LTD overload, flashes on PTA pick-up	Standard
Test Port	-	Facility for TNS-2 OCR checker for calibration checking	Standard
PTA	Pre-Trip Alarm	Useful for load shedding applications	Option
GFT	Ground Fault Trip	Protection against ground faults	Option, not available for XS3200

Access to Setting Dials

To adjust the settings on the electronic TemBreak MCCB, the protective cover seal on the front of the breaker must be broken, and the cover fixing screws removed. To adjust the individual trip settings, turn the setting dials or the base current DIP switches with a flat bladed screwdriver.

Align any setting required between the black dots marked on the dial.

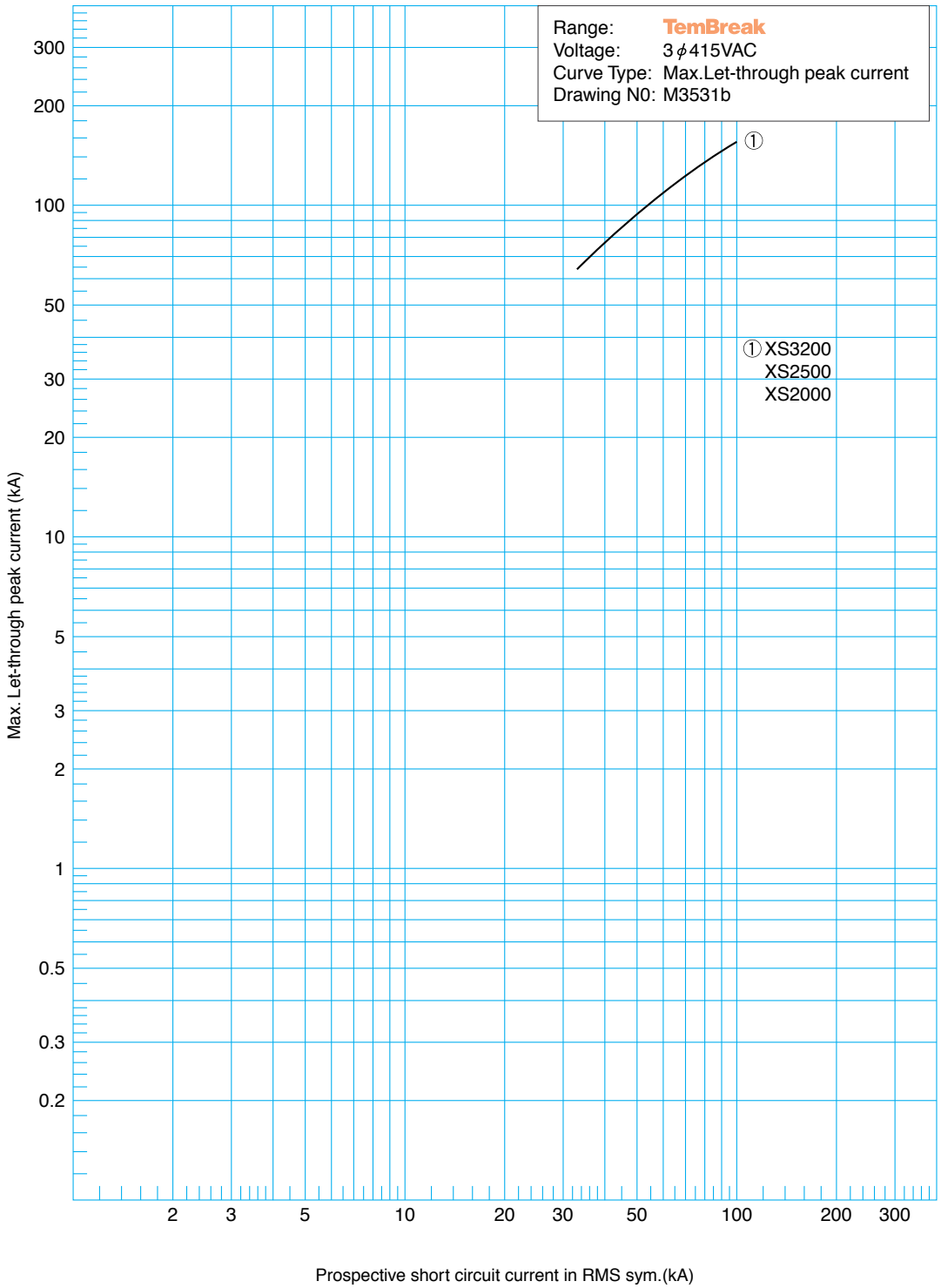
Dial settings are in increments. Replacement sealing stickers are provided in a cavity under the MCCB OCR cover. Refer diagrams on following pages for further details.

VS400NE_dOPCH-S02

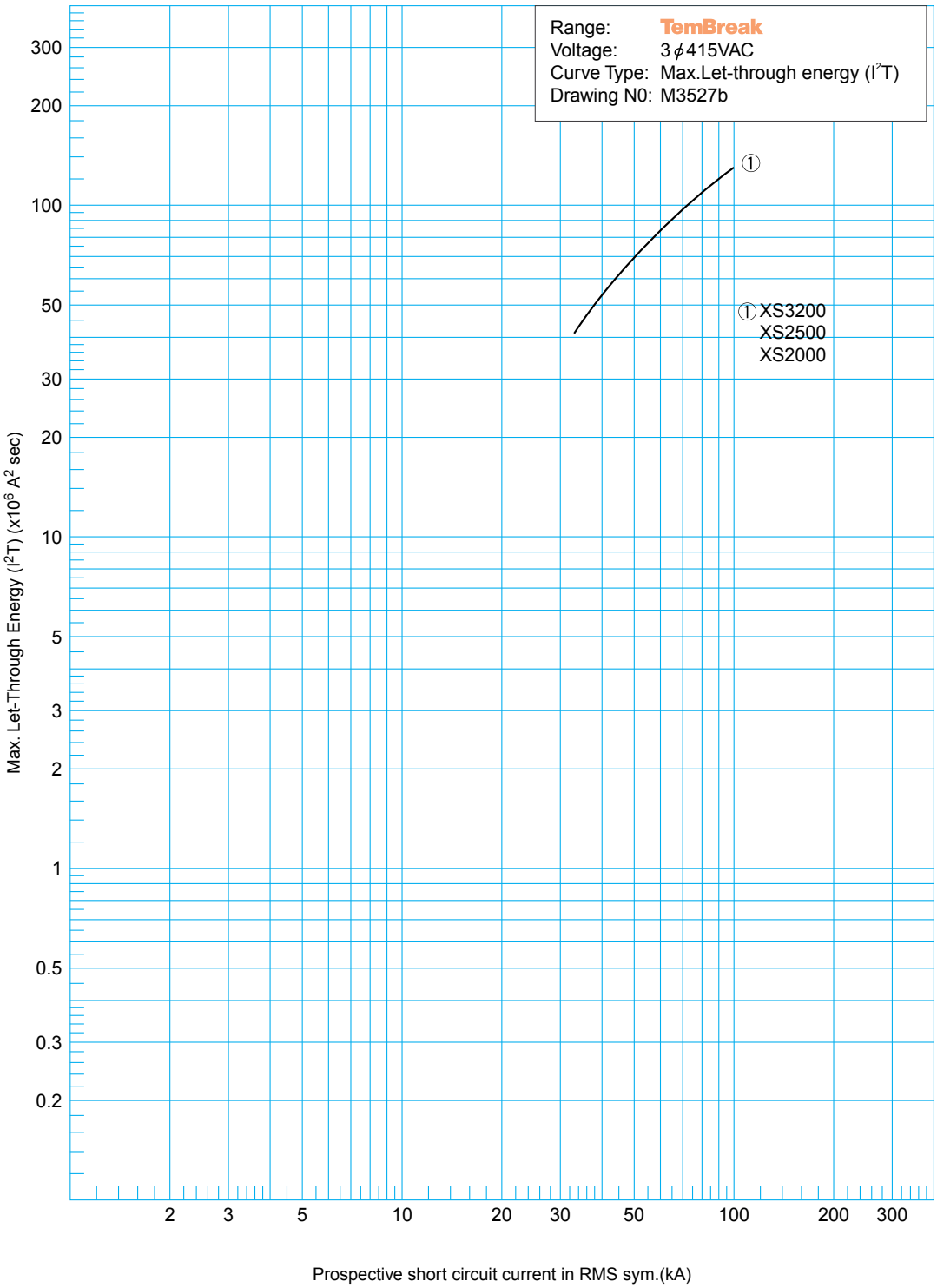
Left
3200 AF Electronic MCCB.

Notes
1) VS400-800 and XS2000-3200 are TemBreak 1 based MCCBs.
2) VS MCCB types are 1000 / 1100 V AC rated Mining MCCBs.

Let-Through Peak Current Curve, XS2000,2500,3200_BE Basic Electronic

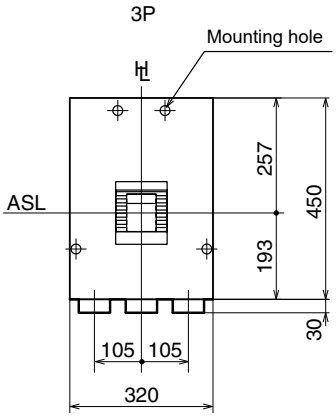


Let-Through Energy I²t Curve, XS2000, 2500,3200_BE, Basic Electronic

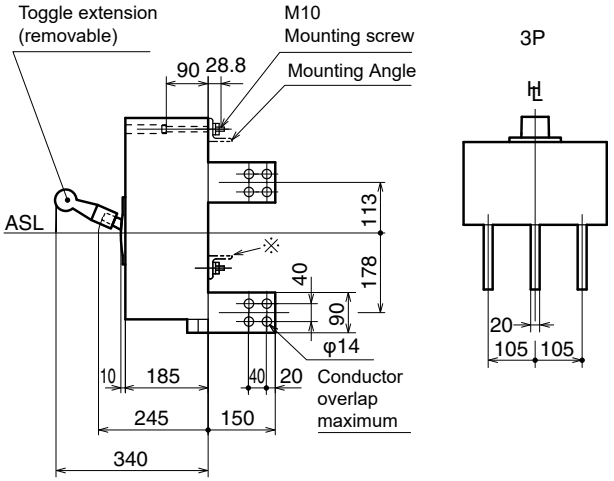


Dimensions XS2500, XS3200_NN/BE/BEG (mm)

Rear Connected

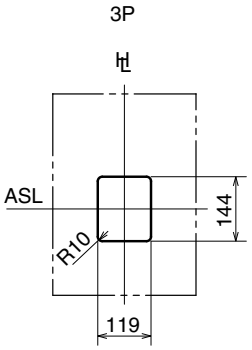


Panel Cutout (Front View)

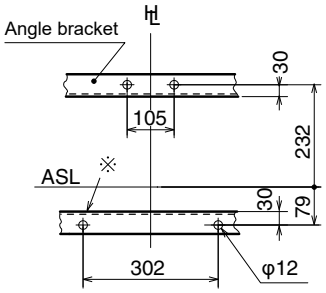


Use Non-Magnetic Angle (SS304 etc.)

Drilling Plan (front view)

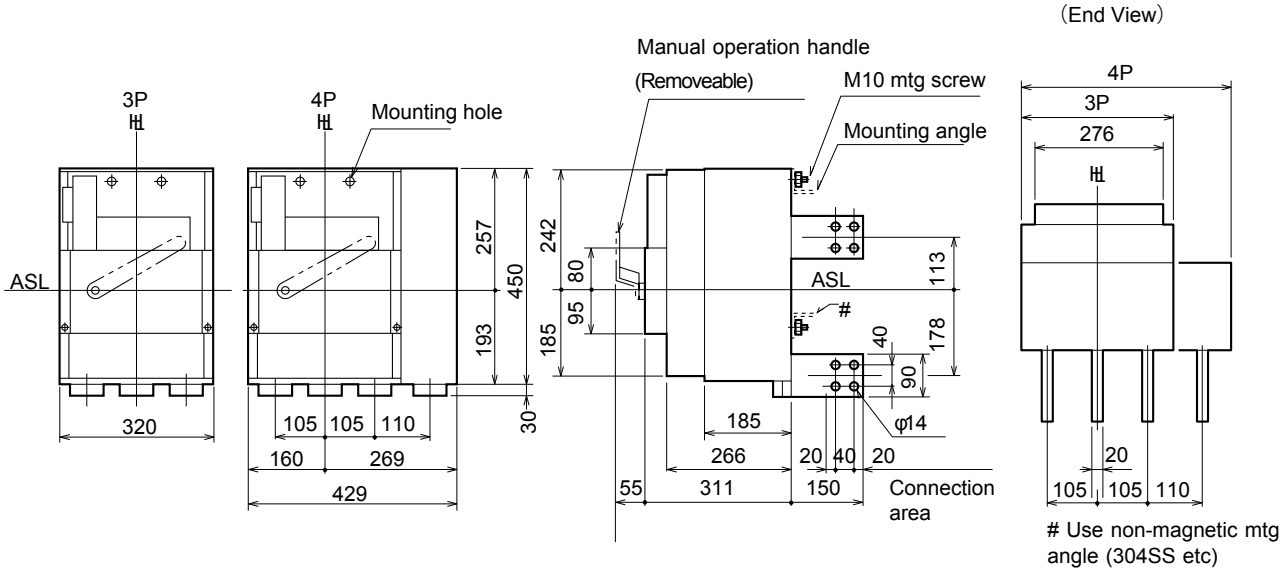


Panel cutout dimensions give an allowance of 2 mm around the handle excutcheon

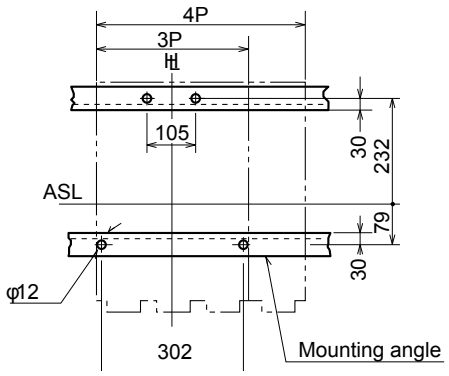


Use Non-Magnetic Angle (SS304)

Dimensions XS2500 – XS3200_NN/BE/BEG with motor operator (mm)



Mounting dimensions (front view)

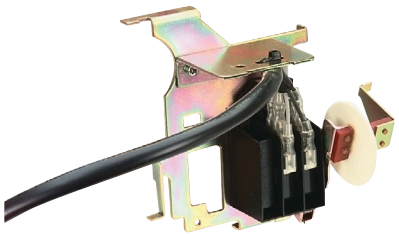


XS3200 AF Accessories

Internal Accessories

Alarm Switches

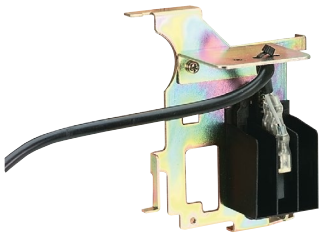
Provides an MCCB trip output contact for external circuits



Item Description	Catalogue No.
Alarm Switch Right Side XS2000/2500/3200 AF	UXLB0012C

Auxiliary Switches

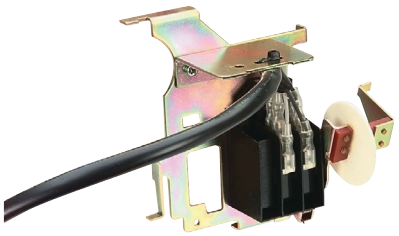
Provides an MCCB ON or OFF contact output for external circuits



Item Description	Catalogue No.
Auxiliary Switch 1C Right Side XS2000/2500/3200	UXXB0013C
Auxiliary Switch 2C Right Side XS2000/2500/3200	UXXB0014C
Auxiliary Switch 3C Right Side XS2000/2500/3200	UXXB0015C
Auxiliary Switch 4C Right Side XS2000/2500/3200	UXXB0016C
Auxiliary Switch vv vvvvv Right Side XS2000/2500/3200	UXXB0017C
Auxiliary Switch 6C Right Side XS2000/2500/3200	UXXB0018C

Auxiliary / Alarm Combination

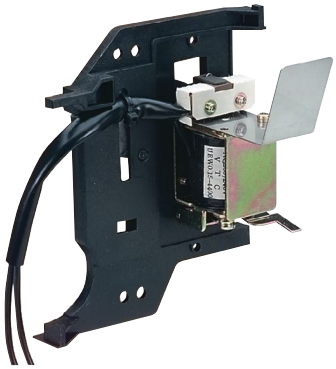
Provides an MCCB trip output contact for external circuits



Item Description	Catalogue No.
Alarm/Auxiliary Switch 1C Right Side XS2000/2500/3200 AF	UXLB0019D
Alarm/Auxiliary Switch 2C Right Side XS2000/2500/3200 AF	UXLB0020C
Alarm/Auxiliary Switch 3C Right Side XS2000/2500/3200 AF	UXLB0021C

Shunt Trips

Allows an external device to trip an MCCB by energizing a shunt trip coil

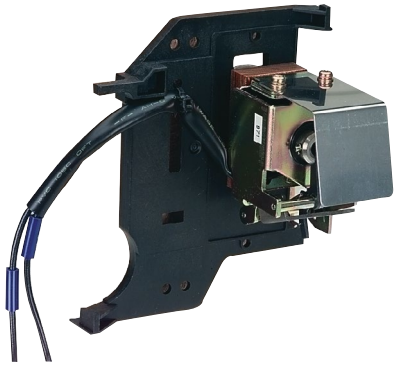


Item Description	Catalogue No.
TB1 Shunt Trip Coil 24 V AC XS2000/2500/3200 AF	2H1532BAA
Shunt Trip 48 V AC for X20-X25	2H1533BAA
TB1 Shunt Trip Coil 110 V AC/DC XS2000/2500/3200 AF	2H1526BAA
TB1 Shunt Trip Coil 240 V AC XS2000/2500/3200 AF	2H1527BAA
Shunt Trip 12 V DC for X20-X25	2H1528BAA
TB1 Shunt Trip Coil 24 V DC XS2000/2500/3200 AF	2H1529BAA
Shunt Trip 48 V DC for X20-X25	2H1530BAA
TB1 Shunt Trip Coil 200 V DC XS2000/2500/3200 AF	2H1531BAA

Undervoltage Trips

Controller Required

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB



Item Description	Catalogue No.
Undervoltage Trip Coil AC XS2000/2500/3200 AF	2H1509BAA

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Instant Undervoltage Controller 110 V AC XS3200 AF	UXUB0013B
Instant Undervoltage Controller 230-480 V AC XS3200 AF	UXUB0014B
Instant Undervoltage Controller 440 V AC XS3200 AF	UXUB0015B
Time Delay Undervoltage Controller 200-230 V DC XS3200 AF	UXUB0038B

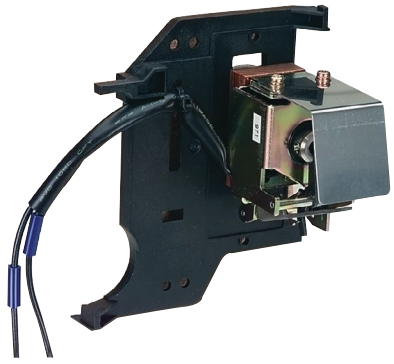
Time Delay Operation (500 ms)

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Time Delay Undervoltage Controller 110 V AC XS3200 AF	UXUB0016B
Time Delay Undervoltage Controller 230-480 V AC XS3200 AF	UXUB0017B
Time Delay Undervoltage Controller 440 V AC XS3200 AF	UXUB0018B

No Controller Required

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB



Item Description	Catalogue No.
Under Voltage Trip Coil 24 V DC XS2000/2500/3200 AF	2H1511BAA
Under Voltage Trip Coil 48 V DC XS2000/2500/3200 AF	2H1512BAA
Under Voltage Trip Coil 60 V DC XS2000/2500/3200 AF	2H1513BAA
Under Voltage Trip Coil 100 / 230 V DC XS2000/2500/3200 AF (Controller Required for 230 V)	2H1510BAA

MCCBs

Locking and Interlocking Accessories

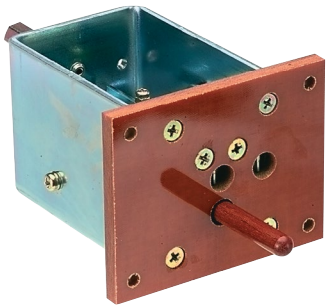
Mechanical Interlock - Rear Walking Beam

Prevents simultaneous operation of two horizontally mounted interlocked MCCBs.

Item Description	Catalogue No.
Mechanical Interlocks – NHP Factory Fit - 3 Pole Walking Beam Interlock	UXKC0012A
Mechanical Interlocks – NHP Factory Fit - 4 Pole Walking Beam Interlock	UXKC0013A

Mechanical Interlock - Cable Type

Mechanical interlock – Rear Cable type Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 M apart.



Item Description	Catalogue No.
Mechanical Interlocks – NHP Factory Fit 3 or 4 Pole Cable Interlock. 1 Required for Each MCCB	UXKC0025B

Item Description	Catalogue No.
Mechanical Interlocks 1.5 m Cable for Interlock Mechanism. 1 Required Only – Customer Fit	UXKC0020A

Toggle Locks

Non-captive

Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON.

Item Description	Catalogue No.
Non Captive Padlock Attachment XS2000/2500/3200 AF	UXKB0001A

Operating External Accessories

Motor Operator

Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
XMB Motor Operator 110 V AC XS/2000/2500/3200 AF	UXMB0006B
XMB Motor Operator 240 V AC XS/2000/2500/3200 AF	UXMB0008B
XMB Motor Operator 110 V DC XS/2000/2500/3200 AF	UXMB0009B

Installation External Accessories

OCR Sealing Cover

A device that allows a user to seal the OCR cover using a compression seal

Item Description	Catalogue No.
OCR Trip Unit Sealing Kit XS2000/2500/3200 AF	XS2000OCRSK

L125PJ

70 kA 690 V AC MCCB

- ✔ 690 VAC power distribution and motor start applications
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Front connect panel mount, rear connect optional
- ✔ Full range of accessories for application flexibility
- ✔ 3 pole MCCB
- ✔ 165 mm (H), 103 mm (D), 35 mm pole centres
- ✔ Fault rating; 70 kA I_{CU} @ 690 V AC
- ✔ Thermal magnetic trip unit: adjustable thermal / adjustable magnetic
- ✔ Trip units; 20, 32, 50, 63, 100, 125 A

CE

General

Trip Unit Protection Type	Adjustable thermal, adjustable magnetic
Trip Unit Rating	20, 32, 50, 63, 100, 125 A
Number of Poles	3
Switching Poles	3P

Short Circuit

Short-Circuit Fault Interruption Capacity (Icu)	70 kA @690 V AC

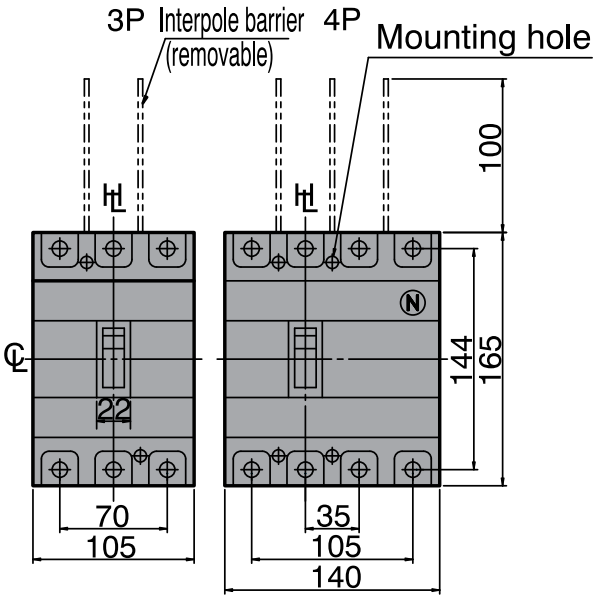
Voltage

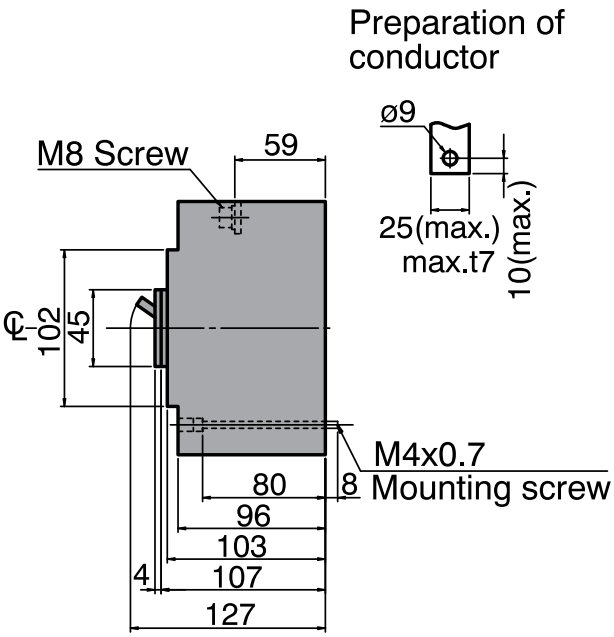
Utilisation Voltages	690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in PM (Option)

Quick Reference Dimensions – Front Connect





125 A Frame 3 Pole 70 kA

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 690 V (kA)	Poles	Catalogue No.
20	12.5 - 20	120 - 240	70	3	L125PJ320
32	20 - 32	192 - 384	70	3	L125PJ332
50	32 - 50	300 - 600	70	3	L125PJ350
63	40 - 63	378 - 756	70	3	L125PJ363
100	63 - 100	600 - 1200	70	3	L125PJ3100
125	80 - 125	750 - 1500	70	3	L125PJ3125

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3
Switching Poles	3P
Frame Size	125 AF
Trip Unit Rating	20 / 32 / 50 / 63 / 100 / 125 A

I_n, Rated Current

A @ 30 °C	20	32	50	63	100	125
A @ 45 °C	20	32	50	63	100	125
A @ 50 °C	20	32	50	63	100	125

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC / DC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	20	32	50	63	100	125
(W)	10.6	12	5.6	6.6	11	10

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	1.5 - 35 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in PM (Option) Draw-out (Option)
Terminal Type	Screw Terminal(s)
Connection Torque	7.8 - 12.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		165 mm
Width	**3P**	105 mm
Depth (less toggle)		103 mm
Depth (toggle included)		125 mm
Weight	**3P**	2.4 kg
Electrical Life		1000 cycles
Mechanical Life		3000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**PE**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	-
		380 / 400 V AC	-
		415 V AC	-
		440 V AC	-
		690 V AC	70
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	-
		380 / 400 V AC	-
		415 V AC	-
		440V AC	-
		690 V AC	33
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-

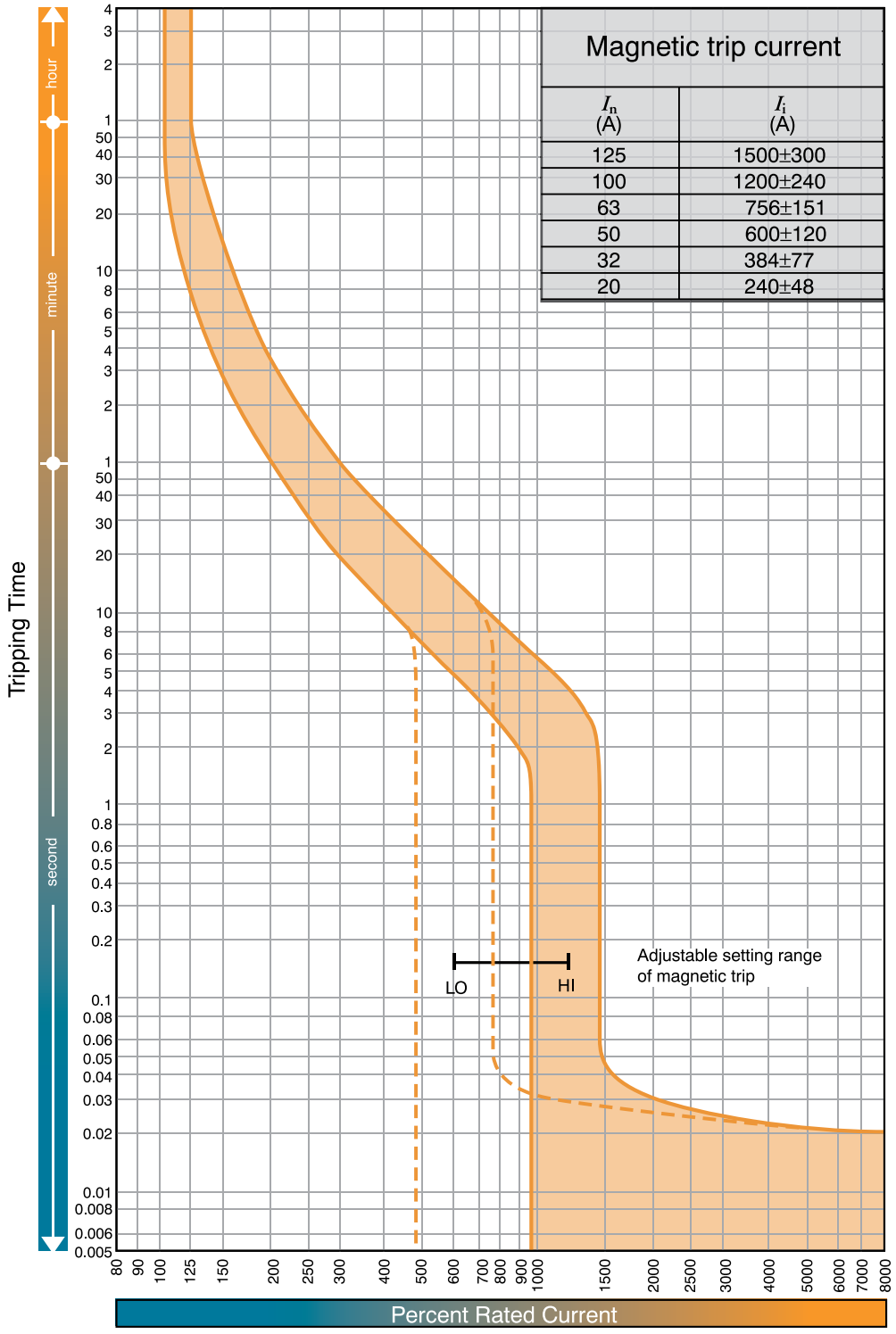
Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Rated Temperature	50 °C

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

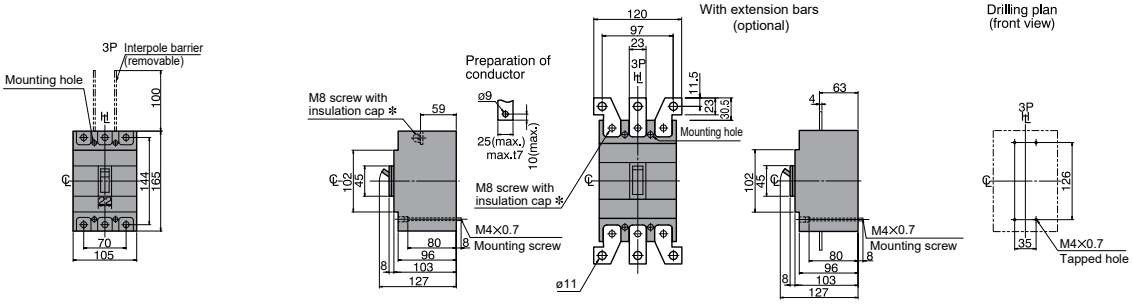
Time Current Characteristics Curve, L125PJ, Thermal Magnetic



Magnetic trip current	
I_n (A)	I_i (A)
125	1500±300
100	1200±240
63	756±151
50	600±120
32	384±77
20	240±48

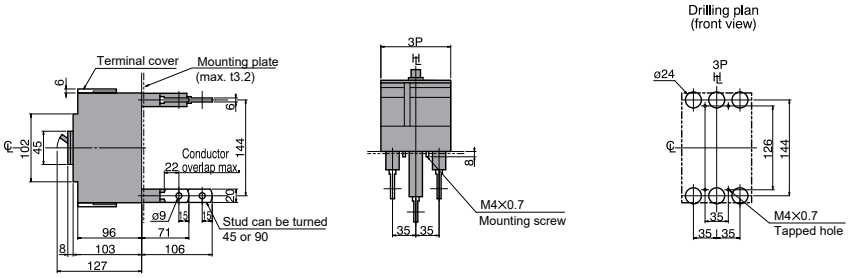
Dimensions L125PJ (mm)

Front Connected

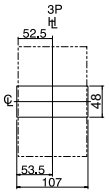


✻ Be sure to install the insulation caps (supplied as standard).

Rear Connected

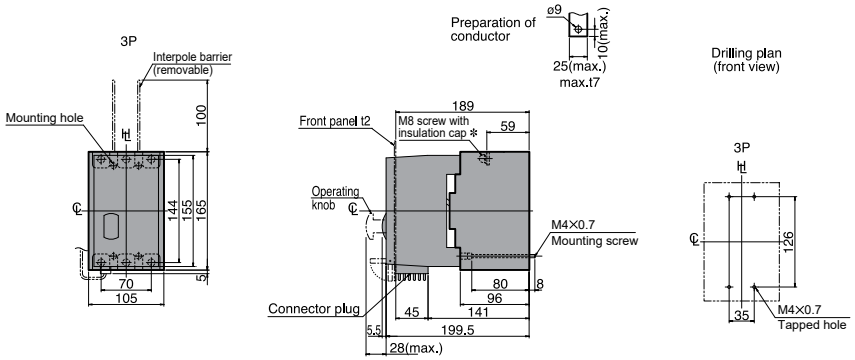


Panel cutout (front view)

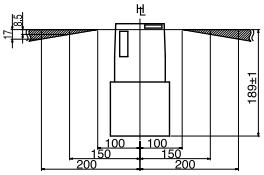


Panel cutout dimensions shown give an allowance of 1.0mm or more around the handle escutcheon.

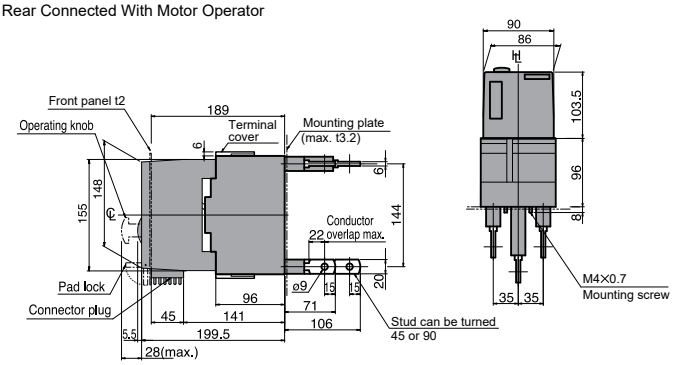
Front Connected With Motor Operator



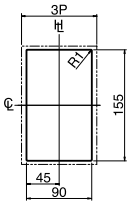
Panel hinge position (hatching area) bottom view



Rear Connected With Motor Operator



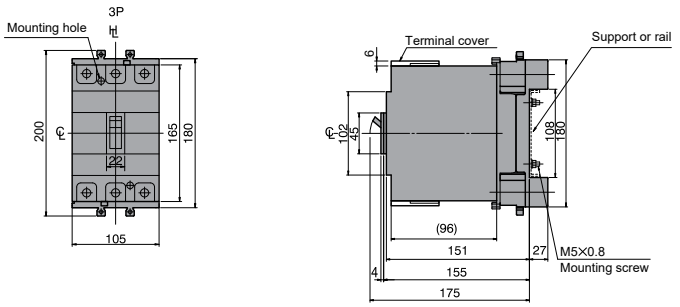
Panel cutout (front view)



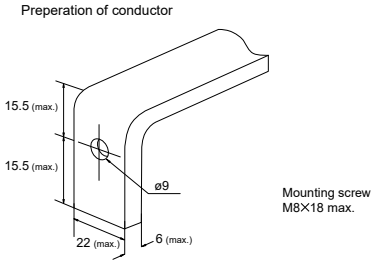
Panel cutout dimensions shown give an allowance of 1.5mm around the handle escutcheon.

Dimensions L125NJ, Plug-in (mm)

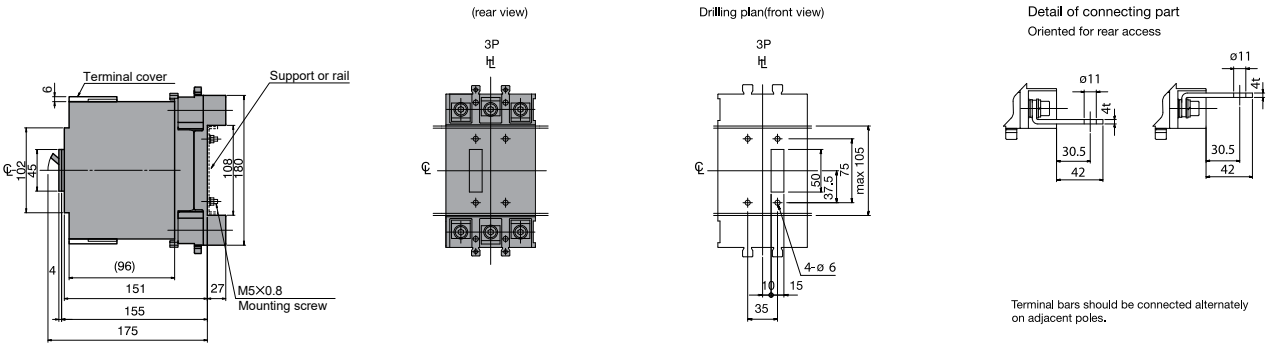
Outline Dimensions



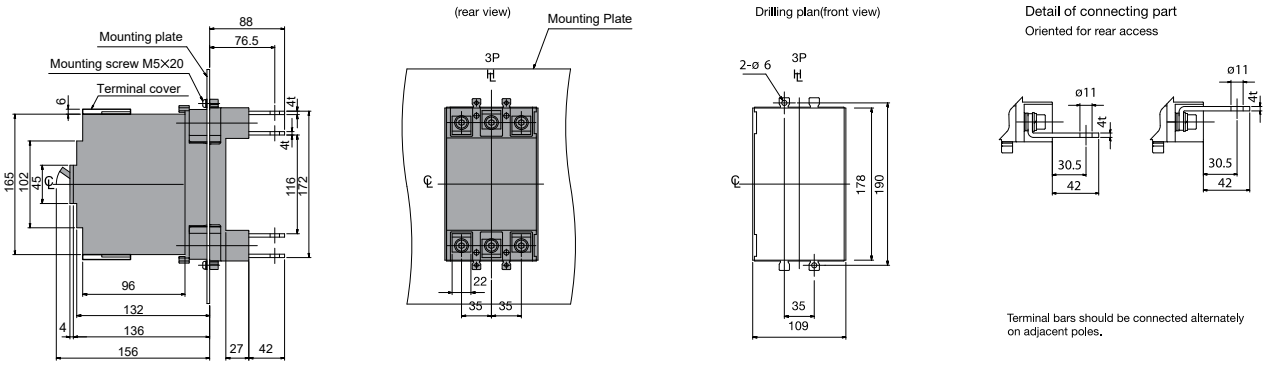
Termination of Busbar



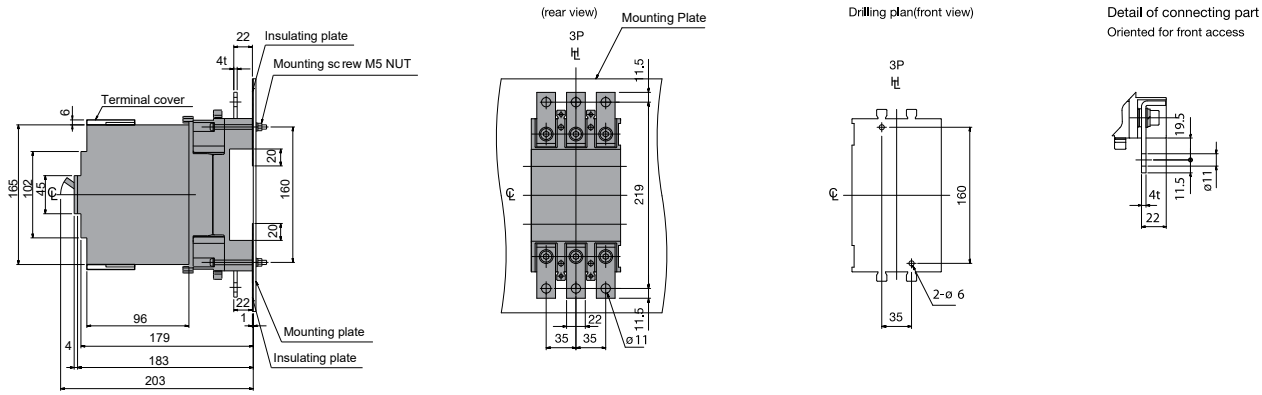
Mounting On a Support or Rails (shown with optional connection bars oriented for rear access)



Mounting Through the Backplate (shown with optional connection bars oriented for rear access)



Mounting On the Backplate (optional connection bars must be oriented for front access)

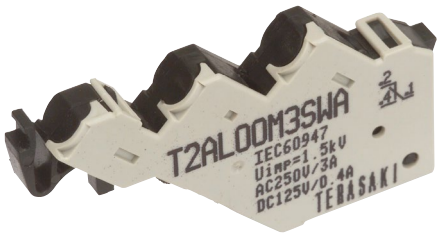


L125PJ Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits



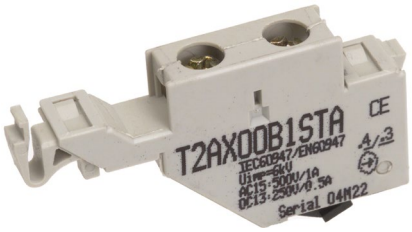
Item Description	Catalogue No.
Alarm Switch 1 C/O	T2AL00M3STA
Alarm Switch 1 C/O Wired	T2AL00M3SWA
Alarm Switch Micro-current 1 C/O	T2AL00M3RTA

Item Description	Catalogue No.
Alarm Switch Heavy Duty 1 N/O	T2AL00B1STA
Alarm Switch Heavy Duty 1 N/C	T2AL00B2STA

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxiliary Switch 1 C/O	T2AX00M3STA
Auxiliary Switch 1 C/O Wired	T2AX00M3SWA
Auxiliary Switch Micro-current 1 C/O	T2AX00M3RTA



Item Description	Catalogue No.
Auxiliary Switch Heavy Duty 1 N/O	T2AX00B1STA
Auxiliary Switch Heavy Duty 1 N/C	T2AX00B2STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00A10TA
Shunt Trip Coil 240 V AC	T2SH00A20TA
Shunt Trip Coil 415 V AC	T2SH00A40TA
Shunt Trip Coil 24 V DC	T2SH00D02TA
Shunt Trip Coil 48 V DC	T2SH00D04TA
Shunt Trip Coil 110 V DC	T2SH00D10TA
Shunt Trip Coil 230 V DC	T2SH00D20TA

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 110 V AC	T2UV00A10NTA
Under Voltage Trip Coil Instant 240 V AC	T2UV00A20NTA
Under Voltage Trip Coil Instant 415 V AC	T2UV00A40NTA
Under Voltage Trip Coil Instant 24 V DC	T2UV00D02NTA
Under Voltage Trip Coil Instant 48 V DC	T2UV00D04NTA
Under Voltage Trip Coil Instant 110 V DC	T2UV00D10NTA
Under Voltage Trip Coil Instant 230 V DC	T2UV00D20NTA

Time Delay Operation (500 ms)

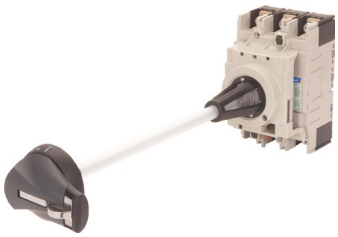
When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500 ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delay 110 V AC 125-630A 3P	T2UV00A10DSA
Under Voltage Trip Coil Time Delay 200-240 V AC 125-630A 3P	T2UV00A24DS
Under Voltage Trip Coil Time Delay 380-450 V AC 125-630A 3P	T2UV00A40DS
Under Voltage Trip Coil Time Delay 24 V DC 125-630A 3P	T2UV00D02DS
Under Voltage Trip Coil Time Delay 110 V DC 125-630A 3P	T2UV00D10DS
Under Voltage Trip Coil Time Delay 230 V DC 125-630A 3P	T2UV00D24DS

Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation



Item Description	Catalogue No.
Door Interlocking Extension Grey, IP55 handle + 356mm shaft	TPHS25SR5GM
Door Interlocking Extension Red/Yellow, IP55 handle + 356mm shaft	TPHS25SR5RM

Item Description	Catalogue No.
Door Interlocking Extension IP65 Metal Handle/Shaft Kit 160/250 AF	T2HP25R6ME

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

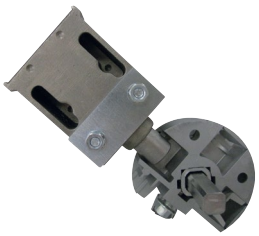
Item Description	Catalogue No.
Door Interlocking Extension IP65 Black Handle/Shaft Kit 160/250 AF	T2HP25R6BN
Door Interlocking Extension IP65 Red Handle/Shaft Kit 160/250 AF	T2HP25R6RN

Handle Options

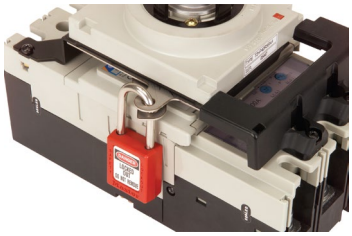
A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
HS 90 mm Shaft 125/250 AF	T2HS250SHAFT



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702



Item Description	Catalogue No.
Door Interlocking Padlck Device/Handle Mechanism 125/250 AF	T2HP25PALK

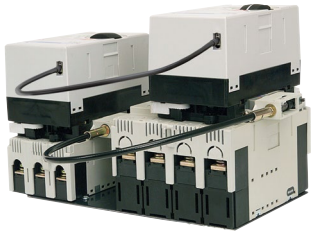
Motor Operator

Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
Motor Operator 110 V AC 160/250AF	T2MC25A10NB
Motor Operator 240 V AC 160/250 AF	T2MC25A24NB
Motor Operator 24 V DC 160/250 AF	T2MC25D02NB
Motor Operator 48 V DC 160/250AF	T2MC25D04NB
Motor Operator 110 V DC 160/250 AF	T2MC25D10NB

Motor Operator Accessories

Provides electrical interlocking between 2 motors to prevent simultaneous operation



Item Description	Catalogue No.
Motor Interlock Cable (0.5 m) Between T2MC12 and T2MC25/25L	T2MM25L05A
Motor Interlock Cable (1.5 m) Between T2MC12 and T2MC25/25L	T2MM25L15A

Item Description	Catalogue No.
Motor Interlock Cable (0.6m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S06A
Motor Interlock Cable (2.1m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S21A

Locking and Interlocking Accessories

Cable Mechanical Interlock

Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 M apart

Item Description	Catalogue No.
Cable Interlock Mechanism for 125 AF and 160/250 AF	T2MW25CA

Item Description	Catalogue No.
Cable Interlock Wire (1.0 m)	T2MW00SA
Cable Interlock Wire (1.5 m)	T2MW00LA

Link Mechanical Interlock

Prevents simultaneous operation of two horizontally mounted interlocked MCCBs.

Item Description	Catalogue No.
Mechanical Interlock Right Link Interlock 160/250 AF	T2ML25RA
Mechanical Interlock Left Link Interlock 3P 160/250 AF	T2ML25L3A
Mechanical Interlock Left Link Interlock 4P 160/250 AF	T2ML25L4A

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option

Item Description	Catalogue No.
Captive Toggle Lock 250 AF	T2HL25CAP

Non-captive

Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Non Captive Toggle Lock 125/250 AF	T2HL25B

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches

Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Mounted

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

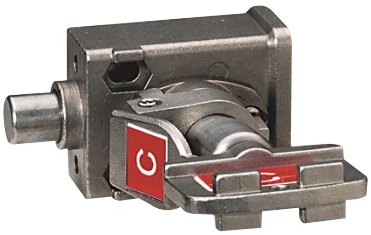
Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, standard key code, A	440TAKEYE100A
Prosafe, standard key code, B	440TAKEYE100B
Prosafe, standard key code, C	440TAKEYE100C
Prosafe, standard key code, D	440TAKEYE100D
Prosafe, standard key code, E	440TAKEYE100E
Prosafe, standard key code, F	440TAKEYE100F
Prosafe, standard key code, G	440TAKEYE100G
Prosafe, standard key code, H	440TAKEYE100H
Prosafe, Standard Key Code I	440TAKEYE100I
Prosafe, Standard Key Code J	440TAKEYE100J
Prosafe, Standard Key Code K	440TAKEYE100K
Prosafe, Standard Key Code L	440TAKEYE100L
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, Standard Key	440TAKEYE10X

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys



Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE10BA
Single key shot bolt lock, key not included	440TMSBLE10X

Installation External Accessories

Door Flange

A door mount flange providing a plastic surround for the panel or escutcheon cutout

Item Description	Catalogue No.
Door Flange IP30 Gland and Gasket, 125 AF / 250 AF MCCB	T2DF25A
Door Flange IP30 Gland and Gasket, 125 AF / 250 AF Motor	T2DM25A

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier 250 A AF	T2BA253LHA

OCR Sealing Cover

A device that allows a user to seal the OCR cover using a compression seal

Item Description	Catalogue No.
Trip Unit Seal Kit,Thermal Magnetic, B160, B250, ZS250	T2SF25NTA
Trip Unit Seal Kit, Electronic, B160, B250, ZS250	T2SF25NEA

Plug-in MCCBs

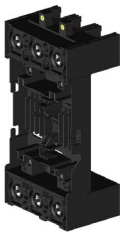
Plug-in B160_TM, B250_TM, L125PJ

The MCCB via rear plugs, is plugged onto a fixed base for its line and load connections.

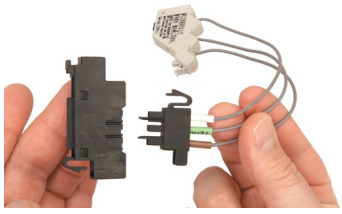
Item Description	Catalogue No.
Plug In Convertion kit, 3 Pole, B250P_SE	2H6940CAB
Plug In Convertion kit, 4 Pole, B250P_SE	2H6941CAB

Plug-in Mounting Bases

The MCCB via rear plugs, is plugged onto a fixed base for its line and load connections



Item Description	Catalogue No.
Plug-In 3P Base, IP20 160/250 AF	T2PM25A3A
Plug-In 4P Base, IP20 160/250 AF	T2PM25A4A



Item Description	Catalogue No.
3 Pin Plug and Socket for Aux/Alarms – for MCCB and Base	2H6959CAA1
3 Pin Plug and Socket for Shunt/UVT – for MCCB and Base	2H6959CBA1
Control Wiring Plugs and Sockets for Withdrawable and Plug-in MCCBs, 3 Pin Socket for Panel Mount Version	T2TP003A

Pole Fillers

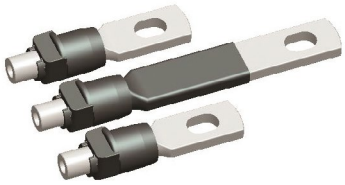
A clip in filler 9 mm wide for vacant pole positions for 46 mm DIN cut-outs

Item Description	Catalogue No.
DIN Pole Filler (1 Strip Of 12 Poles, 24 X 9mm Segments)	DTPF12
DIN Pole Filler (1 Strip Of 4 Poles, 8 X 9mm Segments)	DTPF

Item Description	Catalogue No.
Pole Filler 35 mm Wide for 250 AF MCCBs with a 104 mm Cut-out	XAB3

Rear Connection Studs

Allows MCCB main connections to be made at the rear of the MCCB

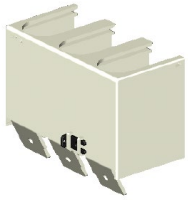


Item Description	Catalogue No.
Rear Studs Connect 3 Pole Kit, Set of 6 Studs, B160, B250, ZS250	T2RP253LA
Rear Connect Terminal Studs 4 Pole Kit, Set of 8 Studs, B160, B250, ZS250	T2RP254LB

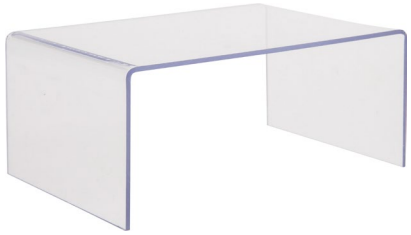
Terminal Covers

Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area



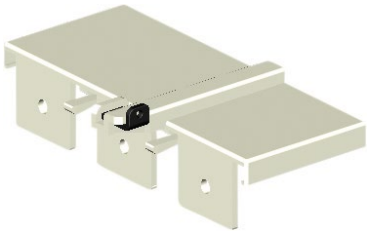
Item Description	Catalogue No.
Extended Terminal Covers Front Connect 3 Pole Single Cover, 55 mm Long, Narrow Cover, B160, B250	T2CF253LLHP
Extended Terminal Covers Front Connect 4 Pole Single Cover, 55 mm Long, Narrow Cover, B160, B250	T2CF254LLHP



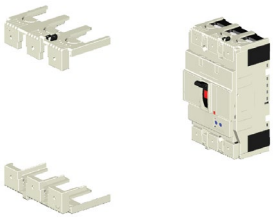
Item Description	Catalogue No.
Extended Terminal Covers Front Connect 3-4 Pole Single Cover, 100 mm Long, Wide “Top Hat, B160, B250	T2CF253WC

Flush Front Terminal Covers

Provides front finger touch protection with MCCBs used with tunnel terminals or chassis



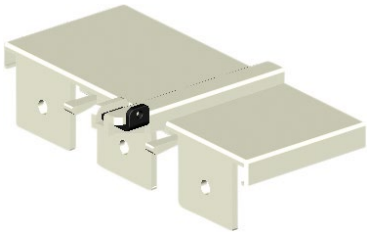
Item Description	Catalogue No.
Flush IP20 Terminal Covers, Front Connected, 1 Pole Cover, Set of 2	T2CS161SP



Item Description	Catalogue No.
Flush IP20 Terminal Covers, Front Connected, 3 Pole Single Cover	T2CS253SHP
Flush IP20 Terminal Covers, Front Connected, 4 Pole Single Cover	T2CS254SHP

Rear Connect Terminal Covers

Provides front finger touch protection with MCCBs used with rear terminals and HC chassis



Item Description	Catalogue No.
Terminal Covers Rear Connect, 4 Pole Cover, Set of 2, B160, B250, ZS250	T2CR253SHP
Terminal Covers Rear Connect, 3 Pole Cover, Set of 2, B160, B250, ZS251	T2CR254SHP

Terminal Cover Locking Clip

Used with terminal covers to prevent unauthorised removal or access to terminal area

Item Description	Catalogue No.
Terminal Cover Locking Clip	T2CF00L

Tunnel Clamp Terminals

Allows cable to be terminated directly to the MCCB and clamped for good connectivity

Item Description	Catalogue No.
Tunnel Terminal 4 Pole, Set of 8 Clamps, 35 – 120 mm², B160, B250, ZS250	T2FW25L3B
Tunnel Terminal 3 Pole, Set of 6 Clamps, 35 – 120 mm², B160, B250, ZS250	T2FW25L4B

MCCBs

L400PE

70 kA 690 V AC MCCB

- ✔ 690 V AC power distribution and motor start applications
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Rear connect terminals standard, plug-in base option
- ✔ Full range of accessories for application flexibility
- ✔ 3 pole MCCB
- ✔ 260 mm (H), 140 mm (D), 45 mm pole centres
- ✔ Fault rating; 70 kA I_{CU} @ 690 V AC
- ✔ Electronic trip unit: 10 preset characteristic curve selection dial and base current adjustment dial
- ✔ Standard features include and instantaneous-only setting
- ✔ Trip units; 250 A, 400 A

General

Trip Unit Protection Type	Adjustable Electronic LSI [1)]
Trip Unit Rating	250, 400 A
Number of Poles	3
Switching Poles	3P

Short Circuit

Short-Circuit Fault Interruption Capacity (Icu)	70 kA @ 690 V AC

Vo ltage

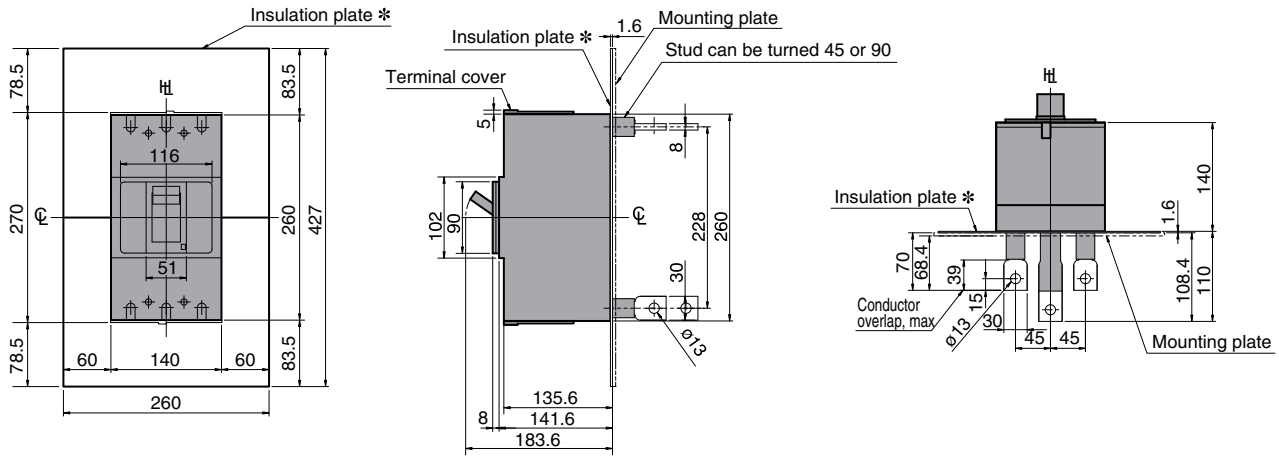
Utilisation Voltages	690 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Rear Connection (Standard) Plug-in PM (Option)

Notes: 1) When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Quick Reference Dimensions – Rear Connect



✻ Be sure to install the insulation plates (supplied as standard).
Note: Studs are factory installed in horizontal direction both on the line and load sides.

630 A Frame 3 Pole 70 kA

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_{cu}, 690 V (kA)	Poles	Catalogue No.
250	100 - 250	70	3	L400PE3250RC
400	252 - 400	70	3	L400PE3400RC

Notes: When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Ratings

Component Type	MCCB
Selectivity Category	B
Number of Poles	3
Switching Poles	3P
Frame Size	630 AF
Trip Unit Rating	250 / 400 A

I_n, Rated Current

A @ 30 °C	250	400
A @ 45 °C	250	400
A @ 50 °C	250	400

U_e, Rated Operational Voltage, AC, max	800 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	250	400
(W)	20.3	46.6

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 3947.2 AS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 185 mm² (Min - Max)
Connection Mode	Plug-in PM (Option) Rear Connection (Standard)
Terminal Type	Bolt-Terminal
Connection Torque	40.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		260 mm
Width	**3P**	140 mm
Depth (less toggle)		140 mm
Depth (toggle included)		184 mm
Weight	**3P**	7.1 kg
Electrical Life		1000 cycles
Mechanical Life		15000 cycles

Short-Circuit Capacity

		kA Rating
		MCCB Type
	Voltage	**PE**
Based On AS/NZS 60947.2 and IEC 60947-2 — I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	-
	380 / 400 V AC	-
	415 V AC	-
	440 V AC	-
	690 V AC	70
	1000 V AC	-
	1100 V AC	-
	125 V DC	-
	250 V DC	-
I_{cs} (Service Breaking Capacity)	220 / 240 V AC	-
	380 / 400 V AC	-
	415 V AC	-
	440V AC	-
	690 V AC	50
	1000 V AC	-
	1100 V AC	-
	125 V DC	-
	250 V DC	-
I_{cw} (Short Time Withstand)	0.3 Seconds	5

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI
	50 °C

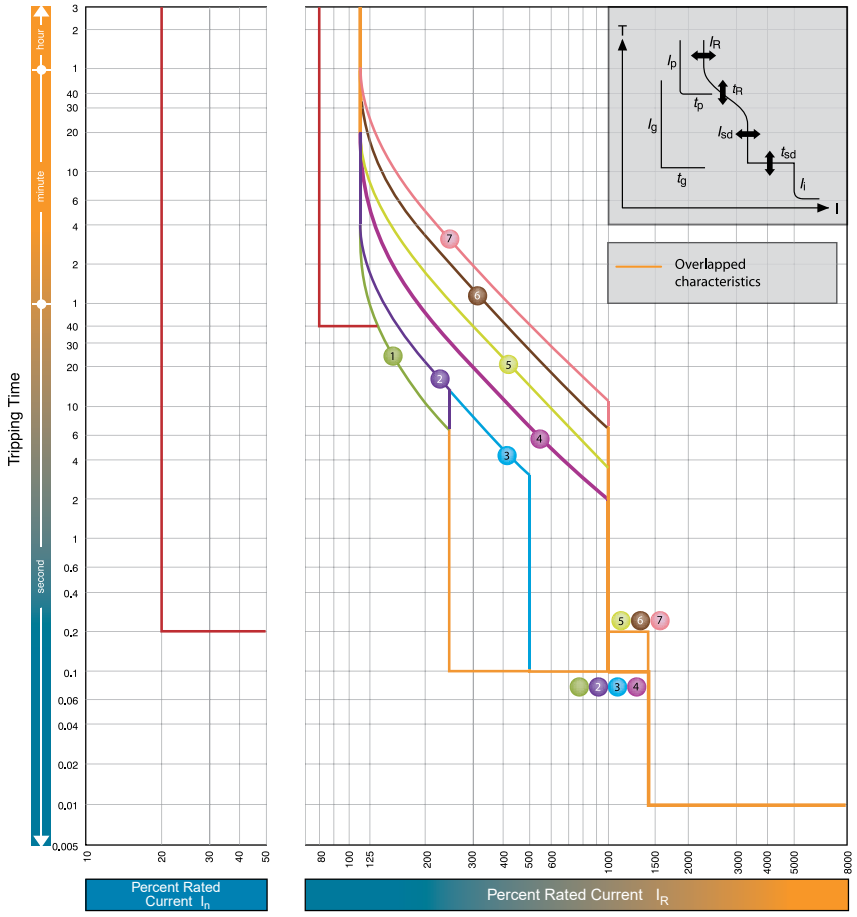
Other Features

Pre-trip alarm (PTA)	Option
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	No
Interpole Barriers	No
External Panel Display	No

Characteristic Curves 1 to 7, B400_BE, L400PE 250 A, Basic Electronic



B250P3125BE_OPCH-S12

Characteristics For I_R Rated 250 A: B400P_BE, B400R_BE, L400PE

LTD Pick Up Current I_R (A)		100 – 125 – 157 – 200 – 225 – 237 – 250 (7 step)							200 A (fixed)	250 A (fixed)	Instantaneous only
		Standard Curves 1 - 7							Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10** [2]
LTD t_R (S)		11	21	21	5	10	19	29	1	2.5	-
		at 200 % x I_R			at 600 % x I_R				at 600 A	at 750 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	0.2	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n) [2]							800 A	1000 A	3250 A
OCR Options											
Pre Trip Alarm (PTA)	I_P x I_R	0.8							0.8		
	I_p (S)	40							40		
Ground Fault (GF) [1]	I_G x I_N	0.2							0.2		
	t_G (S)	0.2							0.2		
Neutral Pole Protection (NP)	I_N x I_R	1.0 / 0.5 [3]							1.0 / 0.5 [3]		
	t_N (S)	$t_N = t_R$							$t_N = t_R$		

Notes

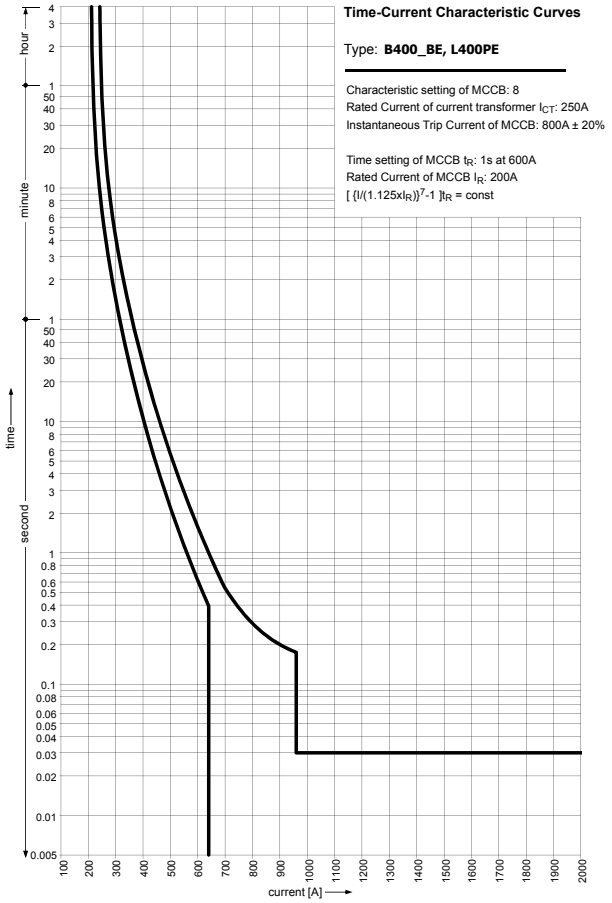
1) GF is not available when In is 250 A. Choose a 400 A rated MCCB, and adjust it down to 250 A or lower

2) I_i max. = 13 x I_n

3) 1.0 x I_R or 0.5 x I_R can be selected. Characteristic of neutral (t_N vs. I_N) is identical to characteristic of phase protection (t_R vs. I_R)

Characteristic Curves 8 and 9, B400_BE, L400PE 250 A, Basic Electronic

8



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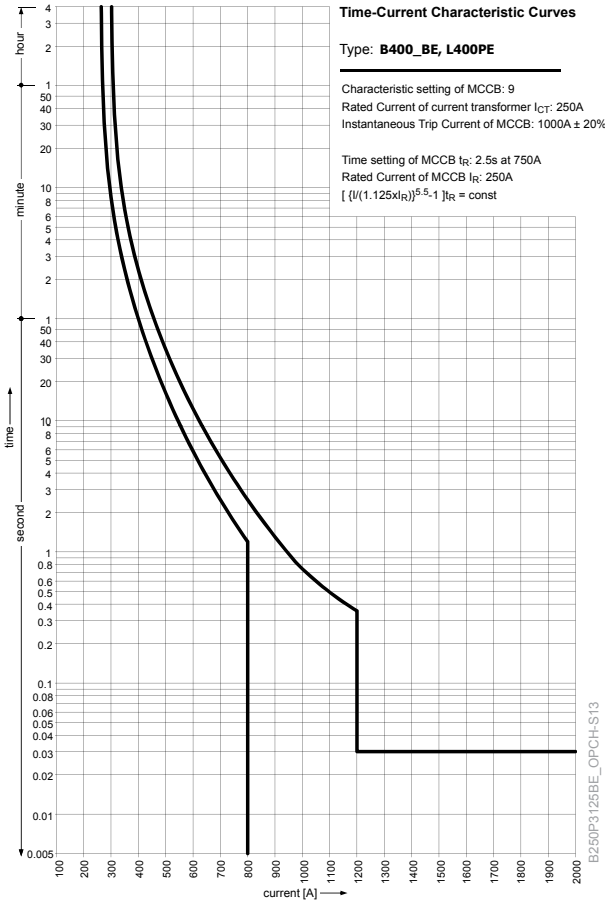


Characteristics For 250 A I_R Rated B400P_BE, B400R_BE, L400PE

LTD Pick Up Current I_R (A)		100 – 125 – 157 – 200 – 225 – 237 – 250 (7 step)							200 A (fixed)	250 A (fixed)	Instantaneous only
		Standard Curves 1 - 7							Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10** [1]
LTD t_R (S)		11	21	21	5	10	10	29	1	2.5	-
		at 200 % x I_R			at 600 % x I_R				at 600 A	at 750 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	0.2	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n)							800 A	1000 A	3250 A
OCR Options		PTA, NP, GF							PTA, NP, GF		

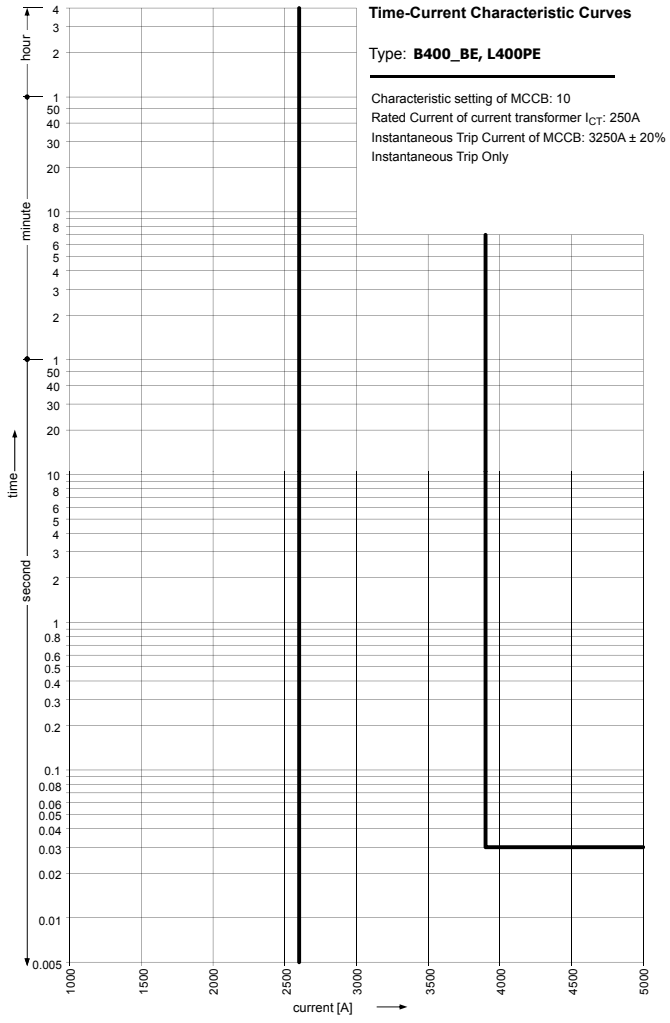
Notes

1) Instantaneous, curve 10, next page

MCCBs

Characteristic Curve 10, B400_BE, L400PE 250 A, Basic Electronic

10

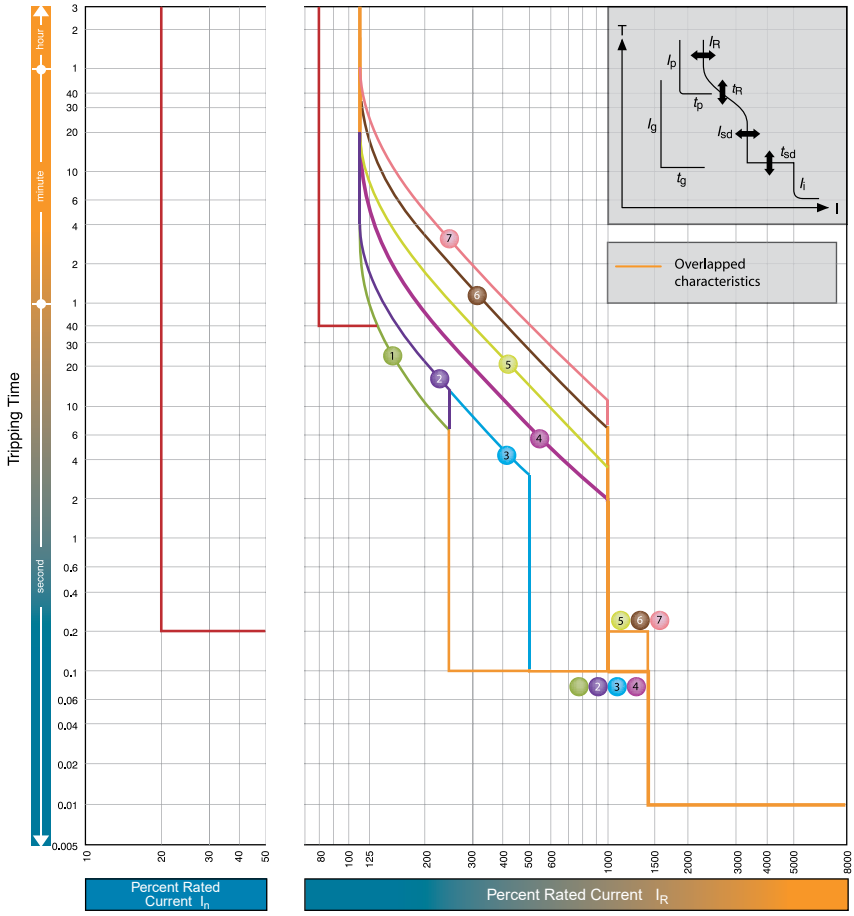


B250P3125BE_OPCH-S14

Characteristics For 250 A I_R Rated B400P_BE, B400R_BE, L400PE

LTD Pick Up Current I_R (A)		100 – 125 – 157 – 200 – 225 – 237 – 250 (7 step)							200 A (fixed)	250 A (fixed)	Instantaneous only
		Standard Curves 1 - 7							Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
LTD t_R (S)		11	21	21	5	10	10	29	1	2.5	-
		at 200 % x I_R			at 600 % x I_R				at 600 A	at 750 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	0.2	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n)							800 A	1000 A	3250 A
OCR Options		PTA, NP, GF							PTA, NP, GF		

Characteristic Curves 1 to 7, B400_BE, L400PE 400 A, Basic Electronic



Characteristics For I_R Rated 400 A: B400P_BE, B400R_BE, L400PE

LTD Pick Up Current I_R (A)		160 – 200 – 252 – 320 – 360 – 380 – 400 (7 step)							320 A (fixed)	400 A (fixed)	Instantaneous only
		Standard Curves 1 - 7							Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10** [1]
LTD t_R (S)		11	21	21	5	10	10	29	2.5	4	-
		at 200 % x I_R			at 600 % x I_R				at 960 A	at 1200 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	0.2	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n) [2]							1280 A	1600 A	5200 A
OCR Options											
Pre Trip Alarm (PTA)	I_P x I_R	0.8							0.8		
	I_p (S)	40							40		
Ground Fault (GF) [1]	I_G x I_N	0.2							0.2		
	t_G (S)	0.2							0.2		
Neutral Pole Protection (NP)	I_N x I_R	1.0 / 0.5 [2]							1.0 / 0.5 [2]		
	t_N (S)	$t_N = t_R$							$t_N = t_R$		

Notes

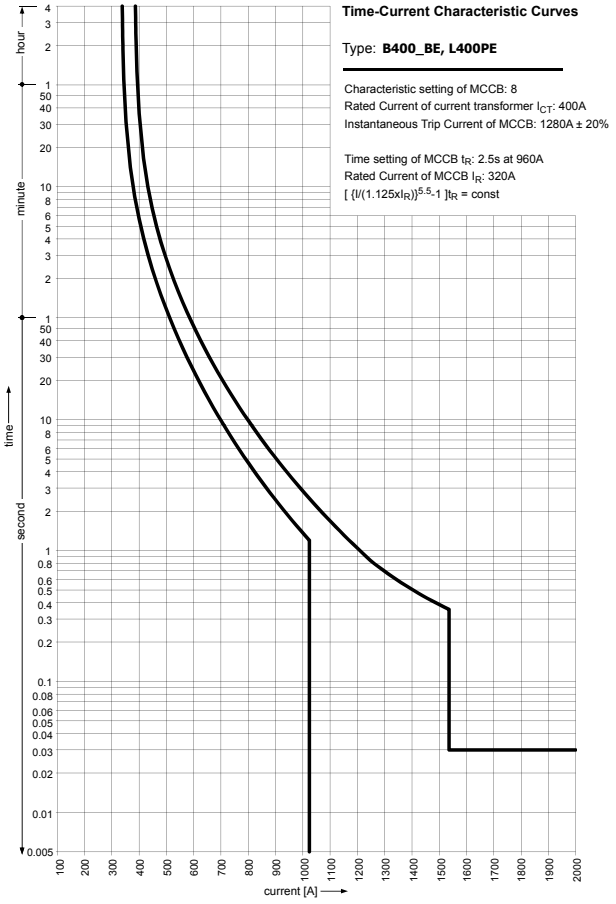
1) *Ii* max. = 13 x I_n

2) 1.0 x I_R or 0.5 x I_R can be selected. Characteristic of neutral (t_N vs. I_N) is identical to characteristic of phase protection (t_R vs. I_R)

MCCBs

Characteristic Curves 8 and 9, B400_BE, L400PE 400 A, Basic Electronic

8



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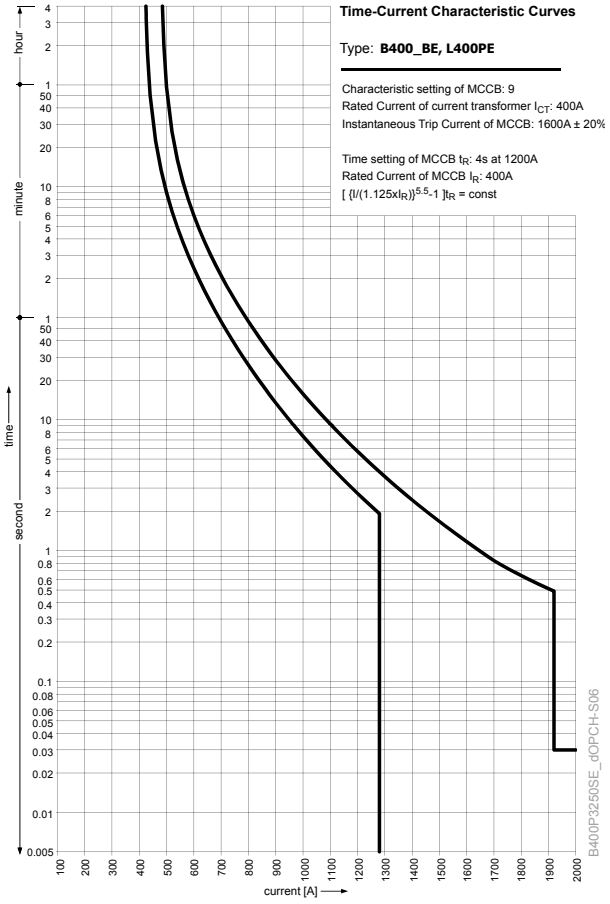


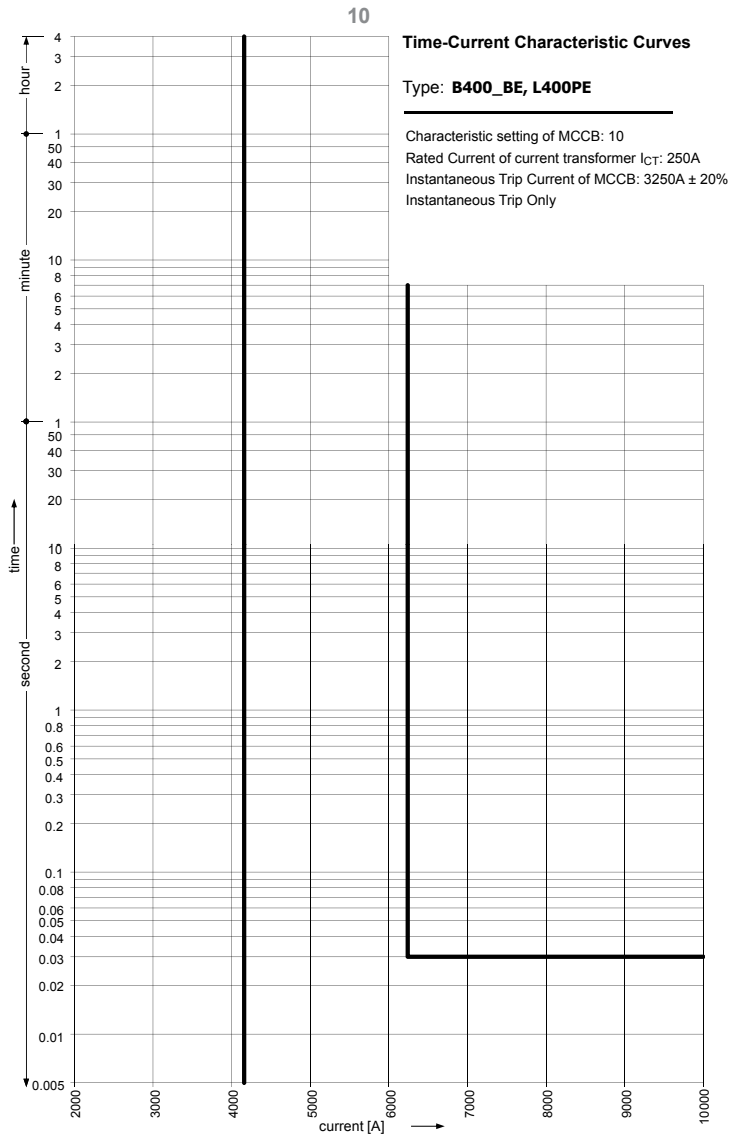
Characteristics For 400 A I_R Rated B400P_BE, B400R_BE, L400PE

LTD Pick Up Current I_R (A)		160 – 200 – 252 – 320 – 360 – 380 – 400 (7 step)							320 A (fixed)	400 A (fixed)	Instantaneous only
		Standard Curves 1 - 7							Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10** [1]
LTD t_R (S)		11	21	21	5	10	10	29	2.5	4	-
		at 200 % x I_R			at 600 % x I_R				at 960 A	at 1200 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	0.2	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n)							1280 A	1600 A	5200 A
OCR Options		PTA, NP, GF							PTA, NP, GF		

Notes

1) Instantaneous, curve 10, next page

Characteristic Curve 10, B400_BE, L400PE 400 A, Basic Electronic



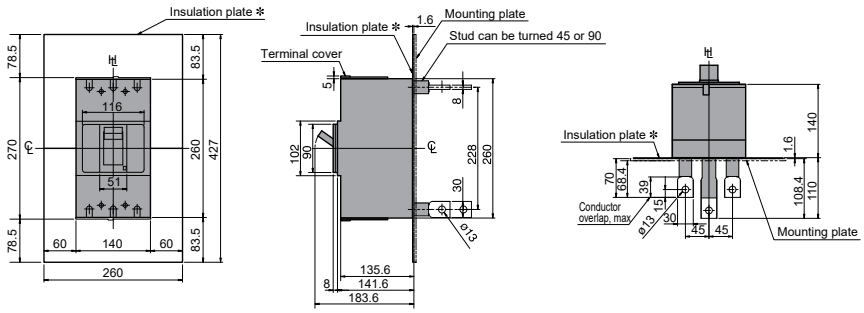
B400P3250SE_dOPCH-S07

Characteristics For 400 A I_R Rated B400P_BE, B400R_BE, L400PE

LTD Pick Up Current I_R (A)		160 – 200 – 252 – 320 – 360 – 380 – 400 (7 step)							320 A (fixed)	400 A (fixed)	Instantaneous only
		Standard Curves 1 - 7							Additional special application curves		
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
LTD t_R (S)		11	21	21	5	10	10	29	2.5	4	-
		at 200 % x I_R			at 600 % x I_R				at 960 A	at 1200 A	-
STD	I_{sd} x I_R	2.5	2.5	5	10	10	10	10	-	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	0.2	0.2	0.2	-	-	-
INST I_i x I_R		14 (Maximum of 13 x I_n)							1280 A	1600 A	5200 A
OCR Options		PTA, NP, GF							PTA, NP, GF		

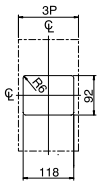
Dimensions L400PE, Rear Connect (mm)

Rear Connected



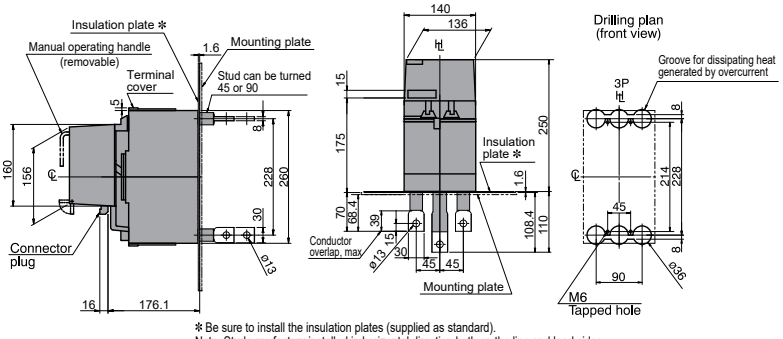
✻ Be sure to install the insulation plates (supplied as standard).
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel cutout (front view)



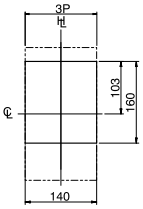
Panel cutout dimensions shown give an allowance of 1.0 mm around the handle escutcheon.

Rear Connected With Motor Operator

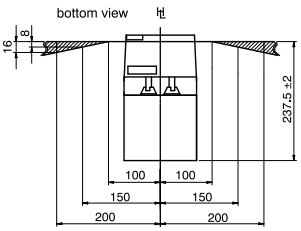


✻ Be sure to install the insulation plates (supplied as standard).
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel cutout (front view)



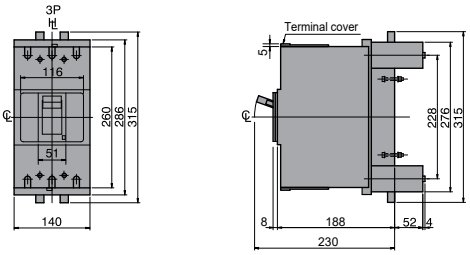
Panel hinge position (hatching area)



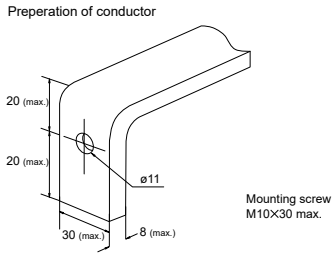
Panel cutout dimensions shown give an allowance of 1.5 mm around motor operator.

Dimensions L400PE, Plug-in (mm)

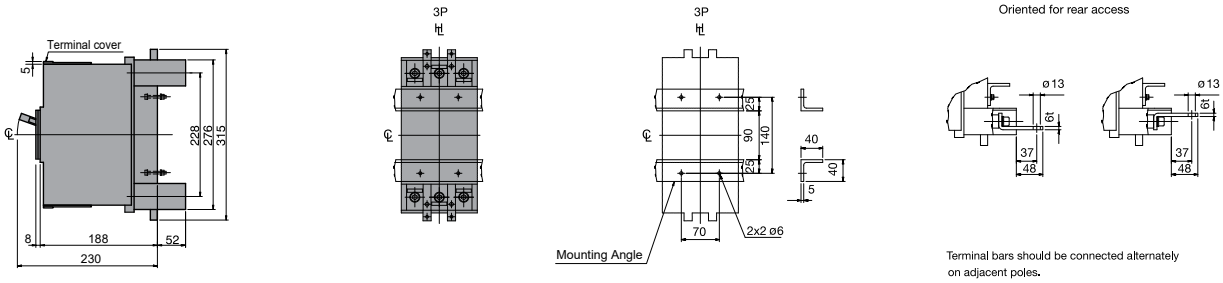
Outline Dimensions



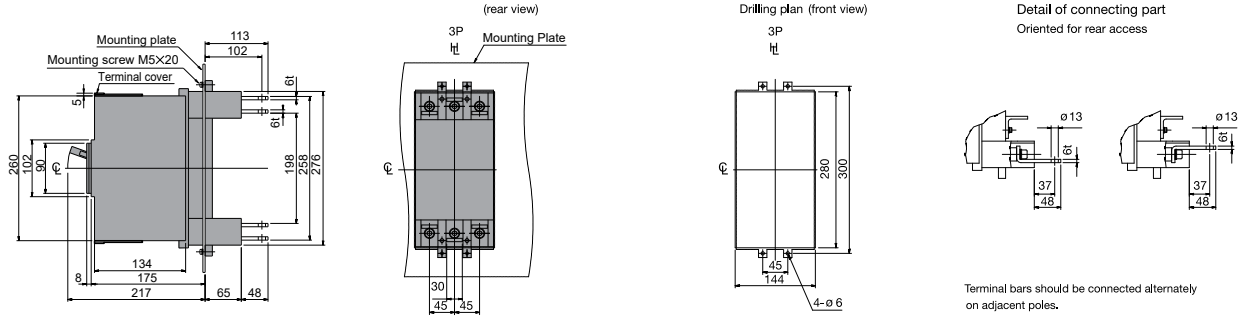
Termination of Busbar



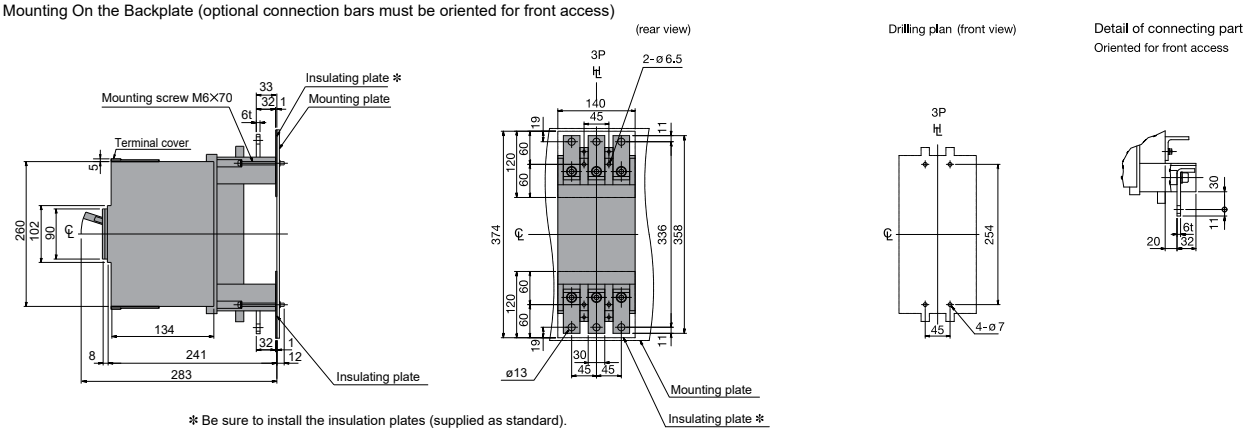
Mounting On a Support or Rails (shown with optional connection bars oriented for rear access)



Mounting Through the Backplate (shown with optional connection bars oriented for rear access)



Mounting On the Backplate (optional connection bars must be oriented for front access)



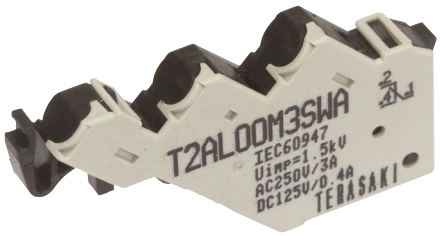
✻ Be sure to install the insulation plates (supplied as standard).

L400PE Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits



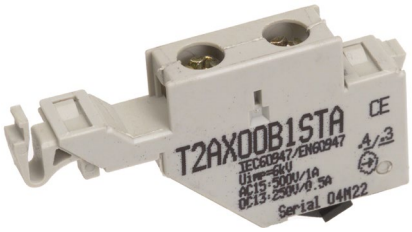
Item Description	Catalogue No.
Alarm Switch 1 C/O	T2AL00M3STA
Alarm Switch 1 C/O Wired	T2AL00M3SWA
Alarm Switch Micro-current 1 C/O	T2AL00M3RTA

Item Description	Catalogue No.
Alarm Switch Heavy Duty 1 N/O	T2AL00B1STA
Alarm Switch Heavy Duty 1 N/C	T2AL00B2STA

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxiliary Switch 1C/O	T2AX00M3STA
Auxiliary Switch 1 C/O Wired	T2AX00M3SWA
Auxiliary Switch Micro-current 1 C/O	T2AX00M3RTA



Item Description	Catalogue No.
Auxiliary Switch Heavy Duty 1 N/O	T2AX00B1STA
Auxiliary Switch Heavy Duty 1 N/C	T2AX00B2STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 24 V DC for Use with B160E 1P	T2SH16D02WA
Shunt Trip Coil 110 V DC for Use with B160E 1P	T2SH16D10WA
Shunt Trip Coil 230 V DC for Use with B160E 1P	T2SH16D20WA
Shunt Trip Coil 110 V AC	T2SH00A10TA
Shunt Trip Coil 240 V AC	T2SH00A20TA
Shunt Trip Coil 415 V AC	T2SH00A40TA
Shunt Trip Coil 24 V DC	T2SH00D02TA
Shunt Trip Coil 48 V DC	T2SH00D04TA
Shunt Trip Coil 110 V DC	T2SH00D10TA
Shunt Trip Coil 230 V DC	T2SH00D20TA

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 110 V AC	T2UV00A10NTA
Under Voltage Trip Coil Instant 240 V AC	T2UV00A20NTA
Under Voltage Trip Coil Instant 415 V AC	T2UV00A40NTA
Under Voltage Trip Coil Instant 24 V DC	T2UV00D02NTA
Under Voltage Trip Coil Instant 48 V DC	T2UV00D04NTA
Under Voltage Trip Coil Instant 110 V DC	T2UV00D10NTA
Under Voltage Trip Coil Instant 230 V DC	T2UV00D20NTA

Time Delay Operation (500 ms)

When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500 ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delay 110 V AC 125-630 A 3P	T2UV00A10DSA
Under Voltage Trip Coil Time Delay 200-240 V AC 125-630 A 3P	T2UV00A24DS
Under Voltage Trip Coil Time Delay 380-450 V AC 125-630 A 3P	T2UV00A40DS
Under Voltage Trip Coil Time Delay 24 V DC 125-630 A 3P	T2UV00D02DS
Under Voltage Trip Coil Time Delay 110 V DC 125-630 A 3P	T2UV00D10DS
Under Voltage Trip Coil Time Delay 230 V DC 125-630 A 3P	T2UV00D24DS

Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

Item Description	Catalogue No.
Metal Compact Handle Silver IP65 Handle + 356 mm Shaft	T2HP40R6ME

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

Item Description	Catalogue No.
T2HP Square Handle Grey, IP65 Handle + 445 mm Shaft	T2HP40R6BN
T2HP Square Handle Red/Yellow, IP65 Handle + 445 mm Shaft	T2HP40R6RN

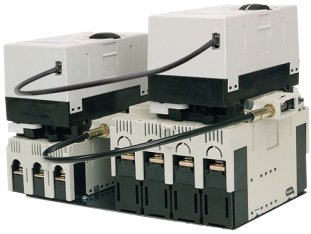
Motor Operator

Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
Motor Operator 110/240 V AC 400/630 AF	T2MC40A10NB
Motor Operator 24/48 V DC 400/630 AF	T2MC40D02NB
Motor Operator 110 V DC 400/630 AF	T2MC40D10NB

Motor Operator Accessories

Provides electrical interlocking between 2 motors to prevent simultaneous operation



Item Description	Catalogue No.
Motor Interlock Cable (0.6 m) Between Any 400/630/1000 AF MCCB Motor	T2MM40L06A
Motor Interlock Cable (2.1 m) Between Any 400/630/1000 AF MCCB Motor	T2MM40L21A

Item Description	Catalogue No.
Motor Interlock Cable (0.6m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S06A
Motor Interlock Cable (2.1m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S21A

Locking and Interlocking Accessories

Cable Mechanical Interlock

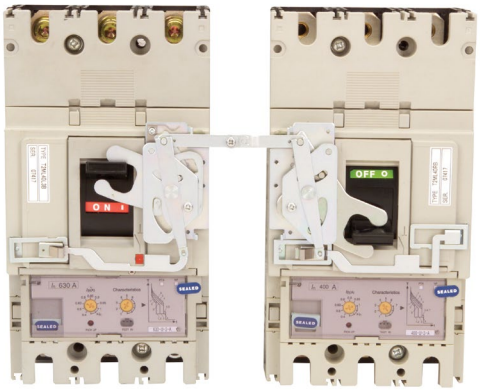
Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 M apart

Item Description	Catalogue No.
Cable Interlock Mechanism for 400/630 AF	T2MW40CB
Cable Interlock Mechanism for Use when a Handle is Installed 400/630 AF	T2MWH40CB

Item Description	Catalogue No.
Cable Interlock Wire (1.0 m)	T2MW00SA
Cable Interlock Wire (1.5 m)	T2MW00LA

Link Mechanical Interlock

Prevents simultaneous operation of two horizontally mounted interlocked MCCBs.

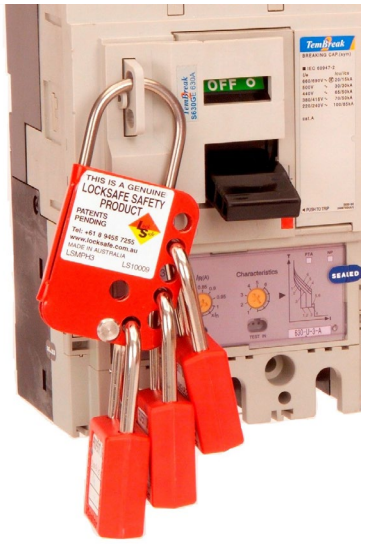


Item Description	Catalogue No.
Link Interlock 3 or 4 Pole Right Side Section	T2ML40RB
Link Interlock 3 Pole Left Side Section	T2ML40L3B
Link Interlock 4 Pole Left Side Section	T2ML40L4B
Link Interlock Right Link Interlock 4P For Use with Handle 400/630 AF	T2MLH40RB
Link Interlock Left Link Interlock 3P For Use with Handle 400/630 AF	T2MLH40L3B
Link Interlock Left Link Interlock 4P For Use with Handle 400/630 AF	T2MLH40L4B

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option



Item Description	Catalogue No.
Captive Toggle Lock 400/630 AF	T2HL40CAP

Non-captive

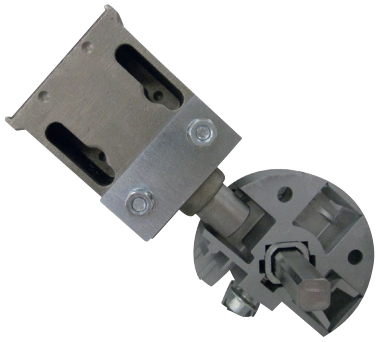
Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Non Captive Toggle Lock 400/630 AF	T2HL40A

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Mounted

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, standard key code, F	440TAKEYE100F
Prosafe, standard key code, G	440TAKEYE100G
Prosafe, standard key code, H	440TAKEYE100H
Prosafe, Standard Key Code I	440TAKEYE100I
Prosafe, Standard Key Code J	440TAKEYE100J
Prosafe, Standard Key Code K	440TAKEYE100K
Prosafe, Standard Key Code L	440TAKEYE100L
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, Standard Key	440TAKEYE10X

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys

Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100A
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10BA
Single key shot bolt lock, key not included	440TMSBLE10X

MCCBs

Installation External Accessories

Door Flange

A door mount flange providing a plastic surround for the panel or escutcheon cutout

Item Description	Catalogue No.
Door Flange IP20 DR FLG 400/630A MCCB	T2DF40A
Door Flange IP30 DR FLG 400/630A MOT	T2DM40A

Plug-in MCCBs

Plug-in MCCB conversion kit

The MCCB via rear plugs, is plugged onto a fixed base for its line and load connections.

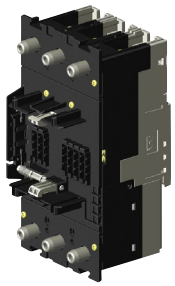
Ordering information

Includes MCCB plugs and other parts for converting an MCCB to a plug-in MCCB. The kA rating of a T2PM plug in MCCB is the same as standard front connected MCCBs.

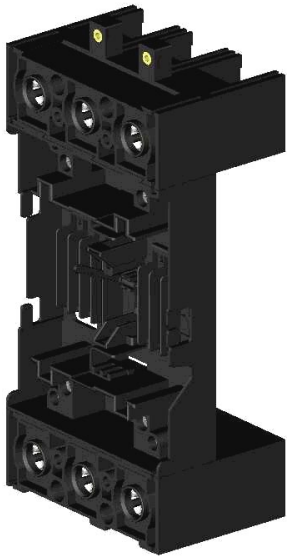
Mounting bases and internal accessory plugs and sockets are ordered seperately.

Plug in bases, IP20, includes rear insulation screen. The base includes terminal studs which are suitable for front or rear connection. Interpole barriers can be used with bases, not terminal covers.

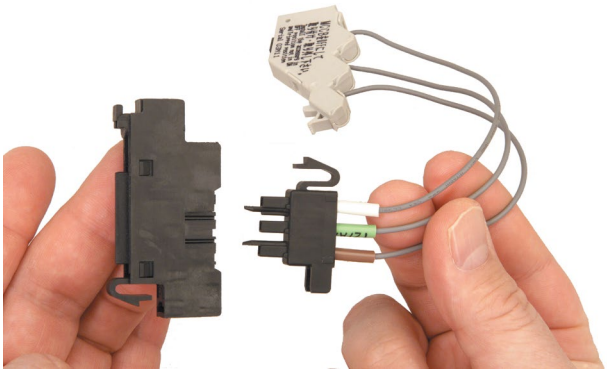
Note:
1) Up to 4 control wiring plug kits can be used in a base.
2) Standard Internal accessories are used with the above plugs and sockets



Item Description	Catalogue No.
Plug-in MCCB, 3 Pole Kit, B400/L400	2M0405CAAK
Plug-in MCCB, 4 Pole Kit, B400/L400	2M0406CAAK



Item Description	Catalogue No.
Plug-in Mounting Base 3P Base 400/630 AF	T2PM40A3A
Plug-in Mounting Base 4P Base 400/630 AF	T2PM40A4A



Item Description	Catalogue No.
3 Pin Plug and Socket for Aux/Alarms – for MCCB and Base	2H6959CAA1
3 Pin Plug and Socket for Shunt/UVT – for MCCB and Base	2H6959CBA1
Control Wiring Plugs and Sockets for Withdrawable and Plug-in MCCBs, 3 Pin Socket for Panel Mount Version	T2TP003A

L800PE

70 kA 690 V AC MCCB

- ✔ 690 V AC power distribution and motor start applications
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Rear connect terminals standard, plug-in base option
- ✔ Full range of accessories for application flexibility
- ✔ 3 pole MCCB
- ✔ 273 mm (H), 140 mm (D), 70 mm pole centres
- ✔ Fault rating; 70 kA ICU @ 690 V AC
- ✔ Electronic trip unit: 10 preset characteristic curve selection dial and base current adjustment dial
- ✔ Standard features include and instantaneous-only setting
- ✔ Trip units; 630 A, 800 A

General

Trip Unit Protection Type	Adjustable Electronic LSI [1)]
Trip Unit Rating	630, 800 A
Number of Poles	3
Switching Poles	3P

Short Circuit

Short-Circuit Fault Interruption Capacity (Icu)	70 kA @ 690 V AC

Voltage

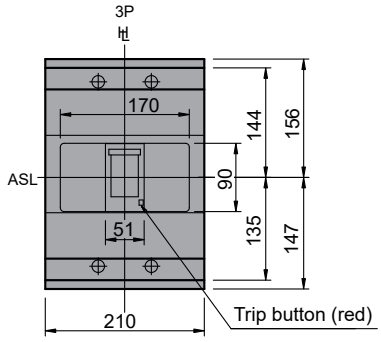
Utilisation Voltages	690 V AC
Rated Frequency	50 / 60 Hz

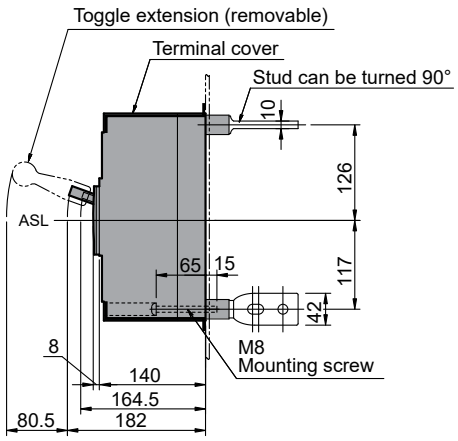
Connections

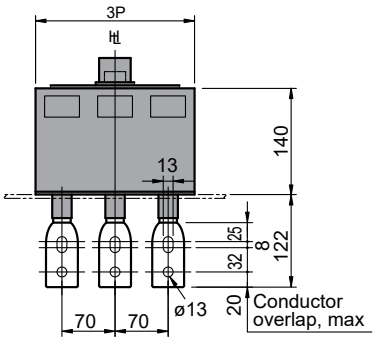
Connection Mode	Rear Connection (Standard) Plug-in PM (Option)

Notes: 1) When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Quick Reference Dimensions – Rear Connect







Note: Studs are factory installed in horizontal direction both on the line and load sides.

1000 A Frame 3 Pole 70 kA

I_n (A @ 50 °C)	I_r, (A)	I_{cu}, 690 V (kA)	Poles	Catalogue No.
630	-	70	3	L800PE3630RC
800	-	70	3	L800PE3800RC

Notes: When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3
Switching Poles	3P
Frame Size	1000 AF
Trip Unit Rating	630 / 800 A

I_n, Rated Current

A @ 30 °C	630	800
A @ 45 °C	630	800
A @ 50 °C	630	800

U_e, Rated Operational Voltage, AC, max	690 V AC
U_i, Rated Insulation Voltage	800 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	630	800
(W)	63.33	102.33

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 3947.2 AS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 %RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Plug-in PM (Option) Rear Connection (Standard)
Terminal Type	Bolt-Terminal
Connection Torque	40.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		273 mm
Width	**3P**	210 mm
Depth (less toggle)		184 mm
Depth (toggle included)		140 mm
Weight	**3P**	13.3 / 14.8 kg
Electrical Life		500 cycles
Mechanical Life		10000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**PE**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	-
		380 / 400 V AC	-
		415 V AC	-
		440 V AC	-
		690 V AC	70
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	-
		380 / 400 V AC	-
		415 V AC	-
		440V AC	-
		690 V AC	50
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-
	I_{cw} (Short Time Withstand)	0.3 Seconds	10

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI
Rated Temperature	50 °C

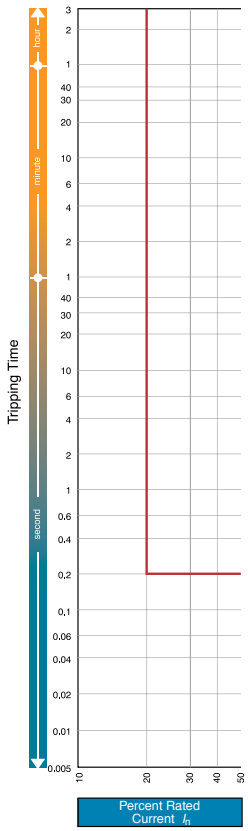
Other Features

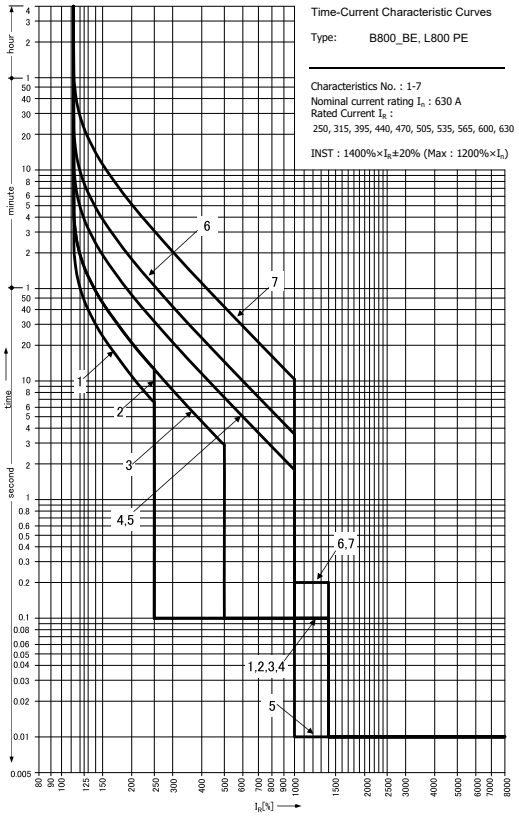
Pre-trip alarm (PTA)	Option
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	No
Interpole Barriers	No
External Panel Display	No

Characteristic Curves 1 to 7, B800_BE, B800_BEG, L800PE 630 A, Basic Electronic





B800P3800SE_dOPCH-S07

Characteristics For I_R Rated 630 A: B800N_BE, B800H_BE, B800P_BE, B800R_BE

LTD Pick Up Current I_R (A)		**250 – 315 – 395 – 440 – 470 – 505 – 535 – 565 – 600 – 630 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8** [4]	**9** [4]	**10** [3, 4]
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)		2.5	10	12
OCR Options											
Pre Trip Alarm (PTA)	I_P x I_R	0.8									
	I_p (S)	40									
Ground Fault (GF) [2]	I_G x I_N	0.2									
	t_G (S)	0.2									
Neutral Pole Protection (NP)	I_N x I_R	1.0 / 0.5 [1]									
	t_N (S)	$t_N = t_R$									

Notes

1) 1.0 x I_R or 0.5 x I_R can be selected. Characteristic of neutral protection (t_N vs. I_N) is identical to characteristic of phase protection (t_R vs. I_R).
2) When GF is specified for 3 pole MCCBs, a terminal block is fitted as standard for external neutral CT connection for 3 phase 4 wire systems. Refer terminal block details on following pages. 4 pole GF MCCBs include an internal 4th CT standard, so no user connection is required.
3) Characteristic 10 is instantaneous only.
4) Curves 8, 9, 10 shown on following pages.

Characteristic Curves 8 and 9, B800_BE, B800_BEG, L800PE 630 A, Basic Electronic

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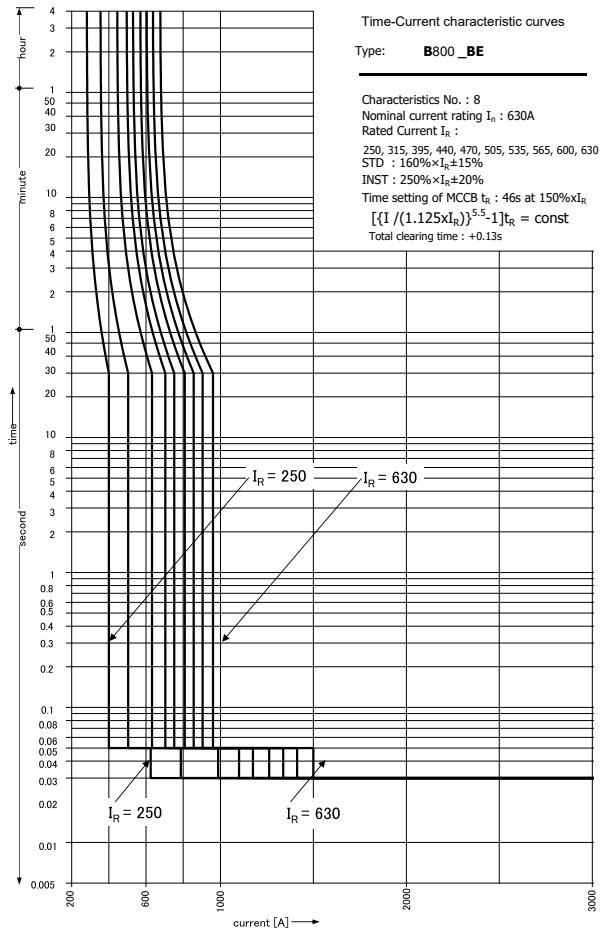

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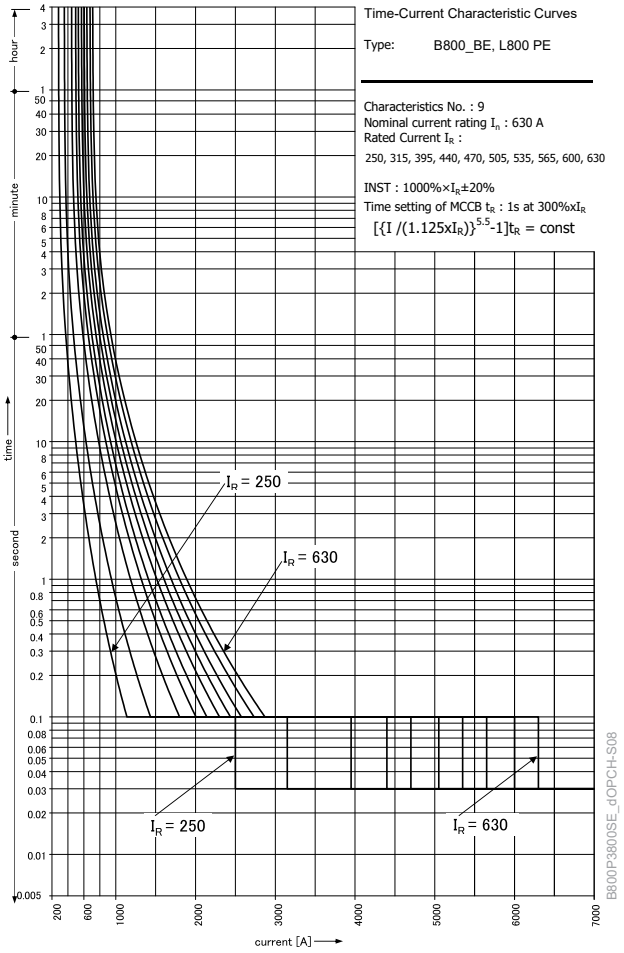
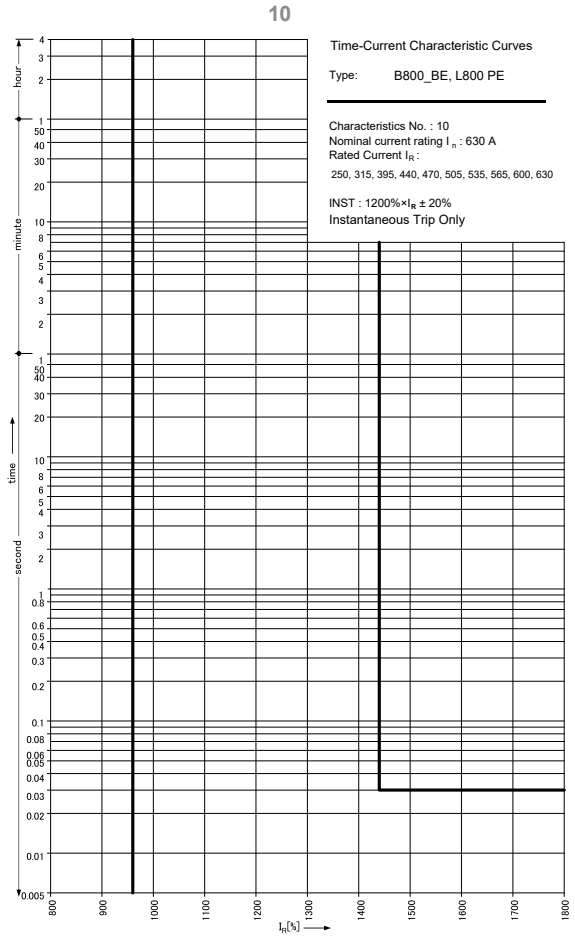


Characteristics For I_R Rated 630 A: B800N_BE, B800H_BE, B800P_BE, B800R_BE, L800PE

LTD Pick Up Current I_R (A)		**250 – 315 – 395 – 440 – 470 – 505 – 535 – 565 – 600 – 630 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)			2.5	10	12
OCR Options		PTA, GF, NP									

Characteristic Curve 10, B800_BE, B800_BEG, L800PE 630 A, Basic Electronic



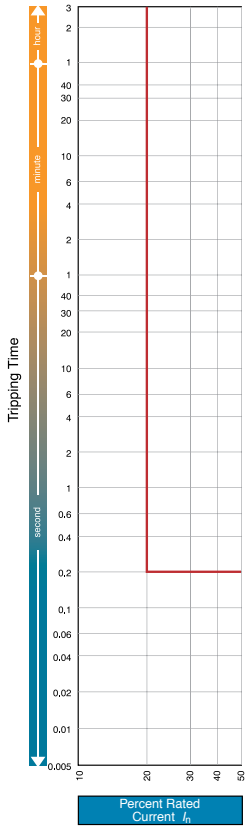
B800P3800SE_dOPCH-S09

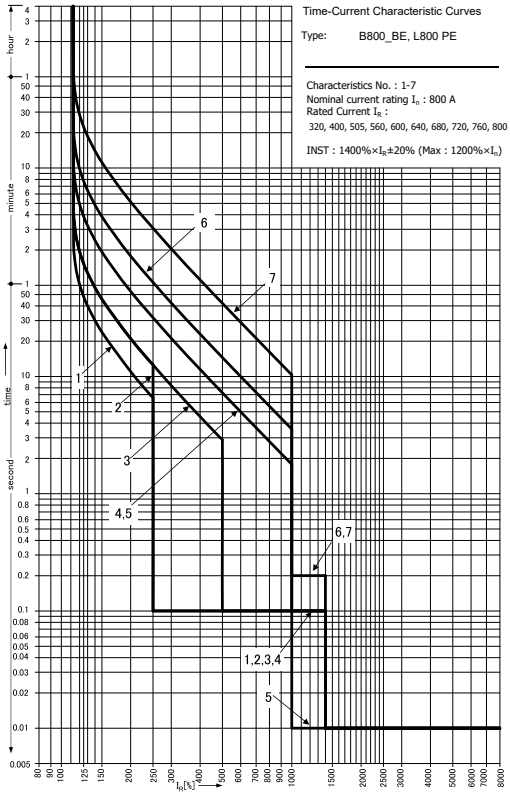
Characteristics For I_R Rated 630 A: B800N_BE, B800H_BE, B800P_BE, B800R_BE, L800PE

LTD Pick Up Current I_R (A)		**250 – 315 – 395 – 440 – 470 – 505 – 535 – 565 – 600 – 630 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)		2.5	10	12
OCR Options		PTA, GF, NP									

MCCBs

Characteristic Curves 1 to 7, B800_BE, B800_BEG, L800PE 800 A IR MCCBs





B800P3800SE_dOPCH-S10

Characteristics For I_R Rated 800 A: B800N_BE, B800H_BE, B800P_BE, B800R_BE, L800PE

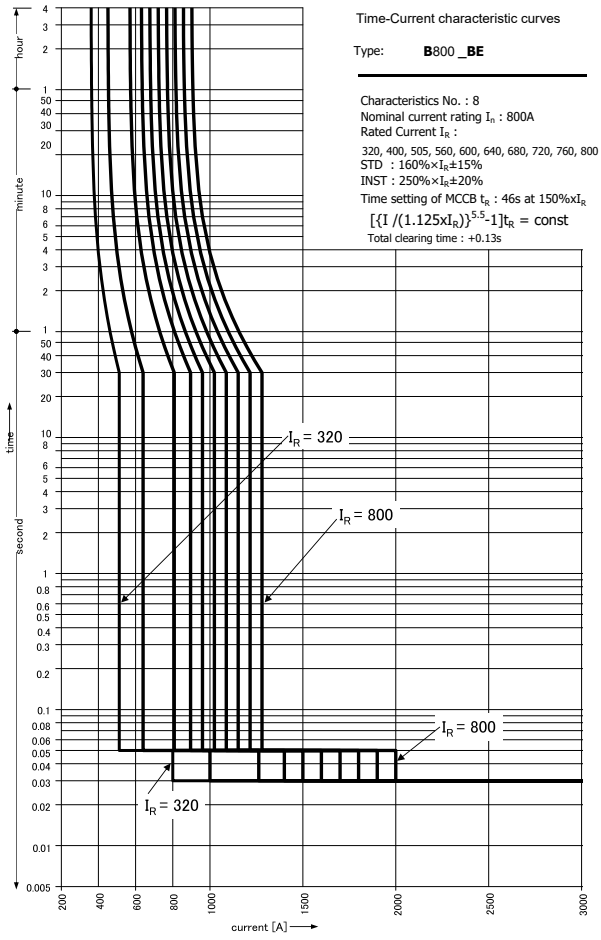
LTD Pick Up Current I_R (A)		**320 – 400 – 505 – 560 – 600 – 640 – 680 – 720 – 760 – 800 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8** [4]	**9** [4]	**10** [3, 4]
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 3 x I_R		-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)		2.5	10	12
OCR Options											
Pre Trip Alarm (PTA)	I_P x I_R	0.8									
	I_p (S)	40									
Ground Fault (GF) [2]	I_G x I_N	0.2									
	t_G (S)	0.2									
Neutral Pole Protection (NP)	I_N x I_R	1.0 / 0.5 [1]									
	t_N (S)	$t_N = t_R$									

Notes

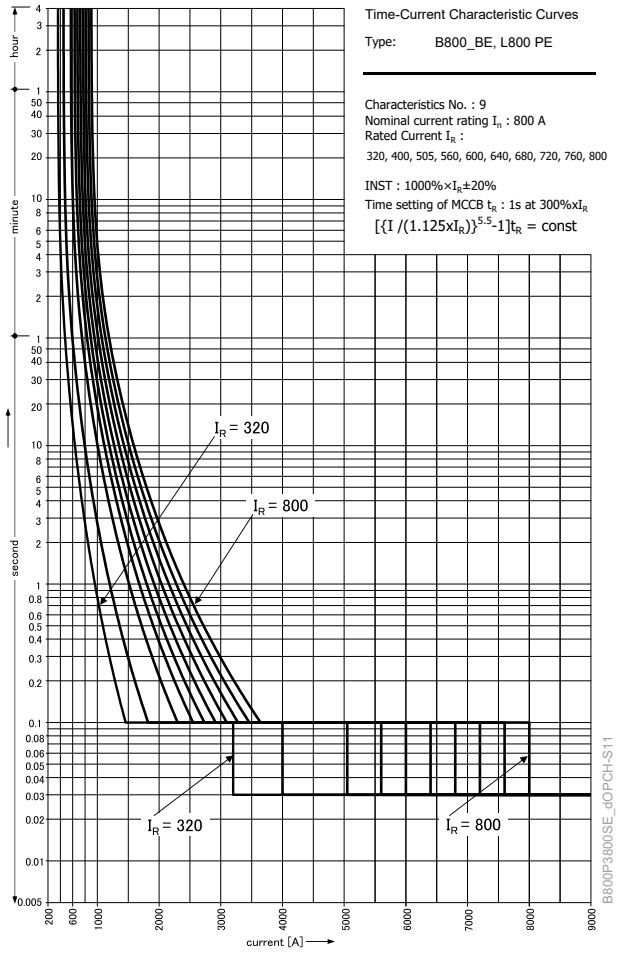
1) 1.0 x I_R or 0.5 x I_R can be selected. Characteristic of neutral protection (t_N vs. I_N) is identical to characteristic of phase protection (t_R vs. I_R).
2) When GF is specified for 3 pole MCCBs, a terminal block is fitted as standard for external neutral CT connection for 3 phase 4 wire systems. Refer terminal block details on following pages. 4 pole GF MCCBs include an internal 4th CT standard, so no user connection is required.
3) Characteristic 10 is instantaneous only.
4) Curves 8, 9, 10 shown on following pages.

Characteristic Curves 8 and 9, B800_BE, B800_BEG, L800PE 800 A IR MCCBs

8



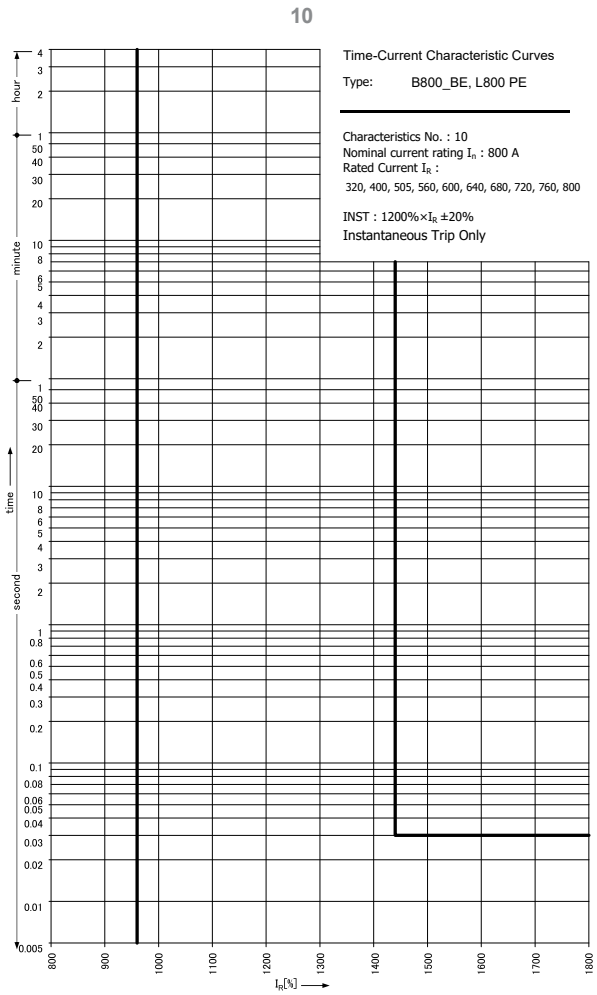
9



Characteristics For I_R Rated 800 A: B800N_BE, B800H_BE, B800P_BE, B800R_BE, L800PE

LTD Pick Up Current I_R (A)		**320 – 400 – 505 – 560 – 600 – 640 – 680 – 720 – 760 – 800 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 2 x I_R			at 6 x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)			2.5	10	12
OCR Options		PTA, GF, NP									

Characteristic Curve 10, B800_BE, B800_BEG, L800PE 800 A IR MCCBs



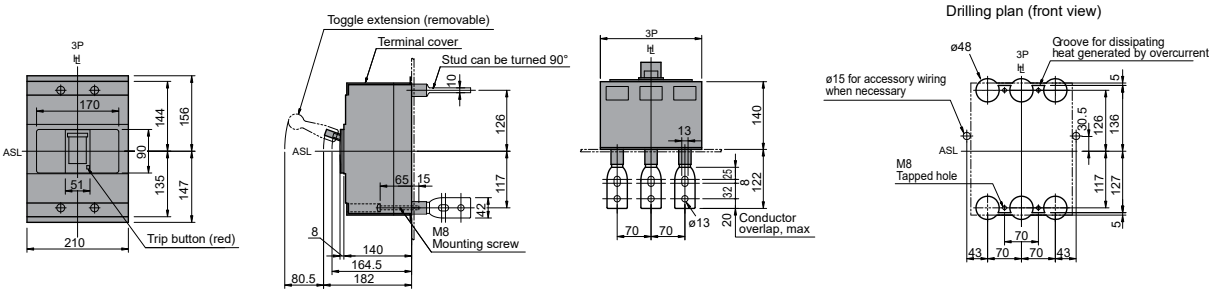
B800P3800SE_dOPCH-S12

Characteristics For I_R Rated 800 A: B800N_BE, B800H_BE, B800P_BE, B800R_BE, L800PE

LTD Pick Up Current I_R (A)		**320 – 400 – 505 – 560 – 600 – 640 – 680 – 720 – 760 – 800 (10 steps)**									
Characteristic Type: LSI – LI – I		L – S – I				L – I	L – S – I			L – I	I – Inst. only
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
LTD t_R (S)		11	21	21	5	5	10	29	46	1	-
		at 200% x I_R			at 600% x I_R				at 1.5 x I_R	at 3 x I_R	-
STD	I_{sd} x I_R	2.5	2.5	5	10	-	10	10	1.6	-	-
	I_{sd} (S)	0.1	0.1	0.1	0.1	-	0.2	0.2	0.05	-	-
INST I_i x I_R		14 (Max. of 12 x I_n)				10	14 (Max. of 12 x I_n)		2.5	10	12
OCR Options		PTA, GF, NP									

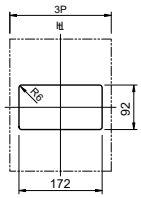
Dimensions L800PE, Rear Connect (mm)

Rear Connected



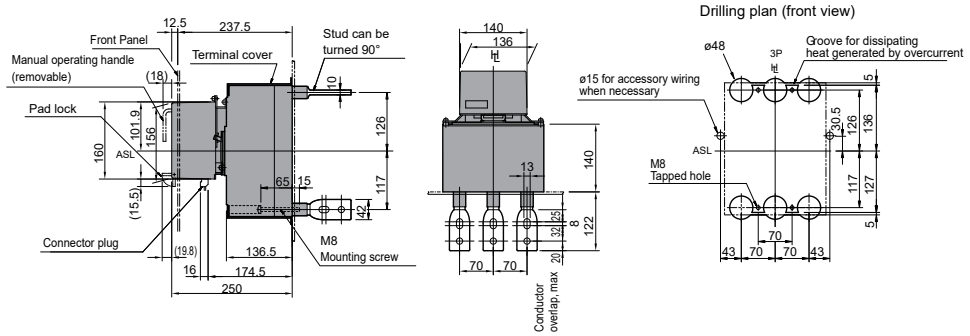
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel cutout (front view)



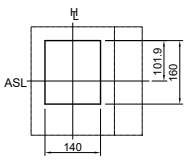
Panel cutout dimensions shown give an allowance of 1.0 mm around the handle escutcheon.

Rear Connected With Motor Operator



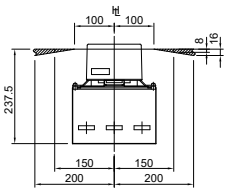
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Panel cutout (front view)



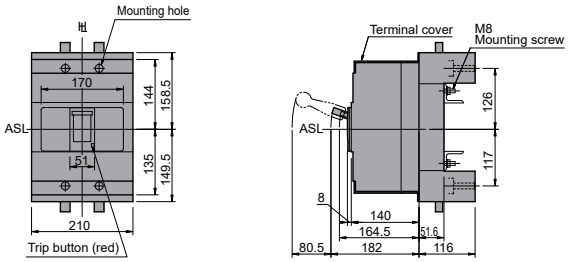
Panel cutout dimensions shown give an allowance of 1.5 mm around motor operator.

Panel hinge position (hatching area)
(bottom view)



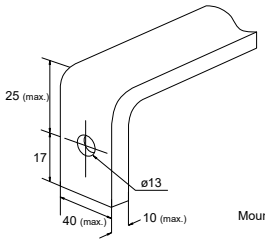
Dimensions L800PE, Plug-in (mm)

Outline Dimensions



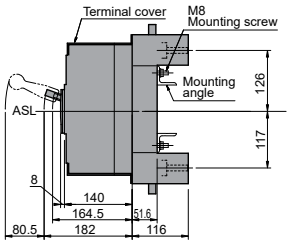
Termination of Busbar

Preperation of conductor

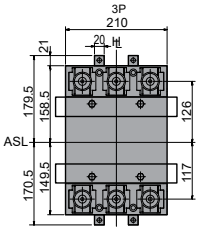


Mounting screw M12×25 max. Hex. sec. head bolt.

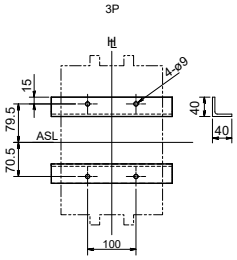
Mounting On the Angle Support



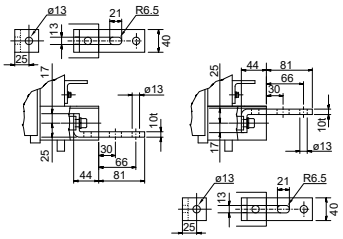
Mounting base (rear view)



Drilling plan (front view)

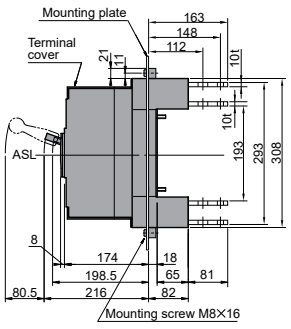


Detail of connecting part
Oriented for rear access

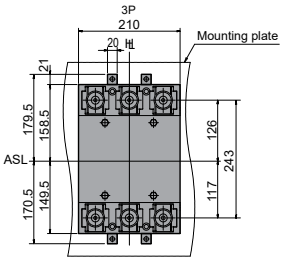


Terminal bars should be connected alternately on adjacent poles.

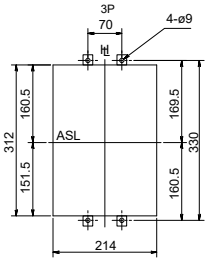
Mounting Through the Backplate (shown with optional connection bars oriented for rear access)



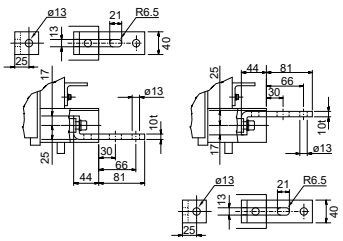
(rear view)



Drilling plan (front view)

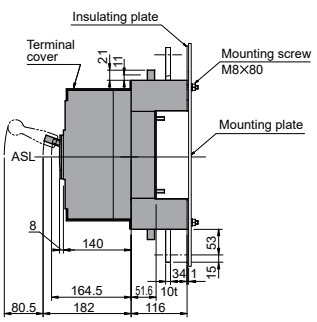


Detail of connecting part
Oriented for rear access

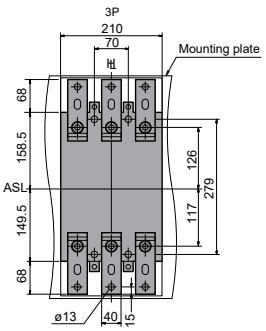


Terminal bars should be connected alternately on adjacent poles.

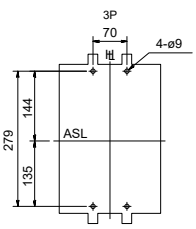
Mounting On the Backplate (optional connection bars must be oriented for front access)



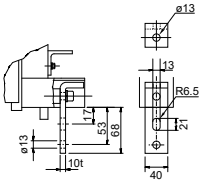
(rear view)



Drilling plan (front view)



Detail of connecting part
Oriented for front access

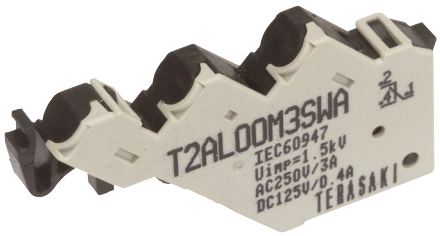


L800PE Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits



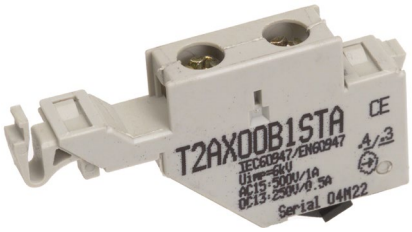
Item Description	Catalogue No.
Alarm Switch 1 C/O	T2AL00M3STA
Alarm Switch 1 C/O Wired	T2AL00M3SWA
Alarm Switch Micro-current 1 C/O	T2AL00M3RTA

Item Description	Catalogue No.
Alarm Switch Heavy Duty 1 N/O	T2AL00B1STA
Alarm Switch Heavy Duty 1 N/C	T2AL00B2STA

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxiliary Switch 1 C/O	T2AX00M3STA
Auxiliary Switch 1 C/O Wired	T2AX00M3SWA
Auxiliary and Alarm Switches 1 C/O 2nd Auxiliary with 700 mm Leads	T2AX00M4SWA
Auxiliary and Alarm Switches 1 C/O 3rd Auxiliary with 700 mm Leads	T2AX00M5SWA
Auxiliary Switch Micro-current 1 C/O	T2AX00M3RTA



Item Description	Catalogue No.
Auxiliary Switch Heavy Duty 1 N/O	T2AX00B1STA
Auxiliary Switch Heavy Duty 1 N/C	T2AX00B2STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00A10TA
Shunt Trip Coil 240 V AC	T2SH00A20TA
Shunt Trip Coil 415 V AC	T2SH00A40TA
Shunt Trip Coil 12V DC	T2SH00D01TA
Shunt Trip Coil 24 V DC	T2SH00D02TA
Shunt Trip Coil 48 V DC	T2SH00D04TA
Shunt Trip Coil 110 V DC	T2SH00D10TA
Shunt Trip Coil 230 V DC	T2SH00D20TA

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 800-1600 A 110 V AC	T2UV80A10NTA
Under Voltage Trip Coil Instant 800-1600 A 240 V AC	T2UV80A20NTA
Under Voltage Trip Coil Instant 800-1600 A 415 V AC	T2UV80A40NTA
Under Voltage Trip Coil Instant 800-1600 A 24 V DC	T2UV80D02NTA
Under Voltage Trip Coil Instant 800-1600 A 48 V DC	T2UV80D04NTA
Under Voltage Trip Coil Instant 800-1600 A 110 V DC	T2UV80D10NTA
Under Voltage Trip Coil Instant 800-1600 A 230 V DC	T2UV80D24NTA

Time Delay Operation (500 ms)

When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delayed 800-1600 A 110 V AC	T2UV80A10DSA
Under Voltage Trip Coil Time Delayed 800-1600 A 230-240 V AC	T2UV80A24DSA
Under Voltage Trip Coil Time Delayed 800-1600 A 380-450 V AC	T2UV80A40DSA
Under Voltage Trip Coil Time Delayed 800-1600 A 24 V DC	T2UV80D02DSA
Under Voltage Trip Coil Time Delayed 800-1600 A 110 V DC	T2UV80D10DSA
Under Voltage Trip Coil Time Delayed 800-1600 A 230 V DC	T2UV80D24DSA

Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

Item Description	Catalogue No.
T2HS Compact Handle Grey, IP65 Handle + 320 mm Shaft 800/1000 AF	T2HS80F6BM

Item Description	Catalogue No.
Metal Compact Handle Silver IP65 Handle + 320 mm Shaft 800/1000 AF	T2HP80R6ME

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

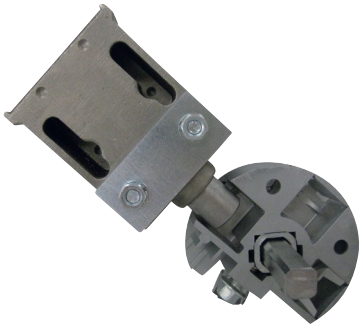
Item Description	Catalogue No.
T2HP Square Handle Grey, IP65 Handle + 445 mm Shaft 800/1000 AF	T2HP80R6BN
T2HP Square Handle Red/Yellow, IP65 Handle + 445 mm Shaft 800/1000 AF	T2HP80R6RN

Handle Options

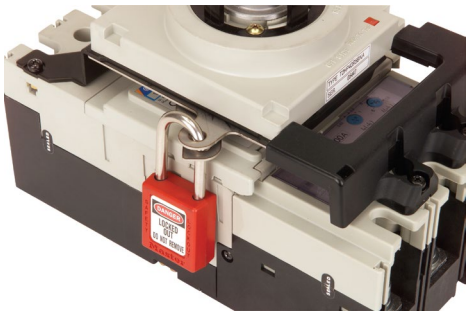
A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
TPHS Handle Options 390 mm T Pin Shaft – no Flexi Coupling 400/630 AF	T2HS400SHAFT



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702



Item Description	Catalogue No.
T2HS Handle Options MCCB/Handle Mechanical Padlock Attachment	T2HP80PALK

Item Description	Catalogue No.
T2HS Handle Options MCCB toggle extension Lever	2A2272BAB

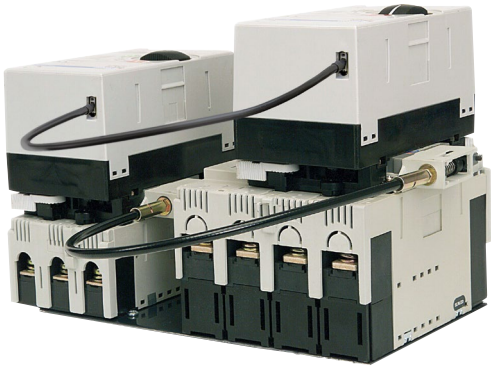
Motor Operator

Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
Motor Operators, 110-240 V AC, B800, B1000, ZS630, ZS800	T2MC80A10NP
Motor Operators, 110 V DC, B800, B1000, ZS630, ZS801	T2MC80D10NP
Motor Operators, 24-48 V DC, B800, B1000, ZS630, ZS802	T2MC80D02NP

Motor Operator Accessories

Provides electrical interlocking between 2 motors to prevent simultaneous operation



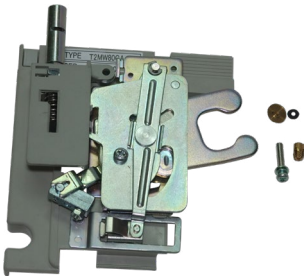
Item Description	Catalogue No.
Motor Interlock Cable (0.6 m) Between Any 400/630/1000 AF MCCB Motor	T2MM40L06A
Motor Interlock Cable (2.1 m) Between Any 400/630/1000 AF MCCB Motor	T2MM40L21A

Item Description	Catalogue No.
Motor Interlock Cable (0.6 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S06A
Motor Interlock Cable (2.1 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S21A

Locking and Interlocking Accessories

Cable Mechanical Interlock

Prevents simultaneous operation of two interlocked MCCBs mounted up to 1.5 M apart



Item Description	Catalogue No.
Cable Interlock Mechanism for 800/1000 AF	T2MW80CA

Item Description	Catalogue No.
Cable Interlock Wire (1.0 m)	T2MW00SA
Cable Interlock Wire (1.5 m)	T2MW00LA

Link Mechanical Interlock

Prevents simultaneous operation of two horizontally mounted interlocked MCCBs.

Item Description	Catalogue No.
Mechanical Interlock Right Link Interlock 3/4P 800/1000 AF	T2ML80RA
Mechanical Interlock Left Link Interlock 3P 800/1000 AF	T2ML80L3A
Mechanical Interlock Left Link Interlock 3P/4P 800/1000 AF	T2ML80L4A

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option

Item Description	Catalogue No.
Toggle Locks captive Lock with Single 8 mm Hole B800/B1000 AF	T2PL80UN

Non-captive

Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Non Captive Toggle Lock 400/630 AF	T2HL40A

Trapped Key Interlocks

Mounted

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, standard key code, A	440TAKEYE100A
Prosafe, standard key code, B	440TAKEYE100B
Prosafe, standard key code, C	440TAKEYE100C
Prosafe, standard key code, D	440TAKEYE100D
Prosafe, standard key code, E	440TAKEYE100E
Prosafe, standard key code, F	440TAKEYE100F
Prosafe, standard key code, G	440TAKEYE100G
Prosafe, standard key code, H	440TAKEYE100H
Prosafe, Standard Key Code I	440TAKEYE100I
Prosafe, Standard Key Code J	440TAKEYE100J
Prosafe, Standard Key Code K	440TAKEYE100K
Prosafe, Standard Key Code L	440TAKEYE100L
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, Standard Key	440TAKEYE10X

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys

Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100A
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10BA
Single key shot bolt lock, key not included	440TMSBLE10X

MCCBs

Installation External Accessories

Door Flange

A door mount flange providing a plastic surround for the panel or escutcheon cutout

Item Description	Catalogue No.
Door Flange IP20 DR FLG 400/630A MCCB	T2DF40A
Door Flange IP30 DR FLG 400/630A MOT	T2DM40A

Plug-in MCCBs

Plug-in Mounting Bases and MCCB Plugs

The MCCB via rear plugs, is plugged onto a fixed base for its line and load connections.

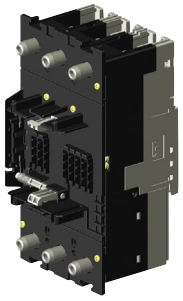
Ordering information

Includes MCCB plugs and other parts for converting an MCCB to a plug-in MCCB. The kA rating of a T2PM plug in MCCB is the same as standard front connected MCCBs.

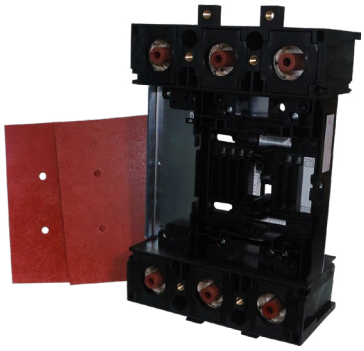
Mounting bases and internal accessory plugs and sockets are ordered seperately.

Plug in bases, IP20, includes rear insulation screen. The base includes terminal studs which are suitable for front or rear connection. Interpole barriers can be used with bases, not terminal covers.

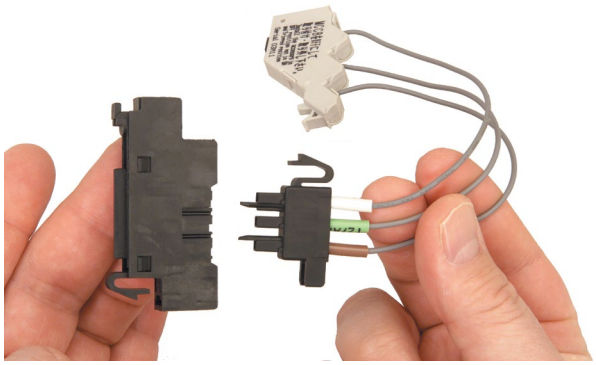
Note:
1) Up to 4 control wiring plug kits can be used in a base.
2) Standard Internal accessories are used with the above plugs and sockets



Item Description	Catalogue No.
Plug in conversion kit, 3P, B800, S800	2M1158CAA



Item Description	Catalogue No.
Plug-in Mounting Bases (IP20 over Sockets) 3 Pole Kit B800F, N, H, S, D	T2PM80A3A
Plug-in Mounting Bases (IP20 over Sockets) 4 Pole Kit B800F, N, H, S, D	T2PM80A4A



Item Description	Catalogue No.
3 Pin Plug and Socket for Aux/Alarms – for MCCB and Base	2H6959CAA1
3 Pin Plug and Socket for Shunt/UVT – for MCCB and Base	2H6959CBA1

Item Description	Catalogue No.
Plug-in MCCB Extension Bar 3 Pole Kit	T2PF803HA
Plug-in MCCB Extension Bar 4 Pole Kit	T2PF804HA

VS125NJ

1000 V AC Circuit Breaker

- ✔ 1000 VAC MCCB for power distribution and motor starting use in mines or tunnels
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 pole MCCB
- ✔ Compact 155 mm H, 68 mm D, 30 mm pole centres
- ✔ Fault interruption rating; 4 kA I_{cu} @ 1000 V AC
- ✔ Utilisation voltage ratings 1000 or 1100 V AC
- ✔ Thermal magnetic trip unit: adjustable thermal / adjustable magnetic
- ✔ Trip units; 20, 32 A

CE

General

Trip Unit Protection Type	Adjustable thermal, adjustable magnetic
Trip Unit Rating	20, 32 A
Number of Poles	3
Switching Poles	3P

Short Circuit

Short-Circuit Fault Interruption Capacity (I_{cu})	4 kA @1000 V AC
	4 kA @1100 V AC
Utilisation and service breaking rated	I_{cu} and I_{cs}

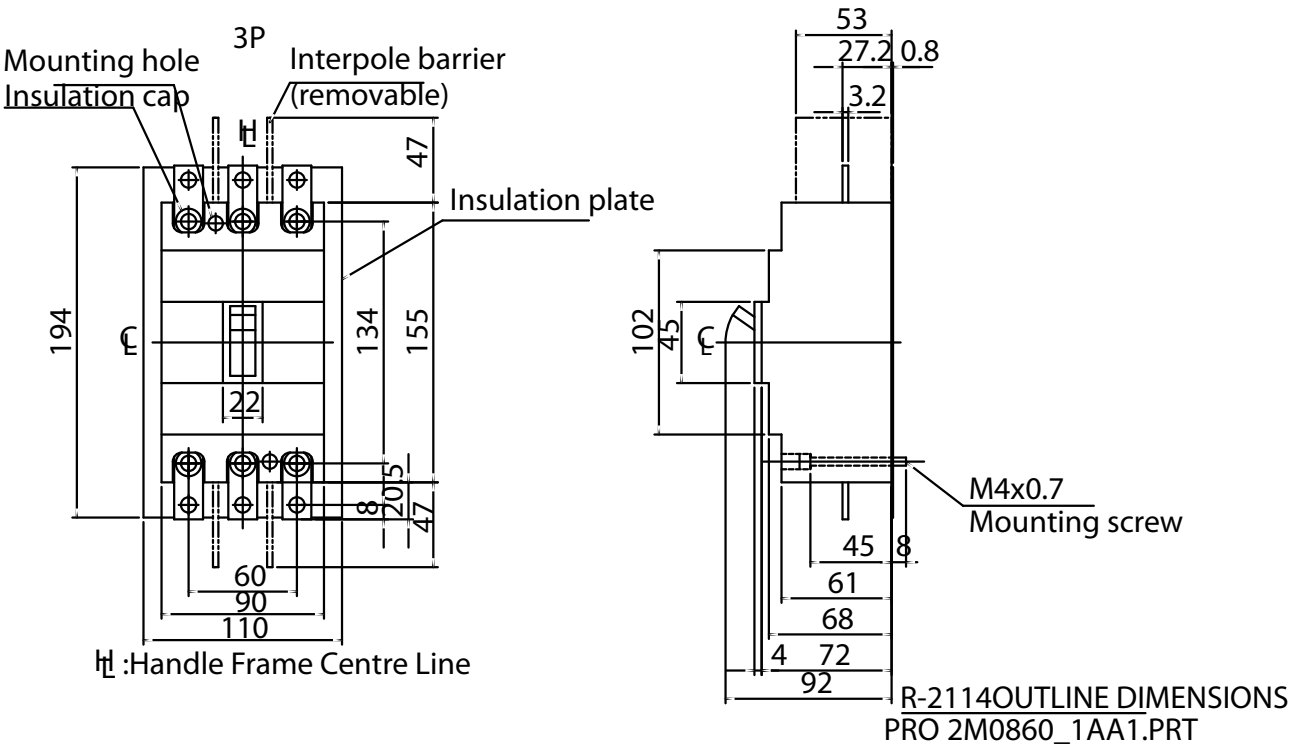
Voltage

Utilisation Voltages	1000 V AC or 1100 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in PM (Option)

Quick Reference Dimensions – Front Connect



125 A Frame 3 Pole 4 kA

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 1000 V (kA)	Poles	Catalogue No.
20	12.5 - 20	120 - 240	4	3	VS125NJ320
32	20 - 32	192 - 384	4	3	VS125NJ332

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3
Switching Poles	3P
Frame Size	125 AF
Trip Unit Rating	20 / 32 A

I_n, Rated Current

A @ 30 °C	20	32
A @ 45 °C	20	32
A @ 50 °C	20	32

U_e, Rated Operational Voltage, AC, max	1100 V AC
U_i, Rated Insulation Voltage	1100 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	20	32
(W)	6.66	8

Dielectric Strength	3500 V AC

Standards

Standards Compliance	IEC 60947-2 IEC 60947-1 JIS C 8201-2-1 Ann.1
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	1.5 - 35 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option)
Terminal Type	Screw Terminal(s)
Connection Torque	4.9 - 6.9 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		155 mm
Width	**3P**	90 mm
Depth (less toggle)		68 mm
Depth (toggle included)		mm
Weight	**3P**	1.1 kg
Electrical Life		1000 cycles
Mechanical Life		7000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**NJ**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	-
		380 / 400 V AC	-
		415 V AC	-
		440 V AC	-
		690 V AC	-
		1000 V AC	4
		1100 V AC	4
		125 V DC	-
		250 V DC	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	-
		380 / 400 V AC	-
		415 V AC	-
		440V AC	-
		690 V AC	-
		1000 V AC	4
		1100 V AC	4
		125 V DC	-
		250 V DC	-
	I_{cw} (Short Time Withstand)	0.3 Seconds	-

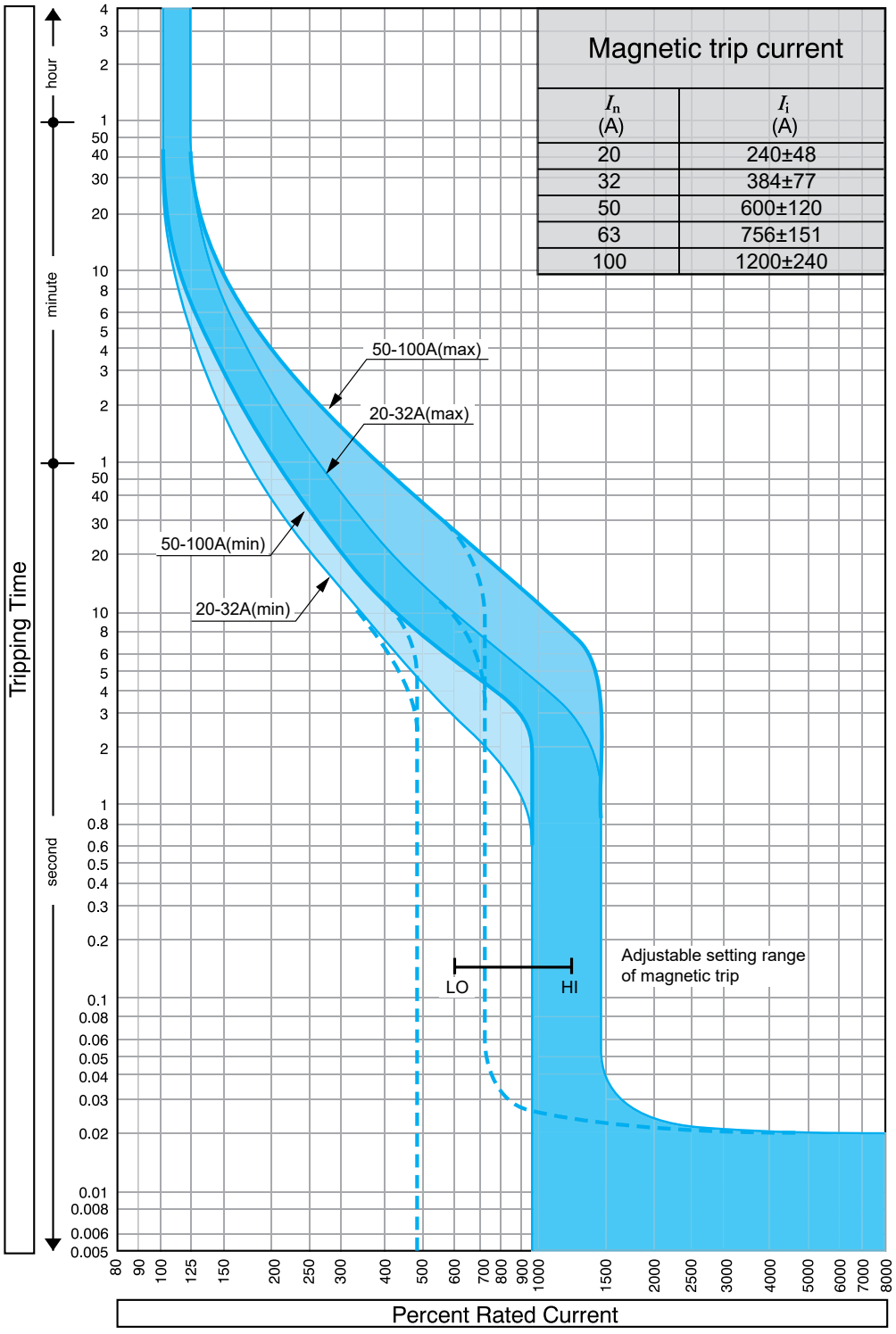
Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Rated Temperature	45 °C

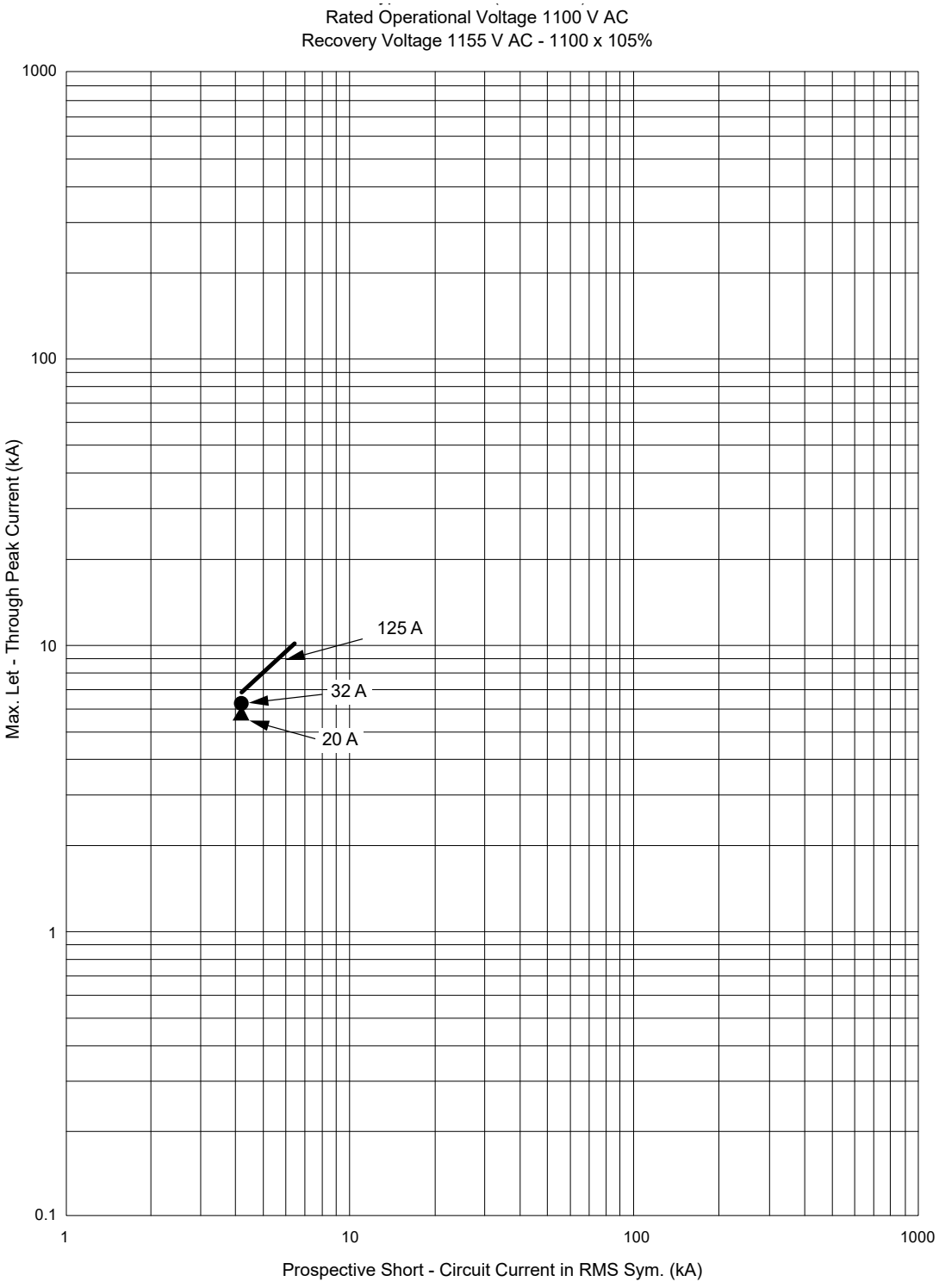
General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

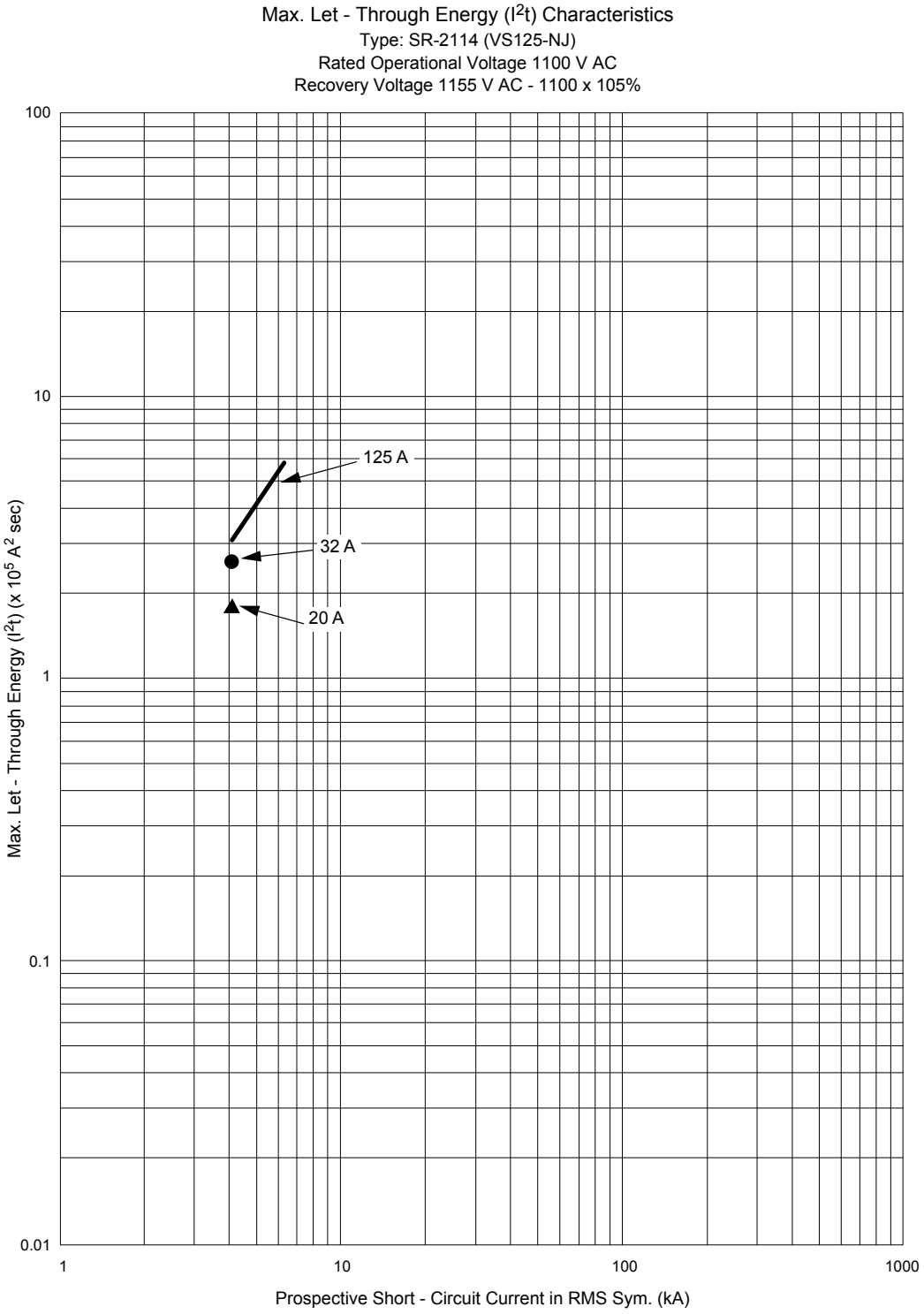
Time Current Characteristics Curve 50 - 100 A, VS125, Thermal Magnetic



Let-Through Peak Current Characteristics VS125NJ

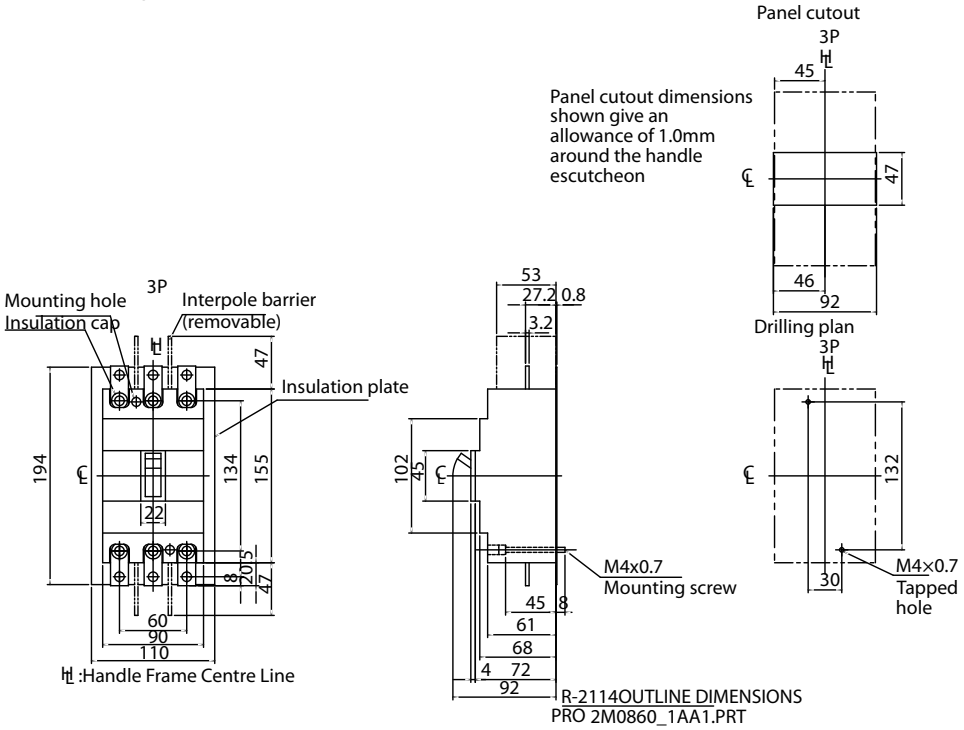


Let-Through Energy I²t Curve, VS125NJ

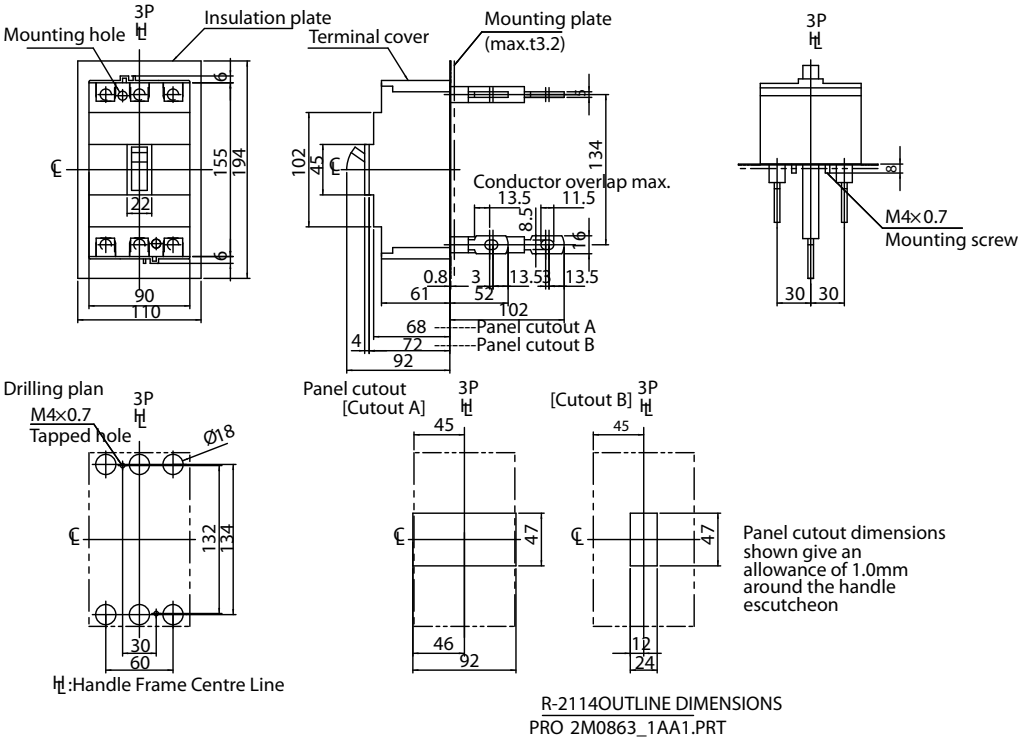


Dimensions VS125_NJ/GJ, Front/ Rear Connection (mm)

Front Connected With Terminal Bars Optional

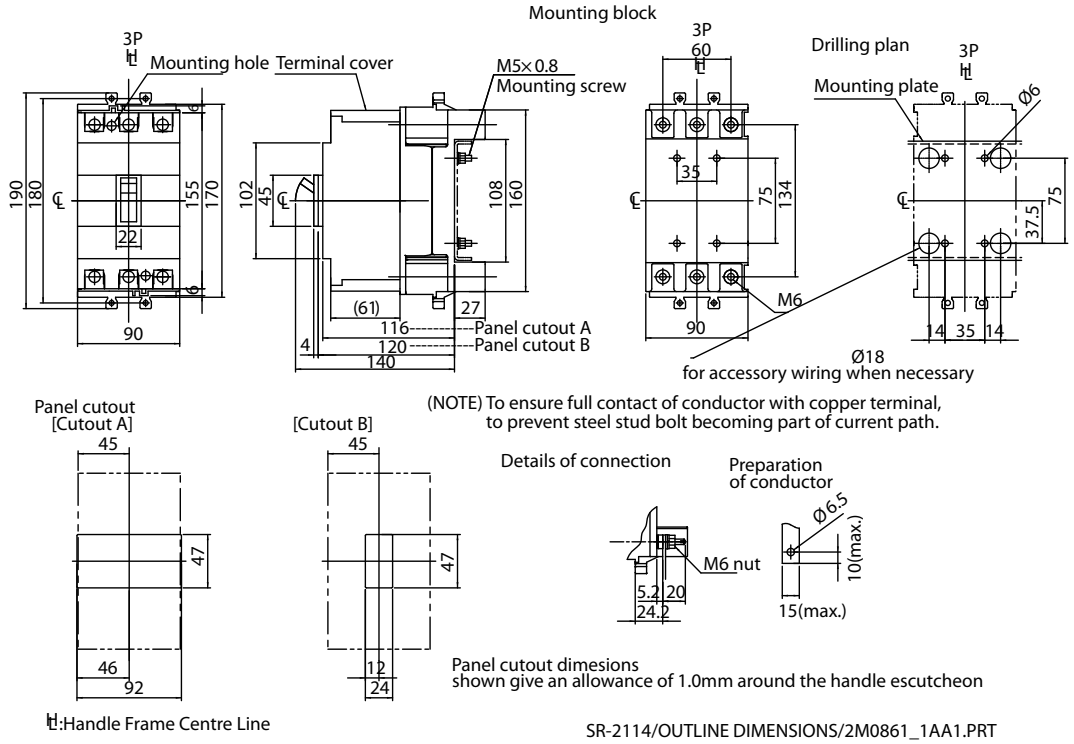


Rear Connected



Dimensions VS125_NJ/GJ, Plug-in (mm)

Plug-In (PMB)



SR-2114/OUTLINE DIMENSIONS/2M0861_1AA1.PRT

VS125GJ

1000 V AC Circuit Breaker

- ✔ 1000 VAC MCCB for power distribution and motor starting use in mines or tunnels
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 pole MCCB
- ✔ Compact 155 mm H, 68 mm D, 30 mm pole centres
- ✔ Fault interruption rating; 10 kA I_{cu} @ 1000 V AC
- ✔ Utilisation voltage ratings 1000 or 1100 V AC
- ✔ Thermal magnetic trip unit: adjustable thermal / adjustable magnetic
- ✔ Trip units; 50, 63, 100, 125 A

CE

General

Trip Unit Protection Type	Adjustable thermal, adjustable magnetic
Trip Unit Rating	50, 63, 100, 125 A
Number of Poles	3
Switching Poles	3P

Short Circuit

Short-Circuit Fault Interruption Capacity (I_{cu})	10 kA @1000 V AC
	6 kA @1100 V AC
Utilisation and service breaking rated	I_{cu} and I_{cs}

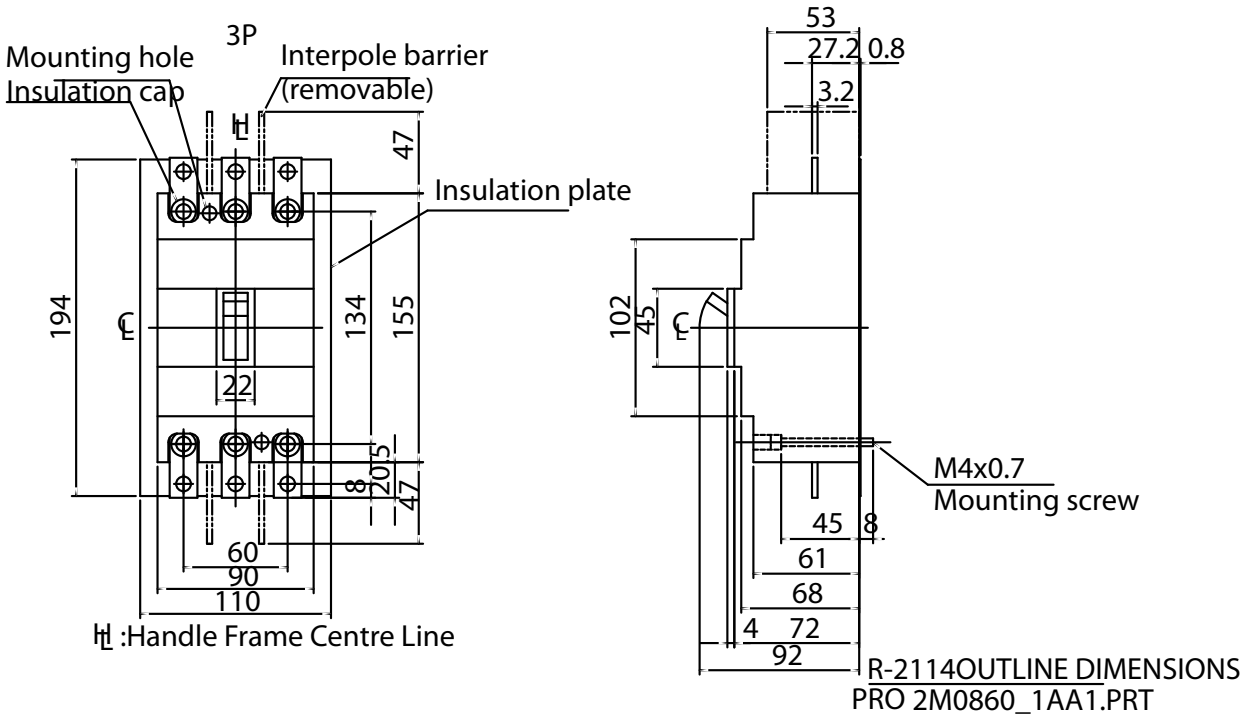
Voltage

Utilisation Voltages	1000 V AC or 1100 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in PM (Option)

Quick Reference Dimensions – Front Connect



125 A Frame 3 Pole 10 kA

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 1000 V (kA)	Poles	Catalogue No.
50	32 - 50	300 - 600	10	3	VS125GJ350
63	40 - 63	378 - 756	10	3	VS125GJ363
100	63 - 100	600 - 1200	10	3	VS125GJ3100
125	80 - 125	750 - 1250	10	3	VS125GJ3125

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3
Switching Poles	3P
Frame Size	125 AF
Trip Unit Rating	50 / 63 / 100 / 125 A

I_n, Rated Current

A @ 30 °C	50	63	100	125
A @ 45 °C	50	63	100	125
A @ 50 °C	50	63	100	125

U_e, Rated Operational Voltage, AC, max	1100 V AC
U_i, Rated Insulation Voltage	1100 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	50	63	100	125
(W)	5	5.33	9	14

Dielectric Strength	3500 V AC

Standards

Standards Compliance	IEC 60947-2 IEC 60947-1 JIS C 8201-2-1 Ann.1
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	1.5 - 35 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option)
Terminal Type	Screw Terminal(s)
Connection Torque	4.9 - 6.9 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		155 mm
Width	**3P**	90 mm
Depth (less toggle)		68 mm
Depth (toggle included)		92 mm
Weight	**3P**	1.1 kg
Electrical Life		1000 cycles
Mechanical Life		7000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**GJ**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	-
		380 / 400 V AC	-
		415 V AC	-
		440 V AC	-
		690 V AC	-
		1000 V AC	10
		1100 V AC	6
		125 V DC	-
		250 V DC	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	-
		380 / 400 V AC	-
		415 V AC	-
		440V AC	-
		690 V AC	-
		1000 V AC	5
		1100 V AC	4
		125 V DC	-
		250 V DC	-
	I_{cw} (Short Time Withstand)	0.3 Seconds	-

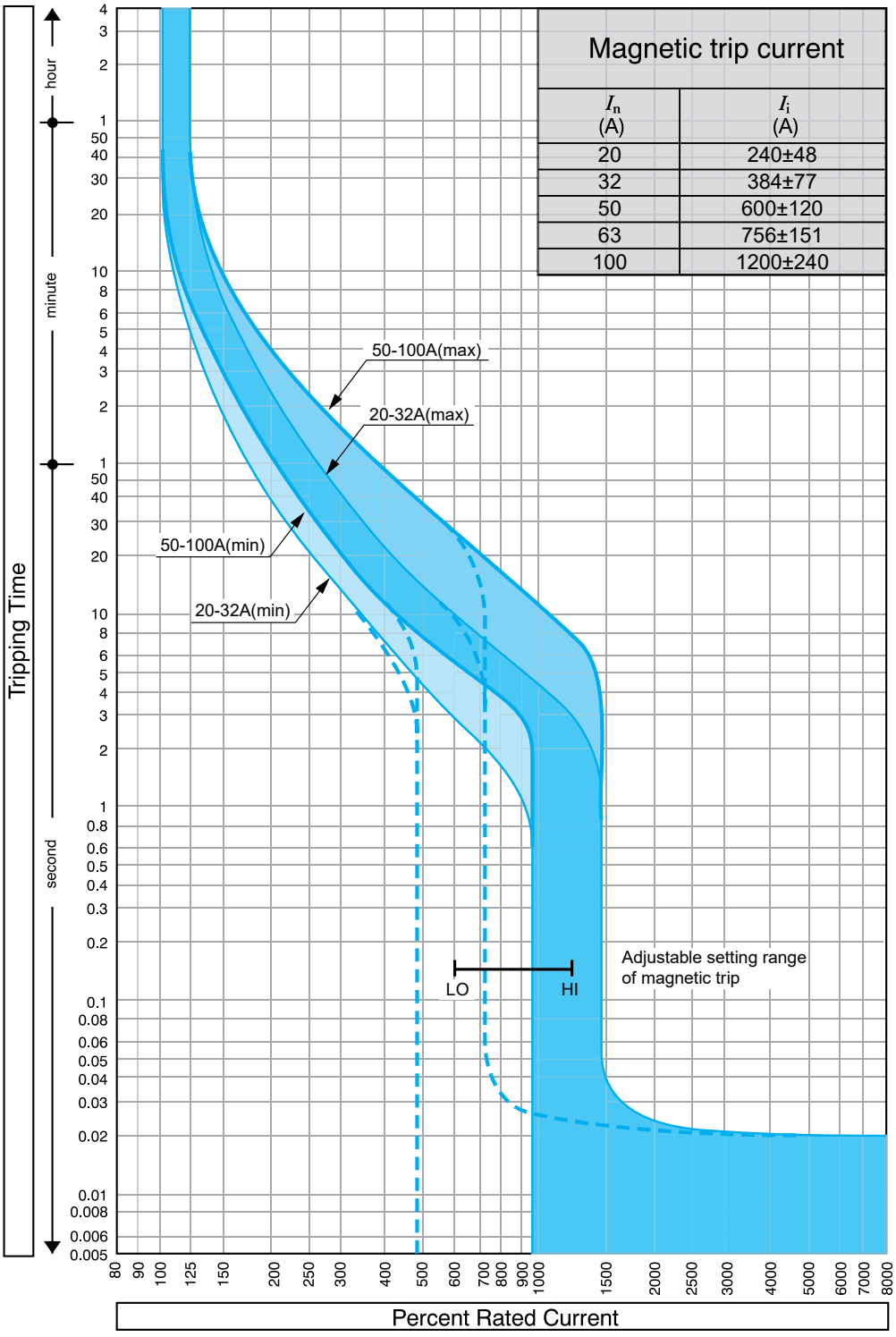
Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Rated Temperature	45 °C

General Accessories

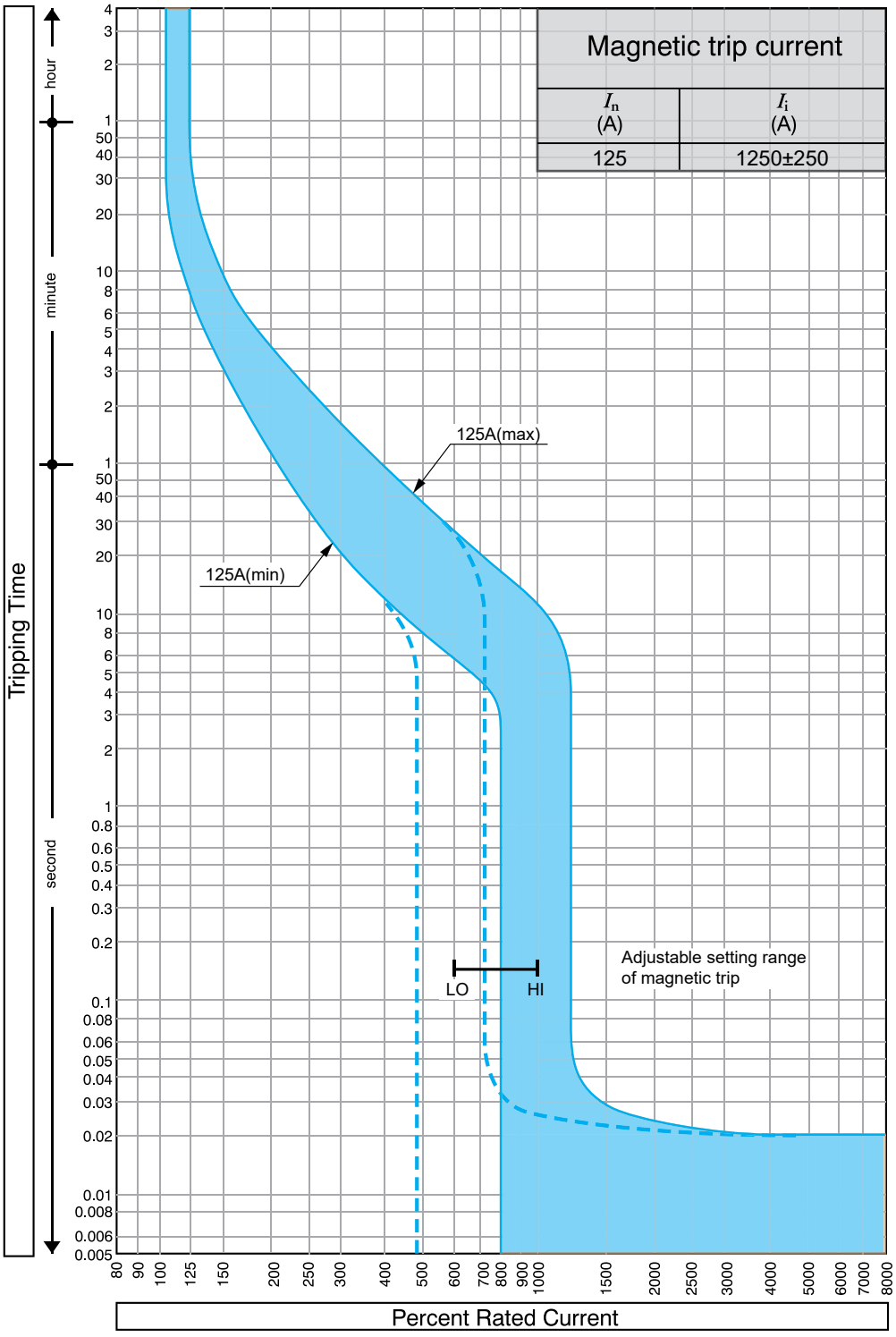
Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

Time Current Characteristics Curve 50 - 100 A, VS125, Thermal Magnetic

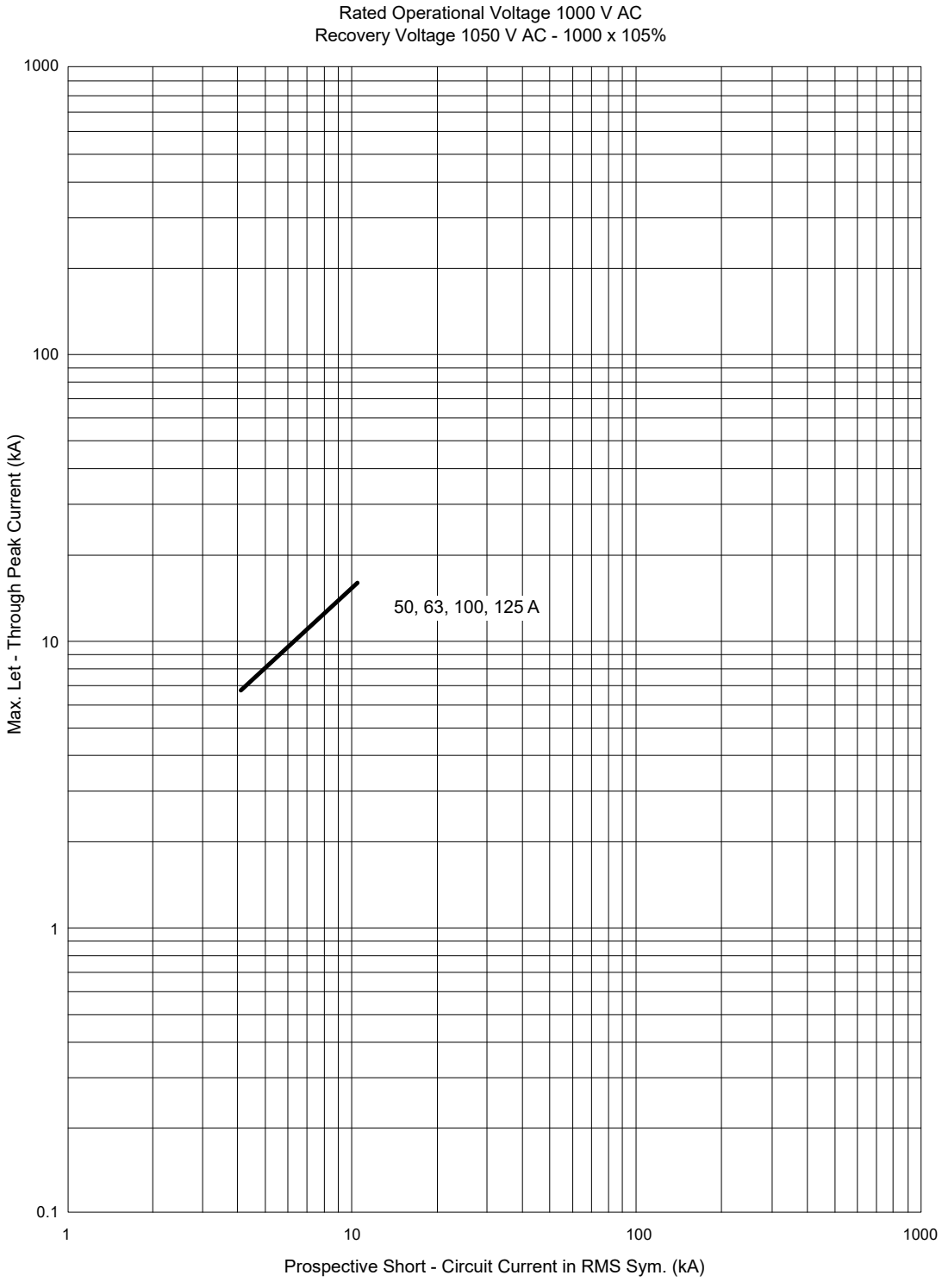


Magnetic trip current	
I_n (A)	I_i (A)
20	240±48
32	384±77
50	600±120
63	756±151
100	1200±240

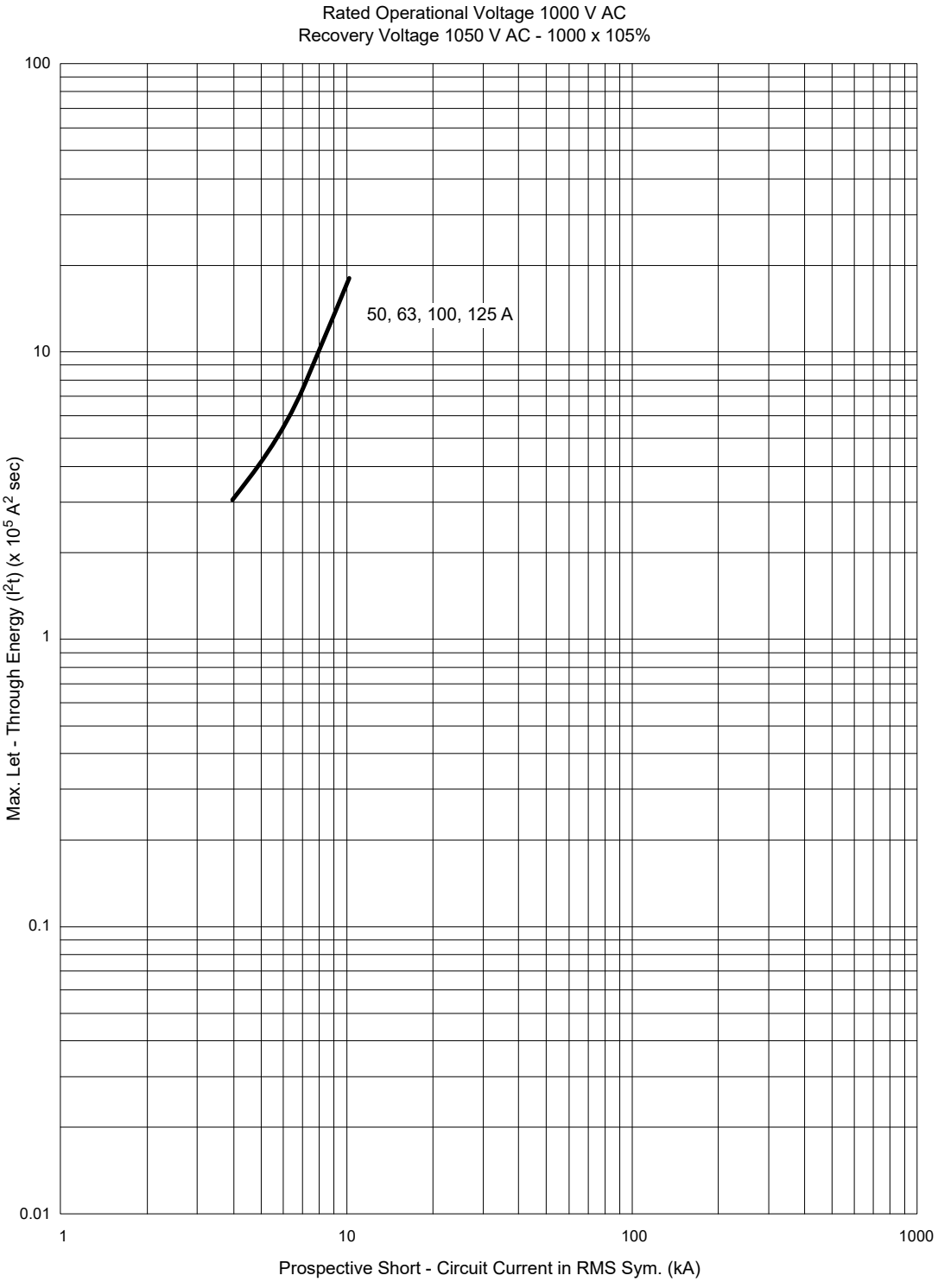
Time Current Characteristic Curve 125 A, VS125, Thermal Magnetic



Let-Through Peak Current Characteristics VS125GJ

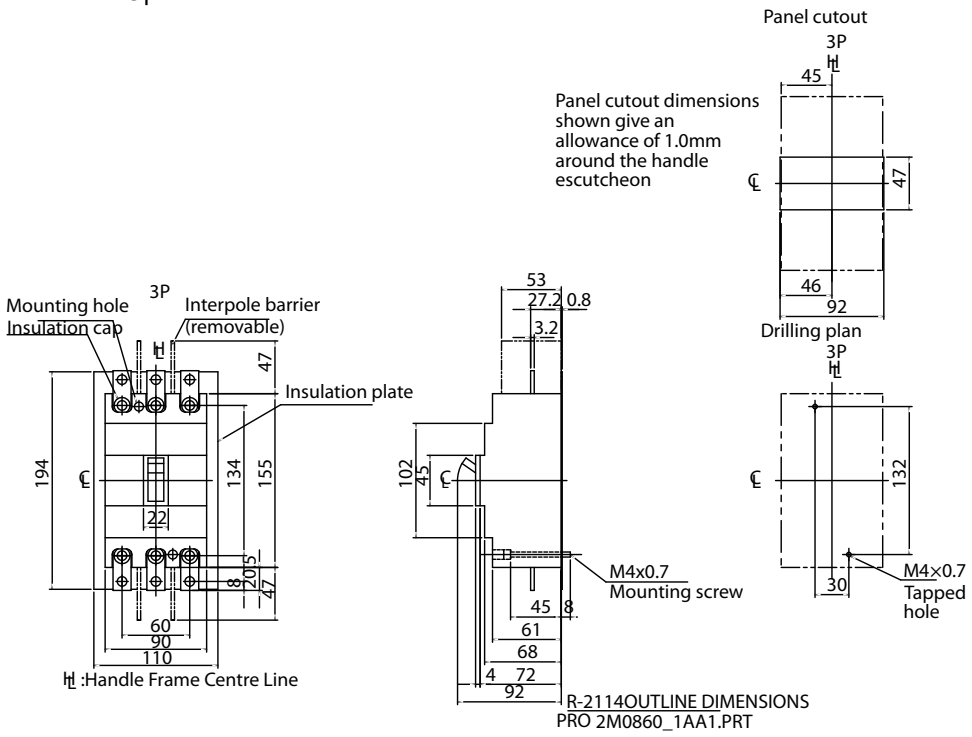


Let-Through Energy I²t Curve, VS125GJ

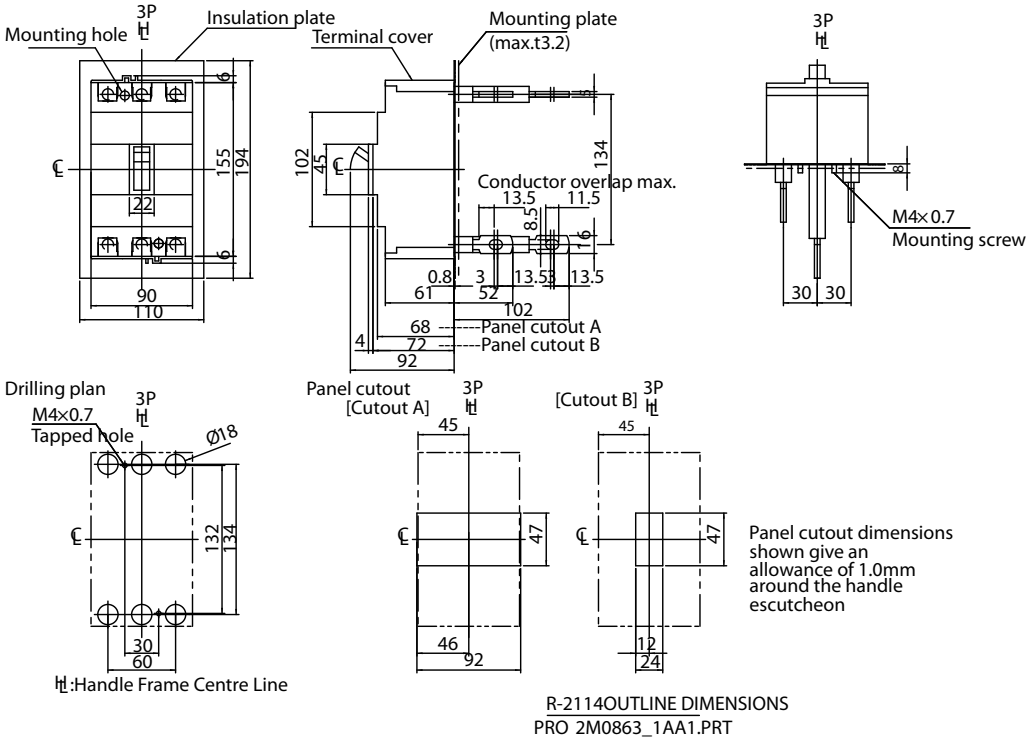


Dimensions VS125_NJ/GJ, Front/ Rear Connection (mm)

Front Connected With Terminal Bars Optional

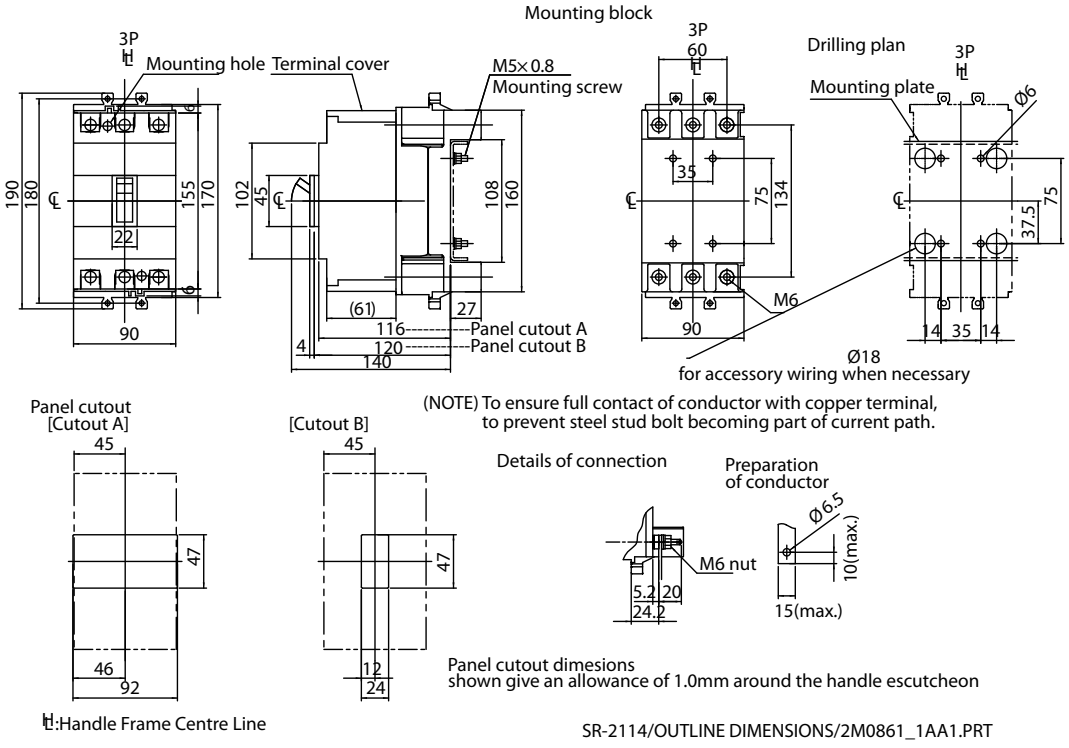


Rear Connected



Dimensions VS125_NJ/GJ, Plug-in (mm)

Plug-In (PMB)



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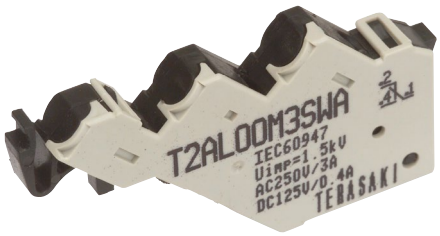
VS125 Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits



Item Description	Catalogue No.
Alarm Switch 1 C/O Wired	T2AL00M3SWA
Alarm Switch Micro-current 1 C/O	T2AL00M3RTA
Alarm Switch 1 C/O	T2AL00M3STA

Item Description	Catalogue No.
Alarm Switch Heavy Duty 1 N/O	T2AL00B1STA
Alarm Switch Heavy Duty 1 N/C	T2AL00B2STA

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxiliary Switch Heavy Duty 1 N/O	T2AX00B1STA
Auxiliary Switch Heavy Duty 1 N/C	T2AX00B2STA

Item Description	Catalogue No.
Auxiliary Switch Micro-current 1 C/O	T2AX00M3RTA
Auxiliary Switch 1 C/O	T2AX00M3STA
Auxiliary Switch 1 C/O Wired	T2AX00M3SWA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00A10TA
Shunt Trip Coil 240 V AC	T2SH00A20TA
Shunt Trip Coil 415 V AC	T2SH00A40TA
Shunt Trip Coil 12V DC	T2SH00D01TA
Shunt Trip Coil 24 V DC	T2SH00D02TA
Shunt Trip Coil 48 V DC	T2SH00D04TA
Shunt Trip Coil 110 V DC	T2SH00D10TA

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 110 V AC	T2UV00A10NTA
Under Voltage Trip Coil Instant 240 V AC	T2UV00A20NTA
Under Voltage Trip Coil Instant 415 V AC	T2UV00A40NTA
Under Voltage Trip Coil Instant 24 V DC	T2UV00D02NTA
Under Voltage Trip Coil Instant 48 V DC	T2UV00D04NTA
Under Voltage Trip Coil Instant 110 V DC	T2UV00D10NTA
Under Voltage Trip Coil Instant 230 V DC	T2UV00D20NTA

Time Delay Operation (500 ms)

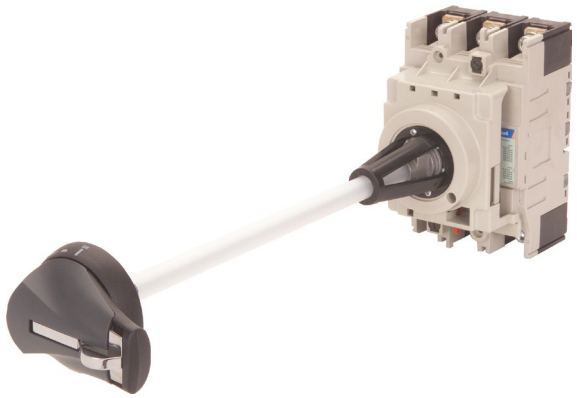
When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500 ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delay 110 V AC 125-630 A 3P	T2UV00A10DSA
Under Voltage Trip Coil Time Delay 200-240 V AC 125-630 A 3P	T2UV00A24DS
Under Voltage Trip Coil Time Delay 380-450 V AC 125-630 A 3P	T2UV00A40DS
Under Voltage Trip Coil Time Delay 24 V DC 125-630 A 3P	T2UV00D02DS
Under Voltage Trip Coil Time Delay 110 V DC 125-630 A 3P	T2UV00D10DS
Under Voltage Trip Coil Time Delay 230 V DC 125-630 A 3P	T2UV00D24DS

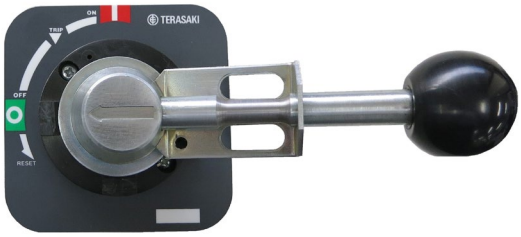
Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation



Item Description	Catalogue No.
T2HS Compact Handle Grey, IP55 Handle + 356 mm Shaft	TPHS12R5GM
T2HS Compact Handle Red/Yellow, IP55 Handle + 356 mm Shaft	TPHS12R5RM



Item Description	Catalogue No.
Metal Compact Handle Silver IP65 Handle + 356 mm Shaft 125 AF	T2HP12R6ME

Handle - Direct Mount

Door mount or internal mount fixed depth handle for MCCB ON OFF RESET operation

Item Description	Catalogue No.
Operating Handle Direct Mounting, Door Interlocking IP55 Rated Grey/ Black Handle 125 AF	T2HB12UR5BN
Operating Handle Direct Mounting, Door Interlocking IP55 Rated Red/ Yellow Handle 125 AF	T2HB12UR5RN

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

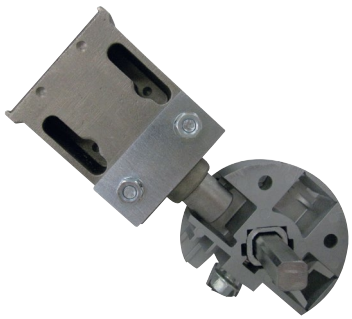
Item Description	Catalogue No.
T2HP Square Handle Grey, IP65 Handle + 445 mm Shaft 125 F	T2HP12R6BN
T2HP Square Handle Red/Yellow, IP65 Handle + 445 mm Shaft 125 AF	T2HP12R6RN

Handle Options

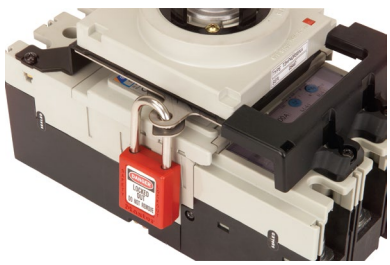
A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
HS 90 mm Shaft 125/250 AF	T2HS250SHAFT



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702



Item Description	Catalogue No.
Door Interlocking Padlck Device/Handle Mechanism 125/250 AF	T2HP25PALK

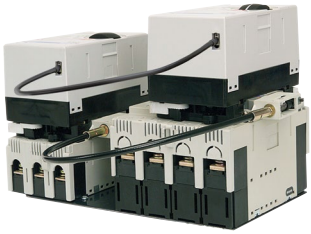
Motor Operator

Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
Motor Operator 110 V AC 125 AF	T2MC12A10NB
Motor Operator 240 V AC 125 AF	T2MC12A24NB
Motor Operator 24 V DC 125 AF	T2MC12D02NB
Motor Operator 48 V DC 125 AF	T2MC12D04NB
Motor Operator 110 V DC 125 AF	T2MC12D10NB

Motor Operator Accessories

Provides electrical interlocking between 2 motors to prevent simultaneous operation



Item Description	Catalogue No.
Motor Interlock Cable (0.5 m) Between T2MC12 and T2MC25/25L	T2MM25L05A
Motor Interlock Cable (1.5 m) Between T2MC12 and T2MC25/25L	T2MM25L15A

Item Description	Catalogue No.
Motor Interlock Cable (0.6 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S06A
Motor Interlock Cable (2.1 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S21A

Locking and Interlocking Accessories

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option

Item Description	Catalogue No.
Captive Toggle Lock 125 AF	T2HL12CAP

Non-captive

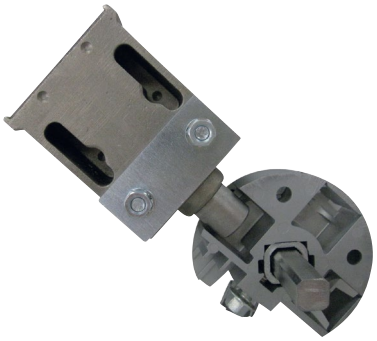
Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Non Captive Toggle Lock 125/250 AF	T2HL25B

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Mounted

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, Standard Key	440TAKEYE10X

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys

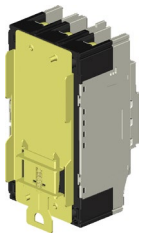
Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10BA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100A

MCCBs

Installation External Accessories

DIN Rail Adaptor

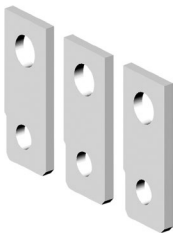
Permits an MCCB to mounted onto 45mm DIN rail for easy mounting and removal



Item Description	Catalogue No.
DIN Rail Adapter 125 AF	T2DA12A

Extension Bars

Add-on bus bars, allow more or larger conductor connector to an MCCB



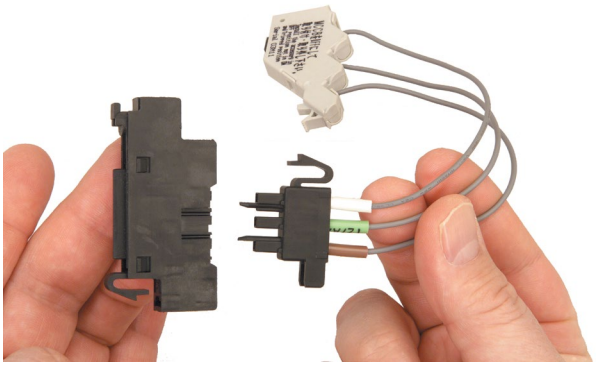
Item Description	Catalogue No.
Attached Bars 1 Pole, Set of 2, Straight Bars 125 AF	T2FB121BA
Attached Busbar 3 Pole, Set of 6, Straight Bars 125 AF	T2FB123BA
Attached Busbar 4 Pole, Set of 8, Straight Bars 125 AF	T2FB124BA

Item Description	Catalogue No.
Attached Busbar 3 Pole, Set of 6, Flanged Bars	T2FB16L3WB
Attached Busbar 4 Pole, Set of 8, Flanged Bars	T2FB16L4WB

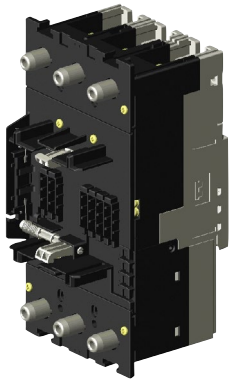
Plug-in MCCBs

Plug-in Mounting Bases

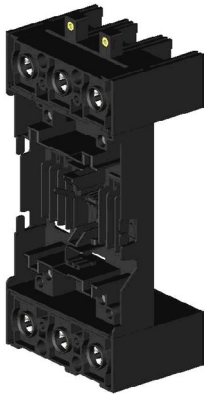
The MCCB via rear plugs, is plugged onto a fixed base for its line and load connections



Item Description	Catalogue No.
3 Pin Plug and Socket for Aux/Alarms – for MCCB and Base	2H6959CAA1
3 Pin Plug and Socket for Shunt/UVT – for MCCB and Base	2H6959CBA1
Control Wiring Plugs and Sockets for Withdrawable and Plug-in MCCBs, 3 Pin Socket for Panel Mount Version	T2TP003A



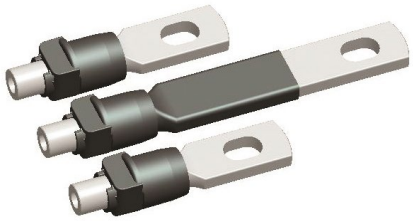
Item Description	Catalogue No.
TB2 Plug-In Kit 3P For E/S125 AF	2H6843CAB
TB2 Plug-In Kit 4P For E/S125 AF	2H6844CAB
Plug In Convertion kit, 3 Pole, B250P_SE	2H6940CAB
Plug In Convertion kit, 4 Pole, B250P_SE	2H6941CAB



Item Description	Catalogue No.
TB2 Plug-In 3P Base 125 AF	T2PM12A3A
TB2 Plug-In 4P Base 125 AF	T2PM12A4A
Plug-In 3P Base, IP20 160/250 AF	T2PM25A3A
Plug-In 4P Base, IP20 160/250 AF	T2PM25A4A

Rear Connection Studs

Allows MCCB main connections to be made at the rear of the MCCB



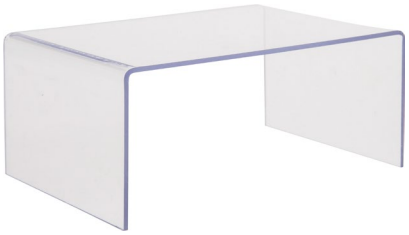
Item Description	Catalogue No.
Rear Studs Connect 3 Pole Kit, Set of 6 Studs 125 AF	T2RP123SA
Rear Studs Connect 4 Pole Kit, Set of 8 Studs 125 AF	T2RP124SA

Terminal Covers

Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area

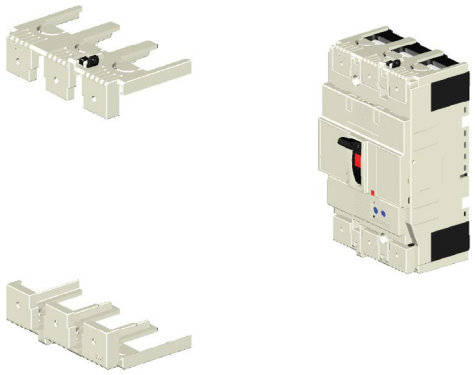
Item Description	Catalogue No.
Extended Terminal Covers Front Connect 3 Pole Single Cover, 50 mm Long, Narrow Cover 125 AF	T2CF123SLHP
Extended Terminal Covers Front Connect 4 Pole Single Cover, 50 mm Long, Narrow Cover 125 AF	T2CF124SLHP



Item Description	Catalogue No.
Extended Terminal Covers Front Connect 3-4 Pole Single Cover, 100 mm Long, Wide “Top Hat, B160, B250	T2CF253WC

Flush Terminal Covers

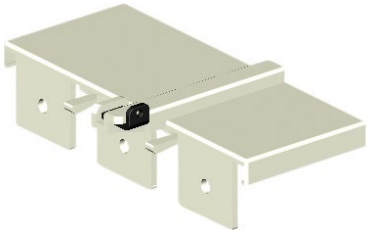
Provides front finger touch protection with MCCBs used with tunnel terminals or chassis



Item Description	Catalogue No.
Flush IP20 Terminal Covers - Front Connected MCCBs 3 Pole Single Cover 125 AF	T2CS123SHP
Flush IP20 Terminal Covers - Front Connected MCCBs 4 Pole Single Cover 125 AF	T2CS124SHP

Rear Connect Terminal Covers

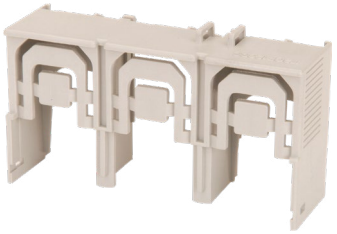
Provides front finger touch protection with MCCBs used with rear terminals and HC chassis



Item Description	Catalogue No.
Short Terminal Covers Front Connect 3 Pole Single Cover, 22 mm Long, Narrow Cover 125 AF	T2CR123SHP
Short Terminal Covers Front Connect 4 Pole Single Cover, 22 mm Long, Narrow Cover 125 AF	T2CR124SHP

Short Terminal Covers Front Connect

Provides front, side and internal isolation between poles in the MCCB power terminal area



Item Description	Catalogue No.
Short Terminal Covers Front Connect 3 Pole Single Cover, 22 mm Long, Narrow Cover 125 AF	T2CF123SSHP
Short Terminal Covers Front Connect 4 Pole Single Cover, 22 mm Long, Narrow Cover 125 AF	T2CF124SSHP

Terminal Cover Locking Clip

Used with terminal covers to prevent unauthorised removal or access to terminal area

Item Description	Catalogue No.
Terminal Cover Locking Clip	T2CF00L

Tunnel Clamp Terminals

Allows cable to be terminated directly to the MCCB and clamped for good connectivity

Item Description	Catalogue No.
Tunnel Terminal 3 Pole, Set of 6 Clamps, 6 – 50 mm² 125 AF	T2FW12S3A
Tunnel Terminal 4 Pole, Set of 8 Clamps, 6 – 50 mm² 125 AF	T2FW12S4A

VS250GJ

1000 V AC Circuit Breaker

- ✔ 1000 VAC MCCB for power distribution and motor starting use in mines or tunnels
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 pole MCCB
- ✔ Compact 165 mm H, 68 mm D, 35 mm pole centres
- ✔ Fault interruption rating; 10 kA I_{cu} @ 1000 V AC
- ✔ Utilisation voltage ratings 1000 or 1100 V AC
- ✔ Thermal magnetic trip unit: adjustable thermal / adjustable magnetic
- ✔ Trip units; 160 A, 250 A

CE

General

Trip Unit Protection Type	Adjustable thermal, adjustable magnetic
Trip Unit Rating	160, 250 A
Number of Poles	3
Switching Poles	3P

Short Circuit

Short-Circuit Fault Interruption Capacity (I_{cu})	10 kA @ 1000 V AC
	6 kA @ 1100 V AC
Utilisation and service breaking rated	I_{cu} and I_{cs}

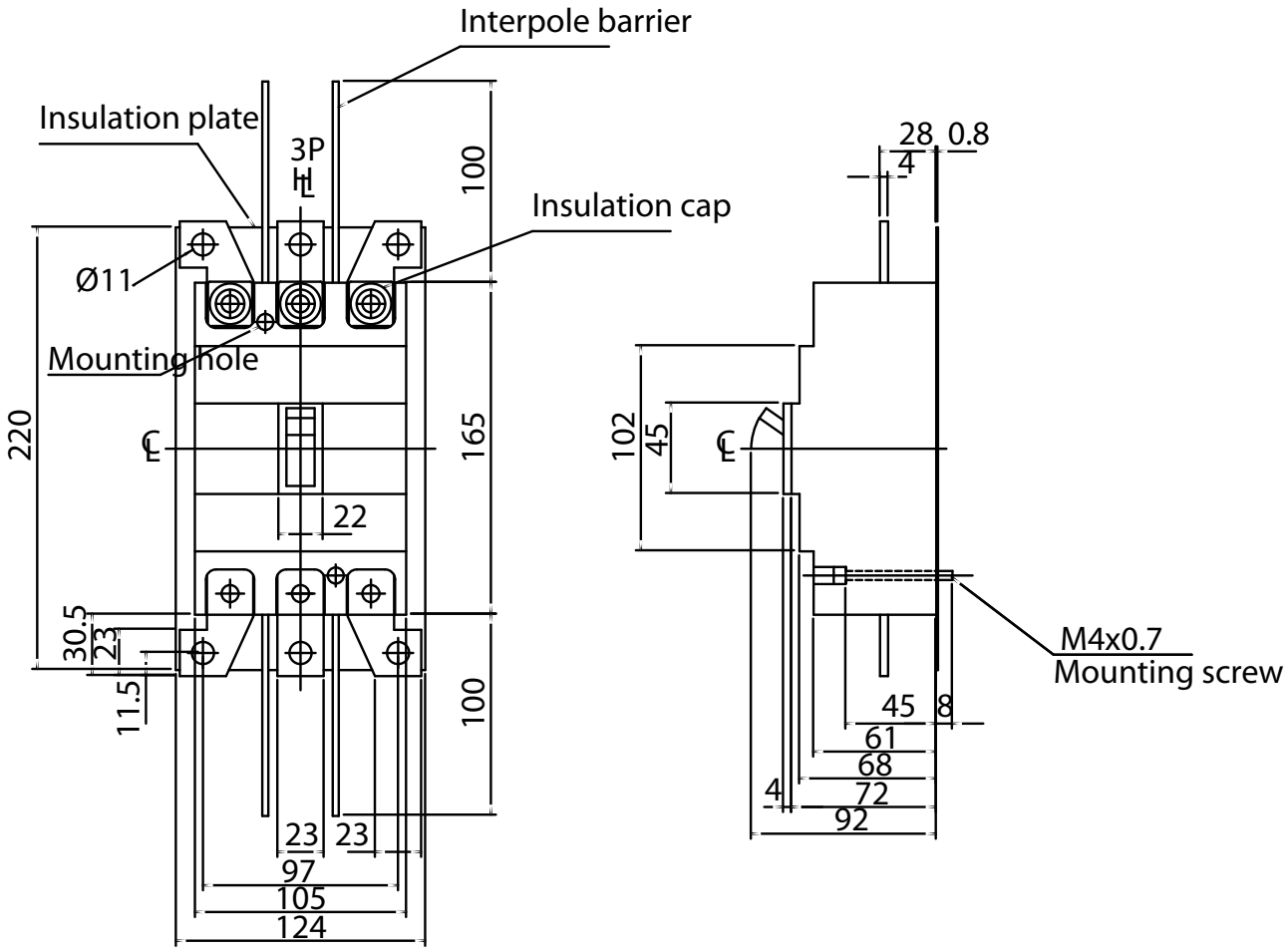
Voltage

Utilisation Voltages	1000 V AC or 1100 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in PM (Option)

Quick Reference Dimensions – Front Connect



250 A Frame 3 Pole 10 kA

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 1000 V (kA)	Poles	Catalogue No.
160	100 - 160	960 - 2080	10	3	VS250GJ3160
250	160 - 250	1500 - 2500	10	3	VS250GJ3250

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3
Switching Poles	3P
Frame Size	250 AF
Trip Unit Rating	160 / 250 A

I_n, Rated Current

A @ 30 °C	160	250
A @ 45 °C	160	250
A @ 50 °C	160	250

U_e, Rated Operational Voltage, AC, max	1100 V AC
U_i, Rated Insulation Voltage	1100 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	160	250
(W)	13.33	18.33

Dielectric Strength	3500 V AC

Standards

Standards Compliance	IEC 60947-2 IEC 60947-1 JIS C 8201-2-1 Ann.1
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 %RH

Connection

Cable Cross Section	35 - 185 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option)
Terminal Type	Screw Terminal(s)
Connection Torque	7.8 - 12.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		165 mm
Width	**3P**	105 mm
Depth (less toggle)		68 mm
Depth (toggle included)		92 mm
Weight	**3P**	1.5 kg
Electrical Life		1000 cycles
Mechanical Life		7000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**GJ**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	-
		380 / 400 V AC	-
		415 V AC	-
		440 V AC	-
		690 V AC	-
		1000 V AC	10
		1100 V AC	6
		125 V DC	-
		250 V DC	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	-
		380 / 400 V AC	-
		415 V AC	-
		440V AC	-
		690 V AC	-
		1000 V AC	5
		1100 V AC	4
		125 V DC	-
		250 V DC	-
	I_{cw} (Short Time Withstand)	0.3 Seconds	-

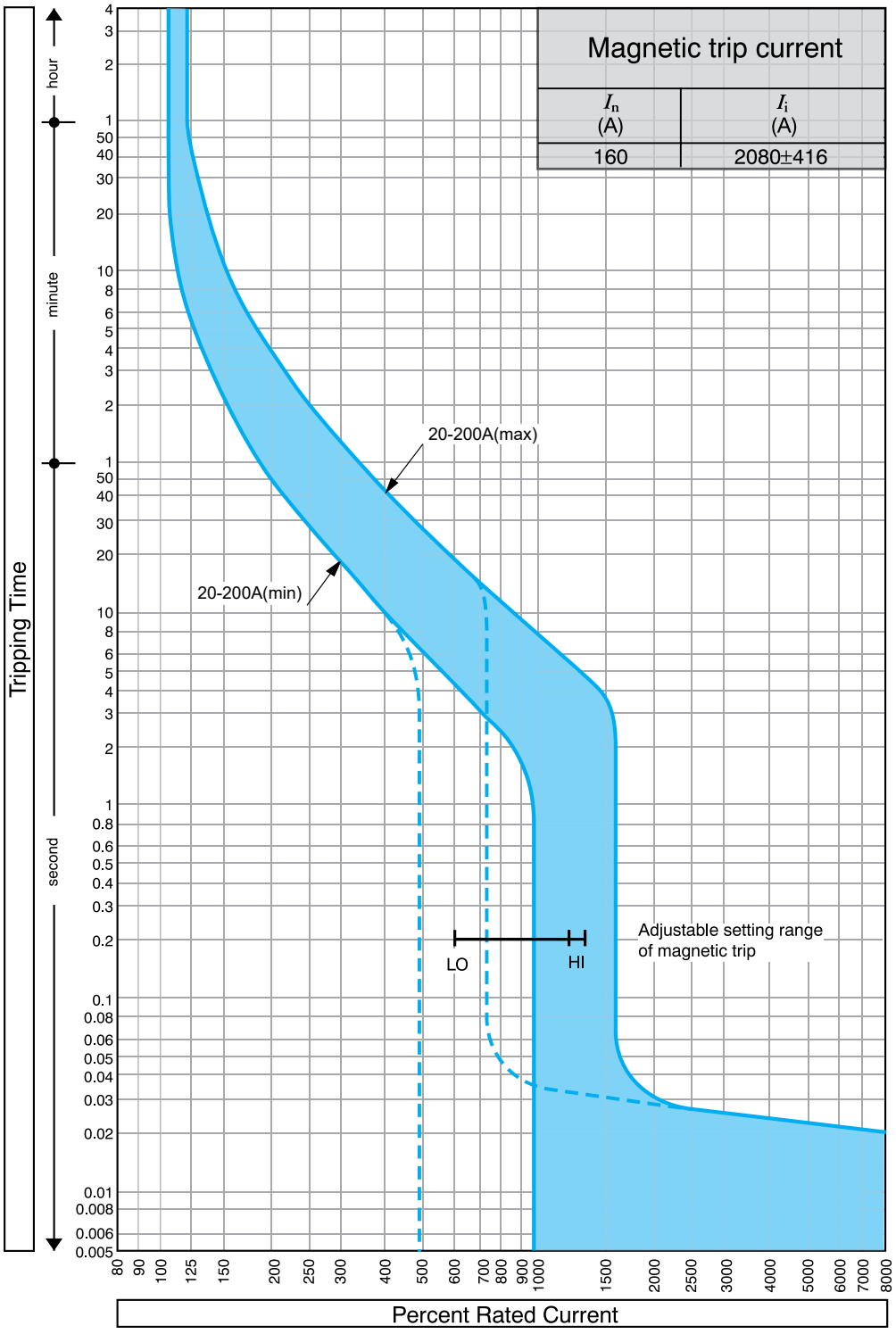
Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Adjustable Thermal Adjustable Magnetic
Rated Temperature	45 °C

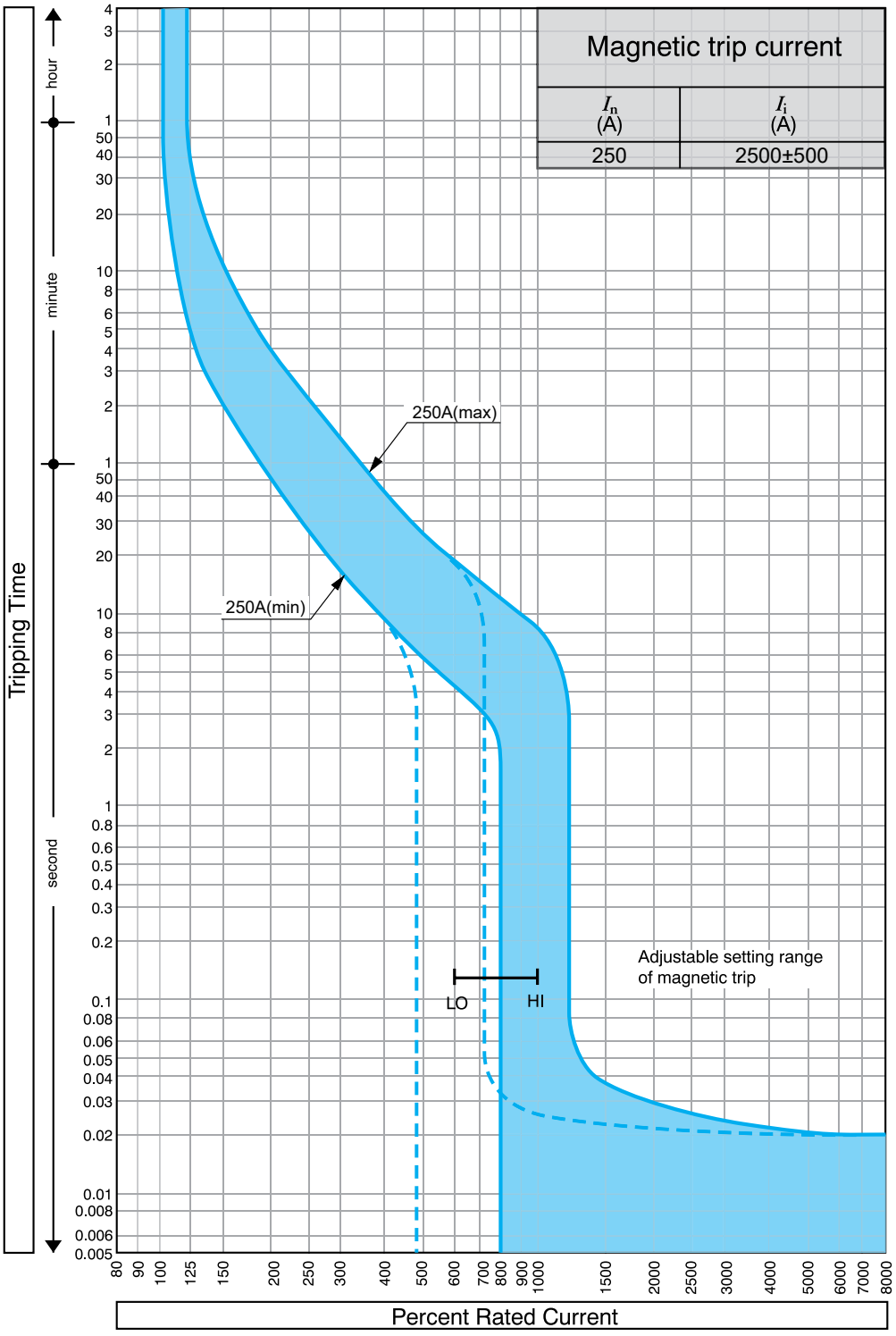
General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	Yes
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

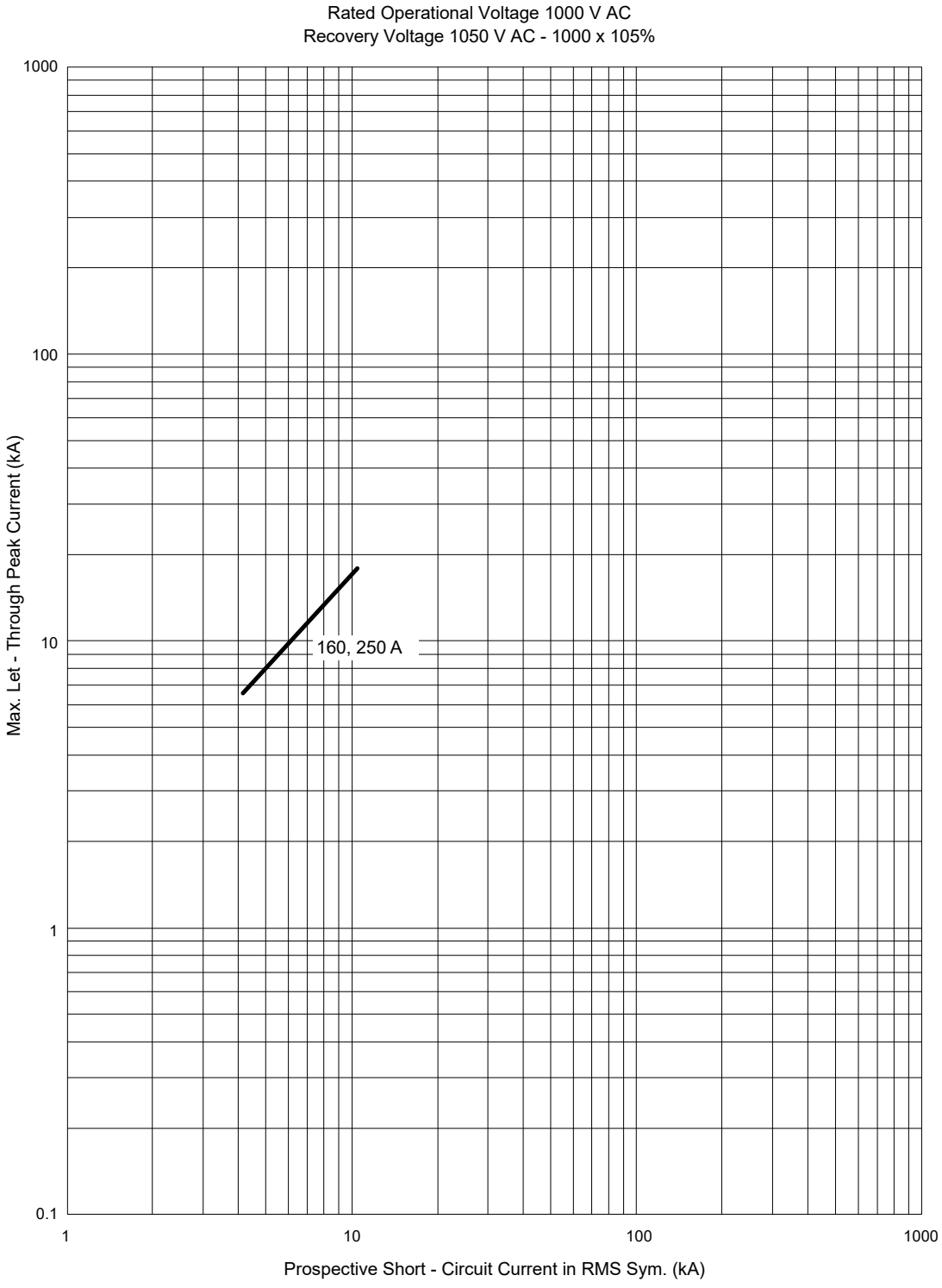
Time Current Characteristics Curve 160 A, VS250, Thermal Magnetic



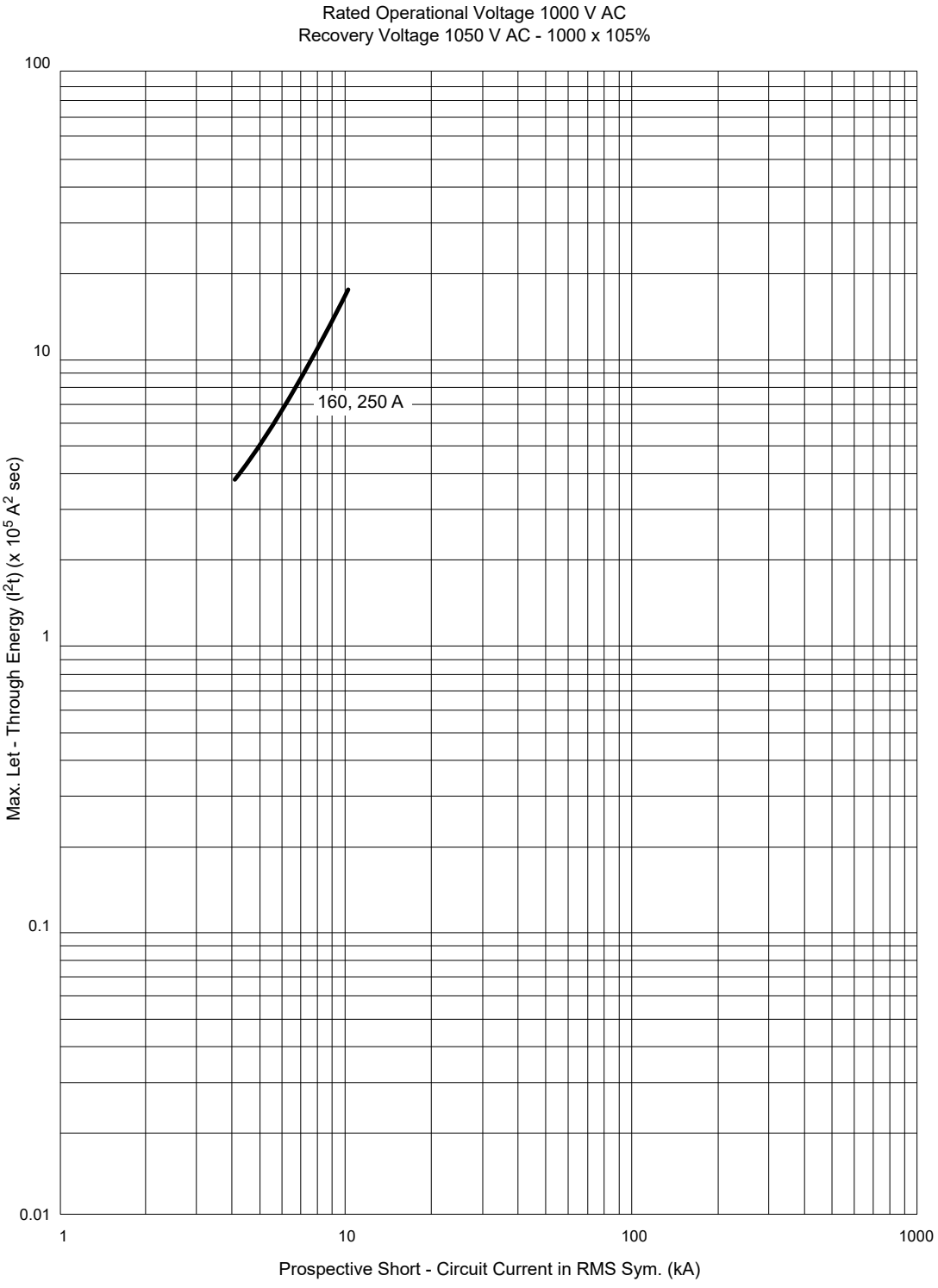
Time Current Characteristics Curve 250 A, VS250, Thermal Magnetic



Let-Through Peak Current Characteristics, VS250GJ

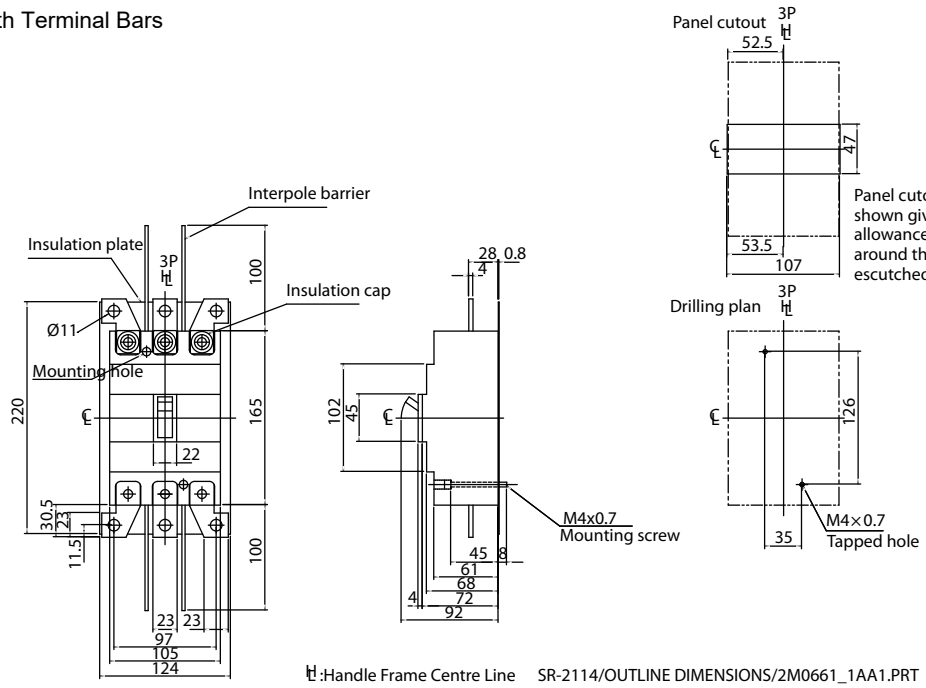


Let-Through Energy I²t Curve, VS250GJ



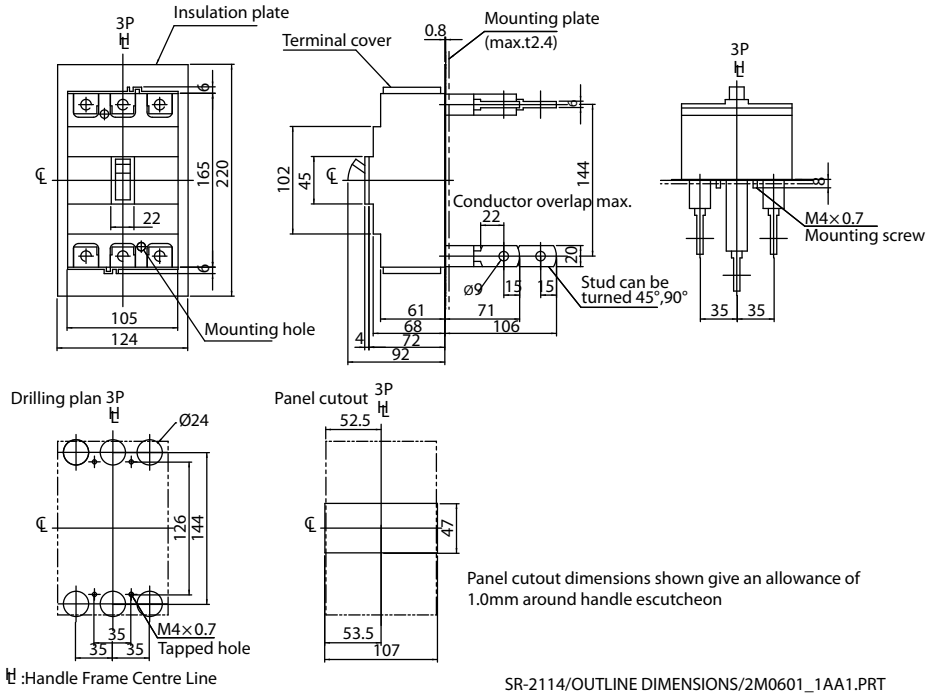
Dimensions VS250_GJ, Front/ Rear Connection (mm)

Front Connected With Terminal Bars



℄:Handle Frame Centre Line SR-2114/OUTLINE DIMENSIONS/2M0661_1AA1.PRT

Rear Connected



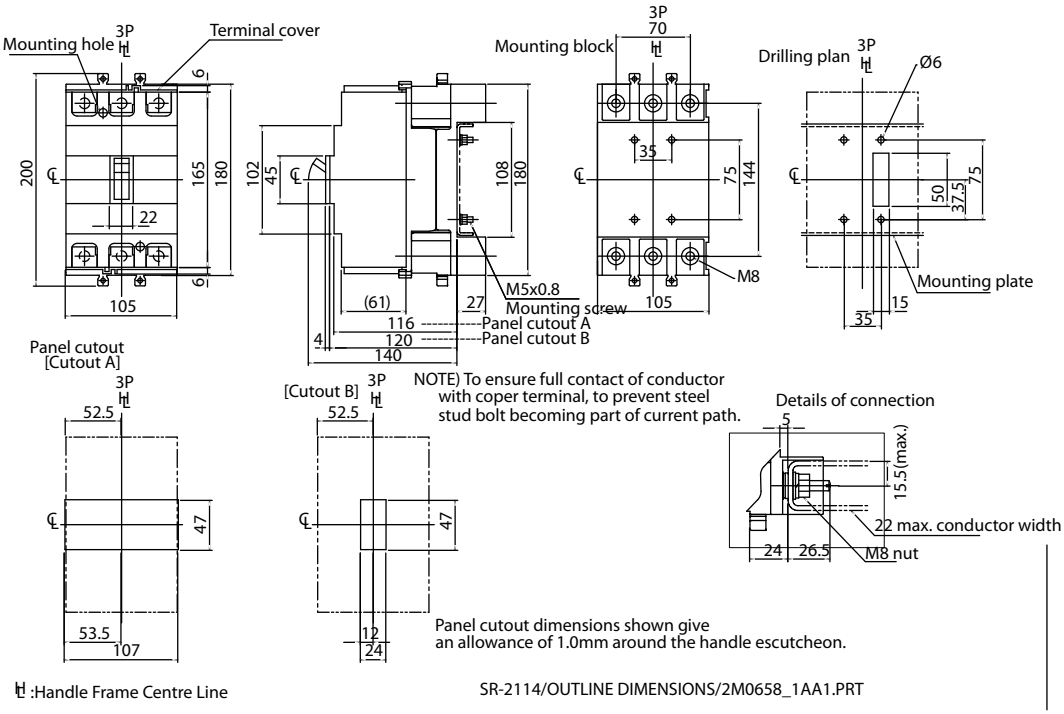
℄:Handle Frame Centre Line

SR-2114/OUTLINE DIMENSIONS/2M0601_1AA1.PRT

MCCBs

Dimensions VS250GJ, Plug-in (mm)

Plug-In (PMB)

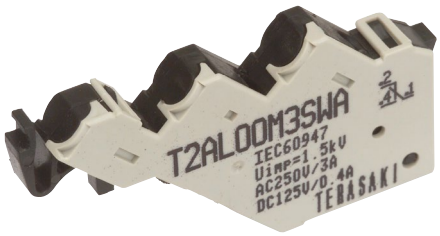


VS250GJ Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits



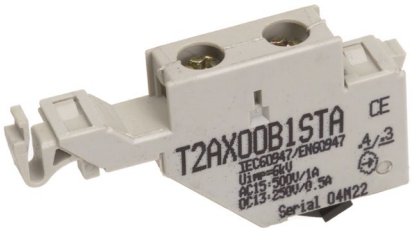
Item Description	Catalogue No.
Alarm Switch 1 C/O	T2AL00M3STA
Alarm Switch 1 C/O Wired	T2AL00M3SWA
Alarm Switch Micro-current 1 C/O	T2AL00M3RTA

Item Description	Catalogue No.
Alarm Switch Heavy Duty 1 N/O	T2AL00B1STA
Alarm Switch Heavy Duty 1 N/C	T2AL00B2STA

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxiliary Switch 1 C/O	T2AX00M3STA
Auxiliary Switch 1 C/O Wired	T2AX00M3SWA
Auxiliary Switch Micro-current 1C/O	T2AX00M3RTA



Item Description	Catalogue No.
Auxiliary Switch Heavy Duty 1 N/O	T2AX00B1STA
Auxiliary Switch Heavy Duty 1 N/C	T2AX00B2STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00A10TA
Shunt Trip Coil 240 V AC	T2SH00A20TA
Shunt Trip Coil 415 V AC	T2SH00A40TA
Shunt Trip Coil 24 V DC	T2SH00D02TA
Shunt Trip Coil 48 V DC	T2SH00D04TA
Shunt Trip Coil 110 V DC	T2SH00D10TA
Shunt Trip Coil 230 V DC	T2SH00D20TA

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 110 V AC	T2UV00A10NTA
Under Voltage Trip Coil Instant 240 V AC	T2UV00A20NTA
Under Voltage Trip Coil Instant 415 V AC	T2UV00A40NTA
Under Voltage Trip Coil Instant 24 V DC	T2UV00D02NTA
Under Voltage Trip Coil Instant 48 V DC	T2UV00D04NTA
Under Voltage Trip Coil Instant 110 V DC	T2UV00D10NTA
Under Voltage Trip Coil Instant 230 V DC	T2UV00D20NTA

Time Delay Operation (500 ms)

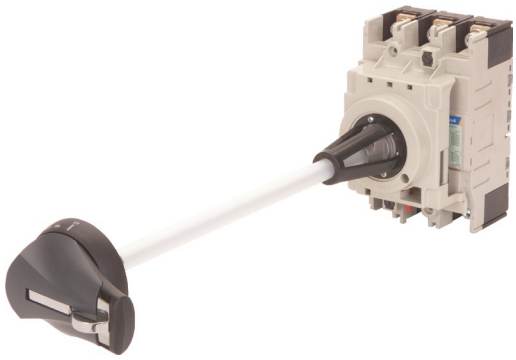
When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500 ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delay 110 V AC 125-630A 3P	T2UV00A10DSA
Under Voltage Trip Coil Time Delay 200-240 V AC 125-630A 3P	T2UV00A24DS
Under Voltage Trip Coil Time Delay 380-450 V AC 125-630A 3P	T2UV00A40DS
Under Voltage Trip Coil Time Delay 24 V DC 125-630A 3P	T2UV00D02DS
Under Voltage Trip Coil Time Delay 110 V DC 125-630A 3P	T2UV00D10DS
Under Voltage Trip Coil Time Delay 230 V DC 125-630A 3P	T2UV00D24DS

Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation



Item Description	Catalogue No.
Door Interlocking Extension Grey, IP55 handle + 356mm shaft	TPHS25SR5GM
Door Interlocking Extension Red/Yellow, IP55 handle + 356mm shaft	TPHS25SR5RM

Item Description	Catalogue No.
Door Interlocking Extension IP65 Metal Handle/Shaft Kit 160/250 AF	T2HP25R6ME

Handle - Direct Mount

Door mount or internal mount fixed depth handle for MCCB ON OFF RESET operation

Item Description	Catalogue No.
Operating Handle Direct Mounting IP54 Rated Black Handle 160/250 AF	T2HB25UR5BN
Operating Handle Direct Mounting IP54 Rated Red Handle 160/250 AF	T2HB25UR5RN

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

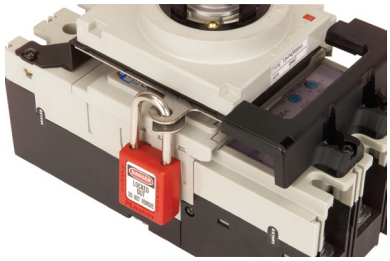
Item Description	Catalogue No.
Door Interlocking Extension IP65 Black Handle/Shaft Kit 160/250 AF	T2HP25R6BN
Door Interlocking Extension IP65 Red Handle/Shaft Kit 160/250 AF	T2HP25R6RN

Handle Options

A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
HS 90 mm Shaft 125/250 AF	T2HS250SHAFT



Item Description	Catalogue No.
Door Interlocking Padlck Device/Handle Mechanism 125/250 AF	T2HP25PALK

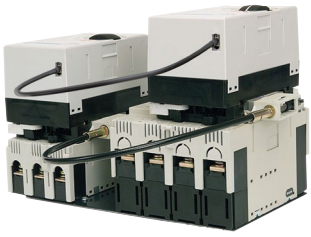
Motor Operator

Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
Motor Operator 110 V AC 160/250AF	T2MC25A10NB
Motor Operator 240 V AC 160/250 AF	T2MC25A24NB
Motor Operator 24 V DC 160/250 AF	T2MC25D02NB
Motor Operator 48 V DC 160/250AF	T2MC25D04NB
Motor Operator 110 V DC 160/250 AF	T2MC25D10NB

Motor Operator Accessories

Provides electrical interlocking between 2 motors to prevent simultaneous operation



Item Description	Catalogue No.
Motor Interlock Cable (0.5 m) Between T2MC12 and T2MC25/25L	T2MM25L05A
Motor Interlock Cable (1.5 m) Between T2MC12 and T2MC25/25L	T2MM25L15A

Item Description	Catalogue No.
Motor Interlock Cable (0.6m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S06A
Motor Interlock Cable (2.1m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S21A

Locking and Interlocking Accessories

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option

Item Description	Catalogue No.
Captive Toggle Lock 250 AF	T2HL25CAP

Non-captive

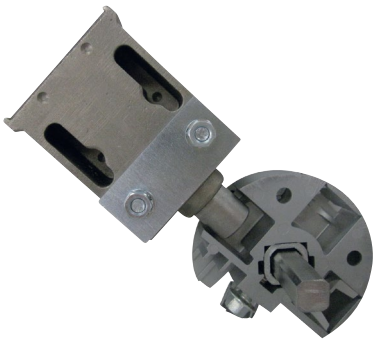
Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Non Captive Toggle Lock 125/250 AF	T2HL25B

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Mounted

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, standard key code, A	440TAKEYE100A
Prosafe, standard key code, B	440TAKEYE100B
Prosafe, standard key code, C	440TAKEYE100C
Prosafe, standard key code, D	440TAKEYE100D
Prosafe, standard key code, E	440TAKEYE100E
Prosafe, standard key code, F	440TAKEYE100F
Prosafe, standard key code, G	440TAKEYE100G
Prosafe, standard key code, H	440TAKEYE100H
Prosafe, Standard Key Code I	440TAKEYE100I
Prosafe, Standard Key Code J	440TAKEYE100J
Prosafe, Standard Key Code K	440TAKEYE100K
Prosafe, Standard Key Code L	440TAKEYE100L
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, Standard Key	440TAKEYE10X

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys

Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10BA
Single key shot bolt lock, key not included	440TMSBLE10X

Installation External Accessories

Extension Bars

Add-on bus bars, allow more or larger conductor connector to an MCCB

Item Description	Catalogue No.
Attached Bars,1 Pole, Set of 2, Straight Bars, B160, B250, ZS250	T2FB251BA

Item Description	Catalogue No.
Attached Bars, 3 Pole, Set of 3, Straight Bars, B160, B250, ZS250	T2FB25L3SH
Attached Bars, 4 Pole, Set of 4, Straight Bars, B160, B250, ZS250	T2FB25L4SH
Attached Bars, 3 Pole, Set of 3, Flanged Bars, B160, B250, ZS250	T2FB25L3WH
Attached Bars, 4 Pole, Set of 4, Flanged Bars, B160, B250, ZS250	T2FB25L4WH

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier (Single Barrier) 250 AF	T2BA25L3SH

Pole Fillers

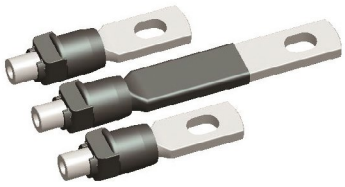
A clip in filler 9 mm wide for vacant pole positions for 46 mm DIN cut-outs

Item Description	Catalogue No.
DIN Pole Filler (1 Strip Of 4 Poles, 8 X 9mm Segments)	DTPF
DIN Pole Filler (1 Strip Of 12 Poles, 24 X 9mm Segments)	DTPF12

Item Description	Catalogue No.
Pole Filler 35 mm Wide for 250 AF MCCBs with a 104 mm Cut-out	XAB3

Rear Connection Studs

Allows MCCB main connections to be made at the rear of the MCCB

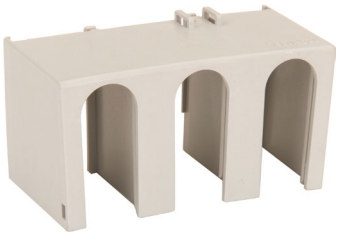


Item Description	Catalogue No.
Rear Connect Terminal Studs 3 Pole Kit, Set of 6 Studs 250 AF	T2RP253SA
Rear Connect Terminal Studs 4 Pole Kit, Set of 8 Studs 250 AF	T2RP254SA

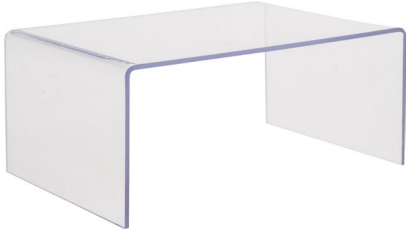
Terminal Covers

Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area



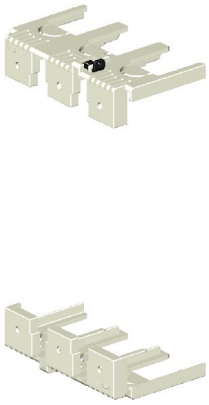
Item Description	Catalogue No.
Extended Terminal Covers Front Connect 3 Pole Single Cover, 55 mm Long, Narrow Cover 250 AF	T2CF253SLHP
Extended Terminal Covers Front Connect 4 Pole Single Cover, 55 mm Long, Narrow Cover 250 AF	T2CF254SLHP



Item Description	Catalogue No.
Extended Terminal Covers Front Connect 3-4 Pole Single Cover, 100 mm Long, Wide “Top Hat, B160, B250	T2CF253WC

Flush Front Terminal Covers

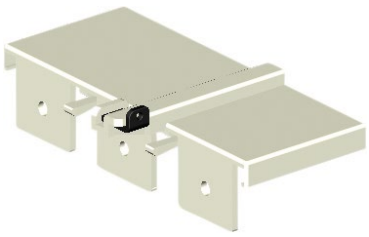
Provides front finger touch protection with MCCBs used with tunnel terminals or chassis



Item Description	Catalogue No.
Flush IP20 Terminal Covers, Front Connected, 3 Pole Single Cover	T2CS253SHP
Flush IP20 Terminal Covers, Front Connected, 4 Pole Single Cover	T2CS254SHP

Rear Connect Terminal Covers

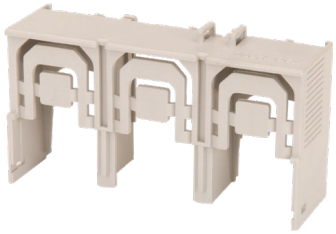
Provides front finger touch protection with MCCBs used with rear terminals and HC chassis



Item Description	Catalogue No.
Terminal Covers Rear Connect, 4 Pole Cover, Set of 2, B160, B250, ZS250	T2CR253SHP
Terminal Covers Rear Connect, 3 Pole Cover, Set of 2, B160, B250, ZS251	T2CR254SHP

Short Terminal Covers Front Connect

Provides front, side and internal isolation between poles in the MCCB power terminal area



Item Description	Catalogue No.
Short Terminal Covers Front Connect 3 Pole Single Cover, 30 mm Long, Narrow Cover 250 AF	T2CF253SSHP
Short Terminal Covers Front Connect 4 Pole Single Cover, 30 mm Long, Narrow Cover 250 AF	T2CF254SSHP

Tunnel Clamp Terminals

Allows cable to be terminated directly to the MCCB and clamped for good connectivity

Item Description	Catalogue No.
Tunnel Terminal 4 Pole, Set of 8 Clamps, 35 – 120 mm², B160, B250, ZS250	T2FW25L3B
Tunnel Terminal 3 Pole, Set of 6 Clamps, 35 – 120 mm², B160, B250, ZS250	T2FW25L4B

Item Description	Catalogue No.
Terminal Cover Locking Clip	T2CF00L

MCCBs

VS400NE

1000 V AC Circuit Breaker

- ✔ 1000 VAC MCCB for power distribution and motor starting use in mines or tunnels
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 pole MCCB
- ✔ Compact 260 mm H, 140 mm D, 45 mm pole centres
- ✔ Fault interruption rating; 18 kA I_{cu} @ 1000 VAC
- ✔ Utilisation voltage ratings 1000 or 1100 VAC
- ✔ 5 dial electronic trip unit: Individual dial setting adjustments of LSI settings
- ✔ Options include PTA
- ✔ Trip units; 250 A, 400 A

General

Trip Unit Protection Type	Adjustable Electronic LSI [1)]
Trip Unit Rating	250, 400 A
Number of Poles	3
Switching Poles	3P

Short Circuit

Short-Circuit Fault Interruption Capacity (I_{cu})	18 kA @1000 V AC
	12.5 kA @1100 V AC
Utilisation and service breaking rated	I_{cu} and I_{cs}

Voltage

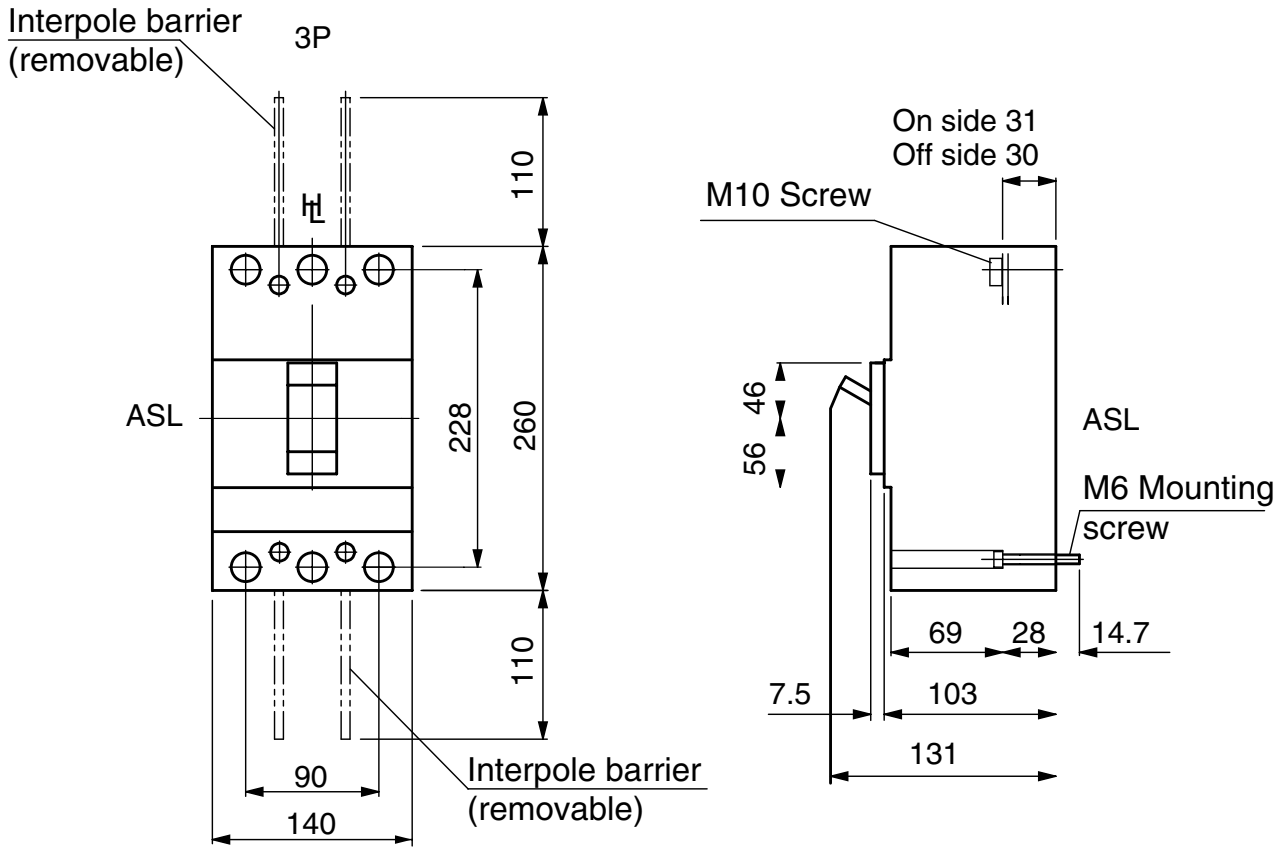
Utilisation Voltages	1000 V AC or 1100 V AC
Rated Frequency	50 / 60 Hz

Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in PM (Option)

Notes: 1) When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Quick Reference Dimensions – Front Connect



400 A Frame 3 Pole 18 kA

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 1000 V (kA)	Poles	Catalogue No.
250	100 - 250	-	12.5	3	VS400NE3250K
400	160 - 400	-	12.5	3	VS400NE3400K

Notes: When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3
Switching Poles	3P
Frame Size	400 AF
Trip Unit Rating	250 / 400 A

I_n, Rated Current

A @ 30 °C	250	400
A @ 45 °C	250	400
A @ 50 °C	250	400

U_e, Rated Operational Voltage, AC, max	1100 V AC
U_i, Rated Insulation Voltage	1100 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	250	400
(W)	16.6	25

Dielectric Strength	3500 V AC

Standards

Standards Compliance	IEC 60947-2 IEC 60947-1 JIS C 8201-2-1 Ann.1
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 185 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option)
Terminal Type	Bolt-Terminal
Connection Torque	13.7 - 22.5 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		260 mm
Width	**3P**	140 mm
Depth (less toggle)		103 mm
Depth (toggle included)		145 mm
Weight	**3P**	5 kg
Electrical Life		1000 cycles
Mechanical Life		7000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**NE**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	-
		380 / 400 V AC	-
		415 V AC	-
		440 V AC	-
		690 V AC	-
		1000 V AC	18
		1100 V AC	12.5
		125 V DC	-
		250 V DC	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	-
		380 / 400 V AC	-
		415 V AC	-
		440V AC	-
		690 V AC	-
		1000 V AC	13.5
		1100 V AC	6.3
		125 V DC	-
		250 V DC	-
	I_{cw} (Short Time Withstand)	0.3 Seconds	-

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI
Rated Temperature	45 °C

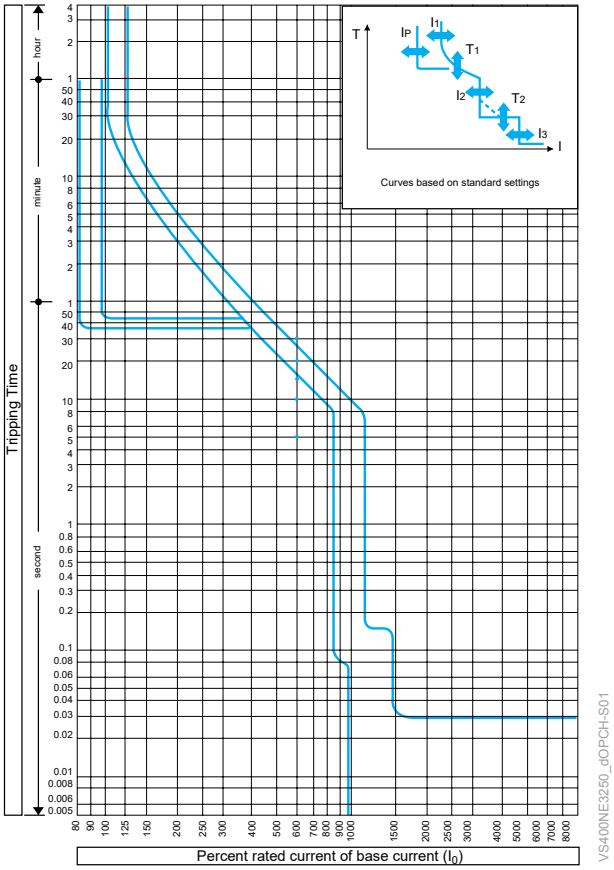
Other Features

Pre-trip alarm (PTA)	Option
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	No
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

Time Current Characteristics Curve 250 - 400A, VS400, Thermal Magnetic



XOS Overcurrent Tripping Charactistics

CT rated current (A) (I_n)	250, 400
Base current setting (A) (I_0)	(I_n) x (0.63-0.8-1.0)
Long time-delay pick-up current (A): (I_1)	(I_0) x (0.8 - 0.85 - 0.9 - 0.95 - 1.0) Non-tripping at (I_1) setting x 105 % and below. Tripping at 125 % and above.
Long time-delay time settings (S) (T_1)	(5 - 10 - 15 - 20 - 30) at (I_1) x 600 % current. Setting tolerance ± 20 %
Short time-delay pick-up current (A): (I_2)	(I_0) x (2-4-6-8-10) Setting tolerance ± 15 %
Short time-delay time settings (S) (T_2)	Opening time (0.1, 0.15, 0.2, 0.25, 0.3) in the definite time-delay. Total clearing time is +50 ms and resettable time - 20 ms for the time- delay setting
Instantaneous trip pick-up current (A) (I_3)	Continuously adjustable from (I_0) x (3 to 12) Setting tolerance ± 20 %
• Pre-trip alarm pick-up current (A) (I_P)	(I_1) x (0.7, 0.8, 0.9, 1.0) Setting tolerance ± 10 %
• Pre-trip alarm time setting (S) (T_P)	40 fixed definite time-delay. Setting tolerance ± 10 %

Notes

- Optional. Underlined values are the factory default settings.

MCCB Operating Characteristics VS400 - 800NE, XS2000 - 3200 MCCBs[1)]

XOS OCR Characteristics

MCCB Type	LTD	STD	INST	I²T Ramp	Pick-up LED	Test Port	PTA	GFT
	Standard Feature						Ordering Option	
VS400NE [2)]	✔	✔	✔	✔	✔	✔	O	O
VS630NE [2)]	✔	✔	✔	✔	✔	✔	O	O
VS800NE [2)]	✔	✔	✔	✔	✔	✔	O	O
XS2000HL	✔	✔	✔	✔	✔	✔	O	O
XS2500HL	✔	✔	✔	✔	✔	✔	O	O
XS3200HL	✔	✔	✔	✔	✔	✔	O	-

Standard and Optional Settings and Features: XOS OCR

Setting Type		Application	Standard or Optional Settings for VS400 – 800 and XS2000-3200 MCCBs
LTD	Long Time Delay	Overload protection, True RMS	Standard
STD	Short Time Delay	Short circuit protection and selectivity	Standard
INST	Instantaneous	Short circuit protection, fast acting	Standard
I2t Ramp	-	Provides easier grading with downstream fuses	Standard
Pick-up LED	-	Illuminates on LTD overload, flashes on PTA pick-up	Standard
Test Port	-	Facility for TNS-2 OCR checker for calibration checking	Standard
PTA	Pre-Trip Alarm	Useful for load shedding applications	Option
GFT	Ground Fault Trip	Protection against ground faults	Option, not available for XS3200

Access to Setting Dials

To adjust the settings on the electronic TemBreak MCCB, the protective cover seal on the front of the breaker must be broken, and the cover fixing screws removed. To adjust the individual trip settings, turn the setting dials or the base current DIP switches with a flat bladed screwdriver.

Align any setting required between the black dots marked on the dial.

Dial settings are in increments. Replacement sealing stickers are provided in a cavity under the MCCB OCR cover. Refer diagrams on following pages for further details.

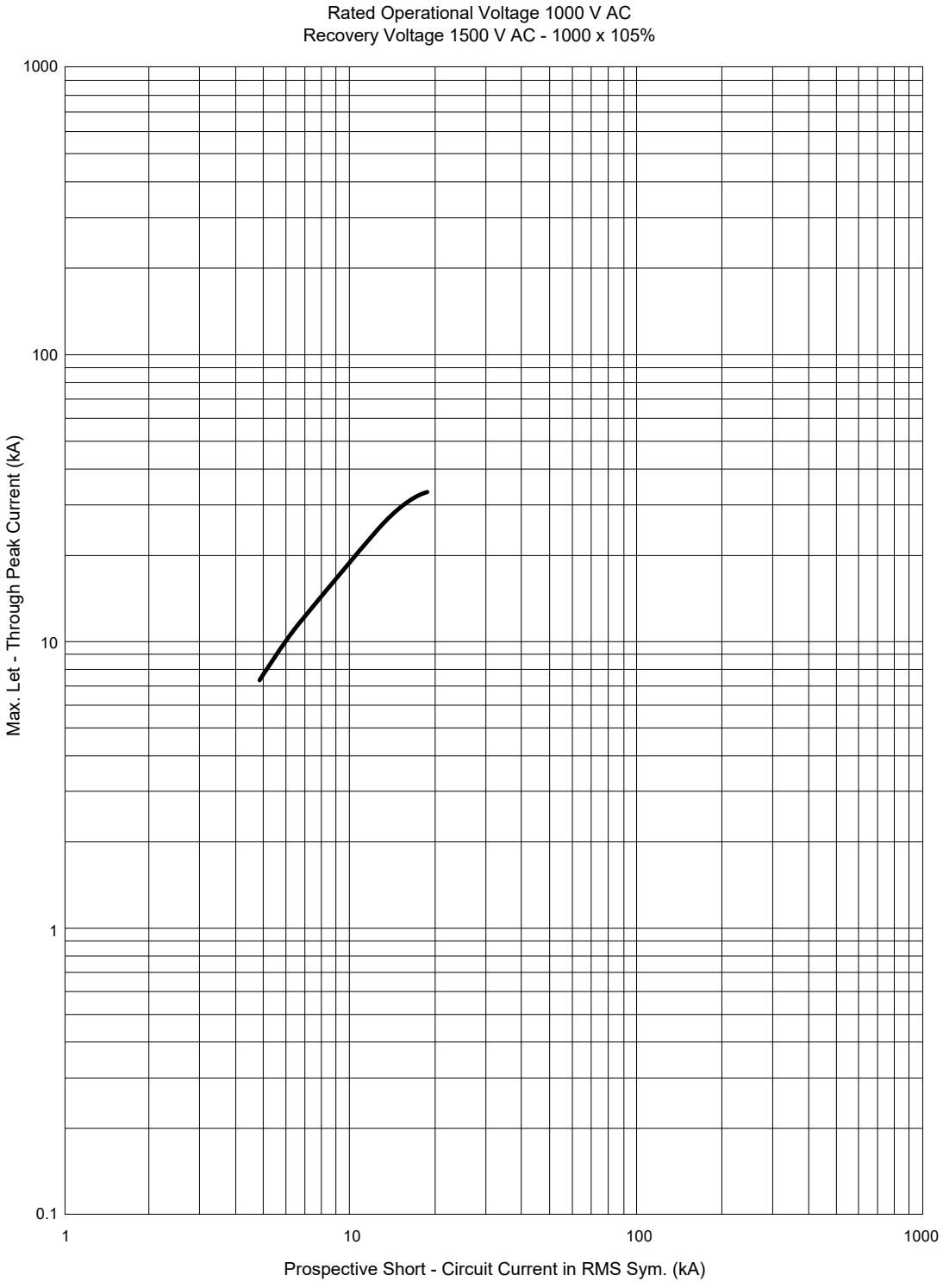
VS400NE_dOPCH-S02

Left
3200 AF Electronic MCCB.

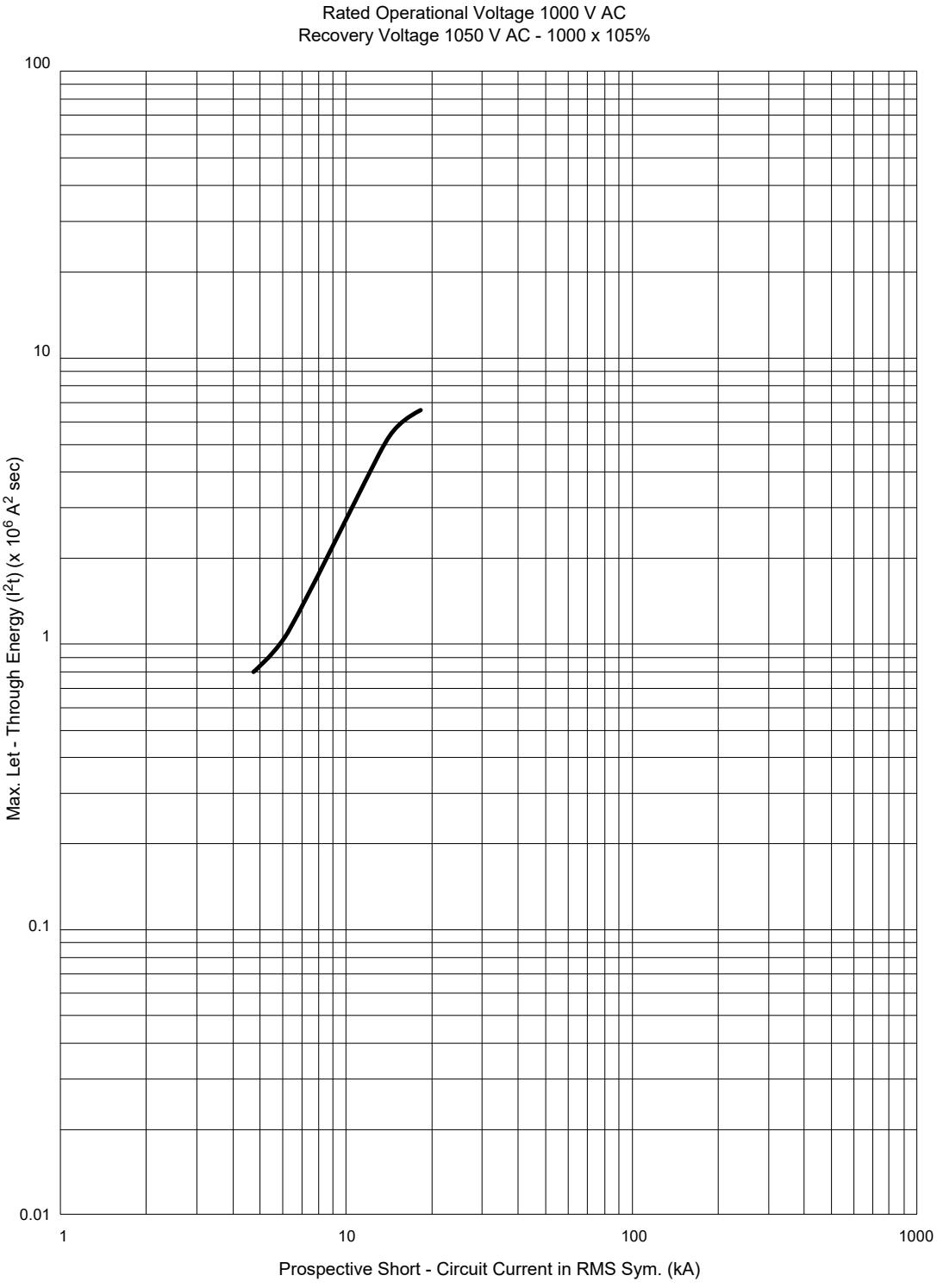
Notes
1) VS400-800 and XS2000-3200 are TemBreak 1 based MCCBs.
2) VS MCCB types are 1000 / 1100 V AC rated Mining MCCBs.

MCCBs

Let-Through Peak Current Characteristics, VS400NE

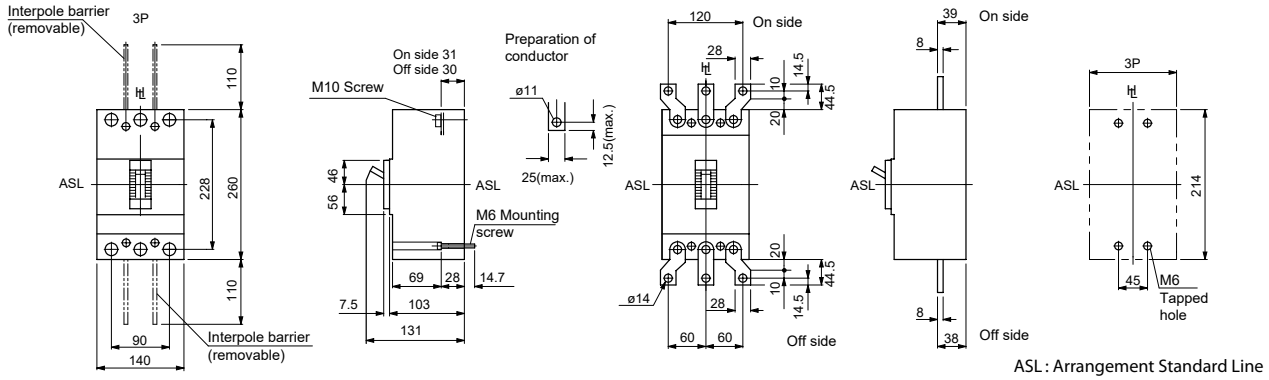


Let-Through Energy I²t Curve, VS400NE



Dimensions VS400NE (mm)

Front Connected

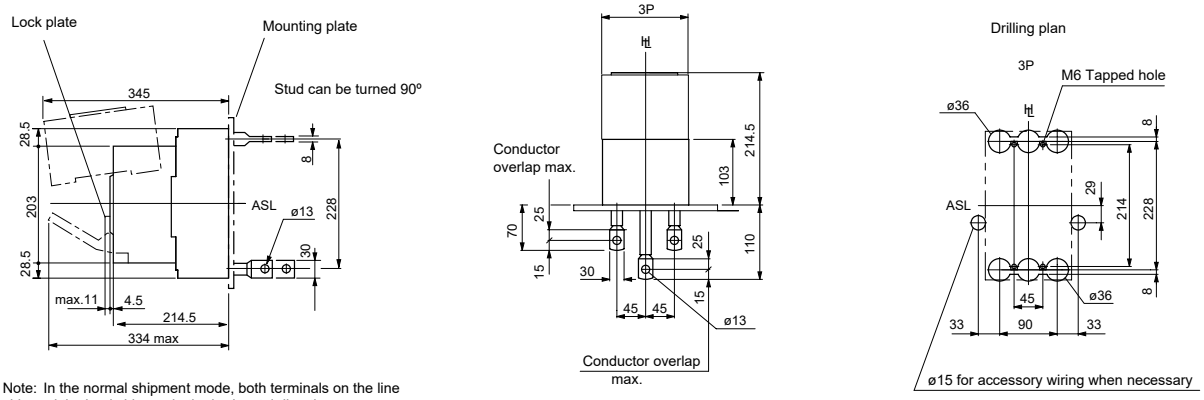


Note: Breakers with terminal bars available on request

ASL : Arrangement Standard Line

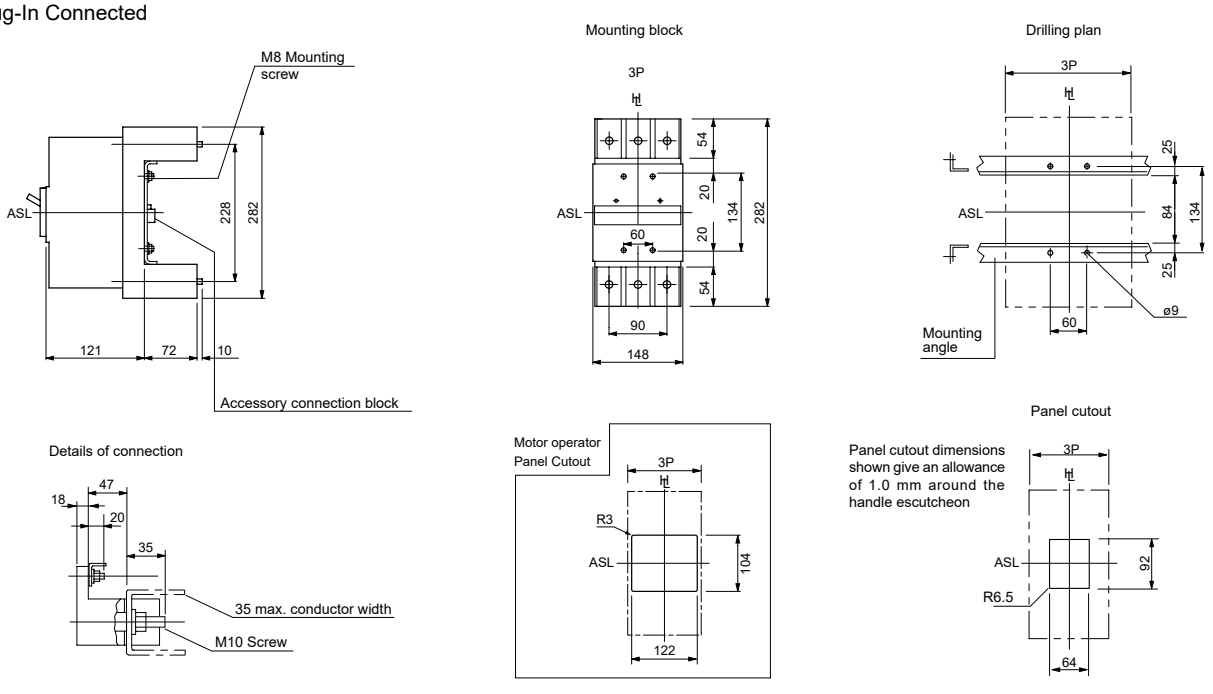
⊬ : Handle Frame Centre Line

Rear Connected with Motor Operator



Note: In the normal shipment mode, both terminals on the line side and the load side are in the horizontal direction.

Plug-In Connected

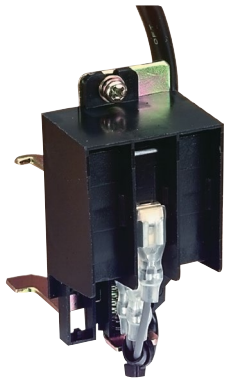


VS400NE Accessories

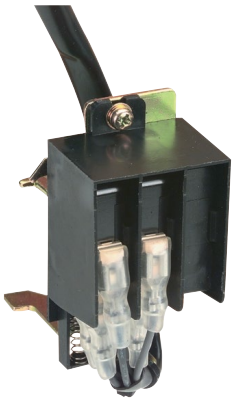
Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits



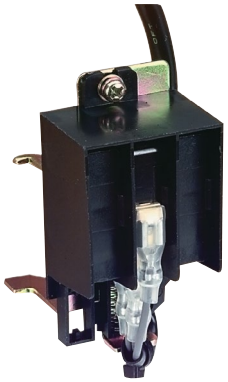
Item Description	Catalogue No.
Alarm Switch Right Side for X4	UXLB0009D



Item Description	Catalogue No.
Alarm/Auxiliary Switch 1C Right Side X4	UXLB0013D
Alarm/Auxiliary Switch 2C Right Side X4	UXLB0014D

Auxiliary Switches

Provides an MCCB trip output contact for external circuits



Item Description	Catalogue No.
Auxiliary Switch 1C Right Side X4	UXXB0004D
Auxiliary Switch 2C Right Side X4	UXXB0005D
Auxiliary Switch 3C Right Side X4	UXXB0006D

Shunt Trips

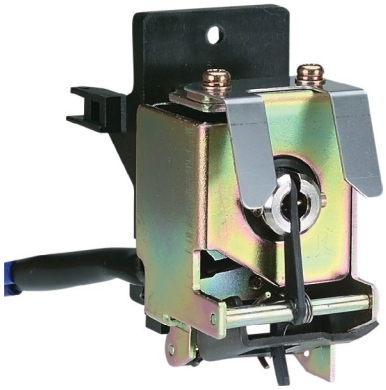
Allows an external device to trip an MCCB by energizing a shunt trip coil

Item Description	Catalogue No.
SHT 24VA X4	2H1311BAA
SHT 110VAD X4	2H1305BAA
SHT 240VA X4	2H1306BAA
SHUNT TRIP 12V DC FOR X4	2H1307BAA
SHT 24VD X4	2H1308BAA

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB



Item Description	Catalogue No.
Undervoltage Trip Coil AC XV400 AF	2H1492BAA
Undervoltage Trip Coil 24 VD UVT X4	2H1494BAA
Undervoltage Trip Coil 48 V DC for X4	2H1495BAA
Undervoltage Trip Coil 60 V DC for X4	2H1496BAA
Undervoltage Trip Coil 110/220 V DC for X4	2H1493BAA

Item Description	Catalogue No.
Instant Undervoltage Controller 110 V AC XS3200 AF	UXUB0013B
Instant Undervoltage Controller 230-480 V AC XS3200 AF	UXUB0014B
Instant Undervoltage Controller 440 V AC XS3200 AF	UXUB0015B
Time Delay Undervoltage Controller 200-230 V DC XS3200 AF	UXUB0038B

Time Delay Operation (500 ms)

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Time Delay Undervoltage Controller 110 V AC XS3200 AF	UXUB0016B
Time Delay Undervoltage Controller 230-480 V AC XS3200 AF	UXUB0017B
Time Delay Undervoltage Controller 440 V AC XS3200 AF	UXUB0018B

Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

Item Description	Catalogue No.
Grey, IP55 handle + 356 mm shaft	T1HS40R5GM

Item Description	Catalogue No.
YASD Extension IP65 Metal Handle/Shaft Kit 400 AF	YASD34

Handle - Direct Mount

Door mount or internal mount fixed depth handle for MCCB ON OFF RESET operation

Item Description	Catalogue No.
Handle Mechanism IP55 X4	TFJ34XU

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

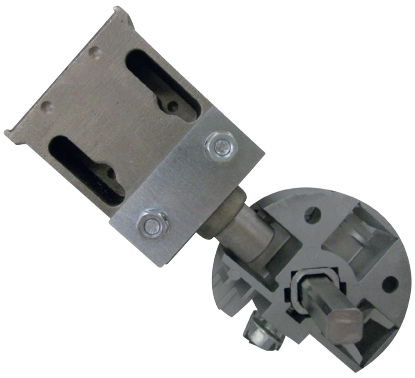
Item Description	Catalogue No.
HP Extension IP65 Grey/Black Handle/Shaft XV400 AF	T1HP40R6BNA4

Handle Options

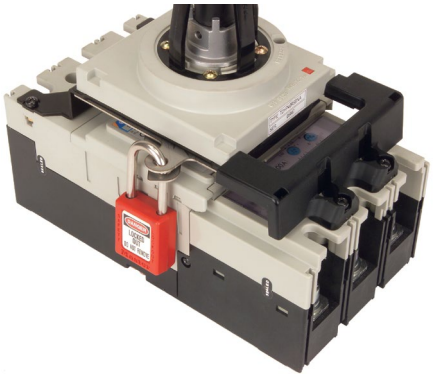
A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
TPHS Handle Options 390 mm T Pin Shaft – no Flexi Coupling 400/630 AF	T2HS400SHAFT



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702



Item Description	Catalogue No.
TB1 HP Handle Mechanism Padlock Off Device 400 AF	T1HP40PALK

Motor Operator

Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
Motor XMD 110 V AC for X4	2H1294CAC
Motor XMD 240 V AC for X4	2H1298CAC
Motor XMD 110 V DC for X4	2H1296CAC
Motor XMD 24 V DC for X4	2H1297CAC

Locking and Interlocking Accessories

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option.

Item Description	Catalogue No.
Padlock Resin Fix X4	XKA4

Item Description	Catalogue No.
Resin	LOCTITE480

Non-captive

Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON.

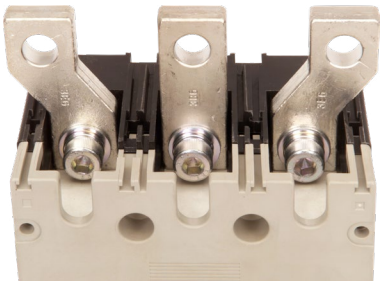
Item Description	Catalogue No.
Non Captive Toggle Lock 400 AF	2H1956BAA

MCCBs

Installation External Accessories

Extension Bars

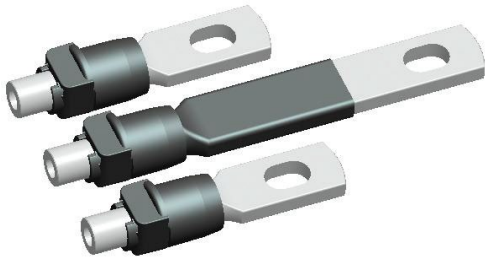
Add-on bus bars, allow more or larger conductor connector to an MCCB



Item Description	Catalogue No.
Attached Busbar 3 Pole, Set of 3, Flanged Bars 400 A 400 AF	TPFB403WHA

Rear Connection Studs

Allows MCCB main connections to be made at the rear of the MCCB



Item Description	Catalogue No.
TB1 Rear Connect Studs 3P 400 AF (6 pcs)	UXRC0006C

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier X4-X16	UXQH0004B

Terminal Clamps

Allows cable to be terminated directly to the MCCB and clamped for good connectivity.

Item Description	Catalogue No.
Solderless Terminals 3P for X4	2H2012DAB

OCR Sealing Cover

A device that allows a user to seal the OCR cover using a compression seal

Item Description	Catalogue No.
OCR Trip Unit Sealing Kit X4	XS400OCRSK

Terminal Covers

Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area.

Item Description	Catalogue No.
Terminal Cover 3P Front Connect X4 with Busbar	2H1413DAB
Terminal Cover 3P Front Connect X4	2H1415DAB
IP20 Protective cover insert quantity 1	2A1787DBA

Rear Connect Terminal Covers

Provides front finger touch protection with MCCBs used with rear terminals and HC chassis.

Item Description	Catalogue No.
Terminal Cover Rear Connect 3P X43	UXPD0011B

VS630NE

1000 V AC Circuit Breaker

- ✔ 1000 V AC MCCB for power distribution and motor starting use in mines or tunnels
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 pole MCCB
- ✔ 273 mm (H), 103 mm (D), 70 mm pole centres
- ✔ Fault interruption rating; 20 kA I_{cu} @ 1000 V AC
- ✔ Utilisation voltage ratings 1000 or 1100 V AC
- ✔ 5 dial electronic trip unit: Individual dial setting adjustments of LSI settings
- ✔ Options include GF or PTA
- ✔ Trip units; 630 A

General

Trip Unit Protection Type	Adjustable Electronic LSI [1)]
Trip Unit Rating	630 A
Number of Poles	3
Switching Poles	3P

Short Circuit

Short-Circuit Fault Interruption Capacity (I_{cu})	20 kA @1000 V AC
	18 kA @1100 V AC
Utilisation and service breaking rated	I_{cu} and I_{cs}

Voltage

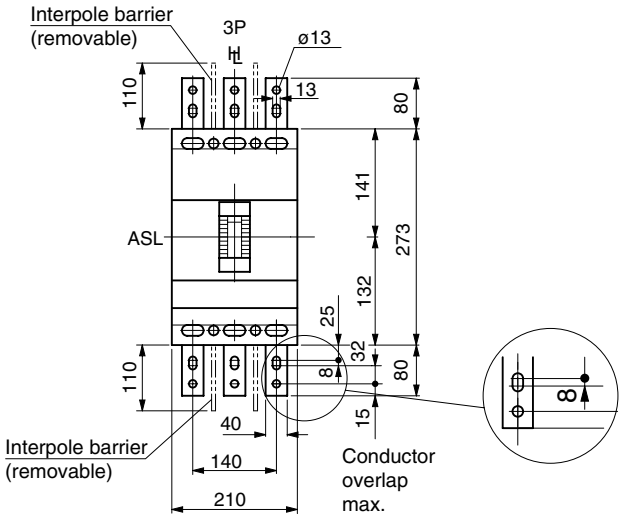
Utilisation Voltages	1000 V AC or 1100 V AC
Rated Frequency	50 / 60 Hz

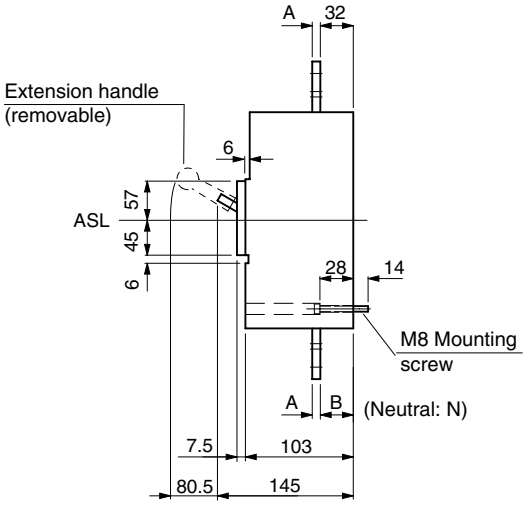
Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in PM (Option)

Notes: 1) When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Quick Reference Dimensions – Front Connect





800 A Frame 3 Pole 20 kA

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, (kA)	Poles	Catalogue No.
630	315 - 630	-	18	3	VS630NE3630K
630	315 - 630	-	18	3	VS630NE3AG630K

Notes: When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3
Switching Poles	3P
Frame Size	800 AF
Trip Unit Rating	630 A

I_n, Rated Current	
A @ 30 °C	630
A @ 45 °C	630
A @ 50 °C	630

U_e, Rated Operational Voltage, AC, max	1100 V AC
U_i, Rated Insulation Voltage	1100 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)		
(A)	630	
(W)	50.66	50.66

Dielectric Strength	3500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection Extension Bar (Option) Rear Connection (Option) Plug-in Base (Option)
Terminal Type	Extension Bar With Bolt holes
Connection Torque	42.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		273 mm
Width	**3P**	210 mm
Depth (less toggle)		103 mm
Depth (toggle included)		145 mm
Weight	**3P**	9.6 kg
Electrical Life		1000 cycles
Mechanical Life		5000 cycles

Short-Circuit Capacity

		kA Rating
		MCCB Type
	Voltage	**NE**
Based On AS/NZS 60947.2 and IEC 60947-2 — I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	-
	380 / 400 V AC	-
	415 V AC	-
	440 V AC	-
	690 V AC	-
	1000 V AC	20
	1100 V AC	18
	125 V DC	-
	250 V DC	-
I_{cs} (Service Breaking Capacity)	220 / 240 V AC	-
	380 / 400 V AC	-
	415 V AC	-
	440V AC	-
	690 V AC	-
	1000 V AC	15
	1100 V AC	13.5
	125 V DC	-
	250 V DC	-
I_{cw} (Short Time Withstand)	0.3 Seconds	-

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI
Rated Temperature	45 °C

Other Features

Pre-trip alarm (PTA)	Option
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	No
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

MCCB Operating Characteristics VS400 - 800NE, XS2000 - 3200 MCCBs[1)]

XOS OCR Characteristics

MCCB Type	LTD	STD	INST	I^2T Ramp	Pick-up LED	Test Port	PTA	GFT
	Standard Feature						Ordering Option	
VS400NE [2)]	✔	✔	✔	✔	✔	✔	O	O
VS630NE [2)]	✔	✔	✔	✔	✔	✔	O	O
VS800NE [2)]	✔	✔	✔	✔	✔	✔	O	O
XS2000HL	✔	✔	✔	✔	✔	✔	O	O
XS2500HL	✔	✔	✔	✔	✔	✔	O	O
XS3200HL	✔	✔	✔	✔	✔	✔	O	-

Standard and Optional Settings and Features: XOS OCR

Setting Type		Application	Standard or Optional Settings for VS400 – 800 and XS2000-3200 MCCBs
LTD	Long Time Delay	Overload protection, True RMS	Standard
STD	Short Time Delay	Short circuit protection and selectivity	Standard
INST	Instantaneous	Short circuit protection, fast acting	Standard
I2t Ramp	-	Provides easier grading with downstream fuses	Standard
Pick-up LED	-	Illuminates on LTD overload, flashes on PTA pick-up	Standard
Test Port	-	Facility for TNS-2 OCR checker for calibration checking	Standard
PTA	Pre-Trip Alarm	Useful for load shedding applications	Option
GFT	Ground Fault Trip	Protection against ground faults	Option, not available for XS3200

Access to Setting Dials

To adjust the settings on the electronic TemBreak MCCB, the protective cover seal on the front of the breaker must be broken, and the cover fixing screws removed. To adjust the individual trip settings, turn the setting dials or the base current DIP switches with a flat bladed screwdriver.

Align any setting required between the black dots marked on the dial.

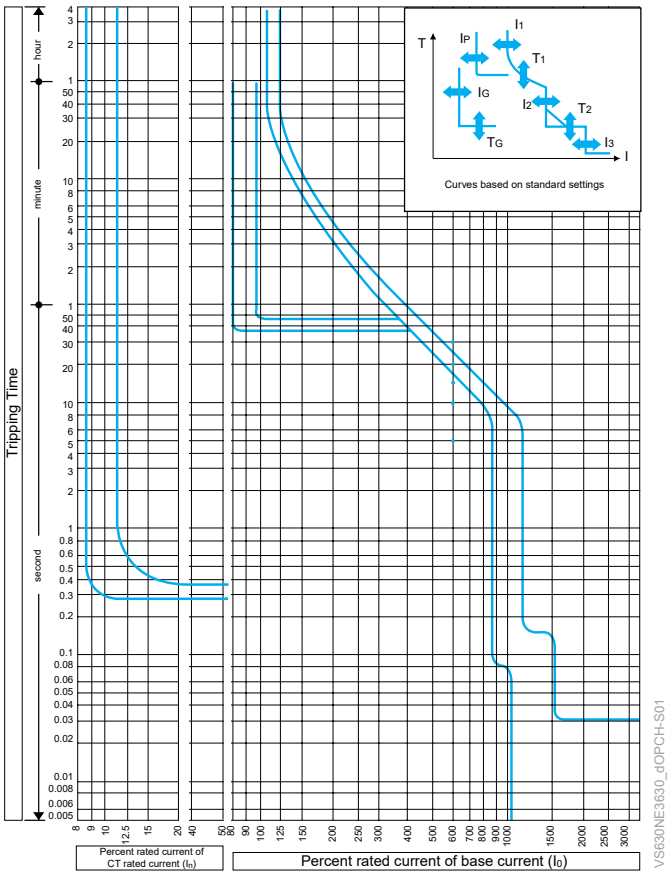
Dial settings are in increments. Replacement sealing stickers are provided in a cavity under the MCCB OCR cover. Refer diagrams on following pages for further details.

VS400NE_dOPCH-S02

Left
3200 AF Electronic MCCB.

Notes
1) VS400-800 and XS2000-3200 are TemBreak 1 based MCCBs.
2) VS MCCB types are 1000 / 1100 V AC rated Mining MCCBs.

Time Current Characteristics Curve 630 - 800A, VS630, Thermal Magnetic



XOS Overcurrent Tripping Charactistics

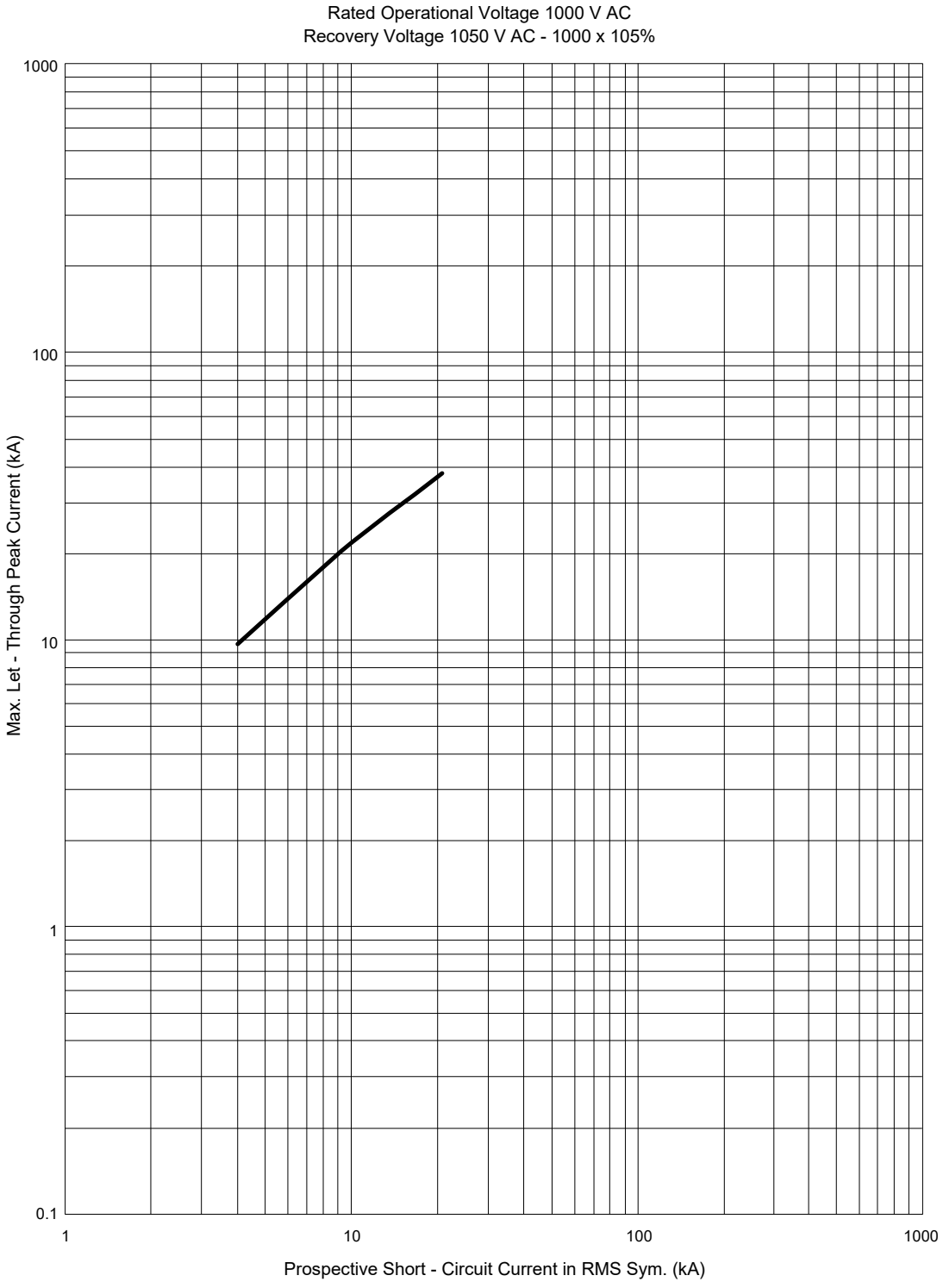
CT rated current (A) (I_n)	630, 800
Base current setting (A) (I_0)	(I_n) x (0.63 - 0.8 - 1-0)
Long time-delay pick-up current (A): (I_1)	(I_0) x (0.8 - 0.85 - 0.9 - 0.95 - 1.0) Non-tripping at (I_1) setting x 105 % and below. Tripping at 125 % and above.
Long time-delay time settings (S) (T_1)	(5 - 10 - 15 - 20 - 30) at (I_1) x 600 % current. Setting tolerance ± 20 %
Short time-delay pick-up current (A): (I_2)	(I_0) x (2 - 4 - 6 - 8 - 10) Setting tolerance ± 15 %
Short time-delay time settings (S) (T_2)	Opening time (0.1, 0.15, 0.2, 0.25, 0.3) in the definite time-delay. Total clearing time is +50 ms and resettable time - 20 ms for the time- delay setting
Instantaneous trip pick-up current (A) (I_3)	Continuously adjustable from (I_0) x (3 to 12) Setting tolerance ± 20 %
• Pre-trip alarm pick-up current (A) (I_P)	(I_1) x (0.7, 0.8, 0.9, 1.0) Setting tolerance ± 10 %
• Pre-trip alarm time setting (S) (T_P)	40 fixed definite time-delay. Setting tolerance ± 10 %
• Ground fault trip pick-up current (A) (I_G)	Continuously adjustable from (I_n) x (0.1 to 0.4) Setting tolerance ± 15 %
• Ground fault trip time setting (S) (T_G)	Opening time (0.1 - 0.2 - 0.3 - 0.4 - 0.8) in the definite time-delay. Total clearing time is +50 ms and resettable time is - 20 ms for the time-delay settings

Notes

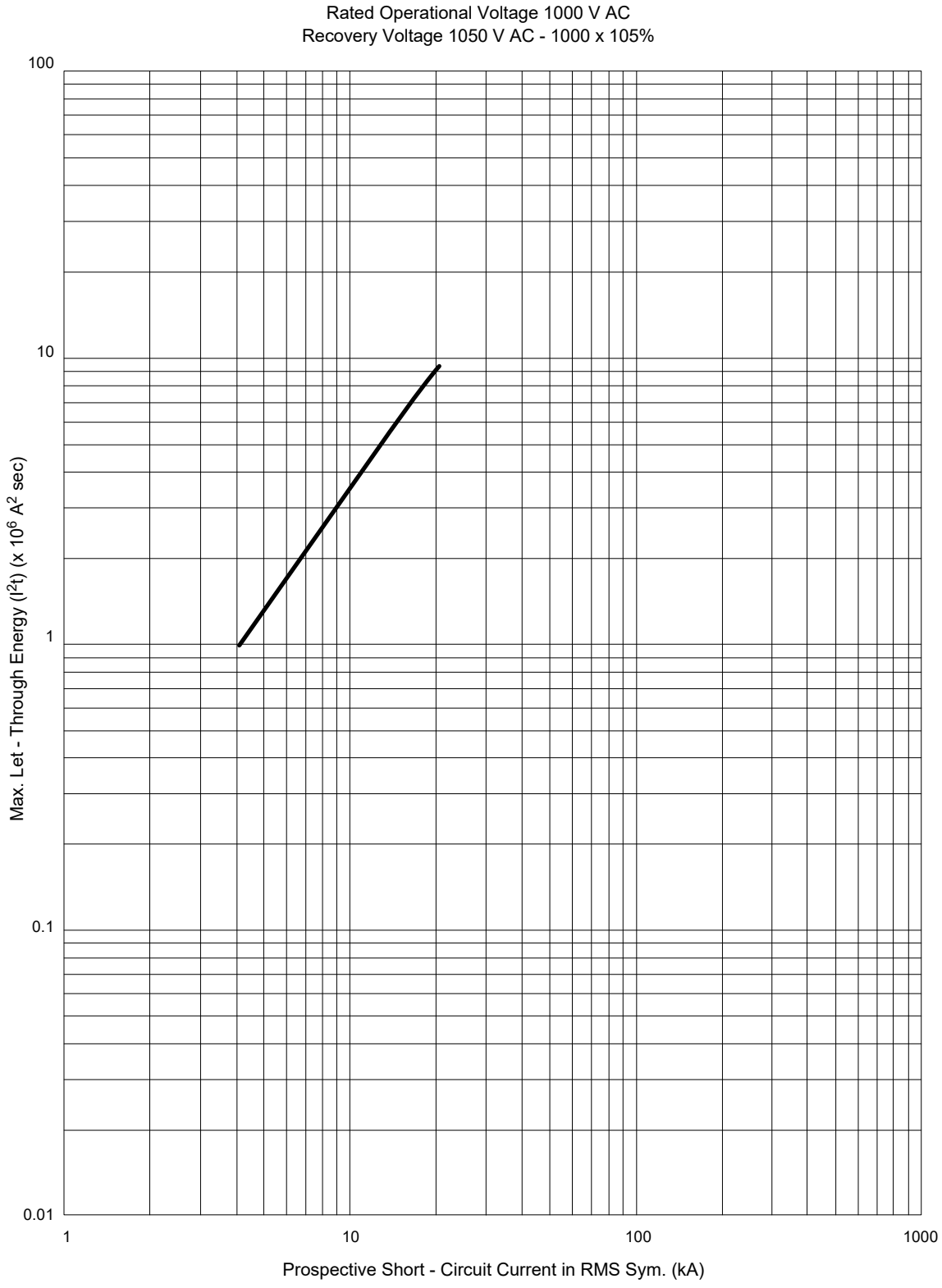
- Optional. Underlined values are the factory default settings.

MCCBs

Let-Through Peak Current Characteristics VS630NE-VS800NE

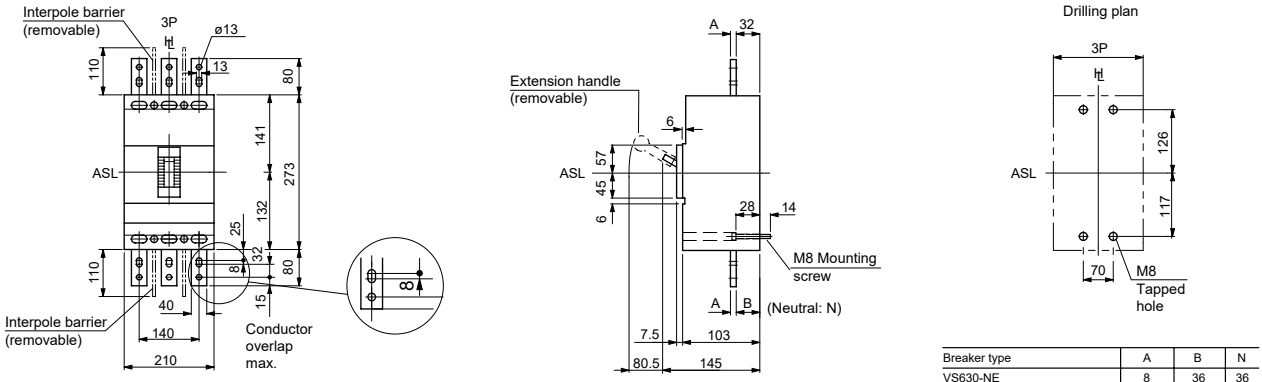


Let-Through Energy I²t Curve, VS630NE-VS800NE



Dimensions VS630, 800NE, Front and Rear Connect (mm)

Front Connected



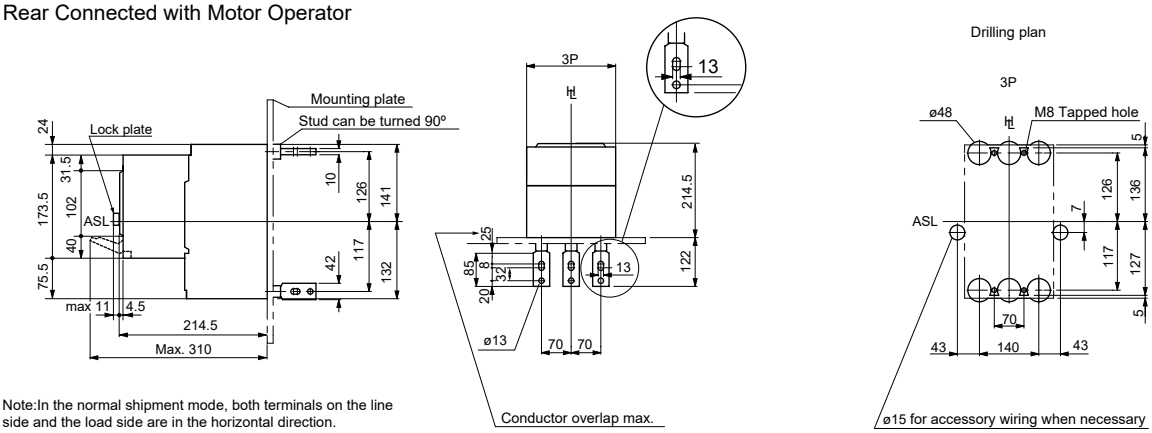
Breaker type	A	B	N
VS630-NE	8	36	36
VS800-NE	10	36	36

Note: Breakers with terminal bars available on request

ASL: Arrangement Standard Line

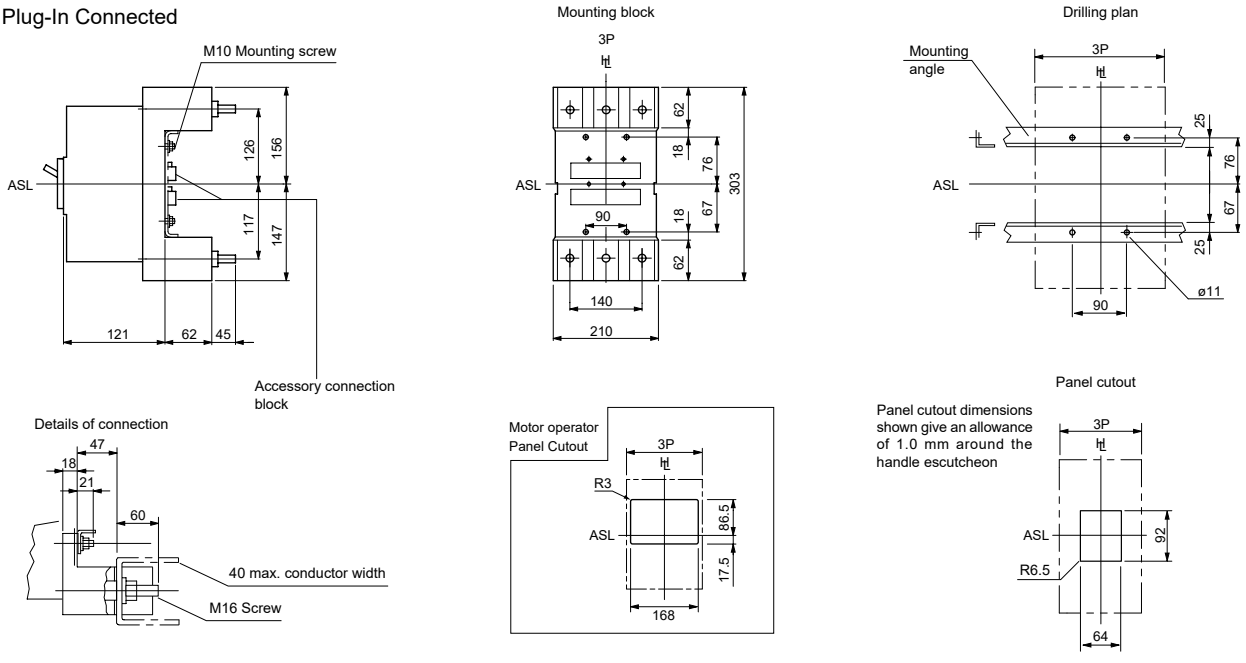
: Handle Frame Centre Line

Rear Connected with Motor Operator



Note:In the normal shipment mode, both terminals on the line side and the load side are in the horizontal direction.

Plug-In Connected

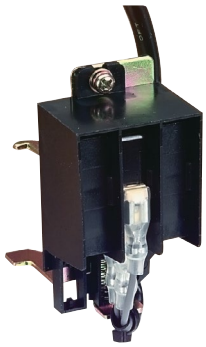


VS630NE Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits

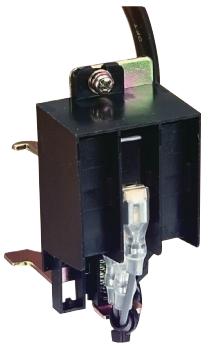


Item Description	Catalogue No.
Alarm Switch Right Side for X6-X8	UXLB0010D

Item Description	Catalogue No.
Alarm/Auxiliary Switch 1C Right Side X6~X8	UXLB0015D
Alarm/Auxiliary Switch 2C Right Side X6~X8	UXLB0016D

Auxiliary Switches

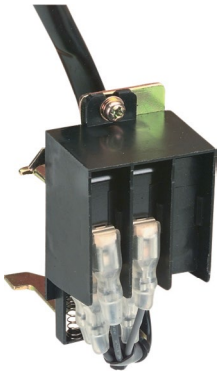
Auxiliary switches provide an MCCB ON or OFF contact output for external circuits.



Item Description	Catalogue No.
SW AUX 1C RH X6~X8	UXXB0007D
SW AUX 2C RH X6~X8	UXXB0008D
SW AUX 3C RH X6~X8	UXXB0009D

Shunt Trips

Allows an external device to trip an MCCB by energizing a shunt trip coil



Item Description	Catalogue No.
Shunt Trip 12 V DC for X6-X8	2H1517BAA
Shunt Trip 24 V DC for X6-X8	2H1518BAA
Shunt Trip 48 V DC for X6-X8	2H1519BAA
Shunt Trip 110 V AC/DC for X6-X8	2H1515BAA
Shunt Trip 24 V AC for X6-X8	2H1521BAA
Shunt Trip 240 V AC for X6-X8	2H1516BAA

Undervoltage Trips

Controller Required

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Undervoltage Trip Coil AC X6-X8	2H1503BAA

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Instant Undervoltage Controller 110 V AC XS3200 AF	UXUB0013B
Instant Undervoltage Controller 230-480 V AC XS3200 AF	UXUB0014B
Instant Undervoltage Controller 440 V AC XS3200 AF	UXUB0015B

Time Delay Operation (500 ms)

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Time Delay Undervoltage Controller 110 V AC XS3200 AF	UXUB0016B
Time Delay Undervoltage Controller 230-480 V AC XS3200 AF	UXUB0017B
Time Delay Undervoltage Controller 440 V AC XS3200 AF	UXUB0018B

No Controller Required

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Undervoltage Trip Coil 24 V DC for X6~X8	2H1505BAA
Undervoltage Trip Coil 48 V DC for X6-X8	2H1506BAA
Undervoltage Trip Coil 60 V DC for X6-X8	2H1507BAA
Undervoltage Trip Coil 100-230 V DC for TB1 MCCB X6-X8	2H1504BAA

Item Description	Catalogue No.
Time Delay Undervoltage Controller 200-230 V DC XS3200 AF	UXUB0038B

Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

Item Description	Catalogue No.
Grey, IP65 handle + 356 mm shaft	T1HS80R5GM

Item Description	Catalogue No.
YASD Extension IP65 Metal Handle/Shaft Kit 630/800 AF	YASD46

Handle - Direct Mount

Door mount or internal mount fixed depth handle for MCCB ON OFF RESET operation

Item Description	Catalogue No.
Handle Mechanism IP55 X6-X8	TFJ36XU

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

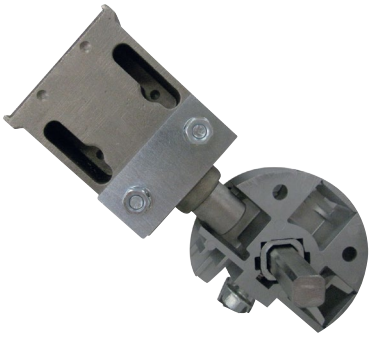
Item Description	Catalogue No.
HP Extension IP65 Grey/Black Handle/Shaft XV630/800 AF	T1HP80R6BNA4

Handle Options

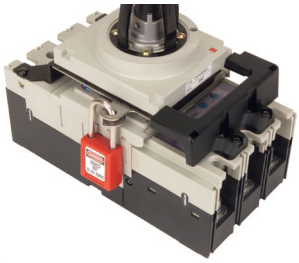
A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
TPHS Handle Options 390 mm T Pin Shaft – no Flexi Coupling 400/630 AF	T2HS400SHAFT



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702



Item Description	Catalogue No.
TB1 HP Handle Mechanism Padlock Off Device 630/800 AF	T1HP80PALK

Item Description	Catalogue No.
T2HS Handle Options MCCB toggle extension Lever	2A2272BAB

Motor Operator

Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
TB1 XMD Motor Operator 110 V DC XV630/800 AF	2H1299CAC
TB1 XMD Motor Operator 240 V AC XV630/800 AF	2H1303CAC
TB1 XMD Motor Operator 110 V DC XV630/800 AF	2H1301CAC
TB1 XMD Motor Operator 24 V DC XV630/800 AF	2H1302CAC

Locking and Interlocking Accessories

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option.

Item Description	Catalogue No.
Captive Padlock Attachment (Resin Fixed) XV630/800 AF	XKA6

Item Description	Catalogue No.
Resin	LOCTITE480

Non-captive

Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON.

Item Description	Catalogue No.
Lock Handle XKC6 X6~X8	UXKB0002A

MCCBs

Installation External Accessories

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier X4-X16	UXQH0004B

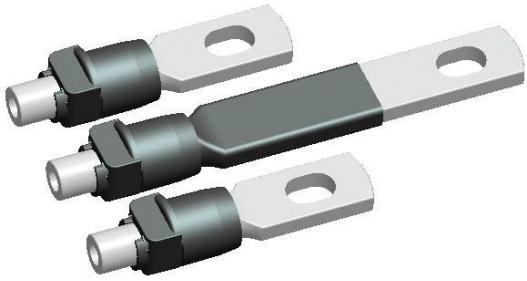
OCR Sealing Cover

A device that allows a user to seal the OCR cover using a compression seal

Item Description	Catalogue No.
OCR Trip Unit Sealing Kit X6-X8	XS630OCRSK

Rear Connection Studs

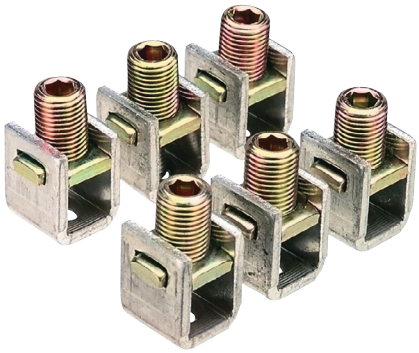
Allows MCCB main connections to be made at the rear of the MCCB



Item Description	Catalogue No.
TB1 Rear Connect Studs 3P 630/800 AF (6 pcs)	UXRC0008B

Terminal Clamps

Allows cable to be terminated directly to the MCCB and clamped for good connectivity.



Item Description	Catalogue No.
Solderless Terminals 3P for X6	TXLD0005A

Terminal Covers

Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area.

Item Description	Catalogue No.
Terminal Cover 3P Front Connect X6-X8	2H1417DAB
IP20 Protective cover insert quantity 1	2A1787DBA

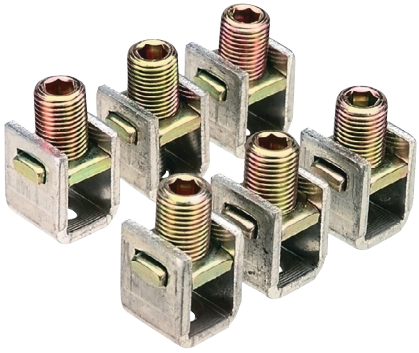
Rear Connect Terminal Covers

Provides front finger touch protection with MCCBs used with rear terminals and HC chassis.

Item Description	Catalogue No.
Terminal Cover Rear Connect 3P X63~X83	UXPD0013C

Screw Tunnel Terminals

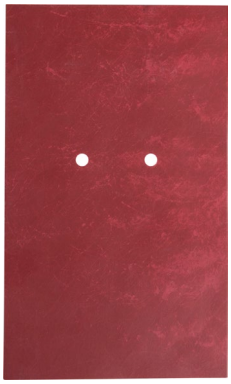
Allows cable to be terminated directly to the MCCB and clamped for good connectivity.



Item Description	Catalogue No.
Solderless Terminals 3P for X6	TXLD0005A

Earthing Insulation Sheet

Supplied standard with MCCBs to provide a lineside earthing barrier for the incoming terminals.



Item Description	Catalogue No.
XV 630/800 A Insulation Base Plate	305.00006

VS800NE

1000 V AC Circuit Breaker

- ✔ 1000 VAC MCCB for power distribution and motor starting use in mines or tunnels
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 pole MCCB
- ✔ 273 mm (H), 103 mm (D), 70 mm pole centres
- ✔ Fault interruption rating; 20 kA I_{cu} @ 1000 V AC
- ✔ Utilisation voltage ratings 1000 or 1100 V AC
- ✔ 5 dial electronic trip unit: Individual dial setting adjustments of LSI settings
- ✔ Options include GF or PTA
- ✔ Trip units; 800 A

General

Trip Unit Protection Type	Adjustable Electronic LSI [1)]
Trip Unit Rating	800 A
Number of Poles	3
Switching Poles	3P

Short Circuit

Short-Circuit Fault Interruption Capacity (I_{cu})	20 kA @ 1000 V AC
	18 kA @ 1100 V AC
Utilisation and service breaking rated	I_{cu} and I_{cs}

Voltage

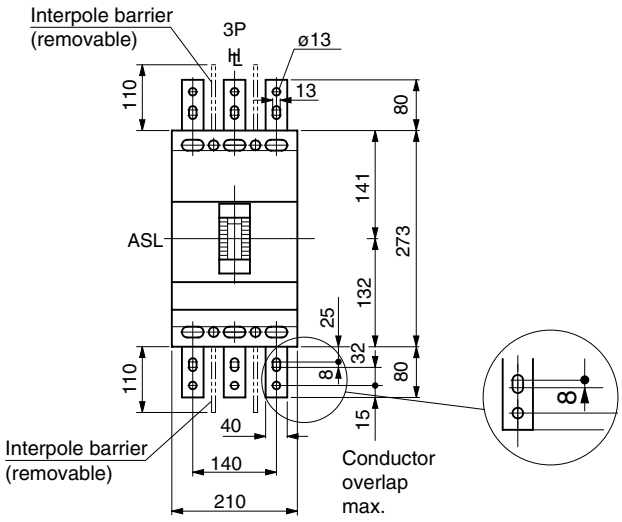
Utilisation Voltages	1000 V AC or 1100 V AC
Rated Frequency	50 / 60 Hz

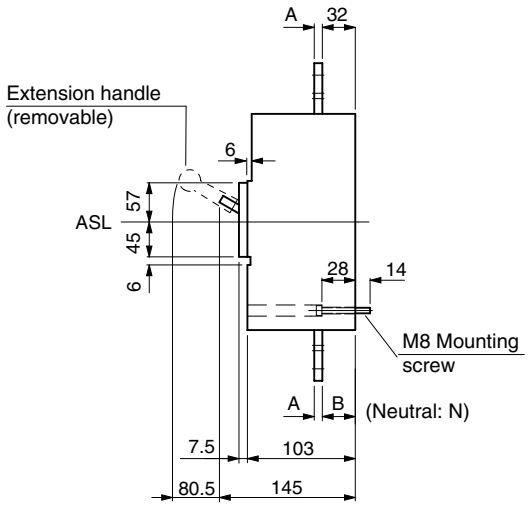
Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in PM (Option)

Notes: 1) When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Quick Reference Dimensions – Front Connect





800 A Frame 3 Pole 20 kA

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, (kA @ 1.1 k V AC)	Poles	Catalogue No.
800	400 - 800	-	18	3	VS800NE3800K
800	400 - 800	-	18	3	VS800NE3AG800K

Notes: When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3
Switching Poles	3P
Frame Size	800 AF
Trip Unit Rating	800 A

I_n, Rated Current	
A @ 30 °C	800
A @ 45 °C	800
A @ 50 °C	800

U_e, Rated Operational Voltage, AC, max	1100 V AC
U_i, Rated Insulation Voltage	1100 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)		
(A)	800	
(W)	81.66	81.66

Dielectric Strength	3500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection Extension Bar (Option) Rear Connection (Option) Plug-in Base (Option)
Terminal Type	Extension Bar With Bolt holes
Connection Torque	40.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		273 mm
Width	**3P**	210 mm
Depth (less toggle)		103 mm
Depth (toggle included)		145 mm
Weight	**3P**	9.7 kg
Electrical Life		500 cycles
Mechanical Life		5000 cycles

Short-Circuit Capacity

		kA Rating
		MCCB Type
	Voltage	**NE**
Based On AS/NZS 60947.2 and IEC 60947-2 — I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	-
	380 / 400 V AC	-
	415 V AC	-
	440 V AC	-
	690 V AC	-
	1000 V AC	20
	1100 V AC	18
	125 V DC	-
	250 V DC	-
I_{cs} (Service Breaking Capacity)	220 / 240 V AC	-
	380 / 400 V AC	-
	415 V AC	-
	440V AC	-
	690 V AC	-
	1000 V AC	15
	1100 V AC	13.5
	125 V DC	-
	250 V DC	-
I_{cw} (Short Time Withstand)	0.3 Seconds	-

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI
Rated Temperature	45 °C

Other Features

Pre-trip alarm (PTA)	Option
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	No
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

MCCB Operating Characteristics VS400 - 800NE, XS2000 - 3200 MCCBs[1)]

XOS OCR Characteristics

MCCB Type	LTD	STD	INST	I^2T Ramp	Pick-up LED	Test Port	PTA	GFT
	Standard Feature						Ordering Option	
VS400NE [2)]	✔	✔	✔	✔	✔	✔	O	O
VS630NE [2)]	✔	✔	✔	✔	✔	✔	O	O
VS800NE [2)]	✔	✔	✔	✔	✔	✔	O	O
XS2000HL	✔	✔	✔	✔	✔	✔	O	O
XS2500HL	✔	✔	✔	✔	✔	✔	O	O
XS3200HL	✔	✔	✔	✔	✔	✔	O	-

Standard and Optional Settings and Features: XOS OCR

Setting Type		Application	Standard or Optional Settings for VS400 – 800 and XS2000-3200 MCCBs
LTD	Long Time Delay	Overload protection, True RMS	Standard
STD	Short Time Delay	Short circuit protection and selectivity	Standard
INST	Instantaneous	Short circuit protection, fast acting	Standard
I2t Ramp	-	Provides easier grading with downstream fuses	Standard
Pick-up LED	-	Illuminates on LTD overload, flashes on PTA pick-up	Standard
Test Port	-	Facility for TNS-2 OCR checker for calibration checking	Standard
PTA	Pre-Trip Alarm	Useful for load shedding applications	Option
GFT	Ground Fault Trip	Protection against ground faults	Option, not available for XS3200

Access to Setting Dials

To adjust the settings on the electronic TemBreak MCCB, the protective cover seal on the front of the breaker must be broken, and the cover fixing screws removed. To adjust the individual trip settings, turn the setting dials or the base current DIP switches with a flat bladed screwdriver.

Align any setting required between the black dots marked on the dial.

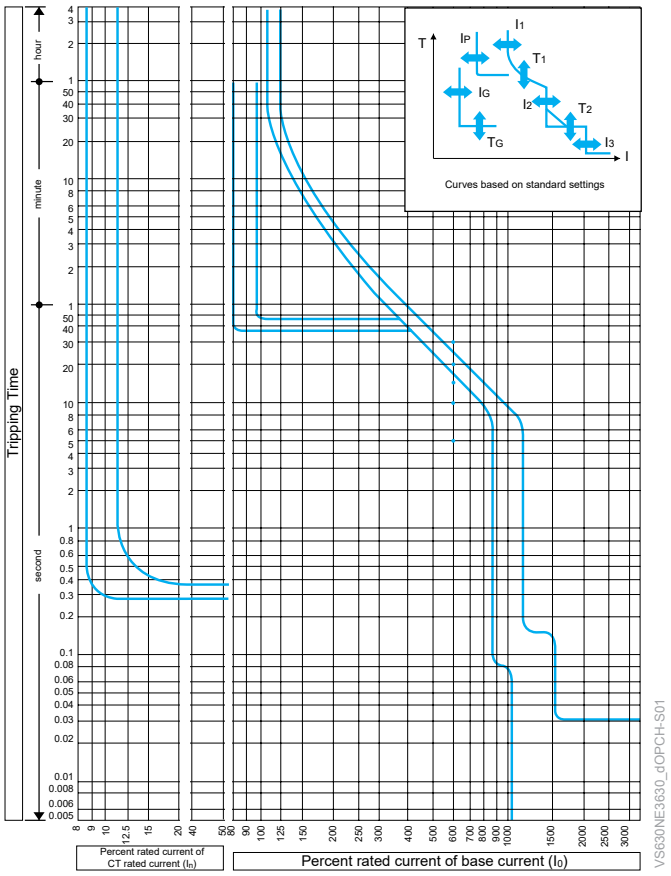
Dial settings are in increments. Replacement sealing stickers are provided in a cavity under the MCCB OCR cover. Refer diagrams on following pages for further details.

VS400NE_dOPCH-S02

Left
3200 AF Electronic MCCB.

Notes
1) VS400-800 and XS2000-3200 are TemBreak 1 based MCCBs.
2) VS MCCB types are 1000 / 1100 V AC rated Mining MCCBs.

Time Current Characteristics Curve 630 - 800A, VS630, Thermal Magnetic



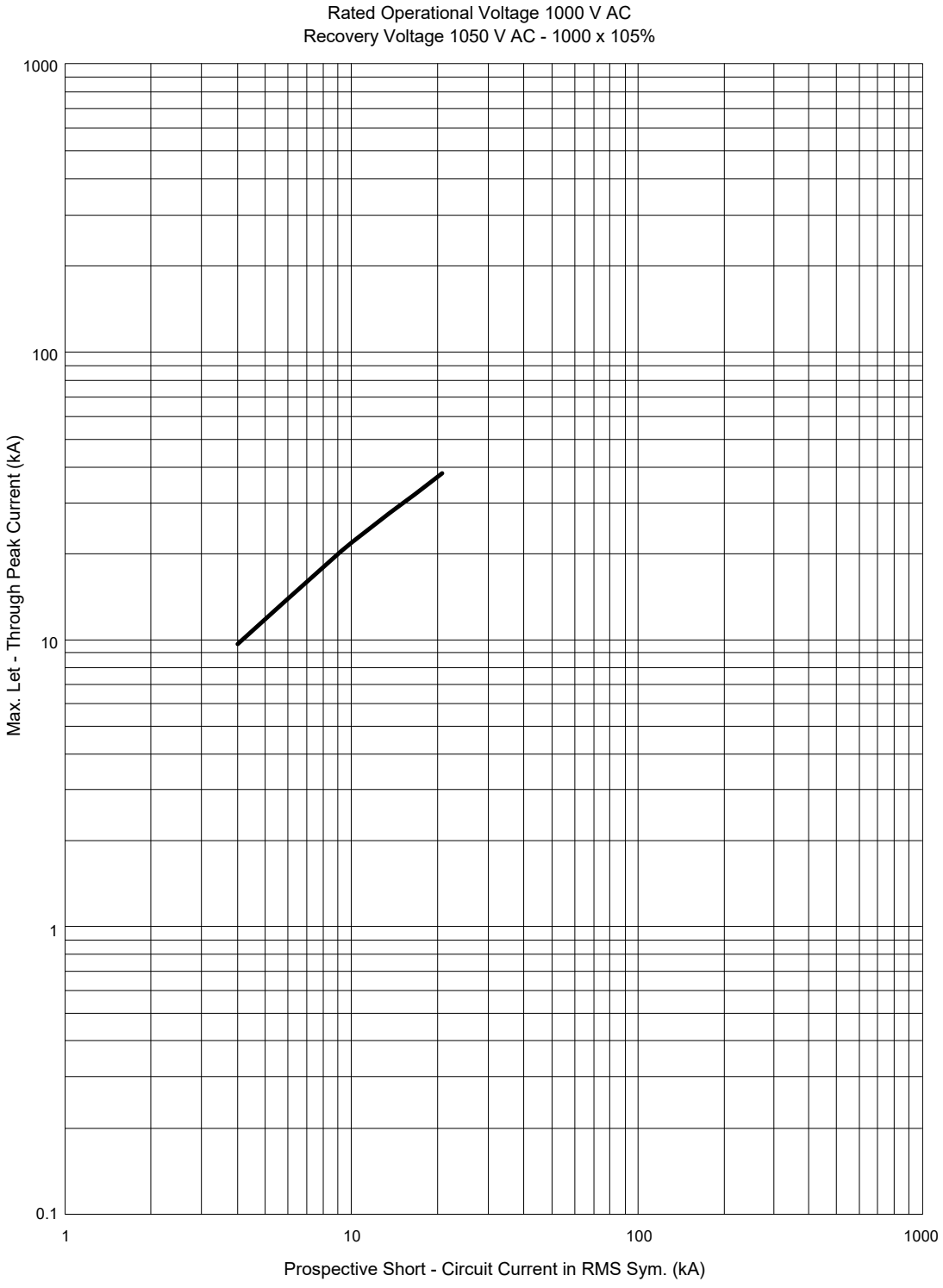
XOS Overcurrent Tripping Charactistics

CT rated current (A) (I_n)	630, 800
Base current setting (A) (I_0)	(I_n) x (0.63 - 0.8 - 1-0)
Long time-delay pick-up current (A): (I_1)	(I_0) x (0.8 - 0.85 - 0.9 - 0.95 - 1.0) Non-tripping at (I_1) setting x 105 % and below. Tripping at 125 % and above.
Long time-delay time settings (S) (T_1)	(5 - 10 - 15 - 20 - 30) at (I_1) x 600 % current. Setting tolerance ± 20 %
Short time-delay pick-up current (A): (I_2)	(I_0) x (2 - 4 - 6 - 8 - 10) Setting tolerance ± 15 %
Short time-delay time settings (S) (T_2)	Opening time (0.1, 0.15, 0.2, 0.25, 0.3) in the definite time-delay. Total clearing time is +50 ms and resettable time - 20 ms for the time- delay setting
Instantaneous trip pick-up current (A) (I_3)	Continuously adjustable from (I_0) x (3 to 12) Setting tolerance ± 20 %
• Pre-trip alarm pick-up current (A) (I_P)	(I_1) x (0.7, 0.8, 0.9, 1.0) Setting tolerance ± 10 %
• Pre-trip alarm time setting (S) (T_P)	40 fixed definite time-delay. Setting tolerance ± 10 %
• Ground fault trip pick-up current (A) (I_G)	Continuously adjustable from (I_n) x (0.1 to 0.4) Setting tolerance ± 15 %
• Ground fault trip time setting (S) (T_G)	Opening time (0.1 - 0.2 - 0.3 - 0.4 - 0.8) in the definite time-delay. Total clearing time is +50 ms and resettable time is - 20 ms for the time-delay settings

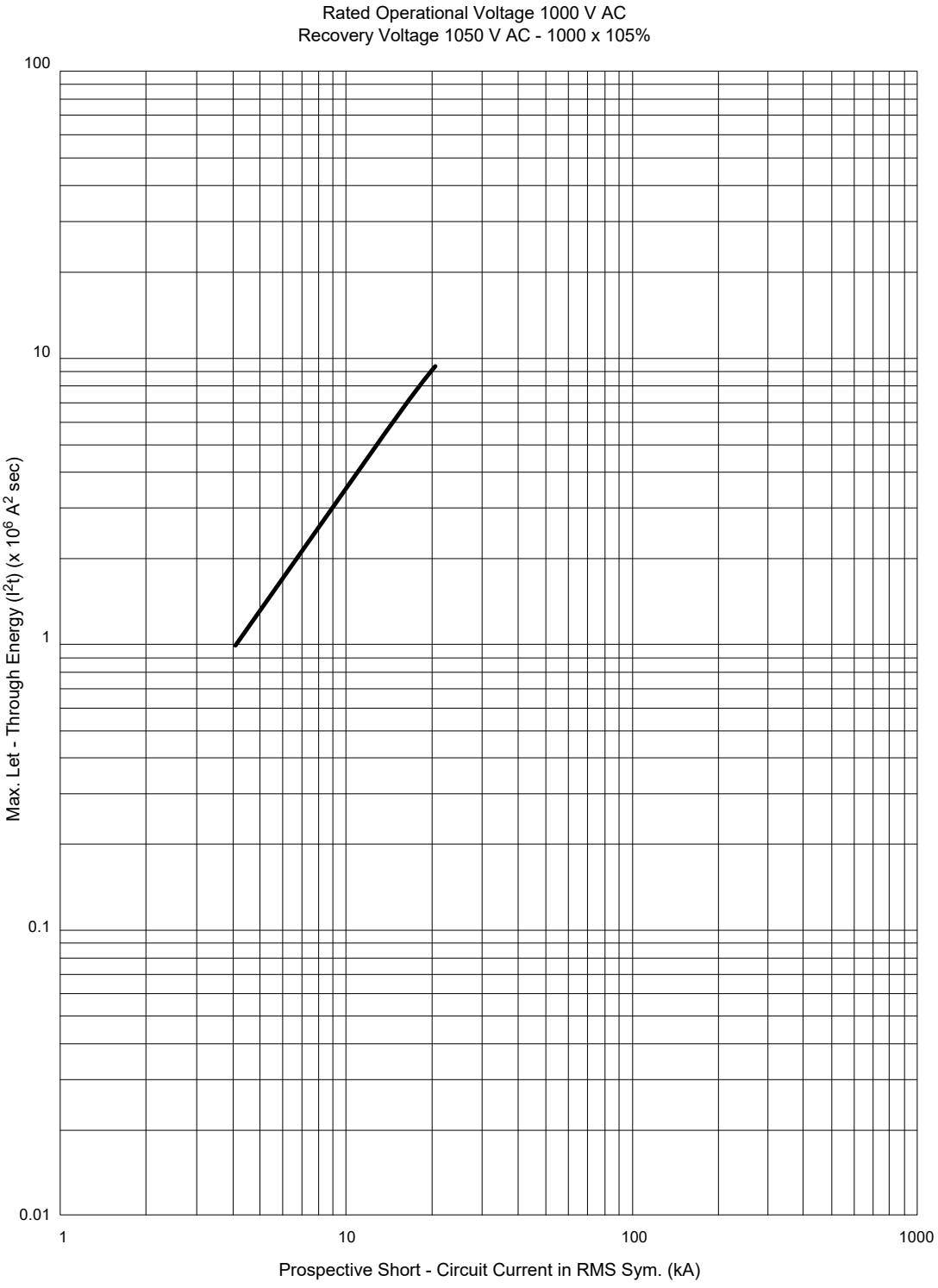
Notes

- Optional. Underlined values are the factory default settings.

Let-Through Peak Current Characteristics VS630NE-VS800NE

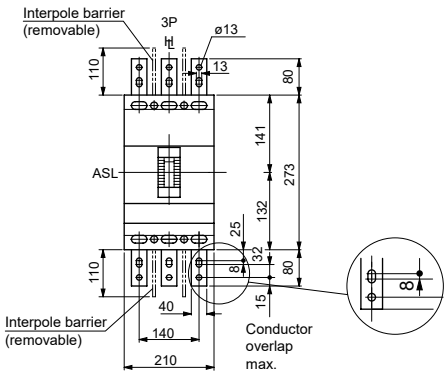


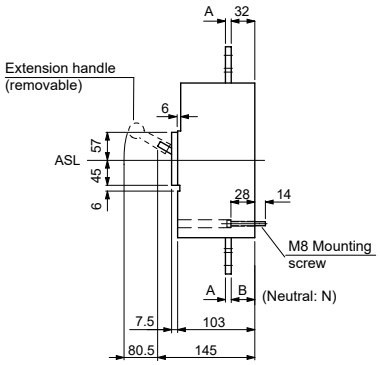
Let-Through Energy I²t Curve, VS630NE-VS800NE

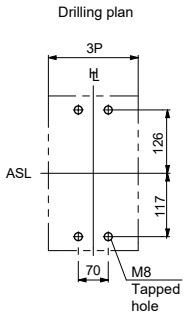


Dimensions VS630, 800NE, Front and Rear Connect (mm)

Front Connected





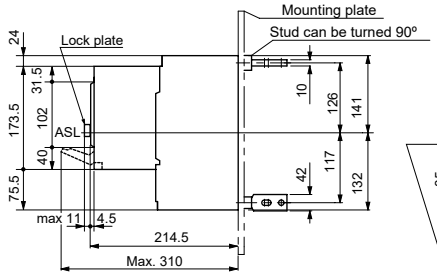


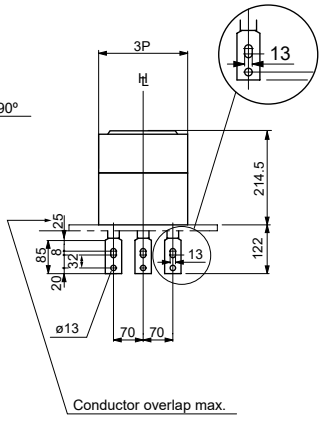
Breaker type	A	B	N
VS630-NE	8	36	36
VS800-NE	10	36	36

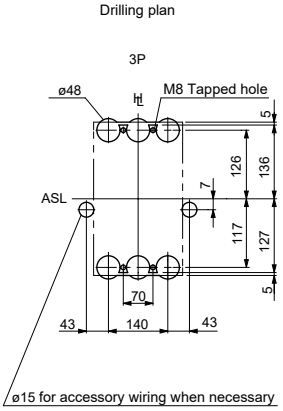
Note: Breakers with terminal bars available on request

ASL: Arrangement Standard Line
: Handle Frame Centre Line

Rear Connected with Motor Operator

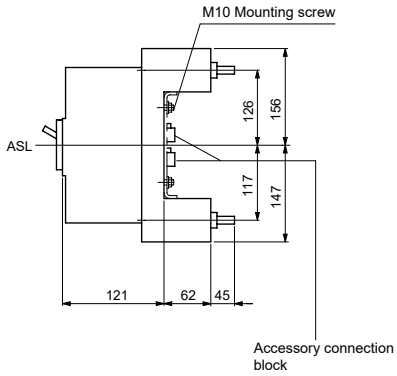


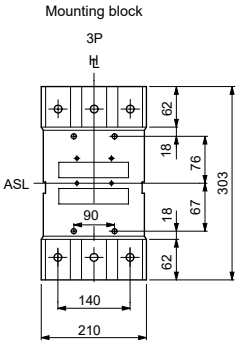


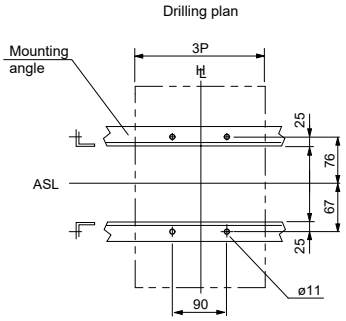


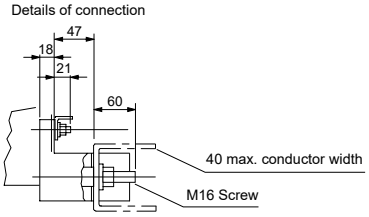
Note:In the normal shipment mode, both terminals on the line side and the load side are in the horizontal direction.

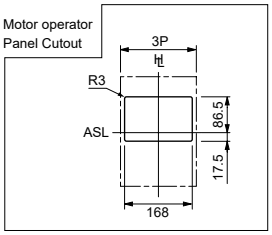
Plug-In Connected

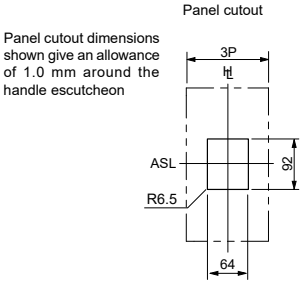












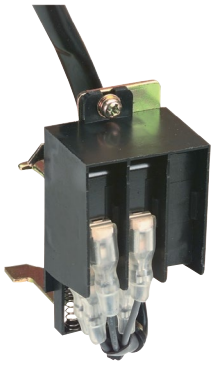
VS800NE Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits

Item Description	Catalogue No.
Alarm Switch Right Side for X6-X8	UXLB0010D



Item Description	Catalogue No.
Alarm/Auxiliary Switch 1C Right Side X6~X8	UXLB0015D
Alarm/Auxiliary Switch 2C Right Side X6~X8	UXLB0016D

Auxiliary Switches

Auxiliary switches provide an MCCB ON or OFF contact output for external circuits.

Item Description	Catalogue No.
SW AUX 1C RH X6~X8	UXXB0007D
SW AUX 2C RH X6~X8	UXXB0008D
SW AUX 3C RH X6~X8	UXXB0009D

Shunt Trips

Allows an external device to trip an MCCB by energizing a shunt trip coil

Item Description	Catalogue No.
Shunt Trip 12 V DC for X6-X8	2H1517BAA
Shunt Trip 48 V DC for X6-X8	2H1519BAA
Shunt Trip 24 V AC for X6-X8	2H1521BAA
Shunt Trip 110 V AC/DC for X6-X8	2H1515BAA
Shunt Trip 240 V AC for X6-X8	2H1516BAA
Shunt Trip 24 V DC for X6-X8	2H1518BAA

Undervoltage Trips

Controller Required

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Undervoltage Trip Coil AC X6-X8	2H1503BAA

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Instant Undervoltage Controller 110 V AC XS3200 AF	UXUB0013B
Instant Undervoltage Controller 230-480 V AC XS3200 AF	UXUB0014B
Instant Undervoltage Controller 440 V AC XS3200 AF	UXUB0015B

Time Delay Operation (500 ms)

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Time Delay Undervoltage Controller 110 V AC XS3200 AF	UXUB0016B
Time Delay Undervoltage Controller 230-480 V AC XS3200 AF	UXUB0017B
Time Delay Undervoltage Controller 440 V AC XS3200 AF	UXUB0018B

No Controller Required

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Undervoltage Trip Coil 48 V DC for X6-X8	2H1506BAA
Undervoltage Trip Coil 60 V DC for X6-X8	2H1507BAA
Undervoltage Trip Coil 100-230 V DC for TB1 MCCB X6-X8	2H1504BAA
Undervoltage Trip Coil 24 V DC for X6~X8	2H1505BAA

Item Description	Catalogue No.
Time Delay Undervoltage Controller 200-230 V DC XS3200 AF	UXUB0038B

Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

Item Description	Catalogue No.
Grey, IP65 handle + 356 mm shaft	T1HS80R5GM

Item Description	Catalogue No.
YASD Extension IP65 Metal Handle/Shaft Kit 630/800 AF	YASD46

Handle - Direct Mount

Door mount or internal mount fixed depth handle for MCCB ON OFF RESET operation

Item Description	Catalogue No.
Handle Mechanism IP55 X6-X8	TFJ36XU

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

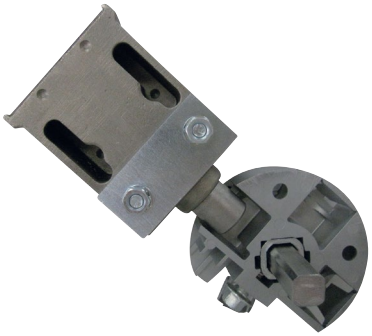
Item Description	Catalogue No.
HP Extension IP65 Grey/Black Handle/Shaft XV630/800 AF	T1HP80R6BNA4

Handle Options

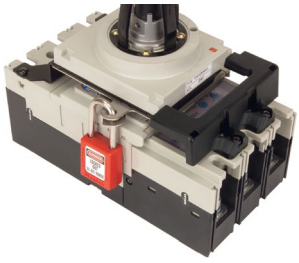
A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
TPHS Handle Options 390 mm T Pin Shaft – no Flexi Coupling 400/630 AF	T2HS400SHAFT



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702



Item Description	Catalogue No.
TB1 HP Handle Mechanism Padlock Off Device 630/800 AF	T1HP80PALK

Item Description	Catalogue No.
T2HS Handle Options MCCB toggle extension Lever	2A2272BAB

Motor Operator

Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
TB1 XMD Motor Operator 110 V DC XV630/800 AF	2H1299CAC
TB1 XMD Motor Operator 240 V AC XV630/800 AF	2H1303CAC
TB1 XMD Motor Operator 110 V DC XV630/800 AF	2H1301CAC
TB1 XMD Motor Operator 24 V DC XV630/800 AF	2H1302CAC

Locking and Interlocking Accessories

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option.

Item Description	Catalogue No.
Captive Padlock Attachment (Resin Fixed) XV630/800 AF	XKA6

Item Description	Catalogue No.
Resin	LOCTITE480

Non-captive

Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON.

Item Description	Catalogue No.
Lock Handle XKC6 X6~X8	UXKB0002A

MCCBs

Installation External Accessories

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier X4-X16	UXQH0004B

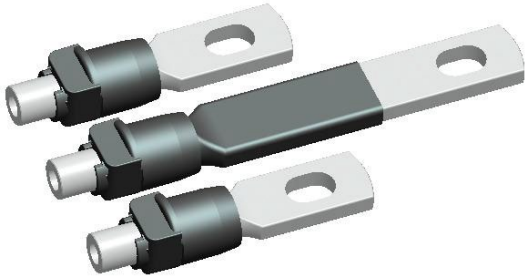
OCR Sealing Cover

A device that allows a user to seal the OCR cover using a compression seal

Item Description	Catalogue No.
OCR Trip Unit Sealing Kit X6-X8	XS630OCRSK

Rear Connection Studs

Allows MCCB main connections to be made at the rear of the MCCB



Item Description	Catalogue No.
TB1 Rear Connect Studs 3P 630/800 AF (6 pcs)	UXRC0008B

Terminal Covers

Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area.

Item Description	Catalogue No.
Terminal Cover 3P Front Connect X6-X8	2H1417DAB
IP20 Protective cover insert quantity 1	2A1787DBA

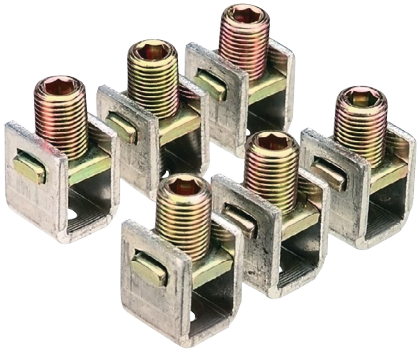
Rear Connect Terminal Covers

Provides front finger touch protection with MCCBs used with rear terminals and HC chassis.

Item Description	Catalogue No.
Terminal Cover Rear Connect 3P X63~X83	UXPD0013C

Screw Tunnel Terminals

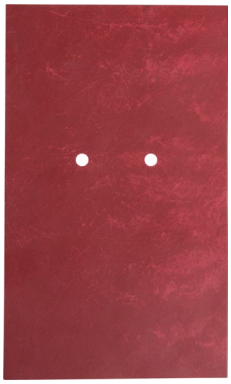
Allows cable to be terminated directly to the MCCB and clamped for good connectivity.



Item Description	Catalogue No.
Solderless Terminals 3P for X6	TXLD0005A

Earthing Insulation Sheet

Supplied standard with MCCBs to provide a lineside earthing barrier for the incoming terminals.



Item Description	Catalogue No.
XV 630/800 A Insulation Base Plate	305.00006

MCCBs

VS800GE

1000 V AC Circuit Breaker

- ✔ 1000 VAC MCCB for power distribution and motor starting use in mines or tunnels
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 pole MCCB
- ✔ 370 mm (H), 120 mm (D), 70 mm pole centres
- ✔ Fault interruption rating; 30 kA I_{cu} @ 1000 VAC
- ✔ Utilisation voltage ratings 1000 or 1100 V AC
- ✔ 2 dial electronic trip unit: 7 preset characteristic curve selection dial and base current adjustment dial
- ✔ Options include GF or PTA
- ✔ Trip units; 800 A

General

Trip Unit Protection Type	Adjustable Electronic LSI [1)]
Trip Unit Rating	800 A
Number of Poles	3
Switching Poles	3P

Short Circuit

Short-Circuit Fault Interruption Capacity (I_{cu})	30 kA @ 1000 V AC
	30 kA @ 1100 V AC
Utilisation and service breaking rated	I_{cu} and I_{cs}

Voltage

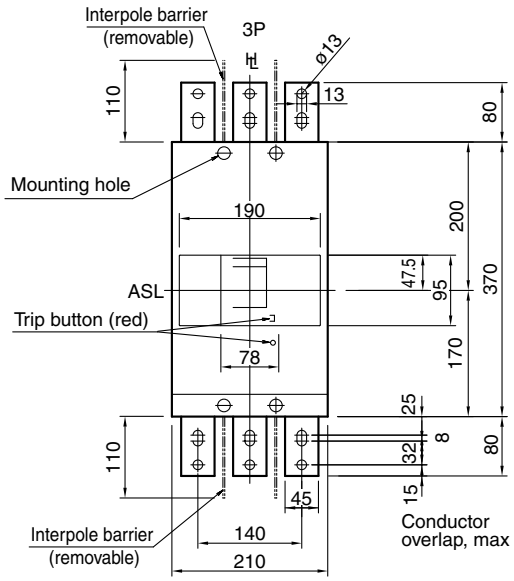
Utilisation Voltages	1000 V AC or 1100 V AC
Rated Frequency	50 / 60 Hz

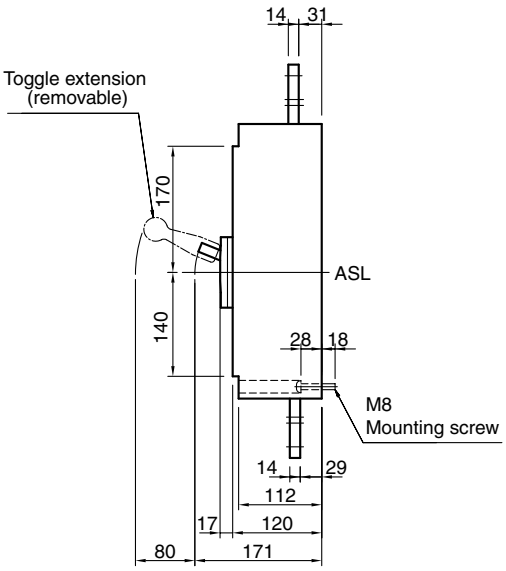
Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in PM (Option)

Notes: 1) When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Quick Reference Dimensions – Front Connect





1250 A Frame 3 Pole 30 kA

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, (kA @ 1.1 kVAC)	Poles	Catalogue No.
800	320 - 800	-	30	3	VS800GE3800K
800	320 - 800	-	30	3	VS800GE3AG800K

Notes: When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3
Switching Poles	3P
Frame Size	800 AF
Trip Unit Rating	800 A

I_n, Rated Current	
A @ 30 °C	800
A @ 45 °C	800
A @ 50 °C	800

U_e, Rated Operational Voltage, AC, max	1100 V AC
U_i, Rated Insulation Voltage	1100 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)		
(A)	800	-
(W)	81.66	81.66

Dielectric Strength	3500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection Extension Bar (Option) Rear Connection (Option) Plug-in Base (Option)
Terminal Type	Extension Bar With Bolt holes
Connection Torque	40.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		370 mm
Width	**3P**	210 mm
Depth (less toggle)		120 mm
Depth (toggle included)		171 mm
Weight	**3P**	19.8 kg
Electrical Life		500 cycles
Mechanical Life		5000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	GE
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	-
		380 / 400 V AC	-
		415 V AC	-
		440 V AC	-
		690 V AC	-
		1000 V AC	30
		1100 V AC	30
		125 V DC	-
		250 V DC	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	-
		380 / 400 V AC	-
		415 V AC	-
		440V AC	-
		690 V AC	-
		1000 V AC	20
		1100 V AC	20
		125 V DC	-
		250 V DC	-
	I_{cw} (Short Time Withstand)	0.3 Seconds	-

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Electronic LSI
Rated Temperature	45 °C

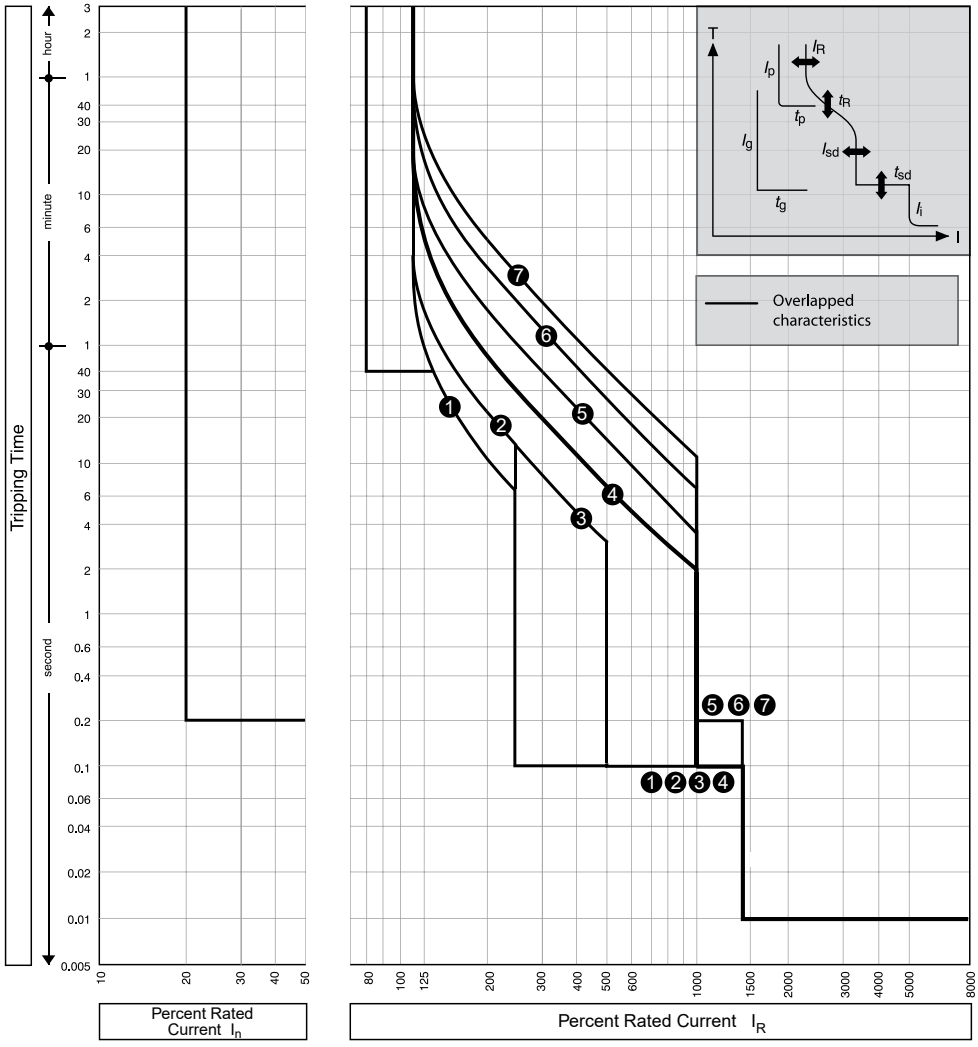
Other Features

Pre-trip alarm (PTA)	Option
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	No
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

Time Current Characteristics Curve 800 - 1250 A, VS800, Thermal Magnetic



VS800NE3800_dOPCH-S01

Characteristics For I_n Rated 800 A 1250 A

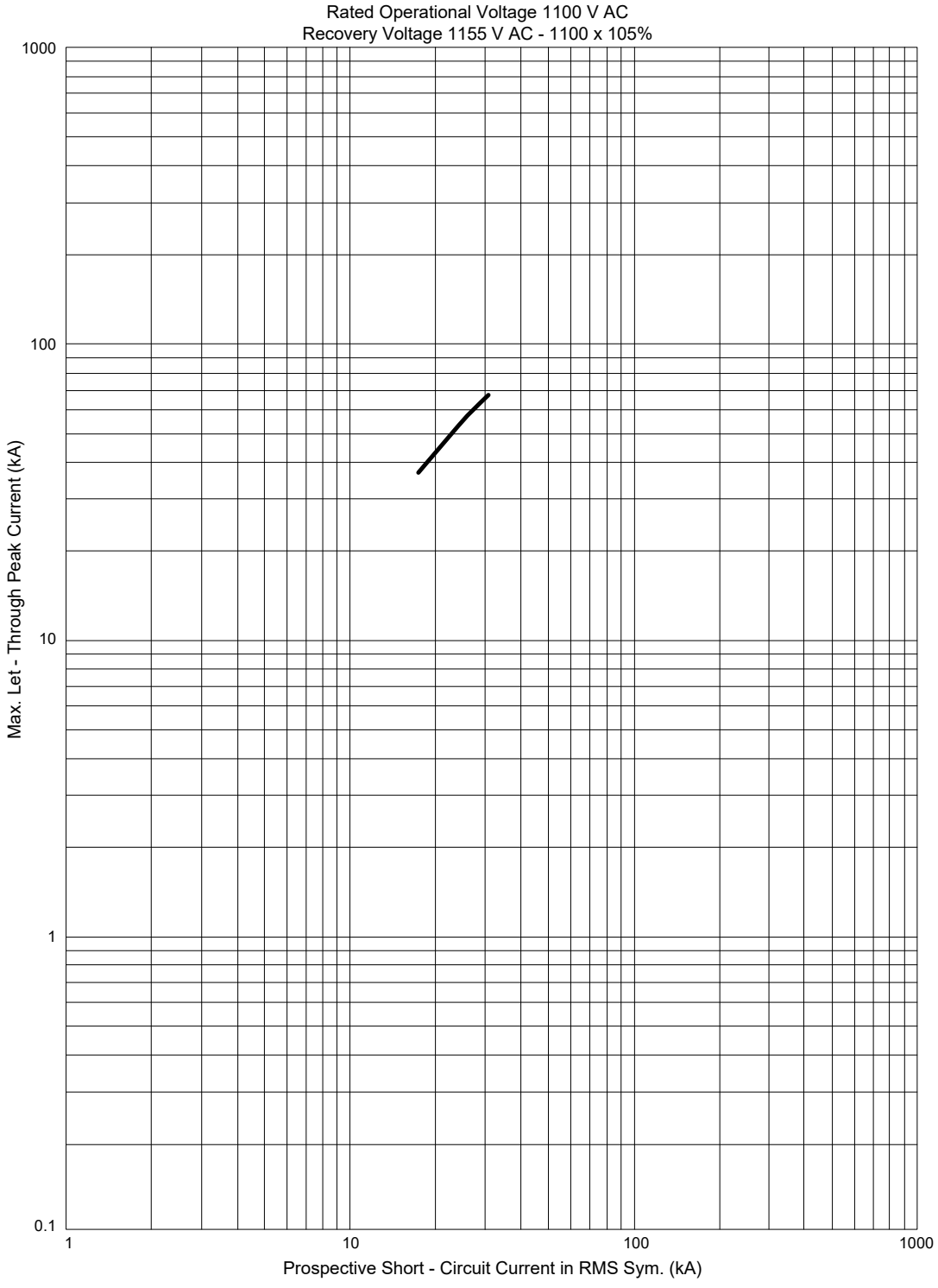
LTD Pick Up Current I_R (A)		**0.4 – 0.5 – 0.63 – 0.8 – 0.9 – 0.95 – 1.0**						
Characteristic Type: LSI – LI – I		L – S – I						
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**
LTD t_R (S)		11	21	21	5	10	19	29
		at 200% x I_R			at 600% x I_R			
STD	I_{sd} x I_R	2.5	2.5	5	10	10	10	10
	I_{sd} (S)	0.1	0.1	0.1	0.2	0.2	0.2	0.2
INST I_i x I_R		14 (Max. of 12 x I_n) [1]						
OCR Options								
Ground Fault (GF) [3]	I_G x I_N	0.2						
	t_G (S)	0.2						

Notes

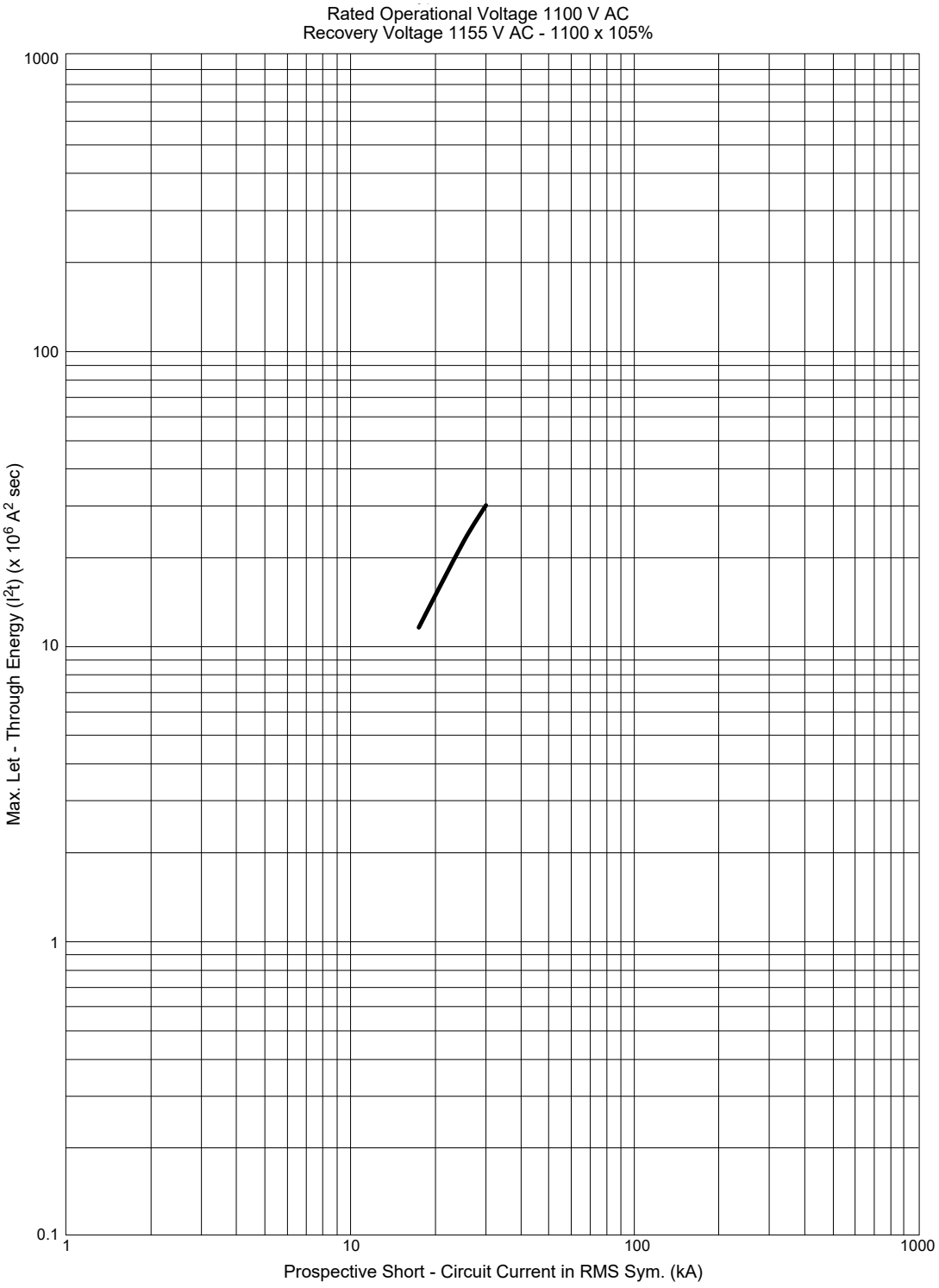
1) I_i max. = 12 x I_n

2) When GF is specified for 3 pole MCCBs, a terminal block is fitted as standard for external neutral CT connection for 3 phase 4 wire systems. Refer terminal block details in this section.

Let-Through Peak Current Characteristics VS800GE and VS1250NE

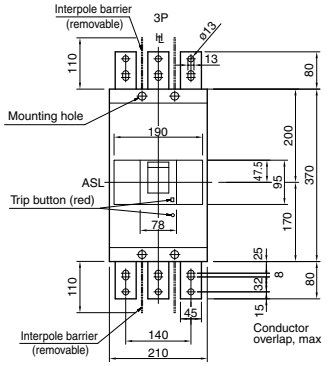


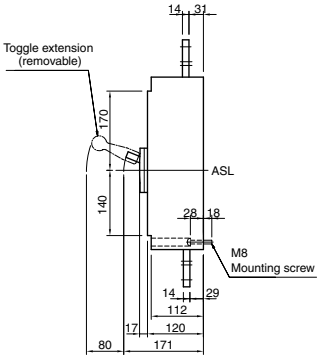
Let-Through Energy I²t Curve, VS800GE and VS1250NE



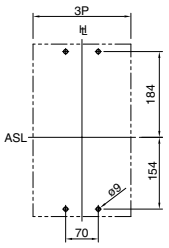
Dimensions VS800GE, VS1250NE (mm)

Front Connected



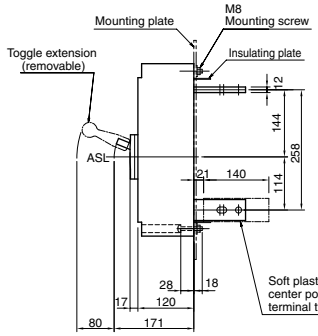


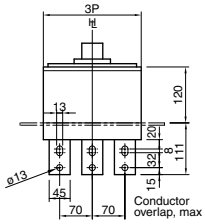
Drilling plan (front view)



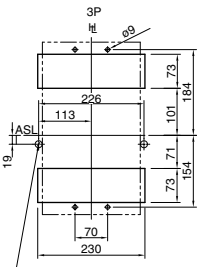
ASL : Arrangement Standard Line
⊬ : Handle Frame Centre Line

Rear Connected

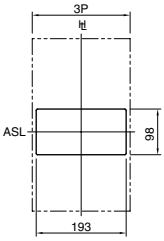




Drilling plan (front view)



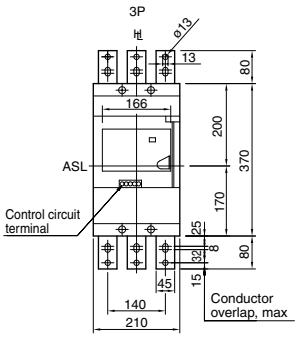
Panel cutout (front view)

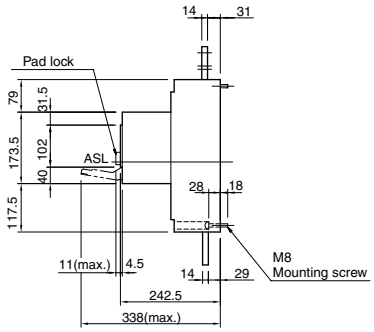


Panel cutout dimensions shown give an allowance of 1.5mm around the handle escutcheon.

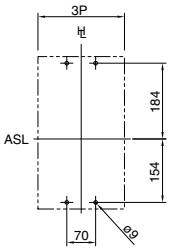
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Front Connected with Motor Operator

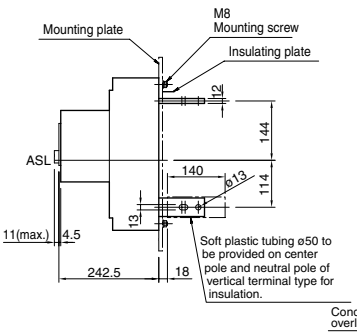


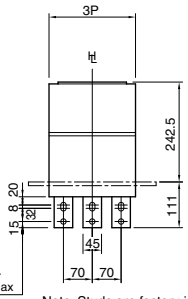


Drilling plan (front view)

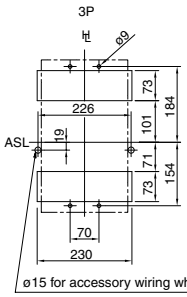


Rear Connected with Motor Operator

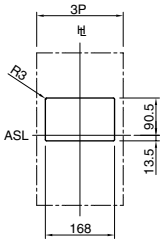




Drilling plan (front view)



Panel cutout (front view)

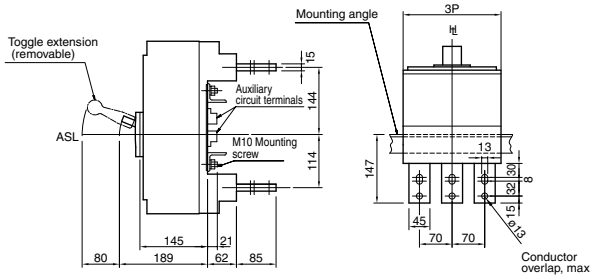


Panel cutout dimensions shown give an allowance of 1.0mm around motor operator.

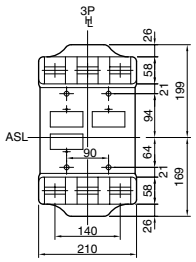
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Dimensions VS800GE, VS1250NE, Plug-in (mm)

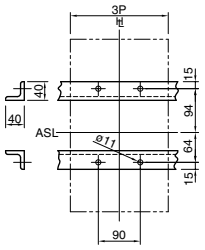
Plug-In Connected



Mounting base (rear view)

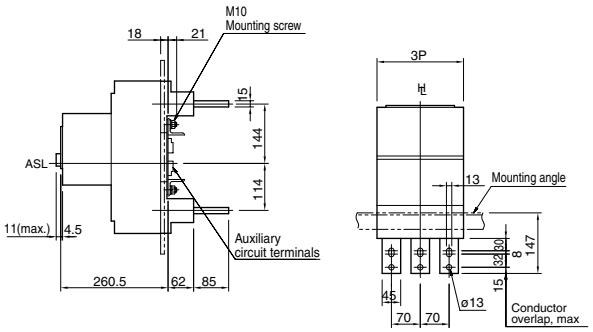


Drilling plan (front view)

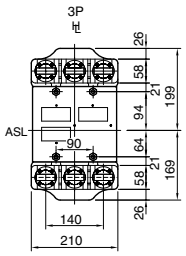


ASL : Arrangement Standard Line
: Handle Frame Centre Line

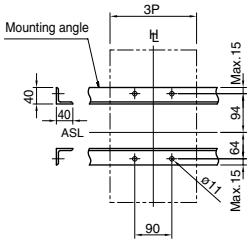
Plug-In Connected with Motor Operator



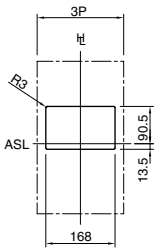
Mounting base (rear view)



Drilling plan (front view)



Panel cutout (front view)



Panel cutout dimensions shown give an allowance of 1.0mm around motor operator.

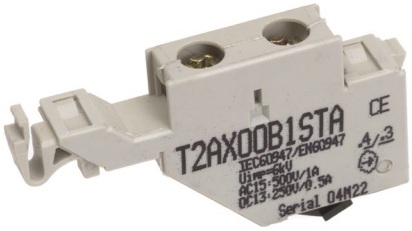
VS800GE Accessories

Internal Accessories

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxiliary Switch 1 C/O	T2AX00M3STA
Auxiliary Switch 1 C/O Wired	T2AX00M3SWA
Auxiliary and Alarm Switches 1 C/O 2nd Auxiliary with 700 mm Leads	T2AX00M4SWA
Auxiliary and Alarm Switches 1 C/O 3rd Auxiliary with 700 mm Leads	T2AX00M5SWA
Auxiliary Switch Micro-current 1 C/O	T2AX00M3RTA



Item Description	Catalogue No.
Auxiliary Switch Heavy Duty 1 N/O	T2AX00B1STA
Auxiliary Switch Heavy Duty 1 N/C	T2AX00B2STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00A10TA
Shunt Trip Coil 240 V AC	T2SH00A20TA
Shunt Trip Coil 415 V AC	T2SH00A40TA
Shunt Trip Coil 12V DC	T2SH00D01TA
Shunt Trip Coil 24 V DC	T2SH00D02TA
Shunt Trip Coil 48 V DC	T2SH00D04TA
Shunt Trip Coil 110 V DC	T2SH00D10TA
Shunt Trip Coil 230 V DC	T2SH00D20TA

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 800-1600 A 110 V AC	T2UV80A10NTA
Under Voltage Trip Coil Instant 800-1600 A 240 V AC	T2UV80A20NTA
Under Voltage Trip Coil Instant 800-1600 A 415 V AC	T2UV80A40NTA
Under Voltage Trip Coil Instant 800-1600 A 24 V DC	T2UV80D02NTA
Under Voltage Trip Coil Instant 800-1600 A 48 V DC	T2UV80D04NTA
Under Voltage Trip Coil Instant 800-1600 A 110 V DC	T2UV80D10NTA
Under Voltage Trip Coil Instant 800-1600 A 230 V DC	T2UV80D24NTA

Time Delay Operation (500 ms)

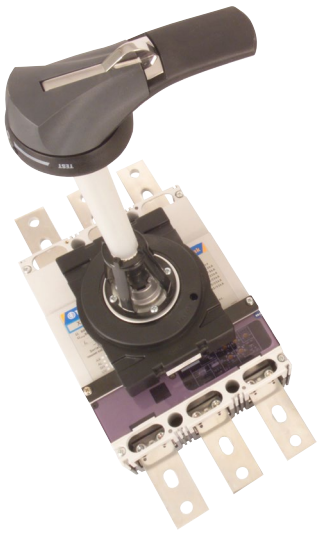
When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delayed 110 V AC	T2UVX6A10DSA
Under Voltage Trip Coil Time Delayed 230-240 V AC	T2UVX6A24DSA
Under Voltage Trip Coil Time Delayed 380-450 V AC	T2UVX6A40DSA
Under Voltage Trip Coil Time Delayed 24 V DC	T2UVX6D02DSA
Under Voltage Trip Coil Time Delayed 110 V DC	T2UVX6D10DSA
Under Voltage Trip Coil Time Delayed 230 V AC	T2UVX6D24DSA

Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation



Item Description	Catalogue No.
T2HS Compact Handle Grey, IP65 Handle + 320 mm Shaft 1250/1600 AF	TPHSX6F65BM
T2HS Compact Handle Red/Yellow, IP65 Handle + 320 mm Shaft 1250/1600 AF	TPHSX6F65RM

Item Description	Catalogue No.
Metal Compact Handle Silver IP65 Handle + 320 mm Shaft 1250/1600 AF	T2HPX6R6ME

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

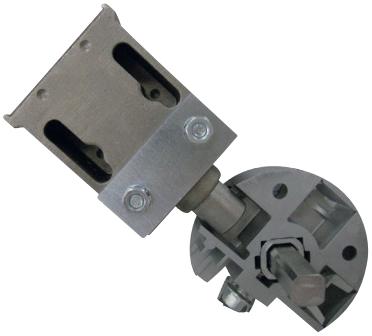
Item Description	Catalogue No.
T2HP Square Handle Grey, IP65 Handle + 445 mm Shaft 1250/1600 AF	T2HPX6R6BN
T2HP Square Handle Red/Yellow, IP65 Handle + 445 mm Shaft 1250/1600 AF	T2HPX6R6RN

Handle Options

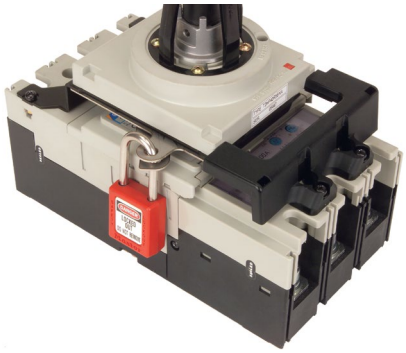
A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
TPHS Handle Options 390 mm T Pin Shaft – no Flexi Coupling 400/630 AF	T2HS400SHAFT



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702



Item Description	Catalogue No.
TB1 HP Handle Mechanism Padlock Off Device 1250/1600 AF	T1HPX6PALK

Item Description	Catalogue No.
T2HS Handle Options MCCB toggle extension Lever	2A2272BAB

Motor Operator

Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
Motor Operators 110 V AC 1250/1600 AF	T2MCX6A10NP
Motor Operators 240 V AC 1250/1600 AF	T2MCX6A24NP
Motor Operators 24 V DC 1250/1600 AF	T2MCX6D02NP

Locking and Interlocking Accessories

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option

Item Description	Catalogue No.
Captive Lock Attachment with 2 x 8 mm Holes 1250/1600 AF	T2PLX6UN

Non-captive

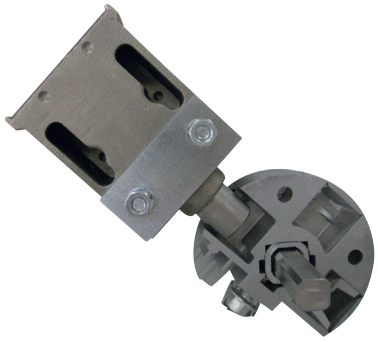
Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Non Captive Toggle Lock 1250/1600 AF	T2HLX6A

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Mounted

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

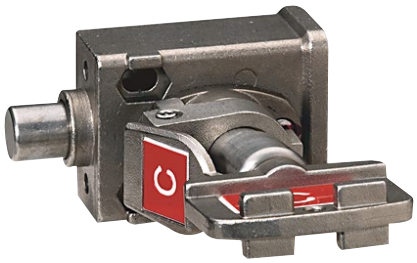
Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, standard key code, A	440TAKEYE100A
Prosafe, standard key code, B	440TAKEYE100B
Prosafe, standard key code, C	440TAKEYE100C
Prosafe, standard key code, D	440TAKEYE100D
Prosafe, standard key code, E	440TAKEYE100E
Prosafe, standard key code, F	440TAKEYE100F
Prosafe, standard key code, G	440TAKEYE100G
Prosafe, standard key code, H	440TAKEYE100H
Prosafe, Standard Key Code I	440TAKEYE100I
Prosafe, Standard Key Code J	440TAKEYE100J
Prosafe, Standard Key Code K	440TAKEYE100K
Prosafe, Standard Key Code L	440TAKEYE100L
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, Standard Key	440TAKEYE10X

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys



Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100A
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10BA
Single key shot bolt lock, key not included	440TMSBLE10X

Installation External Accessories

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier Interpole Barrier (Qty 1), B800, B1000, ZS630, ZS800	T2BA403SH

Item Description	Catalogue No.
Plug-in Mounting Bases 3 Pole Kit 1250 AF	T2PM1250A3A
Plug-in Mounting Bases 4 Pole Kit 1250 AF	T2PM1250A4A

Plug-in MCCBs

Plug-in VS800/1250

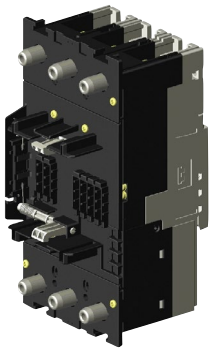
The MCCB via rear plugs, is plugged onto a fixed base for its line and load connections.

Ordering information

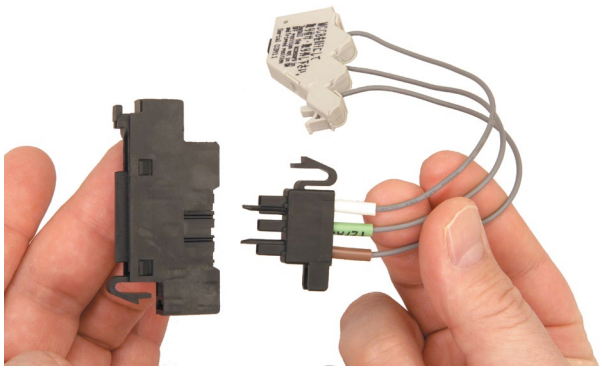
Converting a 1250 A MCCB to a plug in type, includes fitting plugs (Tulip Blocks) and other parts to the rear of the MCCB, as well as removing the internally connected front connect tags. Mounting bases and internal accessory plugs and sockets are ordered seperately.

While fitting the plugs to the MCCB is NHP factory fit only, other items such as the T2PM base, and internal accessory plugs and sockets are customer assembled/installed items.

The kA rating of a T2PM plug in MCCB remains the same as standard front connected MCCBs.



Item Description	Catalogue No.
Plug-in MCCB 3 Pole Kit – NHP factory Fit Only 1250 AF	2M1404CABK
Plug-in MCCB 4 Pole Kit - NHP factory Fit Only 1250 AF	2M1404CBBK



Item Description	Catalogue No.
Auxiliary Connection Block 5C for X2-X8	UXYB0004A
Auxiliary Connection Block 5C for X4-X8	UXYC0005A
Plug-in MCCB Mounting Bolts, Used to Mount Plug-in Base. (Qty 1, Order as Required 3)	2B1551CAAK

Terminal Covers

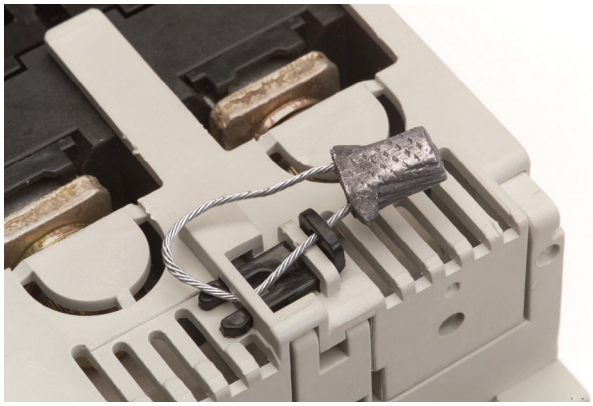
Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area

Item Description	Catalogue No.
Extended Terminal Covers FC 3 Pole Single Cover 1250 AF	T2CFX33SLHP
Extended Terminal Covers FC 4 Pole Single Cover 1250 AF	T2CFX34SLHP

Terminal Cover Locking Clip

Used with terminal covers to prevent unauthorised removal or access to terminal area



Item Description	Catalogue No.
Terminal Cover Locking Clip	T2CF00L

VS1250NE

1000 V AC Circuit Breaker

- ✔ 1000 VAC MCCB for power distribution and motor starting use in mines or tunnels
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Direct opening and indication of main contact status – maximising machine and user safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 pole MCCB
- ✔ 370 mm (H), 120 mm (D), 70 mm pole centres
- ✔ Fault interruption rating; 30 kA I_{cu} @ 1000 VAC
- ✔ Utilisation voltage ratings 1000 or 1100 VAC
- ✔ 2 dial electronic trip unit: 7 preset characteristic curve selection dial and base current adjustment dial
- ✔ Options include GF or PTA
- ✔ Trip units; 1250 A

General

Trip Unit Protection Type	Adjustable Electronic LSI [1)]
Trip Unit Rating	1250 A
Number of Poles	3
Switching Poles	3P

Short Circuit

Short-Circuit Fault Interruption Capacity (I_{cu})	30 kA @ 1000 V AC
	30 kA @ 1100 V AC
Utilisation and service breaking rated	I_{cu} and I_{cs}

Voltage

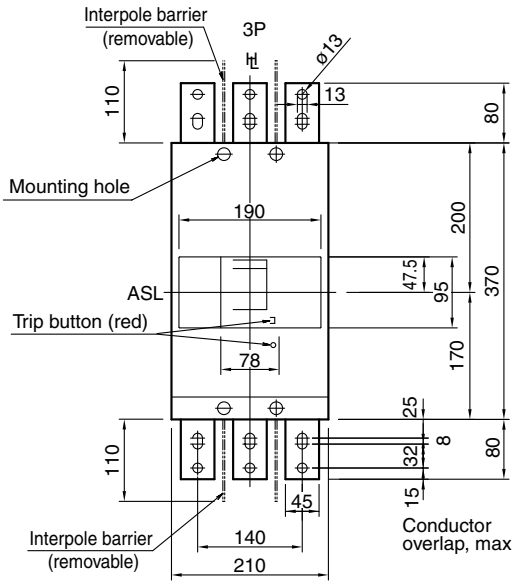
Utilisation Voltages	1000 V AC or 1100 V AC
Rated Frequency	50 / 60 Hz

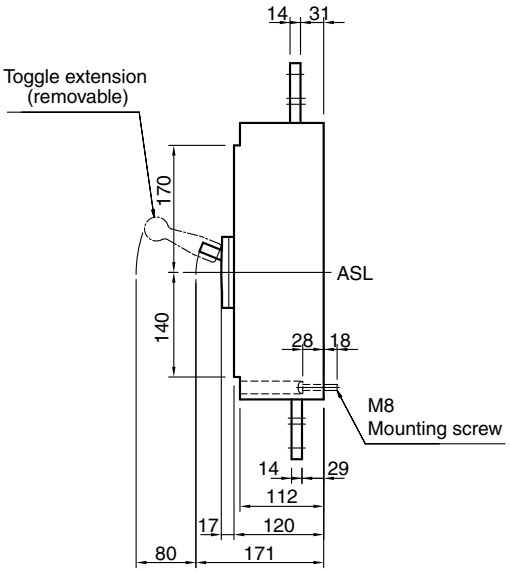
Connections

Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in PM (Option)

Notes: 1) When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Quick Reference Dimensions – Front Connect





1250 A Frame 3 Pole 30 kA

I_n (A @ 45 °C)	I_r, Adjustable (A)	I_m, Adjustable (A)	I_{cu}, 1100 V (kA @ 1.1 kVAC)	Poles	Catalogue No.
1250	500 - 1250	-	30	3	VS1250NE31250K
1250	500 - 1250	-	30	3	VS1250NE3AG1250K

Notes: When ordering MCCBs with Ground Fault, an optional Neutral GF CT can be ordered for 3 or 4 pole MCCBs for when it's installed in a 3P+N system. For PTA - contact NHP.

Ratings

Component Type	MCCB
Selectivity Category	B
Number of Poles	3
Switching Poles	3P
Frame Size	1250 AF
Trip Unit Rating	1250 A

I_n, Rated Current

A @ 30 °C	1250
A @ 45 °C	1250
A @ 50 °C	1250

U_e, Rated Operational Voltage, AC, max	1100 V AC
U_i, Rated Insulation Voltage	1100 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	1250	
(W)	90	90

Dielectric Strength	3500 V AC

Standards

Standards Compliance	IEC 60947-2 AS/NZS 60947-2
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 %RH

Connection

Terminal Bar Connection	Cable or Busbar
Connection Mode	Front Connection Extension Bar (Option) Rear Connection (Option) Plug-in Base (Option)
Terminal Type	Extension Bar With Bolt holes
Connection Torque	40.2 - 65.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	Yes
Plug-in UPX Type	No
Mounting	-

Physical

Height		370 mm
Width	**3P**	210 mm
Depth (less toggle)		120 mm
Depth (toggle included)		171 mm
Weight	**3P**	19.8 kg
Electrical Life		500 cycles
Mechanical Life		5000 cycles

Short-Circuit Capacity

		kA Rating
		MCCB Type
	Voltage	NE
Based On AS/NZS 60947.2 and IEC 60947-2 — I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	-
	380 / 400 V AC	-
	415 V AC	-
	440 V AC	-
	690 V AC	-
	1000 V AC	30
	1100 V AC	30
	125 V DC	-
	250 V DC	-
I_{cs} (Service Breaking Capacity)	220 / 240 V AC	-
	380 / 400 V AC	-
	415 V AC	-
	440V AC	-
	690 V AC	-
	1000 V AC	20
	1100 V AC	20
	125 V DC	-
	250 V DC	-
I_{cw} (Short Time Withstand)	0.3 Seconds	15

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Adjustable Electronic LSI
Rated Temperature	45 °C

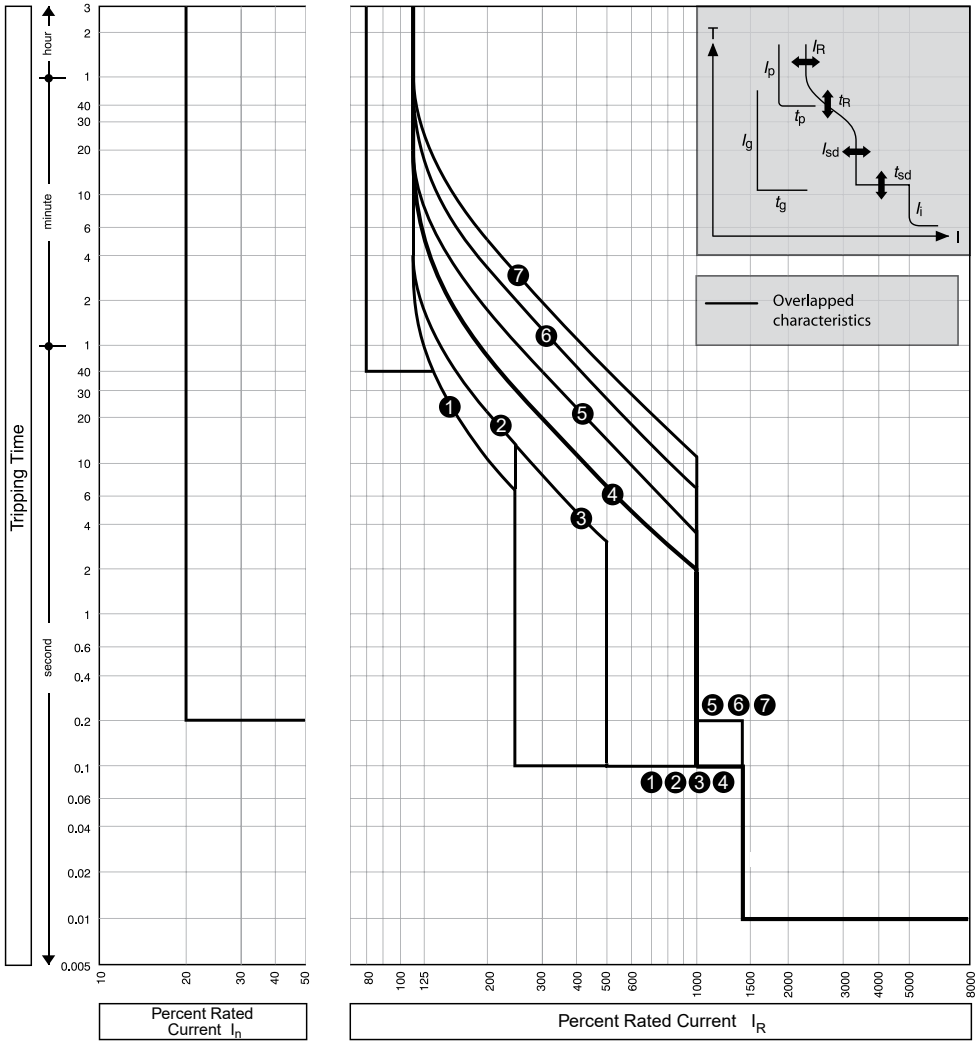
Other Features

Pre-trip alarm (PTA)	Option
ZSI Zone Selective Interlocking	No
ACIP Auxiliary Communications Port	No
CIP Communications Interface Port	No
MIP Maintenance Interface Port	No
OAC Optional Alarm Contact	No

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	No
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

Time Current Characteristics Curve 800 - 1250 A, VS800, Thermal Magnetic



VS800NE3800_dOPCH-S01

Characteristics For I_n Rated 800 A 1250 A

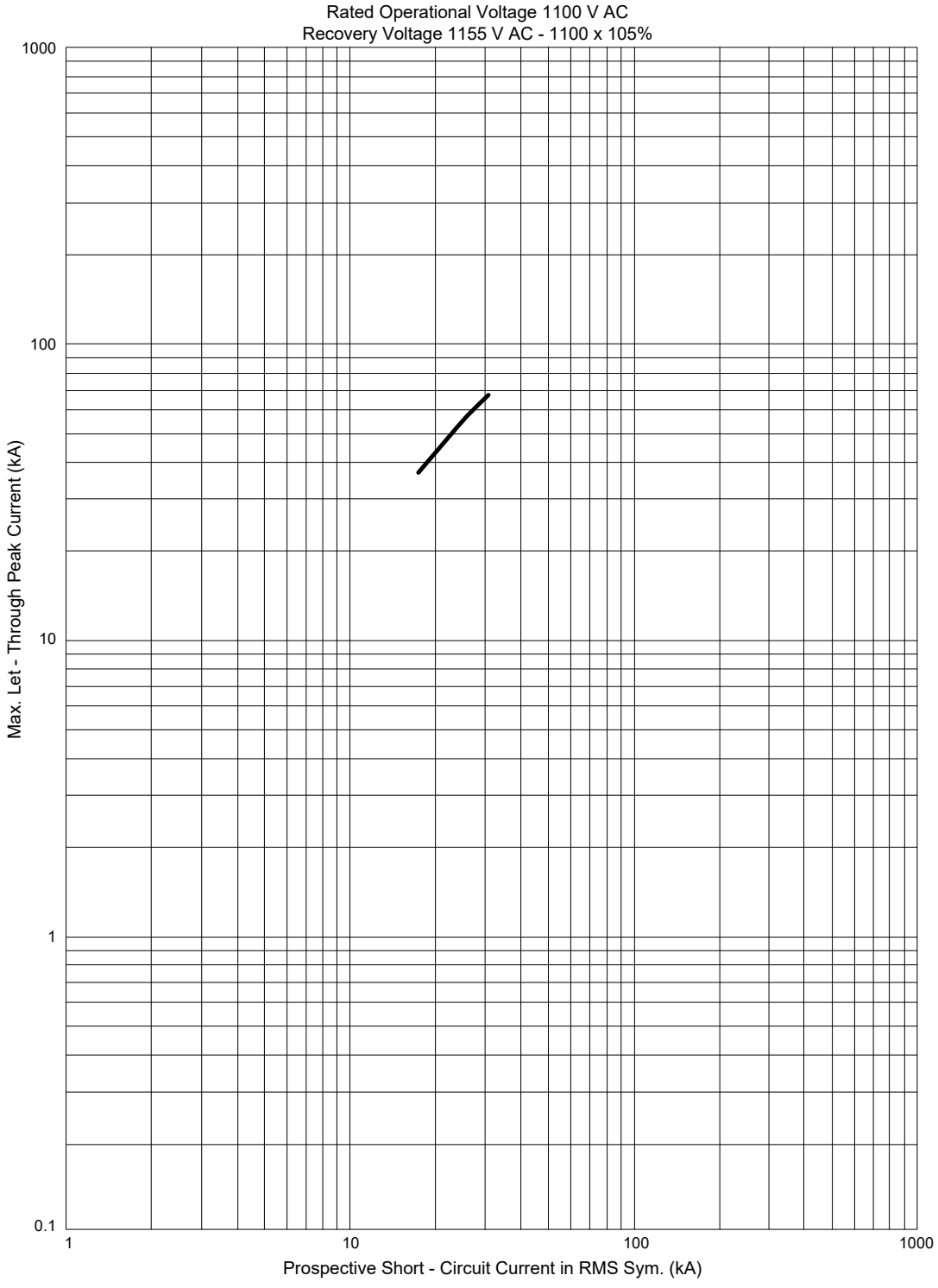
LTD Pick Up Current I_R (A)		**0.4 – 0.5 – 0.63 – 0.8 – 0.9 – 0.95 – 1.0**						
Characteristic Type: LSI – LI – I		L – S – I						
Characteristic Dial Setting		**1**	**2**	**3**	**4**	**5**	**6**	**7**
LTD t_R (S)		11	21	21	5	10	19	29
		at 200% x I_R			at 600% x I_R			
STD	I_{sd} x I_R	2.5	2.5	5	10	10	10	10
	I_{sd} (S)	0.1	0.1	0.1	0.2	0.2	0.2	0.2
INST I_i x I_R		14 (Max. of 12 x I_n) [1]						
OCR Options								
Ground Fault (GF) [3]	I_G x I_N	0.2						
	t_G (S)	0.2						

Notes

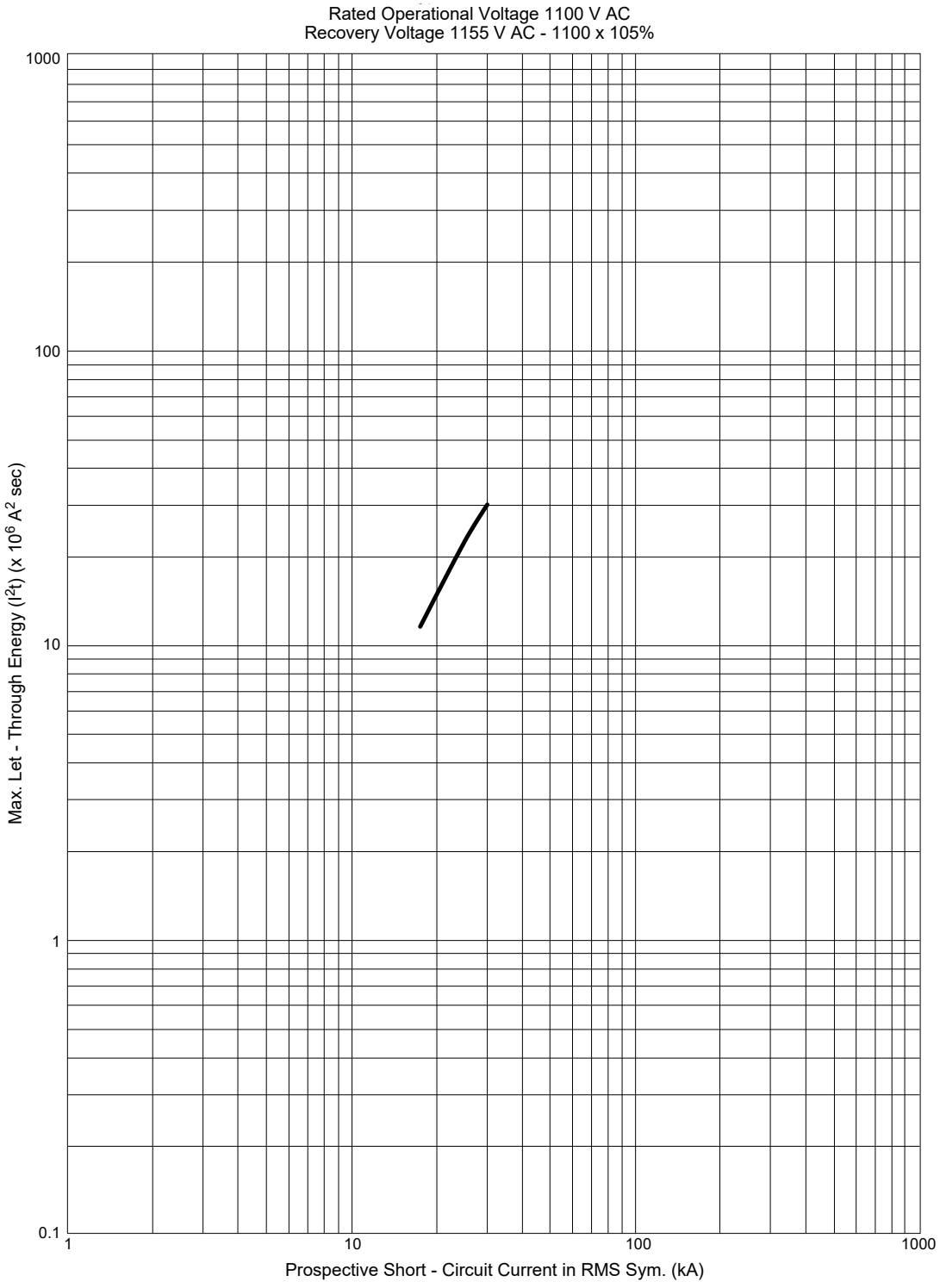
1) I_i max. = 12 x I_n

2) When GF is specified for 3 pole MCCBs, a terminal block is fitted as standard for external neutral CT connection for 3 phase 4 wire systems. Refer terminal block details in this section.

Let-Through Peak Current Characteristics VS800GE and VS1250NE

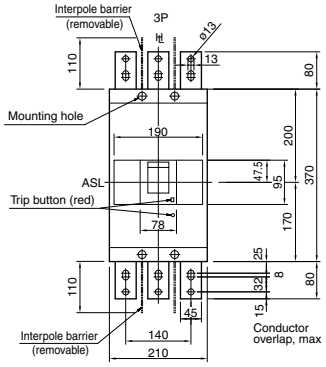


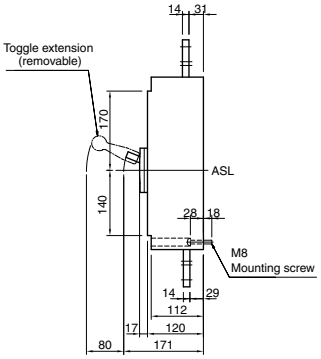
Let-Through Energy I²t Curve, VS800GE and VS1250NE



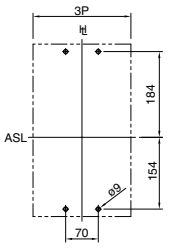
Dimensions VS800GE, VS1250NE (mm)

Front Connected



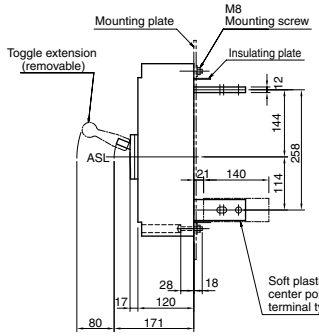


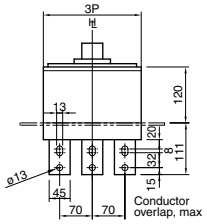
Drilling plan (front view)



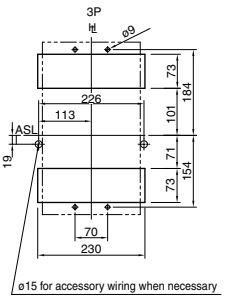
ASL : Arrangement Standard Line
: Handle Frame Centre Line

Rear Connected

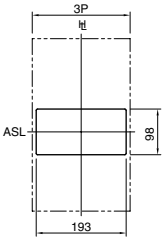




Drilling plan (front view)



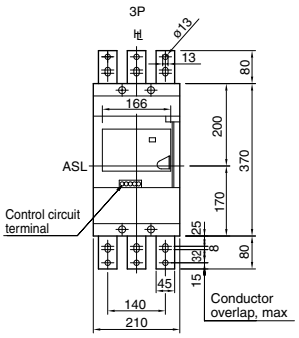
Panel cutout (front view)

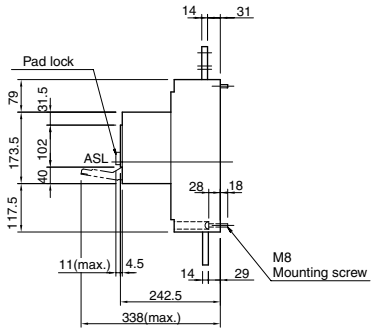


Panel cutout dimensions shown give an allowance of 1.5mm around the handle escutcheon.

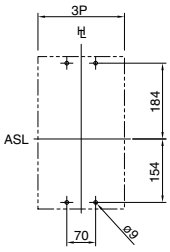
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Front Connected with Motor Operator

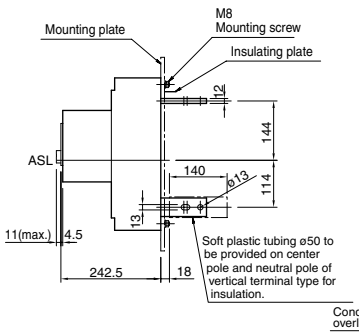


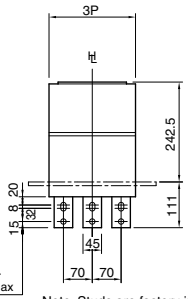


Drilling plan (front view)

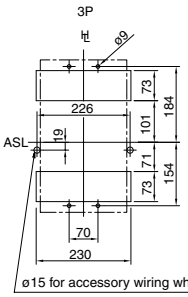


Rear Connected with Motor Operator

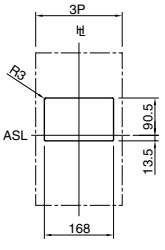




Drilling plan (front view)



Panel cutout (front view)

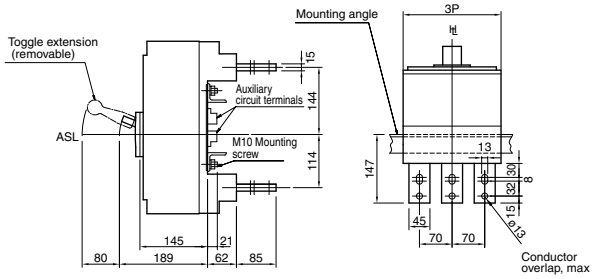


Panel cutout dimensions shown give an allowance of 1.0mm around motor operator.

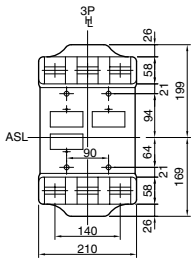
Note: Studs are factory installed in horizontal direction both on the line and load sides.

Dimensions VS800GE, VS1250NE, Plug-in (mm)

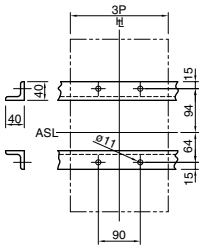
Plug-In Connected



Mounting base (rear view)

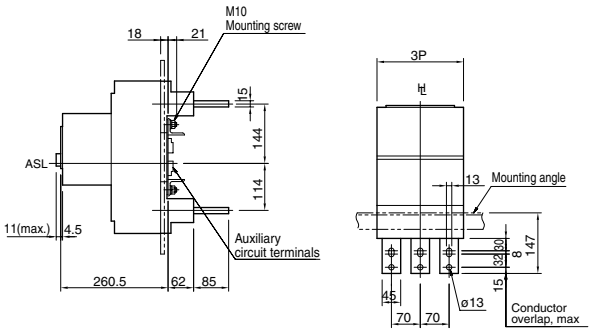


Drilling plan (front view)

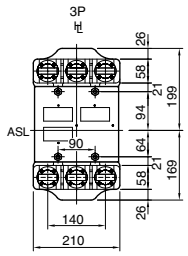


ASL : Arrangement Standard Line
H : Handle Frame Centre Line

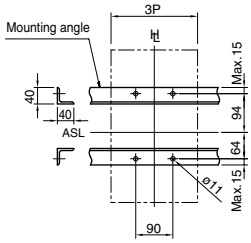
Plug-In Connected with Motor Operator



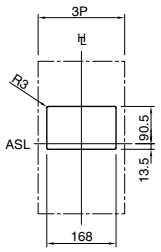
Mounting base (rear view)



Drilling plan (front view)



Panel cutout (front view)



Panel cutout dimensions shown give an allowance of 1.0mm around motor operator.

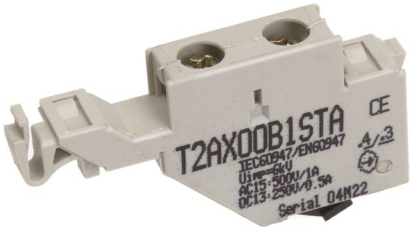
VS1250NE Accessories

Internal Accessories

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxiliary Switch 1 C/O	T2AX00M3STA
Auxiliary Switch 1 C/O Wired	T2AX00M3SWA
Auxiliary and Alarm Switches 1 C/O 2nd Auxiliary with 700 mm Leads	T2AX00M4SWA
Auxiliary and Alarm Switches 1 C/O 3rd Auxiliary with 700 mm Leads	T2AX00M5SWA
Auxiliary Switch Micro-current 1 C/O	T2AX00M3RTA



Item Description	Catalogue No.
Auxiliary Switch Heavy Duty 1 N/O	T2AX00B1STA
Auxiliary Switch Heavy Duty 1 N/C	T2AX00B2STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00A10TA
Shunt Trip Coil 240 V AC	T2SH00A20TA
Shunt Trip Coil 415 V AC	T2SH00A40TA
Shunt Trip Coil 12 V DC	T2SH00D01TA
Shunt Trip Coil 24 V DC	T2SH00D02TA
Shunt Trip Coil 48 V DC	T2SH00D04TA
Shunt Trip Coil 110 V DC	T2SH00D10TA
Shunt Trip Coil 230 V DC	T2SH00D20TA

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 800-1600 A 110 V AC	T2UV80A10NTA
Under Voltage Trip Coil Instant 800-1600 A 240 V AC	T2UV80A20NTA
Under Voltage Trip Coil Instant 800-1600 A 415 V AC	T2UV80A40NTA
Under Voltage Trip Coil Instant 800-1600 A 24 V DC	T2UV80D02NTA
Under Voltage Trip Coil Instant 800-1600 A 48 V DC	T2UV80D04NTA
Under Voltage Trip Coil Instant 800-1600 A 110 V DC	T2UV80D10NTA
Under Voltage Trip Coil Instant 800-1600 A 230 V DC	T2UV80D24NTA

Time Delay Operation (500 ms)

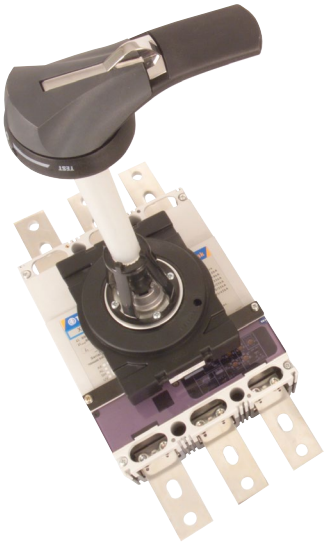
When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delayed 110 V AC	T2UVX6A10DSA
Under Voltage Trip Coil Time Delayed 230-240 V AC	T2UVX6A24DSA
Under Voltage Trip Coil Time Delayed 380-450 V AC	T2UVX6A40DSA
Under Voltage Trip Coil Time Delayed 24 V DC	T2UVX6D02DSA
Under Voltage Trip Coil Time Delayed 110 V DC	T2UVX6D10DSA
Under Voltage Trip Coil Time Delayed 230 V AC	T2UVX6D24DSA

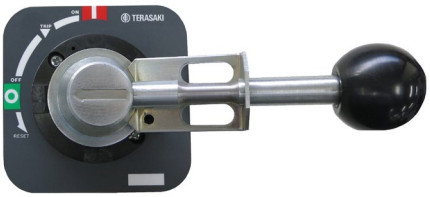
Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation



Item Description	Catalogue No.
T2HS Compact Handle Grey, IP65 Handle + 320 mm Shaft 1250/1600 AF	TPHSX6F65BM
T2HS Compact Handle Red/Yellow, IP65 Handle + 320 mm Shaft 1250/1600 AF	TPHSX6F65RM



Item Description	Catalogue No.
Metal Compact Handle Silver IP65 Handle + 320 mm Shaft 1250/1600 AF	T2HPX6R6ME

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

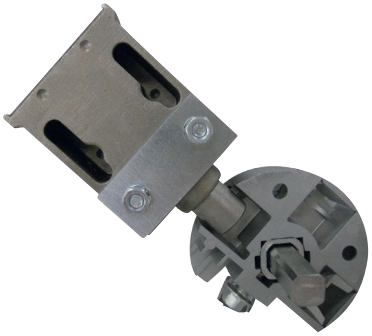
Item Description	Catalogue No.
T2HP Square Handle Grey, IP65 Handle + 445 mm Shaft 1250/1600 AF	T2HPX6R6BN
T2HP Square Handle Red/Yellow, IP65 Handle + 445 mm Shaft 1250/1600 AF	T2HPX6R6RN

Handle Options

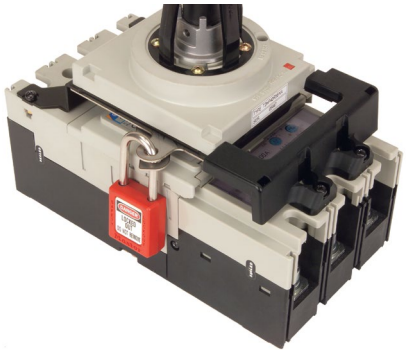
A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
TPHS Handle Options 390 mm T Pin Shaft – no Flexi Coupling 400/630 AF	T2HS400SHAFT



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702



Item Description	Catalogue No.
TB1 HP Handle Mechanism Padlock Off Device 1250/1600 AF	T1HPX6PALK

Item Description	Catalogue No.
T2HS Handle Options MCCB toggle extension Lever	2A2272BAB

Motor Operator

Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
Motor Operators 110 V AC 1250/1600 AF	T2MCX6A10NP
Motor Operators 240 V AC 1250/1600 AF	T2MCX6A24NP
Motor Operators 24 V DC 1250/1600 AF	T2MCX6D02NP

Locking and Interlocking Accessories

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option

Item Description	Catalogue No.
Captive Lock Attachment with 2 x 8 mm Holes 1250/1600 AF	T2PLX6UN

Non-captive

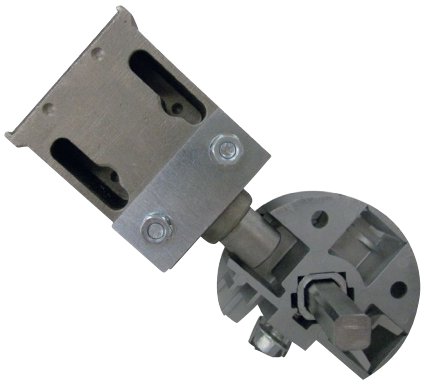
Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Non Captive Toggle Lock 1250/1600 AF	T2HLX6A

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

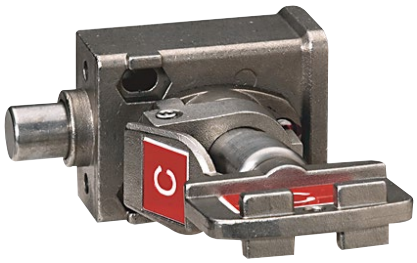
Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, standard key code, A	440TAKEYE100A
Prosafe, standard key code, B	440TAKEYE100B
Prosafe, standard key code, C	440TAKEYE100C
Prosafe, standard key code, D	440TAKEYE100D
Prosafe, standard key code, E	440TAKEYE100E
Prosafe, standard key code, F	440TAKEYE100F
Prosafe, standard key code, G	440TAKEYE100G
Prosafe, standard key code, H	440TAKEYE100H
Prosafe, Standard Key Code I	440TAKEYE100I
Prosafe, Standard Key Code J	440TAKEYE100J
Prosafe, Standard Key Code K	440TAKEYE100K
Prosafe, Standard Key Code L	440TAKEYE100L
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, Standard Key	440TAKEYE10X

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys



Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100A
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10BA
Single key shot bolt lock, key not included	440TMSBLE10X

Installation External Accessories

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier Interpole Barrier (Qty 1), B800, B1000, ZS630, ZS800	T2BA403SH

Item Description	Catalogue No.
Plug-in Mounting Bases 3 Pole Kit 1250 AF	T2PM1250A3A
Plug-in Mounting Bases 4 Pole Kit 1250 AF	T2PM1250A4A

Plug-in MCCBs

Plug-in VS800/1250

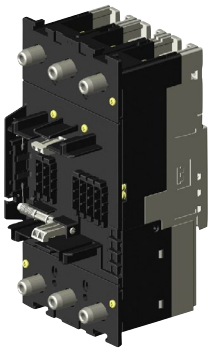
The MCCB via rear plugs, is plugged onto a fixed base for its line and load connections.

Ordering information

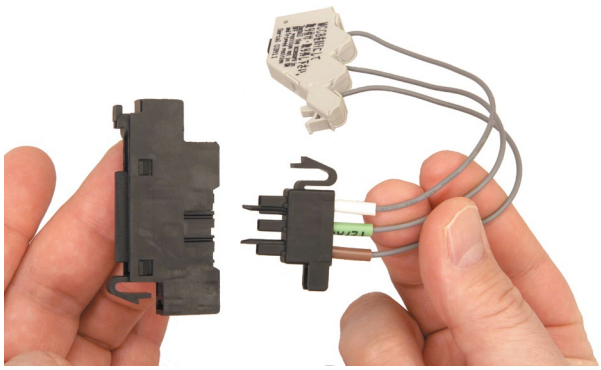
Converting a 1250 A MCCB to a plug in type, includes fitting plugs (Tulip Blocks) and other parts to the rear of the MCCB, as well as removing the internally connected front connect tags. Mounting bases and internal accessory plugs and sockets are ordered seperately.

While fitting the plugs to the MCCB is NHP factory fit only, other items such as the T2PM base, and internal accessory plugs and sockets are customer assembled/installed items.

The kA rating of a T2PM plug in MCCB remains the same as standard front connected MCCBs.



Item Description	Catalogue No.
Plug-in MCCB 3 Pole Kit – NHP factory Fit Only 1250 AF	2M1404CABK
Plug-in MCCB 4 Pole Kit - NHP factory Fit Only 1250 AF	2M1404CBBK



Item Description	Catalogue No.
Auxiliary Connection Block 5C for X2-X8	UXYB0004A
Auxiliary Connection Block 5C for X4-X8	UXYC0005A
Plug-in MCCB Mounting Bolts, Used to Mount Plug-in Base. (Qty 1, Order as Required 3)	2B1551CAAK

Terminal Covers

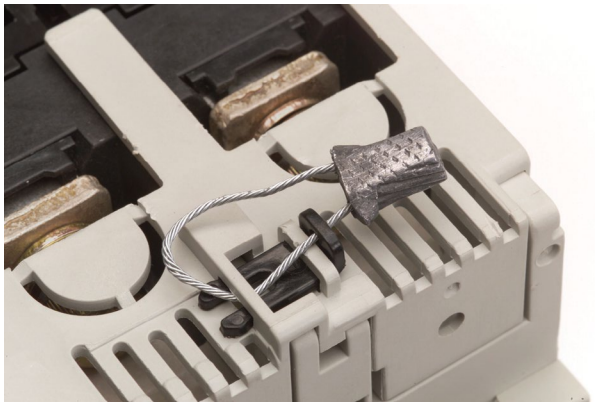
Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area

Item Description	Catalogue No.
Extended Terminal Covers FC 3 Pole Single Cover 1250 AF	T2CFX33SLHP
Extended Terminal Covers FC 4 Pole Single Cover 1250 AF	T2CFX34SLHP

Terminal Cover Locking Clip

Used with terminal covers to prevent unauthorised removal or access to terminal area



Item Description	Catalogue No.
Terminal Cover Locking Clip	T2CF00L

XM30PB

Motor Start Circuit Breaker

- ✔ 1 or 3 phase motor starting MCCB, MCC applications
- ✔ Current limiting device, reduces fault let through energy for increased installation safety
- ✔ Complies to AS / NZS 60947-2, IEC 60947-2
- ✔ Panel mount standard with plug-in option
- ✔ Wide range of accessories for application flexibility
- ✔ 3 pole MCCB
- ✔ Compact 148 mm H, 103 mm D, 25 mm pole centres
- ✔ Fault rating; 85 kA I_{cu} @ 415 V AC
- ✔ 100% I_{cu} / I_{cs}
- ✔ Utilisation ratings from 220 V to 525 V AC
- ✔ Hydraulic magnetic trip unit: fixed long time / fixed magnetic
- ✔ Trip units; 0.7, 1.4, 2.0, 2.6, 4.0, 5.0, 8.0, 10, 12 A

ASTA

General

Trip Unit Protection Type	Fixed Hydraulic, Fixed Magnetic
Trip Unit Rating	0.7 / 1.4 / 2 / 2.6 / 4 / 5 / 8 / 10 / 12 A
Number of Poles	3
Switching Poles	3P

Short Circuit

Short-Circuit Capacity (Ultimate) @415 V AC	**HL** 85 kA

Voltage

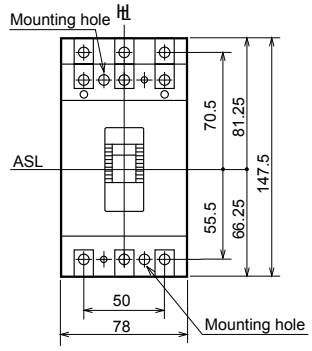
Utilisation Voltages	220 V AC to 525 V AC
Rated Frequency	50 / 60 Hz

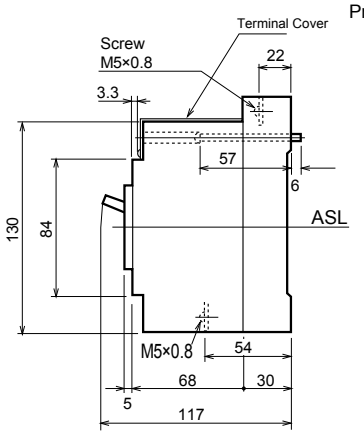
Connections

Connection Mode	Front Connection Plug-in UPX (Option)

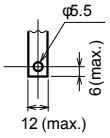
Quick Reference Dimensions – Front Connect

Front connected

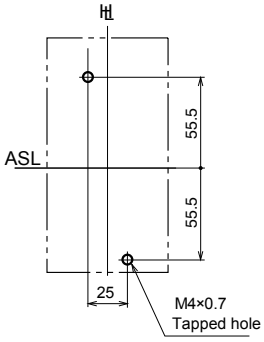




Preparation of Conductor



Drilling Plan (Front View)



30 A Frame 3 Pole 85 kA

I_n (A @ 45 °C)	AC3 kW - 240 V AC	AC3 kW - 415 V AC	Poles	Catalogue No.
0.7	-	0.2	3	XM30PB073P
1.4	0.2	0.5	3	XM30PB143P
2	-	0.75	3	XM30PB23P
2.6	0.4	1.1	3	XM30PB263P
4	0.75	1.5	3	XM30PB43P
5	-	2.2	3	XM30PB53P
8	-	3.7	3	XM30PB83P
10	2.2	4	3	XM30PB103P
12	-	5.5	3	XM30PB123P

Ratings

Component Type	MCCB
Selectivity Category	A
Number of Poles	3
Switching Poles	3P
Frame Size	30 AF
Trip Unit Rating	0.7 / 1.4 / 2 / 2.6 / 4 / 5 / 8 / 10 / 12 A

I_n, Rated Current

A @ 30 °C	0.7	1.4	2	2.6	4	5	8	10	12
A @ 45 °C	0.7	1.4	2	2.6	4	5	8	10	12
A @ 50 °C	0.7	1.4	2	2.6	4	5	8	10	12

U_e, Rated Operational Voltage, AC, max	525 V AC
U_i, Rated Insulation Voltage	690 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

(A)	0.7	1.4	2	2.6	4	5	8	10	12
(W)	2	1.66	1.66	2	2.33	2.66	4.33	5.66	8

Dielectric Strength	2500 V AC

Standards

Standards Compliance	IEC 60947-2 EN 60947-2 AS/NZS 60947-2 JIS C 8201-2-1 Ann.1
CE Mark	-
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +60 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	1.5 - 16 mm² (Min - Max)
Connection Mode	Front Connection Plug-in UPX (Option)
Terminal Type	Screw Terminal(s)
Connection Torque	2.3 - 2.8 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	No
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	Option
Mounting	-

Physical

Height		148 mm
Width	**3P**	78 mm
Depth (less toggle)		103 mm
Depth (toggle included)		117 mm
Weight	**3P**	1.3 kg
Electrical Life		10000 cycles
Mechanical Life		20000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**F**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	125
		380 / 400 V AC	85
		415 V AC	85
		440 V AC	85
		690 V AC	-
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 DC	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	125
		380 / 400 V AC	85
		415 V AC	85
		440V AC	85
		690 V AC	-
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-

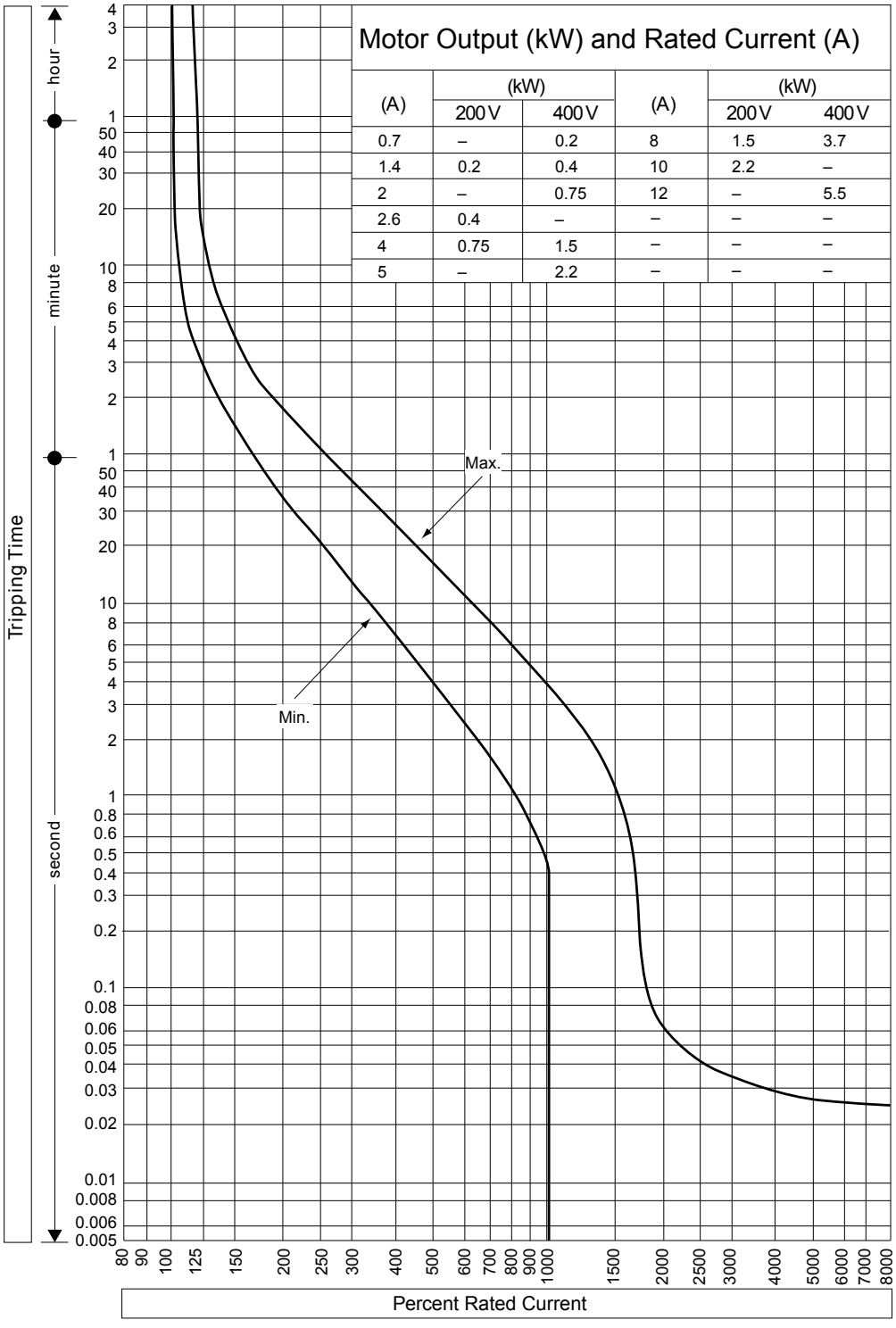
Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Fixed Hydraulic, Fixed Magnetic
Rated Temperature	45 °C

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	No
Mechanical Interlock	No
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	No
External Panel Display	No

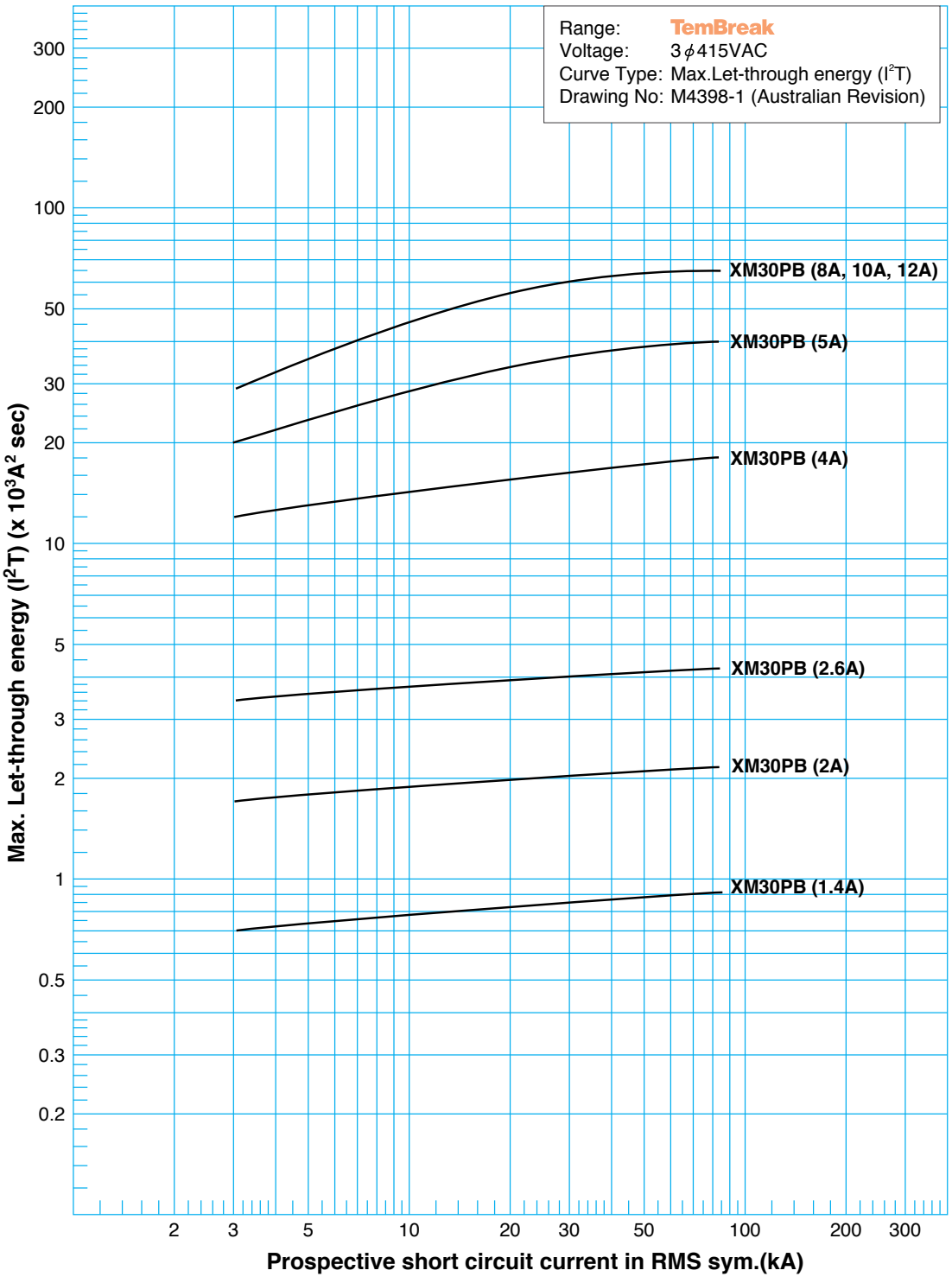
Time/current characteristic curves



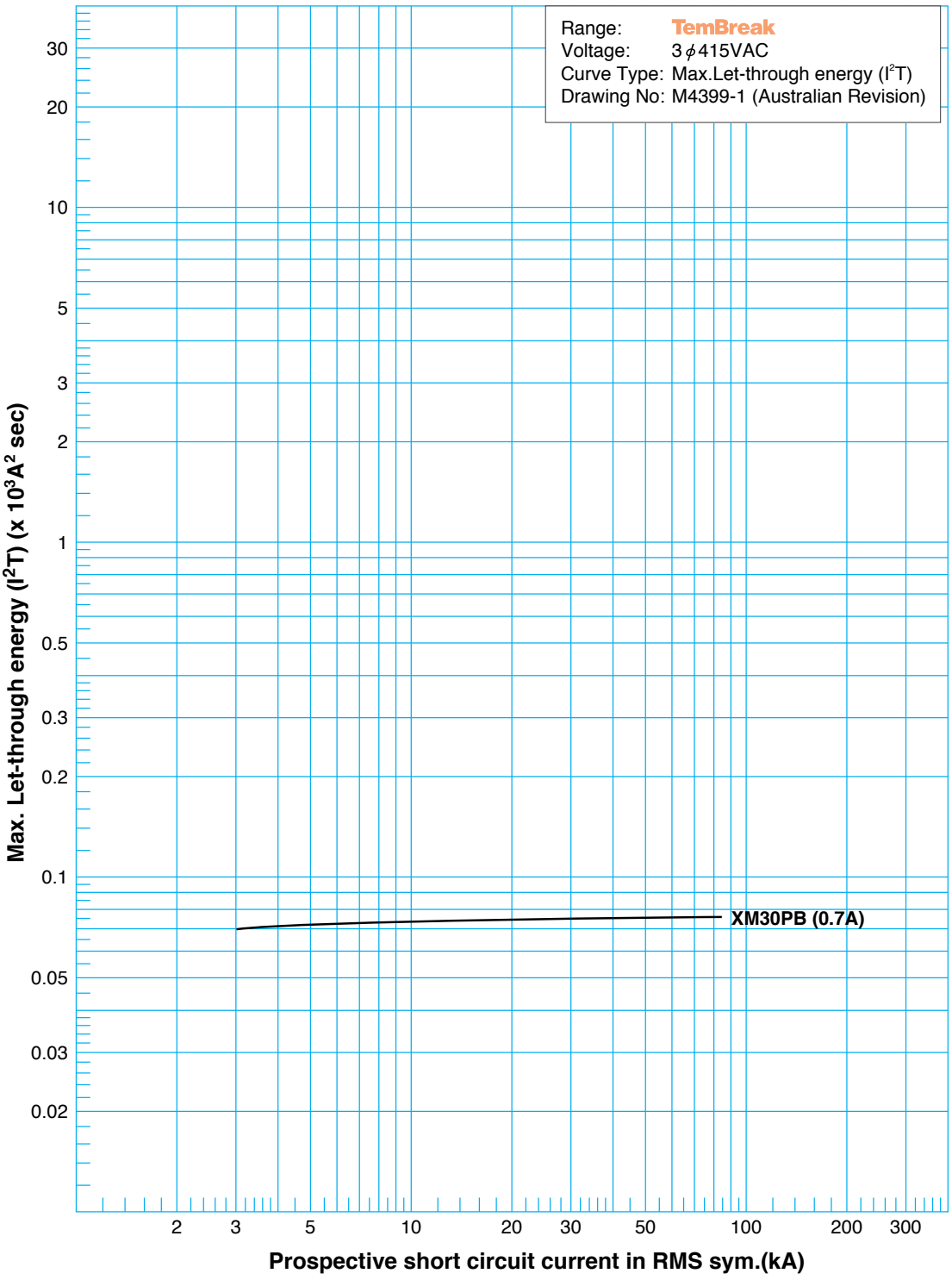
Motor Output (kW) and Rated Current (A)

(A)	(kW)		(A)	(kW)	
	200 V	400 V		200 V	400 V
0.7	–	0.2	8	1.5	3.7
1.4	0.2	0.4	10	2.2	–
2	–	0.75	12	–	5.5
2.6	0.4	–	–	–	–
4	0.75	1.5	–	–	–
5	–	2.2	–	–	–

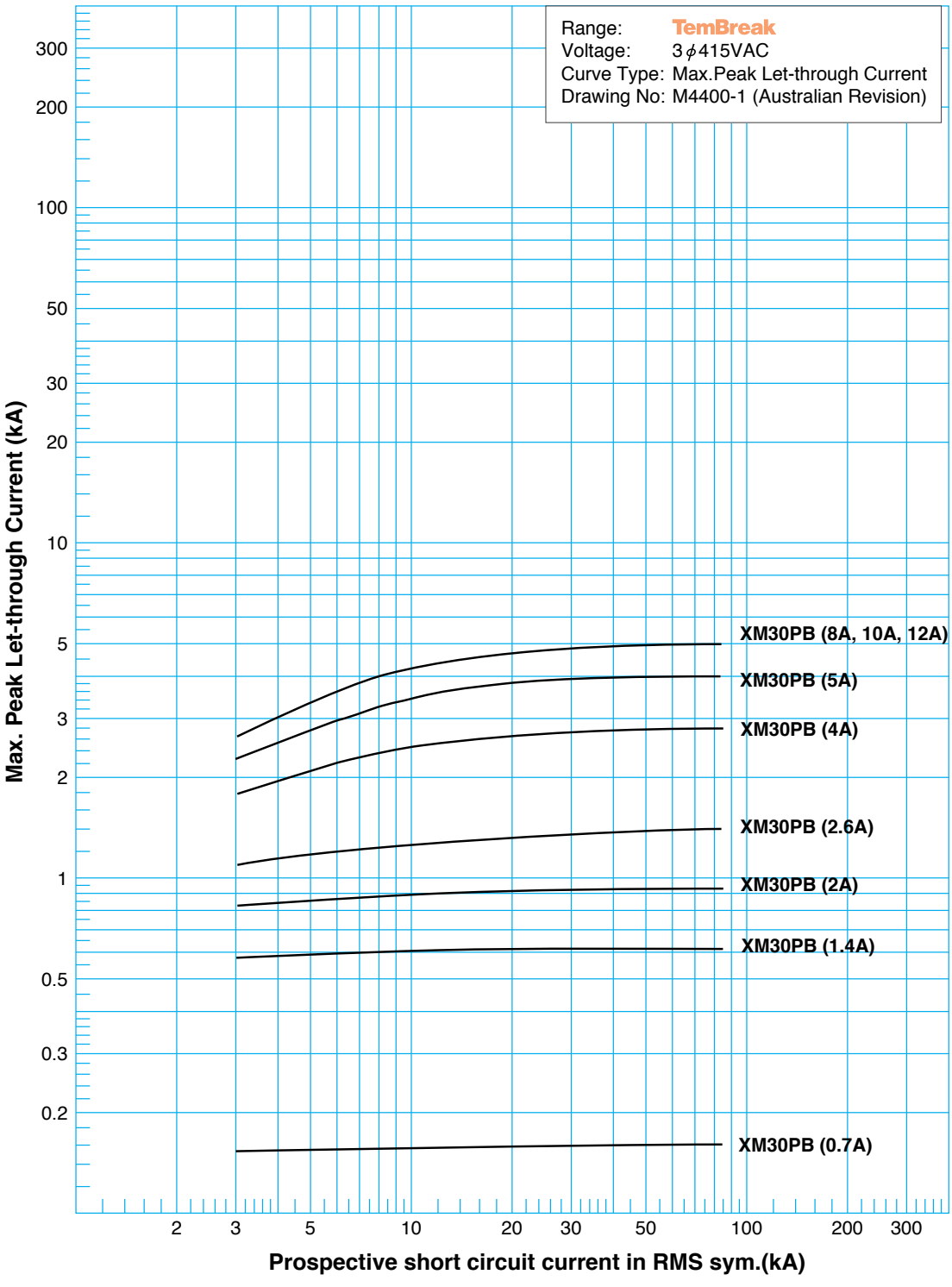
Let-Through Energy I²t Curve, XM30PB



Let-Through Energy I²t Curve, XM30PB



Let-Through Peak Current Curve, XM30 PB



Mounting angle information

The overcurrent tripping characteristics of XS/XH/XV TemBreak are not influenced by the mounting angles for electronic and thermal magnetic types. XM30PB motor circuit protectors use an oil filled dashpot style trip mechanism, which can be affected. Refer to the diagram below.

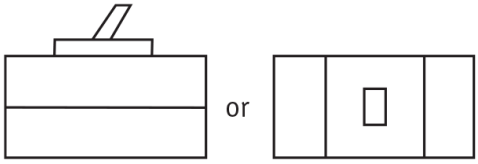
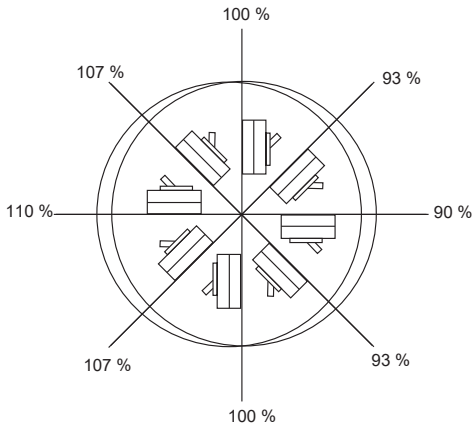
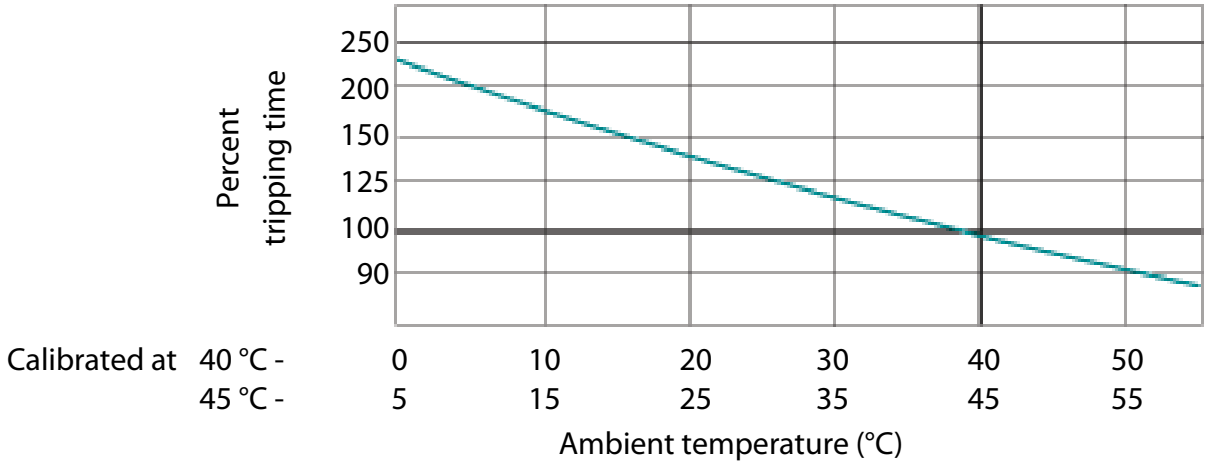


Diagram at right is only applicable to XM30PB motor circuit protectors.

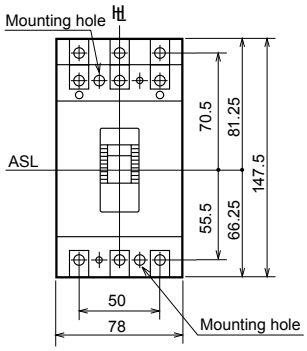


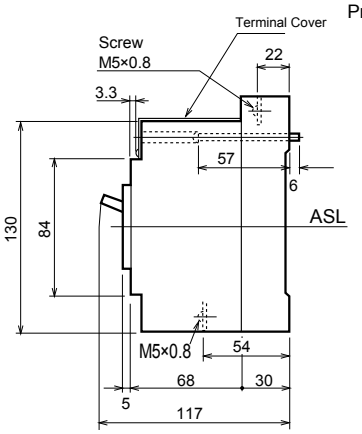
Ambient compensating curves



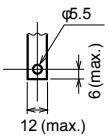
Dimensions XM30PB, Front Connect (mm)

Front connected

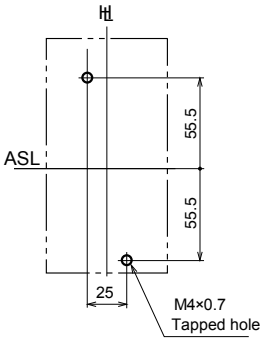




Preparation of Conductor



Drilling Plan (Front View)



MCCBs

XM30PB Accessories

Internal Accessories

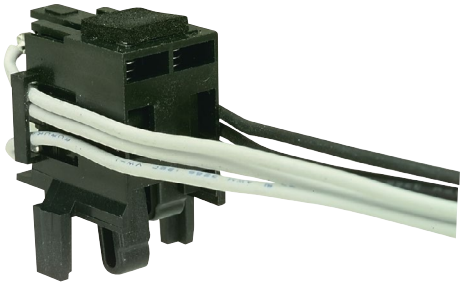
Alarm Switches

Provides an MCCB trip output contact for external circuits

Item Description	Catalogue No.
Alarm Switch 1 C/O Right or Left Side Mounting	UXLB0006C
Alarm/Auxiliary Switch 1C Left/Right Side XM30PB AF	UXLB0008C

Auxiliary Switches

Auxiliary switches Provides an MCCB ON or OFF contact output for external circuits.



Item Description	Catalogue No.
Auxiliary Switch 1 C/O Right or Left Side Mounting	UXXB0001D
Auxiliary Switch 2 C/O Right or Left Side Mounting	UXXB0003C

Shunt Trips

Allows an external device to trip an MCCB by energizing a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 24 V AC XM30PB AF	2H1932BAD
Shunt Trip Coil 110 V AC XM30PB AF	2H1931BAA
Shunt Trip Coil 240 V AC XM30PB AF	2H1931BBA
Shunt Trip Coil 24 V DC XM30PB AF	2H1931BCA
Shunt Trip Coil 48 V DC XM30PB AF	2H1931BDA

Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

Item Description	Catalogue No.
HS Extension IP55 Grey Handle/Shaft XM30PB AF	T1HS03R5GM

Handle - Direct Mount

Door mount or internal mount fixed depth handle for MCCB ON OFF RESET operation

Item Description	Catalogue No.
HS Black, IP55 Direct Mount Handle XM30PB AF	TFJ21PB

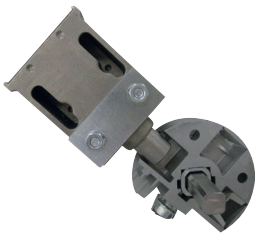
Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

Item Description	Catalogue No.
HP Extension IP65 Grey/Black Handle/ Shaft XM30PB AF	T1HP03R6BNA4

Handle Options

A set of 2 cams for HS extension shaft handles being used with trapped key switches



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Item Description	Catalogue No.
HS 90 mm Shaft 125/250 AF	T2HS250SHAFT

Item Description	Catalogue No.
TB1 HP Handle Mechanism Padlock Off Device XM30PB	T1HP30PALK

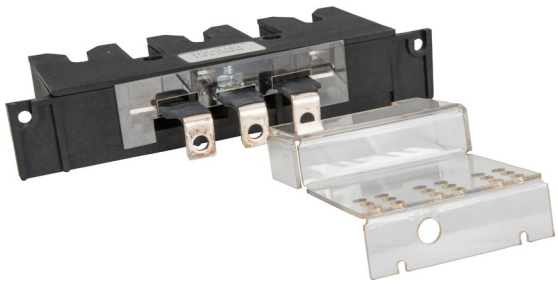
Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

MCCBs

Installation External Accessories

Plug-in MCCBs

Allows an MCCBs line side to be plugged onto vertically arranged 60 mm 3 phase busbar



Item Description	Catalogue No.
TemPlug Vertical 3P Type XM30PB AF	UPX330PB

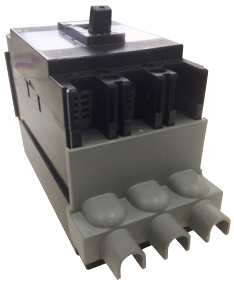
Tunnel Clamp Terminals

Allows cable to be terminated directly to the MCCB and clamped for good connectivity.

Item Description	Catalogue No.
Tunnel Terminals XM30PB AF	TXBD0009A

Terminal Covers

Provides front, side and internal isolation between poles in the MCCB power terminal area.



Item Description	Catalogue No.
Front Connect Terminal Cover XM30PB AF (2 pcs)	T1CF033SLNG

Item Description	Catalogue No.
XM30PB LineSide Screw Terminal Cover	XM30TSC

ZS125_TF

Earth Leakage Circuit Breaker

- ✔ Earth leakage protection ELCB for Power distribution or motor start applications
- ✔ Current limiting, lowers fault let through energy
- ✔ Direct opening main contact / toggle mechanism
- ✔ Complies to AS / NZ 60947-2, IEC 60947-2, AS / NZS 2081 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole ELCBs have switched poles, an unswitched N pole is optional
- ✔ Suits XAP chassis, with panelboard options
- ✔ Compact 155 mm H, 68 mm D, 30 mm pole centres
- ✔ Fault interruption rating; 65 kA I_{cu} @ 415 V AC
- ✔ Utilisation voltage ratings from 160 to 525 / 550 V AC
- ✔ Thermal magnetic trip unit: adj. thermal / fixed mag.
- ✔ ELCB detail: 30mA to 3A, trip time selection, type A
- ✔ 30mA setting; fixed trip time for personnel safety
- ✔ Remote trip function std, cause of trip module option
- ✔ Trip units; 20, 32, 50, 63, 100, 125 A

General

Trip Unit Protection Type	Thermal Magnetic CB with Residual Current trip (ELCB)
Trip Unit Ratings	20, 32, 50, 63, 100, 125 A
Number of Poles	3 or 4
Switching Poles	3P or 4P (Unswitched N option)

Short Circuit

Short-Circuit Fault Interruption Capacity (I_{cu})	65 kA @ 415 V AC

Voltage

Utilisation Voltages	240 V AC to 550 V AC, 50 / 60 Hz

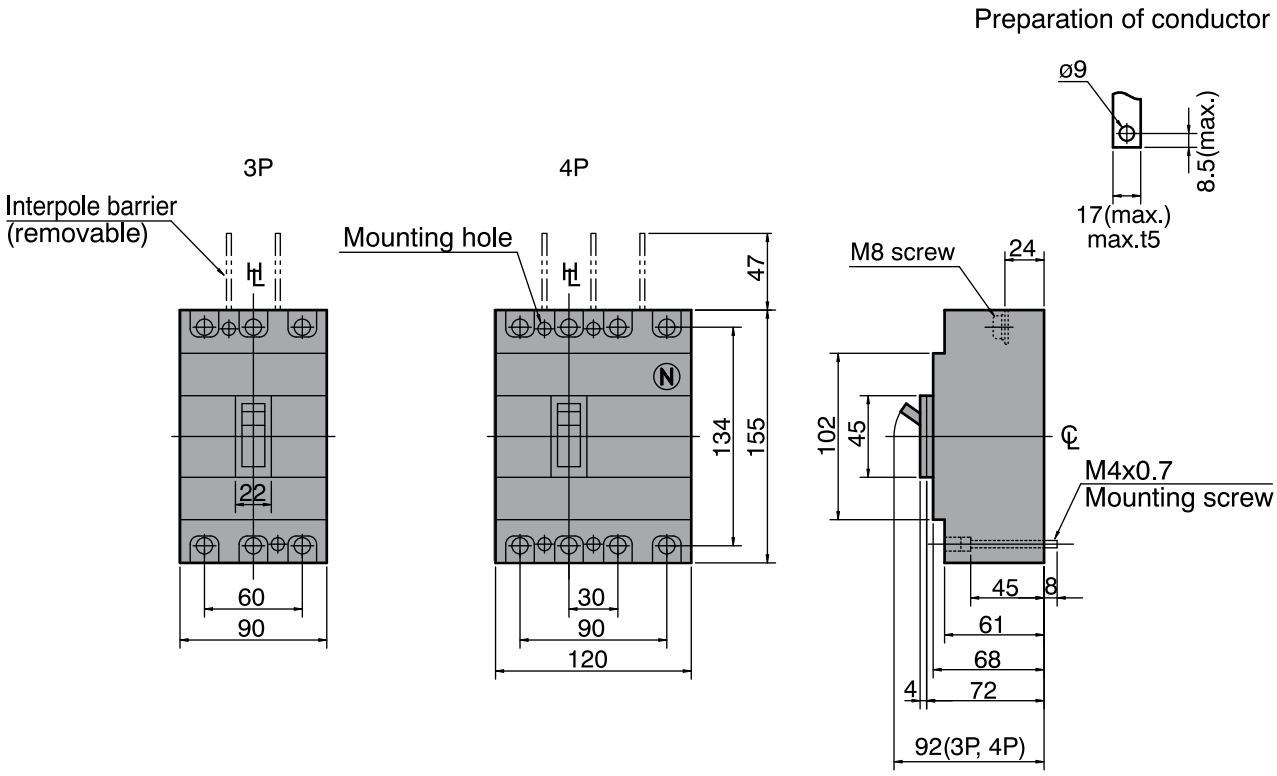
Earth Leakage settings and functions

$I\Delta_N$ (A) setting selection	30 mA, 100 mA, 300 mA, 0.5 A, 1 A, 3 A
Δt (ms) setting selection	INST, 60 ms, 200 ms, 400 ms, 700 ms, NT
Testing	Grey test button
EL Trip Indication	Pop-out yellow, EL trip indication

Accessories and Connections

Options	Accepts most standard MCCB accessories Chassis, mounting and connection options

Quick Reference Dimensions – Front Connect



125 A Frame 3 Pole 65 kA TM (Thermal Magnetic ELCB)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Fixed (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
20	12.5 - 20	240	65	3	ZS125M320TF
32	20 - 32	384	65	3	ZS125M332TF
50	32 - 50	600	65	3	ZS125M350TF
63	40 - 63	756	65	3	ZS125M363TF
100	63 - 100	1200	65	3	ZS125M3100TF
125	80 - 125	1250	65	3	ZS125M3125TF

125 A Frame 4 Pole 65 kA TM (Thermal Magnetic ELCB)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Fixed (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
20	12.5 - 20	240	65	4	ZS125M420TF
32	20 - 32	384	65	4	ZS125M432TF
50	32 - 50	600	65	4	ZS125M450TF
63	40 - 63	756	65	4	ZS125M463TF
100	63 - 100	1200	65	4	ZS125M4100TF
125	80 - 125	1250	65	4	ZS125M4125TF

125 A Frame 4 Pole 65 kA TM (Thermal Magnetic ELCB - Unswitched Neutral)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Fixed (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
20	12.5 - 20	240	65	4	ZS125M420TFSN
32	20 - 32	384	65	4	ZS125M432TFSN
50	32 - 50	600	65	4	ZS125M450TFSN
63	40 - 63	756	65	4	ZS125M463TFSN
100	63 - 100	1200	65	4	ZS125M4100TFSN
125	80 - 125	1250	65	4	ZS125M4125TFSN

Ratings

Component Type	Earth Leakage CB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P + N / 3P
Frame Size	125 AF
Trip Unit Rating	20 / 32 / 50 / 63 / 100 / 125 A
I_n, Rated Current (A)	
Contact NHP	
U_e, Rated Operational Voltage, AC, max	525 V AC
U_i, Rated Insulation Voltage	525 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3
Trip Unit Rating (A) - Power Loss Per Pole (W)	
Contact NHP	
Dielectric Strength	1890 V AC

Standards

Standards Compliance	IEC 60947-2 AS - NZS 2081
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 %RH

Connection

Cable Cross Section	1.5 - 50 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option)
Terminal Type	Bolt-Terminal
Connection Torque	4.9 - 6.9 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	Yes
Suitable for mounting on chassis	XAP Chassis XCP Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	No
Mounting	-

Physical

Height		155 mm
Width	**3P**	90 mm
	4P	120 mm
Depth (less toggle)		68 mm
Depth (toggle included)		92 mm
Weight	**3P**	1.1 kg
	4P	1.4 kg
Electrical Life		10000 cycles
Mechanical Life		30000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**M**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	85
		380 / 400 V AC	65
		415 V AC	65
		440 V AC	50
		690 V AC	-
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 DC	-
	I_{cs} (Service Breaking Capacity)	220 / 240 V AC	85
		380 / 400 V AC	36
		415 V AC	33
		440V AC	25
		690 V AC	-
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Thermal Magnetic CB with Type AC Residual Current Trip (ELCB)
Rated Temperature	50 °C

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	No
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

ELCB Operating Characteristics – ZS Earth Leakage Circuit Breakers

Circuit Breakers with Integral Residual Current Protection (CBRs) are the ultimate safeguards against the hazards of earth leakage.

The TemBreak PRO, ZS ELCB range is available in 2 frame sizes, 125 A and 250 A. Interrupting capacities of 50 kA and 65 kA are offered in 3 and 4 poles versions with adjustable thermal and fixed magnetic protection characteristics. Model sizes range from 20 A to 250 A versions.

ZS125 or ZS250 showing remote trip leads RT1 and RT2

TBPro(ELCB-ZS)_dOPCH-S01

ZS 125 A and 250 A Models

The ZS earth leakage MCCB from Terasaki offers machine or personnel protection within a standard 125 A, 160 / 250 A MCCB frame size.

The full functionality of a standard thermal-magnetic overload / short circuit protection MCCB is maintained.

Standard Features

- Thermal / Magnetic MCCB
- 125 A or 250 A frame
- Trip unit ratings: 12.5 A – 125 A (125 AF), 100 A – 250 A (250 AF). Fixed magnetic setting
- 65 kA fault interruption rating @ 415 AC
- Built-in dielectric disconnection test plug
- Harmonics inhibition
- Remote trip function via external wire dry contact closure (standard on ZS125GJ / ZS250GJ) [1)]

Earth Leakage Features

- Switching utilisation up to 550 V AC
- Suitable for use at 40 / 50 / 60 Hz (except 3 A @ 40 Hz)
- 3 or 4 pole types
- Yellow ground fault TRIP indication flag
- Grey TEST button
- Green 'Power ON' LED
- Adjustable thermal characteristic dial setting from 63 - 100 % of I_R
- Adjustable earth leakage ranges: 30 mA, 100 mA, 300 mA, 500 mA, 1 A, 3 A
- Trip time selection: 0, 60, 200, 400, 700 mS or NT (No Trip)
- 30 mS time setting defaults to a less than 300mS trip time as per AS/NZS standard requirements.
- Type "A" - suitable for AC and residual pulsating DC currents

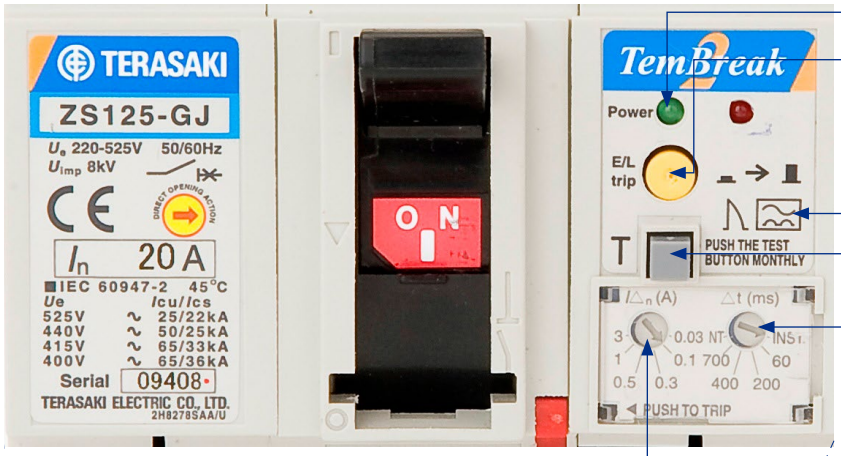
Options and Fitting

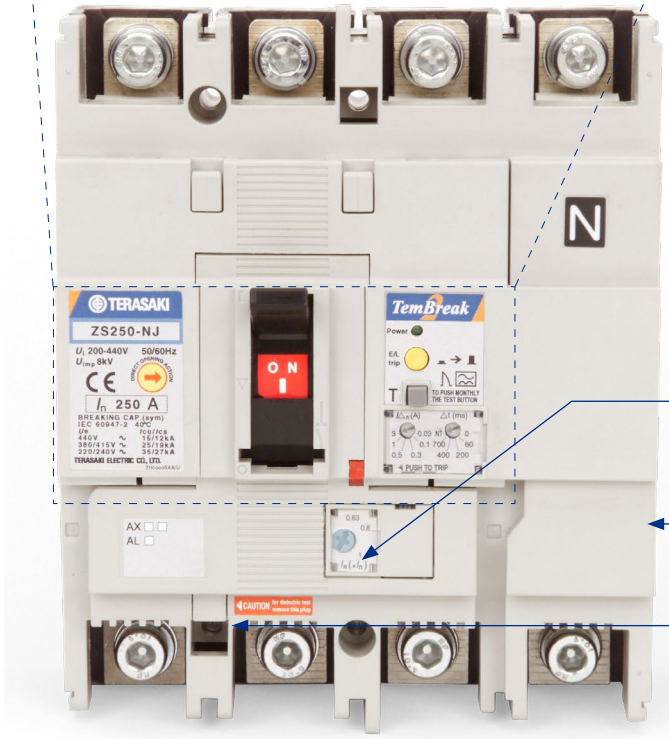
- T2M1166CBA: Trip control module with: Pre-trip alarm and Cause of trip output, remote trip function
- Accepts T2AX / T2AL aux/alarm switches
- Fits to XAP, XAB, XCP chassis
- Seal available for sealing the E / L dial setting area of the MCCB. E.g. @ 30 mA
- Captive padlock attachment that includes a dial sealing feature

Notes

1) The remote trip function includes two 700 mm wires (RT1 and RT2) coming from the side of the ELCB. The ELCB will trip via dry contact closure of the two wires using a pushbutton or relay etc. The tripping of the ELCB is performed by the earth leakage module trip function being activated, which trips the ZS ELCB. Where remote trip and the associiated wires are not required, the wires can be either coiled safety for future use, or cut off, by lifting the ELCB cover and cutting the wires where they are connected to the EL electronic module.

ELCB Operating Characteristics – ZS125 / ZS250 Earth Leakage CB





Voltage presence LED

Trip indicator. The yellow button pops up to the indicate tripping due to residual current. When the breaker is reset, the button will retract

Type A. Tripping is ensured for residual sinusoidal AC in the presence of residual pulsating DC

Test button. Press the button to test the residual current detection and tripping system

Adjustable time delay for residual current protection. Setting include zero and non-trip (NT)

Adjustable residual current tripping thresholds. 30 mA, 100 mA, 300 mA, 500 mA, 1000 mA and 3000 mA

Adjustable overload protection I_R can be set between 63% and 100% of I_N

Switched or unswitched Neutral pole types stocked

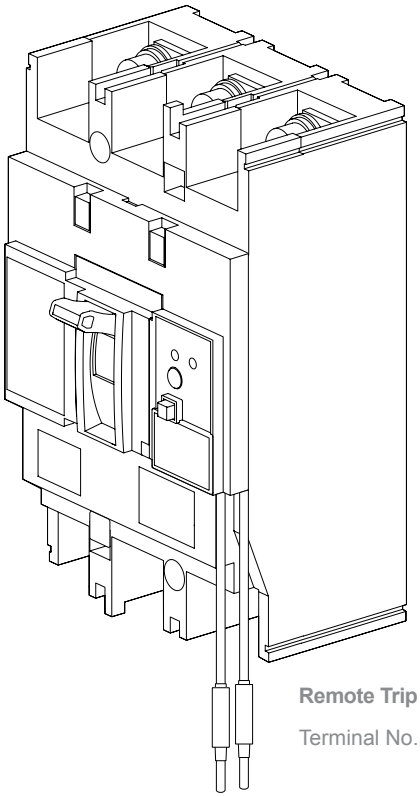
Dielectric test device. Remove the plug to allow dielectric testing to be done with the ELCB closed (ON)

TBPro(ELCB-ZS)_dOPCH-S02

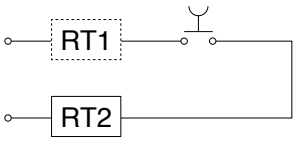
Remote trip feature: standard for 125 / 250 A ELCBs

Remote Trip operation

The RT (2-wire) standard feature on ZS 125 / 250 ELCBs is an easy to use means of remote tripping the ELCB, via dry contact closure, of the 2 wires. The RT feature uses the EL module in the ZS ELCB to trip the ELCB.



Connecting Diagram



Remote Trip

Terminal No. RT1 RT2

Note

The RT feature is not considered a “test” of the ZS ELCB, as the RT does not test the ELCBs internal ZCTs. Only by pressing the ELCBs “TEST” button is a complete test performed, as this tests the full current path within the ELCB.

Refer next page for the option of using an external pushbutton and resistor to perform a remote test of a ZS ELCB.

If the remote trip feature is not required, the user can leave the wires unconnected and coiled for possible future use, or they can be cut off if the feature will never be required.

MCCB Operating Characteristics – Thermal Magnetic and Electronic

TCU - Trip Control Unit

T2M1166CBA

Earth Leakage Pre Trip Alarm with cause of trip output, and Remote Trip

The optional TCU attaches to the right side of a ZS ELCB. Power to the TCU unit is supplied by connecting directly to the EL MCCB line side terminals.

TCU Features

- Can be retrofitted to older and newer ZS ELCBs on-site by qualified personel.
- A Normally Open (N/O) maintained contact (2 A – 250 V AC) switches as a result of an earth fault, which also acts as a Pre Trip Alarm.
- The pre-trip alarm N/O contact activates at a selectable 50 % or 70 % of the selectable earth leakage setting.
- A red LED on the front of the EL MCCB, also indicates an earth leakage within the system.
- A tamper-free transparent cover is available for sealing the setting area of the TCU.
- Remote trip facility (RT), to allow remote tripping of the EL MCCB.
- Down Voltage Trip function which is similar to a UVT. Unlike a UVT, the ELCB can be switched back to ON without power restoration.

TBPro(ELCB-ZS)_dOPCH-S04

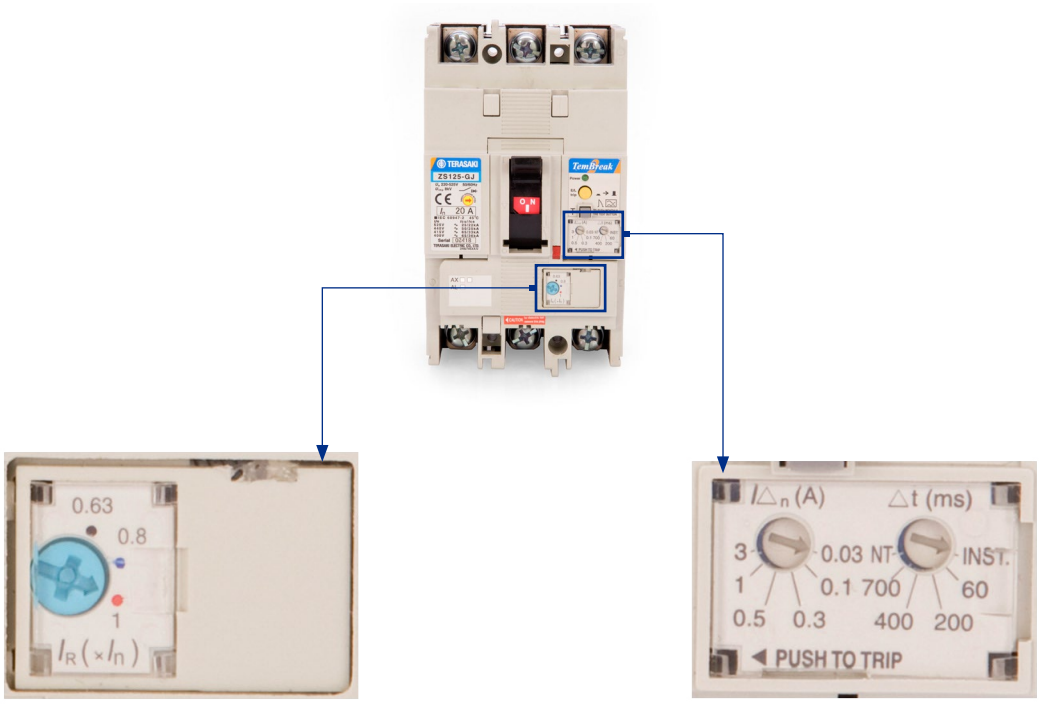
Above
Trip control unit
T2M1166CBA

Below
Close-up of the TCU setting facia

Notes
3 and 4 pole ZS ELCBs are same width as standard MCCBs. If the optional TCU module is added, the overall width of the ELCB + TCU combination is increased by 25 mm.

For outline dimensions of MCCBs with a TCU fitted, refer to the previous ordering pages.

ELCB Operating Characteristics – ZS125 / ZS250 Earth Leakage CB



TBPro(ELCB-ZS)_dOPCH-S05

IΔn is the adjustable tripping threshold for residual current (earth leakage) protection. It can be set between 30 mA and 3 A. Available settings are shown below.

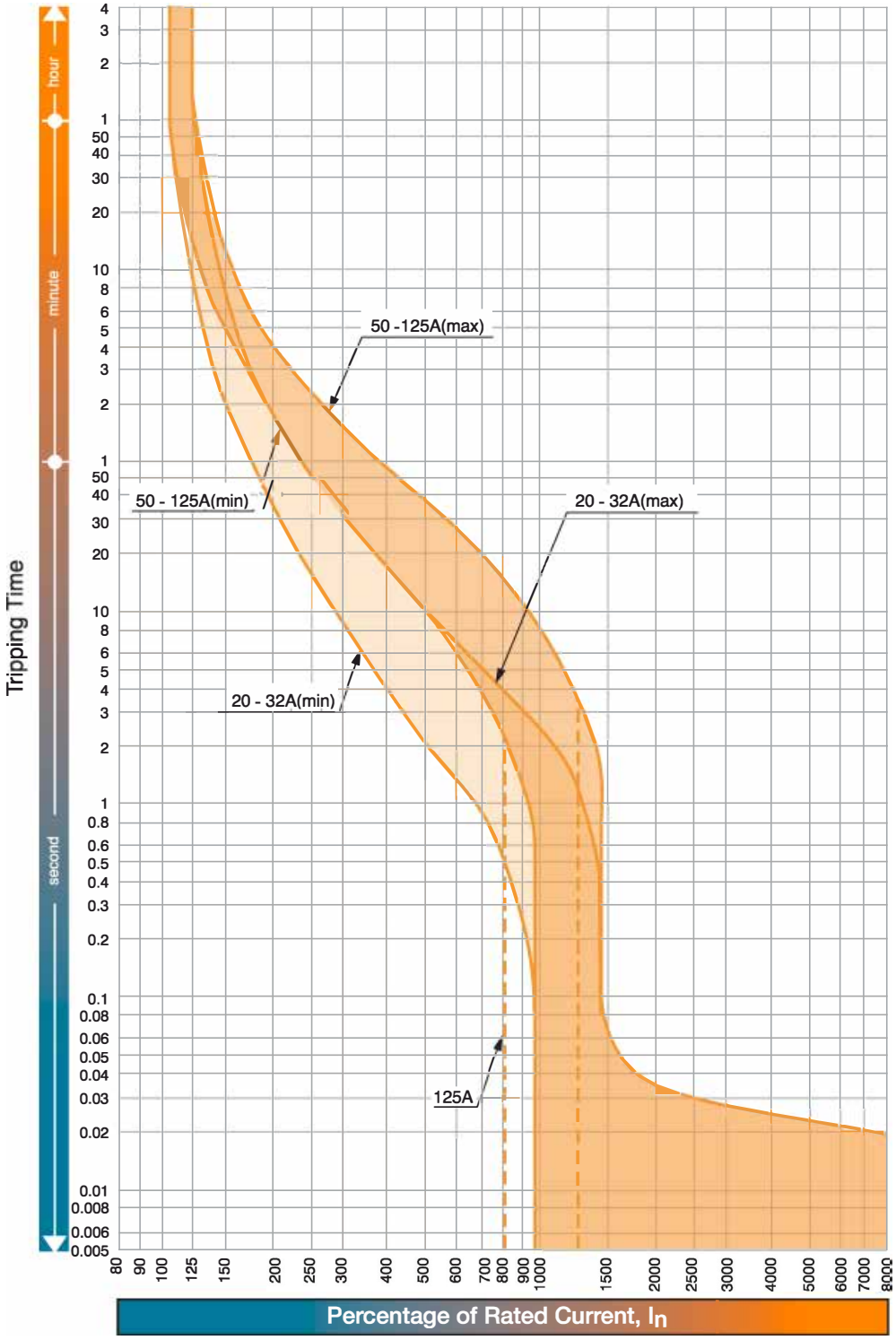
The dial 'Δt (ms)' is a time delay which is introduced to the residual current (earth leakage) protection characteristic. Available settings are shown below. The dial can also be set to INST (max. actual tripping time is 40 ms) or NT (No Trip - tripping time = ∞). The maximum breaking time at each setting is shown in brackets in the table below. Note that when IΔn (A) is set at 30 mA, Δt (ms) defaults to tripping within 300 ms or less.

I_R is the adjustable tripping threshold for overload protection. It can be set between 0.63 and 1.0 times I_n ratings are shown below.

I_R is the tripping threshold for short-circuit protection. It is fixed at the values shown below.

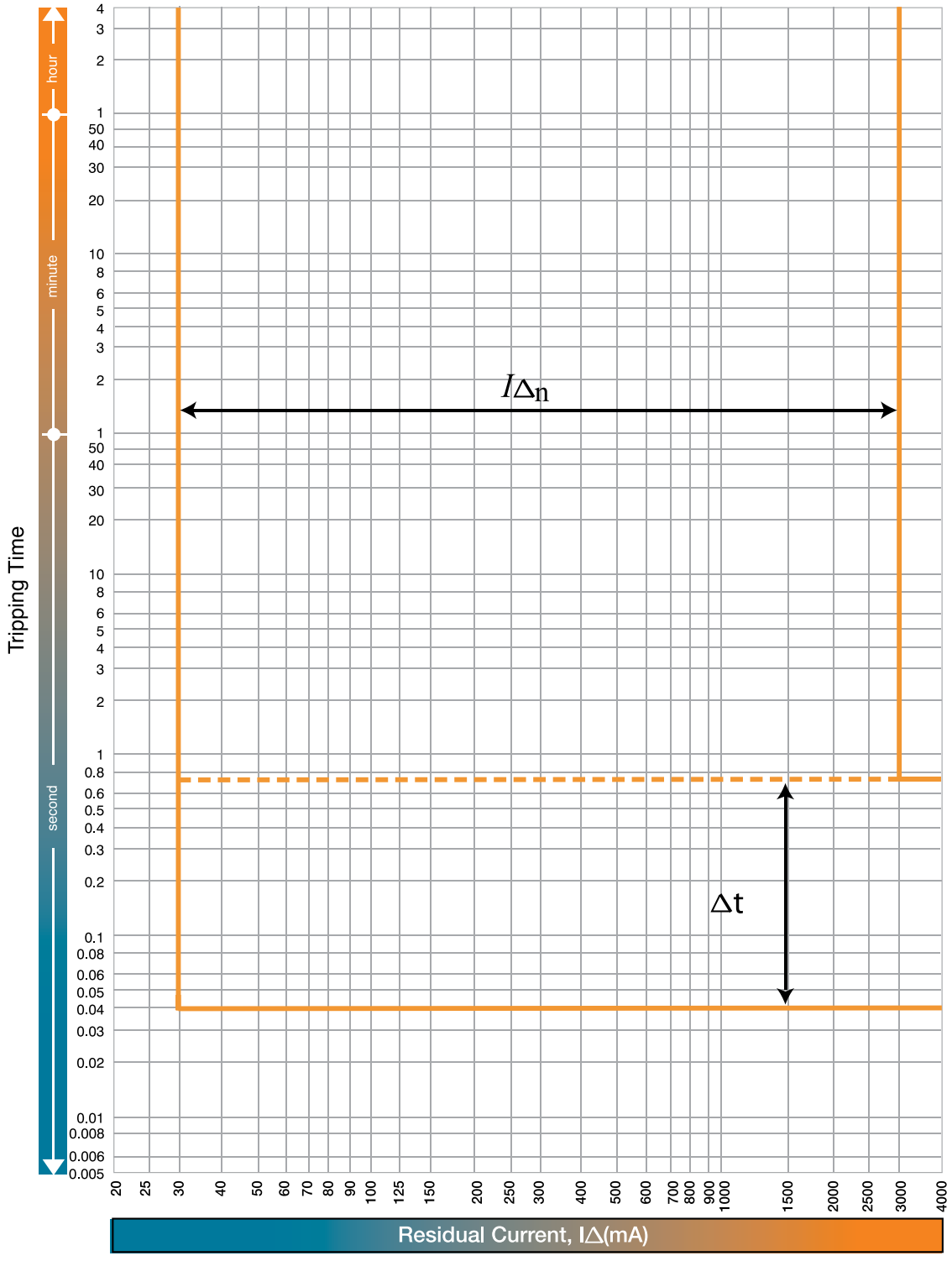
Model	IΔn (A)	Δt (ms)	I_n (A)	I_i
ZS125	0.3, 0.1, 0.3, 0.5, 1, 3	0 (40), 60 (195), 200 (365), 400 (620), 700 (950), NT (∞)	20, 32, 50, 63, 100	12 x I_n (+/- 20 %)
ZS125	0.3, 0.1, 0.3, 0.5, 1, 3	0 (40), 60 (195), 200 (365), 400 (620), 700 (950), NT (∞)	125	10 x I_n (+/- 20 %)
ZS250	0.3, 0.1, 0.3, 0.5, 1, 3	0 (40), 60 (195), 200 (365), 400 (620), 700 (950), NT (∞)	160	13 x I_n (+/- 20 %)
ZS250	0.3, 0.1, 0.3, 0.5, 1, 3	0 (40), 60 (195), 200 (365), 400 (620), 700 (950), NT (∞)	250	10 x I_n (+/- 20 %)

Time Current Characteristic Curve, ZS125M, Thermal Magnetic ELCB

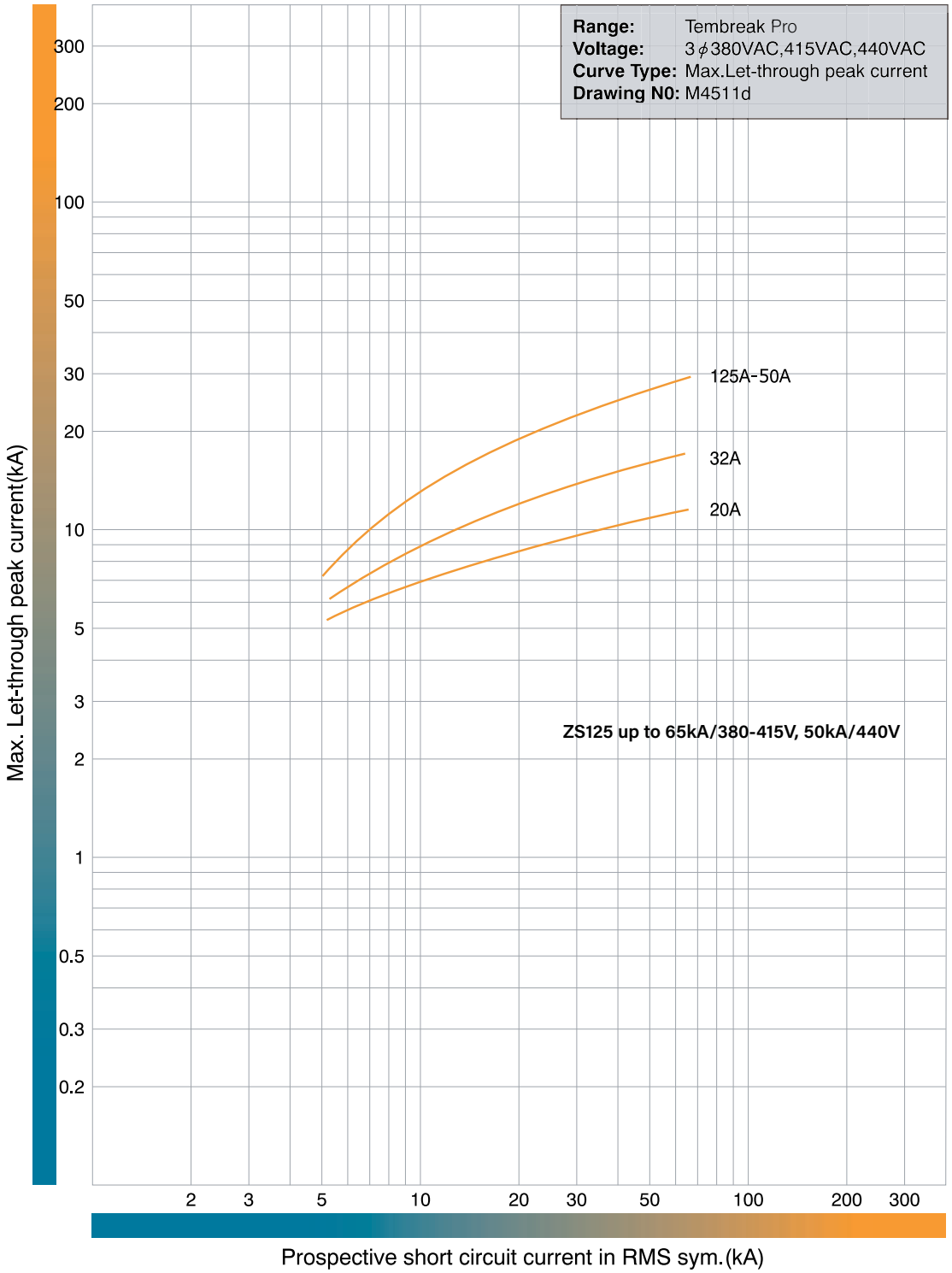


Time Current Characteristic Curve, ZS125M/ZS250M, Thermal Magnetic ELCB

Residual Current Characteristic

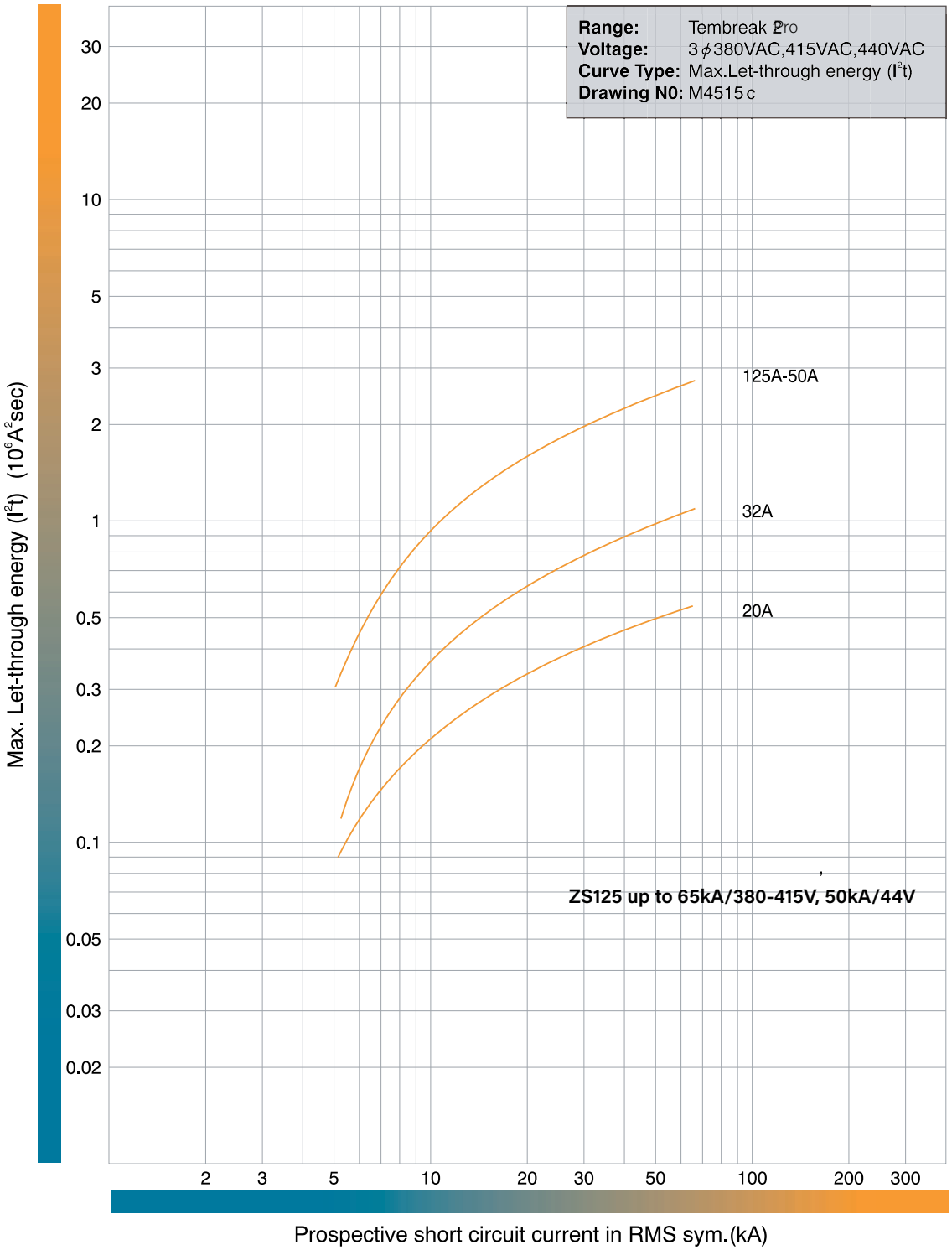


Let-Through Peak Current Characteristics, ZS125M, Thermal Magnetic



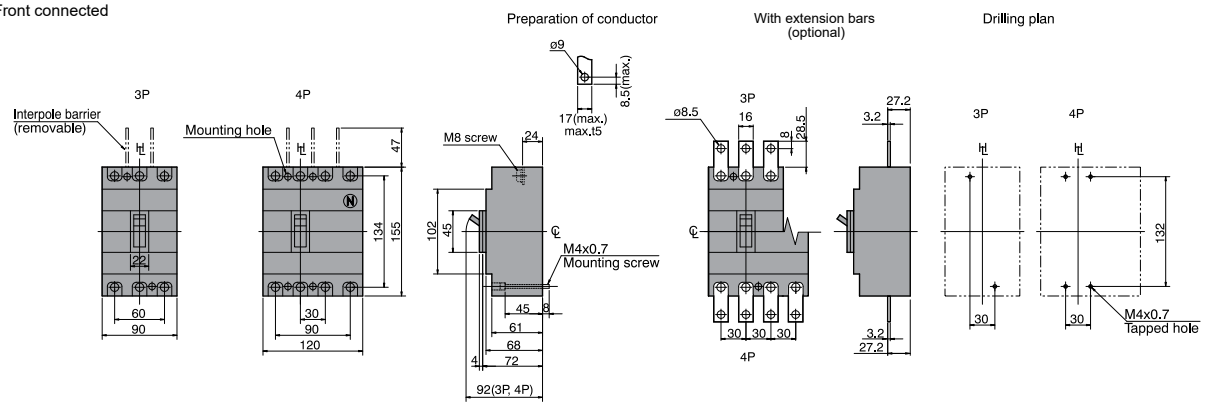
MCCBs

Let-Through Energy I²t Curve, ZS125M, Thermal Magnetic

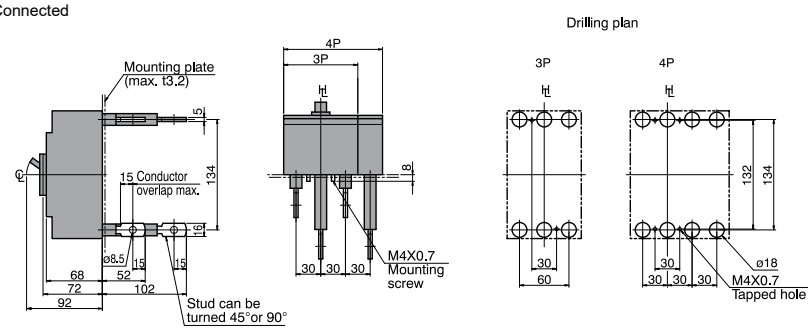


Dimensions ZS125M (mm)

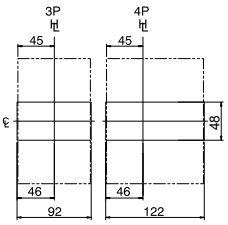
Front connected



Rear Connected

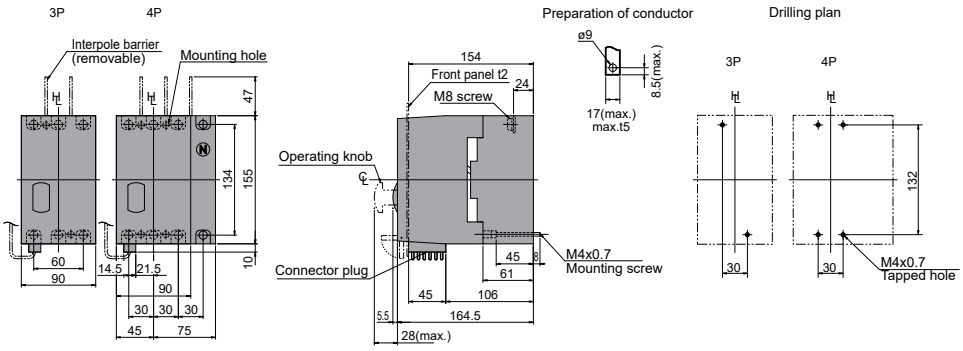


Panel cutout (Front view)

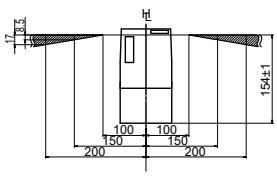


Panel cutout dimensions shown give an allowance of 1.0mm or more around the handle escutcheon.

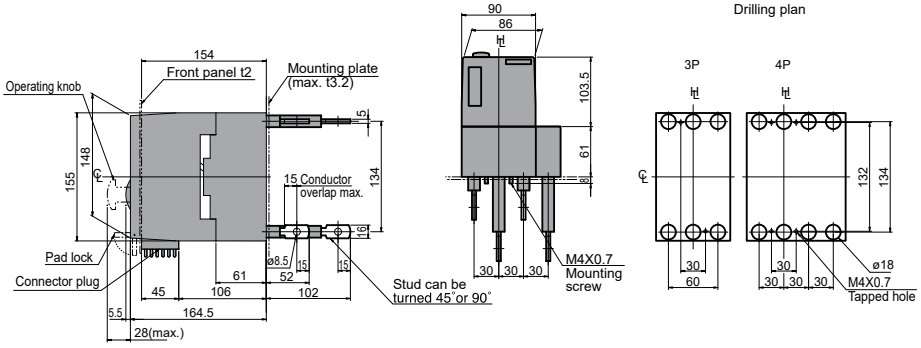
Front Connected With Motor Operator



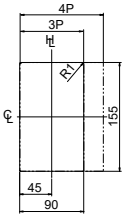
Panel hinge position (hatching area) bottom view



Rear Connected With Motor Operator



Panel cutout (Front view)



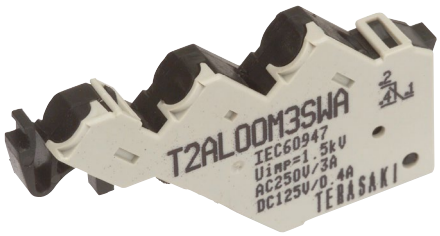
Panel cutout dimensions shown give an allowance of 1.5mm around the handle escutcheon.

ZS125 Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits



Item Description	Catalogue No.
Alarm Switch 1 C/O Wired	T2AL00M3SWA
Alarm Switch Micro-current 1 C/O	T2AL00M3RTA
Alarm Switch 1 C/O	T2AL00M3STA

Item Description	Catalogue No.
Alarm Switch Heavy Duty 1 N/O	T2AL00B1STA
Alarm Switch Heavy Duty 1 N/C	T2AL00B2STA

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxiliary Switch Heavy Duty 1 N/O	T2AX00B1STA
Auxiliary Switch Heavy Duty 1 N/C	T2AX00B2STA

Item Description	Catalogue No.
Auxiliary Switch Micro-current 1 C/O	T2AX00M3RTA
Auxiliary Switch 1 C/O	T2AX00M3STA
Auxiliary Switch 1 C/O Wired	T2AX00M3SWA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00A10TA
Shunt Trip Coil 240 V AC	T2SH00A20TA
Shunt Trip Coil 415 V AC	T2SH00A40TA
Shunt Trip Coil 12V DC	T2SH00D01TA
Shunt Trip Coil 24 V DC	T2SH00D02TA
Shunt Trip Coil 48 V DC	T2SH00D04TA
Shunt Trip Coil 110 V DC	T2SH00D10TA

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 110 V AC	T2UV00A10NTA
Under Voltage Trip Coil Instant 240 V AC	T2UV00A20NTA
Under Voltage Trip Coil Instant 415 V AC	T2UV00A40NTA
Under Voltage Trip Coil Instant 24 V DC	T2UV00D02NTA
Under Voltage Trip Coil Instant 48 V DC	T2UV00D04NTA
Under Voltage Trip Coil Instant 110 V DC	T2UV00D10NTA
Under Voltage Trip Coil Instant 230 V DC	T2UV00D20NTA

Time Delay Operation (500 ms)

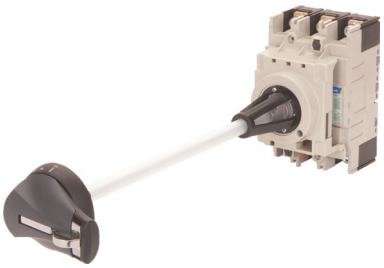
When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500 ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delay 110 V AC 125-630 A 3P	T2UV00A10DSA
Under Voltage Trip Coil Time Delay 200-240 V AC 125-630 A 3P	T2UV00A24DS
Under Voltage Trip Coil Time Delay 380-450 V AC 125-630 A 3P	T2UV00A40DS
Under Voltage Trip Coil Time Delay 24 V DC 125-630 A 3P	T2UV00D02DS
Under Voltage Trip Coil Time Delay 110 V DC 125-630 A 3P	T2UV00D10DS
Under Voltage Trip Coil Time Delay 230 V DC 125-630 A 3P	T2UV00D24DS

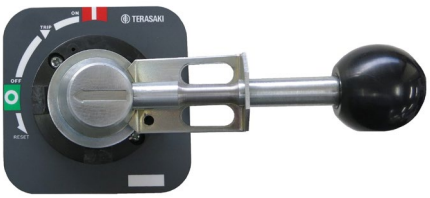
Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation



Item Description	Catalogue No.
T2HS Compact Handle Grey, IP55 Handle + 356 mm Shaft	TPHS12R5GM
T2HS Compact Handle Red/Yellow, IP55 Handle + 356 mm Shaft	TPHS12R5RM



Item Description	Catalogue No.
Metal Compact Handle Silver IP65 Handle + 356 mm Shaft 125 AF	T2HP12R6ME

Handle - Direct Mount

Door mount or internal mount fixed depth handle for MCCB ON OFF RESET operation

Item Description	Catalogue No.
Operating Handle Direct Mounting, Door Interlocking IP55 Rated Grey/ Black Handle 125 AF	T2HB12UR5BN
Operating Handle Direct Mounting, Door Interlocking IP55 Rated Red/ Yellow Handle 125 AF	T2HB12UR5RN

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

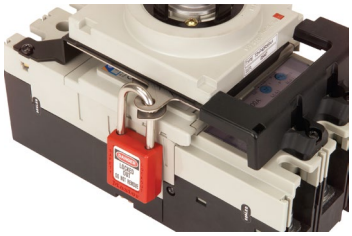
Item Description	Catalogue No.
T2HP Square Handle Grey, IP65 Handle + 445 mm Shaft 125 F	T2HP12R6BN
T2HP Square Handle Red/Yellow, IP65 Handle + 445 mm Shaft 125 AF	T2HP12R6RN

Handle Options

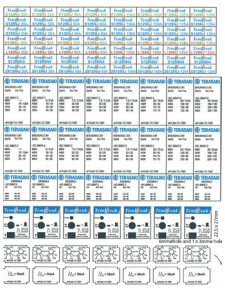
A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
HS 90 mm Shaft 125/250 AF	T2HS250SHAFT



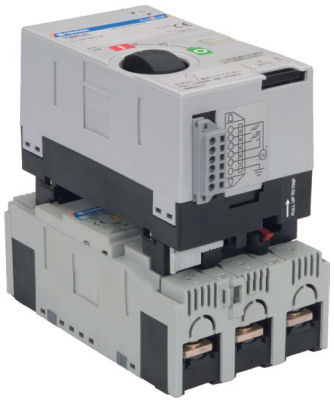
Item Description	Catalogue No.
Door Interlocking Padlck Device/Handle Mechanism 125/250 AF	T2HP25PALK



Item Description	Catalogue No.
MCCB Identification Labels 125 AF	T12CAPLAB

Motor Operator

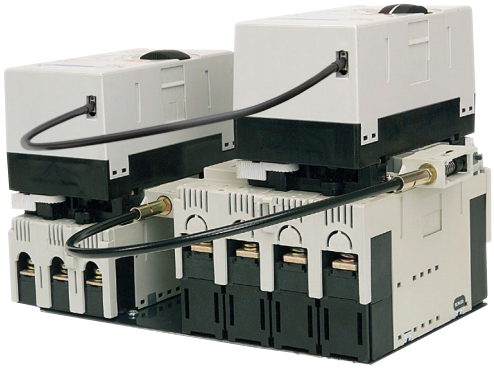
Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs



Item Description	Catalogue No.
Motor Operator 110 V AC 125 AF	T2MC12A10NB
Motor Operator 240 V AC 125 AF	T2MC12A24NB
Motor Operator 24 V DC 125 AF	T2MC12D02NB
Motor Operator 48 V DC 125 AF	T2MC12D04NB
Motor Operator 110 V DC 125 AF	T2MC12D10NB

Motor Operator Accessories

Provides electrical interlocking between 2 motors to prevent simultaneous operation



Item Description	Catalogue No.
Motor Interlock Cable (0.5 m) Between T2MC12 and T2MC25/25L	T2MM25L05A
Motor Interlock Cable (1.5 m) Between T2MC12 and T2MC25/25L	T2MM25L15A

Item Description	Catalogue No.
Motor Interlock Cable (0.6 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S06A
Motor Interlock Cable (2.1 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S21A

MCCBs

Locking and Interlocking Accessories

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option

Item Description	Catalogue No.
Captive Toggle Lock 125 AF	T2HL12CAP

Non-captive

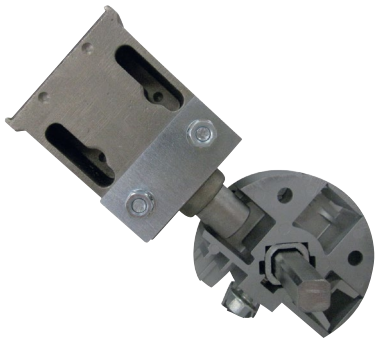
Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Non Captive Toggle Lock 125/250 AF	T2HL25B

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Mounted

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

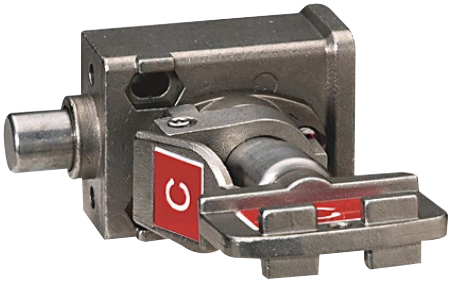
Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, Standard Key	440TAKEYE10X

Lock

Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys

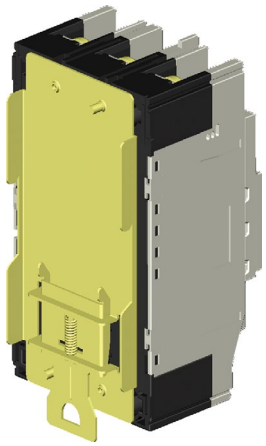


Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10BA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100A

Installation External Accessories

DIN Rail Adaptor

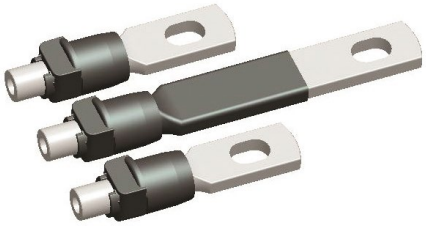
Permits an MCCB to mounted onto 45mm DIN rail for easy mounting and removal



Item Description	Catalogue No.
DIN Rail Adapter 125 AF	T2DA12A

Rear Connection Studs

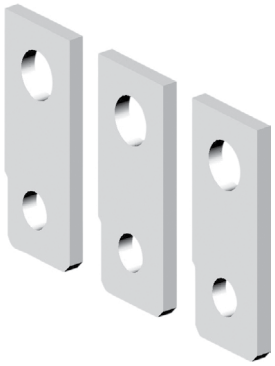
Allows MCCB main connections to be made at the rear of the MCCB



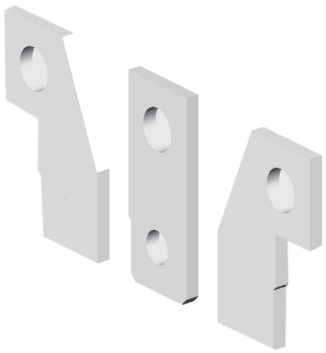
Item Description	Catalogue No.
Rear Studs Connect 3 Pole Kit, Set of 6 Studs 125 AF	T2RP123SA
Rear Studs Connect 4 Pole Kit, Set of 8 Studs 125 AF	T2RP124SA

Extension Bars

Add-on bus bars, allow more or larger conductor connector to an MCCB



Item Description	Catalogue No.
Attached Bars 1 Pole, Set of 2, Straight Bars 125 AF	T2FB121BA
Attached Busbar 3 Pole, Set of 6, Straight Bars 125 AF	T2FB123BA
Attached Busbar 4 Pole, Set of 8, Straight Bars 125 AF	T2FB124BA



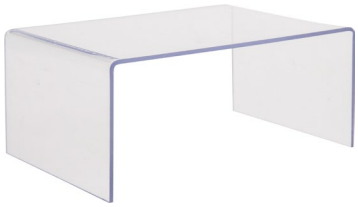
Item Description	Catalogue No.
Attached Busbar 3 Pole, Set of 6, Flanged Bars	T2FB16L3WB
Attached Busbar 4 Pole, Set of 8, Flanged Bars	T2FB16L4WB

Terminal Covers

Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area

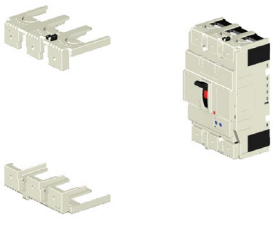
Item Description	Catalogue No.
3 Pole Single Cover, 50 mm Long, Narrow Cover 125 AF	T2CF123SLHP
4 Pole Single Cover, 50 mm Long, Narrow Cover 125 AF	T2CF124SLHP



Item Description	Catalogue No.
Extended Terminal Covers Front Connect 3-4 Pole Single Cover, 100 mm Long, Wide “Top Hat, B160, B250	T2CF253WC

Flush Terminal Covers

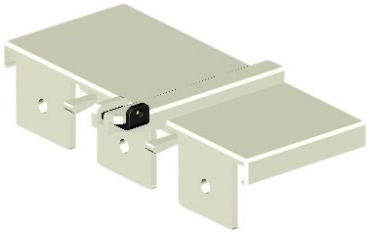
Provides front finger touch protection with MCCBs used with tunnel terminals or chassis



Item Description	Catalogue No.
Flush IP20 Terminal Covers - Front Connected MCCBs 3 Pole Single Cover 125 AF	T2CS123SHP
Flush IP20 Terminal Covers - Front Connected MCCBs 4 Pole Single Cover 125 AF	T2CS124SHP
Flush IP20 Terminal Covers - Front Connected MCCBs 3 Pole Set of Two (2) Covers 125 AF	T2CS123SNP
Flush IP20 Terminal Covers - Front Connected MCCBs 4 Pole Set of Two (2) Covers 125 AF	T2CS124SNP

Rear Connect Terminal Covers

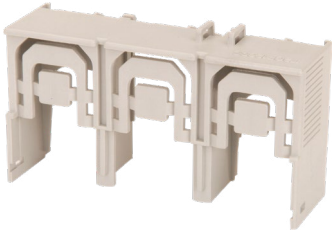
Provides front finger touch protection with MCCBs used with rear terminals and HC chassis



Item Description	Catalogue No.
3 Pole Single Cover, 22 mm Long, Narrow Cover 125 AF	T2CR123SHP
4 Pole Single Cover, 22 mm Long, Narrow Cover 125 AF	T2CR124SHP
3 Pole Set of Two (2) Covers, 22 mm Long, Narrow Cover 125 AF	T2CR123SP
4 Pole Set of Two (2) Covers, 22 mm Long, Narrow Cover 125 AF	T2CR124SP

Short Terminal Covers Front Connect

Provides front, side and internal isolation between poles in the MCCB power terminal area



Item Description	Catalogue No.
3 Pole Single Cover, 22 mm Long, Narrow Cover 125 AF	T2CF123SSHP
4 Pole Single Cover, 22 mm Long, Narrow Cover 125 AF	T2CF124SSHP
3 Pole Set of Two (2) Covers, 22 mm Long, Narrow Cover 125 AF	T2CF123SSNP
4 Pole Set of Two (2) Covers, 22 mm Long, Narrow Cover 125 AF	T2CF124SSNP

Terminal Cover Locking Clip

Used with terminal covers to prevent unauthorised removal or access to terminal area

Item Description	Catalogue No.
Terminal Cover Locking Clip	T2CF00L

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier (Set of 2)	T2BA123SH

Tunnel Clamp Terminals

Allows cable to be terminated directly to the MCCB and clamped for good connectivity

Item Description	Catalogue No.
Tunnel Terminal 3 Pole, Set of 6 Clamps, 6 – 50 mm² 125 AF	T2FW12S3A
Tunnel Terminal 4 Pole, Set of 8 Clamps, 6 – 50 mm² 125 AF	T2FW12S4A

Trip Control Unit

ZS125/250 side mount module, with EL trip output, Remote Trip, PTA output, Down Voltage Trip function.

Item Description	Catalogue No.
ZS Trip Test EL Ind Module	T2M1166CBA

MCCBs

ZS250_TF

Earth Leakage Circuit Breaker

- ✔ Earth leakage protection ELCB for Power distribution or motor start applications
- ✔ Current limiting, lowers fault let through energy
- ✔ Direct opening main contact / toggle mechanism
- ✔ Complies to AS / NZ 60947-2, IEC 60947-2, AS / NZS 2081 and CE
- ✔ Panel mount standard, with other mounting options
- ✔ Full range of accessories for application flexibility
- ✔ 3 or 4 pole ELCBs have switched poles, an unswitched N pole is optional
- ✔ Suits XBP, XBPSS, XCP, HC chassis, with panelboard options
- ✔ Compact 165 mm H, 68 mm D, 35 mm pole centres
- ✔ Fault interruption rating; 65 kA I_{cu} @ 415 V AC
- ✔ Utilisation voltage ratings from 160 to 525 / 550 V AC
- ✔ Thermal magnetic trip unit: adj. thermal / fixed mag.
- ✔ ELCB detail: 30mA to 3A, trip time selection, type A
- ✔ 30mA setting; fixed trip time for personnel safety
- ✔ Remote trip function std, cause of trip module option
- ✔ Trip units; 160, 250 A

General

Trip Unit Protection Type	Thermal Magnetic CB with Residual Current trip (ELCB)
Trip Unit Ratings	160, 250 A
Number of Poles	3 or 4
Switching Poles	3P or 4P (Unswitched N option)

Short Circuit

Short-Circuit Fault Interruption Capacity (Icu)	65 kA @ 415 V AC

Voltage

Utilisation Voltages	240 V AC to 525 / 550 V AC, 50 / 60 Hz

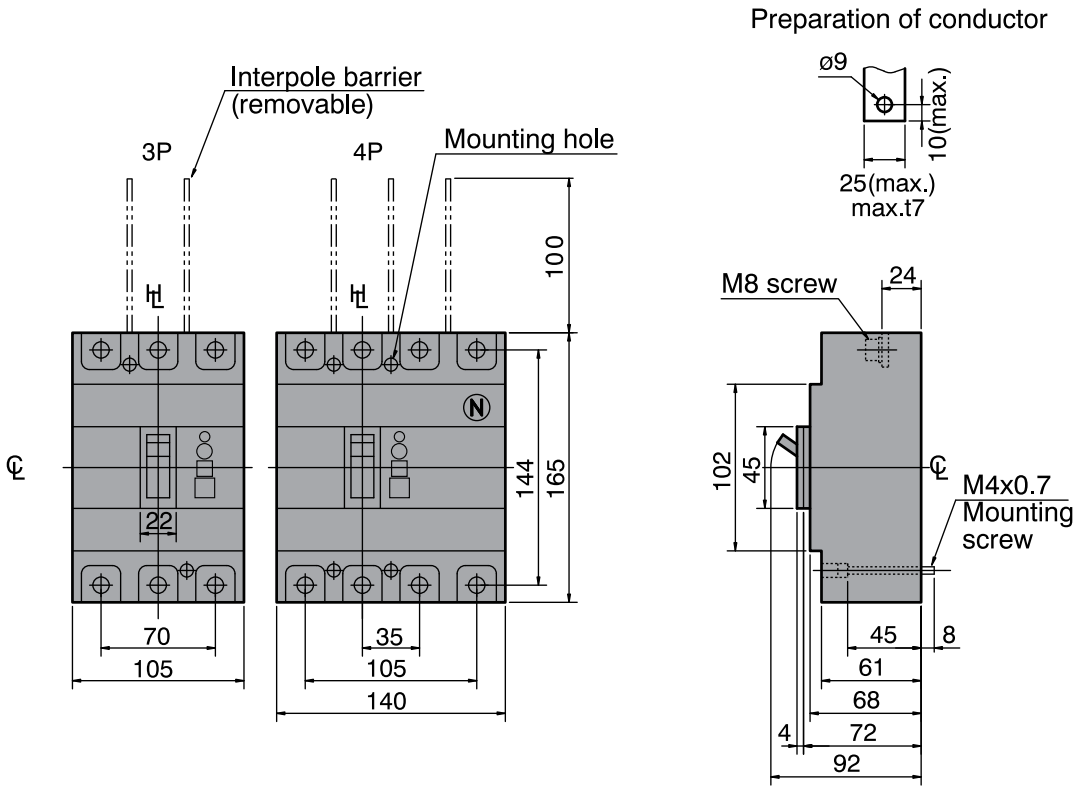
Earth Leakage settings and functions

$I\Delta_N$ (A) setting selection	30 mA, 100 mA, 300 mA, 0.5 A, 1 A, 3 A
Δt (ms) setting selection	INST, 60 ms, 200 ms, 400 ms, 700 ms, NT
Testing	Grey test button
EL Trip Indication	Pop-out yellow, EL trip indication

Accessories and Connections

Options	Accepts most standard MCCB accessories Chassis, mounting and connection options

Quick Reference Dimensions – Front Connect



250 A Frame 3 Pole 65 kA TM (Thermal Magnetic ELCB)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Fixed (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
160	100 - 160	2080	65	3	ZS250M3160TF
250	160 - 250	2500	65	3	ZS250M3250TF

250 A Frame 4 Pole 65 kA TM (Thermal Magnetic ELCB)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Fixed (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
160	100 - 160	2080	65	4	ZS250M4160TF
250	160 - 250	2500	65	4	ZS250M4250TF

250 A Frame 4 Pole 65 kA TM (Thermal Magnetic ELCB - Unswitched Neutral)

I_n (A @ 50 °C)	I_r, Adjustable (A)	I_m, Fixed (A)	I_{cu}, 400 / 415 V (kA)	Poles	Catalogue No.
160	100 - 160	2080	65	4	ZS250M4160TFSN
250	160 - 250	2500	65	4	ZS250M4250TFSN

Ratings

Component Type	Earth Leakage CB
Selectivity Category	A
Number of Poles	3 / 4
Switching Poles	3P / 3P + N
Frame Size	250 AF
Trip Unit Rating	160 / 250 A

I_n, Rated Current (A)

Contact NHP

U_e, Rated Operational Voltage, AC, max	525 V AC
U_i, Rated Insulation Voltage	525 V (rms)
U_{imp}, Impulse Withstand Voltage	8 kV
Supply Voltage Type	AC
Rated Frequency	50 / 60 Hz
Pollution Degree	3

Trip Unit Rating (A) - Power Loss Per Pole (W)

Contact NHP

Dielectric Strength	1890 V AC

Standards

Standards Compliance	IEC 60947-2, AS/NZS 2081
RCM (Regulatory Compliance Mark)	Compliant
CE Mark	Compliant
Shipping Approvals	Contact NHP

Contact NHP for standards compliance and approvals not listed here

Environmental

Vibration Frequency, Operational (Max.)	16.7 Hz
Vibration Acceleration (Max.)	19 m/s²
Vibration Duration (Max.)	12 min
Altitude, Operating (No Derating)	2000 m
Storage Temperature	-10 to +70 min/max °C
Operating Temperature	-5 to +70 min/max °C
Relative Humidity, Max	85 % RH

Connection

Cable Cross Section	35 - 185 mm² (Min - Max)
Connection Mode	Front Connection Extension Bar (Option) Cable Tunnel Clamp (Option) Rear Connection (Option) Plug-in UPX (Option)
Terminal Type	Bolt-Terminal
Connection Torque	7.8 - 12.7 Nm

Installation Types

Suitable for Panel Mounting	Yes
DIN rail mounting with optional adapter	No
Suitable for mounting on chassis	HC Chassis XBP Chassis XBPSS Chassis XCP Chassis
Suitable for Distribution Switchboard or MCC	Yes
Withdrawable	No
Plug-in PM Base	No
Plug-in UPX Type	No
Mounting	-

Physical

Height		165 mm
Width	**3P**	90 mm
	4P	120 mm
Depth (less toggle)		68 mm
Depth (toggle included)		92 mm
Weight	**3P**	1.5 kg
	4P	1.9 kg
Electrical Life		10000 cycles
Mechanical Life		30000 cycles

Short-Circuit Capacity

			kA Rating
			MCCB Type
		Voltage	**M**
Based On AS/NZS 60947.2 and IEC 60947-2	I_{cu} (Ultimate Breaking Capacity)	220 / 240 V AC	85
		380 / 400 V AC	65
		415 V AC	65
		440 V AC	50
		525 V AC	25
		690 V AC	-
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-
	I_{cs} (Service Breaking Capcity)	220 / 240 V AC	85
		380 / 400 V AC	36
		415 V AC	36
		440V AC	25
		525 V AC	22
		690V AC	-
		1000 V AC	-
		1100 V AC	-
		125 V DC	-
		250 V DC	-

Trip Unit

Over Current Protection Function	Yes
Trip Unit Protection Type	Thermal Magnetic CB with Type AC Residual Current Trip (ELCB)
Rated Temperature	50 °C

General Accessories

Auxiliary Switches	Yes
Alarm Switch	Yes
Shunt Trip	Yes
Under Voltage Trip	Yes
Handle Operators	Yes
Motor Operator	Yes
Mechanical Interlock	No
Mechanical Interlock - rear walking beam	No
Locking Devices	Yes
Terminal Covers	Yes
Interpole Barriers	Yes
External Panel Display	No

MCCBs

ELCB Operating Characteristics – ZS Earth Leakage Circuit Breakers

Circuit Breakers with Integral Residual Current Protection (CBRs) are the ultimate safeguards against the hazards of earth leakage.

The TemBreak 2 CBR range is available in 2 frame sizes, 125 A and 250 A. Interrupting capacities of 65 kA are offered in 3 and 4 poles versions with adjustable thermal and fixed magnetic protection characteristics. Model sizes range from 20 A to 250 A versions.

ZS125 or ZS250 showing remote trip leads RT1 and RT2

ZS 125 A and 250 A Models

The ZS earth leakage MCCB from Terasaki offers machine or personnel protection within a standard 125 A, 160 / 250 A MCCB frame size.

The full functionality of a standard thermal-magnetic overload / short circuit protection MCCB is maintained.

Standard Features

- Thermal / Magnetic MCCB
- 125 A or 250 A frame
- Trip unit ratings: 12.5 A – 125 A (125 AF), 100 A – 250 A (250 AF). Fixed magnetic setting
- 65 kA fault interruption rating @ 415 AC
- Built-in dielectric disconnection test plug
- Harmonics inhibition
- Remote trip function via external wire dry contact closure (standard on ZS125 / ZS250) [1)]

Earth Leakage Features

- Switching utilisation up to 550 V AC
- Suitable for use at 40 / 50 / 60 Hz (except 3 A @ 40 Hz)
- 3 or 4 pole types
- Yellow ground fault TRIP indication flag
- Grey TEST button
- Green 'Power ON' LED
- Adjustable thermal characteristic dial setting from 63 - 100 % of I_R
- Adjustable earth leakage ranges: 30 mA, 100 mA, 300 mA, 500 mA, 1 A, 3 A
- Trip time selection: 0, 60, 200, 400, 700 mS or NT (No Trip)
- 30 mA earth leakage setting defaults to instantaneous tripping and trips in less the 300 ms as per AS/NZS standard requirements
- Type "A" - suitable for AC and residual pulsating DC currents

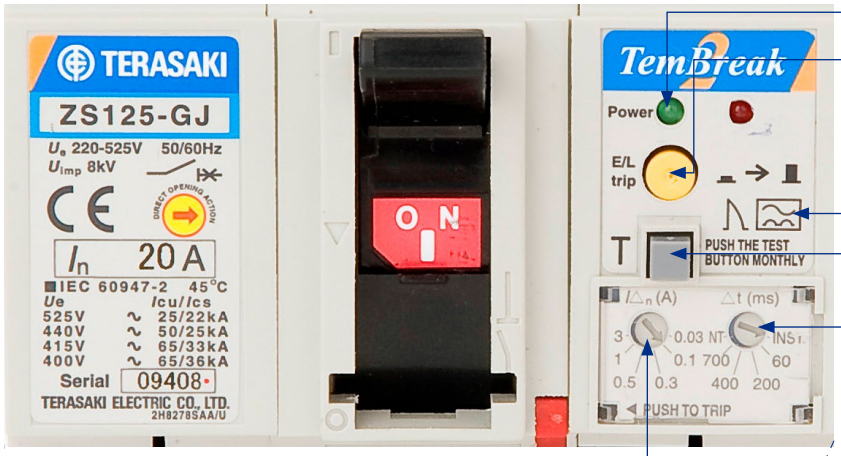
Options and Fitting

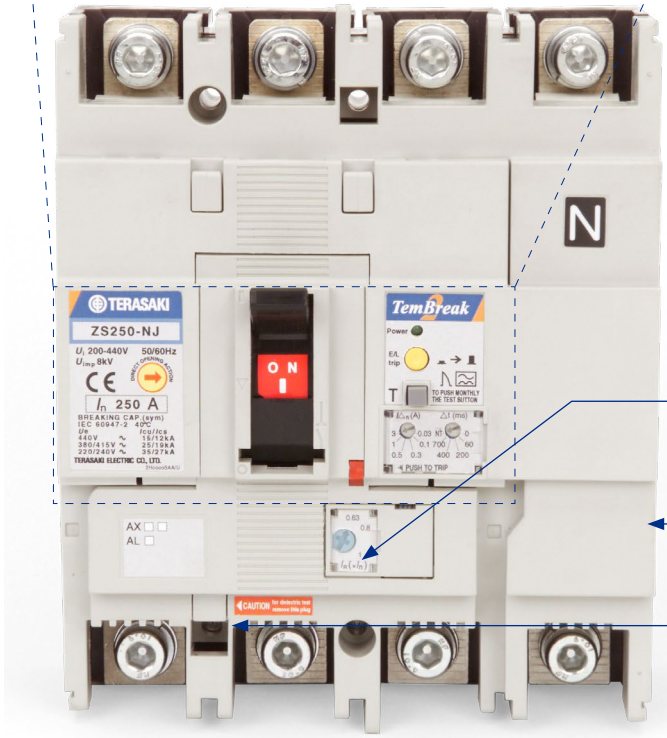
- T2M1166CBA: Trip control module with: Pre-trip alarm and Cause of trip output, remote trip function
- Accepts T2AX / T2AL aux/alarm switches
- Fits to XAP, XAB, XCP chassis
- Seal available for sealing the E / L dial setting area of the MCCB. E.g. @ 30 mA
- Captive padlock attachment that includes a dial sealing feature

Notes

1) The remote trip function includes two 700 mm wires (RT1 and RT2) coming from the side of the ELCB. The ELCB will trip via dry contact closure of the two wires using a pushbutton or relay etc. The tripping of the ELCB is performed by the earth leakage module trip function being activated, which trips the ZS ELCB. Where remote trip and the associiated wires are not required, the wires can be either coiled safety for future use, or cut off, by lifting the ELCB cover and cutting the wires where they are connected to the EL electronic module.

ELCB Operating Characteristics – ZS125 / ZS250 Earth Leakage CB





Voltage presence LED

Trip indicator. The yellow button pops up to the indicate tripping due to residual current. When the breaker is reset, the button will retract

Type A. Tripping is ensured for residual sinusoidal AC in the presence of residual pulsating DC

Test button. Press the button to test the residual current detection and tripping system

Adjustable time delay for residual current protection. Setting include zero and non-trip (NT)

Adjustable residual current tripping thresholds. 30 mA, 100 mA, 300 mA, 500 mA, 1000 mA and 3000 mA

Adjustable overload protection I_R can be set between 63% and 100% of I_N

Switched or unswitched Neutral pole types stocked

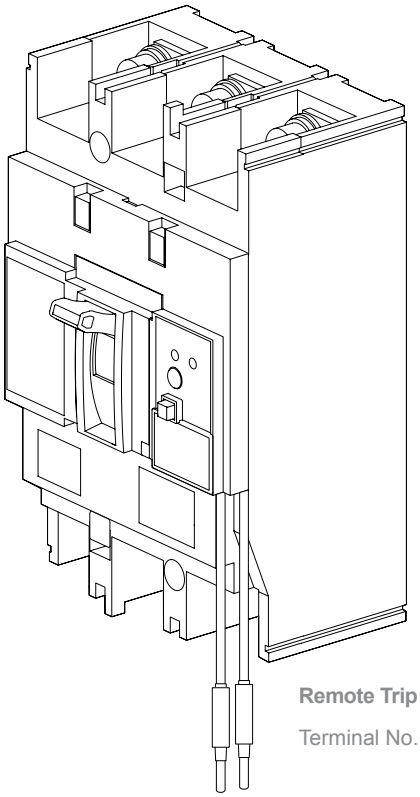
Dielectric test device. Remove the plug to allow dielectric testing to be done with the ELCB closed (ON)

TBPro(ELCB-ZS)_dOPCH-S02

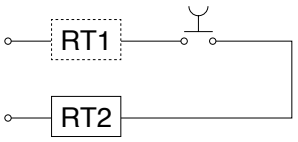
Remote trip feature: standard for 125 / 250 A ELCBs

Remote Trip operation

The RT (2-wire) standard feature on ZS 125 / 250 ELCBs is an easy to use means of remote tripping the ELCB, via dry contact closure, of the 2 wires. The RT feature uses the EL module in the ZS ELCB to trip the ELCB.



Connecting Diagram



Remote Trip

Terminal No. RT1 RT2

Note

The RT feature is not considered a “test” of the ZS ELCB, as the RT does not test the ELCBs internal ZCTs. Only by pressing the ELCBs “TEST” button is a complete test performed, as this tests the full current path within the ELCB.

Refer next page for the option of using an external pushbutton and resistor to perform a remote test of a ZS ELCB.

If the remote trip feature is not required, the user can leave the wires unconnected and coiled for possible future use, or they can be cut off if the feature will never be required.

MCCB Operating Characteristics – Thermal Magnetic and Electronic

TCU - Trip Control Unit

T2M1166CBA

Earth Leakage Pre Trip Alarm with cause of trip output, and Remote Trip

The optional TCU attaches to the right side of a ZS ELCB. Power to the TCU unit is supplied by connecting directly to the EL MCCB line side terminals.

TCU Features

- Can be retrofitted to older and newer ZS ELCBs on-site by qualified personel.
- A Normally Open (N/O) maintained contact (2 A – 250 V AC) switches as a result of an earth fault, which also acts as a Pre Trip Alarm.
- The pre-trip alarm N/O contact activates at a selectable 50 % or 70 % of the selectable earth leakage setting.
- A red LED on the front of the EL MCCB, also indicates an earth leakage within the system.
- A tamper-free transparent cover is available for sealing the setting area of the TCU.
- Remote trip facility (RT), to allow remote tripping of the EL MCCB.
- Down Voltage Trip function which is similar to a UVT. Unlike a UVT, the ELCB can be switched back to ON without power restoration.

TBPro(ELCB-ZS)_dOPCH-S04

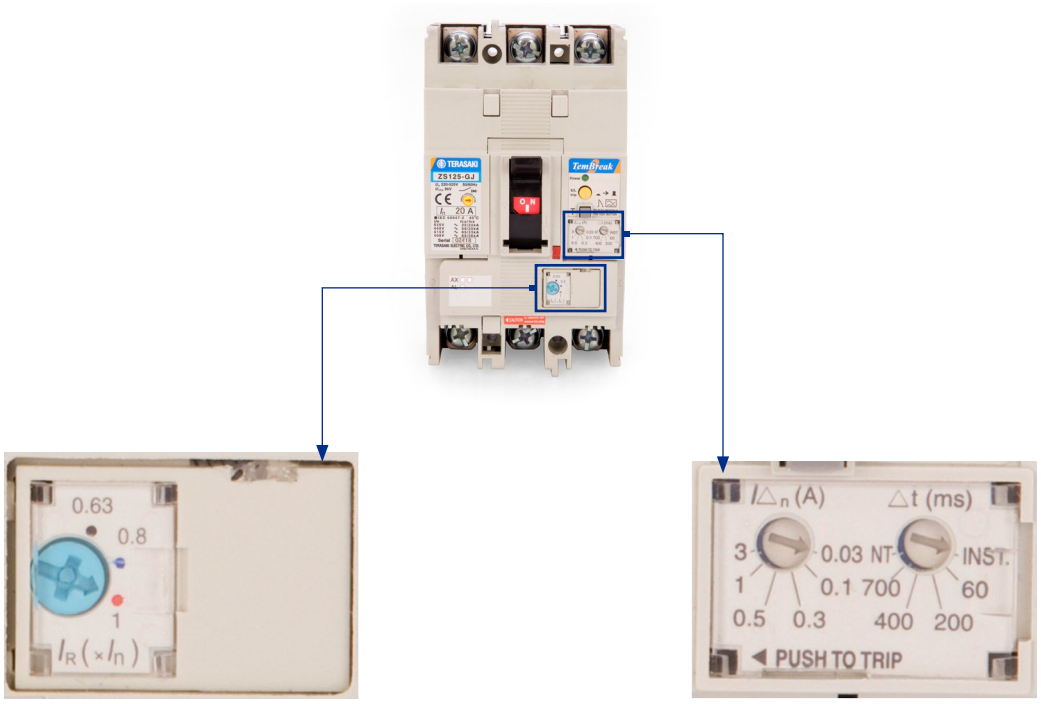
Above
Trip control unit
T2M1166CBA

Below
Close-up of the TCU setting facia

Notes
3 and 4 pole ZS ELCBs are same width as standard MCCBs. If the optional TCU module is added, the overall width of the ELCB + TCU combination is increased by 25 mm.

For outline dimensions of MCCBs with a TCU fitted, refer to the previous ordering pages.

ELCB Operating Characteristics – ZS125 / ZS250 Earth Leakage CB



TBPro(ELCB-ZS)_dOPCH-S05

IΔn is the adjustable tripping threshold for residual current (earth leakage) protection. It can be set between 30 mA and 3 A. Available settings are shown below.

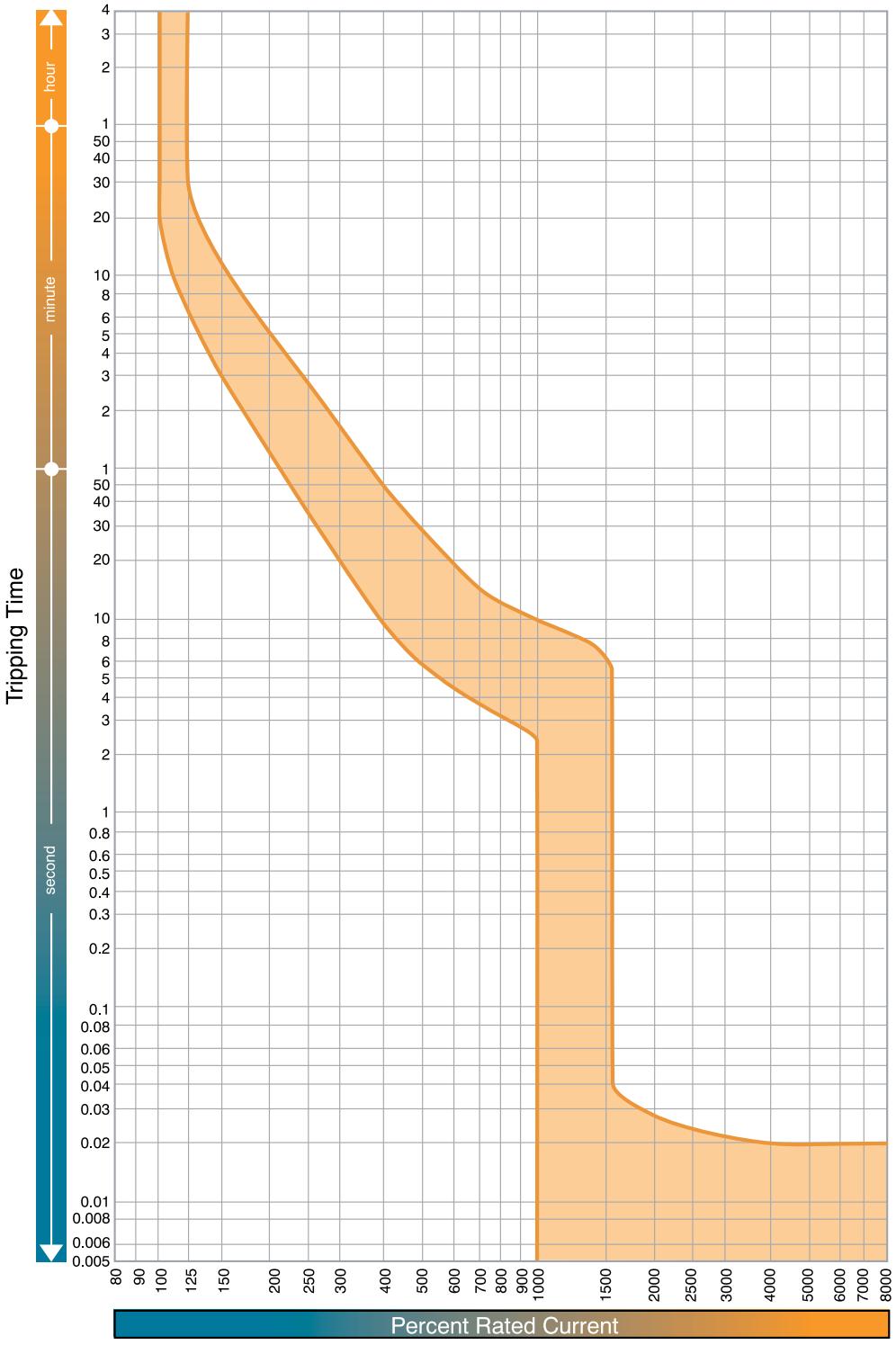
The dial 'Δt (ms)' is a time delay which is introduced to the residual current (earth leakage) protection characteristic. Available settings are shown below. The dial can also be set to INST (max. actual tripping time is 40 ms) or NT (No Trip - tripping time = ∞). The maximum breaking time at each setting is shown in brackets in the table below. Note that when IΔn (A) is set at 30 mA, Δt (ms) defaults to tripping within 300 ms or less.

I_R is the adjustable tripping threshold for overload protection. It can be set between 0.63 and 1.0 times I_n ratings are shown below.

I_R is the tripping threshold for short-circuit protection. It is fixed at the values shown below.

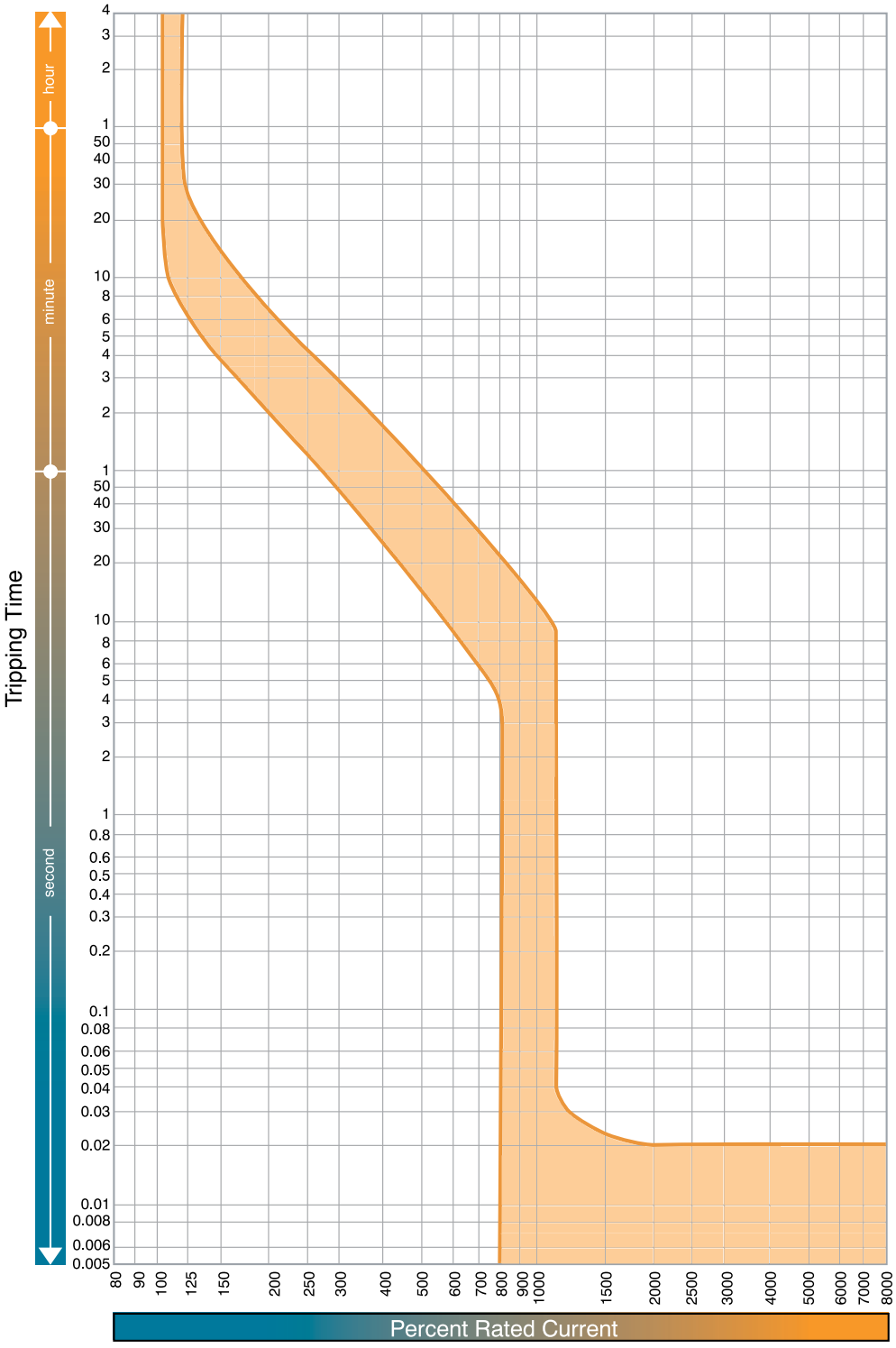
Model	IΔn (A)	Δt (ms)	I_n (A)	I_i
ZS125	0.3, 0.1, 0.3, 0.5, 1, 3	0 (40), 60 (195), 200 (365), 400 (620), 700 (950), NT (∞)	20, 32, 50, 63, 100	12 x I_n (+/- 20 %)
ZS125	0.3, 0.1, 0.3, 0.5, 1, 3	0 (40), 60 (195), 200 (365), 400 (620), 700 (950), NT (∞)	125	10 x I_n (+/- 20 %)
ZS250	0.3, 0.1, 0.3, 0.5, 1, 3	0 (40), 60 (195), 200 (365), 400 (620), 700 (950), NT (∞)	160	13 x I_n (+/- 20 %)
ZS250	0.3, 0.1, 0.3, 0.5, 1, 3	0 (40), 60 (195), 200 (365), 400 (620), 700 (950), NT (∞)	250	10 x I_n (+/- 20 %)

Time Current Characteristic Curve 160 A, ZS250M, Thermal Magnetic ELCB



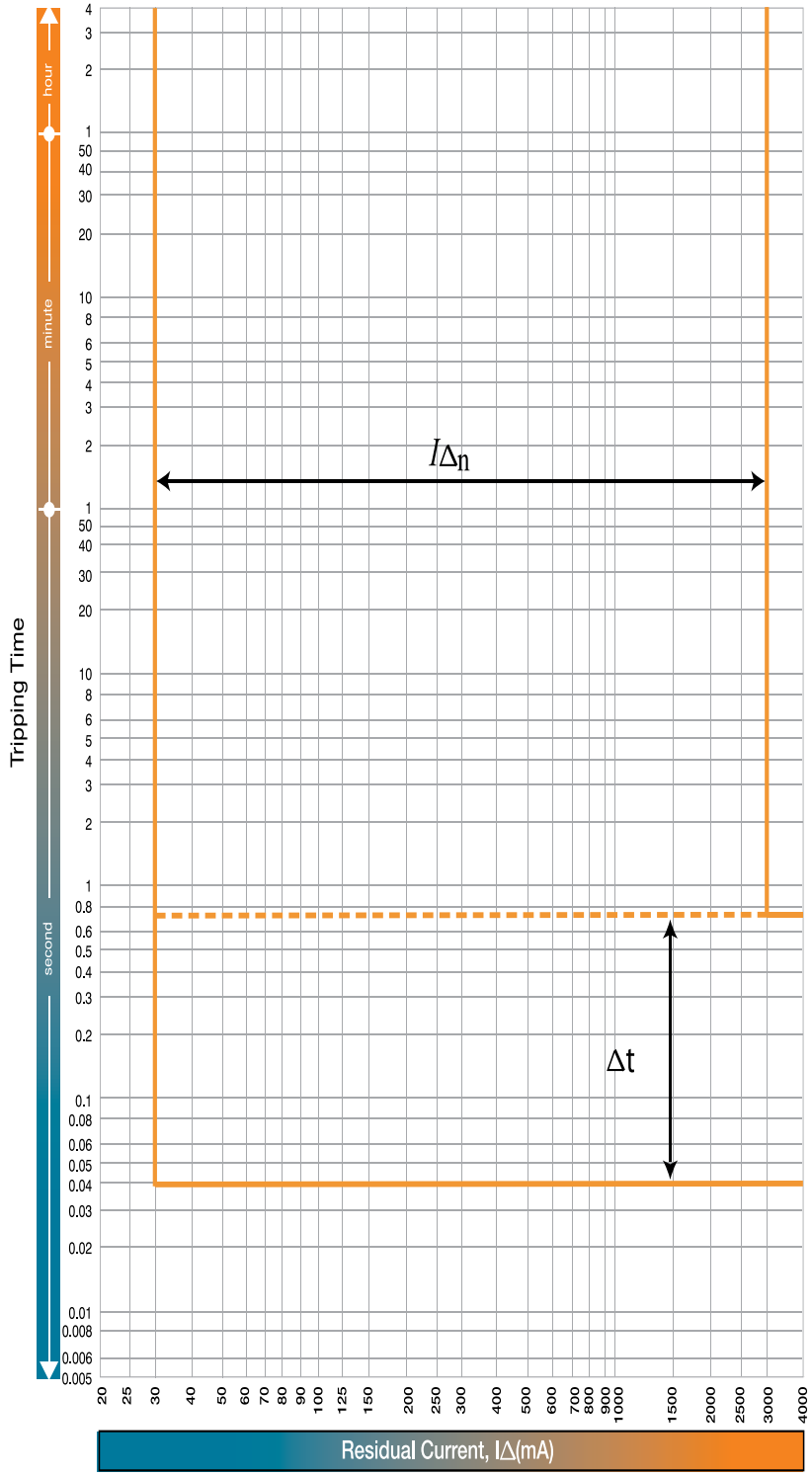
MCCBs

Time Current Characteristic Curve 250 A, ZS250M, Thermal Magnetic ELCB



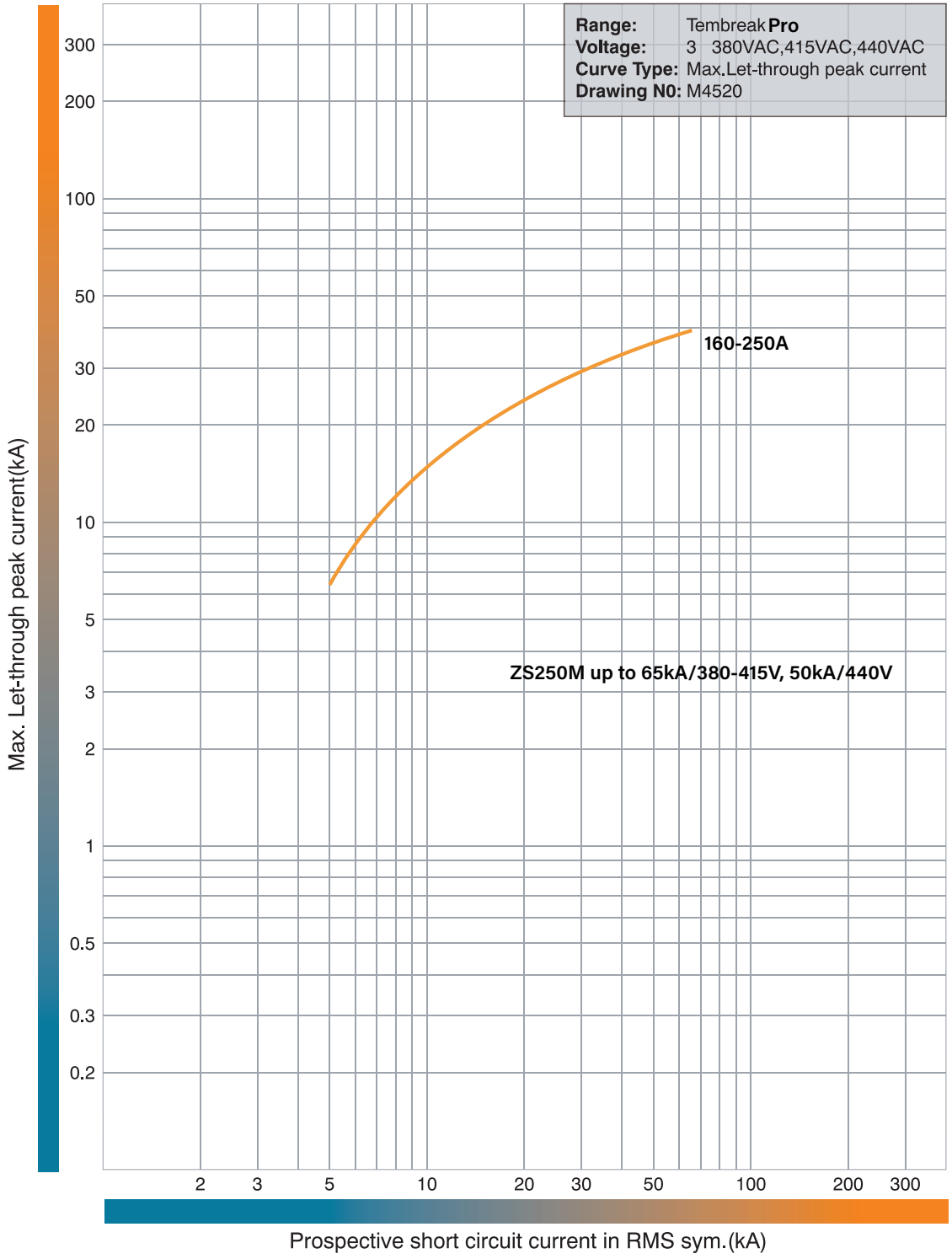
Time Current Characteristic Curve, ZS125M/ZS250M, Thermal Magnetic ELCB

Residual Current Characteristic

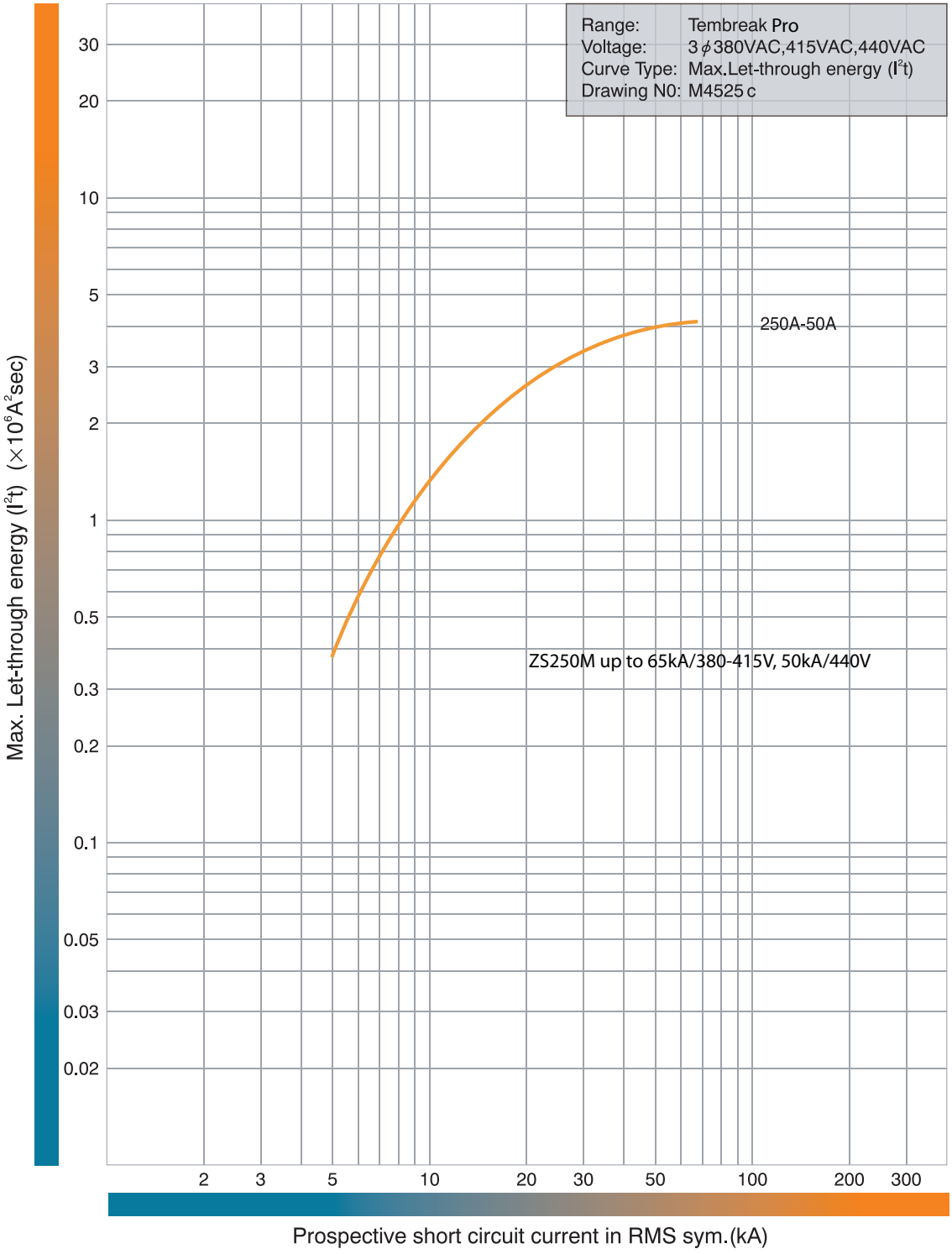


MCCBs

Let-Through Peak Current Curve, ZS250M, Thermal Magnetic ELCB

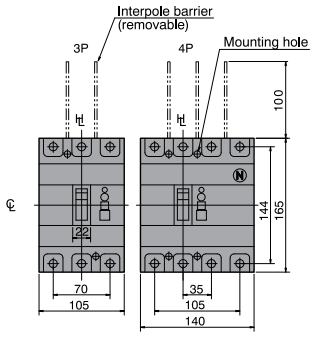


Let-Through Energy I²t Curve, ZS250M, Thermal Magnetic ELCB

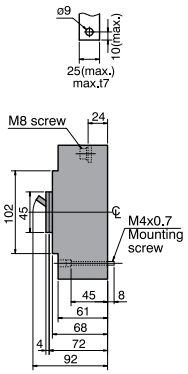


Dimensions ZS250M (mm)

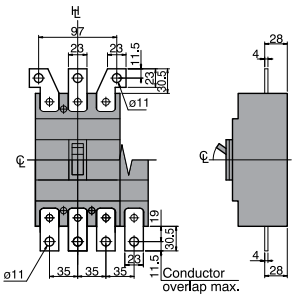
Front Connected



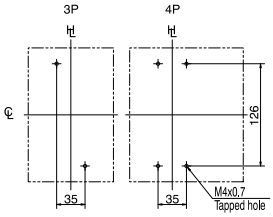
Preparation of conductor



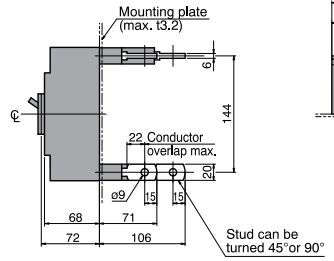
With extension bars
(optional)

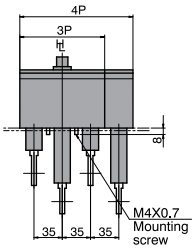


Drilling plan

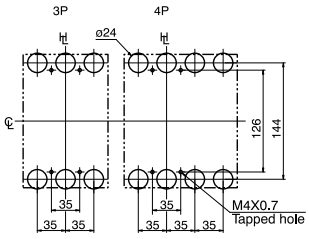


Rear Connected

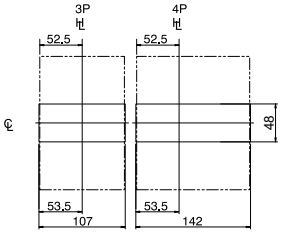




Drilling plan

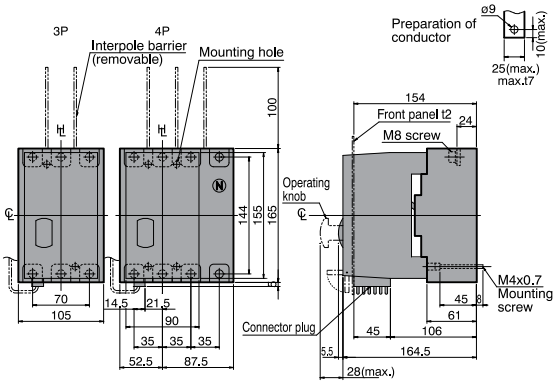


Panel cutout
(Front view)

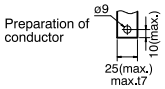


Panel cutout dimensions shown give an allowance of 1.0mm or more around the handle escutcheon.

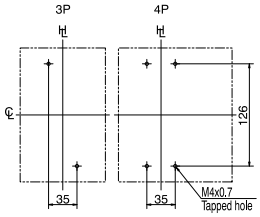
Front Connected With Motor Operator



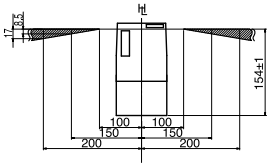
Preparation of
conductor



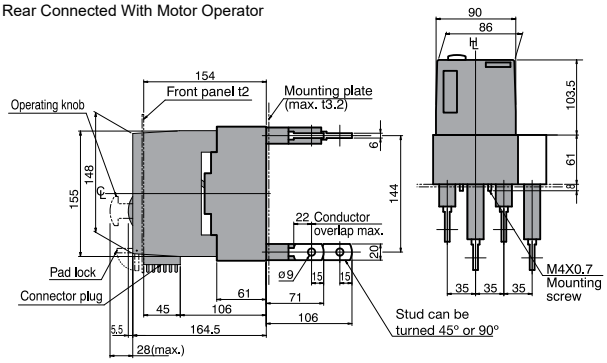
Drilling plan



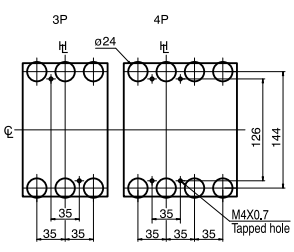
Panel hinge position (hatching area)
bottom view



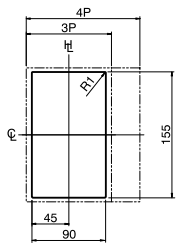
Rear Connected With Motor Operator



Drilling plan



Panel cutout
(Front view)



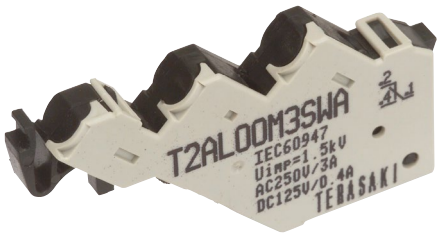
Panel cutout dimensions shown give an allowance of 1.5mm around the handle escutcheon.

ZS250 Accessories

Internal Accessories

Alarm Switches

Provides an MCCB trip output contact for external circuits



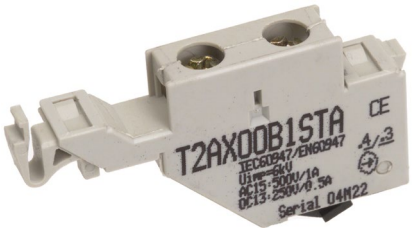
Item Description	Catalogue No.
Alarm Switch 1 C/O	T2AL00M3STA
Alarm Switch 1 C/O Wired	T2AL00M3SWA
Alarm Switch Micro-current 1 C/O	T2AL00M3RTA

Item Description	Catalogue No.
Alarm Switch Heavy Duty 1 N/O	T2AL00B1STA
Alarm Switch Heavy Duty 1 N/C	T2AL00B2STA

Auxiliary Switches

Provides an MCCB ON or OFF contact output for external circuits

Item Description	Catalogue No.
Auxiliary Switch 1 C/O	T2AX00M3STA
Auxiliary Switch 1 C/O Wired	T2AX00M3SWA
Auxiliary Switch Micro-current 1 C/O	T2AX00M3RTA



Item Description	Catalogue No.
Auxiliary Switch Heavy Duty 1 N/O	T2AX00B1STA
Auxiliary Switch Heavy Duty 1 N/C	T2AX00B2STA

Shunt Trips

Allows an external device to trip an MCCB by energising a shunt trip coil

Item Description	Catalogue No.
Shunt Trip Coil 110 V AC	T2SH00A10TA
Shunt Trip Coil 240 V AC	T2SH00A20TA
Shunt Trip Coil 415 V AC	T2SH00A40TA
Shunt Trip Coil 24 V DC	T2SH00D02TA
Shunt Trip Coil 48 V DC	T2SH00D04TA
Shunt Trip Coil 110 V DC	T2SH00D10TA
Shunt Trip Coil 230 V DC	T2SH00D20TA

Undervoltage Trips

Instantaneous

When a UVT coil detects a voltage drop its coil unlatches and trips the MCCB

Item Description	Catalogue No.
Under Voltage Trip Coil Instant 110 V AC	T2UV00A10NTA
Under Voltage Trip Coil Instant 240 V AC	T2UV00A20NTA
Under Voltage Trip Coil Instant 415 V AC	T2UV00A40NTA
Under Voltage Trip Coil Instant 24 V DC	T2UV00D02NTA
Under Voltage Trip Coil Instant 48 V DC	T2UV00D04NTA
Under Voltage Trip Coil Instant 110 V DC	T2UV00D10NTA
Under Voltage Trip Coil Instant 230 V DC	T2UV00D20NTA

Time Delay Operation (500 ms)

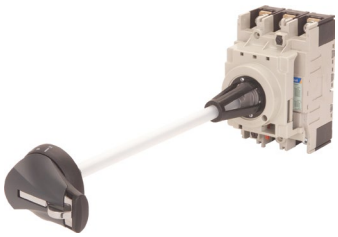
When a UVT coil detects a voltage drop, it trips the MCCB after an ~ 500 ms time delay

Item Description	Catalogue No.
Under Voltage Trip Coil Time Delay 110 V AC 125-630 A 3P	T2UV00A10DSA
Under Voltage Trip Coil Time Delay 200-240 V AC 125-630 A 3P	T2UV00A24DS
Under Voltage Trip Coil Time Delay 380-450 V AC 125-630 A 3P	T2UV00A40DS
Under Voltage Trip Coil Time Delay 24 V DC 125-630 A 3P	T2UV00D02DS
Under Voltage Trip Coil Time Delay 110 V DC 125-630 A 3P	T2UV00D10DS
Under Voltage Trip Coil Time Delay 230 V DC 125-630 A 3P	T2UV00D24DS

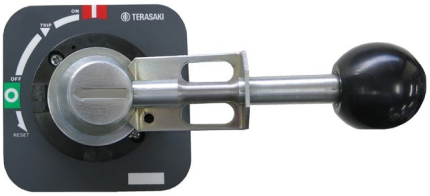
Operating External Accessories

Handle - Compact

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation



Item Description	Catalogue No.
Door Interlocking Extension Grey, IP55 handle + 356mm shaft	TPHS25SR5GM
Door Interlocking Extension Red/Yellow, IP55 handle + 356mm shaft	TPHS25SR5RM



Item Description	Catalogue No.
Door Interlocking Extension IP65 Metal Handle/Shaft Kit 160/250 AF	T2HP25R6ME

Handle - Direct Mount

Door mount or internal mount fixed depth handle for MCCB ON OFF RESET operation

Item Description	Catalogue No.
Operating Handle Direct Mounting IP54 Rated Black Handle 160/250 AF	T2HB25UR5BN
Operating Handle Direct Mounting IP54 Rated Red Handle 160/250 AF	T2HB25UR5RN

Handle - Square

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation

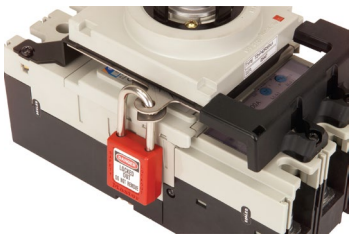
Item Description	Catalogue No.
Door Interlocking Extension IP65 Black Handle/Shaft Kit 160/250 AF	T2HP25R6BN
Door Interlocking Extension IP65 Red Handle/Shaft Kit 160/250 AF	T2HP25R6RN

Handle Options

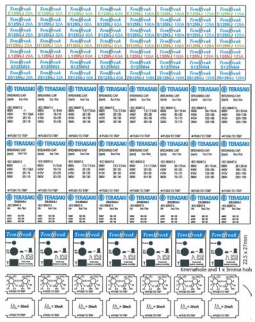
A panel mount surrounding plate with ON OFF TRIP markings for use with HS handles

Item Description	Catalogue No.
HS Handle Escutcheon Plate 100 mm	T2HSESC100

Item Description	Catalogue No.
HS 90 mm Shaft 125/250 AF	T2HS250SHAFT



Item Description	Catalogue No.
Door Interlocking Padlck Device/Handle Mechanism 125/250 AF	T2HP25PALK



Item Description	Catalogue No.
Door Interlocking Label Sheet 250 AF	T25CAPLAB

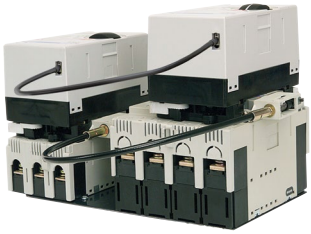
Motor Operator

Allows remote switching an of MCCB ON or OFF or resetting tripped MCCBs

Item Description	Catalogue No.
Motor Operator 110 V AC 160/250AF	T2MC25A10NB
Motor Operator 240 V AC 160/250 AF	T2MC25A24NB
Motor Operator 24 V DC 160/250 AF	T2MC25D02NB
Motor Operator 48 V DC 160/250 AF	T2MC25D04NB
Motor Operator 110 V DC 160/250 AF	T2MC25D10NB

Motor Operator Accessories

Provides electrical interlocking between 2 motors to prevent simultaneous operation



Item Description	Catalogue No.
Motor Interlock Cable (0.5 m) Between T2MC12 and T2MC25/25L	T2MM25L05A
Motor Interlock Cable (1.5 m) Between T2MC12 and T2MC25/25L	T2MM25L15A

Item Description	Catalogue No.
Motor Interlock Cable (0.6 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S06A
Motor Interlock Cable (2.1 m) Between T2MC40/80 and T2MC12/25/25L	T2MM40S21A

Locking and Interlocking Accessories

Toggle Locks

Captive

Permanently attached, padlock accessory for locking an MCCB OFF. ON lock field option

Item Description	Catalogue No.
Captive Toggle Lock 250 AF	T2HL25CAP

Non-captive

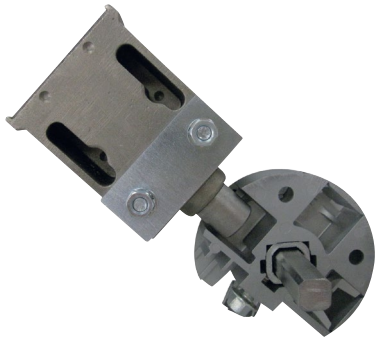
Not permanently attached to toggle, padlockable accessory to lock an MCCB OFF or ON

Item Description	Catalogue No.
Non Captive Toggle Lock 125/250 AF	T2HL25B

Trapped Key Interlocks

Cam

A set of 2 cams for HS extension shaft handles being used with trapped key switches



Item Description	Catalogue No.
Cam Kit To Suit S and HS Handles	14997702

Mounted

Trapped key switch door mounting hardware.

Item Description	Catalogue No.
Trapped Key Interlocks Mounting Brackets and Hardware	TKNHPCOMP

Key

A key used with a trapped key interlock switch. Keys ordered separately from switch

Item Description	Catalogue No.
Prosafe, standard key code, A	440TAKEYE100A
Prosafe, standard key code, B	440TAKEYE100B
Prosafe, standard key code, C	440TAKEYE100C
Prosafe, standard key code, D	440TAKEYE100D
Prosafe, standard key code, E	440TAKEYE100E
Prosafe, standard key code, F	440TAKEYE100F
Prosafe, standard key code, G	440TAKEYE100G
Prosafe, standard key code, H	440TAKEYE100H
Prosafe, Standard Key Code I	440TAKEYE100I
Prosafe, Standard Key Code J	440TAKEYE100J
Prosafe, Standard Key Code K	440TAKEYE100K
Prosafe, Standard Key Code L	440TAKEYE100L
Prosafe, Standard Key Code M	440TAKEYE100M
Prosafe, Standard Key Code N	440TAKEYE100N
Prosafe, standard key code, AA	440TAKEYE10AA
Prosafe, standard key code, AB	440TAKEYE10AB
Prosafe, standard key code, BA	440TAKEYE10BA
Prosafe, standard key code, BB	440TAKEYE10BB
Prosafe, standard key code, CA	440TAKEYE10CA
Prosafe, standard key code, DA	440TAKEYE10DA
Prosafe, standard key code, EA	440TAKEYE10EA
Prosafe, Standard Key	440TAKEYE10X

Lock

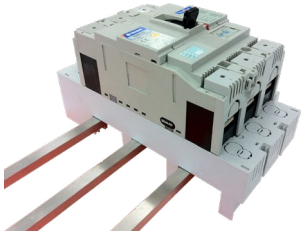
Keyed switches provide interlocking via 2 or more locks, using only 1 or more keys

Item Description	Catalogue No.
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100B
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100C
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100D
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100E
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100F
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100G
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE100I
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10AA
Bolt Interlock - Single Key Mechanical, Standard Key Code Labeling, Key Trapped, Retracted: 0 mm, Extended: 14 mm	440TMSBLE10BA
Single key shot bolt lock, key not included	440TMSBLE10X

Installation External Accessories

60 mm ACS Busbar System

A base which allows an MCCBs line side to be plugged onto 60 mm 3 phase ACS busbar



Item Description	Catalogue No.
60 mm ACS Busbar System MCCB Mounting Adapter 225 A Rated, for 3 Pole MCCBs	32592

Extension Bars

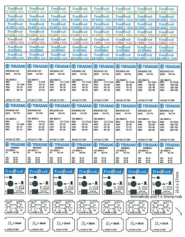
Add-on bus bars, allow more or larger conductor connector to an MCCB

Item Description	Catalogue No.
Attached Bars,1 Pole, Set of 2, Straight Bars, B160, B250, ZS250	T2FB251BA

Item Description	Catalogue No.
Attached Bars, 3 Pole, Set of 3, Straight Bars, B160, B250, ZS250	T2FB25L3SH
Attached Bars, 4 Pole, Set of 4, Straight Bars, B160, B250, ZS250	T2FB25L4SH
Attached Bars, 3 Pole, Set of 3, Flanged Bars, B160, B250, ZS250	T2FB25L3WH
Attached Bars, 4 Pole, Set of 4, Flanged Bars, B160, B250, ZS250	T2FB25L4WH

Identification Labels

Door mount handle using a variable depth shaft for MCCB ON OFF RESET operation



Item Description	Catalogue No.
Door Interlocking Label Sheet 250 AF	T25CAPLAB

Interpole Barriers

Provides internal isolation between in MCCB power pole terminal area between phases

Item Description	Catalogue No.
Interpole Barrier (Set of 2) 250 AF	T2BA25L3SH

Pole Fillers

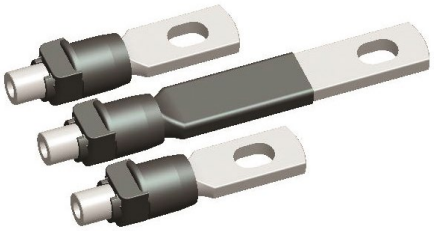
A clip in filler 9 mm wide for vacant pole positions for 46 mm DIN cut-outs

Item Description	Catalogue No.
DIN Pole Filler (1 Strip Of 4 Poles, 8 X 9 mm Segments)	DTPF
DIN Pole Filler (1 Strip Of 12 Poles, 24 X 9 mm Segments)	DTPF12

Item Description	Catalogue No.
Pole Filler 35 mm Wide for 250 AF MCCBs with a 104 mm Cut-out	XAB3

Rear Connection Studs

Allows MCCB main connections to be made at the rear of the MCCB



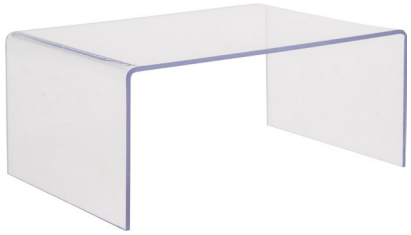
Item Description	Catalogue No.
Rear Connect Terminal Studs 3 Pole Kit, Set of 6 Studs 250 AF	T2RP253SA
Rear Connect Terminal Studs 4 Pole Kit, Set of 8 Studs 250 AF	T2RP254SA

Terminal Covers

Extended Terminal Covers Front Connected

Provides front, side and internal isolation between poles in the MCCB power terminal area

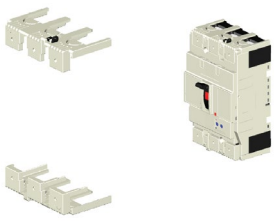
Item Description	Catalogue No.
3 Pole Single Cover, 55 mm Long, Narrow Cover 250 AF	T2CF253SLHP
4 Pole Single Cover, 55 mm Long, Narrow Cover 250 AF	T2CF254SLHP



Item Description	Catalogue No.
3-4 Pole Single Cover, 100 mm Long, Wide “Top Hat, B160, B250	T2CF253WC

Flush Terminal Covers

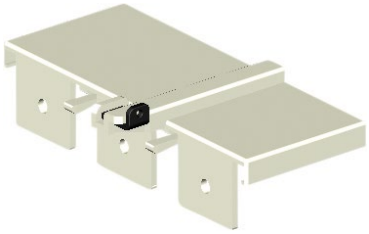
Provides front finger touch protection with MCCBs used with tunnel terminals or chassis



Item Description	Catalogue No.
3 Pole Single Cover	T2CS253SHP
4 Pole Single Cover	T2CS254SHP
1 Pole, Set of Two (2) Covers	T2CS161SP
3 Pole, Set of Two (2) Covers	T2CS253SNP
4 Pole, Set of Two (2) Covers	T2CS254SNP

Rear Connect Terminal Covers

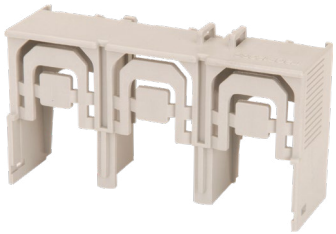
Provides front finger touch protection with MCCBs used with rear terminals and HC chassis



Item Description	Catalogue No.
4 Pole Single Cover, B160, B250, ZS250	T2CR253SHP
3 Pole Single Cover, B160, B250, ZS251	T2CR254SHP
4 Pole Cover, Set of 2, B160, B250, ZS250	T2CR253SNP
3 Pole Cover, Set of 2, B160, B250, ZS251	T2CR254SNP

Short Terminal Covers Front Connect

Provides front, side and internal isolation between poles in the MCCB power terminal area



Item Description	Catalogue No.
3 Pole Single Cover, 30 mm Long, Narrow Cover 250 AF	T2CF253SSHP
4 Pole Single Cover, 30 mm Long, Narrow Cover 250 AF	T2CF254SSHP
3 Pole Set of Two (2) Covers, 30 mm Long, Narrow Cover 250 AF	T2CF253SSNP
4 Pole Set of Two (2) Covers, 30 mm Long, Narrow Cover 250 AF	T2CF254SSNP

Tunnel Clamp Terminals

Allows cable to be terminated directly to the MCCB and clamped for good connectivity

Item Description	Catalogue No.
Tunnel Terminal 4 Pole, Set of 8 Clamps, 35 – 120 mm², B160, B250, ZS250	T2FW25L3B
Tunnel Terminal 3 Pole, Set of 6 Clamps, 35 – 120 mm², B160, B250, ZS250	T2FW25L4B

Item Description	Catalogue No.
Terminal Cover Locking Clip	T2CF00L

Trip Control Unit

ZS125/250 side mount module, with EL trip output, Remote Trip, PTA output, Down Voltage Trip function.

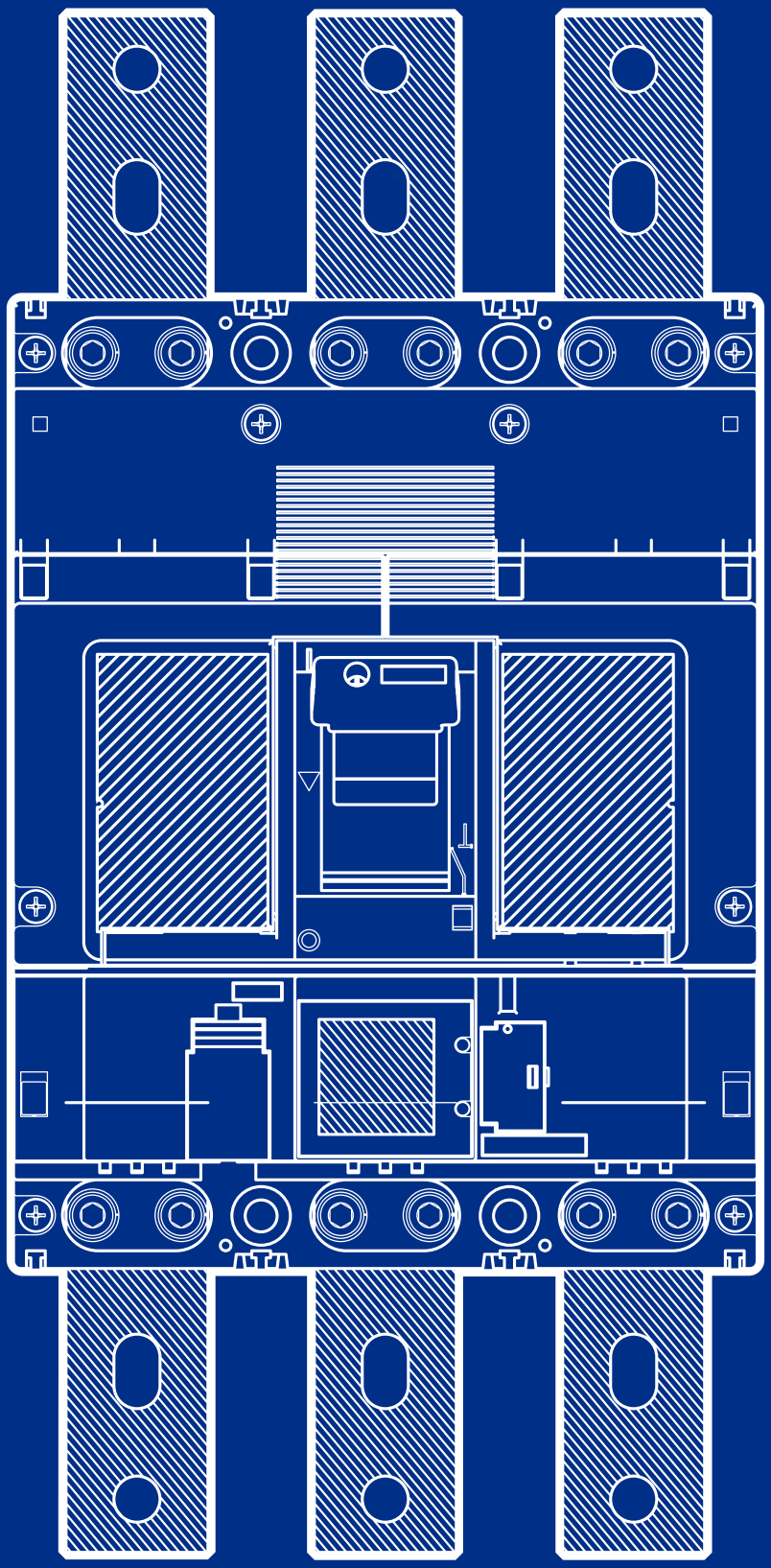
Item Description	Catalogue No.
ZS Trip Test EL Ind Module	T2M1166CBA

A

B

Y

Z



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