

Overtemperature monitoring

Fibreoptic temperature sensing
for high and low voltage
industrial applications

SMART Distribution



nhp.com.au | nhpnz.co.nz

1300 647 647 | 0800 647 647

sales@nhp.com.au | sales@nhp-nz.com

Switchboard overheating

Overheating is one of the largest causes of failure in critical switchboards components. That's why modern circuit protection is provided by digital, microprocessor based overcurrent relays which operate by measuring current flow and not heat. Therefore, abnormal heating caused by the loose connection of bolts, ventilation failure or worn contacts are usually left undetected by conventional circuit protection devices. This abnormal heating can lead to premature failure of switchgear and also constitutes a potential fire hazard.

Real-time switchgear and busbar thermal monitoring

Products from OSENSA's FTX-910/610/310-PWR+R range are installed within a switchboard control cubicle and are connected directly to the busbar or switchgear terminals by a non-conductive fibreoptic probe that is terminated with a special lug. The temperature is measured by pulsing a laser down a fibreoptic cable causing a phosphor dot within the lug to glow. The module then measures the decay rate of the phosphor glow and calculates the temperature. Reporting of measured temperatures in real-time for preventative maintenance is achieved over the integrated Modbus RTU interface. Control systems like BAS, BMS, SCADA can readily interrogate the FTX module.

The fibreoptic temperature transmitters provide continuous real-time temperature monitoring of switchgear, busbars and other low and medium voltage electrical equipment rated up to 38kV. Each transmitter accepts from three to nine optical fibre sensor inputs. These transmitters are powered by 12~24VDC supply and include isolated RS-485 serial connectivity over industry standard Modbus RTU protocol. Multiple transmitters can be connected in series on a standard 35mm DIN rail with power and RS-485 communication supplied by the five-pin TBUS connector. Also included are two programmable 2A relays for over-temperature alarms.

Product specifications

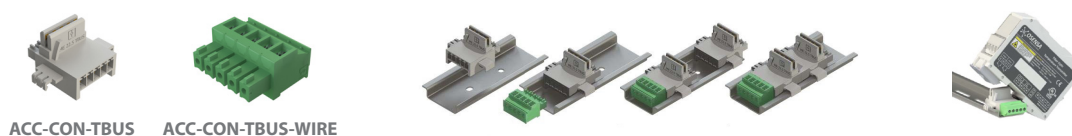
Model name	Model name FTX-910/610/310-PWR+R
Number of channels	9/6/3
Analogue output	None
Measurement range	-40°C to +200°C
Resolution	0.1°C
System accuracy	±1.0°C
Update rate	10 Hz per channel
Communication protocol	Modbus RTU, half duplex
Digital interface	Isolated RS-485
Status indication	3 color flashing and solid LEDs
Operating humidity	0 to 90% RH (non-condensing)
Operating environment	-40°C to +65°C
Power	12-24 VDC (2.5W max)
Dimensions	70mm tall x 22.5mm wide x 90mm long
Mounting	35mm DIN rail
Configuration software	OSENSAView or OSENSAView Pro
Weight	90g
Relay outputs	Rated current: 2A Max switching voltage: 250 VAC, 220 VDC Type: SPST-NO
Product compliance	CE c UL US



FTX-910-PWR+R
temperature transmitter

Quick product selection steps

	Description	Cat. no.	Ordering requirements
Step 1:	How many critical points do you need to monitor temperature?		
Temperature transmitter base unit	3 channel transmitter, RS-485	FTX-310-PWR+R	Order one or multiple base units up to requirement number of points (channels).
	6 channel transmitter, RS-485	FTX-610-PWR+R	
	9 channel transmitter, RS-485	FTX-910-PWR+R	
Step 2:	Installation accessories for DIN rail and Modbus connections		
Modbus connections	DIN rail TBUS connector	ACC-CON-TBUS	1x ACC-CON-TBUS per base unit plus
	TBUS terminal connector	ACC-CON-TBUS-WIRE	1x ACC-CON-TBUS-WIRE per DIN rail installation



Note: Initial Modbus configuration is complete using free software downloaded from Osensa. Thereafter, monitoring can be via SCADA, BMS, PLC, local PC or HMI. Please see the user manual or contact NHP for further information.

Step 3:	What is the required probe cable length?		
Temperature probe	Fibreoptic temperature probe for reliable direct contact temperature sensing	PRB-910-05M-NC-L-TP2 (5m)	Order 1x 5m or 10m probes for each monitoring point
		PRB-910-10M-NC-L-TP2 (10m)	



Step 4:	What is the mounting procedure for the probe end?		
Connector ring for probe tip mounting	Connector ring	ACC-CONN-RING-0.375IN 10.1mm hole	Order 1x connector ring for each probe
		ACC-CONN-RING-0.5IN 13.1mm hole	



Step 5:	Optional: Will you be monitoring sites locally?		
Monitoring system	Touch panel display and programmable user interface	HMI-001	Order one of each per installation site as required
		HMI-001-RELAY	



For further information please go to www.osensa.com/products



nhp.com.au
1300 647 647
sales@nhp.com.au

nhpnz.co.nz
0800 647 647
sales@nhp-nz.com

NHP Electrical Engineering Products

A.B.N. 84 004 304 812

© COPYRIGHT NHP 2022

NHP70BCH 12/22