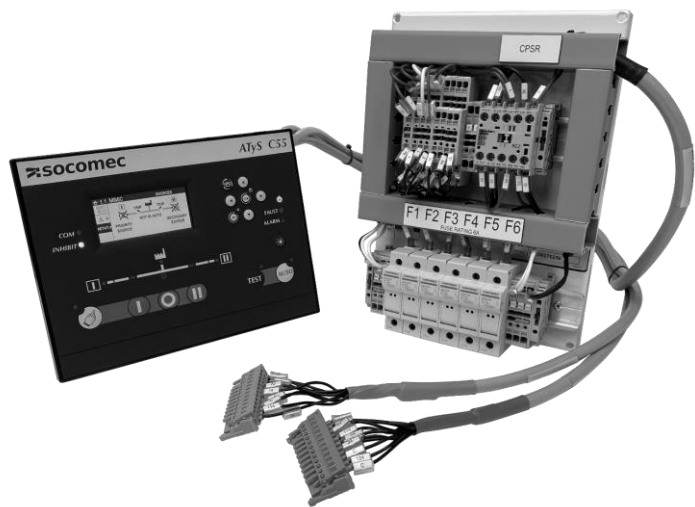
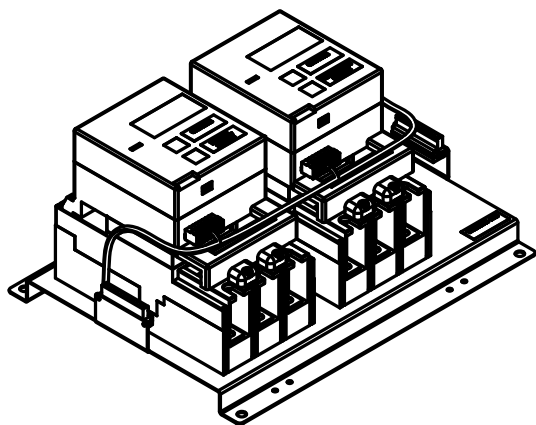




INSTALLATION MANUAL



Cat No: ATYSCxxCIP
For NHP MCCB BTS up to 1600A



Product Specifications	
ATYSC55CIP	ATyS C55 Transfer Switch Control Interface for NHP TB2 and TBP BTS
ATYSC65CIP	ATyS C65 Transfer Switch Control Interface for NHP TB2 and TBP BTS



**WARNING:**

Risk of electrocution, burns or injury to persons and / or damage to equipment.

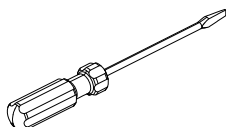
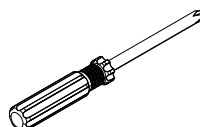
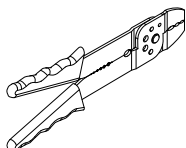
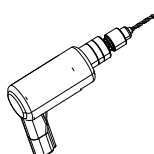
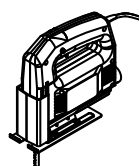
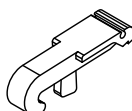
This Installation Manual is intended for personnel trained in the installation and commissioning of this product. For further details refer to the product instruction manual for the C55 & C65 and refer NHP documentation.

**ATTENTION:**

- This product must always be installed and commissioned by qualified and approved personnel.
- Maintenance and servicing operations should be performed by trained and authorized personnel.
- Do not handle any control or power cables connected to the product when voltage may be, or may become present on the product, directly through the mains or indirectly through external circuits.
- Always use an appropriate voltage detection device to confirm the absence of voltage.
- Ensure that no metal objects are allowed to fall in the cabinet (risk of electrical arcing).

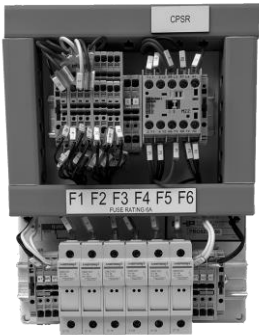
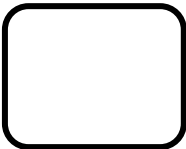


Risk of damaging the device in case the product is dropped or damaged in any way it is recommended to replace the complete product. Installation standards must be respected.

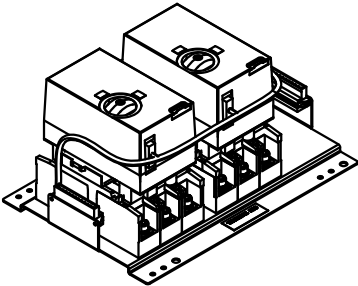
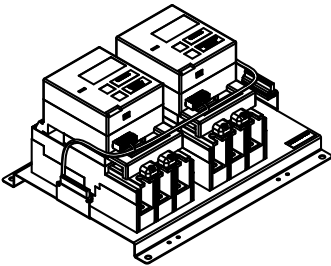
Tools Required (not supplied)**T1****Screwdriver Flathead****T2****Terminal Screwdriver****T3****Screwdriver Phillips Ph #1****T4****Wire Strip &
Crimp Tool****T5****Drill****T6****Applicable
Cutting Tool****T7****Ruler or
Tape Measure****Tools Required (supplied)****T8****Wire Terminating Tool**

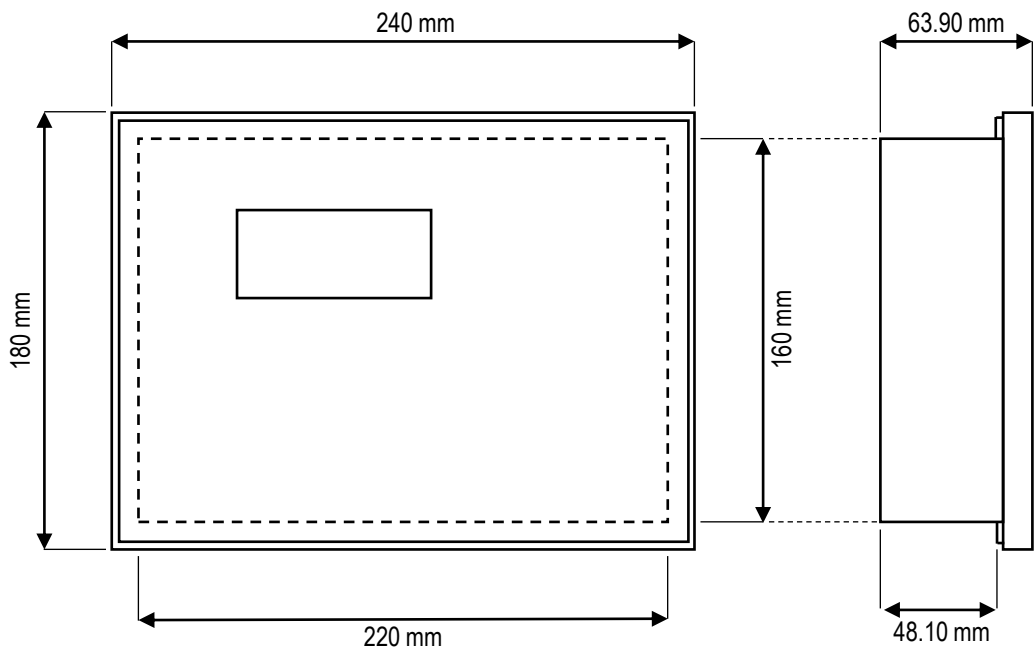
Items

Supplied Items

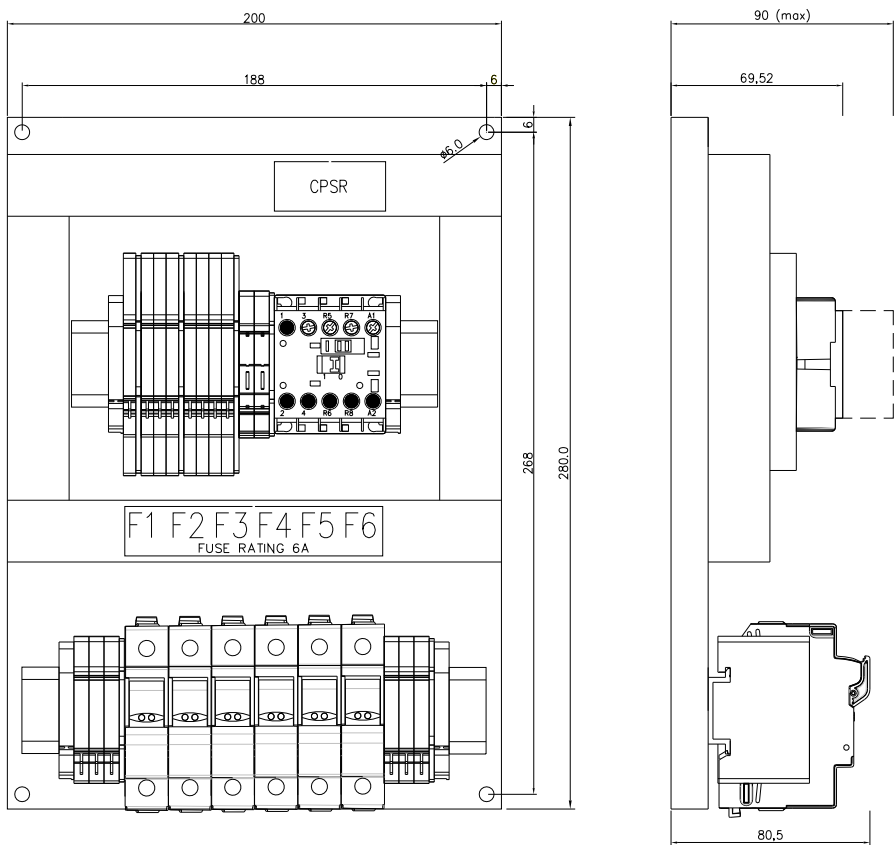
Part Number	Controller	Control Interface Panel	CIP Looms & Plugs	IP65 Gasket
ATYSC55CIP	x 1 - C55 - 16000055 	 x 1 Not available separately	 2.5-meter Looms ATYSLOOMA, B, C x 1 each Loom Looms are prewired to CIP and controller plugs	Not Supplied 16090001
ATYSC65CIP	x 1 - C65 - 16000065 			 X 1 16090001

Required Items Not Supplied

Part Number	
BTSxxxxxxx	 x 1 or  x 1 NHP Manufactured Basic Transfer Switch TB2/TBP up to 1600A Scan QR Code for more information  TemBreak PRO SCAN ME



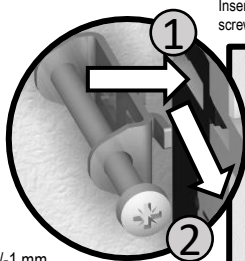
Control Interface Panel



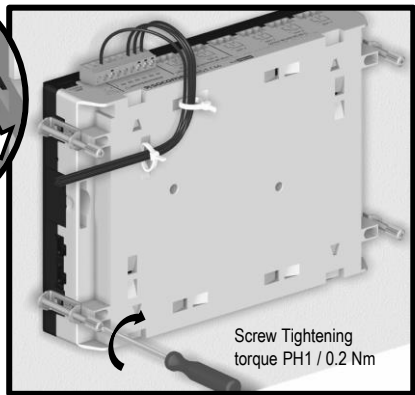
Dimensions not to scale

Mounting

Remove all connectors then place the ATS controller inside the door cut-out and clip the door mounting screws into the side of the controller (2 screws on each side). It is important to respect the tightening torque indicated below and follow good engineering practise when installing the ATS controller.

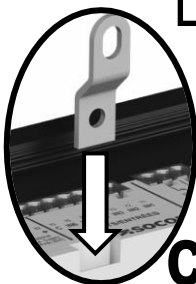


Push back up to lock in place.



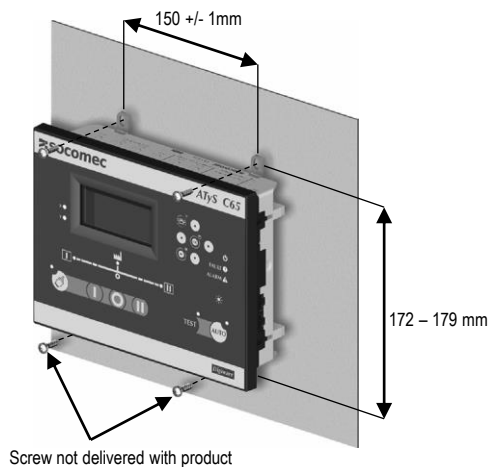
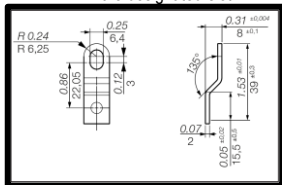
OR

Base

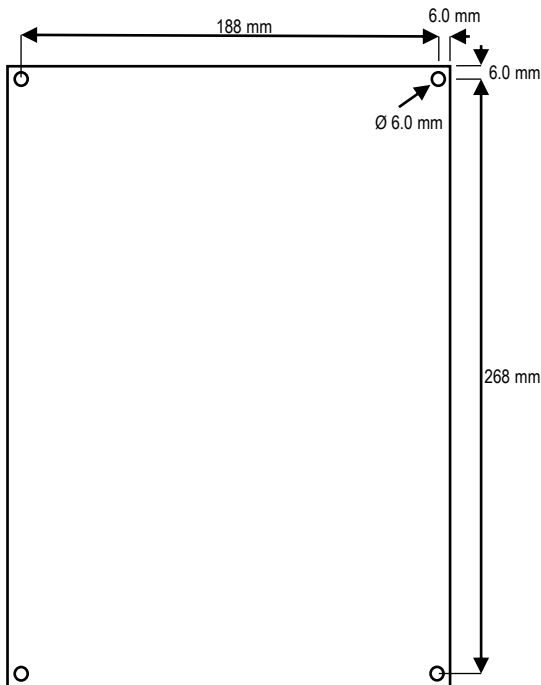


click!

Clip the mounting feet in the designated slot



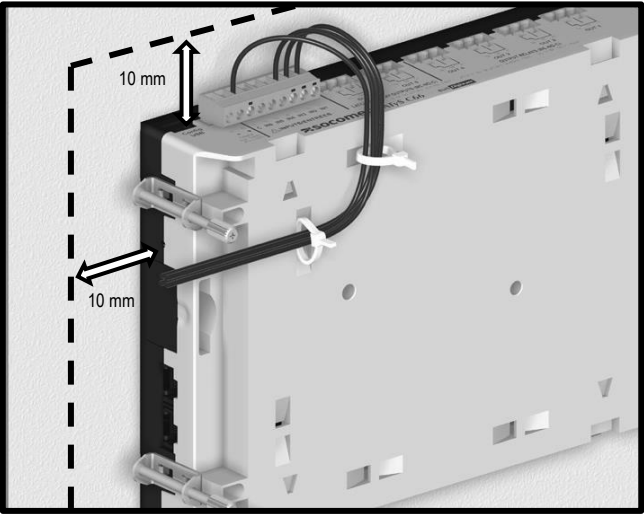
Control Interface Panel



Installer to select appropriate fasters to suit size 6mm mounting holes of unit to mounting material

Controller

Clearances

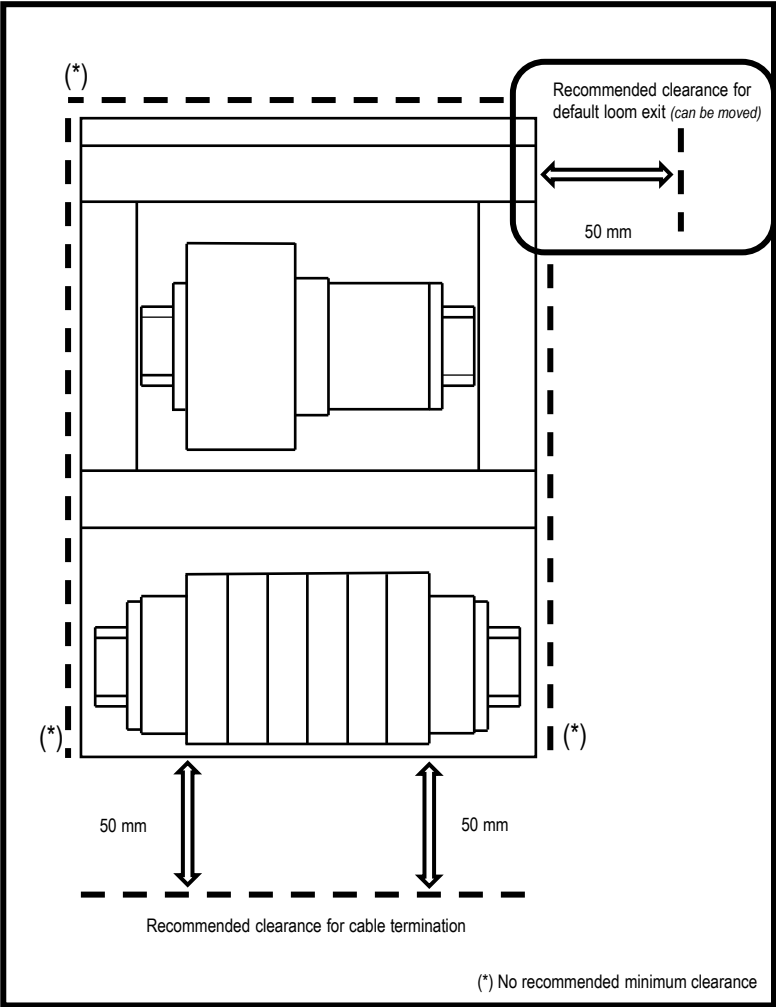


Cable must be more than 10mm away from the RTC battery cover and USB.

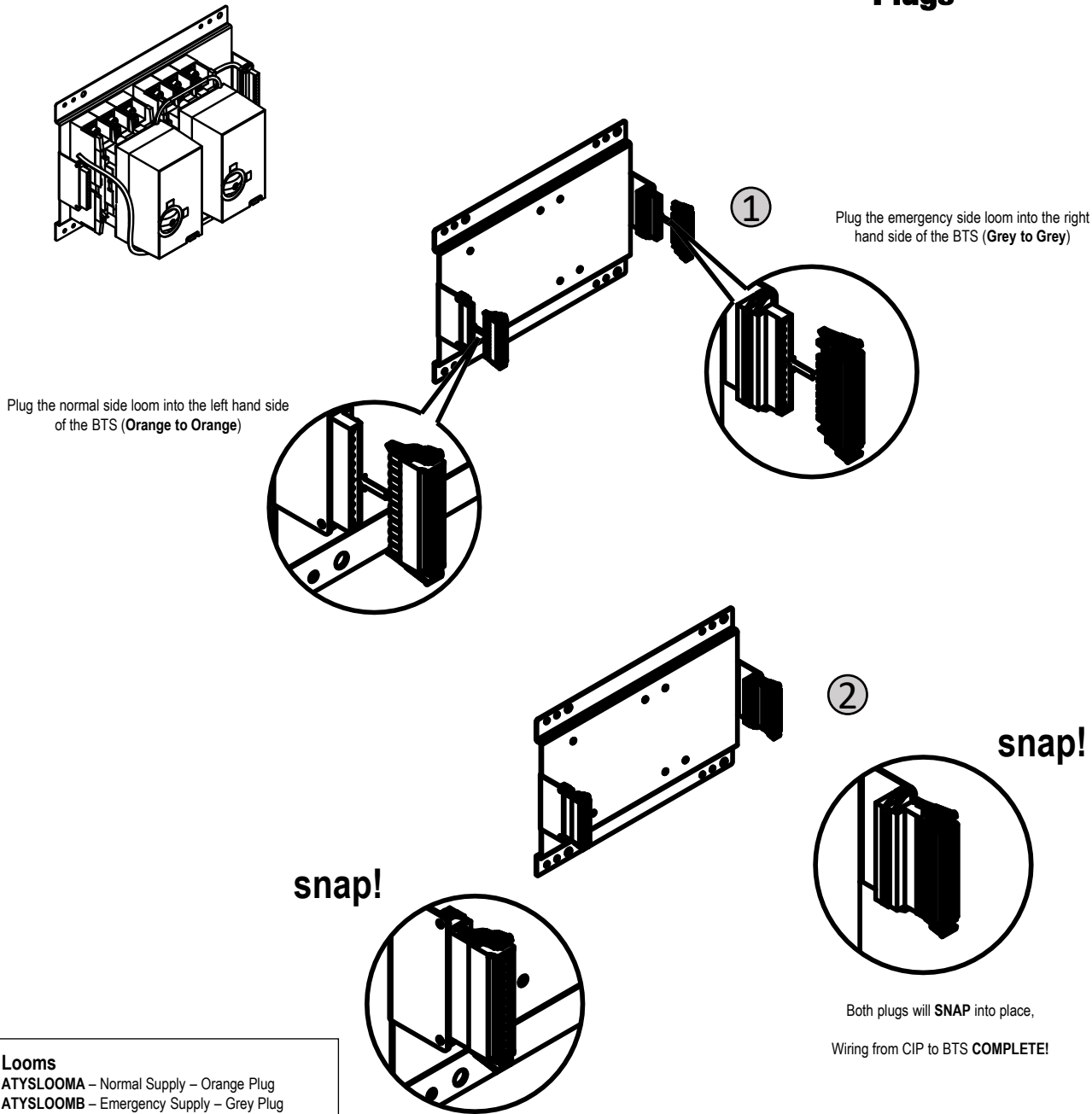
Do not drill holes above the controller after it has been mounted, to avoid swarf in terminals

Control Interface Panel

The below clearance are recommendations to allow for easy of wiring to the Control Interface Panel

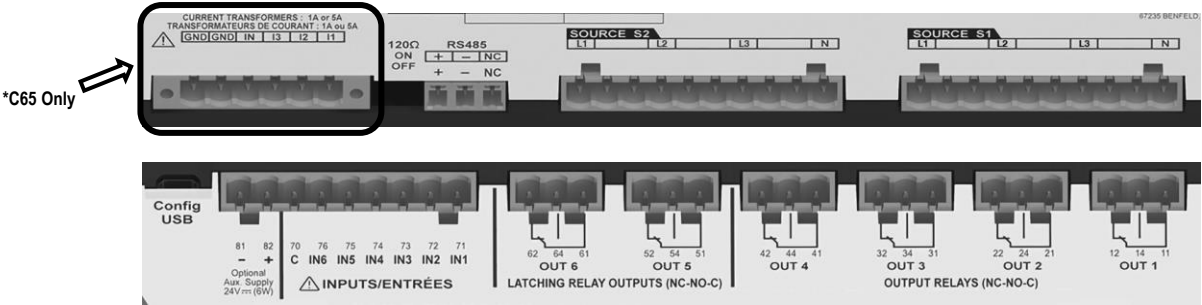


Plugs



Controller

Looms A, B, & C will be prewired to their required plugs on the Controller.
Match the plugs with there sockets on the Controller
Wiring to Controller **COMPLETE!**



*use when current sensing is required for current, power and energy measures on the C65 (1A or 5A CTs)

Fuse Wiring



Do not input > 264 VAC (line – neutral) nominal voltage to the Fuse Terminals

The C55/65 sensing terminals limits are 88 - 576 VAC, however the CPSR's coil & standard build BTS are rated for 204 – 264 VAC.

The below outlines some of the possible wiring combinations for the Control Interface Panel.

L1 and L2 are the power terminals for the ATyS C55 and C65, however when using the ATYSCxxCIP for single phase applications link N1 to 1P1, and N2 to 1P2 to power the Controller.



Do not link N1 & 1P1, and N2 & 1P2 if Line power is wired to F2 and F5 respectively.

It will result in a dead short between line and neutral

Application	Fuse Wiring	Network Setting
Single Phase Source 1 Single Phase Source 2		1P + N *N1 to 1P1 & N2 to 1P2 links required
2 Phase Source 1 2 Phase Source 2 *separate voltage version of CIP required		2P
2 Phase + N Source 1 2 Phase + N Source 2		2P + N
3 Phase Source 1 3 Phase Source 2 *separate voltage version of CIP required		3P
3 Phase + N Source 1 3 Phase + N Source 2		3P + N
3 Phase + N Source 1 Single Phase Source 2		3P + N / 1P + N *N2 to 1P2 link required
Single Phase Source 1 3 Phase + N Source 2		3P + N / 1P + N *Source Priority needs to be set to Source 2 *N1 to 1P1 link required
2 Phase + N Source 1 3 Phase + N Source 2		2P + N *Disable phase rotation check

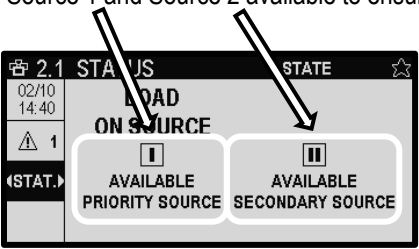
Configuration

When configuring an ATyS C55/65 it is recommended to have both Source 1 and Source 2 available to ensure settings match the required application.

When purchasing a C55 or C65 outside of the ATySCxxCIPxxxx offerings you will be promoted with the SMART Wizard configuration on first power up. As the ATySCxxCIPxxxx is tested in house at NHP manufacturing prior to despatch this Wizard would have been preformed and set to:

NHP CIP Factory Settings	
Language	English
Poles & Wires	3P+N
Nominal Voltage	415 V
Nominal Frequency	50 Hz
Phase Rotation	A – B – C
Application Type	MAIN – GEN
Source Priority	Source 1
Switch Technology	Circuit Breaker (Custom)
Tripping Action	Total Inhibition
Date Format	DD/MM/YY
Date and Time	AEDT
Modbus Settings	Baud: 38400 Stop: 1 BIT Parity: None Address: 006

Time settings do not change with daylight savings and will need to be kept up-to-date by the end user



SETUP ATyS C65	
NETWORK TYPE	3P + N
NOMINAL VOLTAGE	0420
NOMINAL FREQUENCY	50Hz
PHASE ROTATION	V1-V2-V3
PHASE ROTATION CHECK	ENABLED
...	...

APPLICATION ATyS	
SWITCH TECHNOLOGY	ATyS FT
APPLICATION TYPE	MAIN - GEN
SOURCE 1 NAME	Source 1
SOURCE 2 NAME	Source 2
SOURCE PRIORITY	SOURCE 1
...	...

Images are taken from Socomec C55/65 Manual for interface reference and don't reflect the NHP factory settings

NHP Custom Switch Technology Settings	
Input 1	BREAKER 1 CLOSED (N/O)
Input 2	BREAKER 2 CLOSED (N/O)
Input 3	BREAKER 1 TRIPPED (N/C)
Input 4	BREAKER 2 TRIPPED (N/C)

If the above settings are not used for an NHP BTS, a trip event on one source could lead to an event where the opposite source breaker will attempt to close and result in jamming of the BTS.

Input 3 and 4 must to be set in I/O settings and can't be set via Wizard or Switch Technology Settings

If you would like another configuration follow the below to get to the SMART Wizard.

Navigate to the Wizard

1.  Press the Back/Menu button

2.  Or  Navigate to Parameters Menu

3.  Press OK button to enter Parameters

4.     Enter the 1000 using the arrows and press OK button to confirm 

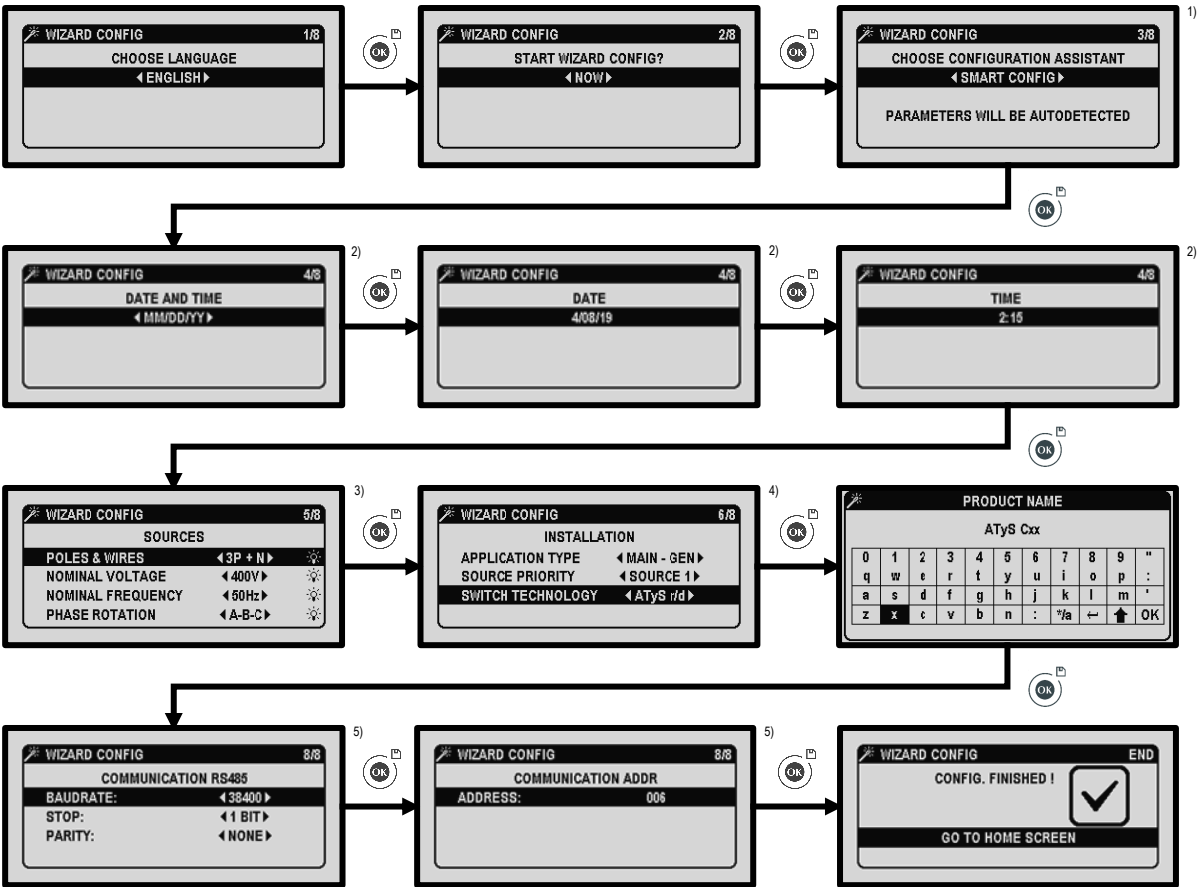
5.  Or  Navigate to Wizard Menu (Last option)

6.  Press OK button to enter Wizard



Wizard

Once you have selected to start the Wizard you will go through the following 12 windows



- 1) Smart Config and Manual Config option
- 2) Date and Time will be important for applications where the logging of events, alarms and faults is critical
- 3) If SMART Config was selected these fields will be auto filled, it is important to have both Source 1 & 2 available during the SMART Config
- 4) For use with BTS and ACBs the Switch Technology should be set to Circuit Breaker
- 5) Modbus RTU communications as standard, if not using communications proceed with the OK button

If the ATyS is still not recognising the sources please check the source OP range settings match the application requirements.

Under Main Menu – Parameters – Network

OP RANGE S1	ATyS Cxx
S1 OV FAIL (%)	115
S1 OV RESTORE (%)	110
S1 UV FAIL (%)	85
S1 UV RESTORE (%)	95
S1 UB FAIL (%)	00
...	

OP RANGE S2	ATyS Cxx
S2 OV FAIL (%)	115
S2 OV RESTORE (%)	110
S2 UV FAIL (%)	85
S2 UV RESTORE (%)	95
S2 UB FAIL (%)	00
...	

Windage generators tend to run at a higher frequency when unloaded.
As a result the **S2 OF Fail %** (Threshold) and **S2 OF RESTORE %** (Hysteresis) settings may need to be increased to allow for higher unloaded running frequency.
The frequency of the generator output should normalise once loaded.

Initial Test

As well as routine inspection it is also important to test the installation when first commissioning. The below will advise how to perform either a Test On Load (TON) or Test Off Load (TOF). TON is the recommended option however, due to site requirements at the time a TON may not be possible.

Test On Load (TON)

TEST ON LOAD / LOAD TEST: will perform a full test including all the timers and operating the switch (full cycle).

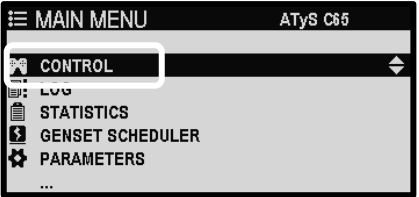
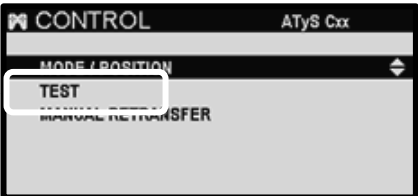
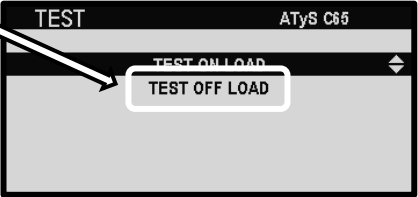
-  As default the Test Button will preform a TON.
-     Enter the 1000 using the arrows and press OK button to confirm 
-  Confirm that you wish to preform a TON
- A TON will start by sending a start-gen signal to the secondary source (if in Main-Gen), and will initiate a transfer to the secondary source.
-  To finish the TON Press the Test Button again and confirm with the OK button, once the test has ended the switch will transfer back to the priority source. 



TEST ON LOAD will cause a load supply interruption when testing the transfer function as the load will change from one source to another in open transition.

Test On Load (TOF)

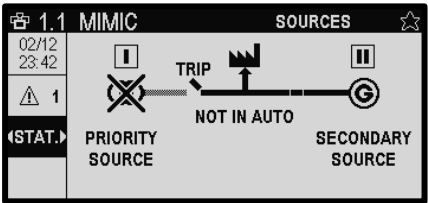
TEST OFF LOAD: Initiates starting of the genset but will not give the order to transfer to the secondary source when it becomes available.

-  Press the Back/Menu button
-   Navigate to Control and Press OK  
-     Enter the 1000 using the arrows and press OK button to confirm 
-   Navigate to Test and Press OK  
-   Navigate to Test OFF Load and Press OK  
-  Once Test is complete you can continue to run other checks or finish the Test by the Pressing Test Button

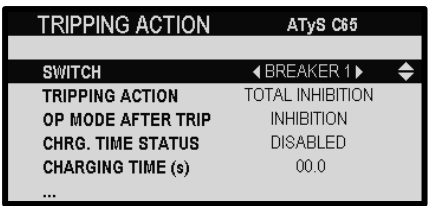
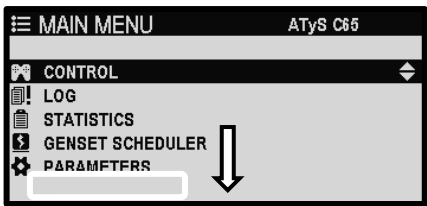
Tripping Action

In the event of a trip on breaker 1 or break 2 the controller will enter a trip inhibition mode. This mode will stop the controller from all automatic transfer functions including Gen start if controller power is still available. The controller will receive trip feedback from the breakers via inputs 3 and 4, as per NHP factory settings.

When a tripping action is detected the controller will inform the user with a pop-up with the information of which breaker has tripped.



Tripping Action settings are available under **Main Menu – Specific Functions – Tripping Action**



Below are the available settings Tripping Action, including the NHP default factory.

Setting	Option	Description
SWITCH	BREAKER 1, BREAKER 2	Selects on which breaker the configuration applies
TRIP ACTION	TRIP = SOURCE LOST, PARTIAL INHIBITION, INHIBITION, TOTAL INHIBITION	This setting defines the action to apply when the trip signal for the corresponding breaker is active.
OP MODE AFTER TRIP	PREVIOUS MODE, AUTOMATIC, PARTIAL INHIBITION, INHIBITION	This setting allows user to select which operating mode the controller will return to after the trip signal has been disabled (input has returned to inactive).
CHRG. TIME STATUS	DISABLED , WHEN OPEN, WHEN CLOSED	Allows users to configure a charging time for the breaker to give time to charge the spring mechanism before sending an order. Users can define if the spring is charged after a close order or open order. If a charging time has been configured the controller will wait the specified duration before sending another order. NB: each charging time will be overridden if an input giving the charging status of the breaker is configured.
CHARGING TIME(s)	0.00-15.00s	

Bold are NHP default factory settings for ATYSCxxCIP

Resetting a Trip Event



Resetting a trip event shall only be performed by qualified persons.

To reset a trip on the controller follow the below steps:

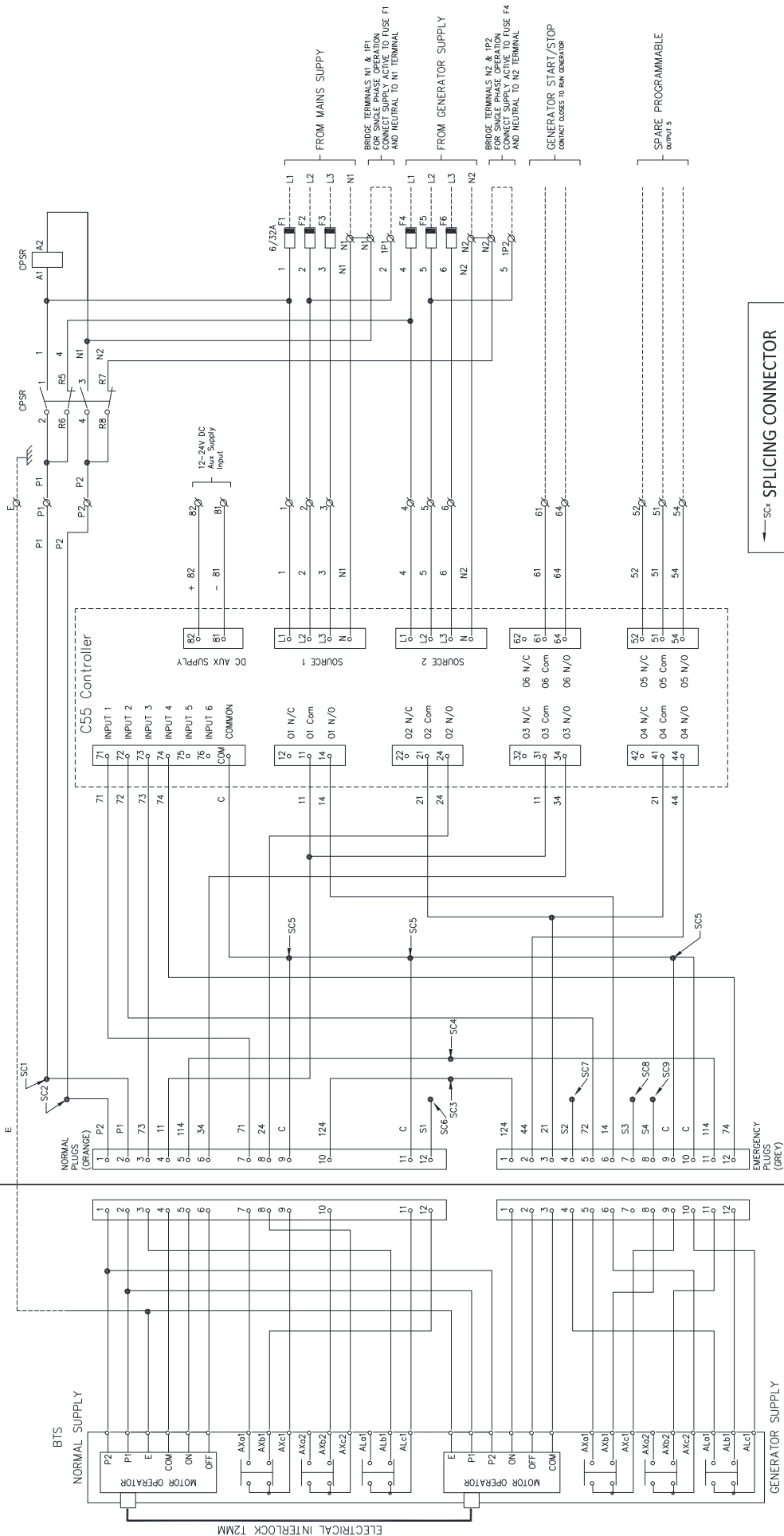
1. Ensure the trip has not caused damage to the assembly and inspect circuit breaker according to manufactures recommendations.
2. Ensure that the cause of the trip has been addressed.
3. Resetting or replacing of the circuit breaker
4. Clear any faults/warning on the controller's interface
5. Select the operation mode using Auto or Manual mode buttons. (operator code will be required)

ATYSC55CIP **ATYSC65CIP Wiring**

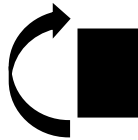
Up to 1000A BTS

AUTOMATIC TRANSFER SWITCH INTERFACE & CONTROL

BASIC TRANSFER SWITCH



SC SPlicing CONNECTOR



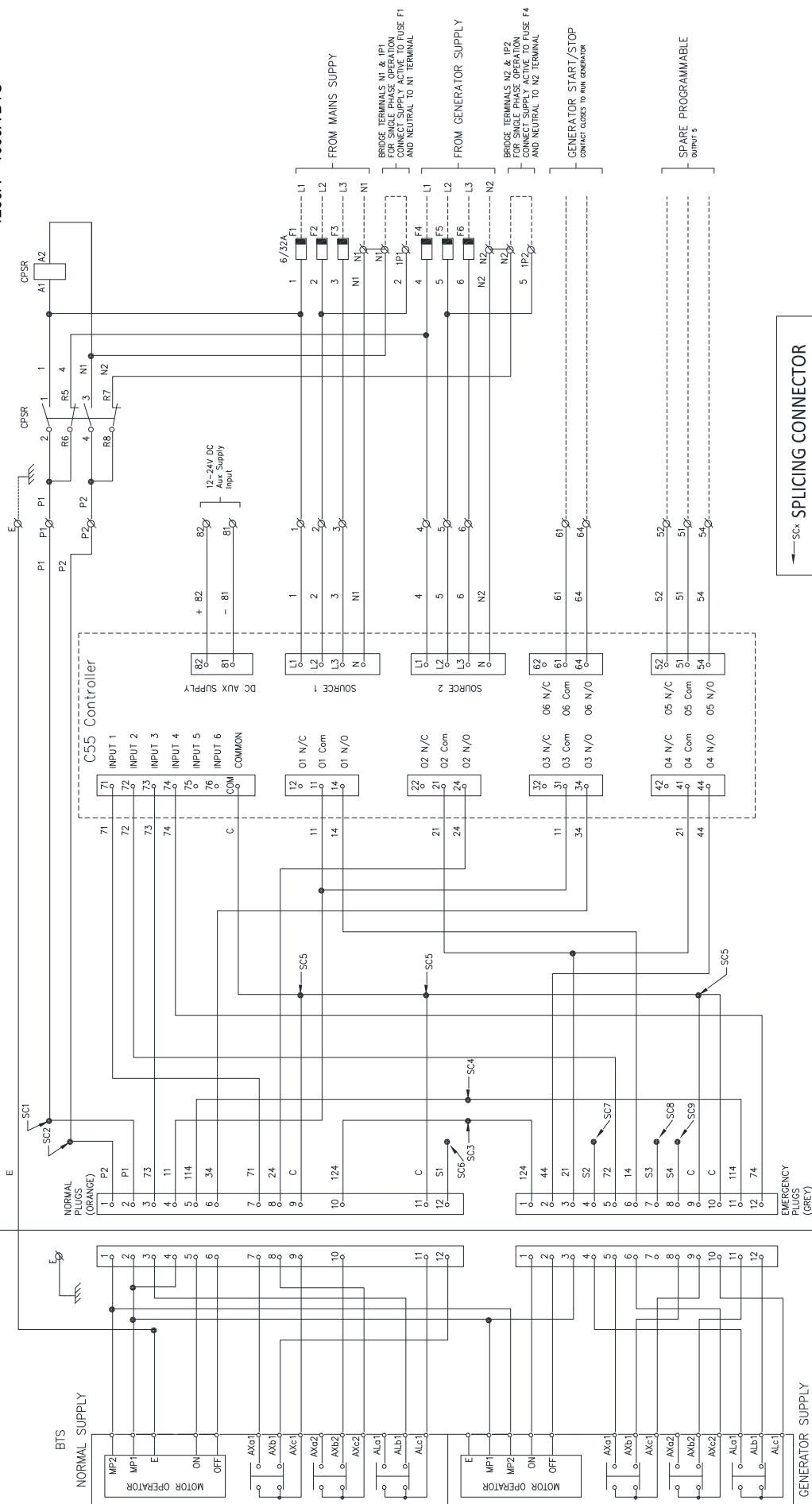
Spare cores will be available in future updates

ATYSC55CIP **ATYSC65CIP Wiring**

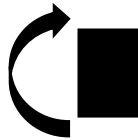
1250A – 1600A BTS

AUTOMATIC TRANSFER SWITCH INTERFACE & CONTROL

BASIC TRANSFER SWITCH



SCx SPLICING CONNECTOR



Spare cores will be available in future updates

Legend

NOTES

CONTROL CIRCUIT CABLING, WHERE NOT PART OF SUPPLIED LOOMS

415VAC SIZE; 0.75mm² C/W
BOOT END PINS
COLOURS; RED, WHITE – PHASES
& BLUE
BLACK – NEUTRAL

240VAC SIZE; 0.75mm² C/W
BOOT END PINS
COLOURS; RED – ACTIVE
BLACK – NEUTRAL

24VDC SIZE; 0.75mm² C/W
BOOT END PINS
COLOURS; ORANGE – POSITIVE
PURPLE – NEGATIVE

VOLT FREE SIZE; 0.75mm² C/W
BOOT END PINS
COLOUR; PINK

LEGEND

C55 AUTO TRANSFER SWITCH CONTROLLER

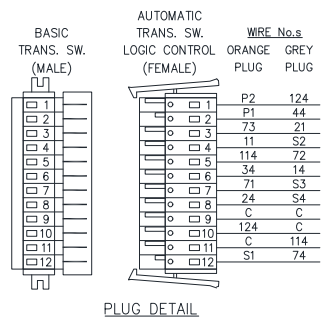
CPSR CONTROL POWER SUPPLY RELAY

F1–6 MAINS & GEN. SUPPLY FUSES

16----- TERMINAL No.16

----- FIELD WIRING BY CUSTOMER

----- WIRING BY N.H.P.



Troubleshooting

Problem Description	Possible Cause	Remedial Advice
Will not transfer to source 2	Generator frequency not back within limits	Try adjusting S2 OF Fail & S2 OF RESTORE settings
	Incorrect nominal settings	Perform a auto-detect or Wizard configuration
	Phase Rotation does not match	Perform a auto-detect or Wizard configuration Compare wiring for Source 1 and 2 at Fuse Terminals
Will not recognise source 2	Generator frequency not back within limits	Try adjusting S2 OF Fail & S2 OF RESTORE settings
	Incorrect nominal settings	Perform a auto-detect or Wizard configuration
	Phase Rotation does not match	Perform a auto-detect or Wizard configuration Compare wiring for Source 1 and 2 at Fuse Terminals
Transfer Switch not Automatically Transferring	Controller is not in Auto Mode	Press the Auto button, a Green LED should light up
		Check that the controller is no receiving a Inhibit Command
	Motors are not responding	Ensure Motors have control power
		Check to see if a Fuse has blown
		Check Motor interlock cable is not unplugged (For 160AF to 1000AF)
	Controller is Inhibited	<u>Possible Inhibit Inputs:</u> Padlock, Blocked, Emergency Sign, Inhibit S1, Inhibit S2, Inhibition, Partial Inhibition, Total Inhibition
		Check Faults in Log-Fault Log-In Progress
	Fault Present	<u>Possible Faults:</u> Unexpected Transfer, Failed to Transfer, Max operation per minutes reached, External fault, Unknown position
		Reset Faults, by hold the LAMP TEST button & reset with OK

If the above doesn't cover your problem, more information can be found in the C55/C65 User Manual found on the [Socomec website](https://www.socomec.com) or alternatively contact NHP

Passwords

Access Level	Description	Code
User	Requires no password and it permits the visualization of the parameters and values measured by the controller through the dashboards. It is the level by default and if another user stays away from the controller for more than 5 minutes with no actions, the security level will become Standard user automatically.	No password
Operator	It allows changing the operating mode, sending position orders to the switch and setting the engine exerciser parameters and alarms.	4000
Configurator	It allows to change any configuration of the controller (operating range, timers, type of control, display settings, etc)	1000
Maintenance	Is the highest level of security. It permits resetting counters, rebooting the device, changing and restoring passwords of other users and entering inspection date and telephone number	1010

These default passwords can be changed in the Parameters / Passwords menu (Configurator or Maintenance access)

