

Motorised source changeover switch 800A - 3200A



6LE007790Aa

HIC4xxE



Preliminary operations

Check the following upon delivery and after removal of the packaging:

- Packaging and contents are in good condition.
- The product reference corresponds to the order.
- Contents should include:
 - 1 x motorised changeover switch
 - 1 x emergency handle and fixing clip
 - 1 x quickstart instruction sheet.

Accessories

- Bridging bars and connection kits.
- Terminal shrouds.
- Terminal shield.
- Voltage sensing kit.
- HZI911 interface.
- Current transformers.

- Plug-in optional modules: RS485 MODBUS communication, 2 inputs/2 outputs, Ethernet communication, Ethernet communication + RS485 JBUS/MODBUS gateway, Analogue outputs, Pulse outputs.

This quick start is intended for personnel trained in the installation and commissioning of this product. For further details refer to the product instruction manual available on the hager website.

- This product must always be installed and commissioned by qualified and approved personnel.
- Maintenance and servicing operations should be performed by trained and authorised 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).

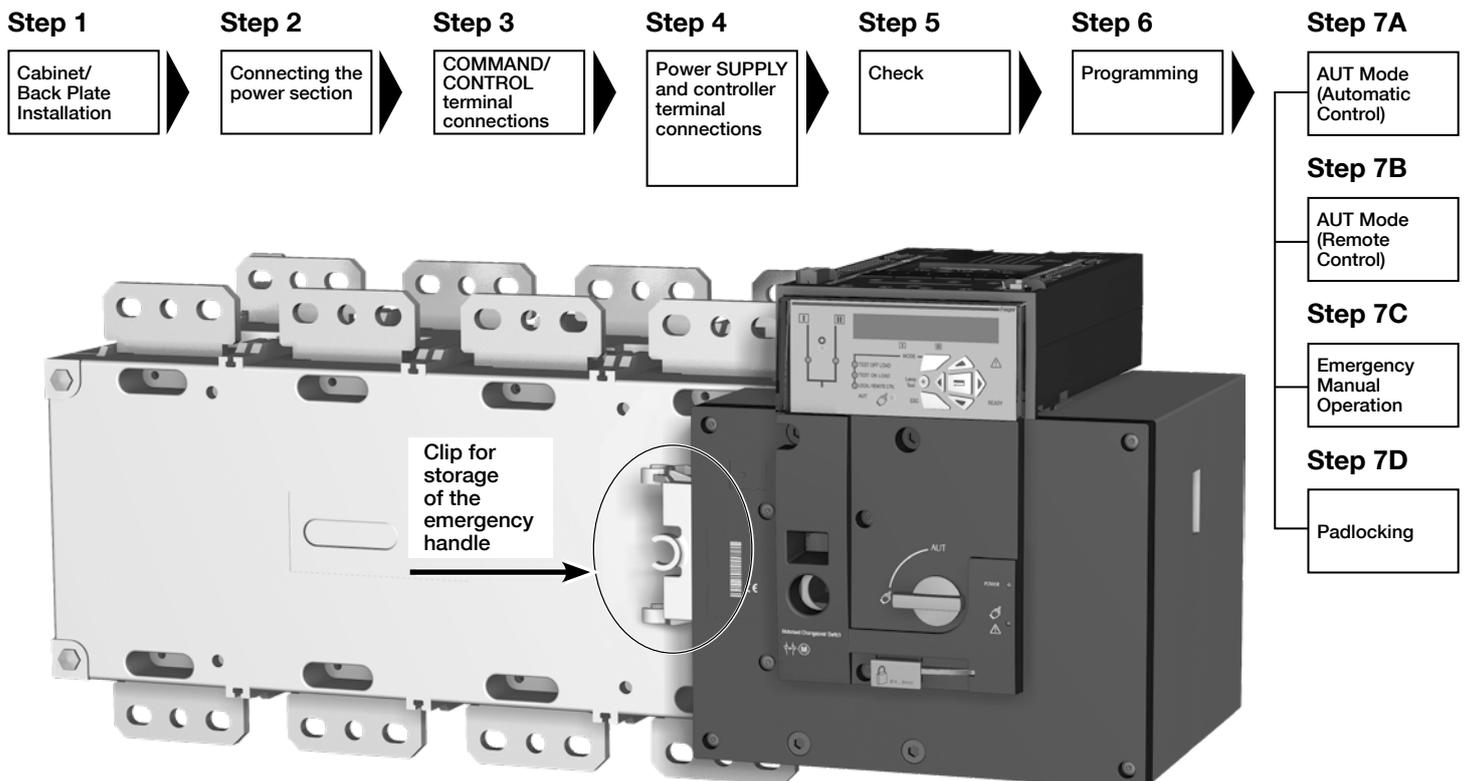
- For 800 – 3200A (Uimp = 12kV). Terminations must respect a minimum of 14 mm clearance from live parts to parts intended to be earthed and between poles.

Failure to observe good engineering practises as well as to follow these safety instructions may expose the user and others to serious injury or death.



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

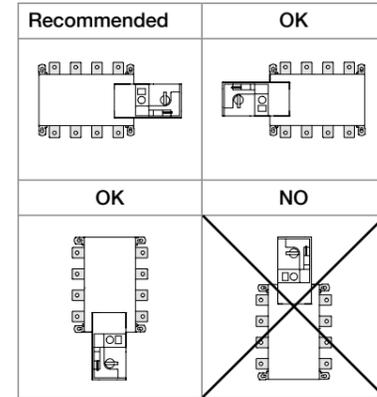


1. Installation

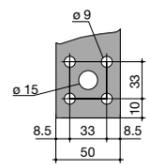


Ensure that the product is installed on a flat rigid surface.

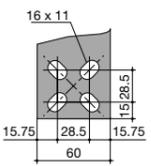
Orientation



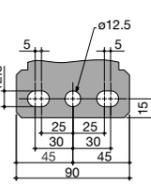
800A to 1000A



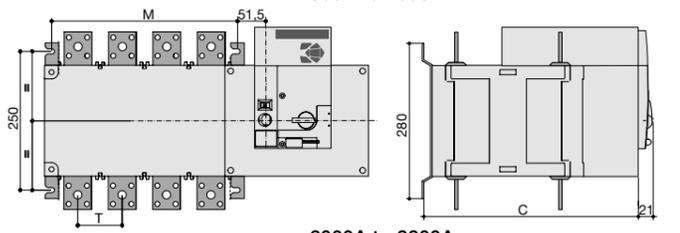
1250A



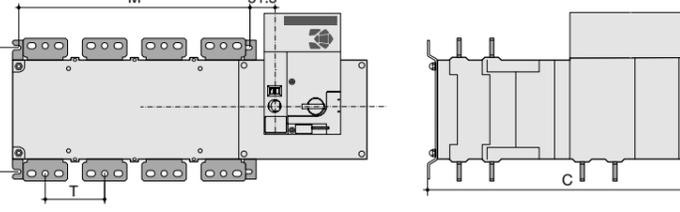
1600A to 3200A



800A to 1600A Dimensions in mm

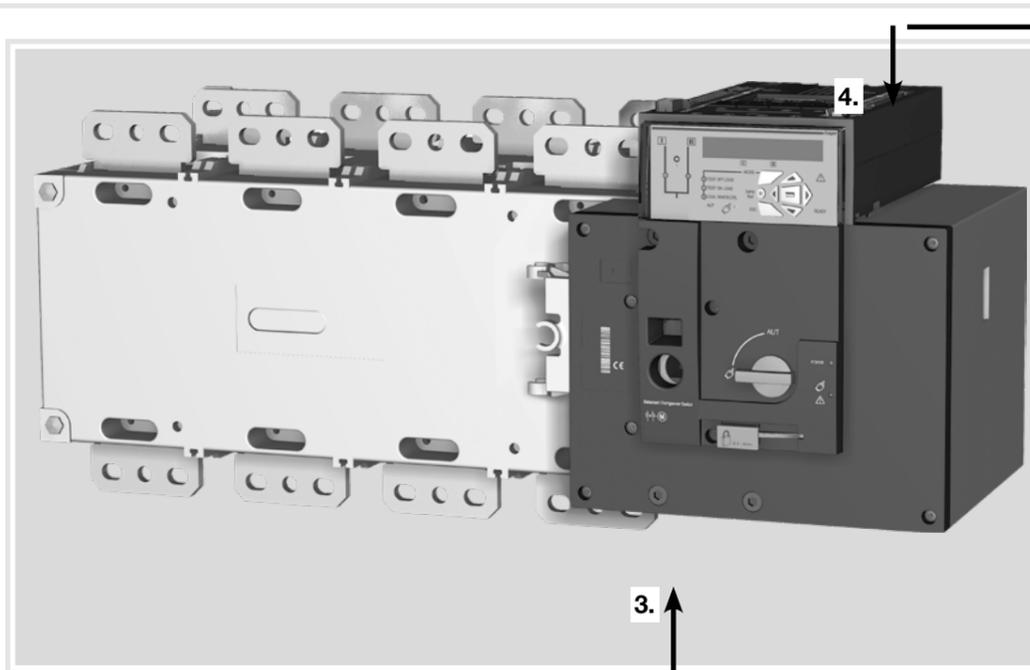
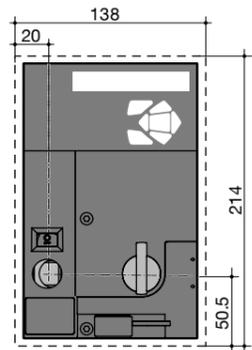


2000A to 3200A



	800A	1000A	1250A	1600A	2000A	2500A	3200A
	4P						
M	335			467			
T	80			120			
C	391			523			

Door cut-out for front panel



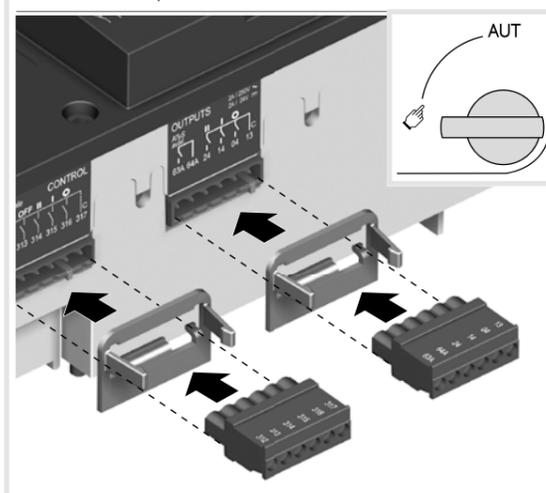
2. Power terminal connections

Use terminal lugs, rigid or flexible busbars.

	800A	1000A	1250A	1600A	2000A	2500A	3200A
Minimum Cu cable section at lth (mm ²)	2x185						
Minimum Cu busbar section at lth (mm ²)	2x50x5	2x63x5	2x63x7	2x100x5	3x100x5	2x100x10	3x100x10
Maximum Cu cable section (mm ²)	4x185		6x185				
Maximum Cu busbar width (mm)	63				100		
Type of screw	M8	M10	M12				
Recommended tightening torque (N.m)	8,3	20	40				
Maximum tightening torque (N.m)	13	26	45				

3. CONTROL/COMMAND terminals

Ensure that the product is in Manual Mode.



4. Power supply, sensing and control wiring

Use cables with 1,5 to 2,5 mm² section.

Screw M3

Tightening torque: min.: 0.5 Nm - max.: 0.6 Nm

ATS Power supply input II
Power supply II - L
Power supply II - N
208-277 VAC ±20% : 50/60 Hz

ATS Voltage sensing input Source supply II
S II - Phase 1
S II - Phase 2
S II - Phase 3
575 VAC (ph-ph) maxi
S II - Neutral
332 VAC (ph-n) maxi

Programmable inputs
To option module (-)/Common
Progr. inputs (208-209)
To option module (+)

Genset Start/stop
NC
Common
NO

Current transformer incoming cable connections

Slot for optional modules

ATS Power supply input I
Power supply I - L
Power supply I - N
208-277 VAC ±20% : 50/60 Hz

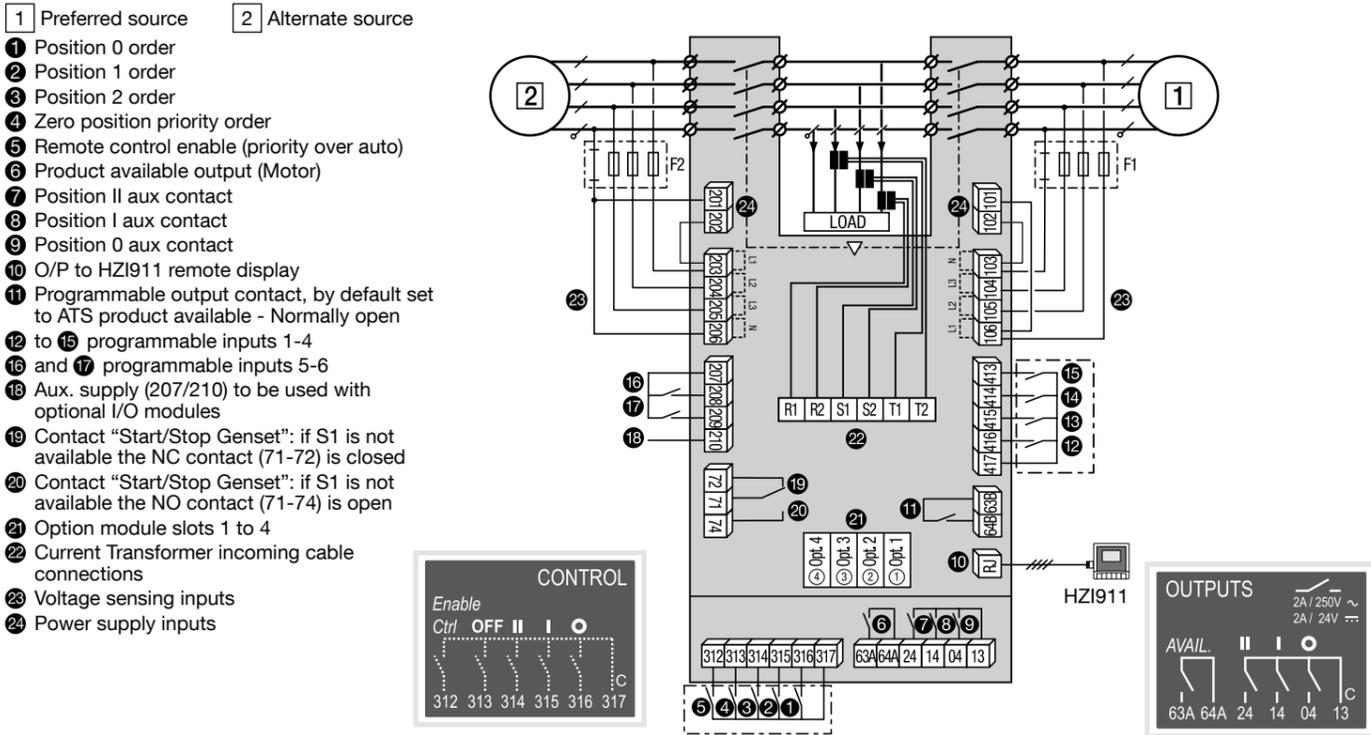
ATS Voltage sensing input Source supply I
S I - Phase 1
S I - Phase 2
S I - Phase 3
575 VAC (ph-ph) maxi
S I - Neutral
332 VAC (ph-n) maxi

ATS Module control inputs (programmable)

ATS Module output control (programmable)

Remote interface
RJ45 to HZI911

Example: control wiring for a 400 VAC application having a 3 phase and neutral supply



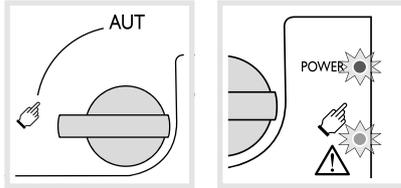
5. Check

Whilst in manual mode, check the wiring and if ok power up the product.



6. Programming the product

is to be programmed powered up and after wiring verification tests. This may either be done through the front of the ATS Controller using the keypad.



The product is delivered with default setting values based on most used customer application requirements. The minimum configuration parameters that must be programmed are the type of network and application together with the voltage and frequency nominal values.

Network parameters

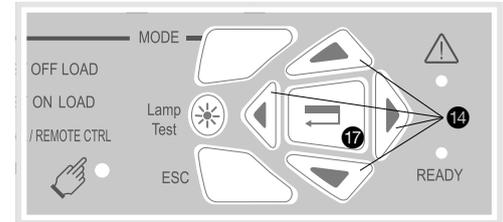
Ensure that the Default Network Setting and Application match the installation or change accordingly before using Auto Configuration

3 phases/4 wire	3 phases/3 wire	2 phases/3 wire	2 phases/2 wire	1 phase/2wire
4NBL 4BL 	3NBL 3BL 	2NBL 	2BL 	1BL

Setup by Auto Configuration (Volts, Hz, Neutral pos., Ph rotation).	
Press 5s	
Go to	1 SETUP
Scroll to	AUTOCONF
Enter code	1000
Set to	YES
Press 60 ms	
LEDs flash	
Save: press 5s	

Note: source I or source II must be available to set by Auto Configuration.

Programming access



Press and hold for 5 s "Validation" pushbutton **17**. Access through the keypad is possible in automatic or manual mode, when the product is in a stable position (I, 0 or II) with at least one supply source available. Programming is not accessible whilst any cycle sequence is running. To change the configuration, enter code (factory code = 1000) using navigation pushbuttons **14**. Programming exit: press and hold for 5 s "Validation" pushbutton **17**.

Menus

1	2	3	4	5	6	7	8
SETUP	VOLT. LEVELS	FREQ. LEVELS	PWR. LEVELS	TIMERS VALUE	I-O	COMM	DATE/TIME
NETWORK 4NBL	OV. U I 115%	OV. F I 105%	OV.P I 0000 kVA	1FT 0003 SEC	IN 1 --- NO	DHCP NO ⁽⁹⁾	YEAR
AUTOCONF NO ⁽⁷⁾	OV. U HYS I 110%	OV. F HYS I 103%	OV.P HYS I 0000 kVA	1RT 0180 SEC	IN 2 --- NO	IP 1-2 192.168. ⁽⁹⁾	MONTH
NEUTRAL AUTO	UND. U I 085%	UND. F I 095%	OV.P II 0000 kVA	2FT 0003 SEC	IN 3 --- NO	IP 3-4 .002.001	DAY
ROT PH. ---	UND. U HYS I 095%	UND. F HYS I 097%	OV.P HYS II 0000 kVA	2RT 0005 SEC ⁽²⁾	IN 4 --- NO	GAT1-2 000.000. ⁽⁹⁾	HOUR
NOM. VOLT 400 V	UNB. U I 00%	OV. F II 105%		2AT 0005 SEC ⁽¹⁾	IN 5 --- NO	GAT3-4 .000.000	MINUTE
NOM. FREQ 50 Hz	UNB. U HYS I 00%	OV. F HYS II 103%		2CT 0180 SEC ⁽¹⁾	IN 6 --- NO	MSK1-2 255.255. ⁽⁹⁾	SECOND
APP M-G	OV. U II 115%	UND. F II 095%		2ST 0030 SEC ⁽¹⁾	IN 7 --- NO ⁽⁸⁾	MSK3-4 .255.000	
PRIO TON NO ⁽¹⁾	OV. U HYS II 110%	UND. F HYS II 097%		ODT 0003 SEC	IN 8 --- NO ⁽⁸⁾	ADDRESS 005	
PRIO EON NO ⁽³⁾	UND. U II 085%			TOT UNL ⁽¹⁾	IN 9 --- NO ⁽⁸⁾	BDRATE 9600	
PRIO NET 1 ⁽²⁾	UND. U HYS II 095%			TOT 0010 SEC ⁽¹⁾	IN10 --- NO ⁽⁸⁾	STOP BIT 1	
RETRANS NO	UNB. U II 00%			T3T 0000 SEC ⁽¹⁾	IN11 --- NO ⁽⁸⁾	PARITY NONE	
CT PRI 100	UNB. U HYS II 00%			TFT UNL ⁽¹⁾	IN12 --- NO ⁽⁸⁾		
CT SEC 5				TFT 0600 SEC ⁽¹⁾	IN13 --- NO ⁽⁸⁾		
S1=SW2 NO				E1T 0005 SEC ⁽³⁾	IN14 --- NO ⁽⁸⁾		
BACKLGHNT INT				E2T UNL ⁽³⁾	OUT 1 POP NO		
CODE P 1000				E2T 0010 SEC ⁽³⁾	OUT 2 --- NO ⁽⁸⁾		
CODE E 0000				E3T 0005 SEC ⁽³⁾	OUT 3 --- NO ⁽⁸⁾		
BACKUP SAVE				E5T 0005 SEC ⁽⁴⁾	OUT 4 --- NO ⁽⁸⁾		
				E6T LIM ⁽⁴⁾	OUT 5 --- NO ⁽⁸⁾		
				E6T 0600 SEC ⁽⁴⁾	OUT 6 --- NO ⁽⁸⁾		
				E7T 0005 SEC ⁽⁴⁾	OUT 7 --- NO ⁽⁸⁾		
				LST 0004 SEC ⁽⁵⁾	OUT 8 --- NO ⁽⁸⁾		
				EET 0168 H ⁽⁶⁾	OUT 9 --- NO ⁽⁸⁾		
				EDT 1800 SEC ⁽⁶⁾			

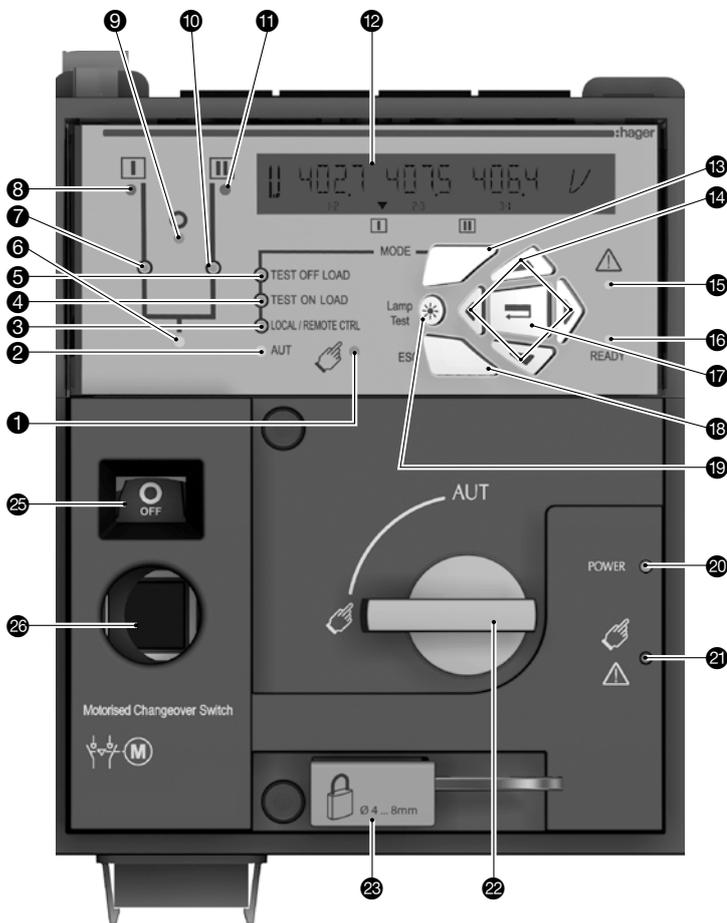


Values as listed above are the setting values by default.

- (1) When "APP" is set to "M-G".
- (2) When "APP" is set to "M-M".
- (3) When one of the I/P is set to "EON".
- (4) When one of the I/P is set to "EOF".
- (5) When one of the I/P is set to "LSC".
- (6) When one of the I/P is set to "EES".

- (7) If the product is in manual mode.
- (8) With optional I/O modules.
- (9) With Ethernet module.

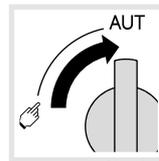




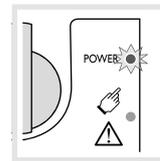
- 1 Manual mode LED indication (yellow steady light when in manual mode).
- 2 Auto mode LED indication (green steady light when in auto mode with no timers running. Green flashing light when in Auto with timers running in the background).
- 3 Local/remote control mode LED indication (yellow steady light when in remote control mode). Remote control mode is achieved with the Auto/Manu selector switched to Auto and terminals 312 closed with terminal 317. Remote control orders are received through closing 314 to 316 with 317.
- 4 TEST ON LOAD CONTROL mode LED indication (yellow steady light when in TON mode).
- 5 TEST OFF LOAD CONTROL mode LED indication (yellow steady light when in TOF mode).
- 6 Load supply on LED (green when the load is supplied).
- 7 Switch 1 LED position indication (green when in position 1).
- 8 Source supply I availability LED indication (green when supply I voltage is within the set limits).
- 9 Zero position LED indication (yellow when in position 0).
- 10 Switch 2 LED position indication (green when in position 2).
- 11 Source supply II availability LED indication (green when supply II voltage is within the set limits).
- 12 LCD display screen: (status, measurement, timers, counters, events, faults, programming...).
- 13 Mode key to shift between operation modes.
- 14 Navigation keys to browse through the product menus without software.
- 15 Fault LED indication (red steady light in case of an ATS controller internal fault. Switch the product from Auto to Manual and back to Auto to reset a fault condition).

- 16 Ready LED indication (green steady light: product is powered and in Auto, watchdog OK, the product is available to changeover).
- 17 Enter key used to enter Prog Mode (press and hold for 5 seconds) and to validate the settings programmed through the keypad.
- 18 ESC key used to escape from a specific screen up to the main menu.
- 19 Lamp test key to check the LED's and LCD screen.
- 20 Green LED Indication: power.
- 21 Red LED indication: product unavailable/manual Mode/fault condition.
- 22 Auto/Manual mode selector switch (key version available as an option).
- 23 Padlocking facility (up to 3 padlocks of dia. 4 - 8mm).
- 24 Emergency manual operation shaft location (accessible only in manual mode).
- 25 Switch position indication window:
I (On switch I)
O (Off)
II (On switch II).

7A. Automatic operation



Ensure that the emergency handle is not inserted in the product and turn the mode selector to the AUT position.



LED green = "Power":
ON
LED Manual/Default:
OFF



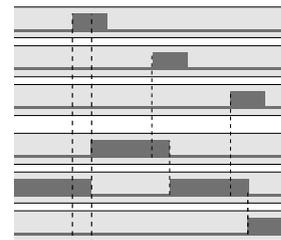
LED green "AUT": ON

7B. Automatic operation: remote control

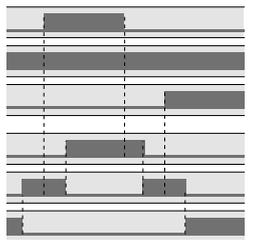


Impulse logic

Order I
Order O
Order II
Position I
Position O
Position II



Contactor logic



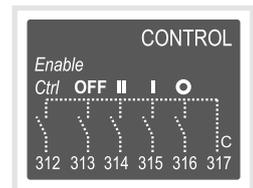
Imp. \geq 60ms
imp. maintained.

To enable control, close contact 312 with 317.

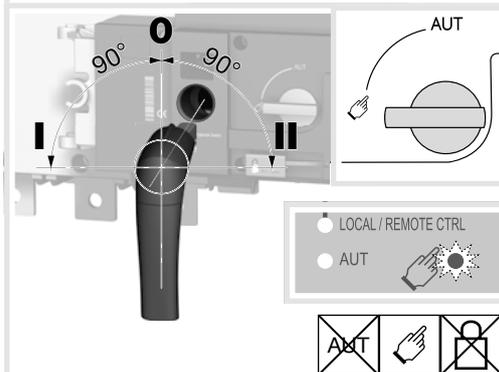
For contactor logic bridge contact 316 with 317.

To operate: close the contact corresponding to the desired position.

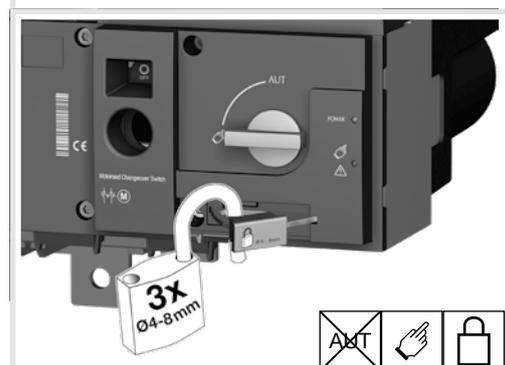
To force the product to 0 position "OFF" bridge contact 313 with 317.



7C. Manual operation



7D. Padlocking mode (standard: in position O)

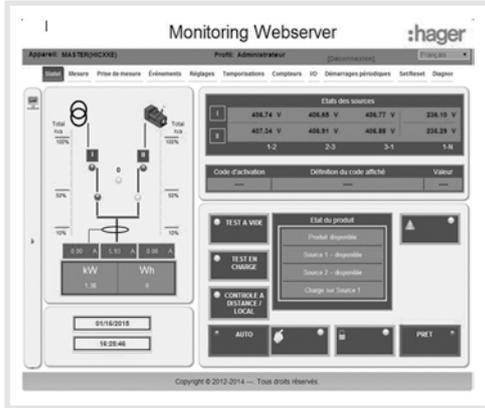


Optional modules

Communication between the software and the product may be done through the Ethernet/Modbus TCP or Modbus RTU modules that are available as an option. The ETHERNET/MODBUS modules are to be installed in one of the slots provided in the product ATS control unit.

Note: the product may accept a total of 4 additional Input/Output modules offering an additional 8 programmable inputs and 8 programmable outputs. When including a MODBUS module the product accepts a total of 3 I/O modules and when including the ETHERNET module a total of 2 I/O modules.

The Ethernet module includes a built in Web Server for Monitoring, Engine Exerciser Control, Events...



SM201: pulsed O/P



SM202: extended I/O 2xIP 2xO/P



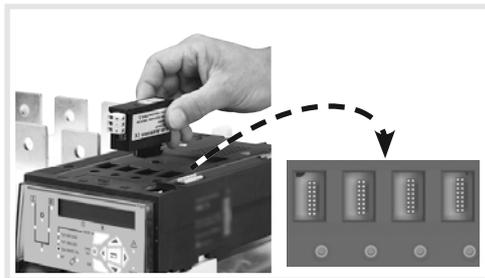
SM203: 4-20 mA



SM211: modbus RS485



SM213: ethernet/modbus TCP simple



SM214: gateway