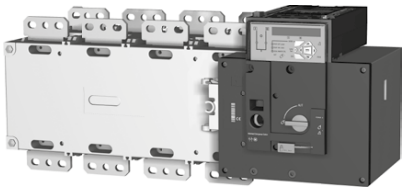


(EN) Motorised source changeover switch
800A - 3200A

6LE001162A.e

# 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).

Failure to observe good enginering 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

**Step 1** Cabinet/ Back Plate Installation

**Step 2** Connecting the power section

**Step 3** COMMAND/ CONTROL terminal connections

**Step 4** Power SUPPLY and controller terminal connections

**Step 5** Check

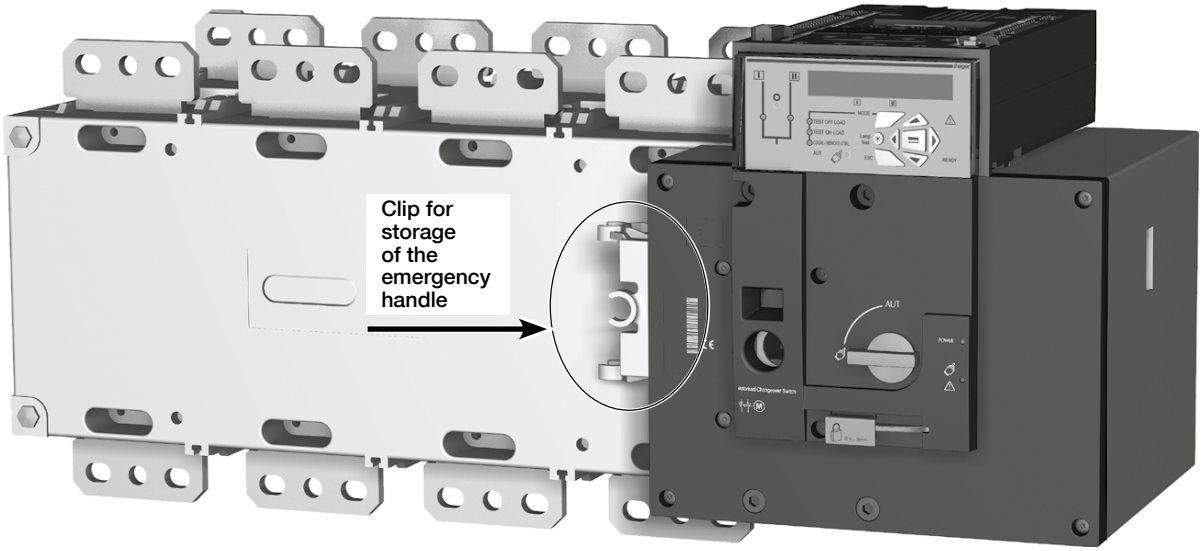
**Step 6** Programming

**Step 7A** AUT Mode (Automatic Control)

**Step 7B** AUT Mode (Remote Control)

**Step 7C** Emergency Manual Operation

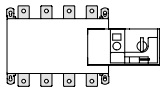
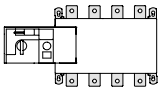
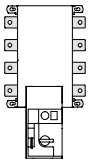
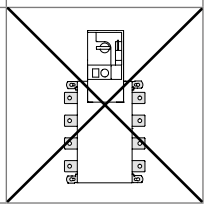
**Step 7D** Padlocking



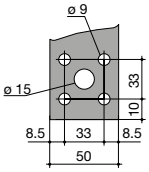
## 1. Installation

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

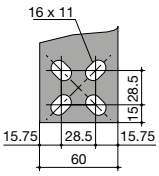
**Orientation**

| Recommended | OK |
|---|---|
|  |  |
| **OK** | **NO** |
|  |  |

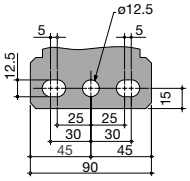
**800A to 1000A**



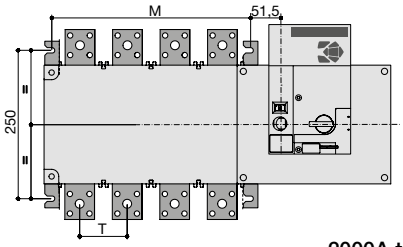

**1250A**

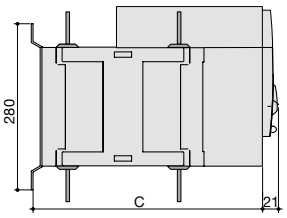



**1600A to 3200A**

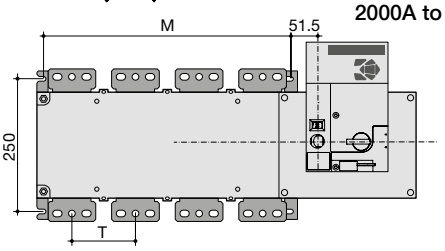


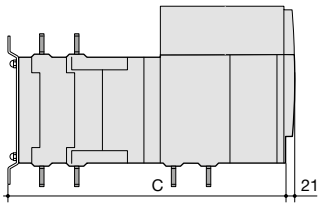

**800A to 1600A**




**2000A to 3200A**

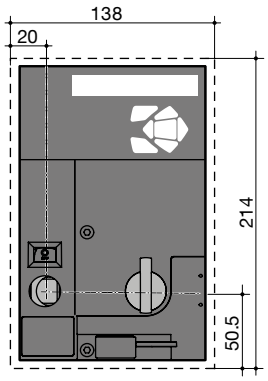


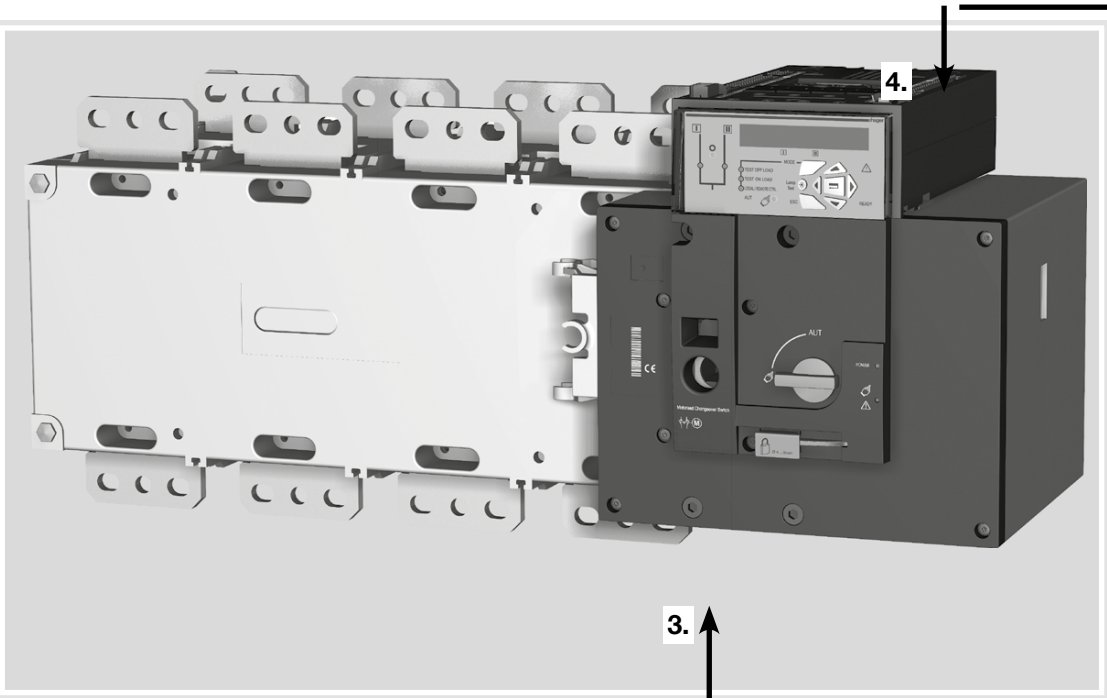




**Dimensions in mm**

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

**Door cut-out for front panel**



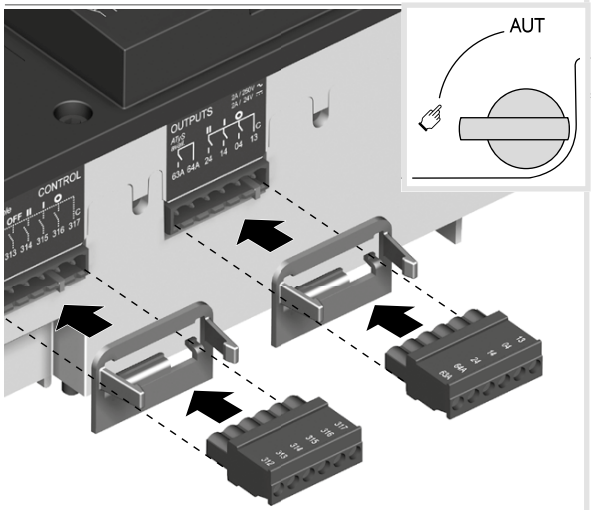

## 2. Power terminal connections

Use terminal lugs, rigid or flexible busbars.

| | | 800 A | 1000 A | 1250 A | 1600 A | 2000 A | 2500 A | 3200 A |
|---|---|---|---|---|---|---|---|---|
| Minimum Cu cable section at Ith | ($mm^2$) | 2x185 | - | | | | | |
| Minimum Cu busbar section at Ith | ($mm^2$) | 2x50x5 | 2x60x5 | | 2x60x7 | 3x100x5 | 4x100x5 | 3x100x10 |
| Maximum Cu cable section | ($mm^2$) | 2x300 | 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 | | | |

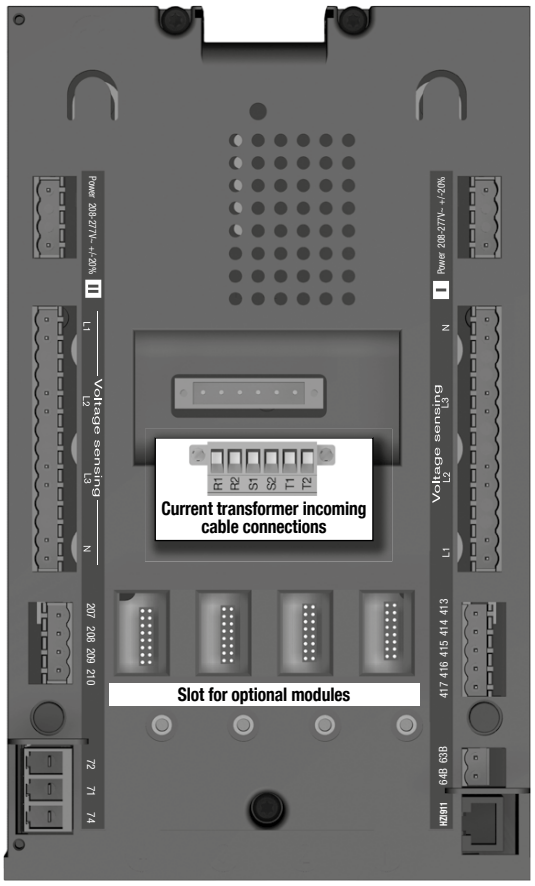
## 3. CONTROL/COMMAND terminals

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

**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)**

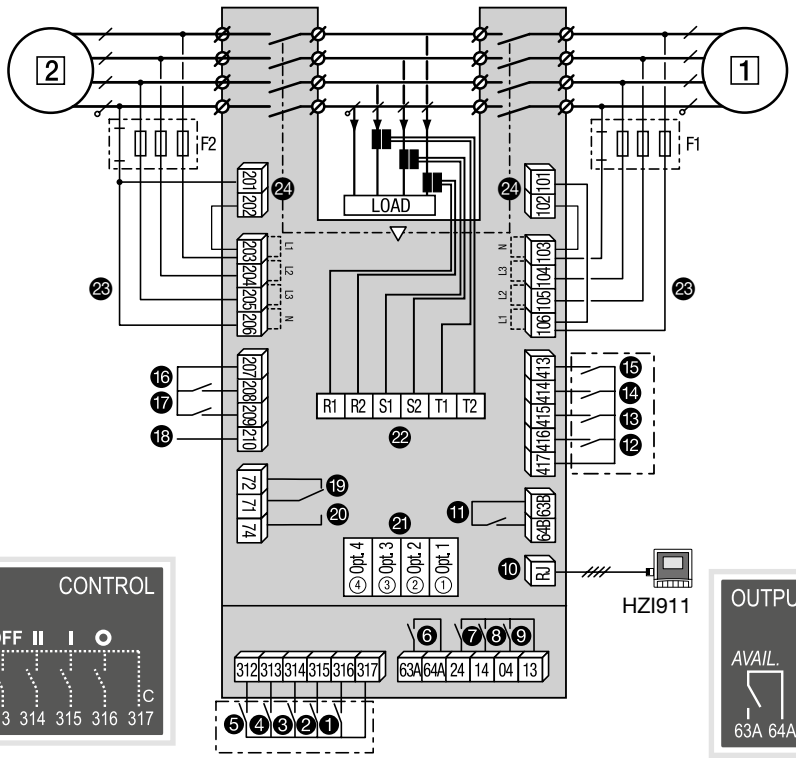
**ATS Module output control (programmable)**

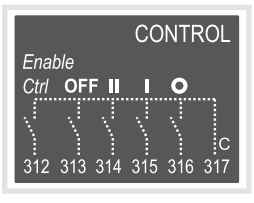
**Remote interface**
RJ45 to HZI911

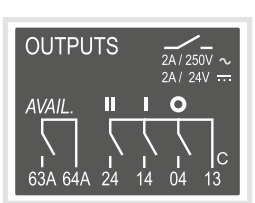
Example: control wiring for a 400 VAC application having a 3 phase and neutral supply

1 Preferred source  2 Alternate source

❶ Position 0 order
❷ Position 1 order
❸ Position 2 order
❹ Zero position priority order
❺ Remote control enable (priority over auto)
❻ Product available output (Motor)
❼ Position II aux contact
❽ Position I aux contact
❾ Position 0 aux contact
❿ O/P to HZI911 remote display
⓫ Programmable output contact, by default set to ATS product available - Normally open
⓬ to ⓯ programmable inputs 1-4
⓰ and ⓱ programmable inputs 5-6
⓲ Aux. supply (207/210) to be used with optional I/O modules
⓳ Contact “Start/Stop Genset”: if S1 is not available the NC contact (71-72) is closed
⓴ Contact “Start/Stop Genset”: if S1 is not available the NO contact (71-74) is open
㉑ Option module slots 1 to 4
㉒ Current Transformer incoming cable connections
㉓ Voltage sensing inputs
㉔ Power supply inputs

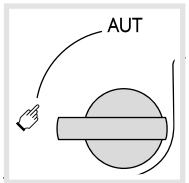


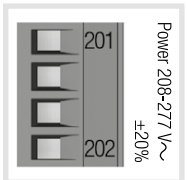



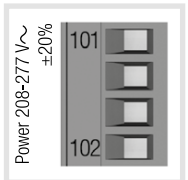



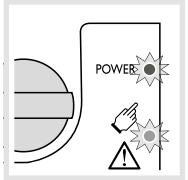

## 5. Check

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



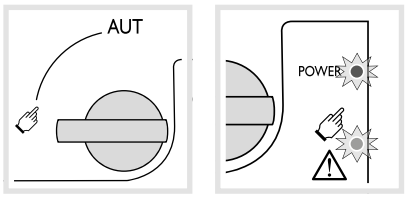




LED Green = “Power” : ON

LED Red = “Manuel/Defaut”: ON

## 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.



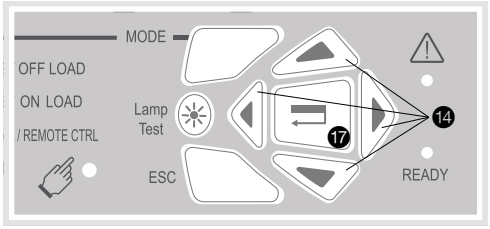

The product is delivered with default setting values based on most used customer application requirements. The minimum configuration parameters that must be programmed are the type of network and application together with the voltage and frequency nominal values.

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

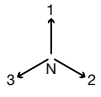
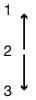
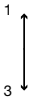
| **Setup by Auto Configuration** (Volts, Hz, Neutral pos., Ph rotation). | |
|---|---|
| Press 5s | |
| Go to | 1 SETUP |
| Scroll to | AUTOCONF |
| Enter code | 1000 |
| Set to | YES |
| Press 60 ms | |
| LEDs flash | |
| Save: press 5s | |

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

**Programming access**




Press and hold for 5 s “Validation” pushbutton ⓱.
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 ⓮.
Programming exit: press and hold for 5 s “Validation” pushbutton ⓱.

| 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  |

## Menus

| 1 SETUP | |
|---|---|
| NETWORK | 4NBL |
| AUTOCONF | NO (7) |
| NEUTRAL | AUTO |
| ROT PH. | --- |
| NOM. VOLT | 400 V |
| NOM. FREQ | 50 Hz |
| APP | M-G |
| PRIO TON | NO (1) |
| PRIO EON | NO (3) |
| PRIO NET | 1 (2) |
| RETRANS | NO |
| CT PRI | 100 |
| CT SEC | 5 |
| S1=SW2 | NO |
| BACKLGHT | INT |
| CODE P | 1000 |
| CODE E | 0000 |
| BACKUP | SAVE |

| 2 VOLT. LEVELS | | |
|---|---|---|
| OV. U | I | 115% |
| OV. U HYS | I | 110% |
| UND. U | I | 085% |
| UND. U HYS | I | 095% |
| UNB. U | I | 00% |
| UNB. U HYS | I | 00% |
| OV. U | II | 115% |
| OV. U HYS | II | 110% |
| UND. U | II | 085% |
| UND. U HYS | II | 095% |
| UNB. U | II | 00% |
| UNB. U HYS | II | 00% |

| 3 FREQ. LEVELS | | |
|---|---|---|
| OV. F | I | 105% |
| OV. F HYS | I | 103% |
| UND. F | I | 095% |
| UND. F HYS | I | 097% |
| OV. F | II | 105% |
| OV. F HYS | II | 103% |
| UND. F | II | 095% |
| UND. F HYS | II | 097% |

| 4 PWR. LEVELS | | |
|---|---|---|
| OV.P | I | 0000 kVA |
| OV.P HYS | I | 0000 kVA |
| OV.P | II | 0000 kVA |
| OV.P HYS | II | 0000 kVA |

| 5 TIMERS VALUE | |
|---|---|
| 1FT | 0003 SEC |
| 1RT | 0180 SEC |
| 2FT | 0003 SEC |
| 2RT | 0005 SEC (2) |
| 2AT | 0005 SEC (1) |
| 2CT | 0180 SEC (1) |
| 2ST | 0030 SEC (1) |
| ODT | 0003 SEC |
| TOT | UNL (1) |
| TOT | 0010 SEC (1) |
| T3T | 0000 SEC (1) |
| TFT | UNL (1) |
| TFT | 0600 SEC (1) |
| E1T | 0005 SEC (3) |
| E2T | UNL (3) |
| E2T | 0010 SEC (3) |
| E3T | 0005 SEC (3) |
| E5T | 0005 SEC (4) |
| E6T | LIM (4) |
| E6T | 0600 SEC (4) |
| E7T | 0005 SEC (4) |
| LST | 0004 SEC (5) |
| EET | 0168 H (6) |
| EDT | 1800 SEC (6) |

| 6 I-O | | |
|---|---|---|
| IN 1 | --- | NO |
| IN 2 | --- | NO |
| IN 3 | --- | NO |
| IN 4 | --- | NO |
| IN 5 | --- | NO |
| IN 6 | --- | NO |
| IN 7 | --- | NO (8) |
| IN 8 | --- | NO (8) |
| IN 9 | --- | NO (8) |
| IN10 | --- | NO (8) |
| IN11 | --- | NO (8) |
| IN12 | --- | NO (8) |
| IN13 | --- | NO (8) |
| IN14 | --- | NO (8) |
| OUT 1 | POP | NO |
| OUT 2 | --- | NO (8) |
| OUT 3 | --- | NO (8) |
| OUT 4 | --- | NO (8) |
| OUT 5 | --- | NO (8) |
| OUT 6 | --- | NO (8) |
| OUT 7 | --- | NO (8) |
| OUT 8 | --- | NO (8) |
| OUT 9 | --- | NO (8) |

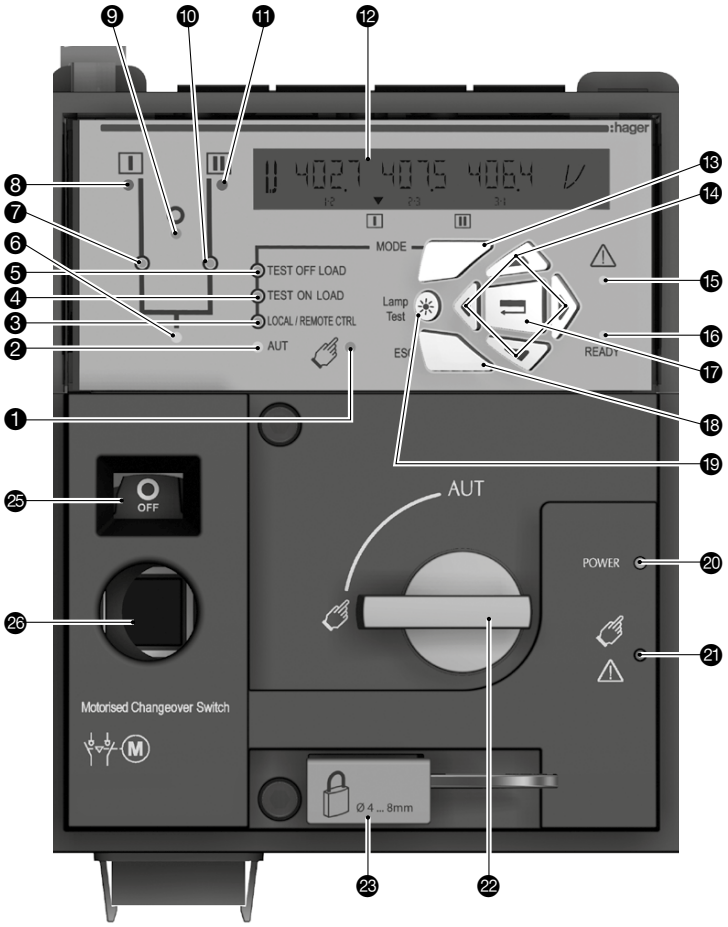
| 7 COMM | |
|---|---|
| DHCP | NO (9) |
| IP 1-2 | 192.168. (9) |
| IP 3-4 | .002.001 |
| GAT1-2 | 000.000. (9) |
| GAT3-4 | .000.000 |
| MSK1-2 | 255.255. (9) |
| MSK3-4 | .255.000 |
| ADDRESS | 005 |
| BDRATE | 9600 |
| STOP BIT | 1 |
| PARITY | NONE |

| 8 DATE/TIME |
|---|
| YEAR |
| MONTH |
| DAY |
| HOUR |
| MINUTE |
| SECOND |

⚠ Values as listed above are the setting values by default.

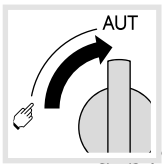
(1) When "APP" is set to"M-G".
(2) When "APP" is set to"M-M".
(3) When one of the I/P is set to"EON".
(4) When one of the I/P is set to "EOF".
(5) When one of the I/P is set to "LSC".
(6) When one of the I/P is set to "EES".
(7) If the product is in manual mode.
(8) With optional I/O modules.
(9) With Ethernet module.

IS 544038D/Printing size: 630x297/Recto-verso/Black/90g/m²/Final size A4

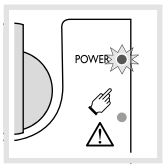



❶ Manual mode LED indication (yellow steady light when in manual mode).
❷ Auto mode LED indication (green steady light when in auto mode with no timers running. Green flashing light when in Auto with timers running in the background.
❸ Local/remote control mode LED indication (yellow steady light when 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.
❹ TEST ON LOAD CONTROL mode LED indication (yellow steady light when in TON mode).
❺ TEST OFF LOAD CONTROL mode LED indication (yellow steady light when in TOF mode).
❻ Load supply on LED (green when the load is supplied).
❼ Switch 1 LED position indication (green when in position 1).
❽ Source supply I availability LED indication (green when supply I voltage is within the set limits).
❾ Zero position LED indication (yellow when in position 0).
❿ Switch 2 LED position indication (green when in position 2).
⓫ Source supply II availability LED indication (green when supply II voltage is within the set limits).
⓬ LCD display screen: (status, measurement, timers, counters, events, faults, programming…).
⓭ Mode key to shift between operation modes.
⓮ Navigation keys to browse through the product menus without software.
⓯ 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).
⓰ Ready LED indication (green steady light: product is powered and in Auto, watchdog OK, the product is available to changeover).
⓱ Enter key used to enter Prog Mode (press and hold for 5 seconds) and to validate the settings programmed through the keypad.
⓲ ESC key used to escape from a specific screen up to the main menu.
⓳ Lamp test key to check the LED's and LCD screen.
⓴ 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).

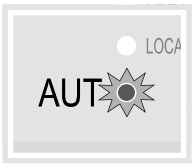
## 7A. Automatic operation




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

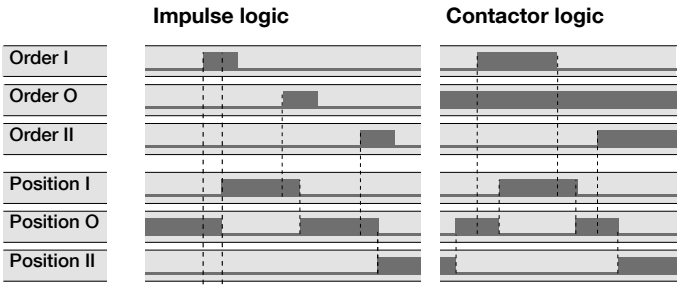



LED green = "Power": ON
LED Manuel/Default: OFF



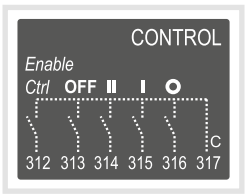

LED green "AUT": ON

## 7B. Automatic operation: remote control

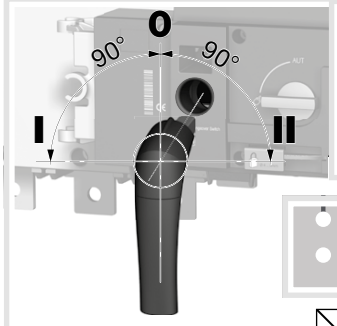

Imp. ≥ 60ms
imp. maintened.

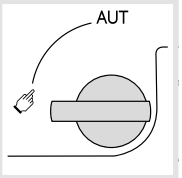
To enable control, close contact 312 with 317.
For contactor logic bridge contact 316 with 317.
To operate: close the contact corresponding to the desired position.

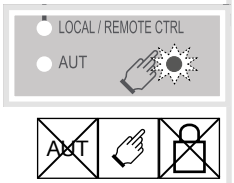



To force the product to 0 position "OFF" bridge contact 313 with 317.

## 7C. Manual operation



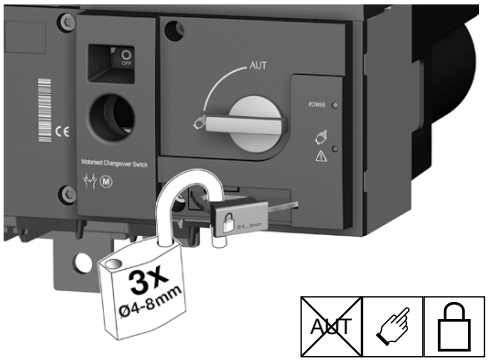



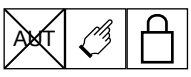







## 7D. Padlocking mode (standard: in position O)



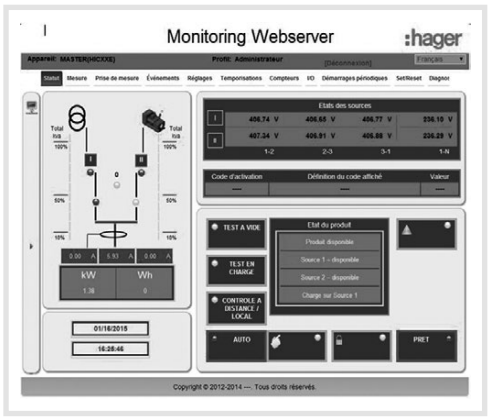



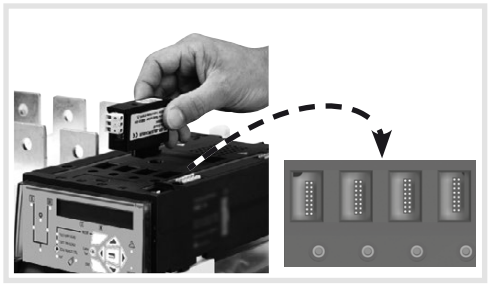
## Optional modules

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