:hager

6LE003168Ad

(EN) Automatic Transfer Switching Equipment 20 A - 160 A (4P)

HIC4xxA

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 HIC4xxA
  - 1 emergency handle extension rod
  - 1 set of terminals
  - 1 Quick Start instruction sheet

Accessories

- bridging bars
- voltage sensing and power supply tap
- terminal shrouds
- auxilliary contact block
- sealable cover

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 www.hager.com.

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 Control/Aux Power terminal connections

Step 4 Check

Step 5 PROGRAMMING

Step 6A Automatic Operation

Step 6B Emergency manual operation

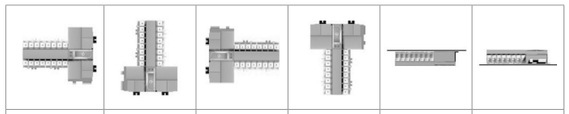
Step 6C Padlocking

1 Installation

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

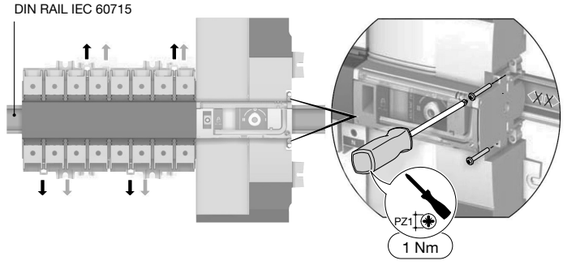
⚠ Tighten to avoid movement on the DIN rail.

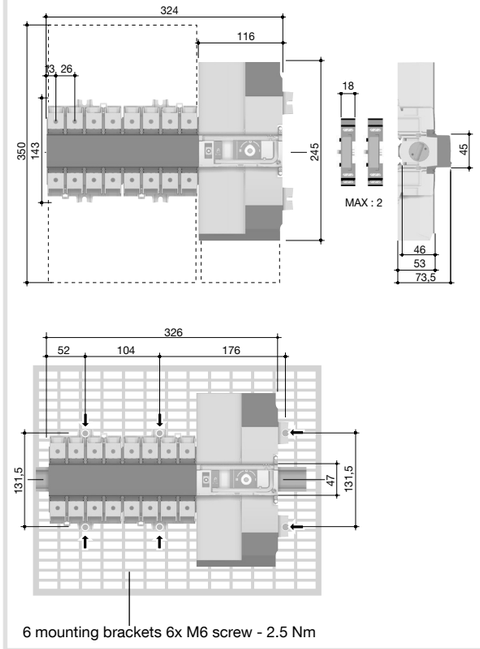
Recommended orientation



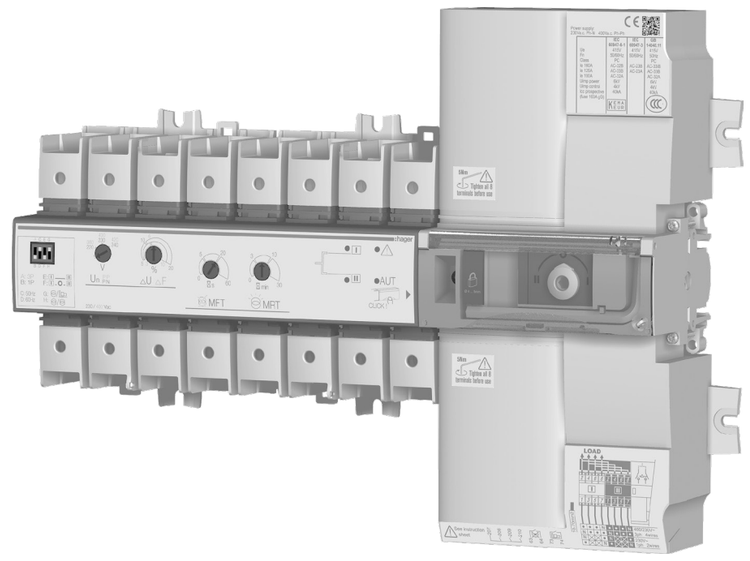
Recommended	Ok	Ok	Ok	Ok	Ok

DIN RAIL IEC 60715



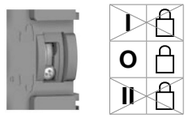


6 mounting brackets 6x M6 screw - 2.5 Nm

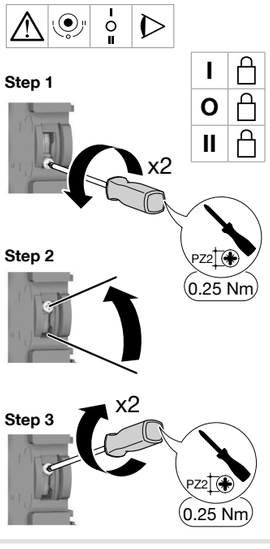


Padlocking configuration

⚠ The HIC4xxA is delivered with padlocking configured to the O position.

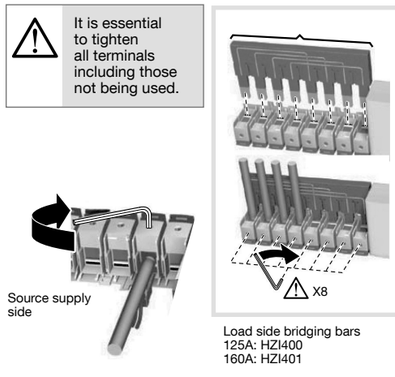


⚠ To allow padlocking in all positions (I-O-II), configure the HIC4xxA as follows before installation. (Screw is located at the back of the product).



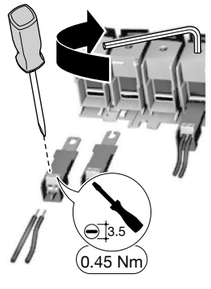
2 Power terminal connections

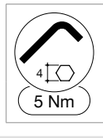
⚠ It is essential to tighten all terminals including those not being used.



Load side bridging bars
125A: HZI400
160A: HZI401

Voltage taps provide 2x ≤ 1.5 mm² connections.
They can be fitted in any terminals on the source supply side.
Do not use on the load side when equipped with a bridging bar.





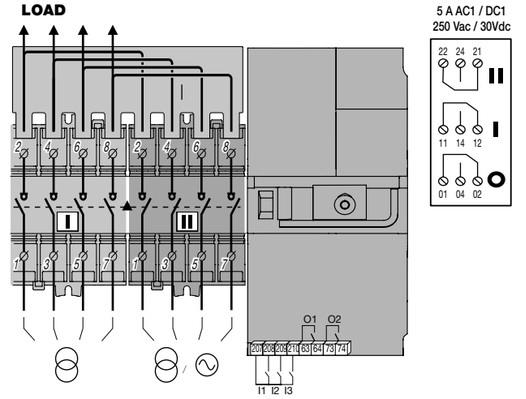
15 mm	15 mm
10 to 70 mm²	

6 mm	6 mm
0.5 to 1.5 mm²	0.5 to 2.5 mm²

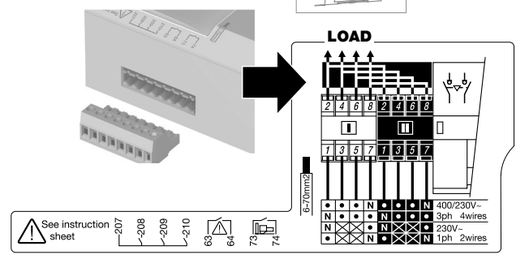
3 Control / aux power terminals and wiring

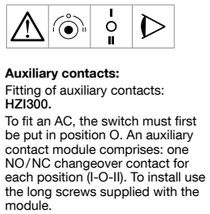
Type	Terminal no.	Application	Status of the contact	Description	Output characteristics	Recommended connection cross-section
Inputs	207	Common				6 mm, 0.5 to 1.5 mm² / 6 mm, 0.5 to 2.5 mm² / 0.5 Nm
	208 I1	Network / Network		With priority	Dry potential free contact	
				Without priority		
		Network / Genset		Automatic retransfer		
				Manual Retransfer		
	209 I2	Network / Network		Source priority I		
				Source priority II		
		Network / Genset		Stop the test on load		
				Test on load		
	210 I3	Network / Network or Network / Genset		AUTO mode		
				Automatic mode inhibition		
Outputs	63/64 01	Network / Network or Network / Genset		Product not available: - Manual mode - Operation failure - Electronic failure - No power sources	Resistive load 2A 30Vdc 0.5A 230Vac Pmax: 60W or 125VA Umax: 30Vdc or 230Vac	
				Product available		
	73/74 02	Network / Genset		No start command genset		
				Generating set starting		

Type	Terminal no.	Status of the contact	Description	Output characteristics	Recommended connection cross-section
Auxiliary contact block *HZI300*	11/12/14	11 — 14 / 12	Changeover switch in position I	250Vac 5A AC1 30Vdc 5A DC1	10 mm, 0.5 to 1.5 mm² / 10 mm, 0.5 to 2.5 mm² / 2.8 Nm
	21/22/24	21 — 24 / 22	Changeover switch in position II		
	01/02/04	01 — 04 / 02	Changeover switch in position O		

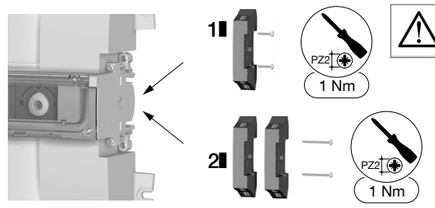


Ensure that the product is in manual mode (front cover open).





Auxiliary contacts:
Fitting of auxiliary contacts: **HZI300.**
To fit an AC, the switch must first be put in position O. An auxiliary contact module comprises: one NO/NC changeover contact for each position (I-O-II). To install use the long screws supplied with the module.



⚠ Use 20 mm screws for 1 module
Use 35 mm screws for 2 modules

4 Check

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

5 PROGRAMMING (Manual operation)

❶ Dip switch settings

Type of network: A-B

A: 3P B: 1P

Frequency: C-D

C: 50 Hz D: 60 Hz

Stop in O position: E-F

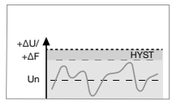
E: No stop in O position F: 2 s stop in O position

Type of application: G-H

G: Network / Genset H: Network / Network

❷ Source voltage supply configuration

Un (P-P):
380-420 Vac
Un (P-N):
220-240 Vac

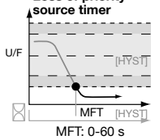


HYST: 20 % ΔU/F
ΔU: 5 - 20 %
ΔF: 3 - 10 %

The LED signalling and operation is only active when the product supply is available. To set the dip switches, it is necessary to open the Auto/Manual cover. Commissioning must always result in having at least 1 LED source available on. (Therefore, the voltage and frequency must be within the defined thresholds).
⚠ Any action on the potentiometers will change the settings, even when the cover is closed.

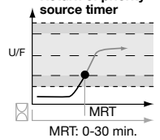
❸ Timer settings

Loss of priority source timer



MFT: 0-60 s

Return of priority source timer



MRT: 0-30 min.

❹ LED's info

Source availability LED's

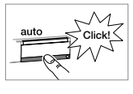
	Source I	Source II
LED ON	available	
LED OFF	missing or out of range	
LED blinking	- a timer is counting down	
	- test mode	

Fault and state of the product LED's

	⚠	AUT
LED ON	Fault	Auto mode
LED OFF	Product OK	Manual mode
LED blinking	Wait	Manual retransfer

⚠ **Fault Reset**

6A Automatic operation

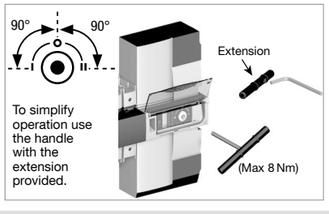


Close the front cover as shown to put the product into automatic mode.

6B Manual operation

Open the front cover as shown to put into manual mode.

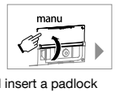
Use the handle situated in the front panel under the cover to operate the transfer switch. Check the changeover switch position on the indicator before operating.

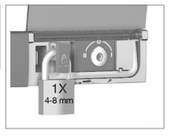


To simplify operation use the handle with the extension provided.

6C Padlocking mode

In order to padlock put the product in manual mode.
Pull the locking mechanism and insert a padlock as shown.
As standard padlocking in the O position. Configurable to I-O-II (see step 1).





7 Troubleshooting guide

	Symptoms	Action to be carried out	Expected results
1	Product is off, no LED is lit	Check for a voltage of 176 to 288 Vac on the supply terminals: - Terminals 1-7 correspond to SOURCE I - Terminals 1-7 correspond to SOURCE II	The "AUT" LED is lit (if the cover is closed)
2	The "Priority SOURCE Availability" LED does not come on	Check the following parameters: • the type of network => 3P (DIP Switch 1 on position A) 1P (DIP Switch 1 on position B) • frequency => 50 Hz (DIP Switch 2 on position C) 60 Hz (DIP Switch 2 on position D) • the nominal voltage =>with a multimeter, measure the voltage across the terminals and report the value on the potentiometer	The "Priority SOURCE Availability" LED is lit
		Check the thresholds and hysteresis of rated voltages (ΔU) and frequencies (ΔF) and report them on the corresponding potentiometer	
		If using an Auto transformer - proceed as follows upon 1st switching on • Step 1: HIC4xxA must be connected to a three-phase + neutral network (4NBL) for setting the neutral position. Neutral position is detected upon first switching on • Step 2: Connect the autotransformers. Warning: Neutral must be connected on the same side as in step 1	
		⚠ How to reset the neutral position: • Step 1: Open the cover • Step 2: Set DIP Switch 1 from 3P to 1P • Step 3: Set DIP Switch 1 from 1P to 3P • Step 4: Close the cover	
3	The "Emergency SOURCE Availability" LED does not come on	Check the following parameters: • the type of network => 3P (DIP Switch 1 on position A) 1P (DIP Switch 1 on position B) • frequency => 50 Hz (DIP Switch 2 on position C) 60 Hz (DIP Switch 2 on position D) • the nominal voltage => with a multimeter, measure the voltage across the terminals and report the value on the potentiometer	The "Emergency SOURCE Availability" LED is lit
		CAUTION: a generator operating off load can generate a Fr and a U lower than the nominal values: Check the thresholds and hysteresis of rated voltages (ΔU) and frequencies (ΔF) and report them on the corresponding potentiometer.	
		If using an Auto transformer - proceed as follows upon 1st switching on • Step 1: HIC4xxA must be connected to a three-phase + neutral network (4NBL) for setting the neutral position. Neutral position is detected upon first switching on. • Step 2: Connect the autotransformers. Warning: Neutral must be connected on the same side as in step 1	
		⚠ How to reset the neutral position: • Step 1: Open the cover • Step 2: Set DIP Switch 1 from 3P to 1P • Step 3: Set DIP Switch 1 from 1P to 3P • Step 4: Close the cover	
4	The product remains switched off after the Priority SOURCE is lost	Check if voltage is between 176 to 288 VAC across the power supply terminals of emergency SOURCE: - Terminals 1-7 correspond to the Emergency Source	The "AUT" LED is lit
		In case of transformer/ Genset, check that FT timer (Main Failure Timer) has finished counting down. • Use a stopwatch. • Start the stopwatch when the product has lost its Priority SOURCE. - Contact 73 - 74 must be closed after 60 s max (M-G application) - GENSET run command = contact 73-74 closed - GENSET stop command = contact 73-74 open	The Genset works and the LED "Emergency Source Disponibility" is lit
5	The product does not switch over after the Priority SOURCE is lost	Check that the product is not in manual mode: • Automatic mode = cover closed • Manual mode = cover open	The "AUT" LED is lit
		Check that automatic operation has not been inhibited by an external order (terminals 207-210).	
		Check the status of led « Emergency SOURCE availability ». If it is off, refer to the symptom concerned (higher in the list)	The "AUT" and "Emergency SOURCE Availability" LEDs are lit
		In case of Transformer / Transformer, check the setting of FT timer (Main Failure Timer). The duration of this time delay is between 0 and 60 s. If necessary, use a stopwatch to check switching to SOURCE after FT countdown	At the end of the time delay, the product switches to mechanical position 0, and to emergency SOURCE
6	The product does not switch over when the Priority SOURCE is restored	Check that the product is not in manual mode: • Automatic mode = cover closed • Manual mode = cover open	The "AUT" LED is lit
		Check that automatic operation has not been inhibited by an external order (terminals 207-210).	
		Check the state of the "Priority Source Availability" LED. If it is off, refer to the symptom concerned (higher in the list)	The "AUT" and "Emergency SOURCE Availability" LEDs are lit
		Check the setting of RT timer (Main Return Timer). The duration of this delay is between 0 and 30 min. Use a stopwatch to check the switch to Priority SOURCE after the RT timer	At the end of the time delay, the product switches to mechanical position 0, and to priority SOURCE
		Check that the "manual retransfer" function is not active* • Retransfer mode activated = contact 207-208 closed • Retransfer mode desactivated = contact 207-208 open * if this function is not required	Contact 207-208 must be open to enable switching to priority SOURCE
7	Return to Priority SOURCE has been executed, but the Emergency Source (for a Generator) continues to operate	Check CDT timer (Cool Down Timer) has finished counting down - Fixed time delay: 4 min • Use a stopwatch. - Start the stopwatch when the product has switched over to the Priority SOURCE. - Contact 73-74 must be open after time delay CDT has finished counting down	The GenSet switches off and led " Emergency SOURCE availability" is OFF"
		Check that the product is not in automatic mode: • Automatic mode = cover closed • Manual mode = cover open	The "AUT" LED is lit
		Check that automatic operation has not been inhibited by an external order (terminals 207-210).	

535443D / Printing size: A3 / Recto-verso / Black / 90g/m² / Final size A4