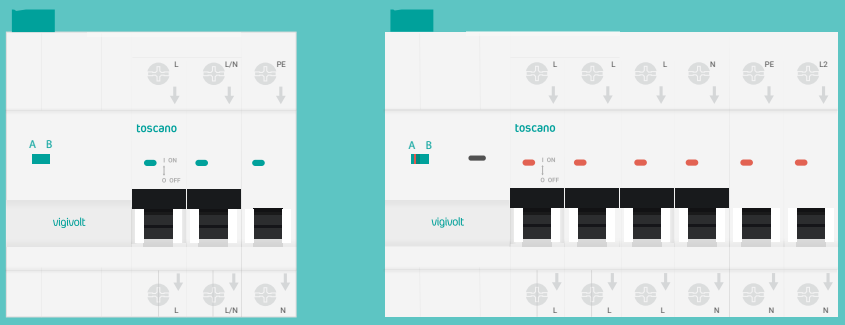
vigivolt

COMBI-PRO-MAX

Automatic control and protection for photovoltaic applications with backup



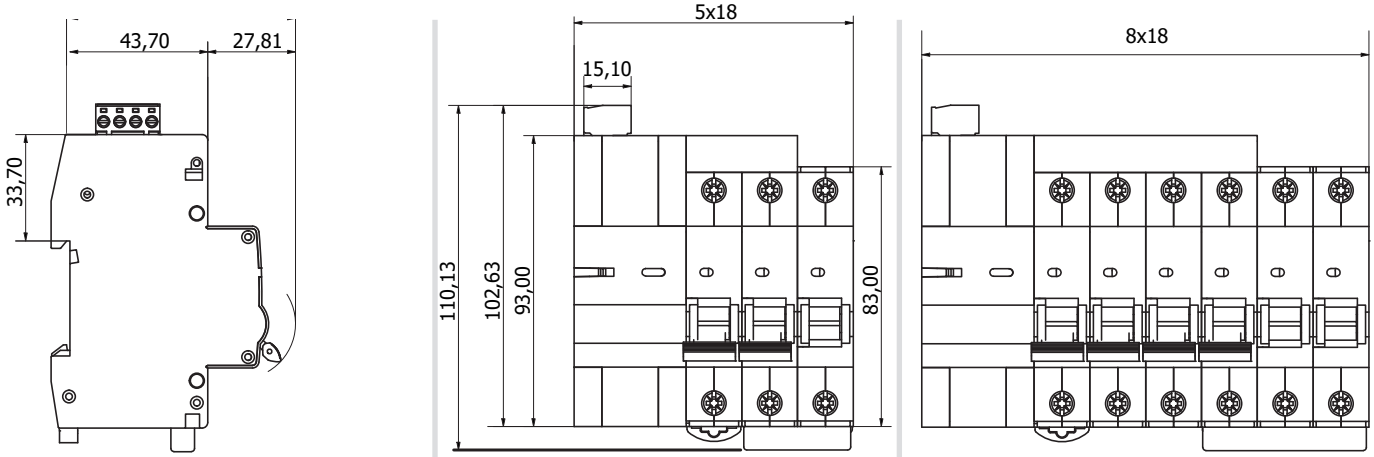
EN

USER MANUAL

Cod. 50023084. Ed.13.26

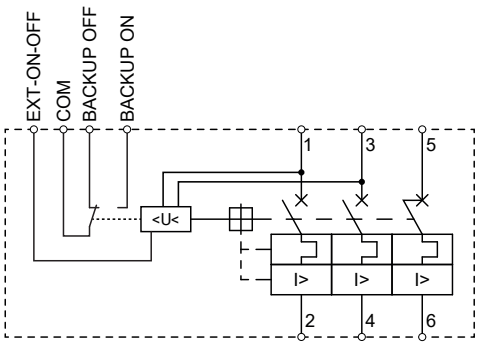
WARNING!	HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH
- The installation, maintenance and eventual replacement of this device must only be carried out by a qualified electrician. - This device must not be repaired. - All applicable local, regional and national regulations must be complied with during the installation, use, maintenance and replacement of this device. - This device should not be installed if, when unpacking it, you observe that is damaged. - Toscano cannot be held responsable in the event of non-compliance with the instructions in this document and in the documents to wich refers. - The service instruction must be observed throughout the product life time of this device.	- Turn off all power supplying this device before working on it. - Use a voltage tester with a suitable rated voltage in order to check that all active conductors aren't energized. - Failure to follow these instructions will result in death or serious injury.

Dimensions

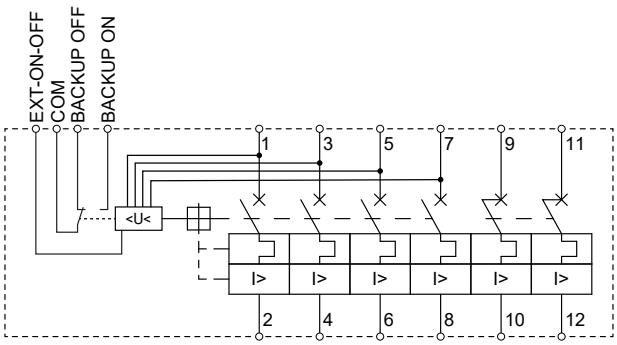


Electrical diagrams

COMBI-PRO-MAX-2P



COMBI-PRO-MAX-4P



Power wiring

POWER	PZ2	L1/L2/L3/N	PE
	2.5 Nm	 12.5 mm	 12.5 mm
CONTROL	SL2.5	COMMON/BACKUP ON/BACKUP OFF/X	
	0.25 Nm	 6 mm	

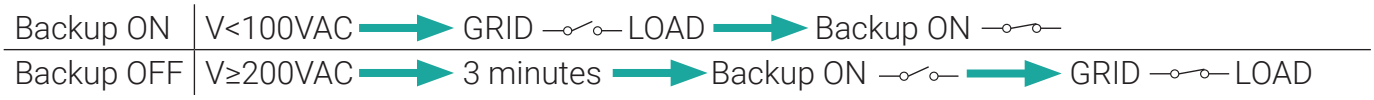
Technical specifications

		COMBI-PRO-MAX-2P	COMBI-PRO-MAX-4P
GENERALS	Rated Voltage Un	240 VAC (L/N)/(L/L)	
	Supply frequency	50-60 Hz	
	Maximum power consumption	5 W	
	Rated power consumption	1,5 W	
	Maximum terminal cross-section	25 mm^2 (power) / 2,5 mm^2 (control)	
	Environmental limits	-25º +55º C / 80% H.R.	
	Nº of DIN modules	5	8
BACKUP	Response time	2 s	
	Reconnection time	180 s	
	Contact	12 VAC/VDC 0,1 A	
PERM.	Disconnection voltage	according to UNE-EN IEC-63052	
	Disconnection time		
	Reconnection voltage	Un + 15 %	
	Reconnection time	200 s ± 5 %	
UNDERVOLT.	Disconnection voltage	<180 V ± 2 %	
	Disconnection time	10 s ± 5 %	
	Reconnection voltage	>210 V ± 2 %	
	Reconnection time	200 s ± 5 %	
MCB	Rated current In	16, 20, 25, 32, 40, 50, 63 A (according to model)	
	Tripping curve code	C	
	Breaking Capacity (I_{cn})	6 kA	
MECHANICAL	Protection degree	IP20	
	Polution degree	2	
	Power terminal torque	2,5 Nm	
	Mounting	Rail DIN 35 mm	
	Net weight	0,45 Kg	0,7 Kg
	Cross weight	0,5 kg	0,8 kg
	Dimensions (width x heigh x depth)	90 x 90 x 70 mm	140 x 90 x 70 mm
STANDARDS	POP	UNE-EN IEC 63052	
	MCB	UNE-EN IEC 60898	
	ARD	UNE-EN IEC 63024	

Operation

Backup:
In the event of a mains voltage loss (V < 100 VAC) or permanent overvoltage (V > 275 VAC), COMBI-PRO-MAX isolates the electrical installation from the grid, connects N and PE, and activates the inverter's backup mode. The operating time is 2 seconds, although the inverter may take longer to activate. COMBI-PRO-MAX allows manual reconnection to the grid by deactivating the backup mode.

If the mains voltage is restored to normal values (200 VAC ≤ V ≤ 265 VAC), after 3 minutes, COMBI-PRO-MAX deactivates the backup mode of the inverter, disconnects N and PE, and reconnects the installation to the electrical grid.



Overvoltage and undervoltage:
When the mains voltage exceeds or drops below the values established in the UNE-EN IEC 63052 standard, COMBI-PRO-MAX protects the electrical installation by isolating it from the grid. The operating time depends on the detected voltage level, in accordance with this standard.

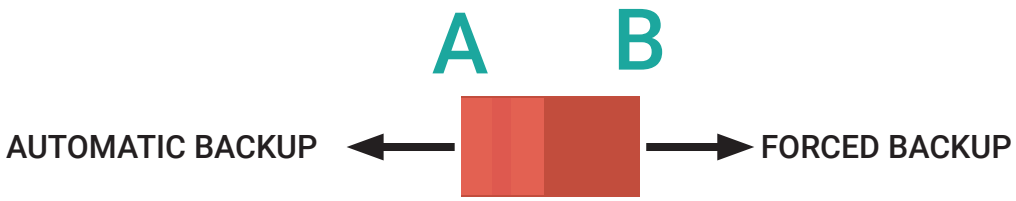
Disconnection time according UNE-EN IEC 63052		
U	Tmin	Tmax
275 VAC	3 s	15 s
300 AC	1 s	5 s
350 VAC	0.25 s	0.75 s
400 VAC	0.07 s	0.20 s

If the voltage is restored to normal values (200 VAC ≤ V ≤ 265 VAC), COMBI-PRO-MAX will reconnect the installation to the grid.

Remote (EXT_ON_OFF)
COMBI-PRO-MAX incorporates a remote control input that must be connected to a supply phase for the device to operate correctly. If this signal is not present, COMBI-PRO-MAX will disconnect the installation and will not allow manual reconnection.

Test:
COMBI-PRO-MAX is equipped with a switch that allows the installation to be set to forced backup mode. This way, the installation can be tested, maintained, or any other work or inspection can be carried out.

To activate manual backup mode, move the mode switch to position B. This will activate backup mode. In this mode, COMBI-PRO-MAX does not allow manual reset. To deactivate forced backup mode, move the switch to position A. COMBI-PRO-MAX will enter normal operating mode.



Status indicator:
The device is also equipped with an LED light that indicates the status of the input voltage and the island mode:

- Green: voltage within normal, island mode deactivated.
- Green flashing: Timing for automatic switch-on.
- Red flashing fast: Overvoltage, goes low on MCB and island mode is activated.
- Slow flashing red: Undervoltage, goes low on MCB and island mode is activated.
- Red: MCB is down due to overcurrent, short circuit or manually. Island mode disabled.
- Off: Loss of power supply. Island mode activated.

Models

COMBI-PRO-MAX-2P

Code	Reference
10004919	COMBI-PRO-MAX-2P16
10004920	COMBI-PRO-MAX-2P20
10004921	COMBI-PRO-MAX-2P25
10004922	COMBI-PRO-MAX-2P32
10004923	COMBI-PRO-MAX-2P40
10004924	COMBI-PRO-MAX-2P50
10004925	COMBI-PRO-MAX-2P63

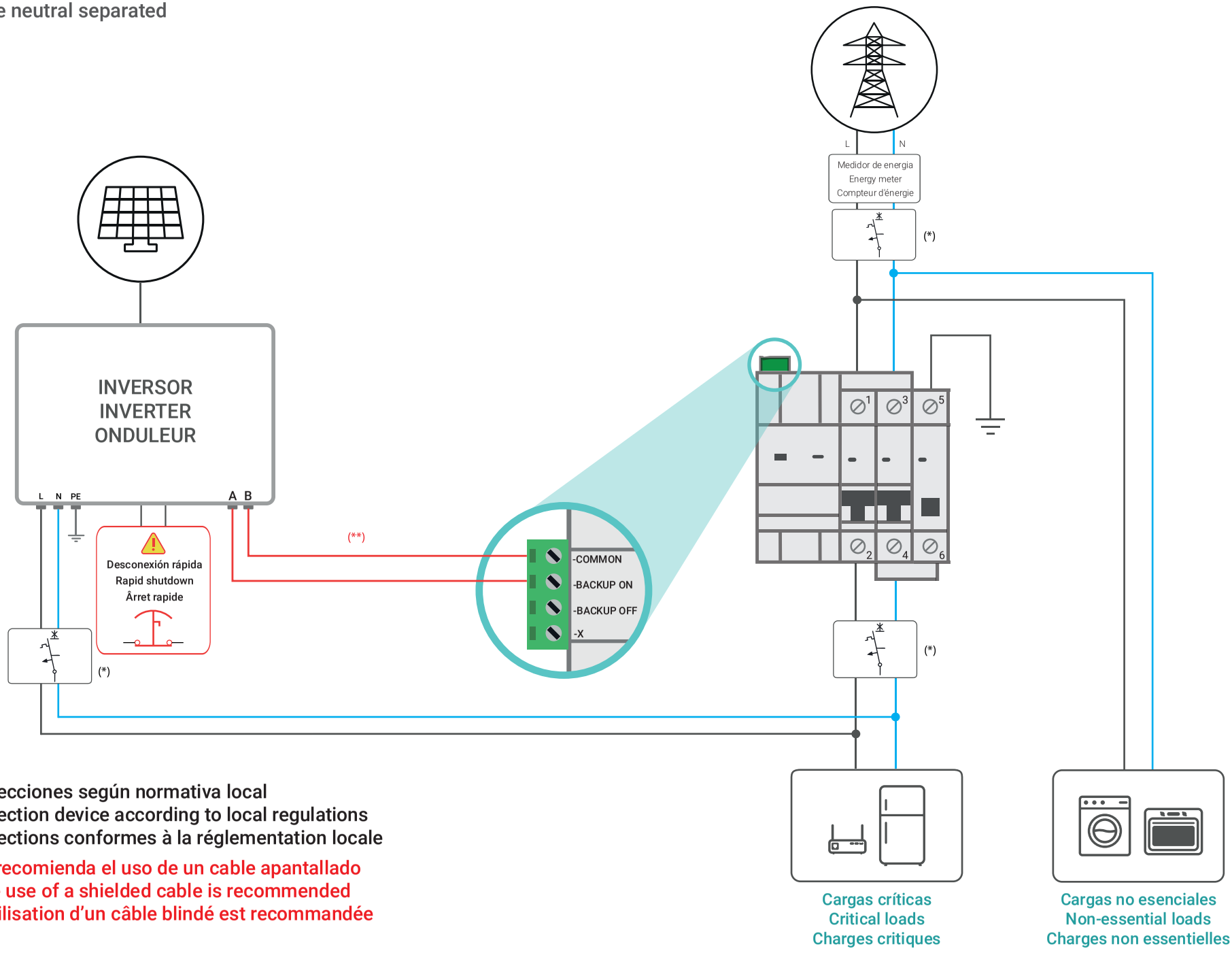
COMBI-PRO-MAX-4P

Code	Reference
10004941	COMBI-PRO-MAX-4P16
10004942	COMBI-PRO-MAX-4P20
10004943	COMBI-PRO-MAX-4P25
10004944	COMBI-PRO-MAX-4P32
10004945	COMBI-PRO-MAX-4P40
10004946	COMBI-PRO-MAX-4P50
10004947	COMBI-PRO-MAX-4P63

Compatible inverters

HUAWEI	KOSTAL PLENTICORE MP G3	SIGENERGY
SUN2000-2KTL-L1	S – 3 kW	Sigen Hybrid 2.0 SP2.0
SUN2000-3KTL-L1	S – 3,6 kW	Sigen Hybrid 3.0 SP2.0
SUN2000-3.68KTL-L1	S – 4 kW	Sigen Hybrid 3.6 SP2.0
SUN2000-4KTL-L1	M – 4,6 kW	Sigen Hybrid 4.0 SP2.0
SUN2000-4.6KTL-L1	M – 5 kW	Sigen Hybrid 4.6 SP2.0
SUN2000-5KTL-L1	M – 6 kW	Sigen Hybrid 5.0 SP2.0
SUN2000-6KTL-L1	M – 7 kW	Sigen Hybrid 6.0 SP2.0
SUN2000-8K-LC0	**KOSTAL PLENTICORE G3**	
SUN2000-10K-LC0	S – 4 kW	
SUN2000-3K-LB0	S – 5,5 kW	
SUN2000-3.68K-LB0	S – 7 kW	
SUN2000-4K-LB0	M – 8,5 kW	
SUN2000-4.6K-LB0	M – 10 kW	
SUN2000-5K-LB0	M – 12,5 kW	
SUN2000-6K-LB0	L – 15 kW	
SUN2000-3KTL-M1	L – 17,5 kW	
SUN2000-4KTL-M1	L – 20 kW	
SUN2000-5KTL-M1	**GROWATT**	
SUN2000-6KTL-M1	MIN2500TL-XH	
SUN2000-8KTL-M1	MIN3000TL-XH	
SUN2000-10KTL-M1	MIN3600TL-XH	
SUN2000-12K-MB0	MIN4200TL-XH	
SUN2000-15K-MB0	MIN4600TL-XH	
SUN2000-17K-MB0	MIN5000TL-XH	
SUN2000-20K-MB0	MIN6000TL-XH	
SUN2000-25K-MB0		

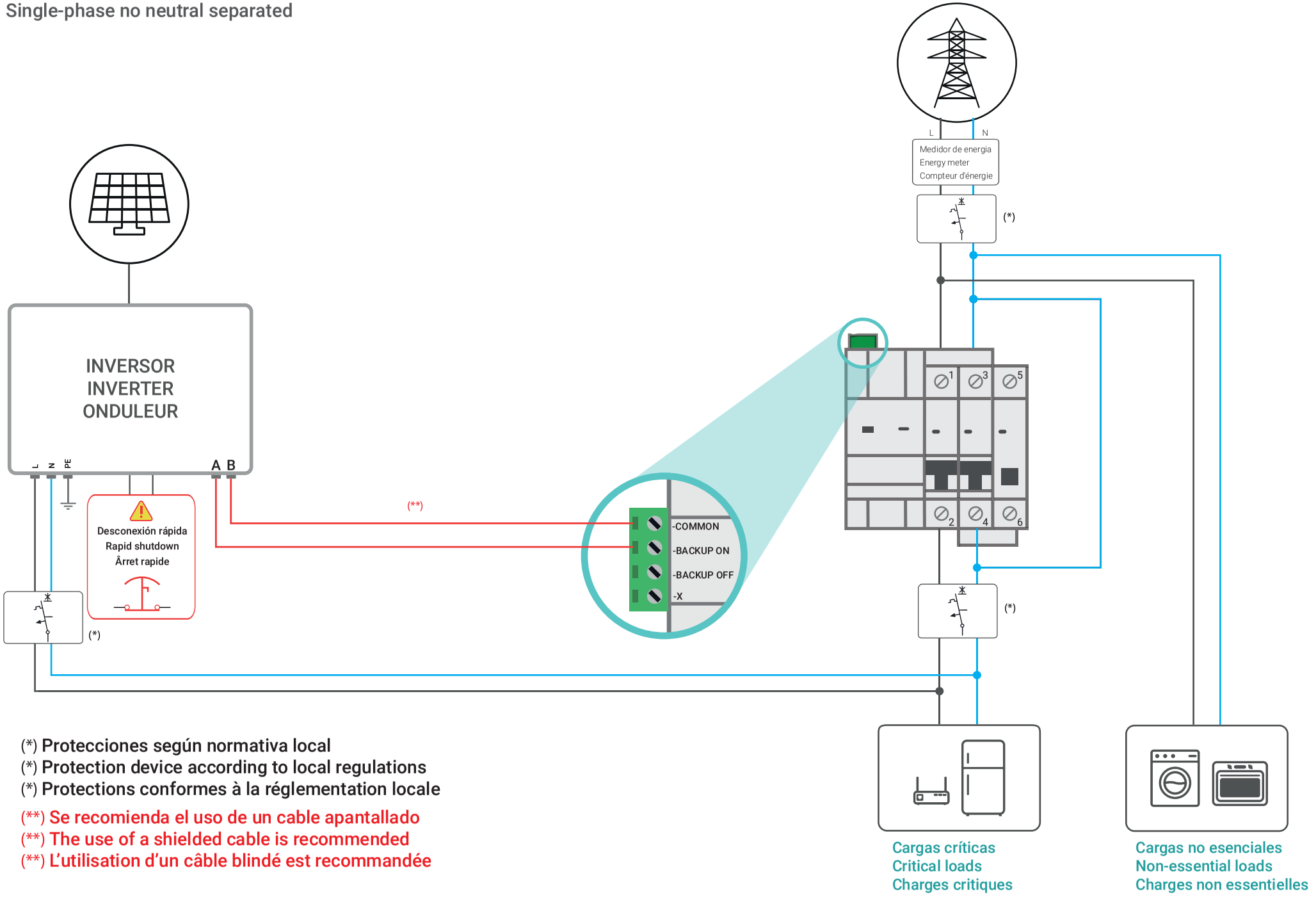
Single-phase neutral separated



(*) Protecciones según normativa local
(*) Protection device according to local regulations
(*) Protections conformes à la réglementation locale

(**) Se recomienda el uso de un cable apantallado
(**) The use of a shielded cable is recommended
(**) L'utilisation d'un câble blindé est recommandée

Single-phase no neutral separated



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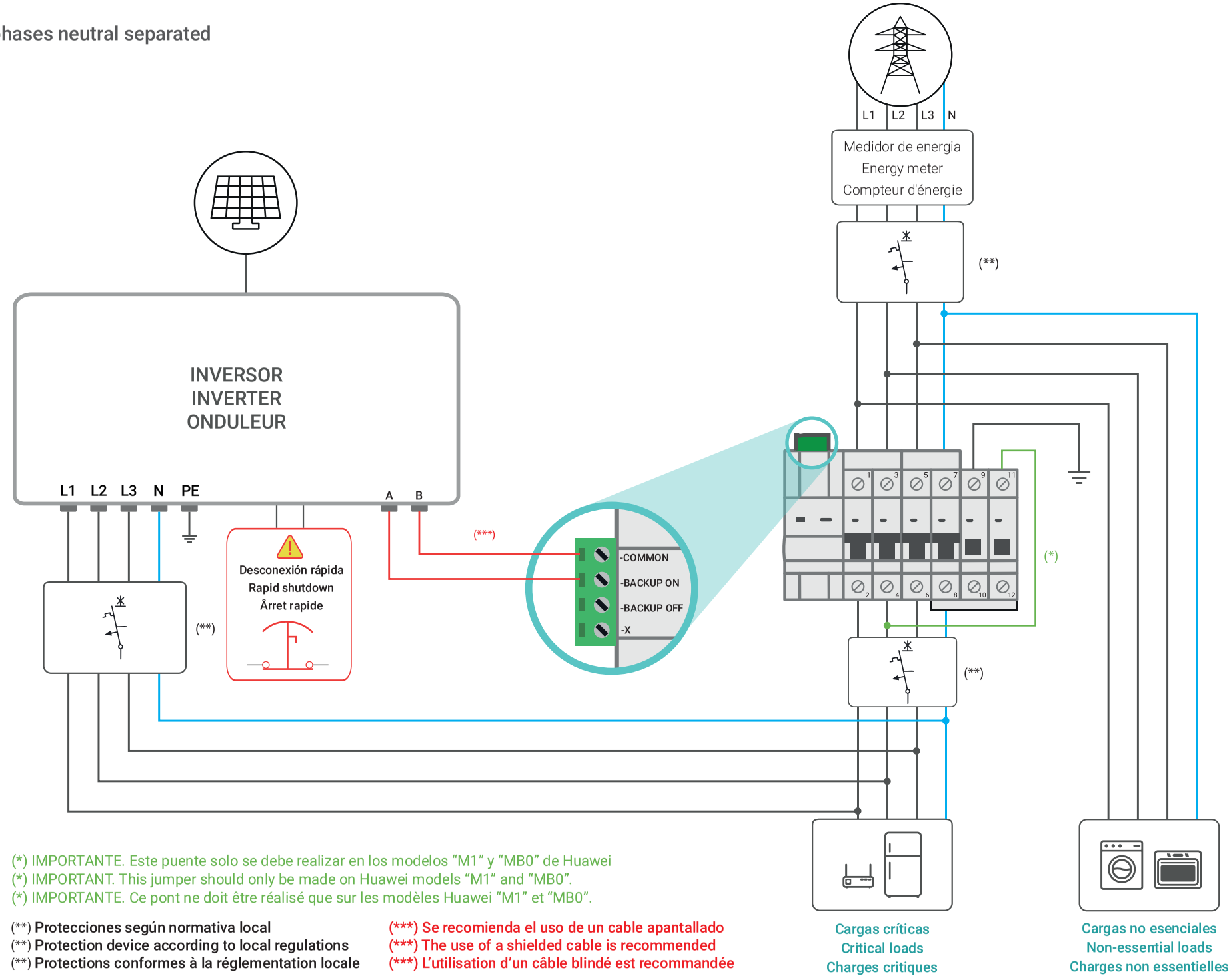
Three phases neutral separated



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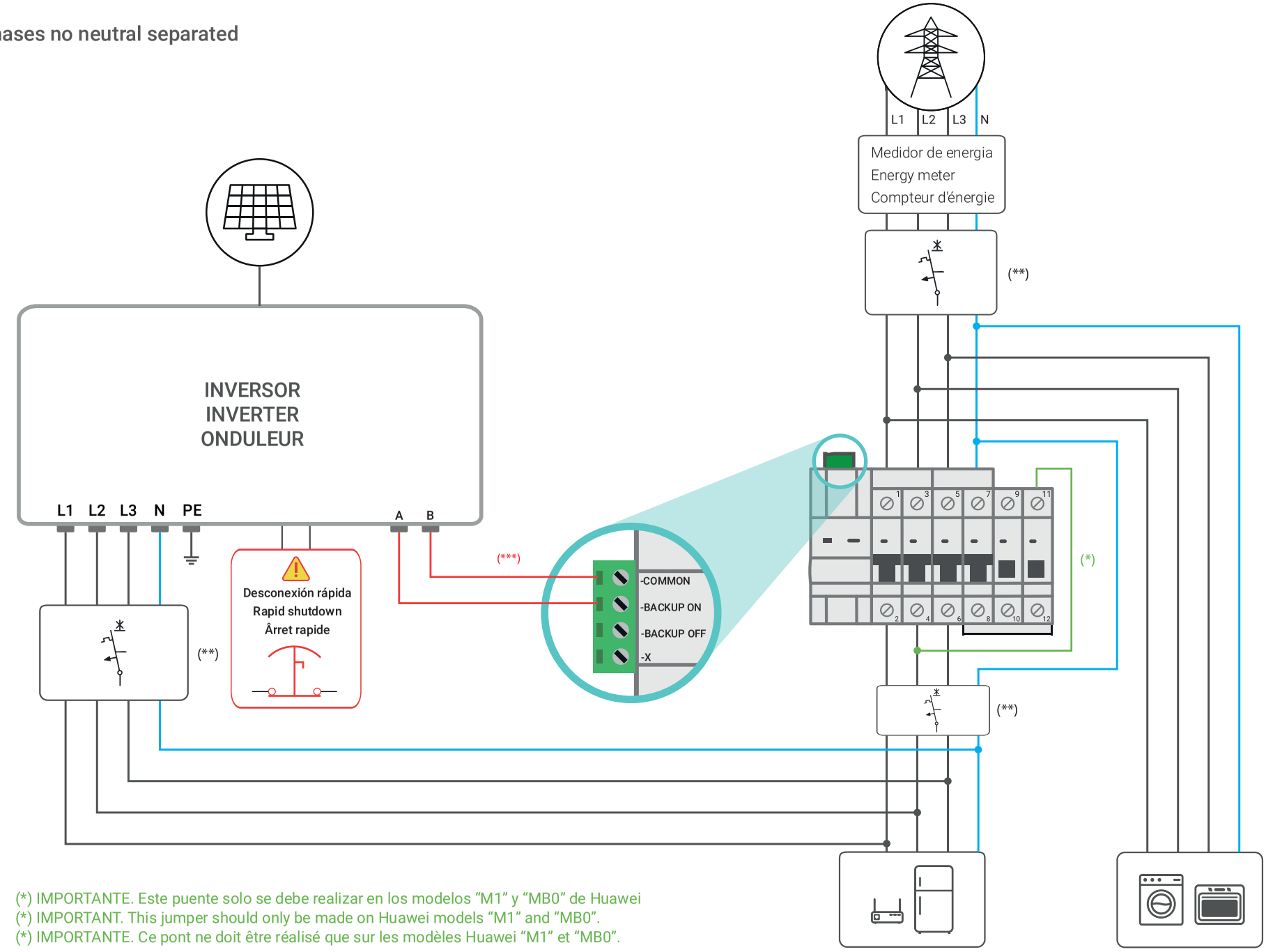
Three phases no neutral separated



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Cod. 50023084. Ed. 13.26

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