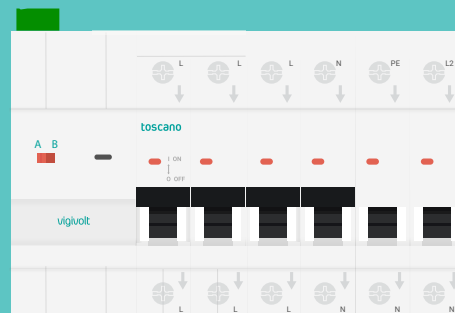
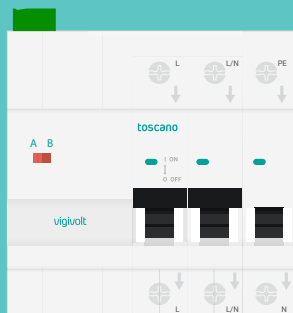


COMBI-PRO-MAX

Automatic control and protection for photovoltaic applications with backup



Cod. 50023084. Ed.17.26



WARNING!

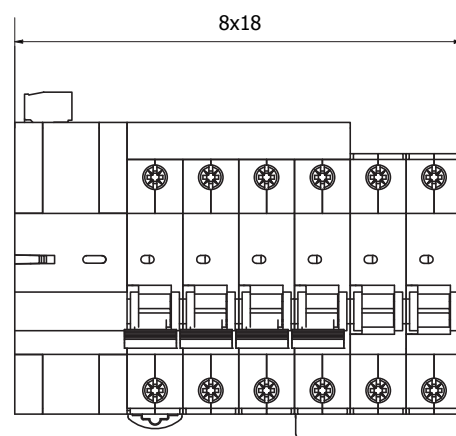
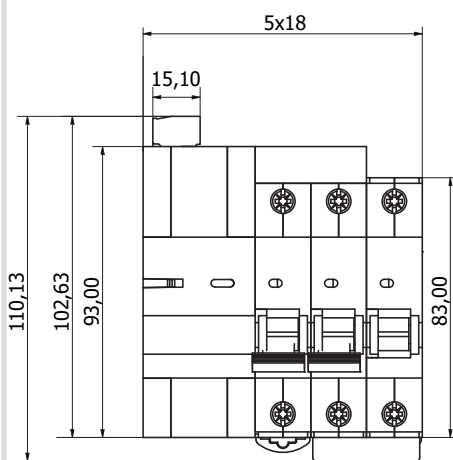
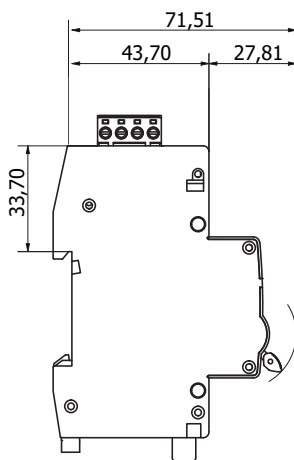
- The installation, maintenance and eventual replacement of this device must only be carried out by a qualified electrician.
- This device must not be repaired.
- All applicable local, regional and national regulations must be complied with during the installation, use, maintenance and replacement of this device.
- This device should not be installed if, when unpacking it, you observe that it is damaged.
- Toscano cannot be held responsible in the event of non-compliance with the instructions in this document and in the documents to which it refers.
- For the correct operation of the equipment, the phases must be connected to the "L" terminals, the neutral to the "N" terminal and the earth to the "PE" terminal.



HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

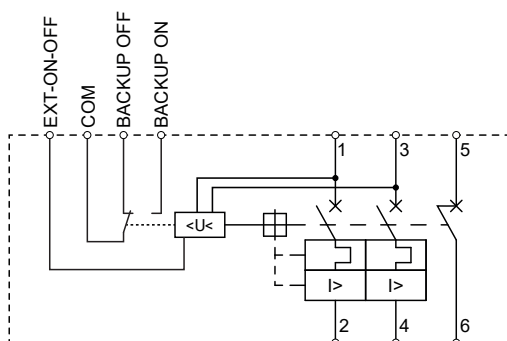
- Turn off all power supplying this device before working on it.
- Use a voltage tester on an appropriate scale to verify that all live conductors are not energized.
- Failure to comply with these instructions may result in serious injury or death.

Dimensiones

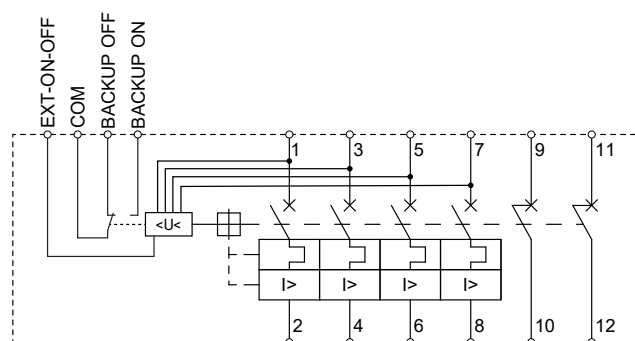


Electrical diagrams

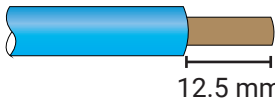
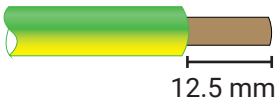
COMBI-PRO-MAX-2P



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
GENERAL	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	-25°C +55°C / 93% R.H.
	No. of DIN modules	5
BACKUP	Response time	2 s
	Reconnection time	180 s
	Contact	12 VAC/VDC 0.1 A
PERM.	Disconnection voltage	Disconnection time according to 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
	Energy limiting class	3
	Insulation voltage Ui	500 V
	Rated impulse withstand voltage Uimp	4 kV
	Breaking Capacity (I _{cn})	6 kA
	Rated operating short circuit breaking capacity (Ics)	6 kA
MECHANICAL	Protection degree	IP20
	Pollution degree	2
	Tightening torque	2.5 Nm
	Mounting	Rail DIN 35 mm
	Approx. average weight	450 g
	Approx. packed weight	500 g
	Dimensions (width x height x depth)	90 x 90 x 71 mm
COMPLIANCE	POP	IEC 63052
	MCB	IEC 60898
	ARD	IEC 63024
	Directives	2014/35/UE (LVD)
		2014/30/UE (EMC)



Before installing the device, you must ensure that the inverter is configured to operate in "ISLAND MODE". To do so, it is necessary to consult your installer or the installation manual of your inverter. The connection of COMBI-PRO-MAX with cascaded inverters, parallel inverters, inverter banks or any application outside the provided diagrams must be consulted and its application is not guaranteed.

Operation

Backup:

In the event of a mains voltage loss ($V < 100 \text{ VAC}$) or permanent overvoltage ($V > 275 \text{ VAC}$), 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 ($200 \text{ VAC} \leq V \leq 265 \text{ VAC}$), 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 IEC 63052		
U	Tmin	Tmax
275 VAC	3 s	15 s
300 VAC	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 ($200 \text{ VAC} \leq V \leq 265 \text{ VAC}$), COMBI-PRO-MAX will reconnect the installation to the grid.

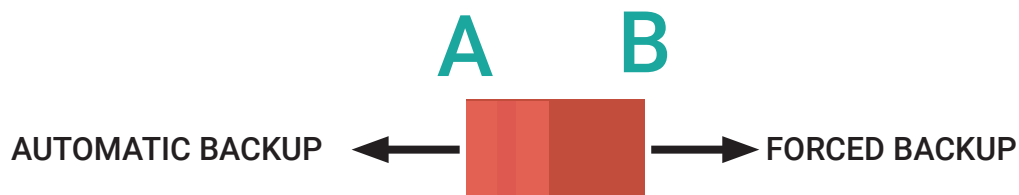
Remote (EXT_ON/OFF)

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

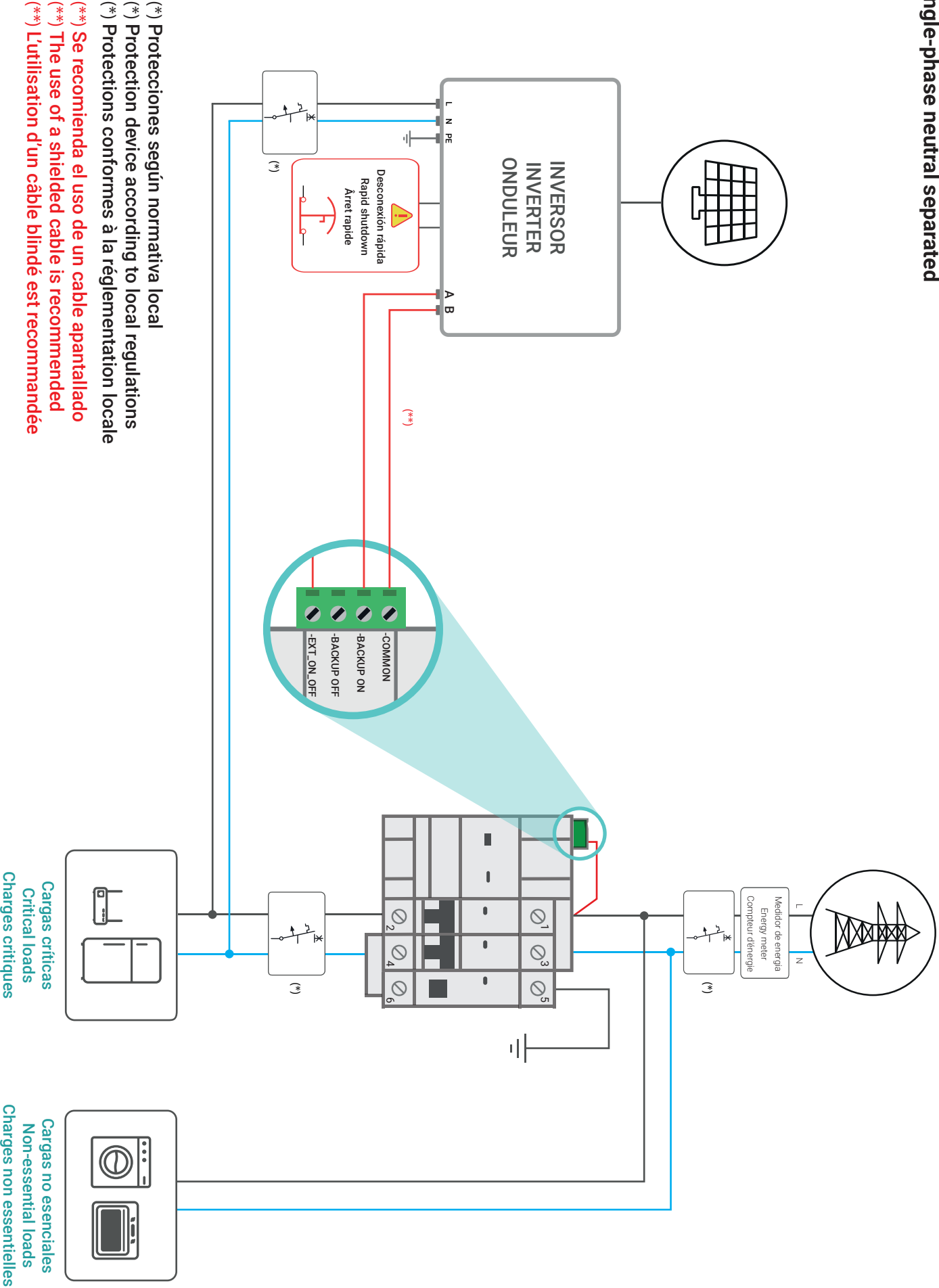
COMBI-PRO-MAX-4P

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

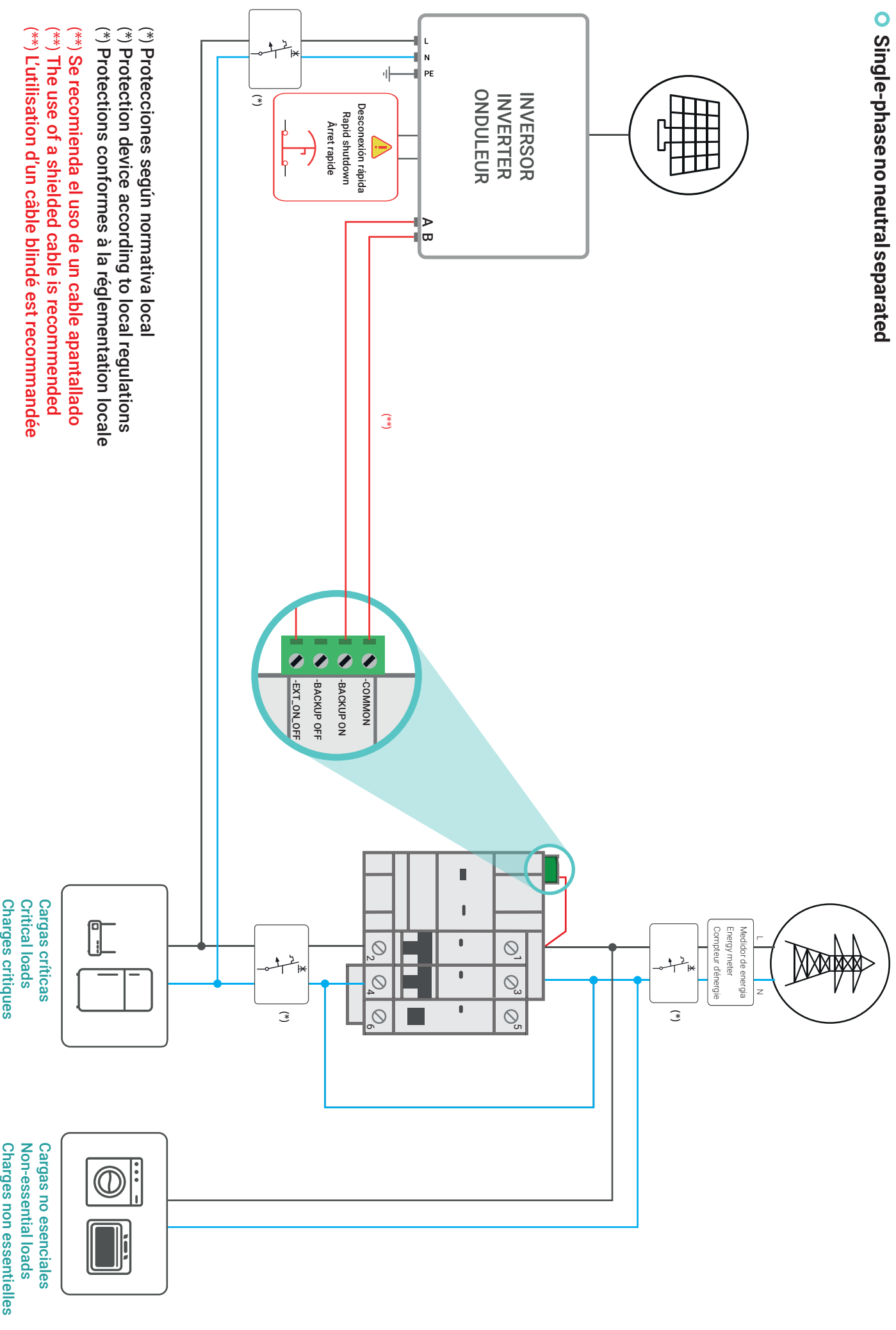
Compatible inverters

COMBI-PRO-MAX 2P	COMBI-PRO-MAX 4P
Huawei SUN2000-(2KTL-6KTL)-L1	Huawei SUN2000-(3KTL-10KTL)-M1
Huawei SUN2000-(8K-10K)-LC0	Huawei SUN2000-(12K-25K)-MB0
Huawei SUN2000-(3K-6K)-LB0	Huawei SUN5000-(17K,25K)-MB0
Kostal Plenticore MP G3	Huawei SUN2000-(5K-12K)-MAP0
GROWATT MIN-(2500-6000)-TL-XH	Huawei SUN5000-(8K,12K)-MAP0
SIGENERGY Sigen Hybrid SP2	Kostal Plenticore G3
SIGENERGY Sigenstor SP	SIGENERGY Sigen Hybrid TP2
	SIGENERGY Sigenstor TP

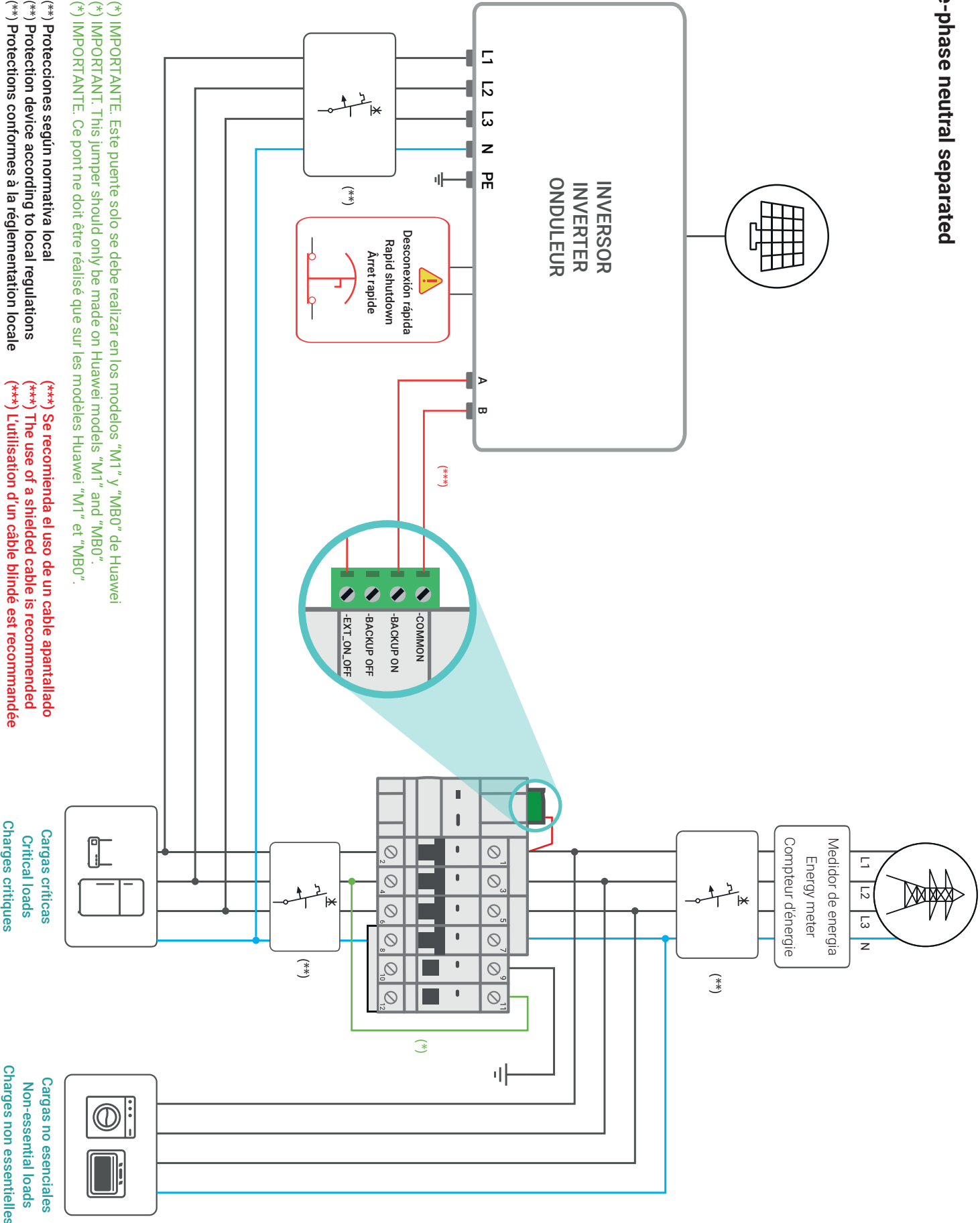
Single-phase neutral separated



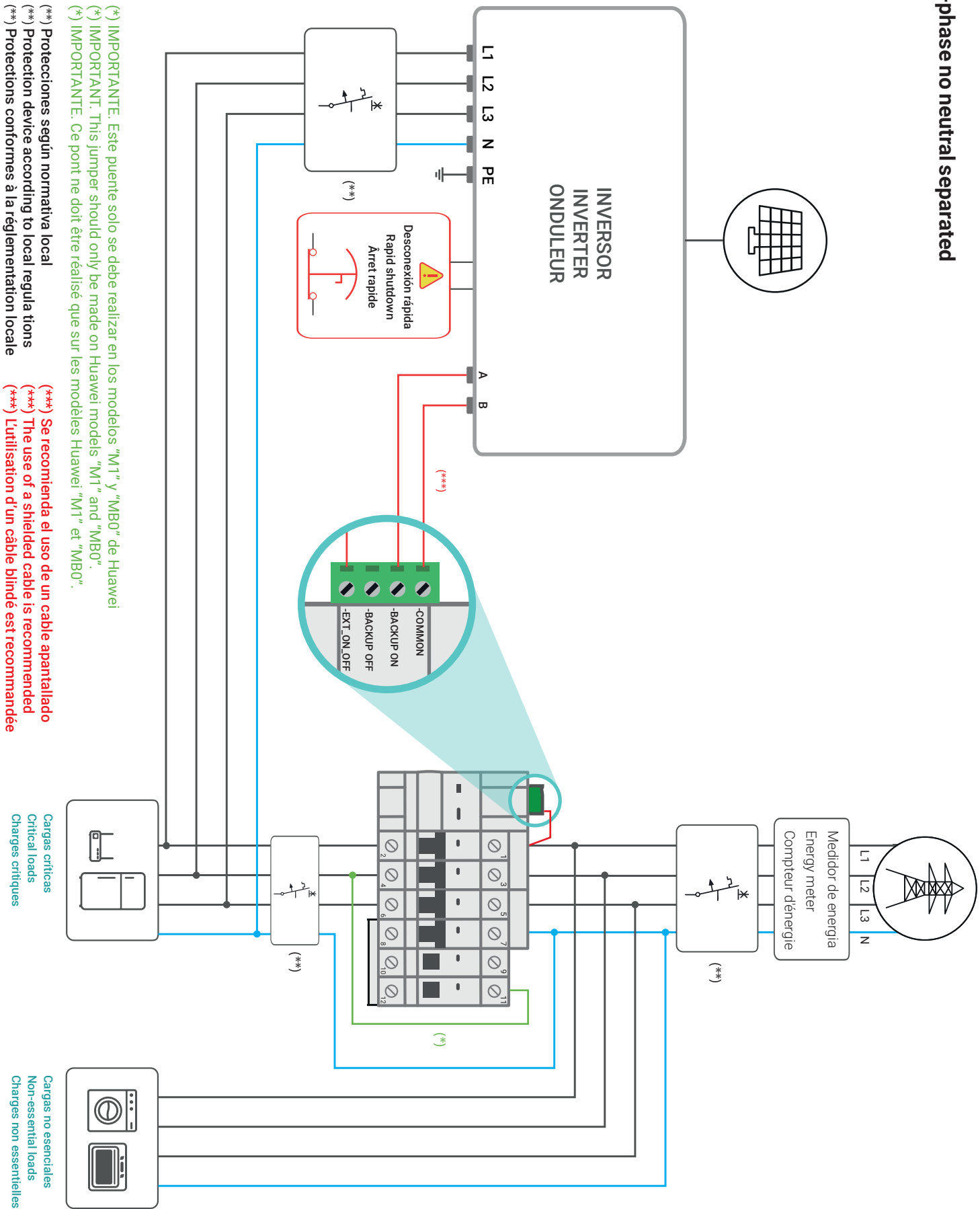
Single-phase no neutral separated



Three-phase neutral separated



Three-phase no neutral separated



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information:

