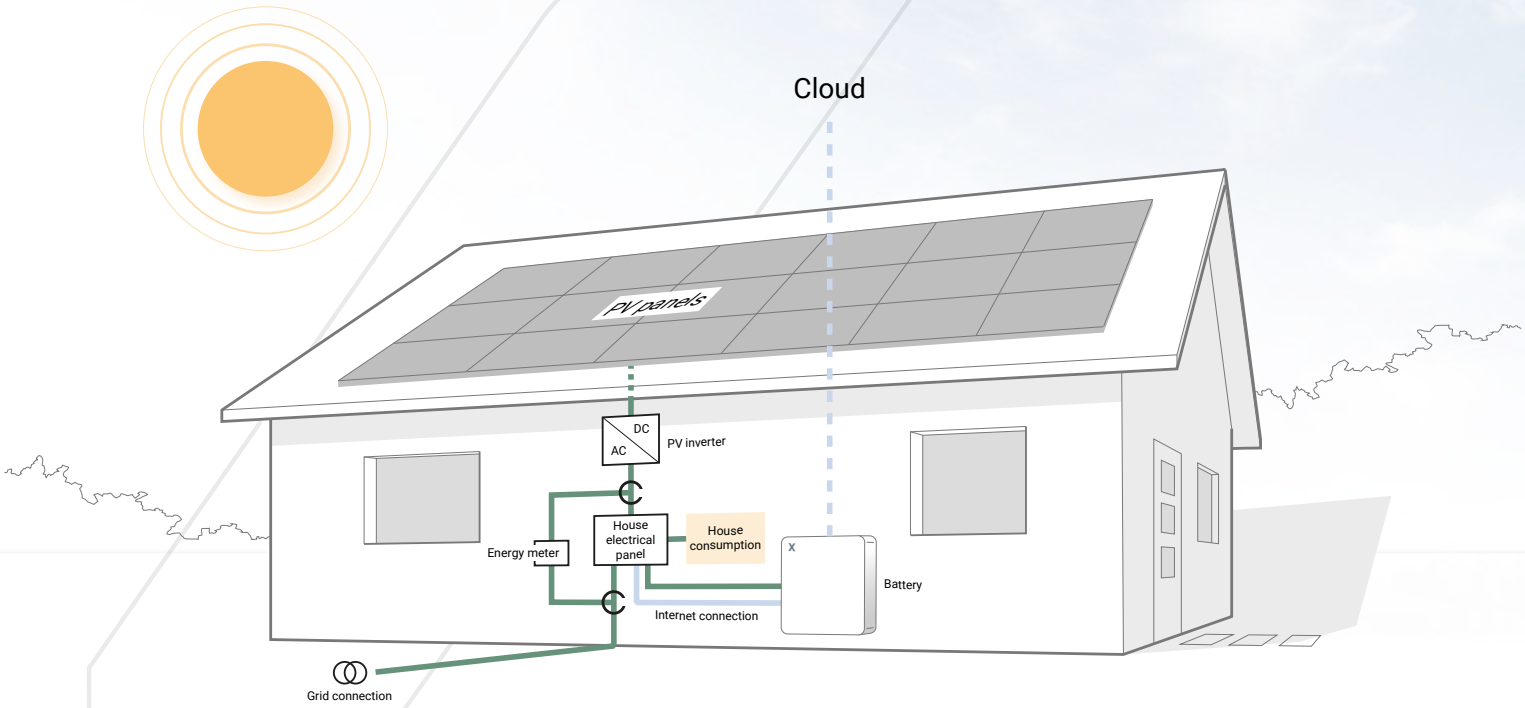
BAT-5/10 All-in-one Battery Energy Storage System



INSTALLATION INSTRUCTIONS

ONLY TO BE USED BY TRAINED INSTALLERS

XOLTA COMPACT SOLAR BATTERY
BAT-5 AND BAT-10

This guide provides you with the necessary information and step-by-step instructions on the mechanical and electrical installation of a compact XOLTA solar battery.

XOLTA

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GENERAL INFORMATION ABOUT THE BATTERY:

Dimensions in mm: H772 x W665 x D260
Weight in kg: 70 (BAT-5), 105 (BAT-10)

The battery is designed for outdoor wall mounting - be aware of the load capacity of the wall in relation to the above battery weight.

1-phase, AC connected which means the battery is independent of the solar installation.

PREPARATION BEFORE INSTALLATION:

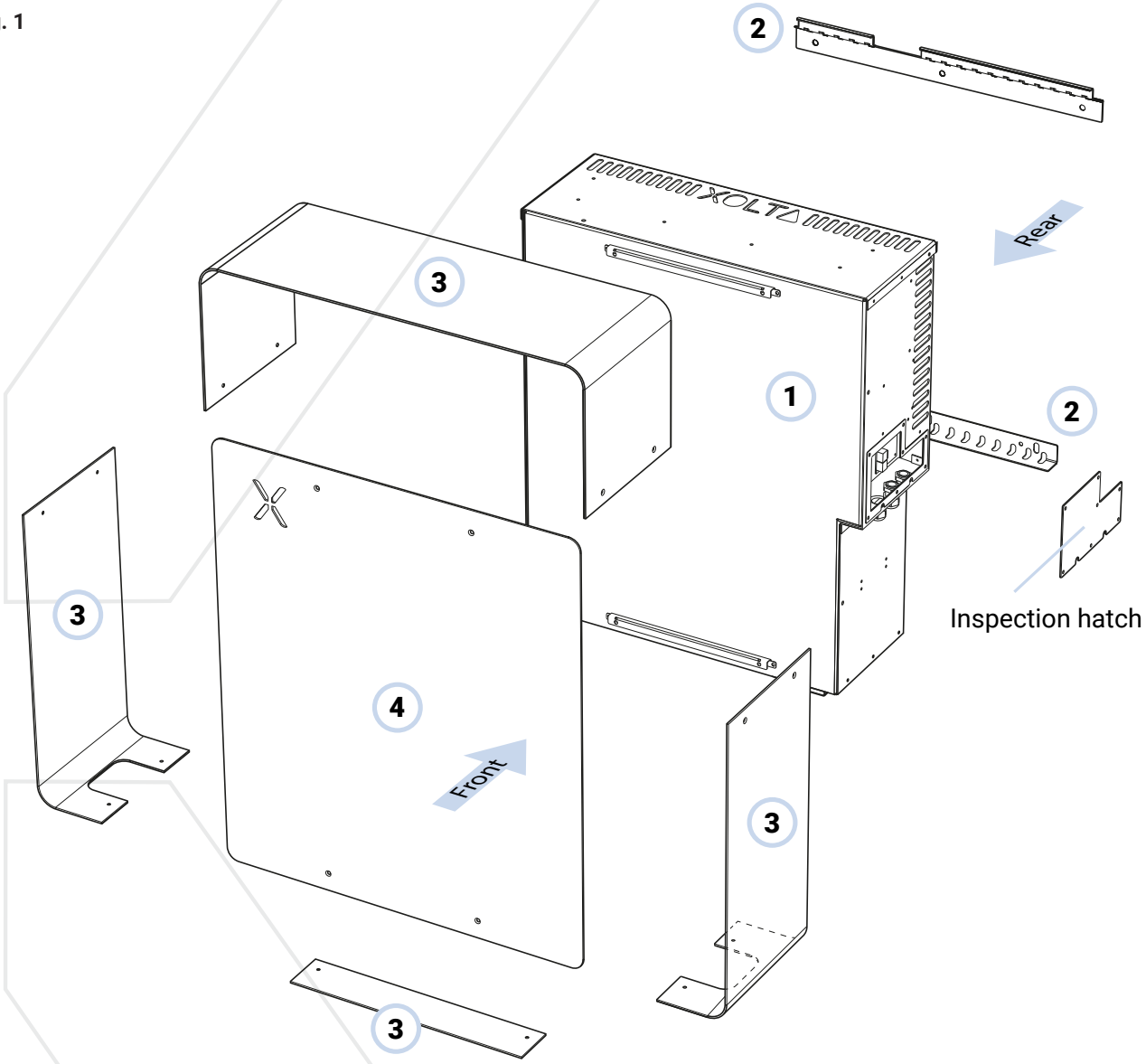
Before you go out to a battery installation, you must be registered as an installer with us.
You can do this by contacting XOLTA support at support@xolta.com or +45 70602017

Materials included:
- Battery box (1)
- Wall bracket top & bottom (2)
- Frame in 4 parts (3)
- 18 x M4 x 10 mm
- Front panel (4)
- Carlo Gavazzi power meter (if ordered)
- 2 sets of power transformers (if ordered)

Materials to be provided by the installer:
- Screws + rawl plugs fittings hole diameter = Ø10
- Installation cable 3x2.5 mm2
- Modbus cable twisted pair 2x0.25 mm2
- Patch cable min. CAT5E
- Routing pipes

Special tools to be provided by the installer:
- Suitable lifting equipment, e.g. sack trolley with lift

Fig. 1



MECHANICAL BATTERY INSTALLATION:

The battery should be installed outside - in the shade or on a north/northeast facing wall.

Distance requirements for wall mounting:

- The bracket ensures a 12 mm distance from the battery to the wall.
  Check that the hanging wall does not obstruct the airway passage at least 12 mm behind the battery.
- Minimum clearance from the top of the battery must be 700 mm
- Minimum clearance from the sides of the battery must be 500 mm.
- The battery should hang above the footing of the house. However, there must be at least 200 mm to the ground. This means that there is a minimum distance of 235 mm from the centre hole of the bottom bracket to the ground.

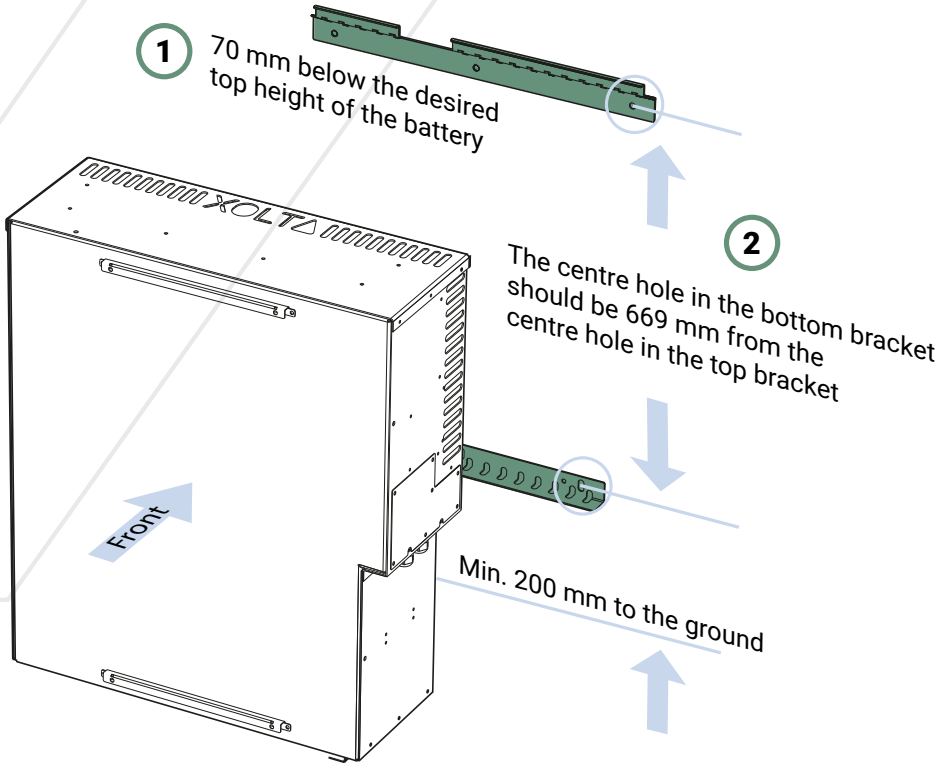
Mounting:

1. The top bracket is mounted 70 mm below the desired top height of the battery.

2. Mount the bottom bracket 669 mm below the top bracket. Centre hole to centre hole from the top bracket must be measured.

3. The battery box is lifted over the top bracket and lowered to rest on the bottom bracket. Please note that the distance to the wall must be 12 mm.

Fig. 2



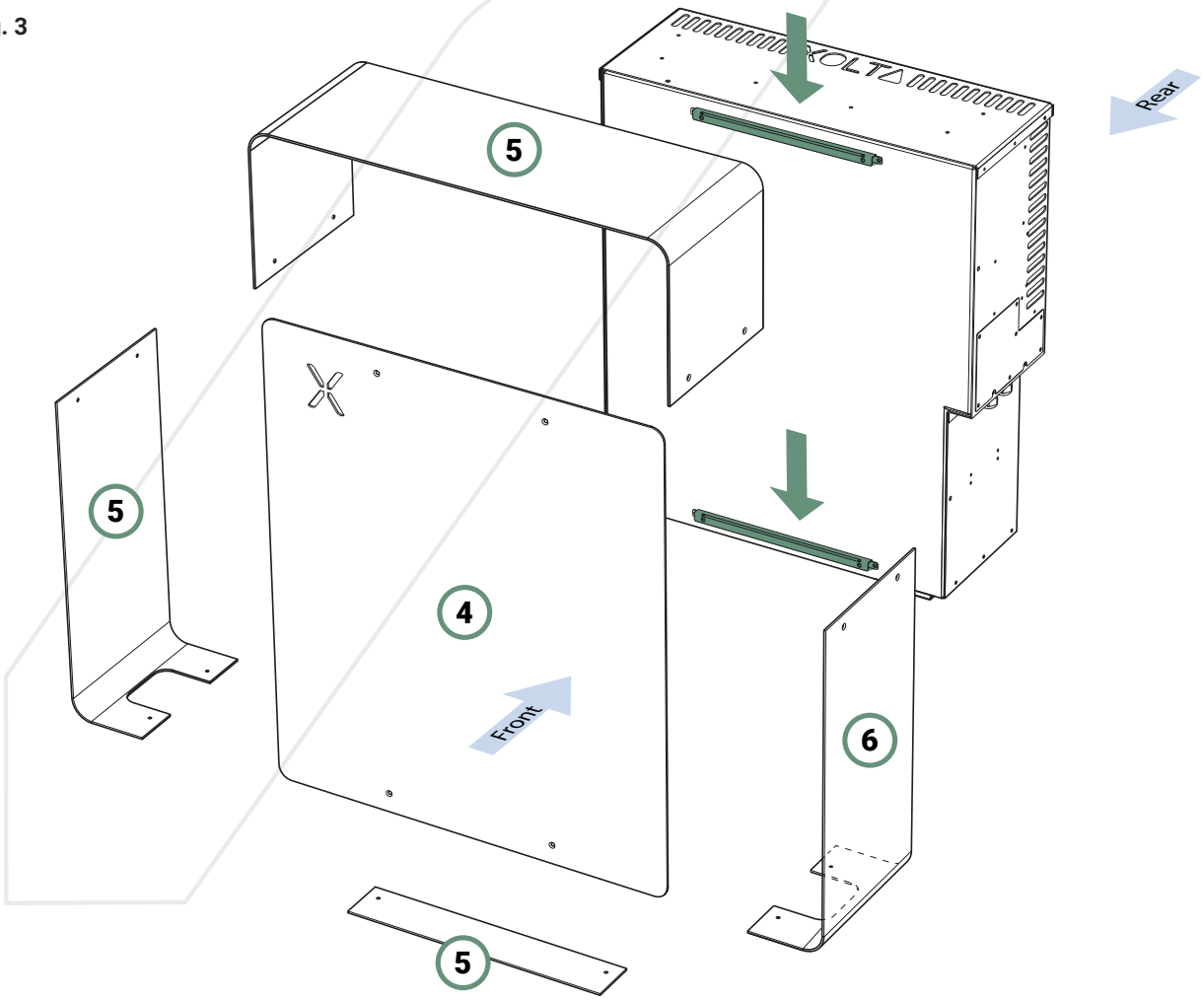
4. The front plate is mounted on the battery mounting bracket at the top and bottom with the supplied countersunk machine screws.

5. Most of the frame is mounted. The frame consists of 4 parts: top, bottom and 2 identical sides. All parts are mounted with countersunk machine screws.

The order does not matter, but the right side must only be mounted after all electrical connections have been established.
- The top is mounted on the sides of the battery box
- Mount the left side and bottom

6. The right side is mounted last - when the electrical installation is completed.

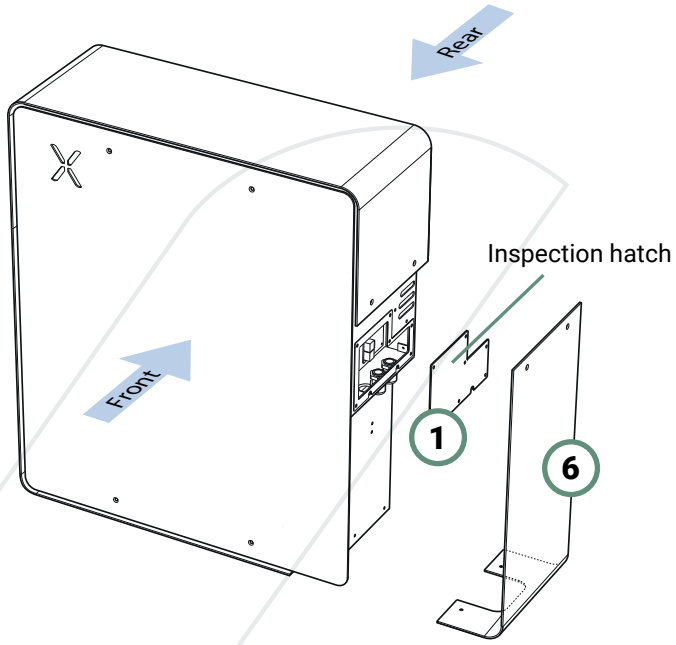
Fig. 3



ELECTRICAL INSTALLATION OF THE BATTERY:

1. Remove the inspection hatch on the right side of the battery.

Fig. 4



2. Connect the 2.5 mm2 installation cable from the electrical panel to the automatic fuse (L/N/Earth) (2).

3. The battery is connected to the Internet via an RJ 45 connector to be plugged in on the left side under the panel (3). Check that there is communication on the Internet connector (RJ 45). When power is applied to the device, the LED should flash at the connector (Fig. 5a).

4. Connect the twisted pair Modbus cable from the energy meter into the electrical panel as shown in the drawing (4).

5. Reattach the inspection hatch (5).

6. Mount the right frame of the battery (6).

Fig. 5

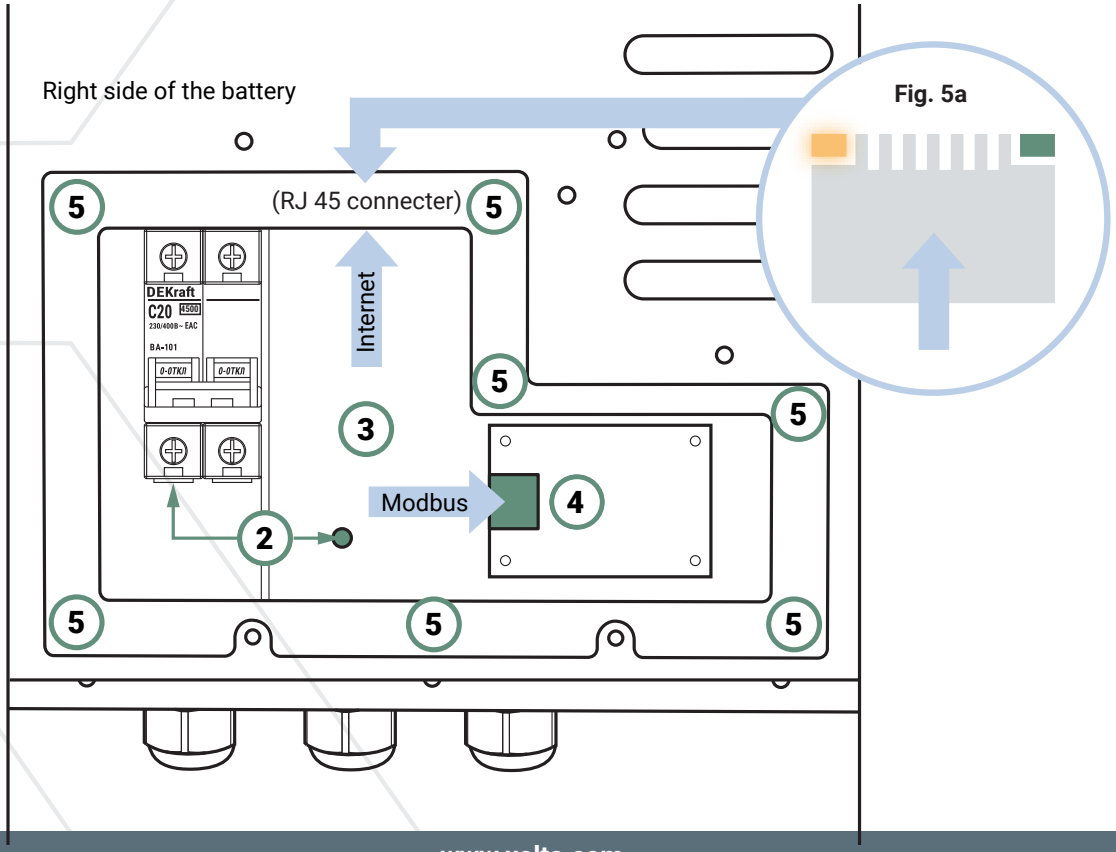


Fig. 5a

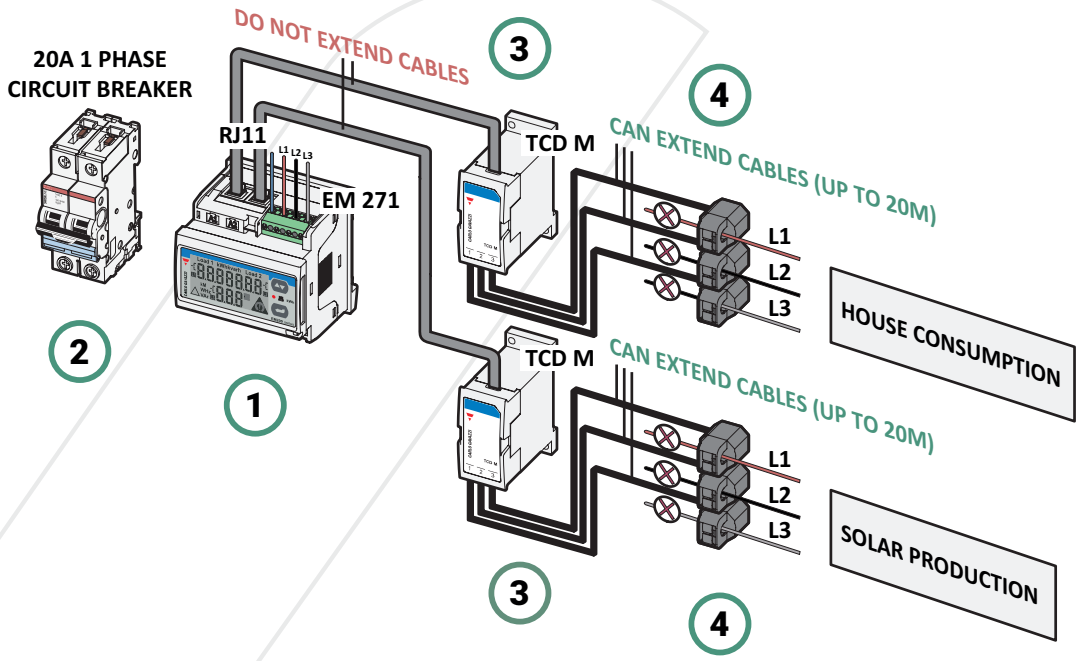
PANEL INSTALLATION:

A Carlo Gavazzi energy meter (1), 20A 1 phase automatic fuse (2) and 2 pcs. DIN mounted integrator modules for the power transformers (3) are fitted in the electrical panel.

In order to mount the above, the space requirement in the electrical panel is 150 mm. They are distributed as follows:

- Carlo Gavazzi measures: 72 mm
- 1 phase 20A group: 36 mm
- Integrator modules: 2x20 mm

Fig. 6



The power transformers (4) must measure the building's total consumption (service line) and the building's total solar production, respectively. Pay attention to the location and correct orientation of the power transformers.

The power transformer is labelled with an arrow at the bottom (see Fig. 8), which indicates the direction of the current.

All 3 phases and neutral must be connected to the EM271 energy meter, as shown in Fig. 5 Carlo Gavazzi manual.

All 3 current transformers must be connected so that the transformer and voltage measurements L1, L2 and L3 match.

Correct location of the power transformers

Fig. 7a

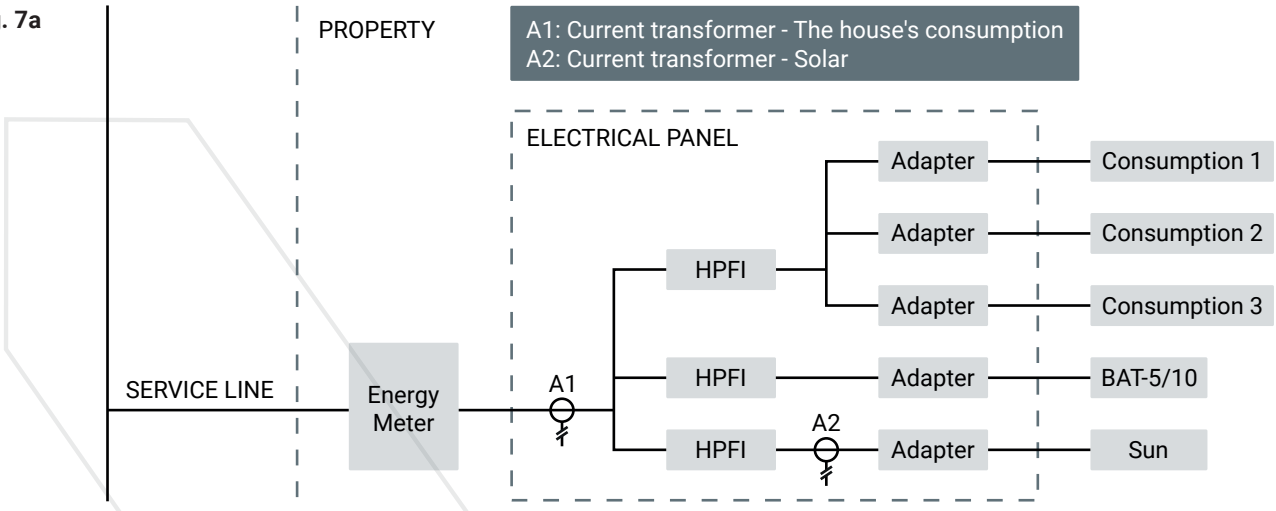
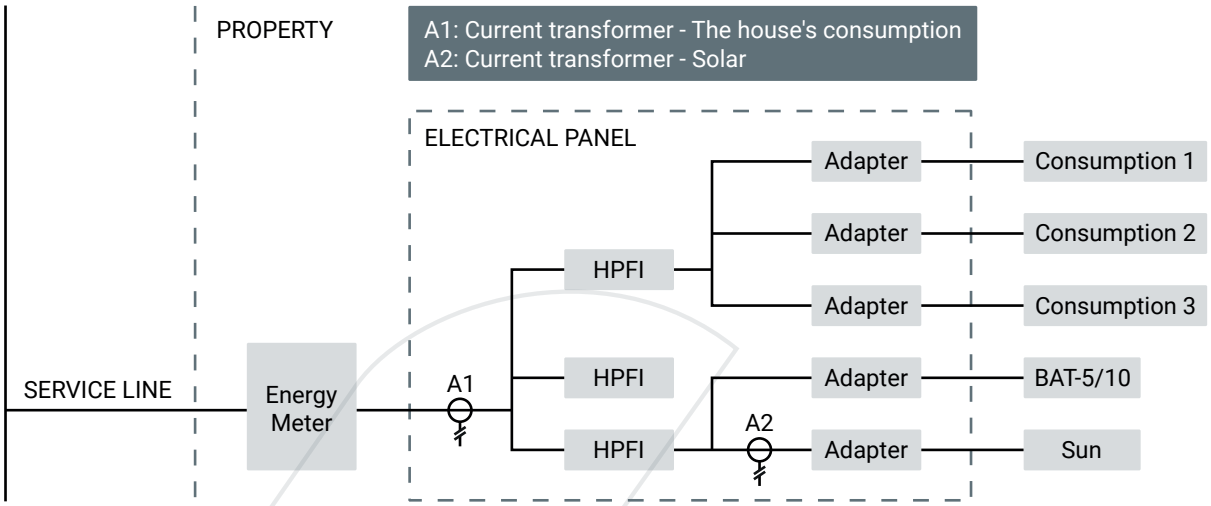
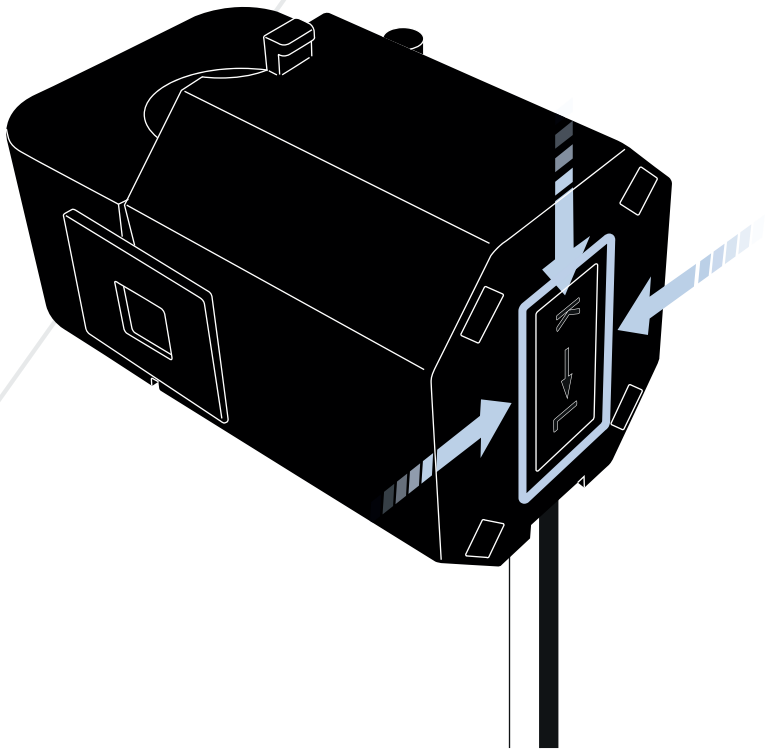


Fig. 7b



IMPORTANT! In general, the arrow should point towards the house, i.e. away from the service line/main meter. Fig 5 in Carlo Gavazzi manual.

Fig. 8



SCHEMATIC DIAGRAM FOR ENERGY METER CARLO GAVAZZI EM271

The location of the power transformers is indicated in the schematic diagram below.

The following is important.

1. Power transformer set A1 (Household consumption) must measure exactly the same power as the main meter/billing meter.

a. Therefore, there must be no branches before the location of the power transformers for A1.

b. These power transformers should be turned so that they point away from the supply point in the road.

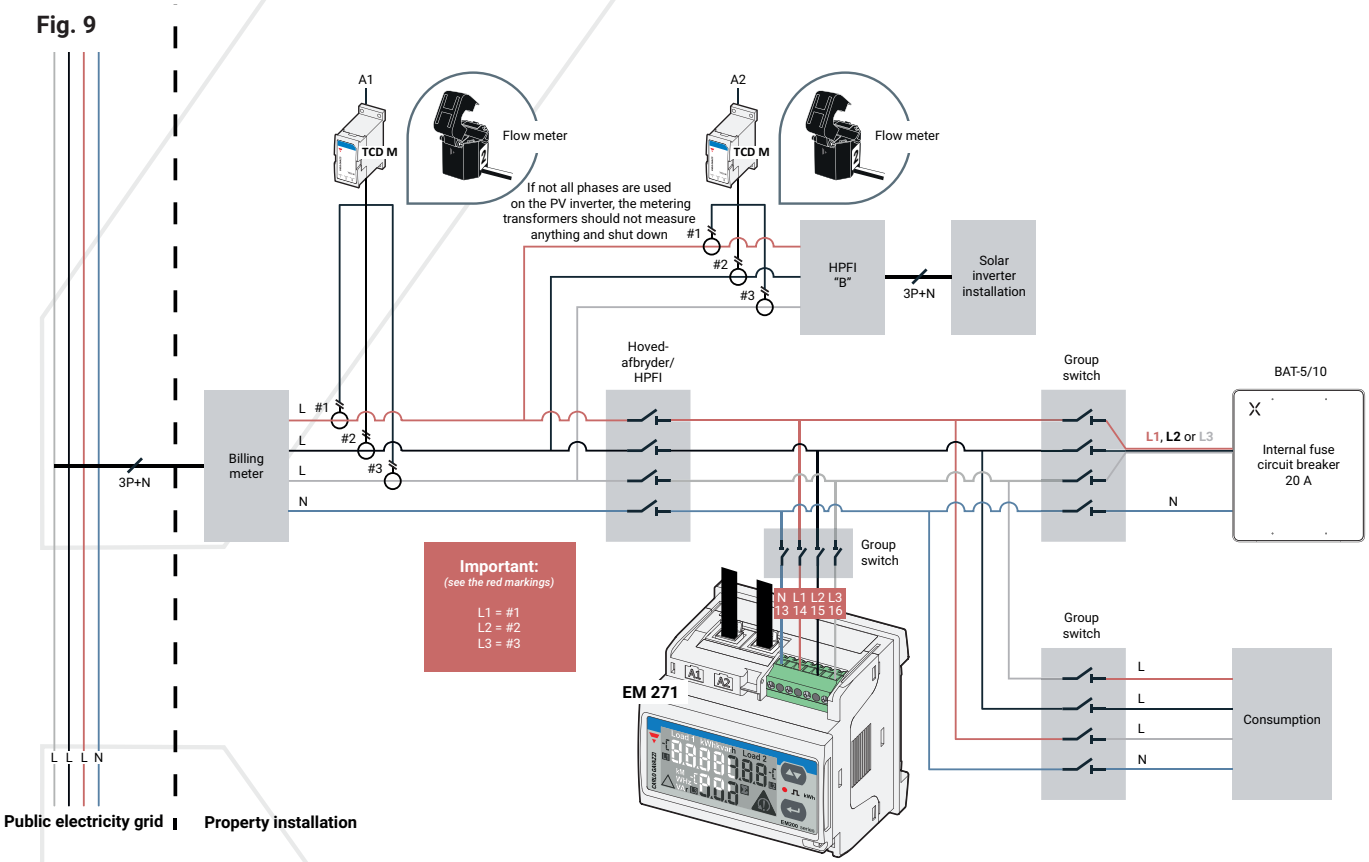
2. Power transformer set A2 (solar production) must measure all production and only solar production. General consumption must not be included in this measurement!

a. These power transformers should be turned so that they point away from the solar inverter.

The EM271 is a summation meter that gives the total consumption for all 3 phases, therefore it is important that the number labelling on the current transformers is respected and mounted so that they match the phase connected to terminals 14 (L1), 15 (L2), 16 (L3) on EM271.

The labelling/naming of the phases at the connection to the group panel should be disregarded here.

Fig. 9

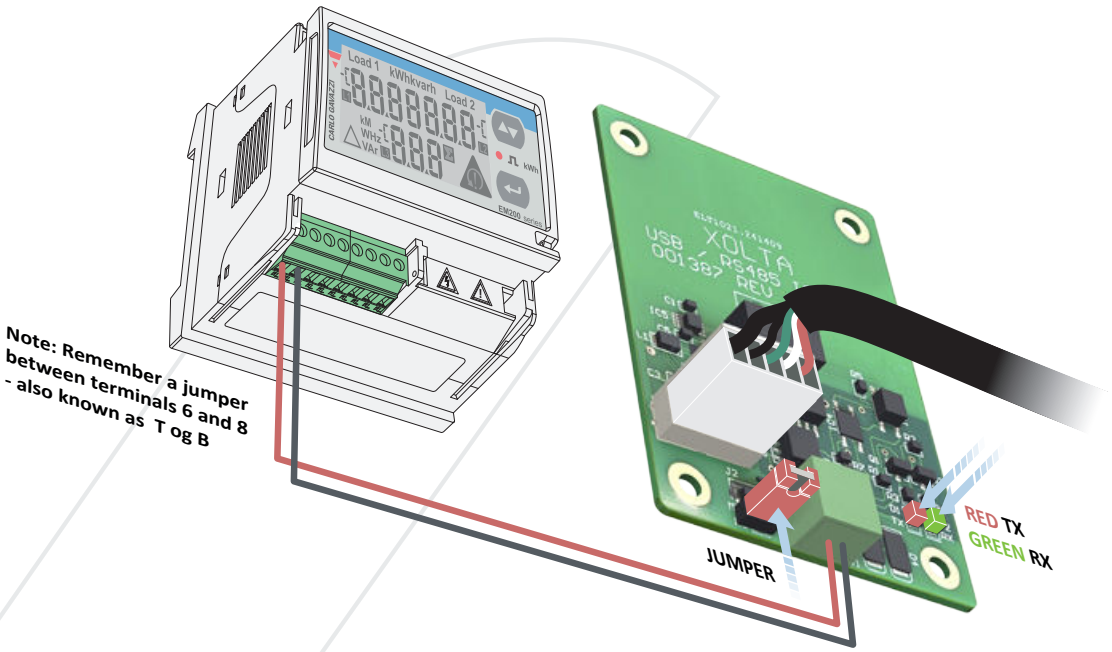


CONNECTING ENERGY METERS:

Modbus connection to energy meters
From EM271 to XOLTA BAT-5/10, the modbus data connection must be made so that pin 1 on EM271 is connected to terminal B on the Interface board and pin 2 on EM271 is connected to terminal A on the Interface board.

Check that the **RED** and **GREEN** LED TX and RX are flashing. If the energy meter is installed correctly, both red and green will flash. If the energy meter is not installed correctly, only red will flash.

Fig. 10

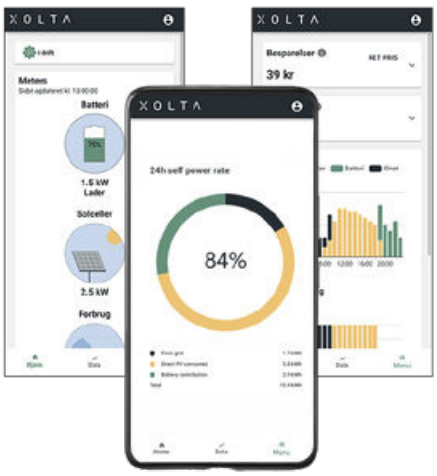


TESTING AND COMMISSIONING THE BATTERY:

Go to **installer.xolta.com** or use the QR code below. Follow the instructions the app gives you.

Contact your dealer if you experience problems with your battery or app.

You can change the language of the app in the menu in the top right corner. It is possible to switch between Danish and English.



THE ABOVE QR CODE IS ONLY TO BE USED BY INSTALLERS.

IF YOU ARE A CUSTOMER, PLEASE USE THE QR CODE IN THE TEST REPORT ENCLOSED WITH YOUR BATTERY.

CHECKLIST BASED ON THE EM271 POWER METER

Experience shows that during installation, for example, current transformers and POWER meters can be incorrectly connected, positioned or reversed. SO, as an installer or partner of XOLTA batteries, make it a habit to check the installation.

CHECK	DESCRIPTION	✓
Inspection hatch	Measure 0V between phase 1 on the service line, phase 1 on the POWER meter (terminal 14 on the EM271) and phase 1 at the solar cell power transformer. Check the same for phases 2 and 3. This checks that the power calculation is made by voltage/current measurement on the same phase.	
Inspection hatch	That all 3 arrows on the power transformers on the GRID point towards the house, i.e. back towards the grave stone.	
Inspection hatch	That all 3 arrows on the current transformers on the PV/solar cells are pointing towards the house, i.e. back towards the PV/solar cells.	
Inspection hatch	That the measured values in the installer app correspond to the Solar production on the solar inverter and consumption on the billing meter. In other words, the current transformers are positioned to measure two things: Solar production and ONLY solar production and EVERYTHING that runs through the service line.	
Inspection hatch	That the flat RJ11 cable from the TCD M box on the power transformers to the POWER meter is not extended.	
Inspection hatch	That the round black and white wires from the TCD M box to the power clamps themselves are not extended more than 20 metres.	
Inspection hatch	That a twisted pair cable is used for the RS485/MODbus connection.	
Inspection hatch	That only ONE pair is used for the RS485/MODbus connection (e.g. the green and green/white wire in terminal A and B, respectively)	
Inspection hatch	That consumption does not follow the solar production (see the graph under “data”, use “high resolution”)	
Inspection hatch	That the app does not show negative consumption.	
Inspection hatch	That the app shows realistic consumption (for a normal household, consumption is rarely below 150-200W).	
Inspection hatch	That you have remembered to press “Confirm installation” to finish in the installation app.	
Inspection hatch	That there is a 100% certainty that there is a summation meter in the household.	
Inspection hatch	That the battery is not on the same phase as another load that can/will draw a lot of power when power is cheap. For example, a 1-phase car charger.	

INTERNET CONNECTION CHECKLIST

CHECK	DESCRIPTION	✓
Inspection hatch	Are the green and yellow LEDs at the RJ45 connector flashing as they should?	
Inspection hatch / PC	Remove the Internet cable from the battery and plug the cable into a PC, which should then be able to Google on the Internet (remember that the WiFi must be switched off on the PC).	
Inspection hatch / Router	Attach a 4G router to the battery so that the connection bypasses the customer’s network.	
Inspection hatch / PC	Ping the battery’s IP address, PORT, etc., and whatever else is deemed necessary to check.	
Inspection hatch / PC	Is there a supply to the battery.	
Inspection hatch	Is it flashing red green on the MODbus board?	
Inspection hatch	Mounted.	
Front	Mounted.	
Installations App	Process completed.	
Battery registration	Customer has created the battery.	

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