

X O L T A



## **BATTERY SYSTEM MANUAL**

XOLTA COMPACT BAT-5 AND BAT-10

**Advanced energy storage systems  
for solar system installations**

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# 1 SAFETY INFORMATION AND LEGAL TERMS:

## 1.1 Document purpose and structure

The purpose of this manual is to provide users and installers of the XOLTA BAT-5 and BAT-10 Compact Battery Energy Storage System (BESS) with an overview of system installation, functionality, and operation. Through out this manual, the product is referred to as XOLTA Compact BESS or XOLTA BESS.

The document is organized as follows:

<b>Chapter 1</b>	sets out important safety information, what to do in emergency situations, and legal information.
<b>Chapter 2</b>	gives a brief introduction to the XOLTA BESS system and key specification parameters.
<b>Chapter 3</b>	describes the main features of the XOLTA Compact Bess system and gives an overview of the hardware.
<b>Chapter 4</b>	deals with system installation and operation.
<b>Chapter 5</b>	describes how to access the XOLTA Web App to monitor the XOLTA Compact BESS online.

## 1.2 Important safety instructions

The XOLTA Compact BESS installation and servicing should only be performed by XOLTA certified installers. As a consequence, XOLTA holds no liability for property damage or injury caused by system modifications or repairs undertaken by unqualified personnel or due to failure to follow the following important safety instructions.

The safety instructions have been divided into:



**WARNING** - indicates a dangerous situation which, if not avoided, could result in injury or death.



**CAUTION** - indicates a situation where damage to the equipment or injury may occur.

### IMPORTANT SAFETY INSTRUCTIONS

Read the entire document carefully before installing or using the XOLTA Compact BESS.



#### **RISK OF EXPLOSION:**

Do not apply any external force to the XOLTA Compact BESS.

Avoid physical damage to the battery. Keep the XOLTA Compact BESS away from where it may accidentally be physically damaged, such as close to where a car is to be parked in a garage.

Do not dispose of the XOLTA Compact BESS in fire.



#### **RISK OF FIRE:**

Keep the system away from flammable objects and heat sources. Avoid installation in places prone to direct sunlight.

Do not expose the battery system to temperatures more than 50°C.



#### **RISK OF ELECTRICAL SHOCK:**

There are high voltages present on AC and DC cables. There is a risk of serious injury or death due to electrical shock. Do not remove the cover. Report any external cable/wire damage to XOLTA or your local XOLTA system installer. Do not touch uninsulated wires.

Never use a system if it is defective, damaged or broken.

Never attempt to disassemble, repair, modify the product or use it in any way other than as described in this manual. Repairs or replacement of components must only be performed by a XOLTA certified technician.

Never immerse the XOLTA Compact BESS in water or other fluids.



**RISK OF DAMAGE:**

Do not expose the battery system to temperatures below -25°C or more than 50°C (30°C during operation)

Do not place any objects on top of or underneath the XOLTA Compact BESS. This might lead to improper product operation or problems with thermal management.

Never use any aggressive solvents or chemicals to clean the XOLTA Compact BESS. The product cover should only be cleaned with soap and water or regular household dishwashing detergent (not automatic dishwasher detergent).



**OTHER PRECAUTIONS:**

The product should not be used for any purpose other than that described in this manual.

The product should not be installed in combination with third party storage products.

Unpleasant smells or odors may indicate electrolyte leakage from the battery cell(s). If you notice such an odor, switch the system off immediately at the electrical panel and contact XOLTA. If installed indoors, ventilate the room and avoid inhaling the odor.

The XOLTA Compact BESS is heavy. Suitable lifting equipment is strongly recommended.

Do not paint any part of the product.

Do not open the battery modules.

For long term storage (longer than 1 month), the battery should be charged to 40% charge and then disconnected from the grid.

When the product is to be disposed of, follow all relevant local laws and regulations.

**NOTE!**

Failure to comply with the conditions of the warranty and the information specified in this document invalidates any warranty claims.

**1.3 ACTIONS to take in emergency situations**

The XOLTA Compact BESS is designed to be very safe. It monitors essential parameters of the battery system and protects the battery from damage. The main battery safety measures are shown in Table 1.1 below.

**Table 1.1:**  
List of main safety features in XOLTA Compact BESS

✓	State of the art battery cells with excellent safety performance (LFP technology)
✓	State of the art battery management system (BMS) ensuring over/under voltage and over/under temperature monitoring for each individual battery cell
✓	Battery cut-off relay controlled by the BMS
✓	Temperature sensors monitoring battery system temperature
✓	Active battery current control depending on battery cell temperature, voltage and state of charge (SoC)
✓	System diagnostics, error handling and automatic grid connection/disconnection controlled by the site controller
✓	Battery air humidity monitoring and prevention system
✓	AC fuse and battery DC protective fuse

Despite all these built-in safety measures, emergency situations can still occur. In such emergencies, the actions to take are as follows:



#### LEAKAGE

Toxic electrolyte leaking from the battery pack. Electrolyte is corrosive and odorous.



#### ACTION

- Avoid any contact with the leaking liquid or gas.
  - In case of electrolyte inhalation – seek immediate medical help.
  - In case of electrolyte coming into contact with skin - wash thoroughly with water and soap and seek medical help.
  - In case of electrolyte coming into contact with eyes - rinse eyes with water for 15 minutes and seek medical help.
  - In case of electrolyte ingestion / swallowing - force vomiting and seek immediate medical help.
- If installed inside:
  - Leave the room and do not re-enter it.
  - Ventilate the room if possible.

- Contact XOLTA.



#### FIRE

Fire may occur as a consequence of physical damage or external sources of heat and fire. Hazardous fumes such as carbon dioxide, carbon monoxide and hydrocarbons are emitted during battery fires.



#### ACTION

- Disconnect the power from the battery system at the electrical panel (if possible without getting too close to the battery and without inhaling fumes).
- Never try to extinguish a battery fire yourself. If battery cells catch fire, only qualified firefighting personnel with appropriate protective equipment should attempt to extinguish the fire. Keep away from battery fires and contact emergency firefighters.
- If components other than battery cells catch fire, then ABC or carbon dioxide extinguishers can be used to extinguish the fire.
- Keep away from the battery and contact the fire department.



#### IMMERSION IN WATER

Immersing the XOLTA Compact BESS in water risks causing a short-circuit and damage to the battery system.



#### ACTION

- Do not try to access the XOLTA Compact BESS.
- Disconnect the power (if possible without coming close to the battery).
- Never use a flooded battery system again – the system must be decommissioned.
- Keep away from the battery and contact XOLTA.



## DAMAGED BATTERY

Any sign of physical damage or abnormal behavior of the battery system (or its peripheral components) should be treated with extreme caution.



## ACTION

- Disconnect the power.
- Keep away from the battery and contact XOLTA.
- Never use the damaged battery system again.

### 1.4 XOLTA approved, authorized installers

XOLTA provides appropriate training to installation technicians for XOLTA systems.

The XOLTA Compact BESS must only be installed and commissioned by a XOLTA approved installer.



### 1.5 Safe disposal of Lithium-ion batteries

Li-ion batteries must be treated as hazardous waste and not be disposed of with regular household waste.

For safe disposal of an unusable XOLTA battery it can be delivered back to the manufacturer or importer that originally sold the battery or to the dealer of a new industrial battery.

### 1.6 Disclaimer

We have taken every precaution to ensure that all information provided in this manual is correct and up to date. However, to the extent permitted under the applicable laws, we assume no responsibility for damage to persons and property arising as a result of following recommendations and/or procedures described in this manual. Furthermore, we assume no responsibility for any infringements of rights of third parties which may result from the use of this manual.

Product modifications or changes to the product environment:

- Only use the storage system in its original state - without any unauthorized modifications - and when it is in proper working order.
- Safety devices must never be overridden, blocked or tampered with.
- The interfaces of the storage system must be wired in accordance with the product documentation.
- An appropriate and readily accessible disconnect device shall be incorporated in the fixed wiring.
- All repairs on the storage system must be performed by authorized service technicians only.
- The replacement of battery modules must be undertaken by authorized service technicians only. When replacing batteries, replacement must be with the same type and number of batteries or battery modules.

### 1.7 Legal

The system has been designed to ensure that an installed BAT-5 or BAT-10 and all its associated functionalities behave safely under the predefined operating conditions. However, please read all sections about safety and precautions carefully before installation, operation, or undertaking service work on a XOLTA BESS. Failure to do so could result in reduced system performance, damage to the system, personal injury or even death.

## 1.8 Copyright

This document and all information contained in the XOLTA System Manual are protected Copyright 2020 by Lithium Balance A/S. All rights reserved. Lithium Balance reserves the right to make changes to the products described in this manual at any time without further notice. This manual may be photocopied or otherwise distributed only to the extent that this is strictly necessary for the correct operation and installation of a XOLTA Compact BESS.

## 1.9 Voiding of warranty

XOLTA does not assume any direct or indirect liability for any damage or loss caused if:

- The Covered Products are not continuously connected to the internet via LAN cable whereby XOLTA cannot monitor the performance of the Covered Products;
- The Covered Product has not been stored, transported, set up or installed in an appropriate and professional manner, in accordance with technical standards and regulations, in accordance with the respective installation manual of the Covered Products or in accordance with instructions of XOLTA;
- The Covered Product has been operated contrary to their intended use or contrary to the instructions in the respective installation manual for the Covered Product;
- The Covered Products were constantly out of service due to Purchaser for a period of more than six months after the initial installation;
- The Covered Product has not been serviced properly and professionally or according to technical standards or the maintenance instructions of Covered Product;
- The Covered Product has been exposed, even temporarily, to vibrations that not only insignificantly exceed the usual extent of vibrations caused by transport and installation;
- The Covered Product has been improperly altered or otherwise tampered with by the person entitled to the Warranty or third parties;
- An overvoltage has occurred in the power grid to which the Covered Products are connected;
- The Covered Product have been exposed to force majeure (in particular lightning, fire, earthquakes, natural disasters) or harmful environmental conditions such as air pollution, salt water or sulphur corrosion;

**NOTE!**

Always refer to the Terms and Conditions document delivered by XOLTA for warranty conditions.

## 1.10 Abbreviations

**Table 1.2:**  
List of abbreviations used in this XOLTA Compact BESS manual

BESS	Battery Energy Storage System
BMS	Battery Management System
BoL	Beginning of Life
BPU	Battery Protection Unit - a unit containing switches and fuses for battery protection
DoD	Depth of Discharge
EoL	End of Life
GUI	Graphical User Interface
MODBUS	Serial communication protocol developed by Modicon
PV	Photovoltaic
SoC	State-of-Charge
TCO	Total Cost of Ownership

## 2 INTRODUCTION:

### 2.1 About the XOLTA Compact BAT-5 and BAT-10

The BAT-5 and BAT-10 are Battery Energy Storage Systems (BESS) for residential or commercial use. With nominal capacities of 5 and 10 kWh (usable 4.5 and 9kWh) respectively the batteries can be used with smaller solar / photovoltaic (PV) installations. The batteries consist of lithium iron phosphate (LFP) based lithium-ion battery cells as well as an integrated battery inverter.

The XOLTA Compact BESS is an AC-coupled battery designed for connection to single or three phase 230V AC 50Hz electrical grids. It is designed to store electricity generated from solar panels in the lithium-Ion battery and later convert stored energy back to alternating current (AC) electricity and feed this into the power grid.

The all-in-one batteries work with any kind of solar installation or any other renewable energy source and are connected directly to the electrical panel of the building. They are designed for both indoor and outdoor installation and to withstand cold and heat.

The batteries come with 24/7/365 monitoring to ensure optimal performance. Production and consumption figures and savings per day/month/year/lifetime can be seen in the XOLTA web app.

### 2.2 XOLTA Compact BESS benefits

The XOLTA BAT-5 XOLTA BAT-5 and BAT-10 are scalable battery energy storage systems designed for residential and commercial use. The batteries are an essential enabler for the transition to renewable energy by balancing out volatile energy production with consumption. The high energy density means little space is required on an outside wall to store sufficient electricity to power building consumption during peak tariff hours.

High performance is assured by 24/7 monitoring via an Internet connection which allows external data such as weather forecasts and anticipated demand for electricity to be used to optimize performance. The battery systems connect to XOLTA's intelligent cloud service and can be monitored using a web app (see Chapter 5).

### 2.3 Maximizing consumption of solar power

Solar power is often generated at different times of the day from when power is required. XOLTA batteries store the excess solar energy generated during the daytime and release it again later when it is needed – for example after sunset.

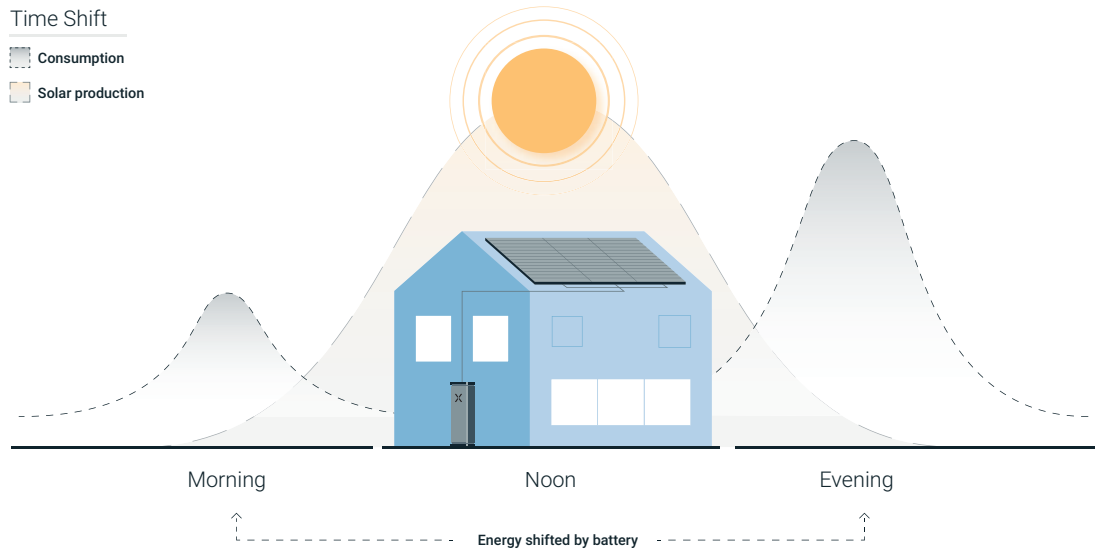
Put simply, there are two scenarios:

1. When your solar panels are generating enough electricity for your own needs, or more than you need at that moment in time:
  - a. Solar power goes to your immediate own consumption.
  - b. Any excess solar power which you do not use is stored in the battery.
  - c. Once the battery is full, you can sell solar power to the grid.
2. When your solar panels are not generating enough electricity for your own needs:
  - a. The system draws power previously stored in the battery.
  - b. If the battery becomes empty, the system draws power from the grid.

This is called time-shifting – where you store excess electricity for later use. See figure 2.1.



**Figure 2.1:**  
Illustration of maximizing selfconsumption in the most optimal situation



## 2.4 Modularity and scalability of XOLTA BAT-5 and XOLTA BAT-10

XOLTA BAT-5 and XOLTA BAT-10 can be connected in parallel on the AC side to meet higher battery power and/or energy requirements. The parallel connection also enhances system reliability and availability.

In the parallel operation, the following scenario is possible:

- XOLTA BAT-5 and/or XOLTA BAT-10 systems work as one unit by equally sharing charge/discharge power;

Up to 3 XOLTA BAT-5 or up to 3 XOLTA BAT-10 battery systems can be connected on the AC side (both on the same grid phase or the different grid phases). The resulting battery power and energy capability are presented in Table 2.1 (XOLTA BAT-5) and in Table 2.2 (XOLTA BAT-10).

**Table 2.1:** Battery power and energy for a different number of parallel-connected XOLTA BAT-5 battery systems.

BAT-5 UNITS	1	2	3
Nominal effect (kW)	3.6	7.2	10.8
Nominal energy (kWh)	5	10	15
Usable energy (kWh)	4.5	9	13.5
Connection	1P+N+E	2P+N+E	3P+N+E

**Table 2.2:** Battery power and energy for a different number of parallel-connected XOLTA BAT-10 battery systems.

BAT-10 UNITS	1	2	3
Nominal effect (kW)	3.6	7.2	10.8
Nominal energy (kWh)	10	20	30
Usable energy (kWh)	9	18	27
Connection	1P+N+E	2P+N+E	3P+N+E

## 2.5 Key specifications

Key specifications of the XOLTA Compact BESS are shown in the following tables.

Key specifications  
for BAT-5

TECHNICAL PROPERTIES		1 BATTERY
Capacity		5 kWh
Grid connection voltage		1 x 230V AC
Ambient temperature rating		-20°C to 35°C
Cabinet design		Various color and material choices
Dimensions		H:772mm x W:664.5mm x D:259.5 mm
Weight		70 kg
Enclosure protection rating		IP55
Expected lifetime		15 years
Warranty*		10 years
Mounting		Indoors/outdoors - wall mounted/freestanding
Self consumption (standby)		<10W
Meetering concept		3-fase Modbus or TCP/IP
Cell technology		Li-ion LFP / Nominal voltage 48V
Standards	General:	Low Voltage Directive (LVD) 2014/35/EU and Electromagnetic Compatibility (EMC) 2014/30/EU
	Transport:	UN38.3 classification for safe transportation
	Safety:	EN 61010-1: 2010 + A1: 2016, IEC 62619: 2017
	EMC:	EN 61000-6-2, Industrial level, EN 61000-6-4, Class A

\*Region dependent and subject to service agreement

Key specifications  
for BAT-10

TECHNICAL PROPERTIES		1 BATTERY
Capacity		10 kWh
Grid connection voltage		1 x 230V AC
Ambient temperature rating		-20°C to 35°C
Cabinet design		Various color and material choices
Dimensions		H:772mm x W:664.5mm x D:259.5 mm
Weight		105 kg
Enclosure protection rating		IP55
Expected lifetime		15 years
Warranty*		10 years
Mounting		Indoors/outdoors - wall mounted/freestanding
Self consumption (standby)		<10W
Meetering concept		3-fase Modbus or TCP/IP
Cell technology		Li-ion LFP / Nominal voltage 48V
Standards	General:	Low Voltage Directive (LVD) 2014/35/EU and Electromagnetic Compatibility (EMC) 2014/30/EU
	Transport:	UN38.3 classification for safe transportation
	Safety:	EN 61010-1: 2010 + A1: 2016, IEC 62619: 2017
	EMC:	EN 61000-6-2, Industrial level, EN 61000-6-4, Class A

\*Region dependent and subject to service agreement

## 3 XOLTA BATTERY ENERGY STORAGE SYSTEM:

### 3.1 Main features

The XOLTA Compact BESS system can be easily integrated into any house or building. It is perfect for retrofitting to existing solar panel installations as well as for brand new installations. The main features of the XOLTA Compact BESS are:

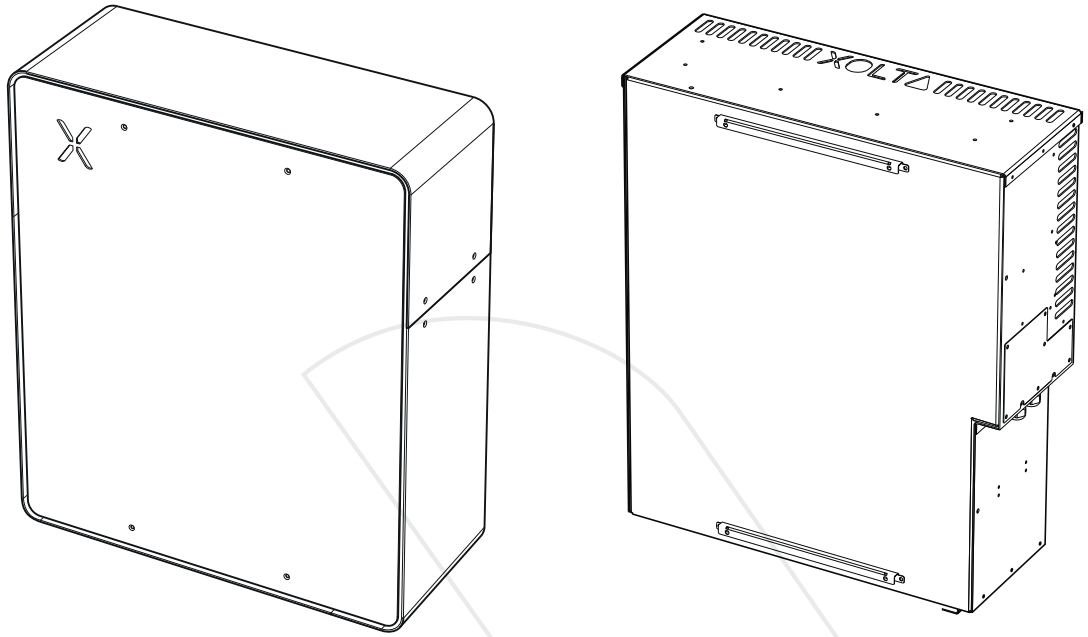
- **PLUG AND PLAY:** Simple installation and commissioning. All the battery requires is electrical grid connection, internet access and electrical meter connections.
- **SINGLE and 3-PHASE:** The system can be used for both single and 3 phase operation.
- **ALL IN ONE:** All system components are integrated into a single cabinet. This includes the battery cells, the power conditioning system (PCS), the thermal management system (TMS), the battery management system (BMS) and the energy management system.
- **INDOOR and OUTDOOR OPERATION CAPABILITY:** The mechanical casing of the system was designed to be effective up to enclosure protection rating IP55 (dust and water jet proof).
- **MODULARITY:** The storage system power and energy can be expanded and tailored to specific needs. In total, up to 3 XOLTA Compact batteries can be connected and operated in parallel giving up to 10.8kW and 30kWh.
- **MULTIPURPOSE:** The battery is designed for various applications: solar self-consumption, time shifting, etc.
- **XOLTA CLOUD CONNECTION:** The battery is integrated with the XOLTA Cloud. It allows for system monitoring, control, data acquisition, and data storage.
- **SAFETY:** The battery is designed to offer exceptionally high operational safety. For example, the system is fitted with state of the art and safe battery systems, multi-layer, and redundant protection systems, as well as a battery management system (BMS) from Lithium Balance which ensures maximal system safety under various operating conditions.
- **LOW TOTAL COST OF OWNERSHIP:** This is achieved by very high system round-trip efficiency, ultra-low standby losses, high cycle lifetime, minimal operational and maintenance (O&M) cost and intelligent energy management.
- **SITE CONTROLLER:** This works as an energy management system (EMS) which manages the entire XOLTA Compact BESS. It provides charge/discharge power management, monitoring to ensure safe battery operation, communication with all system peripherals (e.g. the battery inverter), data acquisition, communication with the XOLTA Cloud, system diagnostics and error handling.
- **THERMAL MANAGEMENT:** Simple, efficient and silent thermal management system.

### 3.2 Hardware description

This section details the various hardware components of the XOLTA Compact BESS.

The XOLTA Compact BESS is available in two versions: 3.6kW/5kWh and 3.6kW/10 kWh. Both systems are IP-rated (Figure 3.1).

**Figure 3.1:**  
Illustration of the  
XOLTA Compact BESS  
with and without  
outer box



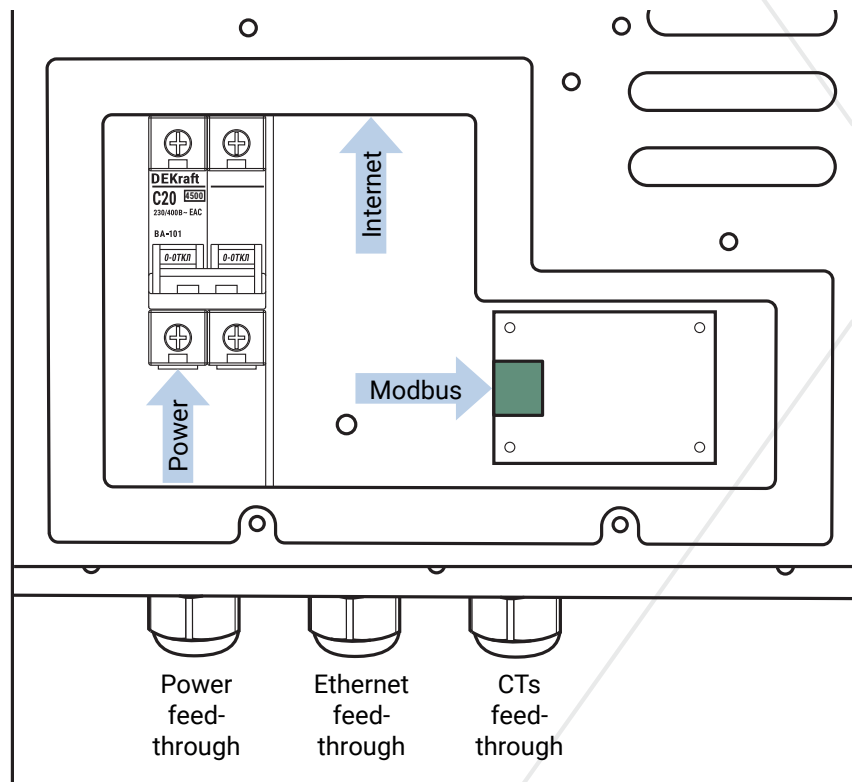
All battery cells are protected by a best-in-class battery management system (BMS) and battery protection unit (BPU). The BMS is responsible for monitoring, protection, and diagnostics of battery cells. Battery cells and power conditioning units are thermally managed by a heat plate which is located on the back of the inverter.

There are three entry ports on the XOLTA Compact BESS (Figure 3.2):

- Power entry port for electrical connection
- Ethernet port for access to internet cable
- Current Transformers (CTs) signals (modbus)

Unused port hole(s) MUST be sealed off, when installation is complete

**Figure 3.2:**  
Illustration of the  
XOLTA Compact  
BESS entry ports.

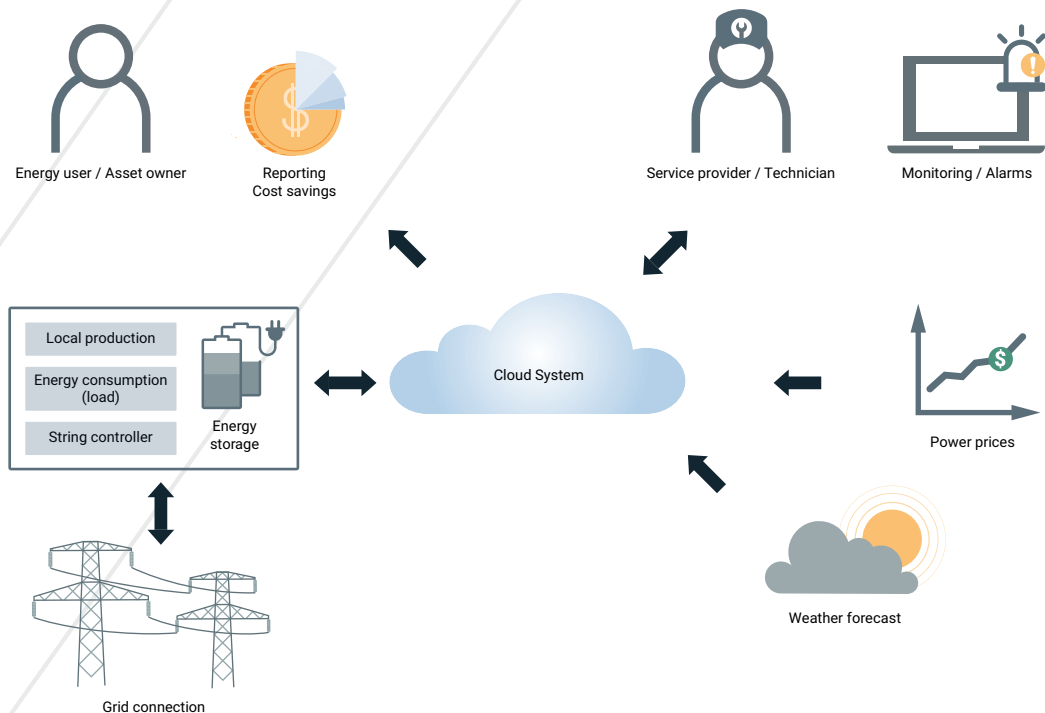


The battery is equipped with a site controller. The site controller is the 'brain' of the BESS and is responsible for battery system energy management and communication with the various system components. It also provides Internet connectivity for the XOLTA cloud.

### 3.3 Software description

The system control logic and data analysis are shared by our site controller and the Cloud. The site controller takes care of all the fast response requests from the grid. It can ensure that the system operates safely without the internet connection and collects moderate amount of data as back up. As shown in Figure 3.3, the Cloud is a bigger playground for all the data to drop in and to be processed for supporting further analytical functions, such as monitoring, alert, economic summary, forecasting, advanced control algorithm, etc.

**Figure 3.3:**  
Cloud solution illustration



The communication between the site controller and the Cloud is through a secured https connection. This ensures the cyber security of the XOLTA system.

## 4 SYSTEM INSTALLATION AND OPERATION:

This part of the manual describes the installation and electrical connection of the XOLTA Compact BESS.

### 4.1 Delivery inspection

Each XOLTA Compact BESS system is delivered as a fully assembled cabinet. It has been carefully checked and tested prior to shipping. However, upon delivery, you should verify visually the state of packaging to make sure that it is in good condition. In case of any visible damage to the packaging, report it to XOLTA support.

- The battery is intended to be wall mounted. The XOLTA Compact BESS must be placed vertically according to installation guidelines and secured against slipping.
- The ambient temperature in the installation location can be in the range of  $-20^{\circ}\text{C}$  to  $+35^{\circ}\text{C}$ ; however, the recommended ambient temperature to ensure the best battery performance and longevity is in the range of  $+5^{\circ}\text{C}$  to  $+25^{\circ}\text{C}$ .

## 4.2 Location requirements

- The XOLTA Compact BESS is intended for indoor and outdoor use and is protected up to IP55 (Enclosure Protection Rating for dust and water jets).
- Install outdoor in a shaded location or on a north/north-east facing wall.
- The battery should not be immersed in water or exposed to high temperatures, flames or physical force
- No object should be placed on the top of the cabinet or within 0.5m of the top of the cabinet; free air circulation should be ensured near to the battery heat sink.

### WARNING:

The XOLTA Compact BESS should not be installed at the following locations:

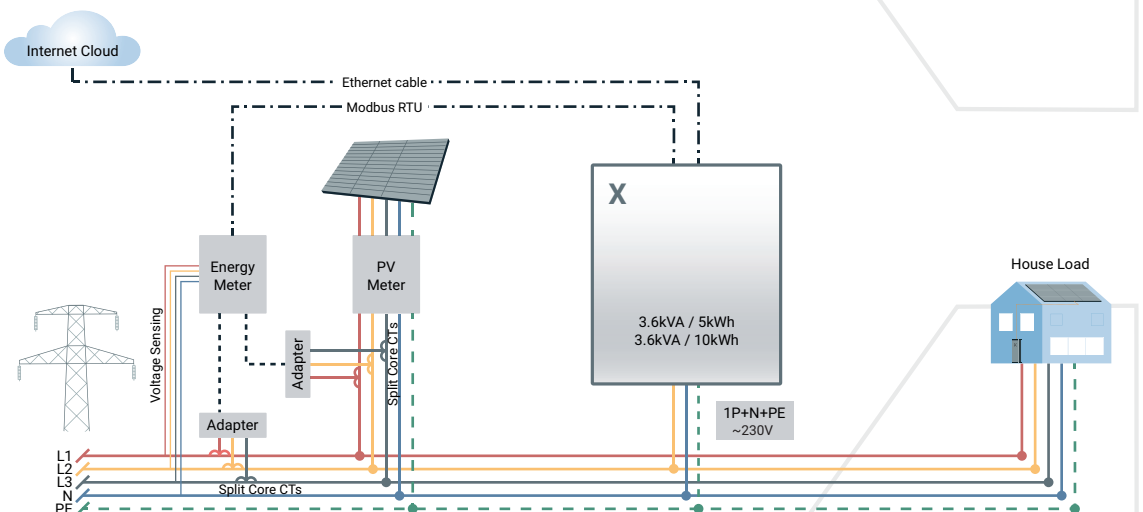
- Areas prone to earthquakes
- Altitudes more than 4000 meters above sea level
- Areas prone to flooding, open flames, explosion and extreme changes of ambient temperatures

## 4.3 Installation procedure

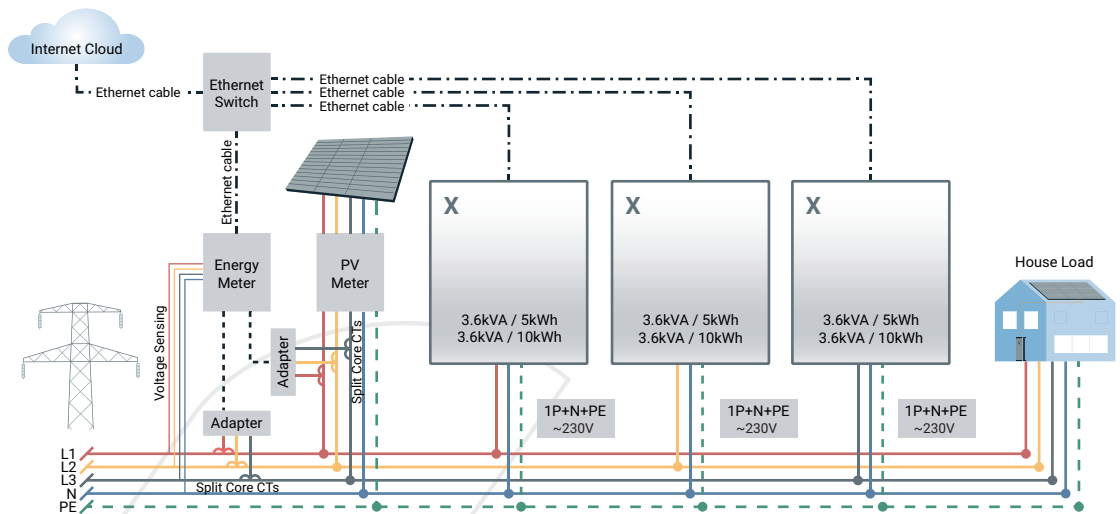
The XOLTA Compact BESS is designed for connection to single or three phase 230V AC 50Hz electrical grids. However, the battery can also be connected to grids with other voltage levels if appropriate voltage/powering units are in place (e.g. power transformers). Each XOLTA Compact BESS has the following installation requirements:

- 1 P+N+PE 230V AC 50Hz power connection
- Cabled internet connection
- Single or three phase connection of auxiliary current transformers (CTs) for solar and household incoming power monitoring

**Figure 4.1:**  
Connection scheme of the XOLTA Compact BESS using single phase connection.



**Figure 4.2:**  
Connection scheme  
of the XOLTA  
Compact BESS  
using three phase  
connection.



Electrical installations and protection circuits must be performed by an authorized electrician. Figure 4.1 and Figure 4.2 show the XOLTA Compact BESS connection scheme for both single and three-phase systems.

The XOLTA Compact BESS must be installed and commissioned by a XOLTA approved electrician. Any subsequent changes or modifications by unauthorized personnel are strictly prohibited and could compromise safety.

#### 4.4 System operation

The XOLTA Compact BESS is operated from the XOLTA Cloud.

#### 4.5 Maintenance requirements

The XOLTA Compact BESS is designed to require no maintenance.

However, to ensure longevity of the battery, it is good practice to undertake the following from time to time:

- Check to see that there is nothing leaking from the system
- Make sure nothing is covering the heat sink (e.g., leaves, dirt, etc.)
- Remove dust from the system according to safety instructions described in Chapter 1

Any abnormalities (e.g., leakage, noise, odor) should be reported to XOLTA support.

#### 4.6 Lifetime and system reliability

The XOLTA Compact BESS is designed to deliver top performance and reliability throughout its lifetime. Nevertheless, all battery cells degrade over time, whether in use or in standby operation. This is a natural process common to all batteries. The electrical performance of the battery system will therefore gradually decrease during the XOLTA Compact BESS' lifetime. This will mean that less energy is available from the battery system and that the round-trip efficiency of the system gradually reduces.

When purchasing the Peace of Mind agreement with the battery, the warranty for the XOLTA Compact BESS is that for 10 years or 6500 cycles (whichever comes first) at least 70% of initial battery capacity will be maintained. The capacity is determined in amp hours (Ah) at a temperature of 25°C and a discharge rate of 0.2C-rate from fully charged (100% SoC). The warranty applies only if the battery system operating modes provided by XOLTA (e.g., solar energy self-consumption) are used. No other use of the battery is covered. Currently, the warranty is valid for the following countries: Austria, Belgium, Denmark, France, Germany, Ireland, Luxembourg, Netherlands, Norway, Sweden, Switzerland, and the UK. The list of countries will be periodically updated.

The XOLTA Compact BESS is considered to be at the end of its life when its battery capacity falls below 70% of initial battery capacity. The XOLTA Compact BESS can still be safely operated after the warranty period has expired. However, operation after its capacity drops below 70% of the initial capacity is not recommended. There are several measures that can be taken to maximize battery lifetime:

- for long standby operation of the system, it is strongly recommended to charge/discharge system to SoC  $\approx$  40% and to keep it in the ambient temperature range of 10°C - 20°C
- the longest lifetime of the system will be achieved at ambient temperatures of +5°C to +25°C

#### 4.7 Installation and commissioning

The installation and system commissioning guidelines are provided by XOLTA in a separate document for the installer.

The XOLTA Compact BESS must only be installed and commissioned by XOLTA approved installers.

## 5 REGISTERING FOR THE XOLTA WEB APP:

### 5.1 Register User and Device

To monitor your battery, you need to go to the XOLTA Web App and register your battery there. Go to [app.xolta.com](http://app.xolta.com). For the best experience we recommend using the Google Chrome browser. A step-by-step guide can be found in the document 'How to get started' which is supplied with the battery.

For larger installations, an API is available. Contact [support@xolta.com](mailto:support@xolta.com) for details.

