



COMMERCIAL ENERGY STORAGE

ENERSTO

112 - 224 kWh

AC-COUPLED COMMERCIAL STORAGE

45 kVA NOMINAL

81 kW PEAK

Scalable energy storage for commercial and industrial sites
- with emergency power, intelligent energy management
and modular expansion.

POWERED BY COMEXIO

DWC ENERGY GROUP | GLOBAL PROJECT HUB: DUBAI, UAE

[DWCENERGY.COM](https://dwcenergy.com)

PRODUCT

Energy when it matters.

Modular AC-coupled energy storage engineered for commercial sites and existing PV systems.



SYSTEM DESIGN & SCALABILITY

The ENERSTO AC-coupled commercial storage system stores surplus electrical energy and makes it available when PV yield is low, site demand exceeds generation or grid consumption is to be reduced. Modular 16 kWh lithium iron phosphate battery trays allow the system capacity to be configured between 112 and 224 kWh in line with the project requirement. The integrated inverter provides 45 kVA nominal power and up to 81 kW peak power. If higher output or storage capacity is required, additional storage systems can be connected in parallel.

Manufactured in Germany, ENERSTO is supplied as a preconfigured cabinet system with battery, inverter and control components integrated. The IP44 enclosure is designed for operating temperatures from -20°C to 40°C and uses temperature monitoring, automatic heating and active cooling to maintain controlled operating conditions.

INTEGRATION, CONTROL & BACKUP

AC-side coupling supports retrofit integration into existing PV installations with limited modification and generally allows installed string inverters to remain in service, subject to project-specific electrical and protection requirements. A qualified electrical contractor must plan, install and commission the system.

The COMEXIO energy management platform uses the smart meter at the grid connection point to measure import and export, control surplus charging and battery discharge, support peak shaving, record operating data and interface with building automation. Core control functions remain available without a permanent internet connection.

Where backup power is configured, the system separates the protected installation from the public grid and establishes a three-phase island network. Depending on the design, defined loads or the complete building can be supplied. PV generation can continue to serve loads and recharge the battery during a grid outage when connected on the protected output side and adequate battery reserve is available.

TECHNICAL HIGHLIGHTS

- Configurable backup-power operation
- Numerous interfaces
- Visualization & operating-data tracking
- Preconfigured for streamlined commissioning
- Extensive automation options
- Fast commissioning
- AC-side coupled
- Integration with existing PV inverters
- Expandable by parallel connection of several storage systems
- Additional grid protection optionally available

SPECIFICATIONS

Technical data.

GENERAL		
	ENERSTO 112	ENERSTO 224
Recommended annual consumption	20,000 - 70,000 kWh	20,000 - 180,000 kWh
Recommended PV power	20 kWp - 100 kWp	50 kWp - 250 kWp
Operating temperature range	-20°C - 40°C	-20°C - 40°C
Climate control	Temperature monitoring with automated heating and active cooling	Temperature monitoring with automated heating and active cooling
Weight	64 kWh: approx. 800 kg Per battery (16 kWh): approx. 120 kg	192 kWh: approx. 2,000 kg Per battery (16 kWh): approx. 120 kg
Protection class	IP44	IP44
Dimensions (h x w x d)	approx. (2356 x 1206 x 962) mm	approx. (2206 x 2357 x 905) mm
CHARACTERISTICS		
	ENERSTO 112	ENERSTO 224
Peak inverter power*	33 kW	81 kW
Nominal inverter power	18 kW	45 kVA
Output voltage	3x 230 V 400V	3x 230 V 400V
Output current (mains current + inverter current)	3x (50 A + 50 A)	3x (100 A + 65 A)
Mains connection	50 A	100 A
Capacity	64 - 112 kWh	112 - 224 kWh
Technology	Lithium iron phosphate (non-flammable)	Lithium iron phosphate (non-flammable)
Battery charging power	approx. 15 kW	approx. 30 kW
Number of battery modules	4 - 7	7 - 14
Cycles	8000+	8000+
Internal battery nominal voltage	51.2 V	51.2 V
Emergency power reserve	10% - 90% (adjustable)	5% - 90% (adjustable)

* Optional parallel connection can expand inverter output and battery capacity.

CAPABILITIES

One system. Multiple value streams.

Control, resilience and flexible energy operation in one coordinated platform.

01

Whole-building backup power

Uninterruptible emergency/substitute supply in a self-sufficient island grid.

02

Three-phase grid

Three-phase architecture for commercial and industrial sites.

03

Black-start capability

Independent restart capability following a grid failure.

04

All components onboard

Integrated inverter, battery and supporting system components.

05

Solar recharging during outages

PV energy can supply loads and recharge the battery during grid failure.

06

Integrated energy management

Recording, load management and surplus-energy management.

07

Unbalanced-load capability

Supports uneven loading across the three phases.

08

Complete battery control

Charging and discharging can be enabled or blocked as required.

09

Building-management integration

Deep integration into the building management system.

10

Peak shaving

Battery power reduces short-term demand peaks at the grid connection.

11

Tariff-based grid charging

Grid charging when electricity market prices are favorable.

SCALABLE BY DESIGN

Optional parallel connection expands inverter output and battery capacity for growing site demand.

ARCHITECTURE

AC-coupled commercial storage.

Retrofit-ready integration with existing photovoltaic systems.

SYSTEM OVERVIEW

In the AC-coupled system, the PV system is connected to the commercial storage system on the AC side via a string inverter. Connection can be made on the input or output side.

The system is mainly used to retrofit battery storage to an existing PV installation. The COMEXIO Smart Meter at the grid transfer point is required (see application examples).

RETROFIT LOGIC

- Integrates with an existing PV installation
- Connection on the input or output side
- COMEXIO Smart Meter at the grid transfer point
- Compatible with all existing inverters

DIMENSIONAL DRAWING

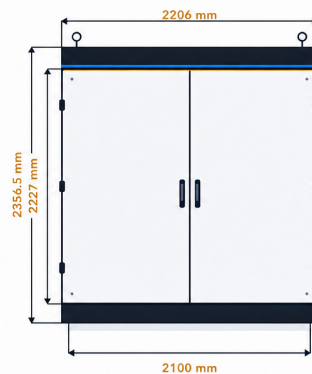
2206 × 2357 × 905 mm

ISOMETRIC VIEW

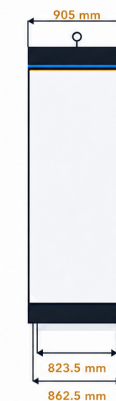


ENERSTO 224
COMMERCIAL ENERGY STORAGE

FRONT ELEVATION



SIDE ELEVATION



● ALL DIMENSIONS IN MILLIMETRES
REFERENCE DRAWING - NOT TO SCALE

ENERSTO 224

DIMENSIONAL DRAWING

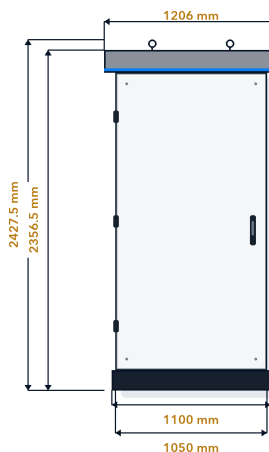
1206 × 2427.5 × 962 mm

ISOMETRIC VIEW

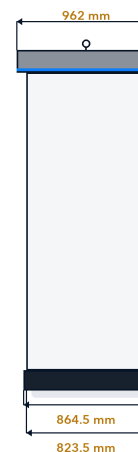


ENERSTO 112
COMMERCIAL ENERGY STORAGE

FRONT ELEVATION



SIDE ELEVATION



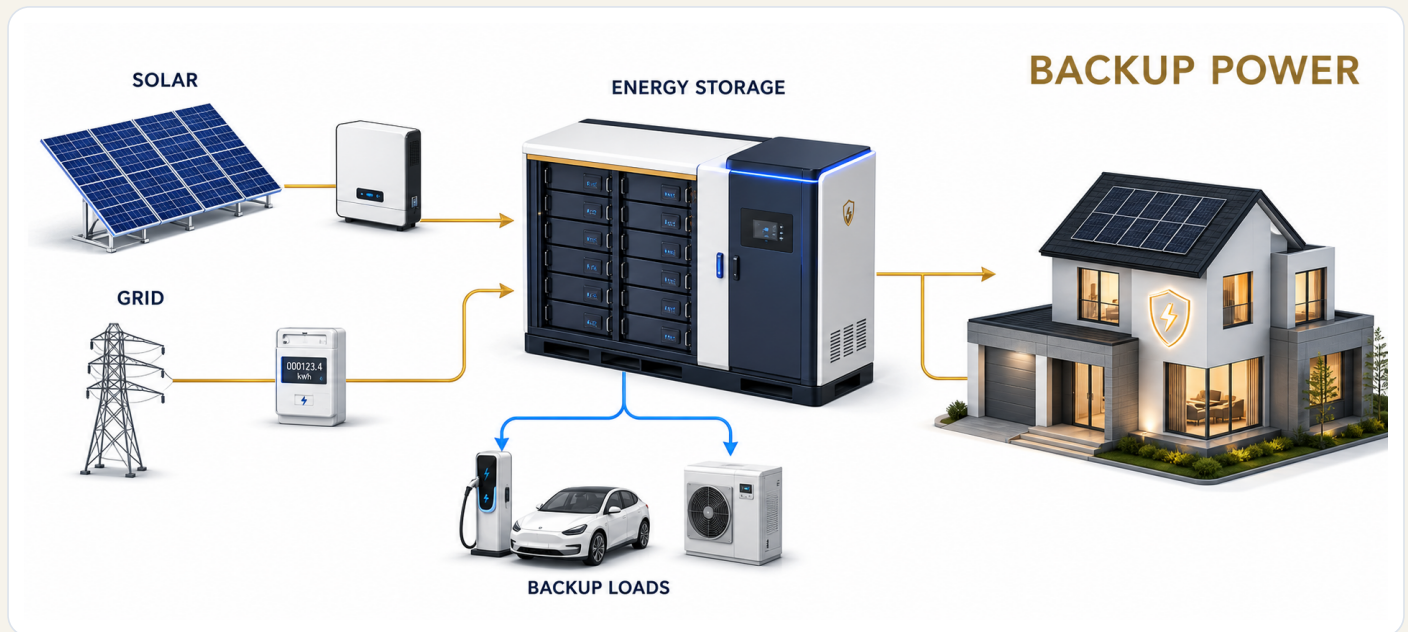
● ALL DIMENSIONS IN MILLIMETRES
REFERENCE DRAWING - PROPORTIONAL VIEW

ENERSTO 112

APPLICATION 01

PV power >45kWp.

With wallbox, heat pump and emergency power supply.



NORMAL OPERATION

The PV system supplies the building loads directly and the Smart Meter continuously measures power flow at the grid connection point. Any solar energy that is not required by the wallbox, heat pump or other consumers is automatically stored in the battery.

When site demand exceeds current PV generation, ENERSTO discharges to reduce grid import and smooth short load peaks. The energy management system coordinates charging, discharging and reserve settings according to the site's priorities. An adjustable backup reserve can be maintained at all times, while surplus capacity remains available for self-consumption optimisation, peak shaving and tariff-based charging.

This coordinated operation increases the use of locally generated solar energy, limits avoidable electricity purchases and prepares the installation for a controlled transition if the public grid becomes unavailable.

GRID FAILURE RESPONSE

When a grid failure is detected, the storage system safely separates the protected installation from the utility network and establishes a stable three-phase backup grid. Defined loads - or the complete building, depending on the project design - continue to receive power from the battery without feeding energy back into the public grid.

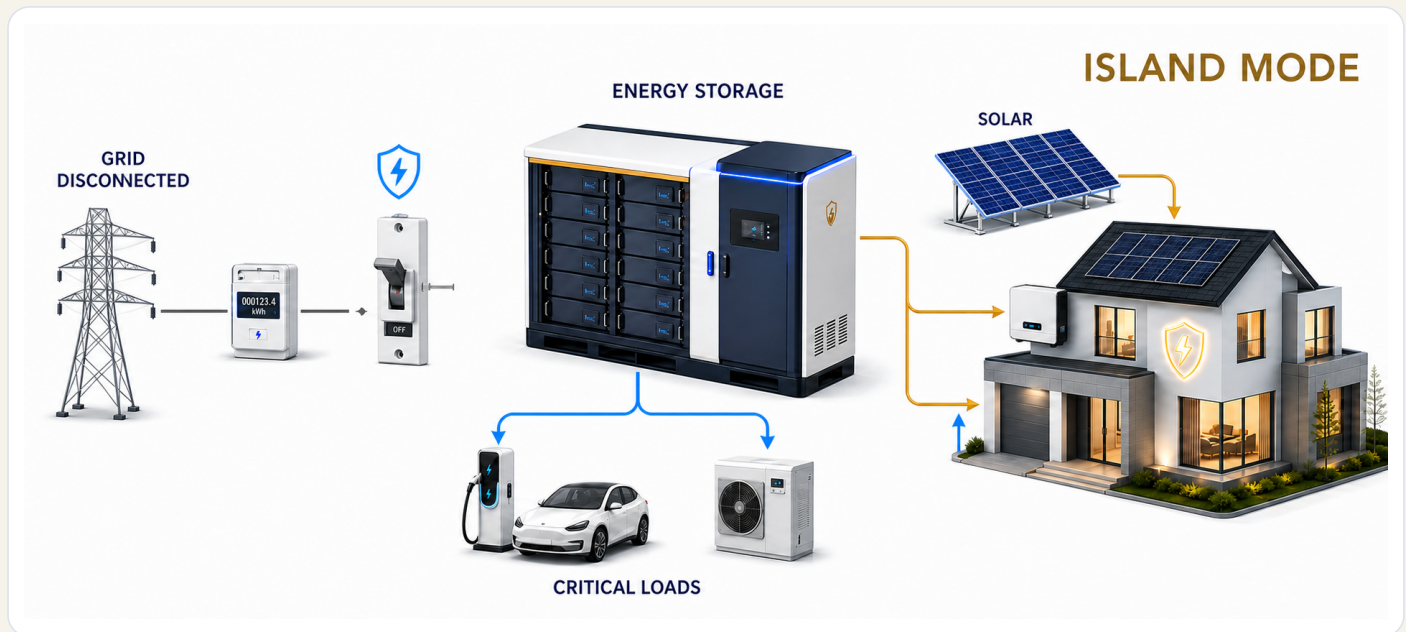
The PV installation can remain connected on the protected output side, allowing the string inverters to continue producing within the technical limits of the island network. Available solar power supplies active consumers first and then recharges the battery.

The energy management system monitors battery state of charge, load demand and inverter limits throughout the outage. Non-critical loads such as the wallbox or heat pump can be prioritised, limited or disconnected to extend backup duration and preserve energy for essential equipment until the utility supply returns.

APPLICATION 02

PV power <45kWp.

With wallbox, heat pump and emergency power supply.



NORMAL OPERATION

During normal grid operation, the PV system supplies the connected consumers and the Smart Meter records import and export at the grid transfer point. Surplus solar generation charges the battery automatically after current building demand has been covered. If demand rises above PV production, ENERSTO discharges stored energy to reduce electricity drawn from the grid.

Because the PV inverter output remains below 45 kWp, the generation system can be integrated on the protected side of the storage concept, subject to project-specific electrical design and protection settings. The energy management system coordinates the battery, wallbox, heat pump and other controllable loads, while maintaining a configurable minimum state of charge for backup operation.

This increases solar self-consumption and ensures that sufficient reserve can be available for an unexpected grid interruption.

GRID FAILURE RESPONSE

After a grid failure, the storage system disconnects the installation from the utility network and forms an independent three-phase island grid. The battery provides the voltage and frequency reference required by compatible PV string inverters, enabling them to restart and continue producing when sufficient sunlight is available.

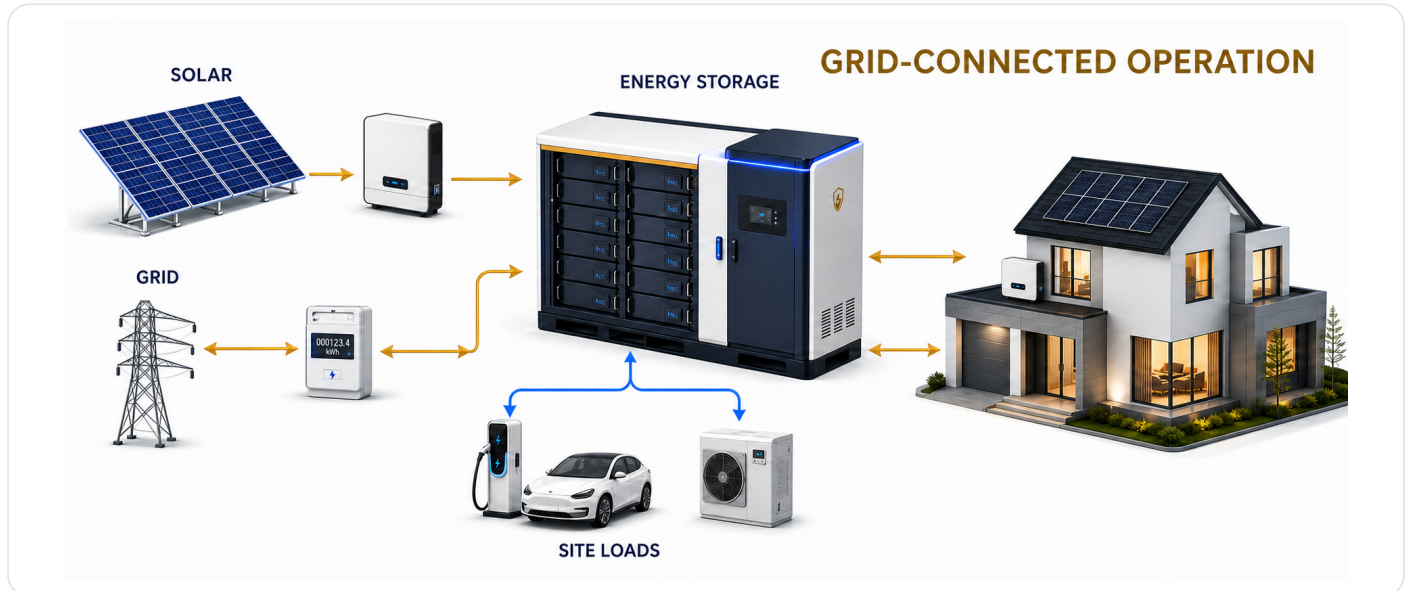
Solar power is used first for active building loads and then to recharge the battery, while the battery supplies any remaining demand and supports operation during periods of low generation. At night or in poor weather, available backup time depends on the selected reserve, battery state of charge and actual load profile.

Critical consumers should therefore be prioritised and high-power devices can be limited or disconnected automatically. System limits, protection states and available reserve are monitored continuously throughout the outage. A minimum battery reserve must be maintained so that the island grid remains stable and the PV inverters can start again the following day.

APPLICATION 03

Operation without backup power.

AC-coupled commercial storage without full-building emergency supply.



NORMAL OPERATION

In grid-connected operation, the AC-coupled storage system is installed on the grid side of the building distribution and operates in parallel with the public network. The Smart Meter measures import and export at the transfer point and provides the control signal for charging or discharging.

Surplus PV energy is stored instead of being exported whenever battery capacity is available. When consumption exceeds current solar generation, the battery supports the site to reduce grid purchases and short demand peaks. The operating strategy can combine self-consumption optimisation, peak shaving, time-of-use charging and controllable-load management.

Existing PV inverters can normally remain in service, making this configuration particularly suitable for retrofit projects in commercial buildings where full-building backup is not required.

GRID FAILURE RESPONSE

If the public grid fails, the storage system detects the loss of mains and disconnects in accordance with the configured protection concept. In this standard grid-connected arrangement, the building distribution, PV system and connected consumers are de-energised because the inverter does not create a full-building island network.

Stored energy remains in the battery and normal operation resumes automatically after the utility supply has returned and the required reconnection conditions are met. Where selected critical loads must remain available, a separately engineered emergency circuit can be added, for example for dedicated socket outlets, communications equipment, controls or safety systems.

The scope, switching equipment and reserve level are defined during project planning so that backup functionality remains clearly separated from the normal grid-connected operating concept.

Recommended accessories.



SMART METER

CME520

powered by COMEXIO



WIRELESS MODULE P

WS310

powered by COMEXIO

START A PROJECT

DWC ENERGY GROUP

Global Project Hub | Dubai, United Arab Emirates

projects@dwenergy.com

www.dwenergy.com

© 2026 DWC Energy Group.