



Product description

METROVA ALL IN ONE series is state of art outdoor cabinet liquid-cooled energy storage system. It adopts All-in-one integrated design and integrates battery energy storage unit, intelligent converter, battery management system, STS, MPPT, temperature control system, fire protection system, energy management system and other equipment.

It meets the requirements of off-grid operation and seamless switching, features high charging and discharging thermal management efficiency, multiple safety designs and a small footprint.

It supports various EMS energy strategies, can participate in power market transactions (VPP), and can be used in various industrial and commercial application scenarios such as peak shaving, valley filling, emergency backup, demand control, optical storage and charging, and microgrids.

Certification

IEC61000 & IEC632619
UN38.3 (Q2 2026)
G99 (Ready)
VDE-AR-N 4105 / VDE V 0124
EMC
AS/NZS 4777.2:2020 + Amd 2:2024
(Ready)

Applications

- Telecommunication sites
- Commercial & Industrial
- Remote Island
- Oil & Gas
- Construction sites
- Campus

And much more

Application Example Oil and gas campus, Grid is not Available



KEY FEATURES

- **High integration:** All-in-one integrated design, easy to install and maintain, saving space and cost
- **Safety and reliability:** Featuring multiple fire protection designs, it combines cell-level temperature detection with PACK-level and cabinet-level aerosol fire suppression, water-based firefighting, and explosion-proof pressure relief to ensure the system operates safely and reliably.
- **Solar panel direct connection:** 2 MPPT Port up to 100 KWp
- **Rich configuration:** supports simultaneous connection of load, battery, grid or diesel generator, and PV
- **Modular design:** flexible configuration, support for multi-machine parallel expansion, support for automatic switching between grid and off-grid, fast response, and ensure continuous power supply for critical loads
- **Extreme temperature control:** Compared with the air-cooling scheme, it improves the thermal management efficiency, space utilization, reduces the temperature difference, improves the battery performance, and achieves the cell temperature difference $\leq 2^{\circ}\text{C}$ and the system temperature difference $\leq 3^{\circ}\text{C}$, so as to achieve higher system efficiency and longer life.
- **Intelligent O&M:** Visualize and manage energy storage across the entire network, improving system reliability, stability, and O&M efficiency while optimizing system performance.

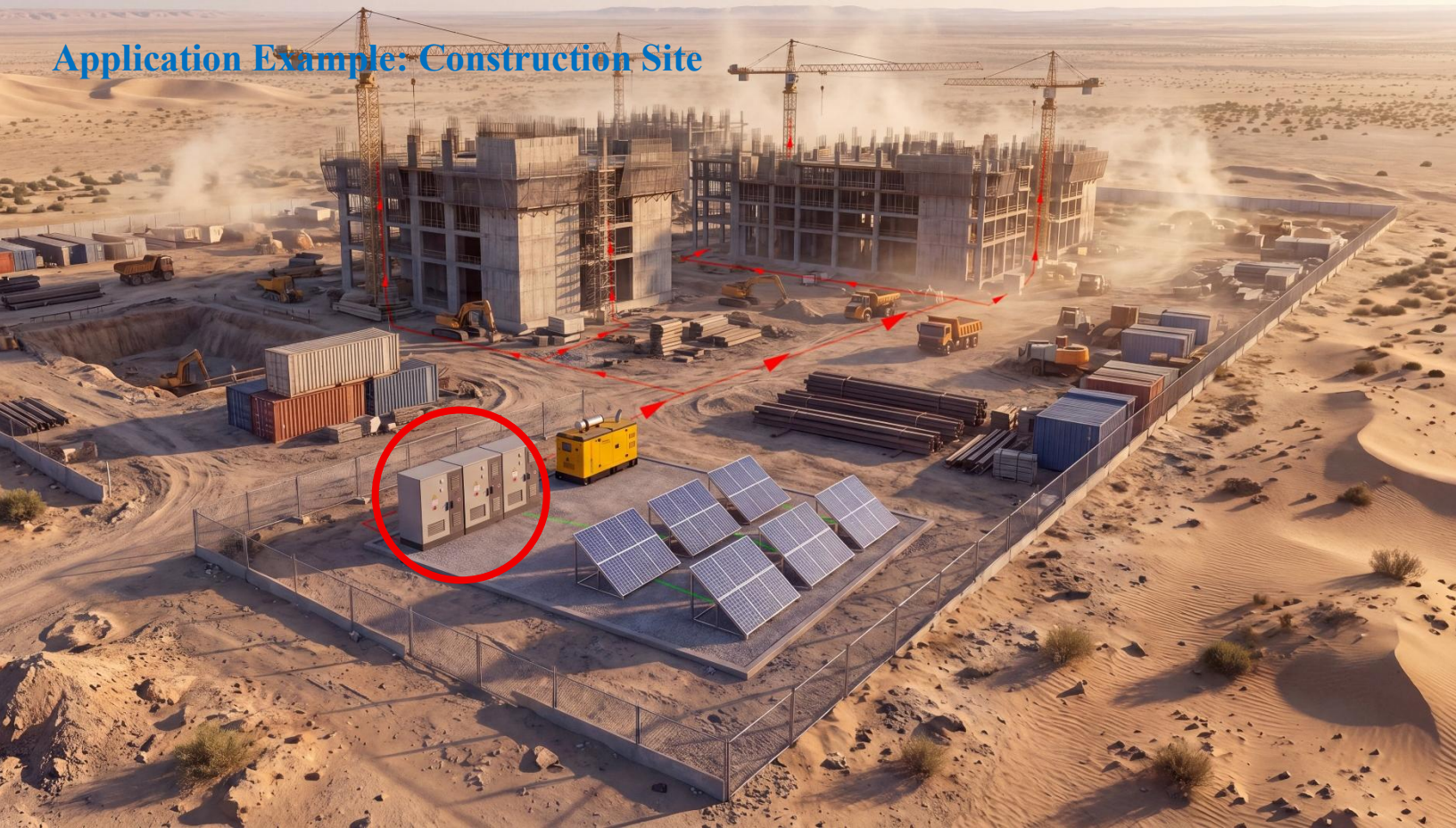


Application Example: Commercial and Industrial

Technical Specification

AC	
Output power and Voltage	105 KW/400 V, Three-phase four-wire
Rated current	152A
Overload capacity	110% long term
Frequency	50Hz/60Hz adaptive
Power factor	0.99
Current distortion rate	<3% (rated power)
Battery	
Cell Type, Battery Pack Type	LFP3.2V/314Ah, 1P52S
Battery pack configuration	1P260S
Nominal battery capacity	261kWh
Charge/discharge rate	≤0.5P
General	
Size (width*depth*height), Weight	1570*1360*2335 (mm), Approximately 2867 kg
IP Rating	IP55
Working altitude	2000 meters (over 2000m reduced)
Operating temperature	-20°C~55°C
Relative humidity	0-95% (no condensation)
Cooling method (PCS)	Smart Air Cooling
Cooling method (battery compartment)	Smart Liquid Cooling
Fire extinguisher system	PACK+ Cabinet-level aerosol fire suppression + Water-based fire suppression + Explosion-
Communication interface	RS485, CAN, Ethernet, dry contact
STS PARAMETERS (OPTIONAL)	
Power rating	200kW (200kW on the grid side, 100kW on the load side)
Automatic switching time between On-grid and Off-grid	≤20ms
PHOTOVOLTAIC PARAMETERS	
Maximum PV input power	50kW/100kW
MPPT voltage range	The PV array open circuit voltage ranges from 200V to 720V.
MPPT quantity	1/2
Maximum input current	100A
Certification	IEC61000 (Beg Q3 2026), IEC62619 (Beg Q3 2026)
	UL9540A (Beg Q3 2026), UN38.3 (Beg Q3 2026)
	EN 50549-1/-10 (Beg Q3 2026), EN 50549-1/-10 (Beg Q3 2026)

Application Example: Construction Site



EMS: ENERGY MANAGEMENT SYSTEM

METROVA EMS centralizes monitoring, control, and optimization for METROVA All in One across PCS BMS, meters and auxiliaries (thermal, fire, environment) . It acquires real-time data and, by operating mode, dispatches safe charge/discharge commands. It also issues alarms, enforces protections, and can initiate emergency actions to safeguard the plant.

Core capabilities:

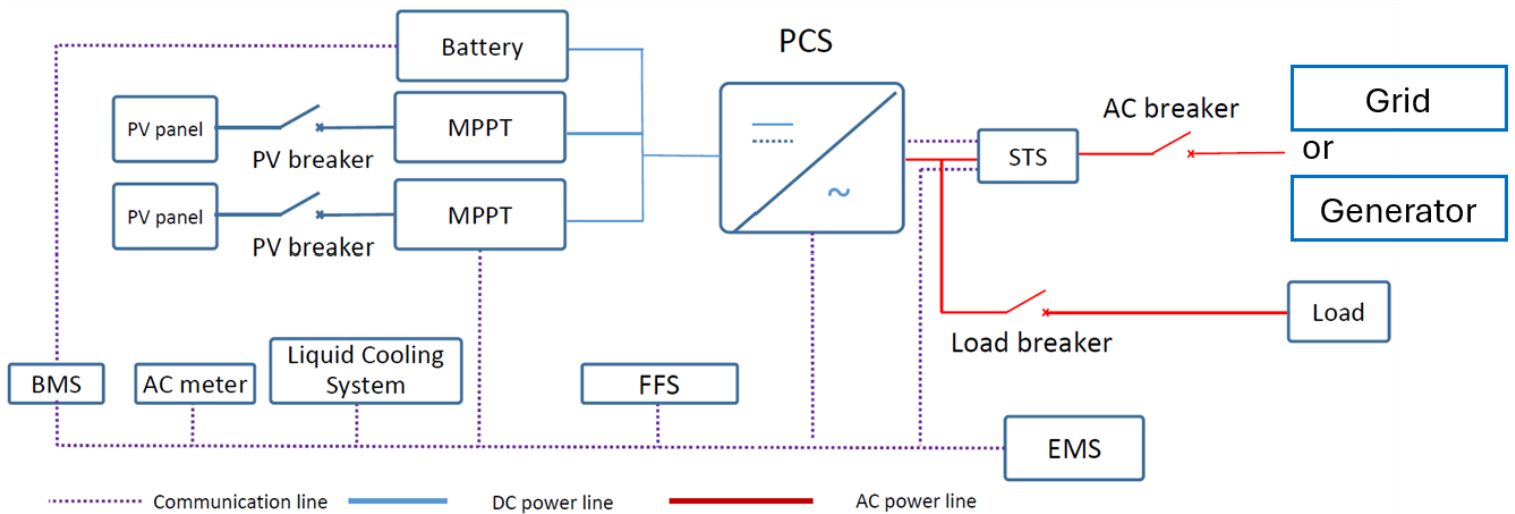
- Operating strategies: Peak-shave/valley-fill (Arbitrage) , anti-export , demand limiting , self-consumption, and backup/off-grid.
- Monitoring & control: Live SLD visualization, device status, curated alarms, and a Command Hub for safe set-points and mode control.
- Reporting & analytics: Revenue/energy, SOC/SOE, power trends, and device curves with configurable views.
- Administration: Site & device management tariff/meter-periods, local/remote mode selection, and operation logs.

The energy storage EMS completes the centralized monitoring and management of the entire energy storage power plant. The energy storage EMS is connected to the secondary remote-control system, PCS, BMS, and auxiliary equipment (temperature control, fire protection, environment) to collect operational data of each equipment. Based on different operating modes, corresponding optimization strategies are adopted to control the charging and discharging of the energy storage system.

Application Example: Cold environment Oil and gas campus, Grid is not Available



System Block diagram



Block Diagram shows how All-in-one integrated design is achieved so it is easy to install and maintain, saving space and cost. EMS will manages and control Energy flow from Solar Panel, Grid or Generator to the load based on required Energy scenario.

Application Example: Iland, where Grid is not available





Parallel Connection



Up to 6 system can be connected in parallel to achieve:

Power: 630KW

Battery: 1,566 KWH

Solar panel: 600 KWp

Application Example: Telecommunication Remote sites with no Grid available

