

STORION-TB250/500

250/500 kW | 630 ~ 2090 kWh

- ▶ AC-Coupled and DC-Coupled solutions are both available
- ▶ A liquid-cooling solution offers enhanced safety and extended lifespan
- ▶ On/Off-grid switching time $\leq 20\text{ms}$
- ▶ Flexible capacity configuration
209 kWh per cabinet, up to 10 cabinets in parallel
Battery capacity ranges: 630 ~ 2090 kWh
- ▶ DC-Coupled up to 160% PV oversize
- ▶ Various working modes for different application scenarios
- ▶ LFP battery cell, high security, long cycle life



AC Container (PCS included)

Liquid-cooling Battery Cabinet

STORION-TB250/500 is an AlphaESS liquid-cooling C&I product for large-scale C&I application, the container has EMS, PCS, STS, transformer, air conditioner, fire extinguishing devices and other equipment. Customers can choose different power range according to their application scenarios.

► **Easy Installation**

- Devices and batteries are pre-assembled at the factory
- Only external wiring at first installation

► **Flexible Configuration**

- PCS is available in 250/500 KVA two options
- The battery capacity ranges from 630 kWh ~ 2090 kWh

► **Safety**

- Active temperature monitoring and control at $23 \pm 2^{\circ}\text{C}$
- Smoke & temperature detection, automatic alarm system

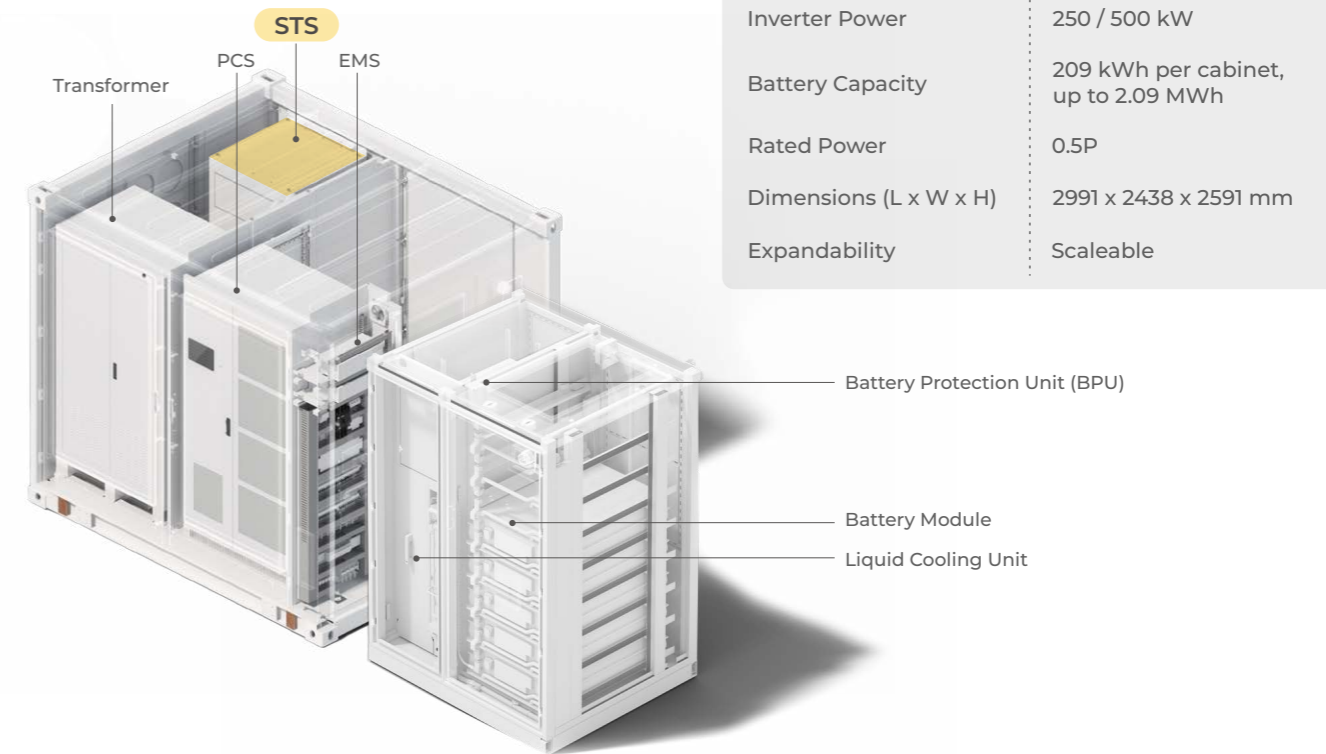
► **Expandable Capacity**

- AC-coupled solution supports a maximum of 4 systems in parallel, reaching a maximum of 2MW power and 8MWh battery capacity.

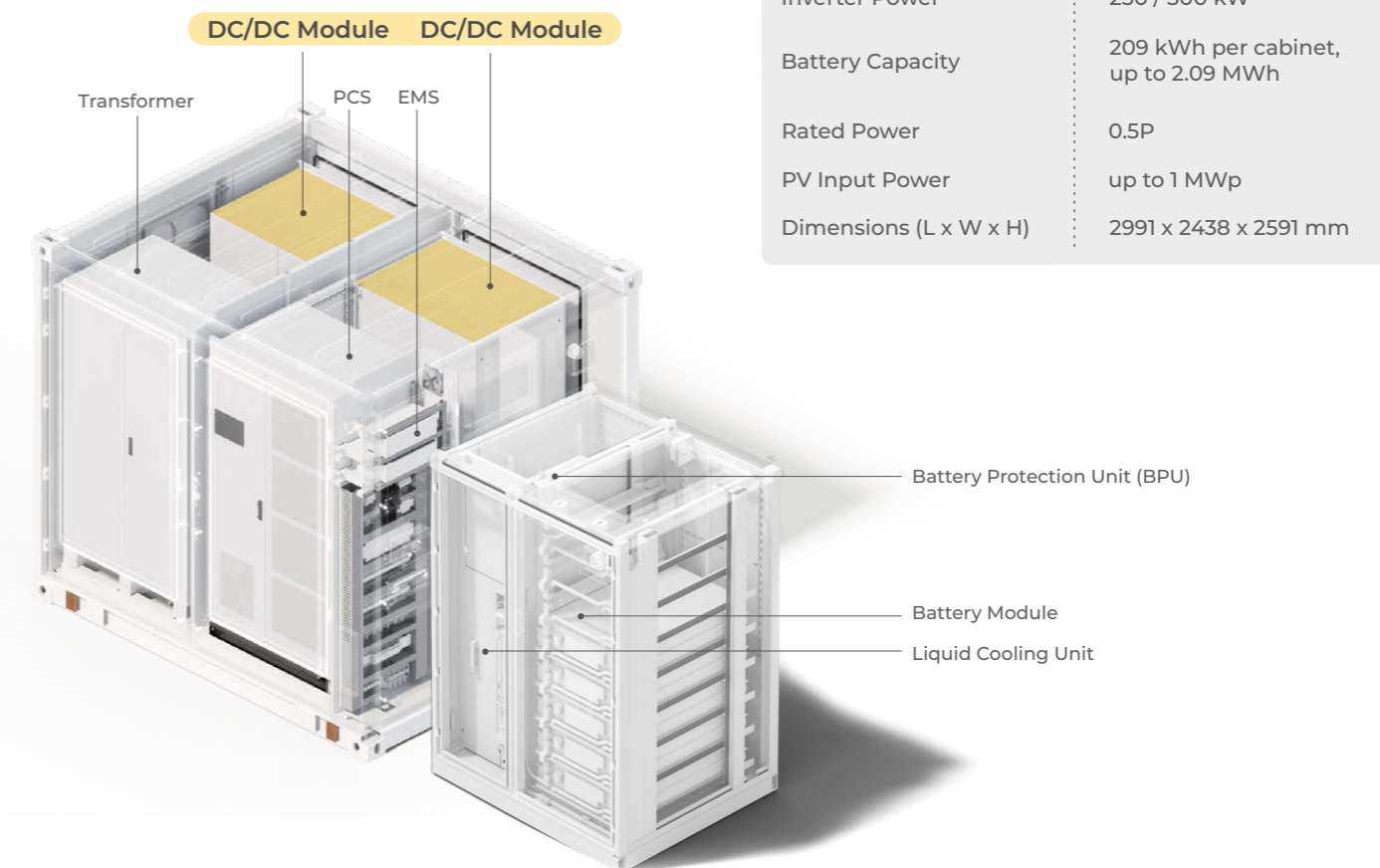


SOLUTIONS

AC-Coupled

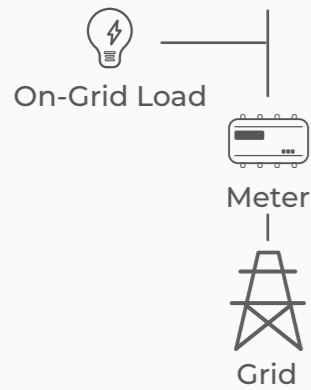
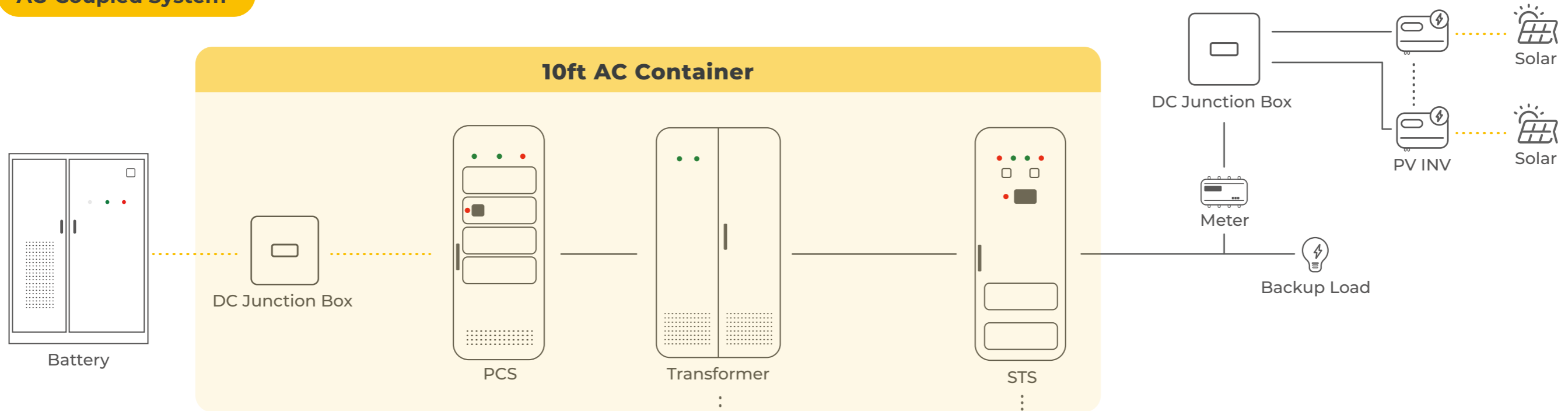


DC-Coupled



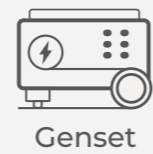
SOLUTIONS

AC-Coupled System



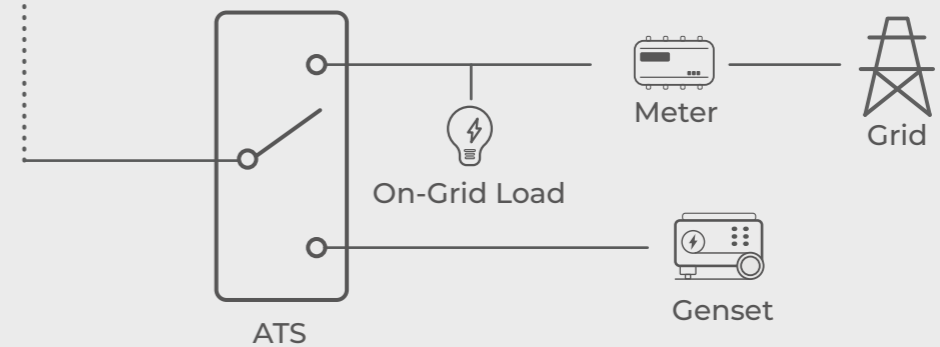
OPTION 1 On-Grid System

By integrating grid, solar, and battery sources, our system allows customers to select various operating modes. In the event of a grid outage, the on-grid load will be disconnected, and the system will automatically switch to supplying backup load, keeping you unaffected by power disruptions.



OPTION 2 Off-Grid System

The generator is managed by the EMS via dry contact, allowing users to control its operation based on preset schedules, battery SOC, or manually. This setup ensures continuous operation of either the generator or the STORION system at any given time. Both the diesel generator and the STORION system work together seamlessly, guaranteeing a reliable power supply for customers residing in remote off-grid areas.



OPTION 3 Dual Power Supply System

This solution requires an additional ATS device for seamless power source switching. In the event of a grid outage, the ATS will automatically switch to the generator side. The EMS controls the generator's operation, ensuring continuous power supply. This setup ensures that either the generator or the STORION system is always operational, guaranteeing uninterrupted backup power for essential loads.

COMPONENTS

DC / DC Module

- 400kVA, 8MPPTs
- Max. 2 Modules in Parallel Operation

The DC/DC module can be integrated into the TB series configuration to enable a DC-coupled solution. This module consists of eight 50kW DC/DC converters, each equipped with 8 MPPTs, and supports two units connected to TB series PCS in parallel. For TB500, up to 160% DC oversizing is attainable, optimizing energy utilization. During sunny conditions, part of the electricity output can be directed to supply the load while the other part charges the battery, effectively maximizing the self-consumption rate.



STS 800kVA

- On/Off-Grid Switching Time $\leq 20\text{ms}$

STS is responsible for switching between on-grid and off-grid states. When the system detects a grid abnormality, the STS can switch to off-grid mode within 20ms. This ensures that the electronic equipment connected to the system is not affected by a power outage. A rated power of 800kW ensures circuit safety during switching.



The TB series three-phase battery inverter is one of the best products on the market today. It has six power options to match different customer needs, and the product has a modular design with modular STS and Transformer for easy installation and lining up.

PCS TB250/500 Battery Inverter

- 4/8 × 62.5kVA PCS
- 340 ~ 460V , 50/60Hz, 3L/N/PE

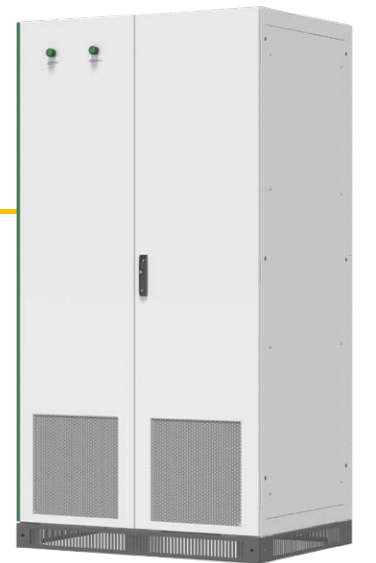
PCS is an important component of a microgrid. It can bidirectional invert DC and AC, and adjust the current waveform to be consistent with the grid, to realize the interaction with the grid. It supports a range of voltages up to 460V, so multiple batteries and PV arrays can be connected in series or parallel.



Transformer 500kVA

- Isolation and Transfer from Delta Grid to Star Grid

The transformer has a maximum input voltage of 380V and a maximum output voltage of 400V. In addition, it supports switching between star and delta circuits to isolate the grid and the devices connected to the system, thus maximizing the protection of the system from grid fluctuations.



COMPONENTS

BATTERY CLUSTER SYSTEM

Battery Module

Module	M166280-S
Nominal Capacity	46.5 kWh
Max. Charging/Discharging Current	140 A
Depth of Discharge	98%(On-Grid), 90%(Off-Grid)



Configuration Rack

BLMU	HV1500250-II
Rated Voltage	Max. 1500V
Rated Current	Max. 250A
Operation Temperature	-30 ~ 50 °C
Dimensions (W x D x H)	526 x 650 x 250mm
Weight	30 kg



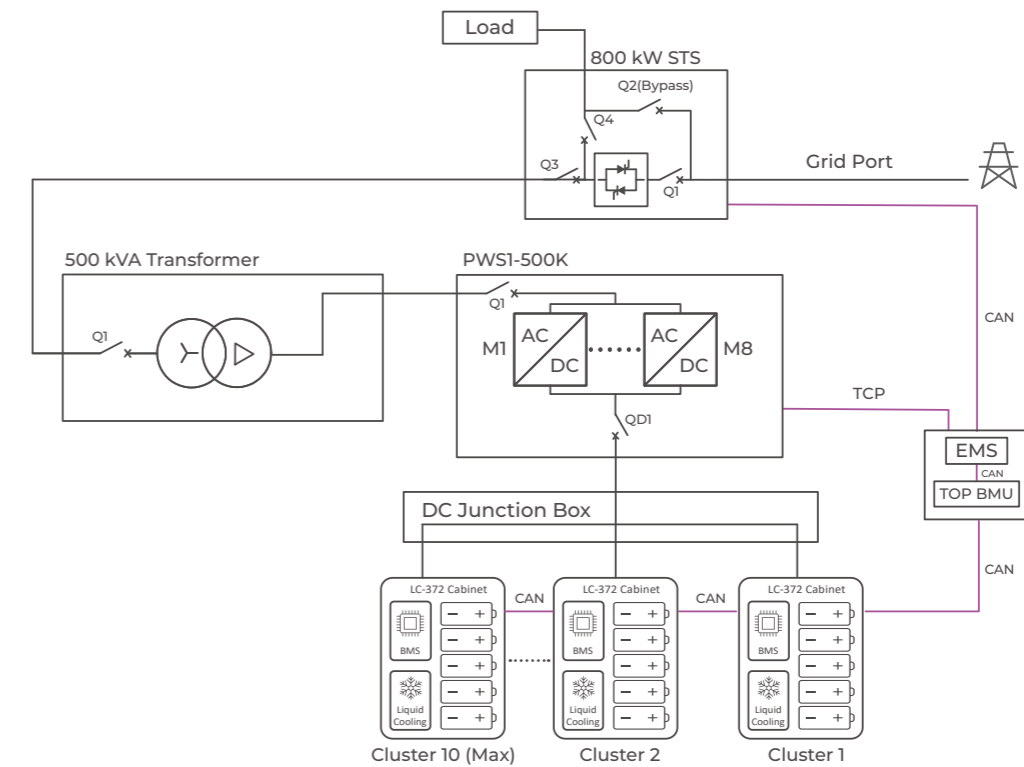
Battery Cabinet

Module	STORION-LC372
Nominal Capacity	209.6 kWh
Number of Cabinet	3 ~ 10
Dimensions (W x D x H)	810 x 1110 x 237.5 mm
Ingress Protection	IP 55
Operating Temperature Range	-30 °C ~ 50 °C

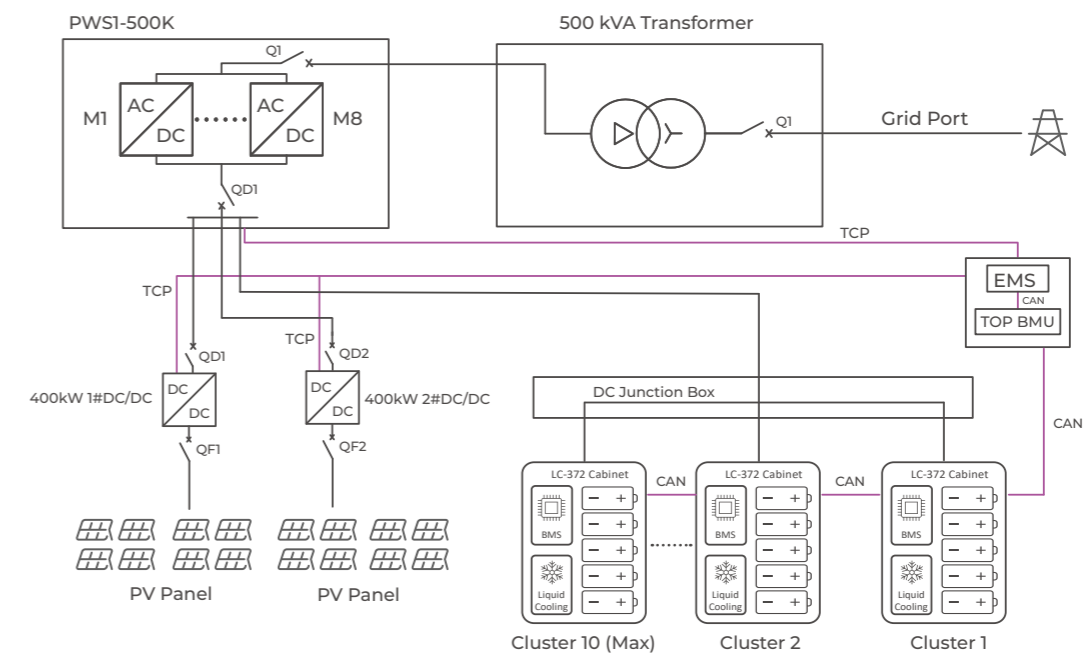


WIRING DIAGRAM

AC-COUPLED SOLUTION



DC-COUPLED SOLUTION



MULTIPLE UNITS EXPANSION

SCALEABLE

STORION-TB250/500 CONTAINERS IN PARALLEL

TOTAL POWER CAPACITY: **250kW/500kW/1MW/2MW...**

