

Pixii Power Shaper



**Flexible grid tied energy storage system
50kW up to 50kWh* / 40kW up to 100kWh***

The PowerShaper from Pixii is a complete modular energy storage system, designed for outdoor installation. It is fully integrated with PixiiBox inverters and batteries and ready to be connected to the grid for applications like solar self-consumption, demand charge reduction, peak shaving, arbitrage, and various ancillary services.

Each cabinet can house up to 50kW (49,5kW) of power conversion and LFP or NMC batteries to match different applications and requirements.

The PowerShaper can provide a variety of energy-saving or grid-supporting services. These functions can be executed autonomously or monitored and controlled by higher-level energy management systems, communicating over different protocols.

The power conversion in the PowerShaper is achieved using the PixiiBox, a bidirectional 3,3kW AC/DC converter module. There is room for up to 15 PixiiBoxes in each cabinet.

The system includes the Pixii Gateway controller, which provides advanced monitoring and control as well as communication and interoperability via the internet, Wi-Fi, or the wireless network.

For applications requiring more power or energy, several PowerShaper cabinets can be operated as a single system. The PowerShaper is typically used in applications from 10kW up to several megawatts.

Highlights

- Modular and scalable
- Integrated & battery inverter solution
- Wide range of functions
- For applications 10kW to megawatts
- Compact
- Fast response
- Galvanically isolated AC to DC
- 48V battery voltage for ease of service

20 foot base, Prewired and including AC connection cabinet



**The stated power and energy capacities are baseline, or nominal, values. Actual performance can vary and may be constrained by several factors, including the state of charge (SoC), state of health (SoH) of the system, as well as thermal conditions.*

Performance data		Performance data	
Nominal AC voltage	230/400VAC	Minimum operating temperature	-20° C
Frequency	50Hz	Maximum operating temperature	45° C
Max AC current (TN)	83A	Dimensions (w x d x h)	706 x 932 x 2 115 mm
Nominal DC voltage	~48V	Weight (fully equipped) - LFP 100Ah (10x battery & 15x PixiiBox)	680kg (16S 3U Battery) 630kg (15S 3U Battery)
Communications protocols DC current	Modbus/RTU, Modbus/TCP, TCP/IP, MQTT, HTTPS and CAN	Weight (fully equipped) - NMC 250Ah (8x battery & 12x PixiiBox)	756kg (14S 4U Battery)
Audible noise	66.6 dBA ¹⁾	Environmental management	Fan Cooled (Aircon Optional)
Cabinet protection class	IP55		
Color	RAL7035		

1) Maximum noise at 1m distance

Typical max system performance vs SoC.

Battery type	100Ah - 16S LFP		100Ah - 15S LFP		250Ah - 14S NMC	
Max kWh ²⁾	50kWh		48kWh		100kWh	
Max power (in kW) ³⁾						
SoC	Charge	Discharge	Charge	Discharge	Charge	Discharge
90%	49	48	40	40	10	40
70%	49	48	40	40	40	38
50%	49	48	40	40	40	37
30%	49	47	40	40	40	35
10%	49	46	40	40	40	24

2) Nominal values 3) Values are for batteries at room temperature (25°C). If batteries are colder or warmer, this may affect the maximum power due to battery imbalance or temperature derating.

Functions

Peak shaving	Reduce your demand charges and save costs by shaving the peaks of your power consumption.
Arbitrage	Support loads from the battery when electricity rates are high, and charge the battery when electricity rates are low.
PV self-consumption	Get the most out of your solar investment and reduce your dependency on the grid through smart power management, enabling you to direct excess energy to batteries for later use during peak hours.
Local power boost	Increase maximum available power capacity by adding smart energy storage systems in parallel with the grid. In locations with temporary overloads, energy storage systems can cover the overload and avoid grid upgrades.
Voltage support	Enables grid operators (DSO's/DNO's/DNSP's) to enhance quality of supply on long weak lines significantly. Unique functionality for voltage-based phase balancing active/reactive power compensation.
Balance services/ Flexibility markets	Unlock the value of your battery energy storage system and monetize your system's flexibility by offering available capacity to ancillary services like FFR, FCR, standard ramp FCAS services and more.

Applicable standards

Safety	IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62040-1, IEC/EN 62477, (Batteries) IEC 62619, IEC 62368, UN38.3
Grid	AS/NZS 4777-2:2020, EN50549-1:2019 Type A & B, C10/11 VDE-AR-N 4105:2018-11, VDE-AR-N 4110:2018-11 (prototype), EREC G99 Issue 1 – Amendment 6, 09 March 2020
EMC	IEC/EN 61000-6-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3, IEC/EN 61000-6-4
Environment	ETSI EN 300 019:2-1 (Class 1.2), ETSI EN 300 019:2-2 (Class 2.3), ETSI EN 300 019:2-3 (Class 3.2)