Pixii
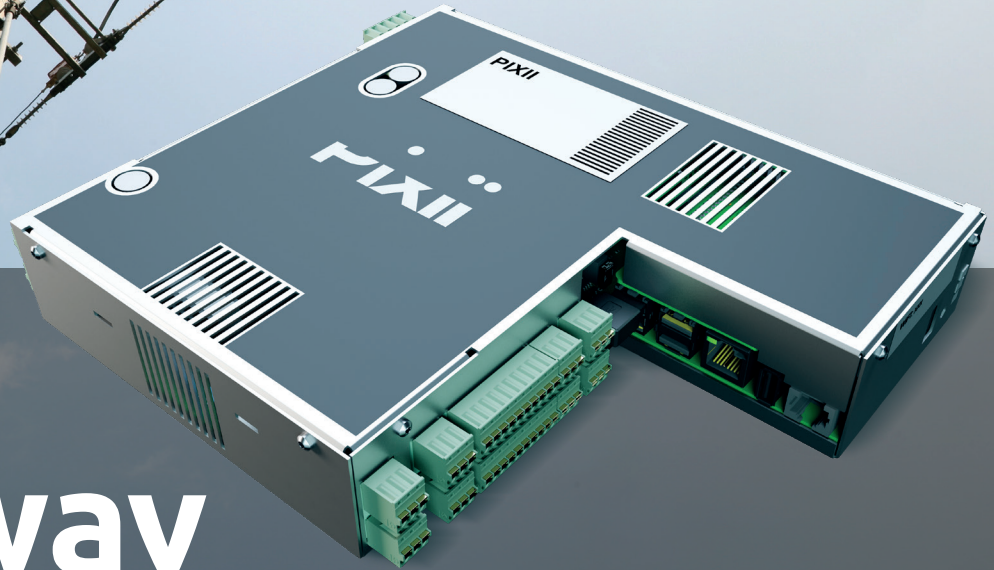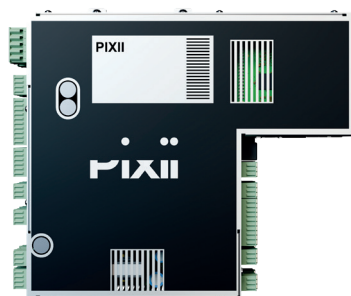# Gateway

Controller and communication hub for all Pixii systems

The Pixii Gateway is the controller and communication hub for all Pixii systems. It communicates securely with all elements within the system and the outside world for system monitoring and advanced control, enabling both local flexibility and the opportunity for coordination and flexible fleet management.

With built-in services and the ability to set priority and scheduling of services, Pixii Gateway provides full control over your Pixii Battery Energy Storage System (BESS). Whether you want to use it for peak shaving, PV self-consumption, arbitrage, grid or voltage support, or flexibility markets, your Pixii BESS will always be ready for optimal performance.

Pixii Gateway enables secure integration with on-site and off-site Energy Management Systems (EMS), site controllers, and third-party equipment such as EV chargers, meters, and more.

For more details on I/O ports, see below and 15641 Pixii PowerShaper Gateway Reference Manual.

Gateway Controller

Services

- Demand response, power control
- Target State of Charge (SoC)
- Peak shaving, adaptive peak shaving
- Voltage support, ancillary Services

Communication interfaces

- RS-485, CAN bus
- Ethernet, Wi-Fi access point (for local configuration), USB
- 4G is available as an option through USB

Communication protocols

- Modbus/RTU, Modbus/TCP
- TCP/IP, MQTT, HTTPS and CAN

Battery control:

- The Pixii Gateway can communicate with different types of batteries via CAN or Modbus/RTU

Thermal management:

- Heater, fans, and AC control options available

Digital inputs

Configurable digital in	Can be configured for custom application
OVP fault alarm	Over Voltage Protection fault alarm
Smoke detector	Smoke detector
Fuse fault alarm	Fuse fault alarm
Door	Door open
Filter removed	Filter removed
Emergency Switch – Clg	Emergency switch detection

Digital inputs

Humidity sensor	Humidity sensor
Digital inputs 1-2	Used for the built-in ripple control receiver or as customizable digital inputs
Generator status	Generator start input signal
Generator status	Generator stop input signal
Fuel cell status	K1 offgrid status
PV	SW1 Key switch status offgrid

Digital outputs

Input contactor control	Used to control input contactor1	230Vac, 5A NO/NC relay
Islanding contactor control	Used to control input contactor2	230Vac, 5A NO/NC relay
Heater control	Contactor optional 1	230Vac, 5A high inrush NO relay
Load contactor control	Heater	230Vac, 5A high inrush NO relay
Relay external 1-3	Relay external 1-3	12 Vdc open collector
Optional signal relay 1	Generator start or optional signal relay 1	30Vac 60Vdc, 5A NO/NC relay
Optional signal relay 2	Generator stop or optional signal relay 2	30Vac/60Vdc, 5A NO/NC relay

Analog inputs

Temperature 1-3 PWR	Temp power +5Vdc	5 VDC
Temperature 1-3	Temperature 1-3	1-wire interface
Symmetry 1-2	DC side earth fault detection	0-80 V
Analog input 1-5	Optional or for DRM mode	Flexible (0-80 V)

Electrical specifications

DC Input	Dual 30-60Vdc/5Amax
DC Output	12DC/500mA, 48V to external loads possible through secondary supply

Mechanical specifications

Dimensions (w x d x h)	265 x 213 x 45 mm
Weight	960g

Environmental specifications

Operating temperature range	-20° C to 45° C
Storage temperature range	-20° C to 60° C

Applicable standards

EN 61010-1, IEC 61010-1

Key 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.