

# FREESUN PPC

## UTILITY SCALE POWER PLANT CONTROLLER

Power Electronics experience in integrating its products into different global electrical networks enables us to offer a set of solutions that can be customized to your requirements to control different sources of energy into the same grid. The integration of an alternative power source creates an unprecedented opportunity to reduce operational costs to off-grid industrial and commercial facilities.



### TECHNICAL CHARACTERISTICS

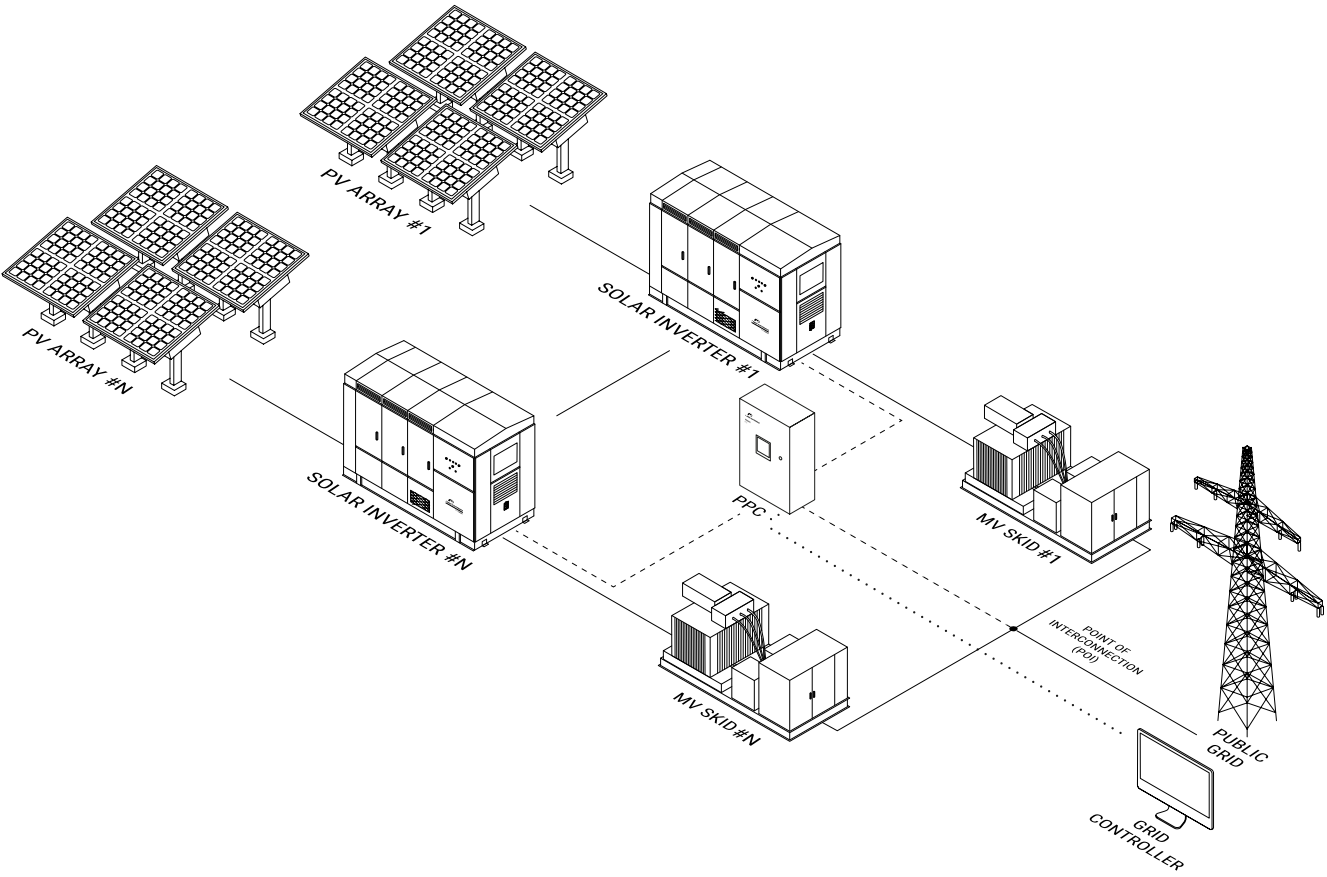
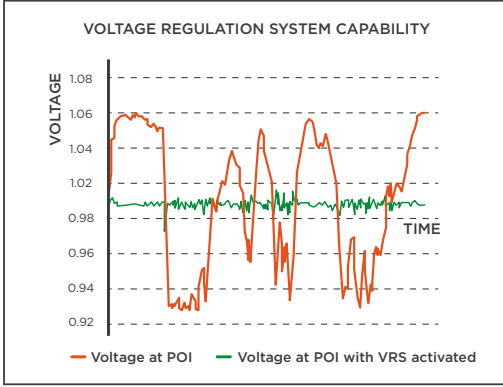
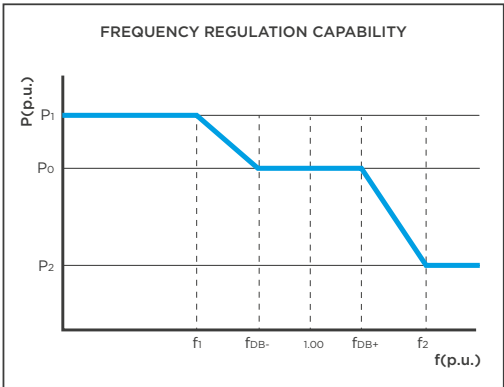
<b>GENERAL DATA</b>	Dimensions (WxDxH) mm	415 x 230 x 515
	Weight (kg)	10
	Mounting system	Wall mounted
	Compatible inverters	HEC, HEM, HEMK, Freemaq PCS, Freemaq PCSK and Freemaq Multi PCSK
	Power supply	250W
<b>I/O and COMMUNICATIONS<sup>[1]</sup></b>	4 x Digital inputs	Programmable inputs and active high (24Vdc). Optically isolated.
	1 x RS485 port	3 wires (GND,A,B), Modbus RTU
	1 x USB port	PC connectable using a master.Modbus configurator (ModScan or similar). Reserved for TS.
	1 x CAN port	3 wires (LO, GND, HI), Modbus RTU
	1 x Ethernet port (RJ45)	Modbus TCP/IP
<b>ENVIRONMENTAL CONDITIONS</b>	Operation temperature	0~50°C (32°~122°F)
	Storage temperature	-20~80°C (-4°~176°F)
	Humidity	5-95% non-condensing
	Degree of protection	IP42
<b>CERTIFICATIONS</b>	CE	
<b>OTHERS</b>	Web interface for local and remote monitoring	
	Customized solution	

[1] Communication ports can be customised depending on PV plant design without prior notice.

## DYNAMIC GRID SUPPORT

The Power Electronics Power Plant Controller is a device used to manage PV plants in order to comply with all the utility and customer requirements, thanks to its fast and flexible control algorithms. The PPC helps the grid controller to manage the performance of the PV plant, guaranteeing grid quality requirements.

The PPC includes the latest utility interactive specifications to support the grid, by controlling the reactive and active power at the POI with a fast response time. This flexible plant control device allows the user to customize the unit, in order to comply with any grid code standards and regulations.

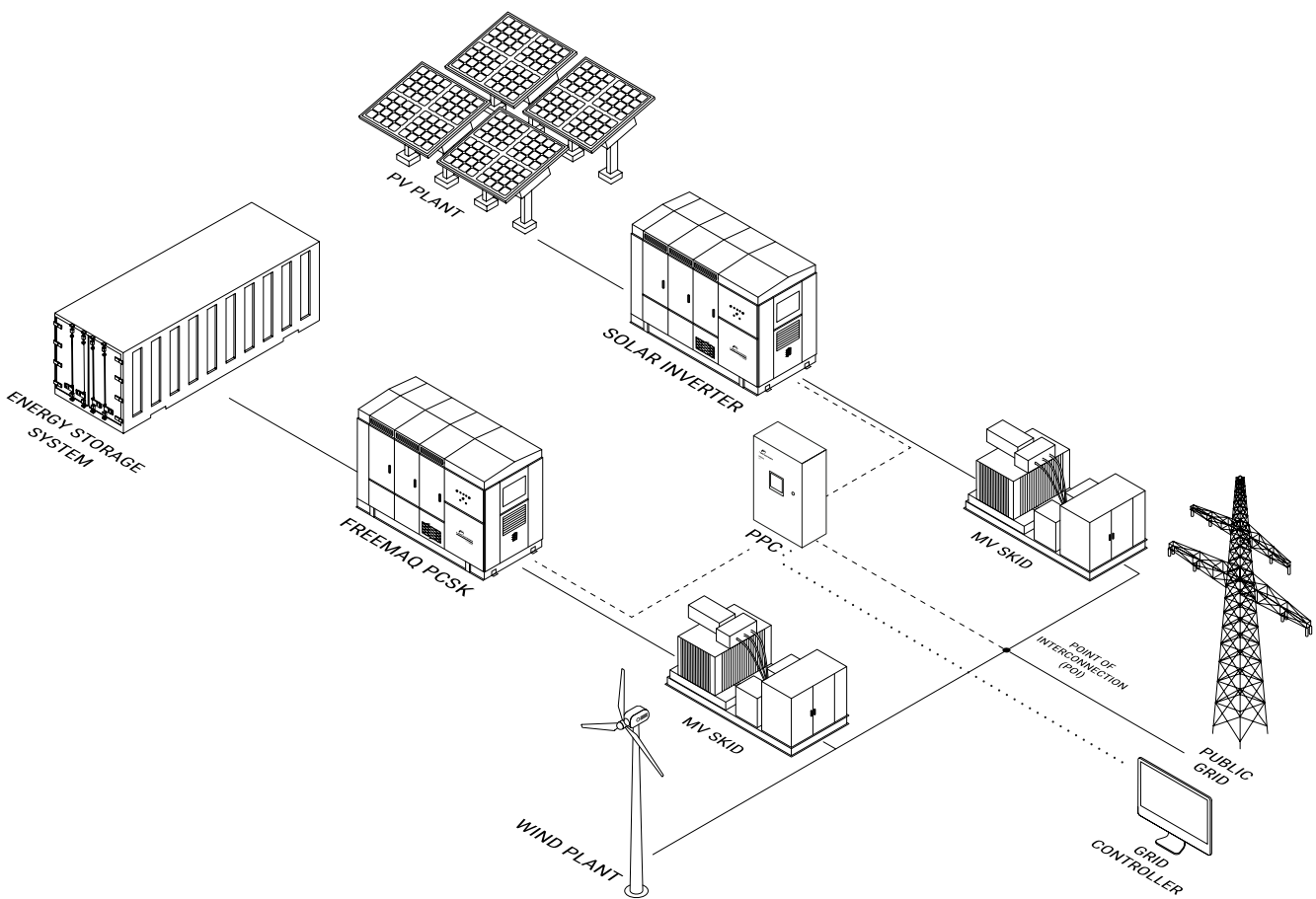


## POWER PLANT CONTROLLER

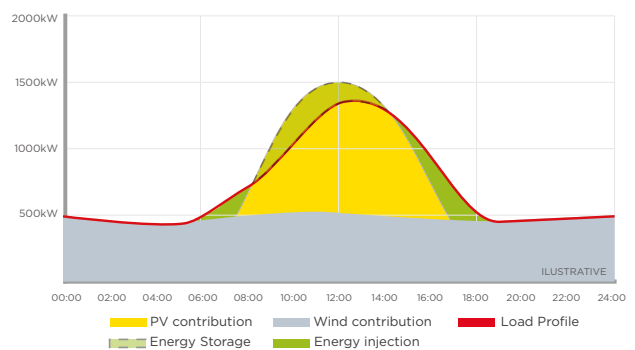
The Power Plant Controller (PPC) can be the main governor of the most complex Multi PCS systems by monitoring the point of interconnection (POI) and at the same time controlling the power generation and storage equipment.

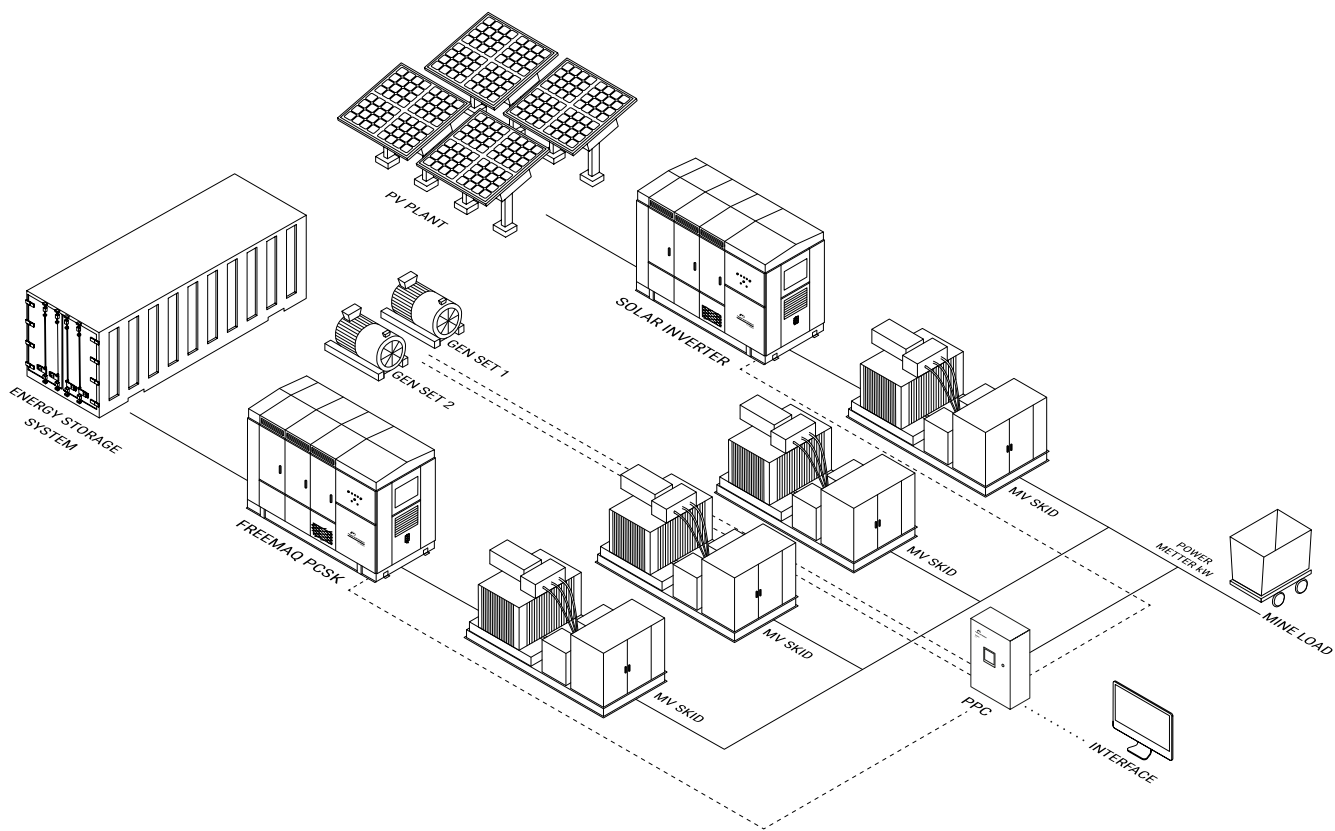
The PPC is equipped with the latest PLC based microprocessor that interacts through the programmable digital/

analogue signals and communication ports (Modbus TCP). The PPC together with the Freesun solar inverter or the Free- maq series can be customized for those countries (Puerto Rico, Hawaii....) that require full compliance to stringent dynamic grid support response at POI.



- PPC main governor and interface of the system.
- Multiple renewable power sources: solar, wind, etc.
- Centralized dynamic grid support at POI.
- Power smoothing – Enable ramp rate control.
- Storage equipment control.





- PPC main governor and interface of the system.
- Multiple GenSets and storage equipment control.
- Centralized dynamic grid support at POI.
- Power shaping - Enhanced broad implementation of decentralized PV.
- Power smoothing – Enable ramp rate control.

