



SunWave™ UP Series Smart Grid Interactive Solar System

Overview

Petra Solar's SunWave™ UP Series systems mount quickly and safely to utility distribution and streetlight poles and deliver power directly to the grid. The systems consist of a high efficiency solar panel and a SunWave Smart Energy Module (SEM) with comprehensive communications capability and the ability to improve power quality and grid reliability through the injection of VARs and non linear power. Remote monitoring and control is achieved through an integrated communications network that creates an IP-based Smart Grid backbone when deployed in large scale.

Electrical Characteristics

Specifications	Min	Typ	Max
AC Power Output (W)			200
AC Reactive Power (VARs)			200
AC Output Voltage (V)	106	120	132
RMS Output Current (A)		1.67	
AC Output Frequency (Hz)	59.3	60	60.5
Current THD			<5%
Operating Temperature (°C)	-40		85

Capable of sourcing reactive power (VARs)

Cellular Network Communication

Certified to UL 1741 and 2008 US NEC

Configuration

The SunWave™ family consists of the SunWave™ AC Module (Solar Panel + SunWave SEM), SunWave Communicator™, and the SunWave Energy Portal™. This turnkey "mount and play" solution is designed to be easily installed by electric utility crews on distribution and street light poles. Interconnection is made with a #12/3 AWG wire jacketed AC output cable. Other configurations based on customer's unique specs are available. System is certified by CSA to the requirements of UL1741, and the 2008 US NEC. System can be installed below or above the communications line.

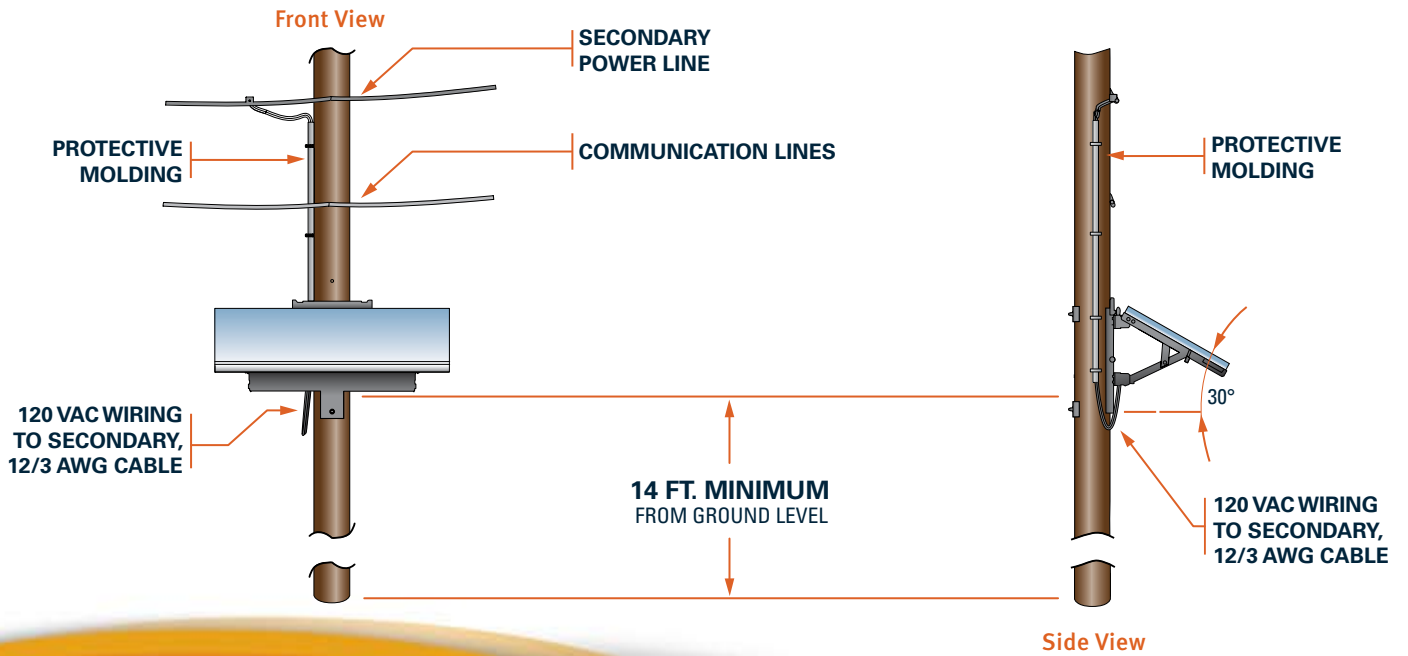
Communications

Petra Solar offers advanced communication architecture for the SunWave™ systems. The communications system allows individual monitor and control of each SunWave™ AC Module. This system also enables remote management of a large, geographically dispersed AC Module population from a centralized location. The SunWave™ communications system delivers the following capabilities on an individual AC Module basis:

- VAR control
- Energy generation monitoring
- Health, status and diagnostics data
- Command capability for system configuration and remote software upgradability
- Simple network deployment and configuration
- Smart Grid device compatibility

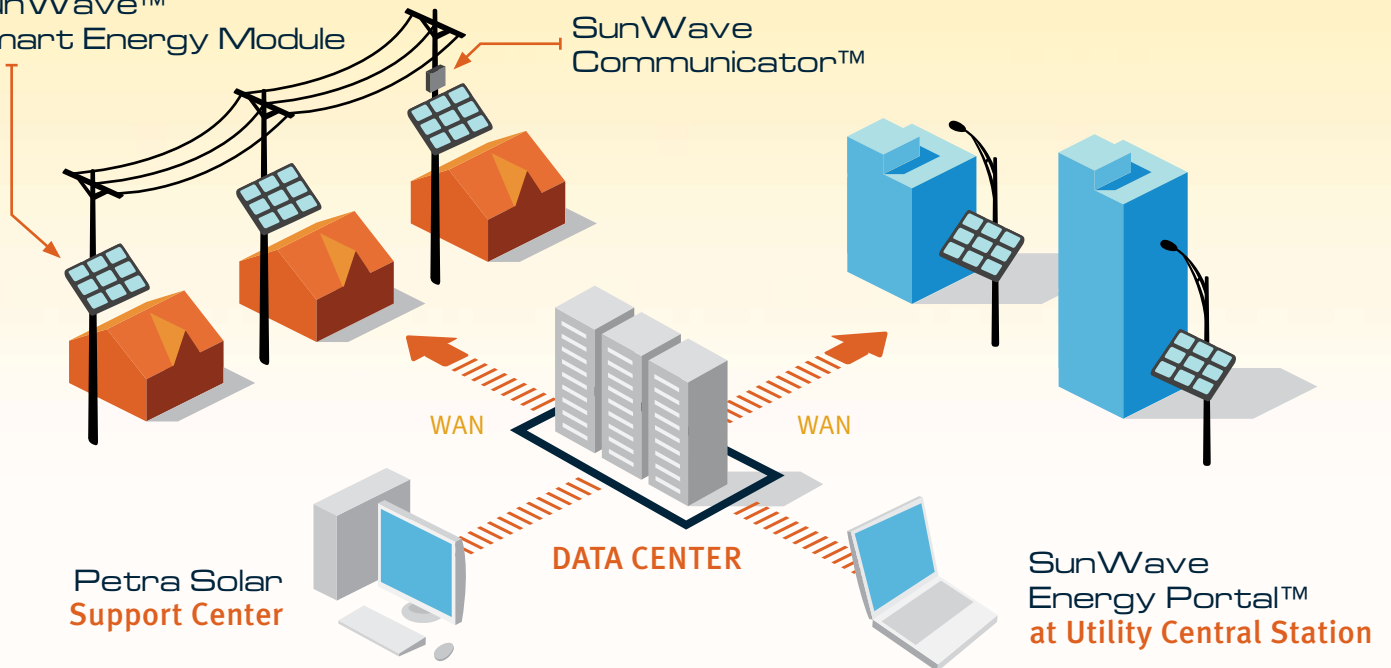


Mounted System Diagram



Petra Solar Communications System

Solar Panel with SunWave™ Smart Energy Module



PETRA SOLAR
Intelligent Energy By Design

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