ADVANCED ENERGY®

AE PVPowered™ AE solaron® AE siteguard®

Solaron® 500E PV Inverter

High-efficiency, 500 kW PV inverter enables the lowest LCOE for utility-scale, grid-tie photovoltaic installations

Achieve the lowest levelized cost of energy (LCOE) with Advanced Energy's Solaron® 500E inverter. The stable, high-voltage, transformerless engine inside this robust, 500 kW inverter allows you to wire many units in parallel into a single, medium-voltage transformer—making it ideal for utility-scale PV installations. Each unit comes outdoor-ready and includes Integrated Data System (IDS™) monitoring and control capabilities to provide remote, real-time, site-performance updates. An optional Remote PV Tie (RPT™) array accessory can cut balance-of-system (BoS) costs even further. All are backed by AE warranties and customizable training, service, and support programs such as AE Safeguard® service.

Benefits

Achieve the lowest levelized cost of energy (LCOE)

Increase energy harvests

Reduce balance-of-system (BoS) costs

Monitor and control with flexible, integrated communications

Rely on worldwide service and support

Features

500 kW, transformerless, bipolar design

Largest core engine in its class—with the industry's smallest footprint and lightest weight per kW

98.2% European efficiency

IDS™ data monitoring and communications

Remote PV Tie (RPT™) array accessory

Three decades of experience in solar PV industry

24/7/365 global service and support

Achieve the Lowest LCOE

The AE Solaron 500E inverter enables the lowest LCOE, driving higher energy harvests, reduced balance-of-system costs, and lower operation and maintenance costs. Higher power and 98.2% European-weighted efficiency translate to immediate system cost savings and greater returns on your PV investment. For example, you can install fewer panels in your PV system to achieve equivalent AC energy harvest. Or, use similar panel counts to get years of higher kWh production.

A combination of advanced controls, smooth MPP tracking, separable bipolar architecture, and proprietary IGBT switching efficiently and reliably converts raw, solar DC power to high-quality AC grid electricity. The Solaron inverter combines the largest core engine in its class with the smallest footprint and lightest weight to deliver ½ MW in a compact, outdoor-rated NEMA 4/NEMA 3R package. Solaron inverters require no additional buildings or enclosures for exterior operation.

Monitor and Control Your System

A secure, integrated LCD and keypad provide fundamental unit data on the exterior inverter cabinet. In addition, the on-board Integrated Data System (IDS™) software—included at no additional charge—provides Internet connectivity and collects and stores a wide range of real-time data, including detailed unit configuration monitoring and control information.

Connect to any Solaron inverter with your web browser to view a suite of built-in graphical representations of minute-by-minute temperature, current, and voltage data—or gather data in Modbus® or CSV format to configure your own custom data and analysis reports.

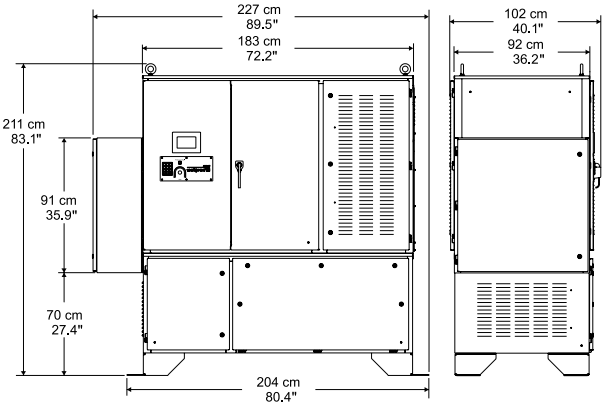
Cut PV System Wiring Costs with the Remote PV Tie (RPT™) Accessory

With the addition of an AE Solaron Remote PV Tie (RPT™) accessory, you can further reduce BoS installation costs and achieve even higher system efficiency. The RPT accessory reduces large-diameter copper home-run cables as well as I2R losses for up to 4% more power output during operation. The RPT accessory also offers flexibility in system design and inverter installation for large, utility-scale solar farms

Rely on Our Worldwide Service and Support

The Solaron inverter is durable, robust, and reliable for ongoing, low-maintenance operation. If needed, AE's worldwide service organization is available 24/7/365 for support. We also offer proactive services, including extended warranties (up to 20 years) and SafeGuard® service programs to help you maximize uptime and power generation. Our highly trained specialists can perform routine system queries, remote testing and diagnostics, and annual on-site inspections, all at a nominal cost.

Solaron 500E Dimensional Drawing



Solaron 500E Summary Specifications

Physical	
Dimensions	211 cm (H) x 227 cm (W) x 102 cm (D) 83.1" (H) x 89.5" (W) x 40.1" (D) Dimensions include cabinet handles and connection box.
Weight	1705.5 kg (3760 lb) unit weight 1859.7 kg (4100 lb) shipping weight
Enclosure	Outdoor ready cabinet design; ≥14-guage corrosion resistant steel construction, Environmental base coating, Electrostatically applied paint, Full lift-rate eye bolts.
Environmental Rating	NEMA 4 Electronics cabinet: NEMA 4 Cooling and Magnetics cabinets: NEMA 3R
Connectors and Cables	
Output AC Power Connectors	4 x 600 MCM wires (Cu or Al)
Input DC Power Connectors	4 x 600 MCM wires (Cu or Al)
User Display	Front panel LCD and keypad; security lock-outs; emergency shutdown button
Electrical	
Output Power	
Max Power	500 kW at 480 VAC
Voltage Range	432 to 528 VAC, 3 Φ, 50 Hz, grounded Wye connection
Frequency	50 Hz
Line Power Factor	> 0.99 typical
AC Current Distortion/THD	< 3% @ 500kW, 480VAC
AC Line Current	660 A typical 667 A max at 86°F (30°C) and low-line voltage; can be limited with field-adjustable settings 630 A max at 122°F (50°C)
Peak Efficiency	98.6%
European Efficiency	98.2% at ± 330 VDC
Input Power	
Array Configuration	Separable bipolar using standard PV modules
Voltage	± 330 to ± 600 VDC (max 1200 V differential)
MPP DC Current	750 ADC max
Open-Circuit Wake-Up Voltage	± 425 VDC default (configurable)
Standby Tare Losses	< 100 W
MPPT Window	± 330 to ± 550 VDC
Utility Power Capabilities	
Active Power Range	500 kW to 0 kW; remotely adjustable set point at 1 kW increments
Reactive Power Range	0.750 leading to 0.750 lagging 526 kVA at 50°C
Ramp Rate (on)	100kW/s maximum; adjustable at 0.1% increments
Delayed Reconnection	5 to 7200 seconds; adjustable
Inverter On/Off	Remotely controllable
Over-Voltage Response	110% ≤ VAC < 120%: 0.2 to 5.0 sec adjustable
Frequency Tolerance	f ≥ 50.5 Hz: adjustable; instantaneous (< 10 cycles) f ≤ 49.3 Hz: adjustable; trip delay 0.2 to 540 sec f ≤ 47.0 Hz: adjustable; instantaneous (< 10 cycles)
Factory-Installed Communication Interfaces	RS-232, RS-422, and RS-485, Ethernet, PCMCIA expansion slot, Modbus/TCP and Modbus/RTU
Data Storage	10 years / 2 GB SD card (upgradeable)
Data Monitoring	AE / SEEDS data monitoring (optional); IDS™ compatible with various 3rd party services
Environmental	
Ambient Operating Temperature	-20°C to 50°C (-4°F to 122°F) Cold weather option to -35°C (-31°F)
Storage Temperature	-30°C to 70°C (-22°F to 158°F)
Relative Operating Humidity	0% to 95% non-condensing
Atmospheric Pressure	778 to 1060 mbar (78 to 106 kPa)
Elevation	2000 m max (6562')
Cooling Requirements	
Cooling Medium	Combination air and liquid cooling (self-contained system)
Regulatory	
Directives and Standards	CE Mark Meets applicable Directives: 2006/95/EC (Low Voltage), 2004/108/EC (EMC) EN 50178:1998 (Electronic equipment for use in power installations) EN 61000-6-2:2005 EN 61000-6-4:2007 (Evaluated to EN 61000-6-4, tested and complies with EN 55011:2007, Class A Group 2) See Declaration of Conformity

Specifications are subject to change without notice.

ADVANCED ENERGY®

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