

# The Matrix™ Solar Inverter Series

E2L™

P143E



The Matrix™ Solar Inverter Series is a field-ready industrial grade grid connected solar inverter engineered to facilitate the initial deployment and subsequent upgrades of solar power plants. The inverters are shipped in standard size 20ft containers that are ready to connect to the PV arrays on the field. Optional MV Modules are also available for seamless integration with the grid.

It is of course possible to connect an unlimited number of inverters to meet the required power plants size. Inverters are available with or without galvanic isolation.

# The Matrix™ Solar Inverter Series

**Achieve superior performance, higher rates of return and a lower total cost of ownership, for the entire life-span of your system.**

E24 inverters maximize array performance and uptime through a combination of system intelligence, advanced command and control capabilities, industrial-grade engineering, and total life cycle performance optimization.

E24 offers the industry's most comprehensive preventative maintenance and extended warranty plans, including our 99% Uptime Guarantee. Our international organization is dedicated to ensuring that each E24 solution performs with the highest levels of efficiency and reliability throughout its entire life-span. All of these benefits combine to deliver the highest levels of system performance that you can depend on.

E24 Solar inverters maximize system uptime and power production, even in cloudy conditions, due to their advanced system intelligence, next-generation Edge™ MPPT technology, and industrial-grade engineering.

**The E24 Matrix™ series delivers the industry's first mobile field ready, grid connect ready, outdoor solar inverter speeding up the deployment and upgrade of utility class solar power plants.**

The Matrix™ series enables centralized, intelligent management of the entire PV system along with the flexibility of localized control over every component in the array, from the panel, to a single string, to the inverter, to the grid – thus serving as a total system solution. With Solstice, power output from each string is independently optimized, allowing each string to operate at its full potential all day. As a result, energy production from the entire array is increased by 5-12% compared to a centralized inverter system.

The Matrix™ series delivers best in class 98.5% peak efficiency combined with the industry's widest thermal operating range.

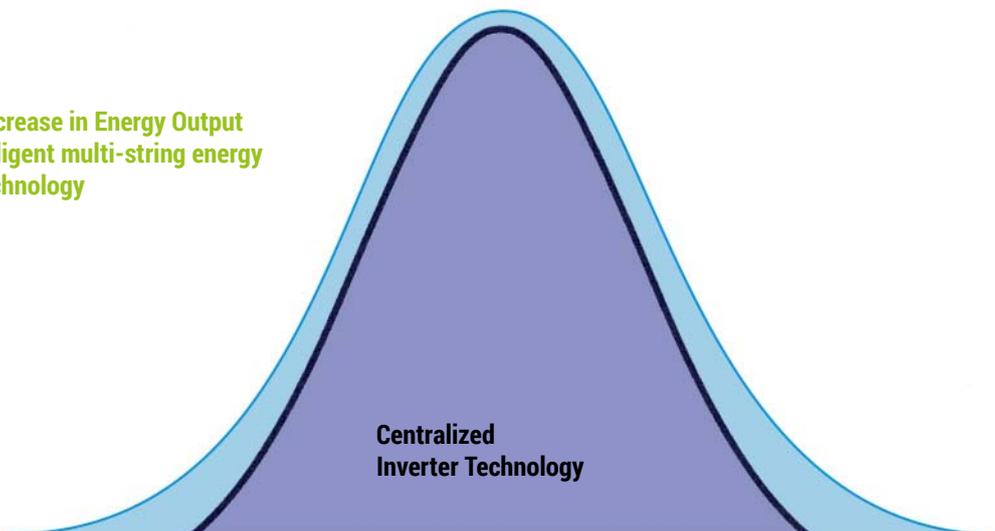
The Matrix™ series is delivered in a standard 20ft container ready to operate under harsh climate conditions.

The Matrix™ series delivers a factory integrated 0.5MW, 0.63MW, 1MW and 1.26 MW units with medium voltage (MV) options for utility scale grid integration.

MV Options are factory integrated step up transformers and MV disconnect switches also included in an outdoor 20ft container supplied in a modular prepackaged design.

## Solar Power Plant daily energy output

**+5 to +12% increase in Energy Output with E24 intelligent multi-string energy harvesting technology**



Energy Output is increased by 5% to 12% through multi-string energy harvesting technology



E24 offers containerized MV step-up transformers with their built in disconnection switches allowing a seamless integration with the grid

### Unparalleled Performance With 4 power ratings ranging from 500 kW to 1.26 MW

E24 offers a wide range of solar PV inverter solutions, enabling you to closely match array capacities and achieve maximum energy throughput.

### Smart MPPT Energy Harvesting Technology

- Features a proprietary maximum power point tracking (MPPT) system
- Provides rapid and accurate control
- Boosts overall PV plant kilowatt yield
- Provides a wide range of operation across all photo-voltaic cell technologies, including thin film, mono-crystalline, and poly-crystalline PV panels.

### Power and Efficiency Ratings

- Four power ratings, ranging from 500 kW to 1.26 MW (CE certified)
- CEC efficiency rating:  
97% to 98% (without transformer)  
96% to 97% (with transformer)
- CE efficiency rating:  
97% to 98% (without transformer)
- Ambient temperature range:  
20 degrees C (-4 deg. F) to +55 degrees C (131 deg. F)
- Superior dynamic performance in cloudy conditions

### DC Inputs at Full Power

- 420V DC to 850V DC (CE)

### Printed Circuit Board Durability

- Wide thermal operating range:  
-40° C (-40° F) to 85° C (185° F)
- Conformal coated to withstand extreme humidity and air-pollution levels.

### Total system monitoring,

- Diagnostics and control provides greater visibility to poorly behaving elements in the system at the string level.
- Bidirectional communication allows you to stop, start and restart a solar PV power plant remotely, and receive status updates from the inverter. It also provides the ability to sense, identify and mitigate ground faults as they occur - in milliseconds.
- A number of accessories and monitoring tools are available to provide you with day to day information about your power plant anytime anywhere.



## Technical Specifications

Item Reference	SIM3-500KI	SIM3-630KI	SIM3-500KTI	SIM3-630KTI	SIM3-10MI	SIM3-12MI
<b>INPUT</b>						
Max. DC input power	550KW	690KW	550KW	690KW	1100KW	1386KW
Max. DC input voltage	900Vdc	1000Vdc	900Vdc	900Vdc	900Vdc	1000Vdc
MPPT tracking voltage range	450~850Vdc (Rated voltage 576Vdc)					
Number of MPPT tracking	1					
Number of DC input tracking	8	10	8	10	16	20
Max. input current	1200A	1440A	1200A	1440A	2400A	2880A
<b>OUTPUT</b>						
Rated output power	500KW	630KW	500KW	630KW	1000KW	1260KW
Rated output voltage	270/315Vac	315Vac	400Vac	400Vac	270/315Vac	315Vac
AC output topology	3Ph+PE		3Ph+N+PE		3Ph+PE	
Output voltage range	(1±15%) x Normal AC voltage (adjustable ±5%, ±10%, ±15%, ±20%)					
Grid frequency range	50/60Hz(±4.5Hz), (adjustable)					
Rated AC output current	1070/916A	1155A	722A	909A	2140/1836A	2310A
Max. AC output current	1124/1007A	1212A	794A	1000A	2248/2014A	2424A
Power factor (cos θ)	1 (0.9 leading-0.9 lagging) (adjustable)					
Total harmonic current distortion (THDi)	<3%					
<b>SYSTEM FEATURES</b>						
Max. efficiency	>98.5%	>98.5%	>97.5%	>97.5%	>98.5%	>98.5%
Euro efficiency	>98.1%	>98.1%	>97.1%	>97.1%	>98.1%	>98.1%
MPPT efficiency	>99%					
Standby (night time) losses	<10W					
Cooling	Forced air cooling					
Communication interface	RS485, external Ethernet (optional)					
<b>ENVIRONMENTAL</b>						
Operating temperature	-40°C~55°C					
Humidity range	0~95%(non-condensing)					
Altitude	3000m					
Nose level	<70dB	<70dB	<70dB	70dB	<70dB	<70dB
Protection rating	IP54					
<b>PHYSICAL</b>						
Dimension WxHxD (mm)	3150x1850x1900	3150x1850x1900	3150x1850x1900	3150x1850x1900	6058x2896x2438	6058x2896x2438
Net Weight (kg)	3500	3600	5000	5200	7000	7200
<b>STANDARDS</b>						
Safety	IEC/EN62109-1,IEC/EN62109-2,CNCA/CTS0004:2009A, CNCA/CTS0006-2010, LVRT, etc					
EMC	IEC/EN61000-6-2, IEC/EN61000-6-4,etc					

PV Panels

PV Cabling Kits

PV Mounting Kits

PV Charge  
Controllers

PV Inverter

PV Controllers



# E24 Modular Range Of Products For Building Easy, Flexible & Evolutive Solutions

E24 products dynamically evolve with the lifestyle and work style of its customers while easing the installation process.

E24 products are conceived in modules allowing for an easy upgrade to adjust with the needs of the customers. Being modular and easy to connect E24 products allow installers to easily configure the required modules for an optimal solution while offering easy upgrade options.



# Ordering Information

Ref Number	Description
PVIM3-500KI	Matrix, Outdoor Grid Connected inverter, 8 MPP Tracker, 500KW, transformerless, 3Phase, 400/230V, 50/60Hz
PVIM3-500KI	Matrix, Outdoor Grid Connected inverter, 8 MPP Tracker, 500KW, w/t isol. transformer, 3Phase, 400/230V, 50/60Hz
PVIM3-630KI	Matrix, Outdoor Grid Connected inverter, 10 MPP Tracker, 630KW, transformerless, 3Phase, 400/230V, 50/60Hz
PVIM3-630KI	Matrix, Outdoor Grid Connected inverter, 10 MPP Tracker, 630KW, w/t isol. transformer, 3Phase, 400/230V, 50/60Hz
PVIM3-10MI	Matrix, Outdoor Grid Connected inverter, 8 MPP Tracker, 1MW, transformerless, 3Phase, 400/230V, 50/60Hz
PVIM3-10MI	Matrix, Outdoor Grid Connected inverter, 8 MPP Tracker, 1MW, w/t isol. transformer, 3Phase, 400/230V, 50/60Hz
PVIM3-12MI	Matrix, Outdoor Grid Connected inverter, 10 MPP Tracker, 1.26MW, transformerless, 3Phase, 400/230V, 50/60Hz
PVIM3-12MI	Matrix, Outdoor Grid Connected inverter, 10 MPP Tracker, 1.26MW, w/t isol. transformer, 3Phase, 400/230V, 50/60Hz
PVIM3-MVT-05I	Matrix, Outdoor containerized MV transformer and disconnect switch 13.8KV, 500KW
PVIM3-MVT-06I	Matrix, Outdoor containerized MV transformer and disconnect switch 13.8KV, 630KW
PVIM3-MVT-10I	Matrix, Outdoor containerized MV transformer and disconnect switch 13.8KV, 1000KW
PVIM3-MVT-12I	Matrix, Outdoor containerized MV transformer and disconnect switch 13.8KV, 1260KW





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