



EG4® 12000XP

OFF-GRID INVERTER

The EG4 12000XP is a 48V split-phase, off-grid inverter/charger capable of utilizing 24kW of PV input and efficiently outputting 12kW of power while also charging your battery bank with the remaining 12kW of DC. Parallel up to 16 units for 192kW of output power and control multiple stations and units using the EG4 Monitor Center.

HIGH
FREQUENCY
SPLIT-PHASE
DESIGN

5-YEAR
WARRANTY

REMOTE
ADJUSTMENT
VIA EG4
SOFTWARE

ALL-IN-ONE OFF-GRID INVERTER

Capable of running entirely off the grid or using grid electricity.

UP TO 480 VDC INPUT

The extra high voltage enables lower cable sizing for the 2 MPPTs and a maximum utilized PV input of 24kW, eliminating the need for a combiner box.

PLUG-IN WI-FI DEVICE

Enables wireless connection between the 12000XP and the EG4 app or EG4 Monitor system.

CLOSED-LOOP COMMUNICATIONS

Able to communicate with EG4 48V batteries and other supported battery brands.

SMART LOADS

The smart load port enhances the efficiency and effectiveness of solar power systems by intelligently managing energy consumption. This allows the port to have multiple use cases via load shedding, accepting AC Couple power, or power shedding for individual smart appliances.



TECHNICAL SPECIFICATIONS

AC INPUT DATA

NOMINAL AC VOLTAGE (GRID GENERATOR)	120/240VAC; 120/208VAC (L1/L2/N required)
FREQUENCY (GRID GENERATOR)	60 Hz (Default) 50 Hz (Configurable)
GRID MAX. CONTINUOUS AC CURRENT	100A @ 240VAC
MAX. AC INPUT POWER	24000W
GENERATOR MAX. CONTINUOUS CURRENT	62.5A @ 240VAC
RECOMMENDED GENERATOR CAPACITY	6000W – 15000W
AC BYPASS (GRID GENERATOR)	100A 90A

AC OUTPUT DATA

OUTPUT VOLTAGE	120/240VAC; 208VAC
OUTPUT FREQUENCY	60 Hz (Default) 50 Hz (Configurable)
MAX. CONTINUOUS OUTPUT CURRENT	50A @ 240VAC 57.7A @ 208V
NOMINAL POWER OUTPUT	w/ PV: 12000W @ 240V 12000W @ 208V w/ out PV: 12000W @ 240V 12000W @ 208V
MAX. CONTINUOUS WATTAGE	12000W (L1-L2) 6000W (L1-N or L2-N)
PEAK POWER (SURGE CAPACITY)	18000W for ≈5 seconds 15000W for ≈10s
POWER FACTOR VALUE	.99
THD (V)	<3%
SWITCHING TIME	<10 ms @ Single / <20 ms @ Parallel

PV INPUT DATA

NUMBER OF MPPTS	2
INPUTS PER MPPT	2/2
MAX. USABLE INPUT CURRENT	35A/35A
MAX. SHORT CIRCUIT INPUT CURRENT	44A/44A
DC INPUT VOLTAGE RANGE	100 – 480 VDC
MIN. STARTUP VOLTAGE	100 VDC
MPPT OPERATING VOLTAGE RANGE	120 – 385 VDC
NOMINAL MPPT VOLTAGE	320 VDC
MAX. UTILIZED SOLAR POWER	24000W (12000 per MPPT)
MAX. RECOMMENDED SOLAR INPUT	28000W (14000 per MPPT)

EFFICIENCY	
MAXIMUM EFFICIENCY (MPPT)	99%
MAXIMUM EFFICIENCY (PV TO BATTERY)	92.8%
MAXIMUM EFFICIENCY (AC TO BATTERY)	92.5%
MAXIMUM EFFICIENCY (PV TO LOADS)	93.5%
MAXIMUM EFFICIENCY (BATTERY TO LOADS)	90.2%
IDLE CONSUMPTION (STANDBY MODE)*	<70W
BATTERY DATA	
COMPATIBLE TYPES	Lead-Acid/Lithium
MAX. CHARGE/DISCHARGE CURRENT (A)	250A
MAX. CHARGE/DISCHARGE POWER (W)	12000W
NOMINAL VOLTAGE	48 VDC
BATTERY VOLTAGE RANGE	46.4 – 60 VDC (Lithium) 38.4 – 60 VDC (Lead-Acid)
RECOMMENDED BATTERY CAPACITY PER INVERTER	>400Ah
HIGH DC CUT-OFF VOLTAGE	59 VDC (Lithium) 60 VDC (Lead-acid)
GENERAL DATA	
MAX. UNITS IN PARALLEL	16
PRODUCT DIMENSIONS (H×W×D)	34.25×20.87×5.91 in. (870×530×150 mm)
UNIT WEIGHT	104.7 lbs. (47.5 kg)
DESIGN TOPOLOGY	High Frequency - Transformerless
RELATIVE HUMIDITY	5 – 95% (non-condensing)
OPERATING ALTITUDE	<6561 ft. (<2000 m)
OPERATING AMBIENT TEMPERATURE RANGE	32°F – 113°F (0°C – 45°C) @ Full Load
STORAGE AMBIENT TEMPERATURE RANGE	5°F – 140°F (-15°C – 60°C)
NOISE EMISSION (TYPICAL)	<60 dB
LOCKED ROTOR AMPS (LRA)	195A
COOLING METHOD	Fan
COMMUNICATION INTERFACE	RS485/CAN/Wi-Fi
STANDARD WARRANTY**	5-year standard warranty
INGRESS PROTECTION RATING	IP20
SAFETY FEATURES	PV Reverse Polarity Protection, Surge Protection Device, Output Over-Voltage Protection, Output Over-Voltage Protection Varistor
STANDARDS AND CERTIFICATIONS	
UL1741	
FCC PART 15, CLASS B	

*Idle consumption value tested with constant 300 VDC PV source

**For information regarding warranty registration on EG4® Electronics products, please navigate to <https://eg4electronics.com/warranty/> and select the corresponding product to begin the registration process.

CHANGELOG

3-19-25

- Corrected typo on cover page verbiage to reflect true parallel ratings

3-10-25

- Published v1.2.3
- Modified spec sheet to include updated certification.
- Added Locked Rotor Amps value to spec sheet

11-12-24

- Modified warranty information to include direct link.

11-11-24

- Modified spec sheet values
- Minor formatting changes
- Removed Operating Frequency line from AC Output Data

11-2-24

- Published v1.2.1
- Removed built in RSD statement from cover page.
- Added Smart Load functionality to cover page.

10-31-24

- Modified 10-year warranty on cover page to reflect warranty of 5 years

10-30-24

- Modified recommended generator input from >15000W to 6000W – 15000W

10-16-24

- Published v1.0