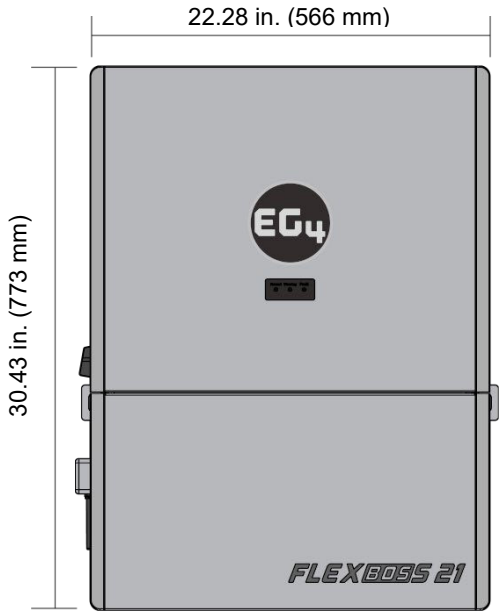

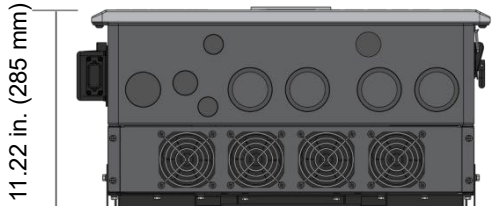

EG4® FLEXBOSS21 HYBRID INVERTER

The EG4 FlexBOSS21 is a versatile 48V split-phase, hybrid inverter/charger that offers the same dependable power as the 18kPV with enhanced flexibility. Powerful enough to start a 5-ton AC unit, the FlexBOSS21 supports up to 21kW of PV input. Capable of paralleling up to 16 units together, the FlexBOSS21 has an impressive total output of 256kW. Able to provide 16kW of continuous output power with PV & battery, and up to 12kW continuous output by using battery alone. Three individual MPPTs give users optimal control over their solar needs, while the updated EG4 monitoring software allows for convenient total remote management, complete with mobile notifications and remote setting. Seamless interaction with the EG4 GridBOSS gives users control over the entire Energy Storage System (ESS).

HIGH FREQUENCY SPLIT-PHASE DESIGN

*10-YEAR WARRANTY

REMOTE ADJUSTMENT VIA EG4 SOFTWARE

ALL-IN-ONE HYBRID INVERTER

Capable of running entirely off grid, using grid electricity, and selling power back to the grid.

UP TO 600VDC INPUT

The extra high voltage enables lower cable sizing for the 3 MPPTs and a maximum recommended PV input of 21kW, eliminating the need for a combiner box.

PLUG-IN WI-FI DEVICE

Enables wireless connection between our monitoring platform and the FlexBOSS21 through the EG4® app or EG4 Monitor system for remote system management.

CLOSED-LOOP COMMUNICATIONS

Able to communicate with EG4 48V batteries and other battery brands. A battery firmware update is required for closed-loop communications with LifePower4 batteries.

RAPID SHUTDOWN

The FlexBOSS21 is CSA C22.2#330:2017 and NEC 690.12 ready with its built-in RSD capabilities.

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VERSION 1.3.0 | INFORMATION SUBJECT TO CHANGE WITHOUT NOTICE.
MODEL#: IV-16000-HYB-AW-FX-**XX** (**XX** is a number between 00-99)

**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.*

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TECHNICAL SPECIFICATIONS

INVERTER	
MODEL	IV-16000-HYB-AW-FX-XX
CEC MODEL #	IV-16000-HYB-AW-FX-XX {240V} | IV-16000-HYB-AW-FX-XX {208V}
TYPE	Hybrid
DESIGN TOPOLOGY	High Frequency – Transformerless
AC SYSTEM	
NOMINAL VOLTAGE	120/240 or 208 VAC
FREQUENCY	50/60Hz
PHASE SUPPORT	1ø
AC OUT	
NOMINAL OUTPUT VOLTAGE	120/240 VAC; 120/208 VAC (L1/L2/N required)
MAX. CONTINUOUS OUTPUT	66.7A | 16kW
MAX. CONTINUOUS OUTPUT – BATTERY ONLY	50A | 12kW
MAX. CONTINUOUS OUTPUT – WITH PV & GRID @25C	66.7A | 16kW
PEAK POWER	24000W (.5 sec) | 18000W (1 sec) | 15000W (6 min) | 13200W (12 min)
LOCKED ROTOR AMPS (LRA)	195A
MAX. CONTINUOUS OUTPUT PER-LEG	50A | 6kW
POWER FACTOR	.99 @ Full Load
MAX. PASS-THRU CURRENT FROM GRID	90A
REACTIVE POWER ADJUST RANGE	+0.8/-0.8
THD V	<5%
MAX. APPARENT POWER WITH BATTERY	12kVA
MAX. APPARENT POWER WITH PV & GRID	16kVA
AC IN	
NOMINAL GRID VOLTAGE	120/240 VAC | 120/208 VAC (L1/L2/N required)
MAX. GRID INPUT POWER TO INVERTER (W/ OUT PASS-THRU)	50A | 12kW
MAX. GRID CIRCUIT RATING (W/ PASS-THRU)	90A
MAX. INPUT SHORT CIRCUIT CURRENT RATING	10kA
BATTERY	
NOMINAL VOLTAGE	51.2 VDC
OPERATING VOLTAGE RANGE	40 – 60 VDC
MAX. CHARGE CURRENT (DC AMPS)	250 ADC
MAX. DISCHARGE CURRENT (DC AMPS)	250 ADC
COMPATIBLE BATTERIES	See www.eg4electronics.com
RECOMMENDED MIN. CAPACITY PER INVERTER	600Ah

PV DC IN	
# OF MPPTS	3
RATED CURRENT PER MPPT	26A (MPPT 1) | 26A (MPPT 2) | 15A (MPPT 3)
INPUTS PER MPPT	3 | 2 (MPPT 1) | 2 (MPPT 2) | 1 (MPPT 3)
SHORT-CIRCUIT CURRENT RATING PER MPPT	31A (MPPT 1) | 31A (MPPT 2) | 19A (MPPT 3)
MAX. DC INPUT VOLTAGE	600 VDC*
MPPT DC STARTUP VOLTAGE	200 VDC
MPPT FULL POWER VOLTAGE RANGE	250 – 440 VDC**
MPPT DC OPERATING VOLTAGE RANGE	120 – 440 VDC
MPPT VOLTAGE HIGH PROTECTION	550 VDC***
RECOMMENDED MAX. SOLAR ARRAY POWER (STC)	21kW
RESPONSE	
TRANSFER TIME (GRID TO BATTERY SWITCHING TIME)	20ms (Default), 10ms (Configurable)
OPEN LOOP RESPONSE TIME (OLRT)	<2 sec
TIME TO STEADY STATE	<10 sec
EFFICIENCY	
CEC WEIGHTED EFFICIENCY	97%
MAX. EFFICIENCY: PV TO GRID/LOAD	97%
MAX. EFFICIENCY: BATTERY TO GRID/LOAD	94%
MAX. EFFICIENCY: PV TO BATTERY	94.5%
MAX. EFFICIENCY: AC TO BATTERY	94%
IDLE CONSUMPTION (STANDBY MODE)	<65W @25C
CONTROL & MONITORING	
DISPLAY	Optional EG4 FlexBOSS Screen Kit
USER INTERFACE	App/Web
REMOTE CONNECTIVITY	Wi-Fi, Cellular, and Ethernet (Wi-Fi dongle included by default)
ENVIRONMENTAL	
OPERATING TEMPERATURE RANGE	-13° – 140°F (-25° – 60°C) (>45°C derating)
STORAGE TEMPERATURE RANGE	-13° – 140°F (-25° – 60°C)
OPERATING HUMIDITY	0 – 95% relative humidity
OPERATING ALTITUDE	<6561 ft. (<2000 m)****
ENCLOSURE RATING	NEMA 4X
COOLING METHOD	Fans
NOISE	<50dB @ 3 ft.

*Do not exceed the max. DC input voltage specification of 600 VDC. Any damage caused by reaching >600 VDC will not be covered under warranty.

**When sizing the system, it is best practice to follow the MPPT Full Power Voltage Range specifications, and not the maximum voltage of the MPPT.

***The value at which the inverter will fault to protect the MPPT from the overvoltage spec of 600 VDC. Ensure **geographical considerations, weather patterns, and panel specifications** are factored into string sizing.
See https://eg4electronics.com/wp-content/themes/hello-elementor/eg4-solar-panel-string-sizer/ for the EG4® string sizing tool.

****For installations above 2000 m, the inverter needs to be derated to specific values depending on the elevation. Refer to the “Inverter Altitude and Derating Usage Restrictions” guide by navigating to https://eg4electronics.com/wp-content/uploads/2026/04/EG4-Inverter-Altitude-Derating-Usage-Restrictions.pdf or by scanning the QR code below.

PHYSICAL SPECIFICATIONS	
DIMENSIONS (H × W × D)	30.43 × 22.28 × 11.22 in. (773 × 566 × 285 mm)
UNIT WEIGHT	121 lbs. (55 kg)
MOUNTING	Wall mount
MAX # OF INVERTERS IN PARALLEL	16
COMPLIANCE AND SAFETY	
CERTIFICATIONS	UL1741, SA, SB, PCS CRD California Rule 21 Phase I, II, III CSA 22.2.107.1:2016 Ed. 4 CSA 22.2.330:2017 Ed. 1 IEEE 1547.1:2020; IEEE 1547:2018 Hawaii Rule 14H [HECO SRD IEEE 1547.1-2020 Ed.2]
EMISSIONS	FCC Part 15, Class B
WARRANTY**	10 years
SAFETY	Integrated DC disconnect, Reverse polarity protection, Output overvoltage protection varistor, Output over current protection, Ground fault monitoring, Grid monitoring, Pole sensitive leakage current monitoring unit, AFCI, RSD
PROTECTIONS	Arc-Fault Circuit Interrupter (AFCI) NEC 2020:690.11/UL1699B Ground Fault Monitoring (GFDI) NEC 2020:690.41(B) Rapid Shutdown (RSD) NEC 2020:690.12
BREAKER RATINGS	
BATTERY BREAKER	300A

*When sizing the system, it is best practice to follow the nominal MPPT full power voltage.

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CHANGELOG

V1.3.0

- Updated product image to reflect latest branding

v1.2.9

- Renamed “Max Altitude of Operation” to “Operating Altitude”

v1.2.8

- Added information regarding inverter derating for higher altitude installations to spec sheet

v1.2.7

- Redefined values in spec sheet to standardize information across guides

v1.2.6

- Modified max # of units in parallel from 10 to 16 per additional testing

v1.2.5

- Reformatted spec sheet and updated several values.
- Added PV Protect High value to spec sheet

v1.2.4

- Added spec: Battery charge/discharge ripple current: <5%

v1.2.3

- Corrected typos

v1.2.2

- Removed redundant specification “Max continuous per line wattage” from specs

v1.2.1

- Added an asterisk to MPPT Operating Voltage Range line in spec sheet
- Added note after the spec sheet regarding MPPT Voltage Range asterisk

v1.2.0

- Added Load Output Minimum Voltage line and value to spec sheet

v1.1.9

- Reformatted Spec Sheet
- Added OLRT & Time to Steady State to Spec Sheet
- Corrected typos
- Modified max # of units in parallel from 16 to 10

v1.1.8

- Added surge capacity ratings
- Modified weight of unit

v1.1.7

- Added Locked Rotor Amps (LRA) value to spec sheet

v1.1.6

- Added “Full Power MPPT Voltage Range” to PV input data section
- Removed (pending) from FCC Part 15, Class B

v1.1.5

- Modified Nominal Power Output in spec sheet

v1.1.4

- Modified model # format on cover page

v1.1.3

- Modified intro. paragraph for clarity on paralleling output wattage

v1.1.2

- Updated Warranty Information

v1.1.1

- Correct QR code on cover page
- Modified verbiage in top paragraph to better highlight key features
- Modified FCC Part 15, Class B to show (pending)

v1.0

- Published