



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.



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 | 1 \emptyset |
| 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.eq4electronics.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) |
| 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.

**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

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