



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 560kW. 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 24kW, 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.



T E C H N I C A L S P E C I F I C A T I O N S

| AC INPUT DATA | | | | |
|--------------------------------------------|-------------------------------------------------------------------------------|-----------------|-----------------|--------------------|
| NOMINAL AC VOLTAGE | 120/240VAC; 120/208VAC (L1/L2/N required) | | | |
| FREQUENCY | 60 Hz (Default) 50 Hz | | | |
| MAX. AC CURRENT | 50A @ 240V 57.7A @ 208V | | | |
| MAX. AC INPUT POWER | 12kW | | | |
| MAX. AC BYPASS | 90A | | | |
| AC GRID OUTPUT DATA | | | | |
| MAX. OUTPUT CURRENT | 66.7A | | | |
| OUTPUT VOLTAGE | 120/240VAC; 120/208VAC (L1/L2/N required) | | | |
| OPERATING VOLTAGE RANGE | 180 – 270VAC | | | |
| NOMINAL POWER OUTPUT | w/ PV: 16000W @240V 13800kW @208V w/ out PV: 12000W @240V 12000W @208V | | | |
| OUTPUT FREQUENCY | 60 Hz (Default) 50 Hz | | | |
| POWER FACTOR | .99 @ Full Load | | | |
| REACTIVE POWER ADJUST RANGE | (-0.8) – (+0.8) Leading Adjustable | | | |
| THD @FULL LOAD | <5% | | | |
| TRANSFER TIME | 20ms (Default), 10ms (Configurable) Parallel – 20ms | | | |
| BACKUP/UPS AC OUTPUT DATA | | | | |
| RATED OUTPUT CURRENT (240 208VAC) | 50A 57.7A | | | |
| NOMINAL OUTPUT VOLTAGE | 120/240 120/208 VAC | | | |
| RATED OUTPUT POWER | 12kW @ 240VAC 12kW @ 208VAC | | | |
| PEAK POWER | 24kW (.5 sec) | 18kW (1 sec) | 15kW (6 min) | 13.2kW (12 min) |
| OPERATING FREQUENCY | 60 Hz (Default) 50 Hz | | | |
| THDV (TOTAL HARMONIC DISTORTION VOLTAGE) | <5% | | | |
| TRANSFER TIME | 20ms (Default), 10ms (Configurable), 20ms (Parallel) | | | |
| PV INPUT DATA | | | | |
| NUMBER OF MPPTS | 3 | | | |
| INPUTS PER MPPT | 2 (MPPT 1) 2 (MPPT 2) 1 (MPPT 3) | | | |
| MAX. USABLE INPUT CURRENT | 26A (MPPT 1) 26A (MPPT 2) 15A (MPPT 3) | | | |
| MAX. SHORT CIRCUIT INPUT CURRENT | 31A (MPPT 1) 31A (MPPT 2) 19A (MPPT 3) | | | |
| DC INPUT VOLTAGE RANGE | 100 – 600VDC | | | |
| UNIT START-UP VOLTAGE | 100VDC | | | |
| MPPT OPERATING VOLTAGE RANGE | 120 – 440VDC | | | |
| NOMINAL MPPT VOLTAGE | 360VDC | | | |
| MAX. UTILIZED SOLAR POWER | 21kW | | | |
| MAX. RECOMMENDED SOLAR INPUT | 25kW | | | |
| EFFICIENCY | | | | |
| CEC | 96.9% | | | |
| MAX. EFFICIENCY (PV TO GRID) | 97% | | | |
| MAX. EFFICIENCY (BATTERY TO GRID) | 94% | | | |
| MAX. EFFICIENCY (PV TO BATTERY) | 94.5% | | | |
| IDLE CONSUMPTION (NORMAL) (STANDBY MODE) | <80W <60W | | | |

BATTERY DATA

| | |
|-------------------------------------------|--------------------|
| COMPATIBLE BATTERY TYPES | Lead-acid/ Lithium |
| MAX. CHARGE/DISCHARGE POWER | 12000W |
| NOMINAL VOLTAGE | 48VDC |
| VOLTAGE RANGE | 40 – 60 VDC |
| RECOMMENDED BATTERY CAPACITY PER INVERTER | >300Ah |

GENERAL DATA

| | |
|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| MAX. UNITS IN PARALLEL | 16 |
| PRODUCT DIMENSIONS (H×W×D) | 30.43 × 22.28 × 11.22 in. (750 × 520 × 285 mm) |
| UNIT WEIGHT | 88 lbs. (52 kg) |
| DESIGN TOPOLOGY | High Frequency – Transformerless |
| RELATIVE HUMIDITY | 0 – 100% |
| OPERATING ALTITUDE | <6561 ft (<2000 m) |
| OPERATING AMBIENT TEMPERATURE RANGE | -13° – 140°F (-25° – 60°C) |
| STORAGE AMBIENT TEMPERATURE RANGE | -13° – 140°F (-25° – 60°C) |
| NOISE EMISSION (TYPICAL) | <50dB @ 3 ft |
| COMMUNICATION INTERFACE | RS485/Wi-Fi/CAN |
| STANDARD WARRANTY | 10-year standard warranty* |
| OUTDOOR RATING | NEMA 4X |
| SAFETY FEATURES | Integrated DC disconnect, Reverse polarity protection, Output over-voltage protection varistor, Output over current protection, Ground fault monitoring, Grid monitoring, Pole sensitive leakage current monitoring unit, AFCI, RSD |

STANDARDS AND CERTIFICATIONS

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|--------------------------------------------------------------|
| UL1741, SA, SB, PCS CRD |
| California Rule 21 Phase I, II, III |
| Arc-Fault Circuit Interrupter (AFCI) NEC 2020:690.11/UL1699B |
| Ground Fault Monitoring (GFDI) NEC 2020:690.41(B) |
| 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] |
| Rapid Shutdown (RSD) NEC 2020:690.12 |
| FCC Part 15, Class B (PENDING) |

*See **EG4 Warranty Registration for terms and conditions**

CHANGELOG

10-31-24

- Published v1.1.1
- Modified verbiage in top paragraph to better highlight key features
- Modified FCC Part 15, Class B to show (pending)

10-16-24

- Published v1.0