



# 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 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.



## TECHNICAL SPECIFICATIONS

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   13800W @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	<65W			

## 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

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)

**\*For information regarding warranty registration on EG4® Electronics products, please navigate to <https://eq4electronics.com/warranty/> and select the corresponding product to begin the registration process.**

## CHANGELOG

2-3-25

- Published v1.1.5
- Modified Nominal Power Output in spec sheet

12-5-24

- Published v1.1.4
- Modified model # format on cover page

12-2-24

- Published v1.1.3
- Modified intro. paragraph for clarity on paralleling output wattage

11-12-24

- Published v1.1.2
- Updated Warranty Information

11-8-24

- Correct QR code on cover page

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