

Three Reasons to Choose the FLEXmax Series Charge Controllers from OutBack Power:

1. DESIGNED FOR PERFORMANCE

- **The de facto standard in the industry**, from the originators of the multiple voltage MPPT charge controller and the first choice for system design professionals
- Innovative FLEXmax MPPT software algorithm is both continuous and active; increases PV array output by up to 30%
- Lower PV array voltage means maximum resistance from shading versus higher voltage controllers
- Full power output in ambient temperature up to 104°F (40°C)
- Battery voltages from 12 to 60VDC
- Greater than 98% peak efficiency; less than 1W self-consumption

2. ENGINEERED FOR RELIABILITY

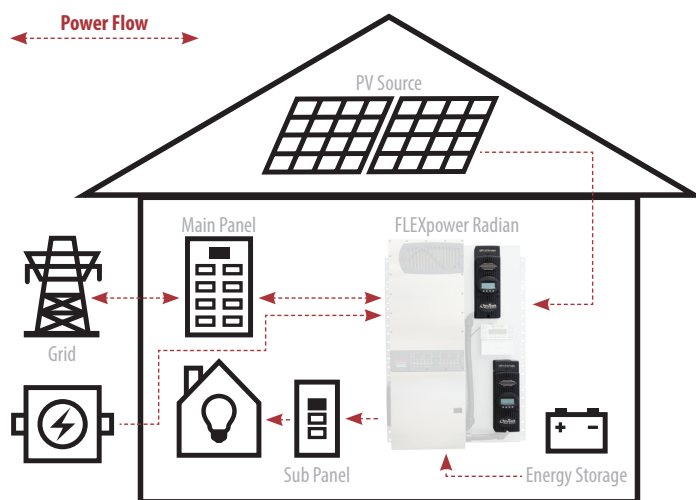
- **Extensive quality and reliability testing**, including Highly Accelerated Life Testing (HALT)
- 15 years of experience manufacturing products for fault intolerant, mission-critical applications
- Standard 5 year warranty (extended 10 year warranty available)

3. EASY-TO-INSTALL, MONITOR AND CONTROL

- **System configures quickly** with smart programming wizards (MATE3 required)
- Built in 4 line 80-character display for easy programming with no other equipment required
- Monitor, command and control from any internet-connected device with OPTICS RE
- Fully OutBack network integrated and programmable
- Programmable auxiliary control output for smart load controls
- Built-in 128 days of data logging
- Global technical support



OutBack FLEXmax Series Typical System Integration (w/ FLEXpower Radian):



OUTBACK POWER — MASTERS OF THE OFF-GRID. FIRST CHOICE FOR THE NEW GRID.



MAKE THE POWER

- FLEXpower Integrated Systems
- Inverter/Chargers & Charge Controllers



STORE THE ENERGY

- EnergyCell RE, GH, NC and OPzV Batteries
- Battery Enclosures and Racking



MANAGE THE SYSTEM

- OPTICS RE System Monitoring and Control
- MATE3 System Display and Communications

Models*	FLEXmax 80 (FM80-150VDC)	FLEXmax 60 (FM60-150VDC)
Nominal Battery Voltages	12, 24, 36, 48, or 60VDC (Single model, selectable via field programming at start-up)	12, 24, 36, 48, or 60VDC (Single model, selectable via field programming at start-up)
Maximum Output Current	80A @ 104°F (40°C) with adjustable current limit	60A @ 104°F (40°C) with adjustable current limit
NEC Recommended Solar Maximum Array STC Nameplate	12VDC systems: 1000W / 24VDC systems: 2000W 48VDC systems: 4000W / 60VDC systems: 5000W	12VDC systems: 750W / 24VDC systems: 1500W 48VDC systems: 3000W / 60VDC systems: 3750W
PV Open Circuit Voltage (VOC)	150VDC absolute maximum coldest conditions / 145VDC start-up and operating maximum	150VDC absolute maximum coldest conditions / 145VDC start-up and operating maximum
Standby Power Consumption	Less than 1W typical	Less than 1W typical
Power Conversion Efficiency	97.5% @ 80ADC in a 48VDC System (typical)	98.1% @ 60ADC in a 48VDC System (typical)
Peak Efficiency	60VDC input w/48V battery at 53.1VDC (98.44%)	68VDC input w/48V battery at 52.8VDC (98.31%)
Charging Regulation	Bulk, absorption, float, silent and equalization	Bulk, absorption, float, silent and equalization
Voltage Regulation Set points	13 to 80VDC user adjustable with password protection	13 to 80VDC user adjustable with password protection
Equalization Charging	Programmable voltage setpoint and duration, automatic termination when completed	Programmable voltage setpoint and duration, automatic termination when completed
Battery Temperature Compensation	Automatic with optional RTS installed / 5.0mV per °C per 2V battery cell	Automatic with optional RTS installed / 5.0mV per °C per 2V battery cell
Voltage Step-Down Capability	Down convert from any acceptable array voltage to any battery voltage. Example: 72VDC array to 24VDC battery; 60VDC array to 48VDC battery	
Programmable Auxiliary Control Output	12VDC output signal which can be programmed for different control applications (maximum of 0.2ADC)	
Status Display	3.1" (8 cm) backlit LCD screen, 4 lines with 80 alphanumeric characters total	3.1" (8 cm) backlit LCD screen, 4 lines with 80 alphanumeric characters total
Remote Display and Controller	Optional MATE3, MATE or MATE2	Optional MATE3, MATE or MATE2
Network Cabling	Proprietary network system using RJ-45 modular connectors with CAT5 cable (8 wires)	Proprietary network system using RJ-45 modular connectors with CAT5 cable (8 wires)
Data Logging	Last 128 days of operation: amp-hours, watt-hours, time in float, peak watts, amps, solar array voltage, maximum battery voltage, min. battery voltage and absorb time, accumulated amp-hours, and kWh of production	
Operating Temperature Range	-40 to 60°C (power automatically derated above 40°C)	-40 to 60°C (power automatically derated above 40°C)
Environmental Rating	Indoor Type 1	Indoor Type 1
Conduit Knockouts	One 1" (25.4mm) on the back; One 1" (25.4mm) on the left side; Two 1" (25.4mm) on the bottom	One 1" (25.4mm) on the back; One 1" (25.4mm) on the left side; Two 1" (25.4mm) on the bottom
Warranty	Standard 5-year / Available 10-year	Standard 5-year / Available 10-year
Weight (lb/kg)	Unit: 12.20 / 5.53 Shipping: 15.5 / 7	Unit: 11.65 / 5.3 Shipping: 14.9 / 6.8
Dimensions H x W x D (in/cm)	Unit: 16.25 x 5.75 x 4.5 / 41.3 x 14.6 x 11.4 Shipping: 19 x 9.5 x 8.5 / 48.3 x 24.1 x 21.6	Unit: 13.75 x 5.75 x 4.5 / 35 x 14.6 x 11.4 Shipping: 17 x 9.5 x 8.5 / 43.2 x 24.1 x 21.6
Options	Remote Temperature Sensor (RTS), HUB4, HUB10.3, MATE, MATE2, MATE3	Remote Temperature Sensor (RTS), HUB4, HUB10.3, MATE, MATE2, MATE3
Menu Languages	English & Spanish	English & Spanish
Certifications	ETL Listed to UL1741, CSA C22.2 No. 107.1	ETL Listed to UL1741, CSA C22.2 No. 107.1

*Use appropriate wire size in accordance with NEC.

Low Voltage Charge Controller Advantage—Smaller string size reduces power output loss in the event of inadvertent module shading

OutBack FLEXmax 80 Charge Controller
Lower Voltage Four-String, 3780W Array (315W Modules)

Shading of a single module affects one string, resulting in a power output loss of up to 25%



Competitor Charge Controller
Higher Voltage Two-String, 3780W Array (315W Modules)

Shading of a single module affects one string, resulting in a power output loss of up to 50%

