

### Three Reasons to Choose the FLEXmax 60/80 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

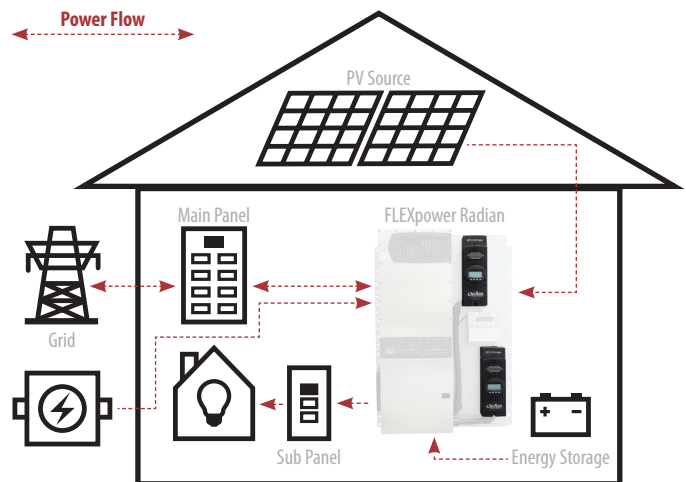
- **Extensive quality and reliability testing**, including Highly Accelerated Life Testing (HALT)
- 15 years of experience manufacturing products for fault intolerant, mission-critical applications
- Standard 5 year warranty (extended 10 year warranty available)

#### 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 60/80 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

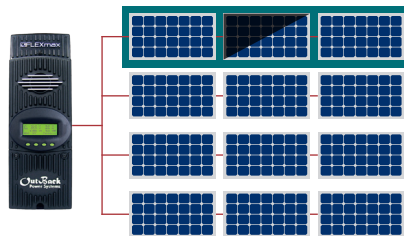
- OPTICS RE System Monitoring and Control
- MATE3 System Display and Communications

Models*	FLEXmax 80 (FM80-150VDC)	FLEXmax 60 (FM60-150VDC)
<b>Nominal Battery Voltages</b>	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)
<b>Maximum Output Current</b>	80A @ 104°F (40°C) with adjustable current limit	60A @ 104°F (40°C) with adjustable current limit
<b>NEC Recommended Solar Maximum Array STC Nameplate</b>	<b>12VDC systems:</b> 1000W / <b>24VDC systems:</b> 2000W <b>48VDC systems:</b> 4000W / <b>60VDC systems:</b> 5000W	<b>12VDC systems:</b> 750W / <b>24VDC systems:</b> 1500W <b>48VDC systems:</b> 3000W / <b>60VDC systems:</b> 3750W
<b>PV Open Circuit Voltage (VOC)</b>	150VDC absolute maximum coldest conditions / 145VDC start-up and operating maximum	150VDC absolute maximum coldest conditions / 145VDC start-up and operating maximum
<b>Standby Power Consumption</b>	Less than 1W typical	Less than 1W typical
<b>Power Conversion Efficiency</b>	97.5% @ 80ADC in a 48VDC System (typical)	98.1% @ 60ADC in a 48VDC System (typical)
<b>Peak Efficiency</b>	60VDC input w/48V battery at 53.1VDC (98.44%)	68VDC input w/48V battery at 52.8VDC (98.31%)
<b>Charging Regulation</b>	Bulk, absorption, float, silent and equalization	Bulk, absorption, float, silent and equalization
<b>Voltage Regulation Set points</b>	13 to 80VDC user adjustable with password protection	13 to 80VDC user adjustable with password protection
<b>Equalization Charging</b>	Programmable voltage setpoint and duration, automatic termination when completed	Programmable voltage setpoint and duration, automatic termination when completed
<b>Battery Temperature Compensation</b>	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
<b>Voltage Step-Down Capability</b>	Down convert from any acceptable array voltage to any battery voltage. <b>Example:</b> 72VDC array to 24VDC battery; 60VDC array to 48VDC battery	
<b>Programmable Auxiliary Control Output</b>	12VDC output signal which can be programmed for different control applications (maximum of 0.2ADC)	
<b>Status Display</b>	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
<b>Remote Display and Controller</b>	Optional MATE3, MATE or MATE2	Optional MATE3, MATE or MATE2
<b>Network Cabling</b>	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)
<b>Data Logging</b>	<b>Last 128 days of operation:</b> 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	
<b>Operating Temperature Range</b>	-40 to 60°C (power automatically derated above 40°C)	-40 to 60°C (power automatically derated above 40°C)
<b>Environmental Rating</b>	Indoor Type 1	Indoor Type 1
<b>Conduit Knockouts</b>	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
<b>Warranty</b>	Standard 5-year / Available 10-year	
<b>Weight (lb/kg)</b>	<b>Unit:</b> 12.20 / 5.53 <b>Shipping:</b> 15.5 / 7	<b>Unit:</b> 11.65 / 5.3 <b>Shipping:</b> 14.9 / 6.8
<b>Dimensions H x W x D (in/cm)</b>	<b>Unit:</b> 16.25 x 5.75 x 4.5 / 41.3 x 14.6 x 11.4 <b>Shipping:</b> 19 x 9.5 x 8.5 / 48.3 x 24.1 x 21.6	<b>Unit:</b> 13.75 x 5.75 x 4.5 / 35 x 14.6 x 11.4 <b>Shipping:</b> 17 x 9.5 x 8.5 / 43.2 x 24.1 x 21.6
<b>Options</b>	Remote Temperature Sensor (RTS), HUB4, HUB10.3, MATE, MATE2, MATE3	Remote Temperature Sensor (RTS), HUB4, HUB10.3, MATE, MATE2, MATE3
<b>Menu Languages</b>	English & Spanish	English & Spanish
<b>Certifications</b>	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%

