FLEXmax™ Series

Continuous Maximum Power Point Tracking (MPPT) Charge Controllers

FLEXmax 80 FLEXmax 60

- Increases PV array output by up to 30%
- Advanced continuous maximum power point tracking
- Full power output in ambient temperature up to 104°F (40°C)
- Battery voltages from 12 to 60VDC
- Fully OutBack network integrated and programmable
- Programmable auxiliary control output
- Built-in 128 days of data logging
- Standard 5 year warranty
- Greater than 98% peak efficiency

The FLEXmax family of charge controllers is the industry leading innovation in Maximum Power Point (MPPT) charge controllers from OutBack Power.

The innovative FLEXmax MPPT software algorithm is both continuous and active, increasing your photovoltaic array power yield up to 30% compared to non-MPPT controllers. Thanks to active cooling and intelligent thermal management cooling, both FLEXmax charge controllers can operate at their full maximum current rating, 60 Amps or 80 Amps respectively, in ambient temperatures as high as 104°F (40°C).

Included in all the FLEXmax charge controllers are the revolutionary features first developed by OutBack Power, including support for a wide range of nominal battery voltages and the ability to step down a higher-voltage solar array to recharge a lower-voltage battery bank. A built-in, backlit 80 character display shows the current status and logged system performance data for the last 128 days at the touch of a button. The integrated OutBack Power network communications allow FLEXmax series charge controllers to be remotely programmed and monitored using the MATE family of system displays and provide unrivaled complete system integration.

FLEXmax MPPT charge controllers are the only choice when you demand a high performance, efficient and versatile charge controller for your advanced power system.

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FLEXmax Series Specifications

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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, max. 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, MATE, MATE2, MATE3	Remote Temperature Sensor (RTS), HUB4, HUB10, 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.

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