



# FLEXmax™ Extreme Charge Controller

- **Environmentally-rated outdoor enclosure:**
  - IP54 design for international markets
  - NEMA 3R for North American market
- **Solid-state, passively cooled design enables sealed architecture, long-term reliability, and quiet operation**
- **Remote battery voltage sense improves battery charging performance and voltage measurement accuracy**
- **Powerful simplified fault sense supports today's and tomorrow's safety requirements**
- **Easily integrated AXS Card Modbus/TCP Interface provides powerful command, control and integration for industrial customers**
- **Certifications include: UL1741, IEC 50178, IEC 61000-6-1, IEC 61000-6-3, RoHS, CE**



OutBack created the *de facto* industry standard when the company introduced its MX60 design, the first multi-voltage Maximum Power Point Tracking (MPPT) charge controller. Now OutBack follows up on its original breakthrough with another first: an outdoor-rated charge controller with unprecedented thermal management capabilities designed for the most extreme environmental conditions.

The FLEXmax Extreme is engineered around the concept that the strongest chain is one with no weak link. In the case of charge controller design, the weak link is typically the cooling fan. Removing the fan removes the greatest obstacle to long service life and high reliability, as fan problems severely limit power output.

FLEXmax Extreme's advanced thermal engineering provides full power output from -20 to 45°C without requiring a cooling fan. And because a passively cooled unit can be sealed, circuit boards and other sensitive electronics are protected from dust, dirt, insects, and other external sources of contamination.

Installer features of the FLEXmax Extreme include: "ground-agnostic" design to support negative-, positive-

and floating-ground systems, substantial wire-bending space, oversized terminals for easy installation with large gauge wire, and mechanical design that permits servicing and replacing all power components while the unit is mounted on a wall and attached to conduit.

Because it is engineered for maximum performance in extreme and remote environments, the FLEXmax Extreme makes it easier than ever to use renewable energy sources to power remote installations-- especially when integrated into system solutions with sealed inverter/chargers and maintenance-free AGM batteries such as OutBack's acclaimed FX series inverters and EnergyCell battery line. In any commercial or residential installation, the FLEXmax Extreme combines superior performance and efficiency with easier installation and greater reliability through its fanless design-- and with its outdoor-rated enclosure, provides much greater system design flexibility.

## FLEXmax Extreme Specifications

<b>Nominal DC Input Voltage</b>	12, 24, 36, 48 or 60 VDC (Automatic adjustment at start-up)
<b>Maximum Output Current</b>	80A @ 45°C / 113°F with adjustable current limit
<b>PV Open Circuit Voltage (VOC)</b>	150 VDC absolute maximum coldest conditions / 145 VDC start-up and operating maximum
<b>Standby Power Consumption</b>	Less than 1W typical
<b>Charging Regulation</b>	Bulk, Absorption, Float and Equalization
<b>Equalization Charging</b>	Programmable voltage setpoint and duration, automatic termination when complete
<b>Remote Battery Voltage Sense</b>	Yes
<b>Battery Temperature Compensation</b>	Automatic with optional RTS installed
<b>Battery Temperature Compensation Slope</b>	Adjustable / 2.0 to 6.0mV per °C per 2V battery cell
<b>Voltage Step-Down Capability</b>	Down convert from any acceptable array voltage to any battery voltage. Examples: 72 VDC array to 24 VDC battery; 60 VDC array to 48 VDC battery
<b>Programmable Auxiliary Control Output</b>	12 VDC output signal which can be programmed for different control applications (maximum of 0.25 Amps DC)
<b>Remote Display and Controller</b>	Optional MATE3, MATE or MATE2
<b>Data Logging</b>	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
<b>Positive Ground Application</b>	Requires dual-pole circuit breaker for switching both positive and negative conductors on PV input
<b>Operating Temperature Range</b>	-40 to 60°C (Full power output -20 to 45°C with passive cooling, -20 to 55°C with Turbo Fan option)
<b>Environmental Rating</b>	IP54 / NEMA 3R
<b>Conduit Knockouts</b>	One 1" trade size (35mm) on both left and right sides; one on the back; two on the bottom
<b>Weight</b>	<b>Unit</b> 22.6 lbs (10.23 kg) <b>Shipping</b> 26.0 lbs (11.79 kg)
<b>Dimensions (HxWxD)</b>	<b>Unit</b> 18.56 x 8.8 x 6.0" (47.1 x 20.9 x 15.2 cm) <b>Shipping</b> 9.69 x 11.75 x 22.75" (24.6 x 29.8 x 57.8 cm)
<b>Warranty</b>	Standard 5 year / Available 10 year
<b>Options</b>	AXS Card Modbus/TCP Interface, External Turbo Fan, Remote Temperature Sensor (RTS)
<b>Non-Volatile Memory</b>	Yes
<b>Field Upgradable Firmware</b>	Yes
<b>Certifications</b>	UL1741, CSA C22.2 No. 107.1, IEC 50178, AS/NZS 3100, IEC 61000-6-1, IEC 61000-6-3, FCC Class B, RoHS, CE

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