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.

OutBack POWER™
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FLEXmax Extreme Specifications

Nominal DC Input Voltage		12, 24, 36, 48 or 60 VDC (Automatic adjustment at start-up)
Maximum Output Current		80A @ 45°C / 113°F with adjustable current limit
PV Open Circuit Voltage (VOC)		150 VDC absolute maximum coldest conditions / 145 VDC start-up and operating maximum
Standby Power Consumption		Less than 1W typical
Charging Regulation		Bulk, Absorption, Float and Equalization
Equalization Charging		Programmable voltage setpoint and duration, automatic termination when complete
Remote Battery Voltage Sense		Yes
Battery Temperature Compensation		Automatic with optional RTS installed
Battery Temperature Compensation Slope		Adjustable / 2.0 to 6.0mV per °C per 2V battery cell
Voltage Step-Down Capability		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
Programmable Auxiliary Control Output		12 VDC output signal which can be programmed for different control applications (maximum of 0.25 Amps DC)
Remote Display and Controller		Optional MATE3, MATE or MATE2
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
Positive Ground Application		Requires dual-pole circuit breaker for switching both positive and negative conductors on PV input
Operating Temperature Range		-40 to 60°C (Full power output -20 to 45°C with passive cooling, -20 to 55°C with Turbo Fan option)
Environmental Rating		IP54 / NEMA 3R
Conduit Knockouts		One 1" trade size (35mm) on both left and right sides; one on the back; two on the bottom
Weight	**Unit**	22.6 lbs (10.23 kg)
	Shipping	26.0 lbs (11.79 kg)
Dimensions (HxWxD)	**Unit**	18.56 x 8.8 x 6.0" (47.1 x 20.9 x 15.2 cm)
	Shipping	9.69 x 11.75 x 22.75" (24.6 x 29.8 x 57.8 cm)
Warranty		Standard 5 year / Available 10 year
Options		AXS Card Modbus/TCP Interface, External Turbo Fan, Remote Temperature Sensor (RTS)
Non-Volatile Memory		Yes
Field Upgradable Firmware		Yes
Certifications		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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