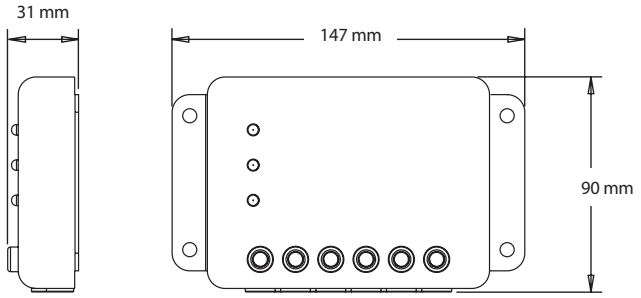
ECO-N-MPPT (15 A)

MPPT Solar Charge Controller

Technical Drawing



Product Introduction

ECO-N-MPPT is the intelligent, cost-effective choice for low-power applications that require maximum charging efficiency. Phocos' high-performance maximum power point tracking (MPPT) algorithm ensures optimal charging current from your panel/array in all conditions. This results in up to 30% higher power yield than conventional PWM charge controllers. This added efficiency paired with Phocos' precision 4-stage, temperature-compensated (external temperature sensor included) charge regime significantly extends battery lifespan, reducing number of battery replacements over the useable life of the system.

The encapsulated housing and corrosion-resistant wire terminals protect the ECO-N-MPPT from the harshest environments. An intuitive, 3-LED interface display basic system status data including: charge on/off, low battery warning, high/low-voltage disconnect, and load over current/short circuit.

Product Features

- Works in 12 or 24 V battery systems (auto recognition)
- Up to 98% power-conversion efficiency
- Compact footprint fits in tight spaces
- Rugged, potted design withstands vibration, dust, insects and water ingress
- Install requires only a flathead screwdriver
- Built-in low-voltage disconnect feature
- Four-stage charging ensures maximum battery lifespan
- User-selectable battery type
- Lithium battery compatible
- Programmable night light, battery type, charging voltages and discharge voltage limit (MXI accessory required)

Optional Accessories

MXI and MXI-232

- Interface for ECO-N-MPPT controller communication with computer via USB or RS232 interface

Technical Data

Type	ECO-N-MPPT-85/15
System Voltage	12 / 24 V auto recognition
Max. Charge/Load Current	15 A
Float Charge	13.8 / 27.6 V (25 °C)
Main Charge	14.4 / 28.8 V (25 °C), 0.5 h daily
Boost Charge	14.4 / 28.8 V (25 °C), 2 h; activation: battery voltage <12.3 / 24.6 V
Equalization Charge	14.8 / 29.6 V (25 °C), 2 h; activation: battery voltage <12.1 / 24.2 V (at least every 30 days)
Deep-Discharge Protection	11.00-12.00 / 22.00-24.04 V (by SOC) 11.0-11.9 / 22.0-23.8 V (by voltage)
Reconnect Level	12.8 / 25.6 V
Overvoltage Protection	15.5 / 31.0 V
Undervoltage Protection	10.5 / 21.0 V
Max. PV Panel Voltage	50 / 85 V
Max. Usable PV Power	225 W / 450 W
Max. PV Array Power	250 Wp / 500 Wp
Temperature Compensation	-25 mV/K (12V); -50 mV/K (24 V)
Idle Self-Consumption	10 mA / 8 mA
Grounding	Common Negative
Ambient Temperature	-40 to +60 °C
Max. Altitude	4,000 m above sea level
Battery Type	Lead acid (gel, AGM, flooded), Lithium (selectable with MXI accessory)
Datalogger	2 years
Max. Wire Cross Section	16 mm^2 (AWG 6)
Dimensions (WxHxD)	147 x 90 x 31 mm / 5.8 x 3.5 x 1.2 in
Weight	1.10 kg / 2.43 lbs
Ingress Protection	IP68 casing / IP21 terminals
Certificates	CE compliant, RoHS compliant
Warranty	5 years