ENVOLTAGE

SOLAR CHARGE CONTROLLER

EV-ML48 Series

PRODUCT OVERVIEW

EV-ML controller is an advanced maximum power point tracking (MPPT) charging technology for off-grid, security monitoring and household photovoltaic systems.

FEATURES

- Advanced dual-peak/multi-peak tracking technology tracks the maximum power point of solar panels even if solar panels are shaded or fail
- MPPT energy utilization efficiency is 15% to 20% higher than the conventional PWM method
- Multiple tracking algorithms enables rapid and accurate tracking of the optimum working point of the I-V curve
- Automatic charging voltage regulation function
- MPPT tracking efficiency up to 99.9%
- Advanced digital power technology increases the circuit energy conversion efficiency to 98%
- Supports charging lithium batteries, gel batteries, sealed batteries and vented batteries
- Limited current charging mode – automatically lowers charging power when solar panel power exceeds a specified level and charging current exceeds rated current
- Instantaneous large capacitive load current startup
- Automatic identification of storage battery voltage
- Can store historical data for up to one year
- Compatible with standard Modbus protocol
- All communications are electrically isolated
- Overheat protection mechanism – protects the controller from damage by overheating
- Temperature compensation function – automatically adjusts charging and discharging parameters to extend battery lifespan
- External battery voltage sampling accounts for line loss
- TVS lightning protection

Product Description

PART#	DESCRIPTION	RATED CURRENT	SYSTEM VOLTAGE	MAX SOLAR INPUT VOLTAGE
EV-ML4830N15	MPPT Controller	30A	12V/24V/36V/48V	145Vdc
EV-ML4860N15	MPPT Controller	60A	12V/24V/36V/48V	145Vdc

Specifications

MODEL#	EV-MF4830N15	EV-ML4860N15
PV INPUT		
Maximum Voltage of Open Circuit	145Vdc	
MPPT Voltage Range	(Battery voltage+2V) ~ 120V	
Maximum PV Input Power	400W/12V, 800W/24V, 1200W/36V, 1600W/48V	800W/12V, 1600W/24V, 2400W/36V, 3200W/48V
BATTERY		
Battery Type	Lead-acid / Li-ion / User Defined	
Rated Battery Voltage	12/24/36/48Vdc	
Battery Voltage Range	9~70Vdc	9~65Vdc
Rated Charging Current	30A	30A
MPPT Charging Mode	Buck	
LOAD		
Load Type	Resistive load, Capacitive load, Inductive load	
Rated Load Voltage	Equal to battery voltage 12V/24V/36V/48V	
Rated Load Current	20A	
Load Working Mode	Light control, Light control + Time control, Manual control (default), Debugging mode, Normal open	
EFFICIENCY		
MPPT Tracking Efficiency	>99%	
Maximum Charging Conversion Efficiency	≤98%	
ACCESSORIES		
Standard	BTS temperature sensors	BTS temperature sensor, 3 pole communication cable
Optional	RM-5 display, BT-1 Bluetooth module, USB to RS232 connection cable, GP-2 IoT module, 6 pole communication cable	
GENERAL		
Communication	RS232/RS485	
Weight	2.3kg (5.07lb)	3.6kg (7.94lb)
Dimensions	226*182*81mm (0.74*0.60*0.27ft)	285*205*93mm (0.94*0.67*0.31ft)
Protection Degree	IP32	
Operating Temperature Range	-35°C ~ +45°C (-31°F~113°F)	

Wiring Diagram