

# 30A PWM Solar Charge Controller

**MODEL: RS-PWM30F**



## FEATURES

- PWM technology, switching control by MOSFET
- Common positive grounding connection
- High efficiency and low power consumption
- Battery type setting and battery condition indication
- Smart charging control
- Charging time management
- LED indication for the battery condition and charging status
- Digital display charging parameters and battery settings
- Automatically activates Lithium battery against BMS protection
- Thermal protection
- Over voltage protection, short-circuit protection, reverse polarity protection
- No sparks
- The thinnest and compact design
- Corrosion-resistant terminals and connectors
- Conformal coating supplied to the inside board against moisture
- Includes a port for external battery temperature sensor (BTS - optional)
- Compatible with most rechargeable lead acid batteries, including Flooded (WET), AGM, GEL, Calcium and Lithium batteries
- Designed to meet CE standards and comply with EMC and FCC regulations

## SPECIFICATIONS

### Electrical Parameters

Rated solar panel amps	Max. 30 AMP
Normal input solar cell array voltage	15~22 VDC
Maximum solar cell array voltage (output has no load)	Max. 25 VDC
The controller lowest operating voltage at solar or battery side	Min. 8 VDC
Standby current consumption at night	Max. 5 mA
Maximum voltage drop-Solar panel to battery	Max. 0.25 VDC

### Charging Characteristics

Minimum battery starts charging voltage	Min. 3 VDC
Soft start charging voltage	3~10±0.2 VDC
Soft start charging current (50% PWM duty)	Up to 15 AMP
Bulk charging	By the maximum rated current
Absorption charging voltage at 25°C	
--Gel battery	14.1±0.2 VDC
--AGM battery (default setting)	14.4±0.2 VDC
--WET battery	14.7±0.2 VDC
--Calcium battery	14.9±0.2 VDC
--LTO battery	14.0±0.2 VDC
--LFP battery	14.4±0.2 VDC
Absorption transits to equalizing or float condition	
--Charging current drops to	1.5±0.1 AMP
-- or Absorption charging timer timed out	4 Hours
Equalization charging active (Only for WET or calcium battery)	
--Battery voltage discharged to less than	10±0.2

--Automatic equalizing charging periodical	28 Day
Equalization charging voltage at 25°C	15.5±0.2 VDC
Equalization charging timer timed out	2 Hours
Float voltage (GEL, WET, Calcium, AGM battery) at 25°C	13.6±0.2 VDC
Float voltage for LTO or LFP battery	13.4±0.2 VDC
Restart voltage for LTO or LFP battery	13.2±0.2 VDC
Restart voltage for lead acid battery	12.6±0.2 VDC
Voltage control accuracy	±0.1%
Battery temperature compensation coefficient	-13.33mV/°F / -24 mV/°C
Temperature compensation range	-4~122°F / -20~50°C

### Protection

Over temperature protection during charging	149°F / 65°C
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### Electrical parts

Input output terminal	M4 terminals
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### Physical Parameters

Controller material	Plastic, Standard ABS
Power terminal maximum stranded wire size	#8 AWG stranded - 0.2in <sup>2</sup>
Power terminal torque	Up to 17 in-lb (1.92 N·m)
Mounting	Vertical wall mounting
IP grade	IP22
Net weight	Approx. 10.6oz / 300g

### Environmental Characteristics

Operating temperature	-13 ~ 122°F / -25 ~ 50°C
Storage temperature	-40 ~ 185°F / -40 ~ 85°C
Operating Humidity range	100% no condensation