



# MCR SERIES MPPT SOLAR CHARGE CONTROLLER

10A-60A



## Performance Characteristics

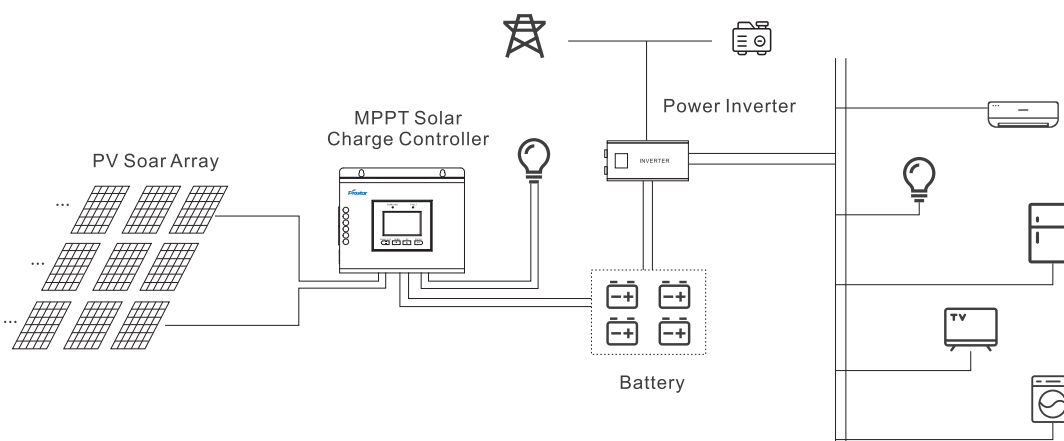
1. Wide DC voltage input range, suitable for various common solar panel specifications
2. Automatically detects 12V/24V/48V DC system voltages
3. Touch LCD screen and LED indicators for operation information, customizable parameters, and error codes
4. Three-stage charging optimizes battery performance.
5. MPPT tracking efficiency up to 99%
6. Deep Cycle Sealed, Gel, Flooded, and Lithium battery option ready
7. Ability to output in parallel to power DC loads
8. Over-temperature protection and power de-rating when temperature is high
9. Die-cast aluminum design allows for efficient heat dissipation
10. RS485 communication port with standard Modbus protocol

This MCR series MPPT solar charge controller automatically detects 12V or 24V or 48V DC system voltages. It can be compatible with various Deep Cycle battery options: Sealed, Gel, Flooded, and Lithium or User-defined. Innovative MPPT technology with high tracking efficiency up to 99% and peak conversion efficiency of 97%. Touch LCD screen and LED indicators for displaying system operation information, customizable parameters, and error codes. It also has electronic protection against reverse polarity, overcharging, over-discharging, overload, short-circuiting, and reverse current.

The MCR Series Charge Controller is suitable for various off-grid solar applications. It protects the battery from becoming over-charged by the solar modules and over-discharged by the loads. By constantly monitoring the voltage and current output of your solar (PV) panels, MPPT technology ensures that every drop of available power is rinsed out of your panels, and harvested for storage.

It is widely used in many fields such as RVs, communication base stations, household systems and field monitoring.

## Application Diagram





## Technical Specifications

Model	MCR1024	MCR2024	MCR3024	MCR3048	MCR4048	MCR5048	MCR6048	
MPPT Efficiency	> 99%							
System Voltage	12V/24V(Auto)			12V/24V/48V(Auto)				
Dimension (WxDxH mm)	193x103x65	162x150x78		200x168x94				
Net Weight(kg)	0.75	1.30		1.80				
<b>INPUT</b>								
Max. PV Input Voltage	55VDC		100VDC	170VDC				
MPPT Operating Voltage Range	12V	18VDC-50VDC		18VDC-95VDC		18VDC-150VDC		
	24V	34VDC-50VDC		34VDC-95VDC		34VDC-150VDC		
	48V	-		65VDC-150VDC				
Low Voltage Protection	12V	16VDC		16VDC				
	24V	30VDC		30VDC				
	48V	-		60VDC				
High-voltage Protection	55VDC		100VDC	170VDC				
PV Rated Input Power	12V	150W	280W	428W	428W	570W	713W	855W
	24V	300W	560W	856W	856W	1140W	1426W	1710W
	48V	-		1712W	2280W	2852W	3420W	
<b>DC LOAD OUTPUT</b>								
Load Voltage	Same as battery voltage							
Load Current	10A (20A optional)			20A				
Load Control Mode	ON/OFF, PV voltage control, time control, PV + time control							
<b>CHARGE</b>								
Battery Type	Sealed Lead Acid, Gel, Flooded, Lithium-ion, User-defined							
Charging Mode	MPPT (Maximum Power Point Tracking)							
Charging Current	10A	20A	30A	30A	40A	50A	60A	
Charging Method	Three-stage: CC (Constant current) - CV (Constant voltage) - CF (Float charge)							
Temperature compensation	-3mV/°C/2V (Default)							
Float Charging Voltage (Lead Acid Default)	12V	13.8VDC (Settable)		13.8VDC (Settable)				
	24V	27.6VDC (Settable)		27.6VDC (Settable)				
	48V	-		55.2VDC (Settable)				
Boost Charging Voltage (Lead Acid Default)	12V	14.5VDC (Settable)		14.5VDC (Settable)				
	24V	29.0VDC (Settable)		29.0VDC (Settable)				
	48V	-		58.0VDC (Settable)				
<b>SYSTEM</b>								
Protection Function	Input low/over voltage, input/output polarity reverse connection, short circuit, over temperature, battery shedding etc.							
Display	Touch LCD + LED							
Cooling method	Forced Air Cooling							
Standby power	< 2W							
Communication	RS485							
<b>ENVIRONMENT</b>								
Relative Humidity	0 ~ 90% RH (non-condensing)							
Altitude	< 3000m							
Operating Temperature	-20°C~+40°C							
Storage Temperature	-40°C~+75°C							
Protection Level	IP21							