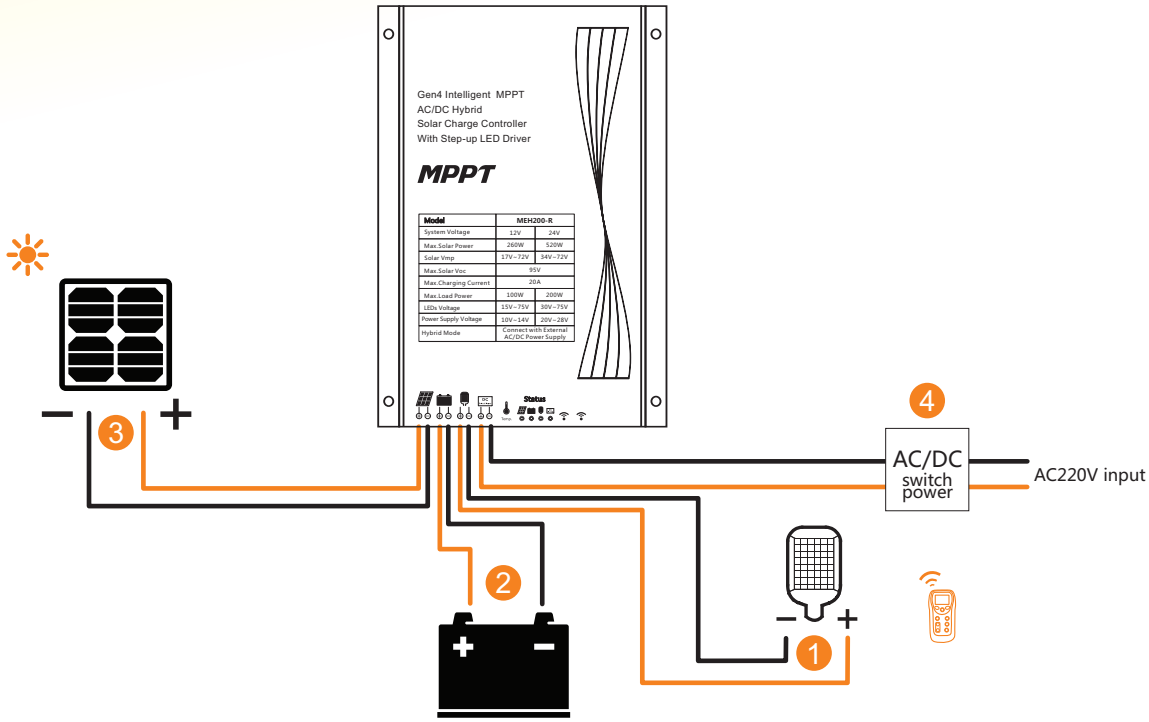
SR-MEH Series

Gen4 Intelligent MPPT AC/DC Hybrid Solar Charge Controller With Step-up LED Driver

Main Feature

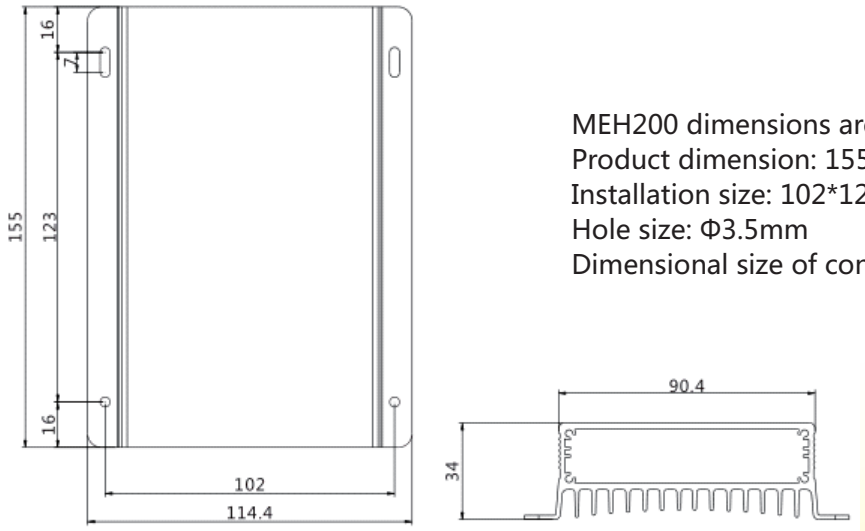
1. MPPT maximum power tracking technology has as high as 99.5% tracking efficiency and as high as 96% charging conversion efficiency.
2.With DC detection function and DC, when battery voltage drops to DC switching voltage point, it shall switch to DC power supply automatically. Without DC, when the battery continues to discharge beyond the over-discharge point, close the output.
3.Settable switching voltage.
4.Lead-acid batteries and lithium batteries are universal. Operating parameters can be set with a remote controller.
5.Very low dormancy current, more energy-saving and convenient for long-distance transportation and storage
6.Multistage temperature compensation and constant voltage charging of lead-acid batteries
7.10-period programmable load power/time control
8.High and low temperature protection function for storage battery in charging and discharging, and settable operation temperature
9.Various intelligent power modes can be selected to automatically adjust the load power according to the battery power.
10.High precision digital boost constant current control algorithm, high efficiency and high constant current accuracy
11.With infrared wireless communication, parameters can be set/read, states can be read, etc.
12.Multiple protection functions, such as battery/PV reverse connection protection, LED short circuit/open circuit/limited power protection, etc.
13.Extensible IoT remote communication and monitoring functions (-U/-C series)
14.With all-aluminium metal shell and IP67 waterproof grade, it can be used in various severe environments.

Electrical Connection Diagram



Wiring sequence: Please connect the load first, then the battery, then the solar panel, and finally the DC.
Please don't connect 220V AC directly to the controller!
When system voltage is [lithium 12V] or [lithium 24V], even if no battery, but only DC power, solar panel and load are connected, the controller can operate normally;
When system voltage is [lead], in the first poweron, the controller can operate normally after the battery is connected for automatic identification of system voltage.

Dimensional Figure



MEH200 dimensions are shown below:
Product dimension: 155*114.4*34mm
Installation size: 102*123mm
Hole size: Φ3.5mm
Dimensional size of controller:

State of Indicator Light and Remote Controller

The state of indicator light of the controller is shown below:

Indicator Light	State of Indicator Light	Description of Indicator Light	State of Remote Controller System
① PV indicator light	Normally on	Battery panel voltage is greater than the light-controlled voltage	Idling
	Off	Battery panel voltage is smaller than the light-controlled voltage	Idling
	Slow flash	Charging	Charge
	Double flash	Fully charged battery	Full charge
	Quick flash	BMS protection of lithium battery Or BAT excessive voltage Or PV excessive voltage Or over temperature (ambient temperature)	E-BMS BV excessive temperature PV excessive temperature Over-temperature
② BAT indicator light	Normally on	Normal operation of storage battery	Idling
	Off	Battery is not connected or over-discharge protection of lithium battery protection panel	/
	Quick flash	Over-discharge of battery	Over discharge
③ LOAD indicator light	Normally on	Load opening	Discharge
	Off	Load off	Idling
	Slow flash	Open circuit of load	Open circuit
	Double flash	Short circuit of load	Short circuit
④ DC indicator light	Off	No DC access	/
	Slow flash	DC access	/
	Normally on	With DC access, and load power is supplied by DC	/
	Quick flash	Abnormal DC voltage	/
①②③④	Four indicator light flashes in flowing at 1Hz	Under lead-acid cell mode, only DC power or solar panel is connected.	No communication can be performed, waiting for storage battery connection.

Parameter

Parameter Name	Parameter Value		Adjustable Parameter	Default Value
Model	MEH160	MEH200		
Remote control type	2.4G wireless remote control -MEH200-W; infrared remote control -MEH200-R			
System voltage	12V/24V		√	Lead
Static power consumption	-R Infrared: < 10mA/12V; <7mA/24V -W Wireless: < 30mA/12V; <15mA/24V			
Sleep power consumption	<1mA/12&24V			
Load current	50mA ~ 5600mA	50mA ~ 7000mA	√	330mA
Load voltage	15V ~ 75V			
Load maximum power	80W/12V ;160W/24V	100W/12V ;200W/24V		
Load conversion efficiency	90% ~ 96%			
Load current accuracy	< 3%			
Load power	High/intermediate/low/automatic/custom/no		√	Middle
Load operation period	Nine periods + morning light			
Period regulation range	1 minute/10 minutes			
Power regulation range	1%/10%			
Maximum solar input power	200W/12V;400W/24V	260W/12V;520W/24V		
Maximum charging current	15A	20A		
Solar input voltage	≤ 95V			
Overvoltage	Lead-acid battery: 16V; lithium battery: charging voltage +2V; x2/24V			
Equalizing charge voltage	Lead-acid battery: 14.6V; lithium battery: without balanced charge; X2/24V			
Equalizing charge interval	30 days			
Boost charging voltage (lead acid) / Charging voltage (lithium)	9.00V -17.00V settable; x2/24V		√	14.4V
Floating charging voltage (lead acid) / Charging return voltage (lithium)	9.00V -17.00V settable; x2/24V		√	13.8V
Over-discharge voltage	9.00V -17.00V settable; x2/24V		√	11.0V
Over-discharge return voltage	9.00V -17.00V settable; x2/24V		√	12.6V
Switching voltage	9.00V -17.00V settable; x2/24V		√	11.5V
DC voltage input range	10-14V/12V system; 20-28V/24V system			
Light control voltage	3V ~ 11V ; ×2/24V		√	5V
Temperature compensation coefficient	Lead acid battery: -3.mV/℃/2V; lithium battery: without temperature compensation			
Light control delay	5s ~ 60s/2min ~ 60min		√	10s
High temperature operation	40℃ ~ +90℃		√	65℃
Low temperature charging	0℃ ~ -35℃		√	-35℃
Operation temperature	-35℃ ~ +65℃			
IP rating	IP67			
Protection function	Reverse polarity protection of storage battery, reverse polarity protection of battery, overvoltage protection of battery panel, overcharge and overdishcarge protection of lithium battery, BMS overcharge detection protection of lithium battery, overtemperature protection, load open-circuit and short-circuit protection, load overcurrent protection, etc.			
Weight	780g			