

Features

- Compact, fully enclosed splash proof design
- Over 1,000,000 duty cycles
- High power density

Applications

- Automotive
- Railway transportation
- Heavy duty machinery
- Energy storage system

General Specification



Items	Characteristics
Nominal Capacitance	165 F
Capacitance Tolerance	0% / +20%
Rated Voltage	48 V
Surge Voltage	51 V
ESR, DC	5 mΩ
Maximum Continuous Current (Δ T=15°C)	90 A
Maximum Continuous Current (Δ T=40°C)	150 A
Maximum Peak Current, 1 sec.	2000 A
Leakage Current (25°C, after 72h)	5.2 mA
Operating Temperature Range	-40 °C to +65 °C
Storage Temperature Range	-40 °C to +70 °C
Power Terminals	M8/M10
Recommended Torque - Terminal	20/30 Nm
Vibration Specification	IEC 255-21-1
Shock Specification	IEC 255-21-2
Cell Voltage Monitoring	Overvoltage Alarm
Temperature Monitoring	NTC Thermistor
Stored Energy	52.8 Wh
Temperature Performance (-40°C to 65°C)	ΔC ≤ 5% of initial measured value@ 25°C ESR ≤ 150% of specified value
High Temp. Life (1,500 hours @ 65°C, Rated Voltage)	ΔC ≤ 20% of initial measured value ESR ≤ 200% of specified value
Room Temp. Life (10 years @ 25°C, Rated Voltage)	ΔC ≤ 20% of initial measured value ESR ≤ 200% of specified value
Cycle Life (1,000,000 cycles between V _R and 1/2 V _R)	ΔC ≤ 20% of initial measured value ESR ≤ 200% of specified value
Shelf Life (25°C, uncharged)	4 years
Factory High-Pot Test	DC 2,500 V
Typical Thermal Resistance	0.3 °C/W
Typical Thermal Capacitance	14,000 J/°C

Difference Parameter List

Items	MCP0165C0-0048R0SHC-01	MCP0165C0-0048R0SHC-02	MCP0165C0-0048R0SHC-03
Environmental Protection	IP54	IP54	IP65
Weight	14.5 kg	14.8kg	14.5 kg
Usable Power Density (Pd)	3,813 W/kg	3,736 W/kg	3,813 W/kg
Impedance Match Power Density (Pmax)	7,944 W/kg	7,783 W/kg	7,944 W/kg
Gravimetric Energy Density (Emax)	3.6 Wh/kg	3.6 Wh/kg	3.6 Wh/kg
Environment Humidity	≤90%RH	≤90%RH	≤96%RH
Installation	M8 short screw	M8 long screw	M8 short screw
Dimensions	417*190*179mm	417*190*179mm	417*193*179mm

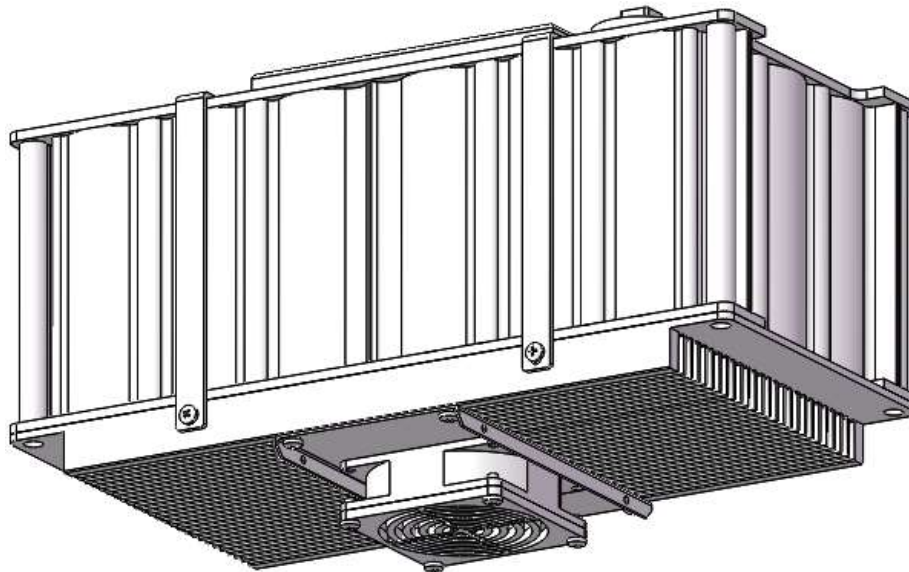
Pin Definition

Pin Number	Wire Color	Definition	Output
1	Black	GND	
2	Red	Overvoltage Alarm	High - Inactive Low - Active
3	Void	Void	
4	Green	Temperature	

Optional Accessories

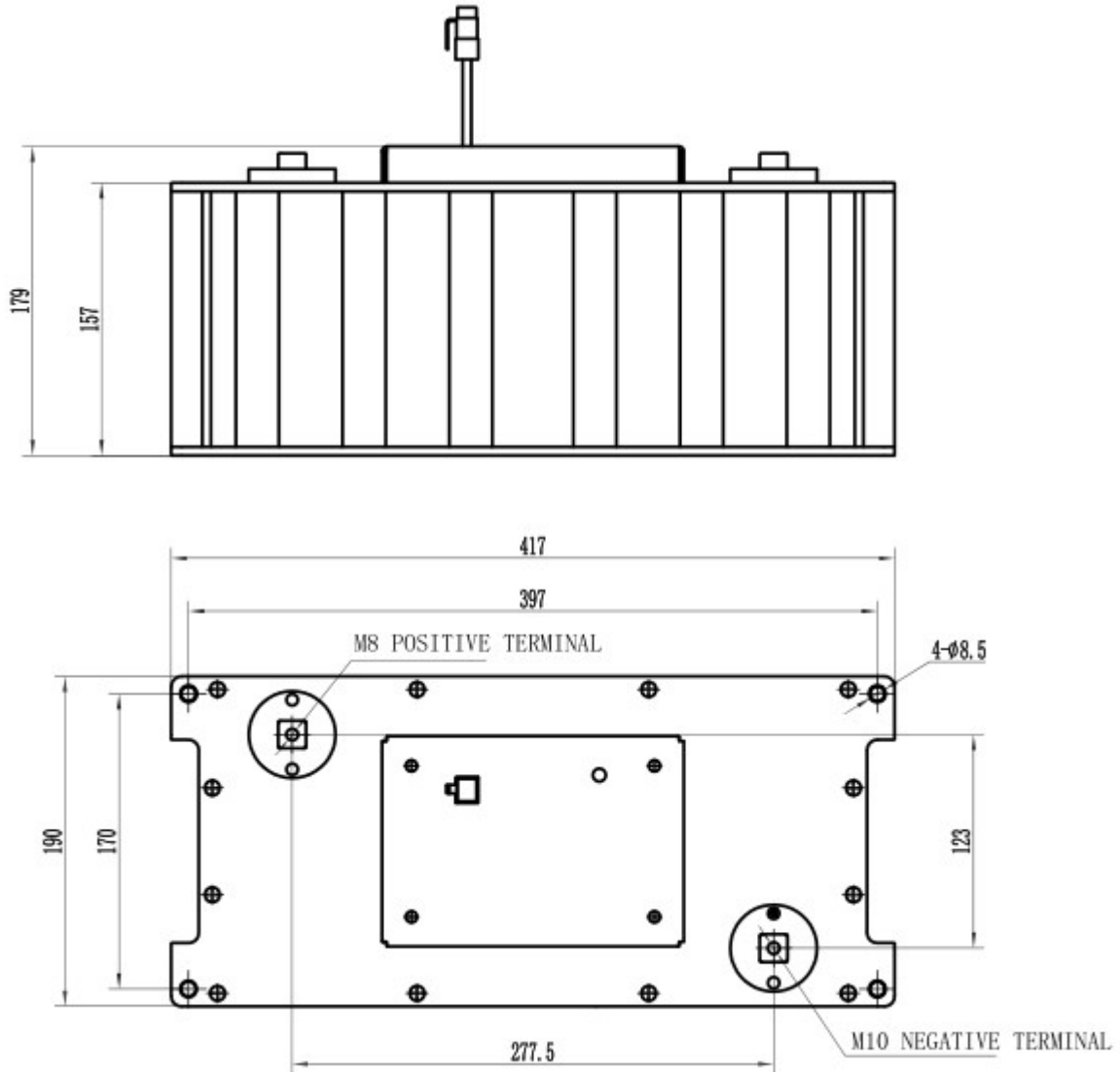
Fan and heat sink can be installed on the module, which can increase module cooling capacity. The fan needs external 24V power supply, and it's installed under the module with the sink.

Effect picture after the installation:



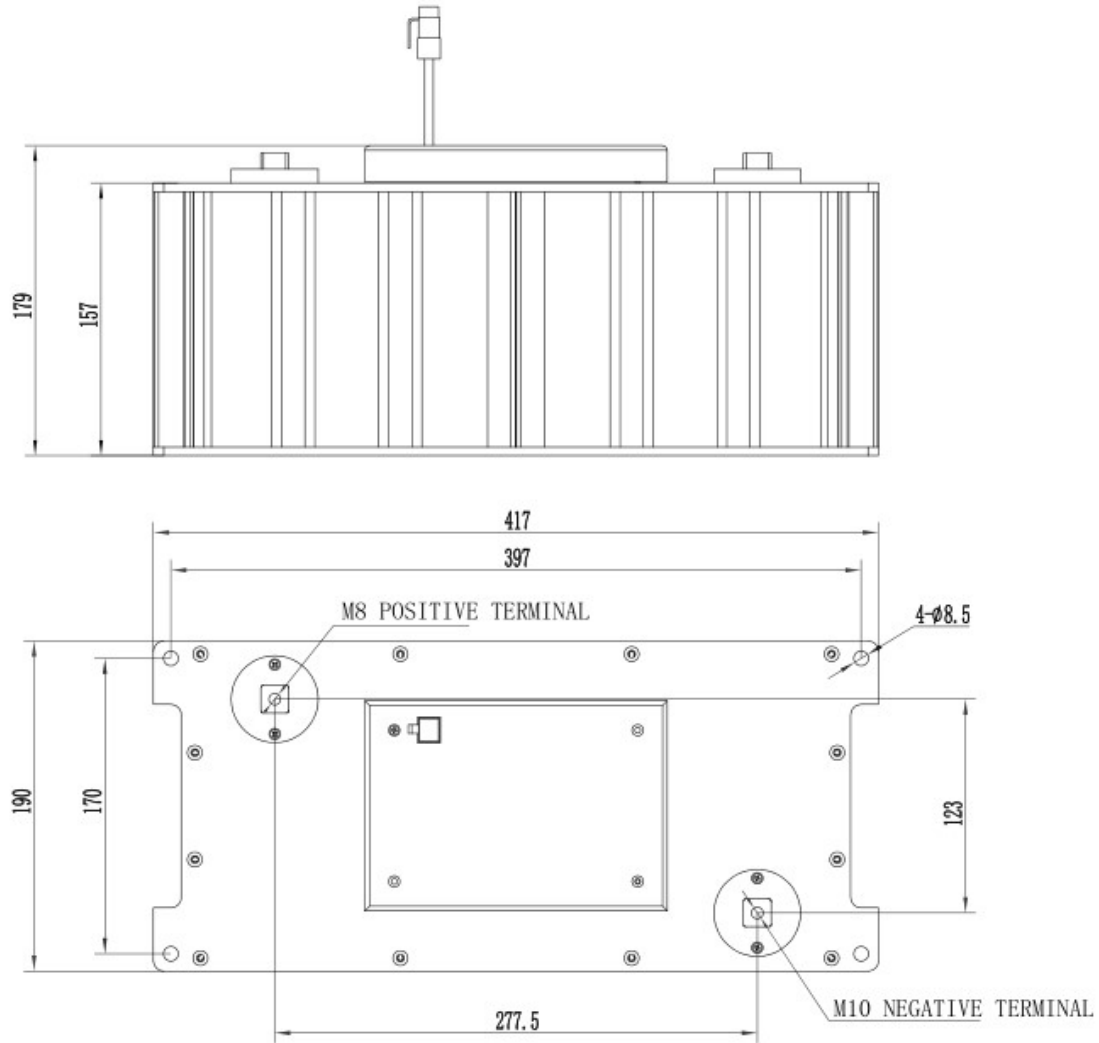
Dimensions

MCP0165C0-0048R0SHC-01



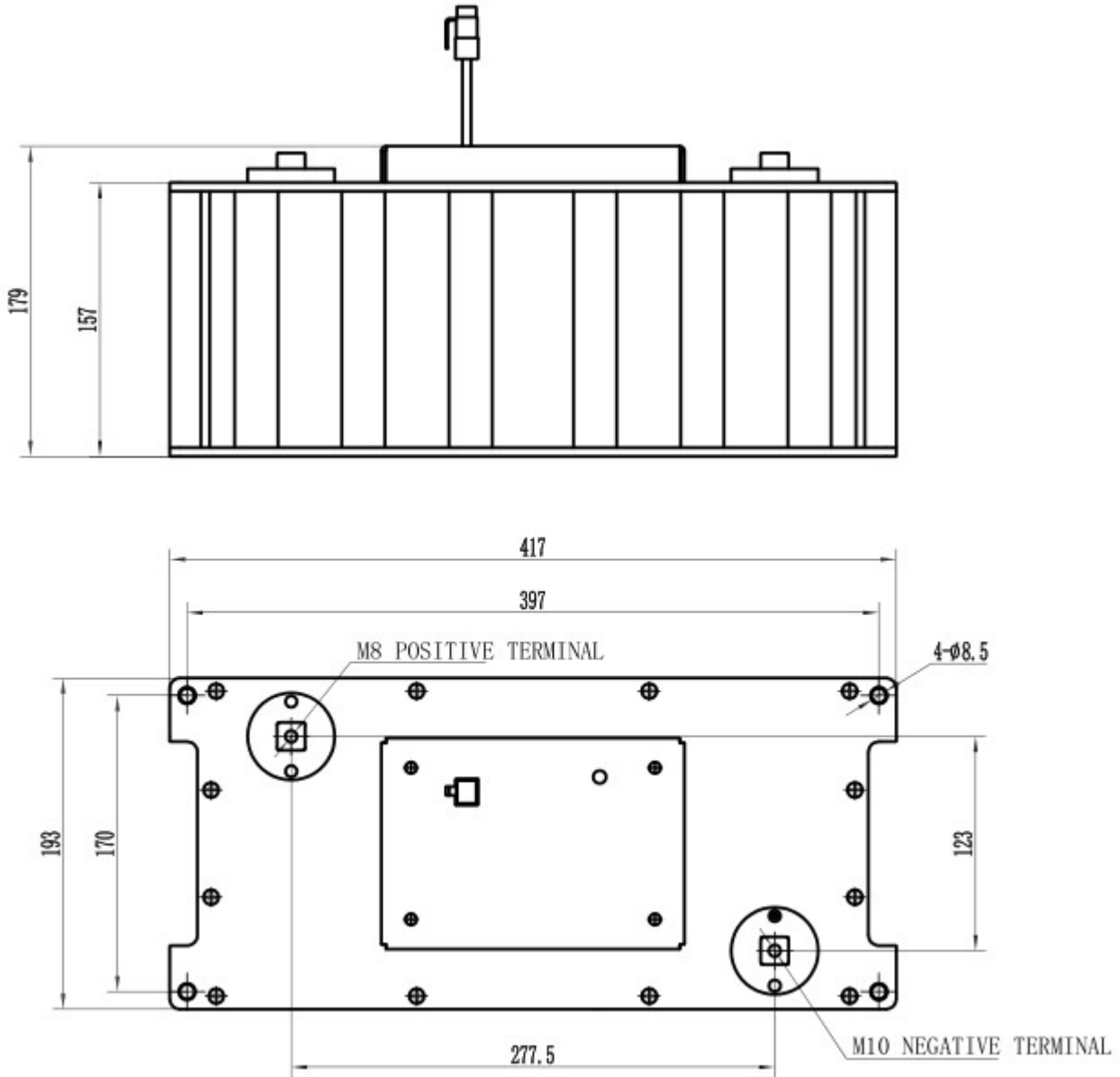
Part Number	Dimension (mm)		
	L (±1mm)	W (±1mm)	H (Max)
MCP0165C0-0048R0SHC-01	417	190	179

MCP0165C0-0048R0SHC-02



Part Number	Dimension (mm)		
	L (±1mm)	W (±1mm)	H (Max)
MCP0165C0-0048R0SHC-02	417	190	179

MCP0165C0-0048R0SHC-03



Part Number	Dimension (mm)		
	L (±1mm)	W (±1mm)	H (Max)
MCP0165C0-0048R0SHC-03	417	193	179