

# MCP0277C0-0048R0SHC



## FEATURES AND BENEFITS

- Compact, fully enclosed splash proof design
- Highest power performance
- Individually balanced cells
- Over 1,000,000 duty cycles
- Ultra-low internal resistance

## TYPICAL APPLICATIONS

- Automotive
- Industrial
- Telecommunications
- Railway transportation
- Uninterruptible Power Supplies(UPS)

## SPECIFICATIONS

### ELECTRICAL

#### Capacitance

Nominal capacitance	277 F
Capacitance tolerance	+20% / -0%

#### Voltage

Rated voltage	48 V
Absolute Maximum Voltage	51 V

#### Resistance

ESR, DC	4.8 mΩ
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#### Current

Maximum continuous current ( $\Delta T=40^{\circ}\text{C}$ )	150 A
Maximum peak current, 1 sec.	2800 A
Leakage current (25°C, after 72h)	13 mA

### TEMPERATURE

<b>Operating temperature range</b> (Cell case temperature)	-40°C to +65°C
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<b>Storage temperature range</b> (Storage uncharged)	-40°C to +70°C
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### PHYSICAL

<b>Weight</b>	20 kg
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<b>Power Terminals</b>	M8/M10
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<b>Recommended Torque - Terminal</b>	20/30 Nm
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<b>Vibration Specification</b>	GB-T 11287-2000
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<b>Shock Specification</b>	GBT 14537-1993
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<b>Environmental Protection</b>	IP65
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### MONITORING / CELL VOLTAGE MANAGEMENT

<b>Internal Temperature Sensor</b>	NTC Thermistor
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<b>Cell Voltage Monitoring</b>	Overvoltage Alarm
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### POWER AND ENERGY

<b>Usable power density (Pd)</b>	2,880 W/kg
<b>Impedance match power density (Pmax)</b>	6,000 W/kg
<b>Gravimetric energy density (Emax)</b>	4.4 Wh/kg
<b>Energy available</b>	88.6 Wh

### LIFE

<b>High Temperature</b> (at Rated Voltage & Maximum operating Temperature)	1,500 hours
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Capacitance change (% decrease from minimum initial value)	≤20%
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ESR change (% increase from maximum initial value)	≤100%
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<b>Room Temperature</b> (at Rated Voltage at 25°C)	10 years
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Capacitance change (% decrease from minimum initial value)	≤20%
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ESR change (% increase from maximum initial value)	≤100%
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<b>Cycle Life</b> (Number of cycles)	1,000,000
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Capacitance change (% decrease from minimum initial value)	≤20%
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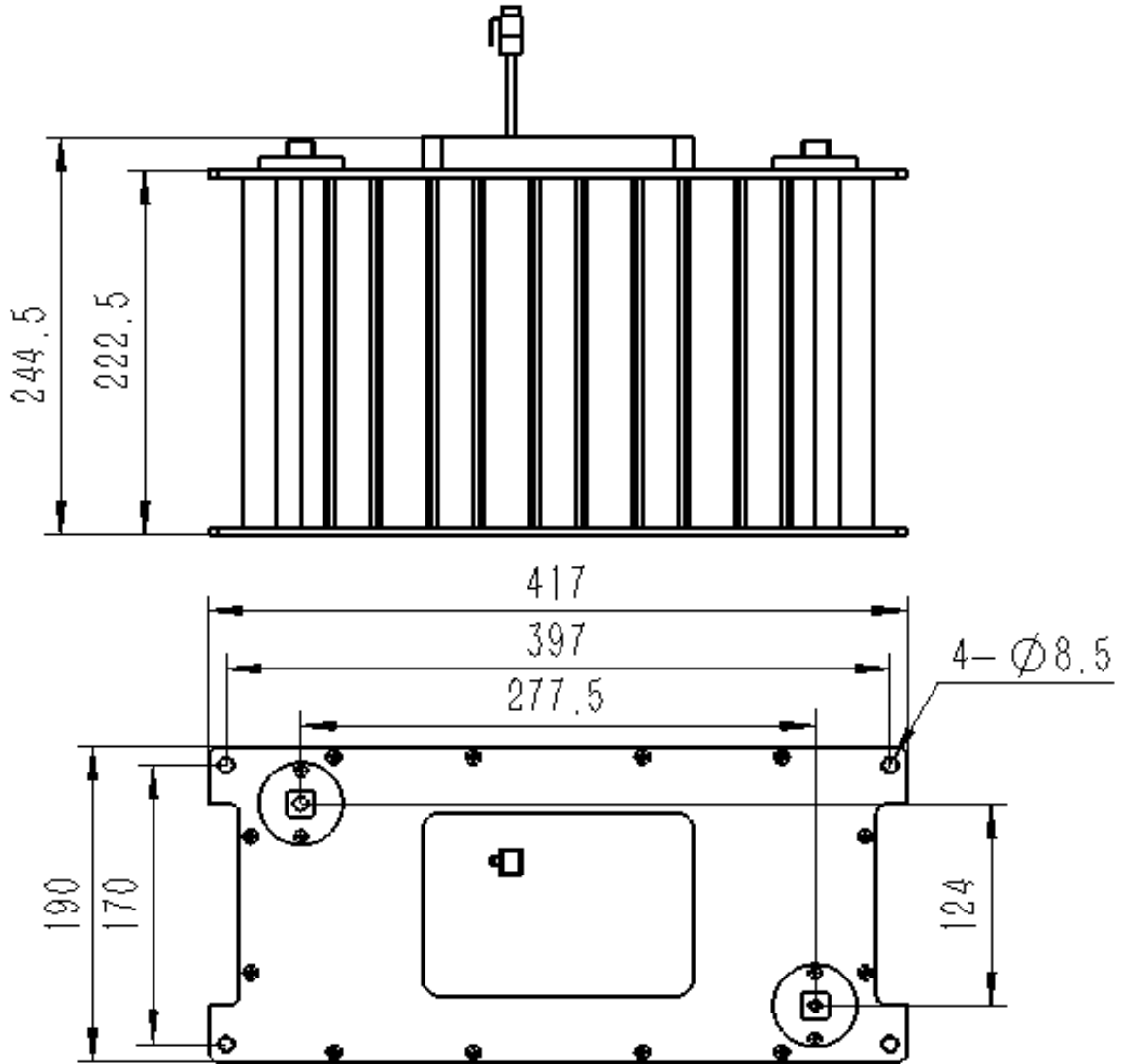
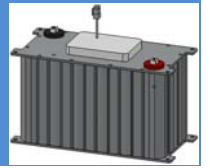
ESR change (% increase from maximum initial value)	≤100%
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<b>Shelf Life</b> (Stored uncharged up to a maximum storage temperature)	2 years
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<b>Factory High-Pot Test</b>	1,500 V DC
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<b>Environment humidity</b>	≤96%
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Pin No.	Wire color	Defination	Output
1	Black	GND	
2	Red	Over voltage alarm	High - Inactive
			Low - Active
3	Void	Void	
4	Green	Temperature	

Part Number	Dimension (mm)			Package Quantity(set)
	L (±0.5mm)	W (±0.5mm)	H (±0.5mm)	
MCP0277C0-0048R0SHC	417.0	190.0	244.5	1

Product dimensions are for reference only unless otherwise identified. Product dimensions and specifications may change without notice. Please contact SPS directly for any technical specifications critical to application.