



IP65 protection degree



UL94-HB-V0 fire rating



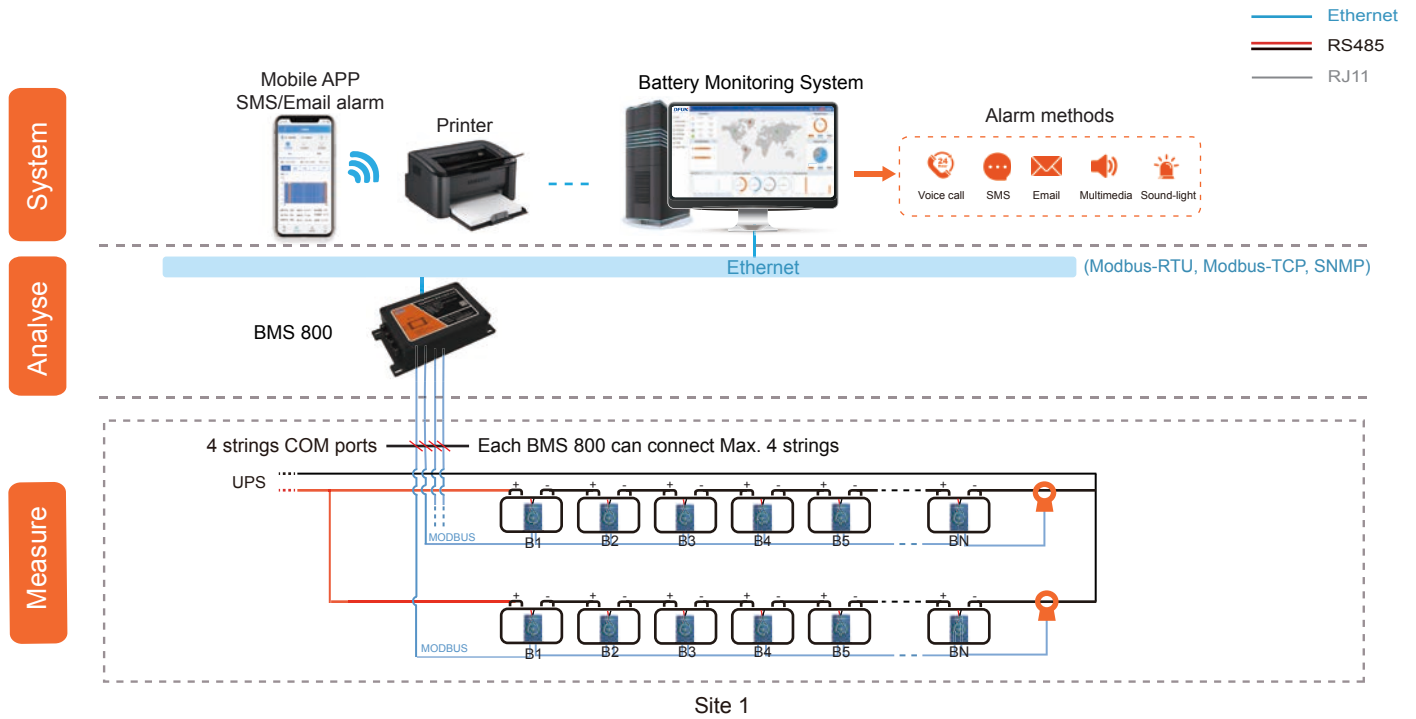
Monitor Ni-cad & Lead-acid battery

### Feature

- Apply to high protection applications like chemical plant, train etc
- Monitor Max. 4 strings battery, in total of 60 batteries
- Online monitoring 2V, 12V lead-acid battery or 1.2V Ni-cad battery
- IP65 protection degree
- UL94-HB-V0 fire rating
- Aviation connector
- Powered by communication bus, no draw any power from the batteries
- Auto-sensing for the battery sensor's ID address
- Monitor string leakage current (optional sensor)
- Full data measurement, such as voltage, current, impedance, insulation resistance, SOC, SOH, etc.
- Comply with IEEE 1188-2005

# BMS 800 Battery Monitoring Module

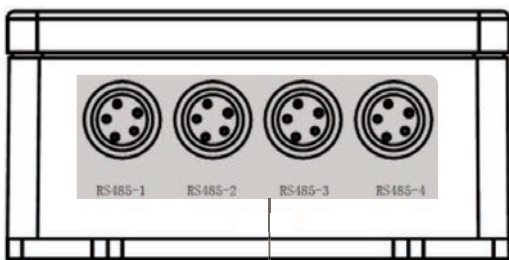
## System Structure



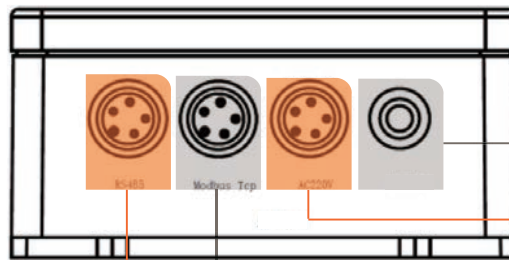
## Management Layer

### BMS 800 Battery Monitoring Master

- Monitor battery string voltage, charge and discharge current
- Calculate battery string SOC & SOH
- Auto-balancing
- IP65 protection degree
- Auto-sensing for the battery sensor's ID address
- Data uploading function via RS485 (Modbus-RTU) & Ethernet (Modbus-TCP or SNMP)
- Accessories: Hall sensor and cable: range from 0 ~ ±1100A with 20cm aviation connector (male & female)



4 x RS485 ports  
Aviation connectors  
For down-link communication  
MODBUS-RTU protocol



1x RS485 port  
Aviation connectors  
For up-link communication  
MODBUS-RTU protocol

1x MODBUS TCP port  
Aviation connectors  
For up-link communication  
MODBUS-TCP/SNMP protocol

Power supply  
Aviation connectors  
Rated input: 220VAC

Indication light  
Indicate communication status

# BMS 800 Battery Monitoring Module

## Technical Specification

<b>CPU</b>	ARM cortex M4 180MHz	<b>Up-link communication</b>	1 Ethernet port (10/100M), MODBUS-TCP, SNMP 1 RS485 serial port, MODBUS-RTU, baudrate: 9600bps, 19200bps, 38400bps (optional)	
<b>Flash</b>	128Mbit flash		<b>Down-link communication</b>	4 Aviation connectors, each port Max. ≤15pcs batteries, total Max.60pcs, MODBUS-RTU.
<b>Power supply</b>	Rated 220VAC Range: 85~264VAC, 100 ~ 370VDC	<b>Measure range</b>		String voltage
<b>MTBF</b>	≥100,000 hours		String current	1 ~ 4 strings, range: -1000 ~ 1000ADC (±0.2%, under 15°C ~ 35°C), resolution: 0.01A
<b>Dimension</b>	190mm×100mm×44mm	<b>Operation environment</b>	Working temperature: -20°C ~ 60°C Storage temperature: -40°C ~ 70°C Humidity: 5% ~ 95%, non-condensing	
<b>Power consumption</b>	<11W (only master)			

## Battery Cell Sensor

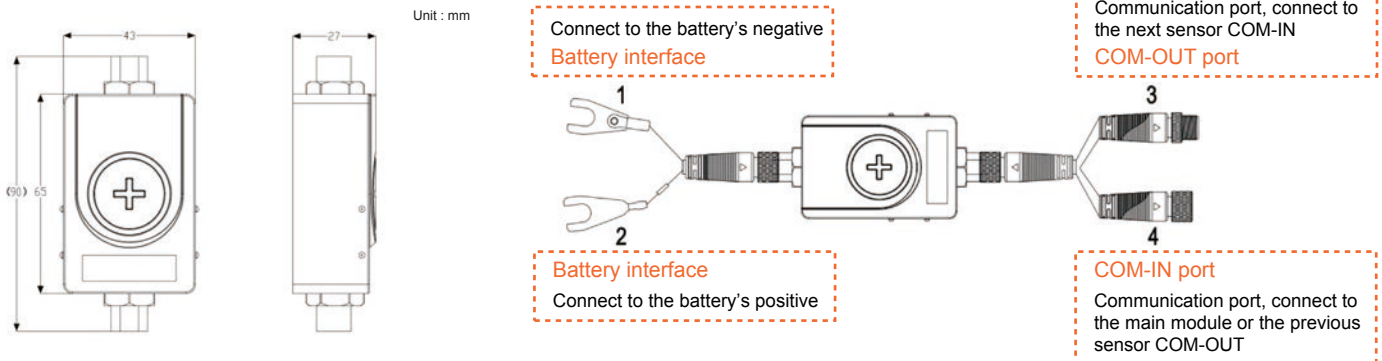
### BAT-02 / BAT-12 Battery Cell Sensor

- BAT-02 for 2V lead-acid battery or 1.2V Ni-cad battery BAT-12 for 12V lead-acid battery
- Monitor individual battery voltage, internal temperature (ne impedance(ohmic value)
- Auto-balancing
- IP65 protection degree
- UL94-HB-V0 fire rating
- Powered by communication bus, no draw any power from the batteries



Item	Power supply	Rated input voltage	Measuring range		
			Voltage	Internal temperature	Impedance
<b>BAT-02</b>	24VDC Power consumption: <0.25W	2V / 1.2V	0.5 ~ 3VDC (±0.2%)	-20°C ~ 85°C (±0.5°C)	Range: 0.1mΩ ~ 50mΩ Repeatability error: 1.0%±25μΩ Conformity error: 1.5% ±25μΩ
<b>BAT-12</b>		12V	5 ~ 18VDC (±0.2%)		

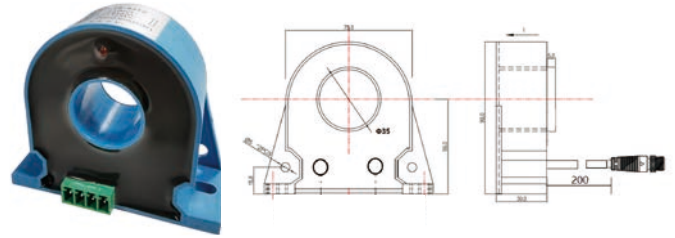
### BAT-02 / BAT-12 Battery Cell Sensor




# BMS 800 Battery Monitoring Module

## DC Leakage Current Sensor (Optional)

- Accuracy:  $\pm 1\%FS$
- Monitoring string leakage current to prevent fire caused
- 1 string can connect Max. 1 leakage current sensor



## Order Information

System structure		Model	Description	Remark
Management layer		<b>BMS 800</b>	Battery monitoring master	One per each UPS, one PBMS8000 can monitor Max. 4 strings, Max. 60 batteries
Battery cell sensor		<b>BAT-02</b>	1.2 / 2 volt battery cell sensor	One per battery cell
		<b>BAT-12</b>	12 volt battery cell sensor	One per battery cell
		<b>BAT-DZ</b>	Base, snap-in DIN-rail installation	One per each cell sensor (optional)
Accessory	Cell sensor communication cable	<b>BAT-COM-3 0</b>	IP65 with aviation connectors, length: 30cm	
	Battery measuring cable	<b>PBAT-81-U-M8-30</b>	Cable terminal: U type  , hole diameter: 8mm, length: 30cm (standrad)	
	Hall sensor (string current acquisition)	<b>ST50K2S-M-DF</b>	Rated input: $\pm 50A$	Measure range: $0 \sim \pm 55A$ , $\Phi 40mm$
		<b>ST100K2S-M-DF</b>	Rated input: $\pm 100A$	Measure range: $0 \sim \pm 110A$ , $\Phi 40mm$
		<b>ST200K2S-M-DF</b>	Rated input: $\pm 200A$	Measure range: $0 \sim \pm 220A$ , $\Phi 40mm$
		<b>ST400K2S-M-DF</b>	Rated input: $\pm 400A$	Measure range: $0 \sim \pm 440A$ , $\Phi 40mm$
		<b>ST500K2S-M-DF</b>	Rated input: $\pm 500A$	Measure range: $0 \sim \pm 550A$ , $\Phi 40mm$
		<b>ST1000K2S-M-DF</b>	Rated input: $\pm 1000A$	Measure range: $0 \sim \pm 1100A$ , $\Phi 40mm$
	DC leakage current sensor (optional)	<b>STL3S-MT2-DF -300mA/RS485</b>	Rated input: $\pm 300mA$	Measure range: $0 \sim \pm 350mA$ , $\Phi 35mm$
		<b>STL3S-MT2-DF -1A/RS485</b>	Rated input: $\pm 1A$	Measure range: $0 \sim \pm 1.2A$ , $\Phi 35mm$
		<b>STL5S-MT2-DF -10mA/RS485</b>	Rated input: $\pm 10mA$	Measure range: $0 \sim \pm 300mA$ , $\Phi 55mm$
		<b>STL8S-MT2-DF -10mA/RS485</b>	Rated input: $\pm 10mA$	Measure range: $0 \sim \pm 300mA$ , $\Phi 72mm$