PBMS8000

Battery Monitoring Solution

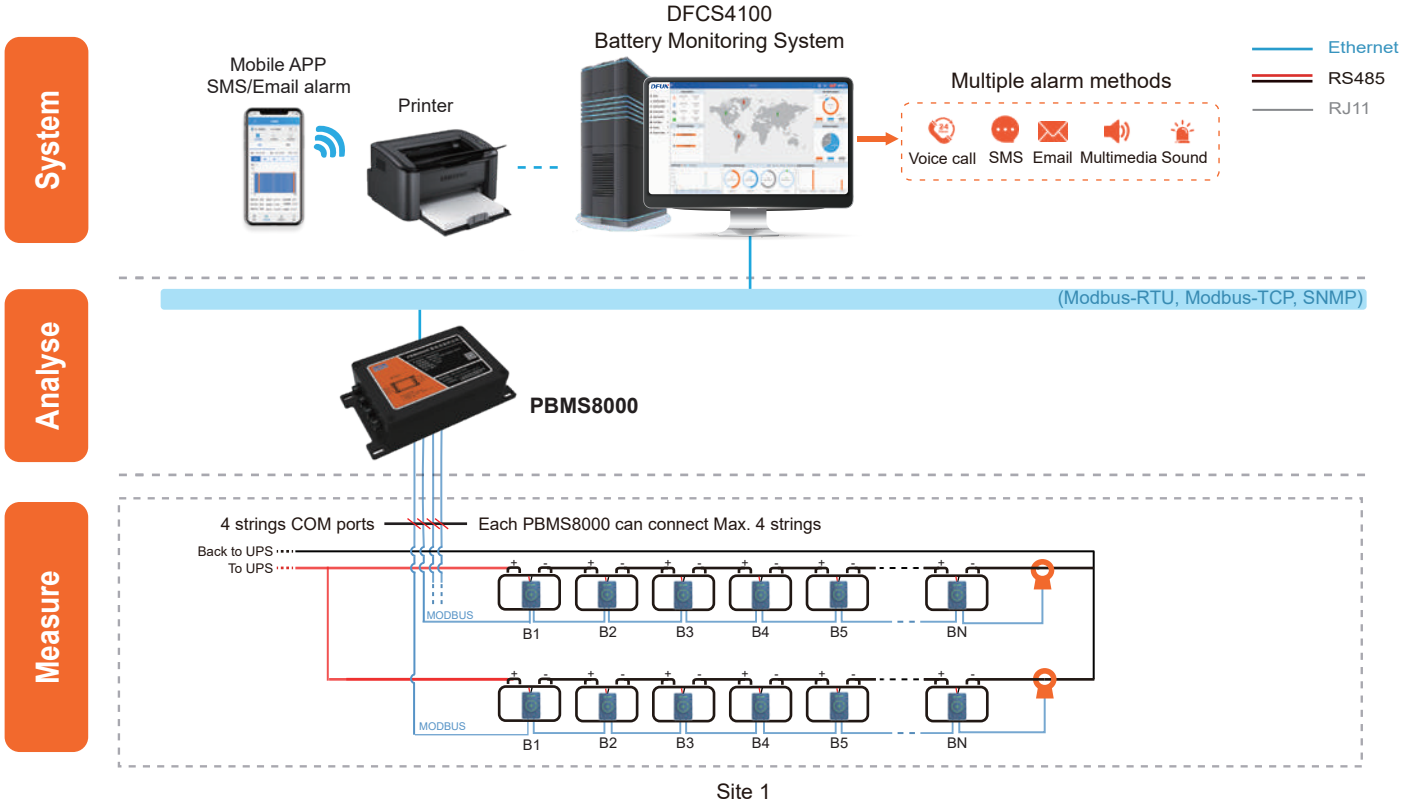


Feature

- Apply to high protection applications like chemical plant, train etc
- Monitor Max. 4 strings battery, in total of 60 batteries
- Measure Lead-Acid, Ni-Cd 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)
- Monitor battery voltage, current, impedance, internal temperature, leakage current, SOC, SOH, etc.
- Comply with IEEE 1188-2005

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System Structure



Site 1

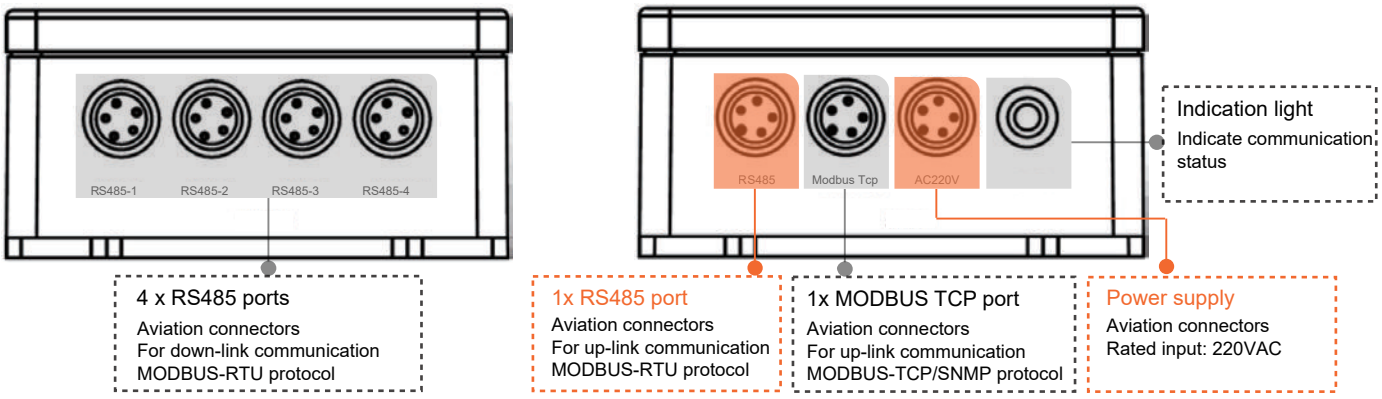
Management Layer

PBMS8000 Battery Monitoring System Main Controller

- 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)



PBMS8000 Hall Sensor



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Technical Specification

CPU	ARM cortex M4 180MHz	**Up-link communication**	1 Ethernet port (10/100M), MODBUS-TCP, SNMP 1 RS485 serial port, MODBUS-RTU, baudrate: 9600bps, 19200bps, 38400bps (optional)	
Flash	128Mbit flash			
Power supply	Rated 220VAC Range: 85 ~ 264VAC, 100 ~ 370VDC	**Down-link communication**	4 Aviation connectors, each port Max. 15pcs batteries, total Max.60pcs, MODBUS-RTU.	
MTBF	≥100,000 hours	**Measure range**	String voltage	1 ~ 4 strings, range: 20 ~ 1000VDC (±0.5%), resolution：0.01V
Dimension	190mm×100mm×44mm		String current	1 ~ 4 strings, range: -1000 ~ 1000ADC (±1%Fs, under 15°C ~ 35°C), resolution: 0.01A
Power consumption	<11W (only module)	**Operation environment**	Working temperature: -20°C ~ 60°C Storage temperature: -40°C ~ 70°C	
			Humidity: 5% ~ 95%, non-condensing	

Battery Cell Sensor

PBAT81-02 / PBAT81-12 Battery Cell Sensor

- PBAT81-02 for 2V Lead-Acid battery or 1.2V Ni-Cd battery
  PBAT81-12 for 12V Lead-Acid battery
- Monitor individual battery voltage, internal temperature (negative pole), impedance(ohmic value)
- Auto-balancing
- IP65 protection degree
- UL94-HB-V0 fire rating
- Powered by communication bus, no draw any power from the batteries



PBAT81



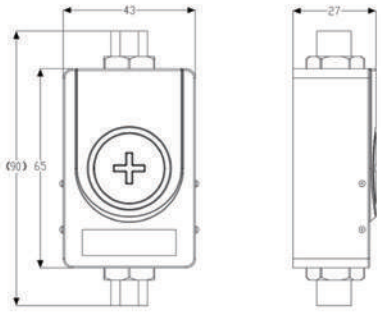
Base (optional)
Snap-in DIN-rail installation

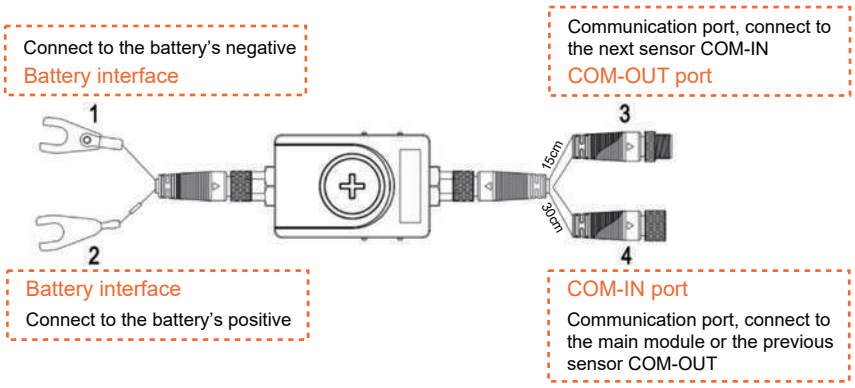


Item	Power supply	Rated input voltage	Measuring range		
			Voltage	Internal temperature	Impedance
PBAT81-02	24VDC Power consumption: <0.25W	02V / 1.2V	0.5 ~ 3VDC (±0.2%)	-20°C ~ 85°C (±0.5°C)	Range: 0.1mΩ ~ 50mΩ Repeatability error: 1.0%±25μΩ Conformity error: 1.5% ±25μΩ
PBAT81-12		12V	5 ~ 18VDC (±0.2%)		

Dimension

Unit : mm

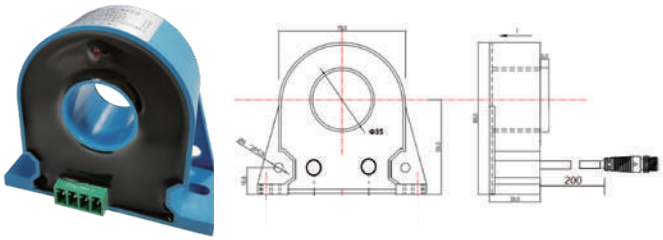




PBMS8000 Battery Monitoring Solution

DC Leakage Current Sensor (Optional)

- Accuracy: ±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		PBMS8000	Battery monitoring system main controller	One per each UPS, one PBMS8000 can monitor Max. 4 strings, Max. 60 batteries. Hall sensor and cable: range from 0 ~ ±1100A with 20cm aviation connector (male & female)
Battery cell sensor		PBAT81-02-A	2V / 1.2V battery cell sensor	Terminal material: industrial plastic
		PBAT81-12-A	12V battery cell sensor	
		PBAT81-02-B	2V / 1.2V battery cell sensor	Terminal material: industrial metal
		PBAT81-12-B	12V battery cell sensor	
		PBAT81-DZ	Base, snap-in DIN-rail installation	One per each cell sensor (optional)
Accessory	AP to RJ45	PBAT-COM -AP12-RJ45	Length: 10m	One per each string
	Cell sensor communication cable	PBAT-COM -AP12-30	IP65 with aviation connectors, length: one side 30cm,other side 15cm.	If PBAT81 is meta terminal, the aviation connectors of cable also is metal
	Battery measuring cable	PBAT-C1/AP12 -U-M8	Cable terminal: U type , hole diameter: 8mm, length: 30cm (standard)	
	Hall sensor for PBMS8000	ST50K2S-M-DF	Rated input: ±50A	Measure range: 0 ~ ±55A, Φ40mm
		ST100K2S-M-DF	Rated input: ±100A	Measure range: 0 ~ ±110A, Φ40mm
		ST200K2S-M-DF	Rated input: ±200A	Measure range: 0 ~ ±220A, Φ40mm
		ST400K2S-M-DF	Rated input: ±400A	Measure range: 0 ~ ±440A, Φ40mm
		ST500K2S-M-DF	Rated input: ±500A	Measure range: 0 ~ ±550A, Φ40mm
		ST1000K2S-M-DF	Rated input: ±1000A	Measure range: 0 ~ ±1100A, Φ40mm
	DC leakage current sensor (optional)	STL3S-MT2-DF -300mA/RS485	Rated input: ±300mA	Measure range: 0 ~ ±350mA, Φ35mm
		STL3S-MT2-DF -1A/RS485	Rated input: ±1A	Measure range: 0 ~ ±1.2A, Φ35mm
		STL5S-MT2-DF -10mA/RS485	Rated input: ±10mA	Measure range: 0 ~ ±300mA, Φ55mm
		STL8S-MT2-DF -10mA/RS485	Rated input: ±10mA	Measure range: 0 ~ ±300mA, Φ72mm

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