



 Build-in Webpage monitoring software

 5 years history data storage

 4G wireless upload to the third party

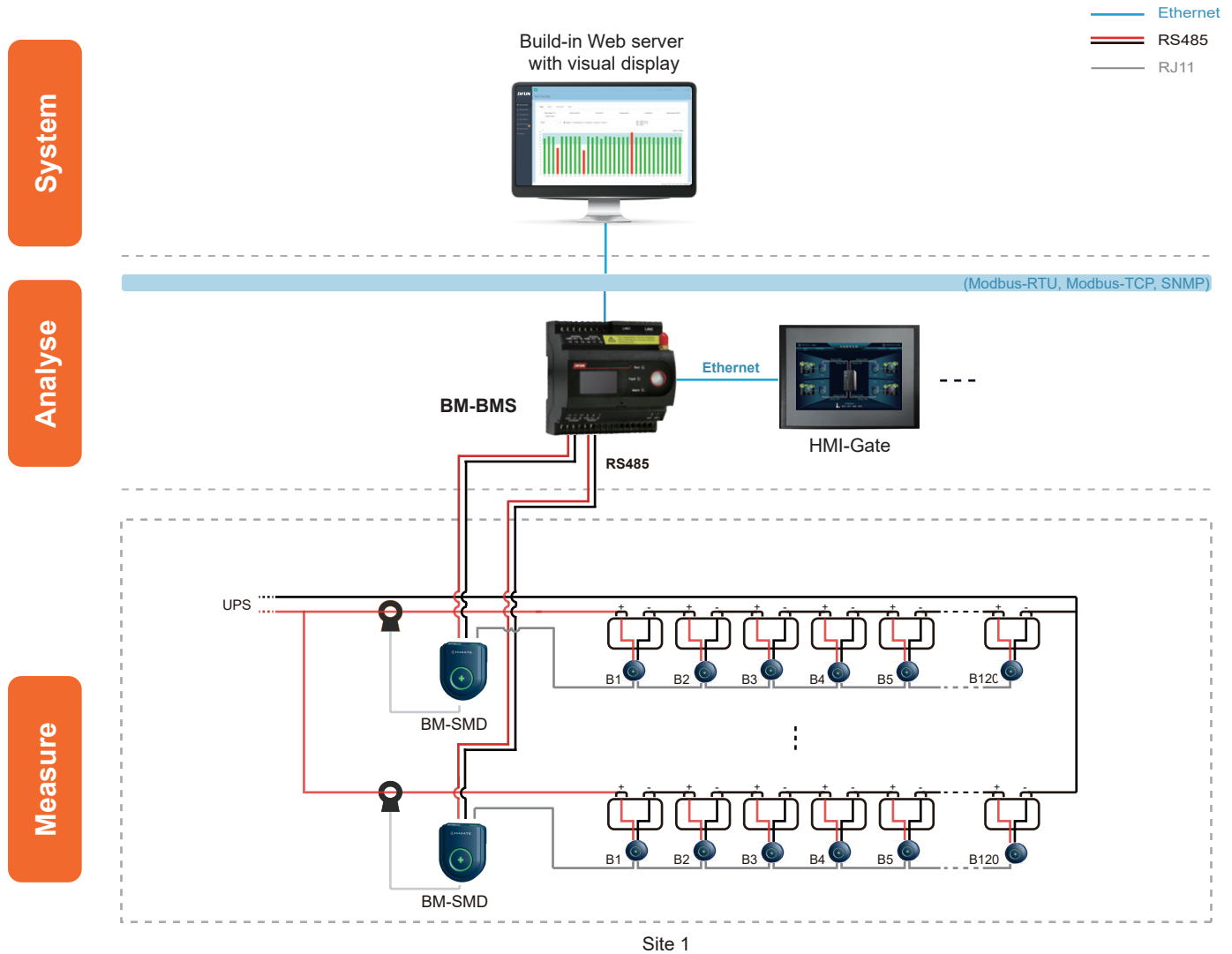
Feature

- Apply to UPS and data center
- 24/7 hours on-line monitoring & remote alarms notification
- Monitor Max. 4 string, in total of 480 batteries
- Measure Lead-Acid battery
- Anti-interference design, support to connect with high-frequency UPS
- Auto-sensing for the battery sensor's ID address
- Multi-communication protocol (MODBUS-TCP, SNMP)
- Support 4G sending SMS alarm or wireless upload to cloud
- Comply with IEEE 1188-2005



BM-BMS for Small-scale Data Center

System Structure



Management Layer

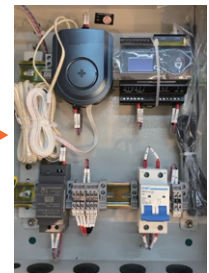
BM-BMS Battery Monitoring System Main Controller

- Real-time monitoring 1 set UPS with Max. 480 batteries
- Data logging for all measuring data for 12 months
- Build-in web server with bar chart and trend curve analysis for voltage, charge and discharge current, internal temperature, impedance
- Report for battery string voltage & current, individual battery voltage, temperature, impedance, support export PDF, CSV etc. document
- Setpoint alarm for cell voltage, internal temperature, impedance, SOC, SOH (upper limit / lower limit) and string voltage, current, SOC (upper limit / lower limit)
- Optional sensor for 2 AI ports for ambient temperature & humidity sensor, 1 DO port for sound and light alarm, 4DI ports for digital input connecting
- Support SNMP, Modbus TCP protocol
- Support HTTP protocol (RESTful API, JSON, XML format)
- Support SMS/Email alarm
- Support 4G data upload to the 3rd party



BM-BMS

All-in-one



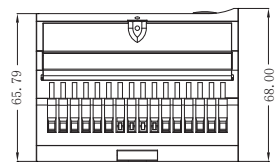
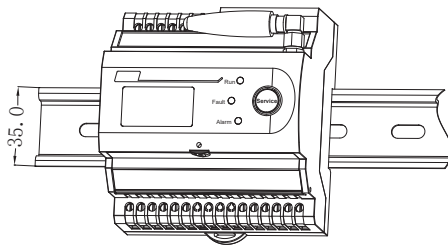
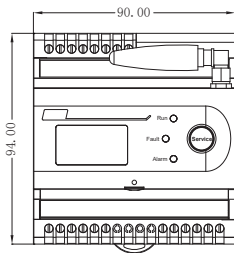
Pre-install & pre-wiring for BM-BMS, BM-SMD

BM-BMS for Small-scale Data Center

Technical Specification

| | | | | |
|--------------|--------------------------------|-----------------------|--------------------------|--|
| CPU | ARM cortex-A8 800MHz | Dimension | 90mm x 94mm x 68mm | |
| Memory | 512MB flash, 8G TF memory card | Operating system | Embedded linux | |
| Flash | Nand flash 512MB | Communication | 4CL | 4 RS485 serial ports, 2 Ethernet ports |
| MTBF | ≥ 50,000 hours | | 2ZL | 2 RS485 serial ports, 2 Ethernet ports |
| Display | OLED | Power consumption | < 5W | |
| Weight | 650g | Optional function | 4 DI, 2 AI, 1 DO | |
| Baudrate | 1200 ~ 115200bps | Operation temperature | -15°C ~ 55°C | |
| Power supply | 18 ~ 36VDC | Operation humidity | 10% ~ 95% Non-condensing | |

Dimension and Installation



Unit: mm

Battery String Sensor

BM-SMD Battery String Sensor

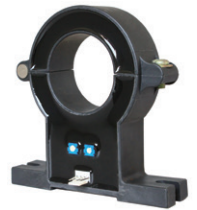
- Monitor battery string voltage, charge and discharge current
- Calculate battery status of charge (SOC)
- Auto-balancing
- Data acquisition
- Auto-sensing for whole battery string sensor's ID address
- Accessories:
 - 1) Hall sensor and cable: range from 0 ~ ±1000A with 2m cable
 - 2) Communication cable : 5m with RJ11 port



Running status



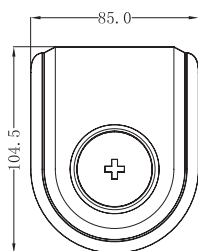
Alarm status



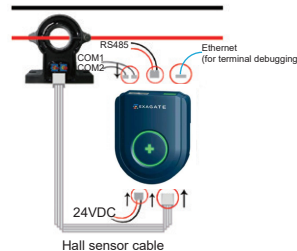
Hall sensor

| Item | Measuring range | | External power supply | Power consumption |
|--------|----------------------|--|-----------------------|-------------------|
| | Voltage | String current | | |
| BM-BMS | 0 ~ 800VDC (±0.5%) | -1000 ~ 1000A by hall sensor (±2.0%) | 12 ~ 36VDC | 1W |

> Dimension and Installation



Unit: mm



Battery Cell Sensor

BM BCS-02 & BM BCS-06 & BM BCS-12 Battery Cell Sensor

- BM BCS-02 for 2V battery, BM BCS-06 for 6V battery, BM BCS-12 for 12V battery
- Monitor individual battery voltage, internal temperature (negative pole), Impedance(ohmic value)
- Auto-balancing



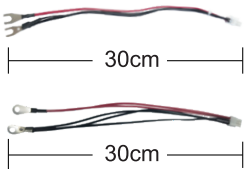
Running status



Abnormal status

| Item | Rated input voltage | Measuring range | | | |
|-----------|---------------------|---------------------|----------------------|--|------------------------------------|
| | | Voltage | Internal temperature | Impedance | Power consumption |
| BM BCS-02 | 02V | 1.6 ~ 2.6V (±0.2%) | -20°C ~ 85°C (±0.5%) | Range: 0.1mΩ~50mΩ Repeatability error: 1.0%±25μΩ Conformity error: 1.5%±25μΩ | Running: <110mW Sleeping: <12mW |
| BM BCS-06 | 06V | 4.8 ~ 10V (±0.2%) | | | Running: <90mW Sleeping: <10mW |
| BM BCS-12 | 12V | 7.5 ~ 15.6V (±0.2%) | | | Running: <90mW Sleeping: <10mW |

> Dimension and Installation



| Battery measuring cable | Item | Description |
|-------------------------|-----------------|--|
| | Length | 30cm |
| | Terminal & Size | U type, hole diameter: 8mm O type, hole diameter: 8mm |

