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BCN-BMS9000

for Large-scale Data Center



Dual source



4G wireless upload to the third party



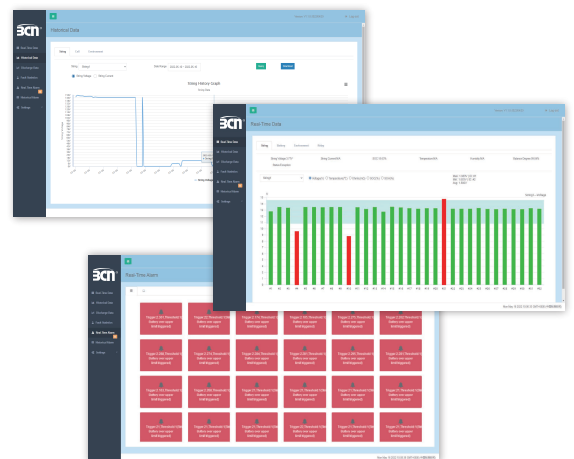
Build-in Webpage monitoring software



5 years history Data storage

Feature

- Apply to UPS and data center application
- Measure lead-acid or multi-pole battery
- Ring communication, any communication failure will not affect other sensors communication
- Monitor battery voltage, current, impedance, insulation resistance, ripple current & voltage, SOC, SOH, etc.
- Support Modbus, SNMP, MQTT and IEC61850 protocols
- Auto-sensing for the battery sensor's ID address
- Dual-source to avoid power shutdown
- Anti-interference design, support to connect with high-frequency UPS
- Comply with IEEE 1188-2005
- Thermal runaway management(Optional temperature and humidity sensor)
- The product has obtained CE, FCC, Rohs, UL certification



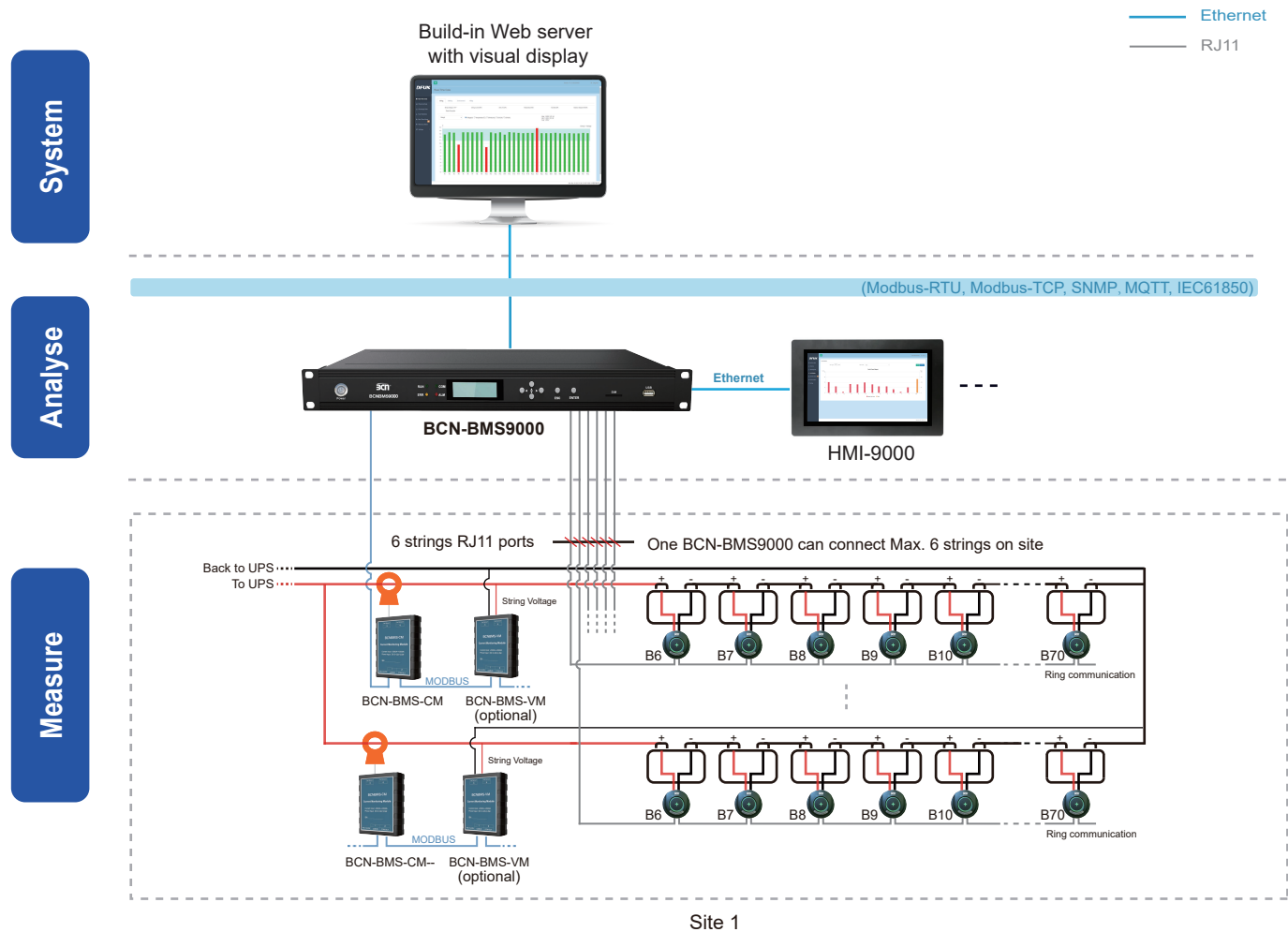
Your choice of power protection



BCN UPS @btconnect BCN UPS

BCN-BMS9000 for Large-scale Data Center

System Structure



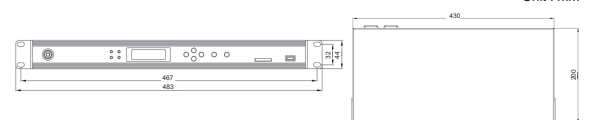
Management Layer

BCN-BMS9000 Battery Monitoring System Main Controller

- Standard 1 U design for distribution cabinet
- Dual-source to avoid power shutdown
- Built-in web server with visual display
- Monitor Max. 6 strings battery, in a total of 420 batteries
- Measure battery string current & voltage, ripple voltage & current, charge & discharge current, internal temperature, impedance, insulation resistance, ambient temperature & humidity, SOC and SOH
- Alarm message by SMS or Email
- Support Modbus-TCP, Modbus-RTU, SNMP and IEC61850 protocols
- Support MQTT for JSON format to data upload
- 1 RS485 port, 2 Ethernet ports and 1 4G Antenna port to data upload
- 6 DI ports (digital Input connecting)
- 6 DO ports (sound and light alarm)

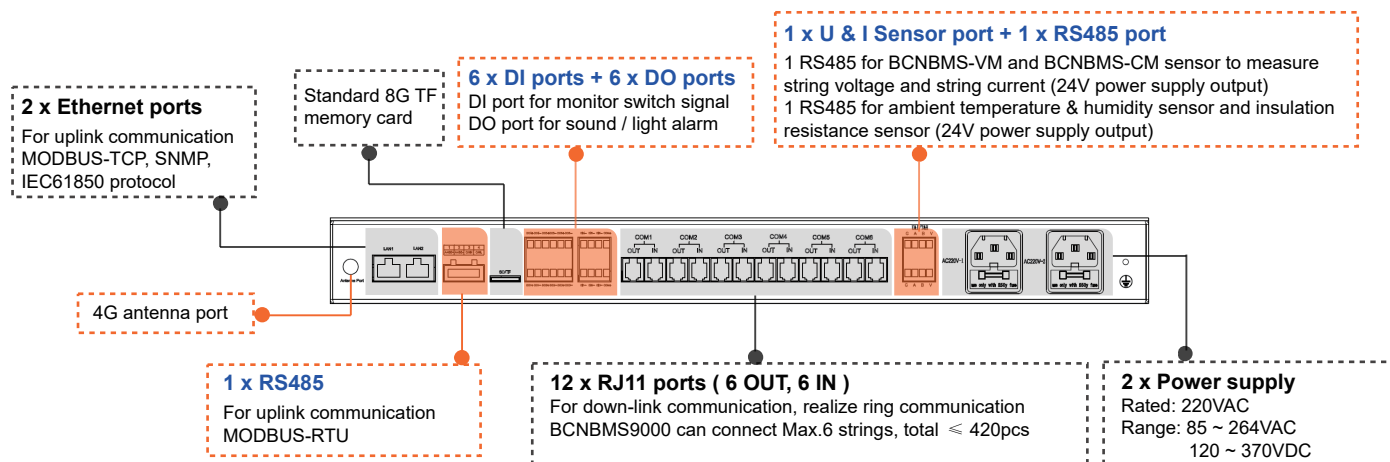


Unit : mm



Pre-install & pre-wiring for BCN-BMS9000 and HMI-9000 (optional)





Technical Specification

CPU	ARM cortex A7 528MHz	Up-link communication	2 Ethernet ports (10/100M), MODBUS-TCP, SNMP, IEC61850 1 RS485 port, MODBUS-RTU, baudrate: 9600bps, 19200bps, 38400bps (optional)
Memory	512MB flash, 4G EMMC + 8G TF memory card	Down-link communication	6 Channels RJ11 ports, each port Max. connect ≤ 70pcs batteries, total Max. 420pcs
Display	2-inch LCD with backlight	Measure range	Voltage 1 ~ 6 strings, range: 8 ~ 1000VDC (±0.5%), resolution: 0.01V
MTBF	≥ 100,000 hours		Ripple voltage 1 ~ 6 strings, range: 2 ~ 100V (peak), resolution: 0.01V
Power supply	Rated: 220VAC Range: 85 ~ 264VAC 120 ~ 370VDC		Current 1 ~ 6 strings, range: -2000 ~ 2000ADC (±2.0%, under 15°C ~ 35°C), resolution: 0.01A
Dimension	Standard 19-inch 1 U device 483mm × 206mm × 44.5mm (W*D*H) Open hole: 440mm×46mm (L*H)		Ripple current 1 ~ 6 strings, according to the rated current of the hall sensor, range: 0 ~ 0.4*I (peak), resolution: 0.01A
Power consumption	< 15W (only main controller)	Operation environment	Working temperature: -15°C ~ 55°C Storage temperature: -40°C ~ 70°C Humidity: 5% ~ 95% non-condensing
Additional port	6 x DI dry contact 6 x DO relay output, 250VAC/5A or 30VDC/5A	Extension sensor (optional)	- RS485 for 1~6 strings string voltage & current measuring - RS485 for Max. 6 strings ambient temperature & humidity measuring - RS485 for 1~6 strings DC insulation resistance measuring

String Measuring Sensor

BCN-BMS-CM String Current Measuring Sensor & Hall Sensor

- One string needs 1 BCNBMS-CM, each BCNBMS-CM with 2 hall sensor ports
- Measure battery string charge and discharge current, ripple current
- Measure multi-pole battery's string charge and discharge current and ripple current with flexible module and hall sensor
- Accessories:
 - 1) Hall sensor and cable: range from 0~±1000A with 2m cable
 - 2) Communication cable : 5m with RJ45 port



BCN-BMS-CM



Hall Sensor

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BCN-BMS9000 for Large-scale Data Center

Item	Power supply	Measuring range		Environment
		String current	Ripple current	
BCN-BMS-CM	24VDC (range: 9 ~ 32VDC) Power consumption: <0.5W	1 Hall sensor: -1000 ~ 1000A 2 Hall sensor: -2000 ~ 2000A ($\pm 2.0\%$, 15°C ~ 35°C)	20% of Hall sensor Rated current (peak value) Frequency: 50Hz ~ 1KHz	Working temperature: 0°C ~ 45°C Working temperature limit: -15°C ~ 55°C Humidity: 5% ~ 95%RH, non-condensing Storage temperature: -40°C ~ 70°C

BCNBMS-VM String Voltage Measuring Sensor (Optional)

- One BCNBMS-VM can measure 1 string's voltage
- Measure battery string voltage and ripple voltage



BCNBMS-VM

Item	Power supply	Measuring range		Environment
		String voltage	Ripple voltage	
BCN-BMS-VM	24VDC (range: 9 ~ 32VDC) Power consumption: <1W	8 ~ 1000VDC ($\pm 0.5\%$)	2 ~ 100VDC (peak value)	Working temperature: 0°C ~ +45°C Working temp limit: -15°C ~ +55°C Humidity: 5% ~ 95%RH, non-condensing Storage temperature: -40°C ~ +70°C

Extension Sensor (Optional)



Ambient temperature & humidity sensor

- Dual RJ45 interface, fast wiring, support cascade use
- Adsorption by magnet
- Temperature: -20°C ~ 60°C ($\pm 0.4^\circ\text{C}$), resolution: 0.1°C. Humidity: 0 ~ 100%RH ($\pm 3\%$ RH), resolution: 0.1%RH
- Cable: 5 meter RJ45 convert to 4P terminal wire



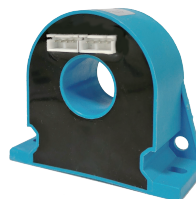
DC insulation resistance sensor

- Measuring range: 1K Ω ~ 30M Ω
- Measurement accuracy: 10% (100K Ω ~ 50K Ω)
- Cable: 2 meter 4P port to 4P terminal wire



Hydrogen (H₂) sensor

- Class of protection: IP65
- 10 ~ 30VDC, power consumption: 0.9W
- Communication: RS485, Modbus
- Measuring range: 0 ~ 1000ppm
Accuracy: $\pm 5\%$ FS
Resolution: 1ppm
- Cable: 2 meter Aviation port to 4P terminal wire



DC leakage current sensor

- Measurement accuracy: $\pm 1\%$ FS
- Monitoring string leakage current to prevent fire caused
- Cable: 2 meter hall sensor port to 4P terminal wire





Order Information

System Structure		Model	Description	Remark
Management layer	BMS Main Controller	BCN-BMS9000	Battery monitoring system main controller	One per each UPS
		BCN-BMS9000-L	Battery monitoring system main controller with 4G antenna port (standard)	One BCNBMS9000 can monitor Max. 6 strings, Max. 420pcs batteries
	Protocol (optional)	-CP	IEC61850 protocol(Monitor Max.108pcs batteries)	Please contact our sales before placing the order
String measuring sensor		BCNBMS-CM	String current measuring sensor	One per each string, each has 2 hall sensor ports, can connect Max. 2 hall sensor. If use for multi-pole battery, then we can configure BCNBMS-CM according to the number of pole. Hall sensor and cable: range from 0 ~ ±1000A with 2m cable. Communication cable: 5m with RJ45 port
		BCN-BMS-VM	String voltage measuring sensor	One per each string (optional)
Battery cell sensor		BCN--BAT 61-02	02V battery cell sensor	One per battery cell
		BCNBAT 61-06	06V battery cell sensor	One per battery cell
		BCN-BAT 61-12	12V battery cell sensor	One per battery cell
Accessory	Cell sensor communication cable	BCN-BAT-COM-40	Cable terminal: RJ11 port, length: 40cm (standard)	
		BCN-BAT-COM-70	Cable terminal: RJ11 port, length: 70cm	
	Battery measuring cable	BCN-BAT-C1-U-M8-30	Cable terminal: U type  , hole diameter: 8mm, length: 30cm (standard)	
		BCN-BAT-C1-O-M8-30	Cable terminal: O type  , hole diameter: 8mm, length: 30cm	
	BCN-BAT-COM-70 Hall sensor for BCN-BMS-CM	CS050EK1T5	Rated input: 50A	Measure range:0~±100A,Φ20mm
		CS100EK2T5	Rated input: 100A	Measure range:0~±200AΦ40mm
		CS200EK2T5	Rated input: 200A	Measure range:0 ~ ±400A,Φ40mm
		CS300EK2T5	Rated input: 300A	Measure range: 0 ~±600A,Φ40mm
		CS400EK2T5	Rated input: 400A	Measure range:0~ ±800A,Φ40mm
		CS500EK2T5	Rated input: 500A	Measure range:0~±1000A,Φ40mm
Optional module	HMI for local display & operation	HMI-9000	10-inch touch-screen HMI for local display & operation	One per six (max) Communication with BCNBMS9000 via Ethernet
		HDR-30-12	12VDC power converter (220VAC to 12VDC)	If selected HMI-BCN-BMS9000, then must select power supply converter
	Ambient temperature & humidity	H-THDRJ45	Temperature: -20°C ~ 60°C (±0.4°C) Humidity: 0 ~ 100%RH (±3%RH)	1BCNBMS9000 can connect Max. 6pcs
	DC insulation resistance sensor	BCN-BMS-IM	Measuring range: 1KΩ ~ 30MΩ	One per each string, 1 BCN-BMS9000 can connect Max. 6pcs
	Hydrogen (H2) Sensor	BCN-BMS-H2	Measuring range: 0 ~ 1000ppm	One per one BCN-BMS9000
	Cabinet for pre-wiring in factory	BCN-BAT-BOX-260	Dimension: 535*260*350mm (W*H*D)	Pre-install & pre-wiring for BCN-BMS9000 and HMI-9000
		BCN-BAT-BOX-730	Dimension: 535*730*335mm (W*H*D)	Pre-install & pre-wiring for Max.4 BCN-BMS9000 and one HMI-9000
	Ethernet switch	IES318	1. Power supply: 24VDC (12~48VDC) 2. 8 x 10/100M Ethernet ports	If selected BCN-BATBOX-730, then must select IES318

Note: If battery terminal is M5, M6, M10, M12, M16, please contact our sales for customize requirements before placing the order.



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