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BCNBMS9000

for Large-scale Data Center



Dual source



4G wireless upload to the third party



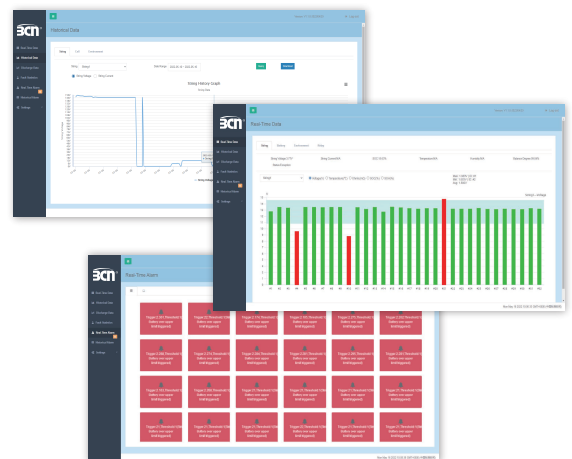
Build-in Webpage monitoring software



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



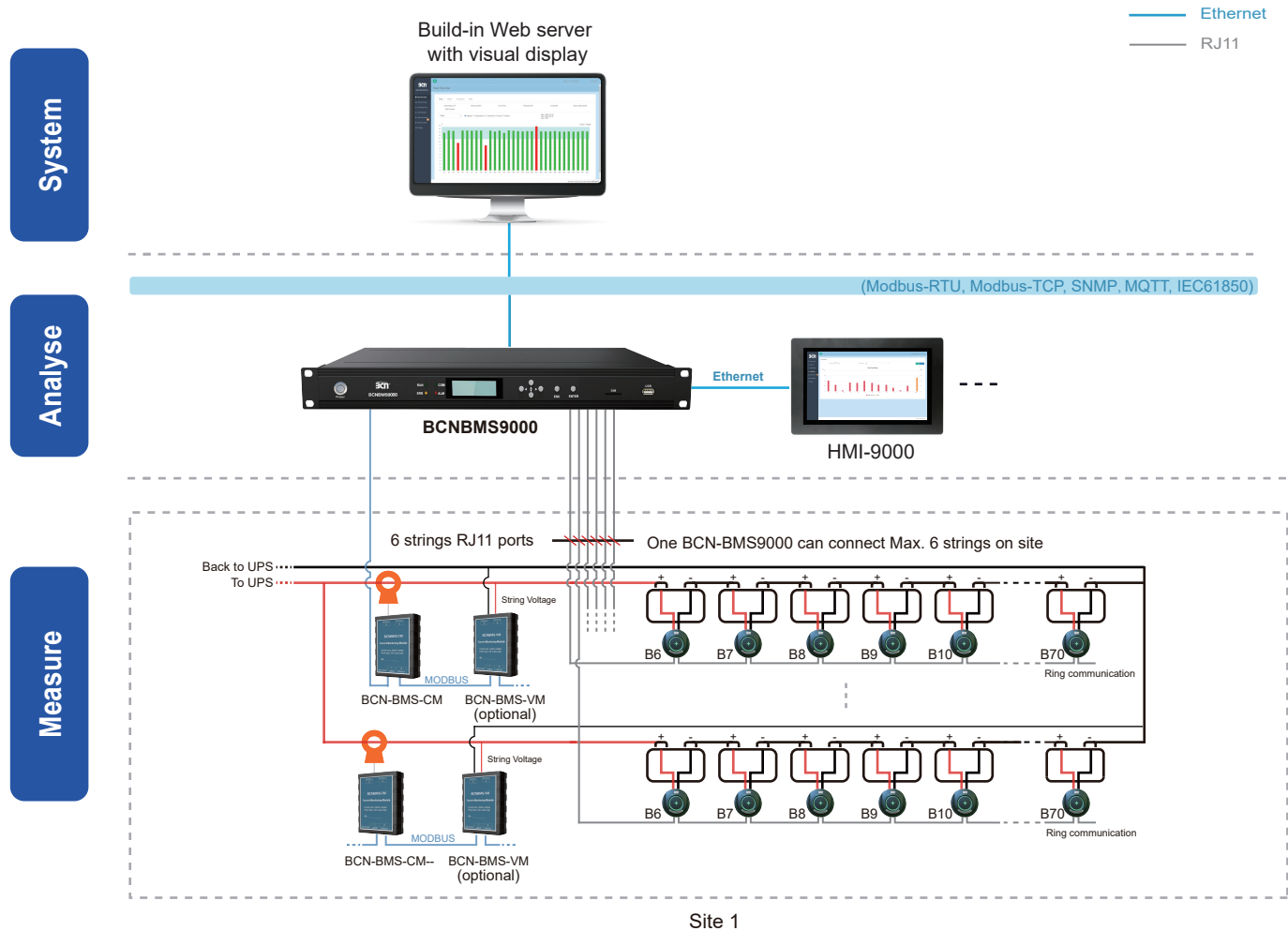
Your choice of power protection



BCN UPS @btconnect BCN UPS

BCNBMS9000 for Large-scale Data Center

System Structure



Management Layer

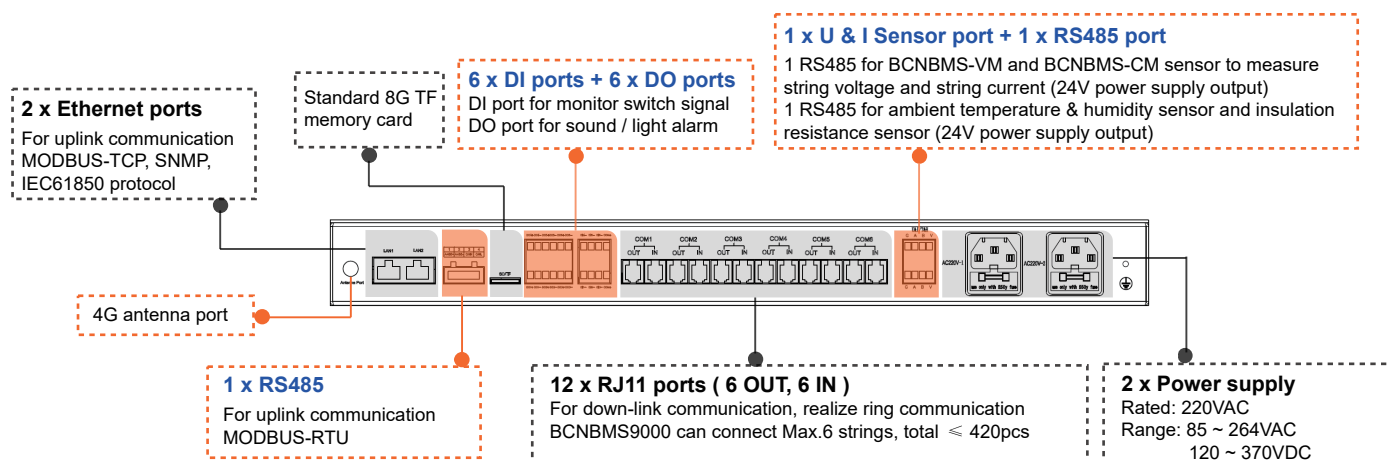
BCNBMS9000 Battery Monitoring System Main Controller

- 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)



Pre-install & pre-wiring for BCNBMS9000 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

BCNBMS-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



BCNBMS-CM



Hall Sensor

Your choice of power protection

BCNBMS9000 for Large-scale Data Center

Item	Power supply	Measuring range		Environment
		String current	Ripple current	
BCNBMS-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

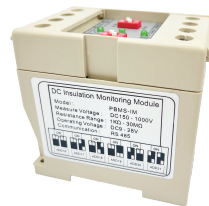
Item	Power supply	Measuring range		Environment
		String voltage	Ripple voltage	
BCNBMS-VM	24VDC (range: 9 ~ 32VDC) Power consumption: <1W	8 ~ 1000VDC ($\pm 0.5\%$)	2 ~ 100VDC (peak value)	Working temperature: 0°C ~ +45°C Working temp limit: -15°C ~ +55°C Humidity: 5% ~ 95%RH, non-condensing Storage temperature: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



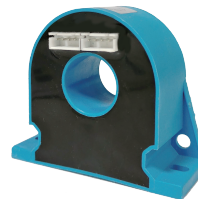
DC insulation resistance sensor

- 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	BCNBMS9000	Battery monitoring system main controller	One per each UPS
		BCNBMS9000-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
		BCNBMS-VM	String voltage measuring sensor	One per each string (optional)
Battery cell sensor		BCNBAT 61-02	02V battery cell sensor	One per battery cell
		BCNBAT 61-06	06V battery cell sensor	One per battery cell
		BCNBAT 61-12	12V battery cell sensor	One per battery cell
Accessory	Cell sensor communication cable	BCNBAT-COM-40	Cable terminal: RJ11 port, length: 40cm (standard)	
		BCNBAT-COM-70	Cable terminal: RJ11 port, length: 70cm	
	Battery measuring cable	BCNBAT-C1-U-M8-30	Cable terminal: U type  , hole diameter: 8mm, length: 30cm (standard)	
		BCNBAT-C1-O-M8-30	Cable terminal: O type  , hole diameter: 8mm, length: 30cm	
	BCNBAT-COM-70 Hall sensor for BCNBMS-CM	CS050EK1T5	Rated input: 50A	Measure range:0~±100A,Φ20mm
		CS100EK2T5	Rated input: 100A	Measure range:0~±200A,Φ40mm
		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-BCNBMS9000 ,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)	1 BCNBMS9000 can connect Max. 6pcs
	DC insulation resistance sensor	BCNBMS-IM	Measuring range: 1KΩ ~ 30MΩ	One per each string, 1 BCNBMS9000 can connect Max. 6pcs
	Hydrogen (H2) Sensor	BCNBMS-H2	Measuring range: 0 ~ 1000ppm	One per one BCN-BMS9000
	Cabinet for pre-wiring in factory	BCNBAT-BOX-260	Dimension: 535*260*350mm (W*H*D)	Pre-install & pre-wiring for BCNBMS9000 and HMI-9000
		BCNBAT-BOX-730	Dimension: 535*730*335mm (W*H*D)	Pre-install & pre-wiring for Max.4 BCNBMS9000 and one HMI-9000
	Ethernet switch	IES318	1. Power supply: 24VDC (12~48VDC) 2. 8 x 10/100M Ethernet ports	If selected BCNBAT-BOX-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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