PowerHub

BRILLIANCE

BATTERY MONITORING SYSTEM

BATTERY MONITORING SOLUTIONS

Monitoring your batteries

In mission critical system, relying on the protection of a UPS and battery bank, battery monitoring is essential to keep operations running smoothly. In recent years, battery monitoring has become an integral part of system continuity strategies for all organizations with medium to large UPS systems. Having a battery monitoring system that constantly monitors that the batteries (State Of Health) brings a lot more advantages.

Batteries failure is just a matter of time

It only takes the failure of one battery to compromise the entire battery string. Many batteries are not inspected or maintained beyond an annual UPS service visit. Unknown and undetected battery failures become critical at the time when you need the batteries the most – especially during a power outage.

UPS systems only provide basic battery monitoring. It can neither identify faults arise within individual batteries, nor has the ability to detect an imbalance condition of individual batteries in multiple strings. To ensure the integrity of the battery system, it is important to detect failing blocks before they affect the operation of the entire system.

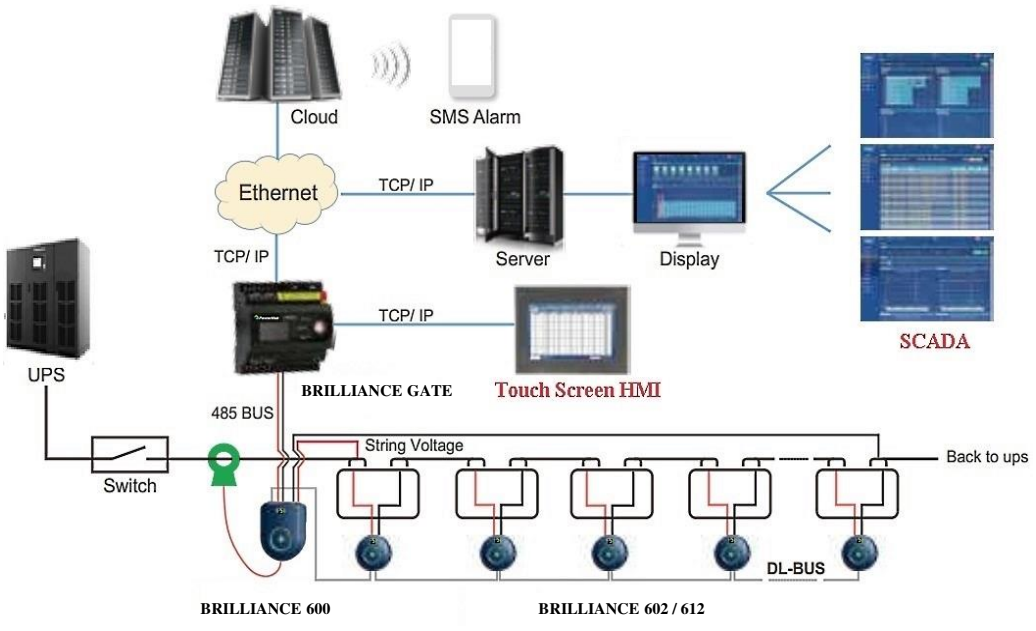
PowerHub **BRILLIANCE BMS** provides the most advanced and most cost-effective tool for monitoring and managing stand-by battery banks. Continuous development of the BMS ensures that the system performs at its optimum state. Continuous data sampling, reporting and battery management capability ensures reduced costs, gives peace of mind, and most importantly - ensures that you have batteries that perform when needed.

Research in the United States shows that only 43% of businesses that suffer a disaster ever resume business and only 29% of these are in business two years later. Of those businesses which lost their data centre for ten days or more, 93% went bankrupt within one year.



BRILLIANCE BMS is the industrial leading battery monitoring system. BRILLIANCE GATE, an intelligent control gateway, collects, stores and analyses data from each BRILLIANCE 602/612 battery sensing module and BRILLIANCE 600 battery string sensing module. All the data can be remotely monitored via the BRILLIANCE GATE.

SYSTEM OVERVIEW



BRILLIANCE GATE

BRILLIANCE 602
(2V battery sensing module)

BRILLIANCE 612
(12V battery sensing module)

BRILLIANCE 600
(battery string sensing module)

BRILLIANCE BMS Features

- Real time monitoring and reporting.
- Data logging for all measuring data for 12 months.
- Built-in web server with bar chart and trend curve analysis for voltage, charge/discharge current, battery temperature/resistance.
- Battery auto balancing function.
- Report for string voltage and current, individual battery voltage, temperature, resistance. Support export of data into pdf, CSV, etc. format.
- Alarm for battery voltage, temperature, resistance, SOC and SOH.
- Alarm for string voltage, current and SOC.
- Support SNMP, Modbus TCP protocol.
- User account control and rights management.
- Support SMS alarm.
- Monitor ambient temperature and humidity (Optional).
- Digital Output (DO) connection for sound and light alarm (Optional).
- Digital Input (DI) connection (Optional).
- Analog Input (AI) connection (Optional).

Data presentation is the key for Efficient Management

A single BRILLIANCE BMS can monitor up to 480 batteries, up to 4 parallel strings. Web based utility of real-time monitoring and control gives users access remotely.

BRILLIANCE BMS offers:

- WAN/LAN integration for remote monitoring.
- 4 RS485 ports, Modbus communication.
- 2 Ethernet ports.

Provide visual and understanding of your batteries status.

By definition, wherever there is a bank of batteries, there is a mission-critical environment being protected. If the batteries are unable to perform when they are needed, the consequences and costs are going to be serious.

TECHNICAL SPECIFICATIONS

BRILLIANCE GATE

It monitors and stores data from individual battery and string sensing modules.

MAIN FUNCTIONS	SPECIFICATION
Data Collection	Smart solution for lead acid batteries that are used in UPS, data center, telecom BTS and solar energy storage bank. With built-in web server , it provides online real-time monitoring of battery status.
String Monitoring	Maximum up to 4 strings in parallel, 120 batteries per string.
Battery Monitoring	Maximum up to 480 batteries
Status Monitoring	Float Charge, Discharge, Charge, Resting.

HARDWARE	SPECIFICATION
CPU	ARM Cortex A8 800MHz
Operating System	Embedded Linux
Memory	512MB Flash 8GB TF Memory Card
Communications	4 RS485 Serial Ports, 2 Ethernet Ports (10/100M) OR 2 RS485 Serial Ports, 2 Ethernet Ports (10/100M), Digital Output, Digital Input, Analog Input, Temperature and Humidity
Display	OLED
Power Supply	DC 18V ~36V

OTHERS	SPECIFICATION
Weight	650g
Dimension	90mm x 94mm x 68mm
Power Consumption	<5W
Operation Temperature	-15°C ~+55°C
Operation Humidity	10%~95%, No Condensation
Safety Standard	CE

BRILLIANCE 602/612/600

Battery sensing modules are electronic stethoscope device that collects electrical information from battery and convert it to electrical signals to transmit to the BRILLIANCE GATE.

Item	Rated Input Voltage	Measuring Range			Power Consumption
BRILLIANCE 602 ***(Cell sensor)***	2V	1.6V to 2.6V (±0.2%)	Battery Temperature: -20℃ to 85℃ (±0.5℃)	Battery Resistance: 0.1mΩ to 100mΩ Repeatability Error: 1.0%±25uΩ Conformity Error: 1.5%±25uΩ	Active: 170mW Sleep: 12mW
BRILLIANCE 612 ***(Cell sensor)***	12V	7.5V to 15.6V (±0.2%)			Active: 120mW Sleep: 10mW
BRILLIANCE 600 ***(String sensor)***	DC 12~ 36V	20V to 800V (±0.5%)	String Current: -1000A~+1000A (By Hall sensor) (±2.0%)		1W

Due to ongoing product improvements, specifications are subject to change without notice.

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