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EquaLink Battery Management & Monitoring System

Active Battery Management System with Voltage Balancing

EquaLink is a battery management system that monitors the voltage, internal resistance and temperature of each battery in a stationary battery system. Through a patented balancing process, EquaLink actively regulates the float charging current of each battery, ensuring all batteries charge at the optimal voltage.

EquaLink Battery Management System actively manages batteries to increase reliability and extend life, whereas other battery monitoring systems simply monitor batteries while they deteriorate.

EquaLink can monitor current, ambient/room temperature, humidity, hydrogen gas and electrolyte levels. Our system can monitor electrical equipment such as UPSs, inverters, transfer switches, generators and air conditioning systems. It operates as a standalone system which can be accessed by either a local serial com port connection, LAN connection or fixed with an IP address for remote log in.

Benefits

- Prevents unexpected battery failure
- Maximizes battery capacity.
- Extends battery life
- Easy access to battery data via web browser
- Automate data collection for NERC and TPL-001 Compliance

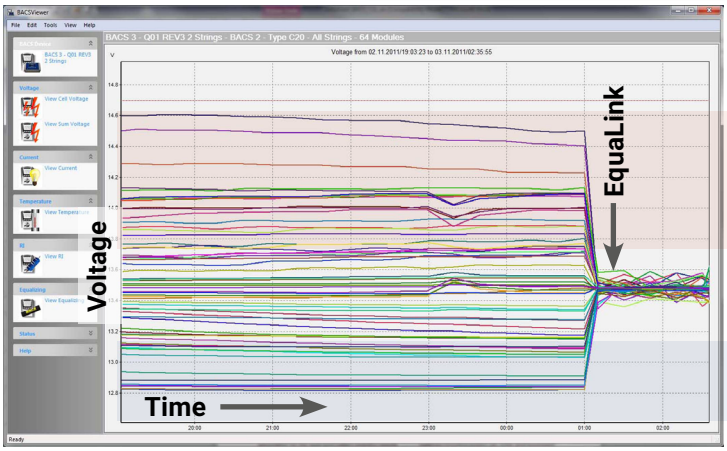
Status log of individual battery data

String EquaLink Demo String #1 48 VDC

No.	Volt [V]	Temp. [°C]	Ri [mΩ]	Equalize	Status
1	2.26	14.5	1.59		
2	2.26	14.8	1.67		
3	2.26	14.8	1.55		
4	2.26	14.7	1.54		
5	2.26	14.5	1.55		
6	2.26	14.1	1.55		
7	2.26	14.5	1.53		

Features

- Patented voltage balancing process
- Pinpoints poorly performing cells
- Regulates charging (prevents overcharging and undercharging)
- Advanced warning system
- Remote log in
- Email and SMS text alerts
- Downloadable battery history
- Modbus, DNP3 and SNMP communications
- Compatible with batteries 2V to 16V
- Thermal runaway prevention
- Listed to UL 60950 standards

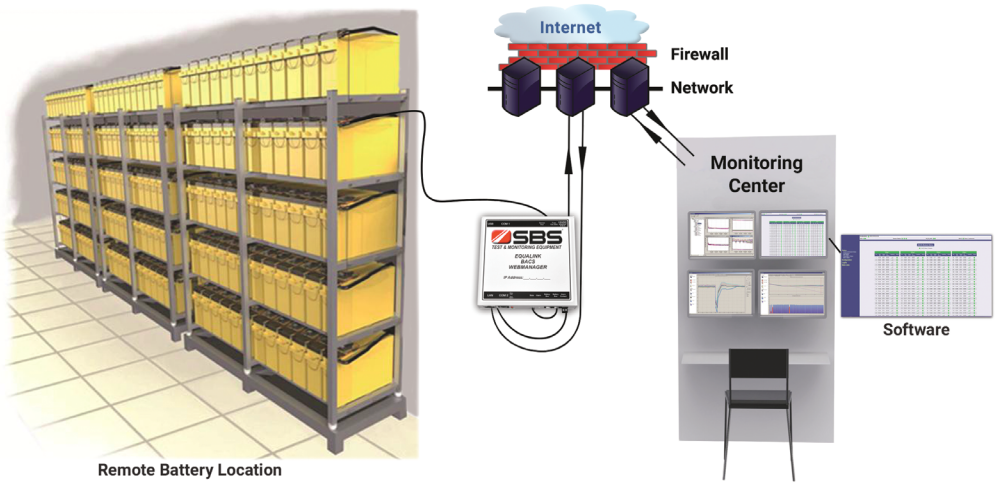


The included EquaLink software (above) shows EquaLink-balanced voltages on a 5-year-old battery system with voltage spread.

How Balancing Works

EquaLink reads individual battery voltages and compares them to the battery system's overall voltage. Each EquaLink module controls the amount of float current passing through the battery to regulate the voltage to the optimum value. This constant monitoring and balancing of the individual charging voltages helps guarantee the availability of the battery system at all times.

With its proprietary balancing process, EquaLink is able to monitor and actively regulate battery voltage within 0.01 volts of the system's average float charging voltage.



Data Collection & Alarms

EquaLink continuously collects data and provides warnings and alarms. Detailed data and reports can be accessed and collected through a local or remote secured browser connection.

NERC PRC-005 Battery Maintenance Requirements

■ - Meets the minimum requirements of NERC PRC-005*
● or ■ - Meets IEEE Recommendations*

	Vented / Flooded Lead Acid Batteries (VLA)	IEEE450-2010 Monthly	Quarterly	Yearly	5 Years
	Visually inspect batteries, rack, charger, room	●	●	■	
✓	Record battery system float voltage and current at battery terminals	●	●	■	
✓	Record charger output voltage and current; correct if needed	●	■	■	
✓	Check electrolyte levels. Fill with distilled water to 'max' line if necessary.	●	■	■	
✓	Record ambient/room temperature	●	●	●	
	Make sure ventilation system is operational	●	●	●	
	Inspect system for unintentional battery grounds	●	■	■	
	Record pilot cell(s) or block(s) voltage and electrolyte temperature	●			
	Record pilot cell(s) specific gravity (temp. corrected to 77° F)	●			
✓	Record voltage of ALL cells/blocks		●		
	Record specific gravity of 10% of the cells (temp. corrected to 77° F)		●		
✓	Record temperature of 10% of the cells		●		
	Record specific gravity of ALL cells (temp. corrected to 77° F)			●	
✓	Record the internal resistance value of ALL cells/blocks		■	■	
✓	Record temperature of ALL cells/blocks			●	
	Record internal resistance value of ALL cell-to-cell and terminal connections			■	
Records	Conduct load test two years after installation and then every five years. When the system's capacity falls below 90%, load test annually.				■

✓ EquaLink can assist in NERC and FERC reporting by verifying and recording the relevant information (see checkmarks on left).

*The above testing schedules are based on SBS's interpretations of both IEEE and NERC PRC-005. This information should be used for guidance purposes only and SBS can't be held responsible if the information is incorrect or if other parties interpret the information differently.

For Battery Types

- Flooded/Wet Lead Acid
- VRLA (Valve Regulated Flooded Lead Acid)
- Nickel Cadmium

Available Environmental Monitoring

- Temperature
- Humidity
- Electrolyte level
- Hydrogen gas detection

Maintenance Cost/Time Savings

EquaLink reduces maintenance costs, especially for remote locations, through:

- Decreased travel to remote locations for data collection
- Decreased time preparing and submitting reports
- Decreased manual monitoring with custom alarm parameters

EquaLink Order Code

		A	B		C	D
*Example**	*BM*	*125-*	*60*	*x*	*2V*	*.01*
Your Code	BM			x		

		Code	Feature
A	Nominal DC System Voltage	12-	12 Vdc
		24-	24 Vdc
		48-	48 Vdc
		125-	125 Vdc
		250-	250 Vdc
		XXX-	Other XXX Vdc
B	Number of Individual Batteries to Monitor	XXX	Enter number of batteries (blocks or cells)
C	Battery Voltage	2V	2 V Cells
		4V	4 V Blocks
		6V	6 V Blocks
		12V	12 V Blocks
D	Input Power	.01	120 Vac/12 Vdc
		.02	18–72 Vdc
		.03	120–370 Vdc

Example part number BM125-60x2V.01 represents:
125V system of sixty (60) 2 Volt cells with a 120 VAC powered WebManager.