

BATTERY MASTER LIFE GUARD (BMLG)

Active Battery Management System with Voltage Balancing

BMLG is a Web-based battery management & supervision system that monitors the voltage, internal impedance, temperature and optional current of each battery cell /Block. Through a patented balancing process, BMLG actively regulates the float charging balance of each battery, ensuring all batteries charge at the optimal Voltage.

BMLG Battery Management System actively manages batteries to increase reliability and extend life till 50% (with normal site conditions), whereas other battery monitoring systems simply monitor batteries while they deteriorate

BMLG can monitor current, ambient/room temperature, humidity, hydrogen gas and electrolyte levels. Through available contacts/relays, BMLG can also monitor electrical equipment such as UPSs, inverters, Rectifiers transfer switches, generators and air conditioning systems by integrated with Galaxis Site Master Guard (SMG)



Benefits

- Prevents unexpected battery failure
- Extend battery capacity by 20%
- Extends battery life till 50%
- logging battery parameters via web-browser

String EqualLink 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	█	●	

Status log of individual battery data

Features

- Patented voltage balancing process
- Pinpoints poorly performing cells
- Regulates charging (prevents overcharging and undercharging)
- Advance warning system
- Remote log in
- Email and SMS text alerts
- Downloadable battery history
- SNMP and Modbus communication
- Compatible with batteries 1.2 V to 12V
- Thermal runaway prevention
- Listed to UL 60950 standards



← Dryout

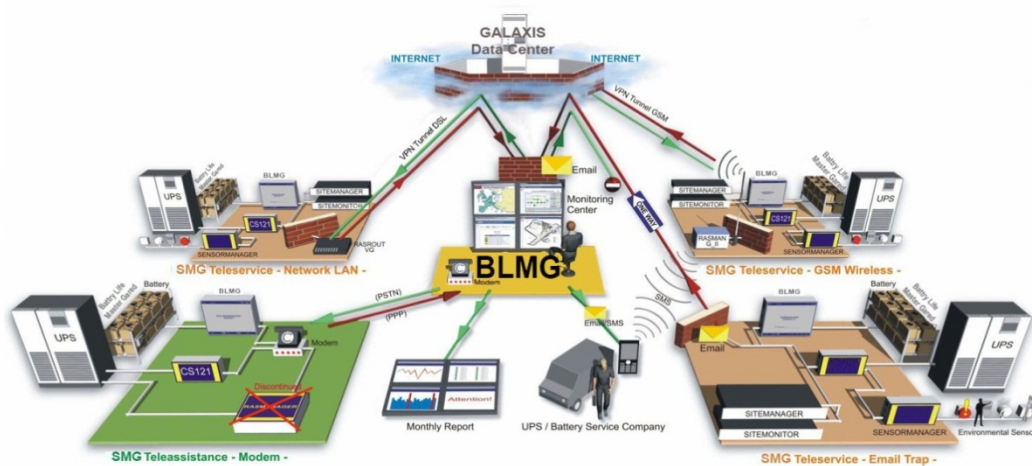
← Balanced

← Sulfation

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

How Balancing Works

BMLG reads individual battery voltages and compares them to the battery system's overall voltage. Each BMLG 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, BMLG is able to monitor and actively regulate battery voltage within 0.001 volts of the system's average float charging voltage



Data Collection & Alarms

BMLG 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.

BMLG benefits to comply battery maintenance requirements standards

BLMG working safely with all battery types specially Lead Acid types (Flooded Lead Acid & Valve Regulated Lead Acid VRLA) and both types need certain level of maintenance & supervision activities although, VRLA could be considered a "maintenance free battery" but this definition not be accurate as overall definition for maintenance activity it is related to maintenance inside the battery itself as a main difference between Flooded LA and VRLA is Electrolyte, and any activity related to managing the electrolyte dedicated only for Flooded type and Not applicable for VRLA, but all remaining maintenance activities should be common for all type of batteries and BLMG system could be achieved 100% of activities required by VRLA and more than 90% activities for flooded Lead Acid type; according to NERC PCR-005 and IEEE 450 recommendations.

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| <ul style="list-style-type: none"> ☑ 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 voltage of ALL cells/blocks. ☑ 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 Conduct load test <p>years after installation and then every five years. When the system's Capacity falls below 90%, load test annually.</p> | <p>Comply by BMLG for (Flooded & VRLA)</p> <p>Comply by BMLG for (Flooded & VRLA)</p> <p>Comply by BMLG for (Flooded Battery only)</p> <p>Comply by BMLG for (Flooded & VRLA)</p> <p>Comply by BMLG for (Flooded & VRLA)</p> <p>NA</p> <p>Comply by BMLG for (Flooded & VRLA)</p> <p>NA</p> <p>Comply by BMLG for (Flooded & VRLA)</p> <p>Comply by BMLG for (Flooded & VRLA)</p> <p>Not needed by using BMLG</p> |
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For Battery Types

- Lead Acid (flooded/wet and VRLA)
- Nickel Cadmium
- NiMH
- Most types of Li-Ion

Available Environmental Monitoring

- Temperature
- Humidity
- Electrolyte level
- Hydrogen gas detection

Maintenance Cost/Time Savings

Battery Master Life Guard 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