EquaLink Battery Management & Monitoring System

**Active Battery Management System with Voltage Balancing**

EquaLink is an Ethernet-based 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. Through available Form C contacts/relays, EquaLink can also monitor electrical equipment such as UPSs, inverters, transfer switches, generators and air conditioning systems.

**Benefits**

- Prevents unexpected battery failure
- Increased battery capacity
- Extends battery life
- Easy access to battery data via web browser
- Automate data collection for NERC requirements

**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
- SNMP and Modbus communication
- Compatible with batteries 2V to 16V
- Thermal runaway prevention
- Listed to UL 60950 standards

**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 0.001 volts of the system’s average float charging voltage.

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

**Status log of individual battery data**

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

**Vented / Flooded Lead Acid Batteries (VLA)**

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Monthly</th>
<th>Quarterly</th>
<th>Yearly</th>
<th>5 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visually inspect batteries, rack, charger, room</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Record battery system float voltage and current at battery terminals</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Record charger output voltage and current; correct if needed</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Check electrolyte levels. Fill with distilled water to ‘max’ line if necessary.</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Record ambient/room temperature</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Make sure ventilation system is operational</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Inspect system for unintentional battery grounds</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Record pilot cell(s) or block(s) voltage and electrolyte temperature</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Record pilot cell(s) specific gravity (temp. corrected to 77°F)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Record voltage of ALL cells/blocks</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Record specific gravity of 10% of the cells (temp. corrected to 77°F)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Record temperature of 10% of the cells</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Record specific gravity of ALL cells (temp. corrected to 77°F)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Record the internal resistance value of ALL cells/blocks</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Record temperature of ALL cells/blocks</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Record internal resistance value of ALL cell-to-cell and terminal connections</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

**Base Code**

- [ ] ✔ - Meets the minimum requirements of NERC PRC-005*
- [ ] or [ ] - Meets IEEE Recommendations*

*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.

**Equalink Order Code**

<table>
<thead>
<tr>
<th>Example*</th>
<th>BM</th>
<th>125-</th>
<th>60</th>
<th>2V</th>
<th>.01</th>
</tr>
</thead>
<tbody>
<tr>
<td>Your Code</td>
<td>BM</td>
<td></td>
<td>x</td>
<td>2V</td>
<td>.01</td>
</tr>
</tbody>
</table>

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

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