BATTERY MONITOR
A3680

The Battery Monitor is capable of measuring one (1) Current, two (2) DC Voltages, and up to four (4) individual battery temperatures. The Battery Monitor Cable Harness (P/N A2225-[]), see Table 1 and 2) enables the monitor to connect to the batteries. The Battery Shunt 200 Amp, 50mV (P/N MS91587-2), is needed to measure the current that is installed on the high side of the installation. The Battery Monitor is NMEA 2000® certified, allowing the user to view all DC information over an NMEA 2000 network.

Product Highlights:
- Capable of Monitoring the following:
  - Current Measurement
  - Two (2) DC Voltage Measurements
  - Four (4) Temperature Measurements
- Configurable Alerts/Alarms
- Single CAN BUS Communication

Installation
The Battery Monitor was designed to be installed in a protected, non-explosive area of the vessel. Take precautions to install the Battery Monitor in an area that will be away from direct exposure to the weather and combustible fumes.

CAN Connections
One male Micro-C connectors is provided on the top of the Battery Monitor for connection to the primary CAN bus via drop cable.

NOTE
Use the shortest drop length possible when connecting the Battery Monitor to the CAN backbone. NMEA 2000 spec is maximum 6 meters for drop cables.

*Manufacturer reserves the right to change product specification without prior notice. Please refer to our website for the latest details.
Battery Monitor (A3680) - Installation

Typical Installation Diagram

When no High Side Shunt is used, tie the orange, green and blue wires directly to the V1+ side of the battery.

Installer must follow applicable industry standards i.e. ABYC/CE for properly wiring and utilizing external protective devices i.e. fuses as required.

**CAUTION!**

Mount Temperature Sensors (Part of A2225-[]) to Battery stud or adhere directly to battery

When no High Side Shunt is used, tie the orange, green and blue wires directly to the V1+ side of the battery. Installer must follow applicable industry standards i.e. ABYC/CE for properly wiring and utilizing external protective devices i.e. fuses as required.

Battery Monitor Harness Cable

**Table 1:**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2225-4</td>
<td>Battery Monitor Cable Harness - 4’</td>
</tr>
<tr>
<td>A2225-6</td>
<td>Battery Monitor Cable Harness - 6’</td>
</tr>
<tr>
<td>A2225-8</td>
<td>Battery Monitor Cable Harness - 8’</td>
</tr>
<tr>
<td>A2225-14</td>
<td>Battery Monitor Cable Harness - 14’</td>
</tr>
<tr>
<td>A2225-16</td>
<td>Battery Monitor Cable Harness - 16’</td>
</tr>
<tr>
<td>MS91587-2</td>
<td>Battery Shunt 200Amp, 50mV</td>
</tr>
</tbody>
</table>

**Table 2:**

<table>
<thead>
<tr>
<th>Pin</th>
<th>Connection</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Temperature Sensor 1 Signal</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Shunt High</td>
<td>Orange</td>
</tr>
<tr>
<td>3</td>
<td>Temperature Sensor 2 Signal</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Temperature Sensor 1 Ground</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Ground</td>
<td>Black</td>
</tr>
<tr>
<td>6</td>
<td>Shunt Low</td>
<td>Green</td>
</tr>
<tr>
<td>7</td>
<td>Temperature Sensor 3 Signal</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Temperature Sensor 3 Ground</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Temperature Sensor 2 Ground</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Reserved</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Battery V2+ 12-30VDC</td>
<td>Red</td>
</tr>
<tr>
<td>12</td>
<td>Temperature Sensor 4 Signal</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Temperature Sensor 4 Ground</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Reserved</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Not Used</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Not Used</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Not Unused</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Battery V1+ 12-30VDC (Must be connected to power monitor)</td>
<td>Blue</td>
</tr>
</tbody>
</table>
Battery Monitor (A3680) - Operation, Maintenance, General Specifications

**Operation**
The Battery Monitor has one (1) configurable parameter; the maximum current value of the high side shunt being used. This parameter is a factory setting. The voltage drop across the high side shunt should not exceed 50 mV for the configured current. For example, if the maximum shunt value selected is 200 amps, then the voltage drop across the high side shunt at 200 Amps should not exceed 50 mV DC.

**Standard Battery Monitor Screen Layout**
The Battery Monitor screen shows the status (voltage, current, temperature & state of charge) of the battery banks being monitored. Specific configuration and installation of the battery monitor is defined by the boat builder.

**Maintenance**
The Battery Monitor requires no maintenance. Any service or repair issues should be handled by a factory authorized technician.

**General Specifications**

### Electrical
- **Power Input**: 12 VDC – 30VDC, 100 mA max (Blue Wire)
- **DC Voltage Input**: 12 VDC – 30VDC (Red Wire)
- **Shunt Voltage**: 50 mVDC (Orange/Green Wires)
- **CAN Bus Voltage**: +15 VDC (± 0.5)
- **Load Equivalence Number (LEN)**: 1

### Mechanical
- **Dimensions**: 5.50” X 2.43” X 2.43”
- **CAN Bus Connectors**: One (1) Micro-C Male
- **Mounting**: 4 each 4 x 0.16 #6 hardware
- **Orientation**: N/A

### Certifications
- **NMEA 2000**: Category B
- **Lloyd’s Register**: Lloyd’s Type Approved, Test Specification #1, Env 2
- **CE**: IEC 60533 Electrical and Electronic Installations in Ships
- **IEC 60945**: Maritime Navigation and Radio Communication Equipment and Systems

### Environmental
- **Radiated, RF Field Immunity** IEC-61000-4-3
- **Electrical Fast Transient/Burst Immunity** IEC 61000-4-4
- **Voltage Surge Immunity** IEC 61000-4-5
- **Conducted, Immunity** IEC 61000-4-6
- **Conducted Emissions** IEC 60945
- **Voltage Variation Immunity** IEC 61000-4-11
- **Conducted LF Immunity** IEC 61000-4-16
- **ESD Immunity** IEC-61000-4-2
- **Insulation Resistance** IEC-60092-504
- **Operating Temperature** -40°C to +70°C
- **Storage Temperature** -40°C to +85°C
- **Temperature Sensor Range** -20°C to +70°C
- **Vibration** IEC-60068-2-6 Test Fc
- **Temperature Cycle** IEC 60945
- **Humidity** IEC-60068-2-30 Test Db
- **Corrosion** IEC 60945
- **Weight** 0.75 lbs (0.34 kg) nominal

---

**NOTE**
This page can vary between installations, as format is determined and/or customizable by the boat builder or owner.
**Dimensional Specifications:** in [mm]

**Battery Monitor**

*A3680*

---

**Shunt**

*Source: www.deltecco.com/MKB-DC.html*