



COST SAVINGS

WIRELESS BATTERY MONITORING SYSTEM

The e²BMS is a state-of-the-art wireless technology Battery Monitoring System.

RELIABILITY

QUALITY



Save on maintenance and operation costs.

Increase reliability and quality of your operation and extend the lifetime of your battery!



Wireless



GPRS (Optional)

The ABERTAX® e²BMS is our flagship Battery Management device with multiple usage options (e²), equipped with state of the art wireless transmission and includes our patented battery analysis algorithms that provide an edge over competing products in the market.

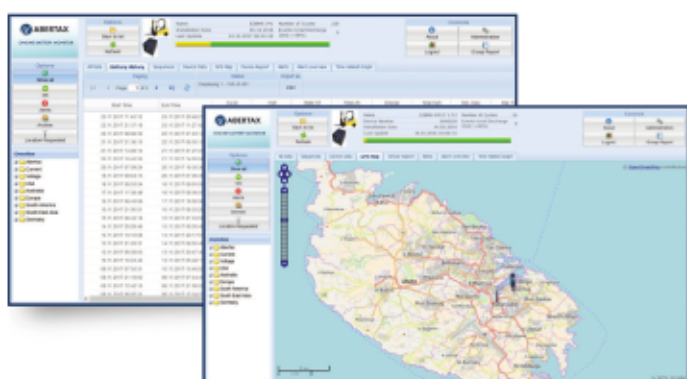
The e²BMS is designed to withstand the harsh electrical, mechanical and chemical environments present on flooded batteries. The technology and algorithms employed are the result of extensive research work in all the above engineering fields.

e²BMS will collect and process data from your batteries allowing you to monitor and control the way these are being used, thus increasing their service life to give you the maximum return on your investment. The device will monitor the full pack voltage, the half pack voltage, ambient and battery temperatures, battery liquid level and, optionally, current. Intelligent algorithms then work out the State of Charge (SOC), and estimate the remaining cycle life based on a history of battery condition events. The e²BMS will also monitor the number of charge and discharge cycles as well as the temperature, low acid level and deep discharge events and duration.

The data stored on the device can be comfortably retrieved wirelessly to be processed by our proprietary software or automatically directed to locally-hosted or cloud-based storage for easy retrieval via a powerful web-based interface with advanced reporting capabilities. An optional GSM modem upgrade is perfect for installation in remote locations with little or restricted internet access.

On-site, harmful battery conditions will raise immediate alarms via three highly visible LEDs on the device, specifically high temperatures, cell voltage imbalances and a low liquid level.

The e²BMS is designed to operate up to a maximum nominal battery voltage of 80V. Multi-stage electronic protection ensures that the e²BMS performs safely and reliably while also withstanding over-voltage, over-current and reverse polarity conditions. All inputs are individually protected, and are designed to recover immediately and resume operation once the fault is removed. Furthermore, additional fuses protect against extreme conditions.



PRODUCT FEATURES

- Patented electrolyte level sensing technology that eliminates electrolytic corrosion between the probe and cell plates
- Full battery pack and half battery pack voltage sensors, dual temperature sensor, level sensor and current sensor
- Log of major events and alerts
- SOC and remaining cycles estimation algorithms
- Wireless communication (Optional GSM modem available)
- Quick and easy installation by qualified service personnel
- Rugged semi-encapsulated enclosure
- Robust protection against voltage & current transients and reverse polarity connection
- Protected against electromagnetic interference
- Patented connector designed for Bolted battery terminals, other connectors for Welded type also available.

WHY USE THE ABERTAX® e²BMS?

- 1. SAFETY** Robust construction, free of any potential danger to the battery and safe against any high inrush current, or high voltage transients.
- 2. RELIABILITY** The e²BMS is not susceptible to corrosion on the probe and does not cause corrosion on the battery plates. Level probe with Gauge Guard prevents the probe from touching the separators. Encapsulated dual ambient and battery temperature sensor and optional Hall Effect current sensor.
- 3. EXTENDED BATTERY LIFE** The level probe means watering intervals can be extended for substantial savings from reduced service intervals. Alerts and estimations inside clear reports allow you to further maximize the battery life by observing and correcting adverse usage conditions.
- 4. EASY ASSEMBLY** The patented connectors fit & seal perfectly on the bolted terminals. No additional parts and handling required.
- 5. HIGHLY VISIBLE** Bright LEDs ensure a highly visible and reliable indication at all times.
- 6. WIRELESS DATA RETRIEVAL** No cables or wired interfaces to carry around. Let the wireless link stream data to your PC, server or directly to the cloud.
- 7. VARIOUS OPTIONS** A large selection of add-on features to meet different customers' needs.

If these are all essential requirements for you, then the only choice is the ABERTAX® e²BMS.



BATTERY STATUS REPORT

The Battery Status Report provides a concise display of all battery usage information, including all battery events and the estimated remaining cycles.

Battery Cycle History

| Half Cycle | Start Time | End Time | Vol | Temp | CS | CS | CS | CS |
|------------|------------------|----------|-----|------|-----|----|----|----|
| ↑ 227 | 2017-04-22 09:08 | 12.7 | 3.2 | 8.5 | 0.0 | 1 | | |
| ↓ 226.5 | 2017-04-21 21:36 | 13.3 | 5.5 | 8.9 | 0.1 | 1 | | |
| ↑ 226 | 2017-04-21 14:28 | 86.2 | 4.3 | 63.9 | 0.0 | 1 | | |
| ↓ 225.5 | 2017-04-20 18:43 | 11.6 | 2.5 | 7.1 | 0.0 | 1 | | |
| ↑ 225 | 2017-04-20 07:59 | 6.6 | 6 | 4.5 | 0.0 | 8 | | |
| ↓ 224.5 | 2017-04-18 09:04 | 64 | 56 | 58.3 | 0.1 | 1 | | |
| ↑ 224 | 2017-04-18 08:53 | 13.6 | 7 | 10.1 | 0.0 | 2 | | |
| ↓ 223.5 | 2017-04-17 17:38 | 11.0 | 76 | 6.9 | 0.1 | 1 | | |
| ↑ 223 | 2017-04-16 06:43 | 13.3 | 49 | 12.2 | 0.0 | 3 | | |
| ↓ 222.5 | 2017-04-15 21:50 | 8.1 | 1.1 | 7 | 0.1 | 6 | | |
| ↑ 222 | 2017-04-15 06:43 | 12.7 | 4.2 | 8.5 | 0.0 | 1 | | |
| ↓ 221.5 | 2017-04-14 20:28 | 13.3 | 2 | 8.9 | 0.1 | 1 | | |
| ↑ 221 | 2017-04-14 10:30 | 11.3 | 67 | 7.3 | 0.0 | 1 | | |
| ↓ 220.5 | 2017-04-13 21:05 | 11.6 | 1 | 7.1 | 0.0 | 1 | | |
| ↑ 220 | 2017-04-13 06:58 | 6.6 | 6 | 4.5 | 0.0 | 8 | | |
| ↓ 219.5 | 2017-04-10 16:23 | 64 | 56 | 58.3 | 0.1 | 1 | | |
| ↑ 219 | 2017-04-09 07:55 | 13.6 | 7 | 10.1 | 0.0 | 2 | | |
| ↓ 218.5 | 2017-04-08 21:18 | 11 | 76 | 6.9 | 0.1 | 1 | | |
| ↑ 218 | 2017-04-08 12:42 | 13.3 | 49 | 12.2 | 0.0 | 3 | | |
| ↓ 217.5 | 2017-04-06 06:02 | 9.2 | 91 | 7.0 | 0.1 | 4 | | |
| ↑ 217 | 2017-04-07 06:28 | 12.7 | 77 | 8.5 | 0.0 | 1 | | |
| ↓ 216.5 | 2017-04-06 21:05 | 13.3 | 2 | 8.9 | 0.1 | 1 | | |
| ↑ 216 | 2017-04-06 10:57 | 11.3 | 67 | 7.3 | 0.0 | 1 | | |
| ↓ 215.5 | 2017-04-03 16:44 | 11.6 | 1 | 7.1 | 0.0 | 1 | | |
| ↑ 215 | 2017-04-03 08:38 | 6.6 | 6 | 4.5 | 0.0 | 8 | | |
| ↓ 214.5 | 2017-04-02 21:26 | 64 | 56 | 58.3 | 0.1 | 1 | | |
| ↑ 214 | 2017-04-02 07:02 | 13.6 | 7 | 10.1 | 0.0 | 2 | | |
| ↓ 213.5 | 2017-04-01 21:44 | 11 | 76 | 6.9 | 0.1 | 1 | | |
| ↑ 213 | 2017-04-01 08:35 | 13.3 | 49 | 12.2 | 0.0 | 3 | | |
| ↓ 212.5 | 2017-03-27 17:13 | 9.2 | 2.2 | 7.0 | 0.1 | 4 | | |
| ↑ 212 | 2017-03-27 09:07 | 12.7 | 77 | 8.5 | 0.0 | 1 | | |
| ↓ 211.5 | 2017-03-26 21:38 | 13.3 | 2 | 8.9 | 0.1 | 1 | | |
| ↑ 211 | 2017-03-26 07:35 | 11.3 | 67 | 7.3 | 0.0 | 1 | | |
| ↓ 210.5 | 2017-03-25 08:47 | 11.6 | 1 | 7.1 | 0.0 | 1 | | |
| ↑ 210 | 2017-03-24 21:38 | 6.6 | 6 | 4.5 | 0.0 | 8 | | |
| ↓ 209.5 | 2017-03-24 06:52 | 64 | 56 | 58.3 | 0.1 | 1 | | |
| ↑ 209 | 2017-03-23 21:31 | 13.6 | 7 | 10.1 | 0.0 | 2 | | |
| ↓ 208.5 | 2017-03-23 10:32 | 11 | 76 | 6.9 | 0.1 | 1 | | |
| ↑ 208 | 2017-03-23 17:11 | 13.3 | 49 | 12.2 | 0.0 | 3 | | |
| ↓ 207.5 | 2017-03-19 21:50 | 9.2 | 2.1 | 7.1 | 0.1 | 4 | | |

Breakdown of Discharge in % of CS

| Level of Discharge | Count |
|--------------------|-------|
| 80-100% | 10 |
| 60-80% | 11 |
| 40-60% | 4 |

Breakdown of Charge in % of CS

| Charge Level | Percentage |
|--------------|------------|
| Full | ~85% |
| Intermediate | ~10% |
| Incomplete | ~5% |

Estimated Battery Status

71.9% Used Cycles, 12% Remaining Cycles, 16.1% Lost Cycles (due to events)

History

| Event | 2016-01-11 | 2016-04-28 | 2016-08-21 | 2017-01-12 | 2017-04-26 |
|-------|------------|------------|------------|------------|------------|
| 1 | ✓ | ✓ | ✓ | ✓ | |
| 2 | ✓ | ✓ | ✗ | ⚠ | |
| 3 | ✗ | ✓ | ✓ | ⚠ | |
| 4 | ⚠ | ⚠ | ✓ | ✓ | |
| 5 | ✓ | ⚠ | ⚠ | ✗ | |

Operation Data

Discharge: 207 Hrs, Charge: 483 Hrs, Idle: 1053 Hrs

Discharge (Ah): 49,321.9 Ah, Charge (Ah): 47,563.3 Ah, Discharge (kWh): 1,187.5 kWh, Charge (kWh): 2,283.0 kWh

Actual Readings

Temperature: Battery 31°C, Ambient 23°C

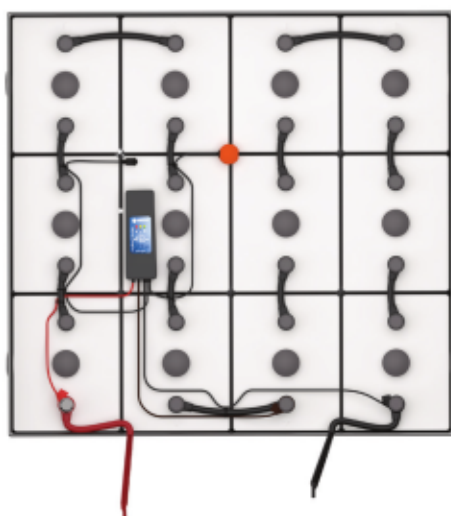
Voltage: (+) 2.08 vpc, (-) 2.10 vpc

Charge: 0.0A, 81% IDLE

Acid Level: OK

EASY TO INSTALL

The ABERTAX e²BMS is easy to install and is available for battery voltages ranging from 12V to 80V.



TECHNICAL SPECIFICATIONS

| | |
|---|--------------------------------|
| Nominal Supply Voltage: | 12V – 80V |
| Max. Operating Volt. (80VDC nom.): | 120VDC |
| Min. Operating Volt. (12VDC nom.): | 10VDC |
| Current Consumption @ 24VDC: | <40mA (Excluding GSM Modem) |
| Operational Temp. Range: | -30°C to +70°C |
| Protection Class: | IP65 |
| Approx. Weight (Standard Type) approx.: | 170g |
| Diameter Level Probe (Including Seal): | 5mm |
| Diameter Hole for Gauge Guard: | 10mm |
| Dim. Temp. - Sensor Housing approx. (excluding probe) | 30mm diameter, 20mm height |

ABERTAX® TECHNOLOGIES
Leaders in Battery Ancillaries

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