



PBT's Battery Sensors

Batteries come in all shapes, sizes, voltages, chemistries, and string orientations. For these reasons, we at PBT have continuously improved our catalogue of battery sensors to meet the growing demand and ever-changing nature of their customers' infrastructure. PBT has battery sensors for nearly all common chemistries, voltages, and battery types.

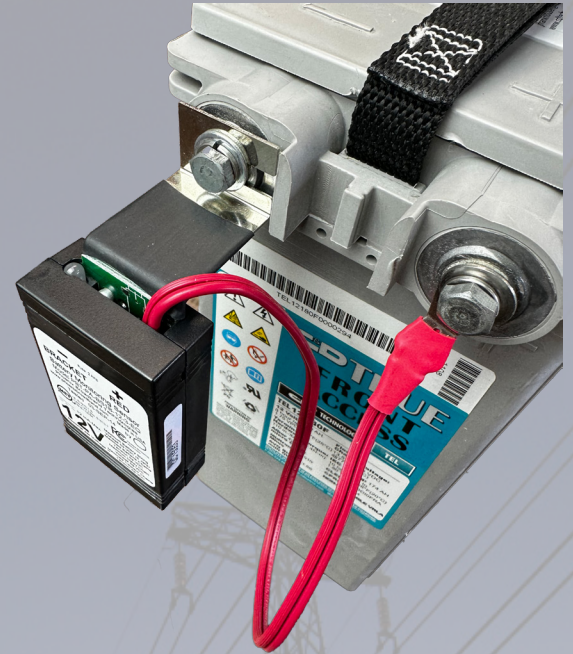
In applications like starting batteries, backup power systems, and uninterruptible power supplies (UPS), where lead-acid batteries are commonly used, maintaining optimal battery health is crucial.

Ohmic measurements can be part of a routine maintenance schedule to catch early signs of degradation, helping to prevent unexpected failures and extending the battery's useful life. However, not all ohmic measurements are the same, and depending on the frequency the measurement is taken, a much more accurate picture of the battery's SoH can be painted.

PBT's line of battery sensors take ohmic measurements that can capture key metrics of a lead-acid battery's performance:

- o Grid Corrosion
- o Early-Stage Sulfation
- o Electrolyte Condition
- o Mechanical hardware connections at the battery posts

In addition to ohmic measurements, PBT's line of battery sensors also take voltage and temperature measurements. Combined, these measurements give operators the data they need to allow for predictive maintenance and avoiding unexpected failures.



Mechanical Specifications

| Specification | 1 volt (NiCad) | 2 volt | 12 volt |
|---------------|---------------------------|---------------------------|---------------------------|
| Size | L=3.0 in, W=1.7in, D=.9in | L=3.0 in, W=1.7in, D=.9in | L=3.0 in, W=1.7in, D=.9in |
| Weight | 2.4 oz | 2.4 oz | 2.4 oz |
| Housing | Black ABS Plastic UL 94BO | Black ABS Plastic UL 94BO | Black ABS Plastic UL 94BO |

Contact Information

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Electrical Specifications

| Specification | 1 volt (NiCad) | 2 volt | 12 volt |
|--------------------------|--|--|--|
| Outing Range | -40 to +80C | -40 to +80C | -40 to +80C |
| Communications Interface | Optically isolated RJ-45 (1200V) | Optically isolated RJ-45 (1200V) | Optically isolated RJ-45 (1200V) |
| Battery Interface* | Positive: Ring terminal with 12-inch wire. Negative: Bracket or ring terminal with 12-inch wire. | Positive: Ring terminal with 12-inch wire. Negative: Bracket or ring terminal with 12-inch wire. | Positive: Ring terminal with 12-inch wire. Negative: Bracket or ring terminal with 12-inch wire. |
| Power Requirements | 0.65VDC - 3.3VDC | 1.65-3.0vdc | 8.0-16vdc |
| Power Consumption | <15ma nominal, 5A during admittance | <15ma nominal, 2/5A during admittance | <15ma nominal, .5/7A during admittance |

Indicators & Connectors

| Specification | 1 volt (NiCad) | 2 volt | 12 volt |
|---------------|----------------|--------------|--------------|
| Indicator | Bi-Color LED | Bi-Color LED | Bi-Color LED |

Communications

| Specification | 1 volt (NiCad) | 2 volt | 12 volt |
|-----------------------------------|----------------|-------------|-------------|
| Communications protocols | Proprietary | Proprietary | Proprietary |
| Communications physical interface | RJ-45 | RJ-45 | RJ-45 |

Measurement Specifications

| Specification | 1 volt (NiCad) | 2 volt | 12 volt |
|--|------------------|------------------|--------------------------------|
| Voltage Measurement Range | 0.65VDC - 3.3VDC | 1.65-3.0vdc | 8.0-16vdc |
| Voltage Resolution ("R") | 3mv | 3mv | 16mv |
| Voltage Accuracy | .5% ± R | .5% ± R | .5% ± R |
| Temperature Measurement Range | -40 to +80C | -40 to +80C | -40 to +80C |
| Temperature Accuracy Range | ± 2 C (R-/ +1 C) | +/-2 C(R-/ +1 C) | ± 2 C (R-/ +1 C) |
| Cell Admittance Measurement Range (units of Siemens) | (180 - 5K) | 500-12K (cell) | 30-800(bloc)...(180-4.8k cell) |
| Cell Admittance Accuracy | 5%** | 5%** | 5%** |
| Battery Voltage Equalization | 0.1 volt | 0.1 volt | 0.1 volt |

*Common configurations | ** Properly installed