MODEL AT-5000 EASYAPP

BATTERY POWERED ROTOR TELEMETRY

- Easy application and installation
- Small size – typically requires only 3 in (76.2 mm) radial envelope
- 95 hours for 1000 ohm and 75 hours for 350 ohm strain gages, continuous use
- Digital telemetry
  - high data integrity and noise immunity
  - exceeds legacy FM telemetry and slip rings
- Two systems (Channel A and B) can be used side-by-side for multi-channel requirements
- Manual shunt calibration invoked at transmitter

TYPICAL APPLICATIONS

- Torque testing for half-shafts / propshafts and driveshafts
- Replacement of slip rings and in-line torque transducers
- Torsional strain testing
- RTD temperature measurement
- Voltage measurement

TRANSMIT TRUE TORQUE DATA

A revolutionary advance in miniature telemetry, the AT-5000 Series replaces slip rings and legacy FM telemetry, offering a perfect solution for applications requiring dependable data retrieval off of rotating shafts and easy installation.

The AT-5000 EasyApp utilizes a small battery powered transmitter mounted using an aramid fiber strap to directly measure, digitize, and transmit true torque data from rotating half-shafts, driveshafts, and rotors of all sizes and speeds. The system is also used for temperature, voltage, and acceleration sensing.

The AT-5000 EasyApp uses a long-life lithium battery to excite a strain gage and to power the AT-5000 telemetry electronics on the rotating shaft. The small signal resulting from torque applied to the shaft is amplified, anti-alias filtered, and digitized (typically at 11,718 samples per second). The digital data is reliably RF transmitted off the rotating shaft to a nearby pickup coil, which is connected to a receiver. The receiver converts the digital data to an analog voltage output (adjustable from 0 +/- 1.0 to +/- 10 volts). This DC to 1 kHz (or optionally higher) bandwidth voltage output can be fed directly to a data acquisition system, FFT analyzer, or an oscilloscope.
## TRANSMITTER MODULES - SAMPLING RATE / TYPICAL BANDWIDTH

<table>
<thead>
<tr>
<th>Component</th>
<th>Specification</th>
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<tbody>
<tr>
<td>Channel A Transmitter</td>
<td>7812 samples per second; DC to 1.2 kHz frequency response; 4 kHz transmitter</td>
</tr>
<tr>
<td>Channel B Transmitter</td>
<td>11,718 samples per second; DC to 1.2 kHz frequency response (DC to 5 kHz available); 6 MHz transmitter frequency. (Channel A and B units can be co-located for 2-channel use.)</td>
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## TRANSMITTER MODULES - SENSOR INPUTS

### Full Bridge Strain Gage
- Including other bridge-style transducers, including pressure transducers, resistive accelerometers, load cells, torque transducers, etc.

### Temperature
- Type K thermocouple is standard. Standard range is -56 to -750 °F (-50 to 400 °C). RTD sensors can also be used; contact Accumetrics.

### Voltage
- 0 to 100 mV; external voltage divider can be provided for high voltage measurement.
- Up to 2700 V measure with optional external dropping resistor

## HOUSING INFORMATION

### Transmitter for > 0.9 in (22.86 mm) Diameter
- Radial Height: 0.78 in to 0.87 in (19.80 mm to 22.10 mm)
- Axial Length: 0.5 in (13.80 mm)
- Weight: 0.185 lb (0.085 kg)

### Transmitter for > 2.0 in (50.8 mm) Diameter
- Radial Height: 0.67 in to 0.76 in (17.00 mm to 19.30 mm)
- Axial Length: 0.5 in (12.70 mm)
- Weight: 0.152 lb (0.067 kg)

### Transmitter for > 8.0 in (203.2 mm) Diameter
- Radial Height: 1.0 in to 1.1 in max (25.40 mm to 27.95 mm)
- Axial Length: 0.5 in (12.70 mm)
- Weight: 0.233 lb (0.11 kg)

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Accumetrics, Inc. provides digital telemetry systems used in a variety of applications such as aerospace, marine, defense, agriculture, transportation, milling operations, energy, and power generation. Systems transmit sensor data from rotating structures using wireless techniques, preserving the integrity of the data even in environments with high levels of electromagnetic interference. Measurement solutions range from single channel products, such as strain gage torque measurements, to advanced custom multichannel systems. Accumetrics, Inc. is a subsidiary of PCB Piezotronics, Inc., and PCB® is a wholly owned subsidiary of MTS Systems Corporations.