



# SYSTEMS FOR SINGLE CHANNEL TELEMETRY

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 **ACCUMETRICS**  
AN AMPHENOL COMPANY

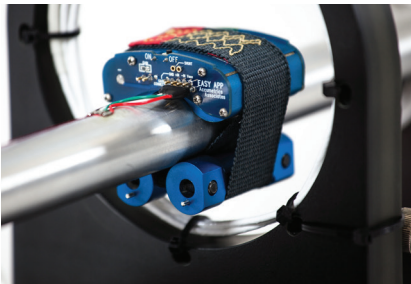
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# REAL-TIME WIRELESS DATA

- Automotive
- Agriculture
- Industrial Equipment
- Aerospace and Defense
- Mining

Accumetrics offers a simple, accurate method of conditioning and transmitting strain, thermocouple, or voltage signals on rotating or moving machinery while operating in a completely contactless mode. Accumetrics' wireless telemetry systems amplify analog sensor signals on rotary shafts, then digitize and transmit the data from the rotor to the stationary receiver, providing a reliable, EMI resistant alternative to slip rings and older FM telemetry systems. This configuration allows users to measure torque or other parameters without modification to the existing shaft. Accumetrics' telemetry systems preserve data integrity under the most challenging conditions.

## BATTERY POWERED SOLUTION: AT-5000 EASYAPP



Need to take measurements for a temporary application or in small spaces? Our AT-5000 battery-powered digital telemetry systems are mounted to a shaft using a heavy-duty aramid fiber strap. It measures, digitizes, and transmits data wirelessly off rotating half shafts, drive shafts and rotors to a stationary receiver which converts the digital data to an analog output voltage. These systems are

ideal for taking precise measurements for torque, temperature (Thermocouple and RTD), and electrical measurements on drive shafts or motor-generator field excitation.

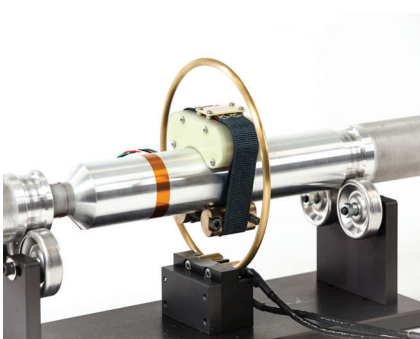
## BENEFITS

- Validate designs
- Improve designs
- Troubleshoot problems
- Predict or detect failures in components

## HIGHLIGHTS

- High data integrity and noise immunity
- Easy installation
- Small size
- Long operating life from internal battery (50 to 150 hours)
- Manual shunt calibration invoked at transmitter
- Two systems can be used side-by-side without interference

## INDUCTION POWERED SOLUTIONS: AT-4500 EASYAPP & AT-4400



Need to take highly precise measurements over a longer duration? We offer induction powered solutions ideal for long duration applications and permanent installations where accuracy, resolution, low drift, and low noise levels are critical. The induction power eliminates the need for batteries. Sensor data is directly measured and digitized on a rotating shaft then transmitted off-shaft using wireless technology.

These systems are ideal for taking precise measurements for torque, strain, temperature (RTD), and voltage on drive shafts or motor-generator field excitation. Designed for long term applications, the AT-4500 EasyApp mounts easily to the shaft with an aramid fiber strap. A single transmitter can be reused on varied shaft sizes. AT-4400 utilizes a rugged split clamp collar design which requires no maintenance, making it ideal for permanent installations.

## HIGHLIGHTS

- EMI resistant digital data transmission
- No rotation required to power transmitter
- Remote shunt calibration invoked at receiver
- Environmentally rugged housing
- High sample rate
- Analog voltage output (adjustable up to +/- 10 volts)



# RANGE OF SOLUTIONS

| SINGLE CHANNEL COMPARISON    |  |                               |                               |
|------------------------------|--|-------------------------------|-------------------------------|
|                              | AT-5000 EasyApp                                      | AT-4500 EasyApp               | AT-4400                       |
| Power                        | Battery  | Induction                     | Induction                     |
| Bandwidth                    | 1.2 kHz (5 kHz optional)                             | 2 kHz (up to 10 kHz optional) | 2 kHz (up to 10 kHz optional) |
| Samples Per Second           | Channel A – 7 812<br>Channel B – 11 718              | 26 485                        | 26 485                        |
| Frequency Data               | Channel A – 4 MHz<br>Channel B – 6 MHz               | 13.56 MHz                     | 10.17 MHz                     |
| Introduction Power Frequency | N/A  | 106 kHz                       | 6.78 MHz                      |
| Strain                       | Yes  | Yes                           | Yes                           |
| Temperature                  | RTD and thermocouple                                 | RTD                           | RTD                           |
| Voltage                      | Yes  | Yes                           | Yes                           |
| Outputs                      | ±10 V Analog   | ±10 V Analog                  | ±10 V Analog                  |
| Installation                 | EasyApp Aramid fiber strap                           | EasyApp Aramid fiber strap    | Split clamp collar            |
| Fits Shaft Sizes             | 0.9" and greater                                     | 2.0" and greater              | 0.9" and greater              |
| Standard Pick-Up Antenna     | 24" flexible pickup loop (standard) and ¼" available | ¼" brass antenna              | ¼" brass antenna              |
| Radial Envelope (typical)    | 3.0"   | 4.0"                          | 4.0"                          |
| Digital Resolution           | 12-bit   | 16-bit                        | 16-bit                        |

## ACCURATE, RELIABLE TELEMETRY SOLUTIONS

### AGRICULTURAL EQUIPMENT MEASUREMENTS

- Measure power take off (PTO) shaft torque on a tractor
- Continuously monitor torque to determine the power delivered to the PTO shaft for maximum power efficiency

### AUTOMOTIVE TORQUE MEASUREMENTS

- Monitor torque on a drive shaft, half shaft, or clutch assembly
- Determine torque spikes (for example, during piston firing or clutch engagement), horsepower, fuel efficiency, and power consumption
- Use data to prove out new designs or improve existing designs

### INDUSTRIAL DRIVE PROCESS MONITORING

- Monitor torque on a reversing cold rolling mills' main drive for optimization of the milling process
- Allow for maximum steel throughput without damaging motors and shafts

## COMMITMENT TO CUSTOMER SATISFACTION

As with all Accumetrics instrumentation, these telemetry systems are backed by our commitment to Total Customer Satisfaction with ongoing assistance from our application engineers and are backed by a no-risk policy that guarantees total customer satisfaction.





6 British American Boulevard, Suite 103-F, Latham, NY 12110 USA

accumetrix.com | telemetry@pcb.com | 888 684 0012 | +1 518 393 2200

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MD-0333-revB-0819