



# Single Channel Rotor Telemetry

For Automotive, Aerospace & Defense, Wind Power Plant, Test Benches, and Industrial Applications



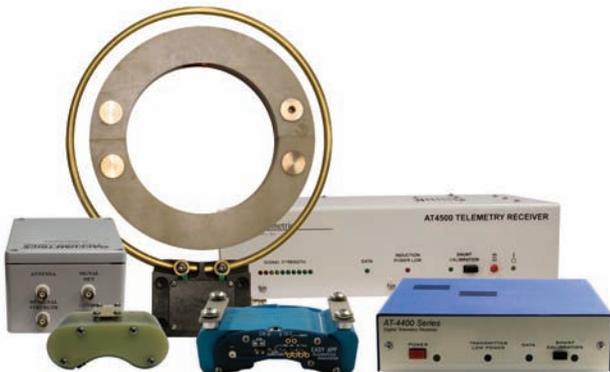
## Applications

- Automotive driveshaft / halfshaft testing
- Torsional vibration testing
- Marine drive shafts
- Dynamometers
- Industrial drives- process monitoring
- Drivetrain testing and monitoring
- Turbo machinery

## If it rotates, we can instrument it and provide real-time wireless data!

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. This configuration allows users to measure torque without interrupting existing shaft systems to install in-line torque transducers. Our comprehensive line of telemetry products includes battery and induction powered products to meet the most demanding applications in automotive, aerospace & defense, wind power plant, test benches and industrial applications.

As with all Accumetrics instrumentation, these telemetry systems are complemented with toll-free applications assistance, and are backed by a no-risk policy that guarantees total customer satisfaction or your money refunded.





## Battery Powered Solution

**Need to take measurements for a temporary application or in small spaces?** Our 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 of motor-generator field excitation.

### Solution Highlights

- High data integrity and noise immunity
- Exceeds legacy FM telemetry and slip rings
- Manual shunt calibration invoked at transmitter
- Two systems (Channel A and B) can be used side-by-side for multi-channel requirements



### AT-5000 EasyApp

- Easy application and installation
- Small size – typically requires only 0.7 to 0.9 inch radial shaft clearance
- Long operating life from internal battery – 150 hours for 1000 ohm strain gage (50 hours for 350 ohm gage)

**A loop pick-up coil placed around the AT-5000 EasyApp retrieves digital data for conversion to +/- 10 V analog (Pictured left)**

Products			
Feature	AT-5000 EasyApp	AT-4500 EasyApp	AT-4400
Number of channels	Channel A & Channel B can be used side by side (Same channel transmitters can be used with >1 foot spacing)	1 (Additional units can be used with >1 foot spacing)	1 (Additional units can be used with >1 foot spacing)
Power to transmitter	Battery	Induction	Induction
Sample rate (Sample/sec)	7812 or 11718	26484	26484
Bandwidth (AC/DC Coupled)	1.2 kHz (optional 5 kHz available)	2 KHz (up to 10 kHz available)	2 KHz (up to 10 kHz available)
Resolution	12 bit	16 bit	16 bit
Inputs			
Strain	Yes	Yes	Yes
Temperature	Type K or external RTD module	RTD	RTD
Voltage	Yes	Yes	Yes
Current	Yes (from shunt)	Yes (from shunt)	Yes
Pressure	Yes	Yes	Yes
Typical mounting	EasyApp aramid fiber strap	EasyApp aramid fiber strap	Clamp-on shaft collar
Outputs	Analog +/-10V with adjustable gain and offset	Analog +/-10V (Optional 10 kHz, +/-5KHz freq. output)	Analog +/-10V 10 kHz +/- 5 frequency output optional



## Induction Powered Solutions

**Need to take highly precise measurements over a longer duration?** We offer induction powered solutions ideal for long duration applications 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. The receiver outputs high bandwidth analog data. These systems are ideal for taking precise measurements for torque, strain, temperature (RTD) and voltage on drive shafts of motor-generator field excitation.

### Solution Highlights

- Environmentally rugged transmitter -- mud / ice / splash resistant
- High precision/ low noise measurements, 16 bit resolution
- High sample rate (26484 Sa/sec) with bandwidth up to 10 kHz (2 kHz is standard)
- Remote shunt Calibration invoked at receiver
- No rotation required for power
- Analog voltage output (adjustable up to +/- 10 volts)
- EMI resistant digital data transmission.



**AT-4500 EasyApp** mounted to shaft with a aramid fiber strap. (Pictured above)

### AT-4500 EasyApp

- Simple-to-apply aramid fiber straps for small or large shaft diameters
- A single transmitter can be reused on varied shaft sizes
- Excellent rotor-to-pickup-coil movement tolerance
- Environmentally rugged transmitter housing



**AT-4400 split collar** clamped around shaft for high-speed applications. (Pictured above)

### AT-4400

- High EMI immunity (usable near variable frequency drives)
- Flexible output gain, offset, and filtering
- High RPM capability
- Rugged collars ideal for longterm use



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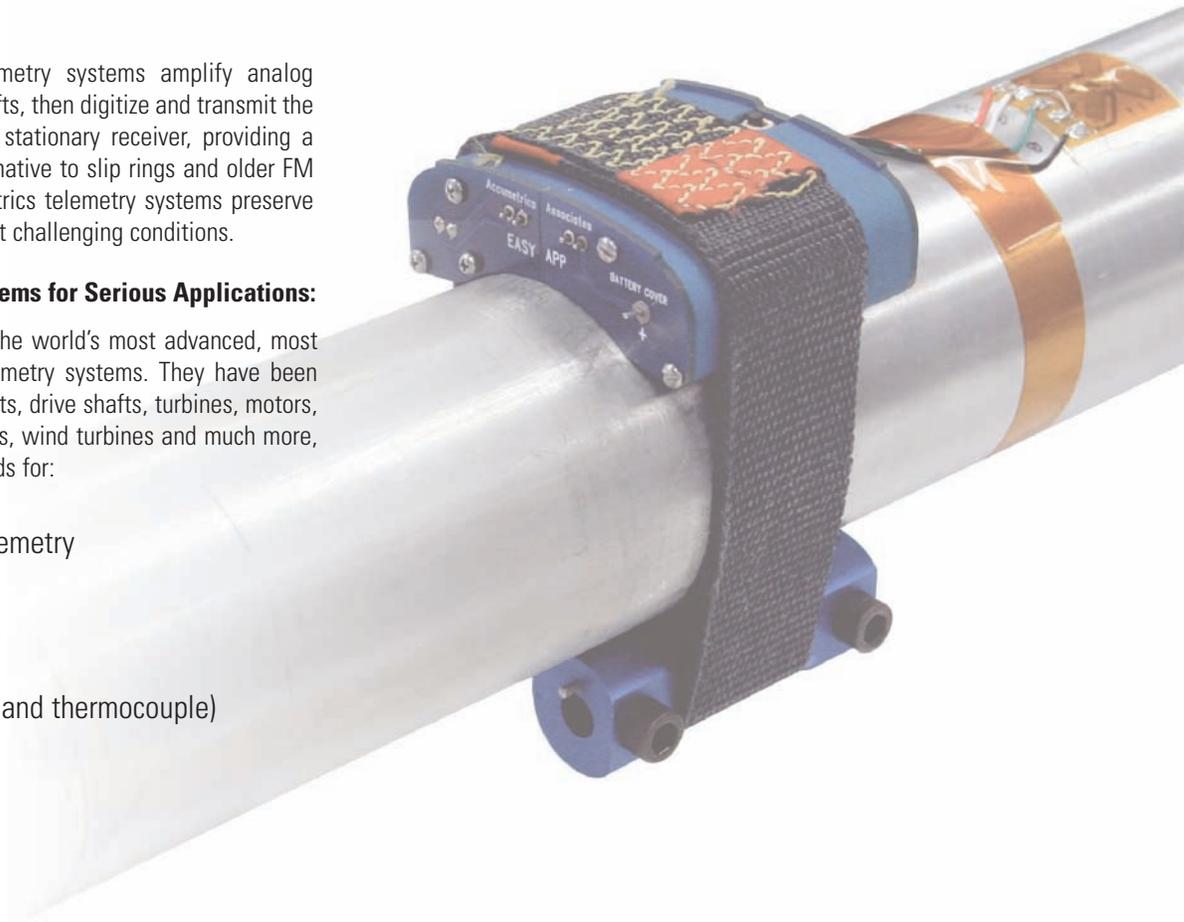
## Here's How:

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. Accumetrics telemetry systems preserve data integrity under the most challenging conditions.

## Advanced Telemetry Systems for Serious Applications:

Accumetrics manufactures the world's most advanced, most accurate, most reliable telemetry systems. They have been used to instrument half-shafts, drive shafts, turbines, motors, generators, helicopter blades, wind turbines and much more, and they can meet your needs for:

- Single channel telemetry
- Torque
- Strain, bending
- Pressure
- Temperature (RTD and thermocouple)
- Vibration



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

Phone 518-393-2200

Fax 716-684-0987 ■ Email [telemetry@pcb.com](mailto:telemetry@pcb.com)

Website [www.accumetrix.com](http://www.accumetrix.com)

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## About Accumetrics:

Accumetrics Inc., was founded in 1992, and became a part of the PCB Group in 2013. The company designs and assembles digital telemetry systems that transmit sensor data from rotating structures using wireless techniques, preserving the integrity of the data even in environments with high levels of electromagnetic interference.

We can provide a range of solutions from single channel products, such as strain gage torque measurements, to advanced multichannel systems that transmit data from hundreds of sensors.

No matter what industry you are in or what your telemetry requirements are, chances are that we will be able to provide you with a system that will meet your needs.

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