



## *High Resolution/ High Bandwidth Multi-Channel Rotor Telemetry*

### ***AT-7600 High Resolution/ Bandwidth Multi-channel Digital Telemetry***

Multi-channel high speed, high resolution and high bandwidth digital wireless telemetry for demanding dynamic measurement applications: gas/ steam turbines, aerospace and other needs. Based on standardized "building block" system architecture, the AT-7600 replaces sliprings for reliable sensor data transfer off of rotating structures.

#### **Applications:**

**Rotating shaft sensor applications where high bandwidth and high resolution are needed:**

- Turbine blade data
- Torsional vibration
- Pressure sensor data
- Noise and Vibration
- Engine monitoring
- High speed bearing research

#### **Benefits:**

- Dependable wireless replacement for sliprings
- 16 bit resolution on-rotor measurements
- Simultaneous sampling
- High bandwidth
- Modular construction allows large numbers of sensors to be monitored
- Rugged construction for high G force applications

Building on Accumetrics' AT-7000 system capabilities, the AT-7600 provides:

- Sensor inputs for dynamic and static strain gages, pressure sensors, RTD's, thermocouples, differential voltages/ currents.
- Instrumentation grade measurements; high accuracy data.
- Induction powered (no batteries)
- Scalable architecture: from 1 to over 600 sensor inputs.
- Auto-balancing of sensor bridges.
- Simultaneous sampling on all channels.
- 16 bit resolution plus high accuracy data
- Continuous high data throughput (Megabits per second. For instance, a system configuration of 8 channels of dynamic strain gages could allow each gage to be sampled at over 8500 samples per second)
- Anti-alias filtering and digitizing on the rotor.
- Digital data transmission off the rotating shaft provides signal robustness and EMI resistance.
- High bandwidth output data.
- Analog voltage or digital data outputs from a remote receiver provide compatibility with data acquisition systems.

#### **Overview:**

Sensor signals are amplified, anti-alias filtered and 16 bit digitized while on the rotor. A data stream of digital pulse code modulated data is wirelessly transferred off rotor by close proximity RF transformer coils (no rotation is needed). The digital data streams are carried by a coaxial cable to the remote receiver for digital output or conversion to analog voltage (+/- 10V typically). Software can be provided for control and data archiving.

## AT-7600 Telemetry System

High Resolution and Bandwidth, Multi-channel digital telemetry



**Transmitter** in split clamp-collar format  
(Shown with multiple modules, epoxy-glass (G10) construction, and stationary coil/ loop also of a split clamp G10 construction)



4 channel Data Acquisition Module example  
--Acquires dynamic or static sensor data  
--Modular design for varied sensor inputs



**Stationary pickup coil**  
designs for wireless power and data transfer

- Machined Phenolic/G10
- 1/4" solid brass loop



### **Receiver:**

--Receives digital data from stationary pickup coil structure  
--Converts data to Analog voltage or standard digital data output  
--Provides control communication  
--Provides RF Power to stationary pickup coil  
-Packaged in NEMA enclosure or rackmount designs



Contact us: [Telemetry@Accumetrix.com](mailto:Telemetry@Accumetrix.com)  
[www.Accumetrix.com](http://www.Accumetrix.com)  
Phone: 518-393-2200 Fax: 518-393-3622  
409 Front Street, Schenectady NY 12305