

ATi 2100/3100 SERIES

Digital Radio Telemetry System



Digital, Band-On, Rotating Telemetry System

RECHARGEABLE BATTERY POWERED

FEATURES

- Superior Digital RF Technology provides clean data that is free of drop-outs.
- No noisy or problematic slip rings.
- Easily moved from shaft to shaft.
- Transmits Sensor Signals via radio Transmitter to a Stationary Receiver.
- No Shaft Modifications Required.
- A Kevlar Band secures the Transmitter and Battery to the shaft.
- Immune to electromagnetic interference, dust, oil, moisture, etc.



Model 2100R-B Non-Pivoting Band-On System shown with Kevlar Band, Transmitter module, Rechargeable Lithium Battery Pack and Receive Antenna.

Band-On Telemetry System Facilitates Quick Installation

The ATi Band-On Telemetry System transmits real-time sensor data from a rotating shaft, while the system is running. The system consists of one or more rotating signal conditioner/transmitter modules with battery pack and a stationary Receiver. Rotating Transmitters are available to interface with most any type of sensor including strain gages, thermocouples, thermistors, RTDs and accelerometers.

The Kevlar band is available in different lengths so this easy to use Band-On system can accommodate just about any diameter shaft 2.3" or larger. This system can operate at up to 2500 G's.

Data is transmitted via a license-free Digital RF telemetry link for drop-out free reliability.

Transmitter power is supplied by a rechargeable Lithium battery pack. A one-channel strain gage

Transmitter connected to a 350Ω bridge can operate continuously for ~12 hours per charge. The Remote On/Sleep feature greatly extends operation when continuous data collection is not required.

The stationary Receiver can be powered from 12 VDC or 110 VAC and includes a filtered analog output for connection to a Data Acquisition System. Its multi-function digital backlit LCD display can be scaled to read out in engineering units.

Each system comes complete with all required accessories including antennas, AC power adapter or DC power cord for the Receiver, Battery Charger, and all required cables.

ATi can provide turn-key systems including strain gage application and NIST traceable calibration documentation.

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Features and Specifications

SYSTEM

Sample Rate (1-Channel) ... up to 6500 Samples/sec
 Integral Non-Linearity $\pm 0.10\%$
 Repeatability $\pm 0.05\%$
 Maximum Error $<0.25\%$ Full Scale

RECEIVER: MODEL 2125B

Power 12VDC / 110VAC
 (Other Options Available)
 Outputs 0-2, 5, 10; $\pm 2, 5, 10$ VDC
 (0-20 & 4-20 mA Optional)
 Display Multi-function, Digital, Backlit LCD
 Output Ripple < 2 mV
 Size 8.0"L x 5.0"W x 3.48"H



Model 2125B
Receiver

TRANSMITTER

Types Available Strain Gage, Voltage, RTD
 Thermocouple, Thermistor, Accelerometer
 Power Rechargeable Lithium Battery Pack
 Zero Drift 0.02% / °C
 Span Drift 0.02% / °C
 Operating Temperature Range -20 to 70°C
 Strain Gage Excitation 2mA constant current

ATi Transmitter Model Numbering Format				
Series	TX Type	Sensor Type	Power	Special (separate by "/")
21=Single Channel 31=Multiplexed	4=Rotating Point 5=Point to Point	0=Strain Gage* 1=Voltage* 2=Thermocouple 3=Accelerometer* 5=RTD*	B = Primary Battery R = Rechargeable Battery ** I = Inductive	2,4,8 = Channel Count (31xx only) J,K,T = Thermocouple Type R = RMS Voltage
Standard Sensor Excitations: Types 0, 1, 5 (1.9 VDC), Type 3 (1 mA) Custom values are available.				

Additional Features

* **Remote Calibration:** Pressing a button on the Receiver's front panel places the Transmitter in CAL mode for approximately 15 seconds.

Strain Sensors - A shunt calibration resistor is connected to one leg of the bridge simulating a known load. (Sensor types 0, 1, 3 and 5 only)

Voltage Output Sensors - Sensor output voltage is replaced by a reference voltage to simulate the load.

Accelerometer/Current Output Sensors - A known constant current source is substituted for the current output sensor.

** **Remote On/Sleep:** Allows the user to manually place the transmitter collar in an ultra-low power sleep mode which greatly increases battery life. This feature is manually controlled via the receiver's front panel display and pushbuttons. (Battery powered transmitters only.)



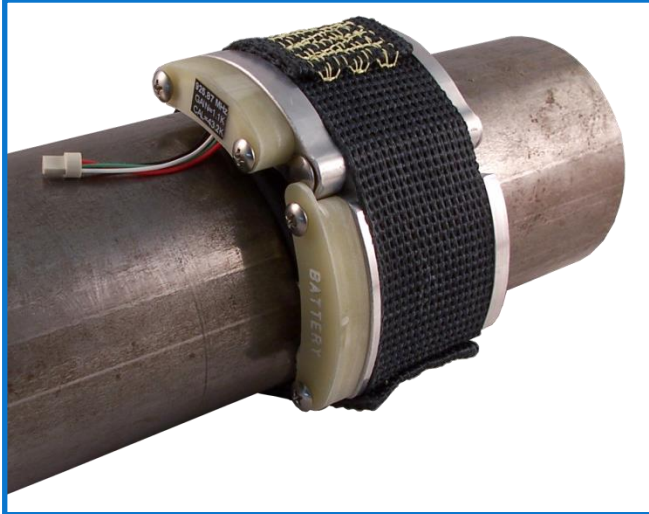
Rechargeable system power components Non-pivoting Band-On system shown with included batteries and AC/DC powered charger.

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Available in both Pivoting and Non-pivoting Versions



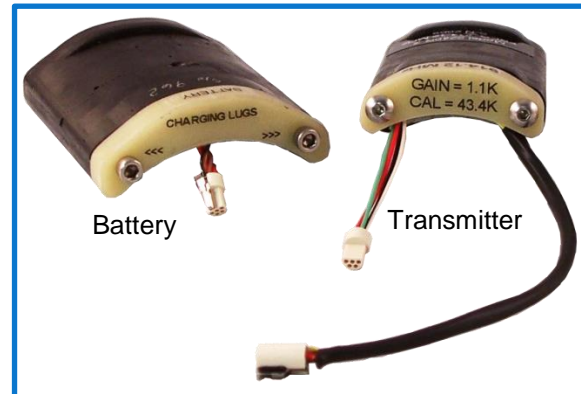
Model 2100B-BH Pivoting Band-On System Installed on a Shaft



Model 2100R-B Non-Pivoting Band-On System Installed on a Shaft



Pivoting Band-On Housing with Transmitter and Rechargeable Lithium Battery Pack



Non-Pivoting Transmitter Module with Rechargeable Lithium Battery Pack



The Model RCBM adjustable cinching device (shown attached to straps) is common to both types of Band-On systems and holds the modules tight to the shaft



Model S Kevlar Straps can be made for just about any size shaft (> 2.3" dia) enabling the same transmitter system to be used in many different applications

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Band-On Applications



The photo above shows the non-pivoting Band-On system installed on a prop shaft. Note the location and orientation of the receive antenna (highlighted yellow).

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