

ATi 2100/3100 SERIES

Digital Radio Telemetry System



Induction Powered Digital Rotating Telemetry System

For Accelerometers, Strain Gages, Thermocouples, RTD's and Voltage Signals

FEATURES

- Transmits Sensor Signals via Digital Radio Transmitter to a Stationary Receiver
- Digital Transmitters are available for Strain, Torque, Pressure, Voltage, Temperature, Vibration.... Most Any Type of Signal
- No Shaft Modifications are Required
- Clamp-on Collar houses Digital Transmitter(s) and Inductive Power Conversion Circuitry. Contains embedded transmitting antenna.
- Eliminates Cumbersome, Problematic, and Maintenance Prone Slip Rings
- Remote Shunt Calibration Available
- Multi-Channel Digital Systems Available
- Immune to electromagnetic interference, dust, oil, moisture, etc.



Model 2125iR Receiver shown with Model 2110i Induction Powered Collar assembly attached to a shaft.
(2140i Transmitter installed)

Miniature Digital Telemetry Transmitters Allow Sensors to be Wireless

ATi's 2100/3100 Series Digital Telemetry systems are ideal for **transmitting data from rotating shafts or machinery** to a stationary receiver. The 2140 & 3140 Miniature Digital Strain Gage Transmitters can be connected to strain gages adhered to your shaft to transmit shaft torque and thrust, **while the system is running.**

Power is supplied to the Transmitter Inductively for continuous, non-interrupted measurements. **No batteries are required** because the system's **Induction Power Supply (IPS)** delivers power through a stationary loop antenna to a rotating antenna. The rotating loop antenna and Induction Power Converter are embedded into the Model 2110i Collar Assembly. Single piece

and split collars are available to clamp or bolt to most any shaft size.

The Model 2125i Digital Receivers can use one or more single-channel Transmitters while the Model 3125i Digital Receivers use multiplexed, multi-channel Transmitters. They have a multi-functional digital backlit LCD with a user programmable filtered output. Various system parameters such as transmitter operating frequency, receiver output filtering and remote shunt calibration are controlled from a menu system displayed on the LCD.

All Receiver models can be set up for 0-2, 0-5, 0-10, ± 2 , ± 5 , ± 10 VDC outputs. 0-20 and 4-20mA analog outputs are optional. The Receiver can be powered direct from 12 VDC or with the included 110 VAC power adapter.

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Features and Specifications

System

1 Channel 6400 samples/sec
2 Channels 3200 samples/sec/ch
4 Channels 1600 samples/sec/ch
Resolution 14 Bits
Other configurations (number of channels, sample rates and resolutions) are available
Integral Non-Linearity $\pm 0.10\%$
Repeatability $\pm 0.025\%$
Maximum Error $< 0.15\%$ Full Scale

Miniature Digital Telemetry Transmitters

Power 500KHz Induction Power
Zero Drift $0.02\% / ^\circ\text{C}$
Span Drift $0.02\% / ^\circ\text{C}$
Operating Temperature Range -40 to $140\text{ }^\circ\text{C}$

Model 2030i Induction Power Supply (IPS)

Power Supplied by 2125i Receiver
Output 500 kHz Induction Power
Size 6.29"L x 2.95"W x 2.25"H

(The IPS can be optionally located inside the Receiver or Stationary Loop Antenna base)



Multi-Channel Receivers are also available.

Receivers: Model 2125i, 2125iR, 3125i, 3125iR

Power 12VDC / 110VAC
Output 0-2, 5, 10; $\pm 2, 5, 10$ VDC
..... (0-20, 4-20 mA Optional)
Display Multifunction, digital, backlit LCD
Output Ripple < 2 mV (Filtered)
Size 8.0"L x 5.0"W x 3.5"H

ATi Transmitter Model Numbering Format

31 4 2 B - 4/J					
Series	TX Type	Sensor Type		Power	Special (separate by "/")
21=Single Channel	4=Rotating	0=Strain Gage*	5=RTD*	B = Primary Battery	2,4,8 = Channel Count (31xx only)
31=Multiplexed	5=Point to Point	1=Voltage*	6=Frequency	R = Rechargeable**	J,K,T = Thermocouple Type
		2=Thermocouple	7=LVDT	I = Inductive	R = RMS Voltage
		3=Accelerometer*	8=Current*		
		4=Thermistor*	9=Contact		
Standard Sensor Excitations: Types 0, 1, 5 (1.9 VDC), Type 3 (1 mA), Type 8 (10 VDC) 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.

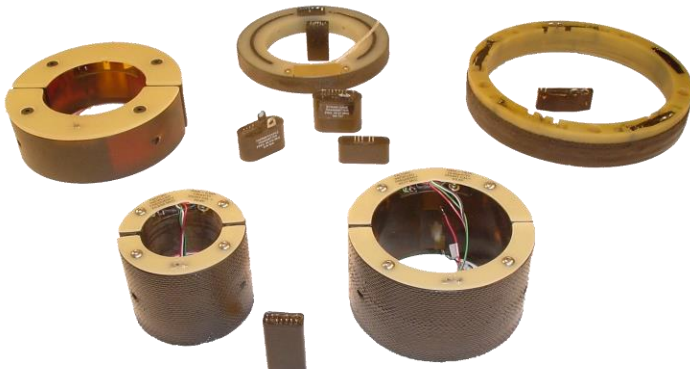
Strain Sensors - A shunt calibration resistor is connected to one leg of the bridge simulating a known load. (Sensor types 0, 1, 3, 4, 5, 7 & 8 only)

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.

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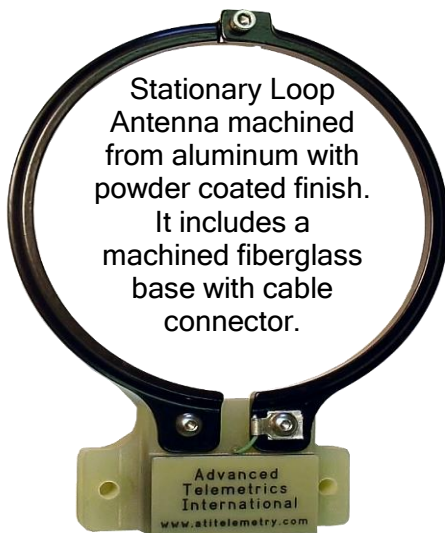
Inductively Powered Telemetry Collars are available in just about any shape and size to fit most any size shaft.



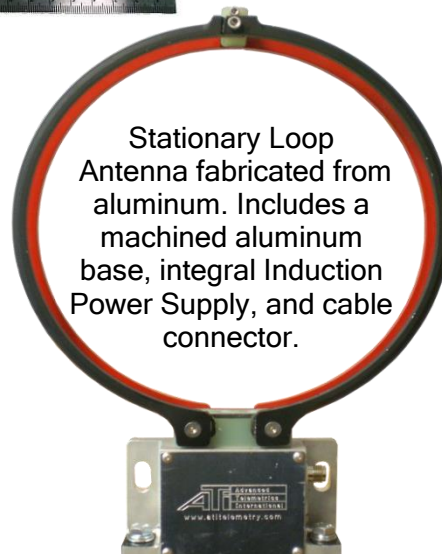
Inductively Powered Digital Telemetry System installed on a truck drive train.



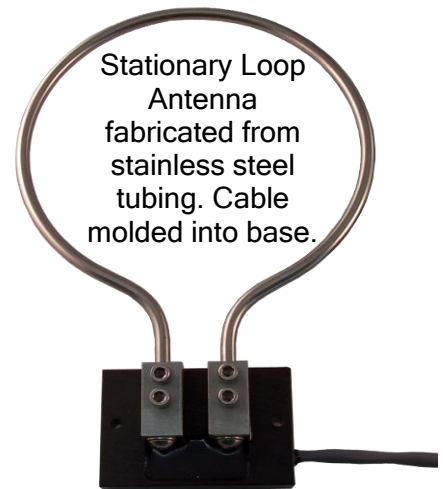
Miniature Digital Transmitters are available in many shapes and sizes to fit your application.



Stationary Loop Antenna machined from aluminum with powder coated finish. It includes a machined fiberglass base with cable connector.



Stationary Loop Antenna fabricated from aluminum. Includes a machined aluminum base, integral Induction Power Supply, and cable connector.



Stationary Loop Antenna fabricated from stainless steel tubing. Cable molded into base.

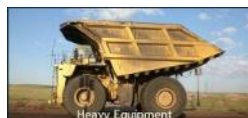
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Petroleum



Power Generation

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