

# ATi 2100 SERIES

## Digital Radio Telemetry System



# Inductively Powered, Digital Half-Shaft Telemetry System

### The Efficient Solution for Rotating Measurements



Miniature Digital Half-Shaft Transmitter Collar (attached to half-shaft) shown with 2125iR Digital Receiver

## System Converts Half-Shaft into Rotating Torque Sensor (also suitable for axle shafts)

The 2110i-XCL Miniature Digital Half-Shaft Telemetry Collar transmits torque signals from rotating shafts to a stationary Receiver. It connects directly to strain gages adhered to the shaft converting it to a torque sensor. This allows it to transmit shaft torque **while the vehicle is operating**. This testing tool is used by automotive and racing engineers to obtain real-time torque measurements from vehicle drivelines. The system can be installed on most any size shaft and is completely field installable by the user.

Power is supplied to the Telemetry Collar inductively through a stationary loop adapter for continuous, uninterrupted operation. The Model 2125iR Digital Receiver features an integral induction power supply, built-in speaker and a digital backlit LCD display which can be scaled to read out in Engineering units. The Receiver can be powered from 12 VDC or 110 VAC and provides a filtered analog output signal for use with almost any data acquisition system.

The stationary loop adapter is made from a self-lubricating material while the two-piece collar is made from Fiberglass composites. There are no mechanical parts to wear out as found in slip rings making it

lightweight and maintenance free. Requiring **only 0.50" clearance**, it can be placed almost anywhere on the shaft.

### FEATURES

- Transmits Sensor Signals via Digital Radio Transmitter to a Stationary Receiver.
- **No Shaft Modifications required**; Collars are available for most any shaft size.
- Split Transmitter Collar clamps directly to half-shaft or axle shafts. Contains embedded transmitting antenna.
- No moving parts or noisy, maintenance prone slip rings.
- Quick and easy user installation.
- **Turn-key systems are available.** Send us a shaft and we will instrument it for you. NIST traceable calibration supplied.
- Multi-Channel Systems are available.

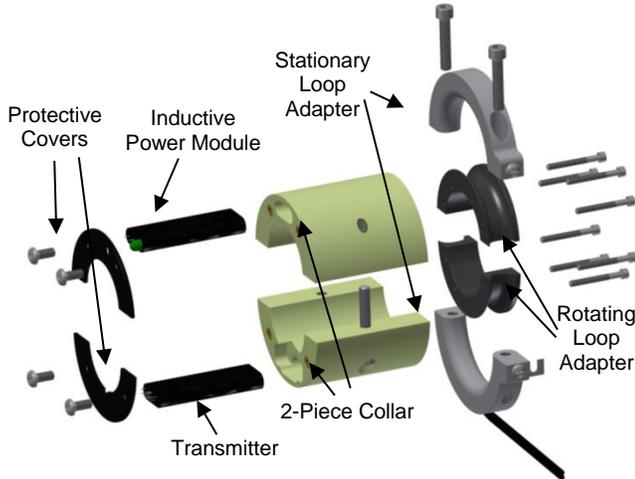
### Features and Specifications

#### SYSTEM

Sample Rate.....up to 6400 samples/sec  
 Resolution ..... 14 bits  
 (Other Rates and Resolutions are Available)  
 Integral Non-Linearity ..... ± 0.10%  
 Repeatability..... ±0.025%  
 Maximum Error.....< 0.15% Full Scale

#### RECEIVER: Model 2125iR

Power ..... 12 VDC / 110 VAC  
 Output ..... 0-2, 5, 10; ± 2, 5, 10 VDC  
 (4-20 mA and 0-20 mA Optional)  
 Display ..... Multi-function Digital Backlit LCD  
 Output Ripple ..... < 2 mV  
 Size ..... 8.0"L x 5.0"W x 3.48"H



#### MINIATURE TRANSMITTER COLLAR

*Requires only 0.500" clearance!*

Power ..... 500KHz Induction Power  
 Zero Drift ..... 0.02% / °C  
 Span Drift ..... 0.02% / °C  
 Operating Temperature Range ..... -40 to 140°C

- Included with the system is the Stationary Loop Adapter, a non-rotating slip collar which clamps over the back end of the rotating collar.
- Multi-Channel Receivers are available.



ATi Transmitter Model Numbering Format				
31 4 2 B - 4/J				
Series	TX Type	Sensor Type	Power	Special (separate by "P")
21=Single Channel 31=Multiplexed	4=Rotating 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.				

\* **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.

### ATi Serves Almost Every Industry Around the Globe!



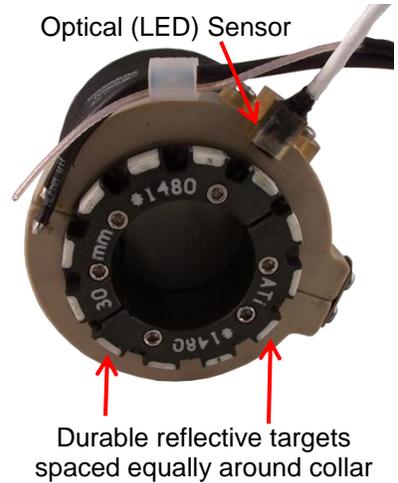
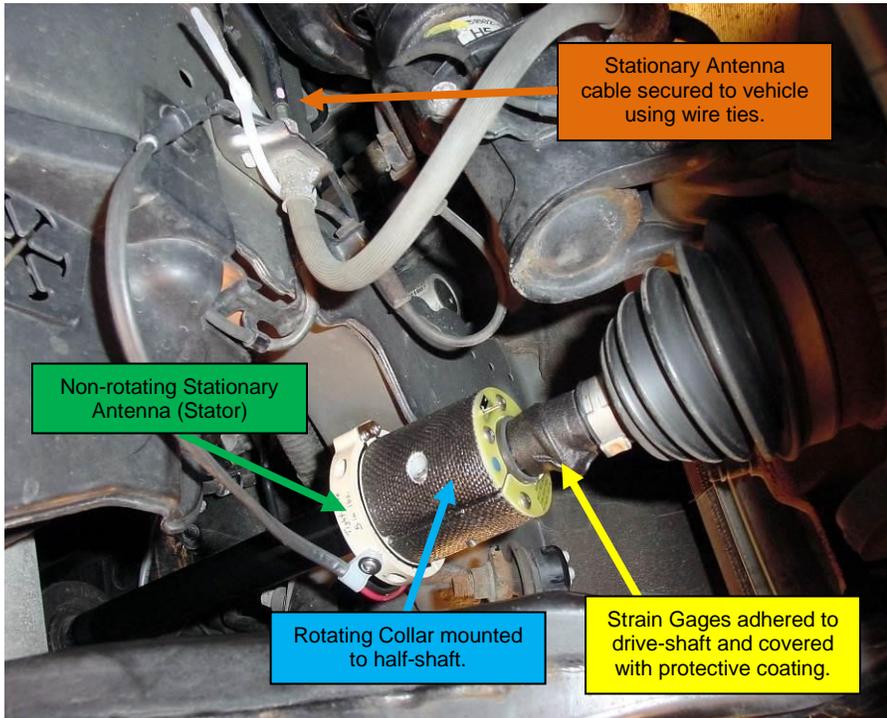
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## Digital Radio Telemetry System



Solve your telemetry problems today. Have ATi build a standard or custom Telemetry System for your application.



Optional optical speed sensor outputs 12 conditioned pulses/rev



Rotating Fiberglass Collar has embedded Transmitter, Antennas and Inductive Power Circuitry



The Non-rotating, Stationary Adapter is made of Self-Lubricating Material and opens for easy



Complete Half-Shaft Collar with 2-Piece Stationary Adapter

