

ATi 2100/3100 SERIES

Digital Radio Telemetry System

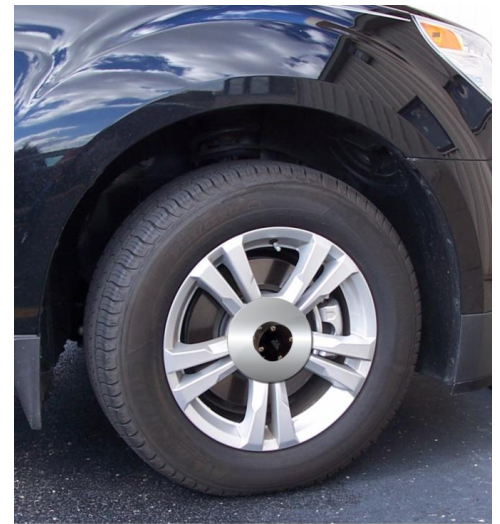


Multi-Channel, Wheel-Mounted, Digital Telemetry System

Attaches to Wheels for Real-Time Rotating Measurements

FEATURES

- Transmits acceleration, pressure, temperature and most any other measurement from a rotating wheel.
- Configurable with 1, 4, 8 or 16 channels. A single collar can interface with multiple sensor types.
- Optional built-in angular wheel position sensor is available with resolutions up to 0.1 degree.
- Rotating components are powered by a rechargeable battery pack.
- Can be mounted to front or rear wheels. Accommodates all suspension travel and steering angles.
- Extremely rugged design capable of handling the harshest environments.
- Adapter plate permits mounting to any lug pattern.



Telemetry System Transmits Measurements from Vehicle Wheels

ATi's Digital Rotating Wheel Sensing system is designed for the measurement of critical parameters from a Rotating Wheel. In today's highly competitive automobile marketplace, passenger safety and comfort are more important than ever and have higher consideration when consumers are choosing a new vehicle.

The system comes in a multitude of configurations and allows manufacturers of wheels and tires, as well as suspension and drive train components, to accurately measure various parameters to best optimize the performance of their product.

Designed to mount directly on the existing wheel without any modifications to the wheel or hub, the system can be used to provide data on tire characteristics, suspension systems, brake performance, drive train and more. Multiple sensors (ex. torque, brake temperature, vibration) can simultaneously

interface with the same Telemetry Collar! Able to withstand the harsh environments of automobile on or off-road testing, ATi's systems can operate over the full speed range of cars, trucks and SUV's. Suitable for racing applications as well.

The optional angular encoder determines the angular position of the wheel. The modular design allows transmitters to be easily swapped so different parameters or test setups can be easily configured.

Adapter plates are available for 4, 5 or 6 bolt lug patterns and include special Lug Nuts designed to replace stock lug nuts.

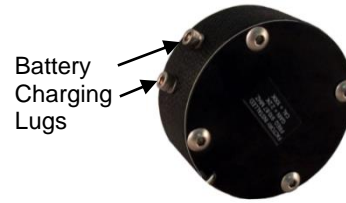
Consisting of one or more Transmitters and Receivers, the system can accommodate acceleration, pressure, temperature and most any other measurement. Miniature Transmitters are contained in a rotating collar (housing) that can be powered from a rechargeable battery pack or non-rechargeable

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battery. The Transmitters provide the sensor excitation and signal conditioning and transmit the signals via telemetry to a Receiver unit located within the vehicle cab for data collection and analysis. Transmitters are available in 1, 2, 4 or 8 channel configurations.



Rechargeable Battery Telemetry Collar with Protective Cover Plate

Features and Specifications

SYSTEM

4 Channels - Strain Gage.....1600 samples/sec/ch
 4 Channels - Thermocouple.....40 samples/sec/ch
 (Other configurations are available)
 Resolution14 Bits
 Integral Non-Linearity..... ± 0.10%
 Repeatability ± 0.025%
 Maximum Error < 0.15% Full Scale

RECEIVER: Models 2125, 2125-4, 3125-4 3125-8/2, 3125-16/4

Power 12 VDC or 110/220 VAC 50/60 Hz
 Display.....Multi-function Digital Backlit LCD
 Channels1, 2, 4, 8, 16 or more
 Analog Output ±2, ±5, or ±10 VDC
 (4-40 mA outputs are optional)
 Output Ripple < 2 mV
 Output Low Pass Filter..... Menu Selectable
 Operating Frequency Menu Selectable
 Size300mm W x 90mm H x 255mm D

TRANSMITTER: Model 3140R-4

Power Rechargeable Lithium Battery Pack
 Sensors 4 Full Bridge Strain Gages, Multiplexed
 Zero Drift0.01% / °C
 Span Drift 0.01% / °C
 Operating Temperature Range -40 to 80° C
 Output Low Pass Filter..... Set at the factory
 Operating Frequency Set at the factory

TRANSMITTER: Model 3142R-4K

PowerRechargeable Lithium Battery Pack
 Sensors 4 Type-K Thermocouples, Multiplexed
 Zero Drift 0.01% / °C
 Span Drift 0.01% / °C
 Operating Temperature Range -40 to 80° C
 Output Low Pass Filter..... Set at the factory
 Operating Frequency Set at the factory



Front and Back Views of ATi's Intelligent Battery Charger/Balancer

ATi Transmitter Model Numbering Format

Series	TX Type	Sensor Type	Power	Special (separate by "/")
21=Single Channel 31=Multiplexed	4=Rotating 5=Point to Point	0=Strain Gage* 1=Voltage* 2=Thermocouple 3=Accelerometer*	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.

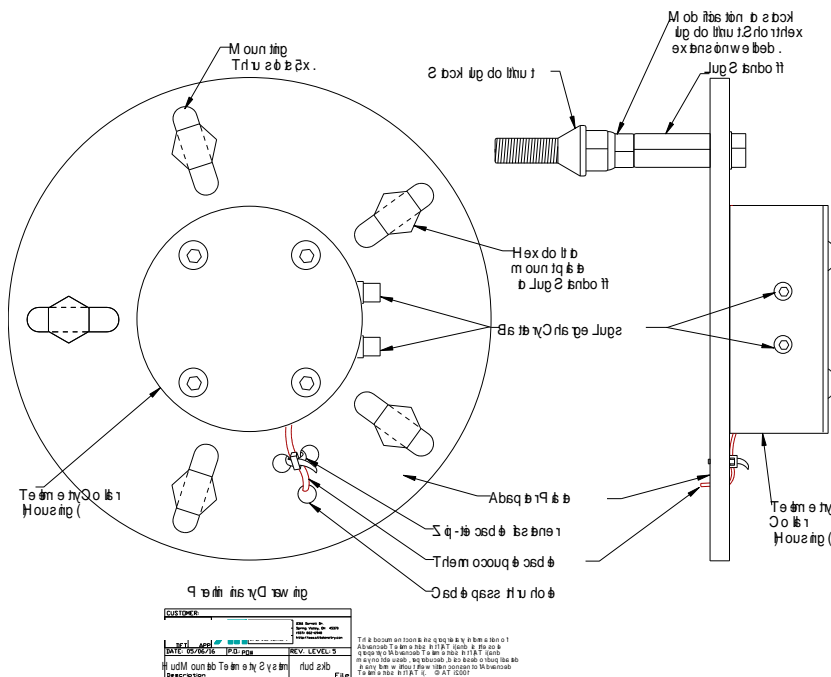
Additional Features

Remote Calibration: Selecting the +CAL or -CAL entry in the Receiver's Setup Menu places the Transmitter in CAL mode for approximately 15 seconds. A shunt calibration resistor is connected to one leg of the bridge simulating a known load (Sensor type 0) or a known reference voltage simulates sensor output (Sensor types 1 and 3).

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.

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Typical Hub Mounted Telemetry Collar with Adapter Plate



16-Channel Receiver for Rechargeable Battery Powered Transmitters

Turn-key systems are also available!

Send us a shaft or component. We will instrument it, install the telemetry components, calibrate it and ship it back to you complete with a NIST traceable Certificate of Calibration.

ATi Serves Almost Every Industry Around the Globe!



While viewing this PDF document, click on these hyperlinks to go direct to ATi's associated website pages.

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