

ATi 2140SE SERIES

Digital Wireless Steering Effort Sensor



Digital Steering Effort Sensor

The Efficient Solution for Rotating Measurements

FEATURES

- **Easy to Mount.** Attaches directly to stock steering wheel with cable ties.
- **Truly Non-Contact** - no slip rings or stay rods. Torque signal is coupled from the steering wheel via digital radio telemetry.
- **Operates in any environment.** The system is extremely durable and can withstand harsh conditions.
- **Available for Most Any Size Steering Wheel.** Allows airbag deployment.
- **No Slip Ring Noise or Maintenance**
- **Shunt Calibration**
- **Long Life** - No Maintenance



Model 2140SE Steering Effort Torque Sensor shown with optional incremental optical encoder

Telemetry Transmitters Allow Sensors to be Wireless

ATi's Digital Steering Effort Telemetry Systems are used to measure steering wheel torque continuously, utilizing a strap-on steering wheel sensor that transmits a real time torque measurement via digital radio telemetry. The sensor is available in most any torque capacity, and transmits the torque signal to a portable telemetry Receiver. The sensor has a built-in telemetry Transmitter which is powered by a standard 9 volt battery.

Quick installation. The sensor is quickly and easily attached to the stock steering wheel with cable ties and does not require any modifications to the vehicle. A rubber whip style receiving antenna can be mounted most anywhere within 3 feet of the sensor and connects to the Receiver. The Receiver supplies a filtered analog output for connection to recording devices.

Highly reliable, durable and Immune to the Environment. The system can be used in most

any environment and is immune to shock, vibration and extreme conditions. Since **no slip rings or stay rods are used**, the system is virtually maintenance free and will operate for years of trouble free service. Our systems have proven worthiness in numerous military and race car applications and can withstand the harshest of conditions. Our telemetry systems are the preferred method for in-vehicle torque monitoring at most of the North American powertrain facilities.



Model 2125LP Receiver with Antenna and Cable

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Features and Specifications

SYSTEM

Sampling Rate up to 2083 Samples/Second
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

RECEIVER: Model 2125B

Power 12 VDC or 110 VAC
Output 0 to ± 2 , 5 or 10 V
Signal Coupling RF via antennas
Low Pass Filter User selectable
Output Ripple <2 mV (Filtered)
Display Multi-function Digital Backlit LCD
Size 6.0"L x 5.0"W x 3.5"H

TORQUE SENSOR: Model 2140SE

Signal Coupling RF Telemetry
Power Rechargeable Li-Po Battery
Usable Temp Range -20 to 80°C
(Due to Battery)
Compensated Region 0 to 60°C
Temp effect on zero $\pm 0.01\%$ per $^{\circ}\text{C}$
Temp effect on span $\pm 0.01\%$ per $^{\circ}\text{C}$
Battery Life 250 hours of on-time per charge



Installed view of Model 2140SE Steering Effort Torque Sensor shown with optional incremental optical encoder.

TRANSMITTER: Model 2140B Strain Gage

RF Frequency 900 MHz Band
Modulation Type Digital
Power Source Rechargeable Li-Po Battery
Operating Temperature Range -40 to 150°C
Battery -40 to 80°C

Temperature Coefficient:

Zero 0.01% Full Scale per $^{\circ}\text{C}$
Span 0.01% Full Scale per $^{\circ}\text{C}$
Input 4 arm Wheatstone Bridge
Excitation 2.5 volts DC

ATi also offers telemetry systems for in-vehicle torque monitoring for drive-shafts or half-shafts.

ATi Serves Almost Every Industry Around the Globe!



Automotive



Aviation / Aerospace



Heavy Equipment



Industrial / Manufacturing



Marine



Military



Petroleum



Power Generation

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.