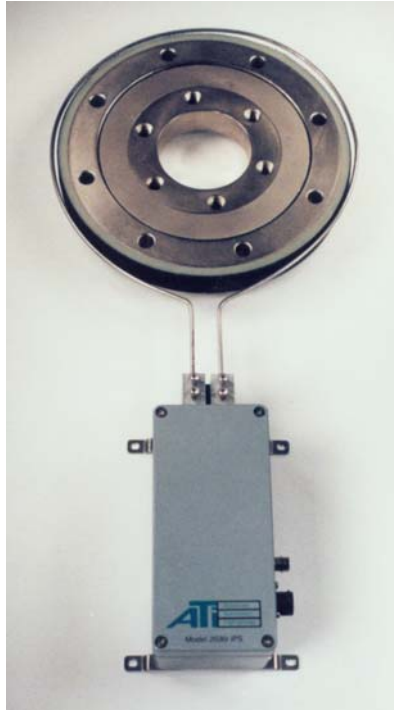


## Non-Contact TORQUE SENSING SYSTEM

### *The Efficient Solution for Rotating Measurements*



*Model 2140D Torque Sensor shown with 2030i Induction Power Supply*

➤➤ **ATi's Torque Sensing Systems** are utilized in applications where conventional rotary torque transducers are not practical due to excessive shaft speeds, vibration, and dirty, oily environments. These factors pose major problems for conventional foot-mounted rotary torque transducers' bearings and slip rings.

**Highly reliable and durable.** RF Telemetry is used for data transfer while Induction Power is used for power transfer to the rotating sensor. These technologies permit excessive movement between the rotating sensor and stationary loop antenna with no affect on the signal quality – minimal alignment between the stationary and rotating components is required.

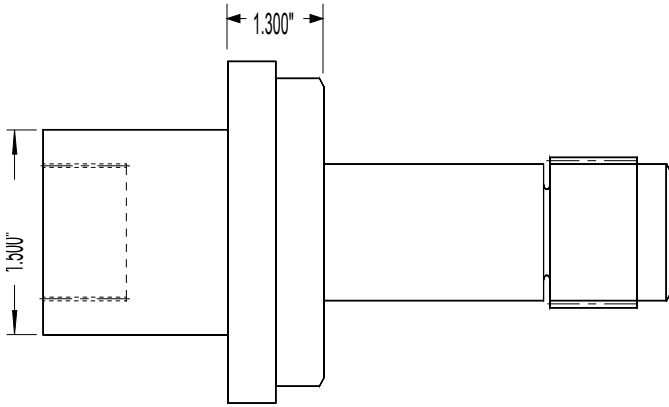
**Immune to the Environment.** The RF Telemetry and Induction Power are also immune to dust and oil build-up, unlike Infrared Torque Sensors which are sensitive to not only dirt build-up but shaft movements as well. Anyone who has struggled with an old-fashioned infrared keyless remote entry system for a vehicle will understand why all major automobile manufacturers have switched to RF technology – no pointing or aiming is required.

#### FEATURES

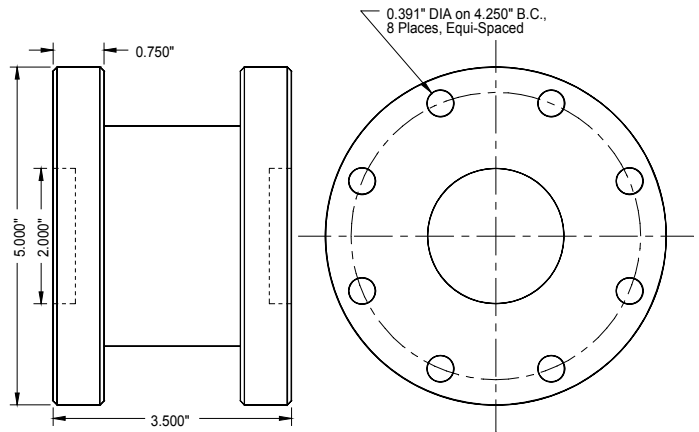
- Torque Sensing System available in **Disk, Shaft or Flange-Coupled** Mounting Configurations.
- **Truly Non-Contact** - no bearings or foot mounting.
- **High Speed Operation** with no lubrication - up to 30,000 RPM.
- Available for **Most Any Size Shaft.**
- Short sensor length **Minimizes Coupling Accuracy Requirements.**
- **Eliminates Frictional Error** due to Bearings.
- **No Slip Ring Noise or Maintenance.**
- **High Torsional Stiffness.**
- **Long Life** - No Maintenance.

# MECHANICAL INTERFACE

## MODEL 2140S: Shaft Coupled



## MODEL 2140F: Flange Coupled



Dimensions shown are for 10K and 20K LB-IN 2140F Models.

- Remote Plus and Minus Shunt Calibration activated by push-buttons on Receiver.
- Sensors' electronics, gages and wiring are all embedded; sealed and protected by stainless steel covers.
- Analog outputs supplied; wide band and filtered.
- Most any Torque capacity available.

# SPECIFICATIONS

## SYSTEM

Bandwidth ..... DC to 1100 Hz  
 Integral Non-Linearity ..... 0.1% F.S.  
 Repeatability .....  $\pm .05\%$   
 Maximum Error .....  $<.25\%$  Full Scale

## RECEIVER: Model 2025i

Power ..... 120 Volts AC  
 or 12 Volts DC  
 Output ..... 0 to  $\pm 2$  Volts  
 (0 to  $\pm 5$  Volts Available)  
 Display ..... 3 ½ Digit Backlit LCD  
 Output Ripple .....  $< 2$  mV (Filtered)  
 < 12 mV (Wide band)  
 Size ..... 8.0"L x 5.0"W x 3.48"H

## TORQUE SENSOR: Model 2140S and 2140F

Standard Ranges ..... 1K, 2K FT-LBS  
 Capacity ..... 2,000 FT-LBS  
 Maximum RPM ..... up to 30,000  
 Signal Coupling ..... RF Telemetry  
 Power Coupling ..... 500 KHz Induction Power  
 (through stationary loop antenna)  
 Usable Temp Range .....  $-40$  to  $250^{\circ}\text{F}$   
 Compensated Region .....  $50$  to  $250^{\circ}\text{F}$   
 Temp effect on zero .....  $\pm .01\%$  per  $^{\circ}\text{C}$   
 Temp effect on span .....  $\pm .01\%$  per  $^{\circ}\text{C}$   
 Safe Overload Capacity ..... 5:1  
 Fatigue Life (alternating,  $>100\%$ FS) ..  $>50$  million cycles

## INDUCTION POWER SUPPLY: Model 2030i

Power ..... supplied by 2025i  
 Output ..... 500kHz Induction Power  
 Size ..... 6.29"L x 2.95"W x 2.25"H

*Custom Requirements? ATi will customize a system to meet  
**your special needs.***