

TorqueTrak Revolution

TORQUE AND POWER MONITORING SYSTEM

Continuous Torque and Power (HP or kW) Data from a Rotating Shaft

The TorqueTrak Revolution system is a torque and/or power (HP or kW) monitoring and control system that features inductive (non-contact) power and data transfer for continuous operation. Designed for applications that require ongoing measurements of torque and/or horsepower, the TorqueTrak Revolution system is custom-machined to install on existing shafting up to 40 inches (1016 mm) in diameter. Machine disassembly is not required. The microprocessor-based system features 14-bit signal processing to provide precise, reliable data in real time during actual machine operation.

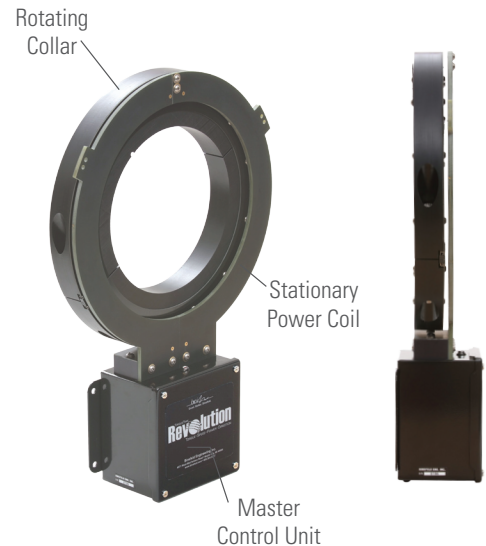
Four independent output signals are standard:

1. Torque: 4-20 mA (12 ± 8 mA), scalable
2. Power: 4-20 mA (12 ± 8 mA), scalable
3. Shaft Speed/RPM: Frequency-based pulse indicator, mA
4. Shaft Direction: Binary indicator, mA



FEATURES

- Easy Installation**
 Rotating Collar and stationary Power Coil are split and bolt together around the shaft. Shaft modification is not required.
- Robust Construction**
 Sturdy hardware and electronics, built for demanding environmental conditions.
- Convenient Calibration**
 Use at factory settings or utilize easy scaling and adjustment tools. No tuning required.
- Onboard Intelligence**
 System status indicators confirm proper operation and aid in troubleshooting.
- Reliable Operation**
 Inductive power and data transfer with generous clearance between stationary and rotating parts. No wear surfaces.
- Product Support**
 Backed by BEI's outstanding customer service, before and after the sale.
- Digital Data Transmission**
 Delivers a clean, noise-free data signal with 14-bit resolution.



Transmitter Module (mounted inside Rotating Collar)

Sensor Input:	Full Bridge strain gage (4 active arms, 350 Ω standard; up to 1000 Ω acceptable)
Bridge Excitation:	2.5 VDC, regulated
Sensor Range:	± 500 microstrain (Full Bridge, 4 active arms – Torque or Bending) ± 769 microstrain (Full Bridge, 2.6 active arms – Tension or Compression) Other microstrain ranges are available
Temp Coefficient – Gain:	≤0.005% FS/°C (50 ppm/°C) 20° to 70°C ≤0.010% FS/°C (100 ppm/°C) -40° to 85°C
Temp Coefficient – Zero:	≤0.005% FS/°C (50 ppm/°C) 20° to 70°C ≤0.010% FS/°C (100 ppm/°C) -40° to 85°C
Linearity:	≤0.05% FS
G-force Rating:	3000 g's (steady state), for example, 5700 RPM on a 4 inch (102 mm) diameter shaft
Sensor Connection:	4-conductor cable

Master Control Unit and Power Coil

Receiver Output Signal:	Four independent current output signals: 1. Torque 4-20 mA (12 ± 8 mA), scalable 2. Power 4-20 mA (12 ± 8 mA), scalable 3. Shaft speed/RPM: Pulse Indicator, 5-19 mA 4. Shaft Direction: Binary Indicator, 5 or 19 mA
Receiver Input Power:	11-16 VDC standard; 2 A max, 0.5 A nominal (115 VAC or 230 VAC option available)

Receiver Output Connection:	Screw terminals
Mounting:	Mounting flanges on Master Control Unit
Dimensions:	6 in x 6 in x 4 in (152 mm x 152 mm x 102 mm)

System Dimensions

Shaft Dia.	A	B	C	D	E
0–1 in	2.75	5.00	5.50	12.88	–
0–25 mm	69.90	127.00	139.70	327.2	–
1–2 in	3.25	5.50	6.50	13.88	–
25–50 mm	82.60	139.70	165.10	352.6	–
2–4 in	4.25	6.50	8.50	15.88	–
50–100 mm	108.00	165.10	215.90	403.4	–
4–6 in	5.00	7.25	10.00	17.38	–
100–150 mm	127.00	184.20	254.00	441.5	–
6–8 in	6.00	8.25	12.00	19.38	7.90
150–200 mm	152.04	209.60	304.80	492.3	200.70
8–10 in	7.00	9.25	14.00	21.38	8.90
200–250 mm	177.80	235.00	355.60	543.1	226.10
10–12 in	8.00	10.25	16.00	23.38	9.90
250–300 mm	203.20	260.40	406.40	593.9	251.50

For shaft diameters larger than 12 inches (300 mm) contact Binsfeld Engineering or visit binsfeld.com.

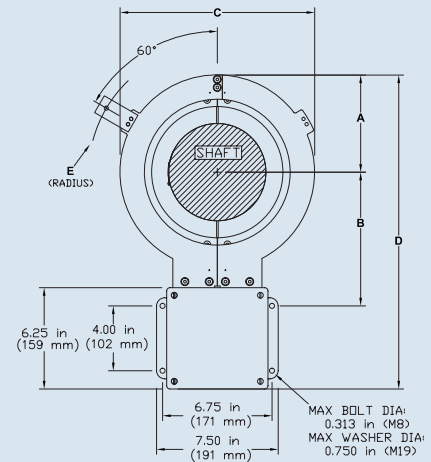
System

Resolution:	14 bits (16384 points of resolution)
Noise Level:	≤0.10% RMS FS
Frequency Response (Torque and Power):	Switch selectable: 1000 Hz, 12 Hz, 1.5 Hz, or 0.1 Hz (-3dB frequency, typical)
Delay:	1 msec, typical (at 1000 Hz setting)
Sampling Rate:	4800 Hz
Operating Temp:	-40° to 85°C (-40° to 185°F)

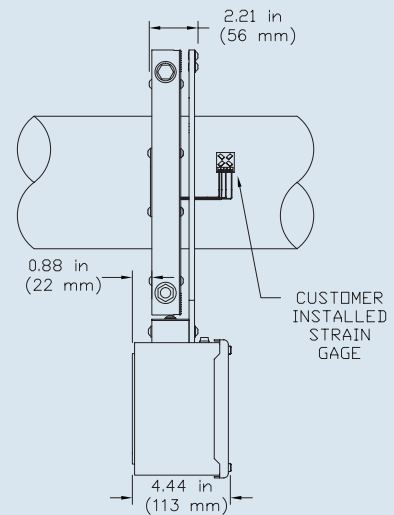
Specifications subject to change without notice.

TorqueTrak Revolution (6 inch (154 mm) system shown)

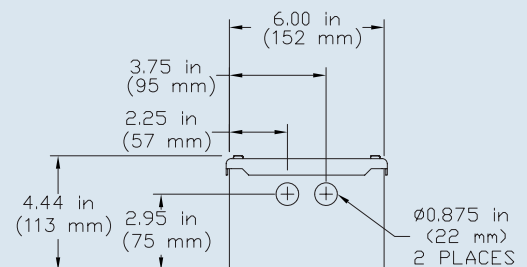
Front View
(see System Dimensions table)



Side View



Bottom View



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