TECHNICAL DATA

TorqueTrak 10K

Torque Telemetry System

Measuring live torque in real time is easier than ever with the TorqueTrak 10K telemetry system from Binsfeld Engineering. Convert virtually any drive shaft into a rotating torque sensor by simply mounting the transmitter, battery and a torque sensitive strain gage to the shaft.

Use the infrared remote control to adjust transmitter gain, activate the remote shunt calibration or switch the transmitter to standby power mode. The multi-line LCD receiver display and keypad make system adjustments straightforward. Low power consumption in the rugged transmitter allows longer battery life while sophisticated electronics ensure accurate and reliable torque data output.

EASY TO USE

Fits any size shaft, any torque level. No machine modifications or disassembly required. Calibration is done off-the-shaft. Receiver display and keypad provides user-friendly interface.

INFRARED REMOTE CONTROL

Control transmitter operation including channel select, gain/range, shunt calibration and low-power standby mode.

RELIABLE DATA TRANSMISSION

Clean, noise-free data signal through analog voltage output or digital data output via RS-232.

STANDBY POWER MODE

Extends transmitter battery life without disconnecting battery.

16 CHANNELS, 500 HZ FREQUENCY RESPONSE

Use multiple systems simultaneously.

RUGGED

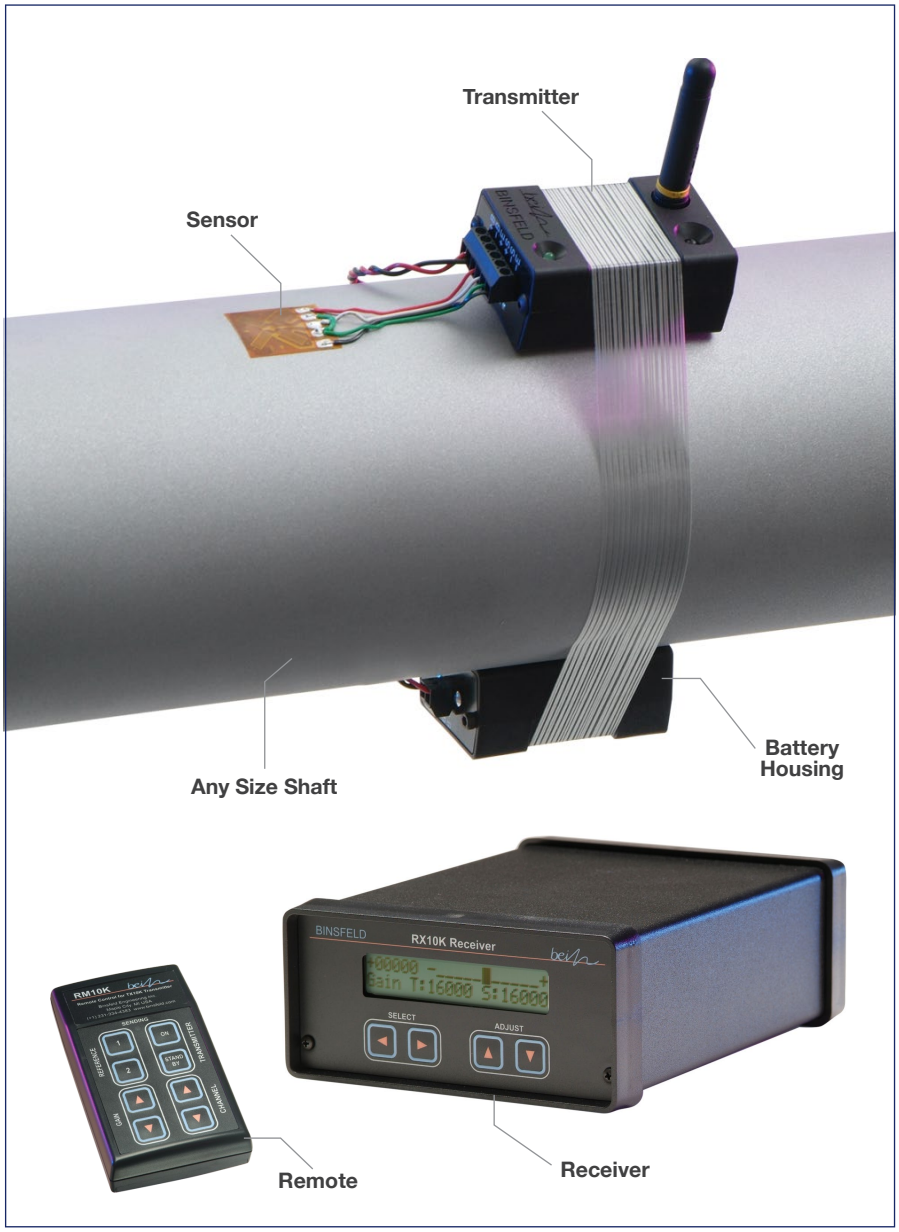
Reinforced, injection-molded transmitter housing is built for demanding applications and features V-groove and tape slot for secure mounting.

USER-ADJUSTABLE GAIN

Amplify the strain/torque signal to the most useful level.

EQUIPMENT CASE INCLUDED

Convenient carrying case provides rugged, watertight protection.



ISO 9001:2015 Certified

PRODUCT SPECIFICATIONS

TX10K-S STRAIN TRANSMITTER

Sensor Input	Full Bridge strain gage (4 active arms, 350 Ω standard; up to 1000 Ω acceptable)
Bridge Excitation	2.5 VDC, ± 0.1%
Sensor Range	User-selectable per chart below (chart based on gage factor = 2.0):

Transmitter Gain	Full Bridge 4 Active Arms (Torque or Bending)	Full Bridge 2.6 Active Arms (Torque or Compression)	¼ Bridge 1 Active Arm (Single Gage)
16000	± 125 microstrain	± 192 microstrain	± 500 microstrain
8000	± 250 microstrain	± 385 microstrain	± 1000 microstrain
4000	± 500 microstrain	± 769 microstrain	± 2000 microstrain
2000	± 1000 microstrain	± 1538 microstrain	± 4000 microstrain
1000	± 2000 microstrain	± 3077 microstrain	± 8000 microstrain
500	± 4000 microstrain	± 6154 microstrain	± 16000 microstrain

Sensor & Power Connection	Screw terminal block
Transmitter Voltage	7 – 18 VDC (9 V battery typical)
Transmitter Current	Transmit: 40 mA nom, 50 mA max with 350 Ω bridge Standby: 4 mA nom, 5 mA max
Transmitter Battery Life	24 hours in Transmit mode (9 V lithium, 350 Ω bridge, 25°C (77°F))
Transmission Frequency	902-925 MHz
Transmit Distance	20 feet (6 m) or more
G-force Rating	3000 g's (steady state), for example, 5700 RPM on a 4 inch (102 mm) diameter shaft
Operating Temperature	-30° to 85°C (-22° to 185°F)
Size and Weight (without Antenna)	2.88 in x 5.75 in x 8.50 in, 2 lbs (73 mm x 146 mm x 216 mm, 1 kg)

RM10K REMOTE CONTROL *(for setup of TX10K-S Strain Transmitter)*

Control Functions	Channel select; Gain/Range; Shunt Calibration 1 and 2; Power Standby
Transmit Type and Distance	Infrared; up to 10 feet (3 m). For use while shaft

RX10K RECEIVER

Voltage Output	± 10 VDC (field adjustable 0.25x to 4.0x) 5-way binding posts (banana jacks)
Digital Output Connection	RS-232 type DB9 connector (cable provided for PC COM port)
Receiver Power Input	RS-232 type DB connector (cable provided for PC COM port)
Operating Temperature	-20° to 70°C (-4° to 158°F)
Size and Weight	2.88 in x 5.75 in x 8.50 in, 2 lbs (73 mm x 146 mm x 216 mm, 1 kg)

TT10K SYSTEM

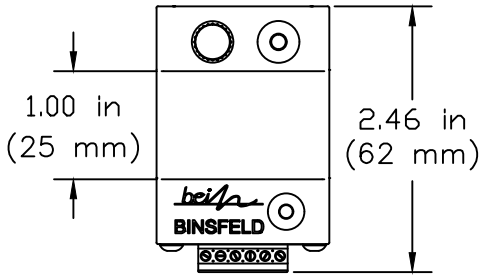
Resolution	14 bits
Gain Error[1]	± 0.25% Reading (max), 25°C ambient
Gain Temperature Coefficient[1]	± 0.005% Reading/°C (max), 0° to 50°C ambient
Offset Error[1]	± 0.16% FS (max), 25°C ambient
Offset Temperature Coefficient[1]	± 0.004% FS/°C (max), 0° to 50°C ambient
Frequency Response[2]	0 – 500 Hz (-3 dB @ 500 Hz) Several low pass filter options
Delay[2]	4.2 msec, typical
Sample Transmission Rate	2400 samples/sec

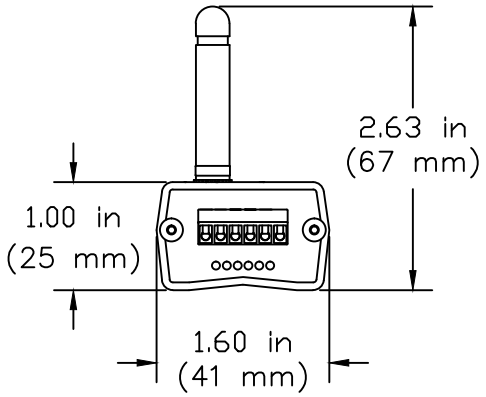
[1] TX10K Gain = 4000

[2] RX10K filter setting = 500 Hz

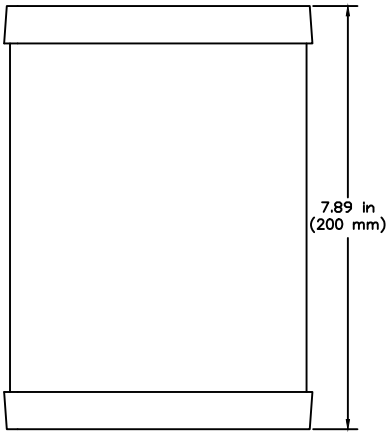
Specifications subject to change without notice.

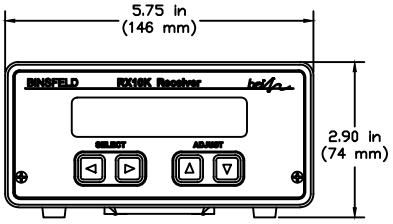
TX10K-S TRANSMITTER





RX10K RECEIVER





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