SensorsX

SX-FTANB Series

Dynamic Torque Sensor

Dynamic Torque Measurement for Rotating Applications



1 – 5,000 N·m Range (0.74 – 3,688 lbf·ft)	**± 0.2 % F.S.** Accuracy Class	**< 12,000 rpm** Maximum Rotational Speed
IP50 Ingress Protection Rating	**±5 V / ±10 V / 4–20 mA** Output Signal	**15 – 28 V** Supply Voltage

■ PRODUCT OVERVIEW

The SensorsX SX-FTANB Series is a dynamic torque sensor designed for torque measurement in rotating machinery and industrial test systems. Featuring a compact, short-shaft design and high torsional stiffness, the series offers rated torque ranges from 1 to 5,000 N·m, a response time of 1 ms, and multiple analog output options for industrial torque measurement and monitoring applications.



■ KEY FEATURES

- ◆ Compact, Short-Shaft Design
- ◆ Fast response time of 1 ms
- ◆ High Torsional Stiffness
- ◆ Repeatability of ±0.02% F.S.

■ TYPICAL APPLICATIONS

- Rotating shaft torque measurement
- Rotating machinery torque monitoring
- Motor and drive system testing
- Industrial power transmission testing
- Gearbox and drivetrain testing
- Rotary equipment performance testing

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■ PERFORMANCE SPECIFICATIONS

Measuring Range	
Rated Torque Range	1 – 5,000 N·m (0.74 … 3,688 lbf·ft)
Maximum Rotational Speed	< 12,000 rpm
Accuracy	
Accuracy	±0.2% F.S.
Repeatability	±0.02% F.S.
Temperature Effects	
Temperature Sensitivity Drift	±0.1% F.S. / 10 K
Zero Point Temperature Drift	±0.1% F.S. / 10 K
Response	
Response Time	1 ms
Overload	
Permissible Service Torque	120% F.S. (static)
Torque Limit	150% F.S. (static)
Ultimate Torque Limit	200% F.S. (static)

■ ELECTRICAL SPECIFICATIONS

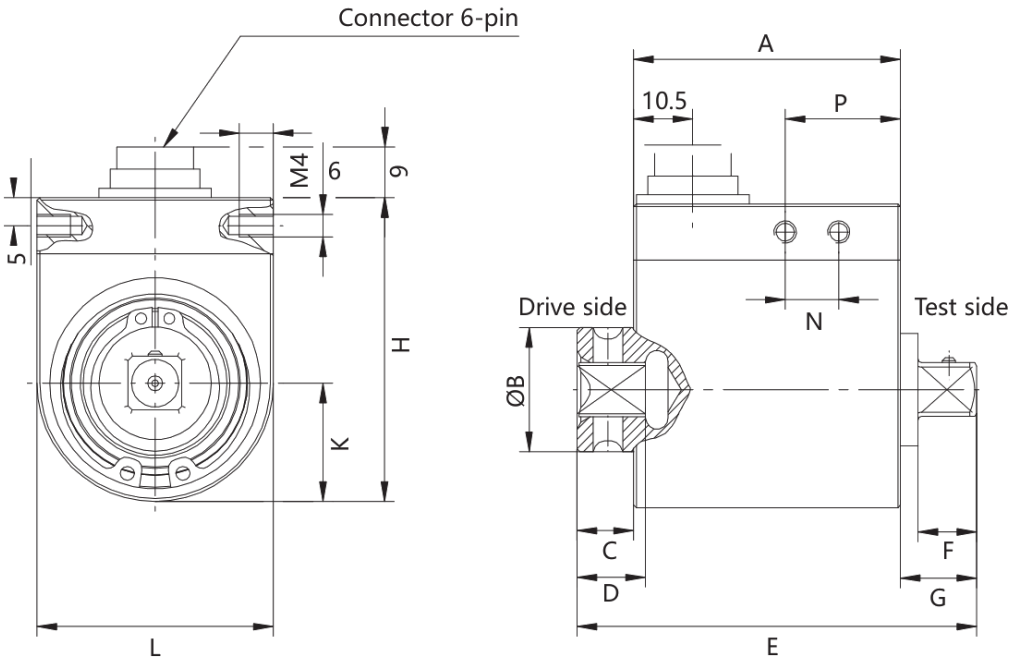
Power	
Supply Voltage	15 – 28 V
Current Consumption	≤60 mA
Output Signal	
Output Signal	±5 V DC / ±10 V DC / 4 – 20 mA
Electrical Connection	
Electrical Connection	Binder 581 series, 6-pin

■ ENVIRONMENTAL SPECIFICATIONS

Temperature	
Operating Temperature Range	−10 to +60 °C (14 to 140 °F)
Mechanical & Environmental	
Ingress Protection Rating	IP50

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■ MECHANICAL DIMENSIONS



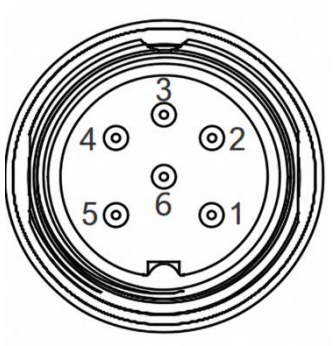
5 / 12 N·m — 1/4" Square Drive	
A / ØB / C / D	45.5 / 13 / 8 / 8.6 mm (1.79 / 0.51 / 0.31 / 0.34 in)
E / F / G / H	64 / 7.2 / 9.9 / 48 mm (2.52 / 0.28 / 0.39 / 1.89 in)
K / L / N / P	12 / 24 / 9 / 17.6 mm (0.47 / 0.94 / 0.35 / 0.69 in)
25 / 60 N·m — 3/8" Square Drive	
A / ØB / C / D	47.4 / 25 / 10.1 / 12.2 mm (1.87 / 0.98 / 0.40 / 0.48 in)
E / F / G / H	71 / 10.4 / 13.5 / 63 mm (2.80 / 0.41 / 0.53 / 2.48 in)
K / L / N / P	21 / 42 / 9.5 / 30 mm (0.83 / 1.65 / 0.37 / 1.18 in)
100 / 150 / 200 N·m — 1/2" Square Drive	
A / ØB / C / D	47.4 / 29.8 / 11.2 / 15 mm (1.87 / 1.17 / 0.44 / 0.59 in)
E / F / G / H	76 / 15.1 / 17.4 / 63 mm (2.99 / 0.59 / 0.69 / 2.48 in)
K / L / N / P	21 / 42 / 9.5 / 30 mm (0.83 / 1.65 / 0.37 / 1.18 in)
500 N·m — 3/4" Square Drive	
A / ØB / C / D	55 / 44 / 19 / 24 mm (2.17 / 1.73 / 0.75 / 0.94 in)
E / F / G / H	100 / 22.9 / 26 / 77 mm (3.94 / 0.90 / 1.02 / 3.03 in)
K / L / N / P	30 / 60 / 12 / 27 mm (1.18 / 2.36 / 0.47 / 1.06 in)
1,000 N·m — 1" Square Drive	
A / ØB / C / D	55 / 54 / 33 / 27 mm (2.17 / 2.13 / 1.30 / 1.06 in)
E / F / G / H	132 / 27.4 / 44 / 77 mm (5.20 / 1.08 / 1.73 / 3.03 in)
K / L / N / P	30 / 60 / 12 / 27 mm (1.18 / 2.36 / 0.47 / 1.06 in)

Note: All dimensions are in millimeters unless otherwise specified. Dimensions for models with rated torque capacities above 1,000 N·m must be confirmed before ordering.

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■ WIRING DIAGRAM

6-Pin Connector — Signal Output



Pin 1 — Yellow	Signal (+)
Pin 2 — White	Signal Ground (GND)
Pin 3	Reserved
Pin 4	Reserved
Pin 5 — Red	Power Supply (+)
Pin 6 — Green	Power Ground (GND)

■ ORDERING INFORMATION — SX-FTANB

Complete model number example: SX-FTANB-20 N·m241I6

Measurement Range	
5 N·m	5 N·m
12 N·m	12 N·m
25 N·m	25 N·m
60 N·m	60 N·m
100 N·m	100 N·m
150 N·m	150 N·m
200 N·m	200 N·m
500 N·m	500 N·m
1000 N·m	1000 N·m
Power Supply	
24	24 V DC
Working Mode	
1	Clockwise positive, counter-clockwise negative
2	Clockwise negative, counter-clockwise positive
Output	
I	4 – 20 mA
V1	0 – 5 V
V2	0 – 10 V
V3	0 … ±5 V
V4	0 … ±10 V
RS	RS485

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Electrical Connection	
6	Binder 581 series, 6-pin
Customization Options	
D	Custom configuration — specify requirements when ordering

Note: Custom torque measurement ranges are available upon request.

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