SensorsX
SX-FTFNB Series

Static Torque Sensor

Static and Reaction Torque Measurement



10 – 20,000 N·m Rated Capacity (7.4 – 14,751 lbf·ft)	**≤ ±0.1 % F.S.** Non-Linearity	**1.0 mV/V** Output Sensitivity
IP65 Ingress Protection Rating	**Stainless steel** Material	**5 – 12 V DC** Recommended Excitation (18 V max.)

■ PRODUCT OVERVIEW

The SX-FTFNB Series is a double-flange static torque sensor for applications that do not require continuous rotation. It is available in rated capacities from 10 to 20,000 N·m, with an output sensitivity of 1.0 mV/V. An external amplifier is required for transmitter-output configurations.



■ KEY FEATURES

- ◆ **Double-flange mounting design**
- ◆ **Designed for non-continuous rotation**
- ◆ **Safe overload capacity of 150% F.S.**
- ◆ **Hysteresis and repeatability of ≤0.05% F.S.**

■ TYPICAL APPLICATIONS

- Static and reaction torque measurement
- Valve and actuator torque testing
- Torque measurement in industrial test benches
- Torque measurement in limited-rotation applications
- Fastener tightening torque testing

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■ PERFORMANCE SPECIFICATIONS

Measuring Range	
Rated Capacity	10, 20, 50, 100 … 20,000 N·m (7.4, 14.8, 36.9, 73.8 … 14,751 lbf·ft)
Performance Characteristics	
Output Sensitivity	1.0 mV/V
Non-Linearity	≤±0.1% F.S.
Hysteresis	≤±0.05% F.S.
Repeatability	≤±0.05% F.S.
Creep	±0.05% F.S. (30 min)
Zero Output	<±1% F.S.
Temperature Effects	
Temperature Effect on Output	±0.05% F.S. / 10 °C (18 °F)
Temperature Effect on Zero	±0.05% F.S. / 10 °C (18 °F)
Overload	
Safe Overload	150% F.S.
Ultimate Overload	200% F.S.

■ ELECTRICAL SPECIFICATIONS

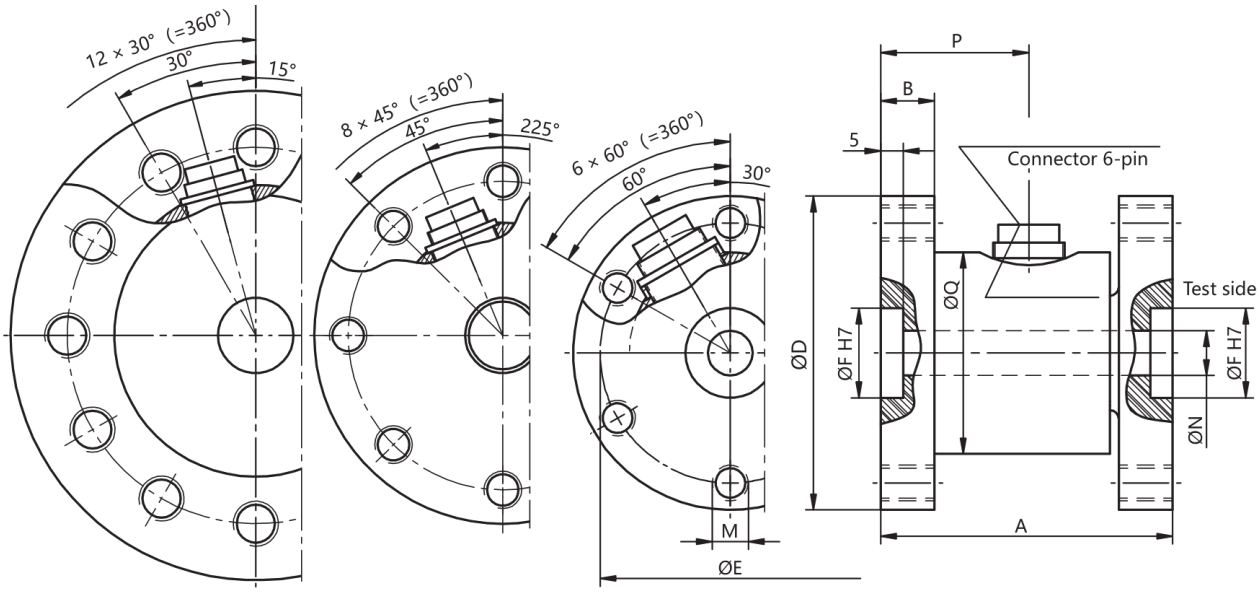
Excitation	
Recommended Excitation Voltage	5–12 V DC
Maximum Excitation Voltage	18 V DC
Bridge	
Input Resistance	380 ± 10 Ω
Output Resistance	350 ± 3 Ω
Insulation Resistance	≥ 2,000 MΩ
Output Signal	
Available Outputs	Available via an external transmitter module: 4–20 mA, 0–5 V, 0–10 V, PROFIBUS, Modbus, CANopen, and RS485, depending on module configuration.
Electrical Connection	
Connector	Binder 581 series, 6-pin connector

■ ENVIRONMENTAL SPECIFICATIONS

Temperature	
Operating Temperature	−30 to +80 °C (−22 to 176 °F)
Mechanical & Environmental	
Ingress Protection Rating	IP65
Housing	
Material	Stainless steel

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■ MECHANICAL DIMENSIONS



Hole pattern C | Hole pattern B | Hole pattern A

10/20/50/100/200 N·m	
A / B / P	65 / 12 / 33 mm (2.56 / 0.47 / 1.30 in)
ØD / ØE / ØF H7	70 / 58 / 20 mm (2.76 / 2.28 / 0.79 in)
ØN / ØQ	10 / 45 mm (0.39 / 1.77 in)
Thread size / Hole pattern	M8 / A
Bolt tightening torque / Bolt property class	35 N·m (25.8 lbf·ft) / 10.9
500/1,000 N·m	
A / B / P	80 / 15 / 39.5 mm (3.15 / 0.59 / 1.56 in)
ØD / ØE / ØF H7	100 / 82 / 20 mm (3.94 / 3.23 / 0.79 in)
ØN / ØQ	18 / 60 mm (0.71 / 2.36 in)
Thread size / Hole pattern	M10 / B
Bolt tightening torque / Bolt property class	71 N·m (52.4 lbf·ft) / 10.9
2,000 N·m	
A / B / P	100 / 20 / 45 mm (3.94 / 0.79 / 1.77 in)
ØD / ØE / ØF H7	130 / 100 / 75 mm (5.12 / 3.94 / 2.95 in)
ØN / ØQ	20 / 80 mm (0.79 / 3.15 in)
Thread size / Hole pattern	M12 / C
Bolt tightening torque / Bolt property class	120 N·m (88.5 lbf·ft) / 10.9
5,000 N·m	
A / B / P	100 / 20 / 45 mm (3.94 / 0.79 / 1.77 in)
ØD / ØE / ØF H7	130 / 100 / 75 mm (5.12 / 3.94 / 2.95 in)
ØN / ØQ	20 / 80 mm (0.79 / 3.15 in)
Thread size / Hole pattern	M12 / C
Bolt tightening torque / Bolt property class	144 N·m (106.2 lbf·ft) / 12.9

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10,000/20,000 N·m	
A / B / P	124 / 32 / 67.5 mm (4.88 / 1.26 / 2.66 in)
ØD / ØE / ØF H7	260 / 210 / 105 mm (10.24 / 8.27 / 4.13 in)
ØN / ØQ	105 / 145 mm (4.13 / 5.71 in)
Thread size / Hole pattern	M24 / B
Bolt tightening torque / Bolt property class	1,190 N·m (877.7 lbf·ft) / 12.9

Note: All dimensions are in millimeters unless otherwise specified.

■ ORDERING INFORMATION — SX-FTFNB

Complete model number example: SX-FTFNB-20 N·m101I6D

Measurement Range	
10 N·m	10 N·m
20 N·m	20 N·m
50 N·m	50 N·m
100 N·m	100 N·m
1000 N·m	1000 N·m
20000 N·m	20000 N·m
Power Supply	
10	10 V DC
24	24 V DC
Torque Polarity	
1	Clockwise positive, counter-clockwise negative
2	Clockwise negative, counter-clockwise positive
Output	
L	1.0 mV/V
I	4–20 mA
V1	0–5 V
V2	0–10 V
V3	0 … ±5 V
V4	0 … ±10 V
RS	RS485
Electrical Connection	
6	Binder 581 series, 6-pin
Customization Options	
D	Custom configuration — specify requirements when ordering

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