SensorsX

SX-FMXNB Series

3/6-Axis Force Sensor

Multi-Axis Force Measurement for Industrial Applications



Fx / Fy / Fz Up to 3/6 Force Components	**1 – 10 kN** Nominal Force Fx, Fy (225 – 2,248 lbf)	**5 – 50 kN** Nominal Force Fz (1,124 – 11,240 lbf)
IP65 Ingress Protection Rating	**0.5 %** Accuracy Class	**5 V** Reference Excitation (15 V max.)

■ PRODUCT OVERVIEW

The SensorsX SX-FMXNB Series is a flange-mounted multi-axis force sensor designed to measure force components along the Fx, Fy, and Fz axes. It offers rated force capacities of 1–10 kN for Fx and Fy and 5–50 kN for Fz, with strain-gauge bridge output and optional analog signal configurations. Featuring customizable dimensions and IP65 protection, the series is suitable for industrial force measurement and mechanical testing applications.



■ KEY FEATURES

- ◆ Three-Component Force Measurement
- ◆ Repeatability: ±0.2% FS
- ◆ Customizable Dimensions
- ◆ Custom measurement ranges are available upon request.

■ TYPICAL APPLICATIONS

- Multi-Axis Force Measurement
- Industrial Load Testing
- Multi-Component Force Analysis

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■ PERFORMANCE SPECIFICATIONS

Measuring Range	
Rated Force (Fx, Fy)	1 / 2 / 5 / 10 kN (225 / 450 / 1,124 / 2,248 lbf)
Rated Force (Fz)	5 / 10 / 25 / 50 kN (1,124 / 2,248 / 5,620 / 11,240 lbf)
Accuracy	
Accuracy Class	0.5 %
Sensitivity (Fx, Fy)	1.5 ± 0.3 mV/V
Sensitivity (Fz)	1.0 ± 0.3 mV/V
Zero Output	± 0.1 mV/V
Non-Linearity	± 0.5 % F.S.
Hysteresis	± 0.5 % F.S.
Repeatability	± 0.2 % F.S.
Creep (30 min)	± 0.1 % F.S.
Temperature Effects	
Temperature Sensitivity Drift	0.3 % / 10 K
Zero Point Temperature Drift	0.3 % / 10 K
Overload	
Safe Overload	150 %
Ultimate Overload Capacity	200 %

Note: The specifications listed above apply to the Fx, Fy, and Fz force measurement components. Additional measurement-axis configurations, if available, require separate technical specifications.

■ ELECTRICAL SPECIFICATIONS

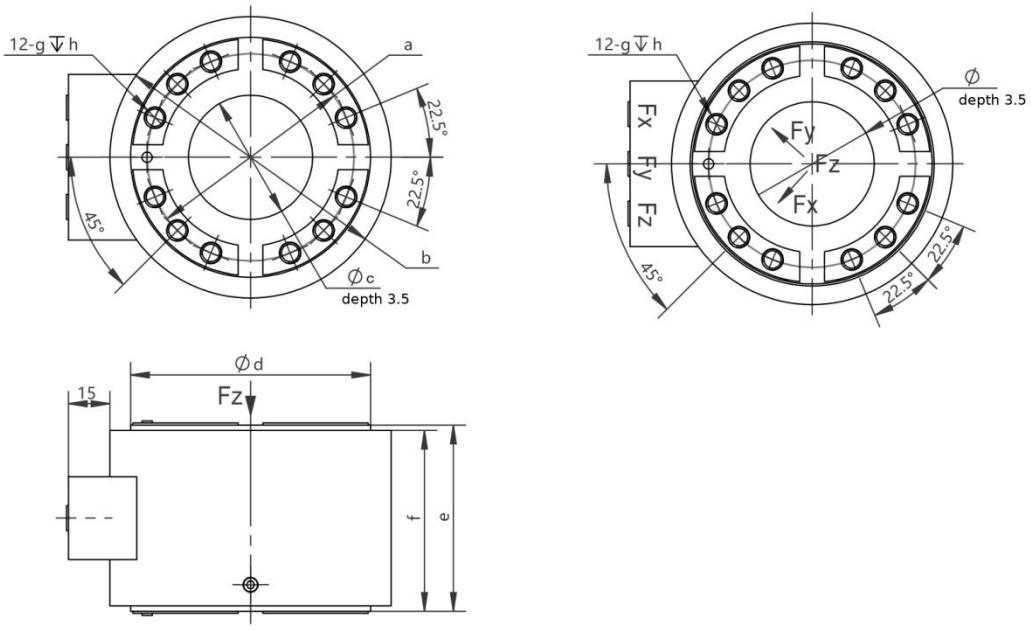
Excitation	
Nominal Bridge Excitation Voltage	5 V
Maximum Excitation Voltage	15 V
Bridge	
Bridge Input Resistance	300 – 800 Ω
Bridge Output Resistance	300 – 800 Ω
Insulation Resistance	2 GΩ
Output Signal	
Optional Analog Output	4 – 20 mA

■ ENVIRONMENTAL SPECIFICATIONS

Temperature	
Operating Temperature Range	−10 to +70 °C (14 to 158 °F)
Storage Temperature Range	−30 to +85 °C (−22 to 185 °F)
Mechanical & Environmental	
Ingress Protection Rating	IP65
Housing	
Housing Material	Alloy / stainless steel

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■ MECHANICAL DIMENSIONS



Rated Force (Fx/Fy and Fz): 1 / 5 kN	
a / b / c	50 / 68 / 30 mm (1.97 / 2.68 / 1.18 in)
d / e / f	58 / 45 / 43.7 mm (2.28 / 1.77 / 1.72 in)
g / h	M5 / 8 mm (M5 / 0.31 in)
Rated Force (Fx/Fy and Fz): 2 / 10, 5 / 25, 10 / 50 kN	
a / b / c	70 / 96 / 45 mm (2.76 / 3.78 / 1.77 in)
d / e / f	86 / 62 / 49 mm (3.39 / 2.44 / 1.93 in)
g / h	M8 / 11 mm (M8 / 0.43 in)

Note: All dimensions are in millimeters unless otherwise specified.

■ ORDERING INFORMATION — SX-FMXNB

Complete model number example: SX-FMXNB-002LFxFyFz

Measurement Range	
001	Fx = 1 kN; Fy = 1 kN; Fz = 5 kN
002	Fx = 2 kN; Fy = 2 kN; Fz = 10 kN
005	Fx = 5 kN; Fy = 5 kN; Fz = 25 kN
010	Fx = 10 kN; Fy = 10 kN; Fz = 50 kN
Output	
L	1 mV/V
V	0 – 5 V
A	4 – 20 mA
Fx Output	
Fx	Fx measurement output
0	No output

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Fy Output	
Fy	Fy measurement output
0	No output
Fz Output	
Fz	Fz measurement output
0	No output
Customization Options	
D	Custom configuration - specify requirements when ordering

Note: For six-axis force sensor specifications and configurations, please contact us before placing an order.

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