SensorsX

SX-FFFNB Series

Double-Flange Tension / Compression Load Cell

Force & Weighing | Double-Flange Tension / Compression Load Cell



100 – 10,000 kg Rated Capacity (220 – 22,046 lb)	**≤ ±0.1% F.S.** Non-Linearity / Hysteresis	**1.0 mV/V ±10%** Output Sensitivity
IP65 Ingress Protection	**−30 to +80 °C** Operating Temp. (−22 to +176 °F)	**5 – 12 V DC** Recommended Excitation (max 15 V DC)

■ PRODUCT OVERVIEW

The SX-FFFNB Series is a compact stainless steel load cell for tension and compression force measurement. Flanges at both ends provide interfaces for mechanical mounting.
The load cell has a nominal output sensitivity of 1.0 mV/V and a recommended bridge excitation voltage of 5–12 V DC. Optional transmitter modules provide conditioned analog or digital outputs, depending on the selected configuration.



■ KEY FEATURES

- ◆ Double-Flange Mounting
- ◆ Compact Stainless Steel Construction
- ◆ Nonlinearity And Hysteresis: ±0.1% F.S. Maximum
- ◆ Safe Overload: 150% Of Rated Capacity

■ TYPICAL APPLICATIONS

Application Fields

- Force monitoring in industrial machinery
- Tension and compression test benches
- Actuator load measurement

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■ PERFORMANCE SPECIFICATIONS

Measurement	
Rated Capacity	100, 200, 500, 1,000 … 10,000 kg (220, 441, 1,102, 2,205 … 22,046 lb)
Output Sensitivity	1.0 mV/V ±10%
Accuracy	
Non-Linearity	≤ ±0.1% F.S.
Hysteresis	≤ ±0.1% F.S.
Repeatability	≤ ±0.05% F.S.
Creep	±0.05% F.S. / 30 min
Temperature Sensitivity Drift	±0.05% F.S. / 10 °C (±0.05% F.S. / 18 °F)
Zero Point Temperature Drift	±0.05% F.S. / 10 °C (±0.05% F.S. / 18 °F)
Zero Output	< ±1% F.S.
Overload	
Safe Overload	150% F.S.
Ultimate Overload	200% F.S.

■ ELECTRICAL SPECIFICATIONS

Excitation	
Recommended Excitation Voltage	5–12 V DC
Maximum Excitation Voltage	15 V DC
Bridge	
Input Resistance	750 ± 10 Ω
Output Resistance	700 ± 3 Ω
Insulation Resistance	≥ 5,000 MΩ
Output Signal	
Signal Output Options	Optional transmitter modules are available for signal conditioning, with output options including 4–20 mA, 0–5 V, 0–10 V, 0 to ±5 V, 0 to ±10 V, PROFIBUS, Modbus, CANopen, and RS-485.
Electrical Connection	
Cable	Cable outlet

Note: These excitation ratings apply to the mV/V-output load cell. Supply requirements for configurations with a transmitter depend on the selected transmitter module.

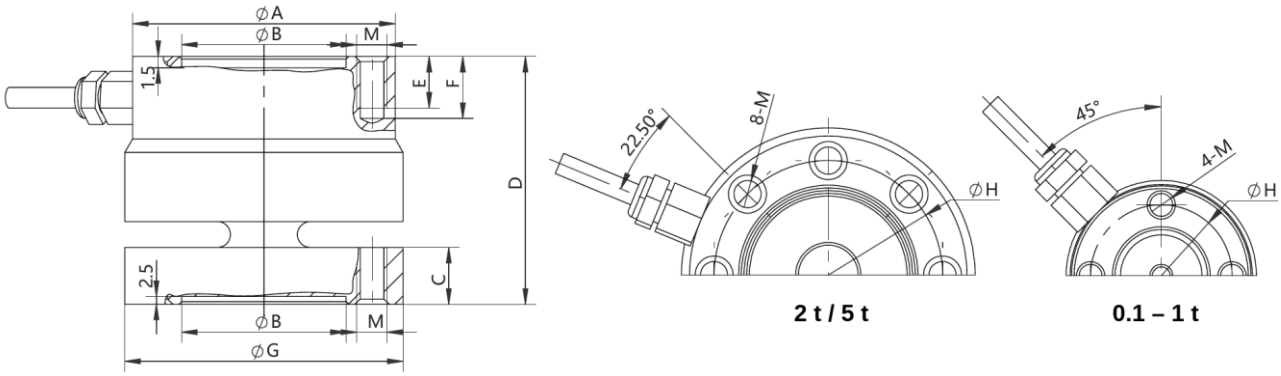
■ ENVIRONMENTAL SPECIFICATIONS

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

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■ MECHANICAL DIMENSIONS

Dimensions



Outline drawing — side section, flange hole pattern for 2 t / 5 t (8-M) and 0.1 – 1 t (4-M) (unit: mm)

Dimension Table — mm (in)

Capacity	ΦA	ΦB	C	D	E	F	ΦG	ΦH	M
1, 2, 5, 10 kN (225 – 2,248 lbf)	33 (1.30)	18 (0.71)	6.2 (0.24)	30.5 (1.20)	7 (0.28)	9 (0.35)	35 (1.38)	26 (1.02)	M5
20, 50 kN (4,496 – 11,240 lbf)	51 (2.01)	32 (1.26)	11 (0.43)	48 (1.89)	10 (0.39)	12 (0.47)	54 (2.13)	42 (1.65)	M6

Note: All dimensions are in millimeters, with inch equivalents in parentheses, unless otherwise specified. Thread specifications (M5 and M6) are metric. Dimensions vary with rated capacity. Please confirm the applicable drawing for the selected model.

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■ ORDERING INFORMATION

Complete model number example: SX-FFFNB-1t242I0

Rated capacity	
0.1t	0.1 t (220 lb)
0.2t	0.2 t (441 lb)
0.5t	0.5 t (1,102 lb)
1t	1 t (2,205 lb)
10t	10 t (22,046 lb)
Power Supply	
05	5 V DC
10	10 V DC
12	12 V DC
24	24 V DC
Working Mode	
1	Tension only
2	Compression only
3	Tension and compression — tension positive, compression negative
4	Tension and compression — compression positive, tension negative
Output	
I	4–20 mA
V1	0–5 V
V2	0–10 V
V3	0–±5 V
V4	0–±10 V
RS	RS-485
L	1.0 mV/V ±10%
Electrical Connection	
0	Cable outlet
Customization Options	
D	Custom configuration — specify requirements when ordering

Example: SX-FFFNB-1t242I0D — SX-FFFNB Series, 1,000 kg rated capacity, 24 V DC supply, compression-only measurement, 4–20 mA output, integral cable, and custom configuration.

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