SensorsX

SX-FFSNB Series

S-Type Tension / Compression Load Cell

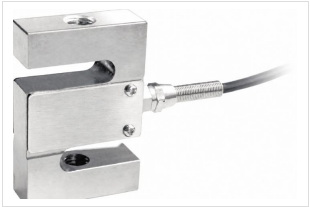
Force & Weighing | S-Type Tension / Compression Load Cell



5 kg – 20 t Rated Capacity (11 – 44,092 lb)	**≤ ±0.02% F.S.** Non-Linearity / Hysteresis / Repeatability	**2.0 mV/V ±10%** Output Sensitivity
IP65 Ingress Protection	**−20 to +60 °C** Operating Temp. (−4 to +140 °F)	**5 – 12 V DC** Recommended Excitation (max 15 V DC)

■ PRODUCT OVERVIEW

The SX-FFSNB Series is an S-type shear-beam load cell for tension and compression force measurement. It features an alloy steel construction and is available in rated capacities from 5 kg to 20 t. Typical applications include electronic truck scales, monorail weighing systems and hopper scales. The load cell has a nominal output sensitivity of 2.0 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

- ◆ S-Type Shear-Beam Design
- ◆ High Measurement Accuracy
- ◆ Alloy Steel Construction With IP65 Ingress Protection
- ◆ Tension and Compression Force Measurement

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■ TYPICAL APPLICATIONS

Application Fields

- Electronic Truck Scales
- Monorail Weighing Systems
- Hopper Scales

■ PERFORMANCE SPECIFICATIONS

Measurement	
Rated Capacity	5, 10, 20, 30, 50, 100 … 20,000 kg (11, 22, 44, 66, 110, 220 … 44,092 lb)
Output Sensitivity	2.0 mV/V ±10%
Accuracy	
Non-Linearity	≤ ±0.02% F.S.
Hysteresis	≤ ±0.02% F.S.
Repeatability	≤ ±0.02% F.S.
Creep	±0.03% F.S. / 30 min
Temperature Sensitivity Drift	±0.02% F.S. / 10 °C (±0.02% F.S. / 18 °F)
Zero Point Temperature Drift	±0.02% F.S. / 10 °C (±0.02% F.S. / 18 °F)
Zero Output	< ±1% F.S.
Overload	
Safe Overload	150% F.S.
Ultimate Overload	300% F.S.

■ ELECTRICAL SPECIFICATIONS

Excitation	
Recommended Excitation Voltage	5–12 V DC
Maximum Excitation Voltage	15 V DC
Bridge	
Input Resistance	380 ± 10 Ω
Output Resistance	350 ± 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	Direct cable outlet / integral shielded cable

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.

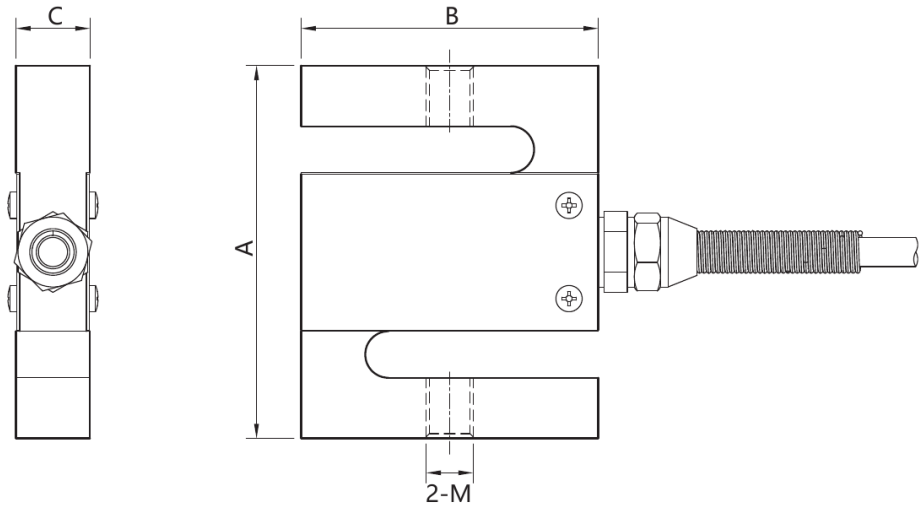
■ ENVIRONMENTAL SPECIFICATIONS

Temperature	
Operating Temperature	−20 to +60 °C (−4 to +140 °F)
Mechanical & Environmental	
Ingress Protection	IP65
Housing	
Material	Alloy steel

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■ MECHANICAL DIMENSIONS

Dimensions



Outline drawing (unit: mm)

Dimension Table — mm (in)

Capacity	A	B	C	M (2×)
5 – 50 kg (11 – 110 lb)	64 (2.52)	51 (2.01)	12.7 (0.50)	M8×1.25
100 – 700 kg (220 – 1,543 lb)	76 (2.99)	51 (2.01)	19.1 (0.75)	M12×1.75
1 – 1.5 t (2,205 – 3,307 lb)	76 (2.99)	51 (2.01)	25.4 (1.00)	M12×1.75
2 – 5 t (4,409 – 11,023 lb)	108 (4.25)	76 (2.99)	25.4 (1.00)	M20×2.5
7.5 – 10 t (16,535 – 22,046 lb)	178 (7.01)	127 (5.00)	51 (2.01)	M30×3.5
20 t (44,092 lb)	188 (7.40)	140 (5.51)	60 (2.36)	M36×3.0

Note: All dimensions are in millimeters, with inch equivalents in parentheses, unless otherwise specified. All mounting threads are metric.

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■ ORDERING INFORMATION

Complete model number example: SX-FFSNB-0.01t242I0

Rated Capacity	
0.005t	5 kg (11 lb)
0.01t	10 kg (22 lb)
0.02t	20 kg (44 lb)
0.03t	30 kg (66 lb)
0.05t	50 kg (110 lb)
0.1t	100 kg (220 lb)
20t	20 t (44,092 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	2.0 mV/V ±10%
Electrical Connection	
0	Cable outlet
Customization Options	
D	Custom configuration — specify requirements when ordering

Example: SX-FFSNB-0.01t242I0D — SX-FFSNB Series, 10 kg rated capacity, 24 V DC supply, compression-only measurement, 4–20 mA output, integral cable, and custom configuration.

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