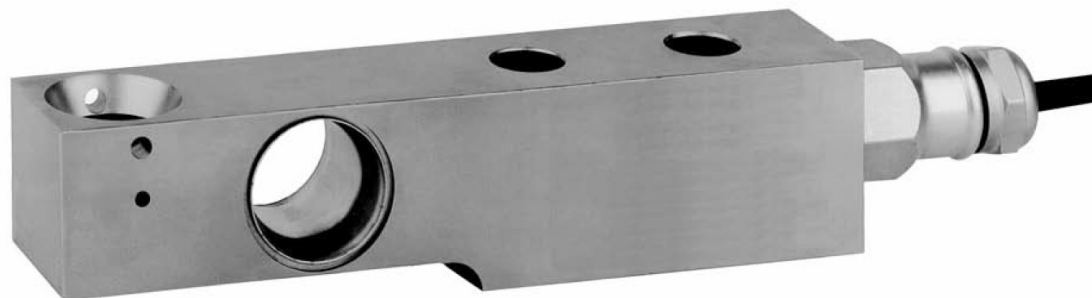


Type SB4 Load Cell



Product Description

The type SB4 is a stainless steel beam type load cell with complete hermetic sealing. It is a perfect fit for use in harsh industrial environments.

Application

- Platform scales, hopper and tank scales

Key Features

- Wide range of capacities from 5 kN to 100 kN (510 kg to 10 197 kg)
- Stainless steel construction
- Environmental Protection IP68 with complete hermetic sealing
- Unique blind loading hole
- High input resistance
- Calibration in mV/V/Ω

Options

- OIML approval to C3 MI7.5
- OIML approval to C4 MI7.5 (for 5...50 kN)

Approvals

- OIML approval to C1 (Y = 5 000), C3, C3 MI7.5, C4 and C4 MI7.5 (Y = 11 000)
- NTEP approval to 5 000 intervals, Class III (for 5 kN to 50 kN)
- ATEX hazardous area approval for Zone 0, 1, 2, 20, 21 and 22
- FM hazardous area approval

Packed Weight

| | | | |
|-----------------|------|-----|-----|
| ■ Capacity (kN) | 5-20 | 50 | 100 |
| Weight (kg) | 1.4 | 2.9 | 7.1 |

Available Accessories

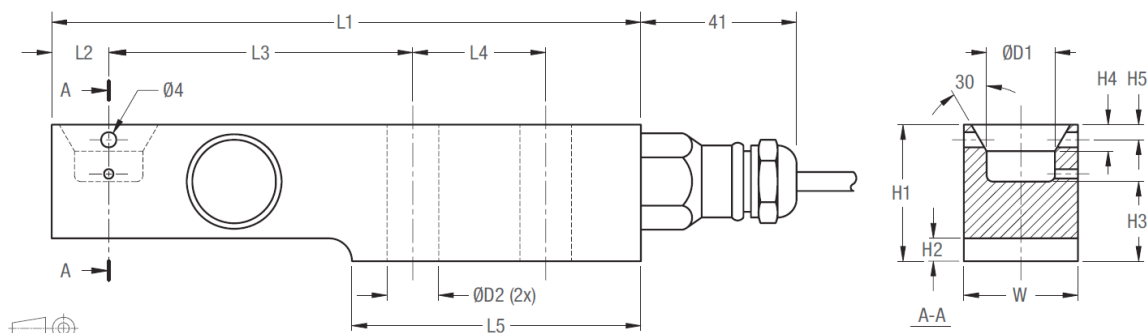
- Compatible range of application hardware
- Compatible range of electronics

Specifications

| | | | | | | | | | | | |
|--|---------------|--------------|--|-------------------|-------------------|-------------------|-------------------|--------------------------|--|--|--|
| Maximum capacity | (E_{max}) | kN | 5 / 10 / 20 / 50 / 100 | | | | | 5 / 10 / 20 / 50 | | | |
| Metric equivalents (1 N=0.10197 kg) | | kg | 510 / 1020 / 2039 / 5099 / 10197 | | | | | 510 / 1020 / 2039 / 5099 | | | |
| Accuracy class according to OIML R60 | | | (GP) | C1 | C3 | C3 MI 7.5 | C4 | C4 MI 7.5 | | | |
| Maximum number of verification intervals | (n_{max}) | | n.a. | 1 000 | 3 000 | | | 4 000 | | | |
| Minimum load cell verification interval | (v_{min}) | | n.a. | $E_{max}/5000$ | $E_{max}/11000$ | | | | | | |
| Temperature effect on minimum dead load output | (T_{CO}) | %*RO/°10C | $\leq \pm 0.0400$ | $\leq \pm 0.0275$ | $\leq \pm 0.0127$ | | | | | | |
| Temperature effect on sensitivity | (TC_{RO}) | %*RO/°10C | $\leq \pm 0.0200$ | $\leq \pm 0.0160$ | $\leq \pm 0.0100$ | | | $\leq \pm 0.0080$ | | | |
| Combined error | | %*RO | $\leq \pm 0.0500$ | $\leq \pm 0.0300$ | $\leq \pm 0.0200$ | $\leq \pm 0.0180$ | $\leq \pm 0.0180$ | $\leq \pm 0.0150$ | | | |
| Non-linearity | | %*RO | $\leq \pm 0.0400$ | $\leq \pm 0.0300$ | $\leq \pm 0.0166$ | $\leq \pm 0.0166$ | $\leq \pm 0.0125$ | $\leq \pm 0.0125$ | | | |
| Hysteresis | | %*RO | $\leq \pm 0.0400$ | $\leq \pm 0.0300$ | $\leq \pm 0.0166$ | $\leq \pm 0.0066$ | $\leq \pm 0.0125$ | $\leq \pm 0.0066$ | | | |
| Creep error (30 minutes) / DR | | %*RO | $\leq \pm 0.0600$ | $\leq \pm 0.0490$ | $\leq \pm 0.0166$ | $\leq \pm 0.0066$ | $\leq \pm 0.0125$ | $\leq \pm 0.0066$ | | | |
| Rated Output | (RO) | mV/V | $2 \pm 0.1\%$ | | | | | | | | |
| Calibration in mV/V/Ω (A...I classified) | | % | $\leq \pm 0.05$ ($\leq \pm 0.005$) | | | | | | | | |
| Excitation voltage | | V | 5...15 | | | | | | | | |
| Zero balance | | %*RO | $\leq \pm 5$ | | | | | | | | |
| Input resistance | (R_{LC}) | Ω | $1\ 100 \pm 50$ | | | | | | | | |
| Output resistance | (R_{out}) | Ω | $1\ 000 \pm 2$ | | | | | | | | |
| Insulation resistance (100 V DC) | | MΩ | $\geq 5\ 000$ | | | | | | | | |
| Safe load limit | (E_{lim}) | %* E_{max} | 200 | | | | | | | | |
| Ultimate load | | %* E_{max} | 300 | | | | | | | | |
| Safe side load | | %* E_{max} | 100 | | | | | | | | |
| Compensated temperature range | | °C | -10...+40 | | | | | | | | |
| Operating temperature range | | °C | -40...+80 (ATEX -40...+60) | | | | | | | | |
| Load cell material | | | stainless steel 17-4 PH (1.4548) | | | | | | | | |
| Sealing | | | complete hermetic sealing; cable entry sealed by glass to metal header | | | | | | | | |
| Protection according EN 60 529 | | | IP68 (up to 2 m water depth) / IP69K | | | | | | | | |

The limits for Non-Linearity, Hysteresis, and TC_{RO} are typical values.
The sum of Non-Linearity, Hysteresis and TC_{RO} meets the requirements according to OIML R60 with $p_{LC}=0.7$.

Dimensions (in mm)



| Type | L1 | L2 | L3 | L4 | L5 | H1 | H2 | H3 | H4 | H5 | W | D1 | D2 | Mounting bolts | Torque* |
|----------------|-----|----|-----|----|-----|----|------|------|----|------|----|----|----|----------------|---------|
| SB4-5/10/20 kN | 155 | 15 | 80 | 35 | 76 | 36 | 6 | 21 | 7 | 4 | 30 | 18 | 13 | M12 8.8 | 90 Nm |
| SB4-50 kN | 190 | 21 | 105 | 40 | 93 | 49 | 8 | 28.5 | 6 | 8 | 43 | 25 | 21 | M20 8.8 | 400 Nm |
| SB4-100 kN | 245 | 30 | 135 | 50 | 120 | 73 | 12.5 | 42 | 10 | n.a. | 60 | 30 | 27 | M24 8.8 | 700 Nm |

* Torque values assume oiled threads.

Wiring

- The load cell is provided with a shielded, 4 conductor cable (AWG 24).
Cable jacket polyurethane
- Cable length: 3 m for SB4-5 kN/10 kN/20 kN
4.5 m for SB4-50 kN/100 kN
- Cable diameter: 5 mm
- On customer enquiry the shield is either floating or connected to the load cell body

