

# SB14 beam load cell



## product description

The SB14 is a high accuracy, low profile bending beam available in a wide range of capacities. Full stainless steel construction and complete hermetic sealing ensures reliable accuracy and robustness in harsh industrial applications. The SB14 is the ideal choice for high accuracy weighing platforms due to the blind-hole load introduction arrangement when combined with the self-aligning feet.

## applications

Industrial platform scales, pallet truck scales, vessel and tank weighing systems.

## key features

Stainless steel construction

Hermetically sealed to IP68

Wide capacity range from 200lb to 10,000lb (91kg to 4,536kg)

High accuracy

Unique blind loading hole

High input resistance

Calibration in mV/V/Ω

## approvals

OIML approval to C3 and C3 M16 (Y=11,500)

NTEP approval to 5,000 intervals, Class III (for 500lb to 5,000lb) for multiple load cell applications

ATEX hazardous area approval for Zone 0, 1, 2, 20, 21 and 22

FM hazardous area approval

## accessories + options

Compatible range of hardware

Compatible range of electronics

Y = 23,000 for C3 and C3 M16 (for 500lb to 5klb)

Stainless steel cable gland



RoHS  
compliant



 **flintec**  
quality + precision

## specifications

|                                                                         |               |                                                          |                                |
|-------------------------------------------------------------------------|---------------|----------------------------------------------------------|--------------------------------|
| Maximum capacity ( $E_{\max}$ )                                         | klb           | 0.2 / 0.5 / 1 / 2.5 / 5 / 10*                            | 0.2 / 0.5 / 1 / 2.5 / 5        |
| Metric equivalents (1 lb=0.45359 kg)                                    | kg            | 91 / 227 / 454 / 1134 / 2,268 / 4,536                    | 91 / 227 / 454 / 1,134 / 2,268 |
| Accuracy class according to OIML R60                                    |               | (GP)                                                     | C3                             |
| Maximum number of verification intervals ( $n_{\max}$ )                 |               | n.a.                                                     | 3,000                          |
| Minimum load cell verification interval ( $v_{\min}$ )                  |               | n.a.                                                     | $E_{\max} / 11,500$            |
| Temperature effect on minimum dead load output ( $TC_0$ )               | %*RO/10°C     | ± 0.0400                                                 | ± 0.0122                       |
| Temperature effect on sensitivity ( $TC_{RO}$ )                         | %*RO/10°C     | ± 0.0200                                                 | ± 0.0100                       |
| Combined error                                                          | %*RO          | ± 0.0500                                                 | ± 0.0180                       |
| Non-linearity                                                           | %*RO          | ± 0.0400                                                 | ± 0.0166                       |
| Hysteresis                                                              | %*RO          | ± 0.0400                                                 | ± 0.0083                       |
| Creep error (30 minutes) / DR                                           | %*RO          | ± 0.0600                                                 | ± 0.0083                       |
| Optional Min.load cell verification interval ( $v_{\min \text{ opt}}$ ) |               | n.a.                                                     | $E_{\max} / 23,000$            |
| Optional Temp. effect on min. dead load output ( $TC_0 \text{ opt}$ )   | %*RO/10°C     | n.a.                                                     | ± 0.0061                       |
| Rated Output (RO)                                                       | mV/V          | 2 ± 0.1%                                                 |                                |
| Calibration in mV/V/Ω (A...I classified)                                | %             | ± 0.05 (± 0.005)                                         |                                |
| Zero balance                                                            | %*RO          | ± 5                                                      |                                |
| Excitation voltage                                                      | V             | 5...15                                                   |                                |
| Input resistance ( $R_{LC}$ )                                           | Ω             | 1,100 ± 50                                               |                                |
| Output resistance ( $R_{out}$ )                                         | Ω             | 1,000 ± 2                                                |                                |
| Insulation resistance (100 V DC)                                        | MΩ            | ≥ 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                                                                 |               | cable entry hermetically sealed by glass to metal header |                                |
| Protection according EN 60 529                                          |               | IP68 (up to 2m water depth) / IP69K                      |                                |
| Packet weight                                                           | kg            | 1.2 (500-5,000lb), 2.44 (10,000lb)                       |                                |

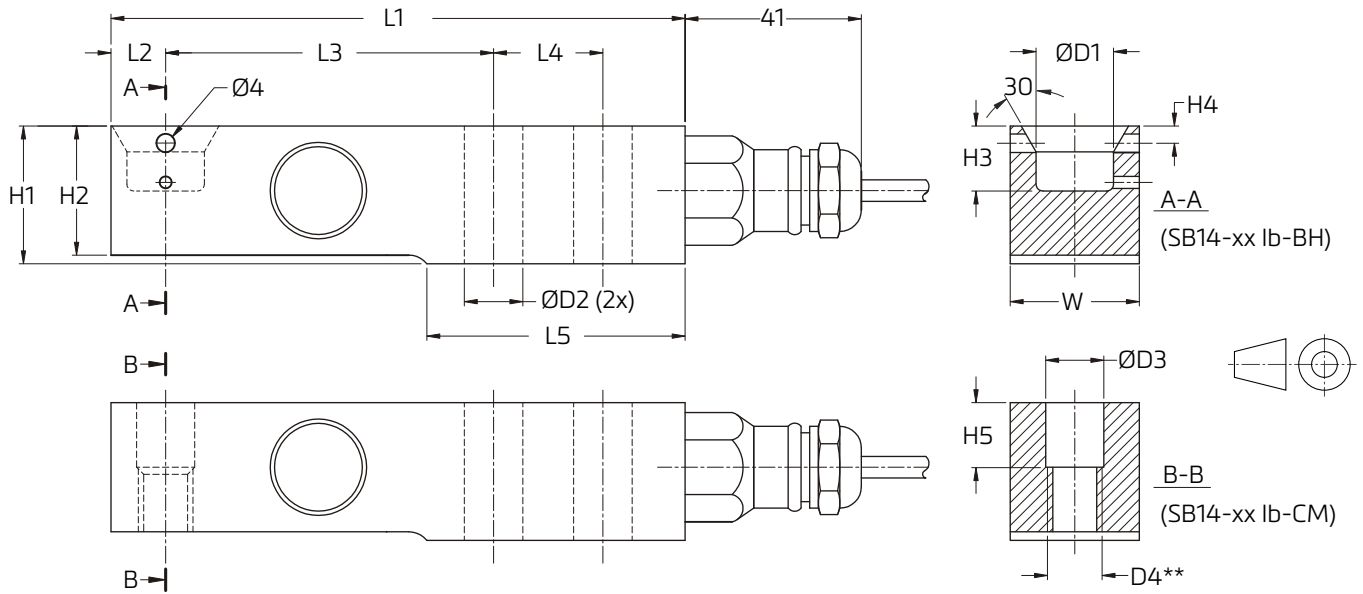
The limits for Non-Linearity, Hysteresis, and  $TC_{RO}$  are typical values.

The sum of Non-linearity, Hysteresis and  $TC_{RO}$  meets the requirements according to OIML R60 with  $p_{LC}=0.7$ .

\* Only available in GP version.



## product dimensions (mm)



| Type        | L1    | L2   | L3   | L4   | L5   | H1   | H2   | H3   | H4 | H5   | W  | D1 | D2 | D3   | D4  | Mounting bolts | Torque * |
|-------------|-------|------|------|------|------|------|------|------|----|------|----|----|----|------|-----|----------------|----------|
| 200 lb      | 133.3 | 12.7 | 76.2 | 25.4 | 59.9 | 30   | 27.7 | 15   | 4  | 15.2 | 30 | 18 | 13 | 13.5 | M12 | M12 8.8        | 90 Nm    |
| 500/1000 lb | 133.4 | 12.7 | 76.2 | 25.4 | 59.9 | 31   | 28.8 | 15   | 4  | 15   | 30 | 18 | 13 | 13.5 | M12 | M12 8.8        | 90 Nm    |
| 2500 lb     | 133.4 | 12.7 | 76.2 | 25.4 | 59.9 | 31   | 30.5 | 15   | 4  | 15   | 30 | 18 | 13 | 13.5 | M12 | M12 8.8        | 90 Nm    |
| 5000 lb     | 133.4 | 12.7 | 76.2 | 25.4 | 59.9 | 31   | 30.5 | 15   | 4  | 15   | 30 | 18 | 13 | 13.5 | M12 | M12 10.9       | 120 Nm   |
| 10,000 lb   | 177.8 | 19.1 | 95.3 | 38.1 | 92.7 | 43.6 | 38.1 | 20.5 | 8  | 20.1 | 43 | 25 | 21 | 21.5 | M20 | M20 8.8        | 400 Nm   |

\* Torque values assume oiled threads.

\*\* Unified thread 1/2-20 UNF (500...5000 lb) and 3/4-16 UNF (10000 lb) is available. Type designation SB14-xx-CU.

## wiring

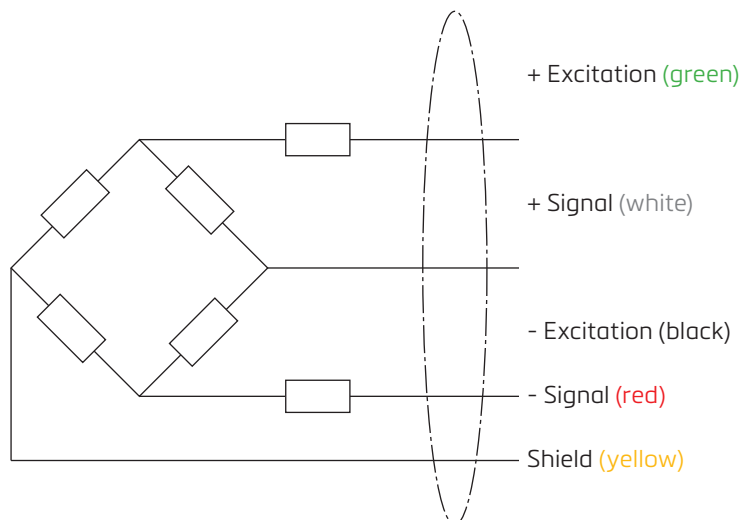
The load cell is provided with a shielded, 4 conductor cable (AWG 24).

Cable jacket: polyurethane

Cable length: 3 m for SB14-500lb to 5,000lb, 4.5 m for SB14-10,000lb

Cable diameter: 5 mm

The shield is floating (On request the shield can be connected to the load cell body)



Specifications and dimensions are subject to change without notice.