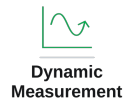


S-TYPE LOAD CELL

TENSION &
COMPRESSION



- CAPACITY 10 KG ... 10 T
- OIML R60 · C2 · C3 · C4
- STAINLESS STEEL · IP68
- FULLY LASER WELDED



NOMINAL LOAD (FS)

Capacity	Classes OIML R60	Approved version	Size Ø (mm)	Weight (kg)
10 · 25 · 50 kg	C2 · C3	—	63.5	0.6
100 · 200 · 300 · 500 kg	C2 · C3	C2 · C3	63.5	0.6
500 kg · 1 · 2 t	C2 · C3	C2 · C3 · C4	82	1.2
2.5 t	C2 · C3	C2 · C3 · C4	82	1.2
5 · 7.5 t	C2 · C3	C2 · C3	102	2.6
10 t	C2 · C3	—	127	≈ 4.4

Approved version with OIML R60 certificate R60-2000-GB1-07.03, for tension applications only; class C4 only there. Minimum verification interval $v_{min} = E_{max} / 10\,000$ (C2, C3), $E_{max} / 15\,000$ (C4). Acceleration of gravity $g = 9.80434 \text{ m/s}^2$.



OVERVIEW

S-type load cell of stainless steel for tension and compression, from 10 kg to 10 t, accuracy classes C2 and C3 to OIML R60; the approved version for tension up to class C4.

The elastic element is completely laser welded and protected to IP68 (100 h at 1 m water column); 10, 25 and 50 kg carry a silicone cover and are protected to IP65. It is connected via a 5 m shielded four-wire cable, or optionally via an M12 connector. Typical uses are silos with three tension supporting points or platforms with four jointed feet.

10 kg ... 10 t

capacities

C2 · C3 · C4

OIML R60

2 mV/V

nominal sensitivity

IP68

protection class

MEASUREMENT

- tension and compression, static and dynamic
- combined error down to $\leq \pm 0.015\%$ (C4)
- nominal sensitivity $2 \text{ mV/V} \pm 0.1\%$
- natural frequency $0.35 \dots 3.25 \text{ kHz}$

DESIGN

- stainless steel, completely laser welded
- IP68 (10 ... 50 kg: IP65)
- female thread $M12 \times 1.75 \dots M30 \times 2$
- 5 m cable, M12 connector option



TECHNICAL DATA

PRECISION (C2 · C3 · C4)

Legal divisions	2000 · 3000 · 4000
Combined error	$\leq \pm 0.023 \cdot 0.018 \cdot 0.015 \%$
Non-repeatability	$\leq \pm 0.015 \cdot 0.010 \cdot 0.010 \%$
Zero return over 30 min	$\leq \pm 0.025 \cdot 0.015 \cdot 0.010 \%$
Creep over 30 min	$\leq \pm 0.025 \cdot 0.015 \cdot 0.015 \%$
Creep over 20 and 30 min	$\leq \pm 0.005 \cdot 0.005 \cdot 0.003 \%$
Temperature effect on zero (10 °C)	$\leq \pm 0.028 \cdot 0.010 \cdot 0.008 \%$
Temperature effect on sensitivity (10 °C)	$\leq \pm 0.012 \cdot 0.010 \cdot 0.008 \%$

MECHANICAL PROPERTIES

Material	stainless steel, completely laser welded
Displacement at nominal load	$\approx 0.2 \text{ mm}$
Weight	0.6 kg (Ø 63.5) · 1.2 kg (Ø 82) · 2.6 kg (Ø 102) · $\approx 4.4 \text{ kg}$ (Ø 127)
Protection class (EN 60529)	IP68 (100 h at 1 m water column) · 10, 25, 50 kg: IP65 (silicone cover)

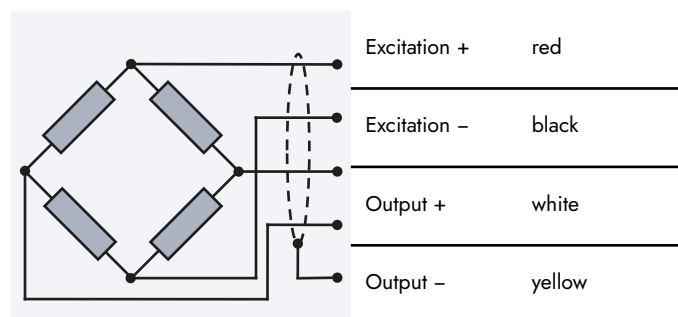
ELECTRICAL PROPERTIES

Nominal sensitivity	2 mV/V
Sensitivity tolerance	$\leq \pm 0.1 \%$
Input resistance	$420 \pm 20 \Omega$
Output resistance	$350 \pm 2 \Omega$
Insulation resistance	$> 5 \text{ G}\Omega$
Zero balance	$\leq \pm 1 \%$
Recommended supply voltage	10 V
Nominal supply voltage	1 ... 15 V
Maximum supply voltage	18 V
Cable	PVC 105 °C, shielded, Ø 5.2 mm, 4 × 0.35 mm ² , 5 m (10 m on request)

TEMPERATURE

Reference temperature	+23 °C
Nominal temperature range	-10 ... +40 °C
Service temperature	-20 ... +70 °C
Storage temperature	-20 ... +80 °C

ELECTRICAL CONNECTION



MECHANICAL LIMITS (REFERRED TO NOMINAL LOAD)

Minimum load	0 %
Service load	120 %
Max. permissible load	150 %
Breaking load	> 300 %
Max. transverse load	100 %
Max. permissible dynamic load	50 %

NATURAL FREQUENCY

10 · 25 · 50 kg	0.35 · 0.65 · 1.05 kHz
100 · 200 · 300 · 500 kg (Ø 63.5)	1.25 · 1.75 · 1.75 · 1.80 kHz
500 kg (Ø 82) · 1 · 2 · 2.5 t	2.20 · 2.50 · 2.50 · 3.25 kHz
5 · 7.5 · 10 t	3.20 · 3.00 · 3.25 kHz

M12 CONNECTOR, 5-POLE (OPTION)

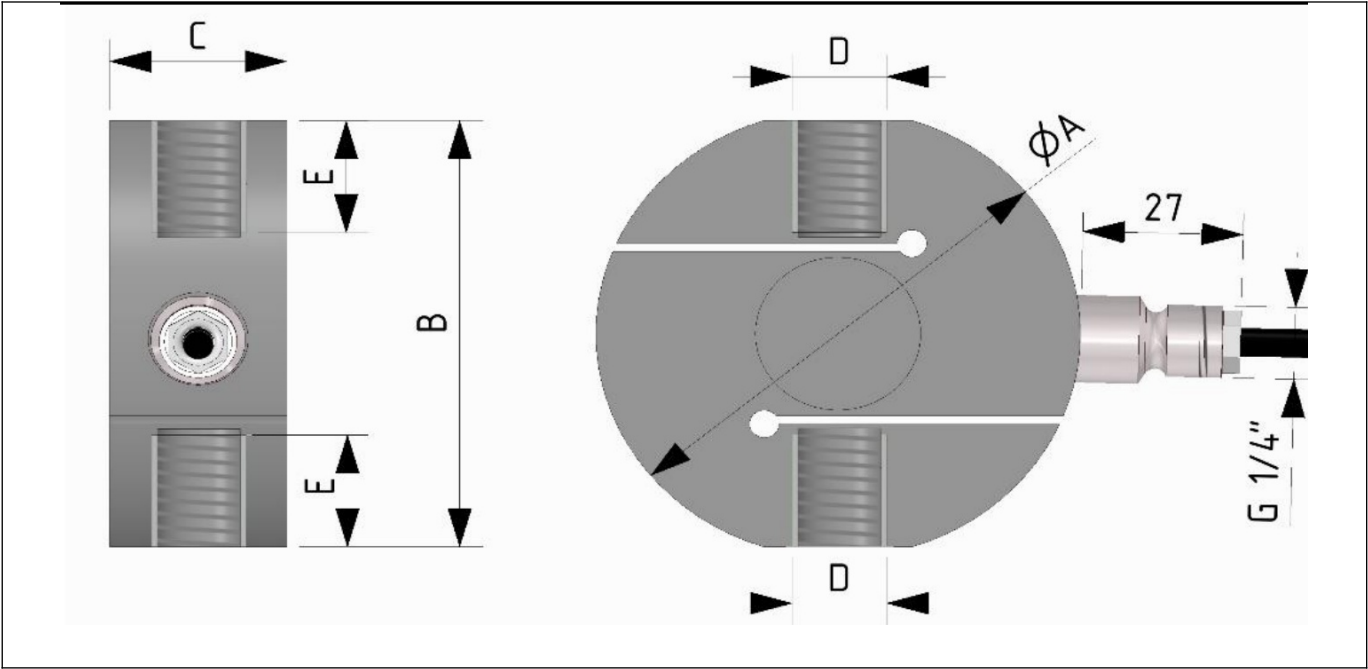
Excitation +	Pin 1
Excitation –	Pin 3
Output +	Pin 2
Output –	Pin 4
Shield	Pin 5

ACCESSORIES AND OPTIONS

M12 connector	direct output on the load cell; not available for the approved version
Connection cable	female M12 × 1, 5-pole, straight, PVC, shielded, 3 m
Knuckle joints	to ISO 12240-4 series E, M12 ... M30 × 2
Calibration report	compression or tension



DIMENSIONS (mm)



Dimensions in mm; the letters refer to the dimension table. Cable gland G 1/4.

DIMENSION TABLE (mm)

Capacity	Ø A	B	C	D	E
10 ... 500 kg	63.5	59.5	22	M12 × 1.75	12
500 kg ... 2 t	82	78	30	M16 × 2	20
2.5 t	82	78	30	M20 × 1.5	20
5 t - 7.5 t	102	90	45	M24 × 2	21.5
10 t	127	120	50	M30 × 2	29

500 kg is available in size Ø 63.5 and Ø 82 mm. The approved version has the same dimensions.

COMPLIANCE AND CERTIFICATION

Protection Rating	IP68 (100 h at 1 m water column) · 10, 25, 50 kg: IP65	
Compliance	CE, RoHS · OIML R60	
Calibration	Calibration report on request (compression or tension)	
Certifications		Approved version: OIML R60, certificate R60-2000-GB1-07.03 (tension only)

