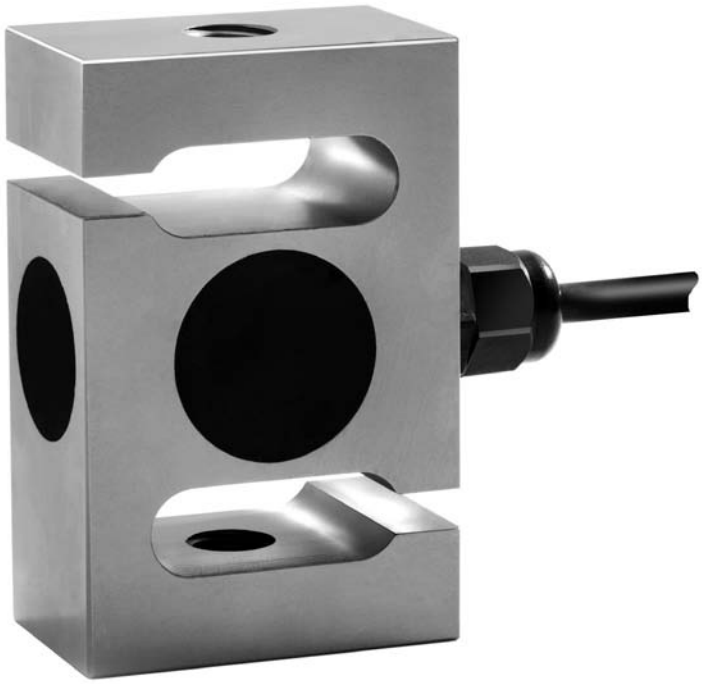
Type ULB Load Cell



Product Description

Type ULB is a stainless steel universal load cell which allows for tension and compression loading. Its improved potting makes it suitable for use in industrial environments.

Application

- Crane scales and hanging scales, small hopper and tank weighing systems, hybrid systems with lever work, belt weighers and other load carriers with multiple load cells

Key Features

- Wide range of capacities from 100 kg to 5 000 kg
- Stainless steel construction
- Environmental Protection IP67
- Bi-direction (tension and compression)
- High input resistance
- Calibration in mV/V/Ω

Approvals

- OIML approval to C3 (Y = 12 000) (for tension load only)
- NTEP approval to 5 000 intervals, Class III and 10 000 intervals, Class III L
- ATEX hazardous area approval for Zone 0, 1, 2, 20, 21 and 22
- FM hazardous area approval

Packed Weight

Capacity	(kg)	100	200	500	1 000
Weight	(kg)	1.0	1.0	1.1	1.1
Capacity	(kg)	2 000	3 000	5 000	
Weight	(kg)	1.85	2.62	5.22	

Available Accessories

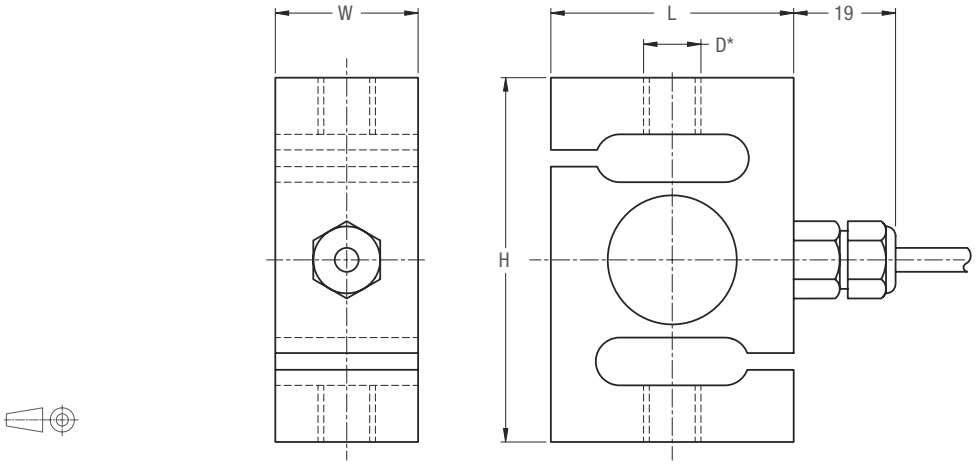
- Compatible range of application hardware
- Compatible range of electronics

Specifications

Maximum capacity	(E_{max})	kg	100 / 200 / 500 / 1 000 / 2 000 / 3 000 / 5 000	500 / 1 000 / 2 000 / 3 000 / 5 000
Minimum dead load	(E_{min})	%*E_{max}	0	
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} /12 000
Temperature effect on minimum dead load output	(TC_0)	%*RO/10°C	≤ ± 0.0400	≤ ± 0.0116
Temperature effect on sensitivity	(TC_{RO})	%*RO/10°C	≤ ± 0.0200	≤ ± 0.0100
Combined error		%*RO	≤ ± 0.0500	≤ ± 0.0200
Non-linearity		%*RO	≤ ± 0.0400	≤ ± 0.0166
Hysteresis		%*RO	≤ ± 0.0400	≤ ± 0.0166
Creep error (30 minutes) / DR		%*RO	≤ ± 0.0600	≤ ± 0.0166
Rated Output	(RO)	mV/V	2 ± 0.1%	
Calibration in mV/V/W (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	
Compensated temperature range		°C	–10...+40	
Operating temperature range		°C	–20...+65 (ATEX –20...+60)	
Load cell material			stainless steel 17-4 PH (1.4548)	
Sealing			potted	
Protection according EN 60 529			IP67	

* Accuracy class is only valid for tension load.
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	H	L	W	Metric thread D-M	Unified thread D-U	Unified thread D-H
ULB-100 kg...500 kg	76.2	49	30	M12	1/2-20	
ULB-1000 kg	76.2	49	30	M16	1/2-20	5/8-18
ULB-2000 kg	86.1	76.2	30	M16	5/8-18	
ULB-3000 kg	88.7	88.7	40	M20 x 1.5	3/4-16	
ULB-5000 kg	146	91.2	56.4	M24 x 2	1-12	

* 3 versions available: ULB-xxxx kg-M (with metric thread), ULB-xxxx kg-U (with unified thread) or ULB-xxxx kg-H (with special thread)

Wiring

- The load cell is provided with a shielded, 4 conductor cable (AWG 24).
  Cable jacket polyurethane
- Cable length: 6 m
- Cable diameter: 5 mm
- The shield is floating
  (On request the shield can be connected to the load cell body)