

LUX-B-ID

Compact Tension/Compression Load Cell



1
-104

Sensor



Suitable for measuring and controlling loads applied to small-scale presses and press-fitting devices

- Rated capacity: ± 50 N to 20 kN
- Degree of protection: IP67
- Detachable cable for easy installation

Compact and lightweight tension/compression load cells designed with a screw-shaped load receiving portion.

*For TEDS information, the rated output value is recorded as the average value of the tension side and compression side outputs.

Specifications

Performance

Rated Capacity	See table below.
Nonlinearity	Within $\pm 0.1\%$ RO (2KN or less: Within $\pm 0.15\%$ RO)
Hysteresis	Within $\pm 0.1\%$ RO (2KN or less: Within $\pm 0.15\%$ RO)
Repeatability	0.05% RO or less
Rated Output	1.3 mV/V or more (100N to 1KN: 0.9 mV/V or more, 50N: 0.85 mV/V or more)

Environmental Characteristics

Safe Temperature	-20 to 80°C
Compensated Temperature	-10 to 70°C
Temperature Effect on Zero	Within $\pm 0.005\%$ RO/°C (50N to 200N: Within $\pm 0.03\%$ RO/°C)
Temperature Effect on Output	Within $\pm 0.005\%$ /°C

Electrical Characteristics

Safe Excitation	15 V AC or DC (50N to 200N: 10 V AC or DC)
Recommended Excitation	1 to 10 V AC or DC (50N to 200N: 1 to 5 V AC or DC)
Input Resistance	375 Ω $\pm 1.5\%$
Output Resistance	350 Ω $\pm 1\%$
Cable	Model : TE-45 6-conductor (0.08 mm ²) chloroprene shielded cable, 4.4 mm diameter by 3 m long Sensor side: Terminated with a connector plug 213FCW-8P Measuring instrument side: Bared at the tip (Shield wire is not connected to the case.)

Mechanical Properties

Safe Overloads	150%
Natural Frequencies	See table below.
Material	SUS (Metallic finish)
Weight	Approx. 50 g (200N or less) (Excluding cable) Approx. 90 g (500N to 2KN) (Excluding cable) Approx. 260 g (5 to 20KN) (Excluding cable)
Degree of Protection	IP67 (JIS C 0920/IEC 60529)

- **Optional Accessories**
- Mount base CX
 - Ball joint TU
 - Whirl-stop coupling TSC
 - Whirl-stop brackets TS

Models

Model	Rated Capacity	Natural Frequencies (Approx.)	Spring Constant (Approx.)
LUX-B-50N-ID	± 50 N	8 kHz	2.7 kN/mm
LUX-B-100N-ID	± 100 N	11 kHz	4.9 kN/mm
LUX-B-200N-ID	± 200 N	14 kHz	8.2 kN/mm
LUX-B-500N-ID	± 500 N	16 kHz	40 kN/mm
LUX-B-1KN-ID	± 1 kN	21 kHz	69 kN/mm
LUX-B-2KN-ID	± 2 kN	27 kHz	122 kN/mm
LUX-B-5KN-ID	± 5 kN	18 kHz	328 kN/mm
LUX-B-10KN-ID	± 10 kN	21 kHz	524 kN/mm
LUX-B-20KN-ID	± 20 kN	25 kHz	761 kN/mm

*Models with the cable which is resistant to repeated bending (flexible cable) are available. Please contact us.

To Ensure Proper Usage

- If impact is expected in receiving tensile loads, be cautious when selecting the load cell capacity. Select a capacity one rank above the usage load.
- Never apply a load exceeding the safe overloads of this device. This is especially dangerous when you measure tension loading, as the measuring object could drop.
- Take note of the strength of fastened parts screwed into this device. In particular, when using a rated capacity of 2 kN or more, use parts made of a material with a tensile strength of 800 N/mm² or more.
Typical recommended material SUS 630 (H900) hardness HRC40 to 47
SCM435 hardness HRC30 to 38

Strain Gage

Load Cell

Pressure Sensor

Acceleration Sensor

Torque Sensor

Displacement Sensor

Component Force Sensor

Automotive Sensor

Civil Engineering Sensor

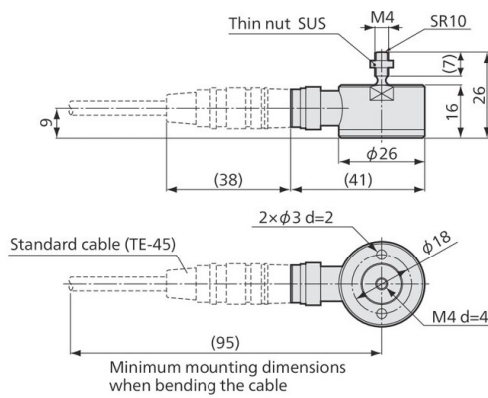


Strain Gage

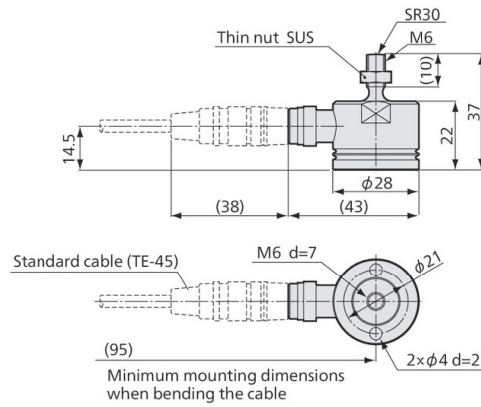
Load Cell

Pressure
SensorAcceleration
SensorTorque
SensorDisplacement
SensorComponent
Force
SensorAutomotive
SensorCivil
Engineering
Sensor

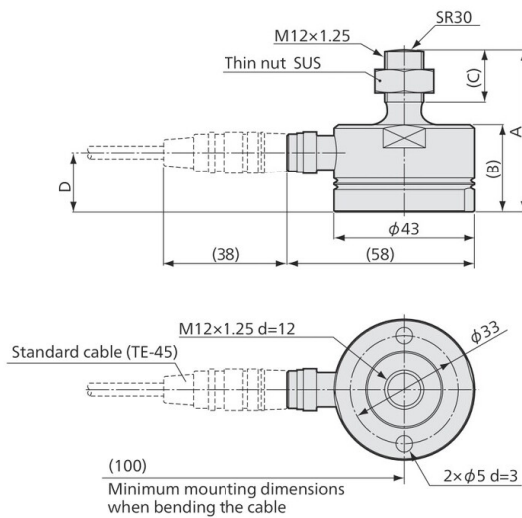
■ Dimensions



LUX-B-50 to 200N-ID



LUX-B-500N to 2KN-ID

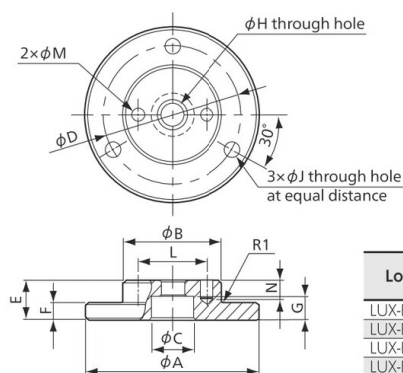


LUX-B-5 to 20KN-ID

Model	A	(B)	(C)	D
LUX-B-5KN-ID	49	26.5	15	19.5
LUX-B-10KN-ID	51	27.5		
LUX-B-20KN-ID	53	27	16	18

Bared at the tip (standard)
(For TEDS installation)

■ Mount Base CX



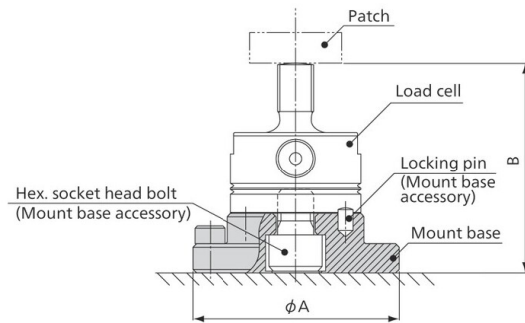
Load cell	Mount Base	φA	φB	φC	φD	E	F	G	φH	φJ	L	φM	N	Weight (Approx.)
LUX-B-50N-ID														
LUX-B-100N-ID	CX-2	43	26	9	35	7	2.5	4.5	4.5	5	18±0.1	3 ^{+0.20} _{+0.06}	4.5	40 g
LUX-B-200N-ID														
LUX-B-500N-ID														
LUX-B-1KN-ID	CX-4	48	29	13	39	12	5	7	7		21±0.1	4 ^{+0.2} _{+0.1}	6	100 g
LUX-B-2KN-ID														
LUX-B-5KN-ID														
LUX-B-10KN-ID	CX-6	68	44	20	57	20	10	13	13	7	33±0.1	5 ^{+0.2} _{+0.1}		350 g
LUX-B-20KN-ID														

Hexagon socket head bolts for connection among load cells, mount bases, and locking pins are attached to the mount base.

● In combination with mount base (CX)

*The patch should be prepared by user or CA-2F or the equivalent should be used.

*This combination does not apply to tensile load measurement.



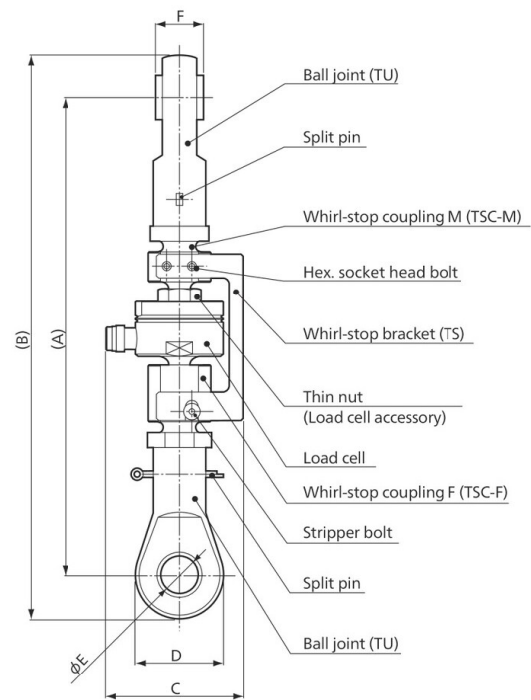
Load cell	Mount Base	φA	B
LUX-B-50N-ID	CX-2	43	33
LUX-B-100N-ID			
LUX-B-200N-ID			
LUX-B-500N-ID			
LUX-B-1KN-ID	CX-4	48	49
LUX-B-2KN-ID			
LUX-B-5KN-ID			
LUX-B-10KN-ID			
LUX-B-20KN-ID	CX-6	68	69
			71
			73

● In combination with ball joint (TU), whirl-stop coupling (TSC) and whirl-stop bracket (TS)

*This combination does not apply to compressive load measurement.

*Note that the Whirl-stop Bracket TS is not a safety device to be used when a load exceeding the safe overload is applied.

If exceeding safe overload is applied, install a safety device on customer side before use.



Load cell	Whirl-stop Coupling	Whirl-stop Bracket	Ball Joint	(A)	(B)	C	D	φE	F
LUX-B-50N-ID	TSC-2M TSC-2F	TS-2	TU-6B	102	120	44.7	18	6	9
LUX-B-100N-ID									
LUX-B-200N-ID									
LUX-B-500N-ID	TSC-4MB TSC-4FB	TS-4B	TU-12B	165	195	50.5	30	12	16
LUX-B-1KN-ID									
LUX-B-2KN-ID									
LUX-B-5KN-ID	TSC-6MB TSC-6FB	TS-6B	TU-18B	237	279	67	42	18	23
LUX-B-10KN-ID				239	281				
LUX-B-20KN-ID				241	283				



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