

Tension/Compression Load Cell



Compact tension/compression load cells

- Rated capacity: ± 5 kN to 2 MN
- Can be designed with rated capacity 2 MN or more
- Wide range of rated capacities

Thin tension/compression load cells. They are suitable for use with height restrictions, or for fatigue tests where a continuous load is applied.

To Ensure Proper Usage

- Be sure to prevent the shaft from turning when using for hanging load measurement. LUK-A is not applicable to setscrews.
- Make sure not to use special accessories such as ball-joint, hanger and rotating attachment.

Specifications

Performance	
Rated Capacity	See table below.
Nonlinearity	Within $\pm 0.1\%$ RO (500kN or larger: Within $\pm 0.2\%$ RO)
Hysteresis	Within $\pm 0.1\%$ RO (500kN or larger: Within $\pm 0.2\%$ RO)
Repeatability	0.05% RO or less (500kN or larger: 0.1% RO or less)
Rated Output	2 mV/V $\pm 1\%$ (5 to 20kN is 2.4 mV/V $\pm 10\%$)

Environmental Characteristics

Safe Temperature	-35 to 80°C
Compensated Temperature	-10 to 70°C
Temperature Effect on Zero	Within $\pm 0.005\%$ RO/°C
Temperature Effect on Output	Within $\pm 0.005\%$ /°C

Electrical Characteristics

Safe Excitation	15 V AC or DC
Recommended Excitation	1 to 10 V AC or DC
Input Resistance	350 Ω $\pm 1\%$
Output Resistance	350 Ω $\pm 1\%$
Cable	4-conductor (0.3 mm ²) chloroprene shielded cable, 7.6 mm diameter by 5 m long, terminated with connector plug PRC03-12A10-7M (Shield wire is not connected to the case.)

Mechanical Properties

Safe Overloads	150%
Natural Frequencies	See table below.
Weight	See table below.
Safe Lateral Force Component	See table below.
Safe Moment	See table below.
Degree of Protection	IP64 (JIS C 0920/IEC 60529)
Compliance	Directive 2011/65/EU, (EU)/2015/863 (10 restricted substances) (RoHS)

Models

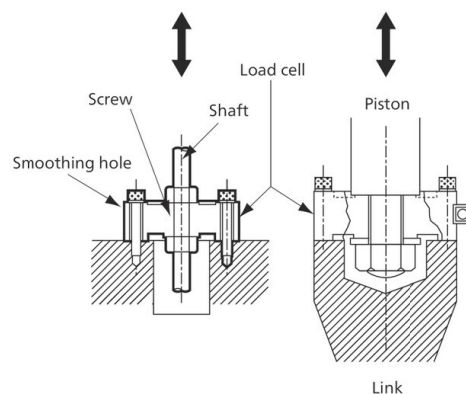
Model	Rated Capacity	Natural Frequencies (Approx.)	Safe Lateral Force Component	Safe Moment	Weight (Approx.) ^{*1}
LUK-A-5kN	± 5 kN	7.4 kHz	250 N	15 N·m	900 g
LUK-A-10kN	± 10 kN	10.8 kHz	500 N	30 N·m	
LUK-A-20kN	± 20 kN	8.5 kHz	1 kN	60 N·m	2 kg
LUK-A-50kN	± 50 kN	11 kHz	2.5 kN	150 N·m	4 kg
LUK-A-100kN	± 100 kN	9 kHz	5 kN	500 N·m	7 kg
LUK-A-200kN	± 200 kN	7.5 kHz	10 kN	1 kN·m	18 kg
LUK-A-500kN	± 500 kN	5.2 kHz	25 kN	2.5 kN·m	50 kg
LUK-A-1MN	± 1 MN	5 kHz	50 kN	5 kN·m	90 kg
LUK-A-2MN	± 2 MN	3.9 kHz	100 kN	10 kN·m	245 kg

^{*1} Excluding cable

^{*} TEDS-installed models are available. Please contact us.

^{*} Custom-made models with rated capacity over 2 MN are available. Please contact us.

Installation Example



Strain Gage

Load Cell

Pressure Sensor

Acceleration Sensor

Torque Sensor

Displacement Sensor

Component Force Sensor

Automotive Sensor

Civil Engineering Sensor



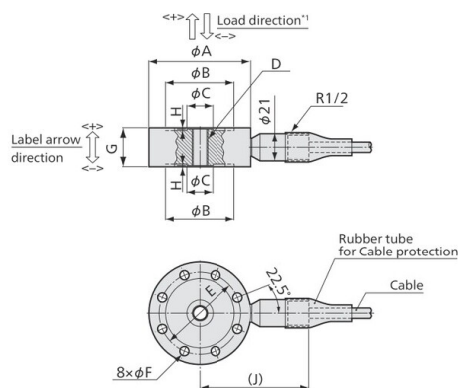
Strain Gage

Load Cell

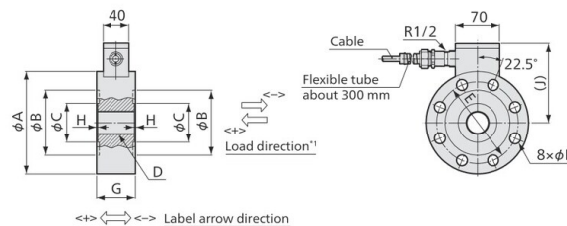
Pressure
SensorAcceleration
SensorTorque
SensorDisplacement
SensorComponent
Force
SensorAutomotive
SensorCivil
Engineering
Sensor

■ Dimensions

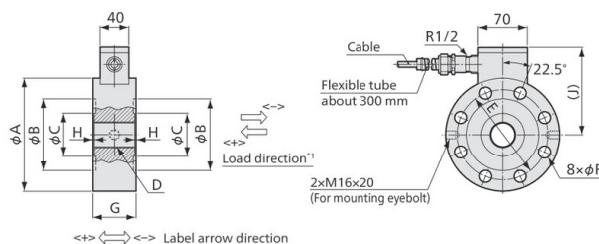
*1 The load direction refers to the condition where the outer peripheral surface is fixed and the load is applied to the center.



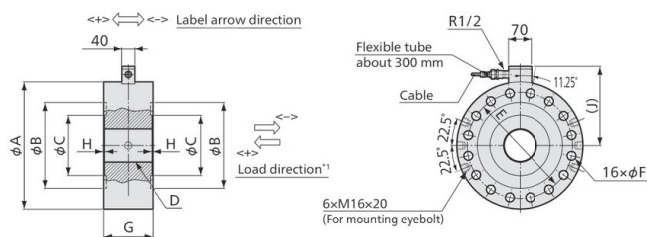
LUK-A-5 to 20KN



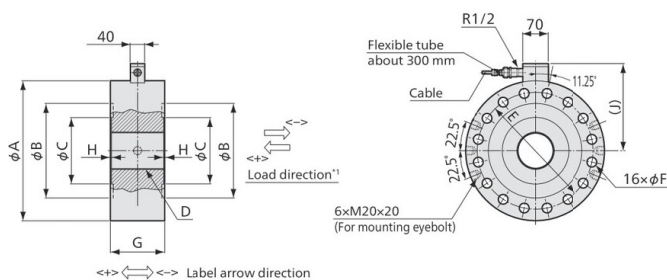
LUK-A-50, 100KN



LUK-A-200, 500KN



LUK-A-1MN



LUK-A-2MN

Model	ϕA	ϕB	ϕC	D	E	ϕF	G	H	(J)
LUK-A-5KN	77	52	20	M12 × 1.75	62	7	30	1	82
LUK-A-10KN	77	52	20	M12 × 1.75	62	7	30	1	82
LUK-A-20KN	107	70	34	M18 × 1.5	85	9	40	1	97
LUK-A-50KN	127	77	40	M24 × 1.5	95	13	50	1	102
LUK-A-100KN	157	100	60	M36 × 2	125	17	60	2	119
LUK-A-200KN	227	136	90	M50 × 2	180	22	70	2	157
LUK-A-500KN	307	200	138	M76 × 3	256	26	105	3	197.5
LUK-A-1MN	375	254	180	M100 × 3	314	26	150	3	232.5
LUK-A-2MN	560	410	260	M150 × 4	485	36	200	3	326

Connector plug (standard)
PRC03-12A10-7M

