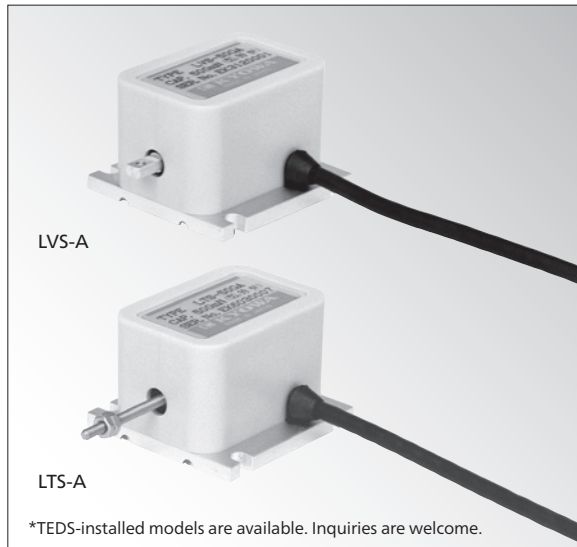


LVS-A/LTS-A

Ultra Small-capacity Load Cell

- Compact & lightweight
- 50 mN to 20 N



LVS-A

LTS-A

*TEDS-installed models are available. Inquiries are welcome.

Designed to accurately measure small loads ranging from 50 mN to 20 N.

- Compact & lightweight
- High accuracy
- Easy to handle

These load cells are designed to accurately measure small loads ranging from 50 mN to 20 N. Easy to install and handle, the LVS-A series measures loads in vertical direction to the mounted surface and the LTS-A series, in horizontal direction.

Specifications

Performance

Rated Capacity	See table below.
Nonlinearity	Within $\pm 0.5\%$ RO
Hysteresis	Within $\pm 0.5\%$ RO
Repeatability	0.5% RO or less
Rated Output	1.5 mV/V or more 5GA and 10GA: 1.2 mV/V or more

Environmental Characteristics

Safe Temperature	-10 to 70°C
Compensated Temperature	0 to 60°C
Temperature Effect on Zero	Within $\pm 0.05\%$ RO/°C
Temperature Effect on Output	Within $\pm 0.1\%$ /°C

Electrical Characteristics

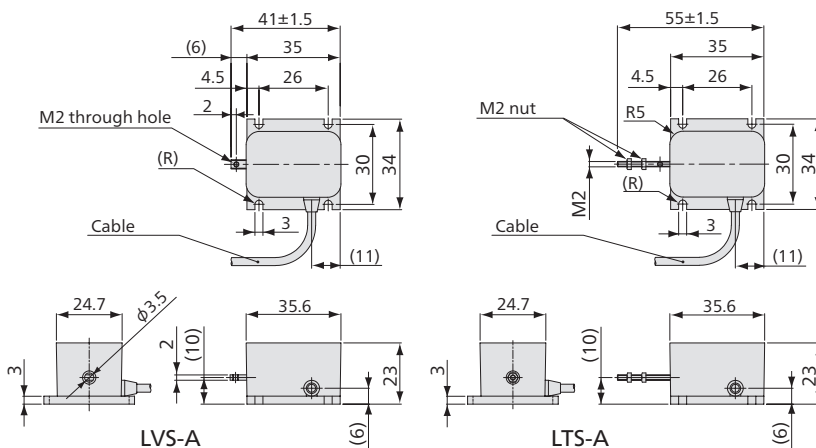
Safe Excitation	6 V AC or DC
Recommended Excitation	1 to 2 V AC or DC
Input Resistance	120 Ω $\pm 10\%$
Output Resistance	120 Ω $\pm 10\%$
Cable	4-conductor (0.05 mm ²) chloroprene shielded cable, 3 mm diameter by 1 m long, terminated with a connector plug PRC03-12A10-7M (Shield wire is not connected to the case.)

Mechanical Properties

Safe Overloads	120%
Ultimate Overloads	See table below.
Natural Frequencies	See table below.
Weight	Approx. 50 g (Excluding cable)

Models	Rated Capacity	Natural Frequencies (Approx.)	Ultimate Overloads
LVS-5GA	50 mN	50 Hz	1000%
LVS-10GA	100 mN	111 Hz	
LVS-20GA	200 mN	147 Hz	
LVS-50GA	500 mN	294 Hz	500%
LVS-100GA	1 N	455 Hz	
LVS-200GA	2 N	667 Hz	
LVS-500GA	5 N	1220 Hz	250%
LVS-1KA	10 N	1600 Hz	
LVS-2KA	20 N	2500 Hz	
LTS-50GA	500 mN	256 Hz	500%
LTS-100GA	1 N	385 Hz	
LTS-200GA	2 N	625 Hz	
LTS-500GA	5 N	1000 Hz	250%
LTS-1KA	10 N	1670 Hz	
LTS-2KA	20 N	1700 Hz	

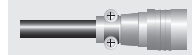
Dimensions



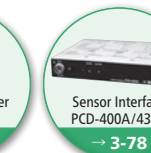
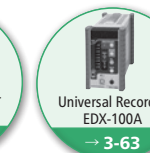
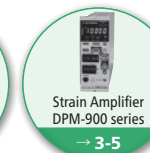
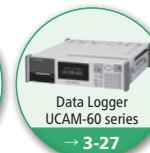
To Ensure Safe Usage

- The load cell should be carefully installed. Especially, never apply any impact (Force) in sensitivity direction.
- When mounting the rod to the measuring object, do not apply any bending or twisting force.

Connector plug PRC03-12A10-7M



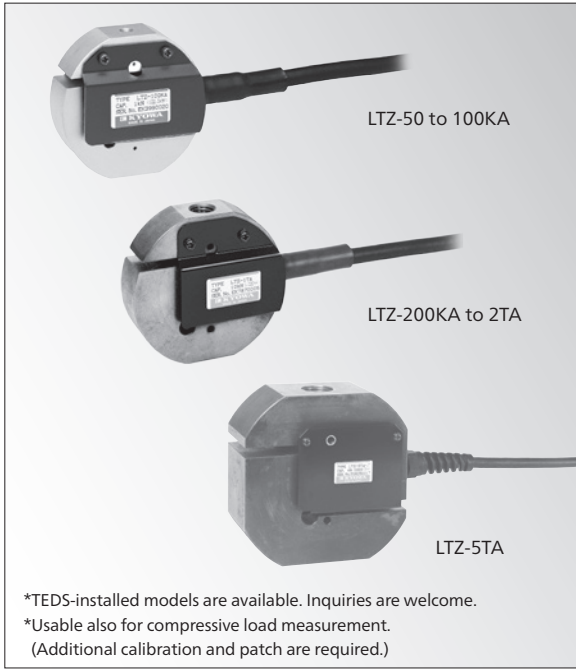
- Physical quantity indication
- Static measurement
- Dynamic measurement



LTZ-A

High-accuracy Tension Load Cell

● Small-sized, high accuracy ● 500 N to 50 kN



Specifications

Performance

Rated Capacity	See table below.
Nonlinearity	Within $\pm 0.03\%$ RO (500KA or larger: Within $\pm 0.05\%$ RO)
Hysteresis	Within $\pm 0.03\%$ RO (500KA or larger: Within $\pm 0.05\%$ RO)
Repeatability	0.03% RO or less
Rated Output	3 mV/V $\pm 0.2\%$

Environmental Characteristics

Safe Temperature	-20 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	20 V AC or DC
Recommended Excitation	1 to 10 V AC or DC
Input Resistance	350 Ω $\pm 0.5\%$
Output Resistance	350 Ω $\pm 0.5\%$
Cable	4-conductor (0.5 mm ²) chloroprene shielded cable, 8.5 mm diameter by 3 m long, bared at the tip (Shield wire is not connected to the case.)

Mechanical Properties

Safe Overloads	150%
Material	Aluminum alloy (Case of 50KA to 200KA)
Natural Frequencies	See table below.
Weight	See table below.
Degree of Protection	IP64 (IEC 60529)

Optional Accessories Saddle CA-B (Page 2-72)
Patch CWM (Page 2-73)
Movable saddle ER-B (Page 2-73)
Boll joints TU (Page 2-75)

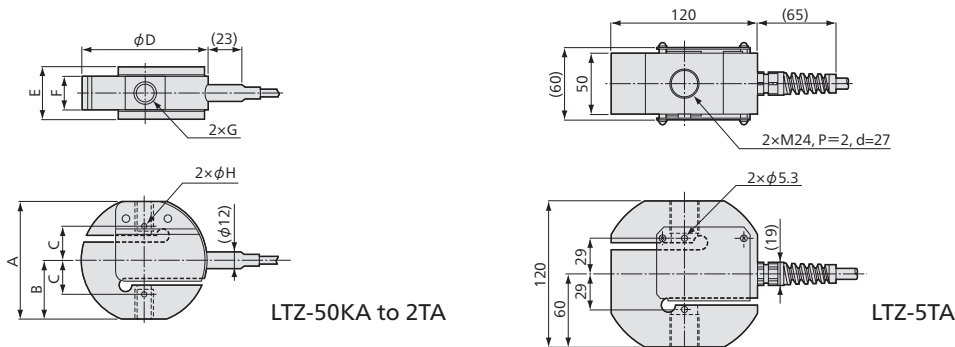
Models	Rated Capacity	Natural Frequencies (Approx.)	Weight* (Approx.)
LTZ-50KA	500 N	1.25 kHz	300 g
LTZ-100KA	1 kN	1.75 kHz	350 g
LTZ-200KA	2 kN	2 kHz	350 g
LTZ-500KA	5 kN	2.5 kHz	700 g
LTZ-1TA	10 kN	2.8 kHz	1.5 kg
LTZ-2TA	20 kN	2.6 kHz	1.5 kg
LTZ-5TA	50 kN	4.3 kHz	4.4 kg

*Excluding cable

Adopt the Roberval's mechanism to ensure the linearity of within $\pm 0.05\%$ RO

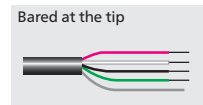
- Compact & lightweight
- Large output
- Usable also for compressive load measurement (Extra calibration and patches are required.)

Dimensions



Models	A	B	C	ϕD	E	F	G	ϕH
LTZ-50KA	64	32	19	68	32	22	M6, P=1, d=14	1.6
LTZ-100KA								
LTZ-200KA								
LTZ-500KA	74	37	21	78	32	22	M12, P=1.75, d=18	3.5
LTZ-1TA								
LTZ-2TA	94	47	23	98	40	30	M18, P=1.5, d=25	3.5
LTZ-5TA								

See dimensions above.



Outline

Compressive

Tensile

Tensile & compressive

Component

Special

Other

LT-FH/FL

●LT-FH: -10 to 150°C
●LT-FL: -196 to 30°C ●500 N to 50 kN

High/Low Temp. Tension Load Cell



*TEDS-installed models are available. Inquiries are welcome.

High reliability
Airtight structure
Selectable from a wide range of rated capacity.

●With the mechanical stopper that activates at 500% overload

LT-FH series enables continuous operation under temperature as high as 150°C with no external cooling.
LT-FL series enable operation at ultra-low temperature of -196°C.

Specifications

Performance

Rated Capacity	See table below.
Nonlinearity	Within ±0.5% RO
Hysteresis	Within ±0.5% RO
Repeatability	0.05% RO or less
Rated Output	1.5 mV/V ±0.2%

Environmental Characteristics

Safe Temperature	FH: -10 to 150°C (Excluding connector)
	FL: -200 to 80°C (Excluding connector)
Compensated Temperature	FH: -10 to 150°C (Excluding connector)
	FL: -196 to 30°C (Excluding connector)
Temperature Effect on Zero	Within ±0.005% RO/°C
Temperature Effect on Output	Within ±0.01%/°C

Electrical Characteristics

Safe Excitation	20 V AC or DC
Recommended Excitation	1 to 10 V AC or DC
Input Resistance	350 Ω ±0.5%
Output Resistance	350 Ω ±0.5%
Cable	4-conductor (0.3 mm ²) fluoroplastic shielded cable, 5 mm diameter by 5 m long, terminated with a connector plug PRC03-12A10-7M (Shield wire is not connected to the case.)

Mechanical Properties

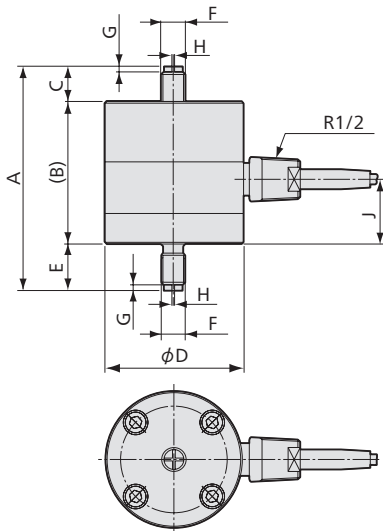
Safe Overloads	200%
Ultimate Overloads	500%
Natural Frequencies	See table below.
Weight	See table below.

Optional Accessories
 Rotating attachment RJ (Page 2-74)
 Ball joint TU (Page 2-75)
 Hook THD (Page 2-75)
 Shackle TRD (Page 2-76)

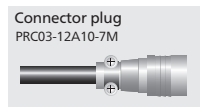
Models (FH)	Models (FL)	Rated Capacity	Natural Frequencies (Approx.)	Weight* (Approx.)
LT-50KFH	LT-50KFL	500 N	1.5 kHz	1.7 kg
LT-100KFH	LT-100KFL	1 kN	2.6 kHz	
LT-200KFH	LT-200KFL	2 kN	4.1 kHz	
LT-500KFH	LT-500KFL	5 kN	5.0 kHz	2.0 kg
LT-1TFH	LT-1TFL	10 kN	5.2 kHz	2.1 kg
LT-2TFH	LT-2TFL	20 kN	5.8 kHz	2.4 kg
LT-5TFH	LT-5TFL	50 kN	4.5 kHz	7.0 kg

*Excluding cable

Dimensions



Models		A	(B)	C	φD	E	F	G	H	J
LT-50KFH	LT-50KFL	111	71	17	68	23	M12, P=1.75	3	1.6	32
LT-100KFH	LT-100KFL									
LT-200KFH	LT-200KFL									
LT-500KFH	LT-500KFL	129	82	20		27	M14, P=2	5	3	36
LT-1TFH	LT-1TFL	143	84	26		33	M18, P=1.5			
LT-2TFH	LT-2TFL	168	89	35		44	M24, P=2			
LT-5TFH	LT-5TFL	236	126	55	96	55	M39, P=3	6	6	48



●Physical quantity indication ●Static measurement ●Dynamic measurement

LT-FH/FL Recommended products for combination

- Instrumentation Amplifier WGA-910A → 3-91
- Data Logger UCAM-60 series → 3-27
- Strain Amplifier DPM-900 series → 3-5
- Universal Recorder EDX-200A → 3-55
- Universal Recorder EDX-100A → 3-63
- Sensor Interface PCD-400A/430A → 3-78