

### Load cell LMU/LU/ZD series

- Small and light weight load cells. They are suitable for a narrow space.
- It can be screwed with the both ends. Easy installation and fixation.

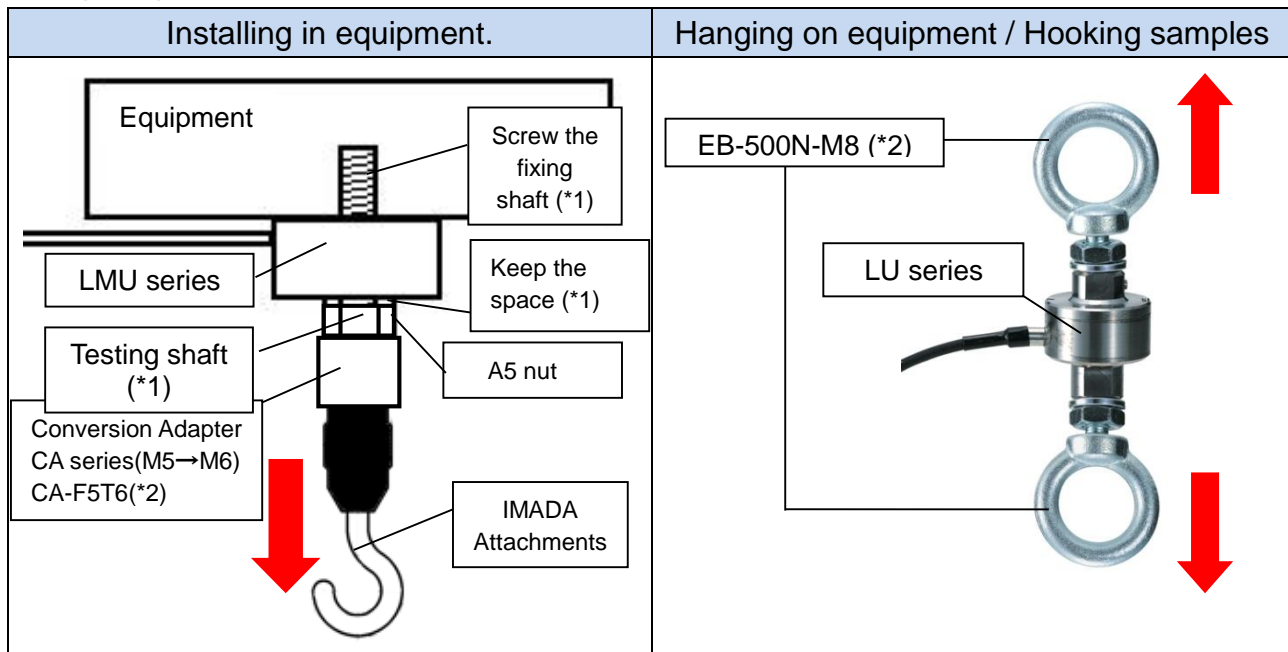
\*They need to be combined with indicators to perform measurement. Please refer to Page 3 to 4.

Model	Extra small type:LMU series	Small type: LU series	High capacity type: ZD series
Capacity	50N~500N	50N~2000N	1000N~20kN
Force direction	Convertible type for Compression and Tension	Convertible type for Compression and tension	Exclusive type for Compression or Tension (*2)
Screws	Male screw(M5)	Female screw(M8)	Male screw(M12P1.75) (20kN type : M20P1.5)
Photos			

\*1 The testing shaft is the male screw nearby the cable. The load cell should be set to be loaded.

\*2 Please choose the direction before you purchase.

#### [Using image]



\*1 Fixing shaft and testing shaft look similar, so please pay attention not to confuse fixing one with testing one. Keep the space between the root of screw and attachment or equipment using M5 nut (Please prepare M5 nut by yourself).

\*2 Attachments and EB-500N-M8 are sold separately.

2016/12/28

**[Specifications]**

Model	LMU series	LU series	ZD series
Capacity	Please refer the model list	Please refer the model list	Please refer the model list
Rated output	+/-1mV / V +/-10% (20N is 0.75mV/V~1mV/V)	+/-0.9~1.4mV / V	1.5mV/V
Nonlinearity	0.5%R.O	0.5%R.O	0.25%R.O
Hysteresis	0.5%R.O	0.5%R.O	-
Recommended voltage (allowable applied voltage)	1~3V AC or DC (5V AC or DC)	2~5V AC or DC (7V AC or DC)	-
Safe overload rating	120%R.O	150%	150%
Working environment (allowable temperature)	0~50 degree Celsius (-10~60 degree Celsius)	0~70 degree Celsius (-10~70 degree Celsius)	-20~80 degree Celsius
Temperature influence for 0 degree	0.005%/ degree Celsius	0.05%/ degree Celsius	0.02%/ degree Celsius
Temperature influence for output	0.01%/ degree Celsius	0.05%/ degree Celsius	0.02%/ degree Celsius
Cable	Approx.2m (with a connector)	Approx.3m (with a connector)	Approx.3m (with a connector)
Dimensions	Please refer the dimension	Please refer the dimension	Please refer the dimension
International Protections	-	-	IP67

\*Only a load cell itself secure protection grade IP. An amplifier (an indicator)/ the connecting part/ the connector part are not secured.

**[eZ-Connect series load cell specification]**

Model	eLMU series	eLU series	eZD series
Capacity	Please refer the model list	Please refer the model list	Please refer the model list
Accuracy	+/-1.0%F.S or less	+/-1.0%F.S. or less	+/-0.5%F.S. or less
Safe overload rating	120%R.O	150%	150%
Working environment (allowable temperature)	0~50 degree Celsius (-10~60 degree Celsius)	0~70 degree Celsius (-10~70 degree Celsius)	-20~80 degree Celsius
Cable	Approx.2m (with a connector)	Approx.3m (with a connector)	Approx.3m (with a connector)
Dimensions	Please refer the dimension	Please refer the dimension	Please refer the dimension
International Protections	-	-	IP67



\*Only a load cell itself secure protection grade IP. An amplifier (an indicator)/ the connecting part/ the connector part are not secured.

\*Please refer on the Page 4 for the eZ-Connect details.

## 1. For those who have a specific measurement / purpose

### [Connect to an amplifier]

- If you do not need to change load cells basically, we recommend the combination of a load cell and an indicator mentioned below.

Model	ZTA/ZTS Sensor separate type force gauge	FA Plus Desk top amplifier
Image		
Feature	<ul style="list-style-type: none"> <li>● You can operate it apart from a load cell.</li> <li>● Easy data management on PC</li> <li>● Various outputs for controlling external devices</li> </ul>	<ul style="list-style-type: none"> <li>● You can easily install on a desk or in equipment due to its box shape.</li> <li>● The sampling rate is 2000Hz.</li> <li>● You can change load cells if you adjust it.</li> </ul>
When you want to change sensor	<ul style="list-style-type: none"> <li>• You do not basically change load cells.</li> <li>• If you need to change load cells, adjustment and calibration are required.</li> </ul>	<ul style="list-style-type: none"> <li>• When you change load cells, you need to adjust and calibrate it.</li> </ul>
Accuracy assurance	<ul style="list-style-type: none"> <li>• An inspection certificate by force data is attached.</li> <li>• Please request us the calibration certificate if necessary.</li> </ul>	<ul style="list-style-type: none"> <li>• We offer an inspection certificate by force data only when you order the models below.</li> <li>• We do not offer the inspection certificate when you order a FA Plus or a load cell separately.</li> <li>• Please request us the calibration certificate if necessary.</li> </ul>

### - Models of sensors combined with indicators (Sensor separate models)

#### ○ LMU series

Model			Capacity	Accuracy(*1)	Display	Resolution
ZTA	ZTS	FA Plus				
ZTA-LMU-50N	ZTS-LMU-50N	FAP-LMU-50N	50N	±1.0%F.S. or less	50.00N	0.01N
ZTA-LMU-100N	ZTS-LMU-100N	FAP-LMU-100N	100N		100.0N	0.1N
ZTA-LMU-200N	ZTS-LMU-200N	FAP-LMU-200N	200N		200.0N	0.1N
ZTA-LMU-500N	ZTS-LMU-500N	FAP-LMU-500N	500N		500.0N	0.1N

#### ○ LU series

Model			Capacity	Accuracy(*1)	Display	Resolution
ZTA	ZTS	FA Plus				
ZTA-LU-50N	ZTS-LU-50N	FAP-LU-50N	50N	±1.0%F.S. or less	50.00N	0.01N
ZTA-LU-100N	ZTS-LU-100N	FAP-LU-100N	100N		100.0N	0.1N
ZTA-LU-200N	ZTS-LU-200N	FAP-LU-200N	200N		200.0N	0.1N
ZTA-LU-500N	ZTS-LU-500N	FAP-LU-500N	500N		500.0N	0.1N
ZTA-LU-1000N	ZTS-LU-1000N	FAP-LU-1000N	1000N		1000N	1N
ZTA-LU-2000N	ZTS-LU-2000N	FAP-LU-2000N	2000N		2000N	1N

#### ○ ZD series

Model			Capacity	Accuracy(*1)	Display	Resolution
ZTA	ZTS	FA Plus				
ZTA-ZD1-1000N	ZTS-ZD1-1000N	FAP-ZD1-1000N	1000N	±0.5%F.S. or less	1000N(1.000kN)	1N(0.001kN)
ZTA-ZD1-2000N	ZTS-ZD1-2000N	FAP-ZD1-2000N	2000N		2000N(2.000kN)	1N(0.001kN)
ZTA-ZD1-5000N	ZTS-ZD1-5000N	FAP-ZD1-5000N	5000N		5000N(5.000kN)	1N(0.001kN)
ZTA-ZD1-10kN	ZTS-ZD1-10kN	FAP-ZD1-10kN	10kN		10.00kN	0.01kN
ZTA-ZD2-20kN	ZTS-ZD2-20kN	FAP-ZD2-20kN	20kN		20.00kN	0.01kN

\*For further information about indicators, please refer to each specifications.

\*1 Accuracy here is calculated after sensor is combined with an indicator.



## [Load cell by itself]

■ If you need a load cell by itself, please refer to the models below.

	Model	Capacity	Screw diameter
LMU series	LMU-50N	50N	Male screw M5 P0.8
	LMU-100N	100N	
	LMU-200N	200N	
	LMU-500N	500N	
LU series	LU-50N	50N	Female screw M8 P1.25
	LU-100N	100N	
	LU-200N	200N	
	LU-500N	500N	
	LU-1000N	1000N	
	LU-2000N	2000N	
ZD series	ZD1-1000N	1000N	Male screw M12 P1.75
	ZD1-2000N	2000N	
	ZD1-5000N	5000N	
	ZD1-10kN	10kN	
	ZD2-20kN	20kN	Male screw M20 P1.5

◎When you order a load cell without indicators, please choose one from 3 of connector types.

\*Please feel free to contact us if the shape is not identified. +81-(0)532-33-3288

Connector shape	1	2	3
	 5 pin	 6 pin	Without Connector
Connect to	ZT series, FA Plus, etc.	Some discontinued IMADA products	For installing in equipment
*Please check the connector shape of your equipment to connect.			

\*We cannot undertake that our load cell can be combined with your equipment. Even though you could combine it, we cannot guarantee accuracy of force value.

## 2. For those who have a wide range of measurement purposes

### [eZT series (Sensor interchangeable model) ]

■ If you need 2 or more different load cells, we recommend eZ-Connect series below since it can change load cells according to your purposes.


#### - eZ-Connect load cell models

	Model	Capacity	Accuracy(*1)	Display	Resolution
eLMU series	eLMU-50N	50N	±1.2%F.S. or less	50.00N	0.01N
	eLMU-100N	100N		100.0N	0.1N
	eLMU-200N	200N		200.0N	0.1N
	eLMU-500N	500N		500.0N	0.1N
eLU series	eLU-50N	50N	±1.2%F.S. or less	50.00N	0.01N
	eLU-100N	100N		100.0N	0.1N
	eLU-200N	200N		200.0N	0.1N
	eLU-500N	500N		500.0N	0.1N
	eLU-1000N	1000N		1000N	1N
	eLU-2000N	2000N		2000N	1N
eZD series	eZD1-1000N	1000N	±0.7%F.S. or less	1000N(1.000kN)	1N(0.001kN)
	eZD1-2000N	2000N		2000N(2.000kN)	1N(0.001kN)
	eZD1-5000N	5000N		5000N(5.000kN)	1N(0.001kN)
	eZD1-10kN	10kN		10.00kN	0.01kN
	eZD2-20kN	20kN		20.00kN	0.01kN



\*For further information about indicators, please refer to each specifications.

\*1 Accuracy here is calculated after sensor is combined with an indicator.

- Indicator eZT \*Please combine a load cell exclusive for eZ-Connect.

Image	Feature	Accuracy
	<ul style="list-style-type: none"> <li>No adjustment is needed when you change load cells.</li> <li>You can measure different force range.</li> <li>You can measure different types of force.</li> <li>You can reduce risks in operation</li> </ul>	<p>*Accuracy here is the total of load cell's accuracy (refer to each specifications) and indicator's one (+/- 0.2%F.S.).</p> <p>We offer higher accuracy models; ZT series (sensor separate type) and FA plus. For detail, please refer to page 3.</p>

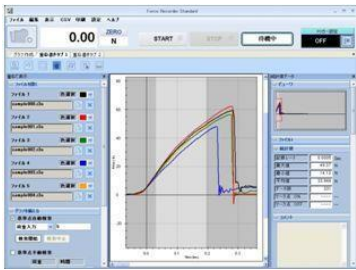
**- Related products**

Hoisting attachments EB/EN series		Conversion Adapter CA series			
	They are attachments for hanging samples and load cells.		The adapter for converting the screw diameter for load cells and attachments.		
	Model		Model		
	EN-500N		for LMU	CA-F5T6	Mount M6 attachment to LMU
	EB-500N-M8	for LU			





**- Cables** (Contact us for information of FAP.)

Model	Explanation	Purpose of use
CB-108	Analog cable	To connect to a multi meter, oscilloscope.
CB-118	Analog cable (For -AN option)	To connect to a multi meter, oscilloscope.
CB-208	RS232C cable	To connect to a PC having its own system
CB-308	Digimatic cable	To connect to a printer DP-1VR
CB-908	Open end connection cable	Output cable for loose wire 37 pin (Useful for connection with unique equipment.)

**- Data analysis software Force Recorder (For ZTS/ZTA/eZT)**

Image	Feature
	<ul style="list-style-type: none"> <li>- You can draw graphs of force-displacement at real time via USB connection at 2000Hz.</li> <li>- 5 graphs at maximum can be overlaid. (Standard / Professional only)</li> <li>- You can write memo on each graph. For instance, you may write down testing conditions such as testing speed, attachment etc.</li> </ul> <p>* 3 models (Light/Standard/Professional) are available.</p>

**- Other load cell line-up** (We offer wide range of load cells to fit your measurement needs.)

Standard DPU series	Coin shaped type LM series	Pen type PN-50N	For automatic doors DM-2000N
Convertible type for compression/ tension	Exclusive type for compression	Convertible type for compression/ tension.	Exclusive type for compression
			
High accuracy built-in type. For general use.	Coin size load cell for compression.	Pen-shaped to fit for measuring control force of small samples.	Fit to measure automatic door closing force.

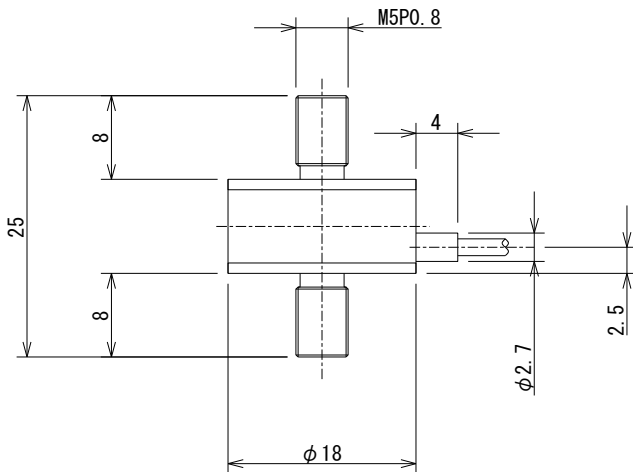
\*Please refer to the each specification for the each load cell.

**Do you have any requests like mentioned below?**

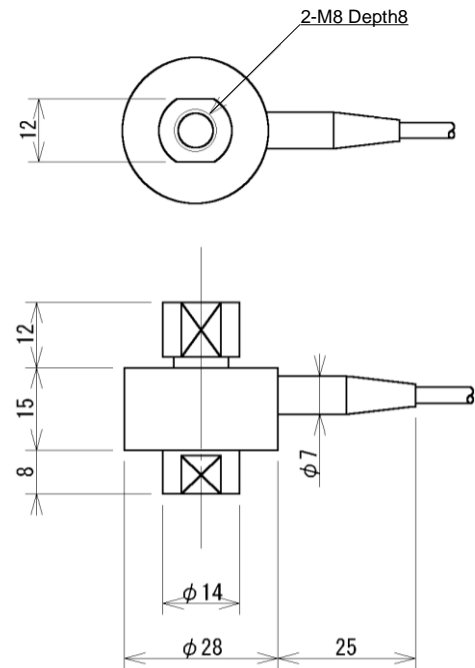
☞ You need flexible cable.    ☞ You need to extend the length of cable.  
We can custom design and manufacture to meet your particular requirements.  
Please contact us for detail. Our service gr: +81-(0)532-33-3288

**[Dimensions]**

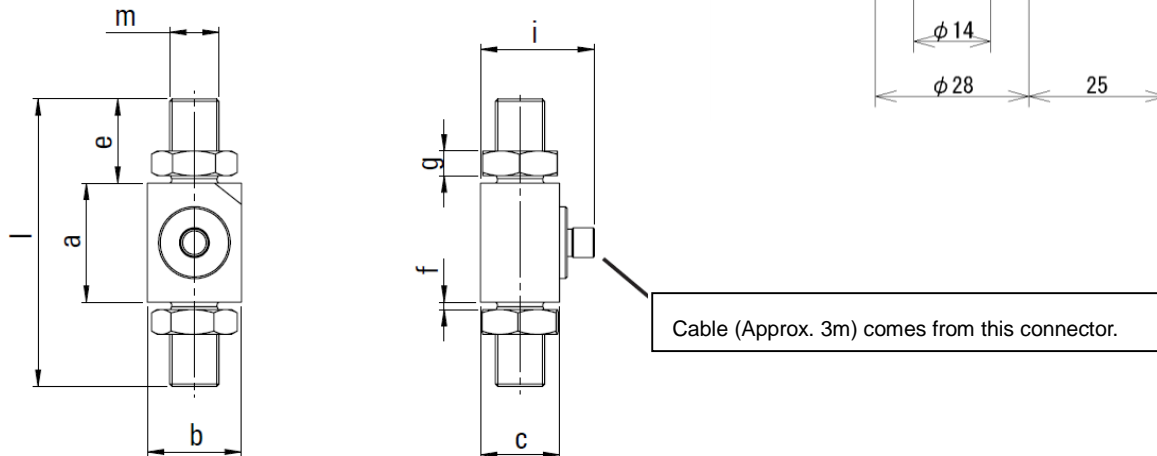
LMU series



LU series



ZD series



Model	l	e	a	b	c	g	i	f	m
ZD1-1000N	78	21	36	30	30	7	44	2~4	M12 P1.75
ZD1-2000N									
ZD1-5000N									
ZD1-10kN									
ZD2-20kN	116	34	48	38	32	12	46	2~4	M20 P1.5

**[Caution]**

- This product is designed for force measurement only. Do not use it for other purposes.
- Please pay close attention for installation.
  - Never apply impact load especially on the sensing direction.
  - Do not apply bending or torsion stress to a sensing part.
- Do not use under the environment such as high temperature, high humidity, near water, dusty place, and rapid temperature changes.
- The contents may be changed without notice in advance.
- Please note that a load cell's capacity differs slightly depending on a selected unit of the indicators. Please contact us for detail.