





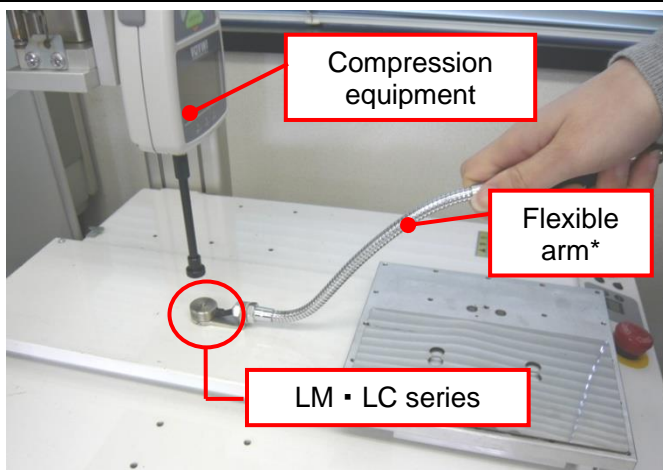
## Load cells for compression LM/LC/DD2/LMT series

- Load cells exclusively for compression
- Ideal for a narrow space due to their slim shapes
- Designed to mount or bond it on pressing machine and the like.

Model	Coin shaped type : LM series	Standard type: LC series	High capacity type: DD2 series	For a wide range of temperature: LMT series
Capacity	10N~20kN	500N~20kN	5000N~20kN	1000N
Photos				
Features	-Extra small and slim type	-High accuracy (+/-0.5%F.S. or less) -High stability and reliability due to airtight structure -Corrosion resistance due to stainless steel body	-Designed for high load measurements.	-Usable for wide range of temperature -40 degree Celsius ~ +150 degree Celsius
How to fix	Mounting or gluing on equipment			

**[Application]** An indicator is required to read force values. Please refer page 3-4 for the details.

Compression testing for a pressing machine, a robot arm, and the like.



Attach the sensor part to a flexible arm, then you can move the sensor as required safely and certainly.

Even at a narrow or unstable place, you can smoothly conduct a measurement.

\*The flexible arm is the custom-made option. Besides, we can provide the equipment including thermostat oven, and so on. Please contact us our service group +81-(0)532-33-3288 or your local distributor if necessary. 2017/02/03

**[Specification]**

Model	LM series	LC series	DD2 series	LMT series
Capacity	Refer the model list.	Refer the model list.	Refer the model list.	Refer the model list.
Rated output	10N~2000N:1.0mV/V±20% 5000N,10kN:1.0mV/V±30% 20kN:1.5mV/V±20%	2.0mV/V±0.25%	2mV/V	2.0mV/V±20%
Nonlinearity	10N~2000N:0.5%R.O 5000N,10kN:1.0%R.O 20kN:2.0%R.O	0.15%R.O	0.25%R.O	0.5%R.O.
Hysteresis	10N~2000N:0.5%R.O 5000N and 10kN:1.0%R.O 20kN:2.0%R.O	0.1%R.O	-	0.5%R.O.
Recommended voltage (allowable voltage)	10N~2000N:1~3V AC or DC (5V AC or DC) 5000N~20kN:5V or less AC or DC (7V AC or DC)	Lower or equal to 8V AC or DC (12V AC or DC)	10V DC or less	1~3V AC/DC (5V AC/DC)
Safe overload rating	10N~2000N:200%R.O 5000N~20kN:120%R.O	150%	120%	120%
Working environment (allowable temperature)	10N~2000N: 0~+50 degree Celsius (-10~60 degree Celsius) 5000N~20kN: -5~+50 degree Celsius (-10~60 degree Celsius)	-10~+70 degree Celsius (-15~80 degree Celsius)	-10~+50 degree Celsius (-30~+50 degree Celsius)	-40~+150 degree Celsius (-40~+160 degree Celsius)
Temperature influence for 0 point	0.05%/ degree Celsius	0.005%/ degree Celsius	0.005%/ degree Celsius	0.01%/ degree Celsius
Temperature influence for output	0.05%/ degree Celsius	0.01%/ degree Celsius	0.005%/ degree Celsius	0.01%/ degree Celsius
Cable	10N~2000N:Approx.2m 5000N~20kN:Approx.3m	Approx. 5m	Approx.5m	Approx.2m
Dimensions	Refer the dimension.	Refer the dimension.	Refer the dimension.	Refer the dimension.
International Protection	-	-	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	eLM series	eLC series	eDD2 series
Capacity	Refer the model list	Refer the model list	Refer the model list
Accuracy	10N~10kN:±2.0%F.S. or less 20kN:±3.5%F.S. or less	+/-0.5%F.S. or less	+/-0.5%F.S. or less
Safe overload rating	10N~2000N:200%R.O 5000N~20kN:120%R.O	150%	120%
Working environment (allowable temperature)	10N~2000N: 0~50 degree Celsius (-10~60 degree Celsius) 5000N~20kN: -5~50 degree Celsius (-10~60 degree Celsius)	-10~70 degree Celsius (-15~80 degree Celsius)	-10~+50 degree Celsius (-30~+50 degree Celsius)
Cable	10N~2000N:Approx.2m 5000N~20kN:Approx.3m	Approx.5m	Approx.5m
Dimensions	Refer to the dimension	Refer to the dimension	Refer to the dimension
International Protection	-	-	IP67*1

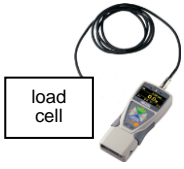

\* Please refer to the Page 4 for eZ-Connect series details.

\*1 Only a load cell itself secure protection grade IP. An amplifier (an indicator)/ its connecting part/ its connector part are not secured.

**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)**

	Model			Range	Accuracy (*1)	Display	Resolution
	ZTA	ZTS	FA Plus				
LM	ZTA-LM-10N	ZTS-LM-10N	FAP-LM-10N	10N	±2.0%F.S or less	10.00N	0.01N
	ZTA-LM-20N	ZTS-LM-20N	FAP-LM-20N	20N		20.00N	0.01N
	ZTA-LM-50N	ZTS-LM-50N	FAP-LM-50N	50N		50.00N	0.01N
	ZTA-LM-100N	ZTS-LM-100N	FAP-LM-100N	100N		100.0N	0.1N
	ZTA-LM-200N	ZTS-LM-200N	FAP-LM-200N	200N		200.0N	0.1N
	ZTA-LM-500N	ZTS-LM-500N	FAP-LM-500N	500N		500.0N	0.1N
	ZTA-LM-1000N	ZTS-LM-1000N	FAP-LM-1000N	1000N		1000N(1.000kN)	1N(0.001kN)
	ZTA-LM-2000N	ZTS-LM-2000N	FAP-LM-2000N	2000N		2000N(2.000kN)	1N(0.001kN)
	ZTA-LM-5000N	ZTS-LM-5000N	FAP-LM-5000N	5000N		5000N(5.000kN)	1N(0.001kN)
	ZTA-LM-10kN	ZTS-LM-10kN	FAP-LM-10kN	10kN	10.00kN	0.01kN	
	ZTA-LM-20kN	ZTS-LM-20kN	FAP-LM-20kN	20kN	±3.5%F.S or less	20.00kN	0.01kN
LC	ZTA-LC-500N	ZTS-LC-500N	FAP-LC-500N	500N	±0.5%F.S or less	500.0N	0.1N
	ZTA-LC-1000N	ZTS-LC-1000N	FAP-LC-1000N	1000N		1000N(1.000kN)	1N(0.001kN)
	ZTA-LC-2000N	ZTS-LC-2000N	FAP-LC-2000N	2000N		2000N(2.000kN)	1N(0.001kN)
	ZTA-LC-5000N	ZTS-LC-5000N	FAP-LC-5000N	5000N		5000N(5.000kN)	1N(0.001kN)
	ZTA-LC-10kN	ZTS-LC-10kN	FAP-LC-10kN	10kN		10.00kN	0.01kN
	ZTA-LC-20kN	ZTS-LC-20kN	FAP-LC-20kN	20kN		20.00kN	0.01kN
DD2	ZTA-DD2-5000N	ZTS-DD2-5000N	FAP-DD2-5000N	5000N	±0.5%F.S. or less	5000N(5.000kN)	1N(0.001kN)
	ZTA-DD2-10kN	ZTS-DD2-10kN	FAP-DD2-10kN	10kN		10kN	0.01kN
	ZTA-DD2-20kN	ZTS-DD2-20kN	FAP-DD2-20kN	20kN		20kN	0.01kN
LMT	ZTA-LMT-1000N	ZTS-LMT-1000N	FAP-LMT-1000N	1000N	±1.0%F.S. or less	1000N(1.000kN)	1N(0.001kN)

\*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.

Capacity	Load cell model			
	LM series	LC series	DD2 series	LMT series
10N	LM-10N	—	—	—
20N	LM-20N	—	—	—
50N	LM-50N	—	—	—
100N	LM-100N	—	—	—
200N	LM-200N	—	—	—
500N	LM-500N	LC-500N	—	—
1000N	LM-1000N	LC-1000N	—	LMT-1000N
2000N	LM-2000N	LC-2000N	—	—
5000N	LM-5000N	LC-5000N	DD2-5000N	—
10kN	LM-10kN	LC-10kN	DD2-10kN	—
20kN	LM-20kN	LC-20kN	DD2-20kN	—

\*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.

Ⓞ 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.			

**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**

Capacity	Load cell model			
	eLM series	eLC series	eDD2 series	eLMT series
10N	eLM-10N	—	—	*You cannot use LMT series as eZ-Connect series.
20N	eLM-20N	—	—	
50N	eLM-50N	—	—	
100N	eLM-100N	—	—	
200N	eLM-200N	—	—	
500N	eLM-500N	eLC-500N	—	
1000N	eLM-1000N	eLC-1000N	—	
2000N	eLM-2000N	eLC-2000N	—	
5000N	eLM-5000N	eLC-5000N	eDD2-5000N	
10kN	eLM-10kN	eLC-10kN	eDD2-10kN	
20kN	eLM-20kN	eLC-20kN	eDD2-20kN	

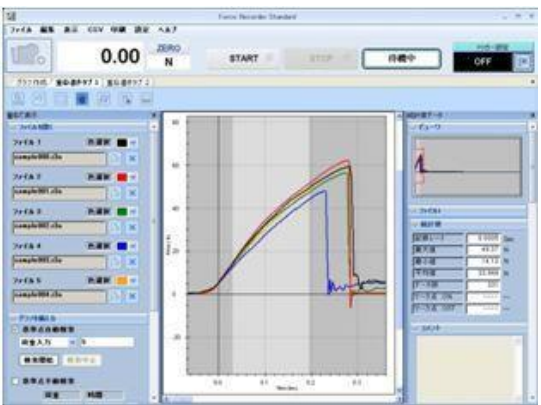
\*Accuracy here is the total of load cell's accuracy (page 2) and indicator's one (+/-0.2%F.S.). Display and resolutions are the same as separate types's one. Please refer to model list in page 3 for detail.

**- 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]**

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.)

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]**

Please choose the suitable one matching your needs from our varieties of load cell.

Standard type DPU series	Extra small type LMU series	Pen type PN-50N	For automatic doors DM-2000N
Compression & Tension	Compression & Tension	Compression	Compression
			
General type load cell with a shaft. Easy to install.	Sensor diameter is only 18mm.	Pen-shaped to fit for measuring control force of small samples.	Fit to measure automatic door closing force.

\*please refer to each load cell specification for the detail.

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

- You need flexible cable.
- You need to extend the length of cable.

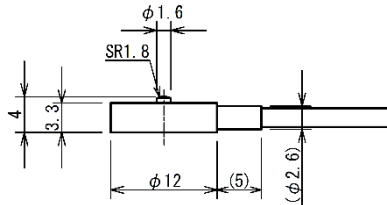
We can custom design and manufacture to meet your particular requirements.

Please contact us for detail. Our service gr: +81-(0)532-33-3288

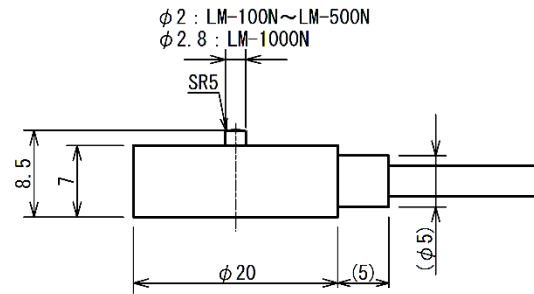
**[Dimensions]**

• LM series

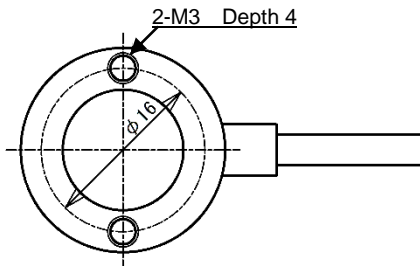
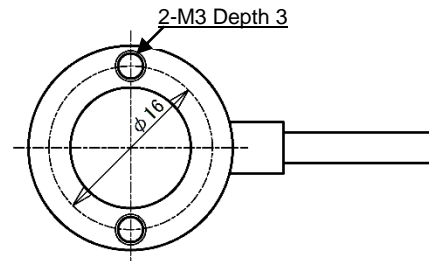
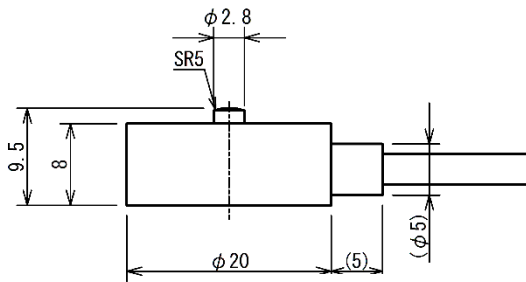
LM-10N~50N



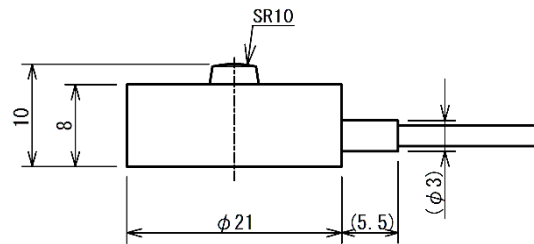
LM-100N~1000N



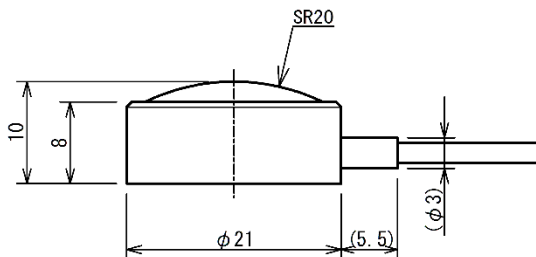
LM-2000N



LM-5000N

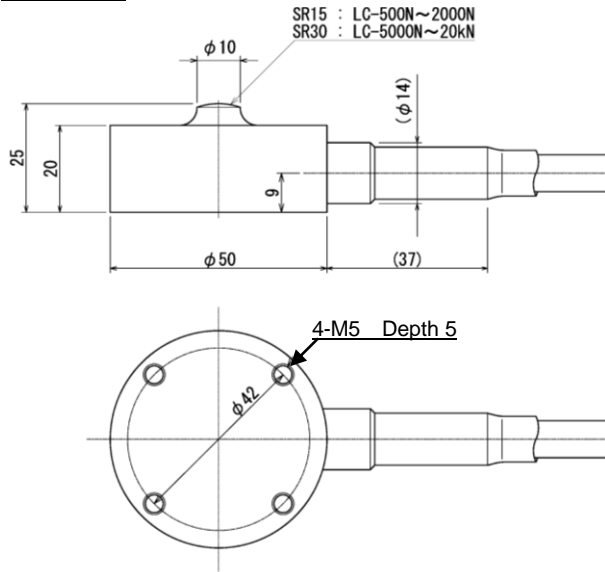


LM-10kN,20kN

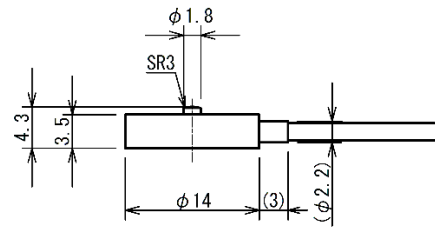


The value in ( ) is only advisory.  
It could be larger depending on quantity for application of glue or due to protective tube for cable.

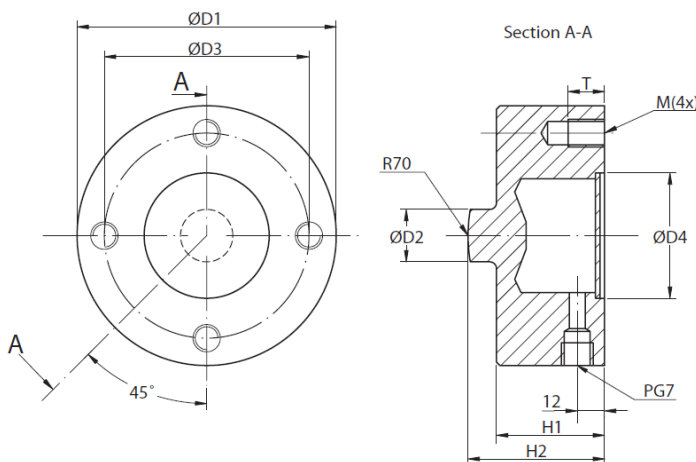
• LC series



• LMT series



• DD2 series



Model	D1	H1	D2	H2	D3	M	T
DD2-5000N	φ94	35.5	φ23	48	φ80	M5	12
DD2-10kN							
DD2-20kN							

**[Caution]**

- This product is designed for force measurement only. Do not use it for other purposes.
- Please pay close attention to install this products.
  - Never apply strong force or impact especially on the sensing direction.
  - Do not apply bending or torsion stress when setting up the sensing shaft to a measuring object.
- 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.

Please feel free to contact us (+81-(0)-532-33-3288) for your measurement.