




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

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

Model	Standard type: LM series	High Accuracy type: LC series	For a wide range of temperature: LMT series
Capacity	10N to 20kN	500N to 20kN	1000N
Photos			
Features	-Extra small and slim type	-High accuracy ( $\pm 0.5\%$ F.S. or lower) -High stability and reliability due to airtight structure -Corrosion resistance due to stainless steel body -Flexible cable	-Suitable for wide range of temperature -40 degree Celsius to +150 degree Celsius
How to fix	Mounting or gluing on equipment		

\*An indicator is required to read force values. Refer page 3 for the details.

### What is IP?

IP (International Protection) is a standard which is based on IEC Standard 529 for solid foreign materials, electric devices for water and cabinet.

IP▲△

▲ : Protection rating against solid foreign objects

△ : Protection rating against water

IP 6:4 — Protected against water splashed from any direction.

IP 6:7 — Protected from immersion in water under the specified time and water pressure (depth).

No ingress of dust.

(Refers to IEC 60529; 2001)

### : eZ-Connect series

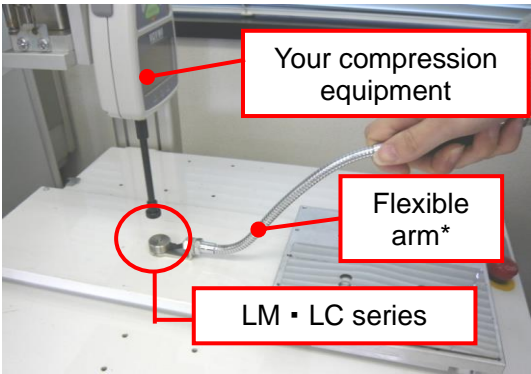
eZ-Connect is composed of an amplifier and load cells.

-Allows easy replacement of load cells without additional adjustment

-Suits different types of tests such as tension and torque, measuring from low load to high load etc.

Available load cells have a mark 

## [Application]

Compression testing for a pressing machine, a robot arm, and the like.	
	<ul style="list-style-type: none"> <li>• Attach the sensor part to a flexible arm, then you can move the sensor as required safely and certainly.</li> <li>• Even at a narrow or unstable place, you can smoothly conduct a measurement.</li> </ul>

\*The custom-made flexible arm up to 5000N capacity is available. The shape of the flexible arm is different from the above image for 10kN and 20kN.

\*Custom-made products are available (e.g. combined with constant temperature water tank).



Specification			
Model	LM series	LC series	LMT series
Capacity	10N to 20kN	10N to 20kN	1000N
Rated output	10N: 0.7mV/V or more 20N to 2000N: 1.0mV/V+/-20% 5000N, 10kN: 1.0mV/V+/-30% 20kN: 1.5mV/V+/-20%	2.0mV/V+/-0.25%	2.0mV/V+/-20%
Nonlinearity	10N to 2000N: 0.5%R.O. 5000N, 10kN: 1.0%R.O. 20kN: 2.0%R.O.	0.15%R.O.	0.5%R.O.
Hysteresis	10N to 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 to 2000N: 1 to 3V AC or DC (5V AC or DC) 5000N to 20kN: 5V or lower AC or DC (7V AC or DC)	1~10V AC or DC (15V AC or DC)	1 to 3V AC/DC (5V AC/DC)
Safe overload rating	10N: 150%R.O. 20N to 2000N: 200%R.O. 5000N to 20kN: 120%R.O.	150%	120%
Working environment (allowable temperature)	10N: -10 to 50 degree Celsius (-20 to 60 degree Celsius) 20N to 2000N: 0 to +50 degree Celsius (-10 to 60 degree Celsius) 5000N to 20kN: -5 to +50 degree Celsius (-10 to 60 degree Celsius)	-10 to +70 degree Celsius (-15 to 80 degree Celsius)	-40 to +150 degree Celsius (-40 to +160 degree Celsius)
Temperature influence for 0 point	0.05%/degree Celsius	0.005%/degree Celsius	0.01%/degree Celsius
Temperature influence for output	0.05%/degree Celsius	0.01%/degree Celsius	0.01%/degree Celsius
Cable	10N to 2000N: Approx. 2m 5000N to 20kN: Approx. 3m	Approx. 5m	Approx. 2m
Dimensions	Refer to [Dimensions]	Refer to [Dimensions]	Refer to [Dimensions]
Weight	10N to 50N: Approx. 40g 100N to 2000N: Approx. 60g 5000N to 20kN: Approx. 70g	Approx. 500g	Approx. 40g
International Protection	-	IP64 (*1)	-

\* An amplifier (indicator) is required to read values. Refer to below "Available amplifiers (indicators)" for the detail.

\* For purchasing only loadcell, select the types of connector. Refer to the table below (Page. 3).

\* The load cells are not guaranteed either for the operability with your own amplifier (indicator) or for the accuracy as a result of such use.

\*1 IP64/67 is only approved for the load cell itself. The amplifier (indicator) and the connector parts are not secured.





Code	-5P	-6P	-OC
Connector shape	 5pins	 6pins	Without Connector
Connect to	ZT series, FA Plus2, etc.	Some discontinued IMADA products	For installing in equipment
*Please check the connector shape of your equipment to connect.			

\* When purchasing, select the connector shape and add the code to the end of the load cell mode.  
e.g. For selecting 5pins: LM-10N-5P

Specification (eZ-Connect series)		
Model	eLM series	eLC series
Capacity	10N to 20kN	500N to 20kN
Accuracy	10N to 10kN: +/-2.0%F.S. or lower 20kN: +/-3.5%F.S. or lower	+/-0.5%F.S. or lower
Safe overload rating	10N: 150%R.O. 20N to 2000N: 200%R.O 5000N to 20kN: 20%R.O	150%
Working environment (allowable temperature)	10N: -10 to 50 degree Celsius (-20 to 60 degree Celsius) 20N to 2000N: 0 to 50 degree Celsius (-10 to 60 degree Celsius) 5000N to 20kN: -5 to 50 degree Celsius (-10 to 60 degree Celsius)	-10 to 70 degree Celsius (-15 to 80 degree Celsius)
Cable	10N to 2000N: Approx. 2m 5000N to 20kN: Approx. 3m	Approx. 5m
Dimensions	Refer to [Dimensions]	Refer to [Dimensions]
Weight	10N to 50N: Approx. 40g 100N to 2000N: Approx. 60g 5000N to 20kN: Approx. 70g	Approx. 500g
International Protection	-	IP64 (*1)

\* Refer to the page 5 for eZ-Connect series details.

\*1 IP64/67 is only approved for the load cell itself. The amplifier (indicator) and the connector parts are not secured.

Available Amplifiers (Indicators)					
Type	Separated Sensor Model			eZ-Connect series Sensor Interchangeable Amplifier 	
Indicator	Handheld ZTS series	Handheld ZTA series	Desktop type FA Plus2	Desktop type eFA Plus2	Handheld eZT
Image					
Feature	- Handheld use - Specific purpose - Higher accuracy	- Handheld use - Specific purpose - Higher accuracy - I/O displacement - Data saving to USB	- Desktop use - Specific purpose - Higher accuracy	- Desktop use - Load cell interchangeable (such as measurement of tension and torque, or low and high load)	- Handheld use - Load cell interchangeable (such as measurement of tension and torque, or low and high load)

\* Refer to each indicator specification for the detail.

**[Models of sensors combined with indicators (Sensor separate models)]**

**-LM series**

Model			Range	Accuracy (*1)	Display	Resolution
ZTA	ZTS	FA Plus2				
ZTA-LM-10N	ZTS-LM-10N	FAP2-LM-10N	10N	+/-2.0%F.S or lower	10.00N	0.01N
ZTA-LM-20N	ZTS-LM-20N	FAP2-LM-20N	20N		20.00N	0.01N
ZTA-LM-50N	ZTS-LM-50N	FAP2-LM-50N	50N		50.00N	0.01N
ZTA-LM-100N	ZTS-LM-100N	FAP2-LM-100N	100N		100.0N	0.1N
ZTA-LM-200N	ZTS-LM-200N	FAP2-LM-200N	200N		200.0N	0.1N
ZTA-LM-500N	ZTS-LM-500N	FAP2-LM-500N	500N		500.0N	0.1N
ZTA-LM-1000N	ZTS-LM-1000N	FAP2-LM-1000N	1000N		1000N (1.000kN)	1N (0.001kN)
ZTA-LM-2000N	ZTS-LM-2000N	FAP2-LM-2000N	2000N		2000N (2.000kN)	1N (0.001kN)
ZTA-LM-5000N	ZTS-LM-5000N	FAP2-LM-5000N	5000N		5000N (5.000kN)	1N (0.001kN)
ZTA-LM-10kN	ZTS-LM-10kN	FAP2-LM-10kN	10kN	+/-3.5%F.S or lower	10.00kN	0.01kN
ZTA-LM-20kN	ZTS-LM-20kN	FAP2-LM-20kN	20kN		20.00kN	0.01kN

**-LC series**

Model			Range	Accuracy (*1)	Display	Resolution
ZTA	ZTS	FA Plus2				
ZTA-LC-500N	ZTS-LC-500N	FAP2-LC-500N	500N	+/-0.5%F.S or lower	500.0N	0.1N
ZTA-LC-1000N	ZTS-LC-1000N	FAP2-LC-1000N	1000N		1000N (1.000kN)	1N (0.001kN)
ZTA-LC-2000N	ZTS-LC-2000N	FAP2-LC-2000N	2000N		2000N (2.000kN)	1N (0.001kN)
ZTA-LC-5000N	ZTS-LC-5000N	FAP2-LC-5000N	5000N		5000N (5.000kN)	1N (0.001kN)
ZTA-LC-10kN	ZTS-LC-10kN	FAP2-LC-10kN	10kN		10.00kN	0.01kN
ZTA-LC-20kN	ZTS-LC-20kN	FAP2-LC-20kN	20kN		20.00kN	0.01kN

**-LMT series**

Model			Range	Accuracy (*1)	Display	Resolution
ZTA	ZTS	FA Plus2				
ZTA-LMT-1000N	ZTS-LMT-1000N	FAP2-LMT-1000N	1000N	+/-1.0%F.S. or lower	1000N (1.000kN)	1N (0.001kN)

\* For further information about indicators, Refer to each specification.

\*1 The accuracy is only available for combinations with the amplifier (indicator).

**-eZ-Connect load cell models**

Load cell model			Range	Accuracy (*1)	Display	Resolution
eLM series	eLC series	eLMT series				
eLM-10N	-	NA	10N	accuracy of the sensor + accuracy of the indicators	10.00N	0.01N
eLM-20N	-		20N		20.00N	0.01N
eLM-50N	-		50N		50.00N	0.01N
eLM-100N	-		100N		100.0N	0.1N
eLM-200N	-		200N		200.0N	0.1N
eLM-500N	eLC-500N		500N		500.0N	0.1N
eLM-1000N	eLC-1000N		1000N		1000N (1.000kN)	1N (0.001kN)
eLM-2000N	eLC-2000N		2000N		2000N (2.000kN)	1N (0.001kN)
eLM-5000N	eLC-5000N		5000N		5000N (5.000kN)	1N (0.001kN)
eLM-10kN	eLC-10kN		10kN		10.00kN	0.01kN
eLM-20kN	eLC-20kN		20kN		20.00kN	0.01kN

\*1 It is the accuracy of the sensor and indicators of eZ-Connect series combined.

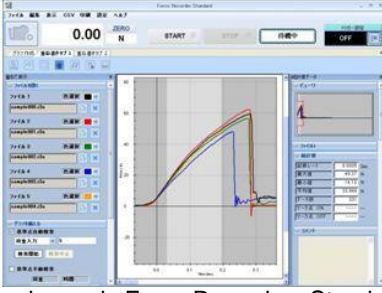
\* Please refer to the accuracy of the sensor of eZ-Connect in P3.

## [Related products]





### -Cables

Model	Explanation	Purpose of use
<b>CB-108</b>	Analog cable (3m)	To connect to a multi meter, oscilloscope.
<b>CB-118</b>	Analog cable (For -AN option)	To connect to a multi meter, oscilloscope.
<b>CB-208</b>	RS232C cable (3m)	To connect to a PC having its own system
<b>CB-308</b>	Digimatic cable(3m)	To connect to a printer DP-1VA (ZTS/ZTA/eZT)
<b>CB-908</b>	Open end cable (3m)	Output cable for loose wire 37 pin (Useful for connection with unique equipment.)

### -Data analysis software Force Recorder

Image	Purpose of use
 <p>*The image is Force Recorders Standard.</p>	<ul style="list-style-type: none"> <li>- You can make graphs of force-displacement at real time via USB connection at 2000Hz.</li> <li>- You can write memo on each graph. You may write down testing conditions such as testing speed.</li> <li>- Up to 5 graphs can be overlaid. (Standard, Professional edition)</li> <li>- It enables to analyze force-displacement relationships. (Professional edition)</li> </ul> <p>* Refer to each specification for further information.</p>

### -Other load cell line-up

Standard type <b>DPU series</b>	Coin shaped type <b>LMU series</b>	Pen type <b>PN-50N</b>	For automatic doors <b>DM-2000N</b>
High accuracy built-in type load cell for general use	Coin size load cell for compression and tension	Pen-shaped to fit for measuring control force of small samples	Fits to measure automatic door closing force
			

### Custom-made Order

<u>Extend the length of a cable</u> Enables to extend the length of a cable for gauge-PC connection or load cell-amplifier connection	<u>Enhance flexibility of a cable</u> Enables to offer high-flex cable to reduce risks of disconnection
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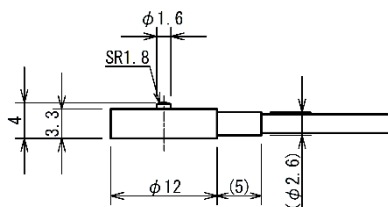
\* LMT series is not available

\* Contact us for details such as cable length etc.

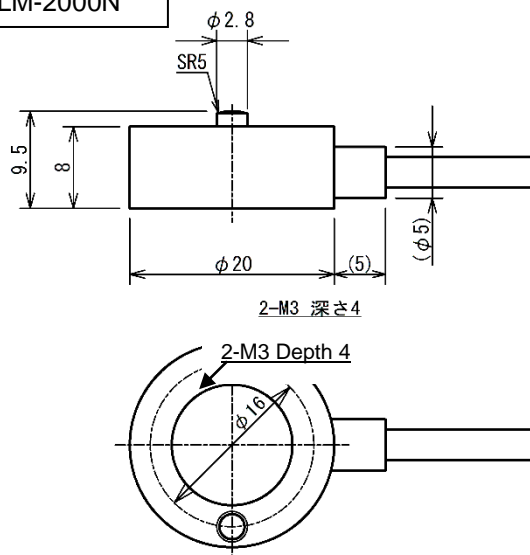
## [Dimensions]

### -LM series

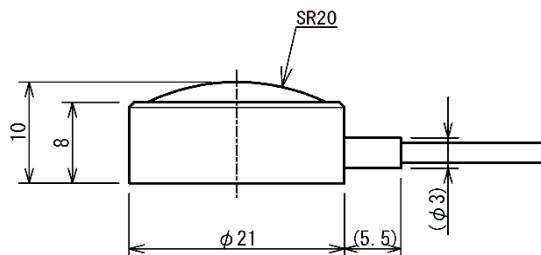
LM-10N to  
50N



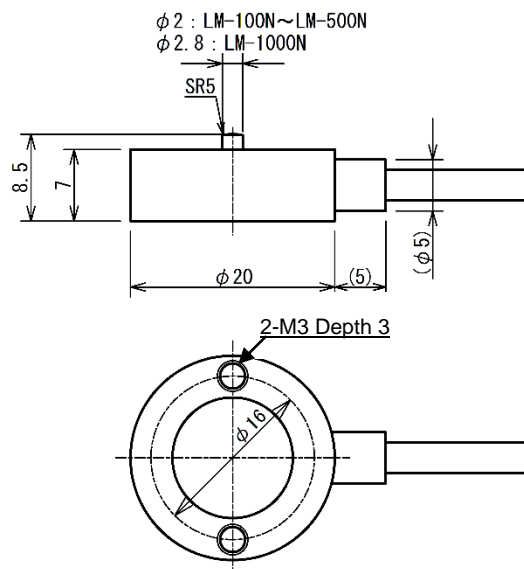
LM-2000N



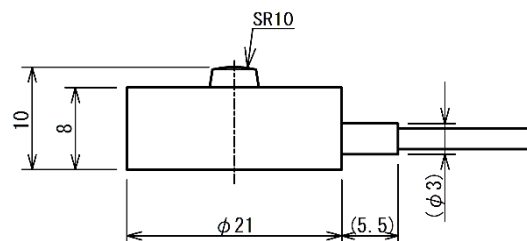
LM-10kN,20kN



LM-100N to 1000N



LM-5000N



The value in ( ) is only advisory.  
It could be larger depending on the  
thickness of glue or protective tube.

Unit:mm

