New Products Launch: STRAIN GAUGE LOAD CELL



We have been offering a wide range of interface devices for strain gauge load cells, from strain gauge transmitters to digital panel meters, limit alarms, remote I/O, and weighing indicators. From now on, you can order strain gauge load cells and interface devices in a single step.



\equiv Principles of strain gauge load cells



A strain gauge load cell consists of a combination of a metal that deforms when a force is applied, and a sensor whose resistance changes when it deforms.

Metals that deform when a force is applied are called flexure elements, while sensors whose resistance changes when they deform are called

strain gauges. A strain gauge exhibits the following characteris-

tics with respect to deformation.



\equiv Wheatstone bridge circuit and rated output

The resistance change in a strain gauge is so small that it is converted to a voltage using a Wheatstone bridge circuit.

When the resistance values of $R1 \times R3$ and $R2 \times R4$ are equal, the output voltage of the Wheatstone bridge circuit is 0 V.

When the resistance values are not equal, the output voltage changes accordingly.



The rated output values in the strain gauge load cell matrix table (inside) represent the output voltages for an excitation voltage of 1 V when the strain gauge load cell is subjected to a force of the rated capacity.

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EC-Z236

\equiv Types of strain gauge load cells



Tension and Compression type

Used by connecting rod ends (*1) or eyebolts at the top and bottom. When used for compression, care must be taken because there are two sides, the fixed side and the load side.



Rod end: A type of bearing consisting of a spherical ball enclosed within a housing. This construction allows for complex movement.

(*1) Prepared by user (*2) Consult us for more information.



Compression

LCC-2R5, 5

Mechanical stopper incorporated

LCC-10...50

LCC-100, 200

Fit in a limited space Suitable for a weight testing

LCC-30

Suitable for a variety of weight testing Wide rang



Rated capacity (not a converted value)	2.5 N 255 gf		5 N 510 gf	10 N 1.02 kgf	20 N 2.04 kgf	50 N 5.1 kgf	100 N 10.2 kgf	200 N 20.4 kgf	300 N 30.6 kgf	5
Rated output	0.4 mV/V or more			1	mV/V ±30	%	1 mV/\			
Non-linearity	±0.3% R.O.			±1% R.O.			±1% R.O.			
Hysteresis	Ę	±0.2% R.O			±1% R.O.		±1% R.O.			
Compensated temperature range		0 to 50°C			0 to 50°C		0 to			
Safe overload		150% R.C.			150% R.C.		150%			
Input terminal resistance	Approx. 350 Ω			350 Ω ±10 Ω			350 Ω			
Output terminal resistance	Approx. 350 Ω			350 Ω ±10 Ω			350 Ω			
Body material	Aluminium			Aluminium	minium Stainless steel			Stainless steel		

Tension and Compression

LCCT-1...5

Female threaded

for easy mounting

LCCT-10, 20

Female threaded for easy mounting

LCCT-50...500, 1K

High accuracy



Rated capacity (not a converted value)	1 N 102 gf	2 N 204 gf		5 N 510 gf	10 N 1.02 kgf	20 N 2.04 kgf	50 N 5.1 kgf	100 N 10.2 kgf	200 N 20.4 kgf		500 N 51 kgf	
Rated output (*5)	0.5 mV/V to 2.5 mV/V				0.7 mV/V	1 mV/V	2 mV/V					
Non-linearity	±0.2% R.O.				±0.29	% R.O.	±0.03% R.O.					
Hysteresis	±0.2% R.O.				±0.29	% R.O.	±0.03% R.O.					
Compensated temperature range	-10 to +50°C				-10 to	+60°C	-10 to +60°C					
Safe overload	200% R.C.				150%	6 R.C.	150% R.C.					
Input terminal resistance	Approx. 1000 Ω				Approx	. 350 Ω	410 Ω ±10 Ω					
Output terminal resistance	Approx. 1000 Ω				Approx	. 350 Ω	350 Ω ±5 Ω					
Body material	Beryllium copper Stainless steel			Alum	inium	Aluminium						

R.C.: Rated Capacity

R.O.: Rated Output

(*4) Shape and size may differ depending on model va





EXTERNAL DIMENSIONS (unit: mm) Please refer to the data sheet of individual models for inch representation.



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2–M8, depth 8

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Your local representative:

* Allowable bending moment: 9 N·m ** Width across flat

Specifications are subject to change without notice. When ordering, use the latest data sheets available at our web site: www.mgco.jp