

Bar type load cell

LC4212 Series



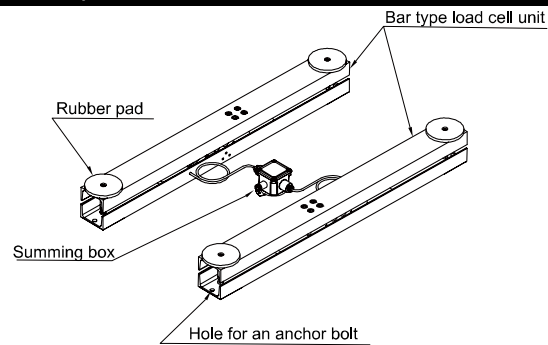
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1. Overview

1-1 Overview

The LC4212 series products are composed of two bar type load cell units and a summing box. That configuration is simple and unique. The LC4212 series enables various types of heavy loads to be weighed easier and quicker with platform scales and pallet scales. It is highly durable and water resistant, and maintains its initial performance for a long time. Also, it can be used as a pitless type, which does not require foundation work, making installation on an existing floor easier.

1-2 Composition



2. Installation

2-1 Installation Requirements

To get the most out of the product, please prepare the following installation environment.

- The floor base is firm and even.
- There are no sudden changes in temperature and humidity. The product is not exposed to direct sunlight, wind, or snow.
- There is no vibration or noise coming from outside.
- If installed inside a pit, drainage should be provided.

2-2 Installation

2-2-1 Precautions for Use

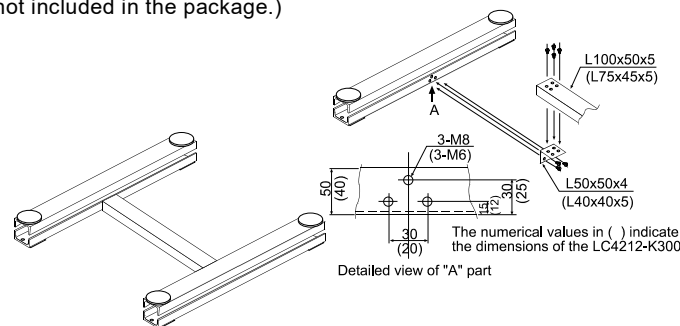
Two bar type load cell units and a summing box are connected with cables. Do not apply excessive force to cables as they may be disconnected if they are pulled. Pay particular attention especially when the place where the product is installed is frequently changed. Do not drop the main unit or apply excessive impact to it.

2-2-2 Using With the Units Secured With an Anchor Bolt

- (1) Place two bar type load cell units in parallel at an interval of up to 2 m on the installation location. Position one load cell cable inside and the other outside.
- (2) Use a liner such as a thin steel sheet to level the units.
- (3) Secure the units with an anchor bolt.
- (4) Secure the summing box to an appropriate position.

2-2-3 Using Without Securing the Units With an Anchor Bolt

Connect the units with a joint to assemble them in an "H" shape. (Joint is not included in the package.)



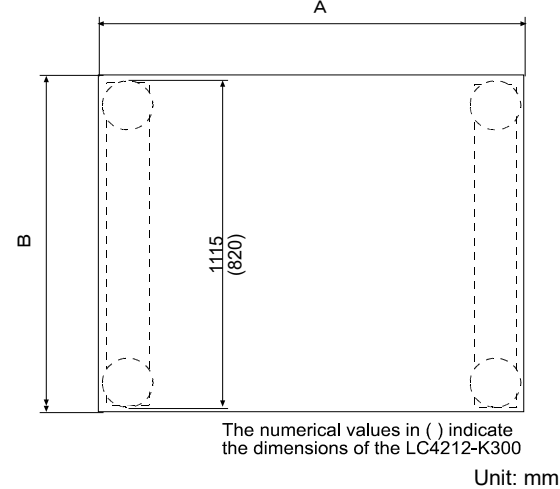
2-3 Attaching a Platform

2-3-1 Precautions for Attaching a Platform

Simply place a platform on the bar type load cell units. If it is secured to the units with bolts, the load cells inside the units may hit each other, causing error.

2-3-2 External Dimensions

See the figure and table below for reference to make a platform. (Platform is not included in the package.)



Model name	A	B
LC4212-K300	Up to 2000 (variable)	900
LC4212-K600	Up to 2000 (variable)	1200
LC4212-T1.2	Up to 2000 (variable)	1200

2-3-3 Configuration

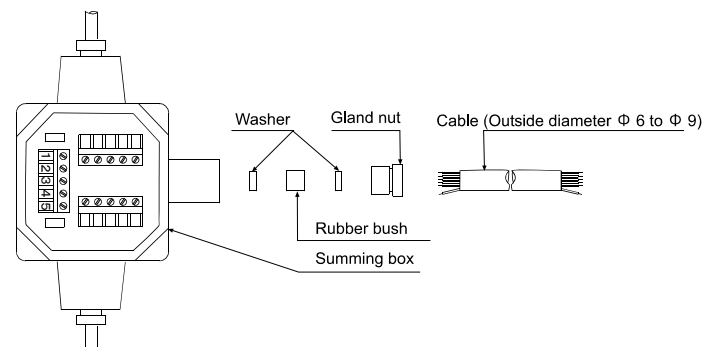
Using a shaped steel or steel sheet, make a highly stiff configuration that has little warpage and bending. The weight of the platform should be within 20% of the rated capacity (within 50% for LC4212-K300) so that it can be as lightweight as possible.

3. Operation

3-1 Connection to the Weighing Indicator

3-1-1 Connection to the Weighing Indicator

For connection to the weighing indicator, see the figure and table below. Use 4-core or 6-core shield cables with diameters of $\Phi 6$ to $\Phi 9$. Refer to "3-1-3 Other precautions" for cables.

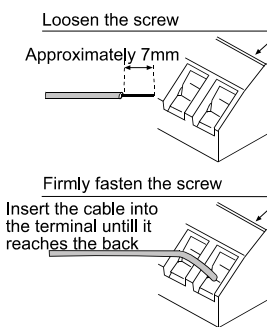


Terminal block for the summing box		Weighing indicator	
NO.	Symbol	Signal	Abbreviation
1	R	Load cell excitation voltage +	EXC +
(1)	(R)	Sensing input +	SEN +
(2)	(W)	Sensing input -	SEN -
2	W	Load cell excitation voltage -	EXC -
3	G	Load cell input +	SIG +
4	B	Load cell input -	SIG -
5	Y	Shield	SHD

For connection of sensing input to the terminal block for the summing box, see "3-1-1 Terminal Block and Base for the Summing Box".

3-1-2 Terminal Block and Gland Nut for the Summing Box

Expose the core wire of the cable by approximately 7 mm to insert into the terminal until it reaches the back, and then firmly fasten the screw.



If a 6-core cable with sensing input is used, connect EXC + and SEN + to number 1 and connect EXC - and SEN - to number 2, respectively. After connecting them, firmly fasten the gland nut together with the washer and the rubber bush.

3-1-3 Other Precautions

Make sure to connect the shield. If it is not connected, operation may become unstable. The upper cover and the gland nut should be firmly fastened to maintain water resistance. If the summing box and the weighing indicator are close to each other (less than 5m), short circuit EXC + and SEN + on the weighing indicator side and also short circuit EXC - and SEN -. This will enable use of a 4-core shield cable. If the distance between them is more than 5 m, use a 6-core shield cable so that the weighing accuracy can be maintained.

3-2 Precautions against Overload

The units come with an overload stopper, and therefore there is no need to attach one separately. Even if a load within 200% of the rated capacity is applied to the center of the surface with the units installed, that will not affect the performance. However, permitted limit on the four corners is within 100% of the rated capacity. If overload that exceeds permitted limit is repeatedly applied, the service life of load cell may be shortened. In an extreme case, the load cell can be damaged. Similarly, a lateral load also requires attention. Use the units on the four corners at less than 50% of the rated capacity.

4. Maintenance / Service

Remove debris, dust, and any foreign materials from the bar type load cell units and always use them in a clean condition. Use air to clean them.

5. Specifications

5-1 Specifications

Model	LC4212-K300	LC4212-K600	LC4212-T1.2
Rated capacity (R.C.)	3 kN	6 kN	12 kN
Rated output (R.O.)	1.0197 mV/V +15% -0%	1.5296 mV/V $\pm 0.2\%$	
Safe load limit	200% of R.C.		
Combined error	0.015% of R.O.		
Recommended excitation voltage	12 V or less		
Maximum excitation voltage	15 V		
Zero balance	25 \pm 10% of R.O.		
Input terminal resistance	Approximately 200 Ω		
Output terminal resistance	175 \pm 5 Ω		
Insulation resistance	500M Ω or more/DC50V		
Temperature compensation range	-10 to 40 $^{\circ}$ C		
Temperature effect on zero balance	0.04% of R.O./ 10 $^{\circ}$ C		
Temperature effect on span	0.014% of LOAD/ 10 $^{\circ}$ C TYP.		
Protection class	Compliant with IP54		
Platform size	900 x MAX. 2000 mm	1200 x MAX. 2000 mm	
Self weight (mass)	35 kg	58 kg	

5-2 External Dimensions

