Minebea

Object Type CMM1(R)(J)-※, CMP1-※
UMM1(R)(J)-※

INSTRUCTION MANUAL

(For Miniature Type Load Cells)

Read this instruction manual with care before using this product.
Be sure to observe the important points mentioned in this manual . Keep this manual in custody near by in such a way that you may refer thereto anytime , if required .

The symbols used in this manual are as follows and have the following meanings .

Matters which you must not do absolutely or pay full attention to or keep in mind are marked with the following symbols . Read the sentences marked with these symbols without fall .

⚠	NOTE : If this rule is not complied with , a trouble of injury or accident will be , caused , resulting in endangering human body . What is explained here must not be done absolutely .

❗	This shows an important point or limitation when carrying out operation or doing work . Be sure to read without fall in order to avoid doing in a wrong way .

1. Preface

Thank you very much for your purchase of MinebeaMitsumi type load cell .
To begin with , check whether or not the delivered load cell has been damaged in transit or its type is correct as specified . If found defective , be sure to contact the agent from which you purchased this product or sales office . Refer to the catalogue or specification for the details of specification of the respective types .

2. Outline

Miniature type load cells are suited for such measuring instruments that a limitation is placed on the fitting dimensions . Models CMM1(R)(J) , CMP1 , UMM1(R)(J) are miniature type load cells an all stainless steel construction and models CM044 and CM045 , miniature type load cells developed specially for hand presses.

⚠ NOTE

- In case of static loads , use the load cell within the range of rated capacities . In case of dynamic loads , use it less than 70% of the rated capacity .
- Do not apply a voltage exceeding the max . applying voltage to the input terminal .
- Fit this load cell with hexagonal (holed) bolts . The bolt sizes to be used are mentioned in the catalogue and specification . Select bolts higher than strength class10.9 of JIS B 1051.
- Under such circumstances that screws tend to loosen , be sure to retighten them periodically or provide detent if required .
- When fitting it to medical machines or apparatuses involving human life , be sure to provide a protective circuit in preparation for functional failure of load cell .
- If used under special operating circumstances , be sure to consult with us once before starting use .

3. Fitting method

●CMM1(R)(J),CMP1

① Using hexagonal bolts (holed) , fit the load cell as illustrated hereunder .
Use spring washers for prevention of loosening .

② Select fitting bolts higher than strength class 10.9 of JIS B 1051 .
If stainless steel bolts are used , use bolts of strength class 80 of JIS B1054 .

③ As for the fitting length of screws , it shall be longer than the nominal diameter of screw .The pedestal must have full rigidity and flat, higher than 25s in surface finish .

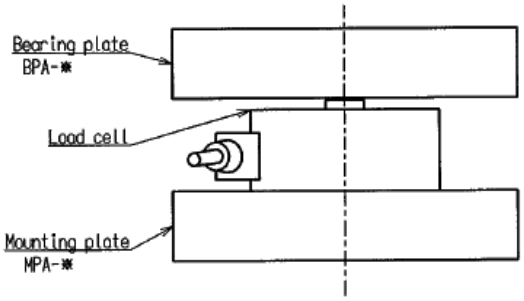
④ Fit it in such a way that no dust or foreign matter is not held between .

⑤ The bolt sizes to be used shall be those mentioned in the catalogue and specification .

⑥ The proper tightening torques shall be adopted , referring to the following table .

NOMINAL DIA .OF BOLT	PROPER TIGHTENING TORQUE(N-m)	
	(N・m)	(kgf・cm)
5	7.84	80
6	13.7	140
8	33.3	340

●Accessories



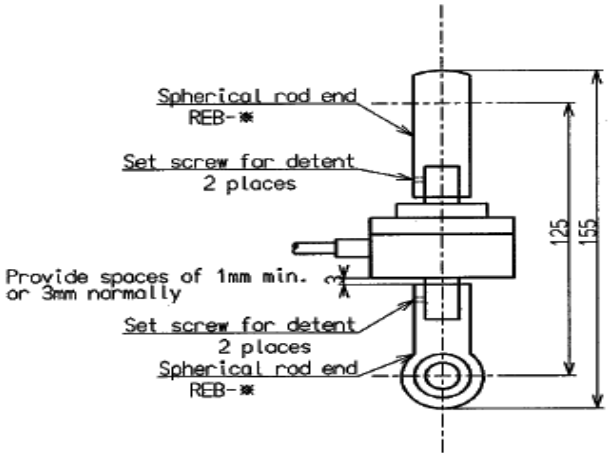
Bearing and mounting plates as well as expansion release hard wares are available at separate prices.

●UMM1(R)(J)

① Using a spherical rod end for fitting of load cell ,fit it as illustrated hereunder .
Fit it in such a way that the fitting lengths of screw are equal at both sides , referring to the dimensional table of fitting of spherical rod ends mentioned in the specification or catalogue.

② Use set screws attached to the rod end for detent. When tightening the set screw , do so in such a way that no load is applied to the sensing block(surface where the fitting screw has protruded) of load cell .

③ Fit it in such a way that no dust and foreign matter has entered entrained therein .



Accessories
Spherical rod end , swivel clevis shank are available at separate prices .

4. Important points for use

① In case of static loads , use it within the range of rated capacities .
In case of dynamic loads , use it less than 70% of rated capacities .

② If there should be an impact load or vibration , a dynamic load calculated by multiplying static load by acceleration will act on the load cell .
Therefore , take a measure to prevent the value calculated by taking into consideration acceleration from exceeding the rated capacity of load cell .

③ If there is a possibility that an overload will act on load cell , provide a safety device against damage .

④ The installing place must have full strength .

⑤ Use it in an ambient temperature within the range temperature compensation range .

⑥ Be sure to avoid a rapid change in temperature and direct heat .

⑦ Checking protecting class , use it in such an environmental condition free from formation of dew .

⑧ Under such circumstances where electric and magnetic fields are very strong , noise is generated sometimes .Therefore , avoid using it at such circumstances .

⑨ Do not bend the cable lead hole extremely or pull strongly . When carrying it from place to place , do not hold the cable to suspend the load cell .

⑩ Under vibrating circumstances , fix the cord in the vicinity of cable lead hole and provide a means for prevention of vibration thereto .

⑪ Under such circumstances where screws tend to be loosened , retighten periodically and provide a detent means thereto , if required .

⑫ When fitting it to medical treatment machines and other apparatuses involving human life , be sure to provide a protective circuit thereto , in preparation for functional failure of load cell .

⑬ Do not disassemble the load cell .

⑭ Do not drop any thing on the load cell or give a shock thereto .

⑮ When discarded , dispose of it , taking into full consideration the environmental condition .

5. Wirings

① Connect the lead wires with the specified terminals of gauges .

● CMM1(R)(J)、CMP1、UMM1(R)(J)

	INPUT		OUTPUT		SHIELD
	(+)	(−)	(+)	(−)	
COLOR OF CABLE LEAD	Red	white	Green	Blue	Yellow
STD CONNECTOR WIRING	A	C	D	B	E

② Refer to the operation manual of gauge the terminals of gauges .

6. Trouble shooting

If an overload exceeding the allowable value is applied or if an overload other than center load is applied , be sure to make calibration again in order to check whether it can be used normally .If indication is unstable or abnormal , check whether or not connection with gauge is made correctly and reliably or the important matters in use in item 4 are used properly .

① Check whether or not the input/output resistance is within the range of specified values with a tester etc .

② Check whether or not the insulation resistance of load cell body and core wires of cord is within the specified range of values .

③ Check whether or not the output (zero balance) without load is within the range of specified values .

If the values of the abovementioned measurement are abnormal , be sure to contact our company at once .
If there should be an unknown point in connection method etc ., contact our company .

Understand the text of the this manual is subject to change without notice .