

TEAC**Strain gauge load cell Instructions for Use****TU-BR-G****CE UK CA****Tension/Compression
Load Cell****Introduction**

Thank you for purchasing the TU-BR-G load cell. Please read this document completely before using this load cell to achieve its best performance and ensure safe and proper operation.

Included accessories

If anything is missing or damaged, contact the retailer where you purchased the product.

- Test report x 1
- Instructions for Use (this document) x 1

- Company names and product names in this document are the trademarks or registered trademarks of their respective owners.

IMPORTANT SAFETY INSTRUCTIONS**WARNING****If something abnormal occurs**

Request repair from the retailer where you purchased the product.

Do not open the cover.

Never remove the cover from this unit. Doing so could cause malfunction. Request inspection and repair from the retailer where you purchased the product. Do not alter this unit. Doing so could cause malfunction.

Do not put foreign objects or water, for example, into the unit.

Do not place a container that holds water, for example, on top of this unit. If liquid is spilled, for example, and enters the unit, this could cause malfunction.

Do not use the unit with any power supply voltage other than that specified.

Do not use the unit with any power supply voltage other than that specified. Doing so could cause malfunction.

CAUTION**Unsuitable installation locations**

Do not place the unit in the following types of locations. Doing so could cause malfunction.

- Locations where it might be exposed to smoke or steam, such as near a kitchen table or humidifier
- Unstable locations, including unsteady stands and tilted places
- Locations that are very humid or dusty
- Locations that are exposed to direct sunlight

When not using the unit for a long time

For safety, cut the power supply when not using this unit for a long time.

Do not operate a damaged unit.**Precautions for use**

- This unit is not built to be water or splash resistant, and it cannot be used in conditions when the relative humidity is high. Moreover, use in atmospheres with corrosive gases should be avoided.
- Be careful to prevent water, oil and other substances from getting on the unit.
- Avoid use in conditions where condensation could occur.
- Connect cores to the load cell after discharging (eliminating) static electricity from your body.
- If the surrounding temperature changes suddenly, the

values output by this device could become unstable, making accurate measurement impossible.

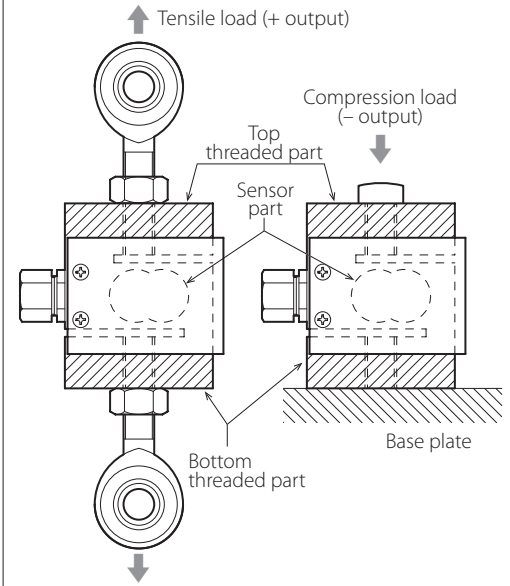
(This could occur, for example, in a location blown by warm or cold air.)

- Conduct load calibrations periodically.

Installation procedures

- To use load buttons, screws, bolts and rod ends, for example, with this load cell, attach them to the screw holes in its top and bottom.

Rod end use example Load button use example

**ATTENTION**

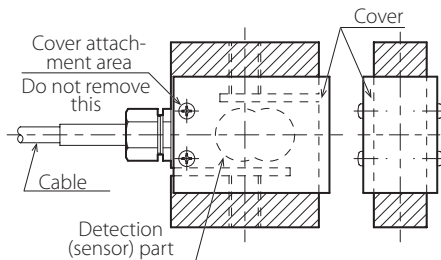
When attaching a rod end or load button to the top screw hole, hold the top threaded part (shown with

diagonal lines) and tighten the screw/bolt and nut.

In the same way, when attaching a rod end or base to the bottom screw hole, hold the bottom threaded part (shown with diagonal lines) and tighten the screw/bolt and nut.

When tightening the screw or nut, holding the threaded part on the opposite end will cause twisting force to be applied to the sensor and damage the load cell.

- There is a gap between the load cell and its cover. Measurement errors could occur if foreign materials enter this space or if the cover becomes deformed causing it to contact the load cell. If this should happen, remove the foreign material or fix the deformation.



- Do not screw the threaded parts of load buttons, bolts and rod ends, for example, into the load cell deeper than the screw hole depth indicated in the table with the dimensional drawing of the specifications. For example, if the load cell has a 2kN rating, do not screw anything in more than 16 mm. Screwing anything in more than this will damage the sensor part.
- When using a rod end or other tension jig, hold the attachment areas shown with diagonal lines in the same way as with compression so that twisting force is not applied to the sensor part.
- When using with tension, consider the detent of all the screws, and conduct inspections before starting work, for example.

- Consider examinations to prevent accidents caused by falling objects due to damaged load cells resulting from overloads and unbalanced loads, for example.

- The screw dimensions are shown in the table below.

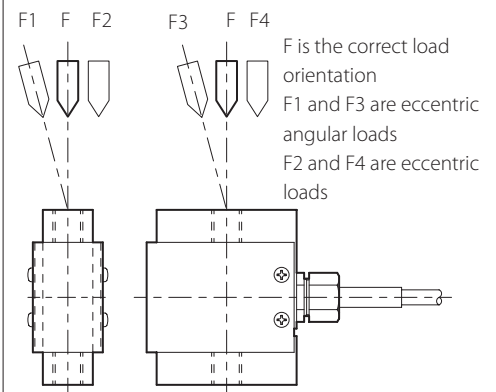
Rated capacity	Screw size	Tightening torque
200 N	M6x1	5.07 N·m
500 N		
1 kN		
2 kN	M12x1.75	76.5 N·m
5 kN		
10 kN		
20 kN	M16x2	190

Use class 12.9 strength screws.

- Since this load cell is made with aluminum material (200N, 500N, 1kN and 2kN), we recommend using flat washers suitable for the screws and bolts being used.

Precautions when placing loads on the unit

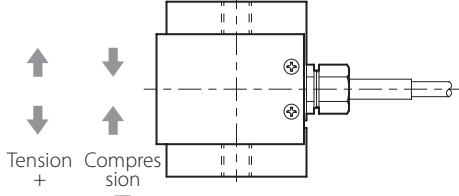
- Make sure the load is applied perpendicularly to the length of the load cell. Make sure that the load is also applied in alignment with the load-receiving hole. If the load is not centered (eccentric load), twisting, for example, and measurement errors could occur. This could even result in damage.



- Be careful to avoid turning and twisting from lateral loads. This could cause troubles like those described in the previous item.
- Be careful to avoid applying loads that exceed the rated capacity. In particular, use caution when there are vibrations because loads that exceed the rated capacity could occur due to sympathetic vibrations, for example.

- The illustration below shows the polarity of the signal in relation to the direction of the load.

Polarity (load direction and output)

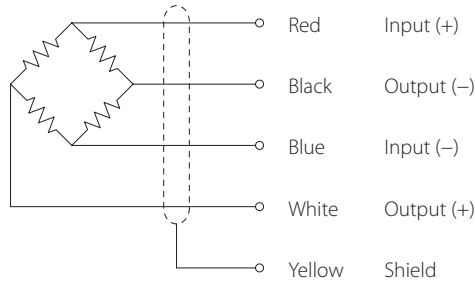


- If the load receiving area is contacted by something that is at a different temperature and the load is increased, the values output by this device could become unstable, making accurate measurement impossible. In such a case, wait until the temperature difference ceases to exist before measuring.

Electrical connection of load cell

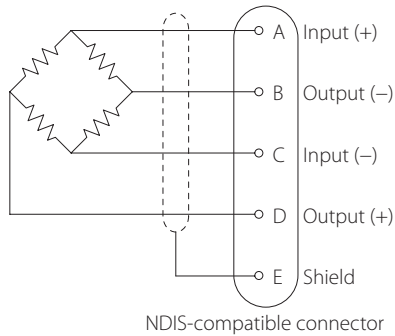
- Connect as shown in the illustration below. Incorrect connections could result in inability to balance and in errors occurring in the output voltage when loads are applied.

Using a cable with bare lead wires



- This unit does not support remote sense. See the operation manuals of indicators and strain amps that support remote sense for how to connect sensors with those units.
- The shield is not connected to the main body of this product. For this reason, if grounding is necessary because of external noise or another issue, arrange to ground the shield to a part other than the body of this unit, for example.
- Since the cable is directly connected to this unit, use a specialized cable to increase the length. (Please consult with us.)

Using a connector (optional)



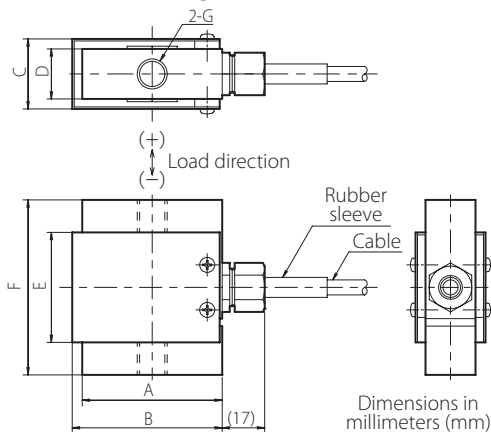
Handling after use

- When moving this unit while it is attached, take protective measures to prevent it from being shaken or subjected to excessive external forces.
- When storing it, keep it in a dry place where it will not be exposed to water or oil, for example.

Specifications

Rated capacity: 200 N, 500 N, 1 kN, 2 kN, 5 kN, 10 kN, 20 kN
 Safe overload rating: 150% R.C.
 Rated output: 3 mV/V \pm 1%
 Linearity: 0.05% R.O.
 Hysteresis: 0.05% R.O.
 Repeatability: 0.03% R.O.
 Zero balance: \pm 10% R.O.
 Safe excitation voltage: 20 V
 Input terminal resistance: 350 Ω \pm 3.5 Ω
 Output terminal resistance: 350 Ω \pm 5 Ω
 Insulation resistance: 1000 M Ω or more (DC 50 V)
 Compensated temperature range: -10 to 70°C
 Permissible temperature range: -30 to 80°C
 Temperature effect on zero balance: 0.05% R.O./10°C
 Temperature effect on output: 0.05% R.C./10°C
 Cable: \varnothing 6mm 4-core shielded cable, 5m direct connection with bare lead wires
 Body material: aluminum
 Environmental compliance: RoHS (10 substances)

Dimensional drawing



Rated capacity	A	B	C	D	E	F	G
200 N							
500 N						60	M6x1, depth 12
1 kN	56	60	28	20	44	70	M12x1.75, depth 16
2 kN							
5 kN							
10 kN							
20 kN	70	74	33	25	58	90	M16x2, depth 20

Warranty explanation

- The warranty period for this device is one year from the date of purchase.
- Be aware that repairs will require payment in the following cases even during the warranty period.
 - Malfunction or damage due to misuse
 - Malfunction or damage caused by modifications or repairs conducted by any party other than our company or a service person designated by our company
 - Malfunction or damage caused by dropping, transportation or similar handling after product delivery
 - Malfunction or damage caused by fire, earthquake, water, lightning or other natural disaster
 - Malfunction or damage caused by external factors, including power supplies and equipment environmental conditions, that deviate from the operation requirements of this product
 - Malfunction or damage if the product was not purchased from our company or an agent designated by our company
- We offer paid service after the conclusion of the warranty period. For details, please contact the retailer where you purchased the unit.
- Be aware that our company will bear no responsibility for any secondary damages resulting from the operation of this device or related to data.
- Information is given about products in this manual only for the purpose of example and does not indicate any guarantees against infringements of third-party intellectual property rights and other rights related to them. TEAC Corporation will bear no responsibility for infringements on third-party intellectual property rights or their occurrence because of the use of these products.

Contact information

TEAC CORPORATION (Manufacturer)

1-47 Ochiai, Tama-shi, Tokyo 206-8530 Japan
 Phone: +81-042-356-9154

TEAC AMERICA, INC.

10410 Pioneer Blvd. Unit #1, Santa Fe Springs, California 90670, U.S.A.
 Phone: +1-323-726-0303

TEAC EUROPE GmbH. (EU Importer)

Bahnstrasse 12, 65205 Wiesbaden-Erbenheim, Germany
 Phone: +49-611-7158-349

TEAC UK Limited (UK Importer)

Luminous House, 300 South Row, Milton Keynes, Buckinghamshire, MK9 2FR, UK
 Phone: +44-1923-797205