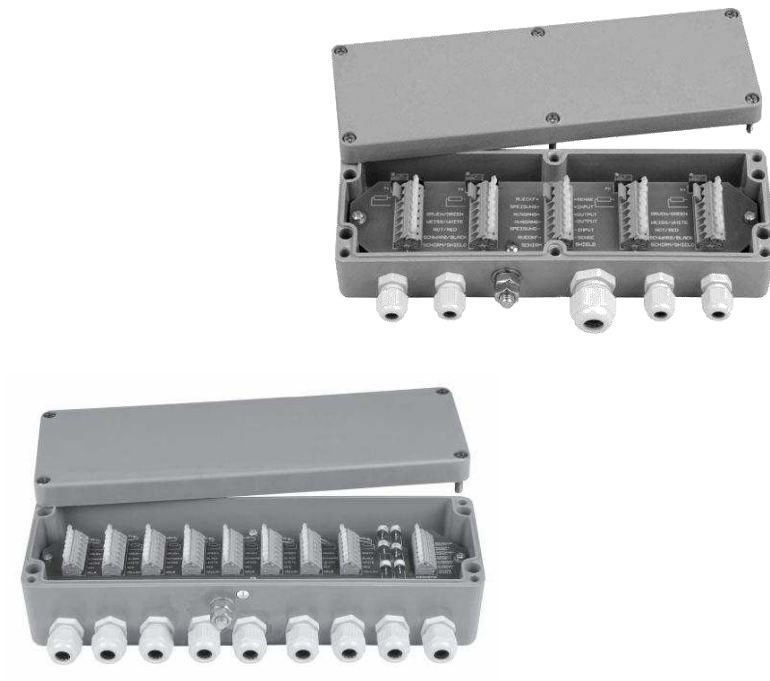


Operating instructions



EZE49X000004 and EZE49X000006/008/010 Junction box

BE 971 b

ONE NAME. ALL SOLUTIONS.



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1 General safety instructions



All products in this series are manufactured and tested for conformity to the relevant safety standards.

- Read this manual carefully before you install or service this unit.
Keep this manual in a safe place so that it can be referred to at a later time!
- When installing, servicing or operating this unit, the relevant VDE guidelines and local safety and accident prevention regulations are to be adhered to!
- Installation, adjustment and servicing of this unit and attached peripheral equipment must be performed only by **qualified specialists!**
- Safety and accident prevention regulations that apply to the specific individual case to be adhered to (e.g. VDE0100 und VDE0113).

2 Introduction

The junction box is intended for the parallel connection of analogue load cells.

The junction box **EZE49X000004** contains cable clamps for a max. of 4 DMS load cells in 4-wire technology and clamping points to accommodate corner correction resistors. Corner correction is to be carried out either via resistors or potentiometers.

The **EZE49X000006** junction box contains cable clamps for a max. of 6 DMS load cells (versions with 8 or 10 clamps can also be supplied) and is fitted with overvoltage protection diodes, specifically for vehicle scales and silos.

Resistors are used to perform corner correction. The box is prefitted with 2.1 ohm resistors, with which even a corner with a low signal can be corrected upwards. The signal of the individual load cells can be lowered by fitting higher value resistors, or raised by fitting lower value resistors.

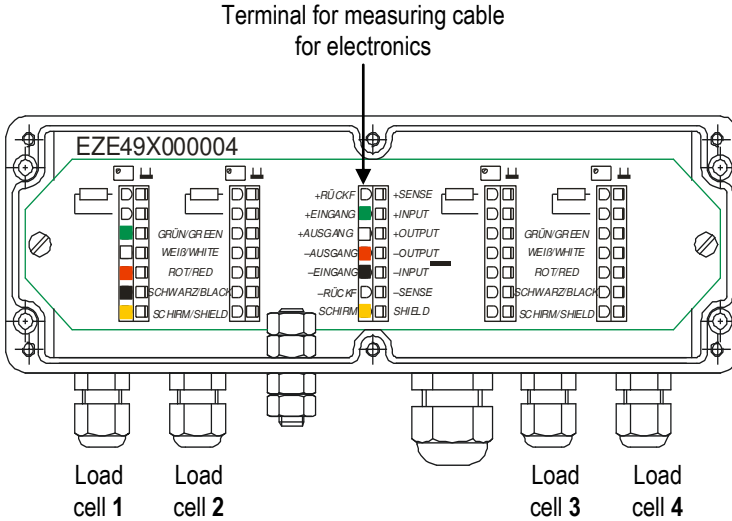


Illustration of EZE49X000004 junction box

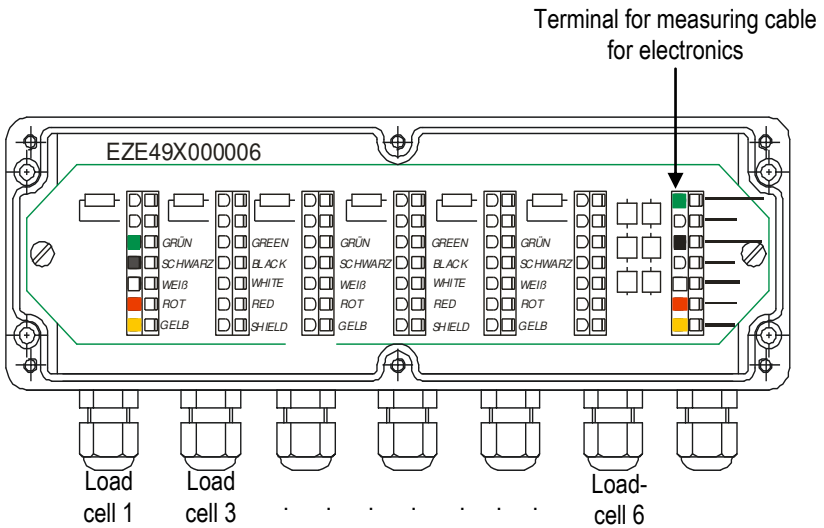


Illustration of EZE49X000006 junction box

3 Installation

Connect the load cells to the designated clamps in accordance with the colours.

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A 6-wire shielded cable should be used to make the connection between the EZE49X00000X junction box and an amplifier module or display device that supports 6-wire technology. Correspondingly, for electronic equipment that supports 4-wire technology, 4-wire shielded cable should be used.

Before closing the junction box, unpack the supplied desiccant and place it in the box.

Check that the seal on the top cover is not dirty and then screw it firmly and evenly to the junction box.

3.1 Earthing - Shielding

The junction box is to be earthed. Basically, all parts that are connected to the application are to be included in the shielding.

3.2 Cabling

Care must be taken during assembly and installation to ensure consistent spatial separation between lines afflicted by interference (e.g. heavy current circuits) and the measurement and control lines. The distance from all other control and heavy current lines must be at least 0.5 metres.

Connecting the load cell cable

Loosen the cable gland, then insert the load cell cable into the gland until the shrink hose disappears therein. Feed the connecting lines (gn, bl, wh, rd, yl) through underneath the board and fetch them in from the rear.

Assignments:

yellow = shield

black = - supply (- input or - EXC)

red = - signal (- out)

white = + signal (+out)

green = + supply (+ input or + EXC)

Tighten the cable gland. (seal tightness and strain relief)

Connecting the measuring cable

The measuring cable (connection of the junction box to the evaluation electronics) should be a 6-wire shielded cable and kept as short as possible. Since this cable is normally slightly thicker than the load cell cable, it is fed into the middle slightly larger cable gland. Because the measuring cables have differing conductor colours, depending on the type and manufacturer, select the colours accordingly yourself. Also connected up are the -sense and + sense lines of the sensor.

e.g. braid = shield

brown = - supply (- input or - EXC)

pink = - signal (- out)

white = + signal (+out)

green = + supply (+ input or + EXC)

yellow = + sense

grey = - sense

The measuring cable is twisted in the junction box and connected to the designated terminal. The shield should also be joined to the evaluation electronics on the other side.

Connect the earthing screw on the outside of the housing to earth or to the weighing modules (potential equalisation).

The order of connection should agree with the corners of the scales, i.e. corner 1 = load cell 1 etc.

4 Corner correction for scales with tectis force transducers or load cells

tecsis load cells are factory calibrated within relatively close tolerances, which means that no corner correction is required in most cases.

The best circumstances pertain where load cells bearing the same code are used (identification is through letters A to I on the package next to the type plate).

Note: Corner errors may also arise due to mechanical causes e.g. inclination of the load cell mounting surface.

- Determination of the display value for each corner. As far as possible with increased resolution of the display device (e.g. factor 10 or higher) or, if this is not possible, by measuring the digit jump with appropriate weights.
- The corner with the lowest display value is the basis for the correction. The difference of the other corners in relation to this "base corner" is calculated accordingly.
- Calculation of the correcting resistance

Correcting resistance [Ω] = $\frac{\text{Abweichung [kg]}}{\text{Test load [kg]}}$ x input impedance of load cell [Ω]*

Example :

You check the corners of your scales with a weight of 2000 kg.
Corner 2 shows 1 kg too much:

$$R_k = \frac{1 \text{ kg}}{2000 \text{ kg}} \times 1100 \Omega \qquad R_k = \frac{1 \text{ kg}}{2000 \text{ kg}} \times 400 \Omega$$

$R_k = 0.55\Omega$ with 1100 Ω load cell / $R_k = 0.2\Omega$ with 400 Ω load cell

You do not have the option of connecting the R_k resistor in series with the existing resistor (at ZE49.000.006) or to exchange the resistor for a new one.

New resistor: 2.1 ohms + 0.55 ohms = **2.65 ohms.**

The junction box also contains a tablet of desiccant to absorb any moisture that may form. Open the plastic pouch containing the tablet and leave the latter in the box.

Fitting the correct resistor into the supply of the relevant load cell in the junction box. The relevant jumpers must be removed before fitting the resistors (with EZE49X000004).

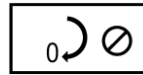
Notes: Set of resistors with 14 values from 0.22 - 4.70 (10 off each) is **available as an option.**

Variant: Potentiometer alignment (only with EZE49X000004)

The ascertained correcting resistor also serves as a yardstick for the corner adjustment per potentiometer (25 gang, 10 ohm Cermet precision trimmer).

Notes:

- Use a suitable screwdriver!
- One revolution corresponds to about 0.4 ohms
- Right stop = 0 ohms
- Left stop = 10 ohms



In the 'as delivered' state, potentiometers P1-P4 are located in the centre position (5 ohms) and are rendered inoperative by the plug-in jumpers J1-J4 (bridged).

If a potentiometer is to be activated, remove the jumper, turn the potentiometer clockwise as far as the stop (click sound), then adjust in the opposite direction to the calculated resistance value.

- Check the corners once again. Repeat the procedure just described, if necessary.

5 Technical specifications

EZE49X000004

Enclosure: Polyester box 75 x 230 x 50 mm
Degree of protection: IP66
Cable gland: 4 x M12, SW 15 and 1 x M16, SW 22

EZE49X000006

Enclosure: Polyester box 100 x 320 x 80 mm
Schutzart: IP66
Cable gland: 7 x M16x1.5 gland suitable for
cable diameters of 5...9 mm

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