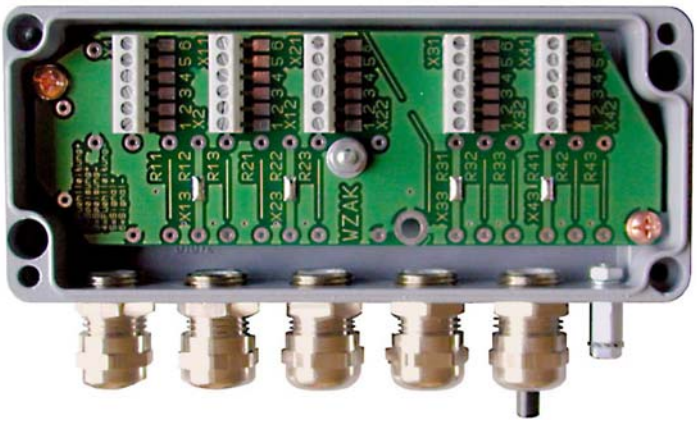
Load Cell Junction Box
XKC 251
XKC 252
XKC 256

Operating Manual



A.S.T. Angewandte SYSTEM-TECHNIK GmbH Dresden
Marschnerstraße 26 01307 Dresden
Telefon (03 51) 44 55 30 Telefax (03 51) 44 55 555
www.ast.de vertrieb.dd@ast.de

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1 Indroduction

The operating manual is for the following types of load cell junction box.:

Number of load cell inputs	Types
1 .. 2	XKC 252
3 .. 4	XKC 251
5 .. 8	XKC 256

Table 1, Types of load cell junction box

2 Technical Specification

Number of load cell inputs:	2 / 4 /8
Type of connectors:	6-lead connection to load cell (operation in 4-lead configuration) 6-lead connection to evaluation device
Type of connection:	by soldering or screwing, as desired
Cable diameter:	4 .. 8mm
Diameter of wires:	0.14 ... 1.5mm²
Voltage sustaining capability:	maximum voltage 40V
Potential equalization:	by earthing screw M4
Temperature range:	-30°C ... +70°C
Interference immunity:	10V/m (26 .. 1000 MHz)
Enclosure:	aluminum die cast, powder coated RAL7001
Dimensions XKC 252:	approx. 98 x 64 x 34 mm^3
Dimensions XKC 251:	approx. 150 x 64 x 34 mm^3
Dimensions XKC 256:	approx. 250 x 80 x 52 mm^3
Enclosure protection:	IP65 to EN 60529

3 Mounting Instructions

Use two screws of type M4 DIN 84 or DIN 912 and follow Figure 1 in attaching the load cell terminal box. Make sure that the indicated clearance needed for making the cable connections and the radiuses of the measuring cables are properly taken into account.

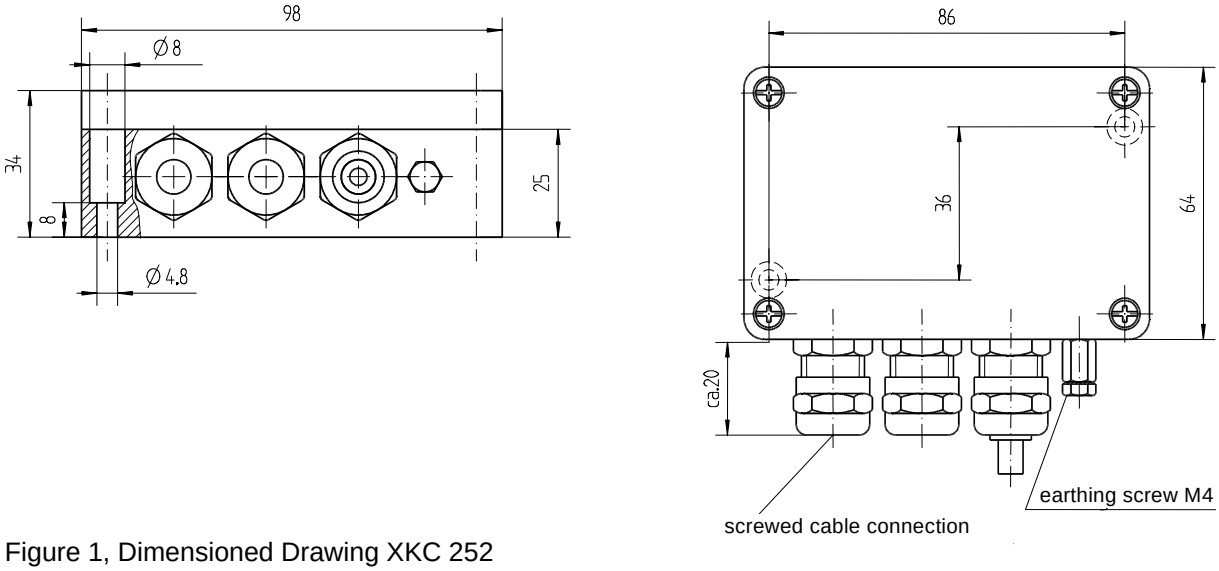

Figure 1, Dimensioned Drawing XKC 252

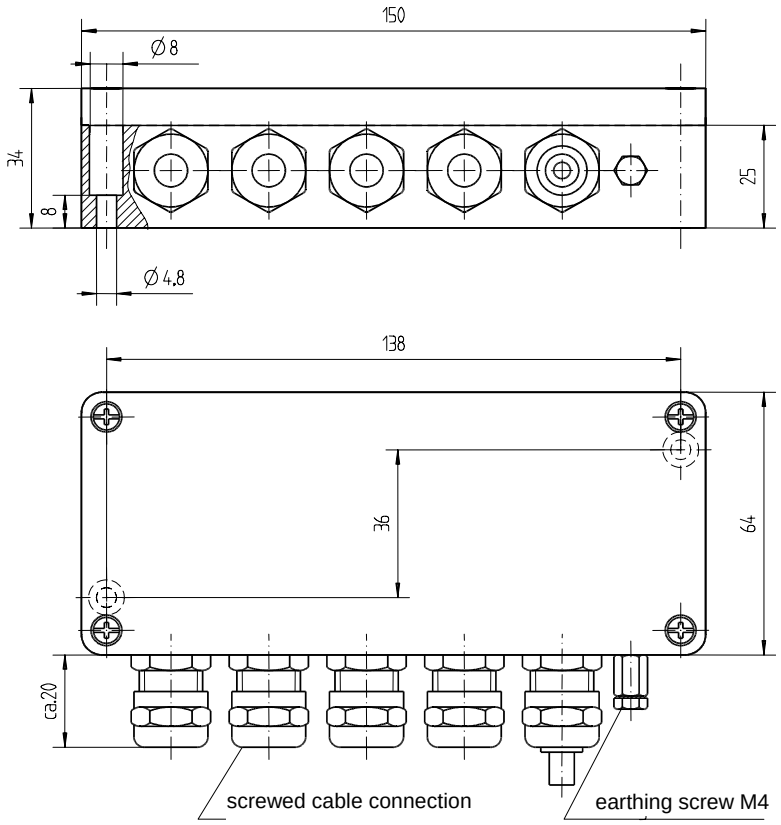

Figure 2, Dimensioned Drawing XKC 251

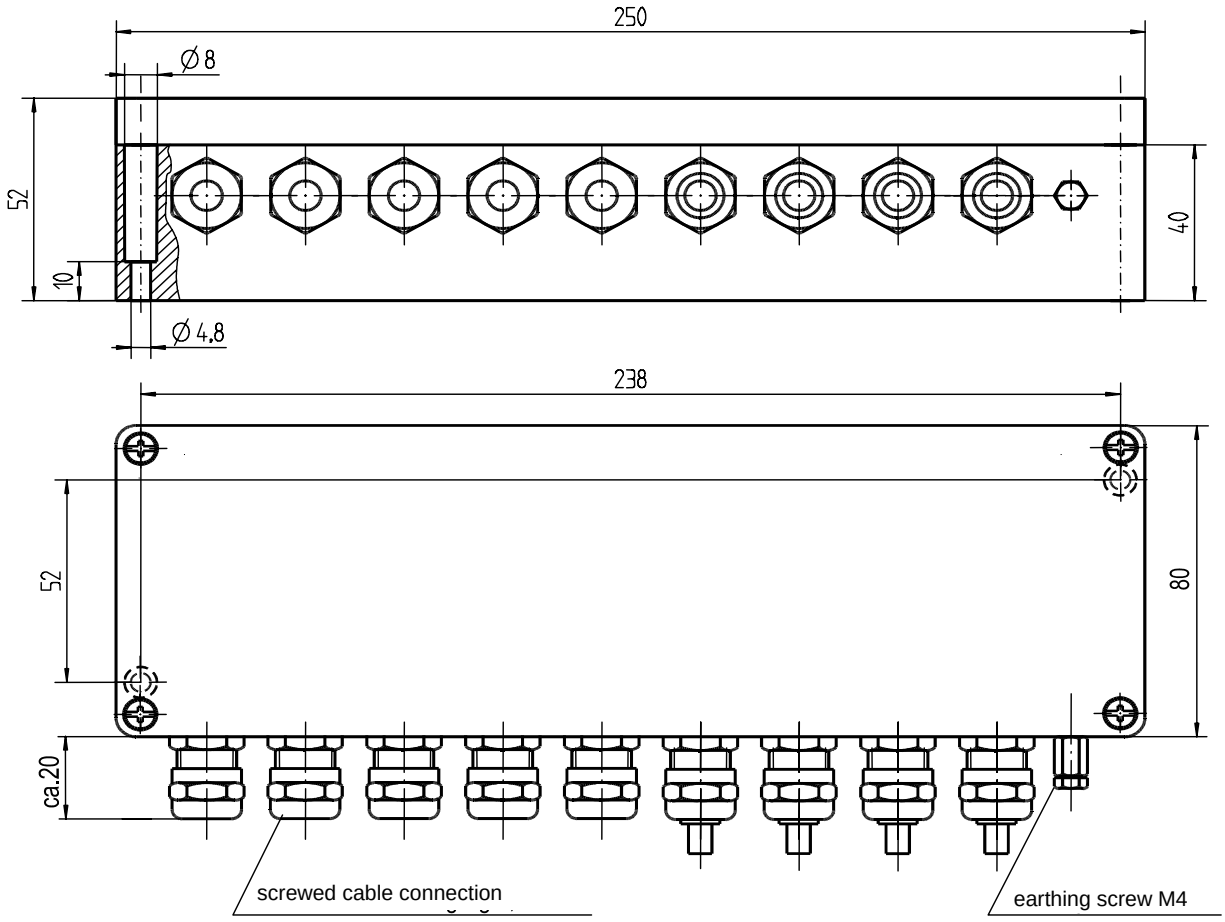

Figure 3, Dimensioned Drawing XKC 256

4 Cable connection

4.1 Cable Configuration

We suggest to use a type LIYCY 7*0.25 shielded cable for the measuring cable. The cable is generally introduced into the device through a screwed earthing cable bushing of type HSK-M-EMV. To this end, please prepare the cable as shown in
Figure 4:

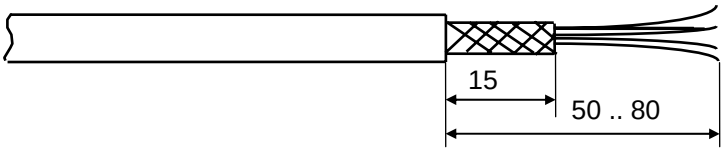

Figure 4, Staggered Removal of Cable Layers

After preparing the cable, lead it though the plastics sleeve down to the end of the cable sheath and fold the shield braid back (see Figure 3). When introducing the plastics sleeve into the bushing, please make sure that the anti-twist locks on the sleeve meet the grooves of the screwed bushing. Tighten the sleeve nut such as to ensure pull relief and leak tightness.
Bear in mind that unused screwed bushings do not constitute an environmental seal. This is why part of the bushings are equipped with sealing plugs.

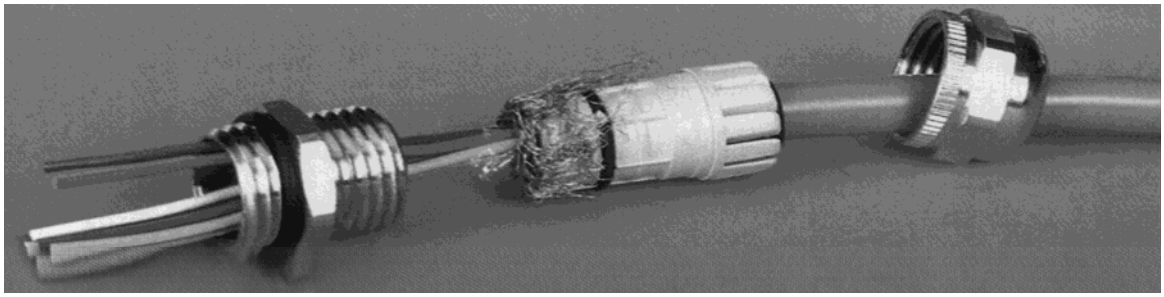

Figure 5, Cable Assembly

4.2 How to Connect the Cable to the Printed Circuit Board

User either the solder contacts (X2, X12, X22 ... X82) or the screw contacts (X1, X11, X21 ... X81) for connecting the measuring cable to the printed circuit board.

In order to meet high demands (high resolution, applications for which calibration is obligatory), we recommend to make connection to the solder contacts in order to minimize thermal voltage. To this end remove the insulating material of each wire approx. 3 mm from its end and tin-coat the blank wire. Use only temperature-controlled soldering irons with an appropriately shaped fine bit. For soldering flux use only rosin in solid or liquid form. Normally no additional flux will be needed if you use tin-based solder with included flux.

When using the screw contacts, do not tin-coat the individual wires but press on terminating sleeves of appropriate size.

Figure 4 … Figure 8 indicates the positions of the solder and screw contacts on the printed circuit board which is labeled accordingly as well. For how to make the terminal connections, please refer to Table 2.

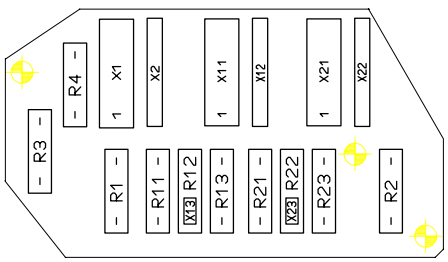

Figure 6, Printed Circuit Board XKC 252

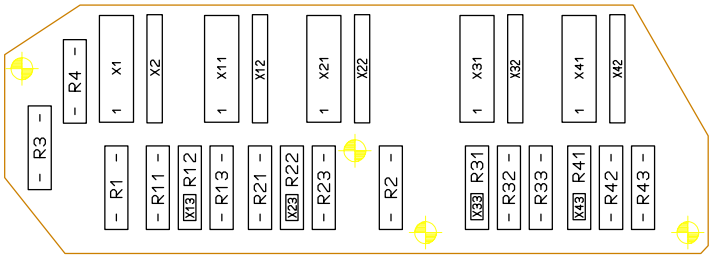

Figure 7, Printed Circuit Board XKC 251

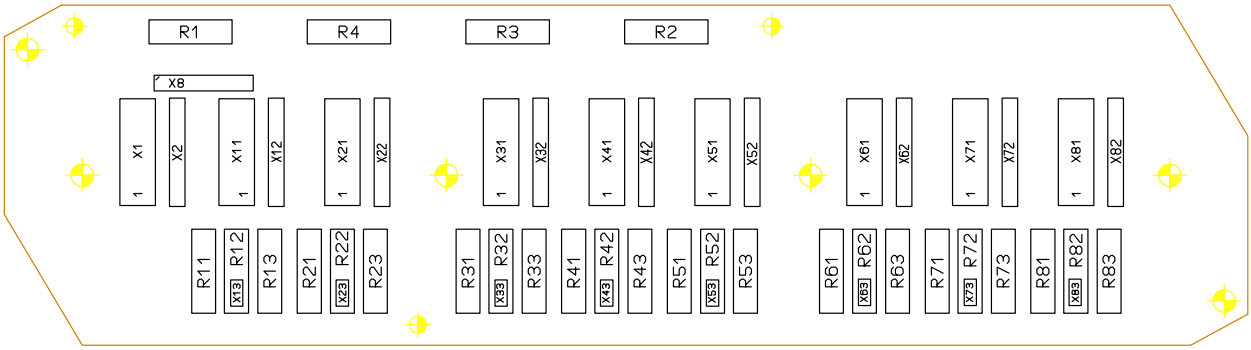

Figure 8, Printed Circuit Board XKC 256

	Sensing line +	Power supply +	Power supply -	Sensing line -	Signal +	Signal -
Electronic unit	X1.1 / X2.1	X1.2 / X2.2	X1.3 / X2.3	X1.4 / X2.4	X1.5 / X2.5	X1.6 / X2.6
Load cell 1	X11.1 / X12.1	X11.2 / X12.2	X11.3 / X12.3	X11.4 / X12.4	X11.5 / X12.5	X11.6 / X12.6
Load cell 2	X21.1 / X22.1	X21.2 / X22.2	X21.3 / X22.3	X21.4 / X22.4	X21.5 / X22.5	X21.6 / X22.6
Load cell 3	X31.1 / X32.1	X31.2 / X32.2	X31.3 / X32.3	X31.4 / X32.4	X31.5 / X32.5	X31.6 / X32.6
Load cell 4	X41.1 / X42.1	X41.2 / X42.2	X41.3 / X42.3	X41.4 / X42.4	X41.5 / X42.5	X41.6 / X42.6
Load cell 5	X51.1 / X52.1	X51.2 / X52.2	X51.3 / X52.3	X51.4 / X52.4	X51.5 / X52.5	X51.6 / X52.6
Load cell 6	X61.1 / X62.1	X61.2 / X62.2	X61.3 / X62.3	X61.4 / X62.4	X61.5 / X62.5	X61.6 / X62.6
Load cell 7	X71.1 / X72.1	X71.2 / X72.2	X71.3 / X72.3	X71.4 / X72.4	X71.5 / X72.5	X71.6 / X72.6
Load cell 8	X81.1 / X82.1	X81.2 / X82.2	X81.3 / X82.3	X81.4 / X82.4	X81.5 / X82.5	X81.6 / X82.6

Table 2, Terminal Connection Diagram

5 Using of balancing resistor

Attention: The type X13 and X23 solder bridges must be closed for any load cell connection that is currently used. The bridges are in closed condition when the unit is supplied, please check up their state. For the position of the bridges, please refer to Figure 6…Figure 8 and the labelling of the printed circuit board.
At the time of supply, cables XC 043 are already connected to the terminal box.

Load cell-connection	solder bridge	balancing resistor
Load cell 1	X13	R11 / R12 / R13
Load cell 2	X23	R21 / R22 / R23
Load cell 3	X33	R31 / R32 / R33
Load cell 4	X43	R41 / R42 / R43
Load cell 5	X53	R51 / R52 / R53
Load cell 6	X63	R61 / R62 / R63
Load cell 7	X73	R71 / R72 / R73
Load cell 8	X83	R81 / R82 / R83

Table 3, Balancing resistor

6 Concept of EMC and Earthing

Take all mandatory shielding and potential-equalizing measures without fail to ensure that all requirements of the EMC law are met and the system operates trouble-free. Observe the following basic rules:

- All measuring cables shall be shielded without interruption.
- At the place where a cable enters a casing (load cell, terminal box, electronic unit), see to it that the shields of the measuring cables are connected to casing potential by means of the EMC-certified screw bushing. Make sure that the shield does not jut into the casing (see paragraph 4.1).
- Lay out additional potential-equalizing leads in parallel to the measuring cables to prevent current from flowing through the shield. These potential-equalizing leads do not replace any potential-equalizing measures between different component parts of a system.