

mycom CLM 121 / 151 - CD/MM Transmitter/Controller for Conductivity and Temperature

Operating Instructions

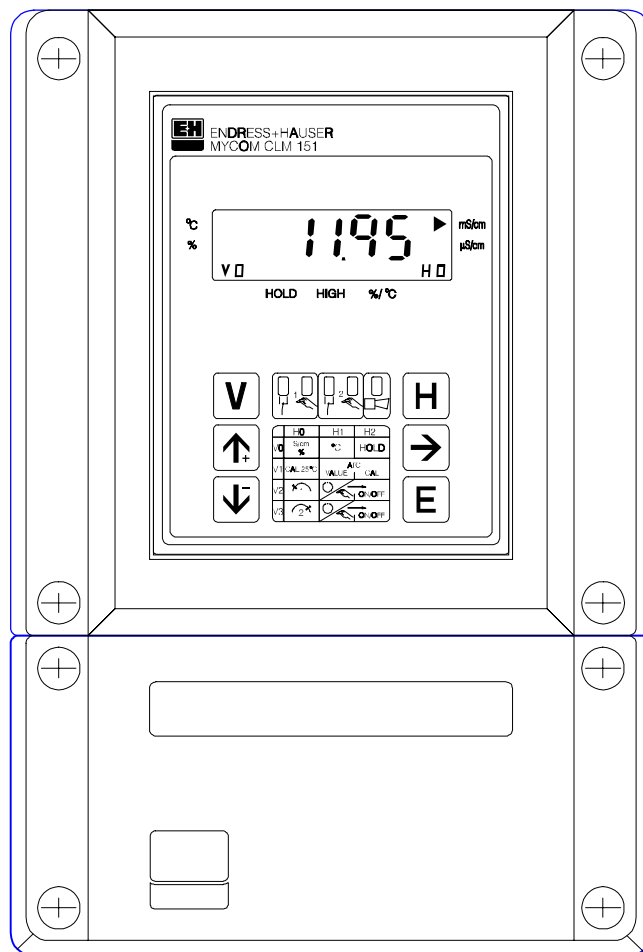
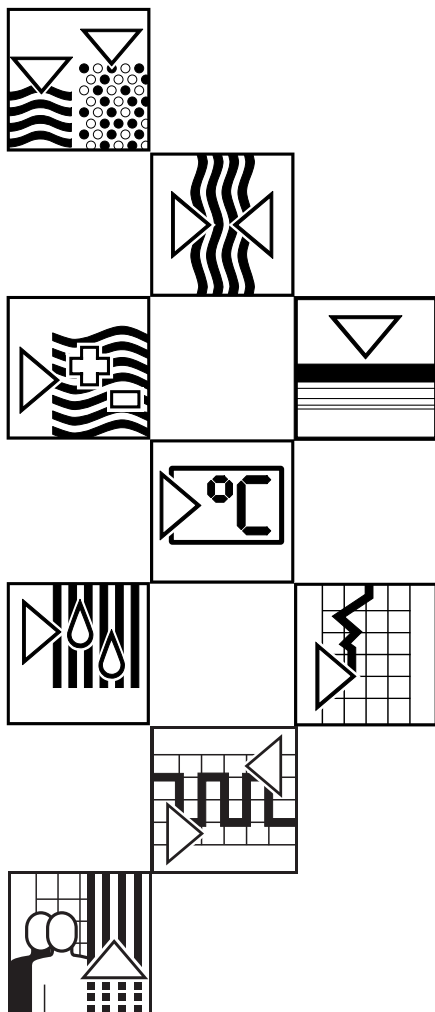


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1. General

These operating instructions describe the fully extended conductivity measuring transmitters Mycom CLM 121-CD/MM and CLM 151-CD/MM

**Note:**

For an instrument with digital interface the separate operating instructions BA 090C "Mycom instrument family serial interface" (order no. 50059856) are required.

1.1 Conformity statement

The Mycom CLM 121 / 151 - CD/MM has been developed and manufactured in accordance with current European standards and directives.

**Note:**

A conformity statement can be obtained from Endress+Hauser.

1.2 Intended application

Mycom CLM 121 / 151 are microprocessor-based measuring and control instruments used to determine the conductivity value.

Their state-of-the-art engineering allows the instruments to adapt easily to all conductivity measuring tasks.

Typical areas of application are:

- Water treatment
- Effluent treatment
- Sewage treatment plants
- Chemical industry
- Pharmaceutical industry
- Food industry

1.3 General safety instructions

**Warning:**

Operating this instrument in any way other than described in these instructions may compromise the safety and function of the measuring system and is therefore not allowed.

Installation, start-up, operation

The Mycom CLM 121 / 151 - CD/MM has been designed and manufactured for safe operation according to the state of the art in engineering and conforms to the relevant regulations and EC directives (see „Technical data“). However, if used improperly or other than for the intended purpose, it may be hazardous, e.g. due to improper connection.

Installation, electrical connection, start-up, operation and maintenance of the measuring system must therefore be performed exclusively by trained specialist personnel properly authorised by the system operator for such work. The specialist personnel must be familiar with these operating instructions and must adhere to the instructions contained therein.

1.4 Order code

Mycom CLM 121 / 151

Types

121 Panel-mounted housing, 96 x 96 mm, ingress protection IP 54 (front)

151 Field-mounted housing, 247 x 167 x 111 mm, ingress protection IP 65

Versions

1 With alarm contact

2 With alarm contact and 1 limit contact

3 With alarm contact and 2 limit contacts

9 Special version

Instrument variants

CD Measurement of specific conductivity,
for connection to 2-electrode measuring cells;
measuring ranges freely programmable

MM Measurement of specific resistance,
for connection to measuring cells with cell constant of 0.01 cm⁻¹;
Selectable measuring ranges 0 ... 1 μS/cm and 0 ... 20 MΩ × cm

ID Measurement of specific conductivity,
for connection to inductive measuring cells CLS 51;
measuring ranges freely programmable

YY Special version

Power supply

0 230 V, 50 / 60 Hz

1 110 V, 50 / 60 Hz

2 200 V, 50 / 60 Hz

3 24 V, 50 / 60 Hz

4 48 V, 50 / 60 Hz

5 100 V, 50 / 60 Hz

6 127 V, 50 / 60 Hz

7 240 V, 50 / 60 Hz

8 24 V DC

Current output

0 0 / 4 ... 20 mA output for conductivity

1 two 0 / 4 ... 20 mA outputs for conductivity and temperature

3 0 / 4 ... 20 mA output for conductivity with additional
RS 232-C interface

4 0 / 4 ... 20 mA output for conductivity with additional
RS 485 interface (variant MM only)

6 0 / 4 ... 20 mA output for conductivity with additional
RS 485 interface / Rackbus (variants CD and ID only)

9 Special version

 ENDRESS + HAUSER Mycom-L			
Order-code:		CLM151-890123456	
Serial no./Serienr:		12345678	CD
Input/Eingang:		min:	0-2.00 uS/cm
		max:	0-1000 mS/cm
		Temp: Pt100	-15...200°C
Output/Ausgang:		1: Lf	0/4...20 mA
		2: °C	0/4...20 mA
Mains/Netz:		230V	50/60Hz max.12VA
Prot.class/Schutzart:		IP65	126239-4A

Fig. 1.1: Nameplate

1.5 Unpacking

- Verify that the contents are undamaged! Inform the post office or forwarding agent as well as the supplier of any damage.
- Check that the delivery is complete and agrees with the shipping documents as well as the unit type and version matches the nameplate (see fig. 1.1).

The scope of supply for Mycom CLM 121 (panel-mounted instrument) includes:

- 2 housing mounting kits (order no. 50047795)
- 1 submin D connector (only for instruments with digital interface; order no. 50051998)
- Simulating resistor 3.3 Ω (order no. 50061325)
- Operating instruction(s)
- Instrument identification card(s)
- Simulator for line balancing

The scope of supply for Mycom CLM 151 includes:

- 1 housing mounting kit (order no. 50061357)
- 1 measuring point marking tag (order no. 50061359)
- Operating instruction(s)
- Instrument identification card(s)
- Simulator for line balancing

If you have any questions, consult your supplier or the Endress+Hauser sales agency in your area (see back page of these operating instructions for addresses).

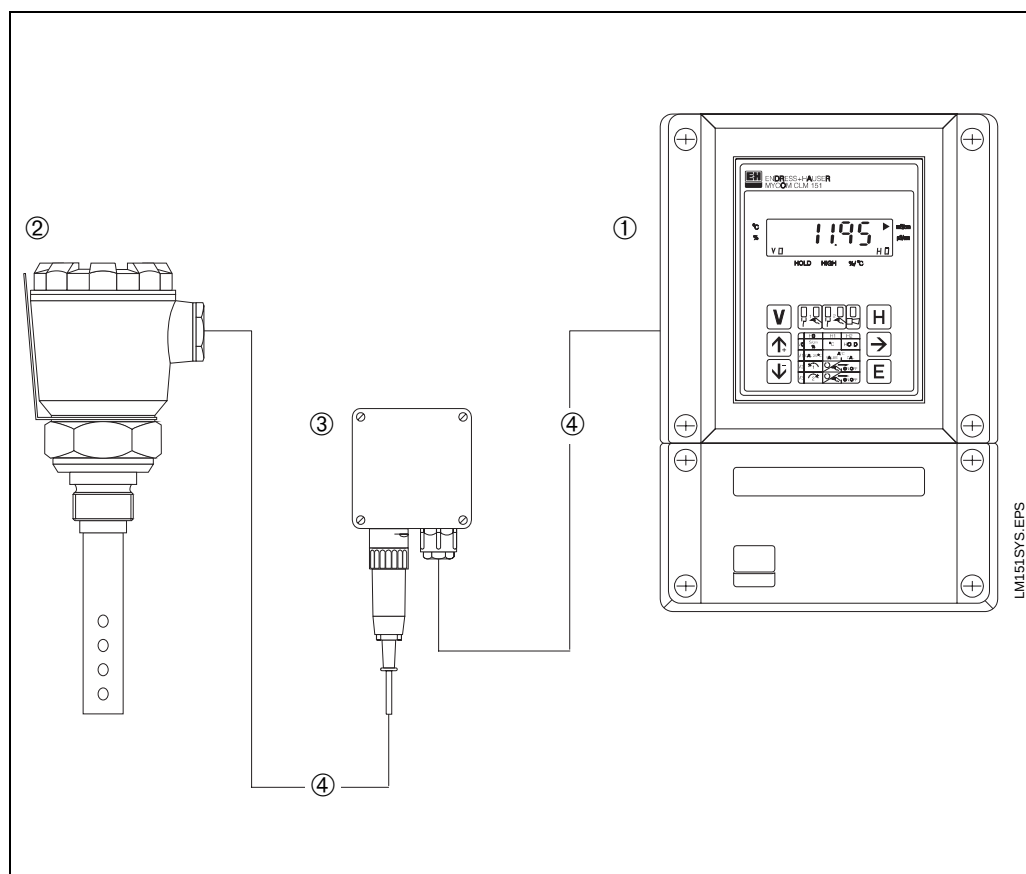
2. Measuring system

The measuring system consists of:

- a 2-electrode conductivity measuring cell, e.g. CLS 12, to be installed into pipe, tank or vessel
- the appropriate conductivity measuring cable, type KMK, SMK or CYK 7
- alternatively
 - the conductivity transmitter Mycom CLM 121 in panel-mounted housing
 - the conductivity transmitter Mycom CLM 151 in field housing

Fig. 2.1: Example of a complete measuring system with:

- ① Conductivity transmitter Mycom CLM 151
- ② 2-electrode conductivity-measuring cell. CLS 12 with Pg 16 cable gland
- ③ Junction box VS (option) with Pg 13.5 - cable gland and SXP-plug, for plug-in connection between Mycom and measuring cell CLS 12
- ④ Conductivity measuring cable, e.g. SMK or KMK



3. Installation

3.1 Unit dimensions

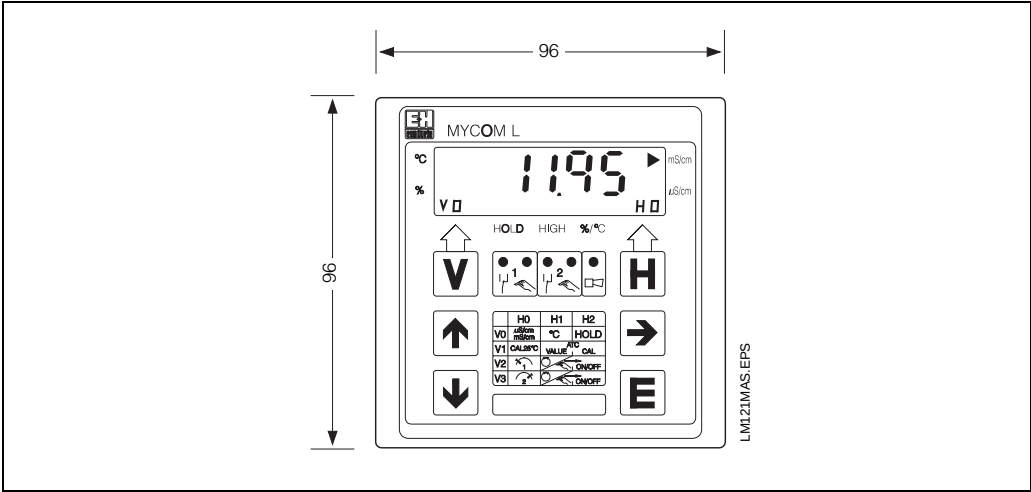


Fig. 3.1: Dimensions of Mycom CLM 121

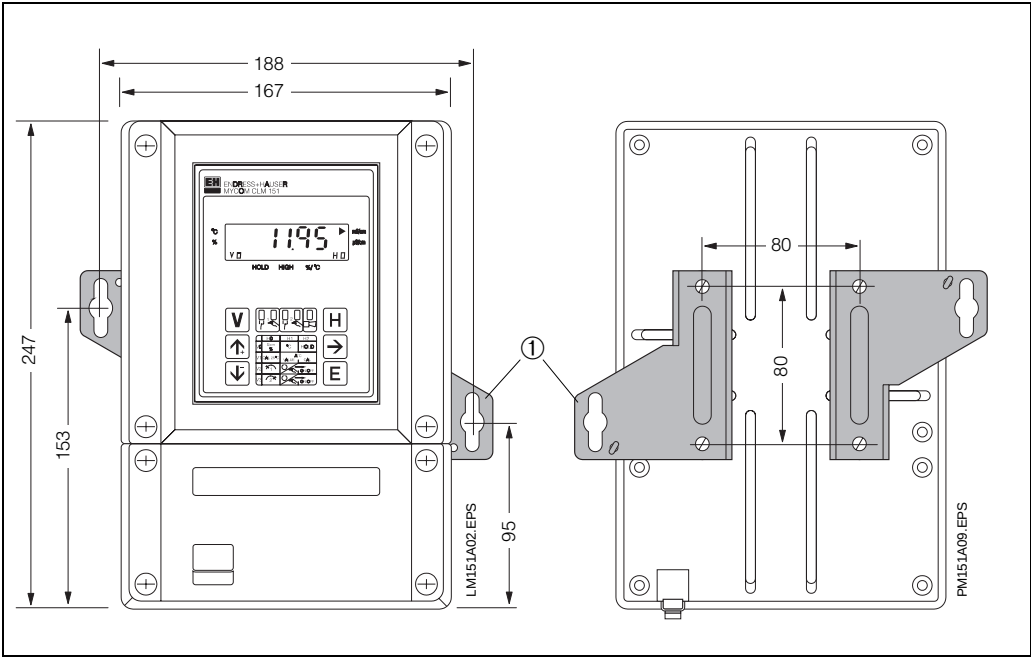


Fig. 3.2: Dimensions of Mycom CLM 151

① Mounting brackets for wall mounting

Fig. 3.3: Rear of field housing with installed mounting brackets

Note:
Mounting brackets and screws are included in the scope of supply as housing mounting kit.

3.2 Types of mounting

3.2.1 Panel mounting of Mycom CLM 121

The required cutout according to DIN 43 700 is $92^{+0,5} \times 92^{+0,5}$ mm.

The instrument is mounted by means of the supplied housing mounting kit.

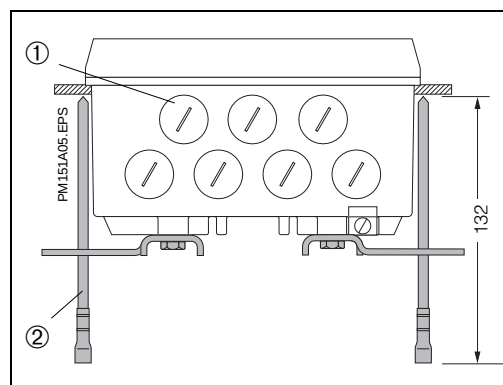


Fig. 3.4: Bottom of field housing with straining screws installed for panel mounting

- ① Screw plugs for Pg 13,5
- ② Straining screws

3.2.2 Panel mounting of Mycom CLM 151

The instrument is mounted by means of the supplied housing mounting kit (see fig. 3.4). The sealing of the panel cutout requires a flat packing (see chapter 9.1).

Panel mounting requires a cutout of $161^{+0,5} \times 241^{+0,5}$ mm (W x H).

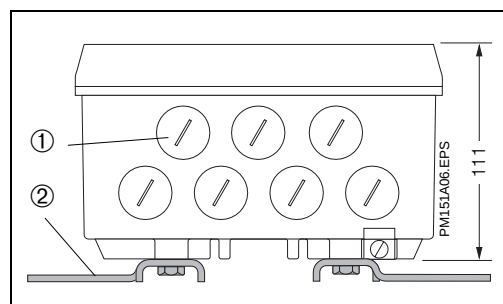


Fig. 3.5: Bottom of field housing with brackets installed for wall mounting

- ① Screw plugs for Pg 13.5
- ② Mounting brackets

3.2.3 Wall mounting of Mycom CLM 151

Install mounting brackets on rear of unit according to fig. 3.3.

For housing and mounting dimensions of the field housing see figures 3.2 and 3.5.

3.2.4 Post mounting

The field housing Mycom CLM 151 can be mounted on vertical or horizontal tubing with max. diameter of 70 mm by means of the supplied housing mounting kit.

The parts of the housing mounting kit have to be installed at the rear of the unit in accordance with fig. 3.6 and 3.7.

For further accessories available for Mycom CLM 151 please refer to chapter 9.1.

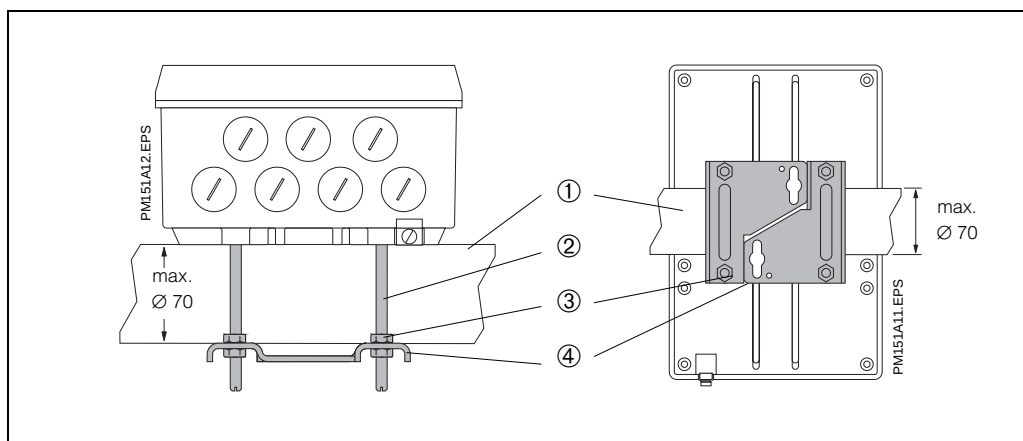


Fig. 3.6: Installation of field housing on horizontal tubing

left: bottom side
right: rear side

- ① Horizontal tubing
- ② Threaded rods M6 x 92
- ③ Mounting screw M6
- ④ Mounting brackets

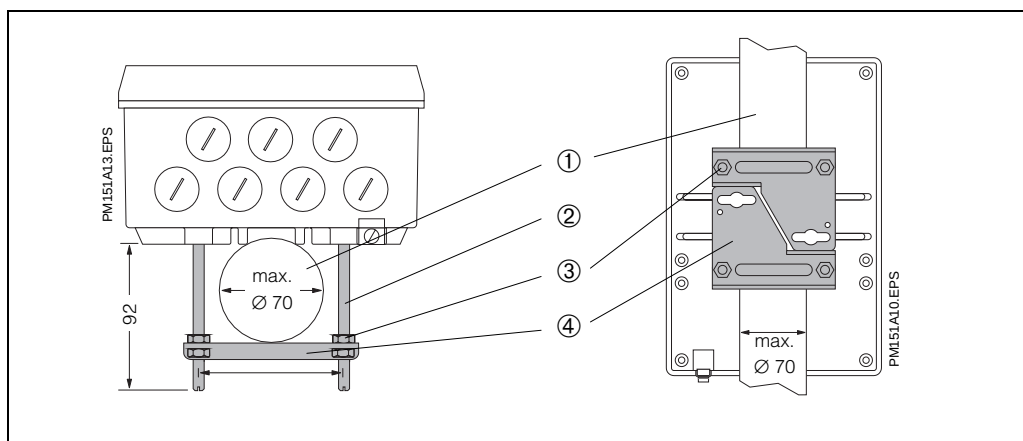


Fig. 3.7: Installation of field housing on vertical tubing

left: bottom side
right: rear side

- ① Vertical tubing
- ② Threaded rods M6 x 92
- ③ Mounting screws M6
- ④ Mounting brackets



Warning:

Field mounting

Do not expose the front of the device to direct sunlight.
In this case use the weather protection cover (see chapter 3.3.1).

3.3 Accessories for installation

3.3.1 Weather protection cover CYY 101

Fig. 3.8: Weather protection cover CYY 101 with dimensions and mounting positions for

- ① Installation on upright post with 2 screws M8
- ② Installation on vertical or horizontal pipe with 2 round post mounts
- ③ Installation of conductivity transmitter Mycom CLM 151
- ④ Wall mounting of conductivity transmitter Mycom CLM 151

Fig. 3.9 Weather protection cover CYY 101 with Mycom CLM 151 mounted on upright post

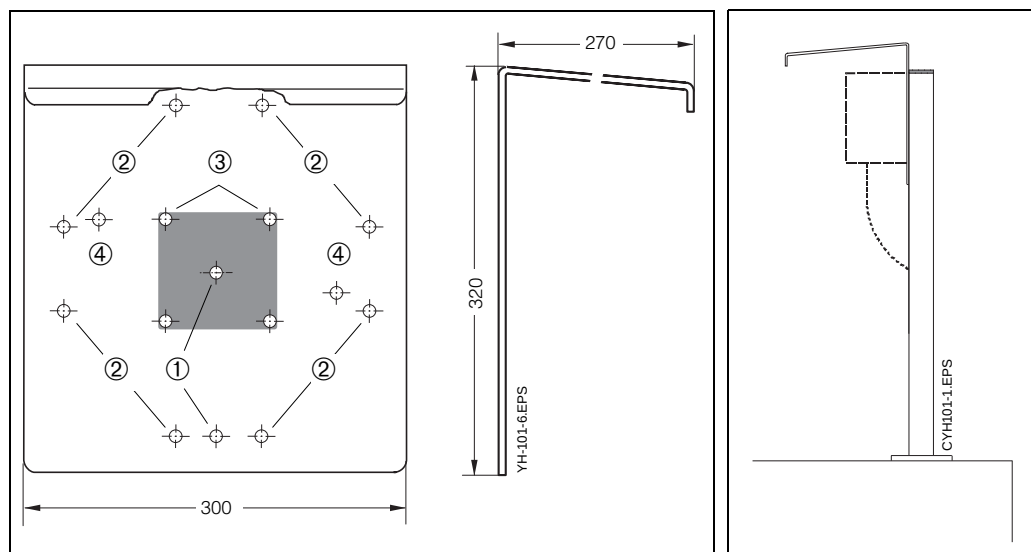
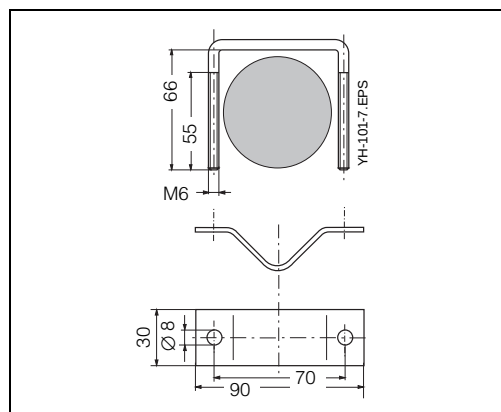


Fig. 3.10: Post mounting kit for weather protection cover CYY 101, if not mounted to assembly holder CYH 101

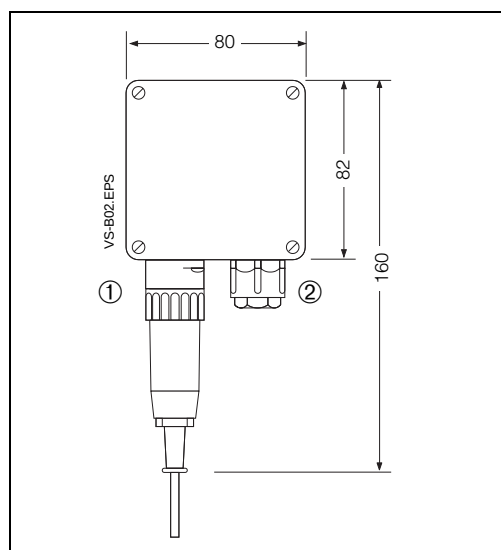


The weather protection cover CYY 101 can be installed directly on upright post of assembly holder CYH 101 by means of 2 screws (M8), see fig. 3.7, mounting position ①.

Installation on vertical or horizontal tubing and upright posts (max. diameter 70 mm) requires an additional round post mounting kit (see chapter 9.1).

Fig. 3.11: Junction box VS for connection of signal line of 2-electrode conductivity measuring cell with the transmitter

- ① SXP plug
- ② Pg 13.5 cable gland



3.3.2 Junction box VS

The installation of junction box VS with plug-in socket is required to connect the signal line of the 2-electrode conductivity measuring cell, e.g. CLS 12 with the transmitter Mycom CLM 151.

The junction box VS has a 7-pole plug (type SXP) for connection of measuring cell to VS junction box.

Ingress protection of junction box VS is IP 65.

4. Electrical connection

4.1 Connection principles

**Warning:**

- The instrument must be grounded before start-up!
- A mains disconnecting device must be installed close to the instrument and identified as a mains disconnecting device for the CLM 121 / 151-CD/MM (see EN 61010-1).
- If malfunctions can not be remedied, the instrument must be removed from service and secured to prevent accidental start-up.
- Repair work can only be carried out directly by the manufacturer or by the Endress+Hauser service organization.

**Note:**

- This instrument has been built and tested in accordance with EN 61010-1 and left the manufacturer's works in perfect condition concerning safety regulations.
- Malfunctions of the instrument can be remedied by means of the error list in chapter 7.3 without intervention in the instrument.
- Alterations to the instrument are not allowed and make any guarantee claim invalid.
- After installing and connecting the instrument and sensors the whole measuring system has to be checked for function.

**Caution:**

- All lines conducting signals are to be shielded and run separately from other control lines.
- Immunity to interference can only be guaranteed for a properly grounded instrument with a screened measured value output line.
The grounding of the screen must be kept short. No soldered extensions of the screen!
This is also valid for connection of junction box VS (see chapter 3.3.2).
- For installation of field housing (CLM 151) the post must be grounded. To increase the immunity to interference cables should be run inside the post.

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