Operating instructions

EE08

Humidity / Temperature probe

YOUR PARTNER IN SENSOR TECHNOLOGY

E+E ELEKTRONIK® Ges.m.b.H.

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This publication might contain technical inaccuracies or typographical errors. The content is revised regularly and is not subject to change management. The manufacturer reserves the right to modify or change its described products at any time.

USA
FCC notice:

This device has been tested and found to comply with the conditions for a category B device according to part 15 of the FCC rules and regulations. These conditions were designed to provide adequate protection against EMI in a residential environment. This device generates, uses and can radiate high-frequency energy. If it is not installed and used in accordance with the operating instructions, it may cause electromagnetic interference to radio communications. However there is no guarantee that electromagnetic interference will not occur in a particular installation. If the device does cause electromagnetic interference to radio or television reception (this can be determined by turning the device off and on), the user is advised to remedy the interference with the following measures:

- Reorient or relocate the receiving antenna.
- Increase the distance between the device and receiver.
- Connect the device to a different circuit to that of the receiver.
- Consult the dealer or an experienced radio/TV technician.

Caution:
Any changes to the device not expressly approved by an EMI representative could void the user‘s authority to operate this device.

CANADA
ICES-003 notification:

This category B device complies with Canadian standard ICES-003.

CONTENT

Hardware

HARDWARE

1 General

This operation manual is part of the scope of supply and serves for ensuring proper handling and optimal functioning of the device.
The operation manual shall be read before commissioning the equipment and it shall be provided to all staff involved in transport, installation, operation, maintenance and repair.

The operation manual may not be used for the purposes of competition without the written consent of E+E Elektronik® and may not be forwarded to third parties. Copies may be made for internal purposes. All information, technical data and diagrams included in these instructions are based on the information available at the time of writing.

1.1 Explanation of symbols

This symbol indicates safety information.
It is essential that all safety information is strictly observed. Failure to comply with this information can lead to personal injuries or damage to property. E+E Elektronik® assumes no liability if this happens.

This symbol indicates instructions.
The instructions shall be observed in order to reach optimal performance of the device.

1.2 Safety instructions

General safety instructions
- Avoid any unnecessary mechanical stress and inappropriate use.
- When replacing the filter cap make sure not to touch the sensing elements.
- For sensor cleaning please see “Cleaning instructions” at www.epluse.com.
- Installation, electrical connection, maintenance and commissioning shall be performed by qualified personnel only.

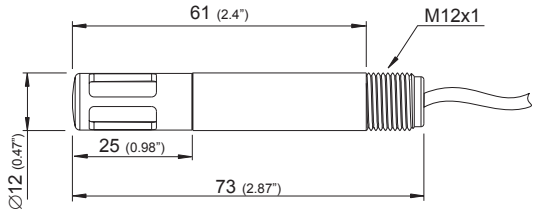
1.3 Environmental aspects

Products from E+E Elektronik® are developed and manufactured observing of all relevant requirements with respect to environment protection. Please observe local regulations for the device disposal.

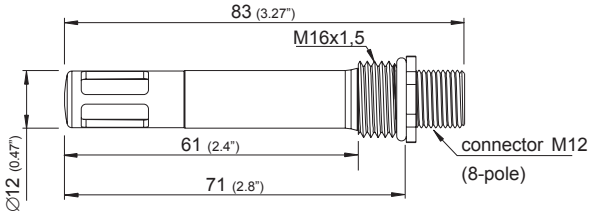
For disposal, the individual components of the device must be separated according to local recycling regulations. The electronics shall be disposed of correctly as electronics waste.

2 Models

EE08 with cable
EE08-PFTx**E**xxx

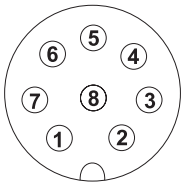


EE08 with connector
EE08-PFTx**D**xxx



3 CONNECTION DIAGRAM

TYPE E:	**Temperature active cable assignment**	**Temperature passive, 4 wire cable assignment**
T-passive	white (not connected)	white, black
T-passive	blue (not connected)	blue, violet
GND	pink	pink
T-out	grey	grey (not connected)
RH-out	yellow	yellow
SCL } E2-interface	green	green
SDA } E2-interface	brown	brown
+UB	red	red

TYPE D:	**Pin assignment**	**Assignment of M12 connection cable (HA010322, HA010323, HA010324, HA010325)**
	1 T-passive	white
	2 SDA } E2-interface	brown
	3 SCL } E2-interface	green
	4 RH-out	yellow
	5 T-out	grey
	6 GND	pink
	7 T-passive	blue
	8 +UB	red

Ground connection:
A low impedance connection between the shield of the connection cable and the ground potential is important for the flawless operation of the EE08.

4 Outdoor operation

For outdoor operation the use of an appropriate radiation shield is of paramount importance. The radiation shield protects the EE08 against rain, snow and overheating caused by direct sunlight. It is available as an accessory, order code HA010506, and is suitable for both models D and E.

4.1 Place of installation

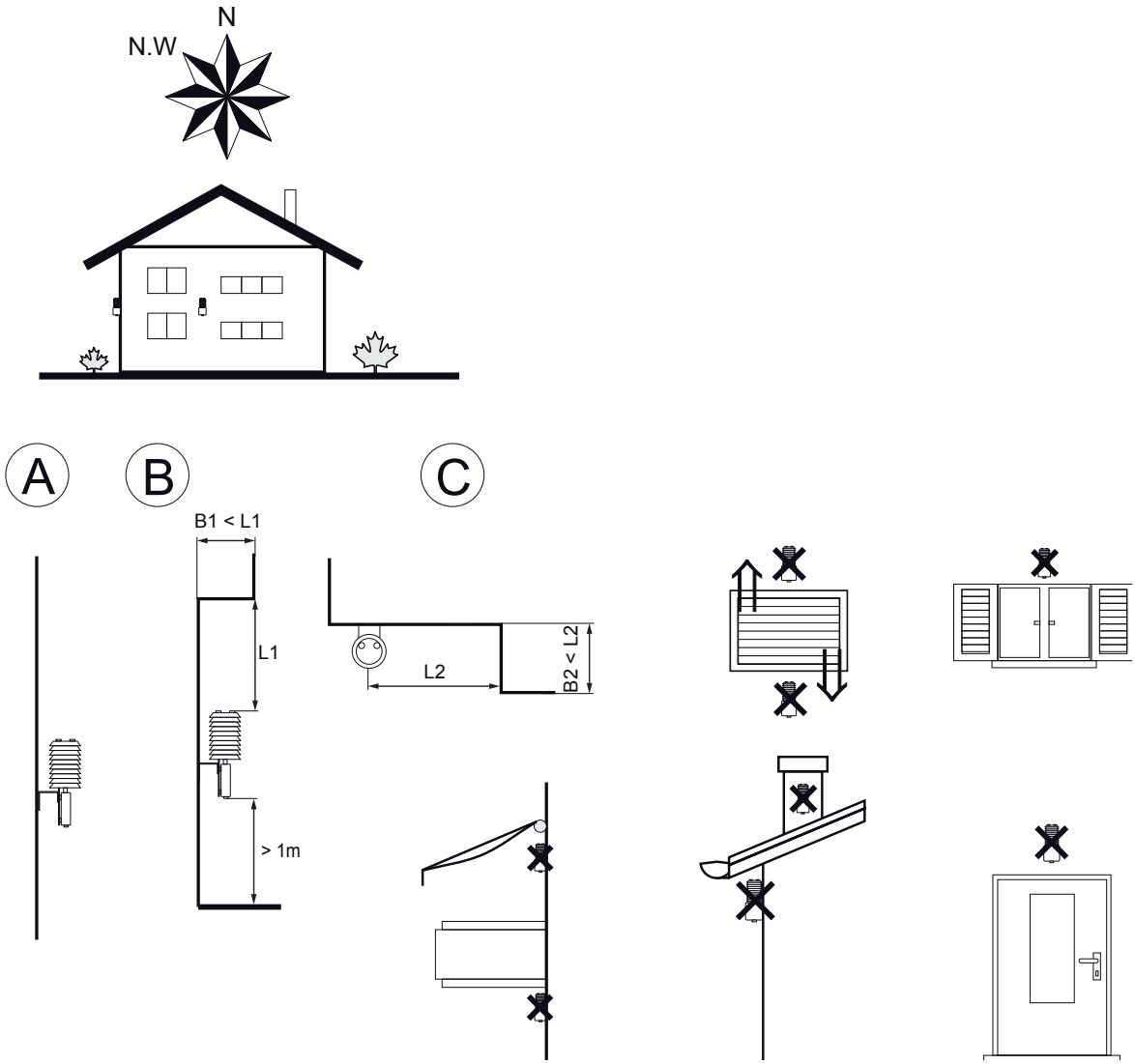


Abb. 1 Place of installation

4.2 Dimensions (mm/inch)

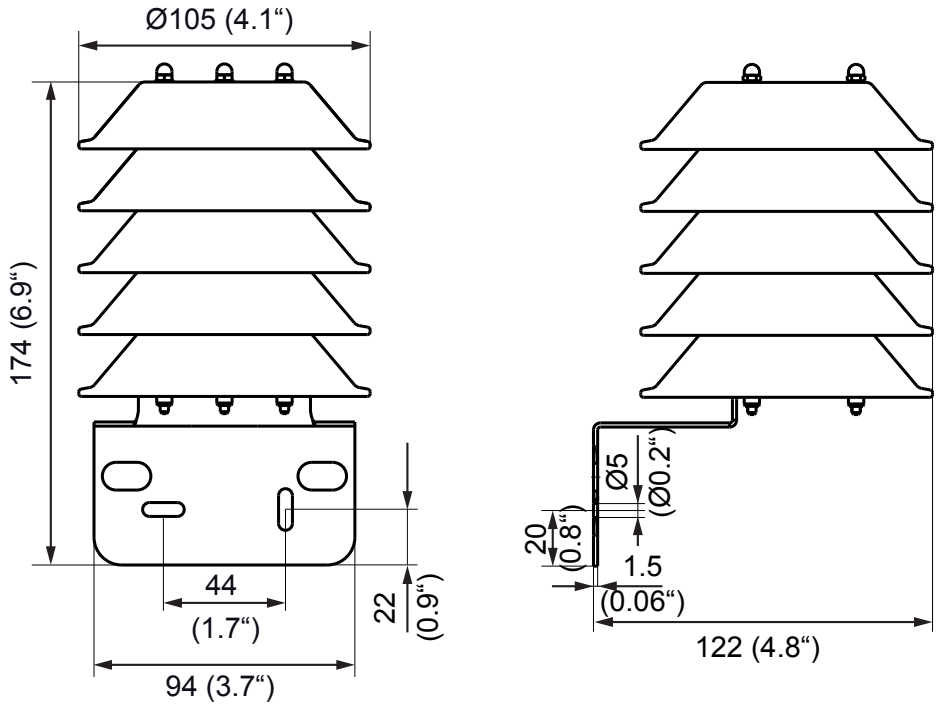


Abb. 2 Dimensions

4.3 Mounting instruction

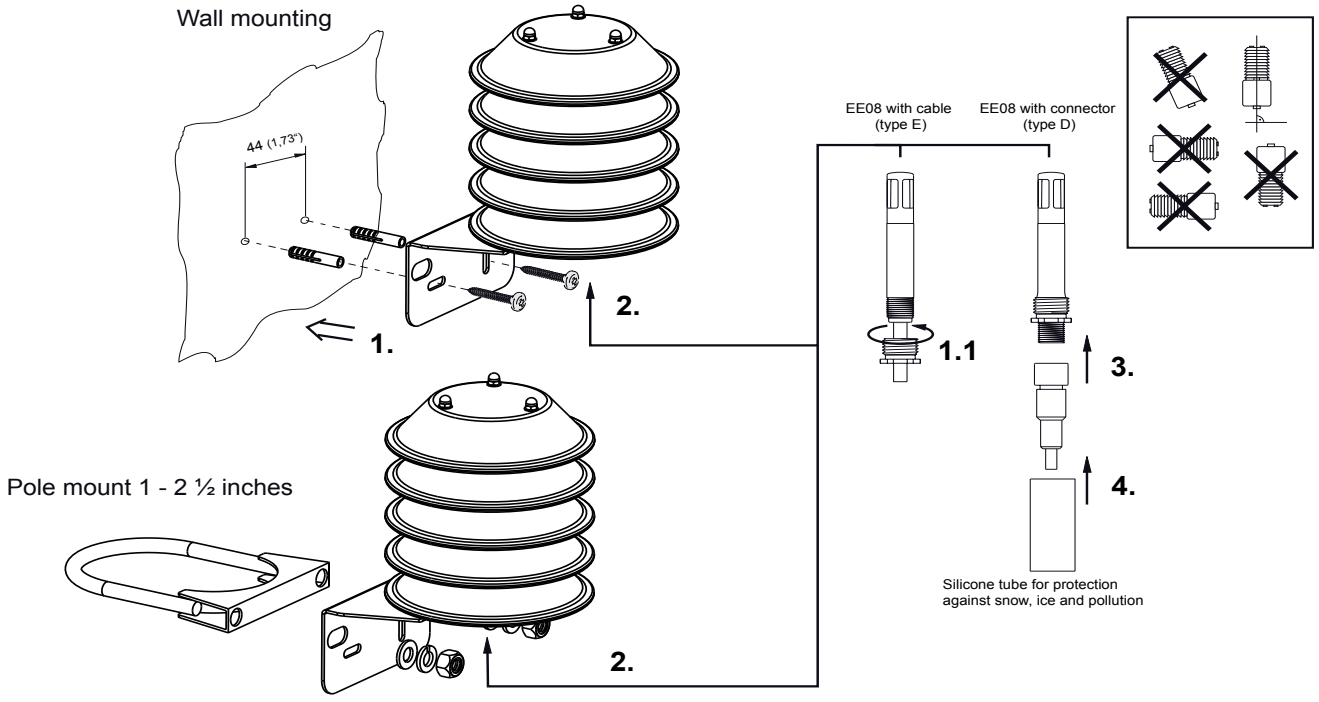


Abb. 3 Mounting instruction

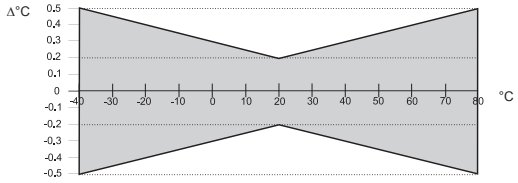
5 Technical data

Measuring values

Relative Humidity

Sensor	HC101
Working range[1)]	0...100 % RH
Digital output (2 wire)[2)]	output value: 0.00...100.00 % RH
Analogue output 0...100 % RH	0-1/2.5/5/10 V -0.2 mA < I_L < 0.2 mA
Accuracy at 20 °C (68 °F) and 12 V DC[*)]	±2 % RH (0...90 % RH) ±3 % RH (90...100 % RH)
Temperature dependence	typ. 0.03 % RH/°C (typ. 0.02 % RH/°F)

Temperature

Sensor	Pt 1000 (DIN A)
Digital output (2 wire)[2)]	output value: -40.00...+80.00 °C (-40...176 °F)
Analogue output	0-1/2.5/5/10 V -0.2mA < I_L < 0.2 mA
Accuracy at 12/24V DC	

General

Supply voltage	output 0-1 V / 0-2.5 V output 0-5 V output 0-10 V		4.5-15 V DC or 7-30 V DC 7-30 V DC 12-30 V DC
Current consumption	typ. < 1.3 mA		
Digital interface	E2-interface	level = 3.3 V / ±0.1 V	
Housing	polycarbonate / IP65		
Sensor protection	metal grid filter		
Electromagnetic compatibility	EN61326-1 Industrial Environment	EN61326-2-3	FCC Part 15 ICES-003 ClassB
Temperature ranges	working temperature: -40...80 °C (-40...176 °F) storage temperature: -40...80 °C (-40...176 °F)		

1) refer to the working range of the humidtiy sensor HC101
2) serial protocol refer to www.epluse.com
*) The accuracy statement includes the uncertainty of the factory calibration with an enhancement factor k=2 (2-times standard deviation). The accuracy was calculated in accordance with EA-4/02 and with regard to GUM (Guide to the Expression of Uncertainty in Measurement).

6 Maintenance

The use in dirty, dusty, polluted environment might arise the need for cleaning the sensing head and replacing the filter cap. In such a case please see “Cleaning Instructions” at www.epluse.com/EE08.

Do not touch the humidity sensor!

7 Calibration / Adjustment

To carry out an one point or a two point calibration / adjustment, the E2 / RS232 converter + calibration software is necessary (available as an accessory, order code HA011005).

The configuration software can be downloaded under www.epluse.com/EE08.

8 Scope of Supply

- EE08 Transmitter according to ordering guide
- Inspection certificate according to DIN EN10204 - 3.1

9 Accessories / Replacement parts

M12 connection cable for type D, length 1.5 m (5 ft)	HA010322
M12 connection cable for type D, length 3 m (10 ft)	HA010323
M12 connection cable for type D, length 5 m (16.4 ft)	HA010324
M12 connection cable for type D, length 10 m (32.8 ft)	HA010325
Radiation shield for Type E	HA010502
Radiation shield for Type D	HA010506
Protection cap for 12 mm probe	HA010783
M12 female socket with wires	HA010703
M12 female cable connector assembly possible	HA010704
Metal grid filter	HA010113
Cconfiguration cable	HA011005
EE-PCS	free download at www.epluse.com/EE08

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