

### PRODUCT DESCRIPTION

The transmitter P3110E with 4-20 mA outputs is designed to measure air temperature and relative humidity in chemically non-aggressive environments.

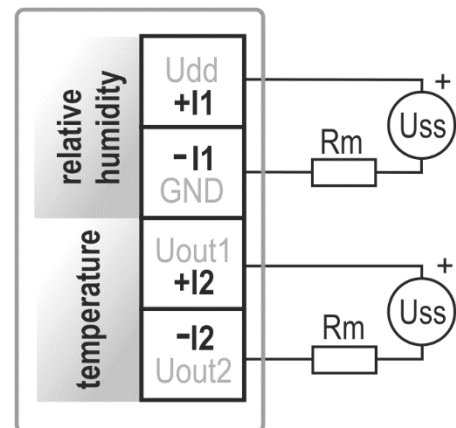
The transmitter communicates by two galvanically separated current loop 4-20mA. Each loop has two-wire connection and each loop requires power from evaluation device. It is always necessary to connect loop I1, which supplies power to measurement part of the device.

Devices P3110EZ are non-standard versions of the transmitter. Description is not included in this manual.

### DEVICE INSTALATION

Devices are designed for wall mounting. There are two mounting holes at the sides of the case. Working position is with sensor cover downwards.

The connecting terminals are accessible after unscrewing the four screws in the corners of the case and removing the lid. Pass the connecting cable through released gland and connect the wires to terminals (for device connection it is recommended to use a shielded cable with maximum length of 1200m and with external diameter of 4 to 8 mm). Finally tighten the gland and screw the lid (check the integrity of the seal).



The loop resistance value  $R_c = R_m + \text{resistance of wires}$  shall fulfill the condition  $R_c[\Omega] < 40 \times U_{ss}[V] - 360$ .

It is not recommended to use the device for long time under condensation conditions or water aerosol conditions. It could be the cause of water steam condensation inside the sensor's cover with a consequential increase of response time to humidity changes. It can cause sensor damage too.

Devices don't require special operation and maintenance. It is recommended keep the sensor cover clean and periodically to verify the accuracy of measurement.

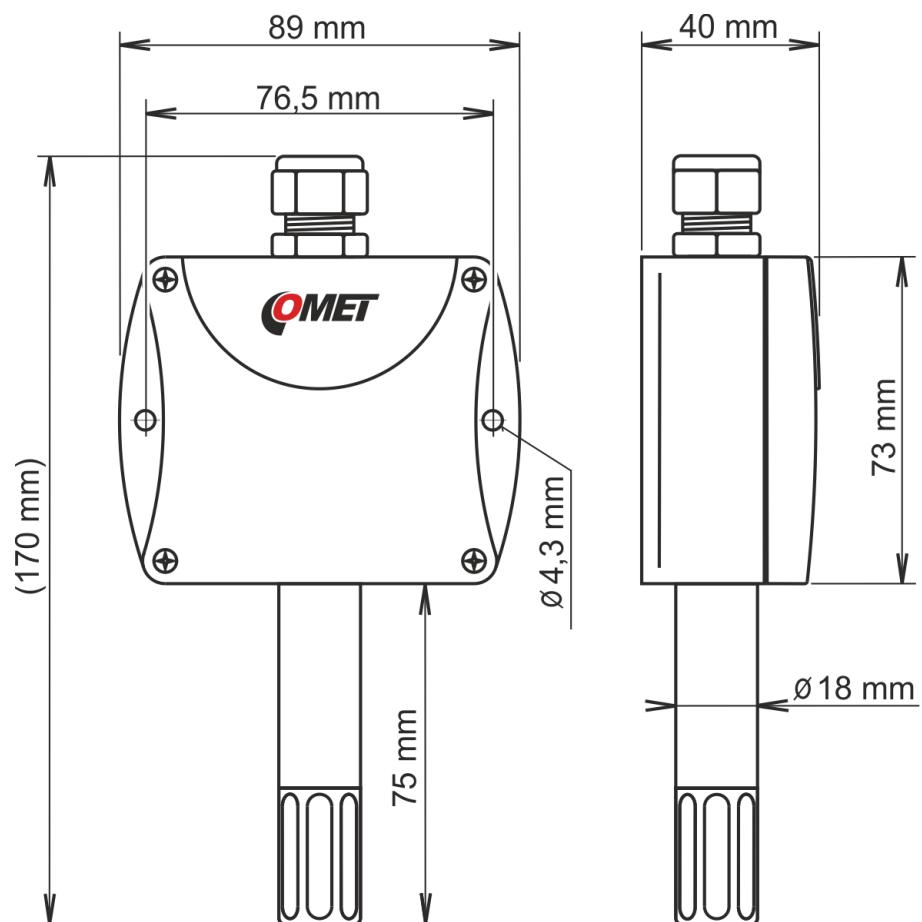
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### WARNING

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- Don't use and don't store the device without a sensor cover.
  - Don't connect transmitter while power supply voltage is on.
  - The cables should be located as far as possible from potential interference sources.
  - Installation, commissioning and maintenance may only be carried out by personnel with qualification by applicable regulations and standards.
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### DIMENSIONS



## MEASURED VALUES

Temperature:	
Accuracy:	±0.6 °C
Measuring range:	-30 to +80 °C
Resolution:	0.1 °C
Response time:	t <sub>90</sub> < 7 min (temperature step 20 °C)
Relative humidity:	
Accuracy:	±3.0 %RH from 5 to 95 %RH at 23 °C
Measuring range:	0 to 100 %RH
Resolution:	0.1 %RH
Temperature error:	0.05 % RH/°C (0 °C to +60 °C)
Response time:	t <sub>90</sub> < 30 s (humidity step 65 %RH, constant temperature)

## GENERAL

Power supply voltage:	9 to 30 Vdc
Current output in case of error:	< 3.8 mA or > 22 mA
Recommended calibration interval:	1 year <i>(relative humidity 1 year, temperature 2 years)</i>
Protection:	housing with electronics IP65, sensors are located in cover with IP40 protection
Storage temperature range:	-30 to +80 °C
Storage humidity range:	5 to 95 %RH (no condensation)
Working position:	cable gland upwards
Electromagnetic compatibility:	EN 61326-1
Weight:	approximately 150 g
Housing material:	ABS

## OPERATING CONDITIONS

Temperature operating range: -30 to +80 °C

Relative humidity operating range: 0 to 100 %RH

## CALCULATION OF THE MEASURED VALUES

Temperature:  $T[°C] = 6.875 \times I[mA] - 57,5$

Relative humidity:  $RH[\%RH] = 6.25 \times I[mA] - 25$

## END OF OPEATION

Disconnect the device and dispose it according to current legislation for dealing with electronic equipment.

## TECHNICAL SUPPORT AND SERVICE

Technical support and service is provided by distributor. For contact see warranty certificate. If needed, you can also use the discussion forum at <http://www.forum.cometsystem.cz/>.

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