

# EE10-T

## Room Temperature Sensors

EE10 is dedicated for accurate room temperature (T) measurement in residential and commercial HVAC.

For model EE10-M3, the measured data is available either on the analogue output or on the BACnet MS/TP or Modbus RTU interface, as well as on the optional display.

The stylish enclosure is available in several colours and in two sizes according to regional standards.

The back cover, which contains only the screw terminals, can be mounted and wired first. The front cover containing the electronics can be simply snapped onto the back cover right before commissioning. Thus the active part of the device is not exposed to construction site pollution and can be replaced without tools within seconds.



### Typical Applications

Building automation  
 Indoor climate control

### Features

High accuracy and long term stability  
 Fast and easy installation  
 Modbus, BACnet or analogue outputs

### Technical Data

#### Measured values

##### Temperature

Accuracy<sup>1)</sup> at 20 °C (68 °F) and  $U_V=24$  V DC  $\pm 0.3$  °C ( $\pm 0.54$  °F)

#### Output

##### Analogue

0 - 10 V  $-1 \text{ mA} < I_L < 1 \text{ mA}$   
 4 - 20 mA (2-wire)  $R_L < (U_V - 10) / 0.02 < 500 \text{ Ohm}$

##### Digital Interface

RS485 with max. 32 devices on one bus

Protocol Modbus RTU or BACnet MS/TP

#### General

Voltage supply ( $U_V$ ), class III  $\diamond$

0 - 10 V 15 - 40 V DC<sup>2)</sup> or 24 V AC  $\pm 20\%$   
 4 - 20 mA 10 + 0.02 x  $R_L < U_V < 28$  V DC ( $R_L < 500 \text{ Ohm}$ )  
 RS485 15 - 35 V DC<sup>2)</sup> or 24 V AC  $\pm 20\%$

Current consumption, typ.

Analogue (0 - 10 V, 4 - 20 mA) DC supply: 4 mA / AC supply: 15 mA<sub>rms</sub>  
 Digital (RS485) DC supply: 9 mA / AC supply: 20 mA<sub>rms</sub>

Electrical connection

Screw terminals max. 1.5 mm<sup>2</sup> (AWG 16)

Enclosure (polycarbonate)

US Version: UL94V-0 approved / EU Version: UL94HB approved

Protection rating

IP30

Electromagnetic compatibility

EN 61326-1 EN 61326-2-3 Industrial Environment  
 FCC Part 15 ICES-003 Class B



Temperature working range

-5...55 °C (23...131 °F)

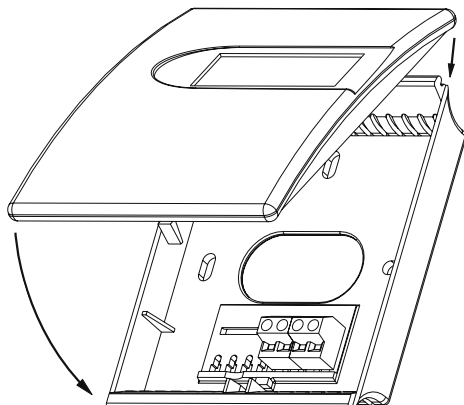
Temperature storage range

-25...60 °C (-13...140 °F)

1) 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).

2) USA & Canada: class 2 supply required, max. supply voltage 30 V

## Enclosure



### Dimensions:

EU: W x H x D = 85 x 100 x 26 mm (3.3 x 3.9 x 1")

US: W x H x D = 85 x 136 x 26 mm (3.3 x 5.4 x 1")

### Colour:

#### EU-Standard, US:

Front cover: signal white RAL9003

Back cover: light grey RAL7035

#### EU-Grey:

Front and back cover: anthracite grey RAL7016

#### EU-Silver:

Front and back cover: white aluminum RAL9006

## Scope of Supply

- EE10 sensor according ordering guide
- Mounting material
- Test report according DIN EN 10204-2.2 (for EE10-T)
- Quick user guide (for digital output only)

## Ordering Guide

		EE10-	
	<b>Model</b>	Temperature	<b>M3</b>
	<b>Output</b>	0 - 10 V	<b>A3</b>
		4 - 20 mA	<b>A6</b>
		RS485	<b>J3</b>
	<b>Display</b>	Without display	<b>no code</b>
	With display	<b>D1</b>	
<b>Enclosure</b>	EU-Standard (RAL9003/RAL7035)	<b>no code</b>	
	EU-Grey (RAL7016)	<b>CH74</b>	
	EU-Silver (RAL9006)	<b>CH93</b>	
	US (RAL9003/RAL7035)	<b>RG2</b>	
<b>Output Setup</b>	<b>Temperature Unit</b>	T [°C]	<b>no code</b>
		T [°F]	<b>MB2</b>
	<b>Scale T low</b>	0	<b>no code</b>
		Value <sup>1)</sup>	<b>SBLValue</b>
	<b>Scale T high</b>	50	<b>no code</b>
		Value <sup>1)</sup>	<b>SBHValue</b>
<b>Protocol</b>	Modbus RTU <sup>2)</sup>	<b>P1</b>	
	BACnet MS/TP <sup>3)</sup>	<b>P3</b>	
<b>Unit</b>	Metric (SI)	<b>no code</b>	
	Non-metric US/GB	<b>U2</b>	
<b>Baud rate</b>	9600 (usual for Modbus)	<b>BD5</b>	
	19200	<b>BD6</b>	
	38400 (usual for BACnet)	<b>BD7</b>	
	57600 <sup>4)</sup>	<b>BD8</b>	
	76800 <sup>4)</sup>	<b>BD9</b>	

1) -5 °C (23 °F) < Scale T low < 20 °C (68 °F).

2) Factory setting: Even Parity, Stopbits 1.

3) Factory setting: No parity, Stopbits 1.

4) Only for BACnet MS/TP

25 °C (77 °F) < Scale T high < 55 °C (131 °F). Scale T high – Scale T low > 20 °C (68 °F).

Modbus Map see User Guide at [www.epluse.com/EE10](http://www.epluse.com/EE10)

Product Implementation Conformance Statement (PICS) available at [www.epluse.com/EE10](http://www.epluse.com/EE10)

## Order Example

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### EE10-M3A3D1

Model:	Temperature
Output:	0 - 10 V
Display:	With display
Enclosure:	EU-Standard (RAL9003/RAL7035)
Temperature Unit:	°C
Scale T low:	0 °C
Scale T high:	50 °C

### EE10-M3J3P3BD7

Model:	Temperature
Output:	RS485
Display:	Without display
Enclosure:	EU-Standard (RAL9003/RAL7035)
Protocol:	BACnet MS/TP
Unit:	Metric (SI)
Baud rate:	38400