

# 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 EE10-M7 features a passive output and can be fitted with a wide choice of temperature sensors.

The stylish enclosure is available in several colors 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, analogue or passive outputs

### Technical Data

#### Measured values

##### Temperature

Accuracy<sup>1)</sup> at 20 °C (68 °F) and U<sub>v</sub>=24 V DC ±0.3 °C (±0.54 °F)

#### Output

##### Analogue

0-10 V -1 mA < I<sub>L</sub> < 1 mA  
 4-20 mA (two wires) R<sub>L</sub> < (U<sub>v</sub>-10)/0.02 < 500 Ohm

##### Digital Interface

Protocol RS485 with max. 32 devices on one bus  
 Modbus RTU or BACnet MS/TP

##### Temperature passive

please see ordering guide

#### General

##### Voltage supply (U<sub>v</sub>)

0 - 10 V 15 - 40 V DC or 24 V AC ±20%  
 4 - 20 mA 10 + 0.02 x R<sub>L</sub> < U<sub>v</sub> < 28 V DC (R<sub>L</sub> < 500 Ohm)  
 RS485 15 - 35 V DC or 24 V AC ±20%

##### Current consumption

Analogue for DC supply: typ. 4 mA / for AC supply: typ. 15 mA<sub>er</sub>  
 Digital for DC supply typ. 11 mA / for AC supply: typ. 30 mA<sub>er</sub>

##### Electrical connection

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

##### Housing (polycarbonate)

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

##### Protection class

IP30

##### CE compatibility according

EN61326-1  
 EN61326-2-3



##### Temperature working range

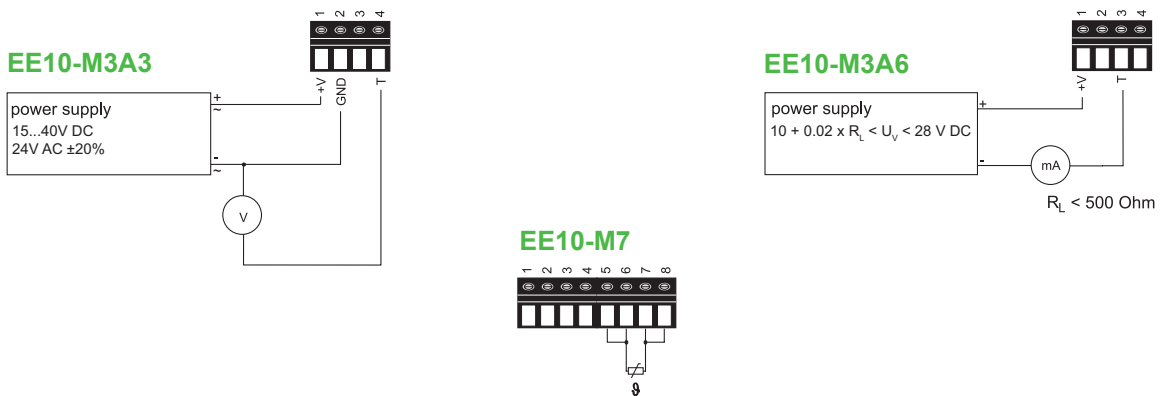
-5...55 °C (23...131 °F)

##### Temperature storage range

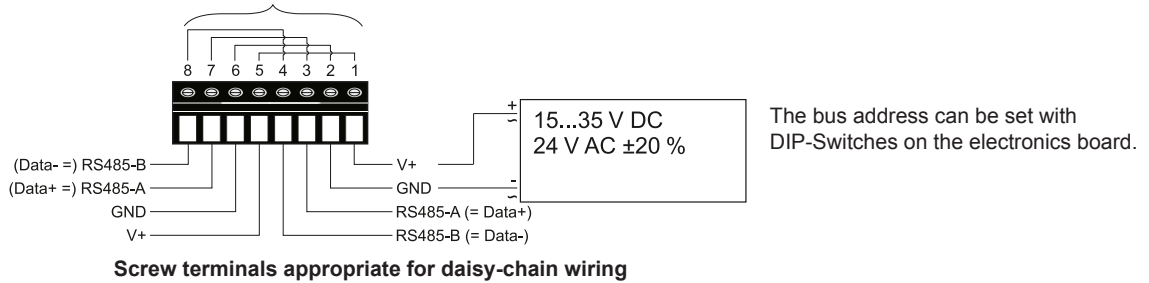
-25...60 °C (-13...140 °F)

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).

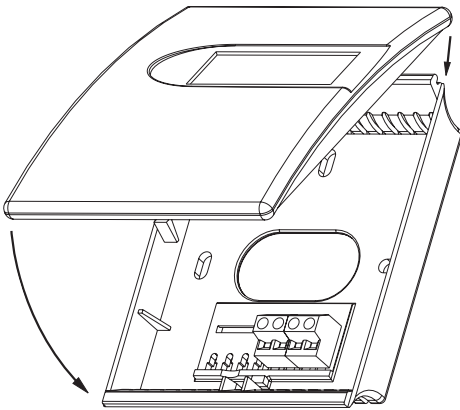
## Connection Diagram



### EE10-M3J3 Connected on the electronics board.



## 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 EN10204 - 2.2 (for EE10-T)
- Quick user guide (for digital output only)

## Ordering Guide

		EE10-		
	<b>Model</b>	Temperature active	M3	
		Temperature passive		M7
	<b>Output</b>	0-10 V	A3	
		4-20 mA	A6	
		RS485	J3	
	<b>T-sensor passive<sup>1)</sup></b>	Pt 100 DIN A		TP1
Pt 1000 DIN A			TP3	
NTC 10k ±1%, B <sub>25/100</sub> = 3950K			TP5	
NTC 1.8k			TP7	
Ni1000, TK6180			TP9	
NTC 10k ±0.5%, B <sub>25/85</sub> = 3989K			TP11	
	NTC 10k ±1%, B <sub>25/85</sub> = 3435K		TP14	
<b>Display</b>	without display	no code		
	with display	D1		
<b>Enclosure</b>	EU-Standard (RAL9003 / RAL7035)	no code	no code	
	EU-Grey (RAL7016)	CH74	CH74	
	EU-Silver (RAL9006)	CH93	CH93	
	US (RAL9003 / RAL7035)	RG2	RG2	
<b>Output Setup</b>	<b>Analogue A3, A6</b>	<b>Temperature Unit</b>	T [°C]	no code
			T [°F]	MB2
		<b>Scale T low</b>	0	no code
		value <sup>2)</sup>	SBL value	
	<b>Scale T high</b>	50	no code	
		value <sup>2)</sup>	SBH value	
<b>Digital J3</b>	<b>Protocol</b>	Modbus RTU <sup>3)</sup>	no code	
		BACnet MS/TP <sup>4)</sup>	P3	
	<b>Unit</b>	metric-SI	no code	
	non-metric	U2		
<b>Baud rate</b>		9600 (usual for Modbus)	no code	
		19200	BD6	
		38400 (usual for BACnet)	BD7	
		57600 <sup>5)</sup>	BD8	
	76800 <sup>5)</sup>	BD9		

1) T-Sensor details see [www.epluse.com/R-T\\_Characteristics](http://www.epluse.com/R-T_Characteristics)

2) Max. scale range -5...55 °C (23...131 °F), min. difference between low and high 20 °C / 36 °F

3) Factory setting: Even Parity, Stopbits 1. Modbus Map see User Guide at [www.epluse.com/ee10](http://www.epluse.com/ee10)

4) Factory setting: No parity, Stopbits 1. Product Implementation Conformance Statement (PICS) available at [www.epluse.com/ee10](http://www.epluse.com/ee10)

5) Only for BACnet MS/TP

## Order Example

### EE10-M3A3D1

Model: Temperature active  
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-M7TP1

Model: Temperature passive  
T-sensor passive: Pt 100 DIN A  
Enclosure: EU-Standard (RAL9003 / RAL7035)

### EE10-M3J3P3BD7

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