

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

Accuracy¹⁾ at 20 °C (68 °F) and $U_L=24$ V DC ± 0.3 °C (± 0.54 °F)

Output

Analogue

0-10 V $-1 \text{ mA} < I_L < 1 \text{ mA}$
4-20 mA (two wires) $R_L < (U_L - 10)/0.02 < 500 \text{ Ohm}$

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_L)

0 - 10 V 15 - 40 V DC or 24 V AC $\pm 20\%$
4 - 20 mA 10 + $0.02 \times R_L < U_L < 28$ V DC ($R_L < 500 \text{ Ohm}$)
RS485 15 - 35 V DC or 24 V AC $\pm 20\%$

Current consumption

Analogue for DC supply: typ. 4 mA / for AC supply: typ. 15 mA_{er}
Digital for DC supply typ. 11 mA / for AC supply: typ. 30 mA_{er}

Electrical connection

screw terminals max. 1.5 mm² (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

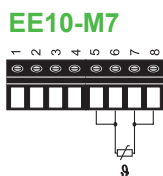
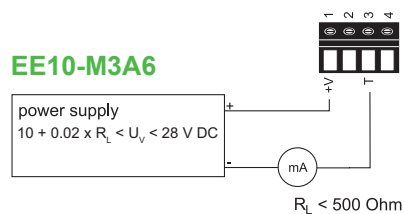
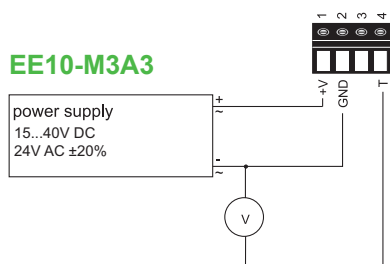
-5...55 °C (23...131 °F)

Temperature storage range

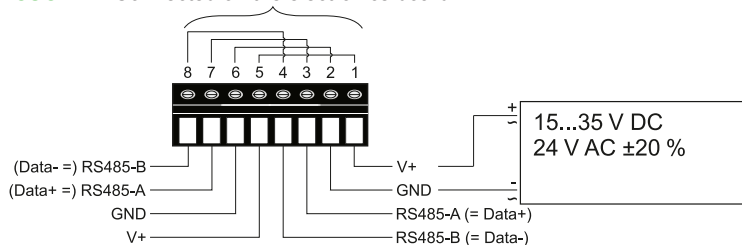
-25...60 °C (-13...140 °F)

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



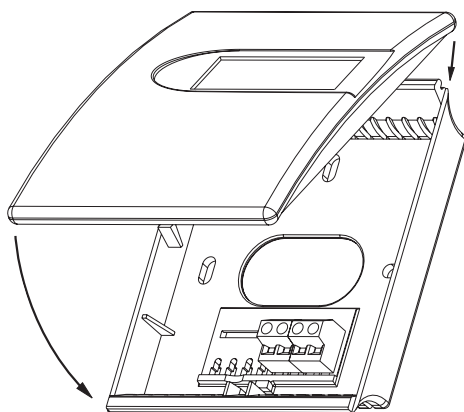
EE10-M3J3 Connected on the electronics board.



The bus address can be set with DIP-Switches on the electronics board.

Screw terminals appropriate for daisy-chain wiring

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-			
		M3	M7		
	Model	Temperature active			
		Temperature passive			
	Output	0-10 V	A3		
		4-20 mA	A6		
		RS485	J3		
	T-sensor passive¹⁾	Pt 100 DIN A		TP1	
Pt 1000 DIN A			TP3		
NTC 10k ±1%, B _{25/100} = 3950K			TP5		
NTC 1.8k			TP7		
Ni1000, TK6180			TP9		
NTC 10k ±0.5%, B _{25/50} = 3950K			TP11		
	NTC 10k ±1%, B _{25/85} = 3435K		TP14		
Display	without display	no code			
	with display	D1			
Enclosure	EU-Standard (RAL9003 / RAL7035)	no code	no code		
	EU-Grey (RAL7016)	CH74	CH74		
	EU-Silver (RAL9006)	CH93	CH93		
	US (RAL9003 / RAL7035)	RG2	RG2		
Output Setup	Analogue A3, A6	Temperature Unit	T [°C]	no code	
			T [°F]	MB2	
		Scale T low	0	no code	
		value ²⁾	SBL value		
		Scale T high	50	no code	
			value ²⁾	SBH value	
Digital J3	Protocol	Modbus RTU ³⁾	P1		
		BACnet MS/TP ⁴⁾	P3		
	Unit	metric-SI	no code		
		non-metric	U2		
Baud rate	9600 (usual for Modbus)	BD5			
	19200	BD6			
	38400 (usual for BACnet)	BD7			
	57600 ⁵⁾	BD8			
	76800 ⁵⁾	BD9			

1) T sensor details at www.epluse.com/R-T_Characteristics. For other passive T sensors please contact E+E.

2) -5 °C (23 °F) < Scale T low < 20 °C (68 °F), 25 °C (77 °F) < Scale T high < 55 °C (131 °F), Scale T high – Scale T low > 20 °C (68 °F).

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

4) Factory setting: No parity, Stopbits 1. Product Implementation Conformance Statement (PICS) available at 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