

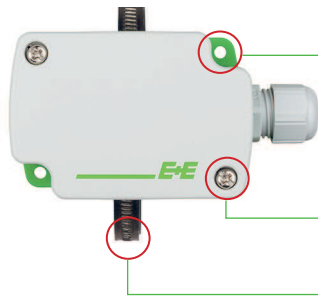
# EE441

## Strap-on Temperature Sensor

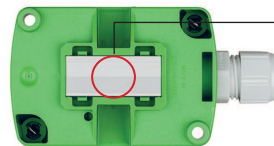
EE441 strap-on sensors are used for temperature measurement on round ducts and pipes. Typical applications are heating systems (warm and cold water pipes) and solar collectors. In addition to active outputs 0-10 V or 4-20 mA various types of sensing elements such as Pt1000, NTC10k or Ni1000 are available for passive temperature measurement. The innovative IP65 housing and the mounting concept allow for fast and easy installation. The optional adapter EE-PCA and the free configuration software EE-PCS facilitate the adjustment and setup of the active temperature sensors.



### Features



- External mounting holes**
  - » Mounting with closed cover
  - » Mounting on plane surfaces
  - » Protection against construction site pollution
- Bayonet screws**
  - » Open/closed with a ¼ rotation
- Hose clamp**
  - » Installation on pipes



- Aluminium contact surface**
  - » Very good thermal transfer
  - » Fast response time



### Technical Data

#### Active Output

Operating temperature	-40 °C...+70 °C (-40 °F...+158 °F)	
Sensing element	Pt1000 (class A, DIN EN60751)	
Output	0-10 V	-1 mA < I <sub>L</sub> < 1 mA
	4-20 mA (two-wire)	R <sub>L</sub> < 500 Ω
Accuracy	±0.3 °C (±0.54 °F) at 20 °C (68 °F)	
Supply voltage (Class III)	15-35 V DC or 24 V AC ±20%	
for 0-10 V	10 V DC + R <sub>L</sub> x 20 mA < V+ < 35 V DC	
for 4-20 mA		
Current demand	DC: typ. 5 mA	
	AC: typ. 12 mA <sub>eff</sub>	
Electromagnetic compatibility	EN61326-1, EN61326-2-3 industrial environment	

#### Passive Output

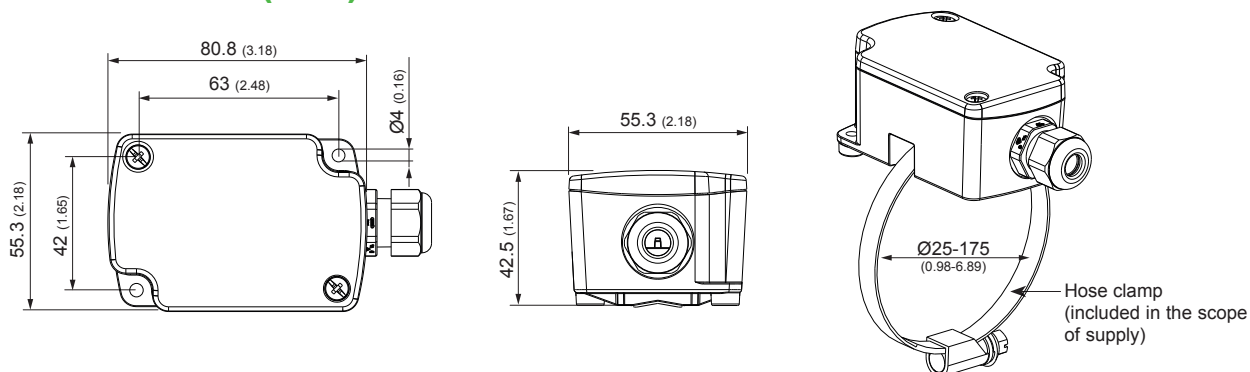
Operating temperature (contact area)	-40 °C...+110 °C (-40 °F...+230 °F)			
Types of T-Sensors	Sensor Type	Nominal Resistance	Sensitivity	Standard
	Pt100 DIN B	R <sub>0</sub> : 100 Ω	TC: 3.850 x 10 <sup>-3</sup> /°C	DIN EN 60751
	Pt1000 DIN B	R <sub>0</sub> : 1000 Ω	TC: 3.850 x 10 <sup>-3</sup> /°C	DIN EN 60751
	NTC10k	R <sub>25</sub> : 10 kΩ ± 0.5 %	B <sub>25/85</sub> : 3989 K (B <sub>25/50</sub> : 3950 K ± 1.0 %)	-
	NTC1.8k	R <sub>25</sub> : 1.8 kΩ ± 0.2 K	B <sub>25/85</sub> : 3500 K ± 1.0 %	-
	Ni1000 TK6180 DIN B	R <sub>0</sub> : 1000 Ω	TC: 6180 ppm/K	DIN 43760
	Ni1000 TK5000 DIN B	R <sub>0</sub> : 1000 Ω	TC: 5000 ppm/K	DIN 43760
Measurement current	typ. < 1 mA <sup>1)</sup>			
T-Sensor connection	two-wire			
Electrical connection	screw terminal, 2x max. 2.5 mm <sup>2</sup> (0.004 in <sup>2</sup> )			

1) according technical data of the specific T-sensors

## General

Insulation resistance	> 100 MΩ at 20 °C (68 °F)
Response time $\tau_{63}$	< 1 min
Enclosure material	polycarbonate, UL94-V0 approved, T-range: -40 °C...+110 °C (-40 °F...+230 °F)
Protection class	IP65 / NEMA 4
Cable gland	M16x1.5, UL94-V2
Hose clamp material	stainless steel (corr. 1.4301 / 304)
Storage temperature	-30 °C...+70 °C (-22 °F...+158 °F)
Working and storage humidity range	5 % rh...95 % rh, no condensation

## Dimensions in mm (inch)

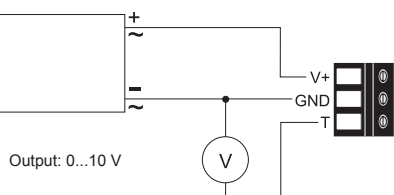


## Connection Diagram

### Active Output

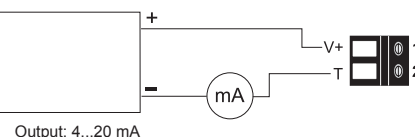
#### EE441-T3xx

power supply  
15...35 V DC  
24 V AC  $\pm 20\%$



#### EE441-T6xx

power supply  
20...35 V DC  $R_L < 500 \Omega$   
11...35 V DC  $R_L < 50 \Omega$



### Passive Output

#### EE441-Txx



## Scope of Supply

- EE441 Temperature sensor according to ordering guide
- Cable gland
- Hose clamp
- Two self-adhesive labels for configuration changes (see user guide at [www.epluse.com/relabeling](http://www.epluse.com/relabeling))
- Test report according to DIN EN10204 - 2.2 (for active output only)

## Ordering Guide

MODEL	ANALOGUE OUTPUT	T-SENSOR PASSIVE <sup>1)</sup>	SCALING <sup>2)</sup>		UNIT
			(analogue output only)		(analogue output only)
Temperature	(T) 0-10 V	(3x) Pt100 DIN B	(BPO)	-40...60	(002) °C (M)
		(6x) Pt1000 DIN B	(DPO)	-20...80	(024) °F (N)
	4-20 mA	(xx) NTC10k	(LPO)	0...50	(004)
		NTC1.8k	(GPO)	0...100	(005)
		Ni1000 TK6180 DIN B	(JPO)	32...212	(075)
		Ni1000 TK5000 DIN B	(TPO)	-40...140	(083)
		Analogue output	(xPO)		
none					
<b>EE441-</b>					

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

2) other scaling upon request

## Order Example

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### Passive Output

#### EE441-TxxDPO

Model: Temperature  
T-Sensor passive: Pt1000 DIN B

### Active Output

#### EE441-T3xxPO/024M

Model: Temperature  
Analogue Output: 0-10 V  
Scaling: -20...80 °C

## Accessories

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Product configuration adapter	<a href="#">see data sheet EE-PCA</a>
Product configuration software	<a href="#">EE-PCS</a> (free download: <a href="http://www.epluse.com/configurator">www.epluse.com/configurator</a> )
Power supply adapter	<a href="#">V03</a> (see data sheet Accessories)
Conduit adapter, M16x1.5 to 1/2"	<a href="#">HA011110</a>