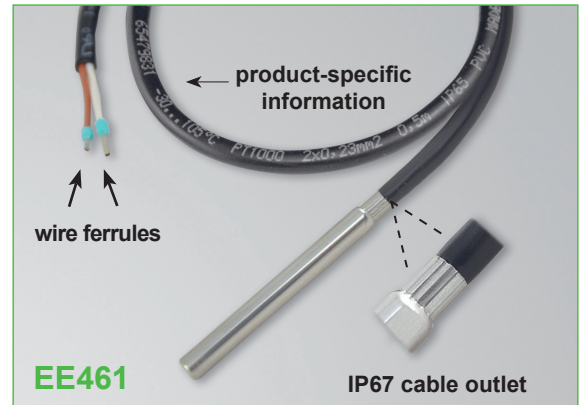


# EE461

## Cable Temperature Sensor

Cable sensors for passive temperature measurement are used in heating, ventilation and air conditioning systems as well as for process control.

Several types of sensing elements such as Pt1000, NTC10k or Ni1000 are available. Due to an innovative production concept (star pressing of the sensor sleeve) a high protection class IP67 is provided. Product-specific information is printed all along the cable.



### Typical Applications

Building automation  
 Process and climate control

### Features

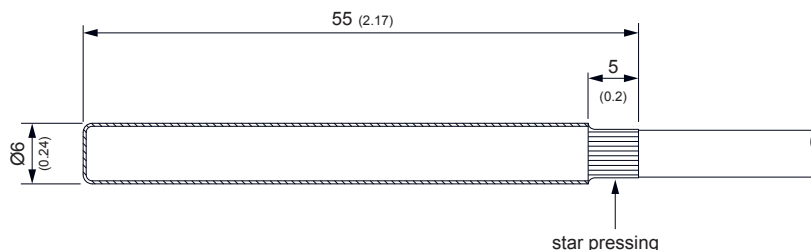
High protection class  
 Cable labeling  
 Various sensing elements and cable lengths

### Technical Data

Operating temperature	PVC -30 °C...+105 °C (-22 °F...+221 °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 %)	-
	NTC2.2k	R <sub>25</sub> : 2.252 kΩ ± 0.2 K	B <sub>25/85</sub> : 3977 K ± 0.3 %	-
	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, wire resistance see additional information below			
Insulation resistance	> 100 MΩ at 20 °C (68 °F)			
Response time τ <sub>63</sub>	< 1 min, at 3 m/s (590 ft/min) air velocity			
	< 30 s, with immersion well in liquid water bath			
Sensor sleeve material	stainless steel (1.4571 / 316Ti)			
Cable material	PVC 2x0.22 mm <sup>2</sup>			
Protection class	IP67 / NEMA 4			
Storage temperature	-30 °C...+70 °C (-22 °F...+158 °F)			
Working and storage humidity range	5 % rh...95 % rh, no condensation			

1) according technical data of the specific T-sensors

### Dimensions in mm (inch)



## Ordering Guide

## Order Example

MODEL	T-SENSOR <sup>1)</sup>	CABLE MATERIAL	CABLE LENGTH
Temperature (T)	Pt100 DIN B (B)	PVC (105 °C (221 °F)) (A)	0.5 m (1.6 ft) (A)
	Pt1000 DIN B (D)		2 m (6.6 ft) (D)
	NTC10k (L)		3 m (9.8 ft) (E)
	NTC2.2k (V)		
	NTC1.8k (G)		
	Ni1000 TK6180 DIN B (J)		
	Ni1000 TK5000 DIN B (T)		
<b>EE461-</b>			

**EE461-TDAD**

Model: Temperature  
T-Sensor: Pt1000 DIN B  
Cable Material: PVC  
Cable Length: 2 m (6.6 ft)

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

## Mounting Accessories

### Immersion well - Thread: R 1/2" ISO

Length	50 mm (1.97 ")	135 mm (5.31 ")	285 mm (11.22 ")
brass	HA400101	HA400102	HA400103
stainless steel	HA400201	HA400202	HA400203

### Immersion well - Thread: 1/2" NPT

Length	50 mm (1.97 ")	135 mm (5.31 ")	285 mm (11.22 ")
brass	HA400111	HA400112	HA400113
stainless steel	HA400211	HA400212	HA400213

For further information please see datasheet EE431.

### Mounting with immersion well:



1. The spring inside the well must be removed and replaced by a standard M12x1.5 cable gland (not included in the scope of supply).
2. Insert the cable sensor and fix it by fastening the cable gland.

Please observe the operating temperature range of the cable gland!

**Cable gland** (M12x1.5, -40 °C...+100 °C / -40 °F... +212 °F, UL94-V0) **HA403101**

**Hose clamp** (for pipe mounting) **HA402101**

For further information please see datasheet EE441.

## Additional Information

### Wire Resistance / Temperature Offset

Cable length	Wire resistance	Temperature offset for Pt100 <sup>*)</sup>
0.5 m (1.64 ft)	0.124 Ω	0.32 °C (32.576 °F)
2 m (6.56 ft)	0.364 Ω	0.93 °C (33.674 °F)
3 m (9.84 ft)	0.520 Ω	1.33 °C (34.394 °F)

\*) For high-resistance T-sensors ( $R \geq 1000 \Omega$ ) the temperature offset is negligible.