

EE461

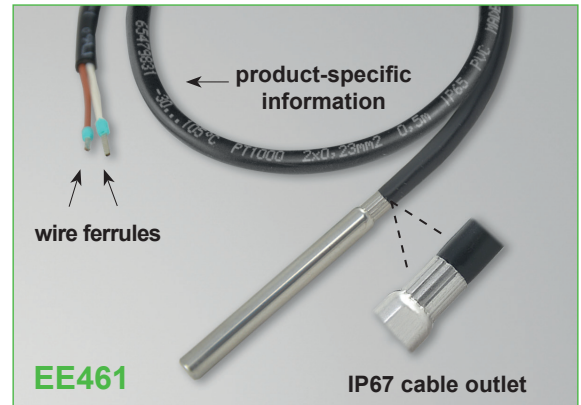
Temperature Cable Sensor

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

For temperature measurement in liquids, the EE461 cable sensor is mounted with an immersion well. Several types of sensing elements are available, such as Pt100, Pt1000, Ni1000 and NTC.

The IP67 / NEMA 4 protection class is made possible by the innovative star pressing of the sensor sleeve.

The EE461 is available with 2-wire and 4 wire connection. Product specific information printed all along the cable allows for easy identification of the sensing element type.



Typical Applications

Building automation
 Process and climate control

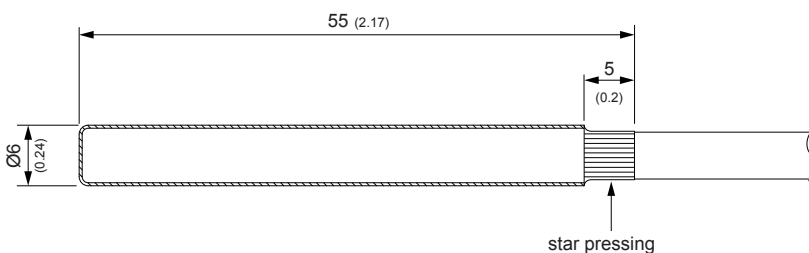
Features

Protection class IP67 / NEMA 4
 2- and 4-wire connection

Technical Data

Operating temperature	-30...+105 °C (-22...+221 °F)			
T-Sensors	Sensor Type	Nominal Resistance	Sensitivity	Standard
	Pt100 DIN B	R ₀ : 100 Ω	TC: 3.850 x 10 ⁻³ /°C	DIN EN 60751
	Pt1000 DIN B	R ₀ : 1000 Ω	TC: 3.850 x 10 ⁻³ /°C	DIN EN 60751
	NTC1.8k	R ₂₅ : 1.8 kΩ	B _{25/85} : 3500 K ± 1.0 %	-
	NTC2.2k	R ₂₅ : 2.252 kΩ ± 1%	B _{25/85} : 3977 K ± 0.3 %	-
	NTC10k B3950	R ₂₅ : 10 kΩ ± 0.5 %	B _{25/85} : 3989 K (B _{25/50} : 3950 K ± 1.0 %)	-
	NTC10k B3435	R ₂₅ : 10 kΩ ± 1 %	B _{25/85} : 3435 K	-
	KTY81-210	R ₂₅ : 1980-2020 Ω	-	-
	Ni1000 TK6180 DIN B	R ₀ : 1000 Ω	TC: 6180 ppm/K	DIN 43760
	Ni1000 TK5000 DIN B	R ₀ : 1000 Ω	TC: 5000 ppm/K	DIN 43760
Measurement current	typ. < 1 mA			
T-Sensor connection	2-wire, 2x 0.22 mm ² , wire resistance 0.172 Ω/m (0.052 Ω/ft) 4-wire, 4x 0.22 mm ²			
Insulation resistance	> 100 MΩ at 20 °C (68 °F)			
Response time τ ₆₃	< 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			
Protection class	IP67 / NEMA 4			
Storage temperature	-30...+70 °C (-22...+158 °F)			
Working and storage humidity range	5...95 % RH, no condensation			

Dimensions in mm (inch)



Ordering Guide

Order Example

WIRING	T-SENSOR ¹⁾	CABLE LENGTH
2-wire connection (no code)	Pt100 DIN B (TP2)	0.5 m (1.6 ft) (K0.5)
	Pt1000 DIN B (TP4)	2 m (6.6 ft) (K2)
	NTC1.8k (TP7)	3 m (9.8 ft) (K3)
	NTC2.2k (TP21)	5 m (16.4 ft) ²⁾ (K5)
	NTC10k B3950 (TP11)	6 m (19.7 ft) ³⁾ (K6)
	NTC10k B3435 (TP14)	10 m (32.8 ft) ²⁾ (K10)
	KTY81-210 (TP13)	
	Ni1000 TK6180 DIN B (TP9)	
	Ni1000 TK5000 DIN B (TP19)	
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EE461-TP4K2
Wire: 2-wire connection
T-Sensor Pt1000 DIN B
Cable Length: 2 m (6.6 ft)

1) T-Sensor details see www.epluse.com/R-T_Characteristics
2) Only available with PT1000 DIN B T-sensor
3) Only available with NTC10k B3950 T-sensor

WIRE	T-SENSOR	CABLE LENGTH
4-wire connection (W4)	Pt100 DIN A (TP1)	2 m (6.6 ft) (K2)
	Pt100 DIN B (TP2)	5 m (16.4 ft) (K5)
	Pt100 1/3 DIN B (TP8)	10 m (32.8 ft) (K10)
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EE461-W4TP1K5
Wire: 4-wire connection
T-Sensor: Pt100 DIN A
Cable Length: 5 m

Mounting Accessories (For further information please see datasheet EE441)

Immersion well - Thread: R 1/2" ISO

Length	50 mm (1.97")	100 mm (3.94")	135 mm (5.31")	285 mm (11.22")
brass	HA400101	HA400104	HA400102	HA400103
stainless steel	HA400201	HA400204	HA400202	HA400203

Immersion well - Thread: 1/2" NPT

Length	50 mm (1.97")	100 mm (3.94")	135 mm (5.31")	285 mm (11.22")
brass	HA400111	HA400114	HA400112	HA400113
stainless steel	HA400211	HA400214	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...+100 °C / -40...+212 °F, UL94-V0) **HA403101**
Hose clamp (for pipe mounting) **HA402101**

Connection Diagram (for 4-wire connection)

