Cable Sensor, Pt100/Pt1000

Sensors with 4-wire silicone cable for pockets or tubes

4-wire air sensors

Elements in 1/1 DIN B, 1/3 DIN B, 1/6 DIN B and 1/1 DIN A

The sensors can be used with the CombiTemp, Building Block Temperature Measuring System

Description

A platinum resistor is built into the temperature sensor. Changes in temperature are reflected by changes in the electrical resistance, so that measuring the value of the resistance gives an analogue expression for the actual temperature.

The Pt100 element has a resistance of 100 Ohms at 0°C and a well-documented working curve (DIN/EN/IEC 60751) within the nominal working range.

The sensors are used in a wide range of applications within the marine, industrial, energy and food sectors.

The Pt100 sensor fits as an insert in sensor tubes with an internal diameter of 6 mm such as the CombiTemp temperature measuring system.

Air sensors are used without sensor pockets to ensure fast response time.

Baumer

Technical Data

Standard sensor	
Measuring range	-50...205°C
Ambient temperature	-50...205°C
Marking label	-30...105°C
Pressure range	≤ 25 bar (water flow 3m/sec.)
Humidity	< 98% RH, condensing
Protection class	IP 65
Cable type	High-flexible silicone, grey
Wires	4 (2 x Red, 2 x white)
Length	up to 99.99 metres

Air sensor	
Measuring range	-50...205°C
Ambient temperature	-50...205°C
Marking label	-30...105°C
Environment	Non-aggressive air
Air gap	8 holes, ø3 mm
Humidity	< 98% RH, condensing
Protection class	IP 65
Cable type	High-flexible silicone, grey
Wires	4 (2 x Red, 2 x white)
Length	up to 99.99 metres

Common data for both types	
Case material	Acid-proof, stainless steel AISI 316 L (1.4404)
Case dimensions	ø5.8 mm x 46 mm
Time constant $\tau_{0,5}$	See table
Accuracy	DIN/EN/IEC 60751
1/1 DIN B	±(0.3 + 0.005 x t) °C
1/3 DIN B	±1/3 x (0.3 + 0.005 x t) °C
1/6 DIN B	±1/6 x (0.3 + 0.005 x t) °C
1/1 DIN A	±(0.15 + 0.002 x t) °C
Vibrations	Lloyds Register, test 2
Mechanical tolerances	ISO 2768-m
Cable diameter	4.9 mm
Cable bending radius	r ≥ 29.4 mm

Disposal of product and packing

According to national laws or by returning to Baumer

Time Constant $\tau_{0.5}$

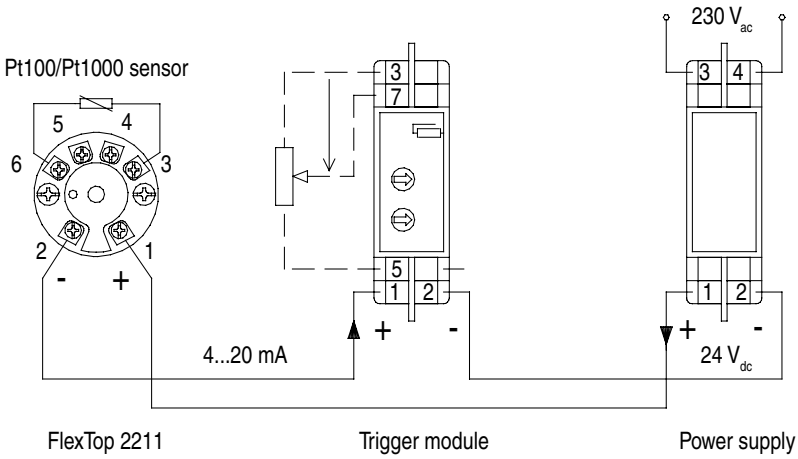
If a pocket or sensor tube is used, the response time is extended, i.e. the time duration for the sensor to reach the correct temperature when the temperature of the medium changes suddenly.

Environment	Sensor type	
	Standard Sensor	Air Sensor
Fluid, 0.4 m/sec.	8 sec.	
Fluid, 0.4 m/sec. (Stainless steel pocket/tube with silicone paste)	17 sec.	
Air, 3 m/sec.	35 sec.	25 sec.
Air, still	135 sec.	105 sec.

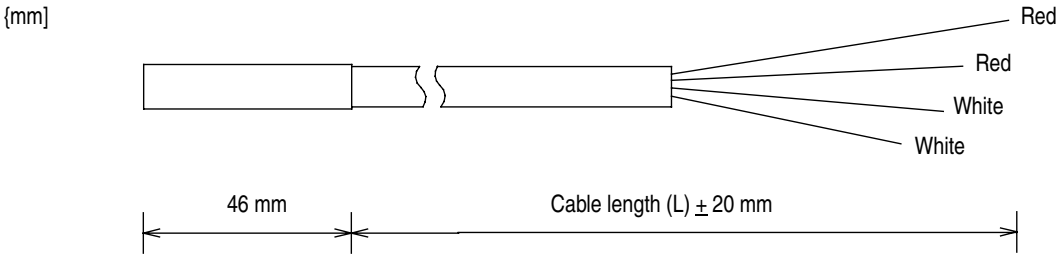
Ordering Details - Cable sensors

	8141	3xx	xxxx
Sensor type	**6´ digit**		
Standard sensor		3	
Air sensor		5	
Sensor element (DIN/EN/IEC 60751)	**7´ digit**		
Pt100, 1/1 DIN B, single, specified accuracy -50...400°C		1	
Pt100, 1/3 DIN B, single, specified accuracy 0...150°C		3	
Pt100, 1/6 DIN B, single, specified accuracy 0...100°C		5	
Pt100, 1/1 DIN A, single, specified accuracy -50...400°C		7	
Pt1000, 1/3 DIN B, single, specified accuracy -50...400°C		A	
Pt1000, 1/1 DIN B, single, specified accuracy -50...400°C		B	
Cable length (L)	**8...11´ digit**		
Length in cm			xxxx

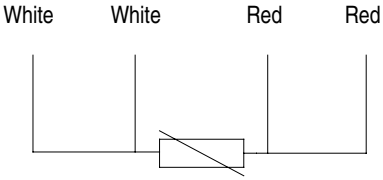
Example of Application



Dimensional Drawing



4-wire Sensors



Warning:
One of the wires may not be connected in case of a 3-wire connection to the temperature transmitter

Ordering Details - Pocket for Cable Sensors

		2909 0001 xxx
Pocket type		
Stainless steel, W 1.4404 (AISI 316L), R1/2 with M12 gland		
Pocket length (L)	**9...11´ digit**	
Length in mm		xxx