



AP 108

Temperature sensor suitable for measurement of liquid and gaseous media, mainly in systems for energy consumption billing.

Specification

Temperature range / sensing element

-50÷180°C **Pt100, Pt500** class B

Sheath

– sheath material: brass $\varnothing 5, 8\text{mm}$, L=48mm

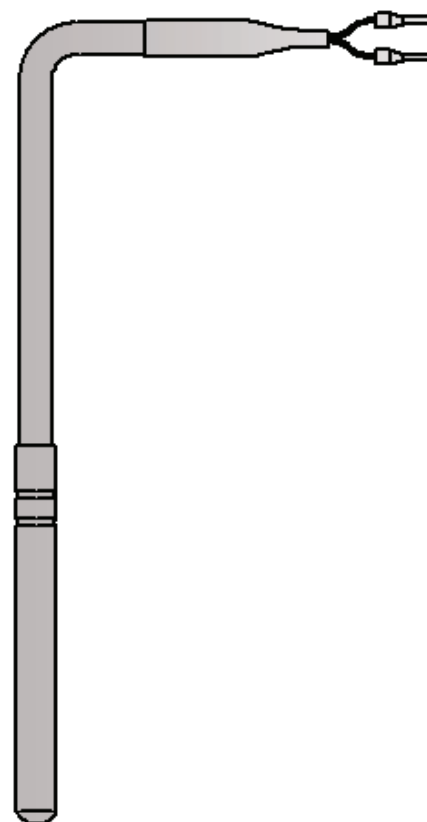
Constructional version

– for application with additional OG thermowell

Lead wire

– stranded Cu wire 2x0,25mm² with double silicone insulation
– length: 3m (standard) or other

Other parameters acc. to requirements



Options

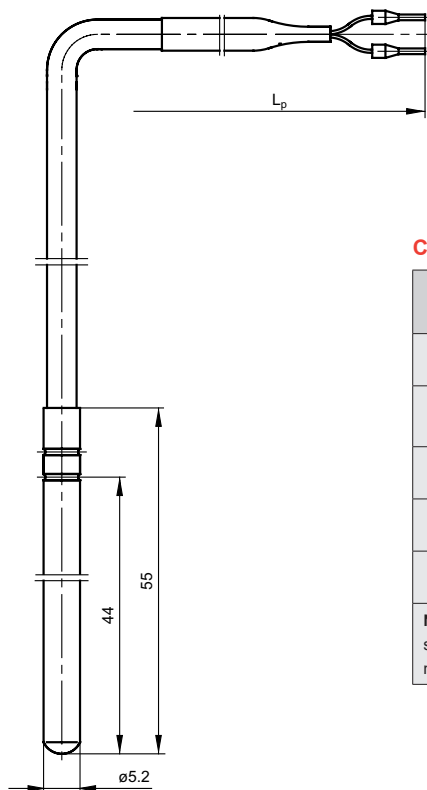
Temperature transmitter application

Temperature transmitter with standard 4+20mA, 0÷10V output signals and with the HART or PROFIBUS communication protocols can be installed in the control cabinet.

Non-standard design

Immersion length, process connection thread, shape and material of the sheath and other parameters can be customized per client request.

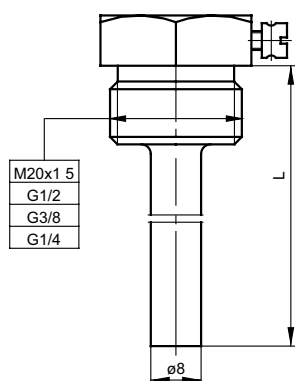
Calibrations performed by Limatherm Sensor Sp. z o.o. are confirmed with the Calibration Certificate of the Accredited Laboratory for Temperature Measurements.



Compensation / thermocouple wire insulations

Insulation material	Operating temperature range [°C]	Properties
PCW (PCV)	-10÷105	Applied in mild environmental conditions. Waterproof and flexible.
Yc- polyvinyl chloride	-10÷105	Applied in mild environmental conditions. Waterproof and flexible.
FEP-teflon	-50÷200	Resistant to oils, acids and other aggressive liquids. Good flexibility.
Si-silicone	-50÷180	Waterproof, flexible. Applied in high humidity conditions.
Ws-fiberglass	-60÷400	Good resistance to high temperature Low resistance to liquid penetration.

Notes: Additionally, copper or steel braids/shields are used on wires to prevent electrical noises, increasing, at the same time, wire insulation resistance to mechanical damages. In case of longer wire lengths grounding may be needed to minimize the noise in measurement circuit



Tolerance for classes of sensors with resistors Pt acc. to PN-EN 60751

Sensor classes	Range of application [°C]	Formula for calculating acceptable deviations [°C]
AA	0÷150	$T = \pm(0,10 + 0,0017 t)$
A	-30÷300	$T = \pm(0,15 + 0,002 t)$
B	-50÷500	$T = \pm(0,3 + 0,005 t)$

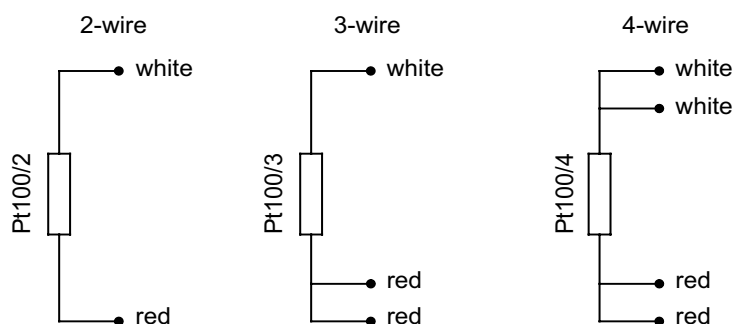
|t| - absolute value of temperature

Measurement circuit

1 x Pt100			2 x Pt100			1 x TC	2 x TC
2-wire	3-wire	4-wire	2-wire	3-wire	4-wire	2-wire	2-wire
✓	✓	✓	x	x	x	x	x

Connection schemes

Pt100 (thermometric resistor)



Product code

		Resistor type	
1	<input type="text"/>	Pt100	Pt100
			other parameters acc. to requirements
		Accuracy	
2	<input type="text"/>	A or B	for measuring resistor
		Measurement circuit	
		2	2 - wire
		3	3 - wire
3	<input type="text"/>	4	4 - wire
		Lead wire length	
		1,5	1,5m
4	<input type="text"/>		other parameters acc. to requirements
		Additional accessories: OG thermowell	
		100	length 100mm
5	<input type="text"/>		other parameters acc. to requirements
		Thread dimension of OG thermowell	
		M20x1,5	metric thread M20x1,5
		G½	pipe thread (inch) G½
		G¼	pipe thread (inch) G¼
6	<input type="text"/>	G¾	pipe thread (inch) G¾

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Ordering example:

TOP-231-Pt100-A-4-3 m-70-G½ RTD sensor with Pt100, class A, 4-wire connection, thermowell OG diameter 8 mm, length L=70 mm, threaded fitting G½, lead wire length L_p=3 m