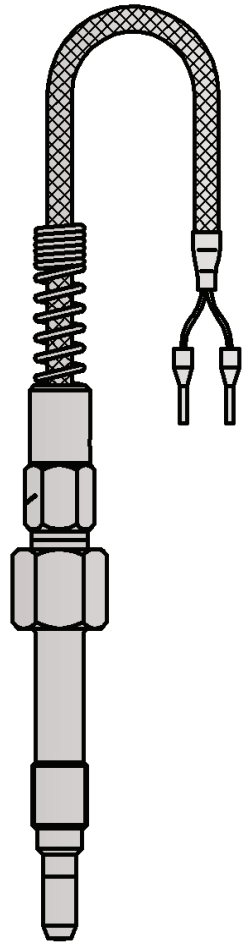
limatherm SENSOR

Temperature Sensors for Measurement of Machinery and Device Parts
TTJE-621, TTKE-621

AP 108

Sensor suitable for temperature measurement of various plastic masses in mixers.



Specification

Temperature range / sensing element

-40÷300°C **K, J** class 2

Sheath

– material: steel 1.4541
– oval tip [mm]: 5x7,8
– length [mm]: 14
– movable connector ½ - UNF

Lead wire

– stranded wire 2x0,22mm^2 with double silicone insulation
– length L_p [m]: 2 (standard)

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, diameter and material of the sheath, and measuring insert 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.

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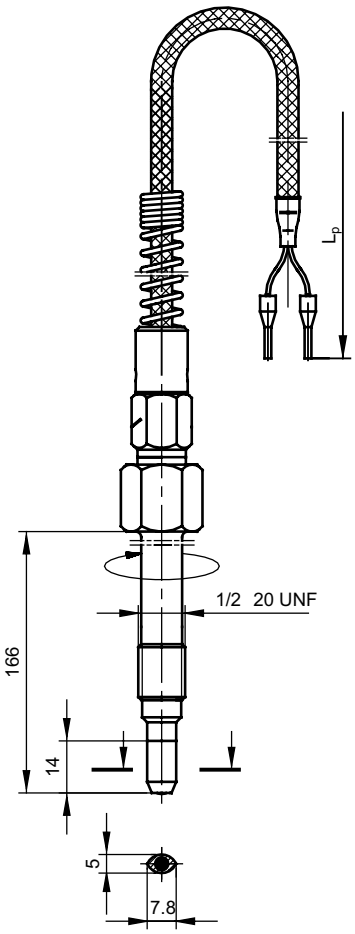
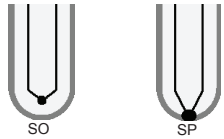


Compensation / thermocouple wire insulations

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

Thermocouple hot junction types



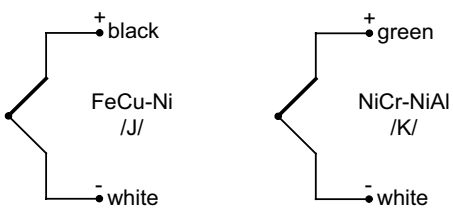
Tolerance for thermocouple classes acc. to PN-EN 60584

Thermocouple type	Class 1		Class 2	
	Range of application [°C]	Tolerance [°C]	Range of application [°C]	Tolerance [°C]
J Fe-CuNi	from -40 to +375 from +375 to +750	±1,5 ±0,004 |t|	from -40 to +333 from +333 to +750	±2,5 ±0,0075 |t|
K NiCr-NiAl	from -40 to +375 from +375 to +1000	±1,5 ±0,004 |t|	from -40 to +333 from +333 to +1200	±2,5 ±0,0075 |t|

\|t\|- absolute value of temperature

Connection schemes

TC (thermocouple)



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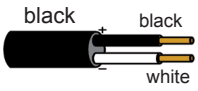
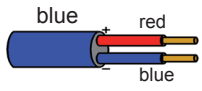
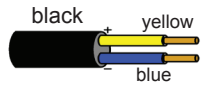
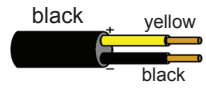
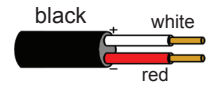
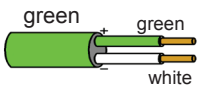
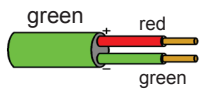
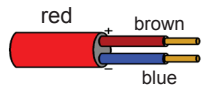
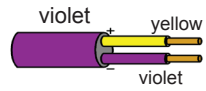
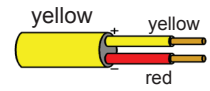
Cable types and colours acc. to the norm

EU	D	GB	F	USA
Thermocouple J type				
				
Thermocouple K type				
				

Product code

		Sensing element	
1		**J**	thermocouple Fe-CuNi /J/
		K	thermocouple NiCr-NiAl /K/
		Thermocouple hot junction type	
2		**SO**	insulated hot junction
		SP	grounded hot junction
		Lead wire length	
		2	2m
3			other parameters acc. to requirements

1			2		3
T		**E-621**	–	–	

Ordering example: **TTJE-621–SO–2 m** sensor with thermocouple Fe-CuNi /J/, insulated hot junction, lead wire length L_p=2 m