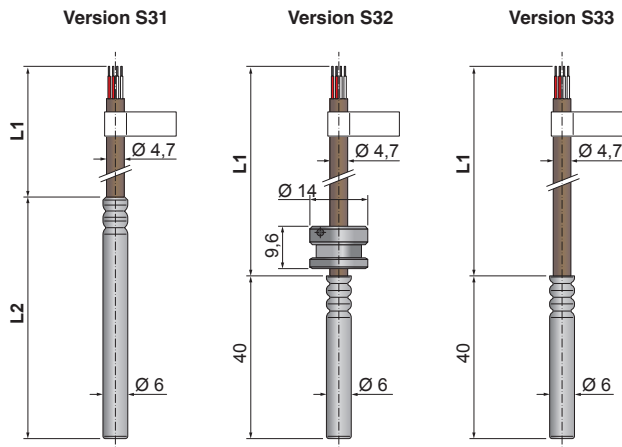


T1027

Cable Resistance Temperature Sensors

- Measuring resistor 1x / 2x Pt100, Pt1000 according to EN 60751
- Measuring resistor 1x Ni1000 according to DIN 43760
- Measuring range -40 to +180 °C (sensors Pt) -50 to +150 °C (sensors Ni)
- Accuracy class A, B according to EN 60751
- Stem material stainless steel 1.4541, brass
- Selectable thermowell sensor PN 63
- Housing IP 67



Application

Cable resistance temperature sensors T1027 have firmly connected connection wires in a form of cable. They are designed for remote measuring of temperature of liquid and gaseous media.

Description

Resistance sensor is made of one or two measuring resistors, embedded in a metal stem of measuring insert and connected to connection wires. There is used defined resistance change according to temperature change. Measuring inserts are inserted into thermowells, where they are fixed by a sealing fitting or by aluminum ring. Thermowells are mounted to a pipe by a shift pipe union into a straight or an oblique welded on piece etc.

Technical specifications

Measuring resistor:

1xPt100, 1xPt1000, 1xNi1000
 accuracy class A, B according to EN 60751,
 two-wire inside wiring (cable 2x0.50 mm²),
 four-wire inside wiring (cable 4x0.22 mm²),
 2xPt100, 2xPt1000
 accuracy class B according to EN 60751,
 two-wire inside wiring (cable 4x0.22 mm²),
 accuracy class A, B according to EN 60751,
 three-wire inside wiring (cable 6x0.22 mm²)

Measuring range:

-40 to +180 °C (sensor Pt)
 -50 to +150 °C (sensor Ni)

Measuring current:

Pt100	0.3 to 1 mA
Pt1000	0.1 to 0.3 mA
Ni1000	up to 0.8 mA

Dielectric strength: 500 V_{eff}

Electrical insulation resistance:

min. 100 MOhm according to EN 60751,
 for temperature (25 ±10)°C
 max. 80 % relative humidity

Used materials:

- thermowell
- stainless steel 1.4541 (AISI 321)
- stem
- brass
- stainless steel 1.4541 (AISI 321)
- inside wiring - Cu
- protective metal tube
- stainless steel AISI 410

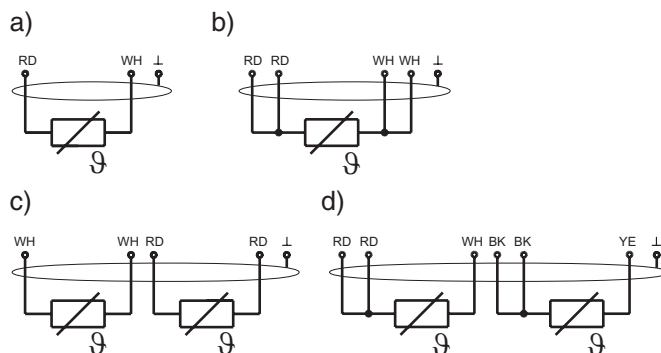
Resistance of connection wires R₃ for two-wire connection:

- cable 4x0.22 mm² ... 0,17 Ohm/m (two cores)
- cable 2x0,50 mm² ... 0,08 Ohm/m (two cores)

Housing:

IP 67

Electrical connection



- a) 1x Pt100, Pt1000, Ni1000, two-wire
- b) 1x Pt100, Pt1000, Ni1000, four-wire
- c) 2x Pt100, Pt1000, two-wire
- d) 2x Pt100, Pt1000, three-wire

RD - red, WH - white, BK - black, YE - yellow, ⊥ - shielding
 Note: Shielding is not electrically connected to the stem.

Cable Resistance Temperature Sensors T1027

Type	Description	
• T1027-2	Cable resistance temperature sensor	
Code	Temperature sensor	Measuring range
• 01	1xPt100, four-wire inside wiring	-40 to +180 °C
◦ 03	1xPt1000, four-wire inside wiring	-40 to +180 °C
◦ 21	1xPt100, two-wire inside wiring	-40 to +180 °C
◦ 23	1xPt1000, two-wire inside wiring	-40 to +180 °C
◦ 04	2xPt100, two-wire inside wiring	-40 to +180 °C
◦ 06	2xPt1000, two-wire inside wiring	-40 to +180 °C
◦ 54	2xPt100, three-wire inside wiring	-40 to +180 °C
◦ 56	2xPt1000, three-wire inside wiring	-40 to +180 °C
◦ 33	1xNi1000 (W100 = 1,6180), two-wire inside wiring	-50 to +150 °C
◦ 13	1xNi1000 (W100 = 1,6180), four-wire inside wiring	-50 to +150 °C
99	Other	
Code	Accuracy class according to EN 60751 (Pt and Ni sensors)	
• 1	B	
◦ 2	A (only for sensors with four-wire or three-wire inside wiring)	
Code	Nominal length L2 [mm]	
• 104	40 (not for code S31)	
◦ 111	111 (not for code S32 and S33)	
◦ 112	126 (not for code S32 and S33)	
114	146 (not for code S32 and S33)	
117	176 (not for code S32 and S33)	
123	236 (not for code S32 and S33)	
999	Other	
Code	Stem - outer diameter of stem [mm]	Stem coat material
◦ S31	Ø 6 (for nominal lengths L2 = 111, 126, 146, 176 and 236 mm)	1.4541
• S32	Ø 6 (for nominal length L2 = 40 mm) + seal ring	brass
◦ S33	Ø 6 (for nominal length L2 = 40 mm)	brass
Code	Cable - nominal length L1 [mm]	
• K216	1600	
◦ K220	2000	
• K225	2500	
• K240	4000	
• K260	6000	
◦ K280	8000	
◦ K310	10000	
◦ K312	12000	
◦ K314	14000	
◦ K316	16000	
◦ K318	18000	
◦ K320	20000	
K999	Other	
Code	Outer insulation / shield / inner insulation	Ambient temperature of cable
• 01	Silicone isolation / copper braiding / FEP	-50 to +180 °C
Code	Cable termination	
• 00	Flying leads	
Code	OPTIONAL ACCESSORIES	
Code	Cable protection	
D070 (...)	Protective steel conduit with outer diameter 7 mm, material SS410 (specify in brackets the length of conduit in mm) (only for code 31)	
Code	Calibration in customer defined points, including certificate of calibration	
◦ KTE31A	Resistance temperature sensor calibration in three points in range -40 to +180 °C	
◦ KTE41A	Resistance temperature sensor calibration in four points in range -40 to +180 °C	
◦ KTE51A	Resistance temperature sensor calibration in five points in range -40 to +180 °C	
KTE9	Other	
Code	Thermowell	
• J01	Thermowell, version A, length L=33 mm, stainless steel 1.4541, PN 63, G1/4" thread (for code S33 and S31)	
◦ J02	Thermowell, version A, length L=33 mm, stainless steel 1.4541, PN 63, M12x1.5 thread (for code S33 and S31)	
• J03	Thermowell, version B, length L=54 mm, stainless steel 1.4541, PN 63, G1/2" thread (for code S32)	
• J04	Thermowell, version B, length L=100 mm, stainless steel 1.4541, PN 63, G1/2" thread (for code S32)	
◦ J05	Thermowell, version B, length L=160 mm, stainless steel 1.4541, PN 63, G1/2" thread (for code S32)	
◦ J06	Thermowell, version B, length L=54 mm, stainless steel 1.4541, PN 63, M20x1.5 thread (for code S32)	
◦ J07	Thermowell, version B, length L=100 mm, stainless steel 1.4541, PN 63, M20x1.5 thread (for code S32)	
◦ J08	Thermowell, version B, length L=160 mm, stainless steel 1.4541, PN 63, M20x1.5 thread (for code S32)	
◦ J11	Thermowell, version C, length L=100 mm, stainless steel 1.4541, PN 63, G1/2" thread (for code S31)	
◦ J12	Thermowell, version C, length L=150 mm, stainless steel 1.4541, PN 63, G1/2" thread (for code S31)	
◦ J13	Thermowell, version C, length L=85 mm, stainless steel 1.4541, PN 63, G1/2" thread (for code S31)	
◦ J14	Thermowell, version C, length L=120 mm, stainless steel 1.4541, PN 63, G1/2" thread (for code S31)	
◦ J15	Thermowell, version C, length L=210 mm, stainless steel 1.4541, PN 63, G1/2" thread (for code S31)	
◦ J16	Thermowell, version C, length L=100 mm, stainless steel 1.4541, PN 63, M20x1.5 thread (for code S31)	
◦ J17	Thermowell, version C, length L=150 mm, stainless steel 1.4541, PN 63, M20x1.5 thread (for code S31)	
◦ J18	Thermowell, version C, length L=85 mm, stainless steel 1.4541, PN 63, M20x1.5 thread (for code S31)	
◦ J19	Thermowell, version C, length L=120 mm, stainless steel 1.4541, PN 63, M20x1.5 thread (for code S31)	
◦ J20	Thermowell, version C, length L=210 mm, stainless steel 1.4541, PN 63, M20x1.5 thread (for code S31)	
J99	Other	

• ... Ex stock version

◦ ... Marked version can be dispatched up to 5 working days (with calibration up to two weeks)

Code	Welded on pieces
• N01	Straight welded on piece G1/4", L=22 mm, carbon steel
• N02	Straight welded on piece M12x1.5, L=22 mm, carbon steel
• N03	Straight welded on piece G1/2", L=20 mm, carbon steel
• N04	Straight welded on piece M20x1.5, L=20 mm, carbon steel
• N05	Oblique welded on piece G1/4", L=19 mm, carbon steel
• N06	Oblique welded on piece M12x1.5, L=19 mm, carbon steel
• N07	Oblique welded on piece G1/2", L=26 mm, carbon steel
• N08	Oblique welded on piece M20x1.5, L=26 mm, carbon steel
◦ N11	Straight welded on piece G1/2", L=70 mm, carbon steel
◦ N12	Oblique welded on piece G1/2", L=70 mm, carbon steel
N99	Other
Code	Sleeve, mounting band and machine
• PP1	Sleeve for stem diameter 6 mm, material brass, with mounting band and machine, material stainless steel 1.4301, use up to 400 °C, for attaching a pipe up to 60 mm
• PP2	Sleeve for stem diameter 6 mm, material brass, with mounting band and machine, material stainless steel 1.4301, use up to 400 °C, for attaching a pipe from 60 to 90 mm
• PP3	Sleeve for stem diameter 6 mm, material brass, with mounting band and machine, material stainless steel 1.4301, use up to 400 °C, for attaching a pipe from 90 to 140 mm
• PP4	Sleeve for stem diameter 6 mm, material brass, with mounting band and machine, material stainless steel 1.4301, use up to 400 °C, for attaching a pipe from 140 to 220 mm

Example of order: T1027-2 01 1 111 S31 K216 01 00 D070(1400) KTE31A (-40, 50, 150 °C)

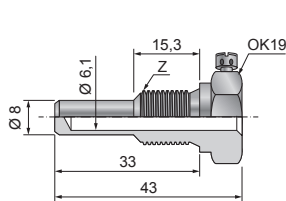
Type	OPTIONAL ACCESSORIES		
Code	Description		
• P	Fixing shift pipe union for sheath temperature sensor		
Code	Version	T _{max}	P _{max}
• S ¹⁾	With stainless steel cutting ring, pipe union of stainless steel material	600 °C / 0.1 MPa	4 MPa / 100 °C
T ²⁾	With PTFE sealing ring, pipe union of stainless steel material	200 °C / 0.1 MPa	0.6 MPa / 100 °C
Code	Connection thread Z		
• M02	M12x1.5		
M03	M16x1.5		
• M04	M20x1.5		
• G02	G1/4"		
• G03	G3/8"		
• G04	G1/2"		
N02	1/4" NPT		
N03	3/8" NPT		
N04	1/2" NPT		
Code	Outer diameter of stem sensor		
• D60	6 mm		

Example of order: PS M04 D60

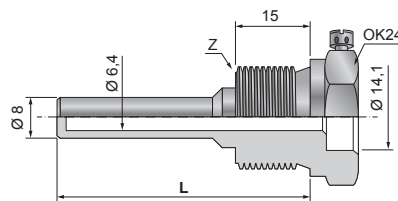
- ... Ex stock version ◦ ... Marked version can be dispatched up to 5 working days
- ¹⁾ ... Adjustable nominal length only for first time of mounting.
- ²⁾ ... Always adjustable nominal length.

Thermowells - stainless steel 1.4541 for PN 63

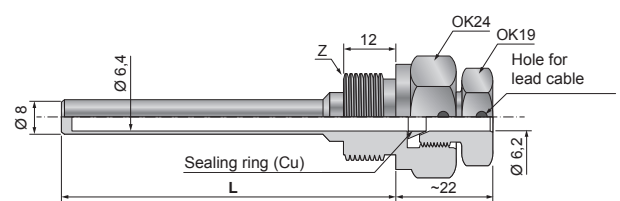
Version A for code S31, S33



Version B for code S32



Version C for code S31



Brass sleeve

