

# T1027

## Cable Resistance Temperature Sensors

- Measuring resistor Pt100, Pt500, Pt1000 according to EN 60751.
- Measuring resistor 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 W.Nr. 1.4541, brass.
- Selectable thermowell sensor PN 63.
- Housing IP 67.
- GOST R certification.

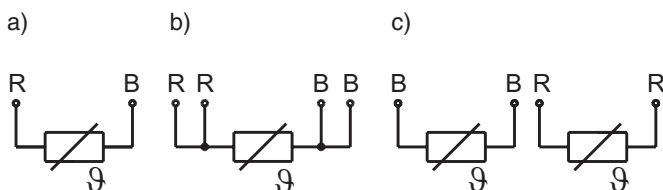
### Application

Cable resistance temperature sensors T1027 with close connected cables are designed for remote measuring of temperature of liquid and gaseous mediums.

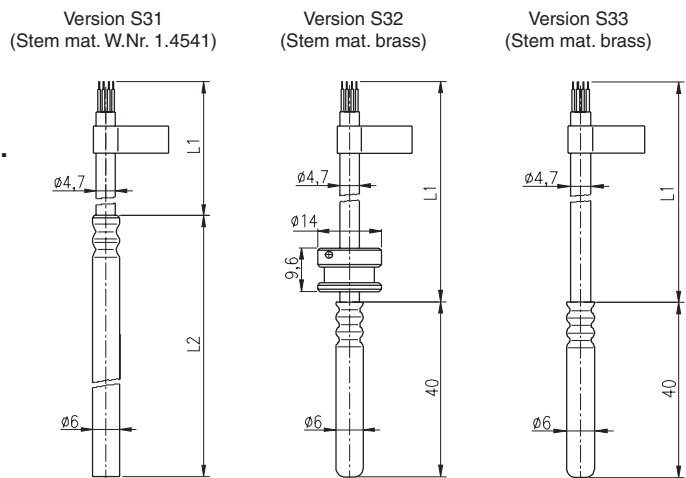
### Description

A sensor of the thermometer is one or two measuring resistors which are placed in the metal measuring insert stem and connected to cable. There is made use of sensor resistance-temperature dependence. Measuring stems are pushed into thermowells, where they are adjusted by lead screw union or by aluminium ring. Thermowell is mounted by a shift pipe union into a straight or an oblique welded-on piece and the like.

### Electrical connection



- a) 1x Pt100, Pt500, Pt1000, Ni1000 two-wire connections  
 b) 1x Pt100, Pt500, Pt1000, Ni1000 four-wire connections  
 c) 2x Pt100, Pt500, Pt1000, Ni1000, two-wire connections  
 B - white, R - red



### Technical specifications

#### Measuring resistor:

1xPt100, 1xPt500, 1xPt1000, 1xNi1000<sup>1)</sup>  
 accuracy class A, B according to EN 60751,  
 fourwire inside wiring (cable 4x0.22 mm<sup>2</sup>)  
 twowire inside wiring (cable 2x0.56 mm<sup>2</sup>)  
 2xPt100, 2xPt500, 2xPt1000, accuracy class B  
 according to EN 60751, two-wire inside wiring  
 (cable 4x0.22 mm<sup>2</sup>)

#### Measuring range:

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

#### Measuring current:

Pt100 0.3 to 1 mA  
 Pt500 0.1 to 0.7 mA  
 Pt1000 0.1 to 0.3 mA  
 Ni1000 up to 0.8 mA

#### Dielectric strength:

500 V eff

#### Electrical insulation resistance:

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

#### Materials:

Thermowell - stainless steel W.Nr. 1.4541  
 Stem - brass  
                   - stainless steel W.Nr. 1.4541  
 Inside wiring Cu

#### Connecting Leads Resistance R<sub>s</sub> for two-wire connections:

- cable 4x0.22 mm<sup>2</sup> ... 0.17 Ω/m (two core)  
 - cable 2x0.56 mm<sup>2</sup> ... 0.066 Ω/m (two core)

#### Housing:

IP 67

Архангельск (8182)63-90-72  
 Астана +7(7172)727-132  
 Белгород (4722)40-23-64  
 Брянск (4832)59-03-52  
 Владивосток (423)249-28-31  
 Волгоград (844)278-03-48  
 Вологда (8172)26-41-59  
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 Ижевск (3412)26-03-58  
 Казань (843)206-01-48

Калининград (4012)72-03-81  
 Калуга (4842)92-23-67  
 Кемерово (3842)65-04-62  
 Киров (8332)68-02-04  
 Краснодар (861)203-40-90  
 Красноярск (391)204-63-61  
 Курск (4712)77-13-04  
 Липецк (4742)52-20-81  
 Магнитогорск (3519)55-03-13  
 Москва (495)268-04-70  
 Мурманск (8152)59-64-93  
 Набережные Челны (8552)20-53-41

Нижний Новгород (831)429-08-12  
 Новокузнецк (3843)20-46-81  
 Новосибирск (383)227-86-73  
 Орел (4862)44-53-42  
 Оренбург (3532)37-68-04  
 Пенза (8412)22-31-16  
 Пермь (342)205-81-47  
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 Рязань (4912)46-61-64  
 Самара (846)206-03-16  
 Санкт-Петербург (812)309-46-40  
 Саратов (845)249-38-78

Смоленск (4812)29-41-54  
 Сочи (862)225-72-31  
 Ставрополь (8652)20-65-13  
 Тверь (4822)63-31-35  
 Томск (3822)98-41-53  
 Тула (4872)74-02-29  
 Тюмень (3452)66-21-18  
 Ульяновск (8422)24-23-59  
 Уфа (347)229-48-12  
 Челябинск (351)202-03-61  
 Череповец (8202)49-02-64  
 Ярославль (4852)69-52-93

Type	Description	
• T1027-2	Cable Resistance Temperature Sensor	
Code	Temperature Sensor	Measuring Range
• 01	1xPt100, Four-wire Inside Wiring	-40 to +180 °C
◦ 02	1xPt500, 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
◦ 22	1xPt500, 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
◦ 05	2xPt500, Two-wire Inside Wiring	-40 to +180 °C
◦ 06	2xPt1000, Two-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	
• 1	B	
◦ 2	A (for Sensors with Four-wire Inside Wiring only)	
Code	Nominal Length L2 [mm]	
• 104	40 (no for code S31)	
◦ 111	111 (no for code S32 and S33)	
◦ 112	126 (no for code S32 and S33)	
114	146 (no for code S32 and S33)	
117	176 (no for code S32 and S33)	
123	236 (no for code S32 and S33)	
999	Other	
Code	Stem - Outside Diameter D [mm]	Stem Coat Material
• S31	∅ 6 (for Nominal Lengths L2 = 111, 126, 146, 176 and 236 mm)	W.Nr. 1.4541
• S32	∅ 6 (for Nominal Length L2 = 40 mm) + Seal Ring	brass
◦ S33	∅ 6 (for Nominal Length L2 = 40 mm)	brass
Code	Cable - Nominal Length L1 [mm]	
• K216	1600	
◦ K220	2000	
• K225	2500	
• K240	4000	
K260	6000	
K999	Other	
Code	Outside Isolation / Shading / Inside Isolation	Ambient Temperature of Cable
• 01	Silicone Isolation / Copper Braiding / FEP	-50 to +180 °C
Code	Close Cable	
• 00	Flying Leads	
Code	OPTIONAL ACCESSORIES	
Code	Product Certifications	
• GR	GOST R Certificate	
Code	Calibration	
◦ KTE31A	Single Sensor Calibration in Three Customer's Given Temperature Points (-40 to +180 °C)	
◦ KTE31A	Double Sensor Calibration in Three Customer's Given Temperature Points (-40 to +180 °C)	
KTE9	Other	
Code	Thermowells	
• J01	Thermowell, Version A, Length L=34.5 mm, Stainless Steel W.Nr. 1.4541, PN 63, G1/4" Thread (for code S33 and S31)	
• J02	Thermowell, Version A, Length L=34.5 mm, Stainless Steel W.Nr. 1.4541, PN 63, M12x1.5 Thread (for code S33 and S31)	
• J03	Thermowell, Version B, Length L=54 mm, Stainless Steel W.Nr. 1.4541, PN 63, G1/2" Thread (for code S32)	
• J04	Thermowell, Version B, Length L=100 mm, Stainless Steel W.Nr. 1.4541, PN 63, G1/2" Thread (for code S32)	
• J05	Thermowell, Version B, Length L=160 mm, Stainless Steel W.Nr. 1.4541, PN 63, G1/2" Thread (for code S32)	
• J06	Thermowell, Version B, Length L=54 mm, Stainless Steel W.Nr. 1.4541, PN 63, M20x1.5 Thread (for code S32)	
• J07	Thermowell, Version B, Length L=100 mm, Stainless Steel W.Nr. 1.4541, PN 63, M20x1.5 Thread (for code S32)	
• J08	Thermowell, Version B, Length L=160 mm, Stainless Steel W.Nr. 1.4541, PN 63, M20x1.5 Thread (for code S32)	
◦ J11	Thermowell, Version C, Length L=100 mm, Stainless Steel W.Nr. 1.4541, PN 63, G1/2" Thread (for code S31)	
◦ J12	Thermowell, Version C, Length L=150 mm, Stainless Steel W.Nr. 1.4541, PN 63, G1/2" Thread (for code S31)	
◦ J13	Thermowell, Version C, Length L=85 mm, Stainless Steel W.Nr. 1.4541, PN 63, G1/2" Thread (for code S31)	
◦ J14	Thermowell, Version C, Length L=120 mm, Stainless Steel W.Nr. 1.4541, PN 63, G1/2" Thread (for code S31)	
◦ J15	Thermowell, Version C, Length L=210 mm, Stainless Steel W.Nr. 1.4541, PN 63, G1/2" Thread (for code S31)	
◦ J16	Thermowell, Version C, Length L=100 mm, Stainless Steel W.Nr. 1.4541, PN 63, M20x1.5 Thread (for code S31)	
◦ J17	Thermowell, Version C, Length L=150 mm, Stainless Steel W.Nr. 1.4541, PN 63, M20x1.5 Thread (for code S31)	
◦ J18	Thermowell, Version C, Length L=85 mm, Stainless Steel W.Nr. 1.4541, PN 63, M20x1.5 Thread (for code S31)	
◦ J19	Thermowell, Version C, Length L=120 mm, Stainless Steel W.Nr. 1.4541, PN 63, M20x1.5 Thread (for code S31)	
◦ J20	Thermowell, Version C, Length L=210 mm, Stainless Steel W.Nr. 1.4541, PN 63, M20x1.5 Thread (for code S31)	
J99	Other	

• ... Ex Stock Version

◦ ... Marked Version can be Dispatched up to 10 Working Days

## Cable Resistance Temperature Sensors T1027

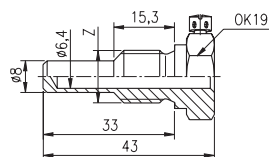
J99	Other
<b>Code</b>	<b>Welded-on Pieces</b>
◦ N01	Straight Welded-on Piece G1/4", L=22 mm, Carbon Steel
◦ N02	Straight Welded-on Piece M12x1.5, L=22 mm, Carbon Steel
◦ N03	Straight Welded-on Piece G1/2", L=20 mm, Carbon Steel
◦ N04	Straight Welded-on Piece M20x1.5, L=20 mm, Carbon Steel
◦ N05	Oblique 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
<b>Code</b>	<b>Sleeve, Mounting Band and Machine</b>
• PP1	Sleeve for Stem Diameter 6 mm, Material Brass, with Mounting Band and Machine, Material Stainless Steel W.Nr. 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 W.Nr. 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 W.Nr. 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 W.Nr. 1.4301, Use up to 400 °C, for Attaching a Pipe from 140 to 220 mm
<b>Example of order: T1027-2 01 1 104 S32 K216 01 00 KTE31A (-40, 50, 150)</b>	
• ... Ex Stock Version      ◦ ... Marked Version can be Dispatched up to 10 Working Days	

	<b>OPTIONAL ACCESSORIES</b>		
<b>Type</b>	<b>Description</b>		
• P	Fixing Shift Pipe Union for Sheath Temperature Sensor		
<b>Code</b>	<b>Version</b>	<b>Tmax</b>	<b>pmax</b>
• S <sup>1)</sup>	With Stainless Steel Cutting Ring, Pipe Union of Stainless Steel Material	600 °C / 0.1 MPa	4 MPa / 100 °C
T <sup>2)</sup>	With PTFE Sealing Ring, Pipe Union of Stainless Steel Material	200 °C / 0.1 MPa	0.6 MPa / 100 °C
<b>Code</b>	<b>Connection Thread Z</b>		
• 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		
<b>Code</b>	<b>Outside Diameter of Stem Sensor</b>		
• D60	6 mm		
<b>Example of Order: PS M04 D60</b>			

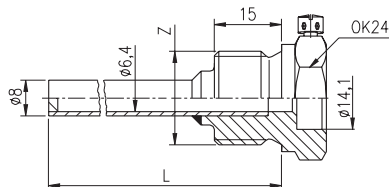
- ... Ex Stock Version
- <sup>6)</sup> ... Adjustable nominal length only for first time of mounting.
- <sup>7)</sup> ... Always adjustable nominal length.

## Thermowells - stainless steel W.Nr. 1.4541 for PN 63

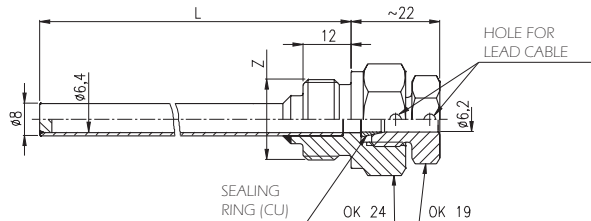
Version A for code S31, S33



Version B for code S32



Version C for code S31



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