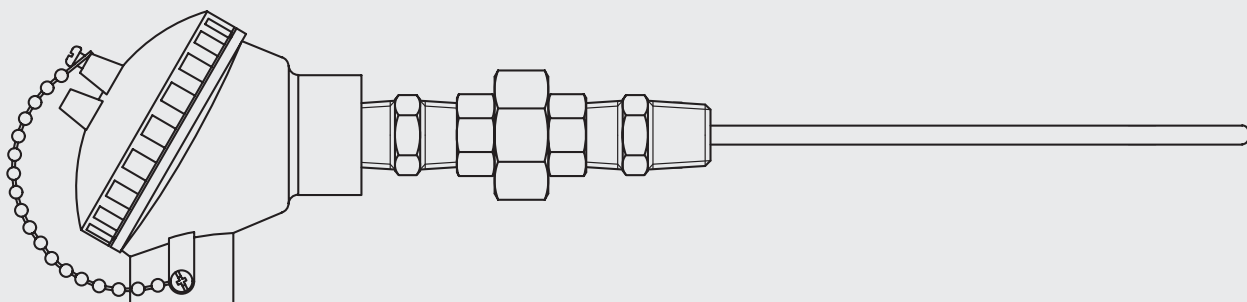


Spring loaded resistance thermometer

FOR USE WITH THERMOWELLS

S100-101-102-103-160-161-162-163
CONFIGURATIONS

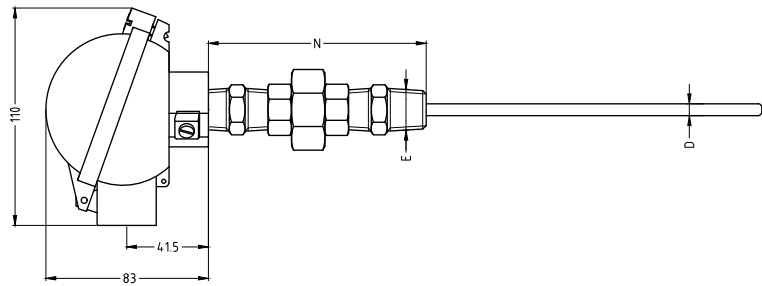
Ex ic-ec RTD



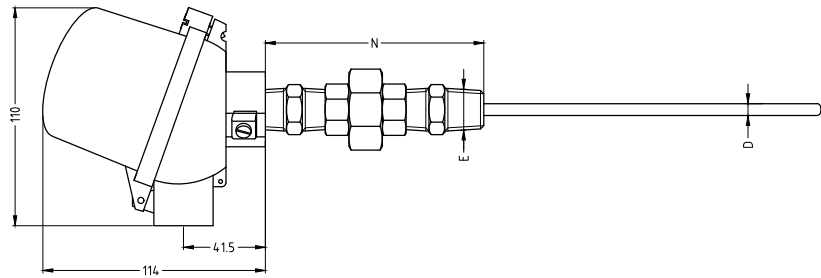
RODAX^o
new temperature solutions

Product series PT100RN/WN

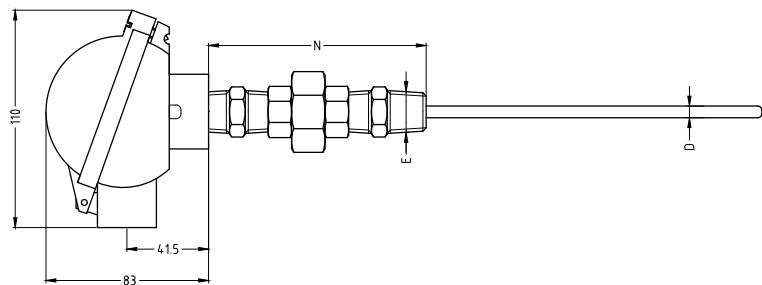
S100



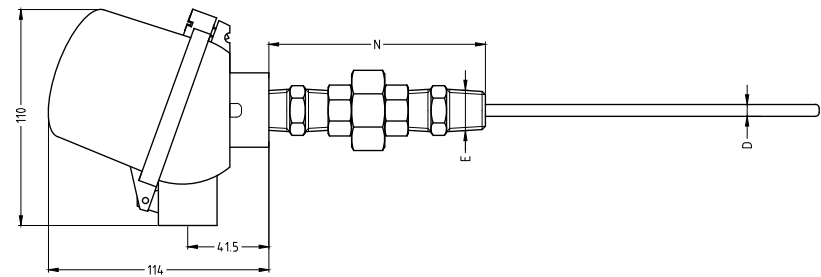
S101



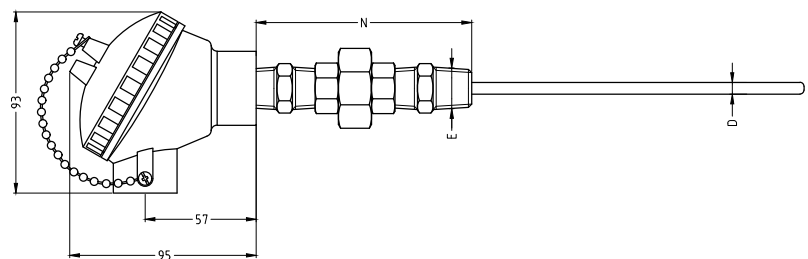
S102



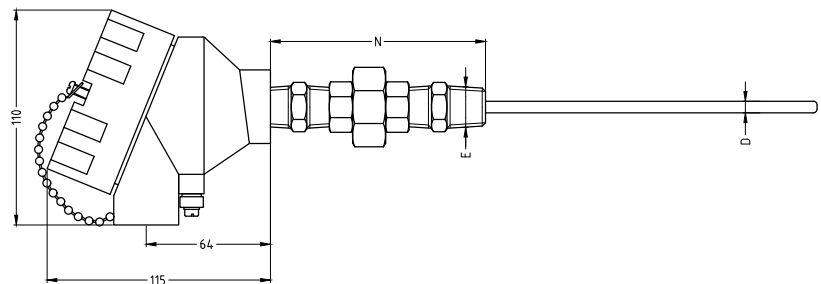
S103



S160 & S161



S162 & S163



Features assembly

The industrial spring loaded configuration guarantees a positive contact between the sensing part of the temperature probe and the bottom of the thermowell, thus reducing the response time. In order to calculate the correct element length, we need the Z-length: this is the total bore depth of the thermowell.

The assemblies can be delivered with an aluminium or stainless steel connection head combined with a high quality thermocouple element with MgO mineral insulated metal sheathed cable, providing excellent stability and reproducibility.

Sensor diameters up to 12,7mm.

Technical specification assembly

- Connection head aluminium (S100-S101-S102-S103-S160-S162) or SS316 (S161-S163).
- Ambient temperature range assembly: -45/+80 °C; this can be limited depending on the materials applied or in case a temperature transmitter is used.
- IP-68 protection degree (body – cover) with silicone rubber O-ring. The assembly protection degree (IP-68) can be attained but depends on the use of correct cable gland(s) and on the correct mounting to thermowells.
- Cover: hinged type or screw type with chain.
- Several sensor diameters and lengths are possible.

Table 1: Configuration

Connection head type

Choice between:

- Connection head types S100 / S101 / S102 / S103 with hinged type cover with 1 or 2 conduit openings.
- Connection head types S160 / S161 / S162 / S163 with screw type cover with 1 or 2 conduit openings.
- Connection head supplied with O-ring in silicone rubber (between body and cover).

	Conduit	Material	Coating	Colour
S100	00A1 1x conduit	Aluminium	Epoxy Corrosion category EN ISO 12944-2: C4	RAL9002 Grey white
S101	01A1 1x conduit	Aluminium	Epoxy Corrosion category EN ISO 12944-2: C4	RAL9002 Grey white
S100/101	00A2/01A2 2x conduits	Aluminium	Epoxy Corrosion category EN ISO 12944-2: C4	RAL9002 Grey white
S102	02S1 1x conduit	Polyamide PA6	None	Blue
S103	03S1 1x conduit	Polyamide PA6	None	Blue
S160	60A1 1x conduit	Aluminium	Epoxy Corrosion category EN ISO 12944-2: C4	RAL9002 Grey white
S161	61S1 1x conduit	SS316	None	SS316 natural colour
S162	62B2 2x conduits	Aluminium	Polyurethane spray on primer Corrosion category EN ISO 12944-2: C5-M	RAL7035 Light grey
S163	63S2 2x conduits	SS316	None	SS316 natural colour

Table 2: Measuring inserts main models

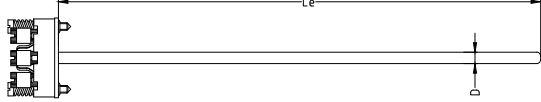
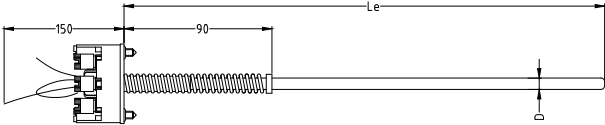
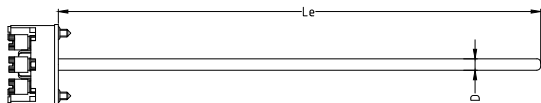
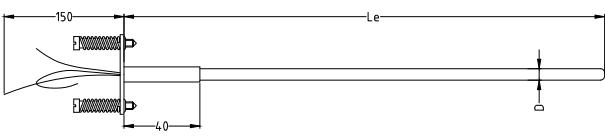
	Terminal	Total spring	
PVC	Ceramic spring loaded terminal block 2/3/4/6 or 8 terminals	10 mm We recommend a spring loading of +/-5 mm	
PVB	Hi-tech spring loaded thermoplast (moisture and shock proof) terminal block 2/3/4 or 6 terminals	40 mm We recommend a spring loading of +/-20 mm	
PVA	Hi-tech spring loaded thermoplast (moisture and shock proof) terminal block 2/3/4 or 6 terminals	10 mm We recommend a spring loading of +/-5 mm	
PUA	Spring loaded mounting plate with flying leads of 150 mm	10 mm We recommend a spring loading of +/-5 mm	

Table 3: Equipment for potentially explosive atmospheres

Certification

A	ATEX
I	IECEX
G	GOST-R

Explosive atmosphere

G	Gas

Table 4: Measuring inserts details

Details

- Maximum temperature: 550 °C
- Minimum insulation resistance: 1000 MOhm at 500VDC, T_{amb}=20 °C
- Conductors: material Cu
- Metal sheath: SS321 / 1.4541

PT100 element

S	D	Option	HV
Single	Double		High vibration

Diameter ØD

D3	D3,2	D4,5	D4,8	D6	D6,35	D8	D9,53	D12,7	Other diameters on request
3,0 mm	3,2 mm	4,5 mm	4,8 mm	6,0 mm	6,35 mm	8,0 mm	9,53 mm	12,7 mm	

Electrical connection

W2	W3	W4 (*)	(*) for OD 3 mm: dual sensors max 2x3 wire
2 wire	3 wire	4 wire	

Accuracy

A1	A3	A5	A6	A10	Other accuracies on request
Class A IEC EN 60751 $\pm(0.15+0.002 t)^{\circ}\text{C}$	1/3 DIN 1/3 class B	1/5 DIN 1/5 class B	1/6 DIN 1/6 class B	1/10 DIN 1/10 class B	

Table 5: Extension details (E and N)

Details

Nipple-union-nipple extension with minimum length N of 110 mm in stainless steel SS316L. In order to achieve longer lengths, pipe nipples will be used instead of hex nipples.

Extension connection (E)

E405	E406	Other dimensions on request
1/2"NPT	3/4"NPT	

Extension length (N)

N110	N160	Other lengths on request
110 mm	160 mm	
with hex nipples	with pipe nipples	

Total bore depth thermowell

Definition total bore depth thermowell (Z) in mm below.

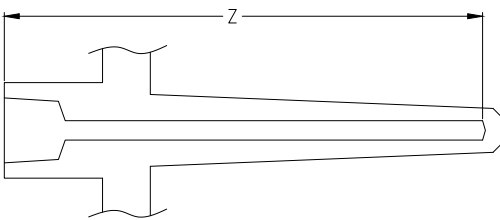
	Z.....
 mm

Table 6: Connection head details

Connection head single/double conduits (SC/DC)

SC173	SC405	DC173	DC405
1X M20x1.5	1X 1/2"NPT	2x M20x1.5	2X 1/2"NPT

Table 7: Connection head accessories

DC heads

- **For DC connection heads: One conduit plugged**
Please use the following code

Material	Brass	PM0200
	Nickel plated brass	PM0210
	Stainless steel SS316	PM2107

Table 8: Certification possibilities

Certificates

Following tests and certificates are possible and are either done in-house or done by an external party.




Code	Certificates
Q04210	Functional test report sensor
Q04230	Calibration report (measuring points to be indicated) E.g. 0/100 °C
Q05220	Calibration report by accredited calibration lab retraceable (measuring points to be indicated)
Q05230	Calibration report by accredited calibration lab ISO/IEC 17025 (BELAC) (measuring points to be indicated)
Q02040	Test report EN10204-2.2
Q04250	Transmitter programming. Range and burn-out settings to be indicated

Thermal data related to product series PT100RN/WN

The maximum process temperature T_p (in °C) and the relation to the temperature class is as follows:

Maximum process temperature T_p (°C)	75	90	125	190	285	435	>435
Temperature class (°C)	T6	T5	T4	T3	T2	T1	T_p+10
Maximum surface temperature T of the Assembly (°C)	85	100	135	200	300	450	T_p+10

Certificates for product series PT100RN/WN

ATEX 2014/34/EU	ATEX EU-type examination certificate 18ATEX0060 X	
IECEX 02	IECEX DEK 18.0032 X	
GOST-R	GOST EAC RU C-BE.ГБ05B.00211	

HOW TO ORDER (example)

Code		Example	Your code
Configuration	See table 1	S162	
Main model	See table 2	PVC	
Certification	See table 3	A	
Explosion atmosphere	See table 3	G	
Pt100 element	See table 4	S	
Diameter ØD	See table 4	D6	
Electrical connection	See table 4	W3	
Accuracy	See table 4	A1	
Extension connection	See table 5	E405	
Extension length	See table 5	N110	
Total bore depth thermowell	See table 5	Z250	
Connection head SC/DC	See table 6	DC173	
Connection head accessories	See table 7	PM0210	

Ordering code example:

S162 PVC A G S D6 W3 A1 E405 N110 Z250 DC173 PM0210

For all options: please contact Rodax

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