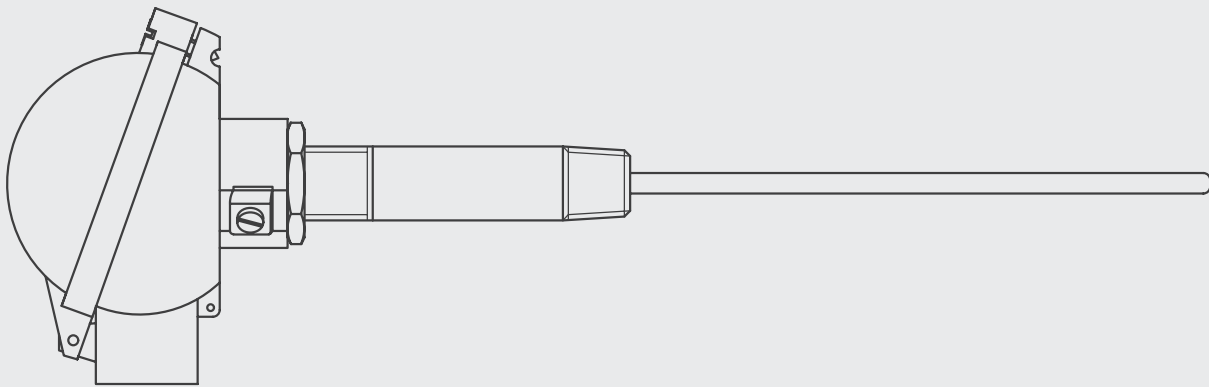


Spring loaded thermocouple

FOR USE WITH THERMOWELLS

S200-201-202-203-260-261-262-263
CONFIGURATIONS

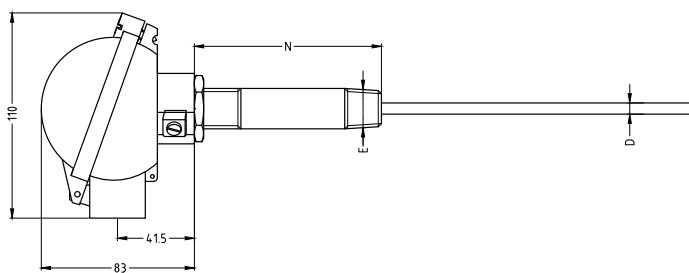
General use TC



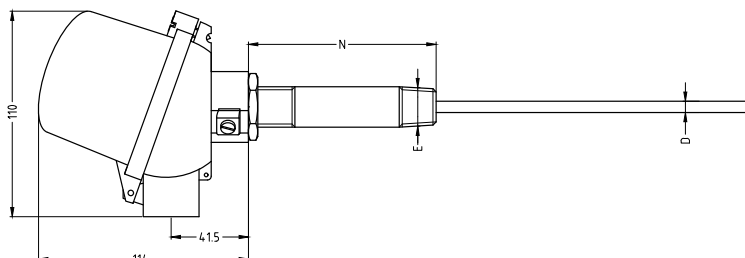
RODAX^o
new temperature solutions

Product series TCRB/WT

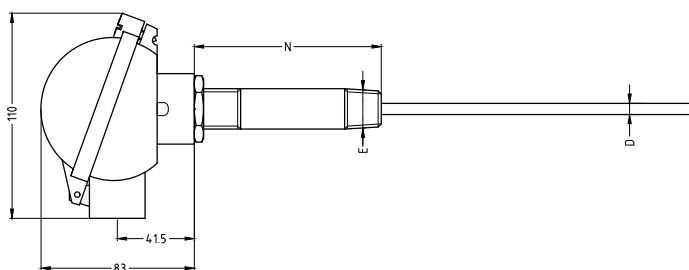
S200



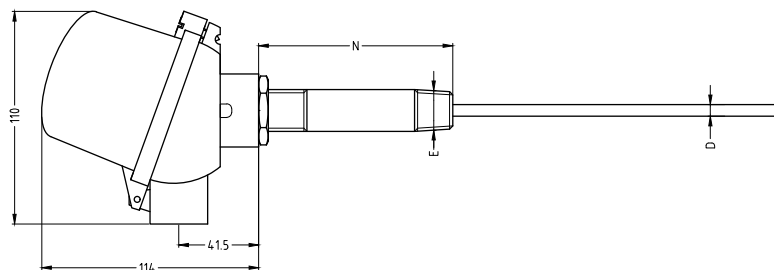
S201



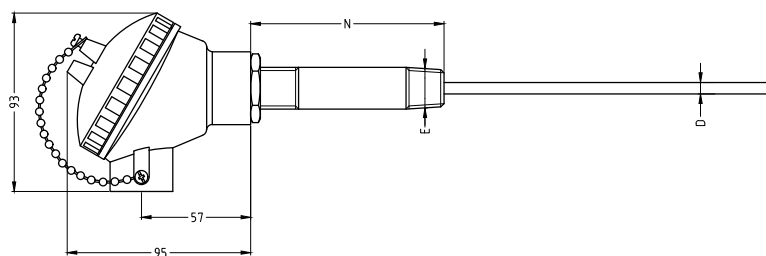
S202



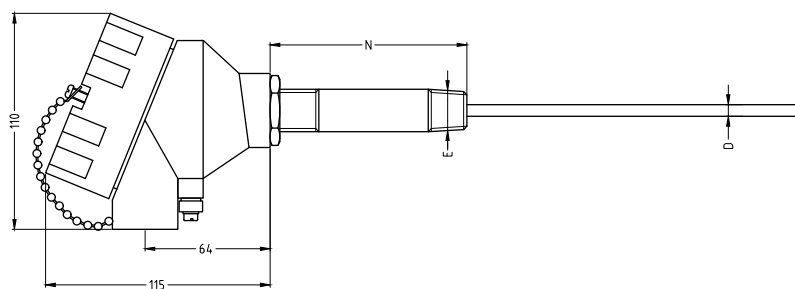
S203



S260 & S261



S262 & S263



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 (S200-S201-S202-S203-S260-S262) or SS316 (S261-S263).
- 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 S200 / S201 / S202 / S203 with hinged type cover with 1 or 2 conduit openings.
- Connection head types S260 / S261 / S262 / S263 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
S200	00A1 1x conduit	Aluminium	Epoxy Corrosion category EN ISO 12944-2: C4	RAL9002 Grey white
S201	01A1 1x conduit	Aluminium	Epoxy Corrosion category EN ISO 12944-2: C4	RAL9002 Grey white
S200/201	00A2/01A2 2x conduits	Aluminium	Epoxy Corrosion category EN ISO 12944-2: C4	RAL9002 Grey white
S202	02S1 1x conduit	Polyamide PA6	None	Blue
S203	03S1 1x conduit	Polyamide PA6	None	Blue
S260	60A1 1x conduit	Aluminium	Epoxy Corrosion category EN ISO 12944-2: C4	RAL9002 Grey white
S261	61S1 1x conduit	SS316	None	SS316 natural colour
S262	62B2 2x conduits	Aluminium	Polyurethane spray on primer Corrosion category EN ISO 12944-2: C5-M	RAL7035 Light grey
S263	63S2 2x conduits	SS316	None	SS316 natural colour

Table 2: Measuring inserts main models

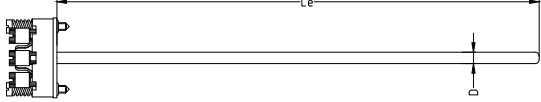
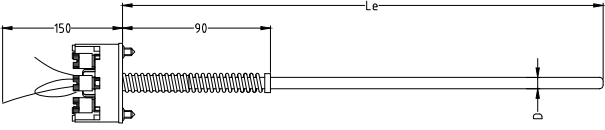
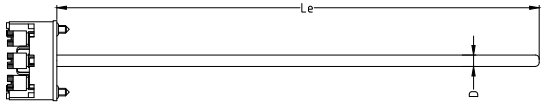
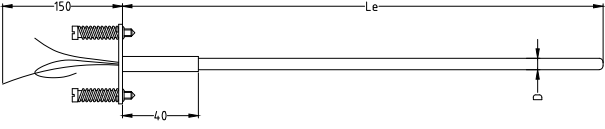
	Terminal	Total spring	
TCAA	Ceramic spring loaded terminal block 2/4/6 or 8 terminals	10 mm We recommend a spring loading of +/-5 mm	
TCBB	Hi-tech spring loaded thermoplast (moisture and shock proof) terminal block 2/4 or 6 terminals	40 mm We recommend a spring loading of +/-20 mm	
TCBA	Hi-tech spring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

Table 3: Measuring inserts details

Details

- Thermocouple types: J/K/T/E/N/S/R/B
- Thermocouple standards: EN/IEC 60584 and/or ANSI MC96-1
- Minimum insulation resistance: 1000 MOhm at 500VDC, $T_{amb}=20\text{ }^{\circ}\text{C}$
- Conductors: thermocouple material
- Metal sheath: see table

TC Type

J	K	T	E	N
Fe – CuNi	NiCr – NiAl	Cu – CuNi	NiCr – CuNi	NiCrSi – NiSi
±1.5 between -40 °C and 375 °C or ±0.004xT °C	±1.5 between -40 °C and 375 °C or ±0.004xT °C	±0.5 between -40 °C and 125 °C or ±0.004xT °C	±1.5 between -40 °C and 375 °C or ±0.004xT °C	±1.5 between -40 °C and 375 °C or ±0.004xT °C

Colour code

ANSI	IEC	Other
ANSI – MC96-1	EN/IEC 60584-1	

TC element

S	D	T
Single thermocouple	Dual thermocouple	Triple thermocouple

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	

Sheath material

M2102	M2107	M2110	M0601	M0701	M0704	M0809
SS304	SS316 Standard for TC J/T	SS310	Inconel 600 Standard for TC K	Alloy 800H	Alloy 825	Hastelloy X

Hot junction

I	Individually isolated	Hot junction electrically isolated from and shielded by the sheath.
CI	Commonly isolated	Multiple hot junctions joined to one hot junction electrically isolated from and shielded by the sheath.
DI	Dually isolated	Hot junction electrically isolated from and shielded by the sheath. For dual and triple: all circuits isolated from each other and from the sheath.
G	Grounded	Hot junction welded to the sheath.

Table 4: Extension details (E and N)

Details

Pipe Nipple + lock nut stainless steel SS316L. Size: 1/2" sched40. Standard length N=110 mm. Other lengths on request.

Extension connection (E)

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

Extension length (N)

N75	N110	Other lengths on request
75 mm	110 mm	

Total bore depth thermowell

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

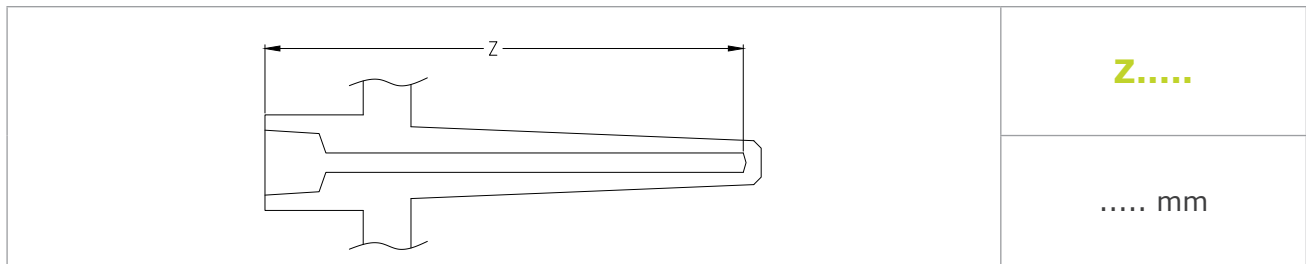


Table 5: Connection head details

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 6: 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 7: 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. 100/200 °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

HOW TO ORDER (example)

Code		Example	Your code
Configuration	See table 1	S262	
Main model	See table 2	KAA	
TC type	See table 3	K	
Colour code	See table 3	IEC	
TC element	See table 3	D	
Diameter ØD	See table 3	D6	
Sheath material	See table 3	M0601	
Hot junction	See table 3	I	
Extension connection	See table 4	E405	
Extension length	See table 4	N110	
Total bore depth thermowell	See table 4	Z250	
Connection head SC/DC	See table 5	SC173	
Connection head accessories	See table 6	PM2107	

Ordering code example:

S262 KAA A G K IEC D D6 M0601 I E405 N110 Z250 SC173 PM2107

For all options: please contact Rodax

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