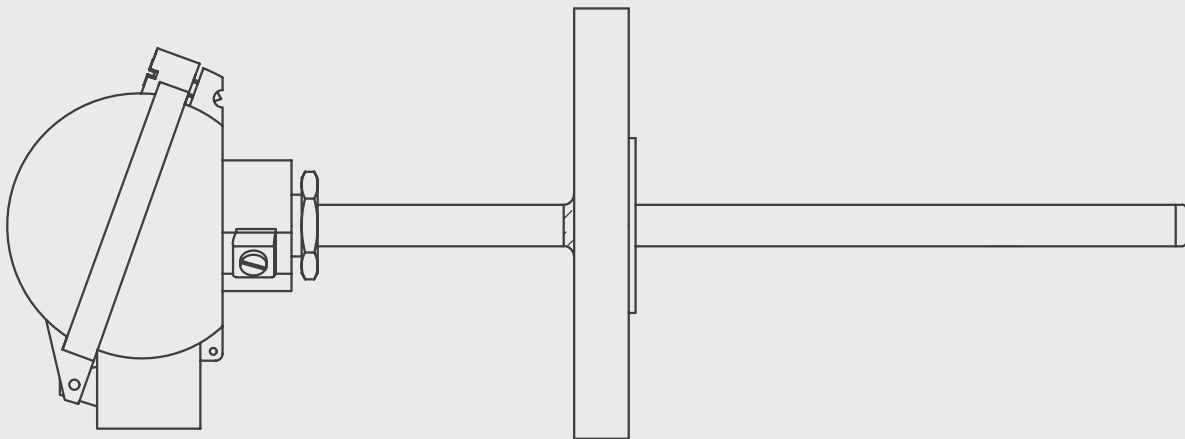


Spring loaded thermocouple

THERMOWELL & REPLACEABLE INSERT

C500-501-502-503-560-562
CONFIGURATIONS

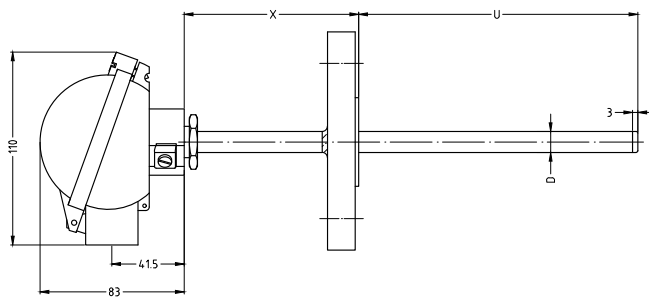
General use TC



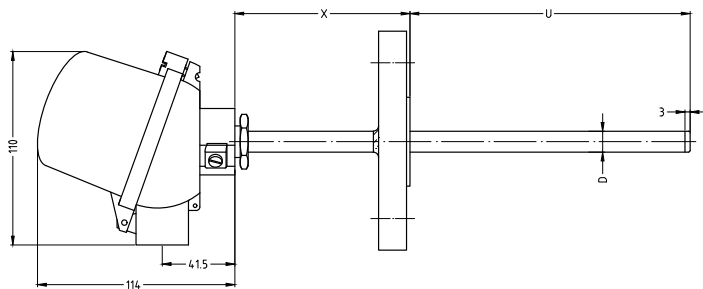
RODAX[®]
new temperature solutions

Product series TCRB/WT

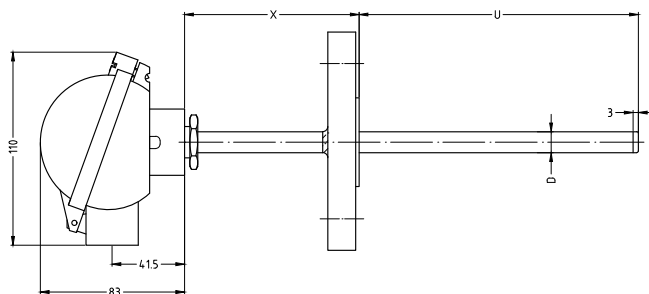
C500



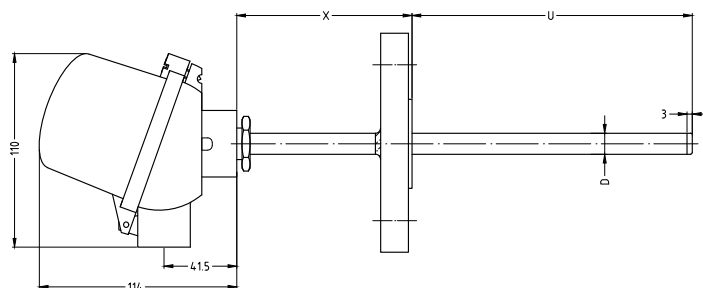
C501



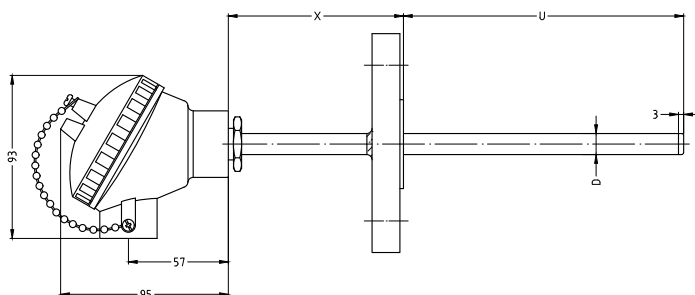
C502



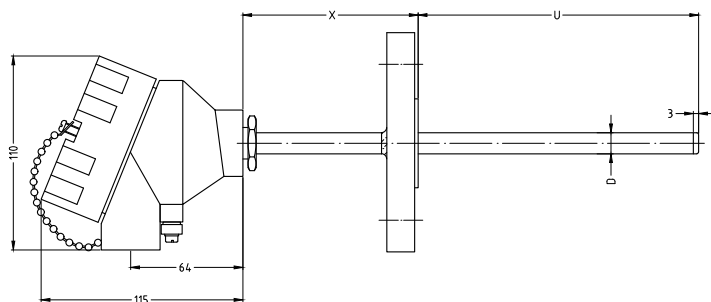
C503



C560



C562



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.

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 (C500-C501-C502-C503-C560-C562).
- 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 C500 / C501 / C502 / C503 with hinged type cover with 1 or 2 conduit openings.
- Connection head types C560 / C562 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
C500	00A1 1x conduit	Aluminium	Epoxy Corrosion category EN ISO 12944-2: C4	RAL9002 Grey white
C501	01A1 1x conduit	Aluminium	Epoxy Corrosion category EN ISO 12944-2: C4	RAL9002 Grey white
C500/501	00A2/01A2 2x conduits	Aluminium	Epoxy Corrosion category EN ISO 12944-2: C4	RAL9002 Grey white
C502	02S1 1x conduit	Polyamide PA6	None	Blue
C503	03S1 1x conduit	Polyamide PA6	None	Blue
C560	60B1 1x conduit	Aluminium	Epoxy Corrosion category EN ISO 12944-2: C4	RAL9002 Grey white
C562	62B2 2x conduits	Aluminium	Polyurethane spray on primer Corrosion category EN ISO 12944-2: C5-M	RAL7035 Light grey

Table 2: Measuring inserts main models

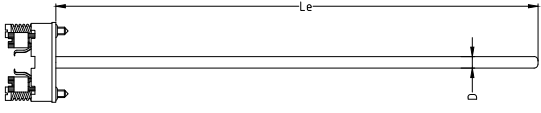
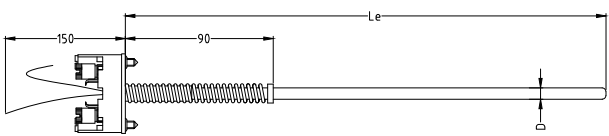
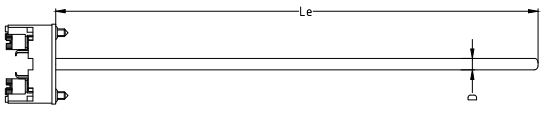
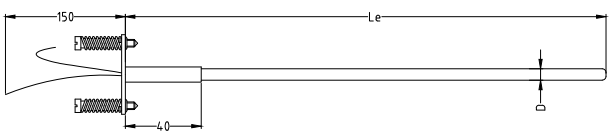
	Terminal	Total spring	
TCAA	Ceramic spring loaded terminal block 2/4/6 or 8 terminals	10 mm We recommend a spring loading of +/-5 mm	
TCBB	Hi-tech spring loaded thermoplast (moisture and shock proof) terminal block 2/4 or 6 terminals	40 mm We recommend a spring loading of +/-20 mm	
TCBA	Hi-tech spring 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, $T_{amb}=20\text{ °C}$
- 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: Thermowell–Protection tube

Protection tube

Stainless steel tube with 3 mm welded plug with rotatable or not-rotatable connection to head.

Material Protection tube

M2108	M2102	M2110/8	M0601	M0805	Other materials on request
SS316L	SS304L	SS310/310S	Inconel 600	Hastelloy C276	

Dimensions Protection tube

D0610	D0810	D1015	D1215	D1425	Other dimensions on request
6 mm OD x Wall 1 mm	8 mm OD x Wall 1 mm	10 mm OD x Wall 1,5 mm	12 mm OD x Wall 1,5 mm	14 mm OD x Wall 2,5 mm	

Positioning connection head

YR	Rotatable connection head
NR	Fixed connection head

Dimensions extension tube

OD tube		X
STD	... mm	X
Same as tube	Reinforced	Length in mm

Insertion length

U	Length in mm
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Flange details according to ANSI B16.5

Pressure rating (lbs/inch ²)	1		2		3		
	150#		300#		600#		
Nominal size	05	06	07	09	10	11	12
	1/2"	3/4"	1"	1 1/2"	2"	2 1/2"	3"
Flange facing	RF	Raised face					
	FF	Flat face					
	RTJ	Ring type joint					
Surface finish	SF	Smooth finish 3,2-6,3 µm (125-250 µ inch)					
	ST	Stock finish 3,2-12,5 µm (125-500 µ inch)					
	Other on request						

Flange details according to EN 1092-1

Pressure rating (PN)	1		2		3		4		5		6		7		
	PN 6		PN 10		PN 16		PN 25		PN 40		PN 63		PN 100		
Nominal size (DN)	D04	D05	D06	D07	D08	D09	D10	D11	D12	D13	D14	D15	D16		
	DN10	DN15	DN20	DN25	DN32	DN40	DN50	DN65	DN80	DN100	DN125	DN150	DN200		
			Flange facing						Surface finish (RA)						
Flange facing & Surface finish (RA)			A	Flat face						3,2-12,5 µm max					
			B1	Raised face PN10 to PN40						3,2-12,5 µm max					
			B2	Raised face PN63 to PN100						0,8-3,2 µm max					
			C	Tongue						0,8-3,2 µm max					
			D	Groove						0,8-3,2 µm max					
			E	Project						3,2-12,5 µm max					
			F	Recess						3,2-12,5 µm max					

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	C501	
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	
Material protection tube	See table 4	M2108	
Dimensions protection tube	See table 4	D1215	
Positioning connection head	See table 4	YR	
Pressure rating	See table 4	1	
Nominal size	See table 4	07	
Flange facing / Surface finish	See table 4	RF SF	
Dimensions extension tube	See table 4	STD	
Extention length X	See table 4	X100	
Insertion length U (mm)	See table 4	U200	
Connection head SC/DC	See table 5	DC173	
Connection head accessories	See table 6	PM0200	

Ordering code example:

C501 KAA K IEC D D6 M0601 I M2108 D1215 YR 1 07 RF SF STD X100 U200 DC173 PM0200

For all options: please contact Rodax

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Santvoortbeeklaan 33, 2100 Antwerp - Belgium

T +32 (0)3 360 90 00

E quotationdesk@rodax-europe.com

www.rodax-europe.com

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C500-Gen-TC GB 201901