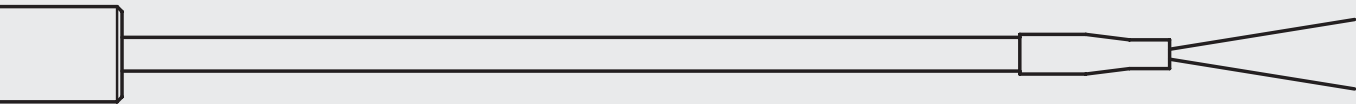


# Industrial thermocouple

WIRE & TRANSITION

**TCWA-TCWB-TCWC-TCWD-TCWH**  
**CONFIGURATIONS**

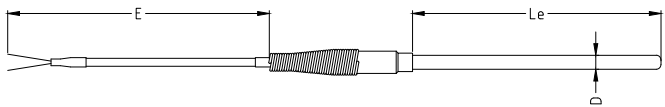
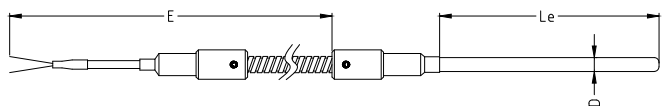
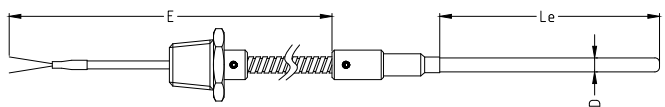
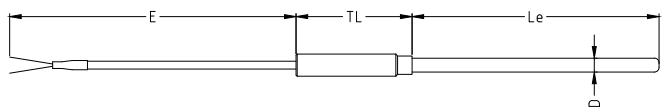
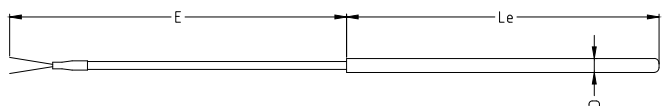
**General use TC**



**RODAX<sup>o</sup>**  
new temperature solutions

Product series TCWT

**Table 1: Sensors main models**

<p><b>TCWA</b></p>	<p>Sensor with lead wire, (threaded) transition and wire relief spring (transition OD 6,35 or 9,53 mm)</p>	
<p><b>TCWB</b></p>	<p>Sensor with lead wire, (threaded) transition and loose flexible metal hose (transition OD 6,35 or 9,53 mm)</p>	
<p><b>TCWC</b></p>	<p>Sensor with lead wire, (threaded) transition and wire flexible metal hose for threaded 1/2" NPT attachment to connection head or cable gland (transition OD 6,35 or 9,53 mm)</p>	
<p><b>TCWD</b></p>	<p>Sensor with lead wire and transition without relief spring (transition all dimension by request)</p>	
<p><b>TCWH</b></p>	<p>Sensor with lead wire and transition same OD as sensor</p>	

## Features assembly

High quality thermocouple element with MgO mineral insulated metal sheathed cable, providing excellent stability and reproducibility.

The unique properties make this basic element ideally suited for a wide variety of applications up to 1200 °C depending on thermocouple type and metal sheath.

The thermocouple element is fully bendable.

**Table 2: 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

<b>J</b>	<b>K</b>	<b>T</b>	<b>E</b>	<b>N</b>
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

<b>ANSI</b>	<b>IEC</b>	<b>Other</b>
ANSI – MC96-1	EN/IEC 60584-1	

## TC element

<b>S</b>	<b>D</b>	<b>T</b>
Single thermocouple	Dual thermocouple	Triple thermocouple

## Diameter ØD

<b>D3</b>	<b>D3,2</b>	<b>D4,5</b>	<b>D4,8</b>	<b>D6</b>	<b>D6,35</b>	<b>D8</b>	<b>D9,53</b>	<b>D12,7</b>	<b>Other diameters on request</b>
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

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

## Hot junction

<b>I</b>	Individually isolated	Hot junction electrically isolated from and shielded by the sheath.
<b>CI</b>	Commonly isolated	Multiple hot junctions joined to one hot junction electrically isolated from and shielded by the sheath.
<b>DI</b>	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.
<b>G</b>	Grounded	Hot junction welded to the sheath.

## Transition OD

<b>D635 or D953</b>	<b>DXXXLYYY</b>	<b>Other diameters on request</b>
Sensor model TCWA, TCWB and TCWC	Sensor model TCWD	
Standard OD 6,35 or 9,53 mm. Standard length 30 mm	With XXX OD in mm and YYY length in mm	

## Temperature rating transition

<b>STD</b>	Standard	Tmax = 120 °C
<b>HT</b>	High temperature	Tmax = 290 °C

**Table 3: Lead wires**

## Lead wire

Standard conductor wire gauge is AWG 24 (0,24 mm<sup>2</sup>). Other dimensions on request.

			<b>Lead wire</b>	<b>Lead wire + SS</b> external SS braiding
Teflon®	Extruded FEP internal Cu/Ni shielding	-45 °C +200 °C	<b>M01</b>	<b>MS1</b>
Kapton®	Polyimide tape	-80 °C +360 °C	<b>M02</b>	<b>MS2</b>
Glass fiber	Resin impregnation	max. +480 °C	<b>M03</b>	<b>MS3</b>
Silicone	Polyvinyl	-45 °C +160 °C	<b>M04</b>	

**Table 4: Certification possibilities**

## Certificates

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

<b>Code</b>	<b>Certificates</b>
<b>Q04210</b>	Functional test report sensor
<b>Q04230</b>	Calibration report (measuring points to be indicated) E.g. 100/200 °C
<b>Q05220</b>	Calibration report by accredited calibration lab retraceable (measuring points to be indicated)
<b>Q05230</b>	Calibration report by accredited calibration lab ISO/IEC 17025 (BELAC) (measuring points to be indicated)
<b>Q02040</b>	Test report EN10204-2.2
<b>Q04250</b>	Transmitter programming. Range and burn-out settings to be indicated

## HOW TO ORDER (example)

Code		Example	Your code
<b>Main model</b>	See table 1	KWA	
<b>TC type</b>	See table 2	K	
<b>Colour code</b>	See table 2	IEC	
<b>TC element</b>	See table 2	S	
<b>Diameter ØD</b>	See table 2	D6	
<b>Sheath material</b>	See table 2	M0601	
<b>Hot junction</b>	See table 2	I	
<b>Transition OD</b>	See table 2	D953	
<b>Temperature rating transition</b>	See table 2	STD	
<b>Lead wire</b>	See table 3	M01	
<b>Insertion length Le</b>	In mm	Le400	
<b>Lead wire length E</b>	In mm	E5000	
<b>Options (transmitters, etc.)</b>			

Ordering code example:

KWA K IEC S D6 M0601 I D953 STD M01 Le400 E5000

**For all options: please contact Rodax**

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new temperature solutions

TCW-Gen-TC GB 201810