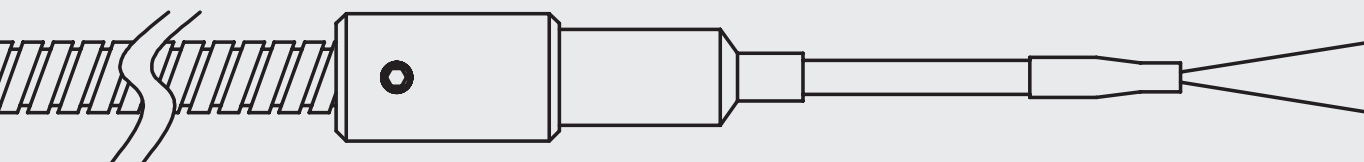


Industrial thermocouple

WIRE & TRANSITION

TCYA-TCYB-TCYC-TCYD-TCYH
CONFIGURATIONS

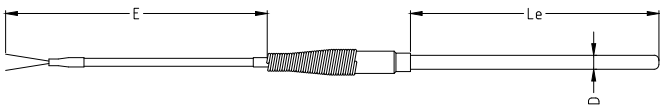
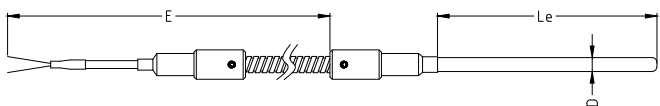
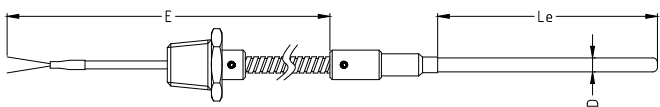
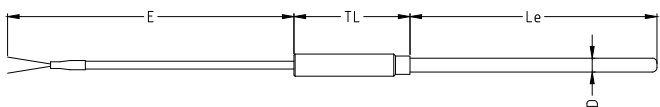
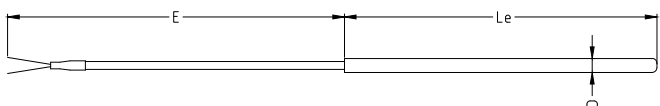
Ex e TC



RODAX^o
new temperature solutions

Product series TCWE

Table 1: Sensors main models

<p>TCYA</p>	<p>Sensor with lead wire, (threaded) transition and wire relief spring (transition OD 6,35 or 9,53 mm)</p>	
<p>TCYB</p>	<p>Sensor with lead wire, (threaded) transition and loose flexible metal hose (transition OD 6,35 or 9,53 mm)</p>	
<p>TCYC</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>TCYD</p>	<p>Sensor with lead wire and transition without relief spring (transition all dimension by request)</p>	
<p>TCYH</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: Equipment for potentially explosive atmospheres

Certification

A	ATEX
I	IECEX
G	GOST-R

Explosive atmosphere

G	Gas
D	Dust

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.

Transition OD

D635 or D953	DXXXLYYY	Other diameters on request
Sensor model TCYA, TCYB and TCYC	Sensor model TCYD	
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

STD	Standard	Tmax = 120 °C
HT	High temperature	Tmax = 290 °C

Table 4: Lead wires

Lead wire

Standard conductor wire gauge is AWG 24 (0,24 mm²). Other dimensions on request.

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

Table 5: 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




Addenda

Thermal data related to product series TCWE

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 TCWE

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
Main model	See table 1	KYA	
Certification	See table 2	A	
Explosion atmosphere	See table 2	G	
TC type	See table 3	K	
Colour code	See table 3	IEC	
TC element	See table 3	S	
Diameter ØD	See table 3	D6	
Sheath material	See table 3	M0601	
Hot junction	See table 3	I	
Transition OD	See table 3	D953	
Temperature rating transition	See table 3	STD	
Lead wire	See table 4	M01	
Insertion length Le	In mm	Le400	
Lead wire length E	In mm	E5000	
Options (transmitters, etc.)			

Ordering code example:

KYA A G K IEC S D6 M0601 I D953 STD M01 Le400 E5000

For all options: please contact Rodax

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