



TECHNICAL THERMOCOUPLES, type TC



DESCRIPTION

The function principle is based on relation e.m.f. and temperature.

Technical Thermocouples type TC are products used for temperature measuring in industrial processes ; e.m.f. is displayed on secondary automatization apparatus.

TC type products are manufactured in different variants:

- according to the measure temperature, thermocouples are :
 - with metallic sleeve
 - with ceramic sleeve
- according to fixation made in installations thermocouples are :
 - with mobile flange
 - without flange equipment
 - with welding nipple type G 1"
 - with welding nipple type Br 1"



TECHNICAL DATA

Calibration : according to ITS 90 for thermocouples :

S(Pt/Pt10%Rh)

R(Pt/Pt13%Rh)

B(Pt6%Rh/Pt30%Rh)

K(Chromel - Alumel)

Thermoelectrodes diameters :

- 0,35 mm to 0,5 mm for thermocouples type S,R

- 0,5 mm for thermocouple type B

- 0,1 mm to 3,2 mm for thermocouple type K

Working pressure :

- atmospheric pressure : it used thermocouple with ceramic sleeve or metallic sleeve with mobile flange

- 1 MPa : it used thermocouple with metallic sleeve with flange or welding nipple

Protection degree : IP 64 (acc. to SR EN 60529-95)

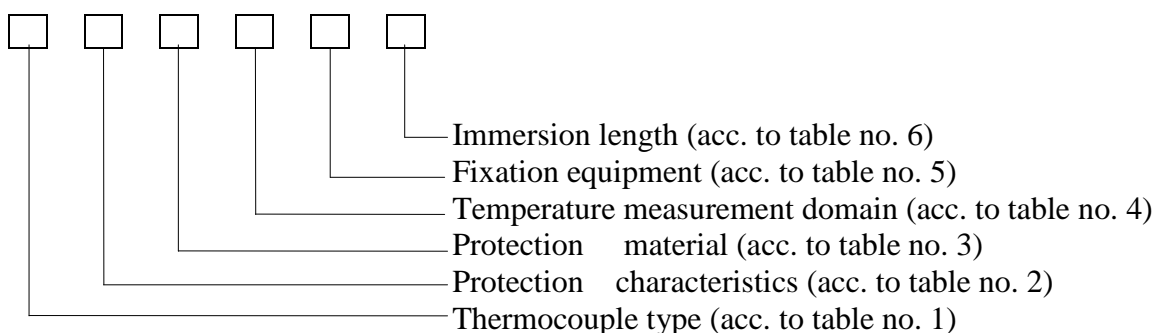
Thermocouples type TC weight :

- max. 1,8 kg $\pm 10\%$ for thermocouples with ceramic

- max. 4 kg $\pm 10\%$ for thermocouples with metallic

Time constant : max. 240 sec.

ORDERING



a) Thermocouple type (table 1)

Table 1

Code	Thermocouple type	Thermoelectrode material(+)	Thermoelectrode material (-)
1	S	Pt10%Rh	Pt
2	R	Pt13%Rh	Pt
3	B	Pt30%Rh	Pt6%Rh
4	K	Cromel	Alumel

b) Protection characteristics (table 2)

Table 2

Code	Diameter (mm)	Nominal length (mm)
01	18	500
02	18	750
03	18	1000
04	20	500
05	20	750
06	20	1000
07	20	1250
08	20	1500
09	20	2000
10	22	500
11	22	750
12	22	1000
13	22	1250
14	22	1500
15	22	1750
16	22	2000
17	24	500
18	24	750
19	24	1000
20	24	1250
21	24	1500
22	24	1750
23	24	2000

c) Protection sleeve material (table 3)

Table 3

Code	
1	Stainless steel
2	Refractor steel
3	Ceramic

d) e.m.f. characteristic - temperature domain (table 4)

Table 4

Code	Working temperature (°C)		Thermoelectrode diameter (mm)	Type of thermocouple
	continuous working	uncontinuous working		
1	-200...+1000	-200...+1200	0,1...3,2	K
2	0...1100	0...1200	0,35	S,R
3	0...1200	0...1600	0,35	S,R
4	0...1300	0...1600	0,5	S,R
5	600...1600	600...1800	0,5	B

e) Fixation equipment (table 5)

Table 5

Code	
1	Without fixation equipment
2	Mobile flange
3	Fixed flange
4	Welding nipple type G 1"
5	Welding nipple type Br 1"

f) Immersion length (table 6)

Table 6

Code	Nominal length (mm)						
	500	750	1000	1250	1500	1750	2000
	Immersion length (mm)						
1	100 <math>L_I < L_N - 100</math> (thermocouples without fixation equipment or mobile flange)*						
2	400	650	900	1150	1400	1650	1900
3	350	600	800	1000	1250	1500	1800
4	300	570	750	980	1200	1350	1750
5	280	550	700	950	1100	1300	1700
6	260	500	650	910	1000	1200	1600
7	250	450	600	850	900	1100	1500
8	200	425	500	800	800	1050	1400
9	100	400	400	700	700	1000	1000

* exception : thermocouple type S, R, B, with ceramic sleeve