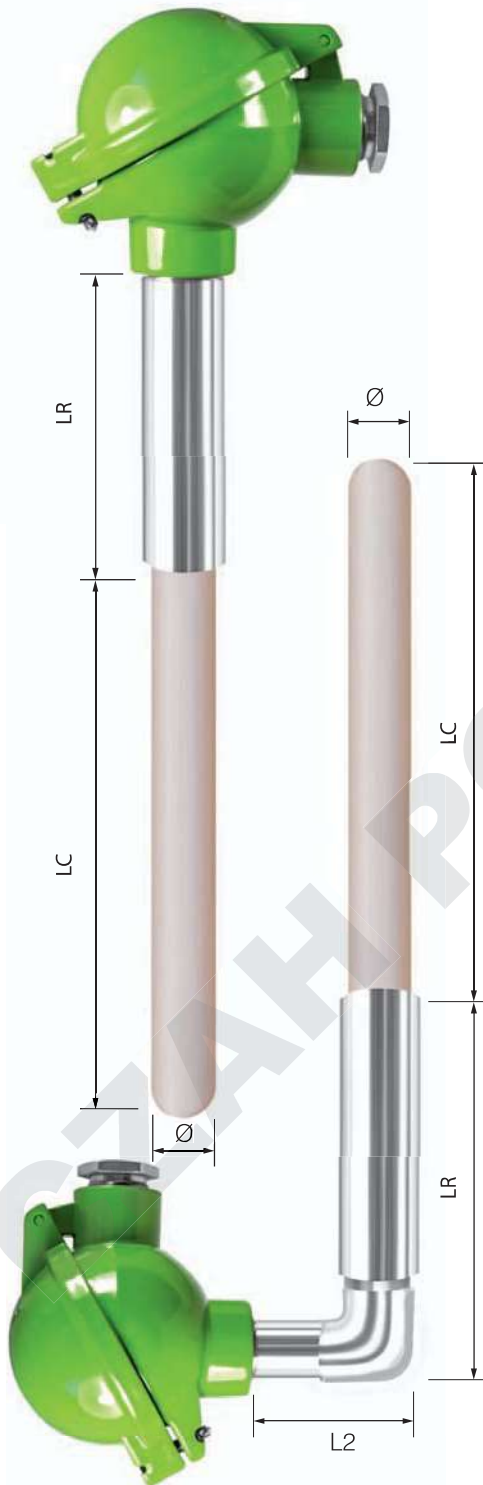


06

CERAMIC SHEATHED THERMOCOUPLES

- Ceramic sheathed thermocouples are used in furnaces, dryers, fumes canals, etc.
- With the appropriate sheath, thermocouples are suitable for use up to 1600 °C
- To suit the application, thermocouples can be supplied with a single or double ceramic sheath
- Can be calibrated in the Accredited Laboratory
- Thermocouples can be supplied complete with additional compression fittings or flanges
- Thermocouples are available in angle version



06	sensor type	accuracy class	ceramic sheath	ceramic material	length (LR/LC) [mm]	inner sheath material	head type	thermo-electrodes diameter	fixing	temperature transmitter
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type and number of sensor (table 1)
1K - simplex
2K - duplex

Give accuracy class; table I, page 63

Give diameter \varnothing of the outer tube; table 2

Give ceramic type; table 3

Give support tube length and ceramic probe length [mm] (LR / LC), for the straight thermocouple or (LR / LC / L2) for the angled thermocouple

Give the inner ceramic sheath material; table 3 (skip if not requested)

Give head type; table 4

Give thermo-electrodes diameter

Give a code of the additional fixing; table 6 (skip if not requested)

Give temperature transmitter parameters; table 7 (skip if not requested)

TAB. ORDERING CODE:

06	1S	1	22	C799	150/450	C799	DA	0,5	-	SEM206TC 4 ... 20 mA 0 ... 1200 °C
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06 – 1S – 1 – 22 – C799 – 150/450 – C799 – DA – 0,5 – SEM206TC 4 ... 20mA 0...1200°

Temperature sensor model 06 (ceramic sheathed thermocouple). Simplex, type S (PtRh10-Pt), class one '1', double ceramic protection tube with outer diameter 22.0 mm. Support tube length: 150 mm, the exposed part of ceramic tube length 450 mm, Aluminum head type DA. Thermo-electrodes with diameter 0,5 mm. Thermocouple equipped with the temperature transmitter SEM206TC 4 ... 20mA for temperature range 0 to 1200 °C.

TAB. 1 THERMO-ELECTRODES TYPES

SENSOR TYPE	THERMO-ELECTRODES TYPE	OPERATIONG TEMPERATURE RANGE (LONG TERM) [°C] *)	OPERATIONG TEMPERATURE RANGE (SHOT TERM) [°C] *)
J	Fe - CuNi	+20 ÷ 700	-180 ÷ 750
T	Cu - CuNi	-185 ÷ 300	-250 ÷ 400
K	NiCr - NiAl	0 ÷ 1100	-180 ÷ 1350
N	NiCrSi - NiSiMg	0 ÷ 1100	-270 ÷ 1300
E	NiCr - CuNi	0 ÷ 800	-40 ÷ 900
S	PtRh10 - Pt	0 ÷ 1550	-50 ÷ 1750
R	PtRh13 - Pt	0 ÷ 1600	-50 ÷ 1700
B	PtRh30 - PtRh6	0 ÷ 1600	-50 ÷ 1700

*) Given temperature ranges are mostly dependent on the outer thermowell material. Tolerance to PN-EN 60584-1, table I, page 63

TAB. 2 OUTER TUBE DIAMETER *)

CERAMIC TUBE DIAMETER [mm]	ASSEMBLING TUBE DIAMETER **) [mm]
6.00	10.0
8.00	12.0
10.0	15.0
12.0	15.0
15.0	21.3
22.0	30.0
24.0	30.0

*) other ceramic tubes diameters available on request
 **) assembling tube length depends on the length of the complete thermocouples, eg.:
 L_{1000} = 150 mm for ceramic 1000 mm long
 L_{1600} = 300 mm for ceramic 1000 mm - 1600 mm long
 L_{1600} = 500 mm for ceramic longer than 1600 mm

TAB. 3 CERAMIC MATERIAL *)

TYPE	MATERIAL	DESCRIPTION
C799	99,7% Al_2O_3	Gas-tight ceramic type C799, trade name Alsint 99,7
C610 **)	60% Al_2O_3	Gas-tight ceramic type C799, trade name Pythagoras

*) possibility of using the additional ceramic tube depends on the outer tube diameter

***) available only on request

TAB. 4 TERMINAL HEAD TYPE

TERMINAL HEAD *) **)			
TYPE	B	NA	DA
TYPE	MA ***)	G1	G2

*) different connection heads available on request ***) for technical data see table A, page 50

TAB. 5 THERMO-ELECTRODES DIAMETERS *)

TYPE	DIAMETERS *) [mm]
J, K, N	3,0
J, K, N	2,0
J, K, N	1,0
J, K, N	0,8
J, K, N, R, S, B	0,5
J, K, N, R, S, B	0,35

*) other diameters available on request

TAB. 6 FIXING *)

TYPE	DESCRIPTION	MATERIAL	THREAD	DRAWING
M2015	Compression fitting welded to the fixing tube **)	stal	M20x1.5	
G12			G1/2"	
G10			G1.0"	
G34			G3/4"	
DN20	Flange welded to the fixing tube ***)	stal	n/d	

*) additional fixing can be applied after using the suitable fixing tube diameter

***) fitting is welded to the end of the fixing tube (next to the ceramic part), different distance is available on request

****) specific dimensions acc. Table G, page 62.

TAB. 7 TEMPERATUR TRANSMITTER

If the in-head signal transmitter is requested eg. signal 4...20 mA, please give all the necessary details, such as: type, temperature range. List of transmitters is available in the table E, page 60.