

ATEX (MI) RTD PROBE
- FOR IN-HEAD TRANSMITTER **

TSCx - EX
TSOCx - EX

II 2 G Ex d IIC T6 Gb -20°C ≤ Ta ≤ +65°C
 II 2 D Ex tb IIIC T80 °C Db IP65 EC-type Certificate No. MP 08 ATEX 0002

DESIGN WITHOUT EXTENSION (TS(O)C)

for n < 150 mm, contact COMECO!

EXTENDED DESIGN WITH WELDED CONNECTION (TS(O)C1)

EXTENDED DESIGN WITH MOVABLE CONNECTION (TS(O)C2)

DESIGN WITH ADJUSTABLE CONNECTION (TS(O)C3)

DESIGN WITH GLAND-TYPE CONNECTION (TS(O)C4)

SENSITIVE ELEMENT	TEMPERATURE RANGE	DIMENSIONS		
		n [mm]	d [mm]	wires

1 x Pt (RB,RD,RF,RG)	T9 -50...200 °C	50...500	4	2, 3*
	T1 -50...400 °C		5	
	T24 -50...500 °C	50...1500	6	2, 3, 4*
	T11* -50...600 °C		8, 10, 12, 14, 16, 20	2, 3, 4
	T2* -200...600 °C	50...3000	6*, 8, 10	2x2(3)*
2(3) x Pt (RB,RD,RF,RG)	T4* 0...800 °C		12, 14, 16, 20	2x2(3), 3x2
	T26 -200...150 °C			
	T22 -200...200 °C			
1 x Cu (RH, RK)	T9 -50...200 °C	50...1500	6	2, 3, 4*
		50...3000	8, 10, 12, 14, 16, 20	
2 x Cu (RH, RK)	T9 -50...200 °C	50...3000	8, 10	2x2
			12, 14, 16, 20	2x2(3)*
1 x PTC (RP, RQ)	T12 -50...100 °C	50...1500	6	2, 3
		50...3000	8, 10, 12, 14	
2 x PTC (RP, RQ)		50...3000	8, 10, 12, 14	2x2

1 x Pt (RB,RD,RF,RG)	T9 -50...200 °C	50...50000	3*	2, 3*
	T1 -50...400 °C		4.5	2, 3*
	T24 -50...500 °C		6	2, 3, 4*
	T11* -50...600 °C		8	2, 3, 4
	T2* -200...600 °C	50...50000	6, 8	2x2, 2x3*
2 x Pt (RB,RD,RF,RG)	T4* 0...800 °C			
	T22 -200...200 °C			

Protection head:
 EG(SS), EGS, EGW(SS), EX8, EX8W, EX10(SS), EX10W(SS), EX8WD, EX10WD (see Appendix - Protection Heads)

Electrical entry:
 - cable gland(s): SS or brass, cemented, ID 7.5 mm
 - threaded head conduit(s)

Process connection 'G' (nipple or union nut):
 - M16x1.5(Q0), M18x1.5(Q1), M20x1.5(Q2), M27x2(Q5), M33x2(Q25)
 - 3/8"(Q3/Q9), 1/2"(Q4/Q10), 3/4"(Q6/Q11), 1"(Q12/Q15)
 - welded or adjustable flange
 - other
 - w/o mounting appliances

Thread length:
 - cylindrical thread: T = 15 mm
 - NPT thread: according to ANSI B1.20.1

Extension length:
 m = 0...1500 mm

Extension diameter: (for TS(O)C1 and TS(O)C2 only, [mm])

Probe diameter 'd'	3, 4 mm	4.5...6 mm	8 mm	10 mm	10+ mm
Ext. length 'm'					
up to 50 mm	8	d	d	d	d
50...150 mm	8	8	d	d	d
150...500 mm	10	10	10	d	d
500+ mm	14	14	14	14	d

Tip shape:
 standard or narrowed (see Appendix - Tip Shapes)

Process pressure:

Probe design	TS(O)C, TS(O)C1	TS(O)C2	TS(O)C4	TS(O)C3
Max. pressure *	25 bar	16 bar	6 bar	0 bar

Sheath material:
 1.4301(M1), 1.4401/1.4404(M9), 1.4541(M2), 1.4571(M3), 1.4362(M15)

Wire material:
 Cu, Ni, or Ag

Accuracy class:
 'A', 'B', or '2xB' (see Appendix - RTD Tolerance)

* Please contact COMECO!

** Order transmitter separately!!!

Ordering code TS★(1,2,3,4) - (MI -) G0'n0".G1G2.G3.G4.G6.G7.G9'9".G10.G11.G12.G13.G14 - #1.#2 - EX

Code	Feature or option	Code values
★	Base model variant	C - standard (w/ terminal block), OC - prepared for in-head transmitter (w/o terminal block)
G0'	Protection head	EG - type "EG", EGS - type "EGS" ⁽¹¹⁾ , EGSS - type "EGSS" ⁽¹¹⁾ , EGW - type "EGW", EGWSS - type "EGWSS" ⁽¹¹⁾ , EX8 - type "EX8", EX8W - type "EX8W", EX10 - type "EX10", EX10SS - type "EX10SS" ⁽¹¹⁾ , EX10W - type "EX10W", EX10WSS - type "EX10WSS" ⁽¹¹⁾ , EX8WD - type "EX8WD", EX10WD - type "EX10WD"
G0"	Electrical entry ('n' - number of entries ⁽¹²⁾)	G - gland, U2 - M20x1.5, U4 - G1/2", U6 - G3/4", U10 - 1/2" NPT, U11 - 3/4" NPT
G1	Number of RTD sensors	1, 2, or 3 ⁽¹¹⁾
G2	Sensor	RB - Pt50, RD - Pt100, RF - Pt500, RG - Pt1000, RH - Cu50, RK - Cu100, RP - PTC 1k, RQ - PTC 2k
G3	Temperature range	T1 - -50...400 °C, T2 - -200...600 °C, T4 - 0...800 °C, T9 - -50...200 °C, T11 - -50...600 °C, T22 - -200...200 °C, T24 - -50...500 °C, T26 - -200...150 °C
G4	Diameter 'd' [mm]	regular design 4, 5, 6, 8, 10, 12, 14, 16, 20
	MI design	3 ⁽¹¹⁾ , 4.5, 6, 8
G6	Probe length 'n' [mm] ⁽¹⁾	50...50000 (see table overleaf)
G7	Probe length 'm' [mm] ⁽²⁾	0...1500
G9'	Mounting connection	X - no mounting appliances ⁽³⁾ , Q0 - M16x1.5, Q1 - M18x1.5, Q2 - M20x1.5, Q3 - G3/8", Q4 - G1/2", Q5 - M27x2, Q6 - G3/4", Q9 - 3/8" NPT, Q10 - 1/2" NPT, Q11 - 3/4" NPT, Q12 - G1", Q15 - 1" NPT, Q25 - M33x2, Uxx - union nut (xx - same as for Qxx), F - flange (specify!), Z - other connection (specify!)
G9"	Compression fitting ferrule ⁽⁴⁾	BR - brass, GR - graphite, SS - stainless steel, TF - Teflon®
G10	Sheath material (wetted parts)	regular design M1 - 1.4301, M2 - 1.4541, M3 - 1.4571, M9 - 1.4401 (1.4404), M15 - 1.4362 ⁽¹¹⁾
	MI design	M2 - 1.4541, M3 - 1.4571, M9 - 1.4401 (1.4404)
G11	Accuracy class	X - none ⁽⁵⁾ , A - 'A', B - 'B', C - '2xB'
G12	Number of wires	2, 3, 4 ⁽¹¹⁾
G13	Wire material ⁽⁶⁾	CU - copper ⁽⁷⁾ , NI - nickel, AG - silver ⁽⁸⁾
G14	Tip shape	X - standard closed, N - narrowed ⁽⁸⁾
#1	Options	X - none, OV - vibration proof (spring terminals, MgO or Silicone filled, secured screws) ⁽⁸⁾ , OP - electrochemically polished sheath surface ⁽⁹⁾
#2	Incorporated devices	X - none, T - in-head transmitter ⁽⁹⁾ , A - local indicator ⁽¹⁰⁾

⁽¹⁾ 'n+m' for TS(O)C3 and TS(O)C4!

⁽²⁾ Only for TS(O)C1 and TS(O)C2!

⁽³⁾ Only for TS(O)C!

⁽⁴⁾ Only for TS(O)C4!

⁽⁵⁾ For non-Pt sensors

⁽⁶⁾ Only for Pt sensors!

⁽⁷⁾ Not applicable to non-MI (regular) RTDs for above 500 °C!

⁽⁸⁾ Only for non-MI (regular) design!

⁽⁹⁾ Only for variant 'OC'! See transmitter datasheets and order separately!

⁽¹⁰⁾ With windowed head only! See indicator datasheets and order separately!

⁽¹¹⁾ Contact COMECO!

⁽¹²⁾ Applicable for the selected head type (see Appendix - Protection Heads)



ATEX (MI) T/C PROBE

- FOR IN-HEAD TRANSMITTER **

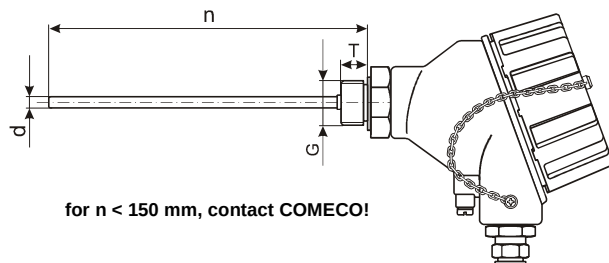
II 2 G Ex d IIC T6 Gb -20°C ≤ T_a ≤ +65°C
II 2 D Ex tb IIIC T80 °C Db IP65

EC-type Certificate No. MP 08 ATEX 0002

TSCx - EX

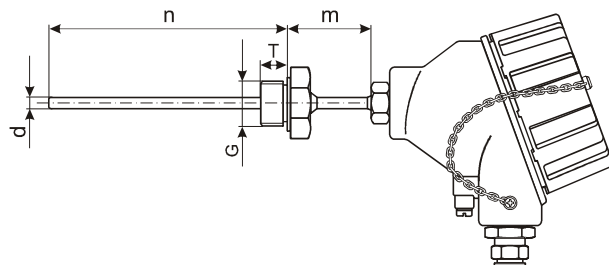
TSOCx - EX

DESIGN WITHOUT EXTENSION (TS(O)C)

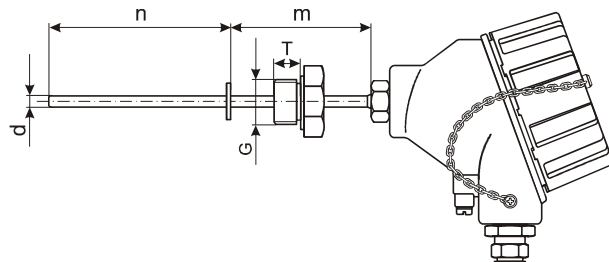


for n < 150 mm, contact COMECO!

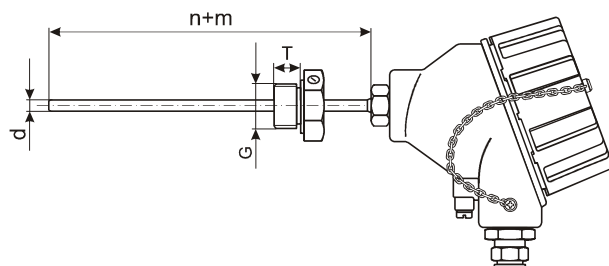
EXTENDED DESIGN WITH WELDED CONNECTION (TS(O)C1)



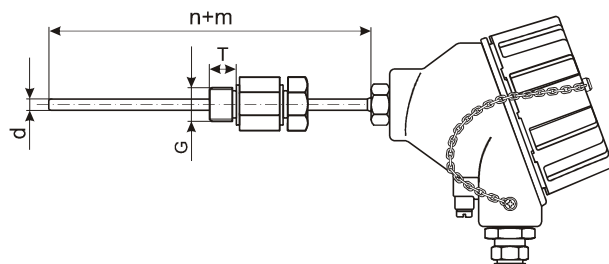
EXTENDED DESIGN WITH MOVABLE CONNECTION (TS(O)C2)



DESIGN WITH ADJUSTABLE CONNECTION (TS(O)C3)



DESIGN WITH GLAND-TYPE CONNECTION (TS(O)C4)



SENSITIVE ELEMENT	TEMPERATURE RANGE	DIMENSIONS		
		n [mm]	d [mm]	wires

Regular Design

1(2) x J	T4	0...800 °C	50...1500	6	2
1(2) x L			50...3000	8, 10, 12, 14, 16, 20, 22	(2x2)
1(2) x K	T3	0...850 °C	50...1500	6	2
	T16	0...1100 °C	50...3000	8, 10, 12, 14, 16, 20, 22	(2x2)
	T6*	0...1150 °C	50...3000	8, 10, 12, 14, 16, 20, 22	(2x2)
1(2) x E	T3	0...850 °C	50...1500	6	2
	T13	0...1000 °C	50...3000	8, 10, 12, 14, 16, 20, 22	(2x2)
1(2) x S	T16	0...1100 °C	50...1500	6	2
	T6*	0...1150 °C	50...3000	8, 10, 12, 14, 16, 20, 22	(2x2)

MI Design

1 x J	T4	0...800 °C	50...50000	3, 4.5, 6, 8, 10*	2
2 x J					2x2
1 x T	T8	0...400 °C	50...50000	3, 4.5, 6, 8, 10*	2
2 x T					2x2
1 x K	T3	0...850 °C	50...50000	3, 4.5, 6, 8, 10*	2
1 x N, 1 x E	T16	0...1100 °C	50...50000	3, 4.5, 6, 8, 10*	2
2 x K	T6*	0...1150 °C	50...50000	3, 4.5, 6, 8, 10*	2x2
2 x N, 2 x E	T6*	0...1250 °C	50...50000	3, 4.5, 6, 8, 10*	2x2
2 x S	T16	0...1100 °C	50...10000	3, 4.5, 6	2x2
2 x R	T6*	0...1150 °C	50...10000	3, 4.5, 6	2x2

Protection head:

EG(SS), EGS, EGW(SS), EX10(SS), EX10W(SS), EX8WD, EX10WD (see

Appendix - Protection Heads)

Electrical entry:

- cable gland(s): SS or brass, cemented, ID 7.5 mm
- threaded head conduit(s)

Process connection 'G' (nipple or union nut):

- M16x1.5(Q0), M18x1.5(Q1), M20x1.5(Q2), M27x2(Q5), M33x2(Q25)
- 3/8"(Q3/Q9), 1/2"(Q4/Q10), 3/4"(Q6/Q11), 1"(Q12/Q15)
- welded or adjustable flange
- other
- w/o mounting appliances

Thread length:

- cylindrical thread: T = 15 mm
- NPT thread: according to ANSI B1.20.1

Extension length:

m = 0...1500 mm

Extension diameter: (for TS(O)C1 and TS(O)C2 only, [mm])

Probe diameter 'd'	3 mm	4.5, 6 mm	8 mm	10 mm	10+ mm
Ext. length 'm'					
up to 50 mm	6	d	d	d	d
50...150 mm	8	8	d	d	d
150...500 mm	10	10	10	d	d
500+ mm	14	14	14	14	d

Tip shape (hot junction design):

standard (isolated) (see Appendix - Tip Shapes)

Process pressure:

Probe design	TS(O)C, TS(O)C1	TS(O)C2	TS(O)C4	TS(O)C3
Max. pressure *	25 bar	16 bar	6 bar	0 bar

Sheath material:

1.4401/1.4404(M9), 1.4541(M2), 1.4571(M3), 1.4762/1.4749(M4), 1.4841(M5), 1.4845(M6), 1.4876(M7), 2.4816(M8), 1.4362(M15)

MI sheath material:

1.4401/1.4404(M9), 1.4541(M2), 1.4571(M3), 1.4762/1.4749(M4), 1.4841(M5), 1.4876(M7), 2.4816(M8), Microbell®(M10)

Accuracy class:

'1' or '2' (see Appendix - T/C Tolerance)

* Please contact COMECO!

** Order transmitter separately!!!

Ordering code TS*(1,2,3,4) - (MI -) G0'n0".G1G2.G3.G4.G6.G7.G9'9".G10.G11 - #1.#2 - EX

Code	Feature or option	Code values
★	Base model variant	C - standard (w/ terminal block), OC - prepared for in-head transmitter (w/o terminal block)
G0'	Protection head	EG - type "EG", EGS - type "EGS" ⁽⁹⁾ , EGSS - type "EGSS" ⁽⁹⁾ , EGW - type "EGW", EGWSS - type "EGWSS" ⁽⁹⁾ , EX8 - type "EX8", EX8W - type "EX8W", EX10 - type "EX10", EX10SS - type "EX10SS" ⁽⁹⁾ , EX10W - type "EX10W", EX10WSS - type "EX10WSS" ⁽⁹⁾ , EX8WD - type "EX8WD", EX10WD - type "EX10WD"
G0"	Electrical entry ('n' - number of entries ⁽¹⁰⁾)	G - gland, U2 - M20x1.5, U4 - G1/2", U6 - G3/4", U10 - 1/2" NPT, U11 - 3/4" NPT
G1	Number of thermocouples	1 or 2
G2	Thermocouple	regular design E - type "E", J - type "J", K - type "K", L - type "L", R - type "R", S - type "S"
	MI design	E - type "E", J - type "J", K - type "K", N - type "N", R - type "R", S - type "S", T - type "T"
G3	Temperature range	T3 - 0...850 °C, T4 - 0...800 °C, T6 - 0...1200 °C ⁽⁹⁾ , T13 - 0...1000 °C, T16 - 0...1100 °C
G4	Diameter 'd' [mm]	regular design 6, 8, 10, 12, 14, 16, 20 ⁽¹⁾ , 22 ⁽¹⁾
	MI design	3, 4.5, 6, 8, 10
G6	Probe length 'n' [mm] ⁽²⁾	50...50000 (see table overleaf)
G7	Probe length 'm' [mm] ⁽³⁾	0...1500
G9'	Mounting connection	X - no mounting appliances ⁽⁴⁾ , Q0 - M16x1.5, Q1 - M18x1.5, Q2 - M20x1.5, Q3 - G3/8", Q4 - G1/2", Q5 - M27x2, Q6 - G3/4", Q9 - 3/8" NPT, Q10 - 1/2" NPT, Q11 - 3/4" NPT, Q12 - G1", Q15 - 1" NPT, Q25 - M33x2, Uxx - union nut (xx - same as for Qxx), F - flange (specify!), Z - other connection (specify!)
G9"	Compression fitting ferrule ⁽⁵⁾	BR - brass, GR - graphite, SS - stainless steel, TF - Teflon®
G10	Sheath material (wetted parts)	regular design M2 - 1.4541, M3 - 1.4571, M4 - 1.4762 (1.4749), M5 - 1.4841, M6 - 1.4845, M7 - 1.4876, M8 - 2.4816, M9 - 1.4401 (1.4404), M15 - 1.4362
	MI design	M2 - 1.4541, M3 - 1.4571, M4 - 1.4762 (1.4749), M5 - 1.4841, M7 - 1.4876, M8 - 2.4816, M9 - 1.4401 (1.4404), M10 - Nicrobell®
G11	Accuracy class	1 - '1' ⁽⁹⁾ , 2 - '2'
#1	Options	X - none, OV - vibration proof (spring terminals ⁽⁹⁾ , secured screws), OP - electrochemically polished sheath surface ⁽⁶⁾
#2	Incorporated devices	X - none, T - in-head transmitter ⁽⁷⁾ , A - local indicator ⁽⁸⁾

⁽¹⁾ d = 21.3 mm for sheath materials 'M5' and 'M6'

⁽²⁾ 'n+m' for TS(O)C3 and TS(O)C4!

⁽³⁾ Only for TS(O)C1 and TS(O)C2!

⁽⁴⁾ Only for TS(O)C!

⁽⁵⁾ Only for TS(O)C4!

⁽⁶⁾ Only for non-MI (regular) design!

⁽⁷⁾ Only for variant 'OC'! See transmitter datasheets and order separately!

⁽⁸⁾ With windowed head only! See indicator datasheets and order separately!

⁽⁹⁾ Contact COMECO!

⁽¹⁰⁾ Applicable for the selected head type (see Appendix - Protection Heads)