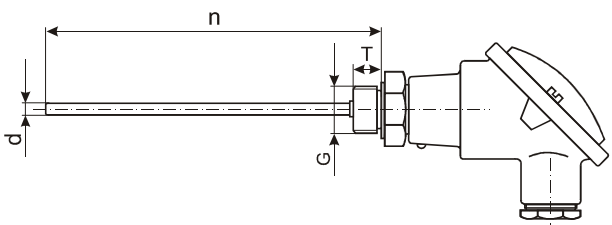
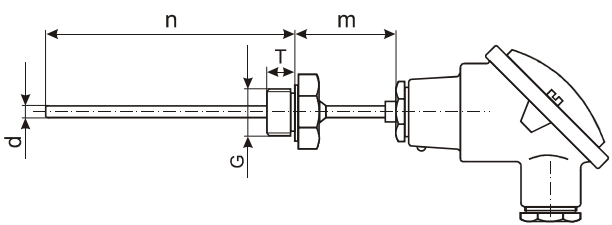
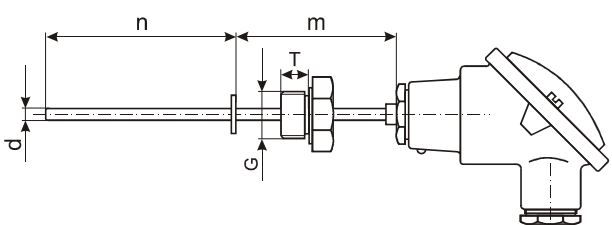
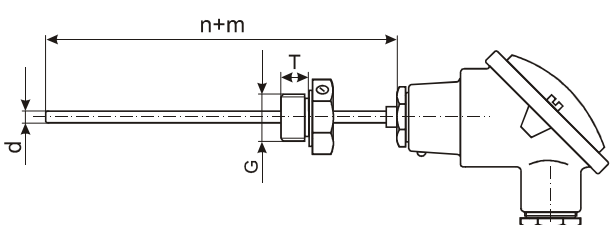
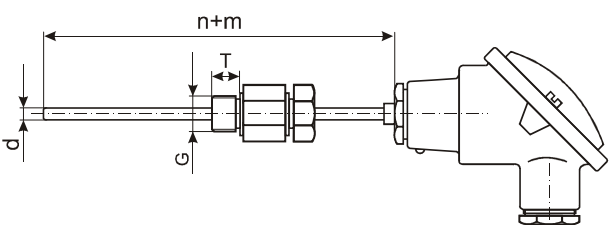


(MI) RTD PROBE WITH PROTECTION HEAD - FOR IN-HEAD TRANSMITTER **	TSCx TSOCx	SENSITIVE ELEMENT	TEMPERATURE RANGE	DIMENSIONS																																						
				n [mm]	d [mm]	wires																																				
Sheath - stainless steel (see Appendix - Sheath materials) Head - aluminum, stainless steel, iron, or plastic (see Appendix - Protection heads)		Regular Design																																								
DESIGN WITHOUT EXTENSION (TS(O)C) 	TSCx	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																																					
			T2* -200...600 °C	50...3000	6*	2x2(3)*																																				
			T4* 0...800 °C		8, 10																																					
			T26 -200...150 °C	50...3000	12, 14, 16, 20	2x2(3), 3x2																																				
			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																																							
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																																						
		MI Design																																								
EXTENDED DESIGN WITH WELDED CONNECTION (TS(O)C1) 	TSCx	1 x Pt (RB,RD,RF,RG)	T9 -50...200 °C	50...50000	3*	2, 3*																																				
			T1 -50...400 °C		4.5																																					
			T24 -50...500 °C		6																																					
			T11* -50...600 °C		8																																					
			T2* -200...600 °C		6, 8		2x2, 2x3*																																			
			T4* 0...800 °C																																							
T22 -200...200 °C																																										
EXTENDED DESIGN WITH MOVABLE CONNECTION (TS(O)C2) 	TSCx	2 x Pt (RB,RD,RF,RG)	T9 -50...200 °C	50...50000	3*	2, 3*																																				
			T1 -50...400 °C		4.5																																					
			T24 -50...500 °C		6																																					
			T11* -50...600 °C		8																																					
			T2* -200...600 °C		6, 8		2x2, 2x3*																																			
			T4* 0...800 °C																																							
T22 -200...200 °C																																										
DESIGN WITH ADJUSTABLE CONNECTION (TS(O)C3) 	TSCx	1 x Pt (RB,RD,RF,RG)	T9 -50...200 °C	50...50000	3*	2, 3*																																				
			T1 -50...400 °C		4.5																																					
			T24 -50...500 °C		6																																					
			T11* -50...600 °C		8																																					
			T2* -200...600 °C		6, 8		2x2, 2x3*																																			
			T4* 0...800 °C																																							
T22 -200...200 °C																																										
DESIGN WITH GLAND-TYPE CONNECTION (TS(O)C4) 	TSCx	2 x Pt (RB,RD,RF,RG)	T9 -50...200 °C	50...50000	3*	2, 3*																																				
			T1 -50...400 °C		4.5																																					
			T24 -50...500 °C		6																																					
			T11* -50...600 °C		8																																					
			T2* -200...600 °C		6, 8		2x2, 2x3*																																			
			T4* 0...800 °C																																							
T22 -200...200 °C																																										
Protection head: B, MA, MB, G, N, Cx, Dx, Ex (see Appendix - Protection Heads)																																										
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																																										
Thermal isolation between nipple and metal head: (for TS(O)C only)																																										
<table border="1"> <tr> <th>Protection head</th> <th>Length 'n'</th> </tr> <tr> <td>MA, MB</td> <td>up to 50 mm</td> </tr> <tr> <td>B</td> <td>up to 100 mm</td> </tr> <tr> <td>other</td> <td>up to 150 mm</td> </tr> </table>		Protection head	Length 'n'	MA, MB	up to 50 mm	B	up to 100 mm	other	up to 150 mm	<table border="1"> <tr> <th>Maximum temperature</th> <th>Insulation material</th> </tr> <tr> <td>200 °C</td> <td>POM</td> </tr> <tr> <td>400 °C</td> <td>Teflon®</td> </tr> </table>		Maximum temperature	Insulation material	200 °C	POM	400 °C	Teflon®																									
Protection head	Length 'n'																																									
MA, MB	up to 50 mm																																									
B	up to 100 mm																																									
other	up to 150 mm																																									
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200 °C	POM																																									
400 °C	Teflon®																																									
Extension length: m = 0...1500 mm																																										
Extension diameter: (for TS(O)C1 and TS(O)C2 only, [mm])																																										
<table border="1"> <tr> <th>Probe diameter 'd'</th> <th>3, 4 mm</th> <th>4.5...6 mm</th> <th>8 mm</th> <th>10 mm</th> <th>10+ mm</th> </tr> <tr> <th>Ext. length 'm'</th> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>up to 50 mm</td> <td>8</td> <td>d</td> <td>d</td> <td>d</td> <td>d</td> </tr> <tr> <td>50...150 mm</td> <td>8</td> <td>8</td> <td>d</td> <td>d</td> <td>d</td> </tr> <tr> <td>150...500 mm</td> <td>10</td> <td>10</td> <td>10</td> <td>d</td> <td>d</td> </tr> <tr> <td>500+ mm</td> <td>14</td> <td>14</td> <td>14</td> <td>14</td> <td>d</td> </tr> </table>		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					
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																																					
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150...500 mm	10	10	10	d	d																																					
500+ mm	14	14	14	14	d																																					
Tip shape: standard, narrowed, pitted (see Appendix - Tip Shapes)																																										
Process pressure:																																										
<table border="1"> <tr> <th>Probe design</th> <th>TS(O)C, TS(O)C1</th> <th>TS(O)C2</th> <th>TS(O)C4</th> <th>TS(O)C3</th> </tr> <tr> <td>Max. pressure *</td> <td>25 bar</td> <td>16 bar</td> <td>6 bar</td> <td>0 bar</td> </tr> </table>		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																															
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!!!																																										

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

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	B - type "B", CC - type "CC", CS - type "CS" ⁽¹¹⁾ , D - type "D", DH - type "DH", DHW - type "DHW", DW - type "DW", E - type "E", EG - type "EG", EGS - type "EGS", EGSS - type "EGSS" ⁽¹¹⁾ , GS - type "GS", EGW - type "EGW", EGWSS - type "EGWSS" ⁽¹¹⁾ , ES - type "ES" ⁽¹¹⁾ , G - type "G", MA - type "MA", MB - type "MB", N - type "N"	
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 , 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⁾ , P - pitted ⁽⁸⁾	
#1	Options	X - none, OV - vibration proof (spring terminals, MgO or Silicone filled, secured screws) , OT - thermal isolation ⁽³⁾ , OP - electrochemically polished sheath surface ⁽⁸⁾	
#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!

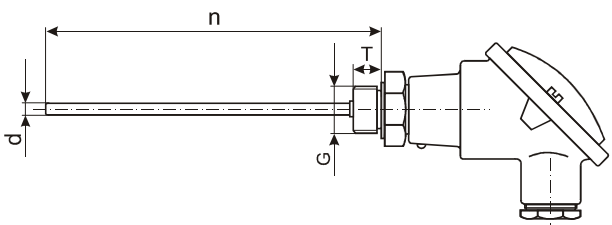
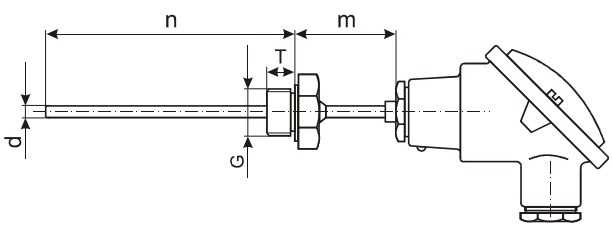
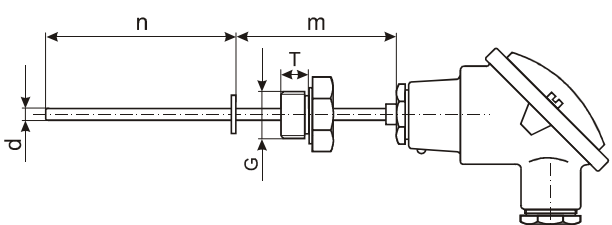
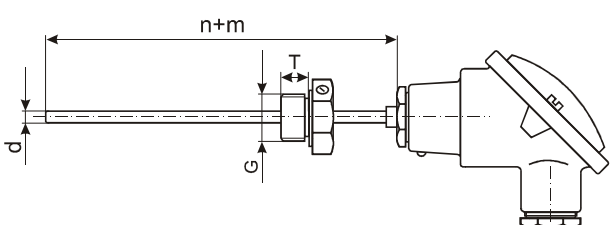
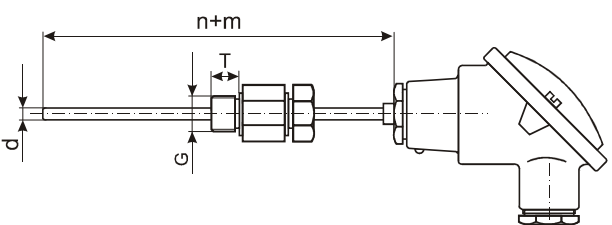

⁽⁷⁾ Not applicable to non-MI (regular) RTDs for above 500 °C!

⁽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!

(MI) T/C PROBE WITH PROTECTION HEAD - FOR IN-HEAD TRANSMITTER ** Sheath - stainless steel (see Appendix - Sheath materials) Head - aluminum, stainless steel, iron, or plastic (see Appendix - Protection heads)	TSCx TSOCx	SENSITIVE ELEMENT	TEMPERATURE RANGE	DIMENSIONS																																																															
				n [mm]	d [mm]	wires																																																													
DESIGN WITHOUT EXTENSION (TS(O)C)		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																																																													
	1(2) x R	T6*	0...1150 °C	50...3000	8, 10, 12, 14, 16, 20, 22	(2x2)																																																													
EXTENDED DESIGN WITH WELDED CONNECTION (TS(O)C1)		MI Design																																																																	
	1 x J	T4	0...800 °C	50...50000	3, 4.5, 6, 8, 10*	2																																																													
	2 x J			50...50000	3, 4.5, 6, 8, 10*	2x2																																																													
	1 x T	T8	0...400 °C	50...50000	3, 4.5, 6, 8, 10*	2																																																													
	2 x T			50...50000	3, 4.5, 6, 8, 10*	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																																																													
<p>Protection head: B, MA, MB, G, N, Cx, Dx, Ex (see Appendix - Protection Heads)</p> <p>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</p> <p>Thread length: - cylindrical thread: T = 15 mm - NPT thread: according to ANSI B1.20.1</p> <p>Thermal isolation between nipple and metal head: (for TS(O)C only)</p> <table border="1"> <thead> <tr> <th>Protection head</th> <th>Length 'n'</th> <th>Maximum temperature</th> <th>Insulation material</th> </tr> </thead> <tbody> <tr> <td>MA, MB</td> <td>up to 50 mm</td> <td>200 °C</td> <td>POM</td> </tr> <tr> <td>B</td> <td>up to 100 mm</td> <td>400 °C</td> <td>Teflon®</td> </tr> <tr> <td>other</td> <td>up to 150 mm</td> <td></td> <td></td> </tr> </tbody> </table> <p>Extension length: m = 0...1500 mm</p> <p>Extension diameter: (for TS(O)C1 and TS(O)C2 only, [mm])</p> <table border="1"> <thead> <tr> <th rowspan="2">Ext. length 'm'</th> <th colspan="5">Probe diameter 'd'</th> </tr> <tr> <th>3 mm</th> <th>4.5, 6 mm</th> <th>8 mm</th> <th>10 mm</th> <th>10+ mm</th> </tr> </thead> <tbody> <tr> <td>up to 50 mm</td> <td>6</td> <td>d</td> <td>d</td> <td>d</td> <td>d</td> </tr> <tr> <td>50...150 mm</td> <td>8</td> <td>8</td> <td>d</td> <td>d</td> <td>d</td> </tr> <tr> <td>150...500 mm</td> <td>10</td> <td>10</td> <td>10</td> <td>d</td> <td>d</td> </tr> <tr> <td>500+ mm</td> <td>14</td> <td>14</td> <td>14</td> <td>14</td> <td>d</td> </tr> </tbody> </table> <p>Tip shape (hot junction design): standard (isolated), grounded, open-tube, exposed (see Appendix - Tip Shapes)</p> <p>Process pressure:</p> <table border="1"> <thead> <tr> <th>Probe design</th> <th>TS(O)C, TS(O)C1</th> <th>TS(O)C2</th> <th>TS(O)C4</th> <th>TS(O)C3</th> </tr> </thead> <tbody> <tr> <td>Max. pressure *</td> <td>25 bar</td> <td>16 bar</td> <td>6 bar</td> <td>0 bar</td> </tr> </tbody> </table> <p>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)</p> <p>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)</p> <p>Accuracy class: '1' or '2' (see Appendix - T/C Tolerance)</p> <p>* Please contact COMECO! ** Order transmitter separately!!!</p>							Protection head	Length 'n'	Maximum temperature	Insulation material	MA, MB	up to 50 mm	200 °C	POM	B	up to 100 mm	400 °C	Teflon®	other	up to 150 mm			Ext. length 'm'	Probe diameter 'd'					3 mm	4.5, 6 mm	8 mm	10 mm	10+ mm	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	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
Protection head	Length 'n'	Maximum temperature	Insulation material																																																																
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Max. pressure *	25 bar	16 bar	6 bar	0 bar																																																															

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

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	B - type "B", CC - type "CC", CS - type "CS" ⁽⁹⁾ , D - type "D", DH - type "DH", DHW - type "DHW", DW - type "DW", E - type "E", EG - type "EG", EGS - type "EGS" ⁽⁹⁾ , EGSS - type "EGSS" ⁽⁹⁾ , GS - type "GS", EGW - type "EGW", EGWSS - type "EGWSS" ⁽⁹⁾ , ES - type "ES" ⁽⁹⁾ , G - type "G", MA - type "MA", MB - type "MB", N - type "N"
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 - Microbell®
G11	Accuracy class	1 - '1' ⁽⁹⁾ , 2 - '2'
G14	Tip shape (hot junction)	X - standard (isolated from sheath), G - grounded, E - exposed hot junction, O - open-tube design
#1	Options	X - none, OV - vibration proof (spring terminals ⁽⁹⁾ , secured screws), OT - thermal isolation ⁽⁴⁾ , 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!