

| (MI**) RTD BAYONET CABLE PROBE TSBx<br>Sheath - stainless steel (see table notes)<br>Cable - see table notes | SENSITIVE ELEMENT    | CABLE TYPE                  | TEMPERATURE RANGE                      | DIMENSIONS |              |
|--|----------------------|-----------------------------|--|------------|--------------|
|  |                      |                             |  | d [mm]     | wires        |
| <p><b>STRAIGHT-TUBE DESIGN (TSB)</b></p> <p>n = 10 ... 200 mm<br/>k = 1 ... 10 m</p>                         | 1 x Pt (RB,RD,RF,RG) | SLSL, TSL, TT<br>YY, UU, YU | T7 0...200 °C<br>T9 -50...200 °C       | 4, 4.5*, 5 | 2, 3*        |
|  | 2 x Pt (RB,RD,RF,RG) | SLSL, TSL, TT,<br>GLGL      | T1 -50...400 °C<br>T8 0...400 °C       | 6          | 2, 3, 4*     |
|  | 1 x Cu (RH, RK)      | SLSL, TSL, YY,<br>UU, YU    | T11* -50...600 °C<br>T22 -200...200 °C | 8          | 2, 3, 4      |
|  | 2 x Cu (RH, RK)      | GLGL, TT                    |  | 6, 8       | 2x2,<br>2x3* |
|  | 1 x PTC (RP, RQ)     | SLSL, TSL, YY,<br>UU, YU    | T9 -50...200 °C                        | 5*         | 2, 3*        |
|  | 2 x PTC (RP, RQ)     | GLGL, TT                    | T7 0...200 °C                          | 6, 8       | 2, 3, 4      |
| <p><b>DESIGN WITH ANGLED TERMINATION (TSBL)</b></p> <p>n = 10 ... 200 mm<br/>k = 1 ... 10 m</p>              |                      |                             |  |            |              |
| <p><b>STRAIGHT DESIGN WITH MOVABLE CONNECTION (TSBG)</b></p> <p>n = 10 ... 200 mm<br/>k = 1 ... 10 m</p>     |                      |                             |  |            |              |
| <p><b>ANGLED DESIGN WITH MOVABLE CONNECTION (TSBGL)</b></p> <p>n = 10 ... 200 mm<br/>k = 1 ... 10 m</p>      |                      |                             |  |            |              |

**Sheath material:**  
1.4301 (M1), 1.4541 (M2), 1.4571 (M3), 1.4404 (M9)

**Cable type:**  
 - GLGLP(V) (glass fiber w/ steel braid, max. 400 °C ambient temperature)  
 - SLSL or TSL (silicone, max. 250 °C ambient temperature)  
 - TT (Teflon®, max. 250 °C ambient temperature)  
 - YY (PVC, max. 100 °C ambient temperature)  
 - UU or YU (PUR, max. 80 °C ambient temperature)  
 - SFSF (mineral fiber, max. 1000 °C ambient temperature)

**Applicable cables:**

| Temp. range | Probe design | TSB, TSBG      | TSBL, TSBGL    |
|-------------|--------------|----------------|----------------|
| T12, T19    |              | all            | all            |
| T7, T9      |              | no PUR, no PVC | all            |
| T22         |              | TT             | TT, SLSL, TSL  |
| T1, T8      |              | GLGLP, SFSF    | no PUR, no PVC |
| T11         |              | SFSF           | GLGLP, SFSF    |

**Tip shape:**  
standard, narrowed, pitted (see Appendix - Tip Shapes)

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

**Cable connector:**  
4-pin (C3) (see Appendix - Connectors)

**Bayonet:**  
ø13x1... ø20x1; aluminum, brass, or stainless steel

**Available threads and HEX sizes:**

| G  | M8 | M10<br>1/8" | M12<br>1/4" | M14 | M16<br>3/8" | M18 | M20<br>1/2" |
|----|----|-------------|-------------|-----|-------------|-----|-------------|
| SW | 10 | 12(13)      | 14          | 17  | 19          | 22  | 24          |

\* Please contact COMECO!

\*\* Available only for TSBL and TSBGL!

**Ordering code** TSB(L,G,GL) - (MI -<sup>(1)</sup>) G1G2.G3.G4.G5'5".G6.G8.G9.G10.G11.G12.G14.G15 - #1

| Code | Feature or option                  | Code values   |                          |
|------|------------------------------------|---|--------------------------|
| G1   | Number of RTD sensors              | 1 or 2  |                          |
| 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, T7 - 0...200 °C, T8 - 0...400 °C, T9 - -50...200 °C, T11 - -50...600 °C <sup>(1,2,7)</sup> , T12 - 50...100 °C, T19 - 0...100 °C, T22 - -200...200 °C  |                          |
| G4   | Diameter 'd' [mm]                  | regular design  | 4, 5, 6, 8               |
|      |                                    | MI design   | 4.5, 6, 8 <sup>(7)</sup> |
| G5'  | Bayonet size <sup>(3)</sup>        | 13 - ø13x1, 14 - ø14x1, 15 - ø15x1, 17 - ø17x1, 20 - ø20x1, Z - other (specify!)  |                          |
| G5"  | Bayonet material <sup>(3)</sup>    | AL - aluminum, BR - brass, SS - stainless steel   |                          |
| G6   | Probe length 'n' [mm]              | 10...200  |                          |
| G8   | Cable length 'k' [m] and type      | 1GL...10GL - glass fiber, 1SL...10SL - silicone, 1TF...10TF - Teflon®, 1PU...10PU - polyurethane <sup>(7)</sup> , 1MF...10MF - mineral fiber, 1PV...10PV - PVC  |                          |
| G9   | Mounting connection <sup>(4)</sup> | Q0 - M16x1.5, Q1 - M18x1.5, Q2 - M20x1.5, Q3 - G3/8", Q4 - G1/2", Q7 - M12x1.5, Q8 - M14x1.5, Q10 - 1/2" NPT, Q18 - G1/8", Q19 - 1/8" NPT, Q20 - M10x1, Q23 - G1/4", Q24 - 1/4" NPT, Q26 - M8x1, Q29 - M8x1.25, Q30 - M10x1.5, Uxx - union nut (xx - same as for Qxx) |                          |
| G10  | Sheath material (wetted parts)     | M1 - 1.4301, M2 - 1.4541, M3 - 1.4571, M9 - 1.4404  |                          |
| G11  | Accuracy class                     | X - none <sup>(5)</sup> , A - 'A', B - 'B', C - '2xB'   |                          |
| G12  | Number of wires                    | 2, 3, 4 <sup>(7)</sup>  |                          |
| G14  | Tip shape                          | X - standard closed, N - narrowed <sup>(6)</sup> , P - pitted <sup>(6)</sup>  |                          |
| G15  | Connector                          | X - none, C3 - 4-pin male plug-in connector ø8 (for H5700 thermometer only)   |                          |
| #1   | Options                            | X - none, OV - vibration proof (MgO or Silicone filled) <sup>(6)</sup> , OS - cable protection SS spring (≈ 50 mm) <sup>(1)</sup> , OB - braid termination lead (only w/o connector), OP - electrochemically polished sheath surface <sup>(6)</sup>                   |                          |

<sup>(1)</sup> Available only for TSBL and TSBGL!

<sup>(2)</sup> Available only for MI design!

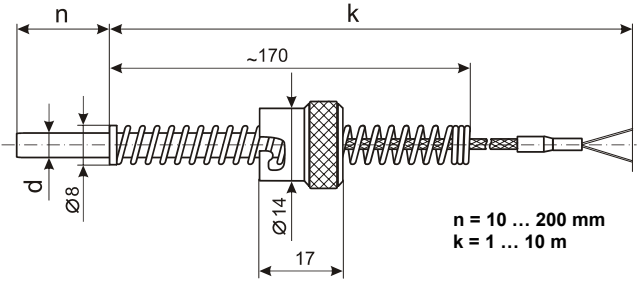
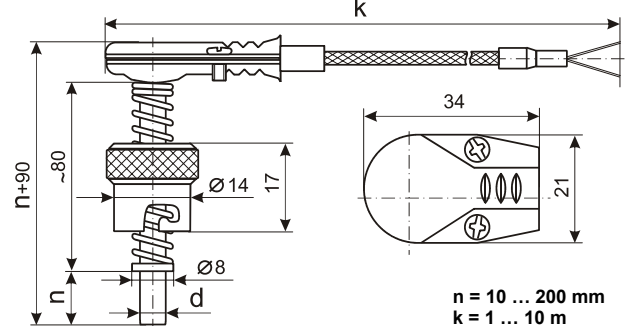
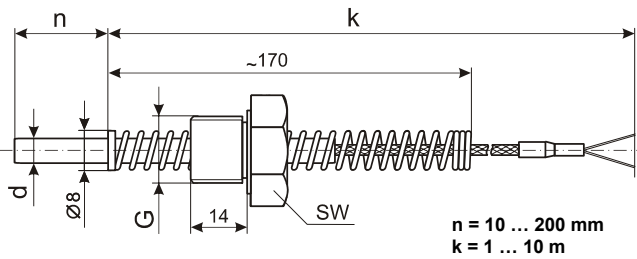
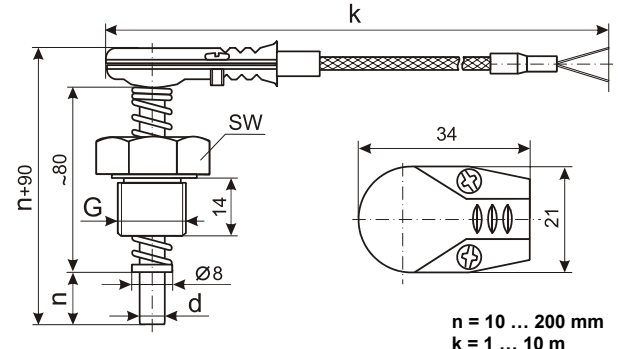
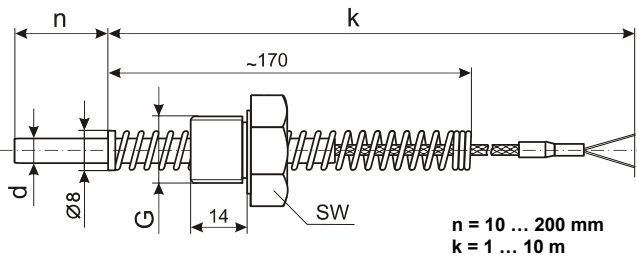
<sup>(3)</sup> Only for TSB and TSBL!

<sup>(4)</sup> Only for TSBG and TSBGL!

<sup>(5)</sup> For non-Pt sensors

<sup>(6)</sup> Only for non-MI (regular) design!

<sup>(7)</sup> Contact COMECO!

| (MI**) T/C BAYONET CABLE PROBE  | TSBx            | SENSITIVE ELEMENT   | CABLE TYPE                       | TEMPERATURE RANGE | DIMENSIONS  |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
|---|-----------------|---|----------------------------------|-------------------|-------------|-------------|-------------|----------------|-------------|-------------|----------------|-------------|--------|-------------|----------------|--------|--------|-------------|----|----|----|----|
|   |                 |   |                                  |                   | d [mm]      | wires       |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| Sheath - stainless steel (see table notes)<br>Cable - see table notes   |                 |   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| <b>Regular Design</b>   |                 |   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| <b>STRAIGHT-TUBE DESIGN (TSB)</b><br> <p>n = 10 ... 200 mm<br/>k = 1 ... 10 m</p>  | 1 x K           | SLSL, TSL, TT<br>YY, UU, YU   | T7 0...200 °C<br>T9 -50...200 °C | 4, 5, 6, 8        | 2           |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
|   |                 | SLSL, TSL, TT,<br>GLGL  | T1 -50...400 °C<br>T8 0...400 °C |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
|   |                 | GLGL, SFSF  | T4 0...800 °C<br>T3* 0...850 °C  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
|   |                 |   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| <b>DESIGN WITH ANGLED TERMINATION (TSBL)</b><br> <p>n = 10 ... 200 mm<br/>k = 1 ... 10 m</p>  | 1 x J           | SLSL, TSL, TT<br>YY, UU, YU   | T7 0...200 °C<br>T9 -50...200 °C | 4, 5, 6, 8        | 2           |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
|   |                 | SLSL, TSL, TT,<br>GLGL  | T1 -50...400 °C<br>T8 0...400 °C |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
|   |                 | GLGL, SFSF  | T4* 0...800 °C                   |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
|   |                 |   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| <b>STRAIGHT DESIGN WITH MOVABLE CONNECTION (TSBG)</b><br> <p>n = 10 ... 200 mm<br/>k = 1 ... 10 m</p>  | 1 x T           | YY, UU, YU<br>SLSL, TSL, TT<br>GLGL   | T7 0...200 °C<br>T9 -50...200 °C | 4, 5, 6, 8        | 2           |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
|   |                 |   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| <b>ANGLED DESIGN WITH MOVABLE CONNECTION (TSBGL)</b><br> <p>n = 10 ... 200 mm<br/>k = 1 ... 10 m</p>   | 1 x N,<br>1 x E | SLSL, TSL, TT<br>YY, UU, YU   | T7 0...200 °C<br>T9 -50...200 °C | 4.5, 6, 8         | 2           |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
|   |                 | SLSL, TSL, TT,<br>GLGL  | T1 -50...400 °C<br>T8 0...400 °C |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
|   |                 | GLGL, SFSF  | T4 0...800 °C<br>T3* 0...850 °C  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
|   |                 |   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| <b>STRAIGHT DESIGN WITH MOVABLE CONNECTION (TSBG)</b><br> <p>n = 10 ... 200 mm<br/>k = 1 ... 10 m</p>  | 1 x T           | YY, UU, YU<br>SLSL, TSL, TT<br>GLGL   | T7 0...200 °C<br>T9 -50...200 °C | 4.5, 6, 8         | 2           |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
|   |                 |   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| <b>MI Design **</b>   |                 |   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| <b>Sheath material:</b><br>1.4301 (M1), 1.4541 (M2), 1.4571 (M3), 1.4404 (M9), 1.4841 (M5), 2.4816 (M8)   |                 |   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| <b>Cable type:</b><br>- GLGLP(V) (glass fiber w/ steel braid, max. 400 °C ambient temperature)<br>- SLSL or TSL (silicone, max. 250 °C ambient temperature)<br>- TT (Teflon®, max. 250 °C ambient temperature)<br>- YY (PVC, max. 100 °C ambient temperature)<br>- UU or YU (PUR, max. 80 °C ambient temperature)<br>- SFSF (mineral fiber, max. 1000 °C ambient temperature) |                 |   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| <b>Applicable cables:</b>   |                 |   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
|   |                 | <table border="1"> <thead> <tr> <th>Probe design</th> <th>TSB, TSBG</th> <th>TSBL, TSBGL</th> </tr> </thead> <tbody> <tr> <td>Temp. range</td> <td>no PUR, no PVC</td> <td>all</td> </tr> <tr> <td>T7, T9</td> <td>no PUR, no PVC</td> <td>all</td> </tr> <tr> <td>T1, T8</td> <td>GLGLP, SFSF</td> <td>no PUR, no PVC</td> </tr> <tr> <td>T3, T4</td> <td>SFSF</td> <td>GLGLP, SFSF</td> </tr> </tbody> </table> |                                  | Probe design      | TSB, TSBG   | TSBL, TSBGL | Temp. range | no PUR, no PVC | all         | T7, T9      | no PUR, no PVC | all         | T1, T8 | GLGLP, SFSF | no PUR, no PVC | T3, T4 | SFSF   | GLGLP, SFSF |    |    |    |    |
| Probe design  | TSB, TSBG       | TSBL, TSBGL   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| Temp. range   | no PUR, no PVC  | all   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| T7, T9  | no PUR, no PVC  | all   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| T1, T8  | GLGLP, SFSF     | no PUR, no PVC  |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| T3, T4  | SFSF            | GLGLP, SFSF   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| <b>Tip shape:</b><br>standard (isolated), grounded, open-tube, exposed<br>(see Appendix - Tip Shapes)   |                 |   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| <b>Accuracy class:</b><br>'1' or '2' (see Appendix - T/C Tolerance)   |                 |   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| <b>Cable connector:</b><br>4-pin (C3), 'T/C standard' (C5) or 'T/C miniature' (C6)<br>(see Appendix - Connectors)   |                 |   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| <b>Bayonet:</b><br>ø13x1... ø20x1; aluminum, brass, or stainless steel  |                 |   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| <b>Available threads and HEX sizes:</b>   |                 |   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
|   |                 | <table border="1"> <thead> <tr> <th>G</th> <th>M8</th> <th>M10<br/>1/8"</th> <th>M12<br/>1/4"</th> <th>M14</th> <th>M16<br/>3/8"</th> <th>M18</th> <th>M20<br/>1/2"</th> </tr> </thead> <tbody> <tr> <td>SW</td> <td>10</td> <td>12(13)</td> <td>14</td> <td>17</td> <td>19</td> <td>22</td> <td>24</td> </tr> </tbody> </table>  |                                  |                   |             |             | G           | M8             | M10<br>1/8" | M12<br>1/4" | M14            | M16<br>3/8" | M18    | M20<br>1/2" | SW             | 10     | 12(13) | 14          | 17 | 19 | 22 | 24 |
| G   | M8              | M10<br>1/8"   | M12<br>1/4"                      | M14               | M16<br>3/8" | M18         | M20<br>1/2" |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| SW  | 10              | 12(13)  | 14                               | 17                | 19          | 22          | 24          |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| * Please contact COMECO!  |                 |   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |
| ** Available only for TSBL and TSBGL!   |                 |   |                                  |                   |             |             |             |                |             |             |                |             |        |             |                |        |        |             |    |    |    |    |

**Ordering code** TSB(L,G,GL) - (MI -<sup>(1)</sup>) G2.G3.G4.G5'5".G6.G8.G9.G10.G11.G14.G15 - #1

| Code       | Feature or option                  | Code values  |
|------------|------------------------------------|--|
| <b>G2</b>  | Thermocouple                       | regular design <b>J</b> - type "J", <b>K</b> - type "K", <b>T</b> - type "T"   |
|            |                                    | MI design <b>E</b> - type "E", <b>N</b> - type "N", <b>T</b> - type "T"  |
| <b>G3</b>  | Temperature range                  | <b>T1</b> - -50...400 °C, <b>T3</b> - 0...850 °C <sup>(5)</sup> , <b>T4</b> - 0...800 °C <sup>(5)</sup> , <b>T7</b> - 0...200 °C, <b>T8</b> - 0...400 °C, <b>T9</b> - -50...200 °C   |
| <b>G4</b>  | Diameter 'd' [mm]                  | regular design <b>4</b> <sup>(5)</sup> , <b>5</b> , <b>6</b> , <b>8</b>  |
|            |                                    | MI design <b>4.5</b> , <b>6</b> , <b>8</b> <sup>(5)</sup>  |
| <b>G5'</b> | Bayonet size <sup>(2)</sup>        | <b>13</b> - ø13x1, <b>14</b> - ø14x1, <b>15</b> - ø15x1, <b>17</b> - ø17x1, <b>20</b> - ø20x1, <b>Z</b> - other (specify!)   |
| <b>G5"</b> | Bayonet material <sup>(2)</sup>    | <b>AL</b> - aluminum, <b>BR</b> - brass, <b>SS</b> - stainless steel   |
| <b>G6</b>  | Probe length 'n' [mm]              | <b>10...200</b>  |
| <b>G8</b>  | Cable length 'k' [m] and type      | <b>1GL...10GL</b> - glass fiber, <b>1SL...10SL</b> - silicone, <b>1TF...10TF</b> - Teflon®, <b>1PU...10PU</b> - polyurethane <sup>(5)</sup> , <b>1MF...10MF</b> - mineral fiber, <b>1PV...10PV</b> - PVC   |
| <b>G9</b>  | Mounting connection <sup>(3)</sup> | <b>Q0</b> - M16x1.5, <b>Q1</b> - M18x1.5, <b>Q2</b> - M20x1.5, <b>Q3</b> - G3/8", <b>Q4</b> - G1/2", <b>Q7</b> - M12x1.5, <b>Q8</b> - M14x1.5, <b>Q10</b> - 1/2" NPT, <b>Q18</b> - G1/8", <b>Q19</b> - 1/8" NPT, <b>Q20</b> - M10x1, <b>Q23</b> - G1/4", <b>Q24</b> - 1/4" NPT, <b>Q26</b> - M8x1, <b>Q29</b> - M8x1.25, <b>Q30</b> - M10x1.5, <b>Uxx</b> - union nut (xx - same as for Qxx) |
| <b>G10</b> | Sheath material (wetted parts)     | regular design <b>M1</b> - 1.4301, <b>M2</b> - 1.4541, <b>M3</b> - 1.4571, <b>M9</b> - 1.4404  |
|            |                                    | MI design <b>M1</b> - 1.4301, <b>M2</b> - 1.4541, <b>M3</b> - 1.4571, <b>M5</b> - 1.4841, <b>M8</b> - 2.4816 (Inconel 600), <b>M9</b> - 1.4404   |
| <b>G11</b> | Accuracy class                     | <b>1</b> - '1' <sup>(5)</sup> , <b>2</b> - '2'   |
| <b>G14</b> | Tip shape (hot junction)           | <b>X</b> - standard (isolated from sheath), <b>G</b> - grounded, <b>E</b> - exposed hot junction, <b>O</b> - open-tube design  |
| <b>G15</b> | Connector                          | <b>X</b> - none, <b>C3</b> - 4-pin male plug-in connector ø8 (for H5700 thermometer only), <b>C5</b> - T/C connector, <b>C6</b> - miniature T/C connector  |
| <b>#1</b>  | Options                            | <b>X</b> - none, <b>OV</b> - vibration proof (MgO or Silicone filled) <sup>(4)</sup> , <b>OS</b> - cable protection SS spring (≈ 50 mm) <sup>(1)</sup> , <b>OB</b> - braid termination lead (only w/o connector), <b>OP</b> - electrochemically polished sheath surface <sup>(4)</sup>   |

<sup>(1)</sup> Available only for TSBL and TSBGL!

<sup>(2)</sup> Only for TSB and TSBL!

<sup>(3)</sup> Only for TSBG and TSBGL!

<sup>(4)</sup> Only for non-MI (regular) design!

<sup>(5)</sup> Contact COMECO!