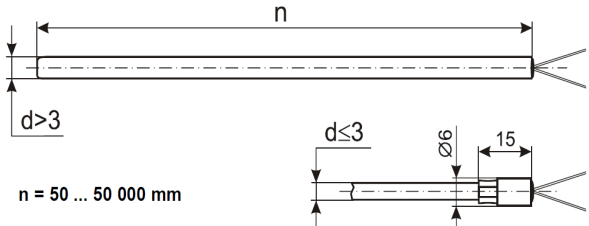
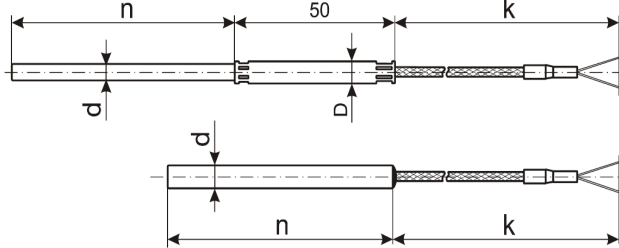
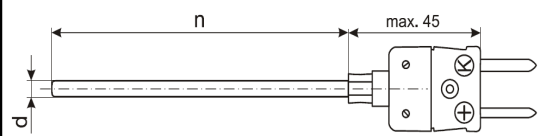
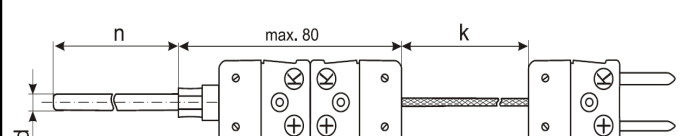


## TERMOCUPLU tip TSN

MINERAL-INSULATED THERMOCOUPLE PROBE Nx (TSNx) <small>Sheath - see table Extension cable - see table notes</small>	SENSITIVE ELEMENT	SHEATH MATERIAL	TEMPERATURE RANGE	d [mm]																																																															
<div style="text-align: center;"> <p><b>MI CABLE PROBE ONLY (N)</b></p>  <p>n = 50 ... 50 000 mm</p> </div> <div style="text-align: center; margin-top: 20px;"> <p><b>DESIGN WITH EXTENSION CABLE (NA)</b></p>  <p>n = 50 ... 50 000 mm k = 1 ... 10 m</p> <table border="1" style="margin: 0 auto; border-collapse: collapse;"> <tr> <td>d</td> <td>&lt; 6</td> <td>6</td> <td>8, 10</td> </tr> <tr> <td>D</td> <td>6</td> <td>8</td> <td>d</td> </tr> </table> </div> <div style="text-align: center; margin-top: 20px;"> <p><b>DESIGN WITH CONNECTOR (NH)</b></p>  <p>n = 50 ... 50 000 mm d ≤ 6 mm</p> </div> <div style="text-align: center; margin-top: 20px;"> <p><b>DESIGN WITH CONNECTOR AND EXTENSION CABLE (NHA)</b></p>  <p>n = 50 ... 50 000 mm    d ≤ 6 mm    k = 1 ... 10 m</p> </div>	d	< 6	6	8, 10	D	6	8	d	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td rowspan="4" style="text-align: center; vertical-align: middle;">1 x J, 1 x T **</td> <td>M1</td> <td>max. 400 °C</td> <td rowspan="2" style="text-align: center;">1, 1.5, 2, 3, 4.5, 6, 8, 10*</td> </tr> <tr> <td>M2, M3, M9, M5, M8</td> <td rowspan="2" style="text-align: center;">max. 800 °C</td> </tr> <tr> <td>M4</td> <td style="text-align: center;">6, 8</td> </tr> <tr> <td>M10</td> <td style="text-align: center;">3, 4.5, 6</td> </tr> <tr> <td rowspan="4" style="text-align: center; vertical-align: middle;">2 x J 2 x T **</td> <td>M1</td> <td>max. 400 °C</td> <td rowspan="2" style="text-align: center;">1.5, 2, 3, 4.5, 6, 8, 10*</td> </tr> <tr> <td>M2, M3, M9, M5, M8</td> <td rowspan="2" style="text-align: center;">max. 800 °C</td> </tr> <tr> <td>M4</td> <td style="text-align: center;">6, 8</td> </tr> <tr> <td rowspan="6" style="text-align: center; vertical-align: middle;">1 x K, 1 x N, 1 x E **</td> <td>M1</td> <td>max. 400 °C</td> <td rowspan="2" style="text-align: center;">1, 1.5, 2, 3, 4.5, 6, 8, 10*</td> </tr> <tr> <td>M2, M3, M9</td> <td>max. 850 °C</td> </tr> <tr> <td>M7*</td> <td rowspan="2" style="text-align: center;">max. 1100 °C</td> <td style="text-align: center;">3, 6, 10*</td> </tr> <tr> <td>M8</td> <td style="text-align: center;">1, 1.5, 2, 3, 4.5, 6, 8, 10*</td> </tr> <tr> <td>M4</td> <td rowspan="2" style="text-align: center;">max. 1150 °C</td> <td style="text-align: center;">6, 8</td> </tr> <tr> <td>M5</td> <td style="text-align: center;">1.5, 3, 4.5, 6, 8</td> </tr> <tr> <td>M10</td> <td>max. 1250 °C</td> <td style="text-align: center;">3, 4.5, 6</td> </tr> <tr> <td rowspan="5" style="text-align: center; vertical-align: middle;">2 x K 2 x N 2 x E **</td> <td>M2, M3, M9</td> <td>max. 850 °C</td> <td style="text-align: center;">1.5, 3, 4.5, 6, 8</td> </tr> <tr> <td>M7*</td> <td rowspan="2" style="text-align: center;">max. 1100 °C</td> <td style="text-align: center;">3, 6, 10*</td> </tr> <tr> <td>M8</td> <td style="text-align: center;">1.5, 3, 4.5, 6, 8</td> </tr> <tr> <td>M4</td> <td rowspan="2" style="text-align: center;">max. 1150 °C</td> <td style="text-align: center;">6, 8</td> </tr> <tr> <td>M5</td> <td style="text-align: center;">1.5, 3, 4.5, 6, 8</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">1 x S(R), 2 x S(R)</td> <td>M8</td> <td>max. 1100 °C</td> <td style="text-align: center;">3, 4.5, 6</td> </tr> </table>	1 x J, 1 x T **	M1	max. 400 °C	1, 1.5, 2, 3, 4.5, 6, 8, 10*	M2, M3, M9, M5, M8	max. 800 °C	M4	6, 8	M10	3, 4.5, 6	2 x J 2 x T **	M1	max. 400 °C	1.5, 2, 3, 4.5, 6, 8, 10*	M2, M3, M9, M5, M8	max. 800 °C	M4	6, 8	1 x K, 1 x N, 1 x E **	M1	max. 400 °C	1, 1.5, 2, 3, 4.5, 6, 8, 10*	M2, M3, M9	max. 850 °C	M7*	max. 1100 °C	3, 6, 10*	M8	1, 1.5, 2, 3, 4.5, 6, 8, 10*	M4	max. 1150 °C	6, 8	M5	1.5, 3, 4.5, 6, 8	M10	max. 1250 °C	3, 4.5, 6	2 x K 2 x N 2 x E **	M2, M3, M9	max. 850 °C	1.5, 3, 4.5, 6, 8	M7*	max. 1100 °C	3, 6, 10*	M8	1.5, 3, 4.5, 6, 8	M4	max. 1150 °C	6, 8	M5	1.5, 3, 4.5, 6, 8	1 x S(R), 2 x S(R)	M8	max. 1100 °C	3, 4.5, 6	<p><b>Sheath material:</b> 1.4301 (M1), 1.4541 (M2), 1.4571 (M3), 1.4762 (M4), 1.4841 (M5), 1.4876 (M7), 2.4816 (M8), 1.4404 (M9), Microbell® (M10)</p> <p><b>Cable type:</b> - 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)</p> <p><b>Tip shape (hot junction design):</b> standard (isolated), grounded, open-tube, exposed (see Appendix - Tip shapes)</p> <p><b>Accuracy class:</b> '1' or '2' (see Appendix - T/C Tolerance)</p> <p><b>Thermocouple connector:</b> 'standard' (C5) or 'miniature' (C6) (see Appendix - Connectors)</p> <p><b>Temperature limitation:</b> The temperature around TSNA holding tube and TSNH(A) connector must not exceed -50...200 °C!</p>		
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<p>* Please contact ** For T/C type "T": max. 400 °C; for T/C type "E": max. 1000 °C</p>																																																																			

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[www.automatizariindustriale.ro](http://www.automatizariindustriale.ro)

**Ordering code** TSN(A,H,HA) - G1G2.G3.G4.G6.G8.G10.G11.G14.G15 - #1

Code	Feature or option	Code values
G1	Number of thermocouples	1 or 2 <sup>(1)</sup>
G2	Thermocouple	J - type "J", K - type "K", N - type "N", E - type "E", T - type "T", S - type "S", R - type "R"
G3	Temperature range	T7 - 0...200 °C, T9 - -50...200 °C, T8 - 0...400 °C, T1 - -50...400 °C, T4 - 0...800 °C, T3 - 0...850 °C, T16 - 0...1100 °C, T6 - 0...1150(1250) °C
G4	Diameter 'd' [mm] <sup>(2)</sup>	1 <sup>(3)</sup> , 1.5 <sup>(4)</sup> , 2, 3, 4.5, 6, 8, 10
G6	Probe length 'n' [mm]	50...50000
G8	Cable length 'k' [m] and type	X - no cable, 1GL...10GL - glass fiber, 1SL...10SL - silicone, 1TF...10TF - Teflon®
G10	Sheath material	M1 - 1.4301, M2 - 1.4541, M3 - 1.4571, M4 - 1.4762 (1.4749), M5 - 1.4841, M7 - 1.4876 (Incolloy 800), M8 - 2.4816 (Inconel 600), M9 - 1.4404, M10 - Niobell®
G11	Accuracy class	1 - '1' <sup>(6)</sup> , 2 - '2'
G14	Tip shape (hot junction)	X - standard (isolated from sheath), G - grounded, E - exposed hot junction, O - open-tube design
G15	Connector <sup>(5)</sup>	X - none, C5 - T/C connector, C6 - miniature T/C connector
#1	Options	X - none, OS - cable protection SS spring (≈ 50 mm) <sup>(5)</sup> , OB - braid termination lead (only w/o connector) <sup>(5)</sup>

<sup>(1)</sup> Only for TSN. Ask for TSNA!

<sup>(2)</sup> Up to 6 mm for TSNH and TSNHA

<sup>(3)</sup> Always grounded

<sup>(4)</sup> Grounded when G1="2"

<sup>(5)</sup> Only for TSNA and TSNHA!

<sup>(6)</sup> Contact

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[www.automatizariindustriale.ro](http://www.automatizariindustriale.ro)