

**JUMO GmbH & Co. KG**

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# Temperature probes for glass furnaces

## For terminal head form A

- For temperatures up to 2000 °C
- With protection tubes made from various materials
- Single, double or triple thermocouples
- With terminal heads in various versions
- With integrated transmitter as optional extra
- Protection tubes with platinum or platinum-rhodium alloy

The push-in thermocouples were developed for measuring temperatures in glass furnaces. The conditions inside glass furnaces are extreme. The main application for the thermocouples is the molten glass area where measuring the furnace temperature is a critical task due to the aggressive atmosphere and high temperature. The design is implemented such that optimal thermal insulation of the process to the ambient temperature is achieved in order to reduce thermal losses and conserve the material.

In the case of the push-in thermocouples, the materials of the protection tube, the thermocouple types and the mechanical version can be defined. Due to the comprehensive selection of process connections, and the excellent accuracy and quality, these thermocouples are optimally equipped for the tough operating conditions in glass furnaces.

Dimensional tolerances according to ISO standards.



Basic type 901830/10

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## Technical data

Terminal head	<p>Form AUSH          Form BUZ          Form BUZH          Form BUS          Form BUZ blue 85 mm          Form BUS blue 85 mm          Form BUSH blue          Form A blue          Form DANAwIn          Form DAND (screw connection 2 × M20 × 1.5)          Special terminal head          Terminal head form A, DIN 43729, cast aluminum, M20 × 1.5;          IP54, ambient temperature -40 to +100 °C          Note: Use lower ambient temperatures when installing transmitters,          data sheets 707010, 707050 and 707060.</p>
Process connection	<p>Stop flange Ø 15 mm DIN EN 43734          Stop flange Ø 22 mm DIN EN 43734          Stop flange Ø 32 mm DIN EN 43734          Flange B16-5 ASME          Flange DIN EN 1092-1 Form B          Flange DIN EN 1092-1 Form C          Flange DIN EN 1092-1 Form N          Flange DN 20 PN 16 DIN 2527 Form B          Life of the furnace bottom in liquid glass</p>
Measuring insert	<p>1× NiCr-Ni "K", Cl. 1, operating temperature 0 to 1200 °C          1× Pt10Rh-Pt "S", Cl. 1, operating temperature 0 to 1300 °C          1× Pt13Rh-Pt "R", Cl. 1, operating temperature 0 to 1600 °C          1× Pt30Rh-Pt6Rh "B", Cl. 2, operating temperature 600 to 1600 °C          2× Pt10Rh-Pt "S", Cl. 1, operating temperature 0 to 1300 °C          2× Pt13Rh-Pt "R", Cl. 1, operating temperature 0 to 1600 °C          2× Pt30Rh-Pt6Rh "B", Cl. 2, operating temperature 600 to 1600 °C          3× Pt10Rh-Pt "S", Cl. 1, operating temperature 0 to 1300 °C          3× Pt13Rh-Pt "R", Cl. 1, operating temperature 0 to 1600 °C          3× Pt30Rh-Pt6Rh "B", Cl. 2, operating temperature 600 to 1600 °C</p>
Protection tube	<p>Steel 1.4749, operating temperature up to 1150 °C          Steel 1.4841, operating temperature up to 1150 °C          Ceramic C 610 (KER 610), working temperature up to 1300 °C          Ceramic C 799 (KER 710), working temperature up to 1800 °C          Optional: Reinforced alumina with a purity of 99.995 %, heat resistant against combustion gas up to 2000 °C.</p>
Protection tube tip	<p>cable with standard ceramic plugs          Thermowell PtRh 10 %          Sheath with projected platinum</p>
Transmitter	<p>Programmable transmitter, 4 to 20 mA/20 to 4 mA output, data sheet 707010          Programmable transmitter, 4 to 20 mA/20 to 4 mA output (USB), data sheet 707050          Programmable Wtrans B transmitter with wireless data transmission, data sheet 707060          (in conjunction with Wtrans receiver, data sheet 902931)</p>

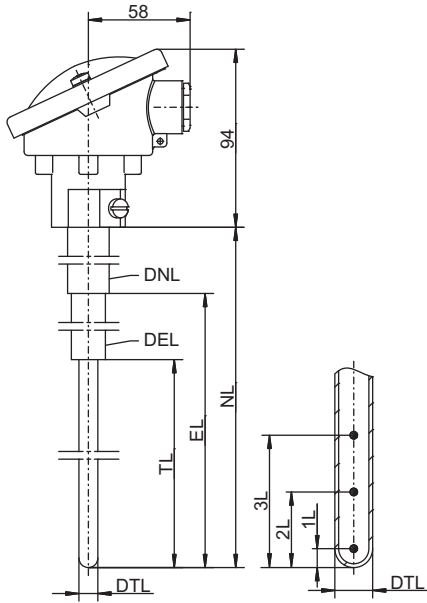
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## Dimensions



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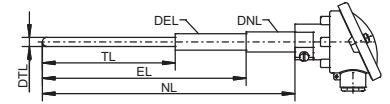
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## Order Details

**(1) Basic type**

901830/10 Temperature probes for glass melting furnaces,  
 for terminal head form A



**(2) Measuring insert**

x		
x	1043	1× NiCr-Ni "K"
x	1044	1× Pt10Rh-Pt "S"
x	1045	1× Pt13Rh-Pt "R"
x	1046	1× Pt30Rh-Pt6Rh "B"
x	2044	2× Pt10Rh-Pt "S"
x	2045	2× Pt13Rh-Pt "R"
x	2046	2× Pt30Rh-Pt6Rh "B"
x	3044	3× Pt10Rh-Pt "S"
x	3045	3× Pt13Rh-Pt "R"
x	3046	3× Pt30Rh-Pt6Rh "B"

**(3) Thermal wire diameter in mm**

x	0.25	0.25 mm
x	0.35	0.35 mm
x	0.50	0.5 mm
x	0.70	0.7 mm
x	0.80	0.8 mm
x	3.50	3.5 mm

**(4) Protection tube diameter DNL in mm (see page 3)**

x	15.00	15 mm
x	17.00	17 mm
x	17.15	17.15 mm
x	20.00	20 mm
x	21.30	21.30 mm
x	22.00	22 mm
x	24.00	24 mm
x	26.70	26.70 mm
x	26.90	26.90 mm
x	0.00 to 100.00	0 to 100 mm

**(5) Nominal length NL in mm (50 to 2000 mm) (see page 3)**

x	280.0	280 mm
x	300.0	300 mm
x	400.0	400 mm
x	50.0 to 2000.0	50 to 2000 mm

**(6) Material DNL (see page 3)**

x	27	CrNi 1.4749
x	28	CrNi 1.4841
x	37	CrNi 1.4835
x	61	Pt (platinum)
x	76	NiCr 2.4816
x	93	Ceramic C610
x	94	Ceramic C799
x	99	According to customer specification

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		<b>(7) Protection tube diameter DEL (1 to 100 mm) (see page 3)</b>
x	0.00	None
x	6.00	6 mm
x	7.00	7 mm
x	8.00	8 mm
x	10.00	10 mm
x	12.00	12 mm
x	13.50	13.50 mm
x	15.00	15 mm
x	17.00	17 mm
x	17.50	17.50 mm
x	20.00	20 mm
x	21.30	21.30 mm
x	22.00	22 mm
x	24.00	24 mm
x	26.70	26.70 mm
x	26.90	26.90 mm
x	49.00	49 mm
x	1.00 to 100.00	1 to 100 mm
		<b>(8) Insertion length EL in mm (0 to 1,500 mm) (see page 3)</b>
x	880.0	880 mm
x	1,000.0	1000 mm
x	1,100.0	1,100 mm
x	1,200.0	1,200 mm
x	0.0 to 1,600.0	0 to 1,600 mm
		<b>(9) Material DEL (see page 3)</b>
x	00	None
x	27	CrNi 1.4749
x	28	CrNi 1.4841
x	37	CrNi 1.4835
x	76	NiCr 2.4816
x	93	Ceramic C610
x	94	Ceramic C799
x	99	According to customer specification
		<b>(10) Protection tube diameter DTL (0 to 1000 mm) (see page 3)</b>
x	0.00	None
x	6.00	6 mm
x	7.00	7 mm
x	7.50	7.50 mm
x	7.60	7.60 mm
x	8.00	8 mm
x	9.60	9.60 mm
x	11.00	11 mm
x	12.00	12 mm
x	0.00 to 15.00	0 to 15 mm
		<b>(11) Protection tube probe tip length TL in mm (see page 3)</b>
x	0.0	None
x	50.0	50 mm
x	90.0	90 mm
x	110.0	110 mm
x	140.0	140 mm
x	160.0	160 mm

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x	190.0	190 mm
x	200.0	200 mm
x	330.0	330 mm
x	600.0	600 mm
x	700.0	700 mm
x	0.0 to 1,000.0	0 to 1,000 mm
	<b>(12) Material DTL (see page 3)</b>	
x	00	None
x	54	Thermowell made of stable platinum
x	55	Thermowell PtRh 10 %
x	99	According to customer specification
	<b>(13) Process connection</b>	
x	000	None
x	668	Stop flange Ø 15 mm DIN 43734
x	669	Stop flange Ø 22 mm DIN 43734
x	671	Stop flange Ø 32 mm DIN 43734
x	693	Flange B16-5 ASME
x	720	Flange DIN EN 1092-1 form B
x	723	Flange DIN EN 1092-1 form C
x	724	Flange DIN EN 1092-1 form N
x	737	Flange DN 20 PN 16 DIN 2527 form B
x	999	According to customer specification
	<b>(14) Cable end</b>	
x	00	None
x	01	Cut off smoothly
x	40	Cable with standard ceramic plugs
x	67	Cable with HARTING connector
	<b>(15) Cable length in mm</b>	
x	0000	None
x	3000	3,000 mm
x	6000	6,000 mm
	<b>(16) Distance from probe tip of thermocouple L (see page 3)</b>	
x	0	0 mm
x	25	25 mm
	<b>(17) Distance from probe tip of thermocouple 2L (see page 3)</b>	
x	0	0 mm
x	25	25 mm
x	75	75 mm
x	125	125 mm

