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# JUMO HEATtemp

## Screw-in RTD Temperature Probe for Combined Cold/Heat Meters for Direct Mounting (Type DS/DL)

- For temperatures from 0 to 120 °C (cold) and 0 to 180 °C (heat)
- Type examination certificate for MID heat meters and domestic approval for cold meters as replaceable temperature probes
- Fulfills the requirements of DIN EN 1434, AGFW FW 202, and FW 211
- Pairing and declaration of conformity according to German Weights and Measures Act and MID
- Production certified according to module D (MID) (CE and metrology identification marking)

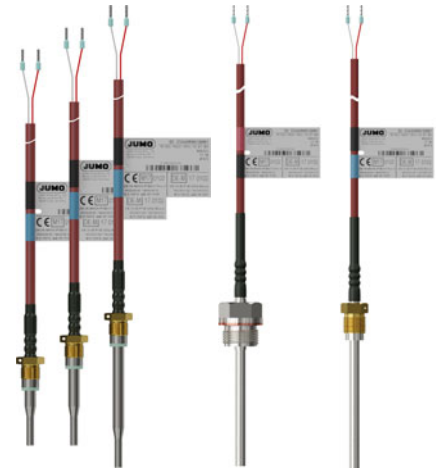
Combined cold/heat meter RTD temperature probes are used for temperature measurement in closed pipeline systems. Direct mounting without additional immersion sleeves is recommended to achieve optimum thermal coupling to the measurement medium in the heating system.

The temperature probes are approved according to the EU Directive 2014/32/EU (MID) as well as according to the German Weights and Measures Act (Mess- und Eichgesetz or MessEG).

Installation in ball valves has been shown to be the optimum installation location (see data sheet 902442). In addition, emptying the system when installing and replacing the temperature probe at the end of the calibration period is no longer necessary.

The temperature probes are also available in paired and conformity-assessed versions. The officially recognized test facility for heat KHE2 is available for this purpose. Production has been certified according to Annex D of Directive 2014/32/EU and Annex 4 Module D of the German Weights and Measures Act.

The following specifications apply for Germany according to the technical directives TR-K8 and TR-K9: For heat/cold meters with nominal flow rates  $\leq q_p 6 \text{ m}^3/\text{h}$  the temperature probe must only be installed with direct immersion when newly installing the section of the pipeline in the measuring point area with nominal pressures  $\leq 16 \text{ bar}$ . Tolerances apply for existing immersion sleeves.



### Technical data

Connection	Ferrules
Connecting cable	PVC, PUR (TPE), silicone; unshielded or shielded
Process connection	Type DS: screw connection M10 × 1, brass according to DIN EN 1434 Type DL: thread G 1/4, G 1/2 stainless steel
Protection tube	Type DS: stainless steel Ø 5.4 mm stepped down to Ø 3.3 mm or Ø 3.6 mm Type DL: stainless steel Ø 8 mm stepped down to Ø 6 mm
Measuring insert	Platinum temperature sensor according to DIN EN 60751 Nominal value: Pt100, Pt500, or Pt1000 Connection: two-wire or four-wire circuit
Temperature	0 to 120 °C (cold) 0 to 180 °C (heat)
Temperature difference	3 to 120 K (cold) 3 to 180 K (heat)
Minimum immersion depth	Type DS: 15 mm Type DL: 30 mm
Insertion length	Type DS: 25 to 60 mm Type DL: 60 to 280 mm
Maximum pressure	PS 25
Flow velocity	2 m/s (water)
Thermoelectric voltage	$\leq 5 \mu\text{V}$
Environmental influences	Climatic 5 to 55 °C protection type IP65 mechanical M3
Sensor design	Type 902428/50, 902428/70: Wrap-around contact Type 902428/51, 902428/71: Flip chip Type 902428/30, 902428/40: PCA

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**Response**

Basic type	Protection tube Ø	Response time $t_{0,5}$	Response time $t_{0,9}$
902455/50	5,0/5,2 mm	≤ 3,5 s	≤ 10,5 s
	6,0 mm	≤ 5,0 s	≤ 11,5 s
902455/51	5,0/5,2 mm	≤ 2,5 s	≤ 7,6 s
	6,0 mm	≤ 4,0 s	≤ 10,1 s
902455/70	3,6 mm	≤ 2,0 s	≤ 5,0 s
902455/71	3,6 mm	≤ 1,1 s	≤ 3,5 s
902455/30	6,0 mm	≤ 6,0 s	≤ 13,0 s
902455/40	6,0 mm	≤ 6,0 s	≤ 13,0 s

**Connecting cable lengths according to DIN EN 1434**

Conductor cross section	Max. connecting cable length AL for Pt100	Max. connecting cable length AL for Pt500	Max. connecting cable length AL for Pt1000
0.22 mm <sup>2</sup>	2500 mm	12500 mm	25000 mm
0.34 mm <sup>2</sup>	3500 mm	17500 mm	35000 mm
0.50 mm <sup>2</sup>	5000 mm	25000 mm	50000 mm

**Important information:**

The possible limitation of the connecting cable length due to the type examination certificate of the ALU/meter should also be taken into account. For four-wire circuits, the max. connecting cable lengths are limited by the requirements of the ALU/meter.

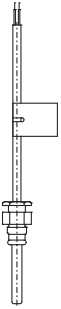
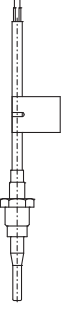
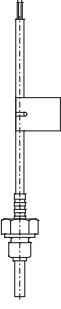
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## Overview of approvals

Version	Basic type	Type examination certificate	
		Type	Number
	902455/50 (DS), 902455/51 (DS)	Weights and Measures Act (Germany, cold) Weights and Measurement Act (Austria, cold)	DE-15-M-PTB-0052 (Germany) OE16/C400 (Austria)
	DS = Direct short (short temperature probe, without immersion sleeve)		
	902455/70 (DS), 902455/71 (DS)	Weights and Measures Act (Germany, cold)	DE-15-M-PTB-0052 (Germany)
	DS = Direct short (short temperature probe, without immersion sleeve)		
	902455/30 (DL) 902455/40 (DL)	Weights and Measures Act (Germany, cold)	DE-15-M-PTB-0050 (150 °C)
	DL = Direct long (long temperature probe, without immersion sleeve)		

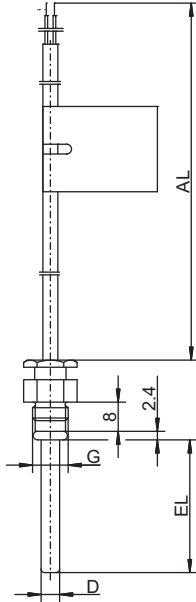
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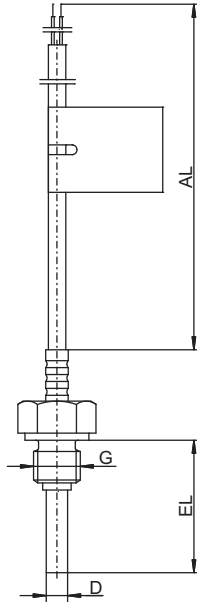
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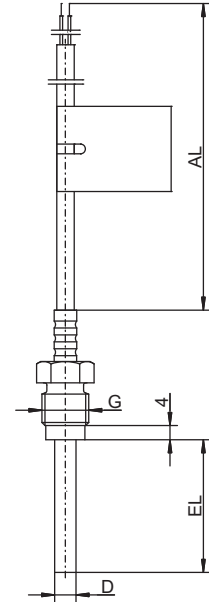
## Dimensions



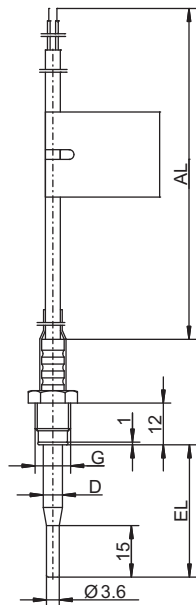
**Basic type 902455/50 (DS),  
 Basic type 902455/51 (DS)**



**Basic type 902455/30 (DL)**



**Basic type 902455/40 (DL)**



**Basic type 902455/70 (DS),  
 Basic type 902455/71 (DS)**

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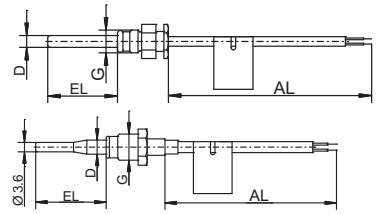
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**Order details: Combined cold/heat meter RTD temperature probe with connecting cable**

<b>(1) Basic type</b>	
902455/50	Screw-in RTD temperature probe for direct mounting (DS) with loose screw connection and smooth protection tube
902455/51	Screw-in RTD temperature probe for direct mounting (DS) with loose screw connection and offset protection tube
<b>(2) Operating temperature in °C</b>	
x x	815 0 to 105 °C/PVC, PUR (TPE) (only in two-wire circuit)
x x	824 0 to 150 °C/silicone
<b>(3) Measuring insert</b>	
x x	1003 1× Pt100 in two-wire circuit
x x	1004 1× Pt500 in two-wire circuit
x x	1005 1× Pt1000 in two-wire circuit
x x	1011 1× Pt100 in four-wire circuit
x x	1012 1× Pt500 in four-wire circuit
x x	1013 1× Pt1000 in four-wire circuit
<b>(4) Accuracy class sensor</b>	
x x	1 F0,3
<b>(5) Protection tube diameter D in mm</b>	
x	5 Ø 5 mm
x	5.2 Ø 5.2 mm
	5.4 Ø 5.4 mm stepped down to Ø 3.3 mm
x	5.4 Ø 5.4 mm stepped down to Ø 3.6 mm
<b>(6) Insertion length EL in mm (25 to 60 mm)</b>	
x	26 26 mm
x	27.5 27.5 mm
x	38 38 mm
x	60 60 mm
x	... Specifications in plain text
<b>(7) Process connection G</b>	
x x	114 Screw connection M10 × 1
<b>(8) Connecting cable end</b>	
x x	04 Tin-plated connection strands (only for temperature probes permanently connected to the ALU)
x x	11 Ferrules according to DIN 46228 Part 4 (standard)
<b>(9) Connecting cable length AL in mm (&gt; 500 mm)</b>	
x x	1500 1500 mm
x x	2500 2500 mm (standard)
x x	... Specifications in plain text (increments of 500 mm)
<b>(10) Extra codes</b>	
x x	000 None
x x	317 Shielded connecting cable
x x	340 Paired according to DIN EN 1434 <sup>a</sup>
x x	341 Paired according to DIN EN 1434 with conformity assessment/identification marking according to MessEG <sup>a</sup> (cold, Germany)
x x	670 Paired according to DIN EN 1434 with identification marking according to MEG <sup>a</sup> (cold, Austria)
x x	761 Paired according to DIN EN 1434 with conformity assessment/identification marking according to MID <sup>a</sup> (heat)



<sup>a</sup> Price for pairing depends on number of units; cost effective from 30 pairs of temperature probes

**Order code**            (1)        (2)        (3)        (4)        (5)        (6)        (7)        (8)        (9)        (10)        ...<sup>a</sup>  
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**Order example**        902455/51 - 824 - 1003 - 1 - 5.2 - 26 - 114 - 11 - 2500 / 341, 761

<sup>a</sup> List extra codes in sequence and separate using commas.

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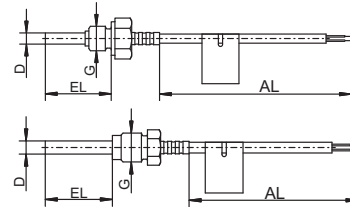
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**Order details: Combined cold/heat meter RTD temperature probe with connecting cable**

<b>(1) Basic type</b>	
902455/30	Screw-in RTD temperature probe for direct mounting (DL) with fixed fitting and smooth protection tube
902455/40	Screw-in RTD temperature probe for direct mounting (DL) with flange and loose screw connection and smooth protection tube
<b>(2) Operating temperature in °C</b>	
x x 824	0 to 150 °C/silicone
<b>(3) Measuring insert</b>	
x x 1003	1× Pt100 in two-wire circuit
x x 1004	1× Pt500 in two-wire circuit
x x 1005	1× Pt1000 in two-wire circuit
x x 1011	1× Pt100 in four-wire circuit
x x 1012	1× Pt500 in four-wire circuit
x x 1013	1× Pt1000 in four-wire circuit
<b>(4) Accuracy class sensor</b>	
x x 1	F0,3
x x 2	F0,15
x x 3	F0,1
<b>(5) Protection tube diameter D in mm</b>	
x x 6	∅ 6 mm
x x 8	∅ 8 mm stepped down to ∅ 6 mm
<b>(6) Insertion length EL in mm (60 to 210 mm)</b>	
x x 85	85 mm
x 91	91 mm
x x 120	120 mm
x 146	146 mm
x 210	210 mm (only for ∅ 8 mm stepped down to ∅ 6 mm)
x x ...	Specifications in plain text
<b>(7) Process connection G</b>	
x x 102	Screw connection G 1/4
x 104	Screw connection G 1/2
x x ...	Specifications in plain text
<b>(8) Connecting cable end</b>	
x x 04	Tin-plated connection strands (only for temperature probes permanently connected to the ALU)
x x 11	Ferrules according to DIN 46228 Part 4 (standard)
<b>(9) Connecting cable length AL in mm (&gt; 500 mm)</b>	
x x 1500	1500 mm
x x 2500	2500 mm (standard)
x x ...	Specifications in plain text (increments of 500 mm)
<b>(10) Extra codes</b>	
x x 000	None
x x 317	Shielded connecting cable
x x 340	Paired according to DIN EN 1434 <sup>a</sup>
x x 341	Paired according to DIN EN 1434 with conformity assessment/identification marking according to MessEG <sup>a</sup> (cold, Germany)
x x 761	Paired according to DIN EN 1434 with conformity assessment/identification marking according to MID <sup>a</sup> (heat)



<sup>a</sup> Price for pairing depends on number of units; cost effective from 30 pairs of temperature probes

**Order code**      (1)      (2)      (3)      (4)      (5)      (6)      (7)      (8)      (9)      (10)      <sup>a</sup>  
 [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] - [ ] / [ ]  
**Order example**      902455/30 - 824 - 1003 - 1 - 6 - 120 - 104 - 11 - 2500 / 341,761

<sup>a</sup> List extra codes in sequence and separate using commas.