

JUMO GmbH & Co. KG

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JUMO Process Control, Inc.

6724 Joy Road
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Phone: +1 315 437 5866
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Email: info.us@jumo.net
Internet: www.jumousa.com



Screw-in RTD temperature probe with connection line

Description

The screw-in RTD temperature probe measures temperatures in liquid and gaseous media.

The device is suitable for use in dry and humid rooms.

Areas of application

- Apparatus engineering
- Meat product plants, butchers, slaughterhouses
- Heating, ventilation, and air-conditioning
- Industrial furnaces and heating systems
- Refrigeration

Special features

- Single and double RTD temperature probes
- Reliable seal in the event of vacuum and overpressure
- SIL and PL-qualified
- Optional bend protection



Type 902050/20

Type 902050/10

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Trademark information

All trademarks and trade and company names used are the property of their rightful owners or authors.

Approval marks and certificates



Certificates for approved device versions are available for download on the manufacturer's website.

H₂ ready is provided as an extra code in the order details.

Technical data

Electrical data

Electrical connection	
Connection element	Connection line with a stripped line end Connection line with tin-plated connection wires Connection line with ferrules Connection line with M12 plug connector Connection line with multi-pole plug connection

Environmental influences

Admissible ambient temperature of the connection line	
PVC	-5 to +80 °C
Silicone	-50 to +180 °C
PTFE	-50 to +260 °C
Metal braiding	-50 to +400 °C

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**Mechanical features**

Materials	
Connection line insulation material	PVC Silicone PTFE Metal braiding
Protection tube	Stainless steel Inconel
Connection line	Strain-relieved
Protection tube	Ø 5 mm Ø 5.4 mm reduced to 3.3 mm Ø 6 mm Ø 8 mm
Response times	
In water 0.2 m/s	$t_{0.5} \approx 2 \text{ s}$, $t_{0.9} \approx 6 \text{ s}$, Ø 6 mm
Measuring insert	DIN EN IEC 60751 1× Pt100 in 2-wire circuit 1× Pt100 in 3-wire circuit 1× Pt100 in 4-wire circuit 1× Pt1000 in 2-wire circuit 2× Pt100 in 2-wire circuit 2× Pt100 in 3-wire circuit 2× Pt1000 in 2-wire circuit
Tolerance class	Class B (standard) Class A in three-wire/four-wire circuit Class AA in three-wire/four-wire circuit

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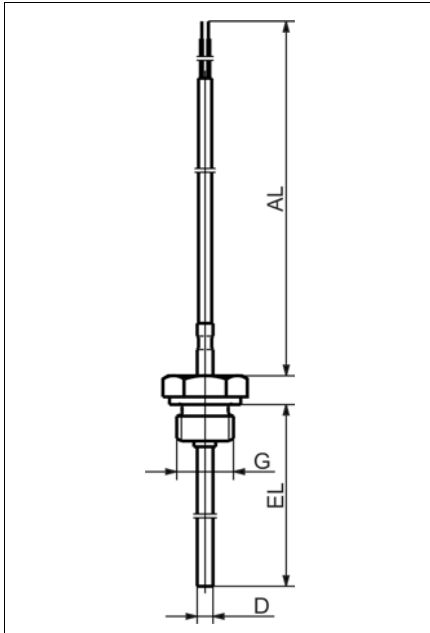
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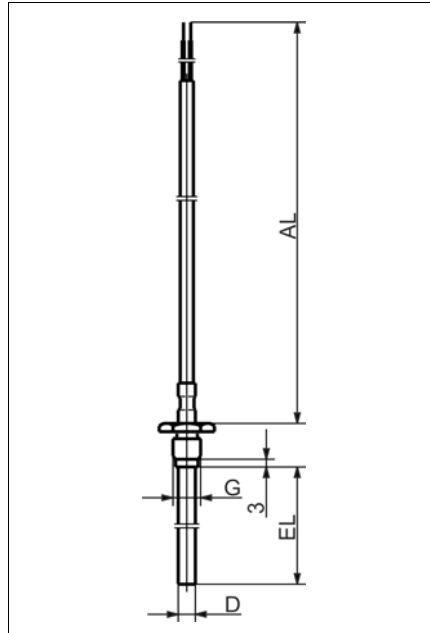


Dimensions

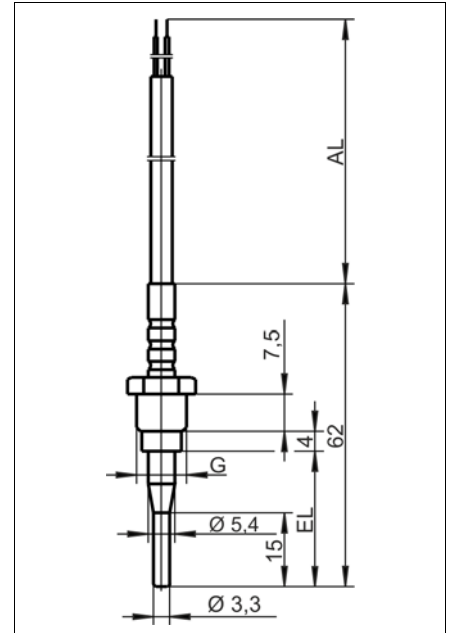
Type 902050/10
 with fixed screw connection



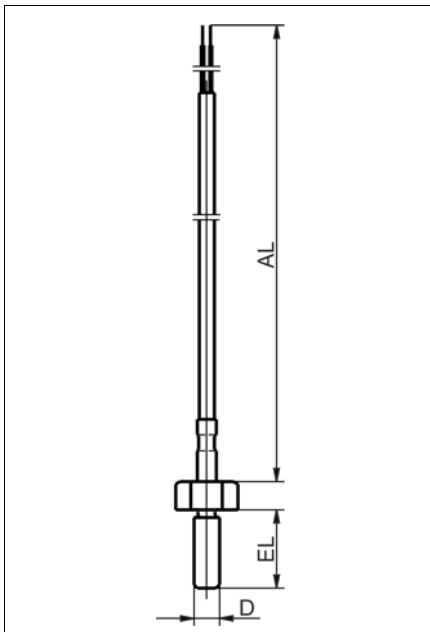
Type 902050/20
 with loose screw connection



Type 902050/30
 with loose screw connection and reduced protection tube



Type 902050/40
 with threaded protection tube



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Order details

		(1) Basic type	
902050/10		Screw-in RTD temperature probe with fixed screw connection	
902050/20		Screw-in RTD temperature probe with loose screw connection	
		(2) Operating temperature	
x x	724	-5 to +80 °C	
x x	378	-50 to +180 °C	
x x	386	-50 to +260 °C (PTFE)	
x x	388	-50 to +260 °C (metal braiding)	
x x	402	-50 to +400 °C	
		(3) Measuring insert	
x x	1003	1× Pt100 in 2-wire circuit	
x x	1001	1× Pt100 in 3-wire circuit	
x x	1011	1× Pt100 in 4-wire circuit	
x x	1005	1× Pt1000 in 2-wire circuit	
x x	2003	2× Pt100 in 2-wire circuit	
x x	2001	2× Pt100 in 3-wire circuit	
x x	2005	2× Pt1000 in 2-wire circuit	
		(4) Tolerance class according to DIN EN IEC 60751	
x x	1	Class B (standard)	
x x	2	Class A	
x x	3	Class AA	
		(5) Protection tube diameter D	
x x	5	Ø 5 mm	
x x	6	Ø 6 mm (standard)	
		(6) Insertion length EL	
x	17	17 mm	
x	37	37 mm	
x x	50	50 mm	
x x	100	100 mm	
x	137	137 mm	
x x	200	200 mm	
x	250	250 mm	
x x	...	Specification in plain text (50 to 500 mm; 50 mm increments)	
		(7) Process connection	
x	102	Screw connection G 1/4"	
x	104	Screw connection G 1/2"	
x	114	Screw connection M10 × 1	
		(8) Connection line end	
x x	03	Bare connection wires	
x x	04	Tin-plated connection wires	
x x	11	Ferrules (standard)	
x x	56	M12 plug connector	
x x	80	Multi-pole plug connection (specify type in plain text)	
		(9) Connection line length AL	
x x	2500	2500 mm	

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x	x		Specification in plain text (500 to 500,000 mm; 500 mm increments)
		(10)	Extra codes
x	x	000	None
x	x	061	UL approval ^a
x	x	317	Shielded connection line
x	x	310	Protection tube, reduced
x	x	315	Bend protection spring
x	x	316	Bend protection tubing
x	x	366	Inspection certificate 3.1 DIN EN 10204 tolerance/calibration
x	x	775	DAkkS calibration according to ISO/IEC 17025
x	x	1150	Accuracy for temperature probe according to AMS 2750 (except Primary Standard, only in connection with tolerance class A or AA and 4-wire technology)
x	x	1151	Accuracy for temperature probe according to CQI-9 (except Primary and Secondary Standard, only in connection with tolerance class A or AA and 4-wire technology)
x	x	1152	Accuracy for temperature probe according to ISO 20431 (except Primary and Secondary Standard, only in connection with tolerance class A or AA and 4-wire technology)
x	x	658	SIL and PL-compatible (only in connection with safetyM safety temperature limiter/monitor according to data sheet 701150; not in connection with transmitters)
x	x	659	SIL and PL-compatible (only in conjunction with dTRANS T06 DIN rail according to data sheet 707071; not in conjunction with transmitters)
x	x	665	SIL and PL-compatible (only in connection with programmable dTRANS T07 T SIL two-channel transmitter with HART® communication and SIL according to data sheet 707080; not in connection with other transmitters)
x		1160	H ₂ ready – Mobile hydrogen application

^a Not in conjunction with connection line end 56.

Order code **(1)** **(2)** **(3)** **(4)** **(5)** **(6)** **(7)** **(8)** **(9)** **(10)**
 Order example 902050/10 - 378 - 1001 - 1 - 6 - 100 - 104 - 11 - 2500 / 000 , ...^a

^a List extra codes in sequence, separated by commas.

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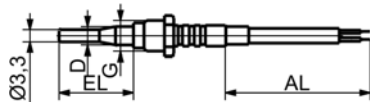
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(1) Basic type		
902050/30	Screw-in RTD temperature probe with loose screw connection and reduced protection tube	
(2) Operating temperature		
378	-50 to +180 °C	
(3) Measuring insert		
1003	1× Pt100 in 2-wire circuit	
1001	1× Pt100 in 3-wire circuit	
(4) Tolerance class according to DIN EN IEC 60751		
1	Class B (standard)	
2	Class A	
3	Class AA	
(5) Protection tube diameter D		
5.4	Ø 5.4 mm reduced to 3.3 mm	
(6) Insertion length EL		
27.5	27.5 mm	
(7) Process connection		
114	Screw connection M10 × 1	
(8) Connection line end		
03	Bare connection wires	
04	Tin-plated connection wires	
11	Ferrules (standard)	
56	M12 plug connector	
80	Multi-pole plug connection (specify type in plain text)	
(9) Connection line length AL		
2500	2500 mm	
....	Specification in plain text (500 to 500,000 mm; 500 mm increments)	
(10) Extra codes		
000	None	
061	UL approval ^a	
317	Shielded connection line	
310	Protection tube, reduced	
315	Bend protection spring	
316	Bend protection tubing	
366	Inspection certificate 3.1 DIN EN 10204 tolerance/calibration	
775	DAkkS calibration according to ISO/IEC 17025	
1150	Accuracy for temperature probe according to AMS 2750 (except Primary Standard, only in connection with tolerance class A or AA and 4-wire technology)	
1151	Accuracy for temperature probe according to CQI-9 (except Primary and Secondary Standard, only in connection with tolerance class A or AA and 4-wire technology)	
1152	Accuracy for temperature probe according to ISO 20431 (except Primary and Secondary Standard, only in connection with tolerance class A or AA and 4-wire technology)	
658	SIL and PL-compatible (only in connection with safetyM safety temperature limiter/monitor according to data sheet 701150; not in connection with transmitters)	
659	SIL and PL-compatible (only in conjunction with dTRANS T06 DIN rail according to data sheet 707071; not in conjunction with transmitters)	
665	SIL and PL-compatible (only in connection with programmable dTRANS T07 T SIL two-channel transmitter with HART® communication and SIL according to data sheet 707080; not in connection with other transmitters)	

^a Not in conjunction with connection line end 56.

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	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)									
Order code		-		-		-		-		-		, ... ^a							
Order example	902050/30	-	378	-	1003	-	1	-	5.4	-	27.5	-	114	-	11	-	2500	/	000

^a List extra codes in sequence, separated by commas.

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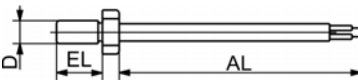
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(1) Basic type		
902050/40	Screw-in RTD temperature probe with threaded protection tube	
(2) Operating temperature		
724	-5 to +80 °C	
378	-50 to +180 °C	
386	-50 to +260 °C (PTFE)	
388	-50 to +260 °C (metal braiding)	
402	-50 to +400 °C	
(3) Measuring insert		
1003	1× Pt100 in 2-wire circuit	
1001	1× Pt100 in 3-wire circuit	
(4) Tolerance class according to DIN EN IEC 60751		
1	Class B (standard)	
2	Class A	
3	Class AA	
(5) Protection tube diameter D		
8	Ø 8 mm (M8)	
(6) Insertion length EL		
25	25 mm	
(7) Process connection		
111	Screw connection M8	
(8) Connection line end		
03	Bare connection wires	
04	Tin-plated connection wires	
11	Ferrules (standard)	
56	M12 plug connector	
80	Multi-pole plug connection (specify type in plain text)	
(9) Connection line length AL		
2500	2500 mm	
....	Specification in plain text (500 to 500,000 mm; 500 mm increments)	
(10) Extra codes		
000	None	
061	UL approval ^a	
317	Shielded connection line	
310	Protection tube, reduced	
315	Bend protection spring	
316	Bend protection tubing	
366	Inspection certificate 3.1 DIN EN 10204 tolerance/calibration	
775	DAkkS calibration according to ISO/IEC 17025	
1150	Accuracy for temperature probe according to AMS 2750 (except Primary Standard, only in connection with tolerance class A or AA and 4-wire technology)	
1151	Accuracy for temperature probe according to CQI-9 (except Primary and Secondary Standard, only in connection with tolerance class A or AA and 4-wire technology)	
1152	Accuracy for temperature probe according to ISO 20431 (except Primary and Secondary Standard, only in connection with tolerance class A or AA and 4-wire technology)	
658	SIL and PL-compatible (only in connection with safetyM safety temperature limiter/monitor according to data sheet 701150; not in connection with transmitters)	
659	SIL and PL-compatible (only in conjunction with dTRANS T06 DIN rail according to data sheet 707071; not in conjunction with transmitters)	
665	SIL and PL-compatible (only in connection with programmable dTRANS T07 T SIL two-channel transmitter with HART® communication and SIL according to data sheet 707080; not in connection with other transmitters)	

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^a Not in conjunction with connection line end 56.

Order code (1) (2) (3) (4) (5) (6) (7) (8) (9) (10)
 Order example 902050/40 - 388 - 1003 - 1 - 8 - 25 - 111 - 11 - 2500 / 000 , ...^a

^a List extra codes in sequence, separated by commas.

Stock versions

Order code	Part no.
902050/10-378-1001-1-6-100-104-11-2500/316	00065232
902050/10-378-1001-1-6-250-104-11-2500/316	00065235
902050/10-402-1003-1-6-50-104-11-2500/315,317	30072369
902050/20-402-1001-1-6-37-114-11-2500/315,317	00464846
902050/30-378-1001-1-5,4-27,5-114-11-2500/316	00089972
902050/40-388-1001-1-8-25-111-11-2500/315,317	00055732
902050/40-388-1003-1-8-25-111-11-2500/315,317	00055722

Accessories

Designation	Data sheet
Screw-in and welding protective sleeves	909710

Further information and downloads

Screw-in RTD temperature probe with connection line	 jmo.to/902050-en
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