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Internet: www.jumousa.com

Screw-in RTD temperature probe

with terminal head form J

Description

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

The device is suitable for mounting in various applications thanks to different process connections.

Areas of application

- Apparatus engineering
- Railway technology
- Heating, ventilation, and air-conditioning
- Mechanical engineering
- Mobile hydrogen applications
- Water and wastewater
- Manufacturers of Wind power plants

Special features

- Single and double RTD temperature probes
- Reliable seal in the event of vacuum and overpressure
- SIL and PL-qualified
- Optional extension tube version
- Optional transmitter



Type 902030/11 **Type 902030/20**

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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.

H_2 ready is provided as an extra code in the order details.

Technical data

Information on connection types of RTD temperature probes and thermocouples ⇨Data sheet 900002.

Information on terminal heads and terminal bases ⇨Data sheet 909715.

Outputs

Transmitter	4 to 20 mA, analog
Resistance signal	Platinum temperature sensor according to DIN EN IEC 60751, see accuracy class

Environmental influences

Operating temperature	-50 to +400 °C
Admissible ambient temperature	
Terminal head	-40 to +100 °C
Transmitter	-50 to +85 °C
Protection type	IP65

Mechanical features

Design types	Straight or tapered protection tube
	Extension tube with straight or tapered protection tube
	Tapered protection tube for air measurement
	Rotatable and with spring-loaded screw connection
Materials	
Terminal head	Aluminum die-cast
Protection tube	Stainless steel
Terminal head	Form J
Protection tube	Ø 6 mm (standard)
	Ø 8 mm
Response times	
In water 0.4 m/s	$t_{0.5}$ ≈ 8 s, $t_{0.9}$ ≈ 20 s, Ø 8 mm
	$t_{0.5}$ ≈ 5 s, $t_{0.9}$ ≈ 12 s, Ø 6 mm
	$t_{0.5}$ ≈ 2 s, $t_{0.9}$ ≈ 5 s, Ø 6 mm reduced to Ø 3.5 mm
	$t_{0.5}$ ≈ 1 s, $t_{0.9}$ ≈ 2 s, Ø 6 mm reduced to Ø 2.6 mm
In air 3.0 m/s	$t_{0.5}$ ≈ 40 s, $t_{0.9}$ ≈ 110 s, Ø 6 mm
	$t_{0.5}$ ≈ 25 s, $t_{0.9}$ ≈ 85 s, Ø 6 mm reduced to Ø 3.5 mm
	$t_{0.5}$ ≈ 18 s, $t_{0.9}$ ≈ 65 s, Ø 6 mm reduced to Ø 2.6 mm

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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
Tolerance class	Class B (standard) Class A Class AA
Insertion length	50 to 1000 mm

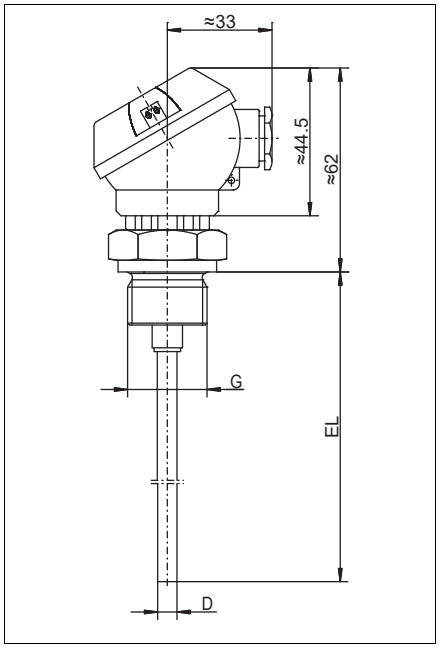
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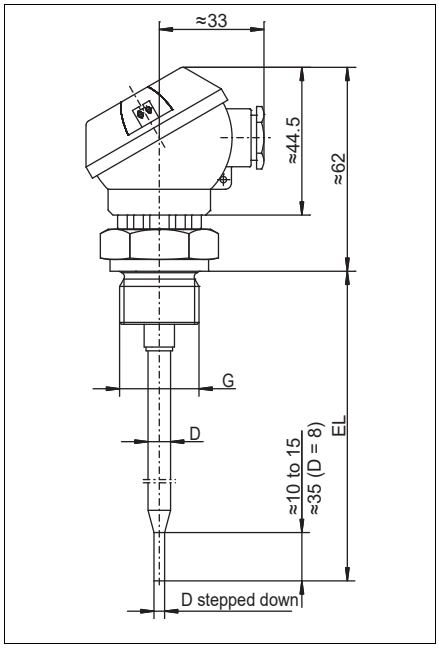
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Dimensions

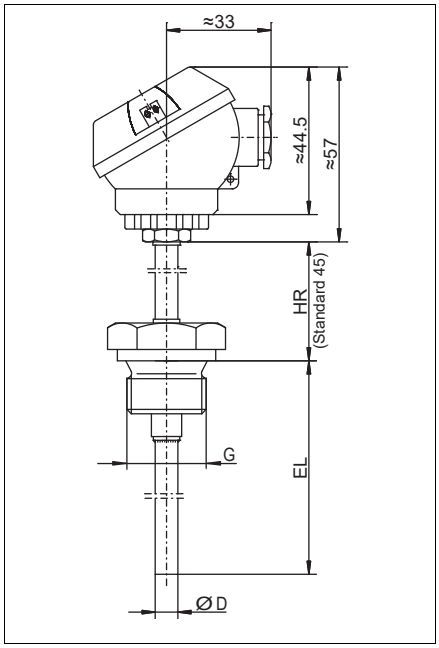
Type 902030/10
with straight protection tube



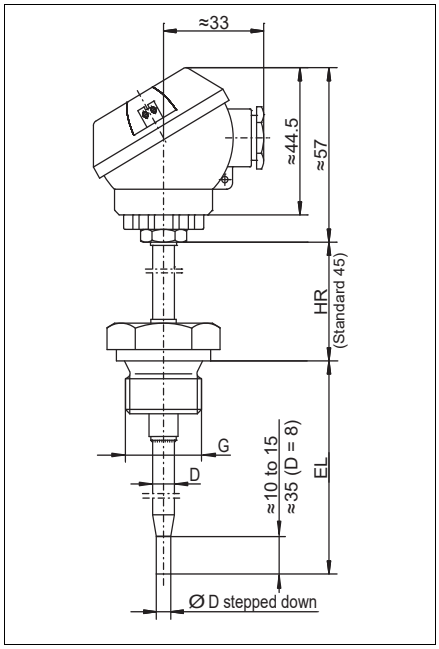
Type 902030/11
with tapered protection tube



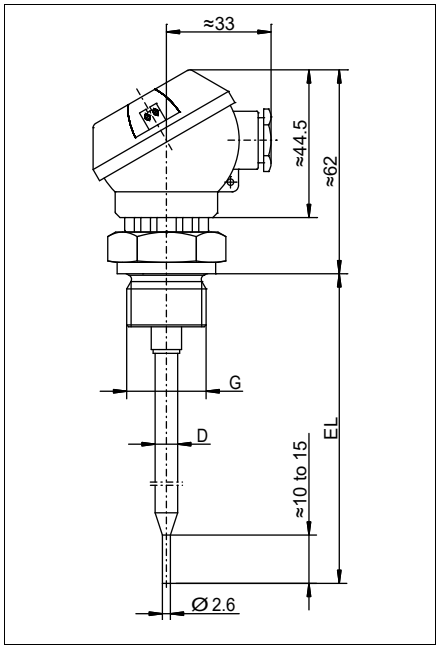
Type 902030/20
with extension tube and straight protection tube



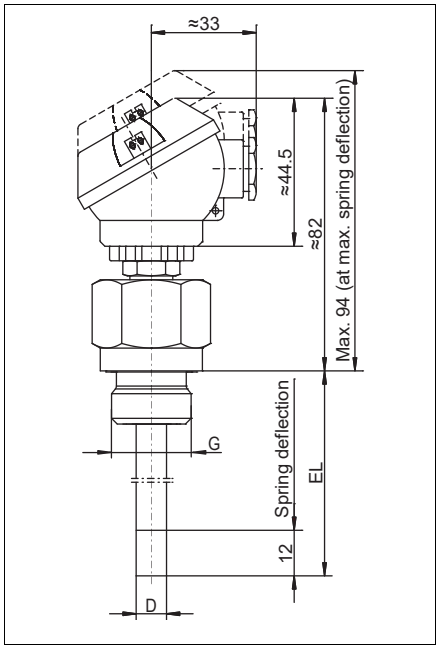
Type 902030/21
with extension tube and tapered protection tube



Type 902030/31
with tapered protection tube for air measurement



Type 902030/80
360° rotation, with spring-loaded screw connection, 12 mm spring deflection



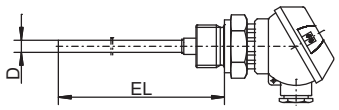
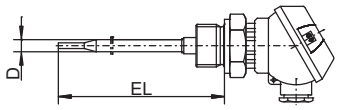
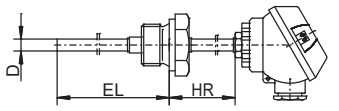
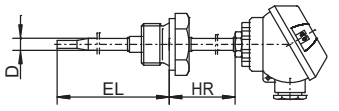
Insofar as the design type allows it, yellow terminal heads are used for SIL and PL applications (extra code 658, 659, or 665). Exceptions to this are probes for use in alkaline environments and probes that are strictly required to be PWIS-free.

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Order details

					(1)	**Basic type**
				902030/10		Screw-in RTD temperature probe with form J terminal head, with straight protection tube 
				902030/11		Screw-in RTD temperature probe with form J terminal head, with tapered protection tube (for Ø 6 to Ø 3.5 mm; for Ø 8 to Ø 6 mm) 
				902030/20		Screw-in RTD temperature probe with form J terminal head, with extension tube and straight protection tube 
				902030/21		Screw-in RTD temperature probe with form J terminal head, with extension tube and tapered protection tube (for Ø 6 to Ø 3.5 mm; for Ø 8 to Ø 6 mm) 
					(2)	**Operating temperature**
x	x	x	x	386		-50 to +260 °C
x	x	x	x	402		-50 to +400 °C
					(3)	**Measuring insert**
x	x	x	x	1003		1× Pt100 in 2-wire circuit
x	x	x	x	1001		1× Pt100 in 3-wire circuit
x	x	x	x	1011		1× Pt100 in 4-wire circuit
x	x	x	x	1005		1× Pt1000 in 2-wire circuit
x	x	x	x	2003		2× Pt100 in 2-wire circuit
					(4)	**Tolerance class according to DIN EN IEC 60751**
x	x	x	x	1		Class B (standard)
x	x	x	x	2		Class A
x	x	x	x	3		Class AA
					(5)	**Protection tube diameter D**
x	x	x	x	6		Ø 6 mm (standard)
x	x	x	x	8		Ø 8 mm
					(6)	**Insertion length EL**
	x		x	...		Specification in plain text (50 to 700 mm)
x		x		...		Specification in plain text (50 to 1000 mm)
					(7)	**Process connection**
x	x	x	x	102		Screw connection G 1/4"
x	x	x	x	103		Screw connection G 3/8"
x	x	x	x	104		Screw connection G 1/2"
		x	x	163		Union nut G 3/8"
		x	x	164		Union nut G 1/2"
		x	x	165		Union nut G 3/4"
					(8)	**Extra codes**
x	x	x	x	000		None
x	x	x	x	424		Form J terminal head with M12 plug connector (not in conjunction with measuring insert 2001)
x	x	x	x	330		1× analog transmitter dTRANS T03 J according to data sheet 707030 (not in conjunction with extra code 658, 659, or 665)
x	x	x	x	950		Railway application according to DIN EN 50155
x				1160		H_2 ready – Mobile hydrogen application
x	x	x	x	366		Inspection certificate 3.1 DIN EN 10204 tolerance/calibration

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x	x	x	x	775	DAkkS calibration according to ISO/IEC 17025
x	x	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	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	x	x	1152	Accuracy for temperature probe according to ISO 20431 (except Primary and Secondary Standard, nur in Verbindung mit Toleranzklasse A oder AA und 4-Leitertechnik)
x	x	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	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	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)

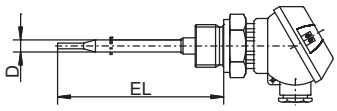
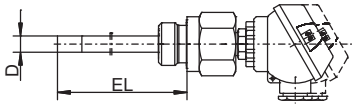
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Order code		-		-		-		-		-		-		/		, ...[a]
Order example	902030/10	-	386	-	1001	-	1	-	6	-	100	-	104	/	000	

[a] List extra codes in sequence and separate using commas.

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			(1)	**Basic type**
		902030/31		Screw-in RTD temperature probe with form J terminal head, with tapered protection tube for air measurement (to Ø 2.6 mm) 
		902030/80		Screw-in RTD temperature probe with form J terminal head (360° rotation), with spring-loaded screw connection, 12 mm spring deflection 
			(2)	**Operating temperature**
x	x	378		-50 to +180 °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	2003		2× Pt100 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		6		Ø 6 mm (standard)
	x	8		Ø 8 mm
			(6)	**Insertion length EL**
x		...		Specification in plain text (50 to 800 mm)
	x	...		Specification in plain text (50 to 1000 mm)
			(7)	**Process connection**
x	x	102		Screw connection G 1/4"
x	x	103		Screw connection G 3/8"
x	x	104		Screw connection G 1/2"
			(8)	**Extra codes**
x	x	000		None
x	x	424		Form B terminal head with M12 plug connector (not in conjunction with measuring insert 2001)
x	x	330		1× analog transmitter dTRANS T03 J according to data sheet 707030 (not in conjunction with extra code 658, 659, or 665)
x	x	950		Railway application according to DIN EN 50155
x	x	366		Inspection certificate 3.1 DIN EN 10204 tolerance/calibration
x	x	775		DAkkS calibration according to ISO/IEC 17025
	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	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	1152		Accuracy for temperature probe according to ISO 20431 (except Primary and Secondary Standard, nur in Verbindung mit Toleranzklasse A oder AA und 4-Leitertechnik)
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	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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	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)	
Order code		-		-		-		-		-		-		/		, ...[a]
Order example	902030/31	-	378	-	1001	-	1	-	6	-	100	-	104	/	000	

[a] List extra codes in sequence and separate using commas.

Stock versions

Order code	Part no.
902030/10-402-1003-1-6-50-104/000	00055692
902030/10-402-1003-1-6-100-104/000	00055693
902030/10-402-1003-1-6-150-104/000	00055694
902030/10-402-1003-1-6-300-104/000	00065691
902030/10-402-1003-1-6-250-104/000	00533433
902030/10-402-2003-1-6-50-104/000	00383011
902030/10-386-1003-1-6-100-104/330 (-50 to +260 °C)	30061780
902030/10-386-1003-1-6-250-104/330 (-50 to +260 °C)	30061811
902030/10-386-1003-1-8-400-104/330 (-50 to +260 °C)	30061812
902030/20-402-1001-1-8-400-104/000	30061813
902030/21-402-1003-1-8-250-104/000	30061814

Accessories

Designation	Data sheet
Screw-in and welding protective sleeves	909710

Further information and downloads

jmo.to/902030-en