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Screw-in RTD temperature probe with terminal head form J

- For temperatures from -50 to +400 °C
- As single or double RTD temperature probes
- Available with transmitter
- Protection type IP65
- Extension tube version

Brief description

Screw-in RTD temperature probes are the preferred choice for measuring temperatures in liquids and gases. An important factor for selecting this installation type is its ability to form reliable seals for vacuum and overpressure applications. The application areas are, among others, in air conditioning and refrigeration technology as well heater, furnace, and apparatus construction.

As a standard feature, the measuring insert is fitted with a Pt100 temperature sensor according to DIN EN 60751:2009 / IEC 60751:2008 (temperature coefficient $\alpha = 3.850 \times 10^{-3} \text{ }^{\circ}\text{C}^{-1}$), class B, in two-wire circuit. Versions with Pt500 or Pt1000 are also possible. Connection is also possible in a three-wire and four-wire circuit. A transmitter can be integrated into the terminal head as an option.



Approvals and approval marks



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Technical data

Terminal head	Form J, aluminium die-cast, M16 × 1.5; IP65, Ambient temperature -40 to +100 °C Caution: reduced ambient temperature range when using transmitters, data sheet 707030 Insofar as the design type allows it, yellow terminal heads are used for SIL and PL applications (extra codes 658 and 659). Exceptions to this are probes for use in alkaline environments and probes where it is strictly necessary that they are PWIS-free.
Process connection	Thread, stainless steel 1.4571
Protection tube	Stainless steel 1.4571, Ø 6 mm and Ø 8 mm
Measuring insert	Pt100 temperature sensor, DIN EN 60751:2009 / IEC 60751:2008, class B, two-wire circuit
Response times	t _{0.5} = 8 s, t _{0.9} = 20 s, in water 0.4 m/s, Ø 8 mm t _{0.5} = 5 s, t _{0.9} = 12 s, in water 0.4 m/s, Ø 6 mm t _{0.5} = 40 s, t _{0.9} = 110 s, in air 3.0 m/s, Ø 6 mm t _{0.5} = 2 s, t _{0.9} = 5 s, in water 0.4 m/s, Ø 6 mm stepped down to Ø 3.5 mm t _{0.5} = 25 s, t _{0.9} = 85 s, in air 3.0 m/s, Ø 6 mm stepped down to Ø 3.5 mm t _{0.5} = 1 s, t _{0.9} = 2 s, in water 0.4 m/s, Ø 6 mm stepped down to Ø 2.6 mm t _{0.5} = 18 s, t _{0.9} = 65 s, in air 3.0 m/s, Ø 6 mm stepped down to Ø 2.6 mm
Transmitter	Analog transmitter, 4 to 20 mA output, data sheet 707030
Accessories	Thermowell, data sheet 909710

Approvals and approval marks

Approval mark	Test facility	Certificate/certification number	Inspection basis	Valid for
SIL QUALIFIED	-	-	-	Extra codes 658 and 659 in conjunction with declaration of manufacturer
PL QUALIFIED	-	-	-	

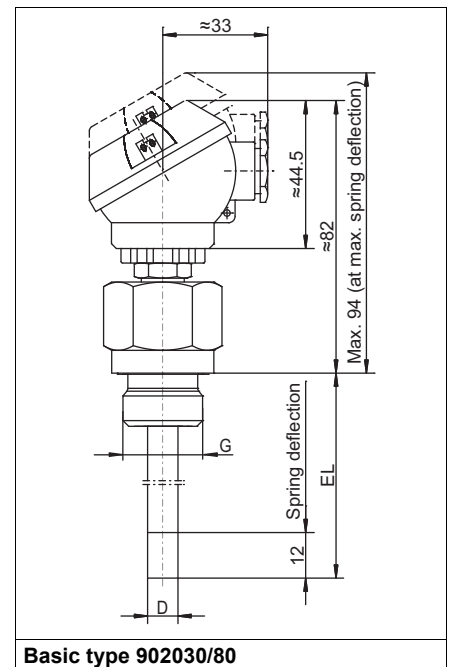
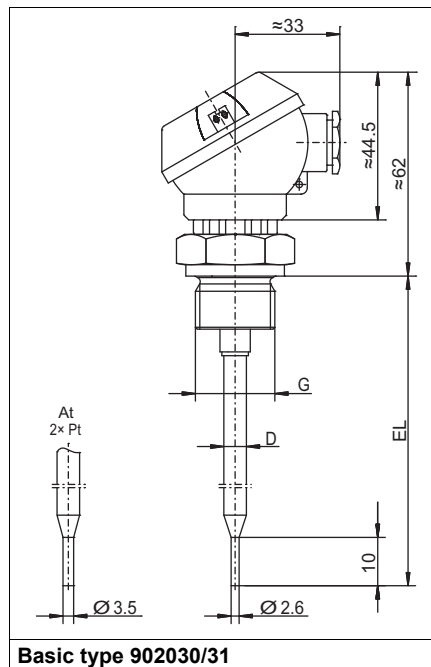
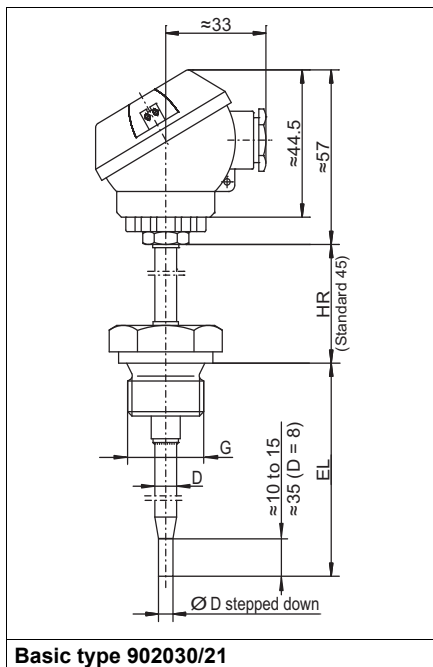
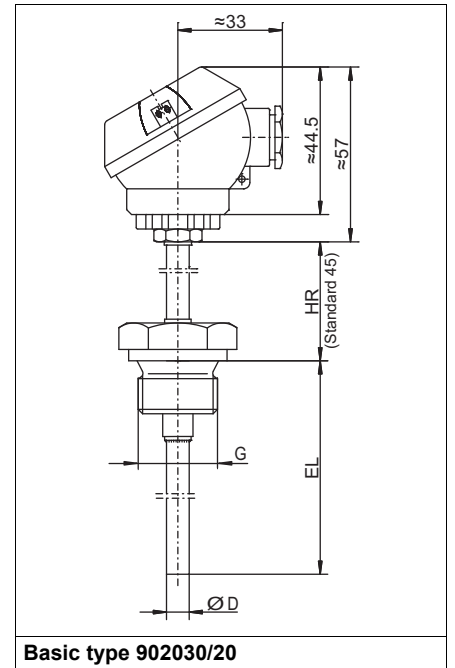
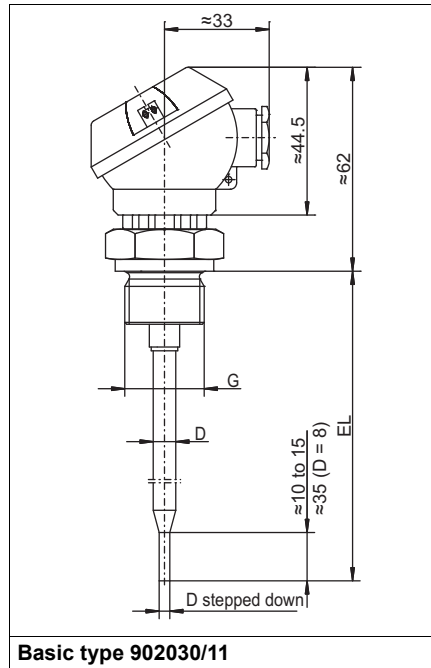
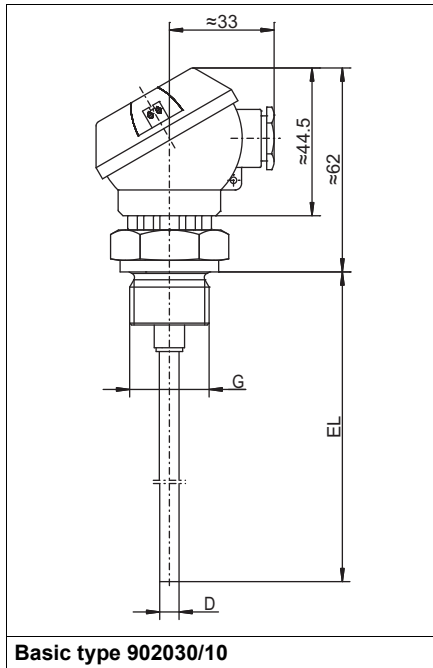
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Dimensions



Insofar as the design type allows it, yellow terminal heads are used for SIL and PL applications (extra codes 658 and 659). Exceptions to this are probes for use in alkaline environments and probes where it is strictly necessary that they are PWIS-free.

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Order details

			(1) Basic type	
902030/10			Screw-in RTD temperature probe with terminal head, form J, with continuous protection tube	
902030/11			Screw-in RTD temperature probe with terminal head, form J, with stepped protection tube (at Ø 6 stepped down to Ø 3.5 mm; at Ø 8 to Ø 6 mm)	
902030/20			Screw-in RTD temperature probe with terminal head, form J, with extension tube and continuous protection tube	
902030/21			Screw-in RTD temperature probe with terminal head, form J, with extension tube and stepped protection tube (at Ø 6 stepped down to Ø 3.5 mm; at Ø 8 to Ø 6 mm)	
			(2) Operating temperature in °C	
x	x	647	-20 to +150 °C (only in connection with class B and 1× Pt100 or 1× Pt1000 in two-wire circuit)	
x	x	x	380	-50 to +200 °C
x	x	x	386	-50 to +260 °C
x	x	x	402	-50 to +400 °C
			(3) Measuring insert	
x	x	x	1001	1× Pt100 in three-wire circuit
x	x	x	1003	1× Pt100 in two-wire circuit
x	x	x	1005	1× Pt1000 in two-wire circuit
x	x	x	1011	1× Pt100 in four-wire circuit
x	x	x	2003	2× Pt100 in two-wire circuit
			(4) Tolerance class according to DIN EN 60751:2009 / IEC 60751:2008	
x	x	x	1	Class B (standard) (-50 to +500 °C)
x	x	x	2	Class A (-30 to +300 °C)
			(5) Protection tube diameter D in mm	
x	x	x	6	Ø 6 mm (standard)
x	x	x	8	Ø 8 mm
			(6) Insertion length EL in mm (EL 50 to 1000) (max. 800 mm for basic type 902030/11)	
x	x	x	50	50 mm
x	x	x	100	100 mm
x	x	x	150	150 mm
x	x	x	250	250 mm
x	x	x	300	300 mm
x	x	x	...	Specification in plain text
			(7) Process connection (further process connections upon request)	
x	x	x	102	Screw connection G 1/4
x	x	x	103	Screw connection G 3/8
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

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				(8)	Extra codes
x	x	x	x	000	None
x	x	x	x	330	1× analog transmitter, output 4 to 20 mA ^a according to data sheet 707030 (only for measuring insert 1× Pt100 in two-wire circuit, not selectable in conjunction with extra code 658, suitable setup program part no. 00397093)
x	x	x	x	658	SIL and PL compatible (only in conjunction with JUMO SIL-certified safety temperature limiters and temperature monitors according to data sheet 701150, not selectable in conjunction with extra code 330)
x	x	x	x	659	SIL and PL compatible (only in conjunction with JUMO dTRANS T06 temperature transmitter according to data sheet 707071, not selectable in conjunction with extra code 330)

^a Specify measuring range in plain text.

Order code (1) (2) (3) (4) (5) (6) (7) (8)
 Order example 902030/10 - 386 - 1001 - 1 - 6 - 100 - 104 / 000, ...^a

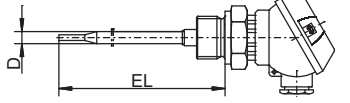
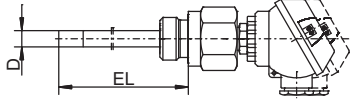
^a List extra codes in sequence and separate using commas.

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(1) Basic type	
902030/31	Screw-in RTD temperature probe with terminal head, form J, with stepped protection tube for air measurement (with 1× Pt to Ø 2.6 mm, with 2× Pt to Ø 3.5 mm)
	
902030/80	Screw-in RTD temperature probe with terminal head, form J (360° rotary), with resilient screw connection, 12 mm spring deflection
	
(2) Operating temperature in °C	
x 378	-50 to +180 °C
x 380	-50 to +200 °C
(3) Measuring insert	
x x 1001	1× Pt100 in three-wire circuit
x x 1003	1× Pt100 in two-wire circuit
x x 1005	1× Pt1000 in two-wire circuit
x x 1011	1× Pt100 in four-wire circuit
x x 2003	2× Pt100 in two-wire circuit
(4) Tolerance class according to DIN EN 60751:2009 / IEC 60751:2008	
x x 1	Class B (standard) (-50 to +500 °C)
x x 2	Class A (-30 to +300 °C)
(5) Protection tube diameter D in mm	
x 6	Ø 6 mm (standard)
x 8	Ø 8 mm
(6) Insertion length EL in mm (EL 50 to 1000) (max. 800 mm for basic type 902030/11)	
x 50	50 mm
x x 100	100 mm
x x 150	150 mm
x x 250	250 mm
x x 300	300 mm
x x ...	Specification in plain text
(7) Process connection (further process connections upon request)	
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 330	1× analog transmitter, output 4 to 20 mA ^a according to data sheet 707030 (only for measuring insert 1× Pt100 in two-wire circuit, not selectable in conjunction with extra code 658, suitable setup program part no. 00397093)
x x 658	SIL and PL compatible (only in conjunction with JUMO SIL-certified safety temperature limiters and temperature monitors according to data sheet 701150, not selectable in conjunction with extra code 330)
x x 659	SIL and PL compatible (only in conjunction with JUMO dTRANS T06 temperature transmitter according to data sheet 707071, not selectable in conjunction with extra code 330)

^a Specify measuring range in plain text.

Order code (1) (2) (3) (4) (5) (6) (7) (8)
 - - - - - - / , ...^a
Order example 902030/31 - 380 - 1001 - 1 - 6 - 100 - 104 / 000

^a List extra codes in sequence and separate using commas.

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Stock versions

Order code	Part no.
902030/10-380-2003-1-6-50-104/000	00533450
902030/10-380-2003-1-6-100-104/000	00533451
902030/10-380-2003-1-6-150-104/000	00533452
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
902030/10-402-2003-1-6-100-104/000	00526429
902030/10-402-2003-1-6-150-104/000	00533442
902030/10-402-1003-1-6-50-103/000	00478984
902030/10-380-1003-1-6-100-104/330 (-40 to +60 °C)	00533453
902030/10-647-1003-1-6-100-104/330 (0 to 100 °C)	00533454
902030/10-647-1003-1-6-150-104/330 (0 to 100 °C)	00533468
902030/10-647-1003-1-6-50-104/000	00533448
902030/10-647-1003-1-6-100-104/000	00533449
902030/10-647-1003-1-6-150-104/000	00508957
902030/31-380-1003-1-6-75-104/000	00438406
902030/31-380-1003-1-6-100-104/000	00438408
902030/31-380-1003-1-6-150-104/000	00438409