

JUMO GmbH & Co. KG

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JUMO Instrument Co. Ltd.

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JUMO Process Control, Inc.

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Screw-in RTD temperature probe with plug connector according to DIN EN 175301

- Temperature range from -50 to +260 °C
- Shakeproof design
- Plug connection locked contact stable, protection class IP65
- Available with transmitter
- GL approval for basic type 902044/20 and 902044/21

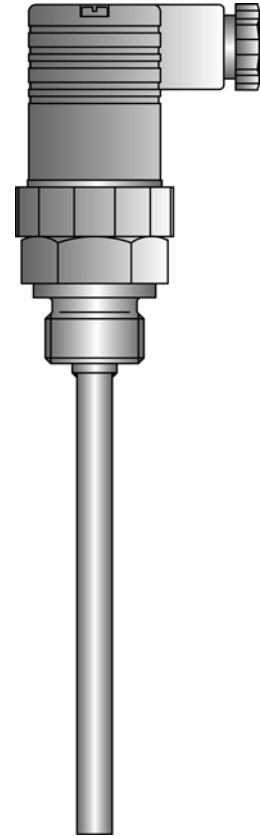
Screw-in RTD temperature probes in vibration proof design allow temperature measuring under pressure in motors, compressors, plant engineering and shipbuilding.

The plug connectors between the protection fitting and the connection cable are locked contact stable and have the protection class IP65 when connected.

The measuring insert is normally fitted with a Pt100 temperature probe according to DIN EN 60751, Class B in 2-wire circuit; versions with Pt500 or Pt1000 can also be supplied.

Connection is available in 2-wire or 4-wire-circuit as an option.

The basic types 902044/25 to 902044/29 are designed with transmitters (output 4 to 20 mA).



Technical Data

Connection

Basic type 902044/20, 902044/25 and 902044/28: plug connector DIN EN 175301-803, Pg9
Basic type 902044/21, 902044/26 and 902044/29: plug connector DIN EN 175301-803, Pg11
max. cable cross section 1.5 mm², IP65, ambient temperature -40 to +125 °C
for the versions equipped with transmitter, ambient temperature -40 to +85 °C

Process connection

Thread, stainless steel 1.4301/1.4571

Thermowell

Stainless steel 1.4571, Ø 8 mm, Ø 6 mm stepped down to Ø 3.3 mm,
Pressure load max. 50 bar at 200 °C (basic type 902044/20 and 902044/21)

Measuring insert

Pt100 temperature probe, DIN EN 60751, cl. B in 2-wire or 4-wire circuit, exchangeable. Shorter fitting lengths in connection with unfavorable fitting conditions (heat dissipation error) can result in an exceedance of the tolerance class.

The measuring insert is not exchangeable for version equipped with transmitter.

Protection type

IP65 when connected

Response times

Basic type 902044/20 and 902044/21: $t_{0,5} = 15$ s, $t_{0,9} = 45$ s, in water with 0.2 m/s, Ø 8 mm
Basic type 902044/25 to 902044/29: $t_{0,5} = <2$ s, $t_{0,9} = <4$ s, in water with 0.2 m/s,
Ø 6 mm stepped down to Ø 3.3 mm

Vibration proof design

German Lloyd, application category "D", characteristic line 2

Approval

Basic type 902044/20 and 902044/21 GL, German Lloyd

Accessories

Thermowell, data sheet 902440

Approval/approval marks (see Technical Data)



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**Technical Data**

Transmitter	Input	
	Measuring input	Pt100 (DIN EN 60751)
	Measuring range limits	-50 to +260 °C
	Measuring range	25 to 310 K (also see zero point offset)
	Zero point offset Data sheet 707030, page 7/10	for measuring range < 75 K fixed zero point setting: -40 °C, -20 °C, 0 °C, 20 °C, 40 °C for measuring range ≥ 75 K: ±50 °C
	Probe current	≤ 0.5 mA
	Measuring range	Permanent measurement due to analog signal path
	Measuring circuit monitoring	
	Underrange	dropping to ≤ 3.6 mA
	Overrange	increasing to ≥ 22 mA to < 28 mA (typical 24 mA)
	Probe short-circuit	≤ 3.6 mA
	Probe and wire break	positive: ≥ 22 mA to < 28 mA (typical 24 mA)
	Output	
	Output signal	load-independent direct current 4 to 20 mA
	Transmission behavior	temperature linear
	Transmission accuracy	≤ ±0.1 %
	Damping of the residual ripple of a voltage supply of 24 V, amplitude 10 V/50 Hz, burden 470 Ω/Load 10MΩ	40 dB
	Burden (Rb)	$R_b = (U_b - 7.5 \text{ V}) / 22 \text{ mA}$
	Burden influence	≤ ±0.02 % / 100 Ω ¹
	Setting time for temperature changes	≤ 10 ms
	Adjustment conditions	DC 24 V / approx. 22 °C
	Calibration accuracy	≤ ±0.2 % ^{1,2} or ≤ ±0.2 K
	Overall accuracy, probe/calibration	±0.4 K (typical) at 20 °C / DC 24 V voltage supply
	Voltage supply	
	Voltage supply (U _b)	DC 7.5 to 30 V
	Reverse voltage protection	yes
	Voltage supply influence	≤ ±0.01 % / V deviation from 24 V ¹
	Environmental influences	
	Operating temperature range	-40 to +85 °C
	Storage temperature range	-40 to +100 °C
	Temperature coefficient	≤ ±0.01 % / K deviation from 22 °C ¹
	Ambient conditions similar to DIN EN 60654 cl. D1	relative humidity ≤ 95 % annual average, no condensation
	EMC Interference emission/resistance	EN 61326 class B / Industrial requirements

Approval

GL	German Lloyd for basic type 902044/20 and 902044/21
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¹ All specifications referring to the measuring range limit value of 20 mA.

² The higher value is valid.

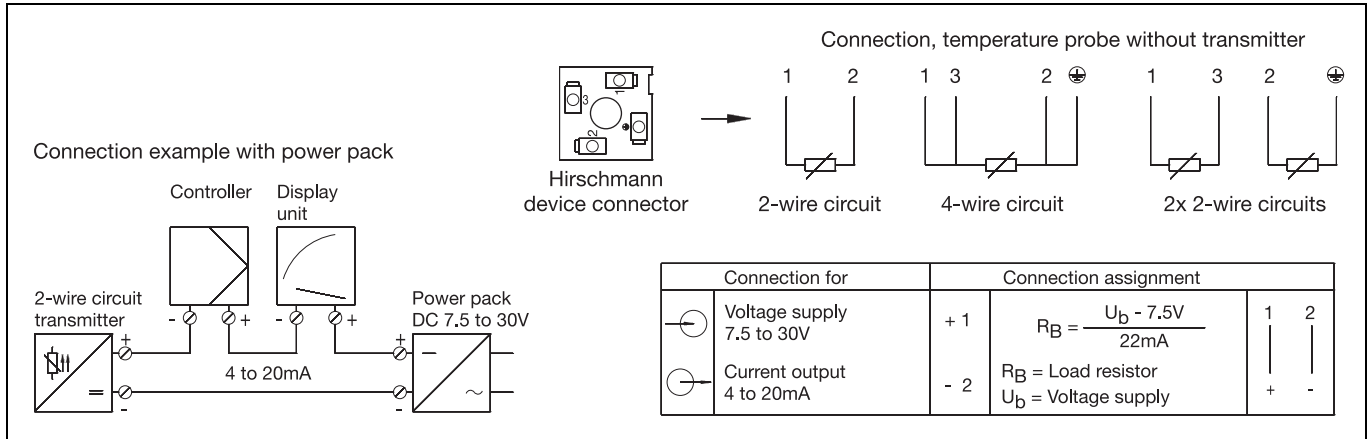
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Connection diagram



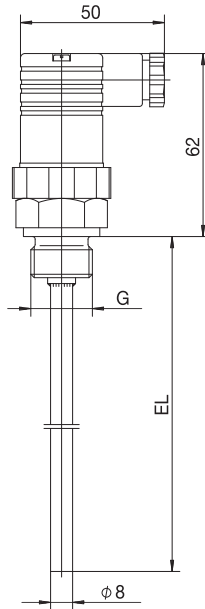
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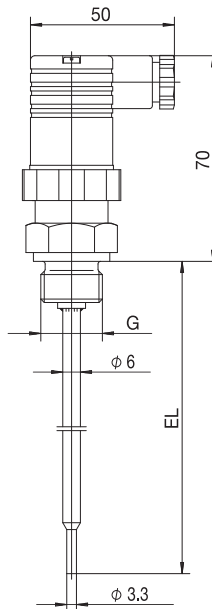
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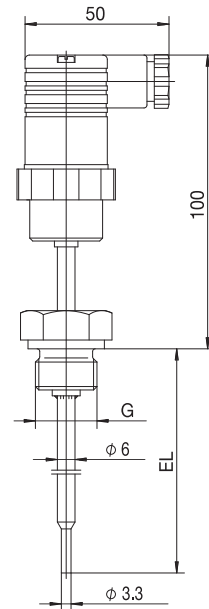
Dimensions



Basic type 902044/20
Basic type 902044/21



Basic type 902044/25
Basic type 902044/26



Basic type 902044/28
Basic type 902044/29

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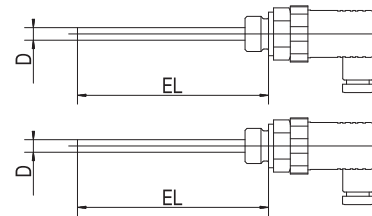
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Order details: Screw-in RTD temperature probe with plug connector according to DIN EN 175301

(1) Basic type	
902044/20	Screw-in RTD temperature probe with connection socket Pg9 according to DIN EN 175301-803 (DIN 43650)
902044/21	Screw-in RTD temperature probe with connection socket Pg11 according to DIN EN 175301-803 (DIN 43650)
(2) Operating temperature in °C	
x x	380 -50 to +200 °C
(3) Measuring insert	
x x	1003 1x Pt100 in 2-wire circuit
x x	1011 1x Pt100 in 4-wire circuit
x x	2003 2x Pt100 in 2-wire circuit
(4) Tolerance class according to DIN EN 60751	
x x	1 Class B (standard)
x x	2 Class A
(5) Thermowell diameter D in mm	
x x	8 Ø 8 mm
(6) Fitting length EL in mm	
x x	50 50 mm
x x	100 100 mm
x x	150 150 mm
x x	200 200 mm
x x	250 250 mm (no GL approval)
x x	... Please specify in plain text (50 mm steps)
(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
x x	126 Screw connection M18 x 1.5
x x	128 Screw connection M20 x 1.5
x x	144 Screw connection (thread) 1/2-14NPT
(8) Thermowell material	
x x	26 stainless steel 1.4571
(9) Extra codes	
x x	000 None
x x	062 GL approval (max. EL = 200 mm)



Order code	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Order example	902044/20	- 380	- 1003	- 1	- 8	- 100	- 104	- 26	/ 000

Design with machine connector M12 x 1, data sheet 902040.

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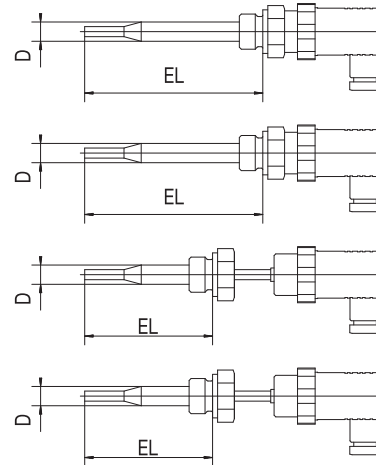
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Order details: Screw-in RTD temperature probe with plug connector according to DIN EN 175301

(1) Basic type

902044/25	Screw-in RTD temperature probe with analog transmitter and connection socket Pg9 according to DIN EN 175301-803 (DIN 43650)
902044/26	Screw-in RTD temperature probe with analog transmitter and connection socket Pg11 according to DIN EN 175301-803 (DIN 43650)
902044/28	Screw-in RTD temperature probe with analog transmitter and connection socket Pg9 according to DIN EN 175301-803 (DIN 43650), neck tube design for higher temperatures
902044/29	Screw-in RTD temperature probe with analog transmitter and connection socket Pg11 according to DIN EN 175301-803 (DIN 43650), neck tube design for higher temperatures



(2) Operating temperature in °C	
x x	370 -50 to +150 °C
x x	386 -50 to +260 °C
(3) Measuring insert	
x x x x	1003 1x Pt100 in 2-wire circuit
(4) Tolerance class according to DIN EN 60751	
x x x x	1 Class B (standard)
x x x x	2 Class A
(5) Thermowell diameter D in mm	
x x x x	6 Ø 6 mm, stepped down to Ø 3.3 mm
(6) Fitting length EL in mm	
x x x x	100 100 mm
x x x x	150 150 mm
x x x x	200 200 mm
x x x x	250 250 mm
x x x x	... Please specify in plain text (50 mm steps)
(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 x x	126 Screw connection M18 x 1.5
x x x x	128 Screw connection M20 x 1.5
x x x x	144 Screw connection (thread) 1/2-14NPT
(8) Thermowell material	
x x x x	26 stainless steel 1.4571
(9) Extra codes	
x x x x	000 None

Order code	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Order example	902044/25	- 370	- 1003	- 1	- 6	- 100	- 104	- 26	/ 000

Design with machine connector M12 x 1, data sheet 902040.

Stock versions

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	Part no.
902044/20	- 380	- 1003	- 1	- 8	- 50	- 104	- 26	/ 000	00365259
902044/20	- 380	- 1003	- 1	- 8	- 100	- 104	- 26	/ 000	00368414
902044/20	- 380	- 1003	- 1	- 8	- 150	- 104	- 26	/ 000	00368416