

JUMO GmbH & Co. KG

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JUMO Instrument Co. Ltd.

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JUMO Process Control, Inc.

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RTD Temperature Probe for the Food/Pharmaceutical Industry

- For temperatures between -50 and +250 °C
- Protection type up to IP69 according to DIN EN 60529 (IP69K according to DIN 40050)
- Hygienic process connection
- Stainless steel protection tubes
- Available with two-wire transmitter
- CIP-compliant insertion

The RTD temperature probes can be built with terminal heads made of stainless steel or die-cast aluminum.

Various process connections are available for the different requirements of sub-areas in the food/pharmaceutical industry. These include screw connections G 3/8, G 1/2 with CIP-compliant conical seal, taper sockets with union nut (dairy pipe fitting), clamping sockets (clamp), movable ball welding sockets with threaded fitting, welding sockets with CIP-compliant conical seal, VARIVENT® connections, and ball welding sleeves.

Additionally, basic types 902810/40 and 902810/41, which are designed for use with hygienic thermowells according to data sheet 902812, are available.

The protection tubes are made of stainless steel.

The RTD temperature probes for the food/pharmaceutical industry are suitable for use in a temperature range from -50 to +250 °C.

High accuracy is ensured by single or double Pt100 temperature sensors according to DIN EN 60751, class A.

Optional analog or programmable two-wire transmitters can be used for longer transmission distances.



Approvals / approval marks



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Technical data

Terminal heads	Stainless steel 1.4571, M16 × 1.5; ambient temperature -20 to +100 °C, protection type IP69 according to DIN EN 60529 (IP69K according to DIN 40050), cable screw connection made of plastic Form B DIN 43729, die-cast aluminum, M20 × 1.5; IP65, ambient temperature -40 to +100 °C Form BUZ, die-cast aluminum, M20 × 1.5; IP65, ambient temperature -40 to +100 °C Form BUZH, die-cast aluminum, M20 × 1.5; IP65, ambient temperature -40 to +100 °C Caution: reduced ambient temperature when using transmitters; data sheet 707010, 707030, and 707050
Extension tube (HR)	Stainless steel, length approx. 70 mm, Ø 9 mm
Process connections	Screw connection G 3/8 Screw connection G 1/2 with CIP-compliant conical seal, stainless steel 316 L Clamping socket (clamp) DIN 32676, stainless steel 316 L Clamping socket with union nut (dairy pipe fitting) DIN 11851, stainless steel 316 L Ball welding socket, stainless steel 316 L, PTFE clamping ring Welding socket with CIP-compliant conical seal, stainless steel 316 L, PTFE seal VARIVENT [®] connection, stainless steel 316 L Ball welding sleeve, stainless steel 316 Ti JUMO PEKA hygienic process connection, stainless steel 316 L
Protection tubes	Stainless steel 316 L Stainless steel 316 Ti, upon request
Measuring insert	Pt100 temperature sensor DIN EN 60751, class A Pt100 temperature sensor DIN EN 60751, class AA
Response times	t _{0,9} = 10 s, in water, flow velocity 0.4 m/s, protection tube diameter 6 mm
Transmitter	Analog transmitter, output 4 to 20 mA, data sheet 707030 Analog transmitter, output 0 to 10 V, data sheet 707030 Programmable transmitter, output 4 to 20 mA/20 to 4 mA, data sheet 707010 Programmable transmitter, output 4 to 20 mA/20 to 4 mA (USB), data sheet 707050

^a VARIVENT[®] is a registered trademark of GEA Tuchenhagen.

Approvals / approval marks

Approval mark	Test facility	Certificate / certification number	Inspection basis	Valid for
SIL QUALIFIED PL QUALIFIED	-	-	-	Extra code 058 Basic type 902810/13, 902810/20, 902810/40, and 902810/41 in conjunction with declaration of manufacturer

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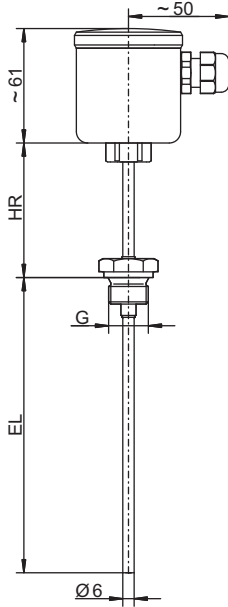
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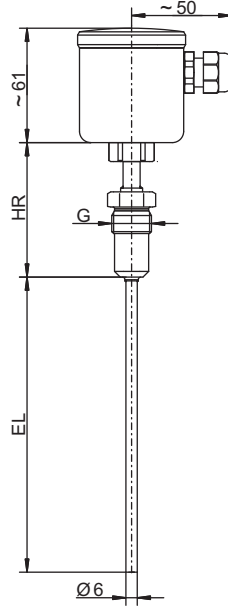


Dimensions

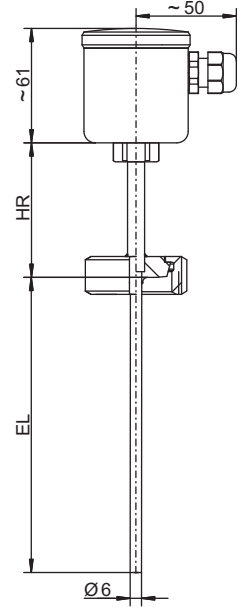
Basic types



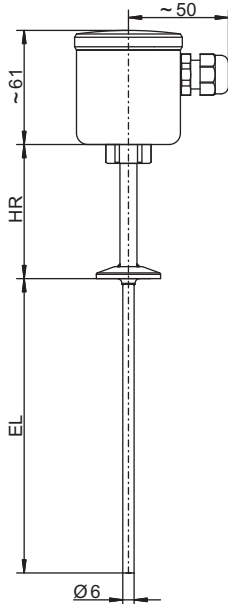
Basic type 902810/20
 with process connection PA 104



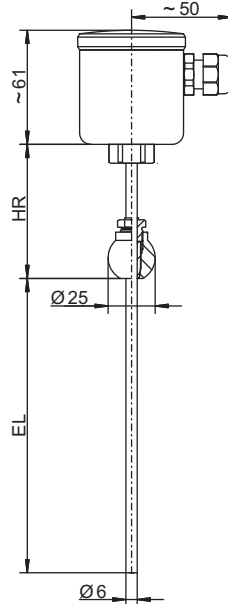
Basic type 902810/20
 with process connection PA 380



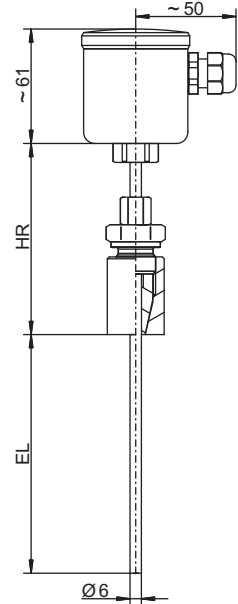
Basic type 902810/20
 with process connection PA 601



Basic type 902810/20
 with process connection PA 611



Basic type 902810/20
 with process connection PA 681



Basic type 902810/20
 with process connection PA 682

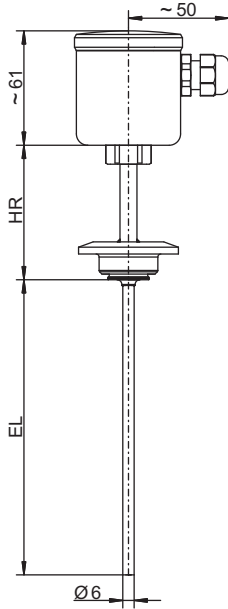
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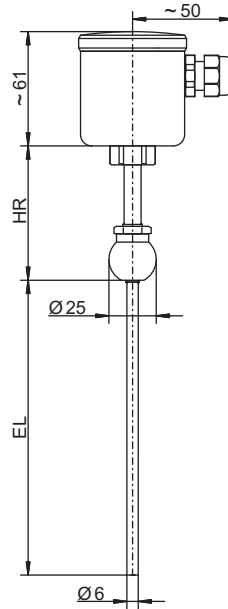
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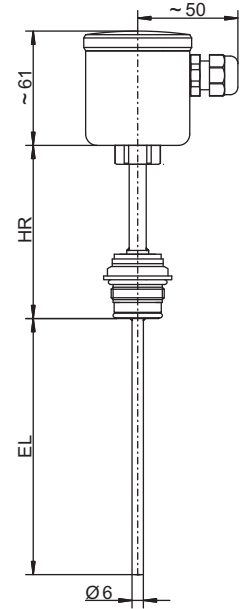
Basic types



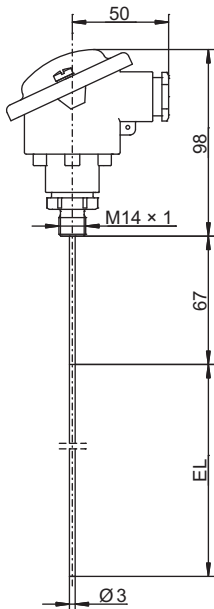
Basic type 902810/20
 with process connection PA 684



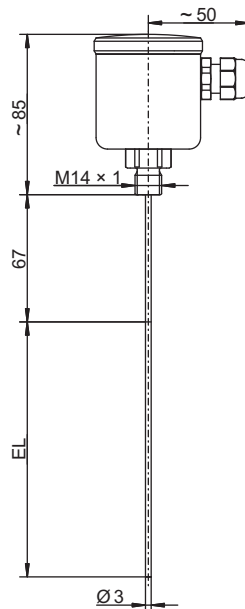
Basic type 902810/20
 with process connection PA 840



Basic type 902810/20
 with process connection PA 997



Basic type 902810/40
 with process connection PA 120



Basic type 902810/41
 with process connection PA 120

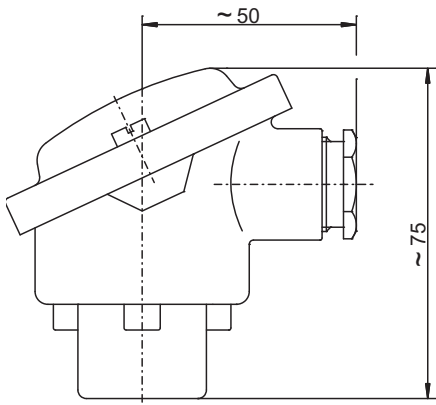
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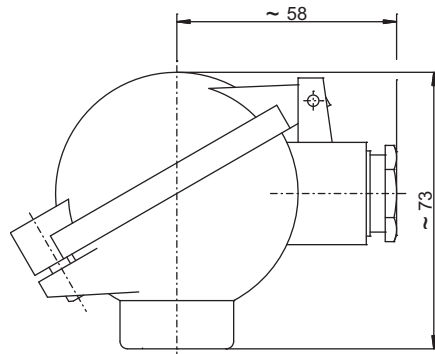
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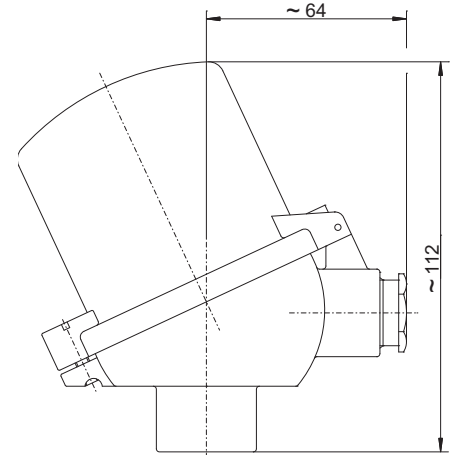
Terminal heads



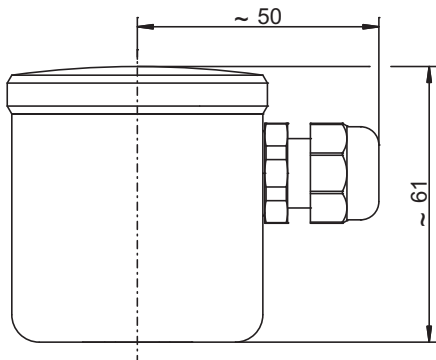
Terminal head form B
 Standard for basic type 902810/13 and 902810/40



Terminal head form BUZ
 Extra code 320



Terminal head form BUZH
 Extra code 321



Stainless steel terminal head
 Standard for basic type 902810/20 and 902810/41

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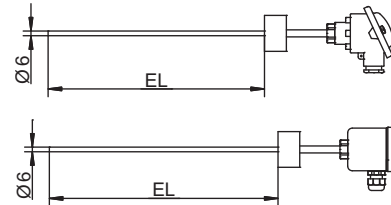
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Order details

(1) Basic type

902810/13	RTD temperature probe for the food/pharmaceutical industry with terminal head form B
902810/20	RTD temperature probe for the food/pharmaceutical industry with stainless steel terminal head



(2) Measuring insert

x x	1001	1× Pt100 in three-wire circuit
x x	2001	2× Pt100 in three-wire circuit

(3) Tolerance class according to DIN EN 60751

x x	2	Class A (standard)
x x	3	Class AA

(4) Protection tube diameter D in mm

x x	6	Ø 6 mm
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(5) Insertion length EL in mm (25 to 400 mm)

x x	25	25 mm
x x	50	50 mm
x x	100	100 mm
x x	150	150 mm
x x	...	Please specify in plain text (50 mm increments)

(6) Process connection

x x	103	Screw connection G 3/8
x x	104	Screw connection G 1/2
x x	380	Screw connection G 1/2 with CIP-compliant conical seal
x x	601	Taper socket with union nut DN 10 DIN 11851 (dairy pipe fitting)
x x	604	Taper socket with union nut DN 25 DIN 11851 (dairy pipe fitting)
x x	605	Taper socket with union nut DN 32 DIN 11851 (dairy pipe fitting)
x x	611	Clamping socket (clamp) DN 10/20 DIN 32676
x x	613	Clamping socket (clamp) DN 25/40 (1"/1.5") DIN 32676
x x	616	Clamping socket (clamp) DN 50 (2") DIN 32676
x x	617	Clamping socket (clamp) 2.5" similar to DIN 32676
x x	681	Ball welding socket with threaded fitting
x x	682	Welding socket with CIP-compliant conical seal
x x	684	VARIVENT® connection DN 15/10
x x	685	VARIVENT® connection DN 32/25
x x	686	VARIVENT® connection DN 50/40
x x	840	Ball welding sleeve (material 316 Ti)
x x	997	JUMO PEKA hygienic process connection ^a

(7) Protection tube material

x x	24	Stainless steel 316 L (material-no. 1.4404/1.4435)
x x	26	Stainless steel 316 Ti (material-no. 1.4571) (upon request)

(8) Extra code

x x	000	None
x x	058	SIL and PL-compatible
x x	305	Without extension tube (only with process connections 104 and 380)
x	320	Terminal head form BUZ
x	321	Terminal head form BUZH
x x	330	1× analog transmitter, output 4 to 20 mA ^b , data sheet 707030 (only for measuring insert 1× Pt100 in two-wire or three-wire circuit, not in conjunction with extra code 058)
x x	331	1× programmable transmitter, output 4 to 20 mA/20 to 4 mA ^c , data sheet 707010 (only for measuring insert 1× Pt100, not in conjunction with extra code 058)
x x	333	1× analog transmitter, output 0 to 10 V ^b , data sheet 707030 (only for measuring insert 1× Pt100 in two-wire or three-wire circuit, not in conjunction with extra code 058)

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x	x	365	Inspection certificate 3.1 DIN EN 10204 (insulation resistance)
x	x	367	Inspection certificate 3.1 DIN EN 10204 (pressure test)
x	x	368	Inspection certificate 3.1 DIN EN 10204 (leakage test)
x	x	374	Inspection certificate 3.1 DIN EN 10204 (material)
	x	425	Cable screw connection made of stainless steel
x	x	452	Wetted, electrolytically polished parts, surface roughness Ra ≤ 0.8 μm (not for process connections 104, 681, 682, and 840)
x	x	550	1× programmable transmitter, output 4 to 20 mA/20 to 4 mA ^c (USB), data sheet 707050 (only for measuring insert 1× Pt100, not in conjunction with extra code 058)
x	x	810	Welding socket G 1/2 (only for process connection 380 and protection tube material 24)

^a For corresponding process connection adapter, see data sheet 409711

^b Specify measuring range in plain text.

^c Specify measuring range and output signal in plain text.

Order code (1) (2) (3) (4) (5) (6) (7) (8)
 - - - - - - / , ...^a

Order example 902810/13 - 1001 - 2 - 6 - 100 - 380 - 24 / 000

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

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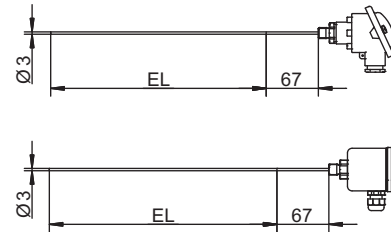
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(1) Basic type

902810/40	RTD temperature probe for the food/pharmaceutical industry with terminal head form B and adaptation system for thermowell 902812/10 (please select associated thermowells in data sheet 902812)
902810/41	RTD temperature probe for the food/pharmaceutical industry with stainless steel terminal head and adaptation system for thermowell 902812/10 (please select associated thermowells in data sheet 902812)



(2) Measuring insert

x	x	1003	1 × Pt100 in two-wire circuit
x	x	1011	1 × Pt100 in four-wire circuit
x	x	2003	2 × Pt100 in two-wire circuit

(3) Tolerance class according to DIN EN 60751

x	x	2	Class A (standard)
x	x	3	Class AA

(4) Protection tube diameter D in mm

x	x	3	Ø 3 mm
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(5) Insertion length EL in mm

(The dimension EL must be identical to that of the selected hygienic thermowell 902812/10, data sheet 902812)

x	x	50	50 mm
x	x	100	100 mm
x	x	150	150 mm

(6) Process connection

x	x	120	Screw connection M14 × 1 for adapting hygienic thermowells
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(7) Protection tube material

x	x	20	Stainless steel
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(8) Extra code

x	x	000	None
x	x	058	SIL and PL-compatible
x		320	Terminal head form BUZ
x		321	Terminal head form BUZH
x	x	330	1 × analog transmitter, output 4 to 20 mA ^a , data sheet 707030 (only for measuring insert 1 × Pt100 in two-wire or three-wire circuit, not in conjunction with extra code 058)
x	x	331	1 × programmable transmitter, output 4 to 20 mA/20 to 4 mA ^b , data sheet 707010 (only for measuring insert 1 × Pt100, not in conjunction with extra code 058)
x	x	333	1 × analog transmitter, output 0 to 10 V ^a , data sheet 707030 (only for measuring insert 1 × Pt100 in two-wire or three-wire circuit, not in conjunction with extra code 058)
x		425	Cable screw connection made of stainless steel
x	x	550	1 × programmable transmitter, output 4 to 20 mA/20 to 4 mA ^b (USB), data sheet 707050 (only for measuring insert 1 × Pt100, not in conjunction with extra code 058)

^a Specify measuring range in plain text.

^b Specify measuring range and output signal in plain text.

Order code (1) (2) (3) (4) (5) (6) (7) (8) , ...^a
Order example 902810/40 - 1003 - 2 - 3 - 50 - 120 - 20 / 000

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

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**Stock versions**

Order code	Part no.
902810/20-1001-2-6-25-380-24/452	00466457
902810/20-1001-2-6-100-380-24/452	00381830
902810/20-1001-2-6-25-611-24/452	00407336
902810/20-1001-2-6-25-613-24/452	00405849

Accessories for transmitter type 707014 (data sheet 707010)

Description	Part no.
Setup program, multilingual	00605080
PC interface with USB/TTL converter	00456352

Accessories for transmitter type 707050 (data sheet 707050)

Description	Part no.
Setup program, multilingual	00574959
USB cable, A connector to Mini-B connector, length 3 m	00506252