

JUMO GmbH & Co. KG

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JUMO Instrument Co. Ltd.

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JUMO Process Control, Inc.

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Hygienic thermowells

for temperature probes used in the food and pharmaceutical industry

- Rapid response times
- Hygienic process connections
- Reduced servicing and maintenance costs
- Fast and unlimited exchange of the temperature probe
- Easy cleaning
- High process reliability

Brief description

The hygienic thermowells have been designed for use with standard temperature probes in the food and pharmaceutical industry. This includes the temperature probes from the product groups 902810, 902815, and 902940.

All common process connections within the industry such as clamping sockets (clamp), VARIVENT® connection, aseptic screw connections in accordance with DIN 11864-1 Form A, and the CIP-compliant conical seal are available as a thermowell. The standard material is stainless steel 316 L with the surface finish $R_a \leq 0.8 \mu\text{m}$ in the area in contact with the medium (except for the thread and weld seams).

A surface finish of $R_a \leq 0.4 \mu\text{m}$ is also available as an optional extra. The wide variety of process connections makes the system versatile and usable in every application.

The use of hygienic thermowells hygienically seals the process. Easy replacement of the temperature probe is guaranteed without interrupting the process. This way, maintenance and repair costs can be reduced.

Inspection certificate:

3.1, please specify when ordering if required.



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Technical data

General information

Operating temperature	Max. -50 to +260 °C; depending on the process connection As a basic principle, the operating temperature ranges of the temperature probes apply. Furthermore, the seal used by the customer may restrict the operating temperature range.
Material	Thermowell with stainless steel 316 L process connection, material-no. 1.4404 or 1.4435 for process connections 611 to 617 clamping socket (clamp)
Insertion lengths	50, 100, or 150 mm
Process connections	Screw connection G 1/2, screw connection G 1/2 with CIP-compliant conical seal, weld-in sleeve, aseptic screw connections, taper socket with union nut (dairy pipe fitting), clamping socket (clamp), ball welding socket with threaded fitting, VARIVENT® ^a connection, NEUMO BioControl® ^b , and ball welding sleeve
Surface finish	Standard surface roughness $R_a \leq 0.8 \mu\text{m}$ in the area in contact with the medium (except for the thread and weld seams); $R_a \leq 0.4 \mu\text{m}$ available as an optional extra for clamping socket (clamp) (area in contact with the medium, except for the weld seams)
Response times	$t_{0.5} = 3 \text{ s}$, $t_{0.9} = 8 \text{ s}$; in water 0.4 m/s

^a VARIVENT® is a registered trademark of GEA Tuchenhausen.

^b NEUMO BioControl® is a registered trademark of NEUMO.

Process connections

Process connection PA	000	103 and 104	380	400	550 to 554	601 to 605
Protection fitting material	1.4404					
Operating temperature in °C ^a	-50 to +260					
Admissible pressure in bar	-	40	16	^b	According to DIN 11864 ^c	According to DIN 11851 ^c
Process connection PA	611 to 617	681	684 to 686	755 to 758	840	
Protection fitting material	1.4435 ^d	1.4404				
Operating temperature in °C ^a	-50 to +260	-50 to +200	-50 to +260	-10 to +200	-50 to +260	
Admissible pressure in bar	According to DIN 32676 ^c	^a	10	16	^b	

^a depending on the seal used

^b p_{max} is dependent on the welding process

^c The admissible pressures are designed for an operating temperature range of -10 to +140 °C given use of suitable clamps and sealing materials.

^d According to Basler Norm II

The maximum possible process pressure depends on different influences, e.g. design type, process connection, and process temperature.

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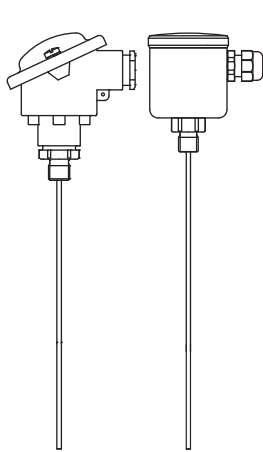
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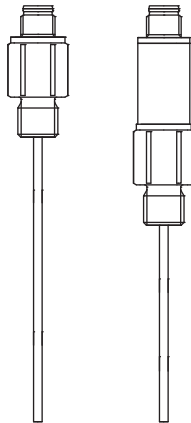


Dimensions

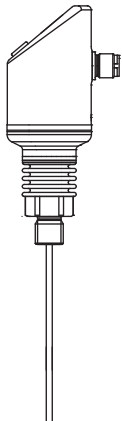
The different design types of the hygienic thermowell shown on the right can be combined with the temperature probes shown on the left.



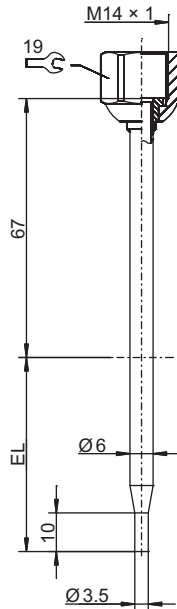
Basic type 902810/40 and .../41,
 Data sheet 902810



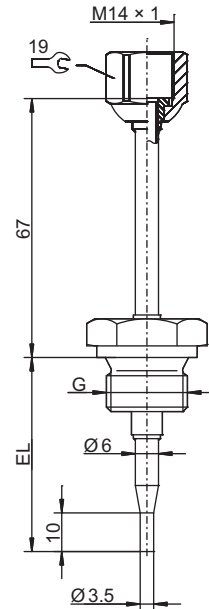
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 Data sheet 902815



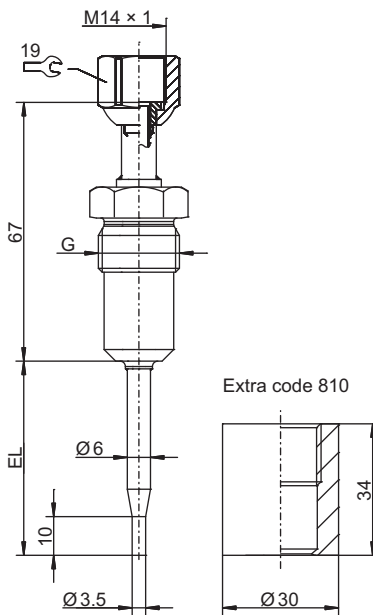
Basic type 902940/40,
 Data sheet 902940



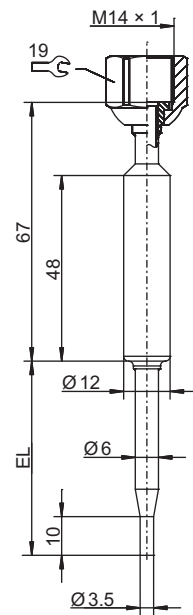
Basic type 902812/10
 with process connection
 PA 000



Basic type 902812/10
 with process connection
 PA 103 or 104



Basic type 902812/10
 with process connection
 PA 380

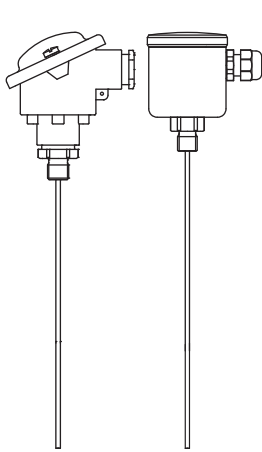


Basic type 902812/10
 with process connection
 PA 400

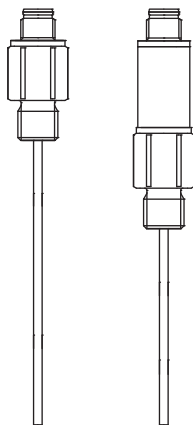
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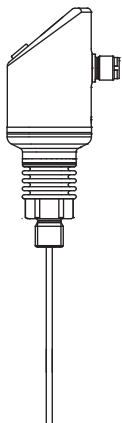
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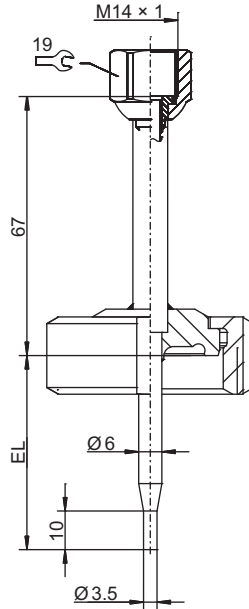
Basic type 902810/40 and .../41,
 Data sheet 902810



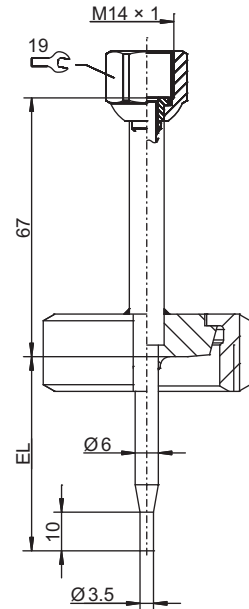
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 Data sheet 902815



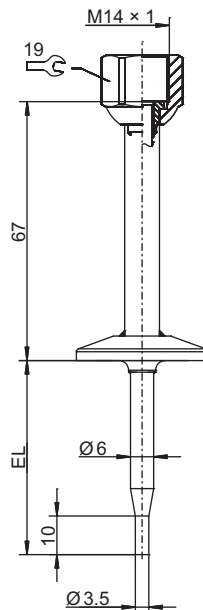
Basic type 902940/40,
 Data sheet 902940



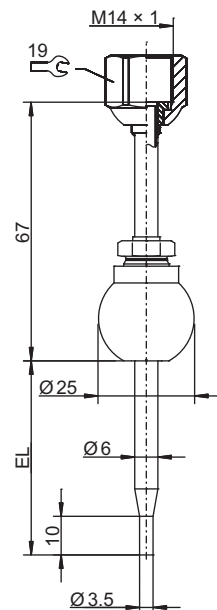
Basic type 902812/10
 with process connection
 PA 550 to 554



Basic type 902812/10
 with process connection
 PA 601 to 605



Basic type 902812/10
 with process connection
 PA 611 to 617

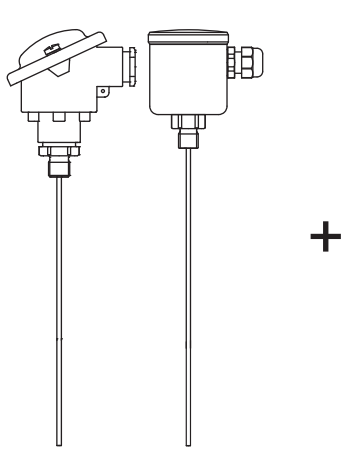


Basic type 902812/10
 with process connection
 PA 681

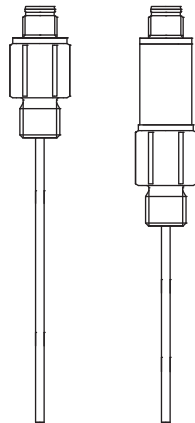
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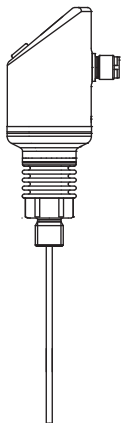
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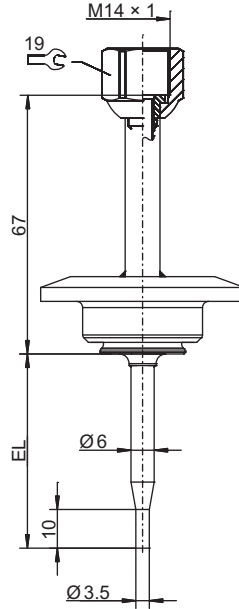
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 Data sheet 902810



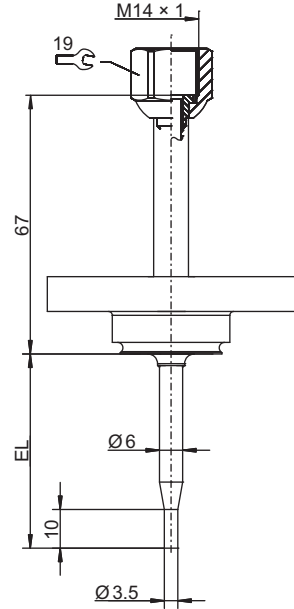
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 Data sheet 902815



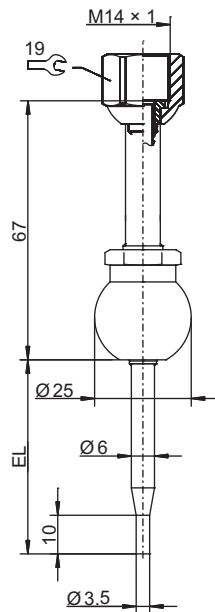
Basic type 902940/40,
 Data sheet 902940



Basic type 902812/10
 with process connection
 PA 684 to 686



Basic type 902812/10
 with process connection
 PA 755 to 758



Basic type 902812/10
 with process connection
 PA 840

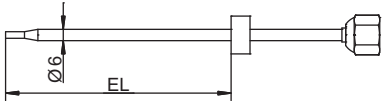
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Order details

(1) Basic type		
902812/10	Hygienic thermowell for temperature probes in the food and pharmaceutical industry with internal thread M14 × 1	
(2) Protection tube diameter		
x	6	Outer diameter stepped down from 6 mm to 3.5 mm
(3) Insertion length EL in mm (50 to 150 mm in 50-mm steps, no intermediate sizes)		
x	50	50 mm
x	100	100 mm
x	150	150 mm
(4) Process connection PA		
x	000	None
x	103	Screw connection G 3/8 (not electropolished)
x	104	Screw connection G 1/2 (not electropolished)
x	380	Screw connection G 1/2 with CIP-compliant conical seal
x	400	Weld-in sleeve
x	550	Aseptic screw connection DN 20 DIN 11864-1 Form A
x	551	Aseptic screw connection DN 25 DIN 11864-1 Form A
x	552	Aseptic screw connection DN 32 DIN 11864-1 Form A
x	553	Aseptic screw connection DN 40 DIN 11864-1 Form A
x	554	Aseptic screw connection DN 50 DIN 11864-1 Form A
x	601	Taper socket with union nut DN 10 DIN 11851 (dairy pipe fitting)
x	604	Taper socket with union nut DN 25 DIN 11851 (dairy pipe fitting)
x	605	Taper socket with union nut DN 32 DIN 11851 (dairy pipe fitting)
x	611	Clamping socket (clamp) DN 10/20 DIN 32676
x	613	Clamping socket (clamp) DN 25/40 (1"/1.5") DIN 32676
x	616	Clamping socket (clamp) DN 50 (2") DIN 32676
x	617	Clamping socket (clamp) DN 2.5" DIN 32676
x	681	Ball welding socket with threaded fitting
x	684	VARIVENT® connection DN 15/10
x	685	VARIVENT® connection DN 32/25
x	686	VARIVENT® connection DN 50/40
x	755	NEUMO BioControl® D25
x	756	NEUMO BioControl® D50
x	757	NEUMO BioControl® D65
x	758	NEUMO BioControl® D80
x	840	Ball welding sleeve
(5) Protection tube material		
x	24	Stainless steel 316 L (material-no. 1.4404)
(6) Extra codes		
x	000	None
x	374	Inspection certificate 3.1 DIN EN 10204 (material)
x	458	Surface roughness $R_a \leq 0.4 \mu\text{m}$ for clamping socket (clamp) (area in contact with the medium)
x	810	Welding socket (only for process connection 380)

Order code (1) - (2) - (3) - (4) - (5) / (6) , ...^a
 Order example 902812/10 - 6 - 50 - 380 - 24 / 000

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