

JUMO PROCESStemp

RTD temperature probes for process technology with Ex approval

- For temperatures from -200 to +600 °C
- With protection tubes made of stainless steel, titanium, tantalum, Inconel, and HASTELLOY®
- Available with two-wire transmitter (4 to 20 mA/HART®) in Ex version
- II 1/2 G Ex ia IIC T1...T6 Ga/Gb
- II 1/2 D Ex ia IIIC T80 °C...T400 °C Da/Db
- II 1/2 G Ex ia/d IIC T1...T6 Ga/Gb
- II 1/2 D Ex ia/tb IIIC T80 °C...T400 °C
- With interchangeable measuring insert (not for Ex basic types)

Brief description

RTD temperature probes for process technology (in chemical plants, petrochemical industry, pressure vessels, etc.) are predominantly used for temperature measurement in liquids and gases.

The RTD temperature probes consist of a protection fitting according to DIN 43772 with various process connections, a terminal head, and an interchangeable measuring insert. The protection fitting is made of material 1.4571 as standard. Other materials are available for special applications.

All fittings are produced according to the German pressure vessel regulation ("Druckbehälterverordnung") and subjected to a pressure and leak test. The measuring insert is fitted with a Pt100 temperature sensor as a standard feature 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 two Pt100 measuring circuits can also be supplied, as well as three and four-wire circuits.

An analog or programmable transmitter with standard signal 4 to 20 mA can be installed for the transmission of measured values. Alternatively a HART® interface can be used.

Versions with flameproof enclosure or intrinsic safety are available for temperature measurement in potentially explosive areas.

For documentation purposes, the device parameters (measurement tolerance, material, etc.) can be confirmed with factory test certificates.

Push-in and screw-in RTD temperature probes with connection line and Ex approval are available upon request.

Note:

The specified operating temperatures are maximum values based on the applied sensing element. Operating temperatures in Ex areas are severely restricted. When determining the respective maximum operating temperature, please consult the operating manual (Chapter 5).

An RTD temperature probe that is installed in a separating wall between zone 0/1 (gas) and 20/21 (dust) and which does not have a protection tube with a zone separation of 1 mm stainless steel (extra code 292) requires the user to make sure that the complete measuring circuit corresponds to the intrinsically safe "ia" ignition protection type.

Explosion protection:

The maximum product-specific explosion protection depends on the design type of the RTD temperature probe. For an exact classification of the RTD temperature probe, please refer to the operating manual.



Approvals and approval marks





Technical data

| | |
|----------------------|--|
| Terminal head | <p>Form B DIN EN 50446, aluminum die-cast, M20 × 1.5; IP65, ambient temperature -40 to +100 °C</p> <p>Form BUZ, aluminum die-cast, M20 × 1.5; IP65, ambient temperature -40 to +100 °C</p> <p>Form BUZH with or without LED display, aluminum die-cast, M20 × 1.5; IP65, ambient temperature -40 to +100 °C (with LED display -20 to +80 °C)</p> <p>Form BUZH with LED display and Ex approval, aluminum die-cast, M20 × 1.5; IP65, ambient temperature 0 to 60 °C</p> <p>Form BBKS, plastic (PA 6), M20 × 1.5; IP54, ambient temperature -30 bis +130 °C</p> <p>Form BEGF, stainless steel 1.4541, M20 × 1.5, IP65, ambient temperature -40 to +100°C</p> <p>Form XD "Ex d IIC"/"Ex tb IIC" with or without LED display, stainless steel or aluminum die-cast, M20 × 1.5; IP66, ambient temperature -50 to +100 °C (with LED display -20 to +80 °C)</p> <p>Caution: reduced ambient temperature when using transmitters, data sheets 707010, 707030, 707050, 707060, and 707080</p> <p>Insofar as the design type allows it, yellow terminal heads are used for SIL and PL applications (extra codes 658 or 659). Exceptions to this are probes for use in alkaline environments and probes that are strictly required to be PWIS-free.</p> |
| Extension tube | Stainless steel 1.4571 |
| Process connection | <p>Thread, stainless steel 1.4571</p> <p>Flange, stainless steel 1.4571</p> <p>Thermowell, stainless steel 1.4571 or steel 1.7335</p> <p>Highly corrosion-resistant materials and coatings are optionally available</p> |
| Protection tube | <p>Stainless steel 1.4571, Ø 6 mm, Ø 9 mm, Ø 11 mm, or Ø 12 mm</p> <p>Highly corrosion-resistant materials and coatings are optionally available</p> |
| Measuring insert | Exchangeable, Pt100 temperature sensor according to DIN DIN EN 60751:2009 / IEC 60751:2008, Class B, two-wire circuit |
| Response times | t _{0,9} approx. 50 s, flow velocity in water 0.2 m/s, Ø 9 mm |
| Vibration resistance | 20 g (peak-to-peak) at the tip of the measuring insert |
| Transmitters | <p>Programmable transmitter, data sheet 707010</p> <p>Analog transmitter, data sheet 707030 (not for the Ex area)</p> <p>Programmable transmitter, data sheet 707050 (not for the Ex area)</p> <p>Programmable two-channel transmitter with HART@/SIL, data sheet 707080</p> <p>Programmable Wtrans B head transmitter with wireless data transmission, data sheet 707060 (not for the Ex area, suitable Wtrans receivers according to data sheet 902931)</p> |
| Accessories | Thermowells, data sheet 909710 |

Functional safety

With this product, JUMO provides a number of different possibilities in terms of functional safety to realize a completely or partially certified solution.

If you require consulting with regard to the safety integrity level (SIL) or performance level (PL), you can contact us at sil@jumo.net to arrange a personal appointment.

The safety data (MTBF, MTTFD, and FIT values) can also be accessed on demand for this item under sensors@jumo.net.





Approvals and approval marks

| | |
|---|--|
| ATEX Test facility Certificate/test no. Inspection basis Valid for | Eurofins Electrosuisse Product Testing AG SEV 15 ATEX 0118 EN 60079-0 + A11, EN 60079-1, EN 60079-11, EN 60079-26, EN 60079-31 Extra code 362 |
| IECEX Test facility Certificate/test no. Inspection basis Valid for | Eurofins Electrosuisse Product Testing AG IECEX SEV 15.0006 IEC 60079-0, IEC 60079-1, IEC 60079-11, IEC 60079-26, IEC 60079-31 Extra code 362 |
| SIL QUALIFIED Test facility Certificate/test no. Inspection basis Valid for | - - - Extra codes 658/659 in conjunction with declaration of manufacturer |
| PL QUALIFIED Test facility Certificate/test no. Inspection basis Valid for | - - - Extra codes 658/659 in conjunction with declaration of manufacturer |

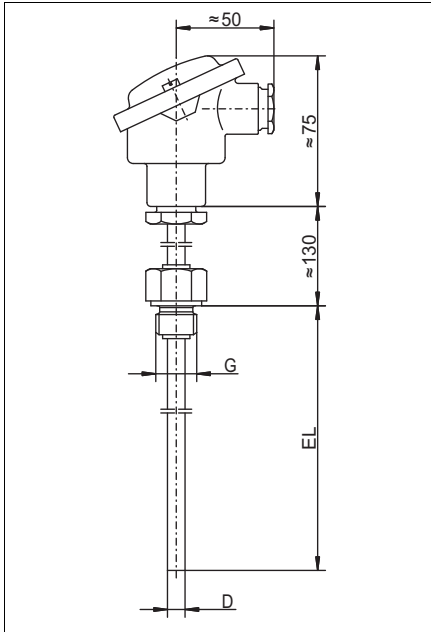
Standardized versions

| Basic type | Design type | | D in mm | L2 in mm | EL in mm | Thread in inches |
|------------|--------------------------------|--------------------------------|------------|-------------|-------------|---------------------|
| 902820/10 | Form 2G according to DIN 43772 | Form B1 according to DIN 43765 | 9 | - | 160 | G 1/2 |
| | | Form B2 according to DIN 43765 | 9 | - | 250 | G 1/2 |
| | | Form B3 according to DIN 43765 | 9 | - | 400 | G 1/2 |
| | | Form C1 according to DIN 43766 | 11 | - | 160 | G 1 |
| | | Form C2 according to DIN 43766 | 11 | - | 250 | G 1 |
| 902820/11 | Form 3G according to DIN 43772 | Form G1 according to DIN 43771 | 9 | - | 160 | G 1 |
| | | Form G2 according to DIN 43771 | 9 | - | 220 | G 1 |
| | | Form G3 according to DIN 43771 | 9 | - | 280 | G 1 |
| 902820/50 | Form 4 according to DIN 43772 | Form D1 according to DIN 43771 | 12.5 | 140 | 65 | - |
| | | Form D2 according to DIN 43771 | 12.5 | 200 | 125 | - |
| | | Form D3 according to DIN 43771 | 12.5 | 200 | 65 | - |
| | | Form D4 according to DIN 43771 | 12.5 | 260 | 125 | - |

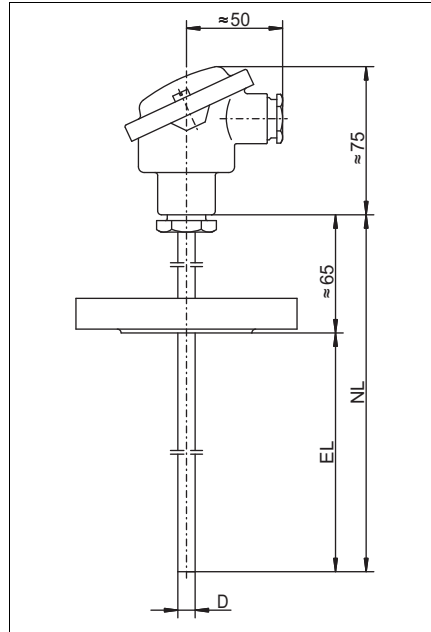
Note: DIN 43772 contains information for evaluating the mechanical and thermal resistance of cylindrical and conical protection tubes in industrial thermometers.

Dimensions

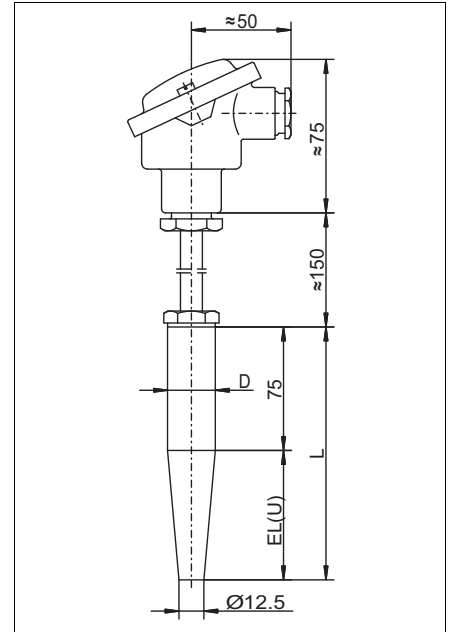
RTD temperature probe dimensions



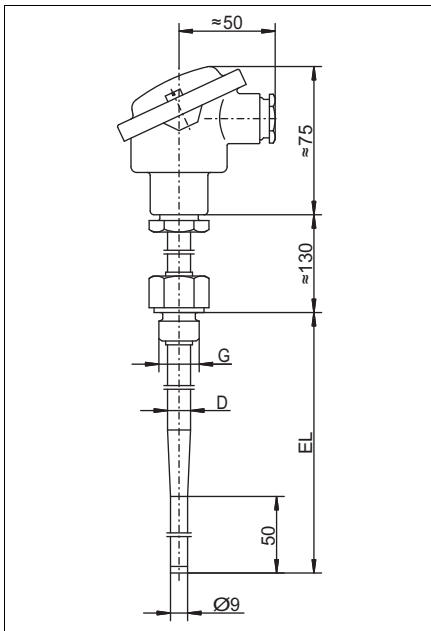
Basic type 902820/10



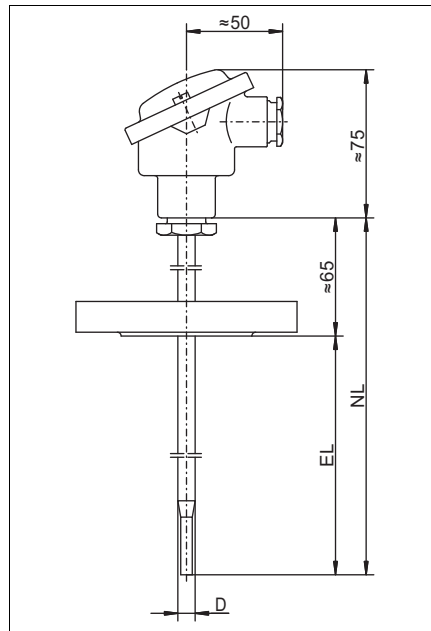
Basic type 902820/20



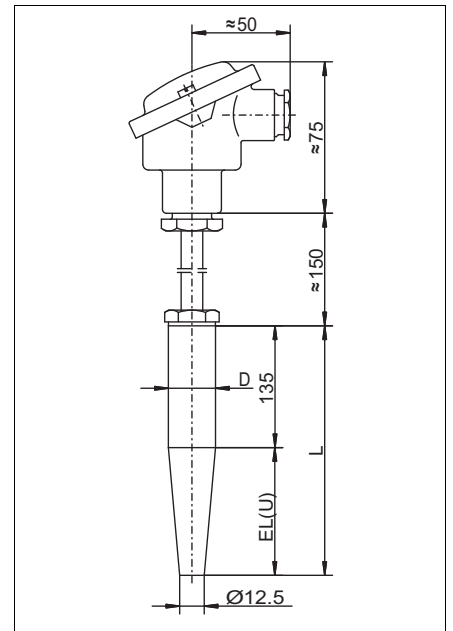
Basic type 902820/50



Basic type 902820/11



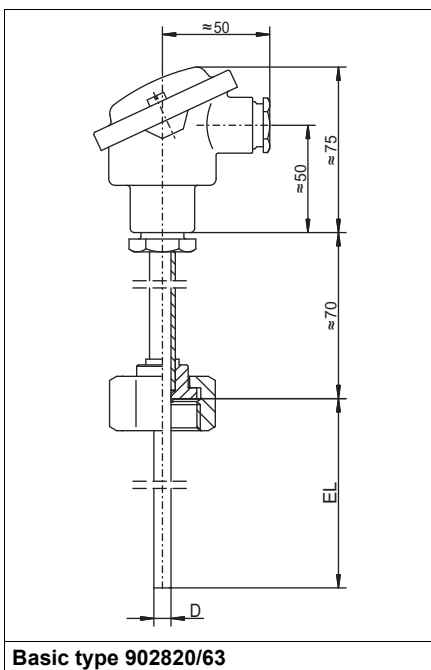
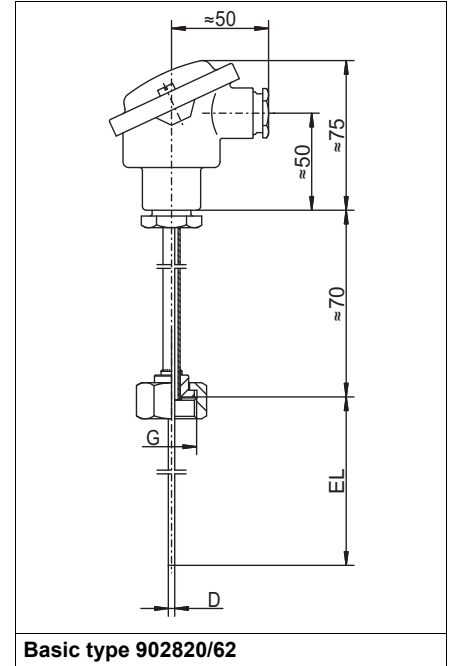
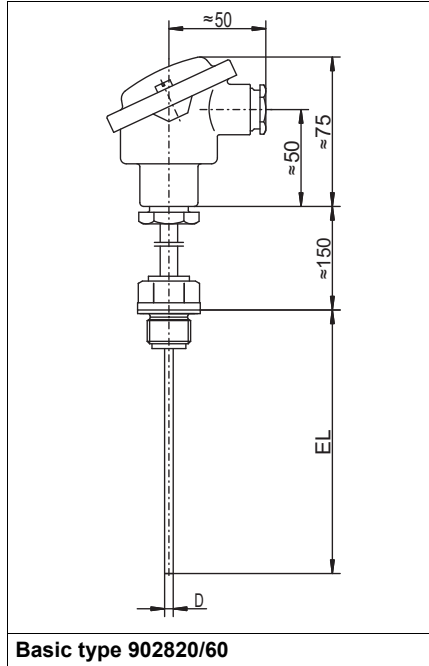
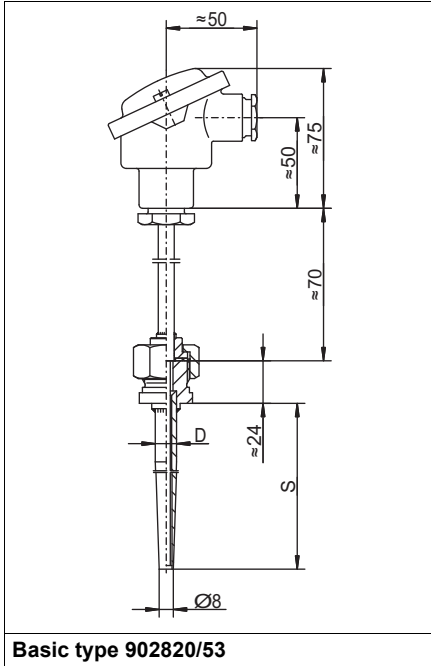
Basic type 902820/21



Basic type 902820/51

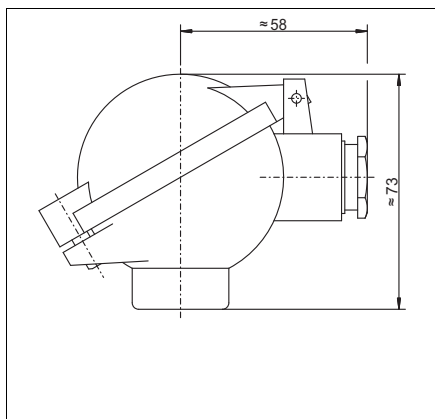
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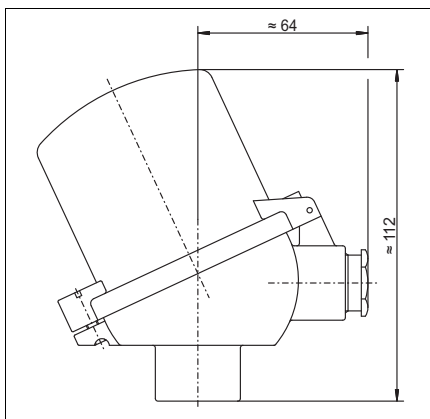


Insofar as the design type allows it, yellow terminal heads are used for SIL and PL applications (extra codes 658 or 659). Exceptions to this are probes for use in alkaline environments and probes where it is strictly necessary that they are PWIS-free.

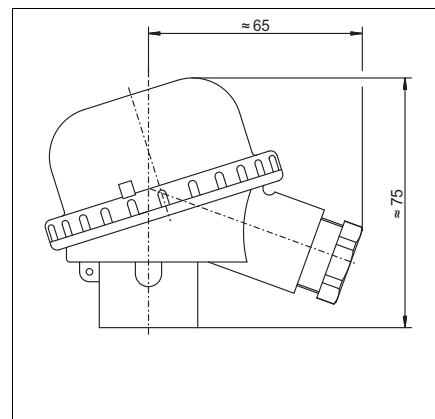
Dimensions of the terminal heads



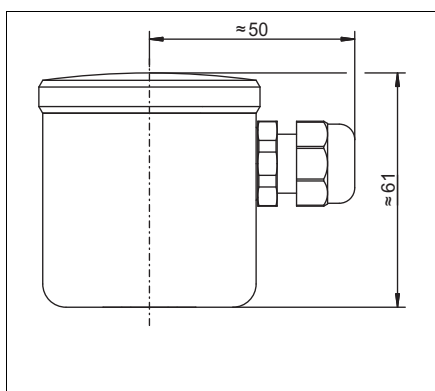
Terminal head form BUZ
Extra code 320



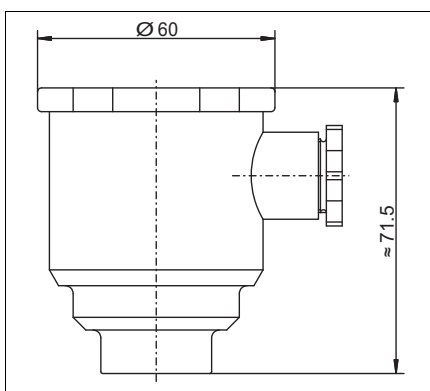
Terminal head form BUZH
Extra code 321
With LED display
Ex ia extra code 321 and 661



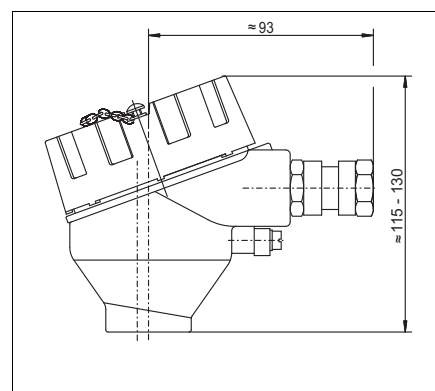
Terminal head form BBKS
Extra code 324



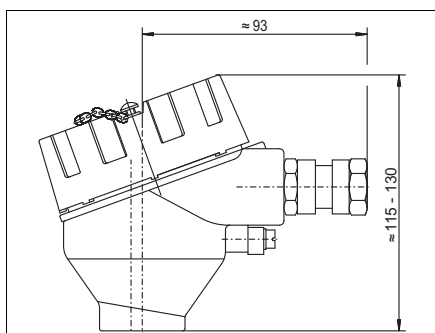
Terminal head form KGI-1
Extra code 326



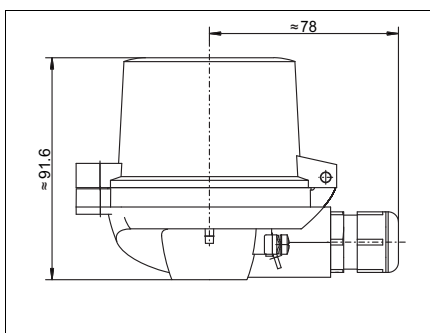
Terminal head form BEGF
Extra code 397



Terminal head form XD-A
Extra code 399
With LED display
Ex ia extra code 399 and 661
Ex ib extra code 399 and 789



Terminal head form XD-S
Extra code 541
With LED display
Ex ia extra code 541 and 661
Ex ib extra code 541 and 789



Terminal head form AB7
Extra code 924

Wtrans B – head transmitter with wireless data transmission

The Wtrans B head transmitter with wireless data transmission (data sheet 707060) is used in conjunction with a Wtrans receiver (data sheet 902931) for stationary or mobile acquisition of temperatures with RTD temperature probes or thermocouples.

The measured values are transmitted wirelessly to the receiver of the Wtrans measuring system. The measured values are displayed on the receiver and are available in digital format on the RS485 interface and as analog outputs. Alternatively, different alarms can be signaled with two relay outputs.

This head transmitter, designed for industrial applications, comprises a transmitter with integrated transmission unit and an antenna-battery housing. The transmitter is designed for mounting in form B terminal heads and works in an ambient temperature range of -30 to +85 °C.

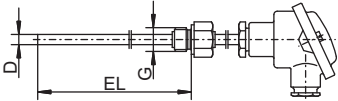
The radio frequency of the Wtrans measuring system is 868.4 MHz. This frequency is largely impervious to external interference and allows data to be transmitted even in harsh industrial environments. When using the antenna holder for wall mounting with the 3 m antenna cable for the receiver, the open air range is 300 m.

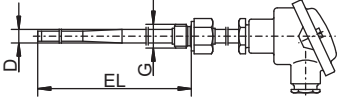
A 3.6 V, 2.2 Ah (size AA) lithium battery is used for the head transmitter voltage supply.

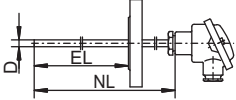
A setup program is available as an accessory for easy configuration and parameterization of the head transmitter and the Wtrans receiver on a PC. The OnlineChart function can be used optionally to record the measured values on a PC.

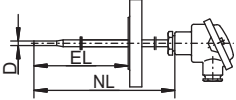


Order details

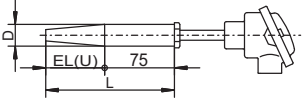
| | | |
|-----------|---|---|
| | (1) Basic type | |
| 902820/10 | Screw-in RTD temperature probe with continuous protection tube |  |
| | (2) Operating temperature (additional versions upon request) | |
| x 150 | -200 to +600 °C (wire-wound temperature sensor) | |
| x 386 | -50 to +260 °C (thin film temperature sensor) | |
| x 402 | -50 to +400 °C (thin film temperature sensor) | |
| x 415 | -50 to +600 °C (thin film temperature sensor) | |
| | (3) Measuring insert (additional versions upon request) | |
| x 1001 | 1× Pt100 in 3-wire circuit | |
| x 1003 | 1× Pt100 in 2-wire circuit | |
| x 1011 | 1× Pt100 in 4-wire circuit | |
| x 2001 | 2× Pt100 in 3-wire circuit | |
| x 2003 | 2× Pt100 in 2-wire circuit | |
| x 2011 | 2× Pt100 in four-wire circuit (only in conjunction with terminal head 321) | |
| | (4) Tolerance class according to DIN EN 60751:2009 / IEC 60751:2008 (additional versions upon request) | |
| x 1 | Class B (standard) (-50 to +500 °C) | |
| x 2 | Class A (-30 to +300 °C) | |
| x 3 | Class AA (0 to 150 °C) | |
| | (5) Protection tube diameter D in mm (additional versions upon request) | |
| x 9 | Ø 9 × 1 mm | |
| x 11 | Ø 11 × 2 mm | |
| | (6) Insertion length EL in mm (EL up to 1000 mm) | |
| ... | Specification in plain text | |
| | (7) Process connection (additional versions upon request) | |
| x 104 | Screw connection G 1/2 | |
| x 106 | Screw connection G 1 | |
| x 144 | Screw connection 1/2-14 NPT | |
| x 146 | Screw connection 1-11.5 NPT | |
| | (8) Protection tube material | |
| x 26 | Stainless steel 1.4571 | |
| x 60 | Titanium, upon request | |
| x 80 | Tantalum, upon request | |
| x 81 | Inconel, upon request | |
| x 82 | HASTELLOY®, upon request | |
| | (9) Extra codes | |
| x 000 | None | |
| x 658 | SIL and PL compatible (only in conjunction with JUMO SIL-certified safety temperature limiters and monitors according to data sheet 701150, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 659 | SIL and PL compatible (only in conjunction with dTRANS T06 temperature transmitter according to data sheet 707071, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 320 | Terminal head form BUZ | |
| x 321 | Terminal head form BUZH | |
| x 324 | Terminal head form BBKS | |
| x 326 | Terminal head form KGI-1 | |
| x 547 | Terminal head form BUZH with LED display | |
| x 924 | Terminal head form AB7 with LC plug-in display (only in conjunction with extra code 866 or 867) | |

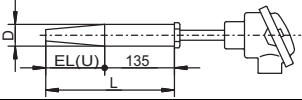
| | | |
|-----------|---|---|
| | (1) Basic type | |
| 902820/11 | Screw-in RTD temperature probe with reduced protection tube |  |
| | (2) Operating temperature (additional versions upon request) | |
| x 150 | -200 to +600 °C (wire-wound temperature sensor) | |
| x 386 | -50 to +260 °C (thin film temperature sensor) | |
| x 402 | -50 to +400 °C (thin film temperature sensor) | |
| x 415 | -50 to +600 °C (thin film temperature sensor) | |
| | (3) Measuring insert (additional versions upon request) | |
| x 1001 | 1× Pt100 in 3-wire circuit | |
| x 1003 | 1× Pt100 in 2-wire circuit | |
| x 1011 | 1× Pt100 in 4-wire circuit | |
| x 2001 | 2× Pt100 in 3-wire circuit | |
| x 2003 | 2× Pt100 in 2-wire circuit | |
| x 2011 | 2× Pt100 in four-wire circuit (only in conjunction with terminal head 321) | |
| | (4) Tolerance class according to DIN EN 60751:2009 / IEC 60751:2008 (additional versions upon request) | |
| x 1 | Class B (standard) (-50 to +500 °C) | |
| x 2 | Class A (-30 to +300 °C) | |
| x 3 | Class AA (0 to 150 °C) | |
| | (5) Protection tube diameter D in mm (additional versions upon request) | |
| x 9 | ∅ 9 × 1 mm reduced to ∅ 6 mm | |
| x 12 | ∅ 12 × 2.5 mm reduced to ∅ 9 mm | |
| | (6) Insertion length EL in mm (EL up to 700 mm) | |
| ... | Specification in plain text | |
| | (7) Process connection (additional versions upon request) | |
| x 104 | Screw connection G 1/2 | |
| x 106 | Screw connection G 1 | |
| x 144 | Screw connection 1/2-14 NPT | |
| x 146 | Screw connection 1-11.5 NPT | |
| | (8) Protection tube material | |
| x 26 | Stainless steel 1.4571 | |
| x 60 | Titanium, upon request | |
| x 80 | Tantalum, upon request | |
| x 81 | Inconel, upon request | |
| x 82 | HASTELLOY®, upon request | |
| | (9) Extra codes | |
| x 000 | None | |
| x 658 | SIL and PL compatible (only in conjunction with JUMO SIL-certified safety temperature limiters and monitors according to data sheet 701150, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 659 | SIL and PL compatible (only in conjunction with dTRANS T06 temperature transmitter according to data sheet 707071, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 320 | Terminal head form BUZ | |
| x 321 | Terminal head form BUZH | |
| x 324 | Terminal head form BBKS | |
| x 326 | Terminal head form KGI-1 | |
| x 547 | Terminal head form BUZH with LED display | |
| x 924 | Terminal head form AB7 with LC plug-in display (only in conjunction with extra code 866 or 867) | |
| x 925 | Terminal head form BUZH with LC plug-in display (only in conjunction with extra code 866 or 867) | |

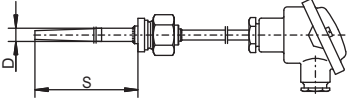
| | | |
|-----------|---|---|
| | (1) Basic type | |
| 902820/20 | Push-in RTD temperature probe with continuous protection tube |  |
| | (2) Operating temperature (additional versions upon request) | |
| x 150 | -200 to +600 °C (wire-wound temperature sensor) | |
| x 386 | -50 to +260 °C (thin film temperature sensor) | |
| x 402 | -50 to +400 °C (thin film temperature sensor) | |
| x 415 | -50 to +600 °C (thin film temperature sensor) | |
| | (3) Measuring insert (additional versions upon request) | |
| x 1001 | 1× Pt100 in 3-wire circuit | |
| x 1003 | 1× Pt100 in 2-wire circuit | |
| x 1011 | 1× Pt100 in 4-wire circuit | |
| x 2001 | 2× Pt100 in 3-wire circuit | |
| x 2003 | 2× Pt100 in 2-wire circuit | |
| x 2011 | 2× Pt100 in four-wire circuit (only in conjunction with terminal head 321) | |
| | (4) Tolerance class according to DIN EN 60751:2009 / IEC 60751:2008 (additional versions upon request) | |
| x 1 | Class B (standard) (-50 to +500 °C) | |
| x 2 | Class A (-30 to +300 °C) | |
| x 3 | Class AA (0 to 150 °C) | |
| | (5) Protection tube diameter D in mm (additional versions upon request) | |
| x 9 | ∅ 9 × 1 mm | |
| x 11 | ∅ 11 × 2 mm | |
| | (6) Insertion length EL in mm (EL up to 1000 mm) | |
| ... | Specification in plain text | |
| | (7) Process connection (additional versions upon request) | |
| x 000 | None | |
| x 642 | Flange B DN 25/PN 40, DIN EN 1092-1 | |
| x 644 | Flange B DN 40/PN 40, DIN EN 1092-1 | |
| | (8) Protection tube material | |
| x 26 | Stainless steel 1.4571 | |
| x 60 | Titanium, upon request | |
| x 80 | Tantalum, upon request | |
| x 81 | Inconel, upon request | |
| x 82 | HASTELLOY®, upon request | |
| | (9) Extra codes | |
| x 000 | None | |
| x 658 | SIL and PL compatible (only in conjunction with JUMO SIL-certified safety temperature limiters and monitors according to data sheet 701150, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 659 | SIL and PL compatible (only in conjunction with dTRANS T06 temperature transmitter according to data sheet 707071, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 320 | Terminal head form BUZ | |
| x 321 | Terminal head form BUZH | |
| x 324 | Terminal head form BBKS | |
| x 326 | Terminal head form KGI-1 | |
| x 547 | Terminal head form BUZH with LED display | |
| x 924 | Terminal head form AB7 with LC plug-in display (only in conjunction with extra code 866 or 867) | |
| x 925 | Terminal head form BUZH with LC plug-in display (only in conjunction with extra code 866 or 867) | |
| x 424 | Terminal head with M12 machine connector (can only be selected in the case of measuring inserts with max. 4 wires, e.g., 1003, 1011, or 2003) | |

| | | |
|-----------|---|---|
| | (1) Basic type | |
| 902820/21 | Push-in RTD temperature probe with reduced protection tube |  |
| | (2) Operating temperature (additional versions upon request) | |
| x 150 | -200 to +600 °C (wire-wound temperature sensor) | |
| x 386 | -50 to +260 °C (thin film temperature sensor) | |
| x 402 | -50 to +400 °C (thin film temperature sensor) | |
| x 415 | -50 to +600 °C (thin film temperature sensor) | |
| | (3) Measuring insert (additional versions upon request) | |
| x 1001 | 1× Pt100 in 3-wire circuit | |
| x 1003 | 1× Pt100 in 2-wire circuit | |
| x 1011 | 1× Pt100 in 4-wire circuit | |
| x 2001 | 2× Pt100 in 3-wire circuit | |
| x 2003 | 2× Pt100 in 2-wire circuit | |
| x 2011 | 2× Pt100 in four-wire circuit (only in conjunction with terminal head 321) | |
| | (4) Tolerance class according to DIN EN 60751:2009 / IEC 60751:2008 (additional versions upon request) | |
| x 1 | Class B (standard) (-50 to +500 °C) | |
| x 2 | Class A (-30 to +300 °C) | |
| x 3 | Class AA (0 to 150 °C) | |
| | (5) Protection tube diameter D in mm (additional versions upon request) | |
| x 9 | ∅ 9 × 1 mm reduced to ∅ 6 mm | |
| x 12 | ∅ 12 × 2.5 mm reduced to ∅ 9 mm | |
| | (6) Insertion length EL in mm (EL up to 1000 mm) | |
| ... | Specification in plain text | |
| | (7) Process connection (additional versions upon request) | |
| x 000 | None | |
| x 642 | Flange B DN 25/PN 40, DIN EN 1092-1 | |
| x 644 | Flange B DN 40/PN 40, DIN EN 1092-1 | |
| | (8) Protection tube material | |
| x 26 | Stainless steel 1.4571 | |
| x 60 | Titanium, upon request | |
| x 80 | Tantalum, upon request | |
| x 81 | Inconel, upon request | |
| x 82 | HASTELLOY®, upon request | |
| | (9) Extra codes | |
| x 000 | None | |
| x 658 | SIL and PL compatible (only in conjunction with JUMO SIL-certified safety temperature limiters and monitors according to data sheet 701150, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 659 | SIL and PL compatible (only in conjunction with dTRANS T06 temperature transmitter according to data sheet 707071, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 320 | Terminal head form BUZ | |
| x 321 | Terminal head form BUZH | |
| x 324 | Terminal head form BBKS | |
| x 326 | Terminal head form KGI-1 | |
| x 547 | Terminal head form BUZH with LED display | |
| x 924 | Terminal head form AB7 with LC plug-in display (only in conjunction with extra code 866 or 867) | |
| x 925 | Terminal head form BUZH with LC plug-in display (only in conjunction with extra code 866 or 867) | |
| x 424 | Terminal head with M12 machine connector (can only be selected in the case of measuring inserts with max. 4 wires, e.g., 1003, 1011, or 2003) | |

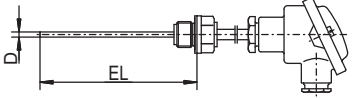


| | | |
|-----------|---|---|
| | (1) Basic type | |
| 902820/50 | Screw-in RTD temperature probe with thermowell DIN 43772, form 4 |  |
| | (2) Operating temperature (additional versions upon request) | |
| x 150 | -200 to +600 °C (wire-wound temperature sensor) | |
| x 386 | -50 to +260 °C (thin film temperature sensor) | |
| x 402 | -50 to +400 °C (thin film temperature sensor) | |
| x 415 | -50 to +600 °C (thin film temperature sensor) | |
| | (3) Measuring insert (additional versions upon request) | |
| x 1001 | 1× Pt100 in 3-wire circuit | |
| x 1003 | 1× Pt100 in 2-wire circuit | |
| x 1011 | 1× Pt100 in 4-wire circuit | |
| x 2001 | 2× Pt100 in 3-wire circuit | |
| x 2003 | 2× Pt100 in 2-wire circuit | |
| x 2011 | 2× Pt100 in four-wire circuit (only in conjunction with terminal head 321) | |
| | (4) Tolerance class according to DIN EN 60751:2009 / IEC 60751:2008 (additional versions upon request) | |
| x 1 | Class B (standard) (-50 to +500 °C) | |
| x 2 | Class A (-30 to +300 °C) | |
| x 3 | Class AA (0 to 150 °C) | |
| | (5) Protection tube diameter D in mm (additional versions upon request) | |
| x 24 | Ø 24 mm reduced to Ø 12.5 mm | |
| | (6) Thermowell dimensions (insertion length/total length) | |
| x 205 | 65 mm/140 mm (previously form D1 according to DIN 43767) | |
| x 325 | 125 mm/200 mm (previously form D2 according to DIN 43767) | |
| ... | Upon request (Code: U + L) | |
| | (7) Thermowell material | |
| x 26 | Stainless steel 1.4571 (operating temperature 600 °C) | |
| x 36 | Steel 1.7335 (operating temperature 540 °C) | |
| | (8) Protection tube material | |
| x 26 | Stainless steel 1.4571 | |
| | (9) Extra codes | |
| x 000 | None | |
| x 658 | SIL and PL compatible (only in conjunction with JUMO SIL-certified safety temperature limiters and monitors according to data sheet 701150, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 659 | SIL and PL compatible (only in conjunction with dTRANS T06 temperature transmitter according to data sheet 707071, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 320 | Terminal head form BUZ | |
| x 321 | Terminal head form BUZH | |
| x 324 | Terminal head form BBKS | |
| x 326 | Terminal head form KGI-1 | |
| x 547 | Terminal head form BUZH with LED display | |
| x 924 | Terminal head form AB7 with LC plug-in display (only in conjunction with extra code 866 or 867) | |
| x 925 | Terminal head form BUZH with LC plug-in display (only in conjunction with extra code 866 or 867) | |
| x 424 | Terminal head with M12 machine connector (can only be selected in the case of measuring inserts with max. 4 wires, e.g., 1003, 1011, or 2003) | |
| x 330 | 1 analog transmitter (type 707031 according to data sheet 707030), output 4 to 20 mA, (only for measuring insert 1× Pt100 in two or three-wire circuit, not in conjunction with extra codes 658 or 659) | |
| x 331 | 1 programmable transmitter (type 707014 according to data sheet 707010), output 4 to 20 mA/20 to 4 mA, (only for measuring insert 1× Pt100, not in conjunction with extra codes 658 or 659, suitable setup program part no. 00605080) | |

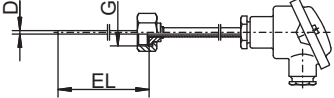
| | | |
|-----------|---|---|
| | (1) Basic type | |
| 902820/51 | Screw-in RTD temperature probe with thermowell DIN 43772, form 4 |  |
| | (2) Operating temperature (additional versions upon request) | |
| x 150 | -200 to +600 °C (wire-wound temperature sensor) | |
| x 386 | -50 to +260 °C (thin film temperature sensor) | |
| x 402 | -50 to +400 °C (thin film temperature sensor) | |
| x 415 | -50 to +600 °C (thin film temperature sensor) | |
| | (3) Measuring insert (additional versions upon request) | |
| x 1001 | 1× Pt100 in 3-wire circuit | |
| x 1003 | 1× Pt100 in 2-wire circuit | |
| x 1011 | 1× Pt100 in 4-wire circuit | |
| x 2001 | 2× Pt100 in 3-wire circuit | |
| x 2003 | 2× Pt100 in 2-wire circuit | |
| x 2011 | 2× Pt100 in four-wire circuit (only in conjunction with terminal head 321) | |
| | (4) Tolerance class according to DIN EN 60751:2009 / IEC 60751:2008 (additional versions upon request) | |
| x 1 | Class B (standard) (-50 to +500 °C) | |
| x 2 | Class A (-30 to +300 °C) | |
| x 3 | Class AA (0 to 150 °C) | |
| | (5) Protection tube diameter D in mm (additional versions upon request) | |
| x 24 | Ø 24 mm reduced to Ø 12.5 mm | |
| | (6) Thermowell dimensions (insertion length/total length) | |
| x 265 | 65 mm/200 mm (previously form D4 according to DIN 43767) | |
| x 385 | 125 mm/260 mm (previously form D5 according to DIN 43767) | |
| ... | Upon request (Code: U + L) | |
| | (7) Thermowell material | |
| x 26 | Stainless steel 1.4571 (operating temperature 600 °C) | |
| x 36 | Steel 1.7335 (operating temperature 540 °C) | |
| | (8) Protection tube material | |
| x 26 | Stainless steel 1.4571 | |
| | (9) Extra codes | |
| x 000 | None | |
| x 658 | SIL and PL compatible (only in conjunction with JUMO SIL-certified safety temperature limiters and monitors according to data sheet 701150, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 659 | SIL and PL compatible (only in conjunction with dTRANS T06 temperature transmitter according to data sheet 707071, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 320 | Terminal head form BUZ | |
| x 321 | Terminal head form BUZH | |
| x 324 | Terminal head form BBKS | |
| x 326 | Terminal head form KGI-1 | |
| x 547 | Terminal head form BUZH with LED display | |
| x 924 | Terminal head form AB7 with LC plug-in display (only in conjunction with extra code 866 or 867) | |
| x 925 | Terminal head form BUZH with LC plug-in display (only in conjunction with extra code 866 or 867) | |
| x 424 | Terminal head with M12 machine connector (can only be selected in the case of measuring inserts with max. 4 wires, e.g., 1003, 1011, or 2003) | |
| x 330 | 1 analog transmitter (type 707031 according to data sheet 707030), output 4 to 20 mA, (only for measuring insert 1× Pt100 in two or three-wire circuit, not in conjunction with extra codes 658 or 659) | |
| x 331 | 1 programmable transmitter (type 707014 according to data sheet 707010), output 4 to 20 mA/20 to 4 mA, (only for measuring insert 1× Pt100, not in conjunction with extra codes 658 or 659, suitable setup program part no. 00605080) | |

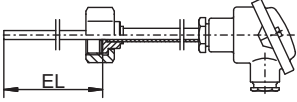
| | | |
|-----------|---|---|
| | (1) Basic type | |
| 902820/53 | Screw-in RTD temperature probe with weld-in sleeve |  |
| | (2) Operating temperature (additional versions upon request) | |
| x 150 | -200 to +600 °C (wire-wound temperature sensor) | |
| x 386 | -50 to +260 °C (thin film temperature sensor) | |
| x 402 | -50 to +400 °C (thin film temperature sensor) | |
| x 415 | -50 to +600 °C (thin film temperature sensor) | |
| | (3) Measuring insert (additional versions upon request) | |
| x 1001 | 1× Pt100 in 3-wire circuit | |
| x 1003 | 1× Pt100 in 2-wire circuit | |
| x 1011 | 1× Pt100 in 4-wire circuit | |
| x 2001 | 2× Pt100 in 3-wire circuit | |
| x 2003 | 2× Pt100 in 2-wire circuit | |
| x 2011 | 2× Pt100 in four-wire circuit (only in conjunction with terminal head 321) | |
| | (4) Tolerance class according to DIN EN 60751:2009 / IEC 60751:2008 (additional versions upon request) | |
| x 1 | Class B (standard) (-50 to +500 °C) | |
| x 2 | Class A (-30 to +300 °C) | |
| x 3 | Class AA (0 to 150 °C) | |
| | (5) Protection tube diameter D in mm (additional versions upon request) | |
| x 12 | Ø 12 mm reduced to Ø 8 mm | |
| | (6) Insertion length S (80 to 500 mm) | |
| x 80 | 80 mm, steel | |
| x 140 | 140 mm, steel | |
| x 170 | 170 mm, steel or stainless steel | |
| x 200 | 200 mm, steel or stainless steel | |
| | (7) Process connection | |
| x 815 | Welding protective sleeve with external thread, fastening with union nut | |
| | (8) Welding protective sleeve material | |
| x 01 | Steel 1.0345 | |
| x 26 | Stainless steel 1.4571 | |
| | (9) Extra codes | |
| x 000 | None | |
| x 658 | SIL and PL compatible (only in conjunction with JUMO SIL-certified safety temperature limiters and monitors according to data sheet 701150, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 659 | SIL and PL compatible (only in conjunction with dTRANS T06 temperature transmitter according to data sheet 707071, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 320 | Terminal head form BUZ | |
| x 321 | Terminal head form BUZH | |
| x 324 | Terminal head form BBKS | |
| x 326 | Terminal head form KGI-1 | |
| x 547 | Terminal head form BUZH with LED display | |
| x 924 | Terminal head form AB7 with LC plug-in display (only in conjunction with extra code 866 or 867) | |
| x 925 | Terminal head form BUZH with LC plug-in display (only in conjunction with extra code 866 or 867) | |
| x 424 | Terminal head with M12 machine connector (can only be selected in the case of measuring inserts with max. 4 wires, e.g., 1003, 1011, or 2003) | |
| x 330 | 1 analog transmitter (type 707031 according to data sheet 707030), output 4 to 20 mA, (only for measuring insert 1× Pt100 in two or three-wire circuit, not in conjunction with extra codes 658 or 659) | |



| | | |
|-----------|---|---|
| | (1) Basic type | |
| 902820/60 | Screw-in RTD temperature probe for thermowell with internal thread |  |
| | (2) Operating temperature (additional versions upon request) | |
| x 150 | -200 to +600 °C (wire-wound temperature sensor) | |
| x 386 | -50 to +260 °C (thin film temperature sensor) | |
| x 402 | -50 to +400 °C (thin film temperature sensor) | |
| x 415 | -50 to +600 °C (thin film temperature sensor) | |
| | (3) Measuring insert (additional versions upon request) | |
| x 1001 | 1× Pt100 in 3-wire circuit | |
| x 1003 | 1× Pt100 in 2-wire circuit | |
| x 1011 | 1× Pt100 in 4-wire circuit | |
| x 2001 | 2× Pt100 in 3-wire circuit | |
| x 2003 | 2× Pt100 in 2-wire circuit | |
| x 2011 | 2× Pt100 in four-wire circuit (only in conjunction with terminal head 321) | |
| | (4) Tolerance class according to DIN EN 60751:2009 / IEC 60751:2008 (additional versions upon request) | |
| x 1 | Class B (standard) (-50 to +500 °C) | |
| x 2 | Class A (-30 to +300 °C) | |
| x 3 | Class AA (0 to 150 °C) | |
| | (5) Protection tube diameter D in mm (additional versions upon request) | |
| x 6 | ∅ 6 mm | |
| | (6) Insertion length EL in mm (EL up to 1000 mm) | |
| ... | Specification in plain text | |
| | (7) Process connection (additional versions upon request) | |
| x 126 | Screw connection M18 × 1.5 | |
| | (8) Protection tube material | |
| x 26 | Stainless steel 1.4571 | |
| | (9) Extra codes | |
| x 000 | None | |
| x 658 | SIL and PL compatible (only in conjunction with JUMO SIL-certified safety temperature limiters and monitors according to data sheet 701150, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 659 | SIL and PL compatible (only in conjunction with dTRANS T06 temperature transmitter according to data sheet 707071, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 320 | Terminal head form BUZ | |
| x 321 | Terminal head form BUZH | |
| x 324 | Terminal head form BBKS | |
| x 326 | Terminal head form KGI-1 | |
| x 547 | Terminal head form BUZH with LED display | |
| x 924 | Terminal head form AB7 with LC plug-in display (only in conjunction with extra code 866 or 867) | |
| x 925 | Terminal head form BUZH with LC plug-in display (only in conjunction with extra code 866 or 867) | |
| x 424 | Terminal head with M12 machine connector (can only be selected in the case of measuring inserts with max. 4 wires, e.g., 1003, 1011, or 2003) | |
| x 330 | 1 analog transmitter (type 707031 according to data sheet 707030), output 4 to 20 mA, (only for measuring insert 1× Pt100 in two or three-wire circuit, not in conjunction with extra codes 658 or 659) | |
| x 331 | 1 programmable transmitter (type 707014 according to data sheet 707010), output 4 to 20 mA/20 to 4 mA, (only for measuring insert 1× Pt100, not in conjunction with extra codes 658 or 659, suitable setup program part no. 00605080) | |
| x 333 | 1 analog transmitter (type 707033 according to data sheet 707030), output 0 to 10 V, (only for measuring insert 1× Pt100 in two or three-wire circuit, not in conjunction with extra codes 658 or 659) | |

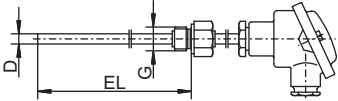


| | | |
|-----------|---|---|
| | (1) Basic type | |
| 902820/62 | Screw-in RTD temperature probe with union nut and replaceable measuring insert for thermowell with external thread |  |
| | (2) Operating temperature (additional versions upon request) | |
| x 150 | -200 to +600 °C (wire-wound temperature sensor) | |
| x 386 | -50 to +260 °C (thin film temperature sensor) | |
| x 402 | -50 to +400 °C (thin film temperature sensor) | |
| x 415 | -50 to +600 °C (thin film temperature sensor) | |
| | (3) Measuring insert (additional versions upon request) | |
| x 1001 | 1× Pt100 in 3-wire circuit | |
| x 1003 | 1× Pt100 in 2-wire circuit | |
| x 1011 | 1× Pt100 in 4-wire circuit | |
| x 2001 | 2× Pt100 in 3-wire circuit | |
| x 2003 | 2× Pt100 in 2-wire circuit | |
| x 2011 | 2× Pt100 in four-wire circuit (only in conjunction with terminal head 321) | |
| | (4) Tolerance class according to DIN EN 60751:2009 / IEC 60751:2008 (additional versions upon request) | |
| x 1 | Class B (standard) (-50 to +500 °C) | |
| x 2 | Class A (-30 to +300 °C) | |
| x 3 | Class AA (0 to 150 °C) | |
| | (5) Protection tube diameter D in mm (additional versions upon request) | |
| x 6 | Ø 6 mm | |
| | (6) Insertion length EL in mm (EL up to 1000 mm) | |
| ... | Specification in plain text | |
| | (7) Process connection (additional versions upon request) | |
| x 165 | Union nut, thread G 3/4 | |
| | (8) Protection tube material | |
| x 26 | Stainless steel 1.4571 | |
| | (9) Extra codes | |
| x 000 | None | |
| x 658 | SIL and PL compatible (only in conjunction with JUMO SIL-certified safety temperature limiters and monitors according to data sheet 701150, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 659 | SIL and PL compatible (only in conjunction with dTRANS T06 temperature transmitter according to data sheet 707071, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 320 | Terminal head form BUZ | |
| x 321 | Terminal head form BUZH | |
| x 324 | Terminal head form BBKS | |
| x 326 | Terminal head form KGI-1 | |
| x 547 | Terminal head form BUZH with LED display | |
| x 924 | Terminal head form AB7 with LC plug-in display (only in conjunction with extra code 866 or 867) | |
| x 925 | Terminal head form BUZH with LC plug-in display (only in conjunction with extra code 866 or 867) | |
| x 424 | Terminal head with M12 machine connector (can only be selected in the case of measuring inserts with max. 4 wires, e.g., 1003, 1011, or 2003) | |
| x 330 | 1 analog transmitter (type 707031 according to data sheet 707030), output 4 to 20 mA, (only for measuring insert 1× Pt100 in two or three-wire circuit, not in conjunction with extra codes 658 or 659) | |
| x 331 | 1 programmable transmitter (type 707014 according to data sheet 707010), output 4 to 20 mA/20 to 4 mA, (only for measuring insert 1× Pt100, not in conjunction with extra codes 658 or 659, suitable setup program part no. 00605080) | |
| x 333 | 1 analog transmitter (type 707033 according to data sheet 707030), output 0 to 10 V, (only for measuring insert 1× Pt100 in two or three-wire circuit, not in conjunction with extra codes 658 or 659) | |

| | | |
|-----------|---|---|
| | (1) Basic type | |
| 902820/63 | Screw-in RTD temperature probe with union nut and non-replaceable measuring insert for thermowell with external thread |  |
| | (2) Operating temperature (additional versions upon request) | |
| x 150 | -200 to +600 °C (wire-wound temperature sensor) | |
| x 386 | -50 to +260 °C (thin film temperature sensor) | |
| x 402 | -50 to +400 °C (thin film temperature sensor) | |
| x 415 | -50 to +600 °C (thin film temperature sensor) | |
| | (3) Measuring insert (additional versions upon request) | |
| x 1001 | 1× Pt100 in 3-wire circuit | |
| x 1003 | 1× Pt100 in 2-wire circuit | |
| x 1011 | 1× Pt100 in 4-wire circuit | |
| x 2001 | 2× Pt100 in 3-wire circuit | |
| x 2003 | 2× Pt100 in 2-wire circuit | |
| x 2011 | 2× Pt100 in four-wire circuit (only in conjunction with terminal head 321) | |
| | (4) Tolerance class according to DIN EN 60751:2009 / IEC 60751:2008 (additional versions upon request) | |
| x 1 | Class B (standard) (-50 to +500 °C) | |
| x 2 | Class A (-30 to +300 °C) | |
| x 3 | Class AA (0 to 150 °C) | |
| | (5) Protection tube diameter D in mm (additional versions upon request) | |
| x 6 | Ø 6 mm | |
| x 9 | Ø 9 mm | |
| | (6) Insertion length EL in mm (EL up to 1000 mm) | |
| ... | Specification in plain text | |
| | (7) Process connection (additional versions upon request) | |
| x 165 | Union nut, thread G 3/4 | |
| | (8) Protection tube material | |
| x 26 | Stainless steel 1.4571 | |
| | (9) Extra codes | |
| x 000 | None | |
| x 658 | SIL and PL compatible (only in conjunction with JUMO SIL-certified safety temperature limiters and monitors according to data sheet 701150, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 659 | SIL and PL compatible (only in conjunction with dTRANS T06 temperature transmitter according to data sheet 707071, not in conjunction with extra codes 330, 331, 333, 334, 335, 336, 337, 550, 551, 859, 866, and 867) | |
| x 320 | Terminal head form BUZ | |
| x 321 | Terminal head form BUZH | |
| x 324 | Terminal head form BBKS | |
| x 326 | Terminal head form KGI-1 | |
| x 547 | Terminal head form BUZH with LED display | |
| x 924 | Terminal head form AB7 with LC plug-in display (only in conjunction with extra code 866 or 867) | |
| x 925 | Terminal head form BUZH with LC plug-in display (only in conjunction with extra code 866 or 867) | |
| x 424 | Terminal head with M12 machine connector (can only be selected in the case of measuring inserts with max. 4 wires, e.g., 1003, 1011, or 2003) | |
| x 330 | 1 analog transmitter (type 707031 according to data sheet 707030), output 4 to 20 mA, (only for measuring insert 1× Pt100 in two or three-wire circuit, not in conjunction with extra codes 658 or 659) | |
| x 331 | 1 programmable transmitter (type 707014 according to data sheet 707010), output 4 to 20 mA/20 to 4 mA, (only for measuring insert 1× Pt100, not in conjunction with extra codes 658 or 659, suitable setup program part no. 00605080) | |
| x 333 | 1 analog transmitter (type 707033 according to data sheet 707030), output 0 to 10 V, (only for measuring insert 1× Pt100 in two or three-wire circuit, not in conjunction with extra codes 658 or 659) | |

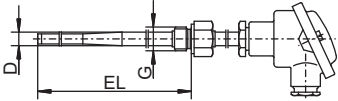
- ⊗ II 1/2 G Ex ia IIC T1...T6 Ga/Gb
- ⊗ II 1/2 D Ex ia IIIC T80 °C...T400 °C Da/Db
- ⊗ II 1/2 G Ex ia/d IIC T1...T6 Ga/Gb
- ⊗ II 1/2 D Ex ia/tb IIIC T80 °C...T400 °C



| (1) Basic type | |
|---|---|
| 902820/10 | Screw-in RTD temperature probe with continuous protection tube |
|  | |
| (2) Operating temperature (additional versions upon request) | |
| x 150 | -200 to +600 °C (wire-wound temperature sensor) |
| x 415 | -50 to +600 °C (thin film temperature sensor) |
| (3) Measuring insert (additional versions upon request) | |
| x 1001 | 1× Pt100 in three-wire circuit (not in conjunction with transmitter 331 or 336) |
| x 1003 | 1× Pt100 in two-wire circuit (not in conjunction with transmitter 331 or 336) |
| x 1011 | 1× Pt100 in 4-wire circuit |
| x 2001 | 2× Pt100 in 3-wire circuit |
| x 2003 | 2× Pt100 in two-wire circuit (not in conjunction with transmitter 331 or 336) |
| (4) Tolerance class according to DIN EN 60751:2009 / IEC 60751:2008 | |
| x 1 | Class B (standard) (-50 to +500 °C) |
| x 2 | Class A (-30 to +300 °C) |
| x 3 | Class AA (0 to 150 °C) |
| (5) Protection tube diameter D in mm (additional versions upon request) | |
| x 9 | ∅ 9 × 1 mm (for use in zone 0 or 20, upon request) |
| x 11 | ∅ 11 × 2 mm |
| (6) Insertion length EL in mm (EL up to 1000 mm) | |
| ... | Specification in plain text |
| (7) Process connection (additional versions upon request) | |
| x 104 | Screw connection G 1/2 |
| x 106 | Screw connection G 1 |
| x 144 | Screw connection 1/2-14 NPT |
| x 146 | Screw connection 1-11.5 NPT |
| (8) Protection tube material | |
| x 26 | Stainless steel 1.4571 |
| x 60 | Titanium, upon request |
| x 80 | Tantalum, upon request |
| x 81 | Inconel, upon request |
| x 82 | HASTELLOY®, upon request |
| (9) Extra codes | |
| x 658 | SIL and PL compatible (only in conjunction with JUMO SIL-certified safety temperature limiters and monitors according to data sheet 701150, not in conjunction with extra codes 331, 336, 868, and 869) |
| x 659 | SIL and PL compatible (only in conjunction with dTRANS T06 temperature transmitter according to data sheet 707071, not in conjunction with extra codes 331, 336, 868, and 869) |
| x 362 | Ex-protection Ex according to Directive 2014/34/EU (ATEX) |
| x 292 | Separation element according to IEC 60079 |
| x 320 | Terminal head form BUZ |
| x 321 | Terminal head form BUZH |
| x 326 | Terminal head form KGI-1 |
| x 397 | Terminal head form BEGF |
| x 399 | Terminal head form XD-A "Ex D IIC" and "Ex tb IIIC" made from die-cast aluminum |
| x 541 | Terminal head form XD-S "Ex D IIC" and "Ex tb IIIC" made from stainless steel |

- ⊗ II 1/2 G Ex ia IIC T1...T6 Ga/Gb
- ⊗ II 1/2 D Ex ia IIIC T80 °C...T400 °C Da/Db
- ⊗ II 1/2 G Ex ia/d IIC T1...T6 Ga/Gb
- ⊗ II 1/2 D Ex ia/tb IIIC T80 °C...T400 °C



| (1) Basic type | |
|--|---|
| 902820/11 | Screw-in RTD temperature probe with reduced protection tube |
| |  |
| (2) Operating temperature (additional versions upon request) | |
| x 150 | -200 to +600 °C (wire-wound temperature sensor) |
| x 415 | -50 to +600 °C (thin film temperature sensor) |
| (3) Measuring insert (additional versions upon request) | |
| x 1001 | 1× Pt100 in three-wire circuit (not in conjunction with transmitter 331 or 336) |
| x 1003 | 1× Pt100 in two-wire circuit (not in conjunction with transmitter 331 or 336) |
| x 1011 | 1× Pt100 in 4-wire circuit |
| x 2001 | 2× Pt100 in 3-wire circuit |
| x 2003 | 2× Pt100 in two-wire circuit (not in conjunction with transmitter 331 or 336) |
| (4) Tolerance class according to DIN EN 60751:2009 / IEC 60751:2008 | |
| x 1 | Class B (standard) (-50 to +500 °C) |
| x 2 | Class A (-30 to +300 °C) |
| x 3 | Class AA (0 to 150 °C) |
| (5) Protection tube diameter D in mm (additional versions upon request) | |
| x 12 | ∅ 12 × 2.5 mm reduced to ∅ 9 mm (for use in zone 0 or 20 upon request) |
| (6) Insertion length EL in mm (EL up to 1000 mm) | |
| ... | Specification in plain text |
| (7) Process connection (additional versions upon request) | |
| x 104 | Screw connection G 1/2 |
| x 106 | Screw connection G 1 |
| x 144 | Screw connection 1/2-14 NPT |
| x 146 | Screw connection 1-11.5 NPT |
| (8) Protection tube material | |
| x 26 | Stainless steel 1.4571 |
| x 60 | Titanium, upon request |
| x 80 | Tantalum, upon request |
| x 81 | Inconel, upon request |
| x 82 | HASTELLOY®, upon request |
| (9) Extra codes | |
| x 658 | SIL and PL compatible (only in conjunction with JUMO SIL-certified safety temperature limiters and monitors according to data sheet 701150, not in conjunction with extra codes 331, 336, 868, and 869) |
| x 659 | SIL and PL compatible (only in conjunction with dTRANS T06 temperature transmitter according to data sheet 707071, not in conjunction with extra codes 331, 336, 868, and 869) |
| x 362 | Ex-protection Ex according to Directive 2014/34/EU (ATEX) |
| x 292 | Separation element according to IEC 60079 |
| x 320 | Terminal head form BUZ |
| x 321 | Terminal head form BUZH |
| x 326 | Terminal head form KGI-1 |
| x 397 | Terminal head form BEGF |
| x 399 | Terminal head form XD-A "Ex D IIC" and "Ex tb IIIC" made from die-cast aluminum |
| x 541 | Terminal head form XD-S "Ex D IIC" and "Ex tb IIIC" made from stainless steel |
| x 547 | Terminal head form BUZH with LED display |

- ⊗ II 1/2 G Ex ia IIC T1...T6 Ga/Gb
- ⊗ II 1/2 D Ex ia IIIC T80 °C...T400 °C Da/Db
- ⊗ II 1/2 G Ex ia/d IIC T1...T6 Ga/Gb
- ⊗ II 1/2 D Ex ia/tb IIIC T80 °C...T400 °C



| (1) Basic type | |
|--|---|
| 902820/20 | Push-in RTD temperature probe with continuous protection tube |
| | |
| (2) Operating temperature (additional versions upon request) | |
| x 150 | -200 to +600 °C (wire-wound temperature sensor) |
| x 415 | -50 to +600 °C (thin film temperature sensor) |
| (3) Measuring insert (additional versions upon request) | |
| x 1001 | 1× Pt100 in three-wire circuit (not in conjunction with transmitter 331 or 336) |
| x 1003 | 1× Pt100 in two-wire circuit (not in conjunction with transmitter 331 or 336) |
| x 1011 | 1× Pt100 in 4-wire circuit |
| x 2001 | 2× Pt100 in 3-wire circuit |
| x 2003 | 2× Pt100 in two-wire circuit (not in conjunction with transmitter 331 or 336) |
| (4) Tolerance class according to DIN EN 60751:2009 / IEC 60751:2008 | |
| x 1 | Class B (standard) (-50 to +500 °C) |
| x 2 | Class A (-30 to +300 °C) |
| x 3 | Class AA (0 to 150 °C) |
| (5) Protection tube diameter D in mm (additional versions upon request) | |
| x 9 | ∅ 9 × 1 mm (for use in zone 0 or 20, upon request) |
| x 11 | ∅ 11 × 2 mm |
| (6) Insertion length EL in mm (EL up to 1000 mm) | |
| ... | Specification in plain text |
| (7) Process connection (additional versions upon request) | |
| x 000 | None |
| x 642 | Flange B DN 25/PN 40, DIN EN 1092-1 |
| x 644 | Flange B DN 40/PN 40, DIN EN 1092-1 |
| (8) Protection tube material | |
| x 26 | Stainless steel 1.4571 |
| x 60 | Titanium, upon request |
| x 80 | Tantalum, upon request |
| x 81 | Inconel, upon request |
| x 82 | HASTELLOY®, upon request |
| (9) Extra codes | |
| x 658 | SIL and PL compatible (only in conjunction with JUMO SIL-certified safety temperature limiters and monitors according to data sheet 701150, not in conjunction with extra codes 331, 336, 868, and 869) |
| x 659 | SIL and PL compatible (only in conjunction with dTRANS T06 temperature transmitter according to data sheet 707071, not in conjunction with extra codes 331, 336, 868, and 869) |
| x 362 | Ex-protection Ex according to Directive 2014/34/EU (ATEX) |
| x 292 | Separation element according to IEC 60079 |
| x 320 | Terminal head form BUZ |
| x 321 | Terminal head form BUZH |
| x 326 | Terminal head form KGI-1 |
| x 397 | Terminal head form BEGF |
| x 399 | Terminal head form XD-A "Ex D IIC" and "Ex tb IIIC" made from die-cast aluminum |
| x 541 | Terminal head form XD-S "Ex D IIC" and "Ex tb IIIC" made from stainless steel |
| x 547 | Terminal head form BUZH with LED display |

- ⊗ II 1/2 G Ex ia IIC T1...T6 Ga/Gb
- ⊗ II 1/2 D Ex ia IIIC T80 °C...T400 °C Da/Db
- ⊗ II 1/2 G Ex ia/d IIC T1...T6 Ga/Gb
- ⊗ II 1/2 D Ex ia/tb IIIC T80 °C...T400 °C



| (1) Basic type | |
|--|---|
| 902820/21 | Push-in RTD temperature probe with reduced protection tube |
| | |
| (2) Operating temperature (additional versions upon request) | |
| x 150 | -200 to +600 °C (wire-wound temperature sensor) |
| x 415 | -50 to +600 °C (thin film temperature sensor) |
| (3) Measuring insert (additional versions upon request) | |
| x 1001 | 1× Pt100 in three-wire circuit (not in conjunction with transmitter 331 or 336) |
| x 1003 | 1× Pt100 in two-wire circuit (not in conjunction with transmitter 331 or 336) |
| x 1011 | 1× Pt100 in 4-wire circuit |
| x 2001 | 2× Pt100 in 3-wire circuit |
| x 2003 | 2× Pt100 in two-wire circuit (not in conjunction with transmitter 331 or 336) |
| (4) Tolerance class according to DIN EN 60751:2009 / IEC 60751:2008 | |
| x 1 | Class B (standard) (-50 to +500 °C) |
| x 2 | Class A (-30 to +300 °C) |
| x 3 | Class AA (0 to 150 °C) |
| (5) Protection tube diameter D in mm (additional versions upon request) | |
| x 12 | ∅ 12 × 2.5 mm reduced to ∅ 9 mm (for use in zone 0 or 20 upon request) |
| (6) Insertion length EL in mm (EL up to 1000 mm) | |
| ... | Specification in plain text |
| (7) Process connection (additional versions upon request) | |
| x 000 | None |
| x 642 | Flange B DN 25/PN 40, DIN EN 1092-1 |
| x 644 | Flange B DN 40/PN 40, DIN EN 1092-1 |
| (8) Protection tube material | |
| x 26 | Stainless steel 1.4571 |
| x 60 | Titanium, upon request |
| x 80 | Tantalum, upon request |
| x 81 | Inconel, upon request |
| x 82 | HASTELLOY®, upon request |
| (9) Extra codes | |
| x 658 | SIL and PL compatible (only in conjunction with JUMO SIL-certified safety temperature limiters and monitors according to data sheet 701150, not in conjunction with extra codes 331, 336, 868, and 869) |
| x 659 | SIL and PL compatible (only in conjunction with dTRANS T06 temperature transmitter according to data sheet 707071, not in conjunction with extra codes 331, 336, 868, and 869) |
| x 362 | Ex-protection Ex according to Directive 2014/34/EU (ATEX) |
| x 292 | Separation element according to IEC 60079 |
| x 320 | Terminal head form BUZ |
| x 321 | Terminal head form BUZH |
| x 326 | Terminal head form KGI-1 |
| x 397 | Terminal head form BEGF |
| x 399 | Terminal head form XD-A "Ex D IIC" and "Ex tb IIIC" made from die-cast aluminum |
| x 541 | Terminal head form XD-S "Ex D IIC" and "Ex tb IIIC" made from stainless steel |
| x 547 | Terminal head form BUZH with LED display |
| x 924 | Terminal head form AB7 with LC plug-in display (only in conjunction with extra code 868 or 869) |

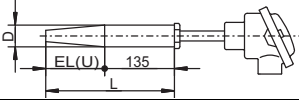
- ⊗ II 1/2 G Ex ia IIC T1...T6 Ga/Gb
- ⊗ II 1/2 D Ex ia IIIC T80 °C...T400 °C Da/Db
- ⊗ II 1/2 G Ex ia/d IIC T1...T6 Ga/Gb
- ⊗ II 1/2 D Ex ia/tb IIIC T80 °C...T400 °C



| (1) Basic type | |
|---|---|
| 902820/50 | Screw-in RTD temperature probe with thermowell DIN 43772, form 4 |
| | |
| (2) Operating temperature (additional versions upon request, for restrictions see DIN 43772) | |
| x 150 | -200 to +600 °C (wire-wound temperature sensor) |
| x 415 | -50 to +600 °C (thin film temperature sensor) |
| (3) Measuring insert (additional versions upon request) | |
| x 1001 | 1× Pt100 in three-wire circuit (not in conjunction with transmitter 331 or 336) |
| x 1003 | 1× Pt100 in two-wire circuit (not in conjunction with transmitter 331 or 336) |
| x 1011 | 1× Pt100 in 4-wire circuit |
| x 2001 | 2× Pt100 in 3-wire circuit |
| x 2003 | 2× Pt100 in two-wire circuit (not in conjunction with transmitter 331 or 336) |
| (4) Tolerance class according to DIN EN 60751:2009 / IEC 60751:2008 | |
| x 1 | Class B (standard) (-50 to +500 °C) |
| x 2 | Class A (-30 to +300 °C) |
| x 3 | Class AA (0 to 150 °C) |
| (5) Thermowell diameter D in mm (additional versions upon request) | |
| x 24 | Ø 24 mm reduced to Ø 12.5 mm |
| (6) Thermowell dimensions (insertion length/total length) | |
| x 205 | 65 mm/140 mm (previously form D1 according to DIN 43767) |
| x 325 | 125 mm/200 mm (previously form D2 according to DIN 43767) |
| ... | Upon request (Code: U + L) |
| (7) Thermowell material | |
| x 26 | Stainless steel 1.4571 (operating temperature 600 °C) |
| x 36 | Steel 1.7335 (operating temperature 540 °C) |
| (8) Protection tube material | |
| x 26 | Stainless steel 1.4571 |
| (9) Extra codes | |
| x 658 | SIL and PL compatible (only in conjunction with JUMO SIL-certified safety temperature limiters and monitors according to data sheet 701150, not in conjunction with extra codes 331, 336, 868, and 869) |
| x 659 | SIL and PL compatible (only in conjunction with dTRANS T06 temperature transmitter according to data sheet 707071, not in conjunction with extra codes 331, 336, 868, and 869) |
| x 362 | Ex-protection Ex according to Directive 2014/34/EU (ATEX) |
| x 292 | Separation element according to IEC 60079 |
| x 320 | Terminal head form BUZ |
| x 321 | Terminal head form BUZH |
| x 326 | Terminal head form KGI-1 |
| x 397 | Terminal head form BEGF |
| x 399 | Terminal head form XD-A "Ex D IIC" and "Ex tb IIIC" made from die-cast aluminum |
| x 541 | Terminal head form XD-S "Ex D IIC" and "Ex tb IIIC" made from stainless steel |
| x 547 | Terminal head form BUZH with LED display |
| x 924 | Terminal head form AB7 with LC plug-in display (only in conjunction with extra code 868 or 869) |
| x 925 | Terminal head form BUZH with LC plug-in display (only in conjunction with extra code 868 or 869) |
| x 661 | LED display Ex "ia" (only in conjunction with extra code 321, 399, or 541) |
| x 789 | LED display Ex "ib" (only in conjunction with extra code 399 or 541) |

- ⊗ II 1/2 G Ex ia IIC T1...T6 Ga/Gb
- ⊗ II 1/2 D Ex ia IIIC T80 °C...T400 °C Da/Db
- ⊗ II 1/2 G Ex ia/d IIC T1...T6 Ga/Gb
- ⊗ II 1/2 D Ex ia/tb IIIC T80 °C...T400 °C



| (1) Basic type | |
|---|---|
| 902820/51 | Screw-in RTD temperature probe with thermowell DIN 43772, form 4 |
|  | |
| (2) Operating temperature (additional versions upon request, for restrictions see DIN 43772) | |
| x 150 | -200 to +600 °C (wire-wound temperature sensor) |
| x 415 | -50 to +600 °C (thin film temperature sensor) |
| (3) Measuring insert (additional versions upon request) | |
| x 1001 | 1× Pt100 in three-wire circuit (not in conjunction with transmitter 331 or 336) |
| x 1003 | 1× Pt100 in two-wire circuit (not in conjunction with transmitter 331 or 336) |
| x 1011 | 1× Pt100 in 4-wire circuit |
| x 2001 | 2× Pt100 in 3-wire circuit |
| x 2003 | 2× Pt100 in two-wire circuit (not in conjunction with transmitter 331 or 336) |
| (4) Tolerance class according to DIN EN 60751:2009 / IEC 60751:2008 | |
| x 1 | Class B (standard) (-50 to +500 °C) |
| x 2 | Class A (-30 to +300 °C) |
| x 3 | Class AA (0 to 150 °C) |
| (5) Thermowell diameter D in mm (additional versions upon request) | |
| x 24 | Ø 24 mm reduced to Ø 12.5 mm |
| (6) Thermowell dimensions (insertion length/total length) | |
| x 265 | 65 mm/200 mm (previously form D4 according to DIN 43767) |
| x 385 | 125 mm/200 mm (previously form D2 according to DIN 43767) |
| ... | Upon request (Code: U + L) |
| (7) Thermowell material | |
| x 26 | Stainless steel 1.4571 (operating temperature 600 °C) |
| x 36 | Steel 1.7335 (operating temperature 540 °C) |
| (8) Protection tube material | |
| x 26 | Stainless steel 1.4571 |
| (9) Extra codes | |
| x 658 | SIL and PL compatible (only in conjunction with JUMO SIL-certified safety temperature limiters and monitors according to data sheet 701150, not in conjunction with extra codes 331, 336, 868, and 869) |
| x 659 | SIL and PL compatible (only in conjunction with dTRANS T06 temperature transmitter according to data sheet 707071, not in conjunction with extra codes 331, 336, 868, and 869) |
| x 362 | Ex-protection Ex according to Directive 2014/34/EU (ATEX) |
| x 292 | Separation element according to IEC 60079 |
| x 320 | Terminal head form BUZ |
| x 321 | Terminal head form BUZH |
| x 326 | Terminal head form KGI-1 |
| x 397 | Terminal head form BEGF |
| x 399 | Terminal head form XD-A "Ex D IIC" and "Ex tb IIIC" made from die-cast aluminum |
| x 541 | Terminal head form XD-S "Ex D IIC" and "Ex tb IIIC" made from stainless steel |
| x 547 | Terminal head form BUZH with LED display |
| x 924 | Terminal head form AB7 with LC plug-in display (only in conjunction with extra code 868 or 869) |
| x 925 | Terminal head form BUZH with LC plug-in display (only in conjunction with extra code 868 or 869) |
| x 661 | LED display Ex "ia" (only in conjunction with extra code 321, 399, or 541) |
| x 789 | LED display Ex "ib" (only in conjunction with extra code 399 or 541) |



Accessories

Accessories for programmable two-wire transmitter, type 707010

| Designation | Part no. |
|--|----------|
| PC interface with USB/TTL converter | 00456352 |
| Special programming (standard measuring range 0 to 100 °C) | - |
| Setup program on CD-ROM, multilingual | 00605080 |

Accessories for programmable two-wire transmitter, type 707050

| Designation | Part no. |
|---|----------|
| Setup program on CD-ROM, multilingual | 00574959 |
| USB cable, type A USB connector on Mini-B USB connector, length 3 m | 00506252 |

Accessories for programmable Wtrans B head transmitter with wireless data transmission, type 707060

| Designation | Part no. |
|---|----------|
| Lithium battery 3.6 V, 2.2 Ah (size AA) | 00547559 |
| PC interface with USB/TTL converter | 00456352 |
| Setup program on CD-ROM, multilingual | 00488887 |
| Setup program including OnlineChart on CD-ROM, multilingual | 00549067 |
| OnlineChart activation | 00549188 |

Accessories for programmable two-channel transmitter with HART®, type 707080 or programmable two-channel transmitter with HART®/SIL, type 707081

| Designation | Part no. |
|---|----------|
| HART® modem USB | 00443447 |
| JUMO dTRANS T07 B 707080 – Device Type Manager (DTM) software program | 00687789 |

Trademark information

- HART® is a registered trademark of FieldComm Group Inc., Austin, TX 78759, US.