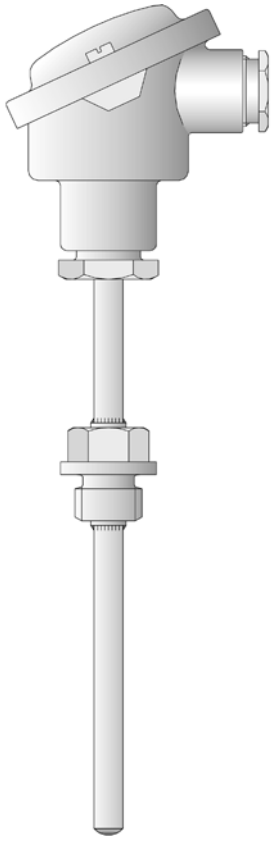
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# Screw-in RTD temperature probes with terminal head form B



- **For temperatures from -50 to +600 °C**
- **With replaceable measuring insert**
- **As single or double RTD temperature probes**
- **Connection head form B, BUZ, BUZH, BBK**
- **Available with transmitter**

Screw-in RTD temperature probes are mainly used for measuring temperatures in fluids and gasses. A decisive selection criterion is the reliable sealing feature of this installation type with vacuum and with overpressure. The application areas are, among others, in the air conditioning technology and refrigeration engineering as well as the HVAC, kiln and apparatus engineering sector.
The connection head is suitable for temperatures up to +100 °C. The versions BUZ, BUZH and BBK are also available in addition to the standard connection head, form B.
A Pt100 temperature sensing element according to DIN EN 60751, class B in 2-wire circuit is used as a measuring insert by default – versions with Pt500 or Pt1000 are also possible. Connection is available in 3-wire or 4-wire circuit as an option. A transmitter can be optionally integrated into the connection head.

## Technical data

| | |
|---|---|
| **Terminal head** | Form B DIN 43729, die-cast aluminum, M20 × 1.5; IP65, ambient temperature -40 to +100 °C<br>Form BUZ, die-cast aluminum, M20 × 1.5; IP65, ambient temperature -40 to +100 °C<br>Form BUZH, die-cast aluminum, M20 × 1.5; IP65, ambient temperature -40 to +100 °C<br>Form BBK, plastic, M20 × 1.5; IP54, ambient temperature -30 to +130 °C<br>Caution: reduced ambient temperature range when using transmitters, data sheets 707010, 707030 and 707060 |
| **Extension tube** | Stainless steel 1.4571, length 130 mm |
| **Process connection** | Thread, stainless steel 1.4571<br>Thermowell, stainless steel 1.4571 or steel 1.7335 |
| **Thermowell** | Stainless steel 1.4571, Ø 9 mm, Ø 11 mm, Ø 12 mm |
| **Measuring insert** | Replaceable, Pt100 temperature probe, DIN EN 60751, class B, 2-wire circuit |
| **Response times** | $t_{0.9}$ approx. 50 s, in water 0.2 m/s, Ø 9 mm |
| **Transmitter** | analog transmitter, 4 to 20 mA output, data sheet 707030<br>analog transmitter, 0 to 10 V output, data sheet 707030<br>programmable transmitter, 4 to 20 mA/20 to 4 mA output, data sheet 707010<br>Wtrans B programmable head transducer with radio transmission, data sheet 707060 (suitable Wtrans receivers, data sheet 902931) |
| **Accessories** | Thermowell, data sheet 909710 |

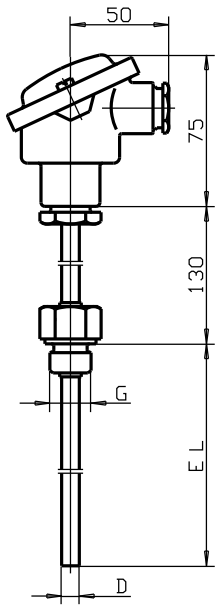
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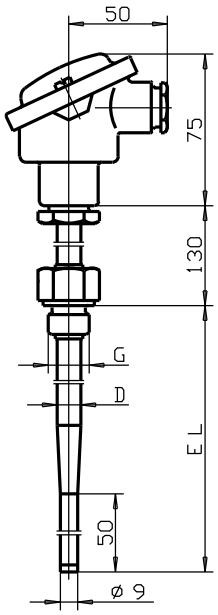
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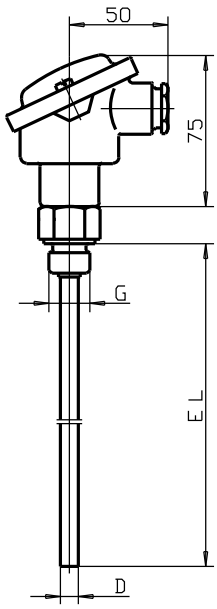
## Dimensions



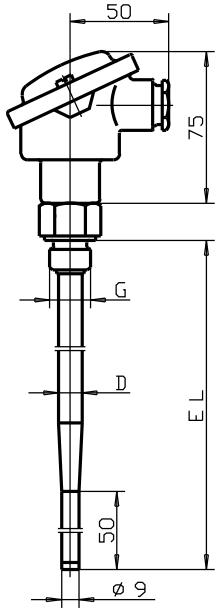

**Basic type 902020/10**




**Basic type 902020/11**




**Basic type 902020/20**



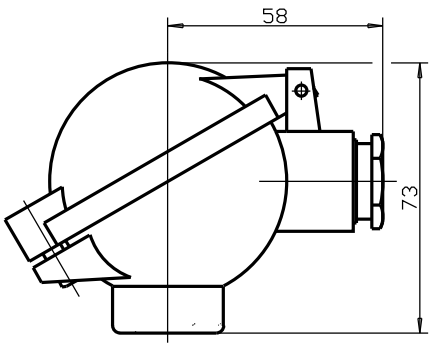

**Basic type 902020/21**

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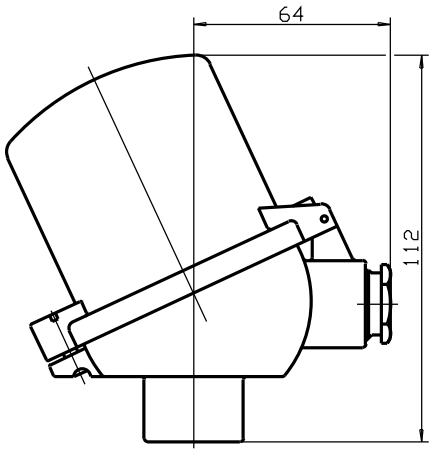
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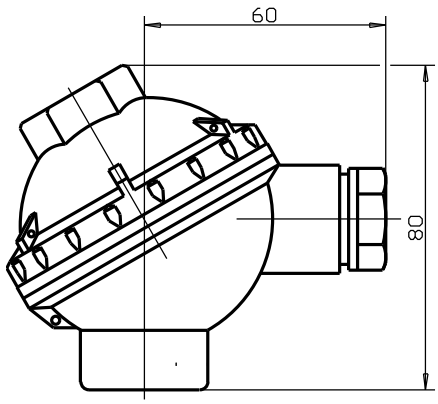





**Terminal head Form BUZ**
**extra code 320**




**Terminal head Form BUZH**
**extra code 321**




**Connection head form BBK**
**extra code 322**

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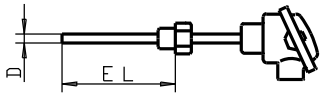
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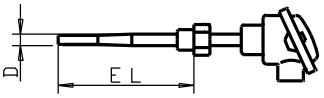


## Order specifications: Screw-in RTD temperature probe with form B connection head

**(1) Basic type**

| | |
|---|---|
| 902020/10 | Screw-in RTD temperature probes with extension tube and continuous thermowell |
| 902020/11 | Screw-in RTD temperature probes with extension tube and stepped thermowell |




| | | | |
|---|---|---|---|
| | | | **(2) Operating temperature in °C** |
| x | x | 402 | -50 to +400 °C (standard) |
| x | x | 415 | -50 to +600 °C |
| | | | **(3) Measuring insert** |
| x | x | 1001 | 1× Pt100 in 3-wire-circuit |
| x | x | 1003 | 1× Pt100 in 2-wire circuit |
| x | x | 1011 | 1× Pt100 in 4-wire circuit |
| x | x | 2001 | 2× Pt100 in 3-wire circuit |
| x | x | 2003 | 2× Pt100 in 2-wire circuit |
| | | | **(4) Tolerance class according to DIN EN 60751** |
| x | x | 1 | Class B (standard) |
| x | x | 2 | Class A |
| | | | **(5) Thermowell diameter D in mm** |
| x | | 9 | Ø 9 mm |
| x | | 11 | Ø 11 mm |
| | x | 12 | Ø 12 mm stepped down to 9 mm |
| | | | **(6) Fitting length EL in mm (EL 100 ... 1000 mm, EL ≤ 700 mm for basic type 902020/11)** |
| x | x | 160 | 160 mm |
| | x | 220 | 220 mm |
| x | x | 250 | 250 mm |
| | x | 280 | 280 mm |
| x | x | 400 | 400 mm |
| x | x | ... | Specification in plain text (50 mm steps) |
| | | | **(7) Process connection** |
| x | x | 104 | Screw-connection G 1/2 |
| x | x | 105 | Screw-connection G 3/4 |
| x | x | 106 | Screw connection G 1 |
| | | | **(8) Extra codes** |
| x | x | 000 | no extra code |
| x | x | 306 | Extension tube 70 mm |
| x | x | 320 | terminal head Form BUZ |
| x | x | 321 | terminal head Form BUZH |
| x | x | 322 | Connection head form BBK |
| x | x | 330 | 1× analog transmitter, 4 to 20 mA[2] output, data sheet 707030 |
| x | x | 331 | 1× transmitter programmable output 4 to 20 mA/20 to 4 mA[3], data sheet 707010 |
| x | x | 333 | 1× analog transmitter, 0 to 10V[2] output, data sheet 707030 |
| x | x | 334 | 2× analog transmitters, 4 to 20 mA[2] output, data sheet 707030 |
| x | x | 335 | 2× transmitter programmable output 4 to 20 mA/20 to 4 mA[3], data sheet 707010 |
| x | x | 337 | 2× analog transmitters, 0 to 10 V[2] output, data sheet 707030 |
| x | x | 859 | 1× Wtrans B programmable head transducer with radio transmission, data sheet 707060 |

| | (1) | | (2) | | (3) | | (4) | | (5) | | (6) | | (7) | | (8) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Order code** | | - | | - | | - | | - | | - | | - | | / | | ,...[1] |
| **Order example** | 902020/10 | - | 402 | - | 1001 | - | 1 | - | 11 | - | 250 | - | 106 | / | 000 | |

[1] List extra codes in sequence, separated by commas.
[2] Specify measuring range in plain text.
[3] Specify measuring range and output signal in plain text.

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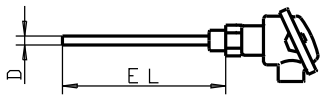
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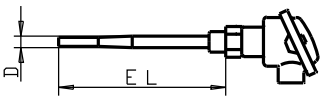


# Order specifications: Screw-in RTD temperature probe with connection head form B

(1) **Basic type**

| | | | |
|---|---|---|---|
| | | 902020/20 | Screw-in RTD temperature probes without extension tube and continuous thermowell |
| | | 902020/21 | Screw-in RTD temperature probes without extension tube and stepped thermowell |




| | | | |
|---|---|---|---|
| | | | **(2) Operating temperature in °C** |
| x | x | 402 | -50 to +400 °C (standard) |
| x | x | 415 | -50 to +600 °C |
| | | | **(3) Measuring insert** |
| x | x | 1001 | 1× Pt100 in 3-wire-circuit |
| x | x | 1003 | 1× Pt100 in 2-wire circuit |
| x | x | 1011 | 1× Pt100 in 4-wire circuit |
| x | x | 2001 | 2× Pt100 in 3-wire circuit |
| x | x | 2003 | 2× Pt100 in 2-wire circuit |
| | | | **(4) Tolerance class according to DIN EN 60751** |
| x | x | 1 | Class B (standard) |
| x | x | 2 | Class A |
| | | | **(5) Thermowell diameter D in mm** |
| x | | 9 | Ø 9 mm |
| x | | 11 | Ø 11 mm |
| | x | 12 | Ø 12 mm stepped down to 9 mm |
| | | | **(6) Fitting length EL in mm (EL 100 ... 1000 mm, EL ≤ 700 mm for basic type 902020/21)** |
| x | x | 100 | 100 mm |
| x | x | 160 | 160 mm |
| x | x | 250 | 250 mm |
| x | x | 400 | 400 mm |
| x | x | ... | Specification in plain text (50 mm steps) |
| | | | **(7) Process connection** |
| x | x | 104 | Screw-connection G 1/2 |
| x | x | 105 | Screw-connection G 3/4 |
| x | x | 106 | Screw connection G 1 |
| | | | **(8) Extra codes** |
| x | x | 000 | no extra code |
| x | x | 320 | terminal head Form BUZ |
| x | x | 321 | terminal head Form BUZH |
| x | x | 322 | Connection head form BBK |
| x | x | 330 | 1× analog transmitter, 4 to 20 mA[2] output, data sheet 707030 |
| x | x | 331 | 1× transmitter programmable output 4 to 20 mA/20 to 4 mA[3], data sheet 707010 |
| x | x | 333 | 1× analog transmitter, 0 to 10 V[2] output, data sheet 707030 |
| x | x | 334 | 2× analog transmitters, 4 to 20 mA[2] output, data sheet 707030 |
| x | x | 335 | 2× transmitter, programmable, output 4 to 20 mA/20 to 4 mA[3], data sheet 707010 |
| x | x | 337 | 2× analog transmitters, 0 to 10 V[2] output, data sheet 707030 |
| x | x | 859 | 1× Wtrans B programmable head transducer with radio transmission, data sheet 707060 |

| | (1) | | (2) | | (3) | | (4) | | (5) | | (6) | | (7) | | (8) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Order code** | | - | | - | | - | | - | | - | | - | | / | | ,...[1] |
| **Order example** | 902020/20 | - | 402 | - | 1001 | - | 1 | - | 9 | - | 160 | - | 104 | / | 000 | |

[1] List extra codes in sequence, separated by commas.
[2] Specify measuring range in plain text.
[3] Specify measuring range and output signal in plain text.

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## Stock versions

| (1) | | (2) | | (3) | | (4) | | (5) | | (6) | | (7) | | (8) | Part no. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 902020/10 | - | 402 | - | 1003 | - | 1 | - | 9 | - | 160 | - | 104 | / | 000 | 00055562 |
| 902020/10 | - | 402 | - | 1003 | - | 1 | - | 9 | - | 250 | - | 104 | / | 000 | 00055563 |
| 902020/10 | - | 402 | - | 1003 | - | 1 | - | 9 | - | 400 | - | 104 | / | 000 | 00055564 |
| 902020/10 | - | 402 | - | 2003 | - | 1 | - | 9 | - | 160 | - | 104 | / | 000 | 00055565 |
| 902020/10 | - | 402 | - | 2003 | - | 1 | - | 9 | - | 250 | - | 104 | / | 000 | 00055566 |
| 902020/10 | - | 402 | - | 2003 | - | 1 | - | 9 | - | 400 | - | 104 | / | 000 | 00055567 |
| 902020/10 | - | 402 | - | 1001 | - | 1 | - | 9 | - | 160 | - | 104 | / | 330 (0 to 100 °C) | 00054616 |
| 902020/10 | - | 402 | - | 1001 | - | 1 | - | 9 | - | 160 | - | 104 | / | 330 (0 to 200 °C) | 00087522 |
| 902020/10 | - | 402 | - | 1001 | - | 1 | - | 9 | - | 250 | - | 104 | / | 330 (0 to 100 °C) | 00054617 |
| 902020/10 | - | 402 | - | 1001 | - | 1 | - | 9 | - | 250 | - | 104 | / | 330 (0 to 200 °C) | 00087527 |
| 902020/10 | - | 402 | - | 1001 | - | 1 | - | 9 | - | 400 | - | 104 | / | 331 (0 to 100 °C) | 00335111 |

## Accessories for programmable 2-wire transmitter type 707010 in the accessories data sheet 709770

| Part | Part no. |
|---|---|
| PC interface with TTL/RS232 converter and adapter (socket connector) | 00350260 |
| PC interface with USB/TTL converter, adapter (socket connector) and adapter (pins) | 00456352 |
| Special programming (standard measuring range 0 to 100 °C) | - |
| Setup program on CD-ROM, multilingual | 00378733 |

## Accessories for Wtrans B, programmable head transmitter with radio transmission Type 707060

| Part | Part no. |
|---|---|
| Lithium battery 3.6 V, 2.2 Ah (size AA) | 00547559 |
| PC interface with USB/TTL converter, adapter (socket) and adapter (pins) | 00456352 |
| PC interface with TTL/RS232 converter and adapter (socket connector) | 00350260 |
| | |
| Setup program on CD-ROM, multilingual | 00488887 |
| Setup program including OnlineChart on CD-ROM, multilingual | 00549067 |
| OnlineChart activation | 00549188 |