

## Selection and ordering data

| SITRANS TS500  | Article No.                    |
|--|--------------------------------|
| Tubular thermowell for low to medium stress, according to DIN 43772, Type 2, without process connection, without extension, plug-in or for use with sliding compression fittings | 7MC751 ● - ● ● ● ● ● - ● ● ● ● |
| Click the article number for online configuration in the PIA Life Cycle Portal.  |                                |
| <b>Wetted material</b>   |                                |
| 316Ti (1.4571)   | 1                              |
| 316L (1.4404 or 1.4435)  | 2                              |
| <b>Process connection</b>  |                                |
| Without process connection (for compression fittings) N=U  | 0 N                            |
| <b>Thermowell form</b>   |                                |
| 2; 9 mm (0.35 inches)  | A                              |
| 2; 12 mm (0.47 inches)   | B                              |
| <b>Installation length "U" (= N), standard</b>   |                                |
| 160 mm (6.3 inches)  | 0 4                            |
| 250 mm (9.84 inches)   | 1 2                            |
| 400 mm (15.75 inches)  | 2 2                            |
| <b>Installation length "U" (= N), customer-specific</b>  |                                |
| Specify customer-specific length with Y44, see order codes   |                                |
| 80 ... 100 mm (3.15 ... 3.94 inches)<br>Initial: 100 mm (3.94 inches)  | 0 1                            |
| 101 ... 120 mm (3.98 ... 4.72 inches)<br>Initial: 120 mm (4.72 inches)   | 0 2                            |
| 121 ... 140 mm (4.76 ... 5.51 inches)<br>Initial: 140 mm (5.51 inches)   | 0 3                            |
| 141 ... 160 mm (5.55 ... 6.30 inches)<br>Initial: 160 mm (6.3 inches)  | 0 4                            |
| 161 ... 180 mm (6.34 ... 7.09 inches)<br>Initial: 180 mm (7.09 inches)   | 0 5                            |
| 181 ... 200 mm (7.13 ... 7.87 inches)<br>Initial: 200 mm (7.87 inches)   | 0 6                            |
| 201 ... 220 mm (7.91 ... 8.66 inches)<br>Initial: 220 mm (8.66 inches)   | 0 7                            |
| 221 ... 240 mm (8.7 ... 9.45 inches)<br>Initial: 225 mm (8.86 inches)  | 1 1                            |
| 241 ... 260 mm (9.49 ... 10.24 inches)<br>Initial: 250 mm (9.84 inches)  | 1 2                            |
| 261 ... 280 mm (10.28 ... 11.02 inches)<br>Initial: 280 mm (11.02 inches)  | 1 3                            |
| 281 ... 300 mm (11.06 ... 11.81 inches)<br>Initial: 285 mm (11.22 inches)  | 1 4                            |
| 301 ... 320 mm (11.85 ... 12.6 inches)<br>Initial: 315 mm (12.4 inches)  | 1 5                            |
| 321 ... 340 mm (12.64 ... 13.39 inches)<br>Initial: 340 mm (13.39 inches)  | 1 6                            |
| 341 ... 360 mm (13.43 ... 14.17 inches)<br>Initial: 360 mm (14.17 inches)  | 2 0                            |
| 361 ... 380 mm (14.21 ... 14.96 inches)<br>Initial: 380 mm (14.96 inches)  | 2 1                            |
| 381 ... 400 mm (15 ... 15.75 inches)<br>Initial: 400 mm (15.75 inches)   | 2 2                            |
| 401 ... 420 mm (15.79 ... 16.54 inches)<br>Initial: 420 mm (16.54 inches)  | 2 3                            |
| 421 ... 440 mm (16.57 ... 17.32 inches)<br>Initial: 440 mm (17.32 inches)  | 2 4                            |
| 441 ... 460 mm (17.36 ... 18.11 inches)<br>Initial: 460 mm (18.11 inches)  | 2 5                            |
| 461 ... 480 mm (18.15 ... 18.90 inches)<br>Initial: 465 mm (18.30 inches)  | 2 6                            |
| 481 ... 500 mm (18.94 ... 19.69 inches)<br>Initial: 500 mm (19.69 inches)  | 2 7                            |
| 501 ... 550 mm (19.72 ... 21.65 inches)<br>Initial: 510 mm (20.08 inches)  | 3 1                            |
| 551 ... 600 mm (21.69 ... 23.62 inches)<br>Initial: 600 mm (23.62 inches)  | 3 2                            |
| 601 ... 650 mm (23.66 ... 25.59 inches)<br>Initial: 650 mm (25.59 inches)  | 3 3                            |
| 651 ... 700 mm (25.63 ... 27.56 inches)<br>Initial: 700 mm (27.56 inches)  | 3 4                            |
| 701 ... 750 mm (27.6 ... 29.53 inches)<br>Initial: 750 mm (29.53 inches)   | 3 5                            |

# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / Tubular thermowells / Type 2, without process connection

#### Selection and ordering data (continued)

| SITRANS TS500  | Article No.                  |
|--|------------------------------|
| Tubular thermowell for low to medium stress, according to DIN 43772, Type 2, without process connection, without extension, plug-in or for use with sliding compression fittings | 7MC751 ● - ● ● ● ● - ● ● ● ● |
| 751 ... 800 mm (29.57 ... 31.50 inches)<br>Initial: 800 mm (31.50 inches)  | 3 6                          |
| 801 ... 850 mm (31.5 ... 33.47 inches)<br>Initial: 850 mm (33.47 inches)   | 3 7                          |
| 851 ... 900 mm (33.5 ... 35.43 inches)<br>Initial: 900 mm (35.43 inches)   | 4 1                          |
| 901 ... 950 mm (35.47 ... 37.4 inches)<br>Initial: 950 mm (37.4 inches)  | 4 2                          |
| 951 ... 1 000 mm (37.44 ... 39.37 inches)<br>Initial: 1 000 mm (39.37 inches)  | 4 3                          |
| 1 001 ... 1 100 mm (39.4 ... 43.30 inches)<br>Initial: 1 100 mm (43.30 inches)   | 4 4                          |
| 1 101 ... 1 200 mm (43.35 ... 47.24 inches)<br>Initial: 1 200 mm (47.24 inches)  | 4 5                          |
| 1 201 ... 1 300 mm (47.28 ... 51.18 inches)<br>Initial: 1 300 mm (51.18 inches)  | 4 6                          |
| 1 301 ... 1 400 mm (51.22 ... 55.11 inches)<br>Initial: 1 400 mm (55.11 inches)  | 4 7                          |
| 1 401 ... 1 500 mm (55.15 ... 59.05 inches)<br>Initial: 1 500 mm (59.05 inches)  | 5 1                          |
| Extension "X"  |                              |
| Standard length for Type 2 according to DIN 43772 (without extension N=U)  | 0                            |
| <b>Head</b>  |                              |
| Aluminum head, BAO, flange cap, standard   | A                            |
| Aluminum head, BBO, spring flap low, screw closure   | B                            |
| Aluminum head, BCO, spring flap high, screw closure  | C                            |
| Aluminum head, AGO, screw cover, Ex d suitable <sup>1)</sup>   | G                            |
| Aluminum head, AHO, screw cover, Ex d suitable, display <sup>1)</sup>  | H                            |
| Plastic head, BMO, screw cover   | M                            |
| Plastic head, BPO, spring flap high, screw closure   | P                            |
| Stainless steel head, AUO, screw cover, Ex d suitable <sup>1)</sup>  | U                            |
| Stainless steel head, AVO, screw cover, Ex d suitable, display <sup>1)</sup>   | V                            |
| <b>Sensor<sup>2)</sup></b>   |                              |
| Note: The accuracy class range can be lower than the measuring range. For more detailed information, see "Configuration"/"Measuring technology: Measuring accuracy"              |                              |
| Pt100, basic version, -50 ... +400 °C (-58 ... +752 °F)  | A                            |
| Pt100, vibration-resistant, -50 ... +400 °C (-58 ... +752 °F)  | B                            |
| Pt100, extended measuring range, -196 ... +600 °C (-320.8 ... +1 112 °F)   | C                            |
| Type K thermocouple, -270 ... +1 100 °C (-167 ... +2 012 °F)   | K                            |
| Type J thermocouple, -0 ... +750 °C (-18 ... +1 382 °F)  | J                            |
| Type N thermocouple, -270 ... +1 100 °C (-167 ... +2 012 °F)   | N                            |
| <b>Number/precision of sensors</b>   |                              |
| Pt100 connection: 1 × 4-wire connection or 2 × 3-wire connection, see "Configuration"/"Measuring technology: Connection types"   |                              |
| Single, basic accuracy (Class 2/Class B)   | 1                            |
| Single, increased accuracy (Class 1/Class A)   | 2                            |
| Single, maximum accuracy (Class AA)  | 3                            |
| Double, basic accuracy (Class 2/Class B)   | 5                            |
| Double, increased accuracy (Class 1/Class A)   | 6                            |
| Double, maximum accuracy (Class AA)  | 7                            |

<sup>1)</sup> Ex d in connection with order option E03

<sup>2)</sup> Pt1000 versions are also available.

To find these, switch to Online Configuration in the PIA Life Cycle Portal: [www.siemens.com/pia-portal](http://www.siemens.com/pia-portal)

| Options   | Order code |
|---|------------|
| <b>Add "Z" to article number and specify order code</b>                       |            |
| <b>Accessories</b>  |            |
| With external grounding screw for connection heads AGO, AHO, AUO and AVO      | A02        |
| With external grounding screw for connection heads BCO, AGO, AHO, AUO and AVO | A03        |

## Selection and ordering data (continued)

| Options  | Order code |
|--|------------|
| <b>Add "-Z" to article number and specify order code</b>   |            |
| <b>Compression fitting enclosed</b>  |            |
| G½"  | A31        |
| NPT½"  | A32        |
| <b>Certificates and approvals</b>  |            |
| Transmitter test report (5 points)   | C11        |
| EN 10204-3.1 Inspection certificate Wetted material  | C12        |
| EN 10204-3.1 Inspection certificate Hydrostatic pressure test  | C31        |
| EN 10204-3.1 Inspection certificate Helium leak test   | C32        |
| EN 10204-3.1 Inspection certificate Surface tear test  | C33        |
| EN 10204-3.1 Factory certificate Visual, dimensional and function check  | C34        |
| EN 10204-2.1: Declaration of compliance with the order   | C35        |
| ISO 9001 grease-free (cleaned for oxygen applications, for example)  | C51        |
| EN 10204-3.1 Inspection certificate "Positive Materials Identification" (PMI)  | On request |
| <b>Certificates for functional safety</b>  |            |
| SITRANS TH320/420 transmitter with SIL2/3 certificate  | C20        |
| <b>Marine approvals</b>  |            |
| Det Norske Veritas Germanischer Lloyd (DNV GL)   | D01        |
| <b>Type of protection (Ex)</b>   |            |
| Without explosion protection requirements (Europe, Australia, New Zealand)   | E00        |
| Intrinsic safety "i"/"IS <sup>1</sup> )" according to ATEX and IECEx (Europe, Australia, New Zealand)  | E01        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> )" according to ATEX and IECEx (Europe, Australia, New Zealand) | E03        |
| Non-sparking "ec" according to ATEX and IECEx (Europe, Australia, New Zealand)   | E04        |
| Without explosion protection requirements (USA, Canada) Basis FM   | E10        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> )" according to cFMus (USA, Canada); other connections (M,G,R)  | E14        |
| Non-sparking "nA"/"NI" according to cFMus (USA, Canada)  | E16        |
| Without explosion protection requirements (USA, Canada), Basis CSA   | E17        |
| Intrinsic safety "i"/"IS <sup>1</sup> )" according to cCSAus (USA, Canada)   | E18        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> )" according to CSAus (USA); other connections (M, G, R)        | E21        |
| Non-sparking "nA"/"NI" according to cCSAus (USA, Canada)   | E23        |
| Without explosion protection requirements (China)  | E54        |
| Intrinsic safety "i"/"IS <sup>1</sup> )" according to NEPSI (China)  | E55        |
| Flameproof enclosure "d"; dust protection through enclosure "t <sup>2</sup> )" according to NEPSI (China)  | E56        |
| Non-sparking "nA"/"NI" according to NEPSI (China)  | E57        |
| Without explosion protection requirements (EAC)  | E80        |
| Intrinsic safety "i"/"IS <sup>1</sup> )" according to EACEx (EAC)  | E81        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> )" according to EACEx (EAC)                                     | E82        |
| Non-sparking "nA"/"NI" according to EACEx (EAC)  | E83        |
| <b>Special design</b>  |            |
| Flying lead connection type (for direct transmitter mounting, delivery without screws or springs)  | G01        |

# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / Tubular thermowells / Type 2, without process connection

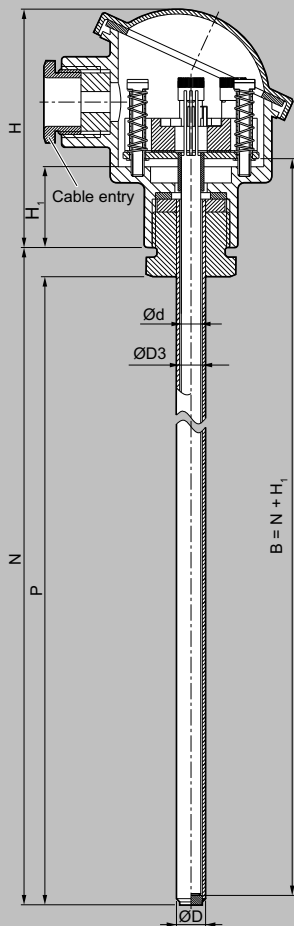
#### Selection and ordering data (continued)

| Options  | Order code |
|--|------------|
| <b>Add "-Z" to article number and specify order code</b>   |            |
| <b>Cable input for connection head</b>   |            |
| M12 device plug (in combination with transmitter, non-Ex and intrinsically safe, max. IP65/67)   | G12        |
| Han 7 D device plug (non-Ex and intrinsically safe, without mating connector max. IP65/67)   | G13        |
| Connection head with ½"-NPT thread without cable gland, for AU0 and AHO only IP66  | G20        |
| SafeGuard 2 × Pt100 4-wire   | G30        |
| <b>Built-in head transmitter</b>   |            |
| Measuring range to be set must be specified with plain text data "Y01".  |            |
| SITRANS TH100, input 1 × Pt100, 4 ... 20 mA  | T12        |
| SITRANS TH320, input 1 × universal, 4 ... 20 mA  | T24        |
| SITRANS TH320, input 1 × universal, HART   | T34        |
| SITRANS TH420, input 2 × universal, HART   | T35        |
| <b>Device settings (including head transmitter options)</b>  |            |
| Tag plate made of stainless steel, specify label in plain text   | Y15        |
| Factory calibration per 1 point, specify temperature in plain text   | Y33        |
| Specify measuring range in plain text (Y01: +/-NNNN ... +/-NNNN C,F), marking on the device when option "Y15" is selected in addition    | Y01        |
| Specify measuring point description in plain text (max. 16 characters)   | Y23        |
| Specify measuring point message in plain text (max. 32 characters)   | Y24        |
| Specify bus address in plain text  | Y25        |
| Installation length U customer-specific<br>Select range, plain text specification of desired length (no specification = standard length) | Y44        |
| <b>Customer-specific plain text</b>  |            |
| Handling number of the special design  | Y99        |

<sup>1)</sup> Select Ex i version of the optional transmitter.

<sup>2)</sup> Only with connection heads code AG0, AHO, AU0, AV0, without cable gland (select non-Ex version of the optional transmitter).

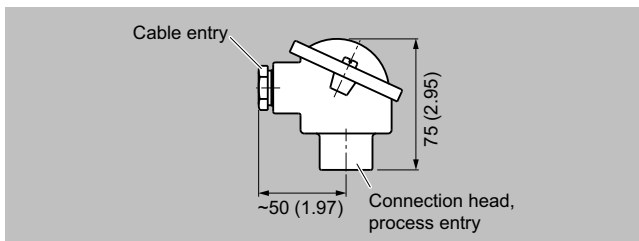
## Dimensional drawings



- B Measuring insert length
- Ød Measuring insert outer diameter (6 (0.24))
- ØD Process connection outer diameter
- ØD3 Thermowell internal diameter
- H Head height
- H<sub>1</sub> Type Axx = 41 (1.61)  
Type Bxx = 26 (1.02)
- N Nominal length
- P Space for process connection P ~ N - 9 (0.35), floor strength 3 mm

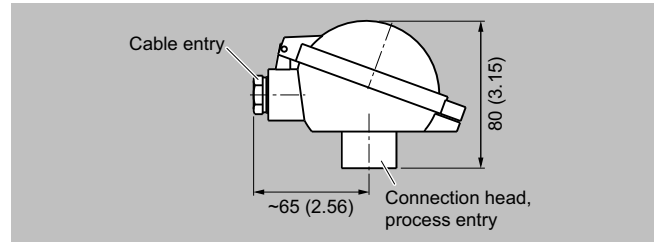
SITRANS TS500, temperature sensors for vessels and pipes, tubular thermowell for low to medium stress, without process connection, without extension, plug-in or for use with sliding compression fittings, dimensions in mm (inch)

## Connection heads

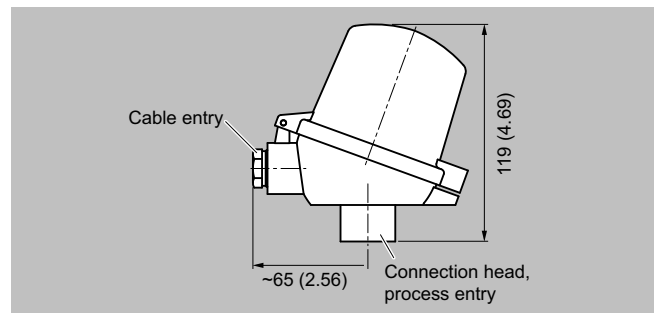


Connection head, aluminum, type BA0, dimensions in mm (inch)

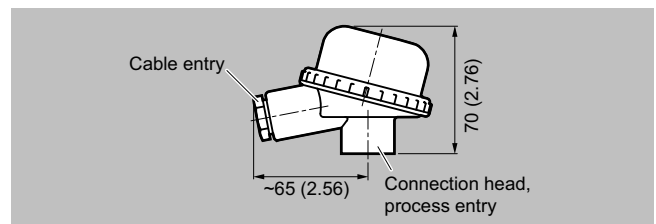
## Dimensional drawings (continued)



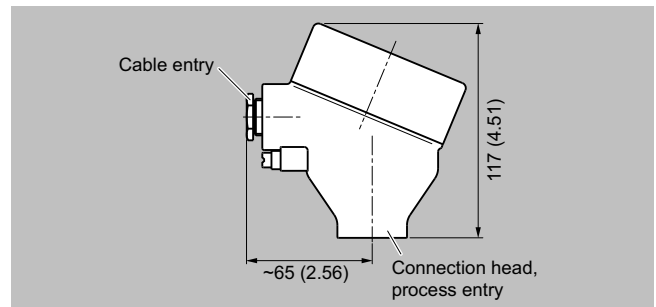
Connection head, aluminum, type BB0, dimensions in mm (inch)



Connection head, aluminum, type BC0, plastic, type BP0, dimensions in mm (inch)



Connection head, plastic, type BM0, dimensions in mm (inch)



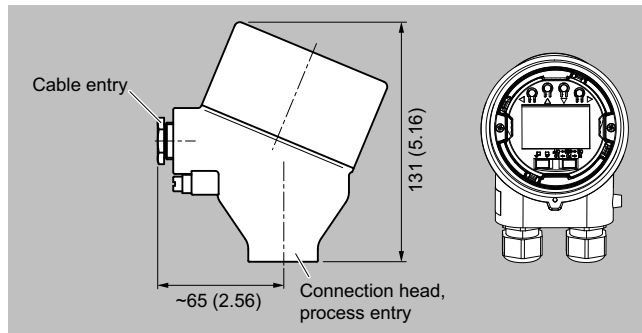
Connection head, aluminum, type AG0, stainless steel, type AU0, dimensions in mm (inch)

## Temperature Measurement

### Temperature sensors

#### SITRANS TS500 / Tubular thermowells / Type 2, without process connection

##### Dimensional drawings (continued)



Connection head with 4-20 mA display, aluminum, type AH0, stainless steel, type AV0, dimensions in mm (inch)

## Selection and ordering data

| SITRANS TS500  | Article No.                    |
|--|--------------------------------|
| Tubular thermowell for low to medium stress, Type 2N similar to DIN 43772, screwed design, without extension | 7MC751 ● - ● ● ● ● ● - ● ● ● ● |
| Click the article number for online configuration in the PIA Life Cycle Portal.                              |                                |
| <b>Wetted material</b>   |                                |
| 316Ti (1.4571)   | 1                              |
| 316L (1.4404 or 1.4435)  | 2                              |
| <b>Process connection</b>  |                                |
| G ½" (½"BSPP)  | 1 C                            |
| ½" NPT   | 1 J                            |
| <b>Thermowell form</b>   |                                |
| 2N, 9 mm (0.35 inches)   | A                              |
| <b>Standard installation length "U"</b>  |                                |
| 100 mm (3.97 inches)   | 0 1                            |
| 160 mm (6.30 inches)   | 0 4                            |
| 230 mm (9.06 inches)   | 1 0                            |
| 360 mm (14.17 inches)  | 2 0                            |
| 510 mm (20.08 inches)  | 3 1                            |
| <b>Installation length "U" customer-specific</b>   |                                |
| Specify customer-specific length with Y44, see order codes   |                                |
| 80 ... 100 mm (3.15 ... 3.94 inches)<br>Initial: 100 mm (3.94 inches)  | 0 1                            |
| 101 ... 120 mm (3.98 ... 4.72 inches)<br>Initial: 120 mm (4.72 inches)                                       | 0 2                            |
| 121 ... 140 mm (4.76 ... 5.51 inches)<br>Initial: 140 mm (5.51 inches)                                       | 0 3                            |
| 141 ... 160 mm (5.55 ... 6.30 inches)<br>Initial: 160 mm (6.3 inches)  | 0 4                            |
| 161 ... 180 mm (6.34 ... 7.09 inches)<br>Initial: 180 mm (7.09 inches)                                       | 0 5                            |
| 181 ... 200 mm (7.13 ... 7.87 inches)<br>Initial: 200 mm (7.87 inches)                                       | 0 6                            |
| 201 ... 220 mm (7.91 ... 8.66 inches)<br>Initial: 220 mm (8.66 inches)                                       | 0 7                            |
| 221 ... 240 mm (8.70 ... 9.45 inches)<br>Initial: 230 mm (9.06 inches)                                       | 1 0                            |
| 241 ... 260 mm (9.49 ... 10.24 inches)<br>Initial: 250 mm (9.84 inches)                                      | 1 2                            |
| 261 ... 280 mm (10.28 ... 11.02 inches)<br>Initial: 280 mm (11.02 inches)                                    | 1 3                            |
| 281 ... 300 mm (11.06 ... 11.81 inches)<br>Initial: 285 mm (11.22 inches)                                    | 1 4                            |
| 301 ... 320 mm (11.85 ... 12.6 inches)<br>Initial: 315 mm (12.4 inches)                                      | 1 5                            |
| 321 ... 340 mm (12.64 ... 13.39 inches)<br>Initial: 340 mm (13.39 inches)                                    | 1 6                            |
| 341 ... 360 mm (13.43 ... 14.17 inches)<br>Initial: 360 mm (14.17 inches)                                    | 2 0                            |
| 361 ... 380 mm (14.21 ... 14.96 inches)<br>Initial: 380 mm (14.96 inches)                                    | 2 1                            |
| 381 ... 400 mm (15 ... 15.75 inches)<br>Initial: 400 mm (15.75 inches)                                       | 2 2                            |
| 401 ... 420 mm (15.79 ... 16.54 inches)<br>Initial: 420 mm (16.54 inches)                                    | 2 3                            |
| 421 ... 440 mm (16.57 ... 17.32 inches)<br>Initial: 440 mm (17.32 inches)                                    | 2 4                            |
| 441 ... 460 mm (17.36 ... 18.11 inches)<br>Initial: 460 mm (18.11 inches)                                    | 2 5                            |
| 461 ... 480 mm (18.15 ... 18.90 inches)<br>Initial: 465 mm (18.30 inches)                                    | 2 6                            |
| 481 ... 500 mm (18.94 ... 19.69 inches)<br>Initial: 500 mm (19.69 inches)                                    | 2 7                            |
| 501 ... 550 mm (19.72 ... 21.65 inches)<br>Initial: 510 mm (20.08 inches)                                    | 3 1                            |
| 551 ... 600 mm (21.69 ... 23.62 inches)<br>Initial: 600 mm (23.62 inches)                                    | 3 2                            |

# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / Tubular thermowells / Type 2N, screwed design, without extension

#### Selection and ordering data (continued)

| SITRANS TS500   | Article No. |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|-------------|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Tubular thermowell for low to medium stress, Type 2N similar to DIN 43772, screwed design, without extension  | 7           | M | C | 7 | 5 | 1 | • | - | • | • | • | • | • | • | • | • | • | • | • | • |   |   |   |
| 601 ... 650 mm (23.66 ... 25.59 inches)<br>Initial: 650 mm (25.59 inches)   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3 | 3 |   |
| 651 ... 700 mm (25.63 ... 27.56 inches)<br>Initial: 700 mm (27.56 inches)   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3 | 4 |
| 701 ... 750 mm (27.6 ... 29.53 inches)<br>Initial: 750 mm (29.53 inches)  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3 | 5 |
| 751 ... 800 mm (29.57 ... 31.50 inches)<br>Initial: 800 mm (31.50 inches)   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3 | 6 |
| 801 ... 850 mm (31.5 ... 33.47 inches)<br>Initial: 850 mm (33.47 inches)  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3 | 7 |
| 851 ... 900 mm (33.5 ... 35.43 inches)<br>Initial: 900 mm (35.43 inches)  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4 | 1 |
| 901 ... 950 mm (35.47 ... 37.4 inches)<br>Initial: 950 mm (37.4 inches)   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4 | 2 |
| 951 ... 1 000 mm (37.44 ... 39.37 inches)<br>Initial: 1 000 mm (39.37 inches)   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4 | 3 |
| 1 001 ... 1 100 mm (39.4 ... 43.30 inches)<br>Initial: 1 100 mm (43.30 inches)  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4 | 4 |
| 1 101 ... 1 200 mm (43.35 ... 47.24 inches)<br>Initial: 1 200 mm (47.24 inches)   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4 | 5 |
| 1 201 ... 1 300 mm (47.28 ... 51.18 inches)<br>Initial: 1 300 mm (51.18 inches)   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4 | 6 |
| 1 301 ... 1 400 mm (51.22 ... 55.11 inches)<br>Initial: 1 400 mm (55.11 inches)   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 4 | 7 |
| 1 401 ... 1 500 mm (55.15 ... 59.05 inches)<br>Initial: 1 500 mm (59.05 inches)   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 5 | 1 |
| <b>Extension "X"</b>  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Without extension (non-adjustable)  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 0 |
| <b>Head</b>   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Aluminum head, BAO, flange cap, standard  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | A |
| Aluminum head, BBO, spring flap low, screw closure  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | B |
| Aluminum head, BCO, spring flap high, screw closure   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | C |
| Aluminum head, AGO, screw cover, Ex d suitable <sup>1)</sup>  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | G |
| Aluminum head, AH0, screw cover, Ex d suitable, display <sup>1)</sup>   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | H |
| Plastic head, BMO, screw cover  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | M |
| Plastic head, BPO, spring flap high, screw closure  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | P |
| Stainless steel head, AU0, screw cover, Ex d suitable <sup>1)</sup>   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | U |
| Stainless steel head, AV0, screw cover, Ex d suitable, display <sup>1)</sup>  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | V |
| <b>Sensor<sup>2)</sup></b>  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Note: The accuracy class range can be lower than the measuring range. For more detailed information, see "Configuration"/"Measuring technology: Measuring accuracy" |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Pt100, basic version, -50 ... +400 °C (-58 ... +752 °F)   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | A |
| Pt100, vibration-resistant, -50 ... +400 °C (-58 ... +752 °F)   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | B |
| Pt100, extended measuring range, -196 ... +600 °C (-320.8 ... +1 112 °F)  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | C |
| Type K thermocouple, -270 ... +1 100 °C (-167 ... +2 012 °F)  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | K |
| Type J thermocouple, -0 ... +750 °C (-18 ... +1 382 °F)   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | J |
| Type N thermocouple, -270 ... +1 100 °C (-167 ... +2 012 °F)  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | N |
| <b>Number/precision of sensors</b>  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Pt100 connection: 1 × 4-wire connection or 2 × 3-wire connection, see "Configuration"/"Measuring technology: Connection types"                                      |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| Single, basic accuracy (Class 2/Class B)  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 1 |
| Single, increased accuracy (Class 1/Class A)  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 2 |
| Single, maximum accuracy (Class AA)   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 3 |
| Double, basic accuracy (Class 2/Class B)  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 5 |
| Double, increased accuracy (Class 1/Class A)  |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 6 |
| Double, maximum accuracy (Class AA)   |             |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   | 7 |

<sup>1)</sup> Ex d in connection with order option E03

<sup>2)</sup> Pt1000 versions are also available.

To find these, switch to Online Configuration in the PIA Life Cycle Portal: [www.siemens.com/pia-portal](http://www.siemens.com/pia-portal)



## Selection and ordering data (continued)

| Options   | Order code |
|---|------------|
| <b>Add "-Z" to article number and specify order code</b>  |            |
| <b>Accessories</b>  |            |
| With external grounding screw for connection heads AG0, AH0, AU0 and AV0  | A02        |
| With external grounding screw for connection heads BC0, AG0, AH0, AU0 and AV0   | A03        |
| <b>Certificates and approvals</b>   |            |
| Transmitter test report (5 points)  | C11        |
| EN 10204-3.1 Inspection certificate Wetted material   | C12        |
| EN 10204-3.1 Inspection certificate Hydrostatic pressure test   | C31        |
| EN 10204-3.1 Inspection certificate Helium leak test  | C32        |
| EN 10204-3.1 Inspection certificate Surface tear test   | C33        |
| EN 10204-3.1 Factory certificate Visual, dimensional and function check   | C34        |
| EN 10204-2.1: Declaration of compliance with the order  | C35        |
| ISO 9001 grease-free (cleaned for oxygen applications, for example)   | C51        |
| EN 10204-3.1 Inspection certificate "Positive Materials Identification" (PMI)   | On request |
| <b>Certificates for functional safety</b>   |            |
| SITRANS TH320/420 transmitter with SIL2/3 certificate   | C20        |
| <b>Marine approvals</b>   |            |
| Det Norske Veritas Germanischer Lloyd (DNV GL)  | D01        |
| <b>Type of protection (Ex)</b>  |            |
| Without explosion protection requirements (Europe, Australia, New Zealand)  | E00        |
| Intrinsic safety "i"/"IS <sup>1</sup> " according to ATEX and IECEx (Europe, Australia, New Zealand)  | E01        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> " according to ATEX and IECEx (Europe, Australia, New Zealand) | E03        |
| Non-sparking "ec" according to ATEX and IECEx (Europe, Australia, New Zealand)  | E04        |
| Without explosion protection requirements (USA, Canada) Basis FM  | E10        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> " according to cFMus (USA, Canada); other connections (M,G,R)  | E14        |
| Non-sparking "nA"/"NI" according to cFMus (USA, Canada)   | E16        |
| Without explosion protection requirements (USA, Canada), Basis CSA  | E17        |
| Intrinsic safety "i"/"IS <sup>1</sup> " according to cCSAus (USA, Canada)   | E18        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> " according to CSAus (USA); other connections (M, G, R)        | E21        |
| Non-sparking "nA"/"NI" according to cCSAus (USA, Canada)  | E23        |
| Without explosion protection requirements (China)   | E54        |
| Intrinsic safety "i"/"IS <sup>1</sup> " according to NEPSI (China)  | E55        |
| Flameproof enclosure "d"; dust protection through enclosure "t <sup>2</sup> " according to NEPSI (China)  | E56        |
| Non-sparking "nA"/"NI" according to NEPSI (China)   | E57        |
| Without explosion protection requirements (EAC)   | E80        |
| Intrinsic safety "i"/"IS <sup>1</sup> " according to EACEx (EAC)  | E81        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> " according to EACEx (EAC)                                     | E82        |
| Non-sparking "nA"/"NI" according to EACEx (EAC)   | E83        |
| <b>Special design</b>   |            |
| Flying lead connection type (for direct transmitter mounting, delivery without screws or springs)   | G01        |

# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / Tubular thermowells / Type 2N, screwed design, without extension

#### Selection and ordering data (continued)

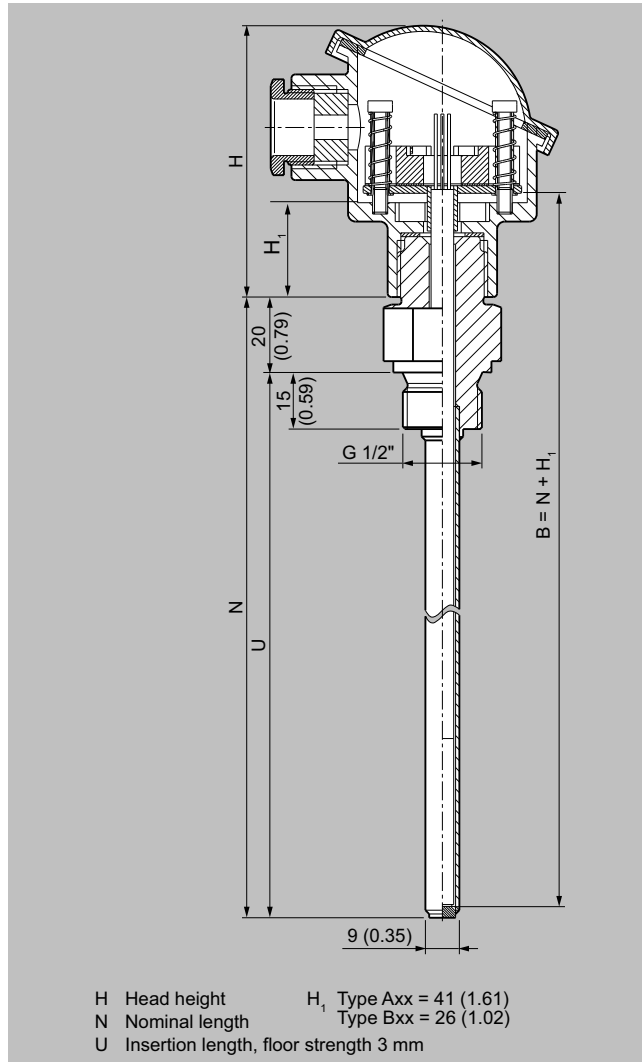
| Options  | Order code |
|--|------------|
| <b>Add "-Z" to article number and specify order code</b>   |            |
| <b>Cable input for connection head</b>   |            |
| M12 device plug (in combination with transmitter, non-Ex and intrinsically safe, max. IP65/67)   | G12        |
| Han 7 D device plug (non-Ex and intrinsically safe, without mating connector max. IP65/67)   | G13        |
| Connection head with ½"-NPT thread without cable gland, for AU0 and AH0 only IP66  | G20        |
| SafeGuard 2 × Pt100 4-wire   | G30        |
| <b>Built-in head transmitter</b>   |            |
| Measuring range to be set must be specified with plain text data "Y01".  |            |
| SITRANS TH100, input 1 × Pt100, 4 ... 20 mA  | T12        |
| SITRANS TH320, input 1 × universal, 4 ... 20 mA  | T24        |
| SITRANS TH320, input 1 × universal, HART   | T34        |
| SITRANS TH420, input 2 × universal, HART   | T35        |
| <b>Device settings (including head transmitter options)</b>  |            |
| Tag plate made of stainless steel, specify label in plain text   | Y15        |
| Factory calibration per 1 point, specify temperature in plain text   | Y33        |
| Specify measuring range in plain text (Y01: +/--NNNN ... +/--NNNN C,F), marking on the device when option "Y15" is selected in addition  | Y01        |
| Specify measuring point description in plain text (max. 16 characters)   | Y23        |
| Specify measuring point message in plain text (max. 32 characters)   | Y24        |
| Specify bus address in plain text  | Y25        |
| Installation length U customer-specific<br>Select range, plain text specification of desired length (no specification = standard length) | Y44        |
| Extension length X customer-specific<br>Select range, plain text specification of desired length (no specification = standard length)    | Y45        |
| <b>Customer-specific plain text</b>  |            |
| Handling number of the special design  | Y99        |

1) Select Ex i version of the optional transmitter.

2) Only with connection heads code AG0, AH0, AU0, AV0, without cable gland (select non-Ex version of the optional transmitter).

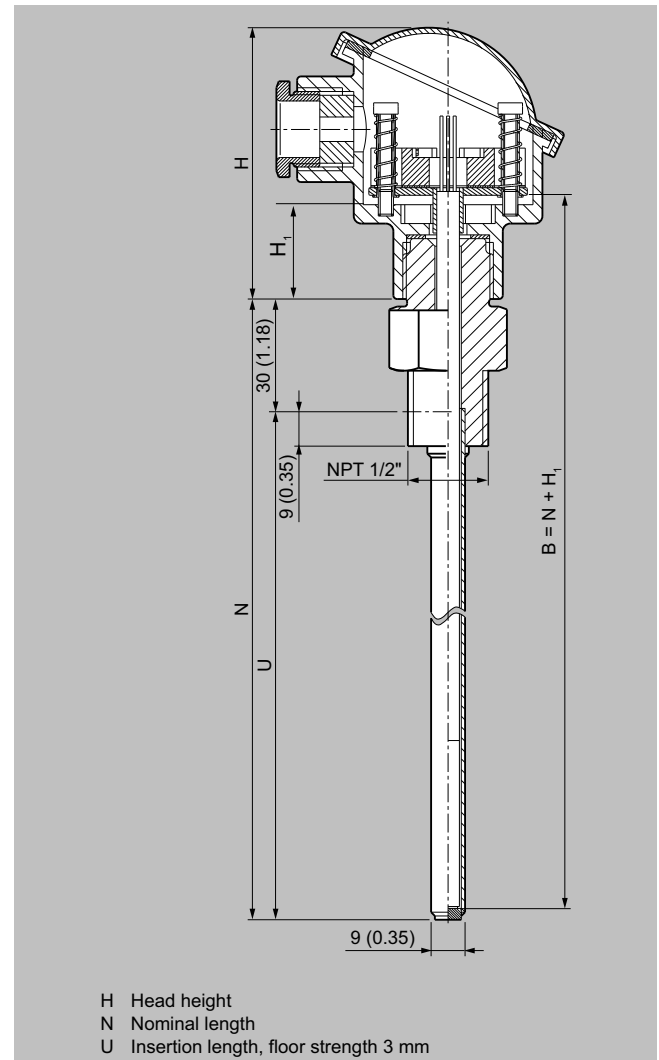
## Dimensional drawings

SITRANS TS500, temperature sensors for vessels and pipes, tubular thermowell for low to medium stress, type 2N similar to DIN 43772, screwed design, without extension, non-adjustable connection head. For Ex-versions the maximum process temperature is 100 °C.



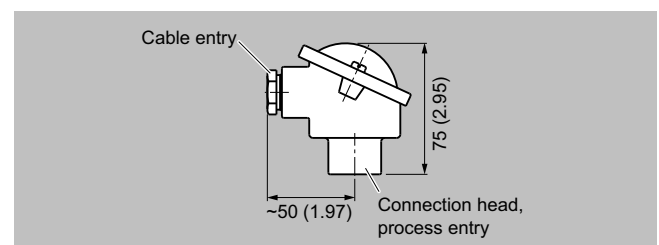
Connection type "G", dimensions in mm (inch)

## Dimensional drawings (continued)



Connection type "NPT", dimensions in mm (inch)

## Connection heads



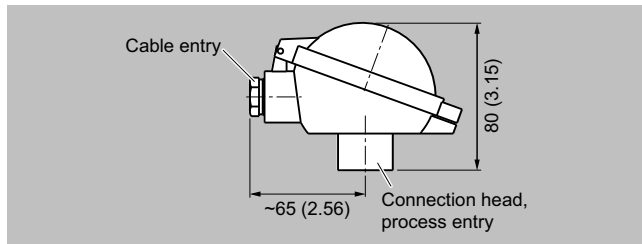
Connection head, aluminum, type BA0, dimensions in mm (inch)

## Temperature Measurement

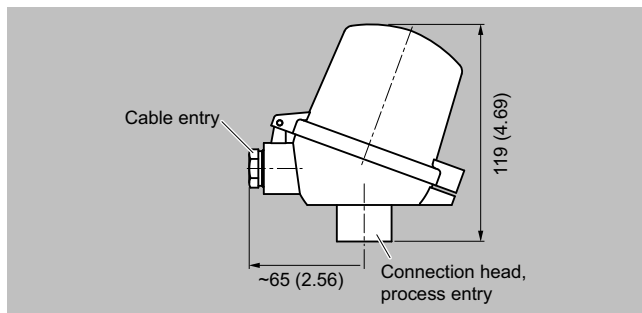
### Temperature sensors

#### SITRANS TS500 / Tubular thermowells / Type 2N, screwed design, without extension

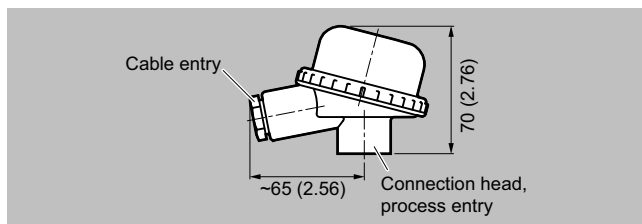
##### Dimensional drawings (continued)



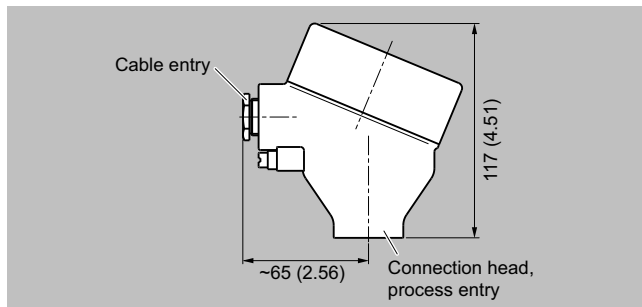
Connection head, aluminum, type BB0, dimensions in mm (inch)



Connection head, aluminum, type BC0, plastic, type BP0, dimensions in mm (inch)

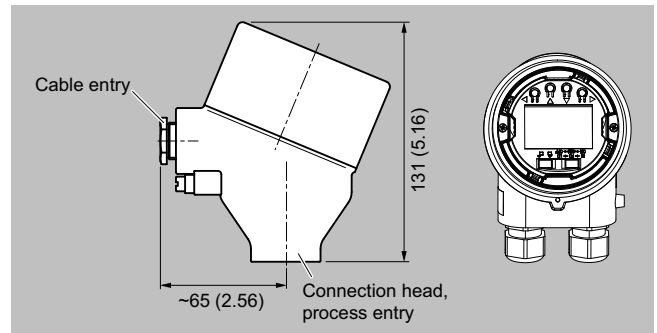


Connection head, plastic, type BM0, dimensions in mm (inch)



Connection head, aluminum, type AG0, stainless steel, type AU0, dimensions in mm (inch)

##### Dimensional drawings (continued)



Connection head with 4-20 mA display, aluminum, type AHO, stainless steel, type AV0, dimensions in mm (inch)

## Selection and ordering data

| Selection and ordering data  | Article No.                     | Order code |
|--|---------------------------------|------------|
| <b>SITRANS TS500</b>   | 7MC751                          |            |
| Tubular thermowell for low to medium stress, according to DIN 43772, Type 2G, screwed design, with extension | ● - ● ● ● ● ● - ● ● ● ● ● ● ● ● |            |
| Click the article number for online configuration in the PIA Life Cycle Portal.                              |                                 |            |
| <b>Wetted material</b>   |                                 |            |
| 316Ti (1.4571)   | 1                               |            |
| 316L (1.4404 or 1.4435)  | 2                               |            |
| <b>Process connection</b>  |                                 |            |
| Cylindrical: G½" (½" BSPP)   | 1                               | C          |
| Cylindrical: G¾" (¾" BSPP)   | 1                               | D          |
| Tapered: NPT½"   | 1                               | J          |
| Tapered: NPT¾"   | 1                               | K          |
| Tapered: NPT1"   | 1                               | L          |
| Cylindrical: M20 × 1.5   | 1                               | V          |
| Cylindrical: M27 × 2.0   | 1                               | W          |
| Cylindrical: M33 × 2.0   | 1                               | Y          |
| <b>Thermowell form</b>   |                                 |            |
| 2G, 9 mm (0.35 inches)   |                                 | A          |
| 2G, 12 mm (0.47 inches)  |                                 | B          |
| <b>Standard installation length "U"</b>  |                                 |            |
| 160 mm (6.30 inches)   |                                 | 0 4        |
| 250 mm (9.84 inches)   |                                 | 1 2        |
| 400 mm (15.75 inches)  |                                 | 2 2        |
| <b>Installation length "U" customer-specific</b>   |                                 |            |
| Specify customer-specific length with Y44, see order codes   |                                 |            |
| 80 ... 100 mm (3.15 ... 3.94 inches)<br>Initial: 100 mm (3.94 inches)  |                                 | 0 1        |
| 101 ... 120 mm (3.98 ... 4.72 inches)<br>Initial: 120 mm (4.72 inches)                                       |                                 | 0 2        |
| 121 ... 140 mm (4.76 ... 5.51 inches)<br>Initial: 140 mm (5.51 inches)                                       |                                 | 0 3        |
| 141 ... 160 mm (5.55 ... 6.30 inches)<br>Initial: 160 mm (6.3 inches)  |                                 | 0 4        |
| 161 ... 180 mm (6.34 ... 7.09 inches)<br>Initial: 180 mm (7.09 inches)                                       |                                 | 0 5        |
| 181 ... 200 mm (7.13 ... 7.87 inches)<br>Initial: 200 mm (7.87 inches)                                       |                                 | 0 6        |
| 201 ... 220 mm (7.91 ... 8.66 inches)<br>Initial: 220 mm (8.66 inches)                                       |                                 | 0 7        |
| 221 ... 240 mm (8.70 ... 9.45 inches)<br>Initial: 225 mm (8.86 inches)                                       |                                 | 1 1        |
| 241 ... 260 mm (9.49 ... 10.24 inches)<br>Initial: 250 mm (9.84 inches)                                      |                                 | 1 2        |
| 261 ... 280 mm (10.28 ... 11.02 inches)<br>Initial: 280 mm (11.02 inches)                                    |                                 | 1 3        |
| 281 ... 300 mm (11.06 ... 11.81 inches)<br>Initial: 285 mm (11.22 inches)                                    |                                 | 1 4        |
| 301 ... 320 mm (11.85 ... 12.6 inches)<br>Initial: 315 mm (12.4 inches)                                      |                                 | 1 5        |
| 321 ... 340 mm (12.64 ... 13.39 inches)<br>Initial: 340 mm (13.39 inches)                                    |                                 | 1 6        |
| 341 ... 360 mm (13.43 ... 14.17 inches)<br>Initial: 360 mm (14.17 inches)                                    |                                 | 2 0        |
| 361 ... 380 mm (14.21 ... 14.96 inches)<br>Initial: 380 mm (14.96 inches)                                    |                                 | 2 1        |
| 381 ... 400 mm (15 ... 15.75 inches)<br>Initial: 400 mm (15.75 inches)                                       |                                 | 2 2        |
| 401 ... 420 mm (15.79 ... 16.54 inches)<br>Initial: 420 mm (16.54 inches)                                    |                                 | 2 3        |
| 421 ... 440 mm (16.57 ... 17.32 inches)<br>Initial: 440 mm (17.32 inches)                                    |                                 | 2 4        |
| 441 ... 460 mm (17.36 ... 18.11 inches)<br>Initial: 460 mm (18.11 inches)                                    |                                 | 2 5        |
| 461 ... 480 mm (18.15 ... 18.90 inches)<br>Initial: 465 mm (18.30 inches)                                    |                                 | 2 6        |

# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / Tubular thermowells / Type 2G, screwed design

#### Selection and ordering data (continued)

| Selection and ordering data   | Article No.                     | Order code |
|---|---------------------------------|------------|
| <b>SITRANS TS500</b>  | <b>7MC751</b>                   |            |
| Tubular thermowell for low to medium stress, according to DIN 43772, Type 2G, screwed design, with extension  | ● - ● ● ● ● ● - ● ● ● ● ● ● ● ● |            |
| 481 ... 500 mm (18.94 ... 19.69 inches)<br>Initial: 500 mm (19.69 inches)   |                                 | 2 7        |
| 501 ... 550 mm (19.72 ... 21.65 inches)<br>Initial: 510 mm (20.08 inches)   |                                 | 3 1        |
| 551 ... 600 mm (21.69 ... 23.62 inches)<br>Initial: 600 mm (23.62 inches)   |                                 | 3 2        |
| 601 ... 650 mm (23.66 ... 25.59 inches)<br>Initial: 650 mm (25.59 inches)   |                                 | 3 3        |
| 651 ... 700 mm (25.63 ... 27.56 inches)<br>Initial: 700 mm (27.56 inches)   |                                 | 3 4        |
| 701 ... 750 mm (27.6 ... 29.53 inches)<br>Initial: 750 mm (29.53 inches)  |                                 | 3 5        |
| 751 ... 800 mm (29.57 ... 31.50 inches)<br>Initial: 800 mm (31.50 inches)   |                                 | 3 6        |
| 801 ... 850 mm (31.5 ... 33.47 inches)<br>Initial: 850 mm (33.47 inches)  |                                 | 3 7        |
| 851 ... 900 mm (33.5 ... 35.43 inches)<br>Initial: 900 mm (35.43 inches)  |                                 | 4 1        |
| 901 ... 950 mm (35.47 ... 37.4 inches)<br>Initial: 950 mm (37.4 inches)   |                                 | 4 2        |
| 951 ... 1 000 mm (37.44 ... 39.37 inches)<br>Initial: 1 000 mm (39.37 inches)   |                                 | 4 3        |
| 1 001 ... 1 100 mm (39.4 ... 43.30 inches)<br>Initial: 1 100 mm (43.30 inches)  |                                 | 4 4        |
| 1 101 ... 1 200 mm (43.35 ... 47.24 inches)<br>Initial: 1 200 mm (47.24 inches)   |                                 | 4 5        |
| 1 201 ... 1 300 mm (47.28 ... 51.18 inches)<br>Initial: 1 300 mm (51.18 inches)   |                                 | 4 6        |
| 1 301 ... 1 400 mm (51.22 ... 55.11 inches)<br>Initial: 1 400 mm (55.11 inches)   |                                 | 4 7        |
| 1 401 ... 1 500 mm (55.15 ... 59.05 inches)<br>Initial: 1 500 mm (59.05 inches)   |                                 | 5 1        |
| <b>Extension "X"</b>  |                                 |            |
| Standard length for type 2G DIN 43772 (X=129 mm (5.08 inches))  |                                 | 1          |
| <b>Extension length "X" customer-specific</b><br>Specify customer-specific length with Y45, see page 2/68 order codes   |                                 |            |
| 75 ... 150 mm (2.95 ... 5.91 inches)<br>Initial: 150 mm (5.91 inches)   |                                 | 9 N 1 D    |
| 151 ... 300 mm (5.95 ... 11.81 inches)<br>Initial: 300 mm (11.81 inches)  |                                 | 9 N 2 D    |
| 301 ... 450 mm (11.85 ... 17.72 inches)<br>Initial: 450 mm (17.72 inches)   |                                 | 9 N 3 D    |
| <b>Head</b>   |                                 |            |
| Aluminum head, BAO, flange cap, standard  |                                 | A          |
| Aluminum head, BB0, spring flap low, screw closure  |                                 | B          |
| Aluminum head, BC0, spring flap high, screw closure   |                                 | C          |
| Aluminum head, AG0, screw cover, Ex d suitable <sup>1)</sup>  |                                 | G          |
| Aluminum head, AH0, screw cover, Ex d suitable, display <sup>1)</sup>   |                                 | H          |
| Plastic head, BMO, screw cover  |                                 | M          |
| Plastic head, BPO, spring flap high, screw closure  |                                 | P          |
| Stainless steel head, AU0, screw cover, Ex d suitable <sup>1)</sup>   |                                 | U          |
| Stainless steel head, AV0, screw cover, Ex d suitable, display <sup>1)</sup>  |                                 | V          |
| <b>Sensor<sup>2)</sup></b>  |                                 |            |
| Note: The accuracy class range can be lower than the measuring range. For more detailed information, see "Configuration"/"Measuring technology: Measuring accuracy" |                                 |            |
| Pt100, basic version, -50 ... +400 °C (-58 ... +752 °F)   |                                 | A          |
| Pt100, vibration-resistant, -50 ... +400 °C (-58 ... +752 °F)   |                                 | B          |
| Pt100, extended measuring range, -196 ... +600 °C (-320.8 ... +1 112 °F)  |                                 | C          |
| Type K thermocouple, -270 ... +1 100 °C (-167 ... +2 012 °F)  |                                 | K          |
| Type J thermocouple, -0 ... +750 °C (-18 ... +1 382 °F)   |                                 | J          |
| Type N thermocouple, -270 ... +1 100 °C (-167 ... +2 012 °F)  |                                 | N          |
| <b>Number/precision of sensors</b>  |                                 |            |
| Pt100 connection: 1 × 4-wire connection or 2 × 3-wire connection, see "Configuration"/"Measuring technology: Connection types"                                      |                                 |            |
| Single, basic accuracy (Class 2/Class B)  |                                 | 1          |
| Single, increased accuracy (Class 1/Class A)  |                                 | 2          |



# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / Tubular thermowells / Type 2G, screwed design

#### Selection and ordering data (continued)

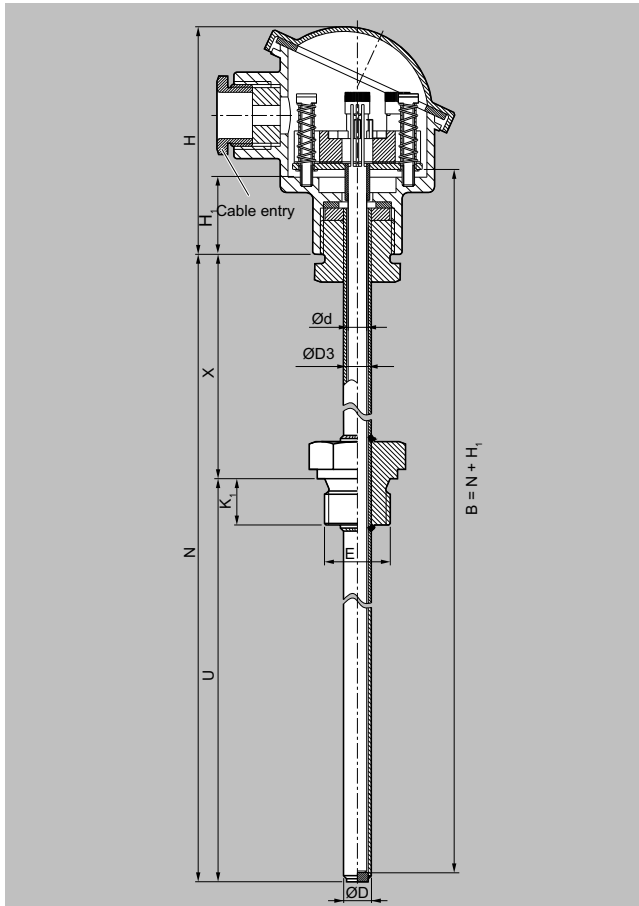
| Options   | Order code |
|---|------------|
| <b>Add "-Z" to article number and specify order code</b>  |            |
| Without explosion protection requirements (China)   | E54        |
| Intrinsic safety "i"/"IS" <sup>1)</sup> according to NEPSI (China)  | E55        |
| Flameproof enclosure "d"; dust protection through enclosure "t" <sup>2)</sup> according to NEPSI (China)                              | E56        |
| Non-sparking "nA"/"NI" according to NEPSI (China)   | E57        |
| Without explosion protection requirements (EAC)   | E80        |
| Intrinsic safety "i"/"IS" <sup>1)</sup> according to EACEx (EAC)  | E81        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP" <sup>2)</sup> according to EACEx (EAC)                     | E82        |
| Non-sparking "nA"/"NI" according to EACEx (EAC)   | E83        |
| <b>Special design</b>   |            |
| Flying lead connection type (for direct transmitter mounting, delivery without screws or springs)                                     | G01        |
| <b>Cable input for connection head</b>  |            |
| M12 device plug (in combination with transmitter, non-Ex and intrinsically safe, max. IP65/67)  | G12        |
| Han 7 D device plug (non-Ex and intrinsically safe, without mating connector max. IP65/67)  | G13        |
| Connection head with 1/2"-NPT thread without cable gland, for AU0 and AHO only IP66   | G20        |
| SafeGuard 2 × Pt100 4-wire  | G30        |
| <b>Built-in head transmitter</b>  |            |
| Measuring range to be set must be specified with plain text data "Y01".   |            |
| SITRANS TH100, input 1 × Pt100, 4 ... 20 mA   | T12        |
| SITRANS TH320, input 1 × universal, 4 ... 20 mA   | T24        |
| SITRANS TH320, input 1 × universal, HART  | T34        |
| SITRANS TH420, input 2 × universal, HART  | T35        |
| <b>Device settings (including head transmitter options)</b>   |            |
| Tag plate made of stainless steel, specify label in plain text  | Y15        |
| Factory calibration per 1 point, specify temperature in plain text  | Y33        |
| Specify measuring range in plain text (Y01: +/-NNNN ... +/-NNNN C,F), marking on the device when option "Y15" is selected in addition | Y01        |
| Specify measuring point description in plain text (max. 16 characters)  | Y23        |
| Specify measuring point message in plain text (max. 32 characters)  | Y24        |
| Specify bus address in plain text   | Y25        |
| Installation length U customer-specific   | Y44        |
| Select range, plain text specification of desired length (no specification = standard length)   |            |
| <b>Customer-specific plain text</b>   |            |
| Handling number of the special design   | Y99        |

<sup>1)</sup> Select Ex i version of the optional transmitter.

<sup>2)</sup> Only with connection heads code AG0, AHO, AU0, AV0, without cable gland (select non-Ex version of the optional transmitter).

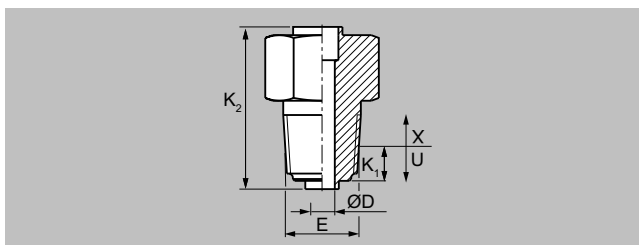


Dimensional drawings



- B Measuring insert length
- Ød Measuring insert outer, diameter (6 (0.24))
- ØD Process connection, outer diameter
- ØD3 Thermowell internal diameter
- E Process connection, thread size
- H Head height
- H<sub>1</sub> Type Axx = 41 (1.61)  
Type Bxx = 26 (1.02)
- K<sub>1</sub> Screw depth
- N Nominal length
- U Insertion length
- X Extension length, floor strength 3 mm

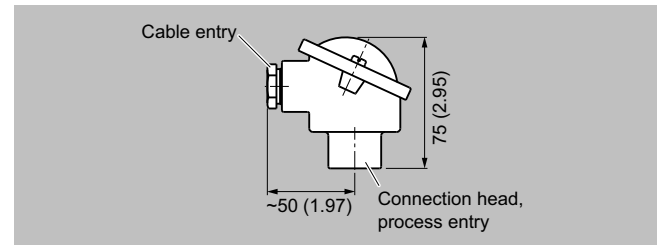
SITRANS TS500, temperature sensors for vessels and pipes, tubular thermowell for low to medium stress, according to DIN 43772, type 2G, screwed design, with extension, for screw-in depth dimensions, see "Technical reference", "Thread shapes" page, dimensions in mm (inch).



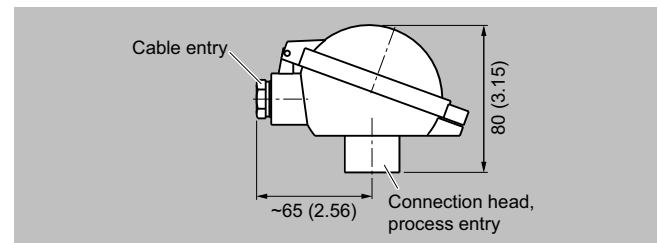
Process connection tapered, dimensions in mm (inch)

Dimensional drawings (continued)

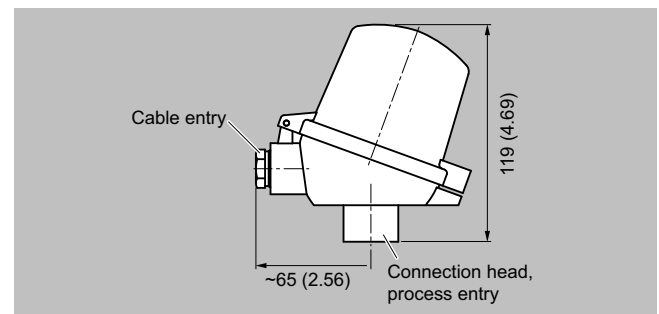
Connection heads



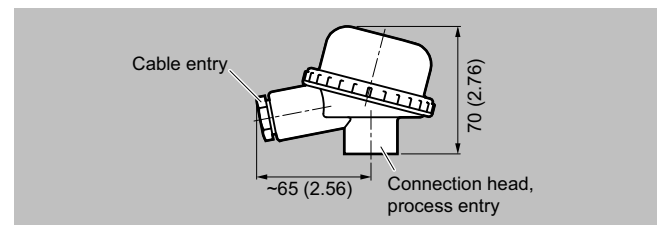
Connection head, aluminum, type BA0, dimensions in mm (inch)



Connection head, aluminum, type BB0, dimensions in mm (inch)



Connection head, aluminum, type BC0, plastic, type BP0, dimensions in mm (inch)



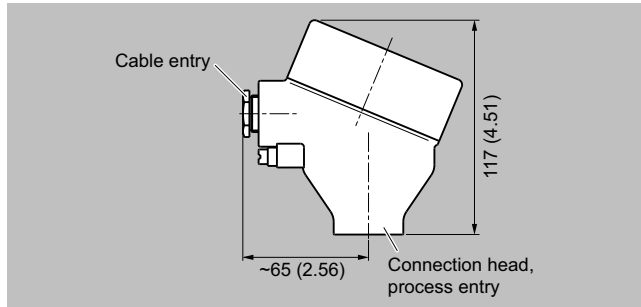
Connection head, plastic, type BM0, dimensions in mm (inch)

## Temperature Measurement

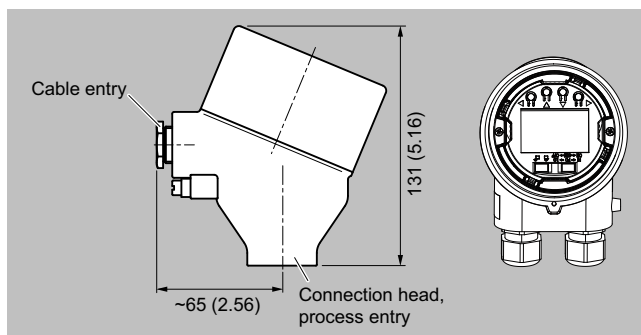
### Temperature sensors

#### SITRANS TS500 / Tubular thermowells / Type 2G, screwed design

##### Dimensional drawings (continued)



Connection head, aluminum, type AG0, stainless steel, type AU0, dimensions in mm (inch)



Connection head with 4-20 mA display, aluminum, type AH0, stainless steel, type AVO, dimensions in mm (inch)

## Selection and ordering data

|   | Article No.<br>7MC751           | Order code |
|---|---------------------------------|------------|
| <b>SITRANS TS500</b><br>Tubular thermowell for low to medium stress, according to DIN 43772, Type 2F, with flange, with extension | ● - ● ● ● ● ● - ● ● ● ● ● ● ● ● |            |
| Click the article number for online configuration in the PIA Life Cycle Portal.   |                                 |            |
| <b>Wetted material</b>  |                                 |            |
| 316Ti (1.4571)  | 1                               |            |
| 316L (1.4404 or 1.4435)   | 2                               |            |
| <b>Process connection</b>   |                                 |            |
| Flange EN; DN 25 PN10 ... 40 B1   | 2                               | A          |
| Flange EN; DN 40 PN 40 B1   | 2                               | B          |
| Flange EN; DN 50 PN 40 B1   | 2                               | C          |
| Flange ASME; 1.0" RF 150  | 2                               | E          |
| Flange ASME; 1.0" RF 300  | 2                               | F          |
| Flange ASME; 1.5" RF 150  | 2                               | G          |
| Flange ASME; 1.5" RF 300  | 2                               | H          |
| Flange ASME; 2.0" RF 150  | 2                               | J          |
| Flange ASME; 2.0" RF 300  | 2                               | K          |
| Flange ASME; 1.0" RF 600  | 2                               | L          |
| Flange ASME; 1.5" RF 600  | 2                               | N          |
| Flange ASME; 1.5" RF 900  | 2                               | R          |
| Flange ASME; 2.0" RF 600  | 2                               | S          |
| Flange ASME; 2.0" RF 900  | 2                               | T          |
| Flange EN; DN 32 PN 40 B1   | 4                               | A          |
| Flange EN; DN 40 PN 100 B1  | 4                               | B          |
| Flange EN; DN 50 PN 16 B1   | 4                               | C          |
| Flange EN; DN 80 PN 16 B1   | 4                               | D          |
| Flange EN; DN 100 PN 16 B1  | 4                               | E          |
| <b>Thermowell form</b>  |                                 |            |
| 2G, 9 mm (0.35 inches)  |                                 | A          |
| 2G, 12 mm (0.47 inches)   |                                 | B          |
| <b>Standard installation length "U"</b>   |                                 |            |
| 225 mm (8.86 inches)  |                                 | 1 1        |
| 315 mm (12.40 inches)   |                                 | 1 5        |
| 465 mm (18.31 inches)   |                                 | 2 6        |
| <b>Installation length "U" customer-specific</b><br>Specify customer-specific length with Y44, see order codes                    |                                 |            |
| 80 ... 100 mm (3.15 ... 3.94 inches)<br>Initial: 100 mm (3.94 inches)   |                                 | 0 1        |
| 101 ... 120 mm (3.98 ... 4.72 inches)<br>Initial: 120 mm (4.72 inches)  |                                 | 0 2        |
| 121 ... 140 mm (4.76 ... 5.51 inches)<br>Initial: 140 mm (5.51 inches)  |                                 | 0 3        |
| 141 ... 160 mm (5.55 ... 6.30 inches)<br>Initial: 160 mm (6.3 inches)   |                                 | 0 4        |
| 161 ... 180 mm (6.34 ... 7.09 inches)<br>Initial: 180 mm (7.09 inches)  |                                 | 0 5        |
| 181 ... 200 mm (7.13 ... 7.87 inches)<br>Initial: 200 mm (7.87 inches)  |                                 | 0 6        |
| 201 ... 220 mm (7.91 ... 8.66 inches)<br>Initial: 220 mm (8.66 inches)  |                                 | 0 7        |
| 221 ... 240 mm (8.70 ... 9.45 inches)<br>Initial: 225 mm (8.86 inches)  |                                 | 1 1        |
| 241 ... 260 mm (9.49 ... 10.24 inches)<br>Initial: 250 mm (9.84 inches)   |                                 | 1 2        |
| 261 ... 280 mm (10.28 ... 11.02 inches)<br>Initial: 280 mm (11.02 inches)   |                                 | 1 3        |
| 281 ... 300 mm (11.06 ... 11.81 inches)<br>Initial: 285 mm (11.22 inches)   |                                 | 1 4        |
| 301 ... 320 mm (11.85 ... 12.6 inches)<br>Initial: 315 mm (12.4 inches)   |                                 | 1 5        |
| 321 ... 340 mm (12.64 ... 13.39 inches)<br>Initial: 340 mm (13.39 inches)   |                                 | 1 6        |
| 341 ... 360 mm (13.43 ... 14.17 inches)<br>Initial: 360 mm (14.17 inches)   |                                 | 2 0        |

# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / Tubular thermowells / Type 2F, flange

#### Selection and ordering data (continued)

| SITRANS TS500   | Article No.<br>7MC751           | Order code |
|---|---------------------------------|------------|
| Tubular thermowell for low to medium stress, according to DIN 43772, Type 2F, with flange, with extension | ● - ● ● ● ● ● - ● ● ● ● ● ● ● ● |            |
| 361 ... 380 mm (14.21 ... 14.96 inches)<br>Initial: 380 mm (14.96 inches)                                 |                                 | 2 1        |
| 381 ... 400 mm (15 ... 15.75 inches)<br>Initial: 400 mm (15.75 inches)                                    |                                 | 2 2        |
| 401 ... 420 mm (15.79 ... 16.54 inches)<br>Initial: 420 mm (16.54 inches)                                 |                                 | 2 3        |
| 421 ... 440 mm (16.57 ... 17.32 inches)<br>Initial: 440 mm (17.32 inches)                                 |                                 | 2 4        |
| 441 ... 460 mm (17.36 ... 18.11 inches)<br>Initial: 460 mm (18.11 inches)                                 |                                 | 2 5        |
| 461 ... 480 mm (18.15 ... 18.90 inches)<br>Initial: 465 mm (18.30 inches)                                 |                                 | 2 6        |
| 481 ... 500 mm (18.94 ... 19.69 inches)<br>Initial: 500 mm (19.69 inches)                                 |                                 | 2 7        |
| 501 ... 550 mm (19.72 ... 21.65 inches)<br>Initial: 510 mm (20.08 inches)                                 |                                 | 3 1        |
| 551 ... 600 mm (21.69 ... 23.62 inches)<br>Initial: 600 mm (23.62 inches)                                 |                                 | 3 2        |
| 601 ... 650 mm (23.66 ... 25.59 inches)<br>Initial: 650 mm (25.59 inches)                                 |                                 | 3 3        |
| 651 ... 700 mm (25.63 ... 27.56 inches)<br>Initial: 700 mm (27.56 inches)                                 |                                 | 3 4        |
| 701 ... 750 mm (27.6 ... 29.53 inches)<br>Initial: 750 mm (29.53 inches)                                  |                                 | 3 5        |
| 751 ... 800 mm (29.57 ... 31.50 inches)<br>Initial: 800 mm (31.50 inches)                                 |                                 | 3 6        |
| 801 ... 850 mm (31.5 ... 33.47 inches)<br>Initial: 850 mm (33.47 inches)                                  |                                 | 3 7        |
| 851 ... 900 mm (33.5 ... 35.43 inches)<br>Initial: 900 mm (35.43 inches)                                  |                                 | 4 1        |
| 901 ... 950 mm (35.47 ... 37.4 inches)<br>Initial: 950 mm (37.4 inches)                                   |                                 | 4 2        |
| 951 ... 1 000 mm (37.44 ... 39.37 inches)<br>Initial: 1 000 mm (39.37 inches)                             |                                 | 4 3        |
| 1 001 ... 1 100 mm (39.4 ... 43.30 inches)<br>Initial: 1 100 mm (43.30 inches)                            |                                 | 4 4        |
| 1 101 ... 1 200 mm (43.35 ... 47.24 inches)<br>Initial: 1 200 mm (47.24 inches)                           |                                 | 4 5        |
| 1 201 ... 1 300 mm (47.28 ... 51.18 inches)<br>Initial: 1 300 mm (51.18 inches)                           |                                 | 4 6        |
| 1 301 ... 1 400 mm (51.22 ... 55.11 inches)<br>Initial: 1 400 mm (55.11 inches)                           |                                 | 4 7        |
| 1 401 ... 1 500 mm (55.15 ... 59.05 inches)<br>Initial: 1 500 mm (59.05 inches)                           |                                 | 5 1        |
| <b>Extension "X"</b>  |                                 |            |
| Standard length for type 2F DIN 43772 (X=64 mm (2.52 inches))   |                                 | 1          |
| <b>Extension length "X" customer-specific</b>   |                                 |            |
| • Specify customer-specific length with Y45, see order codes  |                                 |            |
| 75 ... 150 mm (2.95 ... 5.91 inches)<br>Initial: 150 mm (5.91 inches)                                     |                                 | 9 N 1 D    |
| 151 ... 300 mm (5.95 ... 11.81 inches)<br>Initial: 300 mm (11.81 inches)                                  |                                 | 9 N 2 D    |
| 301 ... 450 mm (11.85 ... 17.72 inches)<br>Initial: 450 mm (17.72 inches)                                 |                                 | 9 N 3 D    |
| <b>Head</b>   |                                 |            |
| Aluminum head, BAO, flange cap, standard  |                                 | A          |
| Aluminum head, BBO, spring flap low, screw closure  |                                 | B          |
| Aluminum head, BCO, spring flap high, screw closure   |                                 | C          |
| Aluminum head, AGO, screw cover, Ex d suitable <sup>1)</sup>  |                                 | G          |
| Aluminum head, AHO, screw cover, Ex d suitable, display <sup>1)</sup>                                     |                                 | H          |
| Plastic head, BMO, screw cover  |                                 | M          |
| Plastic head, BPO, spring flap high, screw closure  |                                 | P          |
| Stainless steel head, AUO, screw cover, Ex d suitable <sup>1)</sup>                                       |                                 | U          |
| Stainless steel head, AVO, screw cover, Ex d suitable, display <sup>1)</sup>                              |                                 | V          |

## Selection and ordering data (continued)

|   | Article No.<br>7MC751           | Order code |
|---|---------------------------------|------------|
| <b>SITRANS TS500</b><br>Tubular thermowell for low to medium stress, according to DIN 43772, Type 2F, with flange, with extension   | ● - ● ● ● ● ● - ● ● ● ● ● ● ● ● |            |
| <b>Sensor<sup>2)</sup></b><br>Note: The accuracy class range can be lower than the measuring range. For more detailed information, see "Configuration"/"Measuring technology: Measuring accuracy" |                                 |            |
| Pt100, basic version, -50 ... +400 °C (-58 ... +752 °F)   |                                 | A          |
| Pt100, vibration-resistant, -50 ... +400 °C (-58 ... +752 °F)   |                                 | B          |
| Pt100, extended measuring range, -196 ... +600 °C (-320.8 ... +1 112 °F)  |                                 | C          |
| Type K thermocouple, -270 ... +1 100 °C (-167 ... +2 012 °F)  |                                 | K          |
| Type J thermocouple, -0 ... +750 °C (-18 ... +1 382 °F)   |                                 | J          |
| Type N thermocouple, -270 ... +1 100 °C (-167 ... +2 012 °F)  |                                 | N          |
| <b>Number/precision of sensors</b><br>Pt100 connection: 1 x 4-wire connection or 2 x 3-wire connection, see "Configuration"/"Measuring technology: Connection types"                              |                                 |            |
| Single, basic accuracy (Class 2/Class B)  |                                 | 1          |
| Single, increased accuracy (Class 1/Class A)  |                                 | 2          |
| Single, maximum accuracy (Class AA)   |                                 | 3          |
| Double, basic accuracy (Class 2/Class B)  |                                 | 5          |
| Double, increased accuracy (Class 1/Class A)  |                                 | 6          |
| Double, maximum accuracy (Class AA)   |                                 | 7          |

1) Ex d in connection with order option E03

2) Pt1000 versions are also available.

To find these, switch to Online Configuration in the PIA Life Cycle Portal: [www.siemens.com/pia-portal](http://www.siemens.com/pia-portal)

| Options   | Order code |
|---|------------|
| <b>Add "-Z" to article number and specify order code.</b>   |            |
| <b>Accessories</b>  |            |
| With external grounding screw for connection heads AG0, AHO, AU0 and AVO  | A02        |
| With external grounding screw for connection heads BC0, AG0, AHO, AU0 and AVO   | A03        |
| <b>Certificates and approvals</b>   |            |
| Transmitter test report (5 points)  | C11        |
| EN 10204-3.1 Inspection certificate Wetted material   | C12        |
| EN 10204-3.1 Inspection certificate Hydrostatic pressure test   | C31        |
| EN 10204-3.1 Inspection certificate Helium leak test  | C32        |
| EN 10204-3.1 Inspection certificate Surface tear test   | C33        |
| EN 10204-3.1 Factory certificate Visual, dimensional and function check   | C34        |
| EN 10204-2.1: Declaration of compliance with the order  | C35        |
| ISO 9001 grease-free (cleaned for oxygen applications, for example)   | C51        |
| EN 10204-3.1 Inspection certificate "Positive Materials Identification" (PMI)   | On request |
| <b>Certificates for functional safety</b>   |            |
| SITRANS TH320/420 transmitter with SIL2/3 certificate   | C20        |
| <b>Marine approvals</b>   |            |
| Det Norske Veritas Germanischer Lloyd (DNV GL)  | D01        |
| <b>Type of protection (Ex)</b>  |            |
| Without explosion protection requirements (Europe, Australia, New Zealand)  | E00        |
| Intrinsic safety "i"/"IS" <sup>1)</sup> according to ATEX and IECEx (Europe, Australia, New Zealand)  | E01        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP" <sup>2)</sup> according to ATEX and IECEx (Europe, Australia, New Zealand) | E03        |
| Non-sparking "ec" according to ATEX and IECEx (Europe, Australia, New Zealand)  | E04        |
| Without explosion protection requirements (USA, Canada) Basis FM  | E10        |

# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / Tubular thermowells / Type 2F, flange

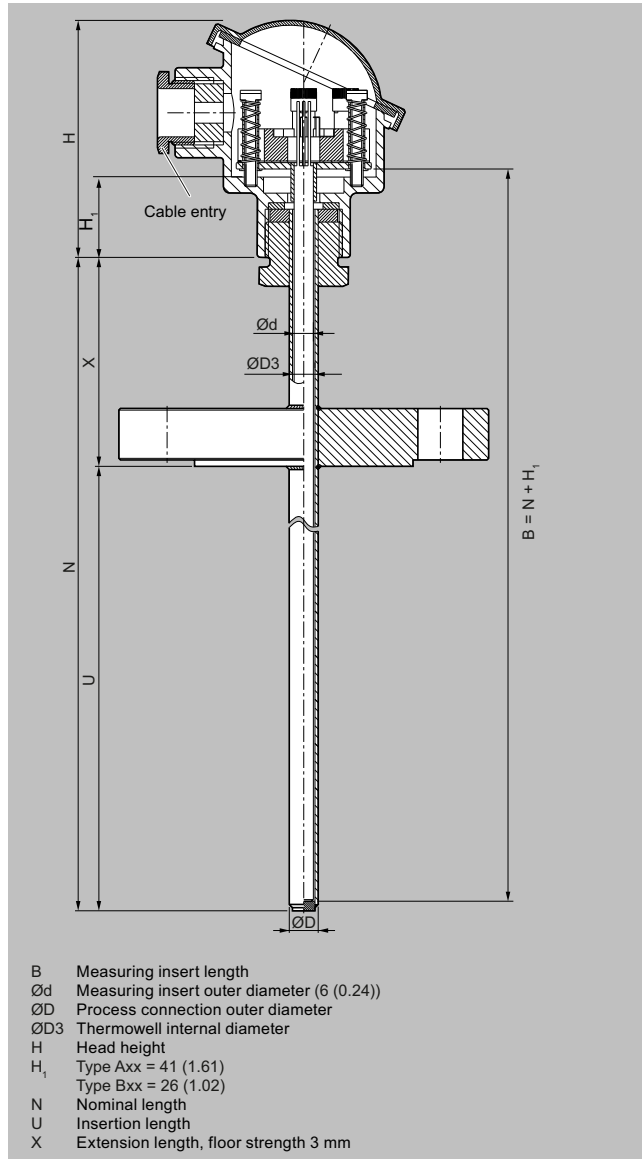
#### Selection and ordering data (continued)

| Options  | Order code |
|--|------------|
| <b>Add "-Z" to article number and specify order code.</b>  |            |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> ) according to cFMus (USA, Canada); other connections (M,G,R) | E14        |
| Non-sparking "nA"/"NI" according to cFMus (USA, Canada)  | E16        |
| Without explosion protection requirements (USA, Canada), Basis CSA   | E17        |
| Intrinsic safety "i"/"IS <sup>1</sup> ) according to cCSAus (USA, Canada)  | E18        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> ) according to CSAus (USA); other connections (M, G, R)       | E21        |
| Non-sparking "nA"/"NI" according to cCSAus (USA, Canada)   | E23        |
| Without explosion protection requirements (China)  | E54        |
| Intrinsic safety "i"/"IS <sup>1</sup> ) according to NEPSI (China)   | E55        |
| Flameproof enclosure "d"; dust protection through enclosure "t <sup>2</sup> ) according to NEPSI (China)   | E56        |
| Non-sparking "nA"/"NI" according to NEPSI (China)  | E57        |
| Without explosion protection requirements (EAC)  | E80        |
| Intrinsic safety "i"/"IS <sup>1</sup> ) according to EACEx (EAC)   | E81        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> ) according to EACEx (EAC)                                    | E82        |
| Non-sparking "nA"/"NI" according to EACEx (EAC)  | E83        |
| <b>Special design</b>  |            |
| Flying lead connection type (for direct transmitter mounting, delivery without screws or springs)  | G01        |
| <b>Cable input for connection head</b>   |            |
| M12 device plug (in combination with transmitter, non-Ex and intrinsically safe, max. IP65/67)   | G12        |
| Han 7 D device plug (non-Ex and intrinsically safe, without mating connector max. IP65/67)   | G13        |
| Connection head with ½" NPT thread without cable gland, for AU0 and AHO only IP66  | G20        |
| SafeGuard 2 × Pt100 4-wire   | G30        |
| <b>Built-in head transmitter</b>   |            |
| Measuring range to be set must be specified with plain text data "Y01".  |            |
| SITRANS TH100, input 1 × Pt100, 4 ... 20 mA  | T12        |
| SITRANS TH320, input 1 × universal, 4 ... 20 mA  | T24        |
| SITRANS TH320, input 1 × universal, HART   | T34        |
| SITRANS TH420, input 2 × universal, HART   | T35        |
| <b>Device settings (including head transmitter options)</b>  |            |
| Tag plate made of stainless steel, specify label in plain text   | Y15        |
| Factory calibration per 1 point, specify temperature in plain text   | Y33        |
| Specify measuring range in plain text (Y01:+/-NNNN ... +/-NNNN C,F), marking on the device when option "Y15" is selected in addition                 | Y01        |
| Specify measuring point description in plain text (max. 16 characters)   | Y23        |
| Specify measuring point message in plain text (max. 32 characters)   | Y24        |
| Specify bus address in plain text  | Y25        |
| Installation length U customer-specific  | Y44        |
| Select range, plain text specification of desired length (no specification = standard length)  |            |
| Extension length X customer-specific   | Y45        |
| Select range, plain text specification of desired length (no specification = standard length)  |            |
| <b>Customer-specific plain text</b>  |            |
| Handling number of the special design  | Y99        |

## Selection and ordering data (continued)

- 1) Select Ex i version of the optional transmitter.
- 2) Only with connection heads code AG0, AH0, AU0, AV0, without cable gland (select non-Ex version of the optional transmitter).

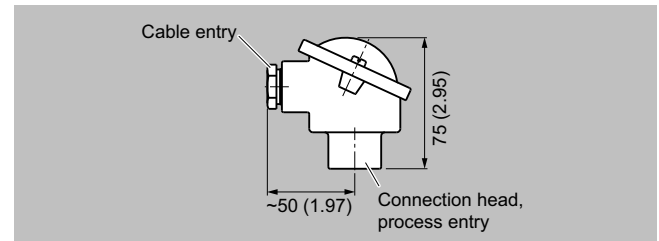
## Dimensional drawings



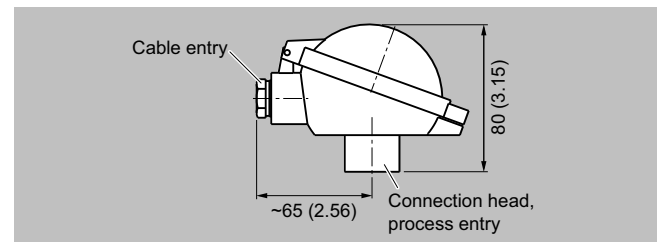
SITRANS TS500, temperature sensors for vessels and pipes, tubular thermowell for low to medium stress, according to DIN 43772, type 2F, with flange, with extension, dimensions in mm (inch)

## Dimensional drawings (continued)

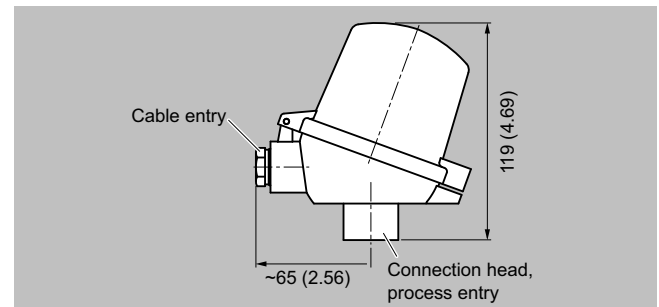
## Connection heads



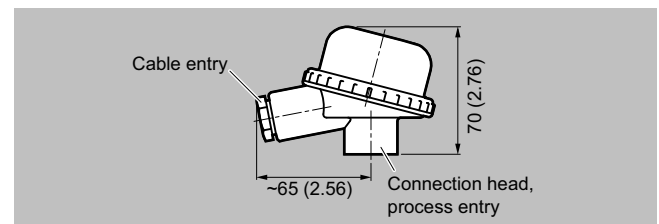
Connection head, aluminum, type BA0, dimensions in mm (inch)



Connection head, aluminum, type BB0, dimensions in mm (inch)



Connection head, aluminum, type BC0, plastic, type BP0, dimensions in mm (inch)



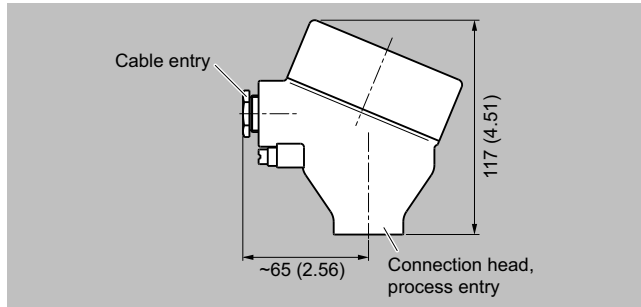
Connection head, plastic, type BM0, dimensions in mm (inch)

# Temperature Measurement

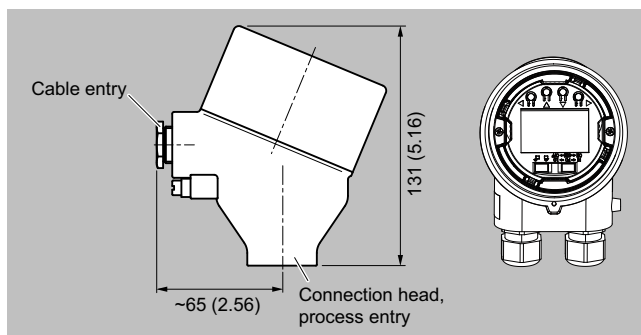
## Temperature sensors

### SITRANS TS500 / Tubular thermowells / Type 2F, flange

#### Dimensional drawings (continued)



Connection head, aluminum, type AG0, stainless steel, type AU0, dimensions in mm (inch)



Connection head with 4-20 mA display, aluminum, type AH0, stainless steel, type AV0, dimensions in mm (inch)



## Selection and ordering data

| SITRANS TS500   | Article No.                    |
|---|--------------------------------|
| Tubular thermowell for low to medium stress, according to DIN 43772, Type 3, without process connection, improved response time, plug-in or for use with sliding compression fittings | 7MC751 ● - ● ● ● ● ● - ● ● ● ● |
| Click the article number for online configuration in the PIA Life Cycle Portal.   |                                |
| <b>Wetted material</b>  |                                |
| 316Ti (1.4571)  | 1                              |
| 316L (1.4404 or 1.4435)   | 2                              |
| <b>Process connection</b>   |                                |
| Without process connection (for compression fittings) U = N   | 0 N                            |
| <b>Thermowell form</b>  |                                |
| 3. 12/9 mm (0.47/0.35 inches)   | K                              |
| <b>Installation length "U" (= N), standard</b>  |                                |
| 160 mm (6.3 inches)   | 0 4                            |
| 220 mm (8.66 inches)  | 0 7                            |
| 280 mm (11.02 inches)   | 1 3                            |
| <b>Installation length "U" customer-specific</b>  |                                |
| Specify customer-specific length with Y44, see order codes  |                                |
| 121 ... 140 mm (4.76 ... 5.51 inches)<br>Initial: 140 mm (5.51 inches)  | 0 3                            |
| 141 ... 160 mm (5.55 ... 6.30 inches)<br>Initial: 160 mm (6.3 inches)   | 0 4                            |
| 161 ... 180 mm (6.34 ... 7.09 inches)<br>Initial: 180 mm (7.09 inches)  | 0 5                            |
| 181 ... 200 mm (7.13 ... 7.87 inches)<br>Initial: 200 mm (7.87 inches)  | 0 6                            |
| 201 ... 220 mm (7.91 ... 8.66 inches)<br>Initial: 220 mm (8.66 inches)  | 0 7                            |
| 221 ... 240 mm (8.70 ... 9.45 inches)<br>Initial: 225 mm (8.86 inches)  | 1 1                            |
| 241 ... 260 mm (9.49 ... 10.24 inches)<br>Initial: 250 mm (9.84 inches)   | 1 2                            |
| 261 ... 280 mm (10.28 ... 11.02 inches)<br>Initial: 280 mm (11.02 inches)   | 1 3                            |
| 281 ... 300 mm (11.06 ... 11.81 inches)<br>Initial: 285 mm (11.22 inches)   | 1 4                            |
| 301 ... 320 mm (11.85 ... 12.6 inches)<br>Initial: 315 mm (12.4 inches)   | 1 5                            |
| 321 ... 340 mm (12.64 ... 13.39 inches)<br>Initial: 340 mm (13.39 inches)   | 1 6                            |
| 341 ... 360 mm (13.43 ... 14.17 inches)<br>Initial: 360 mm (14.17 inches)   | 2 0                            |
| 361 ... 380 mm (14.21 ... 14.96 inches)<br>Initial: 380 mm (14.96 inches)   | 2 1                            |
| 381 ... 400 mm (15 ... 15.75 inches)<br>Initial: 400 mm (15.75 inches)  | 2 2                            |
| 401 ... 420 mm (15.79 ... 16.54 inches)<br>Initial: 420 mm (16.54 inches)   | 2 3                            |
| 421 ... 440 mm (16.57 ... 17.32 inches)<br>Initial: 440 mm (17.32 inches)   | 2 4                            |
| 441 ... 460 mm (17.36 ... 18.11 inches)<br>Initial: 460 mm (18.11 inches)   | 2 5                            |
| 461 ... 480 mm (18.15 ... 18.90 inches)<br>Initial: 465 mm (18.30 inches)   | 2 6                            |
| 481 ... 500 mm (18.94 ... 19.69 inches)<br>Initial: 500 mm (19.69 inches)   | 2 7                            |
| 501 ... 550 mm (19.72 ... 21.65 inches)<br>Initial: 510 mm (20.08 inches)   | 3 1                            |
| 551 ... 600 mm (21.69 ... 23.62 inches)<br>Initial: 600 mm (23.62 inches)   | 3 2                            |
| 601 ... 650 mm (23.66 ... 25.59 inches)<br>Initial: 650 mm (25.59 inches)   | 3 3                            |
| 651 ... 700 mm (25.63 ... 27.56 inches)<br>Initial: 700 mm (27.56 inches)   | 3 4                            |
| 701 ... 750 mm (27.6 ... 29.53 inches)<br>Initial: 750 mm (29.53 inches)  | 3 5                            |
| 751 ... 800 mm (29.57 ... 31.50 inches)<br>Initial: 800 mm (31.50 inches)   | 3 6                            |
| 801 ... 850 mm (31.5 ... 33.47 inches)<br>Initial: 850 mm (33.47 inches)  | 3 7                            |

# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / Tubular thermowells / Type 3, without process connection

#### Selection and ordering data (continued)

| SITRANS TS500   | Article No.                  |
|---|------------------------------|
| Tubular thermowell for low to medium stress, according to DIN 43772, Type 3, without process connection, improved response time, plug-in or for use with sliding compression fittings | 7MC751 ● - ● ● ● ● - ● ● ● ● |
| 851 ... 900 mm (33.5 ... 35.43 inches)<br>Initial: 900 mm (35.43 inches)  | 4 1                          |
| 901 ... 950 mm (35.47 ... 37.4 inches)<br>Initial: 950 mm (37.4 inches)   | 4 2                          |
| 951 ... 1 000 mm (37.44 ... 39.37 inches)<br>Initial: 1 000 mm (39.37 inches)   | 4 3                          |
| 1 001 ... 1 100 mm (39.4 ... 43.30 inches)<br>Initial: 1 100 mm (43.30 inches)  | 4 4                          |
| <b>Extension</b>  |                              |
| Standard length for type 2 according to DIN 43772 (without extension N = U)   | 0                            |
| <b>Head</b>   |                              |
| Aluminum head, BAO, flange cap, standard  | A                            |
| Aluminum head, BBO, spring flap low, screw closure  | B                            |
| Aluminum head, BCO, spring flap high, screw closure   | C                            |
| Aluminum head, AGO, screw cover, Ex d suitable <sup>1)</sup>  | G                            |
| Aluminum head, AHO, screw cover, Ex d suitable, display <sup>1)</sup>   | H                            |
| Plastic head, BMO, screw cover  | M                            |
| Plastic head, BPO, spring flap high, screw closure  | P                            |
| Stainless steel head, AUO, screw cover, Ex d suitable <sup>1)</sup>   | U                            |
| Stainless steel head, AVO, screw cover, Ex d suitable, display <sup>1)</sup>  | V                            |
| <b>Sensor<sup>2)</sup></b>  |                              |
| Note: The accuracy class range can be lower than the measuring range. For more detailed information, see "Configuration"/"Measuring technology: Measuring accuracy"                   |                              |
| Pt100, basic version, -50 ... +400 °C (-58 ... +752 °F)   | A                            |
| Pt100, vibration-resistant, -50 ... +400 °C (-58 ... +752 °F)   | B                            |
| Pt100, extended measuring range, -196 ... +600 °C (-320.8 ... +1 112 °F)  | C                            |
| Type K thermocouple, -270 ... +1 100 °C (-167 ... +2 012 °F)  | K                            |
| Type J thermocouple, -0 ... +750 °C (-18 ... +1 382 °F)   | J                            |
| Type N thermocouple, -270 ... +1 100 °C (-167 ... +2 012 °F)  | N                            |
| <b>Number/precision of sensors</b>  |                              |
| Pt100 connection: 1 × 4-wire connection or 2 × 3-wire connection, see "Configuration"/"Measuring technology: Connection types"  |                              |
| Single, basic accuracy (Class 2/Class B)  | 1                            |
| Single, increased accuracy (Class 1/Class A)  | 2                            |
| Single, maximum accuracy (Class AA)   | 3                            |
| Double, basic accuracy (Class 2/Class B)  | 5                            |
| Double, increased accuracy (Class 1/Class A)  | 6                            |
| Double, maximum accuracy (Class AA)   | 7                            |

<sup>1)</sup> Ex d in connection with order option E03

<sup>2)</sup> Pt1000 versions are also available.

To find these, switch to Online Configuration in the PIA Life Cycle Portal: [www.siemens.com/pia-portal](http://www.siemens.com/pia-portal)

| Options   | Order code |
|---|------------|
| <b>Add "-Z" to article number and specify order code</b>                      |            |
| <b>Accessories</b>  |            |
| With external grounding screw for connection heads AGO, AHO, AUO and AVO      | A02        |
| With external grounding screw for connection heads BCO, AGO, AHO, AUO and AVO | A03        |
| <b>Compression fitting enclosed</b>   |            |
| G½"   | A31        |
| NPT½"   | A32        |
| <b>Certificates and approvals</b>   |            |
| Transmitter test report (5 points)  | C11        |
| EN 10204-3.1 Inspection certificate Wetted material                           | C12        |
| EN 10204-3.1 Inspection certificate Hydrostatic pressure test                 | C31        |
| EN 10204-3.1 Inspection certificate Helium leak test                          | C32        |
| EN 10204-3.1 Inspection certificate Surface tear test                         | C33        |

## Selection and ordering data (continued)

| Options   | Order code |
|---|------------|
| <b>Add "-Z" to article number and specify order code</b>  |            |
| EN 10204-3.1 Factory certificate Visual, dimensional and function check   | C34        |
| EN 10204-2.1: Declaration of compliance with the order  | C35        |
| ISO 9001 grease-free (cleaned for oxygen applications, for example)   | C51        |
| EN 10204-3.1 Inspection certificate "Positive Materials Identification" (PMI)   | On request |
| <b>Certificates for functional safety</b>   |            |
| SITRANS TH320/420 transmitter with SIL2/3 certificate   | C20        |
| <b>Marine approvals</b>   |            |
| Det Norske Veritas Germanischer Lloyd (DNV GL)  | D01        |
| <b>Type of protection (Ex)</b>  |            |
| Without explosion protection requirements (Europe, Australia, New Zealand)  | E00        |
| Intrinsic safety "i"/"IS <sup>1</sup> " according to ATEX and IECEx (Europe, Australia, New Zealand)  | E01        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> " according to ATEX and IECEx (Europe, Australia, New Zealand) | E03        |
| Non-sparking "ec" according to ATEX and IECEx (Europe, Australia, New Zealand)  | E04        |
| Without explosion protection requirements (USA, Canada) Basis FM  | E10        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> " according to cFMus (USA, Canada); other connections (M,G,R)  | E14        |
| Non-sparking "nA"/"NI" according to cFMus (USA, Canada)   | E16        |
| Without explosion protection requirements (USA, Canada), Basis CSA  | E17        |
| Intrinsic safety "i"/"IS <sup>1</sup> " according to cCSAus (USA, Canada)   | E18        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> " according to CSAus (USA); other connections (M, G, R)        | E21        |
| Non-sparking "nA"/"NI" according to cCSAus (USA, Canada)  | E23        |
| Without explosion protection requirements (China)   | E54        |
| Intrinsic safety "i"/"IS <sup>1</sup> " according to NEPSI (China)  | E55        |
| Flameproof enclosure "d"; dust protection through enclosure "t <sup>2</sup> " according to NEPSI (China)  | E56        |
| Non-sparking "nA"/"NI" according to NEPSI (China)   | E57        |
| Without explosion protection requirements (EAC)   | E80        |
| Intrinsic safety "i"/"IS <sup>1</sup> " according to EACEx (EAC)  | E81        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> " according to EACEx (EAC)                                     | E82        |
| Non-sparking "nA"/"NI" according to EACEx (EAC)   | E83        |
| <b>Special design</b>   |            |
| Flying lead connection type (for direct transmitter mounting, delivery without screws or springs)   | G01        |
| <b>Cable input for connection head</b>  |            |
| M12 device plug (in combination with transmitter, non-Ex and intrinsically safe, max. IP65/67)  | G12        |
| Han 7 D device plug (non-Ex and intrinsically safe, without mating connector max. IP65/67)  | G13        |
| Connection head with 1/2"-NPT thread without cable gland, for AU0 and AHO only IP66   | G20        |
| SafeGuard 2 × Pt100 4-wire  | G30        |
| <b>Built-in head transmitter</b>  |            |
| Measuring range to be set must be specified with plain text data "Y01".   |            |
| SITRANS TH100, input 1 × Pt100, 4 ... 20 mA   | T12        |

# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / Tubular thermowells / Type 3, without process connection

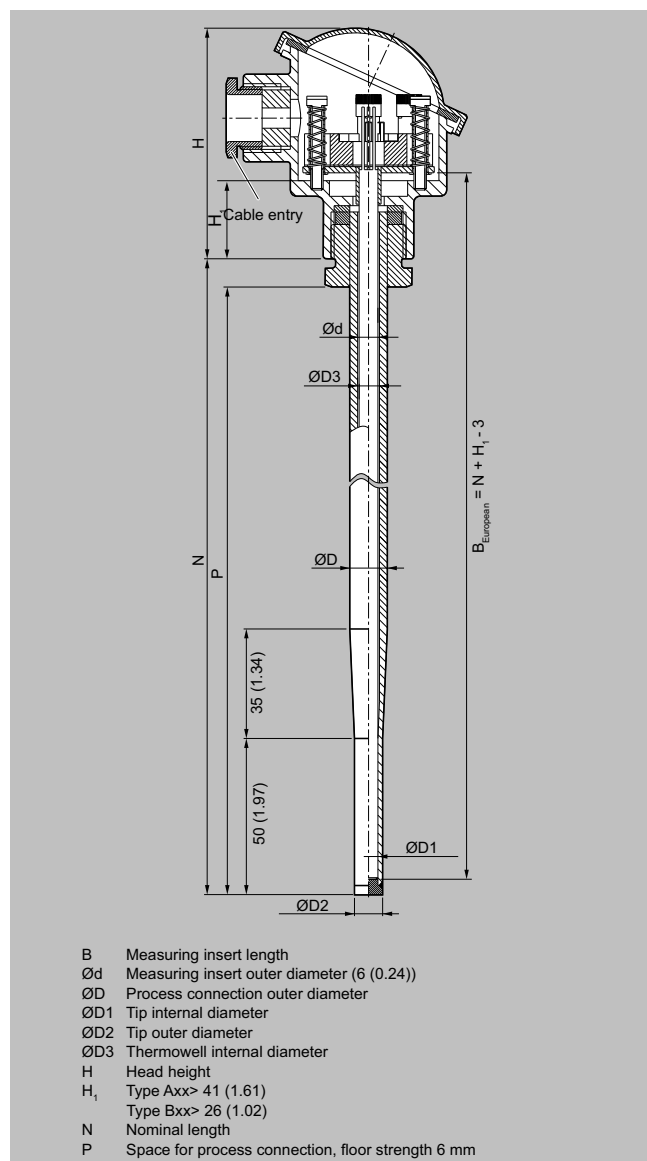
#### Selection and ordering data (continued)

| Options  | Order code |
|--|------------|
| <b>Add "-Z" to article number and specify order code</b>   |            |
| SITRANS TH320, input 1 × universal, 4 ... 20 mA  | T24        |
| SITRANS TH320, input 1 × universal, HART   | T34        |
| SITRANS TH420, input 2 × universal, HART   | T35        |
| <b>Device settings (including head transmitter options)</b>  |            |
| Tag plate made of stainless steel, specify label in plain text   | Y15        |
| Factory calibration per 1 point, specify temperature in plain text   | Y33        |
| Specify measuring range in plain text (Y01: +/--NNNN ... +/--NNNN C,F), marking on the device when option "Y15" is selected in addition  | Y01        |
| Specify measuring point description in plain text (max. 16 characters)   | Y23        |
| Specify measuring point message in plain text (max. 32 characters)   | Y24        |
| Specify bus address in plain text  | Y25        |
| Installation length U customer-specific<br>Select range, plain text specification of desired length (no specification = standard length) | Y44        |
| <b>Customer-specific plain text</b>  |            |
| Handling number of the special design  | Y99        |

1) Select Ex i version of the optional transmitter.

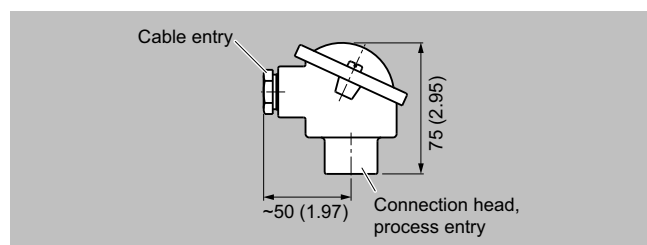
2) Only with connection heads code AG0, AH0, AU0, AV0, without cable gland (select non-Ex version of the optional transmitter).

## Dimensional drawings



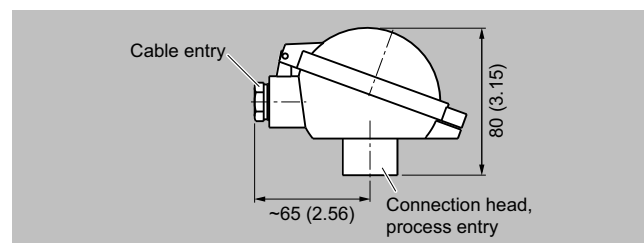
SITRANS TS500, temperature sensors for vessels and pipes, tubular thermowell for low to medium stress, without process connection, without extension, plug-in or for use with sliding compression fittings, dimensions in mm (inch)

## Connection heads

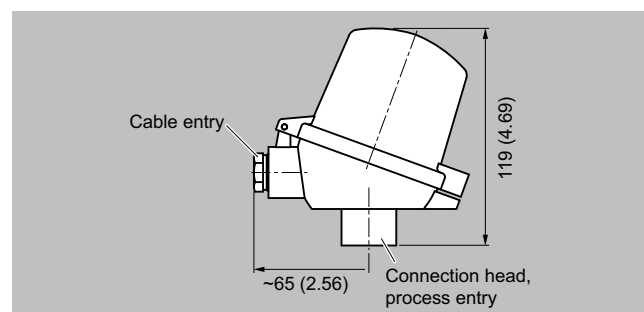


Connection head, aluminum, type BA0, dimensions in mm (inch)

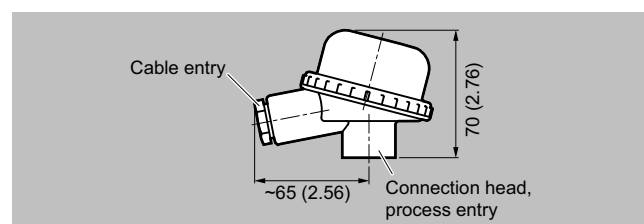
## Dimensional drawings (continued)



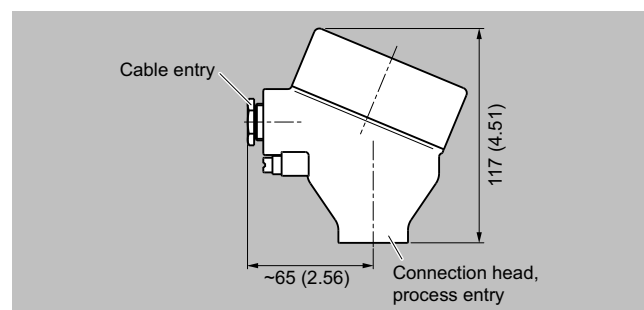
Connection head, aluminum, type BB0, dimensions in mm (inch)



Connection head, aluminum, type BC0, plastic, type BP0, dimensions in mm (inch)



Connection head, plastic, type BM0, dimensions in mm (inch)



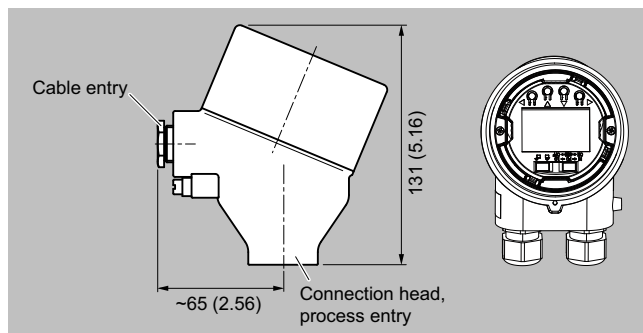
Connection head, aluminum, type AG0, stainless steel, type AU0, dimensions in mm (inch)

## Temperature Measurement

### Temperature sensors

#### SITRANS TS500 / Tubular thermowells / Type 3, without process connection

##### Dimensional drawings (continued)



Connection head with 4-20 mA display, aluminum, type AH0, stainless steel, type AV0, dimensions in mm (inch)

## Selection and ordering data

|  | Article No.<br>7MC751           | Order code |
|--|---------------------------------|------------|
| <b>SITRANS TS500</b>   |                                 |            |
| Tubular thermowell made of pipe material for low to medium stress, according to DIN 43772, Type 3G, screwed design, with extension | ● - ● ● ● ● ● - ● ● ● ● ● ● ● ● |            |
| Click the article number for online configuration in the PIA Life Cycle Portal.  |                                 |            |
| <b>Wetted material</b>   |                                 |            |
| 316Ti (1.4571)   | 1                               |            |
| 316L (1.4404 or 1.4435)  | 2                               |            |
| <b>Process connection</b>  |                                 |            |
| Cylindrical: G½" (½" BSPP)   | 1                               | C          |
| Cylindrical: G¾" (¾" BSPP)   | 1                               | D          |
| Tapered: NPT½"   | 1                               | J          |
| Tapered: NPT¾"   | 1                               | K          |
| Tapered: NPT1"   | 1                               | L          |
| Cylindrical: M20 × 1.5   | 1                               | V          |
| Cylindrical: M27 × 2.0   | 1                               | W          |
| Cylindrical: M33 × 2.0   | 1                               | Y          |
| <b>Thermowell form</b>   |                                 |            |
| 3G, 12/9 mm (0.47/0.35 inches)   |                                 | K          |
| <b>Standard installation length "U"</b>  |                                 |            |
| 160 mm (6.30 inches)   |                                 | 0 4        |
| 220 mm (8.66 inches)   |                                 | 0 7        |
| 280 mm (11.02 inches)  |                                 | 1 3        |
| <b>Installation length "U" customer-specific</b>   |                                 |            |
| Specify customer-specific length with Y44, see page 2/83 order codes   |                                 |            |
| 121 ... 140 mm (4.76 ... 5.51 inches)<br>Initial: 140 mm (5.51 inches)   |                                 | 0 3        |
| 141 ... 160 mm (5.55 ... 6.30 inches)<br>Initial: 160 mm (6.3 inches)  |                                 | 0 4        |
| 161 ... 180 mm (6.34 ... 7.09 inches)<br>Initial: 180 mm (7.09 inches)   |                                 | 0 5        |
| 181 ... 200 mm (7.13 ... 7.87 inches)<br>Initial: 200 mm (7.87 inches)   |                                 | 0 6        |
| 201 ... 220 mm (7.91 ... 8.66 inches)<br>Initial: 220 mm (8.66 inches)   |                                 | 0 7        |
| 221 ... 240 mm (8.70 ... 9.45 inches)<br>Initial: 225 mm (8.86 inches)   |                                 | 1 1        |
| 241 ... 260 mm (9.49 ... 10.24 inches)<br>Initial: 250 mm (9.84 inches)  |                                 | 1 2        |
| 261 ... 280 mm (10.28 ... 11.02 inches)<br>Initial: 280 mm (11.02 inches)  |                                 | 1 3        |
| 281 ... 300 mm (11.06 ... 11.81 inches)<br>Initial: 285 mm (11.22 inches)  |                                 | 1 4        |
| 301 ... 320 mm (11.85 ... 12.6 inches)<br>Initial: 315 mm (12.4 inches)  |                                 | 1 5        |
| 321 ... 340 mm (12.64 ... 13.39 inches)<br>Initial: 340 mm (13.39 inches)  |                                 | 1 6        |
| 341 ... 360 mm (13.43 ... 14.17 inches)<br>Initial: 360 mm (14.17 inches)  |                                 | 2 0        |
| 361 ... 380 mm (14.21 ... 14.96 inches)<br>Initial: 380 mm (14.96 inches)  |                                 | 2 1        |
| 381 ... 400 mm (15 ... 15.75 inches)<br>Initial: 400 mm (15.75 inches)   |                                 | 2 2        |
| 401 ... 420 mm (15.79 ... 16.54 inches)<br>Initial: 420 mm (16.54 inches)  |                                 | 2 3        |
| 421 ... 440 mm (16.57 ... 17.32 inches)<br>Initial: 440 mm (17.32 inches)  |                                 | 2 4        |
| 441 ... 460 mm (17.36 ... 18.11 inches)<br>Initial: 460 mm (18.11 inches)  |                                 | 2 5        |
| 461 ... 480 mm (18.15 ... 18.90 inches)<br>Initial: 465 mm (18.30 inches)  |                                 | 2 6        |
| 481 ... 500 mm (18.94 ... 19.69 inches)<br>Initial: 500 mm (19.69 inches)  |                                 | 2 7        |
| 501 ... 550 mm (19.72 ... 21.65 inches)<br>Initial: 510 mm (20.08 inches)  |                                 | 3 1        |

# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / Tubular thermowells / Type 3G, screwed design

#### Selection and ordering data (continued)

| SITRANS TS500<br>Tubular thermowell made of pipe material for low to medium stress, according to DIN 43772,<br>Type 3G, screwed design, with extension              | Article No.<br>7MC751 |   |   |   |   |   |   |   |   |   | Order code |   |   |   |   |         |
|---|-----------------------|---|---|---|---|---|---|---|---|---|------------|---|---|---|---|---------|
|   | ●                     | - | ● | ● | ● | ● | ● | - | ● | ● | ●          | ● | ● | ● | ● | ●       |
| 551 ... 600 mm (21.69 ... 23.62 inches)<br>Initial: 600 mm (23.62 inches)   |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | 3 2     |
| 601 ... 650 mm (23.66 ... 25.59 inches)<br>Initial: 650 mm (25.59 inches)   |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | 3 3     |
| 651 ... 700 mm (25.63 ... 27.56 inches)<br>Initial: 700 mm (27.56 inches)   |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | 3 4     |
| 701 ... 750 mm (27.6 ... 29.53 inches)<br>Initial: 750 mm (29.53 inches)  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | 3 5     |
| 751 ... 800 mm (29.57 ... 31.50 inches)<br>Initial: 800 mm (31.50 inches)   |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | 3 6     |
| 801 ... 850 mm (31.5 ... 33.47 inches)<br>Initial: 850 mm (33.47 inches)  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | 3 7     |
| 851 ... 900 mm (33.5 ... 35.43 inches)<br>Initial: 900 mm (35.43 inches)  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | 4 1     |
| 901 ... 950 mm (35.47 ... 37.4 inches)<br>Initial: 950 mm (37.4 inches)   |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | 4 2     |
| 951 ... 1 000 mm (37.44 ... 39.37 inches)<br>Initial: 1 000 mm (39.37 inches)   |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | 4 3     |
| <b>Extension "X"</b>  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   |         |
| Standard length for type 3G DIN 43772 (X=131 mm (5.16 inches))  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | 1       |
| <b>Extension length "X" customer-specific</b><br>Specify customer-specific length with Y45, see page 2/83 order codes   |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   |         |
| 75 ... 150 mm (2.95 ... 5.91 inches)<br>Initial: 150 mm (5.91 inches)   |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | 9 N 1 D |
| 151 ... 300 mm (5.95 ... 11.81 inches)<br>Initial: 300 mm (11.81 inches)  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | 9 N 2 D |
| <b>Head</b>   |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   |         |
| Aluminum head, BAO, flange cap, standard  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | A       |
| Aluminum head, BB0, spring flap low, screw closure  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | B       |
| Aluminum head, BC0, spring flap high, screw closure   |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | C       |
| Aluminum head, AG0, screw cover, Ex d suitable <sup>1)</sup>  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | G       |
| Aluminum head, AH0, screw cover, Ex d suitable, display <sup>1)</sup>   |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | H       |
| Plastic head, BM0, screw cover  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | M       |
| Plastic head, BP0, spring flap high, screw closure  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | P       |
| Stainless steel head, AU0, screw cover, Ex d suitable <sup>1)</sup>   |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | U       |
| Stainless steel head, AV0, screw cover, Ex d suitable, display <sup>1)</sup>  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | V       |
| <b>Sensor<sup>2)</sup></b>  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   |         |
| Note: The accuracy class range can be lower than the measuring range. For more detailed information, see "Configuration"/"Measuring technology: Measuring accuracy" |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   |         |
| Pt100, basic version, -50 ... +400 °C (-58 ... +752 °F)   |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | A       |
| Pt100, vibration-resistant, -50 ... +400 °C (-58 ... +752 °F)   |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | B       |
| Pt100, extended measuring range, -196 ... +600 °C (-320.8 ... +1 112 °F)  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | C       |
| Type K thermocouple, -270 ... +1 100 °C (-167 ... +2 012 °F)  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | K       |
| Type J thermocouple, -0 ... +750 °C (-18 ... +1 382 °F)   |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | J       |
| Type N thermocouple, -270 ... +1 100 °C (-167 ... +2 012 °F)  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | N       |
| <b>Number/precision of sensors</b>  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   |         |
| Pt100 connection: 1 × 4-wire connection or 2 × 3-wire connection, see "Configuration"/"Measuring technology: Connection types"                                      |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   |         |
| Single, basic accuracy (Class 2/Class B)  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | 1       |
| Single, increased accuracy (Class 1/Class A)  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | 2       |
| Single, maximum accuracy (Class AA)   |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | 3       |
| Double, basic accuracy (Class 2/Class B)  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | 5       |
| Double, increased accuracy (Class 1/Class A)  |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | 6       |
| Double, maximum accuracy (Class AA)   |                       |   |   |   |   |   |   |   |   |   |            |   |   |   |   | 7       |

<sup>1)</sup> Ex d in connection with order option E03

<sup>2)</sup> Pt1000 versions are also available.

To find these, switch to Online Configuration in the PIA Life Cycle Portal: [www.siemens.com/pia-portal](http://www.siemens.com/pia-portal)



## Selection and ordering data (continued)

| Options   | Order code |
|---|------------|
| <b>Add "-Z" to article number and specify order code</b>  |            |
| <b>Accessories</b>  |            |
| With external grounding screw for connection heads AG0, AH0, AU0 and AV0  | A02        |
| With external grounding screw for connection heads BC0, AG0, AH0, AU0 and AV0   | A03        |
| <b>Certificates and approvals</b>   |            |
| Transmitter test report (5 points)  | C11        |
| EN 10204-3.1 Inspection certificate Wetted material   | C12        |
| EN 10204-3.1 Inspection certificate Hydrostatic pressure test   | C31        |
| EN 10204-3.1 Inspection certificate Helium leak test  | C32        |
| EN 10204-3.1 Inspection certificate Surface tear test   | C33        |
| EN 10204-3.1 Factory certificate Visual, dimensional and function check   | C34        |
| EN 10204-2.1: Declaration of compliance with the order  | C35        |
| ISO 9001 grease-free (cleaned for oxygen applications, for example)   | C51        |
| EN 10204-3.1 Inspection certificate "Positive Materials Identification" (PMI)   | On request |
| <b>Certificates for functional safety</b>   |            |
| SITRANS TH320/420 transmitter with SIL2/3 certificate   | C20        |
| <b>Marine approvals</b>   |            |
| Det Norske Veritas Germanischer Lloyd (DNV GL)  | D01        |
| <b>Type of protection (Ex)</b>  |            |
| Without explosion protection requirements (Europe, Australia, New Zealand)  | E00        |
| Intrinsic safety "i"/"IS <sup>1</sup> " according to ATEX and IECEx (Europe, Australia, New Zealand)  | E01        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> " according to ATEX and IECEx (Europe, Australia, New Zealand) | E03        |
| Non-sparking "ec" according to ATEX and IECEx (Europe, Australia, New Zealand)  | E04        |
| Without explosion protection requirements (USA, Canada) Basis FM  | E10        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> " according to cFMus (USA, Canada); other connections (M,G,R)  | E14        |
| Non-sparking "nA"/"NI" according to cFMus (USA, Canada)   | E16        |
| Without explosion protection requirements (USA, Canada), Basis CSA  | E17        |
| Intrinsic safety "i"/"IS <sup>1</sup> " according to cCSAus (USA, Canada)   | E18        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> " according to CSAus (USA); other connections (M, G, R)        | E21        |
| Non-sparking "nA"/"NI" according to cCSAus (USA, Canada)  | E23        |
| Without explosion protection requirements (China)   | E54        |
| Intrinsic safety "i"/"IS <sup>1</sup> " according to NEPSI (China)  | E55        |
| Flameproof enclosure "d"; dust protection through enclosure "t <sup>2</sup> " according to NEPSI (China)  | E56        |
| Non-sparking "nA"/"NI" according to NEPSI (China)   | E57        |
| Without explosion protection requirements (EAC)   | E80        |
| Intrinsic safety "i"/"IS <sup>1</sup> " according to EACEx (EAC)  | E81        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> " according to EACEx (EAC)                                     | E82        |
| Non-sparking "nA"/"NI" according to EACEx (EAC)   | E83        |
| <b>Special design</b>   |            |
| Flying lead connection type (for direct transmitter mounting, delivery without screws or springs)   | G01        |

# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / Tubular thermowells / Type 3G, screwed design

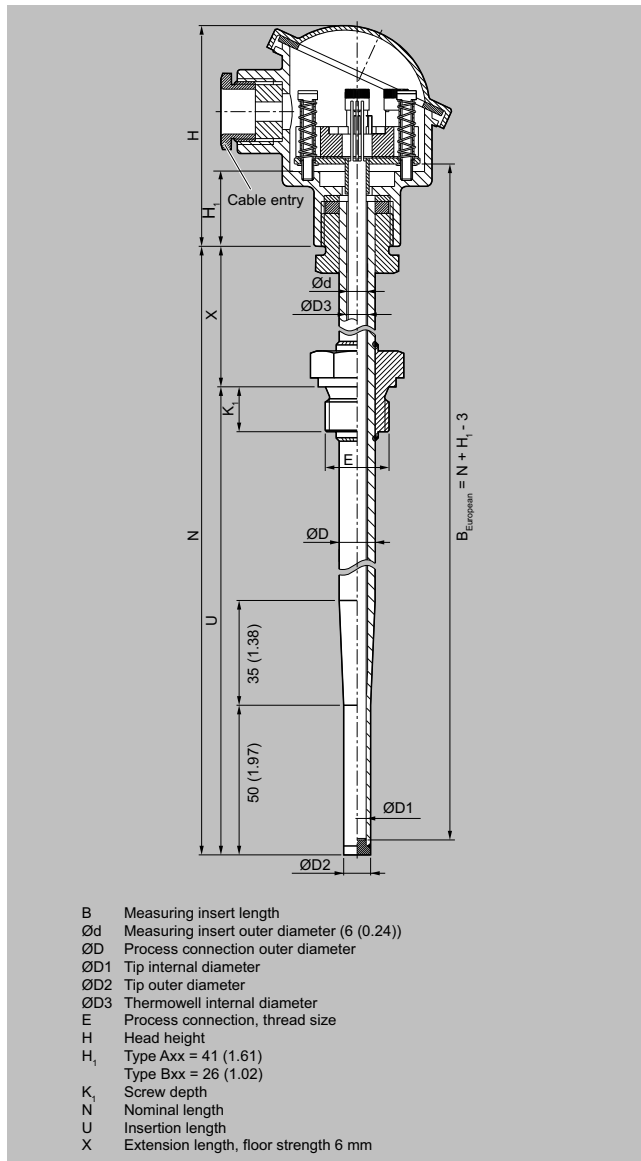
#### Selection and ordering data (continued)

| Options  | Order code |
|--|------------|
| <b>Add "-Z" to article number and specify order code</b>   |            |
| <b>Cable input for connection head</b>   |            |
| M12 device plug (in combination with transmitter, non-Ex and intrinsically safe, max. IP65/67)   | G12        |
| Han 7 D device plug (non-Ex and intrinsically safe, without mating connector max. IP65/67)   | G13        |
| Connection head with ½"-NPT thread without cable gland, for AU0 and AH0 only IP66  | G20        |
| SafeGuard 2 × Pt100 4-wire   | G30        |
| <b>Built-in head transmitter</b>   |            |
| Measuring range to be set must be specified with plain text data "Y01".  |            |
| SITRANS TH100, input 1 × Pt100, 4 ... 20 mA  | T12        |
| SITRANS TH320, input 1 × universal, 4 ... 20 mA  | T24        |
| SITRANS TH320, input 1 × universal, HART   | T34        |
| SITRANS TH420, input 2 × universal, HART   | T35        |
| <b>Device settings (including head transmitter options)</b>  |            |
| Tag plate made of stainless steel, specify label in plain text   | Y15        |
| Factory calibration per 1 point, specify temperature in plain text   | Y33        |
| Specify measuring range in plain text (Y01: +/-NNNN ... +/-NNNN C,F), marking on the device when option "Y15" is selected in addition    | Y01        |
| Specify measuring point description in plain text (max. 16 characters)   | Y23        |
| Specify measuring point message in plain text (max. 32 characters)   | Y24        |
| Specify bus address in plain text  | Y25        |
| Installation length U customer-specific<br>Select range, plain text specification of desired length (no specification = standard length) | Y44        |
| Extension length X customer-specific<br>Select range, plain text specification of desired length (no specification = standard length)    | Y45        |
| <b>Customer-specific plain text</b>  |            |
| Handling number of the special design  | Y99        |

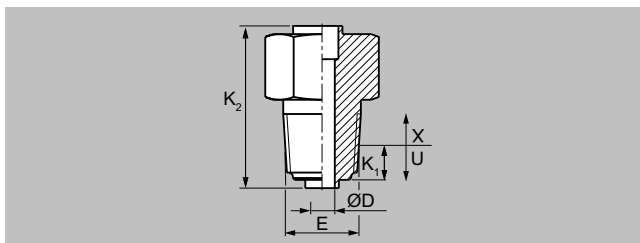
<sup>1)</sup> Select Ex i version of the optional transmitter.

<sup>2)</sup> Only with connection heads code AG0, AH0, AU0, AV0, without cable gland (select non-Ex version of the optional transmitter).

## Dimensional drawings



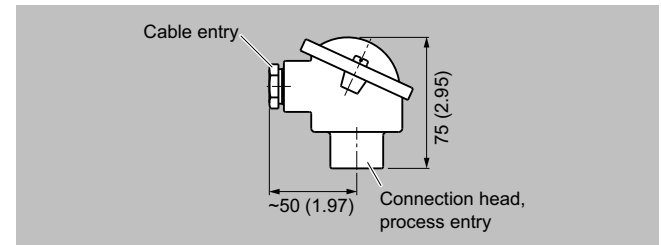
SITRANS TS500, temperature sensors for vessels and pipes, tubular thermowell for low to medium stress, according to DIN 43772, type 3G, screwed design, without process connection, with extension, for screw-in depth dimensions, see "Technical reference", "Thread shapes" page, dimensions in mm (inch).



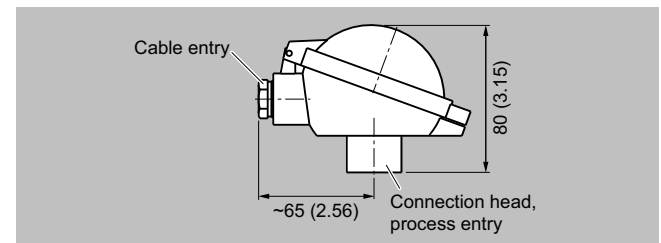
Process connection tapered, dimensions in mm (inch)

## Dimensional drawings (continued)

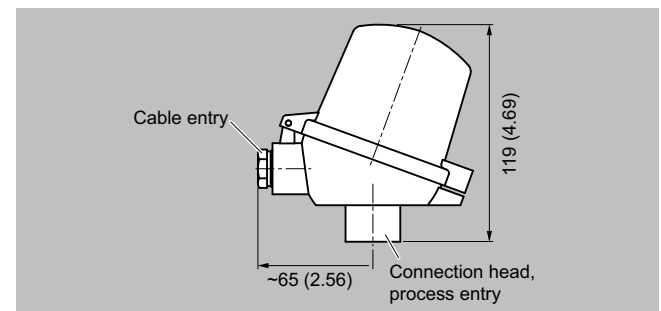
## Connection heads



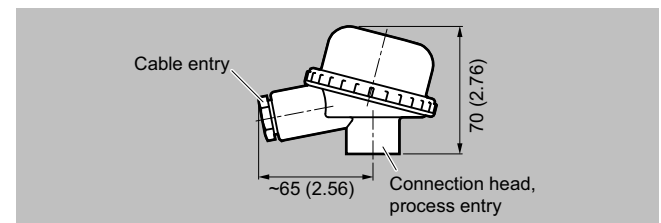
Connection head, aluminum, type BA0, dimensions in mm (inch)



Connection head, aluminum, type BB0, dimensions in mm (inch)



Connection head, aluminum, type BC0, plastic, type BP0, dimensions in mm (inch)



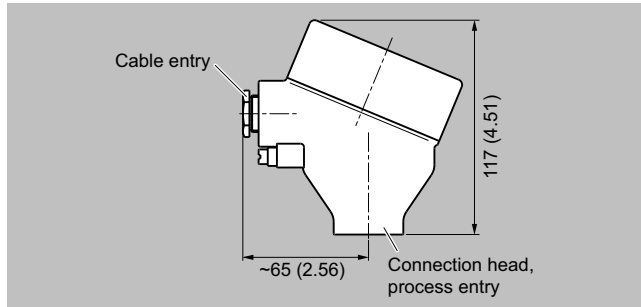
Connection head, plastic, type BM0, dimensions in mm (inch)

## Temperature Measurement

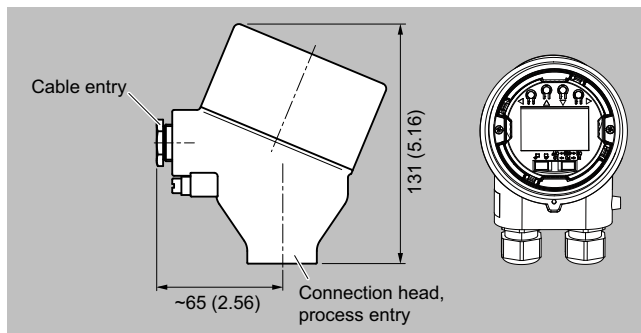
### Temperature sensors

#### SITRANS TS500 / Tubular thermowells / Type 3G, screwed design

##### Dimensional drawings (continued)



Connection head, aluminum, type AG0, stainless steel, type AU0, dimensions in mm (inch)



Connection head with 4-20 mA display, aluminum, type AH0, stainless steel, type AVO, dimensions in mm (inch)

## Selection and ordering data

|   | Article No.<br>7MC751           | Order code |
|---|---------------------------------|------------|
| <b>SITRANS TS500</b><br>Tubular thermowell for low to medium stress, according to DIN 43772, Type 3F, with flange, with extension | ● - ● ● ● ● ● - ● ● ● ● ● ● ● ● |            |
| Click the article number for online configuration in the PIA Life Cycle Portal.   |                                 |            |
| <b>Wetted material</b>  |                                 |            |
| 316Ti (1.4571)  | 1                               |            |
| 316L (1.4404 or 1.4435)   | 2                               |            |
| <b>Process connection</b>   |                                 |            |
| Flange EN; DN 25 PN10 ... 40 B1   | 2                               | A          |
| Flange EN; DN 40 PN 40 B1   | 2                               | B          |
| Flange EN; DN 50 PN 40 B1   | 2                               | C          |
| Flange ASME; 1.0" RF 150  | 2                               | E          |
| Flange ASME; 1.0" RF 300  | 2                               | F          |
| Flange ASME; 1.5" RF 150  | 2                               | G          |
| Flange ASME; 1.5" RF 300  | 2                               | H          |
| Flange ASME; 2.0" RF 150  | 2                               | J          |
| Flange ASME; 2.0" RF 300  | 2                               | K          |
| Flange ASME; 1.0" RF 600  | 2                               | L          |
| Flange ASME; 1.5" RF 600  | 2                               | N          |
| Flange ASME; 1.5" RF 900  | 2                               | R          |
| Flange ASME; 2.0" RF 600  | 2                               | S          |
| Flange ASME; 2.0" RF 900  | 2                               | T          |
| Flange EN; DN 32 PN 40 B1   | 4                               | A          |
| Flange EN; DN 40 PN 100 B1  | 4                               | B          |
| Flange EN; DN 50 PN 16 B1   | 4                               | C          |
| Flange EN; DN 80 PN 16 B1   | 4                               | D          |
| Flange EN; DN 100 PN 16 B1  | 4                               | E          |
| <b>Thermowell form</b>  |                                 |            |
| 3F; 12/9 mm (0.47/0.35 inches)  |                                 | K          |
| <b>Standard installation length "U"</b>   |                                 |            |
| 225 mm (8.86 inches)  |                                 | 1 1        |
| 285 mm (11.22 inches)   |                                 | 1 4        |
| 345 mm (13.58 inches)   |                                 | 1 7        |
| <b>Installation length "U" customer-specific</b><br>Specify customer-specific length with Y44, see order codes                    |                                 |            |
| 121 ... 140 mm (4.76 ... 5.51 inches)<br>Initial: 140 mm (5.51 inches)  |                                 | 0 3        |
| 141 ... 160 mm (5.55 ... 6.30 inches)<br>Initial: 160 mm (6.3 inches)   |                                 | 0 4        |
| 161 ... 180 mm (6.34 ... 7.09 inches)<br>Initial: 180 mm (7.09 inches)  |                                 | 0 5        |
| 181 ... 200 mm (7.13 ... 7.87 inches)<br>Initial: 200 mm (7.87 inches)  |                                 | 0 6        |
| 201 ... 220 mm (7.91 ... 8.66 inches)<br>Initial: 220 mm (8.66 inches)  |                                 | 0 7        |
| 221 ... 240 mm (8.70 ... 9.45 inches)<br>Initial: 225 mm (8.86 inches)  |                                 | 1 1        |
| 241 ... 260 mm (9.49 ... 10.24 inches)<br>Initial: 250 mm (9.84 inches)   |                                 | 1 2        |
| 261 ... 280 mm (10.28 ... 11.02 inches)<br>Initial: 280 mm (11.02 inches)   |                                 | 1 3        |
| 281 ... 300 mm (11.06 ... 11.81 inches)<br>Initial: 285 mm (11.22 inches)   |                                 | 1 4        |
| 301 ... 320 mm (11.85 ... 12.6 inches)<br>Initial: 315 mm (12.4 inches)   |                                 | 1 5        |
| 321 ... 340 mm (12.64 ... 13.39 inches)<br>Initial: 340 mm (13.39 inches)   |                                 | 1 6        |
| 341 ... 360 mm (13.43 ... 14.17 inches)<br>Initial: 345 mm (13.58 inches)   |                                 | 1 7        |
| 361 ... 380 mm (14.21 ... 14.96 inches)<br>Initial: 380 mm (14.96 inches)   |                                 | 2 1        |
| 381 ... 400 mm (15 ... 15.75 inches)<br>Initial: 400 mm (15.75 inches)  |                                 | 2 2        |



## Selection and ordering data (continued)

|   | Article No.<br>7MC751           | Order code |
|---|---------------------------------|------------|
| <b>SITRANS TS500</b>  | ● - ● ● ● ● ● - ● ● ● ● ● ● ● ● |            |
| Tubular thermowell for low to medium stress, according to DIN 43772, Type 3F, with flange, with extension |                                 |            |
| Single, maximum accuracy (Class AA)   |                                 | 3          |
| Double, basic accuracy (Class 2/Class B)  |                                 | 5          |
| Double, increased accuracy (Class 1/Class A)  |                                 | 6          |
| Double, maximum accuracy (Class AA)   |                                 | 7          |

1) Ex d in connection with order option E03

2) Pt1000 versions are also available.

To find these, switch to Online Configuration in the PIA Life Cycle Portal: [www.siemens.com/pia-portal](http://www.siemens.com/pia-portal)

| Options  | Order code |
|--|------------|
| <b>Add "-Z" to article number and specify order code</b>   |            |
| <b>Accessories</b>   |            |
| With external grounding screw for connection heads AG0, AHO, AU0 and AV0   | A02        |
| With external grounding screw for connection heads BC0, AG0, AHO, AU0 and AV0  | A03        |
| <b>Certificates and approvals</b>  |            |
| Transmitter test report (5 points)   | C11        |
| EN 10204-3.1 Inspection certificate Wetted material  | C12        |
| EN 10204-3.1 Inspection certificate Hydrostatic pressure test  | C31        |
| EN 10204-3.1 Inspection certificate Helium leak test   | C32        |
| EN 10204-3.1 Inspection certificate Surface tear test  | C33        |
| EN 10204-3.1 Factory certificate Visual, dimensional and function check  | C34        |
| EN 10204-2.1: Declaration of compliance with the order   | C35        |
| ISO 9001 grease-free (cleaned for oxygen applications, for example)  | C51        |
| EN 10204-3.1 Inspection certificate "Positive Materials Identification" (PMI)  | On request |
| <b>Certificates for functional safety</b>  |            |
| SITRANS TH320/420 transmitter with SIL2/3 certificate  | C20        |
| <b>Marine approvals</b>  |            |
| Det Norske Veritas Germanischer Lloyd (DNV GL)   | D01        |
| <b>Type of protection (Ex)</b>   |            |
| Without explosion protection requirements (Europe, Australia, New Zealand)   | E00        |
| Intrinsic safety "i"/"IS <sup>1)</sup> " according to ATEX and IECEx (Europe, Australia, New Zealand)  | E01        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2)</sup> " according to ATEX and IECEx (Europe, Australia, New Zealand) | E03        |
| Non-sparking "ec" according to ATEX and IECEx (Europe, Australia, New Zealand)   | E04        |
| Without explosion protection requirements (USA, Canada) Basis FM   | E10        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2)</sup> " according to cFMus (USA, Canada); other connections (M,G,R)  | E14        |
| Non-sparking "nA"/"NI" according to cFMus (USA, Canada)  | E16        |
| Without explosion protection requirements (USA, Canada), Basis CSA   | E17        |
| Intrinsic safety "i"/"IS <sup>1)</sup> " according to cCSAus (USA, Canada)   | E18        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2)</sup> " according to CSAus (USA); other connections (M, G, R)        | E21        |
| Non-sparking "nA"/"NI" according to cCSAus (USA, Canada)   | E23        |

# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / Tubular thermowells / Type 3F, flange

#### Selection and ordering data (continued)

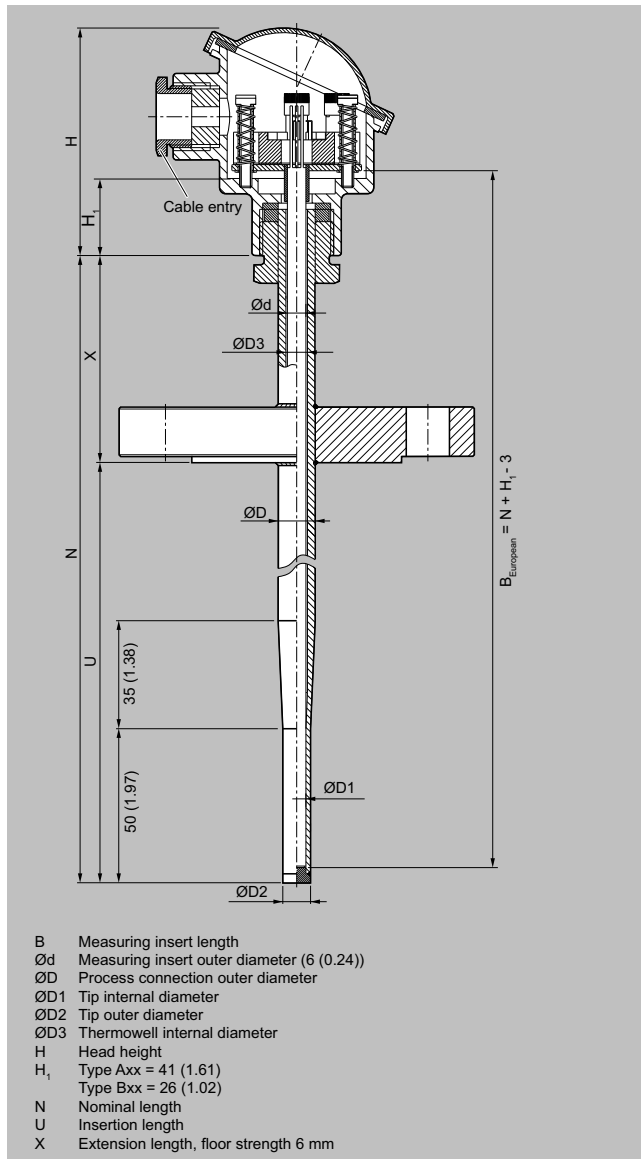
| Options  | Order code |
|--|------------|
| <b>Add "-Z" to article number and specify order code</b>   |            |
| Without explosion protection requirements (China)  | E54        |
| Intrinsic safety "i"/"IS" <sup>1)</sup> according to NEPSI (China)   | E55        |
| Flameproof enclosure "d"; dust protection through enclosure "t" <sup>2)</sup> according to NEPSI (China)                                 | E56        |
| Non-sparking "nA"/"NI" according to NEPSI (China)  | E57        |
| Without explosion protection requirements (EAC)  | E80        |
| Intrinsic safety "i"/"IS" <sup>1)</sup> according to EACEx (EAC)   | E81        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP" <sup>2)</sup> according to EACEx (EAC)                        | E82        |
| Non-sparking "nA"/"NI" according to EACEx (EAC)  | E83        |
| <b>Special design</b>  |            |
| Flying lead connection type (for direct transmitter mounting, delivery without screws or springs)  | G01        |
| <b>Cable input for connection head</b>   |            |
| M12 device plug (in combination with transmitter, non-Ex and intrinsically safe, max. IP65/67)   | G12        |
| Han 7 D device plug (non-Ex and intrinsically safe, without mating connector max. IP65/67)   | G13        |
| Connection head with ½"-NPT thread without cable gland, for AU0 and AHO only IP66  | G20        |
| SafeGuard 2 × Pt100 4-wire   | G30        |
| <b>Built-in head transmitter</b>   |            |
| Measuring range to be set must be specified with plain text data "Y01".  |            |
| SITRANS TH100, input 1 × Pt100, 4 ... 20 mA  | T12        |
| SITRANS TH320, input 1 × universal, 4 ... 20 mA  | T24        |
| SITRANS TH320, input 1 × universal, HART   | T34        |
| SITRANS TH420, input 2 × universal, HART   | T35        |
| <b>Device settings (including head transmitter options)</b>  |            |
| Tag plate made of stainless steel, specify label in plain text   | Y15        |
| Factory calibration per 1 point, specify temperature in plain text   | Y33        |
| Specify measuring range in plain text (Y01: +/-NNNN ... +/-NNNN C,F), marking on the device when option "Y15" is selected in addition    | Y01        |
| Specify measuring point description in plain text (max. 16 characters)   | Y23        |
| Specify measuring point message in plain text (max. 32 characters)   | Y24        |
| Specify bus address in plain text  | Y25        |
| Installation length U customer-specific<br>Select range, plain text specification of desired length (no specification = standard length) | Y44        |
| Extension length X customer-specific<br>Select range, plain text specification of desired length (no specification = standard length)    | Y45        |
| <b>Customer-specific plain text</b>  |            |
| Handling number of the special design  | Y99        |

<sup>1)</sup> Select Ex i version of the optional transmitter.

<sup>2)</sup> Only with connection heads code AG0, AHO, AU0, AV0, without cable gland (select non-Ex version of the optional transmitter).

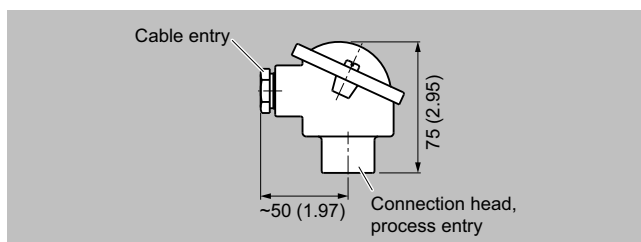


## Dimensional drawings



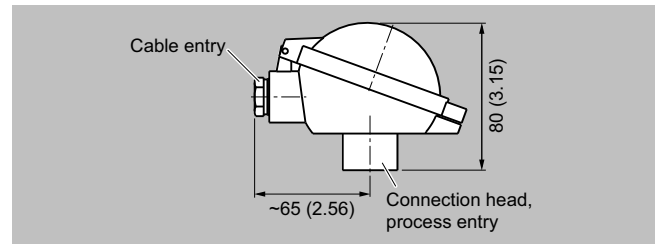
SITRANS TS500, temperature sensors for vessels and pipes, tubular thermowell for low to medium stress, according to DIN 43772, type 3F, with flange, with extension, dimensions in mm (inch)

## Connection heads

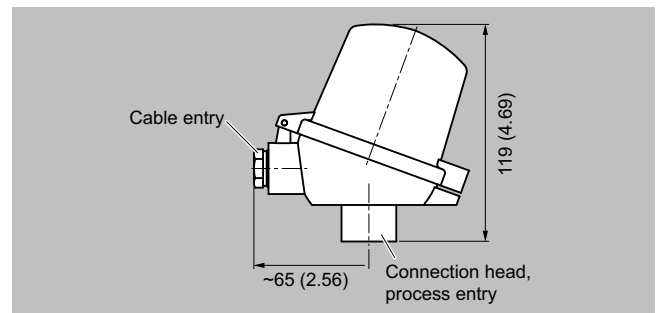


Connection head, aluminum, type BA0, dimensions in mm (inch)

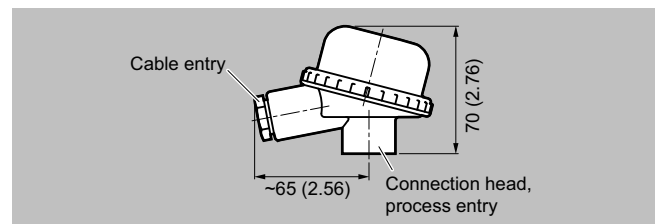
## Dimensional drawings (continued)



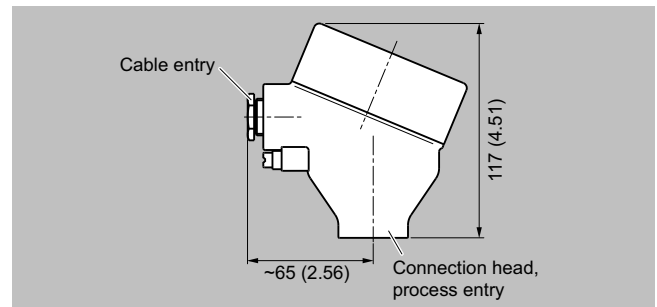
Connection head, aluminum, type BB0, dimensions in mm (inch)



Connection head, aluminum, type BC0, plastic, type BP0, dimensions in mm (inch)



Connection head, plastic, type BM0, dimensions in mm (inch)



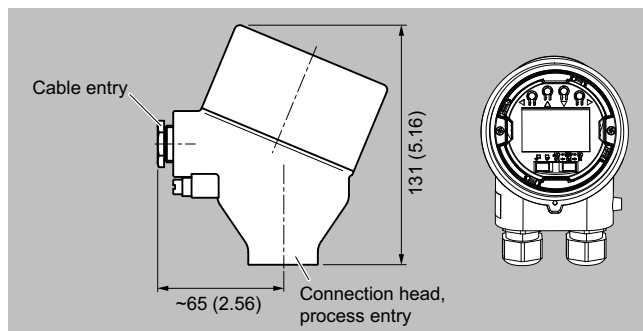
Connection head, aluminum, type AG0, stainless steel, type AU0, dimensions in mm (inch)

## Temperature Measurement

### Temperature sensors

#### SITRANS TS500 / Tubular thermowells / Type 3F, flange

##### Dimensional drawings (continued)



Connection head with 4-20 mA display, aluminum, type AH0, stainless steel, type AV0, dimensions in mm (inch)

## Selection and ordering data

| SITRANS TS500   | Article No. | Order code                      |
|---|-------------|---------------------------------|
| Barstock thermowell for connection head, with display and medium to high stress, according to DIN 43772. Type 4, for welding, Type 4F with flange, with extension   | 7MC752      | ● - ● ● ● ● ● - ● ● ● ● ● ● ● ● |
| Click the article number for online configuration in the PIA Life Cycle Portal.   |             |                                 |
| <b>Wetted material</b>  |             |                                 |
| 316Ti (1.4571)  | 1           |                                 |
| 316L (1.4404 or 1.4435)   | 2           |                                 |
| 1.7335 Heat-resistant, only for versions without flange   | 3           |                                 |
| 1.5415 Heat-resistant, only for versions without flange   | 4           |                                 |
| <b>Process connection</b>   |             |                                 |
| None (for welding)  | 0 N         |                                 |
| Flange DN25 PN10 ... 40 B1  | 2 A         |                                 |
| Flange 1"RF150  | 2 E         |                                 |
| Flange 1"RF300  | 2 F         |                                 |
| Flange 1.5"RF150  | 2 G         |                                 |
| Flange 1.5"RF300  | 2 H         |                                 |
| <b>Thermowell form</b>  |             |                                 |
| Version with flange:  |             |                                 |
| Deviating from standard [U = L-70 mm (2.76 inches)] installation length "U"; specify in plain text with Y44. [Min: U = C; Max: U = L-50 mm (1.97 inches)]           |             |                                 |
| Type 4/4F<br>L = 140 mm (5.51 inches), C = 65 mm (3.74 inches), ØD = 24 mm (0.95 inches), Ød = 6 mm (0.24 inches)   |             | A 0 0                           |
| Type 4/4F<br>L = 200 mm (7.87 inches), C = 65 mm (3.74 inches), ØD = 24 mm (0.95 inches), Ød = 6 mm (0.24 inches)   |             | B 0 0                           |
| Type 4/4F<br>L = 200 mm (7.87 inches), C = 125 mm (4.92 inches), ØD = 24 mm (0.95 inches), Ød = 6 mm (0.24 inches)  |             | D 0 0                           |
| Type 4/4F<br>L = 260 mm (10.24 inches), C = 125 mm (4.92 inches), ØD = 24 mm (0.95 inches), Ød = 6 mm (0.24 inches)   |             | E 0 0                           |
| <b>Extension "X"</b>  |             |                                 |
| According to DIN 43772, (X=149 mm (5.87 inches))  |             | 1                               |
| <b>Extension length "X" customer-specific</b>   |             |                                 |
| Specify customer-specific length with Y45, see page 2/93 order codes  |             |                                 |
| 75 ... 150 mm (2.95 ... 5.91 inches)<br>Initial: 150 mm (5.91 inches)   | 9           | N 1 D                           |
| 151 ... 300 mm (5.95 ... 11.81 inches)<br>Initial: 300 mm (11.81 inches)  | 9           | N 2 D                           |
| 301 ... 450 mm (11.85 ... 17.72 inches)<br>Initial: 450 mm (17.72 inches)   | 9           | N 3 D                           |
| 451 ... 600 mm (17.86 ... 23.62 inches)<br>Initial: 600 mm (23.62 inches)   | 9           | N 4 D                           |
| 601 ... 750 mm (23.66 ... 29.53 inches)<br>Initial: 750 mm (29.53 inches)   | 9           | N 5 D                           |
| 751 ... 900 mm (29.57 ... 45.43 inches)<br>Initial: 900 mm (45.43 inches)   | 9           | N 6 D                           |
| 901 ... 1 050 mm (45.47 ... 41.34 inches)<br>Initial: 1 050 mm (41.34 inches)   | 9           | N 7 D                           |
| <b>Head</b>   |             |                                 |
| Aluminum head, BAO, flange cap, standard  |             | A                               |
| Aluminum head, BB0, spring flap low, screw closure  |             | B                               |
| Aluminum head, BC0, spring flap high, screw closure   |             | C                               |
| Aluminum head, AG0, screw cover, Ex d suitable <sup>1)</sup>  |             | G                               |
| Aluminum head, AH0, screw cover, Ex d suitable, display <sup>1)</sup>   |             | H                               |
| Plastic head, BM0, screw cover  |             | M                               |
| Plastic head, BP0, spring flap high, screw closure  |             | P                               |
| Stainless steel head, AU0, screw cover, Ex d suitable <sup>1)</sup>   |             | U                               |
| Stainless steel head, AV0, screw cover, Ex d suitable, display <sup>1)</sup>  |             | V                               |
| <b>Sensor<sup>2)</sup></b>  |             |                                 |
| Note: The accuracy class range can be lower than the measuring range. For more detailed information, see "Configuration"/"Measuring technology: Measuring accuracy" |             |                                 |
| Pt100, basic version, -50 ... +400 °C (-58 ... +752 °F)   |             | A                               |
| Pt100, vibration-resistant, -50 ... +400 °C (-58 ... +752 °F)   |             | B                               |
| Pt100, extended measuring range, -196 ... +600 °C (-320.8 ... +1 112 °F)  |             | C                               |
| Type K thermocouple, -270 ... +1 100 °C (-167 ... +2 012 °F)  |             | K                               |
| Type J thermocouple, -0 ... +750 °C (-18 ... +1 382 °F)   |             | J                               |
| Type N thermocouple, -270 ... +1 100 °C (-167 ... +2 012 °F)  |             | N                               |

# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / Barstock thermowells / Type 4+4F

#### Selection and ordering data (continued)

| SITRANS TS500   | Article No.<br>7MC752           | Order code |
|---|---------------------------------|------------|
| Barstock thermowell for connection head, with display and medium to high stress, according to DIN 43772. Type 4, for welding, Type 4F with flange, with extension | ● - ● ● ● ● ● - ● ● ● ● ● ● ● ● |            |
| <b>Number/precision of sensors</b>  |                                 |            |
| Pt100 connection: 1 × 4-wire connection or 2 × 3-wire connection, see "Configuration"/"Measuring technology: Connection types"                                    |                                 |            |
| Single, basic accuracy (Class 2/Class B)  |                                 | 1          |
| Single, increased accuracy (Class 1/Class A)  |                                 | 2          |
| Single, maximum accuracy (Class AA)   |                                 | 3          |
| Double, basic accuracy (Class 2/Class B)  |                                 | 5          |
| Double, increased accuracy (Class 1/Class A)  |                                 | 6          |
| Double, maximum accuracy (Class AA)   |                                 | 7          |

<sup>1)</sup> Ex d in connection with order option E03

<sup>2)</sup> Pt1000 versions are also available.

To find these, switch to Online Configuration in the PIA Life Cycle Portal: [www.siemens.com/pia-portal](http://www.siemens.com/pia-portal)

| Options  | Order code |
|--|------------|
| <b>Add "-Z" to article number and specify order code</b>   |            |
| <b>Accessories</b>   |            |
| With external grounding screw for connection heads AG0, AHO, AU0 and AV0   | A02        |
| With external grounding screw for connection heads BC0, AG0, AHO, AU0 and AV0  | A03        |
| <b>Certificates and approvals</b>  |            |
| Transmitter test report (5 points)   | C11        |
| EN 10204-3.1 Inspection certificate Wetted material  | C12        |
| EN 10204-3.1 Inspection certificate Hydrostatic pressure test  | C31        |
| EN 10204-3.1 Inspection certificate Helium leak test   | C32        |
| EN 10204-3.1 Inspection certificate Surface tear test  | C33        |
| EN 10204-3.1 Factory certificate Visual, dimensional and function check  | C34        |
| EN 10204-2.1: Declaration of compliance with the order   | C35        |
| ISO 9001 grease-free (cleaned for oxygen applications, for example)  | C51        |
| EN 10204-3.1 Inspection certificate "Positive Materials Identification" (PMI)  | On request |
| <b>Certificates for functional safety</b>  |            |
| SITRANS TH320/420 transmitter with SIL2/3 certificate  | C20        |
| <b>Marine approvals</b>  |            |
| Det Norske Veritas Germanischer Lloyd (DNV GL)   | D01        |
| <b>Type of protection (Ex)</b>   |            |
| Without explosion protection requirements (Europe, Australia, New Zealand)   | E00        |
| Intrinsic safety "i"/"IS <sup>1)</sup> " according to ATEX and IECEx (Europe, Australia, New Zealand)  | E01        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2)</sup> " according to ATEX and IECEx (Europe, Australia, New Zealand) | E03        |
| Non-sparking "ec" according to ATEX and IECEx (Europe, Australia, New Zealand)   | E04        |
| Without explosion protection requirements (USA, Canada) Basis FM   | E10        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2)</sup> " according to cFMus (USA, Canada); other connections (M,G,R)  | E14        |
| Non-sparking "nA"/"NI" according to cFMus (USA, Canada)  | E16        |
| Without explosion protection requirements (USA, Canada), Basis CSA   | E17        |

## Selection and ordering data (continued)

| Options  | Order code |
|--|------------|
| <b>Add "-Z" to article number and specify order code</b>   |            |
| Intrinsic safety "i"/"IS" <sup>1)</sup> according to cCSAus (USA, Canada)  | E18        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP" <sup>2)</sup> according to CSAus (USA); other connections (M, G, R) | E21        |
| Non-sparking "nA"/"NI" according to cCSAus (USA, Canada)   | E23        |
| Without explosion protection requirements (China)  | E54        |
| Intrinsic safety "i"/"IS" <sup>1)</sup> according to NEPSI (China)   | E55        |
| Flameproof enclosure "d"; dust protection through enclosure "t" <sup>2)</sup> according to NEPSI (China)                                       | E56        |
| Non-sparking "nA"/"NI" according to NEPSI (China)  | E57        |
| Without explosion protection requirements (EAC)  | E80        |
| Intrinsic safety "i"/"IS" <sup>1)</sup> according to EACEx (EAC)   | E81        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP" <sup>2)</sup> according to EACEx (EAC)                              | E82        |
| Non-sparking "nA"/"NI" according to EACEx (EAC)  | E83        |
| <b>Special design</b>  |            |
| Flying lead connection type (for direct transmitter mounting, delivery without screws or springs)  | G01        |
| Full penetration process connection for 316L/316Ti   | G02        |
| <b>Cable input for connection head</b>   |            |
| M12 device plug (in combination with transmitter, non-Ex and intrinsically safe, max. IP65/67)   | G12        |
| Han 7 D device plug (non-Ex and intrinsically safe, without mating connector max. IP65/67)   | G13        |
| Connection head with ½"-NPT thread without cable gland, for AU0 and AH0 only IP66  | G20        |
| SafeGuard 2 × Pt100 4-wire   | G30        |
| <b>Built-in head transmitter</b>   |            |
| Measuring range to be set must be specified with plain text data "Y01".  |            |
| SITRANS TH100, input 1 × Pt100, 4 ... 20 mA  | T12        |
| SITRANS TH320, input 1 × universal, 4 ... 20 mA  | T24        |
| SITRANS TH320, input 1 × universal, HART   | T34        |
| SITRANS TH420, input 2 × universal, HART   | T35        |
| Tag plate made of stainless steel, specify label in plain text   | Y15        |
| Factory calibration per 1 point, specify temperature in plain text   | Y33        |
| Specify measuring range in plain text (Y01: +/- NNNN ... +/- NNNN C,F), marking on the device when option "Y15" is selected in addition        | Y01        |
| Specify measuring point description in plain text (max. 16 characters)   | Y23        |
| Specify measuring point message in plain text (max. 32 characters)   | Y24        |
| Specify bus address in plain text  | Y25        |
| Installation length U customer-specific<br>Select range, plain text specification of desired length (no specification = standard length)       | Y44        |
| Extension length X customer-specific<br>Select range, plain text specification of desired length (no specification = standard length)          | Y45        |
| <b>Customer-specific plain text</b>  |            |
| Handling number of the special design  | Y99        |

<sup>1)</sup> Select Ex i version of the optional transmitter.

<sup>2)</sup> Only with connection heads code AG0, AH0, AU0, AV0, without cable gland (select non-Ex version of the optional transmitter).

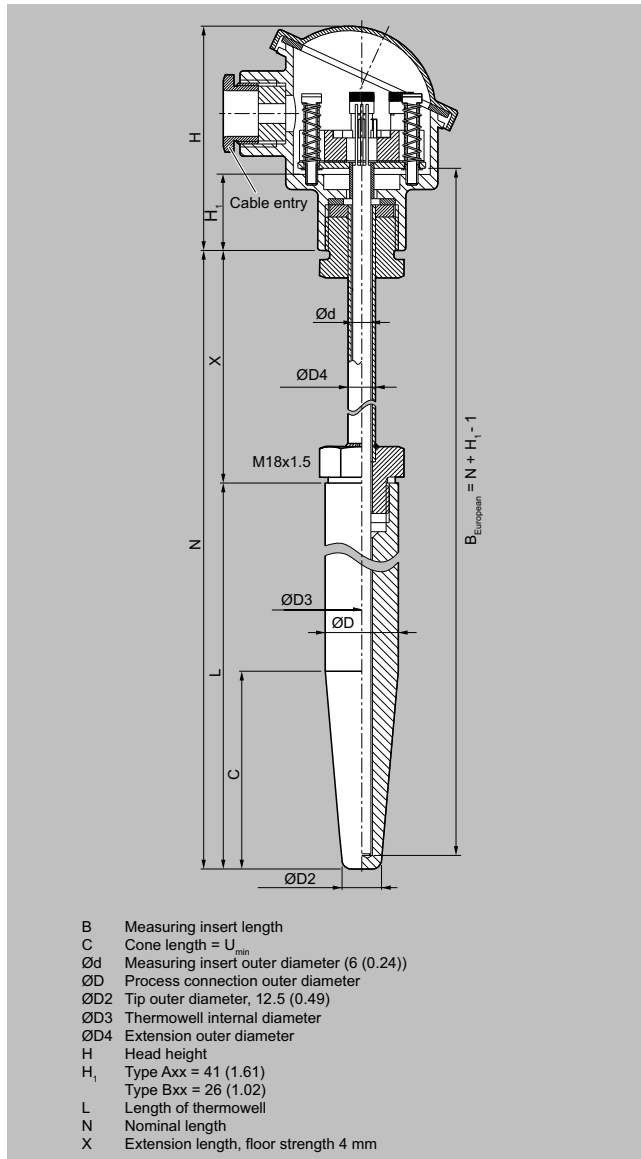
# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / Barstock thermowells / Type 4+4F

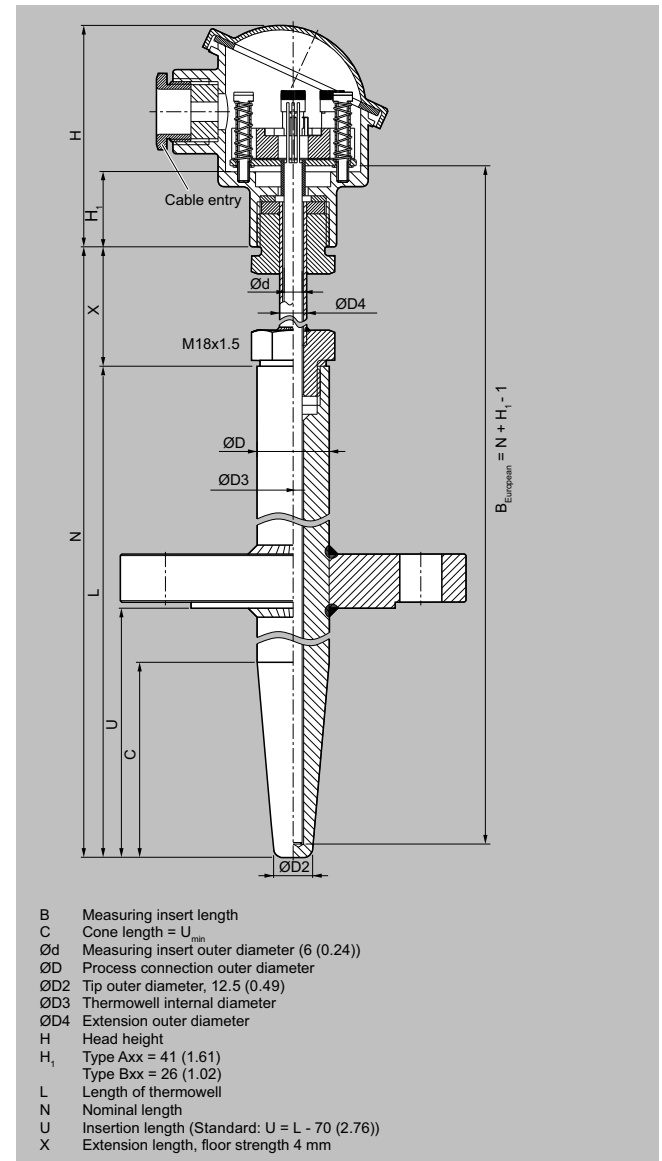
#### Dimensional drawings

SITRANS TS500, temperature sensors for vessels and pipes, barstock thermowell for medium to extreme stress, according to DIN 43772.



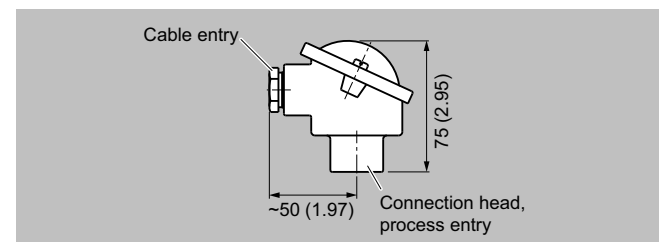
Thermowell type 4, for welding in, with extension, dimensions in mm (inch)

#### Dimensional drawings (continued)



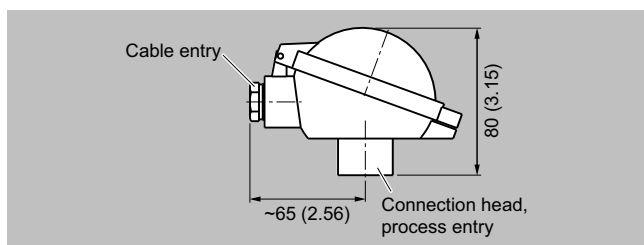
Thermowell type 4F, with flange, with extension, dimensions in mm (inch)

#### Connection heads

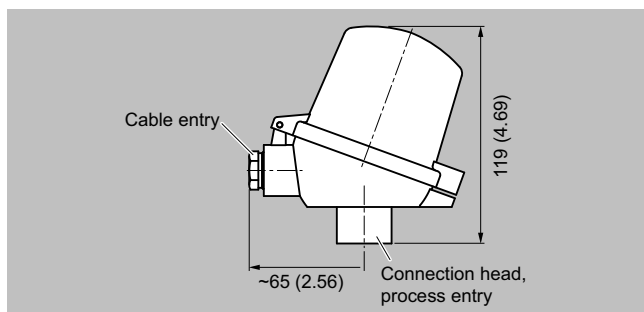


Connection head, aluminum, type BA0, dimensions in mm (inch)

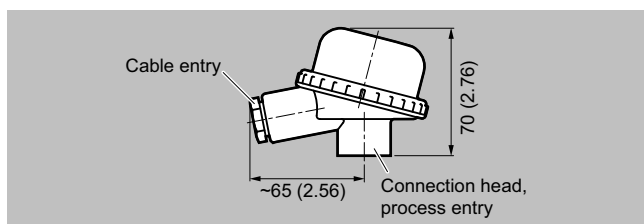
## Dimensional drawings (continued)



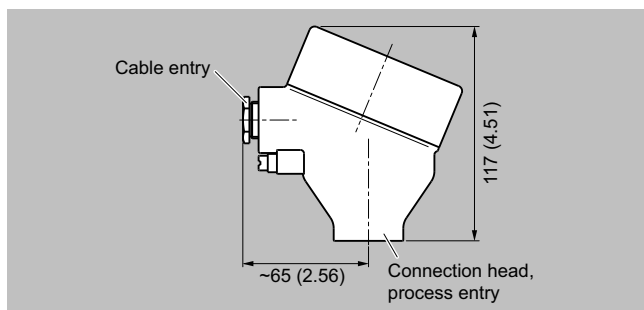
Connection head, aluminum, type BB0, dimensions in mm (inch)



Connection head, aluminum, type BC0, plastic, type BP0, dimensions in mm (inch)

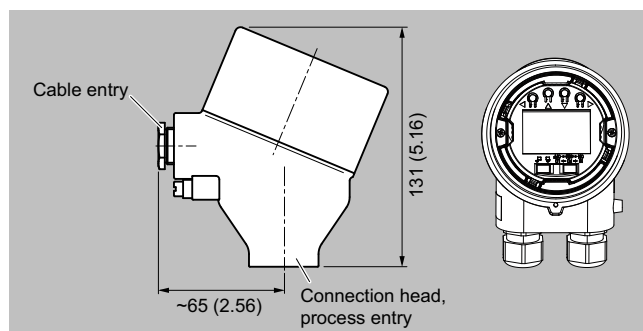


Connection head, plastic, type BM0, dimensions in mm (inch)



Connection head, aluminum, type AG0, stainless steel, type AU0, dimensions in mm (inch)

## Dimensional drawings (continued)



Connection head with 4-20 mA display, aluminum, type AH0, stainless steel, type AV0, dimensions in mm (inch)

# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / for installation in existing thermowells

#### Selection and ordering data

| SITRANS TS500  | Article No.<br>7MC7500- |   | Order code |         |  |
|--|-------------------------|---|------------|---------|--|
| Temperature sensors for installation in existing thermowells, suitable for thermowells in accordance with DIN 43772 and ASME B40.9-2001, with extension of European or American type | ● ● ● ● ●               | - | ● ● ● ● ●  | ● ● ● ● |  |
| Click the article number for online configuration in the PIA Life Cycle Portal.  |                         |   |            |         |  |
| <b>Design</b>  |                         |   |            |         |  |
| Existing thermowells   | 1                       |   |            |         |  |
| <b>Thread form:</b>  |                         |   |            |         |  |
| G½" (½"BSPP) (not for American type)   | C                       |   |            |         |  |
| NPT½"  | J                       |   |            |         |  |
| M14x1.5 (not for American type)  | T                       |   |            |         |  |
| M18x1.5 (not for American type)  | U                       |   |            |         |  |
| M20x1.5 (not for American type)  | V                       |   |            |         |  |
| Without thread   | N                       |   |            |         |  |
| Special design   | Z                       |   |            | J 1 Y   |  |
| <b>Installation length "U" unloaded, standard lengths</b>  |                         |   |            |         |  |
| 110 mm (4.33 inches)   | B                       | 1 |            |         |  |
| 140 mm (5.51 inches)   | B                       | 2 |            |         |  |
| 200 mm (7.87 inches)   | C                       | 1 |            |         |  |
| 260 mm (10.24 inches)  | C                       | 2 |            |         |  |
| 410 mm (16.14 inches)  | E                       | 1 |            |         |  |
| <b>Installation length "U" unloaded, customer-specific</b><br>Specify customer-specific length with Y44, see order codes   |                         |   |            |         |  |
| 30 ... 100 mm (1.18 ... 3.94 inches)<br>Initial: 100 mm (3.94 inches)  | A                       | 0 |            |         |  |
| 101 ... 200 mm (3.98 ... 7.87 inches)<br>Initial: 200 mm (7.87 inches)   | B                       | 0 |            |         |  |
| 201 ... 300 mm (7.91 ... 11.81 inches)<br>Initial: 300 mm (11.81 inches)   | C                       | 0 |            |         |  |
| 301 ... 400 mm (11.85 ... 15.75 inches)<br>Initial: 400 mm (15.75 inches)  | D                       | 0 |            |         |  |
| 401 ... 500 mm (15.79 ... 19.69 inches)<br>Initial: 500 mm (19.69 inches)  | E                       | 0 |            |         |  |
| 501 ... 600 mm (19.72 ... 23.62 inches)<br>Initial: 600 mm (23.62 inches)  | F                       | 0 |            |         |  |
| 601 ... 800 mm (23.66 ... 31.50 inches)<br>Initial: 800 mm (31.50 inches)  | G                       | 0 |            |         |  |
| 801 ... 1 000 mm (31.54 ... 39.37 inches)<br>Initial: 1 000 mm (39.37 inches)  | H                       | 0 |            |         |  |
| 1 001 ... 1 250 mm (39.41 ... 49.21 inches)<br>Initial: 1 250 mm (49.21 inches)  | J                       | 0 |            |         |  |
| 1 251 ... 1 500 mm (49.25 ... 59.05 inches)<br>Initial: 1 500 mm (59.05 inches)  | K                       | 0 |            |         |  |
| Special length < 30 mm (1.18 inches) or > 1 500 mm (59.00 inches)  | X                       | 0 |            |         |  |
| <b>Diameter measuring tip "d"</b>  |                         |   |            |         |  |
| 6 mm (0.24 inches)   |                         |   | 6          |         |  |
| 8 mm (0.31 inches) (with barrel = not exchangeable)  |                         |   | 8          |         |  |
| 10 mm (0.39 inches) (with barrel = not exchangeable)   |                         |   | 0          |         |  |
| <b>Extension X</b>   |                         |   |            |         |  |
| Without extension  |                         |   |            | 0       |  |
| European type  |                         |   |            |         |  |
| • X = 65 (M = 81 mm) (3.15 inches) adjustable  |                         |   |            | 1       |  |
| • X = 139 mm (5.47 inches) (M = 155 mm (6.10 inches)) adjustable (DIN standard length for L=110)   |                         |   |            | 2       |  |
| • X = 149 mm (5.87 inches) (M = 165 mm (6.50 inches)) adjustable   |                         |   |            | 3       |  |
| American type  |                         |   |            |         |  |
| • X = 74 mm (2.91 inches), integrated sensor suspension, NIP non-adjustable (NPT½"), Umin = 100 mm   |                         |   |            | 6       |  |
| • X = 150 mm (5.91 inches) integrated sensor suspension NUN adjustable (NPT½")   |                         |   |            | 8       |  |
| <b>Extension length "X" customer-specific</b><br>Specify customer-specific length with Y45, see page 2/98 order codes  |                         |   |            |         |  |
| 75 ... 150 mm (2.95 ... 5.91 inches)<br>Initial: 150 mm (5.91 inches)  |                         |   | 9          | N 1     |  |
| 151 ... 300 mm (5.95 ... 11.81 inches)<br>Initial: 300 mm (11.81 inches)   |                         |   | 9          | N 2     |  |
| 301 ... 450 mm (11.85 ... 17.72 inches)<br>Initial: 450 mm (17.72 inches)  |                         |   | 9          | N 3     |  |
| Special length < 45 mm (1.77 inches) or > 450 mm (17.7 inches)   |                         |   | 9          | N 8     |  |



## Selection and ordering data (continued)

| SITRANS TS500  | Article No.<br>7MC7500-     | Order code |
|--|-----------------------------|------------|
| Temperature sensors for installation in existing thermowells, suitable for thermowells in accordance with DIN 43772 and ASME B40.9-2001, with extension of European or American type | ● ● ● ● ● - ● ● ● ● ● ● ● ● |            |
| <b>Design</b>  |                             |            |
| European type (M24 adjustable)   |                             | D          |
| <b>Head</b>  |                             |            |
| Aluminum head, BA0, flange cap, standard   |                             | A          |
| Aluminum head, BB0, spring flap low, screw closure   |                             | B          |
| Aluminum head, BC0, spring flap high, screw closure  |                             | C          |
| Aluminum head, AG0, screw cover, Ex d suitable <sup>1)</sup>   |                             | G          |
| Aluminum head, AH0, screw cover, Ex d suitable, display <sup>1)</sup>  |                             | H          |
| Plastic head, BM0, screw cover   |                             | M          |
| Plastic head, BP0, spring flap high, screw closure   |                             | P          |
| Stainless steel head, AU0, screw cover, Ex d suitable <sup>1)</sup>  |                             | U          |
| Stainless steel head, AV0, screw cover, Ex d suitable, display <sup>1)</sup>   |                             | V          |
| <b>Sensor<sup>2)</sup></b>   |                             |            |
| Note: The accuracy class range can be lower than the measuring range. For more detailed information, see "Configuration"/"Measuring technology: Measuring accuracy"                  |                             |            |
| Pt100, basic version, -50 ... +400 °C (-58 ... +752 °F)  |                             | A          |
| Pt100, vibration-resistant, -50 ... +400 °C (-58 ... +752 °F)  |                             | B          |
| Pt100, extended measuring range, -196 ... +600 °C (-320.8 ... +1 112 °F)   |                             | C          |
| Type J thermocouple, -0 ... +750 °C (-18 ... +1 382 °F)  |                             | J          |
| Type K thermocouple, -270 ... +1 100 °C (-167 ... +2 012 °F)   |                             | K          |
| Type N thermocouple, -270 ... +1 100 °C (-167 ... +2 012 °F)   |                             | N          |
| <b>Number/precision of sensors</b>   |                             |            |
| Pt100 connection: 1 × 4-wire connection or 2 × 3-wire connection, see "Configuration"/"Measuring technology: Connection types"   |                             |            |
| Single, basic accuracy (Class 2/Class B)   |                             | 1          |
| Single, increased accuracy (Class 1/Class A)   |                             | 2          |
| Single, maximum accuracy (Class AA)  |                             | 3          |
| Double, basic accuracy (Class 2/Class B)   |                             | 5          |
| Double, increased accuracy (Class 1/Class A)   |                             | 6          |
| Double, maximum accuracy (Class AA)  |                             | 7          |

<sup>1)</sup> Ex d in connection with order option E03

<sup>2)</sup> Pt1000 versions are also available.

To find these, switch to Online Configuration in the PIA Life Cycle Portal: [www.siemens.com/pia-portal](http://www.siemens.com/pia-portal)

| Options  | Order code |
|--|------------|
| <b>Add "Z" to article number and specify order code</b>  |            |
| <b>Accessories</b>   |            |
| With external grounding screw for connection heads AG0, AH0, AU0 and AV0                             | A02        |
| With external grounding screw for connection heads BC0, AG0, AH0, AU0 and AV0                        | A03        |
| <b>Certificates and approvals</b>  |            |
| Transmitter test report (5 points)   | C11        |
| EN 10204-3.1 Factory certificate Visual, dimensional and function check                              | C34        |
| EN 10204-2.1: Declaration of compliance with the order   | C35        |
| EN 10204-3.1 Inspection certificate "Positive Materials Identification" (PMI)                        | On request |
| <b>Certificates for functional safety</b>  |            |
| SITRANS TH320/420 transmitter with SIL2/3 certificate  | C20        |
| <b>Marine approvals</b>  |            |
| Det Norske Veritas Germanischer Lloyd (DNV GL)   | D01        |
| <b>Type of protection (Ex)</b>   |            |
| Without explosion protection requirements (Europe, Australia, New Zealand)                           | E00        |
| Intrinsic safety "i"/"IS" <sup>1)</sup> according to ATEX and IECEx (Europe, Australia, New Zealand) | E01        |

# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / for installation in existing thermowells

#### Selection and ordering data (continued)

| Options   | Order code |
|---|------------|
| <b>Add "-Z" to article number and specify order code</b>  |            |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> ) according to ATEX and IECEx (Europe, Australia, New Zealand)                             | E03        |
| Non-sparking "ec" according to ATEX and IECEx (Europe, Australia, New Zealand)  | E04        |
| Without explosion protection requirements (USA, Canada) Basis FM  | E10        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> ) according to cFMus (USA); NPT connections at the enclosure are mandatory                 | E13        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> ) according to cFMus (USA, Canada); other connections (M,G,R)                              | E14        |
| Non-sparking "nA"/"NI" according to cFMus (USA, Canada)   | E16        |
| Without explosion protection requirements (USA, Canada), Basis CSA  | E17        |
| Intrinsic safety "i"/"IS <sup>1</sup> ) according to cCSAus (USA, Canada)   | E18        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> ) according to cCSAus (USA, Canada); NPT connections <b>on the enclosure</b> are mandatory | E20        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> ) according to CSAus (USA); other connections (M, G, R)                                    | E21        |
| Non-sparking "nA"/"NI" according to cCSAus (USA, Canada)  | E23        |
| Without explosion protection requirements (China)   | E54        |
| Intrinsic safety "i"/"IS <sup>1</sup> ) according to NEPSI (China)  | E55        |
| Flameproof enclosure "d"; dust protection through enclosure "t <sup>2</sup> ) according to NEPSI (China)  | E56        |
| Non-sparking "nA"/"NI" according to NEPSI (China)   | E57        |
| Without explosion protection requirements (EAC)   | E80        |
| Intrinsic safety "i"/"IS <sup>1</sup> ) according to EACEx (EAC)  | E81        |
| Flameproof enclosure "d"/"XP"; dust protection through enclosure "t"/"DIP <sup>2</sup> ) according to EACEx (EAC)   | E82        |
| Non-sparking "nA"/"NI" according to EACEx (EAC)   | E83        |
| <b>Special design</b>   |            |
| Flying lead connection type (for direct transmitter mounting, delivery without screws or springs)   | G01        |
| Full penetration process connection for 316L/316TI  | G02        |
| <b>Cable input for connection head</b>  |            |
| M12 device plug (in combination with transmitter, non-Ex and intrinsically safe, max. IP65/67)  | G12        |
| Han 7 D device plug (non-Ex and intrinsically safe, without mating connector max. IP65/67)  | G13        |
| Connection head with 1/2"-NPT thread without cable gland, for AU0 and AHO only IP66   | G20        |
| SafeGuard 2 × Pt100 4-wire  | G30        |
| <b>Input of the connection head</b>   |            |
| Input of the connection head: M24×1.5, with sealing screw, Umin = 50 mm   | G50        |
| Input of the connection head: NPT 1/2", with sealing screw, Umin = 50 mm  | G51        |
| Input of the connection head: M24×1.5, open, Umin = 50 mm   | G52        |
| Input of the connection head: NPT 1/2", open, Umin = 50 mm  | G53        |
| <b>Built-in head transmitter</b>  |            |
| Measuring range to be set must be specified with plain text data "Y01".   |            |
| SITRANS TH100, input 1 × Pt100, 4 ... 20 mA   | T12        |
| SITRANS TH320, input 1 × universal, 4 ... 20 mA   | T24        |
| SITRANS TH320, input 1 × universal, HART  | T34        |
| SITRANS TH420, input 2 × universal, HART  | T35        |

## Selection and ordering data (continued)

| Options  | Order code |
|--|------------|
| <b>Add "-Z" to article number and specify order code</b>   |            |
| <b>Device settings (including head transmitter options)</b>  |            |
| Tag plate made of stainless steel, specify label in plain text   | Y15        |
| Factory calibration per 1 point, specify temperature in plain text   | Y33        |
| Specify measuring range in plain text (Y01: +/-NNNN ... +/-NNNN C,F), marking on the device when option "Y15" is selected in addition    | Y01        |
| Specify measuring point description in plain text (max. 16 characters)   | Y23        |
| Specify measuring point message in plain text (max. 32 characters)   | Y24        |
| Specify bus address in plain text  | Y25        |
| Installation length U customer-specific<br>Select range, plain text specification of desired length (no specification = standard length) | Y44        |
| Extension length X customer-specific<br>Select range, plain text specification of desired length (no specification = standard length)    | Y45        |
| <b>Customer-specific plain text</b>  |            |
| Handling number of the special design  | Y99        |

<sup>1)</sup> Select Ex i version of the optional transmitter.

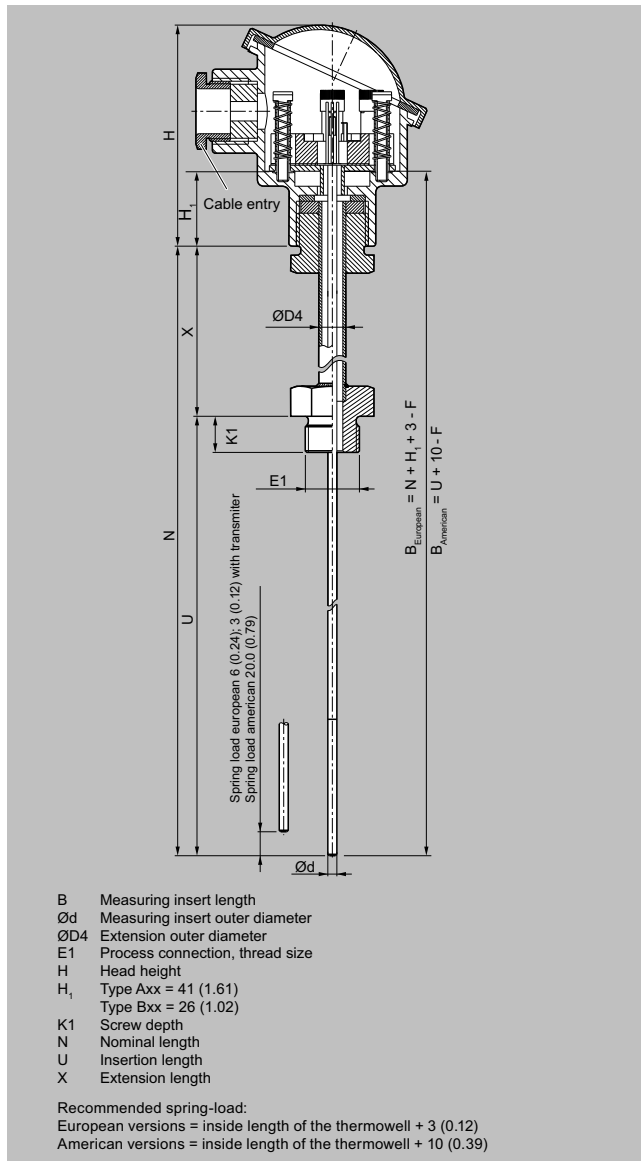
<sup>2)</sup> Only with connection heads code AG0, AH0, AU0, AV0, without cable gland (select non-Ex version of the optional transmitter).

# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / for installation in existing thermowells

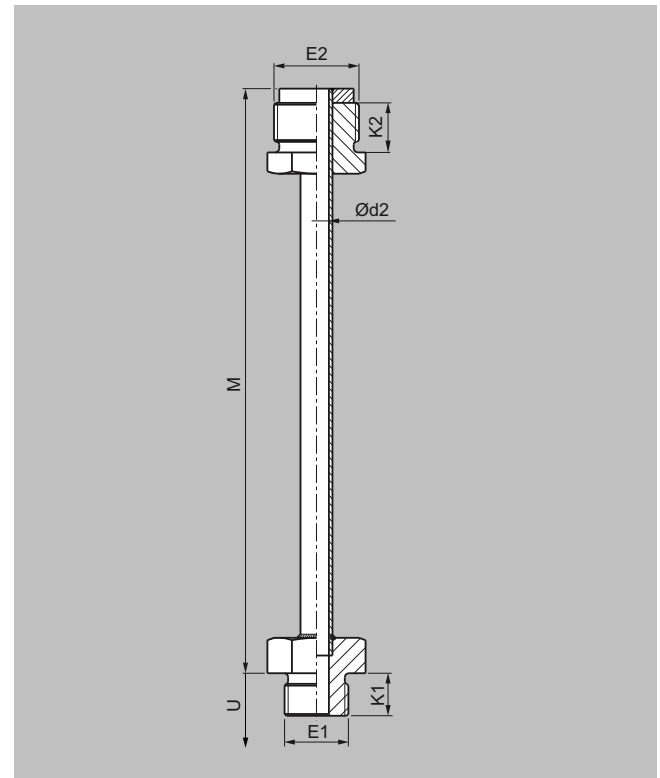
#### Dimensional drawings



SITRANS TS500, temperature sensors for vessels and pipes. Temperature sensors for installation in existing thermowells, suitable for thermowells in accordance with DIN 43772 and ASME B40.9-2001, with extension of European or American type, dimensions in mm (inch)

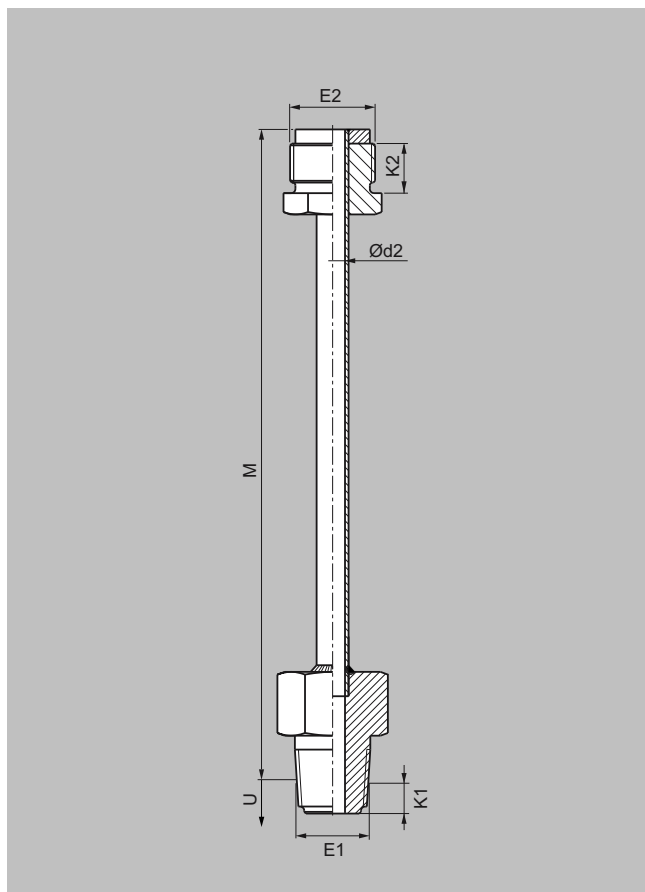
#### Dimensional drawings (continued)

##### Extensions



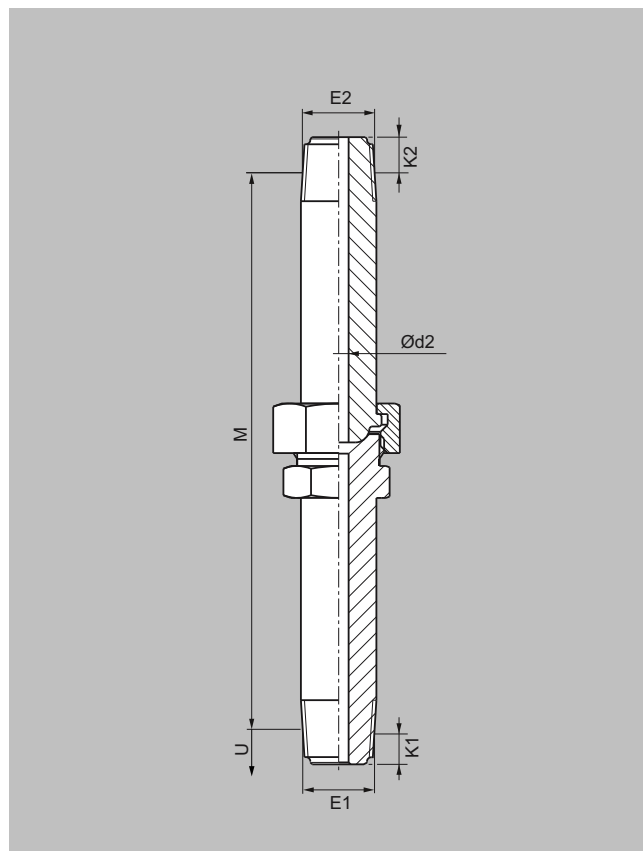
Extension (1, 2, 3)<sup>1)</sup>, adjustable, European, cylindrical

Dimensional drawings (continued)



Extension (1, 2, 3)<sup>1)</sup>, adjustable, European, tapered

Dimensional drawings (continued)



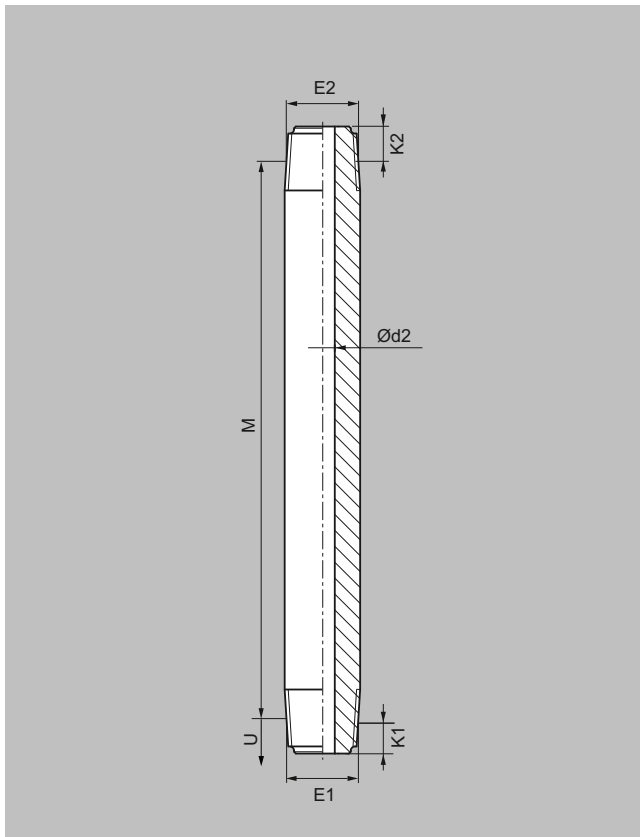
Extension NUN, adjustable, tapered, American (8)<sup>1)</sup>

# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / for installation in existing thermowells

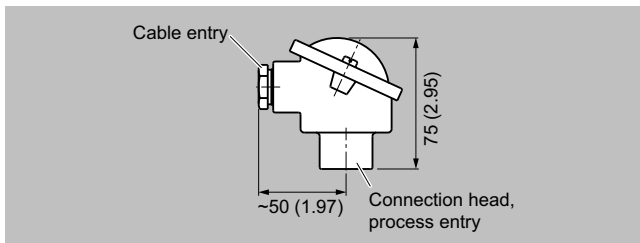
#### Dimensional drawings (continued)



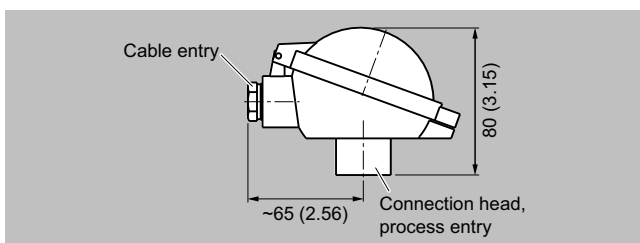
Extension NIP, non-adjustable, tapered, American (6)<sup>1)</sup>

<sup>1)</sup> Numbers 1 ... 8: See selection and ordering data "Extension" option

#### Connection heads

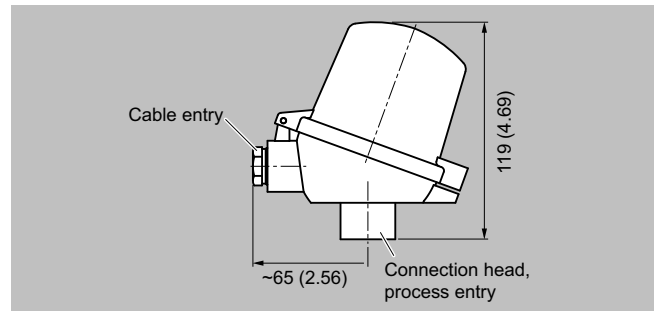


Connection head, aluminum, type BA0, dimensions in mm (inch)

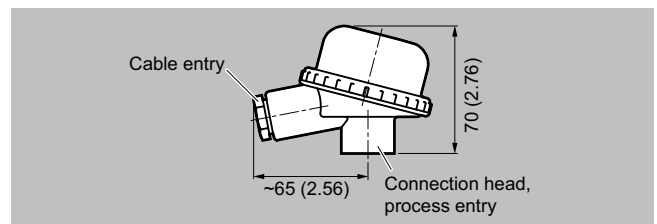


Connection head, aluminum, type BB0, dimensions in mm (inch)

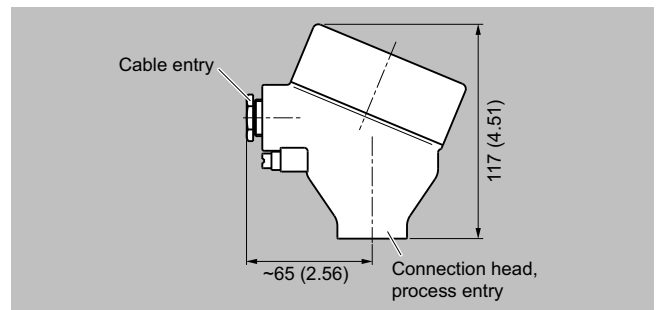
#### Dimensional drawings (continued)



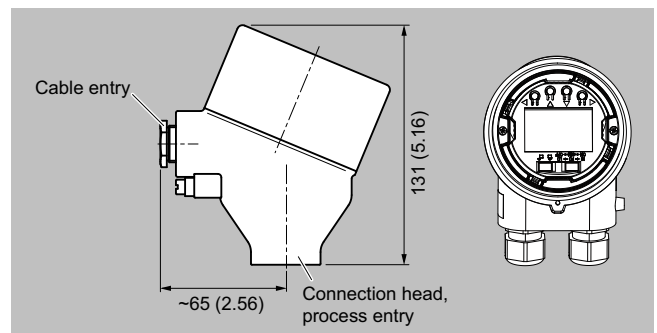
Connection head, aluminum, type BC0, plastic, type BPO, dimensions in mm (inch)



Connection head, plastic, type BM0, dimensions in mm (inch)



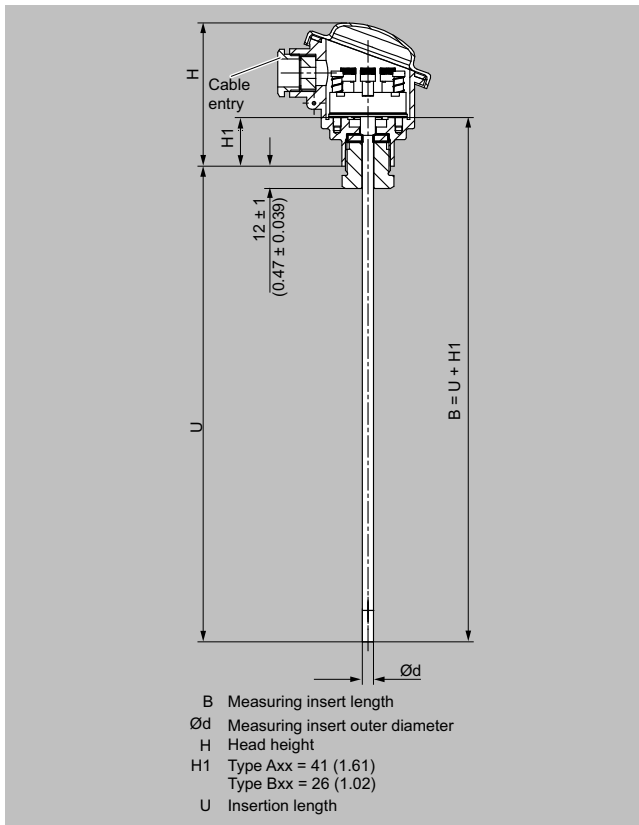
Connection head, aluminum, type AG0, stainless steel, type AU0, dimensions in mm (inch)



Connection head with 4-20 mA display, aluminum, type AH0, stainless steel, type AV0, dimensions in mm (inch)

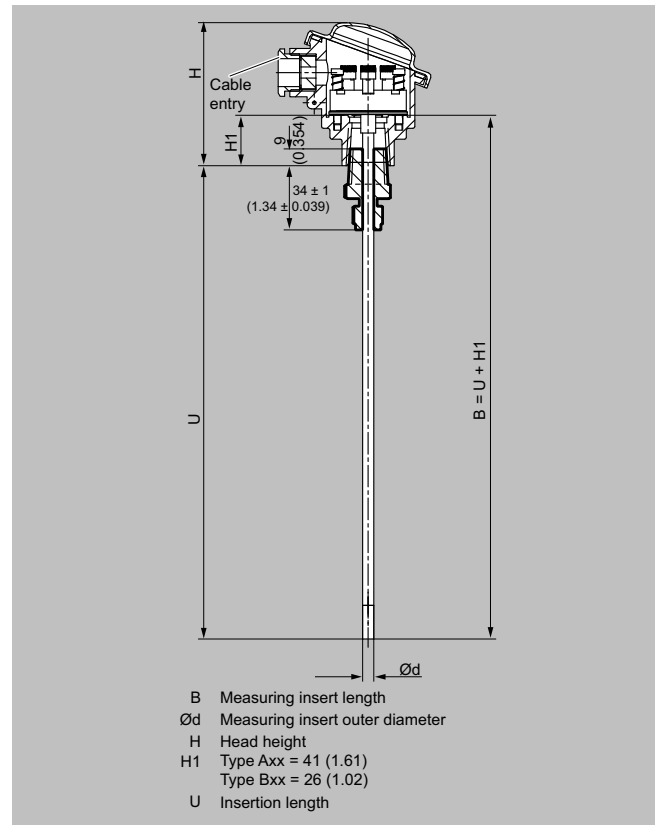
## Dimensional drawings (continued)

Option G50: M24×1.5, with gasket



## Dimensional drawings (continued)

Option G51: ½" NPT, with seal



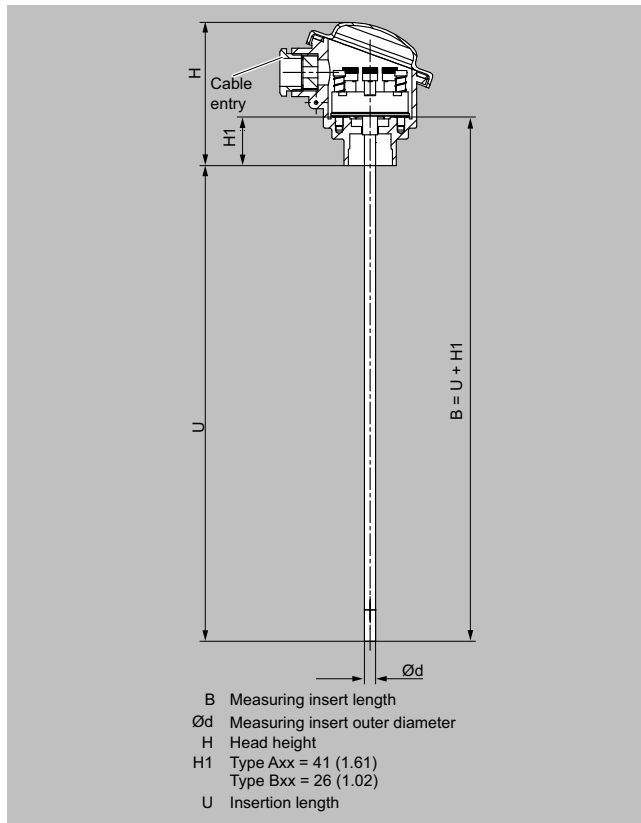
# Temperature Measurement

## Temperature sensors

### SITRANS TS500 / for installation in existing thermowells

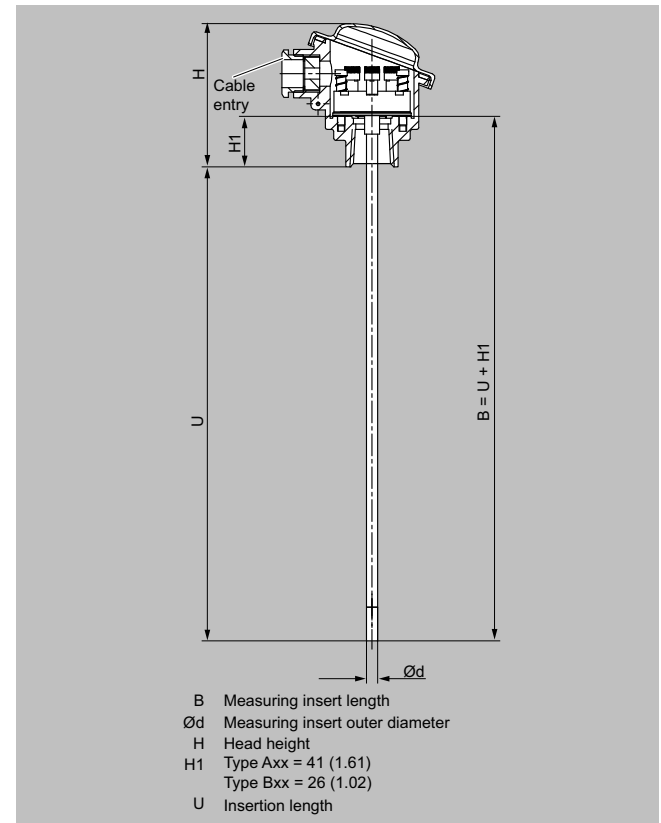
#### Dimensional drawings (continued)

Option G52: M24×1.5, open



#### Dimensional drawings (continued)

Option G53: ½" NPT, open



Input of the connection head:  $U_{min} = 50 \text{ mm}$  (1.97 inches), dimensions in mm (inch)