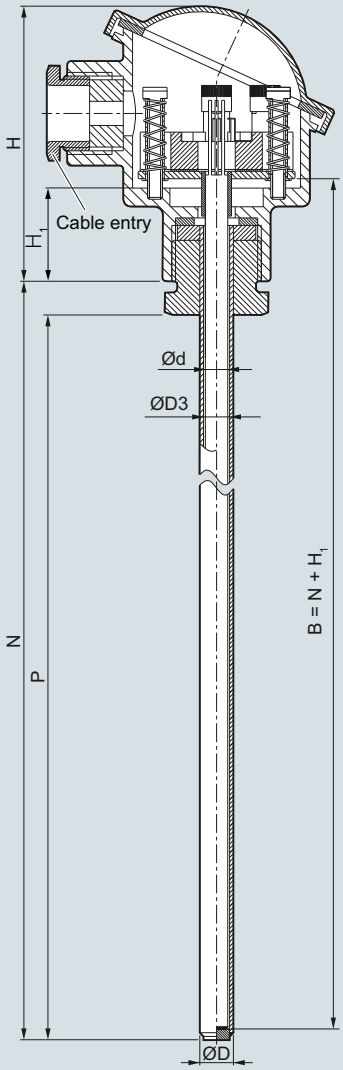
## Type 2, tubular version without process connection



### 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 |
| $H_1$ | Type Axx = 41 (1.61)<br>Type Bxx = 26 (1.02) |
| N | Nominal length |
| P | Space for process connection P ~ N - 9 (0.35) |

SITRANS TS500, temperature sensors for vessels and pipings, tubular version for minimal to medium stress, without process connection, without extension, plug-in or use with moveable compression fittings, dimensions in mm (inch)

| Selection and Ordering data | Article No. |
|---|---|
| **SITRANS TS500** ↗ | **7MC751-** - |
| **Pipe version for minimal to medium stress, as per thermowell DIN 43722, Type 2, without process connection, without extension, plug-in or use with moveable compression fittings** | |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | |
| **Material, in contact with media** | |
| 316Ti (1.4571) | 1 |
| 316L (1.4404 or 1.4435) | 2 |
| **Process connection** | |
| Without process connection (for compression fitting) N=U | 0 N |
| **Thermowell form** | |
| 2; 9 mm (0.35 inch) | A |
| 2; 12 mm (0.47 inch) | B |
| **Insertion length U (=N), Standard** | |
| 160 mm (6.3 inch) | 0 4 |
| 250 mm (9.84 inch) | 1 2 |
| 400 mm (15.75 inch) | 2 2 |
| **Insertion length U (=N), customer-specific** | |
| enter customer specific length with Y44, see Order codes on page 2/59 | |
| 80 ... 100 mm (3.15 ... 3.94 inch)<br>Initial: 100 mm (3.94 inch) | 0 1 |
| 101 ... 120 mm (3.98 ... 4.72 inch)<br>Initial: 120 mm (4.72 inch) | 0 2 |
| 121 ... 140 mm (4.76 ... 5.51 inch)<br>Initial: 140 mm (5.51 inch) | 0 3 |
| 141 ... 160 mm (5.55 ... 6.30 inch)<br>Initial: 160 mm (6.3 inch) | 0 4 |
| 161 ... 180 mm (6.34 ... 7.09 inch)<br>Initial: 180 mm (7.09 inch) | 0 5 |
| 181 ... 200 mm (7.13 ... 7.87 inch)<br>Initial: 200 mm (7.87 inch) | 0 6 |
| 201 ... 220 mm (7.91 ... 8.66 inch)<br>Initial: 220 mm (8.66 inch) | 0 7 |
| 221 ... 240 mm (8.7 ... 9.45 inch)<br>Initial: 225 mm (8.86 inch) | 1 1 |
| 241 ... 260 mm (9.48 ... 10.24 inch)<br>Initial: 250 mm (9.84 inch) | 1 2 |
| 261 ... 280 mm (10.28 ... 11.02 inch)<br>Initial: 280 mm (11.02 inch) | 1 3 |
| 281 ... 300 mm (11.02 ... 11.81 inch)<br>Initial: 285 mm (11.22 inch) | 1 4 |
| 301 ... 320 mm (11.85 ... 12.6 inch)<br>Initial: 315 mm (12.4 inch) | 1 5 |
| 321 ... 340 mm (12.64 ... 13.39 inch)<br>Initial: 340 mm (13.39 inch) | 1 6 |
| 341 ... 360 mm (13.43 ... 14.17 inch)<br>Initial: 360 mm (14.17 inch) | 2 0 |
| 361 ... 380 mm (14.21 ... 14.96 inch)<br>Initial: 380 mm (14.96 inch) | 2 1 |
| 381 ... 400 mm (15 ... 15.75 inch)<br>Initial: 400 mm (15.75 inch) | 2 2 |
| 401 ... 420 mm (15.79 ... 16.54 inch)<br>Initial: 420 mm (16.54 inch) | 2 3 |
| 421 ... 440 mm (16.57 ... 17.32 inch)<br>Initial: 440 mm (17.32 inch) | 2 4 |
| 441 ... 460 mm (17.36 ... 18.11 inch)<br>Initial: 460 mm (18.11 inch) | 2 5 |
| 461 ... 480 mm (18.15 ... 18.90 inch)<br>Initial: 465 mm (18.30 inch) | 2 6 |
| 481 ... 500 mm (18.94 ... 19.68 inch)<br>Initial: 500 mm (19.68 inch) | 2 7 |
| 501 ... 550 mm (19.72 ... 21.65 inch)<br>Initial: 510 mm (20.08 inch) | 3 1 |
| 551 ... 600 mm (21.69 ... 23.62 inch)<br>Initial: 600 mm (23.62 inch) | 3 2 |
| 601 ... 650 mm (23.66 ... 25.59 inch)<br>Initial: 650 mm (25.59 inch) | 3 3 |

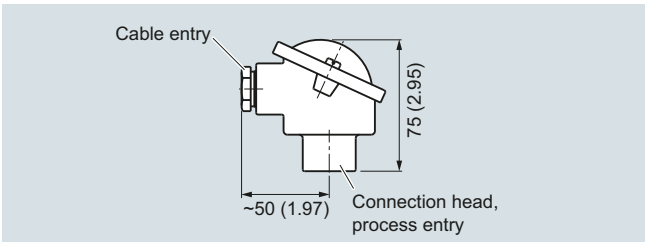
| Selection and Ordering data | Article No. |
|---|---|
| **SITRANS TS500** | **7MC751-** - |
| **Pipe version for minimal to medium stress, as per thermowell DIN 43722, Type 2, without process connection, without extension, plug-in or use with moveable compression fittings** | |
| 651 ... 700 mm (25.63 ... 27.56 inch)<br>Initial: 700 mm (27.56 inch) | 3 4 |
| 701 ... 750 mm (27.6 ... 29.53 inch)<br>Initial: 750 mm (29.53 inch) | 3 5 |
| 751 ... 800 mm (29.57 ... 31.50 inch)<br>Initial: 800 mm (31.50 inch) | 3 6 |
| 801 ... 850 mm (31.5 ... 33.47 inch)<br>Initial: 850 mm (33.47 inch) | 3 7 |
| 851 ... 900 mm (33.5 ... 35.43 inch)<br>Initial: 900 mm (35.43 inch) | 4 1 |
| 901 ... 950 mm (35.47 ... 37.4 inch)<br>Initial: 950 mm (37.4 inch) | 4 2 |
| 951 ... 1 000 mm (37.44 ... 39.37 inch)<br>Initial: 1 000 mm (39.37 inch) | 4 3 |
| 1001 ... 1 100 mm (39.4 ... 43.30 inch)<br>Initial: 1 100 mm (43.30 inch) | 4 4 |
| 1 101 ... 1 200 mm (43.35 ... 47.24 inch)<br>Initial: 1 200 mm (47.24 inch) | 4 5 |
| 1 201 ... 1 300 mm (47.28 ... 51.18 inch)<br>Initial: 1 300 mm (51.18 inch) | 4 6 |
| 1 301 ... 1 400 mm (51.22 ... 55.11 inch)<br>Initial: 1400 mm (55.11 inch) | 4 7 |
| 1 401 ... 1 500 mm (55.15 ... 59.05 inch)<br>Initial: 1 500 mm (59.05 inch) | 5 1 |
| **Extension X** | |
| Standard length for Type 2 as per DIN 43722 (without extension N=U) | 0 |

**Additional configurations on page after next page!**

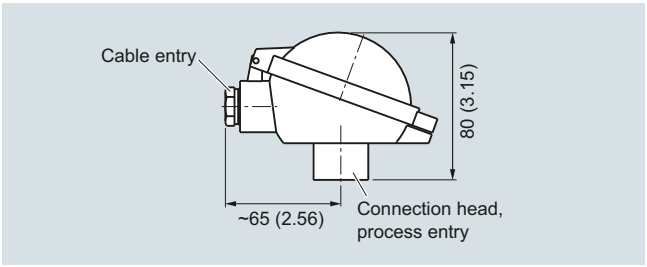
**You find ordering examples on page 2/41!**

## Type 2, tubular version without process connection

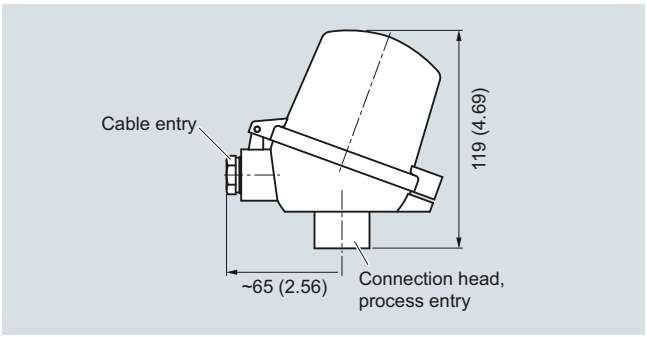




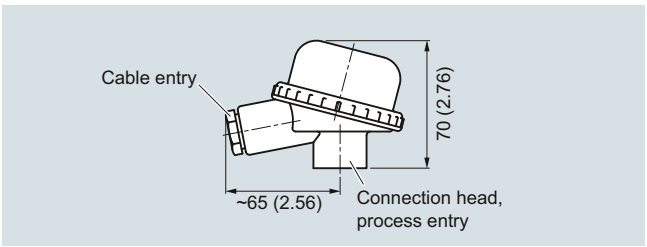

Connection head, aluminum, Type BA0, dimensions in mm (inch)



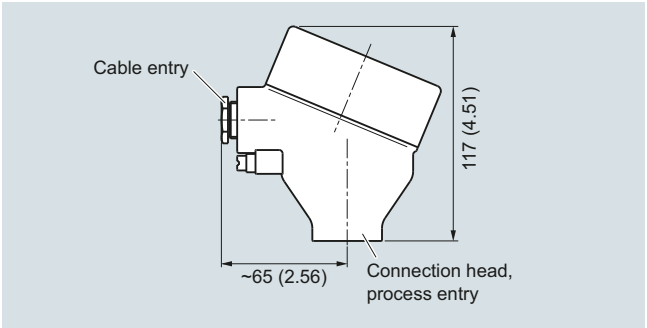

Connection head, aluminum, Type BB0, dimensions in mm (inch)



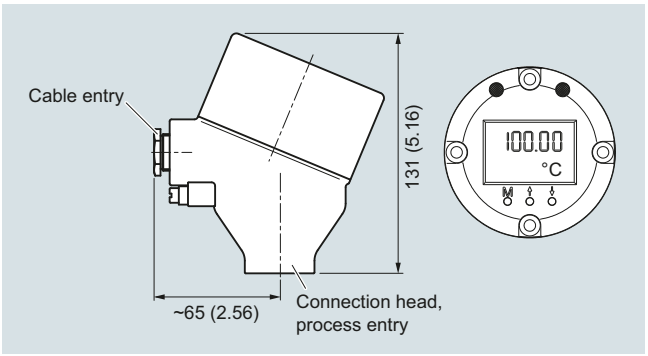

Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)




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




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 — Article No.

**SITRANS TS500**
**Tubular version for minimal to medium stress, as per thermowell DIN 43722, Type 2, without process connection, without extension, plug-in or use with moveable compression fittings**

**7MC751-** ■ - ■■■■■■ - ■■■

| | |
|---|---|
| **Head** | |
| Aluminum head, BA0, flange cover, Standard | A |
| Aluminum head, BB0, low hinged cover, screw connection | B |
| Aluminum head, BC0, high hinged cover, screw connection | C |
| Aluminum head, AG0, screw cover, suitable for suitable for Ex d[1)] | G |
| Aluminum head, AH0, screw cover, suitable for Ex d, display[1)] | H |
| Plastic head, BM0, screw cover | M |
| Plastic head, BP0, high hinged cover, screw connection | P |
| Stainless steel head, AU0, screw cover, suitable for Ex d[1)] | U |
| Stainless steel head, AV0, screw cover, suitable for Ex d, display[1)] | V |
| **Sensor[2)]** | |
| Please note: The accuracy class range can be lower than the measuring range. For more information, see page 2/18 | |
| Pt100, basis, -50 ... +400 °C (-58 ... +752 °F) | A |
| Pt100, vibration-resistant, -50 ... +400 °C (-58 ... +752 °F) | B |
| Pt100, expanded range, -196 ... +600 °C (-321 ... +1 112 °F) | C |
| Thermocouple Type K, -40 ... +1 000 °C (-40 ... +1 832 °F) | K |
| Thermocouple Type J, -40 ... +750 °C (-40 ... +1 382 °F) | J |
| Thermocouple Type N, -40 ... +1 000 °C (-40 ... +1 832 °F) | N |
| **Sensor number/Accuracy** | |
| Circuit Pt 100: 1 x 4-wire circuit or 2 x 3-wire circuit, see "Measuring technique: Connection types", page 2/20 | |
| Single, basic accuracy (Class 2/Class B) | 1 |
| Single, increased accuracy (Class 1/Class A) | 2 |
| Single, highest accuracy (Class AA) | 3 |
| Double, basic accuracy (Class 2/Class B) | 5 |
| Double, increased accuracy (Class 1/Class A) | 6 |
| Double, highest accuracy (Class AA) | 7 |

1) Ex d in connection with Order code E03

2) Pt1000 versions are also available. To find these, please switch to Online Configuration in the PIA Life Cycle Portal: www.siemens.com/pia-portal

## Selection and Ordering data — Order code

*Further designs*

Add "**-Z**" to Article No. and specify Order code.

| | |
|---|---|
| **Insertion length customer-specific** Select range, enter desired length in plain text (No entry = standard length) | **Y44** |

## Selection and Ordering data — Order code

*Options*

Add "**-Z**" to Article No. and add options, separate extensions with "+".

| | |
|---|---|
| **Built-in head transmitter** Measuring range to be set must be specified with plain text data "Y01". | |
| SITRANS TH100, 4 ... 20 mA, Pt100 | **T10** |
| SITRANS TH100 Ex i (ATEX), 4 ... 20 mA, Pt100 | **T11** |
| SITRANS TH200, 4 ... 20 mA, Universal | **T20** |
| SITRANS TH200 Ex i (ATEX), 4 ... 20 mA, Universal | **T21** |
| SITRANS TH300, HART, Universal | **T30** |
| SITRANS TH300 Ex i (ATEX), HART, Universal | **T31** |
| SITRANS TH400 PA, Universal | **T40** |
| SITRANS TH400 PA Ex i, Universal | **T41** |
| SITRANS TH400 FF, Universal | **T45** |
| SITRANS TH400 FF Ex i, Universal | **T46** |
| **Explosion protection** | |
| Without explosion protection requirements (Europe, Australia, New Zealand) | **E00** |
| Intrinsic safety "i"/"IS[1)] according to ATEX and IECEx (Europe, Australia, New Zealand) | **E01** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2)] according to ATEX and IECEx (Europe, Australia, New Zealand) | **E03** |
| Non-sparking "nA"/"NI" 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 housing "t"/"DIP"[2)] 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"[1)] according to cCSAus (USA, Canada) | **E18** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2)] according to cCSAus (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"[1)] according to NEPSI (China) | **E55** |
| Flameproof enclosure "d"; dust protection through housing "t"[2)] according to NEPSI (China) | **E56** |
| Non-sparking "nA"/"NI" according to NEPSI (China) | **E57** |
| Without explosion protection requirements (EAC) | **E80** |
| Intrinsic safety "i"/"IS"[1)] according to EACEx (EAC) | **E81** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2)] according to EACEx (EAC) | **E82** |
| Non-sparking "nA"/"NI" according to EACEx (EAC) | **E83** |
| **Marine approvals** | |
| Det Norske Veritas Germanischer Lloyd (DNV GL) | **D01** |
| Bureau Veritas (BV) | **D02** |
| Lloyd's Register of Shipping (LR) | **D04** |
| American Bureau of Shipping (ABS) | **D05** |
| **Certificates and approvals** | |
| EN 10204-3.1 Inspection certificate for materials coming into contact with media | **C12** |
| EN 10204-3.1 Inspection certificate for hydrostatic pressure test | **C31** |
| EN 10204-3.1 Inspection certificate for helium leak test | **C32** |
| EN 10204-3.1 Inspection certificate for surface tear test | **C33** |
| EN 10204-3.1Inspection certificate: visual, measurement and functional inspection | **C34** |
| EN 10204-2.1: Declaration of compliance with the order | **C35** |
| ISO 9001 grease-free (cleaned for e.g. oxygen applications) | **C51** |

## Type 2, tubular version without process connection



| Selection and Ordering data | Order code |
|---|---|
| **Designation, calibration** | |
| Stainless steel TAG plate , enter lettering in plain text | **Y15** |
| Plant calibration per 1 point, enter temperature in plain text | **Y33** |
| **Transmitter options** | |
| Transmitter, enter complete setting in plain text (Y01:+/-NNNN ... +/-NNNN C,F), marking on the device when Order code "Y15" is selected | **Y01** |
| Enter measuring point (max. 8 characters) in plain text | **Y17** |
| Transmitter, enter measuring point description (max. 16 characters) in plain text | **Y23** |
| Transmitter, enter measuring point text (max. 32 characters) in plain text | **Y24** |
| Transmitter, enter bus address in plain text | **Y25** |
| Transmitter, fail-safe value 3.6 mA (instead of 22.8 mA) | **U36** |
| Transmitter with a SIL 2 conformity | **C20** |
| Transmitter with a SIL 2/3 conformity | **C23** |
| Transmitter test protocol (5 points) | **C11** |
| ***Further options*** | |
| Connection form, flying leads (for the direct transmitter assembly, delivery without screws and springs) | **G01** |
| M12 device plug (in combination with 1x Pt100 and/or transmitter, Non-Ex and intrinsically safe, max. IP65/67) | **G12** |
| Han 7D 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** |
| with outer earth screw for heads AG0, AH0, AU0 and AV0 | **A02** |
| with inner earth screw for heads BC0, AG0, AH0, AU0 and AV0 | **A03** |
| Compression fitting G½", enclosed | **A31** |
| Compression fitting NPT½", enclosed | **A32** |
| **Option not found?** | |
| Handling number special version | **Y99** |

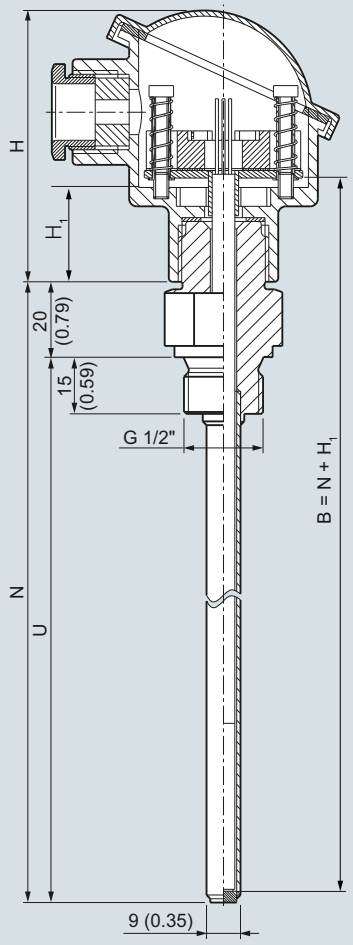
[1] Please select Ex i version of the optional transmitter.

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

**You find ordering examples on page 2/41.**
**Accessories, see page 2/238.**

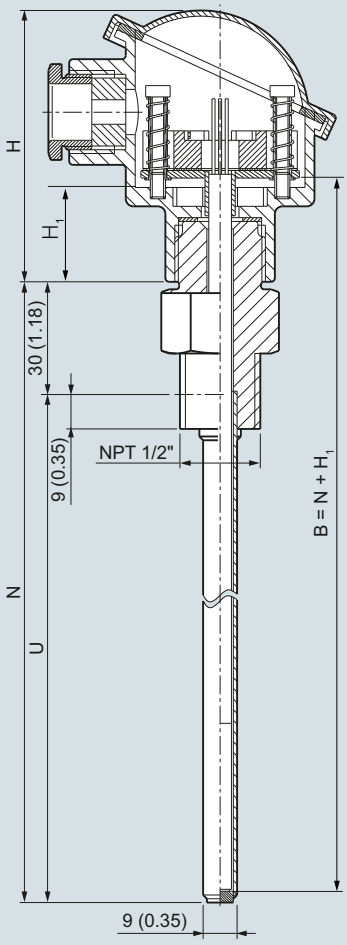
## Dimensional drawings

SITRANS TS500, temperature sensors for vessels and pipelines, tubular version for minimal to medium stress, thermowell Type 2N similar to DIN 43722, screwed in, without extension, non-alignable connection head.
For Ex-versions the maximum process temperature is 100 °C.




H Head height
N Nominal length
U Insertion length
$H_1$ Type Axx = 41 (1.61)
Type Bxx = 26 (1.02)

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




H Head height
N Nominal length
U Insertion length

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

## Type 2N, tubular version, with screw socket

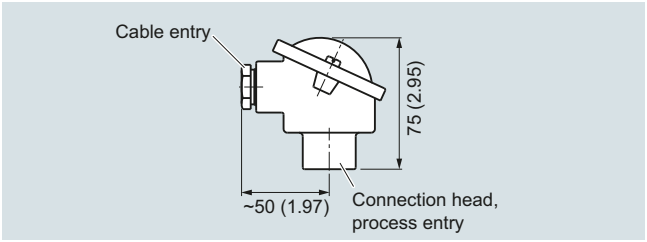


| Selection and Ordering data | Article No. |
|---|---|
| **SITRANS TS500** ↗ | **7MC751-** |
| **Tubular thermowell, minimal to medium stress, Type 2N similar to DIN 43722, screwed in, without extension** | - |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | |
| **Material, in contact with media** | |
| 316Ti (1.4571) | 1 |
| 316L (1.4404 or 1.4435) | 2 |
| **Process connection** | |
| G ½" (½"BSPP) | 1 C |
| ½" NPT | 1 J |
| **Thermowell form** | |
| 2N, 9 mm (0.35 inch) | A |
| **Standard insertion length** | |
| 100 mm (3.97 inch) | 0 1 |
| 160 mm (6.30 inch) | 0 4 |
| 230 mm (9.06 inch) | 1 0 |
| 360 mm (14.17 inch) | 2 0 |
| 510 mm (20.08 inch) | 3 1 |
| **Customer-specific insertion length** | |
| enter customer specific length with Y44, see page 2/64 Order codes | |
| 80 ... 100 mm (3.15 ... 3.94 inch) Initial: 100 mm (3.94 inch) | 0 1 |
| 101 ... 120 mm (3.98 ... 4.72 inch) Initial: 120 mm (4.72 inch) | 0 2 |
| 121 ... 140 mm (4.76 ... 5.51 inch) Initial: 140 mm (5.51 inch) | 0 3 |
| 141 ... 160 mm (5.55 ... 6.30 inch) Initial: 160 mm (6.30 inch) | 0 4 |
| 161 ... 180 mm (6.34 ... 7.09 inch) Initial: 180 mm (7.09 inch) | 0 5 |
| 181 ... 200 mm (7.13 ... 7.87 inch) Initial: 200 mm (7.87 inch) | 0 6 |
| 201 ... 220 mm (7.91 ... 8.66 inch) Initial: 220 mm (8.66 inch) | 0 7 |
| 221…240 mm (8.70 ... 9.45 inch) Initial: 230 mm (9.06 inch) | 1 0 |
| 241…260 mm (9.49 ... 10.24 inch) Initial: 250 mm (9.84 inch) | 1 2 |
| 261…280 mm (10.28 ...11.02 inch) Initial: 280 mm (11.02 inch) | 1 3 |
| 281…300 mm (11.06 ... 11.81 inch) Initial: 285 mm 11.22 inch) | 1 4 |
| 301…320 mm (11.85 ... 13.00 inch) Initial: 315 mm (12.40 inch) | 1 5 |
| 321…340 mm (12.64 ... 13.39 inch) Initial: 340 mm (13.39 inch) | 1 6 |
| 341…360 mm (13.43 ... 14.17 inch) Initial: 360 mm (14.17 inch) | 2 0 |
| 361…380 mm (14.21 ... 14.96 inch) Initial: 380 mm (14.96 inch) | 2 1 |
| 381…400 mm (14.99 ... 15.75 inch) Initial: 400 mm (15.75 inch) | 2 2 |
| 401…420 mm (15.79 ... 16.54 inch) Initial: 420 mm (16.54 inch) | 2 3 |
| 421…440 mm (16.57 ... 17.32 inch) Initial: 440 mm (17.32 inch) | 2 4 |
| 441…460 mm (17.36 ... 18.11 inch) Initial: 460 mm (18.11 inch) | 2 5 |
| 461…480 mm (18.15 ... 18.90 inch) Initial: 465 mm (18.30 inch) | 2 6 |
| 481…500 mm (18.94 ... 19.69 inch) Initial: 500 mm (19.69 inch) | 2 7 |

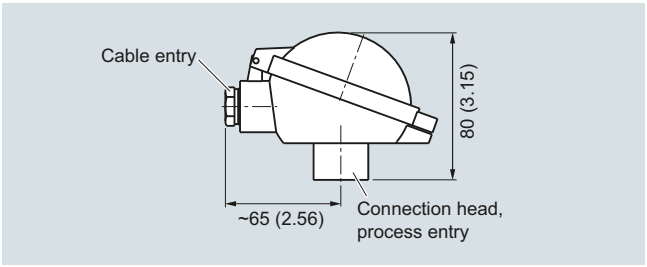
| Selection and Ordering data | Article No. |
|---|---|
| **SITRANS TS500** | **7MC751-** |
| **Tubular thermowell, minimal to medium stress, Type 2N similar to DIN 43722, screwed in, without extension** | - |
| 501…550 mm (19.72 ... 21.65 inch) Initial: 510 mm (20.08 inch) | 3 1 |
| 551…600 mm (21.69 ... 23.62 inch) Initial: 600 mm (23.62 inch) | 3 2 |
| 601…650 mm (23.66 ... 25.59 inch) Initial: 650 mm (25.59 inch) | 3 3 |
| 651…700 mm (25.63 ... 27.56 inch) Initial: 700 mm (27.56 inch) | 3 4 |
| 701…750 mm (27.60 ... 29.53 inch) Initial: 750 mm (29.53 inch) | 3 5 |
| 751…800 mm (29.57 ... 31.50 inch) Initial: 800 mm (31.50 inch) | 3 6 |
| 801…850 mm (31.54 ... 33.46 inch) Initial: 850 mm (33.46 inch) | 3 7 |
| 851…900 mm (33.50 ... 35.43 inch) Initial: 900 mm (35.43 inch) | 4 1 |
| 901…950 mm (35.47 ... 37.40 inch) Initial: 950 mm (37.40 inch) | 4 2 |
| 951…1 000 mm (37.44 ... 39.37 inch) Initial: 1 000 mm (39.37 inch) | 4 3 |
| 1 001…1 100 mm (39.41 ... 43.31 inch) Initial: 1 100 mm (43.31 inch) | 4 4 |
| 1 101…1 200 mm (43.35 ... 47.24 inch) Initial: 1 200 mm (47.24 inch) | 4 5 |
| 1 201…1 300 mm (47.28 ... 51.18 inch) Initial: 1 300 mm (51.18 inch) | 4 6 |
| 1 301…1 400 mm (51.22 ... 55.12 inch) Initial: 1400 mm (55.12 inch) | 4 7 |
| 1 401…1 500 mm (55.16 ... 59.05 inch) Initial: 1 500 mm (59.05 inch) | 5 1 |
| **Extension X** | |
| without neck tube, (not adjustable) | 0 |

**Additional configurations on page after next page!**

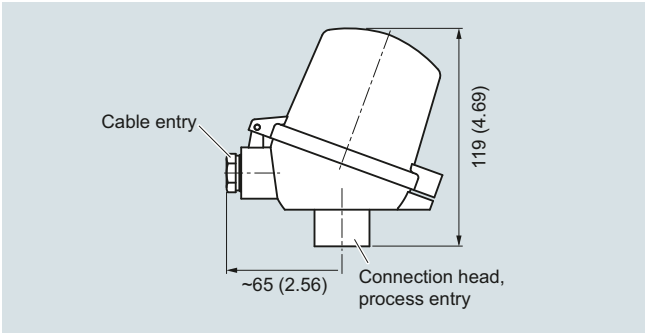
**You find ordering examples on page 2/41!**



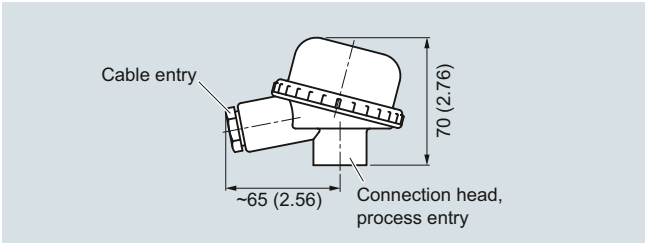

Connection head, aluminum, Type BA0, dimensions in mm (inch)



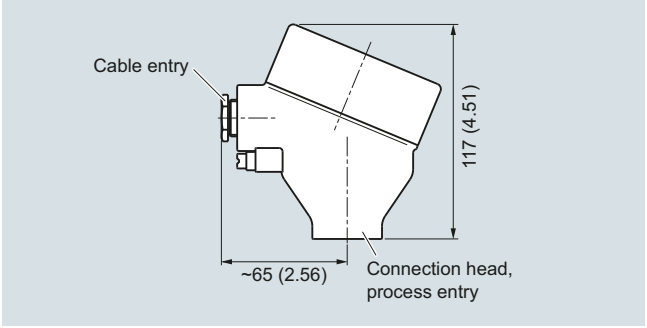

Connection head, aluminum, Type BB0, dimensions in mm (inch)



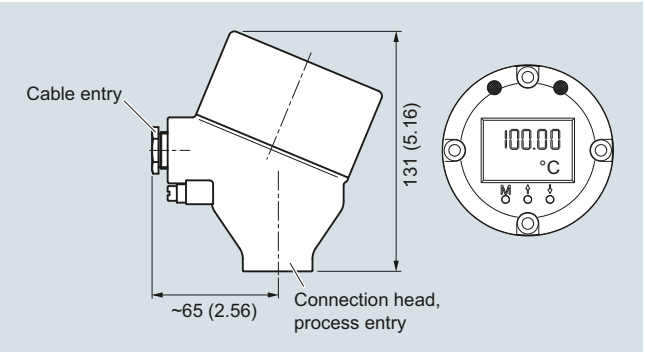

Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)




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




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)

## Type 2N, tubular version, with screw socket



| Selection and Ordering data | Article No. |
|---|---|
| **SITRANS TS500**<br>**Tubular thermowell, minimal to medium stress, Type 2N similar to DIN 43722, screwed in, without extension, for maximum process temperatures of 100 °C** | **7MC751-** ☐ - ☐☐☐☐☐ - ☐☐☐ |
| **Head** | |
| Aluminum head, BA0, flange cover, Standard | A |
| Aluminum head, BB0, low hinged cover, screw connection | B |
| Aluminum head, BC0, high hinged cover, screw connection | C |
| Aluminum head, AG0, screw cover, suitable for Ex d[1] | G |
| Aluminum head, AH0, screw cover, suitable for Ex d, display[1] | H |
| Plastic head, BM0, screw cover | M |
| Plastic head, BP0high hinged cover, screw connection | P |
| Stainless steel head, AU0, screw cover, suitable for Ex d[1] | U |
| Stainless steel head, AV0, screw cover, suitable for Ex d, display[1] | V |
| **Sensor[2]**<br>Please note: The accuracy class range can be lower than the measuring range. For more information, see page 2/18 | |
| Pt100, basis, -50 ... +400 °C (-58 ... +752 °F) | A |
| Pt100, vibration-resistant, -50 ... +400 °C (-58 ... +752 °F) | B |
| Pt100, expanded range, -196 ... +600 °C (-321 ... +1 112 °F) | C |
| Thermocouple Type K, -40 ... +1 000 °C (-40 ... +1 832 °F) | K |
| Thermocouple Type J, -40 ... +750 °C (-40 ... +1 382 °F) | J |
| Thermocouple Type N, -40 ... +1 000 °C (-40 ... +1 832 °F) | N |
| **Sensor number/Accuracy**<br>Circuit Pt 100: 1 x 4-wire circuit or 2 x 3-wire circuit, see "Measuring technique: Connection types", page 2/20 | |
| Single, basic accuracy (Class 2/Class B) | 1 |
| Single, increased accuracy (Class 1/Class A) | 2 |
| Single, highest accuracy (Class AA) | 3 |
| Double, basic accuracy (Class 2/Class B) | 5 |
| Double, increased accuracy (Class 1/Class A) | 6 |
| Double, highest accuracy (Class AA) | 7 |

[1] Ex d in connection with Order code E03

[2] Pt1000 versions are also available. To find these, please switch to Online Configuration in the PIA Life Cycle Portal: www.siemens.com/pia-portal

| Selection and Ordering data | Order code |
|---|---|
| ***Further designs***<br>Add "**-Z**" to Article No. and specify Order code. | |
| **Insertion length customer-specific**<br>Select range, enter desired length in plain text (No entry = standard length) | **Y44** |

| Selection and Ordering data | Order code |
|---|---|
| ***Options***<br>Add "**-Z**" to Article No. and add options, separate extensions with "+". | |
| **Built-in head transmitter**<br>Measuring range to be set must be specified with plain text data "Y01". | |
| SITRANS TH100, 4 ... 20 mA, Pt100 | **T10** |
| SITRANS TH100 Ex i (ATEX), 4 ... 20 mA, Pt100 | **T11** |
| SITRANS TH200, 4 ... 20 mA, Universal | **T20** |
| SITRANS TH200 Ex i (ATEX), 4 ... 20 mA,Universal | **T21** |
| SITRANS TH300, HART, Universal | **T30** |
| SITRANS TH300 Ex i (ATEX), HART, Universal | **T31** |
| SITRANS TH400 PA, Universal | **T40** |
| SITRANS TH400 PA Ex i, Universal | **T41** |
| SITRANS TH400 FF, Universal | **T45** |
| SITRANS TH400 FF Ex i, Universal | **T46** |
| **Explosion protection** | |
| Without explosion protection requirements (Europe, Australia, New Zealand) | **E00** |
| Intrinsic safety "i"/"IS[1] according to ATEX and IECEx (Europe, Australia, New Zealand) | **E01** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to ATEX and IECEx (Europe, Australia, New Zealand) | **E03** |
| Non-sparking "nA"/"NI" 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 housing "t"/"DIP"[2] 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"[1] according to cCSAus (USA, Canada) | **E18** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to cCSAus (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"[1] according to NEPSI (China) | **E55** |
| Flameproof enclosure "d"; dust protection through housing "t"[2] according to NEPSI (China) | **E56** |
| Non-sparking "nA"/"NI" according to NEPSI (China) | **E57** |
| Without explosion protection requirements (EAC) | **E80** |
| Intrinsic safety "i"/"IS"[1] according to EACEx (EAC) | **E81** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to EACEx (EAC) | **E82** |
| Non-sparking "nA"/"NI" according to EACEx (EAC) | **E83** |
| **Marine approvals** | |
| Det Norske Veritas Germanischer Lloyd (DNV GL) | **D01** |
| Bureau Veritas (BV) | **D02** |
| Lloyd's Register of Shipping (LR) | **D04** |
| American Bureau of Shipping (ABS) | **D05** |
| **Certificates and approvals** | |
| EN 10204-3.1 Inspection certificate for materials coming into contact with media | **C12** |
| EN 10204-3.1 Inspection certificate for hydrostatic pressure test | **C31** |
| EN 10204-3.1 Inspection certificate for helium leak test | **C32** |
| EN 10204-3.1 Inspection certificate for surface tear test | **C33** |
| EN 10204-3.1 Inspection certificate: visual, measurement and functional inspection | **C34** |
| EN 10204-2.1: Declaration of compliance with the order | **C35** |
| ISO 9001 grease-free (cleaned for e.g. oxygen applications) | **C51** |

| Selection and Ordering data | Order code |
|---|---|
| **Designation, calibration** | |
| Stainless steel TAG plate , enter lettering in plain text | **Y15** |
| Plant calibration per 1 point, enter temperature in plain text | **Y33** |
| **Transmitter options** | |
| Transmitter, enter complete setting in plain text (Y01:+/-NNNN ... +/-NNNN C,F), marking on the device when Order code "Y15" is selected | **Y01** |
| Enter measuring point (max. 8 characters) in plain text | **Y17** |
| Transmitter, enter measuring point description (max. 16 characters) in plain text | **Y23** |
| Transmitter, enter measuring point text (max. 32 characters) in plain text | **Y24** |
| Transmitter, enter bus address in plain text | **Y25** |
| Transmitter, fail-safe value 3.6 mA (instead of 22.8 mA) | **U36** |
| Transmitter with a SIL 2 conformity | **C20** |
| Transmitter with a SIL 2/3 conformity | **C23** |
| Transmitter test protocol (5 points) | **C11** |
| ***Further options*** | |
| Connection form, flying leads (for the direct transmitter assembly, delivery without screws and springs) | **G01** |
| M12 device plug (in combination with 1x Pt100 and/or transmitter, Non-Ex and intrinsically safe, max. IP65/67) | **G12** |
| Han 7D 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** |
| with outer earth screw for heads AG0, AH0, AU0 and AV0 | **A02** |
| with inner earth screw for heads BC0, AG0, AH0, AU0 and AV0 | **A03** |
| **Option not found?** | |
| Handling number special version | **Y99** |

[1] Please select Ex i version of the optional transmitter.

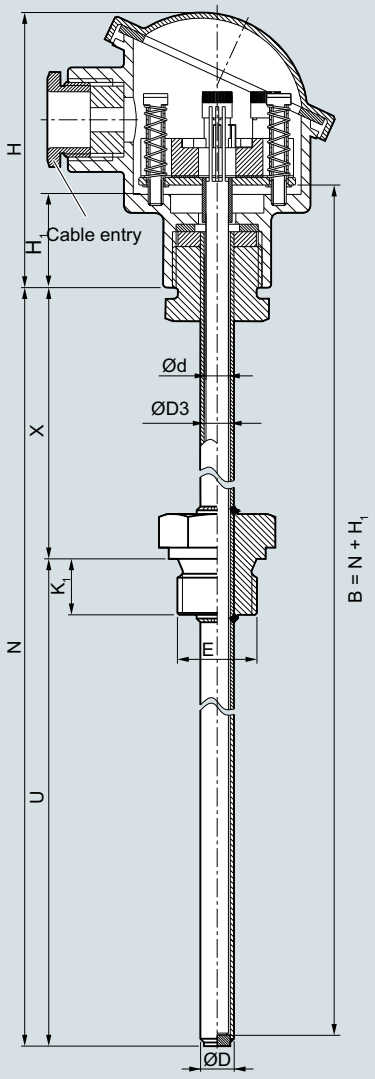
[2] Only with connection heads code AG0, AH0, AU0, AV0, without cable gland (please select non-Ex version of the optional transmitter).

**You find ordering examples on page 2/41.**
**Accessories, see page 2/238.**

## Type 2G, tubular version, with screw socket and extension

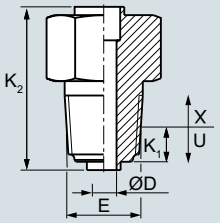


### Dimensional drawings




| | |
|---|---|
| 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 |
| $H_1$ | Type Axx = 41 (1.61)<br>Type Bxx = 26 (1.02) |
| $K_1$ | Screw depth |
| N | Nominal length |
| U | Insertion length |
| X | Extension length |

SITRANS TS500, temperature sensors for vessels and pipelines, tubular version for minimal to medium stress, thermowell as per DIN 43722, Type 2G, screwed in, with extension.
For dimensions for the screw depth see page 2/12, dimensions in mm (inch)




Tapered process connection, dimensions in mm (inch)

| Selection and Ordering data | Article No. | Ord. Code |
|---|---|---|
| **SITRANS TS500** ↗ | **7MC751-** | |
| **Tubular thermowell, minimal to medium stress, thermowell as per DIN 43722, Type 2G, screwed in, with extension** | ■ - ■■■■■ - | ■■■ ■■■ |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | | |
| **Material, in contact with media** | | |
| 316Ti (1.4571) | **1** | |
| 316L (1.4404 or 1.4435) | **2** | |
| **Process connection** | | |
| Cylindrical: G½ " (½ "BSPP) | **1 C** | |
| Cylindrical: G1 " (1 "BSPP) | **1 E** | |
| Tapered: NPT½ " | **1 J** | |
| **Thermowell form** | | |
| 2G, 9 mm (0.35 inch) | **A** | |
| 2G, 12 mm (0.47 inch) | **B** | |
| **Insertion length U standard** | | |
| 160 mm (6.30 inch) | **0 4** | |
| 250 mm (9.84 inch) | **1 2** | |
| 400 mm (15.75 inch) | **2 2** | |
| **Insertion length U customer-specific** | | |
| enter customer specific length with Y44, see page 2/69 Order codes | | |
| 80 ... 100 mm (3.15 ... 3.94 inch)<br>Initial: 100 mm (3.94 inch) | **0 1** | |
| 101 ... 120 mm (3.98 ... 4.72 inch)<br>Initial: 120 mm (4.72 inch) | **0 2** | |
| 121 ... 140 mm (4.76 ... 5.51 inch)<br>Initial: 140 mm (5.51 inch) | **0 3** | |
| 141 ... 160 mm (5.55 ... 6.30 inch)<br>Initial: 160 mm (6.30 inch) | **0 4** | |
| 161 ... 180 mm (6.34 ... 7.09 inch)<br>Initial: 180 mm (7.09 inch) | **0 5** | |
| 181 ... 200 mm (7.13 ... 7.87 inch)<br>Initial: 200 mm (7.87 inch) | **0 6** | |
| 201 ... 220 mm (7.91 ... 8.66 inch)<br>Initial: 220 mm (8.66 inch) | **0 7** | |
| 221…240 mm (8.70 ... 9.45 inch)<br>Initial: 225 mm (8.86 inch) | **1 1** | |
| 241…260 mm (9.49 ... 10.24 inch)<br>Initial: 250 mm (9.84 inch) | **1 2** | |
| 261…280 mm (10.28 ...11.02 inch)<br>Initial: 280 mm (11.02 inch) | **1 3** | |
| 281…300 mm (11.06 ... 11.81 inch)<br>Initial: 285 mm 11.22 inch) | **1 4** | |
| 301…320 mm (11.85 ... 13.00 inch)<br>Initial: 315 mm (12.40 inch) | **1 5** | |
| 321…340 mm (12.64 ... 13.39 inch)<br>Initial: 340 mm (13.39 inch) | **1 6** | |
| 341…360 mm (13.43 ... 14.17 inch)<br>Initial: 360 mm (14.17 inch) | **2 0** | |
| 361…380 mm (14.21 ... 14.96 inch)<br>Initial: 380 mm (14.96 inch) | **2 1** | |
| 381…400 mm (14.99 ... 15.75 inch)<br>Initial: 400 mm (15.75 inch) | **2 2** | |
| 401…420 mm (15.79 ... 16.54 inch)<br>Initial: 420 mm (16.54 inch) | **2 3** | |
| 421…440 mm (16.57 ... 17.32 inch)<br>Initial: 440 mm (17.32 inch) | **2 4** | |
| 441…460 mm (17.36 ... 18.11 inch)<br>Initial: 460 mm (18.11 inch) | **2 5** | |
| 461…480 mm (18.15 ... 18.90 inch)<br>Initial: 465 mm (18.30 inch) | **2 6** | |
| 481…500 mm (18.94 ... 19.69 inch)<br>Initial: 500 mm (19.69 inch) | **2 7** | |

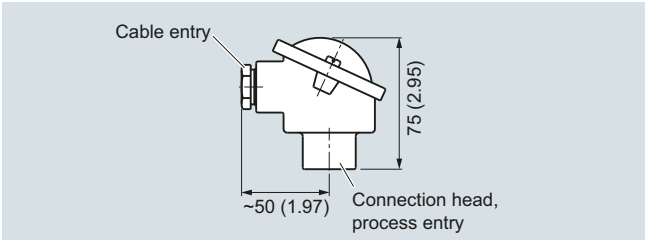
| Selection and Ordering data | Article No. | Ord. Code |
|---|---|---|
| **SITRANS TS500** | **7MC751-** | |
| **Tubular thermowell, minimal to medium stress, thermowell as per DIN 43722, Type 2G, screwed in, with extension** | ■ - ■■■■■ - | ■■■ ■■■ |
| 501…550 mm (19.72 ... 21.65 inch)<br>Initial: 510 mm (20.08 inch) | **3 1** | |
| 551…600 mm (21.69 ... 23.62 inch)<br>Initial: 600 mm (23.62 inch) | **3 2** | |
| 601…650 mm (23.66 ... 25.59 inch)<br>Initial: 650 mm (25.59 inch) | **3 3** | |
| 651…700 mm (25.63 ... 27.56 inch)<br>Initial: 700 mm (27.56 inch) | **3 4** | |
| 701…750 mm (27.60 ... 29.53 inch)<br>Initial: 750 mm (29.53 inch) | **3 5** | |
| 751…800 mm (29.57 ... 31.50 inch)<br>Initial: 800 mm (31.50 inch) | **3 6** | |
| 801…850 mm (31.54 ... 33.46 inch)<br>Initial: 850 mm (33.46 inch) | **3 7** | |
| 851…900 mm (33.50 ... 35.43 inch)<br>Initial: 900 mm (35.43 inch) | **4 1** | |
| 901…950 mm (35.47 ... 37.40 inch)<br>Initial: 950 mm (37.40 inch) | **4 2** | |
| 951…1 000 mm (37.44 ... 39.37 inch)<br>Initial: 1 000 mm (39.37 inch) | **4 3** | |
| 1 001…1 100 mm (39.41 ... 43.31 inch)<br>Initial: 1 100 mm (43.31 inch) | **4 4** | |
| 1 101…1 200 mm (43.35 ... 47.24 inch)<br>Initial: 1 200 mm (47.24 inch) | **4 5** | |
| 1 201…1 300 mm (47.28 ... 51.18 inch)<br>Initial: 1 300 mm (51.18 inch) | **4 6** | |
| 1 301…1 400 mm (51.22 ... 55.12 inch)<br>Initial: 1 400 mm (55.12 inch) | **4 7** | |
| 1 401…1 500 mm (55.16 ... 59.05 inch)<br>Initial: 1 500 mm (59.05 inch) | **5 1** | |
| **Extension X** | | |
| Standard length for Type 2G DIN 43772 (X=129 mm (5.08 inch)) | **1** | |
| **Extension length X - customer specific** | | |
| enter customer specific length with Y45, see page 2/69 Order codes | | |
| 45 ...150 mm (1.77 ... 5.91 inch)<br>Initial: 150 mm (5.91 inch) | **9** | **N 1 D** |
| 151 ... 300 mm (5.95 ... 11.81 inch)<br>Initial: 300 mm (11.81 inch) | **9** | **N 2 D** |
| 301 ... 450 mm (11.85 ... 17.72 inch)<br>Initial: 450 mm (17.72 inch) | **9** | **N 3 D** |

**Additional configurations on page after next page.**

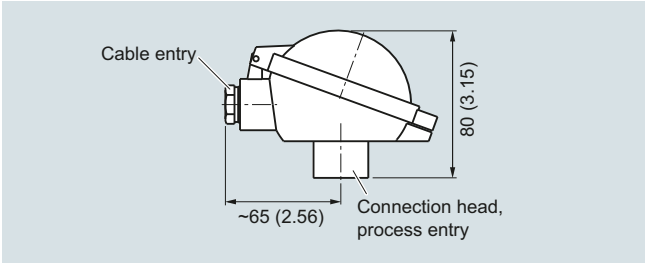
**You find ordering examples on page 2/41.**

## Type 2G, tubular version, with screw socket and extension

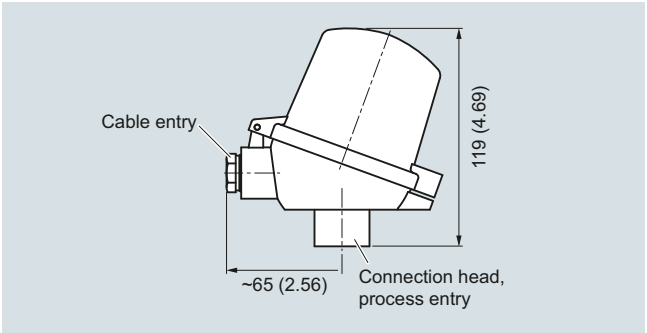




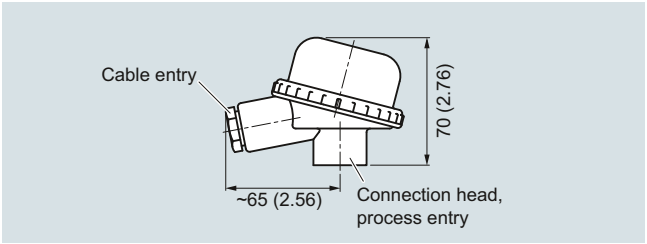

Connection head, aluminum, Type BA0, dimensions in mm (inch)



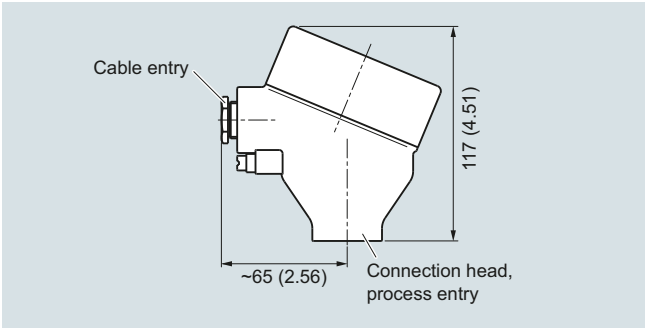

Connection head, aluminum, Type BB0, dimensions in mm (inch)



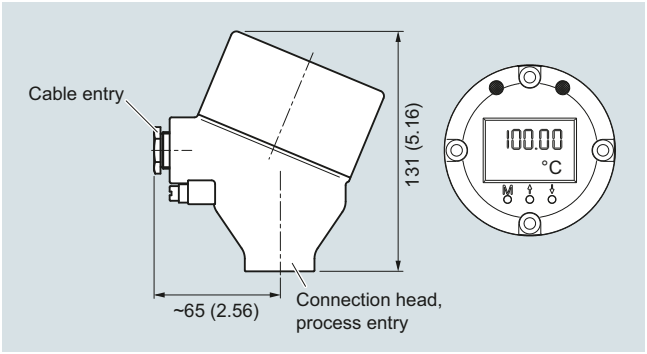

Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)




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




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 | Article No. | Ord. Code |
|---|---|---|
| **SITRANS TS500**<br>**Tubular thermowell, minimal to medium stress, thermowell as per DIN 43722, Type 2G, screwed in, with extension** | **7MC751-** | ■ - ■■■■■ - ■■■ |
| **Head** | | |
| Aluminum head, BA0, flange cover, Standard | | **A** |
| Aluminum head, BB0, low hinged cover, screw connection | | **B** |
| Aluminum head, BC0, high hinged cover, screw connection | | **C** |
| Aluminum head, AG0, screw cover, suitable for Ex d[1] | | **G** |
| Aluminum head, AH0, screw cover, suitable for Ex d, display[1] | | **H** |
| Plastic head, BM0, screw cover | | **M** |
| Plastic head, BP0high hinged cover, screw connection | | **P** |
| Stainless steel head, AU0, screw cover, suitable for Ex d[1] | | **U** |
| Stainless steel head, AV0, screw cover, suitable for Ex d, display[1] | | **V** |
| **Sensor[2]** | | |
| Please note: The accuracy class range can be lower than the measuring range. For more information, see page 2/18 | | |
| Pt100, Basis, -50 ... +400 °C (-58 ... +752 °F) | | **A** |
| Pt100, vibration resistant, -50 ... +400 °C (-58 ... +752 °F) | | **B** |
| Pt100, expanded range, -196 ... +600 °C (-321 ... +1 112 °F) | | **C** |
| Thermocouple Type K, -40 ... +1 000 °C (-40 ... +1 832 °F) | | **K** |
| Thermocouple Type J, -40 ... +750 °C (-40 ... +1 382 °F) | | **J** |
| Thermocouple Type N, -40 ... +1 000 °C (-40 ... +1 832 °F) | | **N** |
| **Sensor number/Accuracy** | | |
| Circuit Pt 100: 1 x 4-wire circuit or 2 x 3-wire circuit, see "Measuring technique: Connection types", page 2/20 | | |
| Single, basic accuracy (Class 2/Class B) | | **1** |
| Single, increased accuracy (Class 1/Class A) | | **2** |
| Single, highest accuracy (Class AA) | | **3** |
| Double, basic accuracy (Class 2/Class B) | | **5** |
| Double, increased accuracy (Class 1/Class A) | | **6** |
| Double, highest accuracy (Class AA) | | **7** |

[1] Ex d in connection with Order code E03

[2] Pt1000 versions are also available. To find these, please switch to Online Configuration in the PIA Life Cycle Portal: www.siemens.com/pia-portal

| Selection and Ordering data | Order code |
|---|---|
| ***Further designs*** | |
| Add "**-Z**" to Article No. and specify Order code. | |
| **Insertion length customer-specific**<br>Select range, enter desired length in plain text (No entry = standard length) | **Y44** |
| **Extension X length customer-specific**<br>Select range, enter desired length in plain text (No entry = standard length) | **Y45** |

| Selection and Ordering data | Order code |
|---|---|
| ***Options***<br>Add "**-Z**" to Article No. and add options, separate extensions with "+". | |
| **Built-in head transmitter**<br>Measuring range to be set must be specified with plain text data "Y01". | |
| SITRANS TH100, 4 ... 20 mA, Pt100 | **T10** |
| SITRANS TH100 Ex i (ATEX), 4 ... 20 mA, Pt100 | **T11** |
| SITRANS TH200, 4 ... 20 mA, Universal | **T20** |
| SITRANS TH200 Ex i (ATEX), 4 ... 20 mA, Universal | **T21** |
| SITRANS TH300, HART, Universal | **T30** |
| SITRANS TH300 Ex i (ATEX), HART, Universal | **T31** |
| SITRANS TH400 PA, Universal | **T40** |
| SITRANS TH400 PA Ex i, Universal | **T41** |
| SITRANS TH400 FF, Universal | **T45** |
| SITRANS TH400 FF Ex i, Universal | **T46** |
| **Explosion protection** | |
| Without explosion protection requirements (Europe, Australia, New Zealand) | **E00** |
| Intrinsic safety "i"/"IS[1] according to ATEX and IECEx (Europe, Australia, New Zealand) | **E01** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to ATEX and IECEx (Europe, Australia, New Zealand) | **E03** |
| Non-sparking "nA"/"NI" 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 housing "t"/"DIP"[2] 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"[1] according to cCSAus (USA, Canada) | **E18** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to cCSAus (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"[1] according to NEPSI (China) | **E55** |
| Flameproof enclosure "d"; dust protection through housing "t"[2] according to NEPSI (China) | **E56** |
| Non-sparking "nA"/"NI" according to NEPSI (China) | **E57** |
| Without explosion protection requirements (EAC) | **E80** |
| Intrinsic safety "i"/"IS"[1] according to EACEx (EAC) | **E81** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to EACEx (EAC) | **E82** |
| Non-sparking "nA"/"NI" according to EACEx (EAC) | **E83** |
| **Marine approvals** | |
| Det Norske Veritas Germanischer Lloyd (DNV GL) | **D01** |
| Bureau Veritas (BV) | **D02** |
| Lloyd's Register of Shipping (LR) | **D04** |
| American Bureau of Shipping (ABS) | **D05** |
| **Certificates and approvals** | |
| EN 10204-3.1 Inspection certificate for materials coming into contact with media | **C12** |
| EN 10204-3.1 Inspection certificate for hydrostatic pressure test | **C31** |
| EN 10204-3.1 Inspection certificate for helium leak test | **C32** |
| EN 10204-3.1 Inspection certificate for surface tear test | **C33** |
| EN 10204-3.1 Inspection certificate: visual, measurement and functional inspection | **C34** |
| EN 10204-2.1: Declaration of compliance with the order | **C35** |
| ISO 9001 grease-free (cleaned for e.g. oxygen applications) | **C51** |

## Type 2G, tubular version, with screw socket and extension



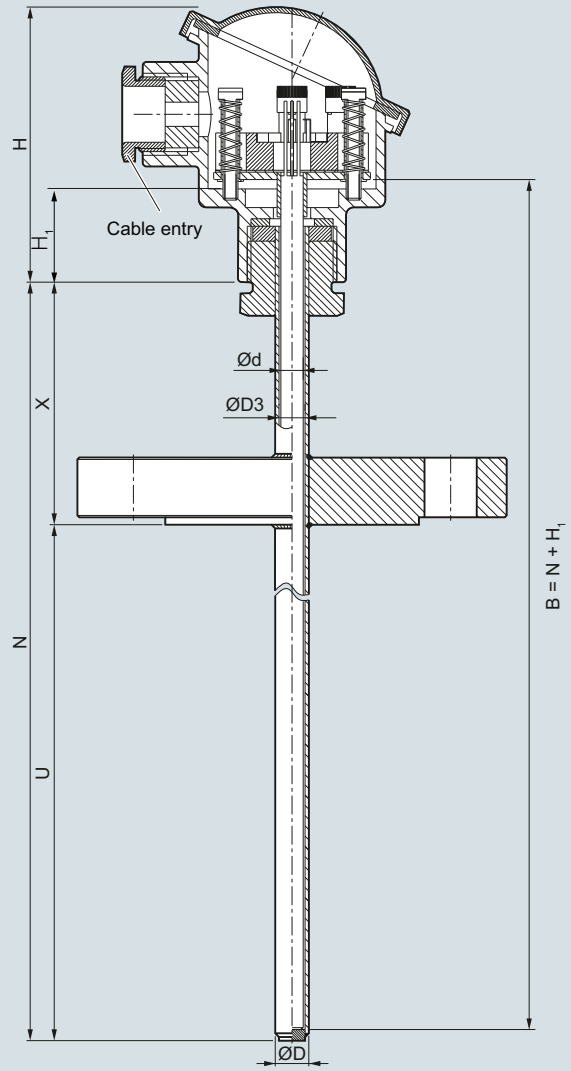
| Selection and Ordering data | Order code |
|---|---|
| **Designation, calibration** | |
| Stainless steel TAG plate , enter lettering in plain text | **Y15** |
| Plant calibration per 1 point, enter temperature in plain text | **Y33** |
| **Transmitter options** | |
| Transmitter, enter complete setting in plain text (Y01:+/-NNNN ... +/-NNNN C,F), marking on the device when Order code "Y15" is selected | **Y01** |
| Enter measuring point (max. 8 characters) in plain text | **Y17** |
| Transmitter, enter measuring point description (max. 16 characters) in plain text | **Y23** |
| Transmitter, enter measuring point text (max. 32 characters) in plain text | **Y24** |
| Transmitter, enter bus address in plain text | **Y25** |
| Transmitter, fail-safe value 3.6 mA (instead of 22.8 mA) | **U36** |
| Transmitter with a SIL 2 conformity | **C20** |
| Transmitter with a SIL 2/3 conformity | **C23** |
| Transmitter test protocol (5 points) | **C11** |
| ***Further options*** | |
| Connection form, flying leads (for the direct transmitter assembly, delivery without screws and springs) | **G01** |
| M12 device plug (in combination with 1x Pt100 and/or transmitter, Non-Ex and intrinsically safe, max. IP65/67) | **G12** |
| Han 7D 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** |
| with outer earth screw for heads AG0, AH0, AU0 and AV0 | **A02** |
| with inner earth screw for heads BC0, AG0, AH0, AU0 and AV0 | **A03** |
| **Option not found?** | |
| Handling number special version | **Y99** |

[1] Please select Ex i version of the optional transmitter.

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

**You find ordering examples on page 2/41.**
**Accessories, see page 2/238.**

## 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 |
| $H_1$ | Type Axx = 41 (1.61)<br>Type Bxx = 26 (1.02) |
| N | Nominal length |
| U | Insertion length |
| X | Extension length |

SITRANS TS500, temperature sensors for vessels and pipelines, tubular version for minimal to medium stress, thermowell as per DIN 43722, Type 2F, with flange, with extension, dimensions in mm (inch)

## Type 2F, tubular version, with flange and extension

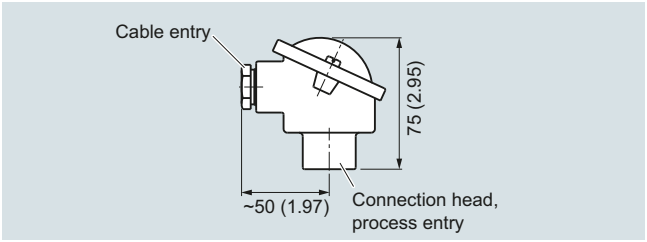
2

| Selection and Ordering data | Article No. | Ord. Code |
|---|---|---|
| **SITRANS TS500** ↗ | **7MC751-** | |
| **Tubular thermowell, minimal to medium stress, thermowell as per DIN 43722, Type 2F, with flange, with extension** | - | - |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | | |
| **Material, in contact with media** | | |
| 316Ti (1.4571) | **1** | |
| 316L (1.4404 or 1.4435) | **2** | |
| **Process connection** | | |
| Flange EN, DN25 PN10 ... 40 B1 | **2 A** | |
| Flange ASME, 1"RF150 | **2 E** | |
| Flange ASME, 1"RF300 | **2 F** | |
| Flange ASME, 1.5"RF150 | **2 G** | |
| Flange ASME, 1.5"RF300 | **2 H** | |
| **Thermowell form** | | |
| 2F, 9 mm (0.35 inch) | **A** | |
| 2F, 12 mm (0.47 inch) | **B** | |
| **Insertion U standard** | | |
| 225 mm (8.86 inch) | **1 1** | |
| 315 mm (12.40 inch) | **1 5** | |
| 465 mm (18.31 inch) | **2 6** | |
| **Insertion length U customer-specific** enter customer specific length with Y44, see page 2/74 Order codes | | |
| 80 ... 100 mm (3.15 ... 3.94 inch) Initial: 100 mm (3.94 inch) | **0 1** | |
| 101 ... 120 mm (3.98 ... 4.72 inch) Initial: 120 mm (4.72 inch) | **0 2** | |
| 121 ... 140 mm (4.76 ... 5.51 inch) Initial: 140 mm (5.51 inch) | **0 3** | |
| 141 ... 160 mm (5.55 ... 6.30 inch) Initial: 160 mm (6.30 inch) | **0 4** | |
| 161 ... 180 mm (6.34 ... 7.09 inch) Initial: 180 mm (7.09 inch) | **0 5** | |
| 181 ... 200 mm (7.13 ... 7.87 inch) Initial: 200 mm (7.87 inch) | **0 6** | |
| 201 ... 220 mm (7.91 ... 8.66 inch) Initial: 220 mm (8.66 inch) | **0 7** | |
| 221…240 mm (8.70 ... 9.45 inch) Initial: 225 mm (8.86 inch) | **1 1** | |
| 241…260 mm (9.49 ... 10.24 inch) Initial: 250 mm (9.84 inch) | **1 2** | |
| 261…280 mm (10.28 ...11.02 inch) Initial: 280 mm (11.02 inch) | **1 3** | |
| 281…300 mm (11.06 ... 11.81 inch) Initial: 285 mm 11.22 inch) | **1 4** | |
| 301…320 mm (11.85 ... 13.00 inch) Initial: 315 mm (12.40 inch) | **1 5** | |
| 321…340 mm (12.64 ... 13.39 inch) Initial: 340 mm (13.39 inch) | **1 6** | |
| 341…360 mm (13.43 ... 14.17 inch) Initial: 360 mm (14.17 inch) | **2 0** | |
| 361…380 mm (14.21 ... 14.96 inch) Initial: 380 mm (14.96 inch) | **2 1** | |
| 381…400 mm (14.99 ... 15.75 inch) Initial: 400 mm (15.75 inch) | **2 2** | |
| 401…420 mm (15.79 ... 16.54 inch) Initial: 420 mm (16.54 inch) | **2 3** | |
| 421…440 mm (16.57 ... 17.32 inch) Initial: 440 mm (17.32 inch) | **2 4** | |
| 441…460 mm (17.36 ... 18.11 inch) Initial: 460 mm (18.11 inch) | **2 5** | |
| 461…480 mm (18.15 ... 18.90 inch) Initial: 465 mm (18.30 inch) | **2 6** | |
| 481…500 mm (18.94 ... 19.69 inch) Initial: 500 mm (19.69 inch) | **2 7** | |

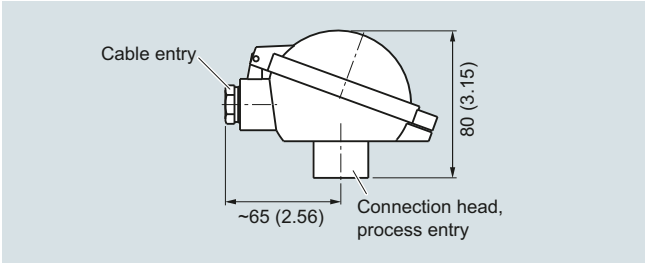
| Selection and Ordering data | Article No. | Ord. Code |
|---|---|---|
| **SITRANS TS500** | **7MC751-** | |
| **Tubular thermowell, minimal to medium stress, thermowell as per DIN 43722, Type 2F, with flange, with extension** | - | - |
| 501…550 mm (19.72 ... 21.65 inch) Initial: 510 mm (20.08 inch) | **3 1** | |
| 551…600 mm (21.69 ... 23.62 inch) Initial: 600 mm (23.62 inch) | **3 2** | |
| 601…650 mm (23.66 ... 25.59 inch) Initial: 650 mm (25.59 inch) | **3 3** | |
| 651…700 mm (25.63 ... 27.56 inch) Initial: 700 mm (27.56 inch) | **3 4** | |
| 701…750 mm (27.60 ... 29.53 inch) Initial: 750 mm (29.53 inch) | **3 5** | |
| 751…800 mm (29.57 ... 31.50 inch) Initial: 800 mm (31.50 inch) | **3 6** | |
| 801…850 mm (31.54 ... 33.46 inch) Initial: 850 mm (33.46 inch) | **3 7** | |
| 851…900 mm (33.50 ... 35.43 inch) Initial: 900 mm (35.43 inch) | **4 1** | |
| 901…950 mm (35.47 ... 37.40 inch) Initial: 950 mm (37.40 inch) | **4 2** | |
| 951…1 000 mm (37.44 ... 39.37 inch) Initial: 1 000 mm (39.37 inch) | **4 3** | |
| 1 001…1 100 mm (39.41 ... 43.31 inch) Initial: 1 100 mm (43.31 inch) | **4 4** | |
| 1 101…1 200 mm (43.35 ... 47.24 inch) Initial: 1 200 mm (47.24 inch) | **4 5** | |
| 1 201…1 300 mm (47.28 ... 51.18 inch) Initial: 1 300 mm (51.18 inch) | **4 6** | |
| 1 301…1 400 mm (51.22 ... 55.12 inch) Initial: 1 400 mm (55.12 inch) | **4 7** | |
| 1 401…1 500 mm (55.16 ... 59.05 inch) Initial: 1 500 mm (59.05 inch) | **5 1** | |
| **Extension X** | | |
| Standard length for Type 2F DIN 43772 (X=64 mm (2.52 inch)) | **1** | |
| **Extension length X - customer specific** enter customer specific length with Y45, see page 2/74 Order codes | | |
| 45 ...150 mm (1.77 ... 5.91 inch) Initial: 150 mm (5.91 inch) | **9** | **N 1 D** |
| 151 ... 300 mm (5.95 ... 11.81 inch) Initial: 300 mm (11.81 inch) | **9** | **N 2 D** |
| 301 ... 450 mm (11.85 ... 17.72 inch) Initial: 450 mm (17.72 inch) | **9** | **N 3 D** |

**Additional configurations on page after next page!**

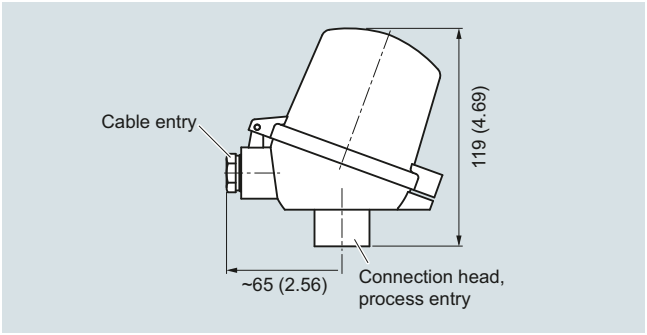
**You find ordering examples on page 2/41!**



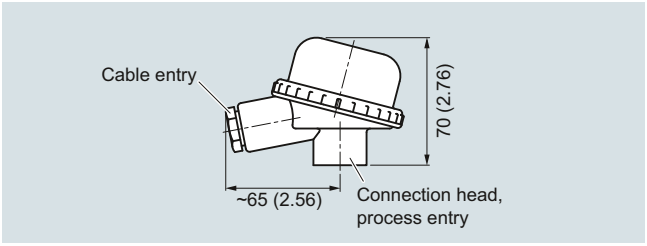

Connection head, aluminum, Type BA0, dimensions in mm (inch)



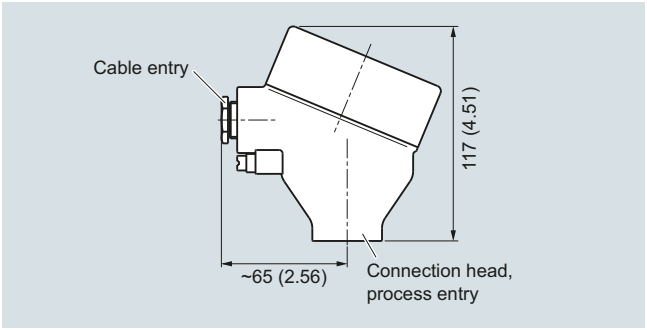

Connection head, aluminum, Type BB0, dimensions in mm (inch)



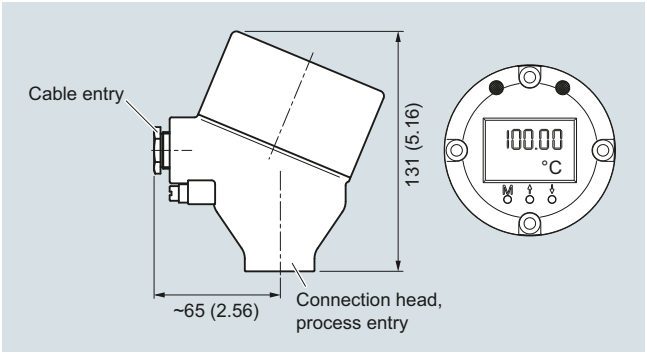

Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)




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




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)

## Type 2F, tubular version, with flange and extension



| Selection and Ordering data | Article No. |
|---|---|
| **SITRANS TS500** | **7MC751-** |
| **Tubular thermowell, minimal to medium stress, thermowell as per DIN 43722, Type 2F, with flange, with extension** | - - |
| **Head** | |
| Aluminum head, BA0, flange cover, Standard | **A** |
| Aluminum head, BB0, low hinged cover, screw connection | **B** |
| Aluminum head, BC0, high hinged cover, screw connection | **C** |
| Aluminum head, AG0, screw cover, suitable for Ex d[1] | **G** |
| Aluminum head, AH0, screw cover, suitable for Ex d, display[1] | **H** |
| Plastic head, BM0, screw cover | **M** |
| Plastic head, BP0high hinged cover, screw connection | **P** |
| Stainless steel head, AU0, screw cover, suitable for Ex d[1] | **U** |
| Stainless steel head, AV0, screw cover, suitable for Ex d, display[1] | **V** |
| **Sensor[2]** | |
| Please note: The accuracy class range can be lower than the measuring range. For more information, see page 2/18 | |
| Pt100, Basis, -50 ... +400 °C (-58 ... +752 °F) | **A** |
| Pt100, vibration resistant, -50 ... +400 °C (-58 ... +752 °F) | **B** |
| Pt100, expanded range, -196 ... +600 °C (-321 ... +1 112 °F) | **C** |
| Thermocouple Type K, -40 ... +1 000 °C (-40 ... +1 832 °F) | **K** |
| Thermocouple Type J, -40 ... +750 °C (-40 ... +1 382 °F) | **J** |
| Thermocouple Type N, -40 ... +1 000 °C (-40 ... +1 832 °F) | **N** |
| **Sensor number/Accuracy** | |
| Circuit Pt 100: 1 x 4-wire circuit or 2 x 3-wire circuit, see "Measuring technique: Connection types", page 2/20 | |
| Single, basic accuracy (Class 2/Class B) | **1** |
| Single, increased accuracy (Class 1/Class A) | **2** |
| Single, highest accuracy (Class AA) | **3** |
| Double, basic accuracy (Class 2/Class B) | **5** |
| Double, increased accuracy (Class 1/Class A) | **6** |
| Double, highest accuracy (Class AA) | **7** |

[1] Ex d in connection with Order code E03

[2] Pt1000 versions are also available. To find these, please switch to Online Configuration in the PIA Life Cycle Portal: www.siemens.com/pia-portal

| Selection and Ordering data | Order code |
|---|---|
| ***Further designs*** | |
| Add "**-Z**" to Article No. and specify Order code. | |
| **Insertionlength customer-specific** Select range, enter desired length in plain text (No entry = standard length) | **Y44** |
| **Extension X length customer-specific** Select range, enter desired length in plain text (No entry = standard length) | **Y45** |

| Selection and Ordering data | Order code |
|---|---|
| ***Options*** Add "**-Z**" to Article No. and add options, separate extensions with "+". | |
| **Built-in head transmitter** Measuring range to be set must be specified with plain text data "Y01". | |
| SITRANS TH100, 4 ... 20 mA, Pt100 | **T10** |
| SITRANS TH100 Ex i (ATEX), 4 ... 20 mA, Pt100 | **T11** |
| SITRANS TH200, 4 ... 20 mA, Universal | **T20** |
| SITRANS TH200 Ex i (ATEX), 4 ... 20 mA, Universal | **T21** |
| SITRANS TH300, HART, Universal | **T30** |
| SITRANS TH300 Ex i (ATEX), HART, Universal | **T31** |
| SITRANS TH400 PA, Universal | **T40** |
| SITRANS TH400 PA Ex i, Universal | **T41** |
| SITRANS TH400 FF, Universal | **T45** |
| SITRANS TH400 FF Ex i, Universal | **T46** |
| **Explosion protection** | |
| Without explosion protection requirements (Europe, Australia, New Zealand) | **E00** |
| Intrinsic safety "i"/"IS[1] according to ATEX and IECEx (Europe, Australia, New Zealand) | **E01** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to ATEX and IECEx (Europe, Australia, New Zealand) | **E03** |
| Non-sparking "nA"/"NI" 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 housing "t"/"DIP"[2] 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"[1] according to cCSAus (USA, Canada) | **E18** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to cCSAus (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"[1] according to NEPSI (China) | **E55** |
| Flameproof enclosure "d"; dust protection through housing "t"[2] according to NEPSI (China) | **E56** |
| Non-sparking "nA"/"NI" according to NEPSI (China) | **E57** |
| Without explosion protection requirements (EAC) | **E80** |
| Intrinsic safety "i"/"IS"[1] according to EACEx (EAC) | **E81** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to EACEx (EAC) | **E82** |
| Non-sparking "nA"/"NI" according to EACEx (EAC) | **E83** |
| **Marine approvals** | |
| Det Norske Veritas Germanischer Lloyd (DNV GL) | **D01** |
| Bureau Veritas (BV) | **D02** |
| Lloyd's Register of Shipping (LR) | **D04** |
| American Bureau of Shipping (ABS) | **D05** |
| **Certificates and approvals** | |
| EN 10204-3.1 Inspection certificate for materials coming into contact with media | **C12** |
| EN 10204-3.1 Inspection certificate for hydrostatic pressure test | **C31** |
| EN 10204-3.1 Inspection certificate for helium leak test | **C32** |
| EN 10204-3.1 Inspection certificate for surface tear test | **C33** |
| EN 10204-3.1 Inspection certificate: visual, measurement and functional inspection | **C34** |
| EN 10204-2.1: Declaration of compliance with the order | **C35** |
| ISO 9001 grease-free (cleaned for e.g. oxygen applications) | **C51** |

| Selection and Ordering data | Order code |
|---|---|
| **Designation, calibration** | |
| Stainless steel TAG plate , enter lettering in plain text | **Y15** |
| Plant calibration per 1 point, enter temperature in plain text | **Y33** |
| **Transmitter options** | |
| Transmitter, enter complete setting in plain text (Y01:+/-NNNN ... +/-NNNN C,F), marking on the device when Order code "Y15" is selected | **Y01** |
| Enter measuring point (max. 8 characters) in plain text | **Y17** |
| Transmitter, enter measuring point description (max. 16 characters) in plain text | **Y23** |
| Transmitter, enter measuring point text (max. 32 characters) in plain text | **Y24** |
| Transmitter, enter bus address in plain text | **Y25** |
| Transmitter, fail-safe value 3.6 mA (instead of 22.8 mA) | **U36** |
| Transmitter with a SIL 2 conformity | **C20** |
| Transmitter with a SIL 2/3 conformity | **C23** |
| Transmitter test protocol (5 points) | **C11** |
| ***Further options*** | |
| Connection form, flying leads (for the direct transmitter assembly, delivery without screws and springs) | **G01** |
| M12 device plug (in combination with 1x Pt100 and/or transmitter, Non-Ex and intrinsically safe, max. IP65/67) | **G12** |
| Han 7D 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** |
| with outer earth screw for heads AG0, AH0, AU0 and AV0 | **A02** |
| with inner earth screw for heads BC0, AG0, AH0, AU0 and AV0 | **A03** |
| **Option not found?** | |
| Handling number special version | **Y99** |

[1] Please select Ex i version of the optional transmitter.

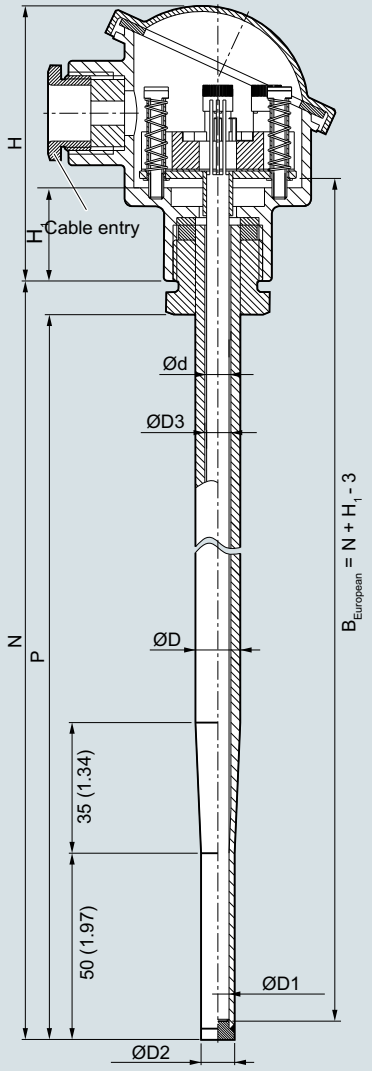
[2] Only with connection heads code AG0, AH0, AU0, AV0, without cable gland (please select non-Ex version of the optional transmitter).

**You find ordering examples on page 2/41.**
**Accessories, see page 2/238.**

**Type 3, tubular quick, without process connection**

2

## Dimensional drawings




| | |
|---|---|
| B | Measuring insert length |
| Ød | Measuring insert outer diameter (6 (0.24)) |
| ØD | Process connection outer diameter |
| ØD1 | Tip internal diameter |
| ØD2 | Tip outer diameter |
| ØD3 | Thermowell diameter |
| H | Head height |
| $H_1$ | Type Axx> 41 (1.61)<br>Type Bxx> 26 (1.02) |
| N | Nominal length |
| P | Space for process connection |

SITRANS TS500, temperature sensors for vessel and pipings, tubular version for minimum to medium stress, without process connection, without extension, plug-in or use with moveable compression fitting, dimension in mm (inch)

| Selection and Ordering data | Article No. |
|---|---|
| **SITRANS TS500** ↗ | **7MC751-** |
| **Tubular version for minimal to medium stress, thermowell per DIN 43722, Type 3, without process connection, improved response time, plug-in or use with moveable compression fittings** | - |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | |
| **Material, in contact with media** | |
| 316Ti (1.4571) | 1 |
| 316L (1.4404 or 1.4435) | 2 |
| **Process connection** | |
| Without process connection (for compression joints) N=U | 0 N |
| **Thermowell form** | |
| 3, 12/9 mm (0.47/0.35 inch) | K |
| **Insertion length U (=N), Standard** | |
| 160 mm (6.3 inch) | 0 4 |
| 220 mm (8.66 inch) | 0 7 |
| 280 mm (11.02 inch) | 1 3 |
| **Insertion length U (=N), customer-specific** enter customer specific length with Y44, see page 2/79 Order codes | |
| 121 ... 140 mm (4.76 ... 5.51 inch) Initial: 140 mm (5.51 inch) | 0 3 |
| 141 ... 160 mm (5.55 ... 6.30 inch) Initial: 160 mm (6.3 inch) | 0 4 |
| 161 ... 180 mm (6.34 ... 7.09 inch) Initial: 180 mm (7.09 inch) | 0 5 |
| 181 ... 200 mm (7.13 ... 7.87 inch) Initial: 200 mm (7.87 inch) | 0 6 |
| 201 ... 220 mm (7.91 ... 8.66 inch) Initial: 220 mm (8.66 inch) | 0 7 |
| 221 ... 240 mm (8.7 ... 9.45 inch) Initial: 225 mm (8.86 inch) | 1 1 |
| 241 ... 260 mm (9.48 ... 10.24 inch) Initial: 250 mm (9.84 inch) | 1 2 |
| 261 ... 280 mm (10.28 ... 11.02 inch) Initial: 280 mm (11.02 inch) | 1 3 |
| 281 ... 300 mm (11.02 ... 11.81 inch) Initial: 285 mm (11.22 inch) | 1 4 |
| 301 ... 320 mm (11.85 ... 12.6 inch) Initial: 315 mm (12.4 inch) | 1 5 |
| 321 ... 340 mm (12.64 ... 13.39 inch) Initial: 340 mm (13.39 inch) | 1 6 |
| 341 ... 360 mm (13.43 ... 14.17 inch) Initial: 360 mm (14.17 inch) | 2 0 |
| 361 ... 380 mm (14.21 ... 14.96 inch) Initial: 380 mm (14.96 inch) | 2 1 |

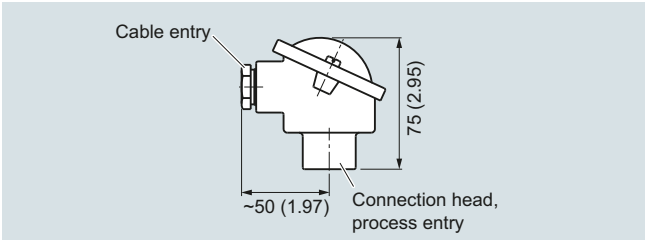
| Selection and Ordering data | Article No. |
|---|---|
| **SITRANS TS500** | **7MC751-** |
| **Tubular version for minimal to medium stress, thermowell per DIN 43722, Type 3, without process connection, improved response time, plug-in or use with moveable compression fittings** | - |
| 381 ... 400 mm (15 ... 15.75 inch) Initial: 400 mm (15.75 inch) | 2 2 |
| 401 ... 420 mm (15.79 ... 16.54 inch) Initial: 420 mm (16.54 inch) | 2 3 |
| 421 ... 440 mm (16.57 ... 17.32 inch) Initial: 440 mm (17.32 inch) | 2 4 |
| 441 ... 460 mm (17.36 ... 18.11 inch) Initial: 460 mm (18.11 inch) | 2 5 |
| 461 ... 480 mm (18.15 ... 18.90 inch) Initial: 465 mm (18.30 inch) | 2 6 |
| 481 ... 500 mm (18.94 ... 19.68 inch) Initial: 500 mm (19.68 inch) | 2 7 |
| 501 ... 550 mm (19.72 ... 21.65 inch) Initial: 510 mm (20.08 inch) | 3 1 |
| 551 ... 600 mm (21.69 ... 23.62 inch) Initial: 600 mm (23.62 inch) | 3 2 |
| 601 ... 650 mm (23.66 ... 25.59 inch) Initial: 650 mm (25.59 inch) | 3 3 |
| 651 ... 700 mm (25.63 ... 27.56 inch) Initial: 700 mm (27.56 inch) | 3 4 |
| 701 ... 750 mm (27.6 ... 29.53 inch) Initial: 750 mm (29.53 inch) | 3 5 |
| 751 ... 800 mm (29.57 ... 31.50 inch) Initial: 800 mm (31.50 inch) | 3 6 |
| 801 ... 850 mm (31.53 ... 33.46 inch) Initial: 850 mm (33.46 inch) | 3 7 |
| 851 ... 900 mm (33.50 ... 35.43 inch) Initial: 900 mm (35.43 inch) | 4 1 |
| 901 ... 950 mm (35.47 ... 37.40 inch) Initial: 950 mm (37.40 inch) | 4 2 |
| 951 ... 1 000 mm (37.44 ... 39.37 inch) Initial: 1 000 mm (39.37 inch) | 4 3 |
| 1 001 ... 1 100 mm (39.41 ... 43.31 inch) Initial: 1 100 mm (43.31 inch) | 4 4 |
| **Extension** | |
| Standard length for Type 2 as per DIN 43722 (without extension N=U) | 0 |

**Additional configurations on page after next page!**

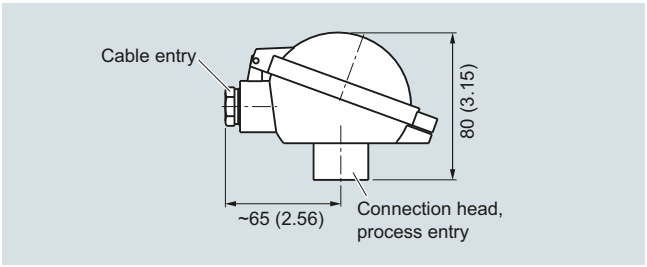
**You find ordering examples on page 2/41!**

## Type 3, tubular quick, without process connection

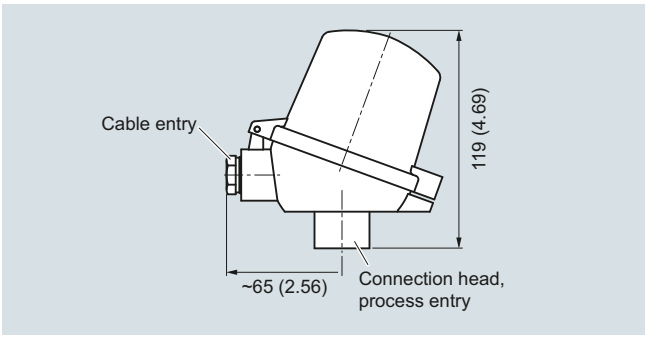




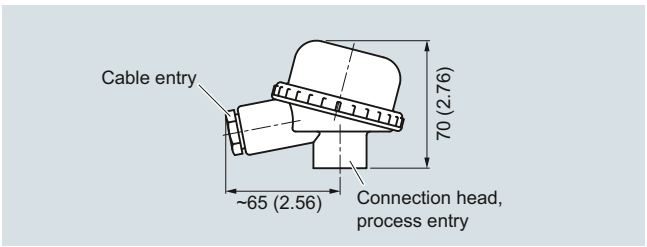

Connection head, aluminum, Type BA0, dimensions in mm (inch)



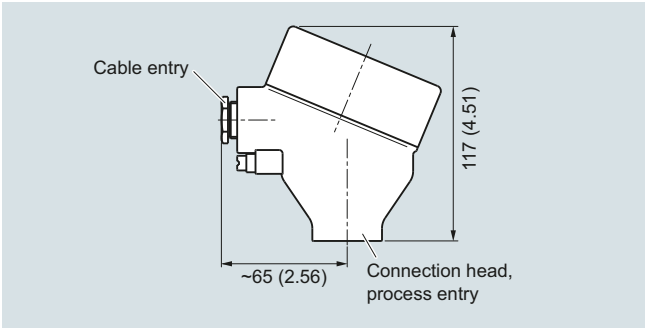

Connection head, aluminum, Type BB0, dimensions in mm (inch)



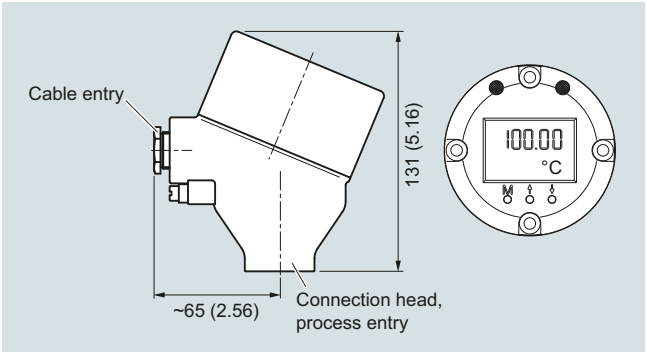

Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)




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




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 | Article No. |
|---|---|
| **SITRANS TS500** | **7MC751-** |
| **Tubular version for minimal to medium stress, thermowell as per DIN 43722, Type 3, without process connection, improved response time, plug-in or use with moveable compression fittings** | ■ - ■■■■■ - ■■■ |
| **Head** | |
| Aluminum head, BA0, flange cover, Standard | **A** |
| Aluminum head, BB0, low hinged cover, screw connection | **B** |
| Aluminum head, BC0, high hinged cover, screw connection | **C** |
| Aluminum head, AG0, screw cover, suitable for Ex d[1] | **G** |
| Aluminum head, AH0, screw cover, suitable for Ex d, display[1] | **H** |
| Plastic head, BM0, screw cover | **M** |
| Plastic head, BP0high hinged cover, screw connection | **P** |
| Stainless steel head, AU0, screw cover, Ex d[1] | **U** |
| Stainless steel head, AV0, screw cover, suitable for Ex d, display[1] | **V** |
| **Sensor[2]** | |
| Please note: The accuracy class range can be lower than the measuring range. For more information, see page 2/18 | |
| Pt100, basis, -50 ... +400 °C (-58 ... +752 °F) | **A** |
| Pt100, vibration-resistant, -50 ... +400 °C (-58 ... +752 °F) | **B** |
| Pt100, expanded range, -196 ... +600 °C (-321 ... +1 112 °F) | **C** |
| Thermocouple Type J, only class 2, -40 ... +750 °C (-40 ... +1 382 °F) | **J** |
| Thermocouple Type K, -40 .. . +1 000 °C (-40 ... +1 832 °F) | **K** |
| Thermocouple Type N, -40 ... +1 000 °C (-40 ... +1 832 °F) | **N** |
| **Sensor number/Accuracy** | |
| Circuit Pt 100: 1 x 4-wire circuit or 2 x 3-wire circuit, see "Measuring technique: Connection types", page 2/20 | |
| Single, basic accuracy (Class 2/Class B) | **1** |
| Single, increased accuracy (Class 1/Class A) | **2** |
| Single, highest accuracy (Class AA) | **3** |
| Double, basic accuracy (Class 2/Class B) | **5** |
| Double, increased accuracy (Class 1/Class A) | **6** |
| Double, highest accuracy (Class AA) | **7** |

[1] Ex d in connection with Order code E03

[2] Pt1000 versions are also available. To find these, please switch to Online Configuration in the PIA Life Cycle Portal: www.siemens.com/pia-portal

| Selection and Ordering data | Order code |
|---|---|
| ***Further designs*** | |
| Add "**-Z**" to Article No. and specify Order code. | |
| **Insertion length customer-specific** Select range, enter desired length in plain text (No entry = standard length) | **Y44** |

| Selection and Ordering data | Order code |
|---|---|
| ***Options*** | |
| Add "**-Z**" to Article No. and add options, separate extensions with "+". | |
| **Built-in head transmitter** | |
| Measuring range to be set must be specified with plain text data "Y01". | |
| SITRANS TH100, 4 ... 20 mA, Pt100 | **T10** |
| SITRANS TH100 Ex i (ATEX), 4 ... 20 mA, Pt100 | **T11** |
| SITRANS TH200, 4 ... 20 mA, Universal | **T20** |
| SITRANS TH200 Ex i (ATEX), 4 ... 20 mA, Universal | **T21** |
| SITRANS TH300, HART, Universal | **T30** |
| SITRANS TH300 Ex i (ATEX), HART, Universal | **T31** |
| SITRANS TH400 PA, Universal | **T40** |
| SITRANS TH400 PA Ex i, Universal | **T41** |
| SITRANS TH400 FF, Universal | **T45** |
| SITRANS TH400 FF Ex i, Universal | **T46** |
| **Explosion protection** | |
| Without explosion protection requirements (Europe, Australia, New Zealand) | **E00** |
| Intrinsic safety "i"/"IS[1] according to ATEX and IECEx (Europe, Australia, New Zealand) | **E01** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to ATEX and IECEx (Europe, Australia, New Zealand) | **E03** |
| Non-sparking "nA"/"NI" 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 housing "t"/"DIP"[2] 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"[1] according to cCSAus (USA, Canada) | **E18** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to cCSAus (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"[1] according to NEPSI (China) | **E55** |
| Flameproof enclosure "d"; dust protection through housing "t"[2] according to NEPSI (China) | **E56** |
| Non-sparking "nA"/"NI" according to NEPSI (China) | **E57** |
| Without explosion protection requirements (EAC) | **E80** |
| Intrinsic safety "i"/"IS"[1] according to EACEx (EAC) | **E81** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to EACEx (EAC) | **E82** |
| Non-sparking "nA"/"NI" according to EACEx (EAC) | **E83** |
| **Marine approvals** | |
| Det Norske Veritas Germanischer Lloyd (DNV GL) | **D01** |
| Bureau Veritas (BV) | **D02** |
| Lloyd's Register of Shipping (LR) | **D04** |
| American Bureau of Shipping (ABS) | **D05** |
| **Certificates and approvals** | |
| EN 10204-3.1 Inspection certificate for materials coming into contact with media | **C12** |
| EN 10204-3.1 Inspection certificate for hydrostatic pressure test | **C31** |
| EN 10204-3.1 Inspection certificate for helium leak test | **C32** |
| EN 10204-3.1 Inspection certificate for surface tear test | **C33** |
| EN 10204-3.1 Inspection certificate: visual, measurement and functional inspection | **C34** |
| EN 10204-2.1: Declaration of compliance with the order | **C35** |
| ISO 9001 grease-free (cleaned for e.g. oxygen applications) | **C51** |

## Type 3, tubular quick, without process connection



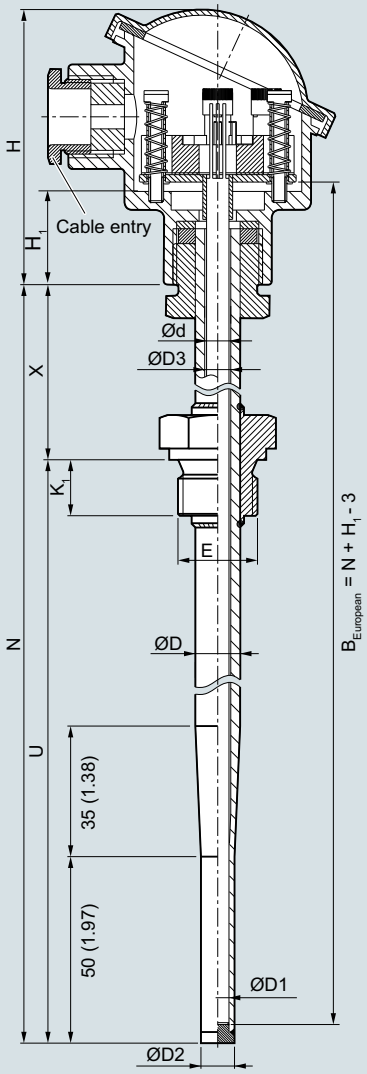
| Selection and Ordering data | Order code |
|---|---|
| **Designation, calibration** | |
| Stainless steel TAG plate , enter lettering in plain text | **Y15** |
| Plant calibration per 1 point, enter temperature in plain text | **Y33** |
| **Transmitter options** | |
| Transmitter, enter complete setting in plain text (Y01:+/-NNNN ... +/-NNNN C,F), marking on the device when Order code "Y15" is selected | **Y01** |
| Enter measuring point (max. 8 characters) in plain text | **Y17** |
| Transmitter, enter measuring point description (max. 16 characters) in plain text | **Y23** |
| Transmitter, enter measuring point text (max. 32 characters) in plain text | **Y24** |
| Transmitter, enter bus address in plain text | **Y25** |
| Transmitter, fail-safe value 3.6 mA (instead of 22.8 mA) | **U36** |
| Transmitter with a SIL 2 conformity | **C20** |
| Transmitter with a SIL 2/3 conformity | **C23** |
| Transmitter test protocol (5 points) | **C11** |
| ***Further options*** | |
| Connection form, flying leads (for the direct transmitter assembly, delivery without screws and springs) | **G01** |
| M12 device plug (in combination with 1x Pt100 and/or transmitter, Non-Ex and intrinsically safe, max. IP65/67) | **G12** |
| Han 7D 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** |
| with outer earth screw for heads AG0, AH0, AU0 and AV0 | **A02** |
| with inner earth screw for heads BC0, AG0, AH0, AU0 and AV0 | **A03** |
| Compression joint G½", enclosed | **A31** |
| Compression joint NPT½", enclosed | **A32** |
| **Option not found?** | |
| Handling number special version | **Y99** |

[1] Please select Ex i version of the optional transmitter.

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

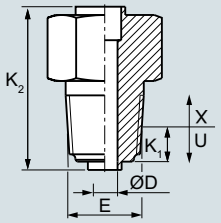
**You find ordering examples on page 2/41.**
**Accessories, see page 2/238.**

## Dimensional drawings




| | |
|---|---|
| B | Measuring insert length |
| Ød | Measuring insert outer diameter (6 (0.24)) |
| ØD | Process connection outer diameter |
| ØD1 | Tip internal diameter |
| ØD2 | Tip outer diameter |
| ØD3 | Thermowell internal diameter |
| E | Process connection, thread size |
| H | Head height |
| $H_1$ | Type Axx = 41 (1.61)<br>Type Bxx = 26 (1.02) |
| $K_1$ | Screw depth |
| N | Nominal length |
| U | Insertion length |
| X | Extension length |

SITRANS TS500, temperature sensors for vessels and pipelines, tubular version for minimal to medium stress, thermowell as per DIN 43722, Type 3G, screwed in, with extension.
For dimensions for the screw depth see page 2/12, dimensions in mm (inch).




Tapered process connection, dimensions in mm (inch)

## Type 3G, tubular quick, with screw socket and extension

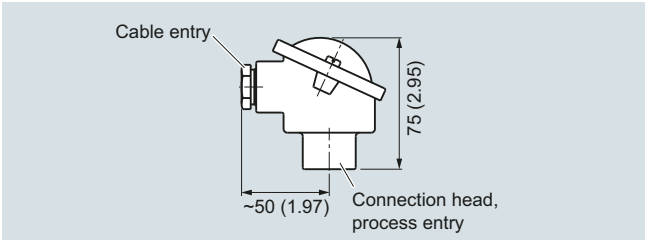
2

| Selection and Ordering data | Article No. | Ord. Code |
|---|---|---|
| **SITRANS TS500** ↗ | **7MC751-** | |
| **Tubular thermowell, minimal to medium stress, thermowell as per DIN 43722, Type 3G, screwed in, with extension** | - | - |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | | |
| **Material, in contact with media** | | |
| 316Ti (1.4571) | 1 | |
| 316L (1.4404 or 1.4435) | 2 | |
| **Process connection** | | |
| Cylindrical: G½" inch (½" BSPP) | 1 C | |
| Cylindrical: G1" inch (1" BSPP) | 1 E | |
| Tapered: NPT½" | 1 J | |
| **Thermowell form** | | |
| 3G, 12/9 mm (0.47/0.35 inch) | K | |
| **Insertion length U standard** | | |
| 160 mm (6.30 inch) | 0 4 | |
| 220 mm (8.66 inch) | 0 7 | |
| 280 mm (11.02 inch) | 1 3 | |
| **Insertion length U customer-specific** | | |
| enter customer specific length with Y44, see page 2/84 Order codes | | |
| 121 ... 140 mm (4.76 ... 5.51 inch) Initial: 140 mm (5.51 inch) | 0 3 | |
| 141 ... 160 mm (5.55 ... 6.30 inch) Initial: 160 mm (6.30 inch) | 0 4 | |
| 161 ... 180 mm (6.34 ... 7.09 inch) Initial: 180 mm (7.09 inch) | 0 5 | |
| 181 ... 200 mm (7.13 ... 7.87 inch) Initial: 200 mm (7.87 inch) | 0 6 | |
| 201 ... 220 mm (7.91 ... 8.66 inch) Initial: 220 mm (8.66 inch) | 0 7 | |
| 221…240 mm (8.70 ... 9.45 inch) Initial: 225 mm (8.86 inch) | 1 1 | |
| 241…260 mm (9.49 ... 10.24 inch) Initial: 250 mm (9.84 inch) | 1 2 | |
| 261…280 mm (10.28 ...11.02 inch) Initial: 280 mm (11.02 inch) | 1 3 | |
| 281…300 mm (11.06 ... 11.81 inch) Initial: 285 mm 11.22 inch) | 1 4 | |
| 301…320 mm (11.85 ... 13.00 inch) Initial: 315 mm (12.40 inch) | 1 5 | |
| 321…340 mm (12.64 ... 13.39 inch) Initial: 340 mm (13.39 inch) | 1 6 | |
| 341…360 mm (13.43 ... 14.17 inch) Initial: 360 mm (14.17 inch) | 2 0 | |
| 361…380 mm (14.21 ... 14.96 inch) Initial: 380 mm (14.96 inch) | 2 1 | |
| 381…400 mm (14.99 ... 15.75 inch) Initial: 400 mm (15.75 inch) | 2 2 | |
| 401…420 mm (15.79 ... 16.54 inch) Initial: 420 mm (16.54 inch) | 2 3 | |
| 421…440 mm (16.57 ... 17.32 inch) Initial: 440 mm (17.32 inch) | 2 4 | |
| 441…460 mm (17.36 ... 18.11 inch) Initial: 460 mm (18.11 inch) | 2 5 | |
| 461…480 mm (18.15 ... 18.90 inch) Initial: 465 mm (18.30 inch) | 2 6 | |
| 481…500 mm (18.94 ... 19.69 inch) Initial: 500 mm (19.69 inch) | 2 7 | |

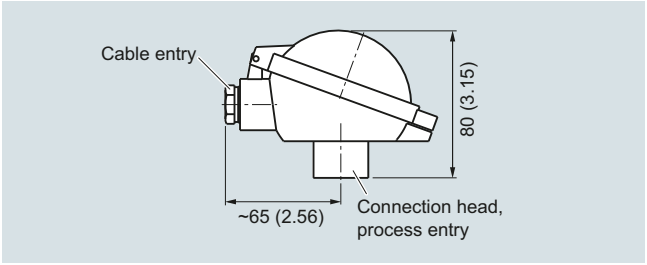
| Selection and Ordering data | Article No. | Ord. Code |
|---|---|---|
| **SITRANS TS500** | **7MC751-** | |
| **Tubular thermowell, minimal to medium stress, thermowell as per DIN 43722, Type 3G, screwed in, with extension** | - | - |
| 501 ... 550 mm (19.72 ... 21.65 inch) Initial: 510 mm (20.08 inch) | 3 1 | |
| 551 ... 600 mm (21.69 ... 23.62 inch) Initial: 600 mm (23.62 inch) | 3 2 | |
| 601 ... 650 mm (23.66 ... 25.59 inch) Initial: 650 mm (25.59 inch) | 3 3 | |
| 651 ... 700 mm (25.63 ... 27.56 inch) Initial: 700 mm (27.56 inch) | 3 4 | |
| 701 ... 750 mm (27.6 ... 29.53 inch) Initial: 750 mm (29.53 inch) | 3 5 | |
| 751 ... 800 mm (29.57 ... 31.50 inch) Initial: 800 mm (31.50 inch) | 3 6 | |
| 801 ... 850 mm (31.53 ... 33.46 inch) Initial: 850 mm (33.46 inch) | 3 7 | |
| 851 ... 900 mm (33.50 ... 35.43 inch) Initial: 900 mm (35.43 inch) | 4 1 | |
| 901 ... 950 mm (35.47 ... 37.40 inch) Initial: 950 mm (37.40 inch) | 4 2 | |
| 951 ... 1 000 mm (37.44 ... 39.37 inch) Initial: 1 000 mm (39.37 inch) | 4 3 | |
| **Extension X** | | |
| Standard length for Type 2G DIN 43772 (X=131 mm (5.08 inch)) | 1 | |
| **Extension length - customer specific** | | |
| enter customer specific length with Y45, see page 2/84 Order codes | | |
| 45 ...150 mm (1.77 ... 5.91 inch) Initial: 150 mm (5.91 inch) | 9 | N 1 D |
| 151 ... 300 mm (5.95 ... 11.81 inch) Initial: 300 mm (11.81 inch) | 9 | N 2 D |

**Additional configurations on page after next page!**

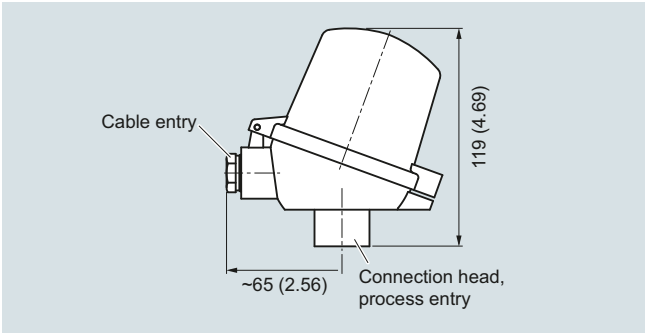
**You find ordering examples on page 2/41!**



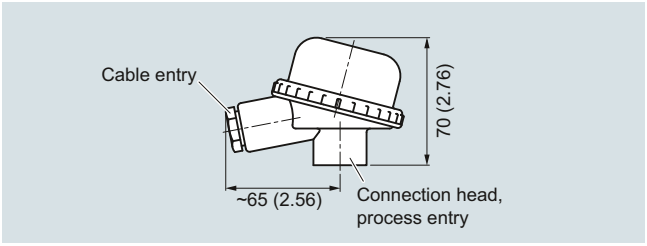

Connection head, aluminum, Type BA0, dimensions in mm (inch)



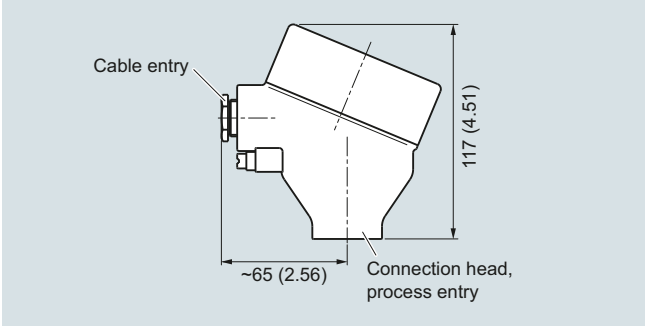

Connection head, aluminum, Type BB0, dimensions in mm (inch)



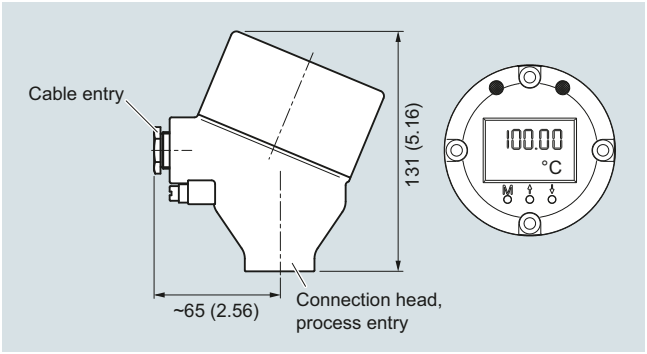

Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)




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




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)

## Type 3G, tubular quick, with screw socket and extension



| Selection and Ordering data | Article No. |
|---|---|
| **SITRANS TS500**<br>**Tubular thermowell, minimal to medium stress, thermowell as per DIN 43722, Type 3G, screwed in, with extension** | **7MC751-** ■ - ■■■■■ - ■■■ |
| **Head** | |
| Aluminum head, BA0, flange cover, Standard | A |
| Aluminum head, BB0, low hinged cover, screw connection | B |
| Aluminum head, BC0, high hinged cover, screw connection | C |
| Aluminum head, AG0, screw cover, suitable for Ex d[1] | G |
| Aluminum head, AH0, screw cover, suitable for Ex d, display[1] | H |
| Plastic head, BM0, screw cover | M |
| Plastic head, BP0high hinged cover, screw connection | P |
| Stainless steel head, AU0, screw cover, Ex d[1] | U |
| Stainless steel head, screw cover, Ex d, display[1] | V |
| **Sensor[2]**<br>Please note: The accuracy class range can be lower than the measuring range. For more information, see page 2/18 | |
| Pt100, basis, -50 ... +400 °C (-58 ... +752 °F) | A |
| Pt100, vibration resistant, -50 ... +400 °C (-58 ... +752 °F) | B |
| Pt100, expanded range, -196 ... +600 °C (-321 ... +1 112 °F) | C |
| Thermocouple Type J, only class 2, -40 ... +750 °C (-40 ... +1 382 °F) | J |
| Thermocouple Type K, -40 .. . +1 000 °C (-40 ... +1 832 °F) | K |
| Thermocouple Type N, -40 ... + 1000 °C (-40 ... +1 832 °F) | N |
| **Sensor number/Accuracy**<br>Circuit Pt 100: 1 x 4-wire circuit or 2 x 3-wire circuit, see "Measuring technique: Connection types", page 2/20 | |
| Single, basic accuracy (Class 2/Class B) | 1 |
| Single, increased accuracy (Class 1/Class A) | 2 |
| Single, highest accuracy (Class AA) | 3 |
| Double, basic accuracy (Class 2/Class B) | 5 |
| Double, increased accuracy (Class 1/Class A) | 6 |
| Double, highest accuracy (Class AA) | 7 |

[1] Ex d in connection with Order code E03

[2] Pt1000 versions are also available. To find these, please switch to Online Configuration in the PIA Life Cycle Portal: www.siemens.com/pia-portal

| Selection and Ordering data | Order code |
|---|---|
| ***Further designs***<br>Add "**-Z**" to Article No. and specify Order code. | |
| **Insertion length customer-specific**<br>Select range, enter desired length in plain text (No entry = standard length) | **Y44** |
| **Extension length customer-specific**<br>Select range, enter desired length in plain text (No entry = standard length) | **Y45** |

| Selection and Ordering data | Order code |
|---|---|
| ***Options***<br>Add "**-Z**" to Article No. and add options, separate extensions with "+". | |
| **Built-in head transmitter**<br>Measuring range to be set must be specified with plain text data "Y01". | |
| SITRANS TH100, 4 ... 20 mA, Pt100 | **T10** |
| SITRANS TH100 Ex i (ATEX), 4 ... 20 mA, Pt100 | **T11** |
| SITRANS TH200, 4 ... 20 mA, Universal | **T20** |
| SITRANS TH200 Ex i (ATEX), 4 ... 20 mA, Universal | **T21** |
| SITRANS TH300, HART, Universal | **T30** |
| SITRANS TH300 Ex i (ATEX), HART, Universal | **T31** |
| SITRANS TH400 PA, Universal | **T40** |
| SITRANS TH400 PA Ex i, Universal | **T41** |
| SITRANS TH400 FF, Universal | **T45** |
| SITRANS TH400 FF Ex i, Universal | **T46** |
| **Explosion protection** | |
| Without explosion protection requirements (Europe, Australia, New Zealand) | **E00** |
| Intrinsic safety "i"/"IS[1] according to ATEX and IECEx (Europe, Australia, New Zealand) | **E01** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to ATEX and IECEx (Europe, Australia, New Zealand) | **E03** |
| Non-sparking "nA"/"NI" 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 housing "t"/"DIP"[2] 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"[1] according to cCSAus (USA, Canada) | **E18** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to cCSAus (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"[1] according to NEPSI (China) | **E55** |
| Flameproof enclosure "d"; dust protection through housing "t"[2] according to NEPSI (China) | **E56** |
| Non-sparking "nA"/"NI" according to NEPSI (China) | **E57** |
| Without explosion protection requirements (EAC) | **E80** |
| Intrinsic safety "i"/"IS"[1] according to EACEx (EAC) | **E81** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to EACEx (EAC) | **E82** |
| Non-sparking "nA"/"NI" according to EACEx (EAC) | **E83** |
| **Marine approvals** | |
| Det Norske Veritas Germanischer Lloyd (DNV GL) | **D01** |
| Bureau Veritas (BV) | **D02** |
| Lloyd's Register of Shipping (LR) | **D04** |
| American Bureau of Shipping (ABS) | **D05** |
| **Certificates and approvals** | |
| EN 10204-3.1 Inspeciton certificate for materials coming into contact with media | **C12** |
| EN 10204-3.1 Inspection certificate for hydrostatic pressure test | **C31** |
| EN 10204-3.1 Inspection certificate for helium leak test | **C32** |
| EN 10204-3.1 Inspection certificate for surface tear test | **C33** |
| EN 10204-3.1 Inspectiont certificate: visual, measurement and functional inspection | **C34** |
| EN 10204-2.1: Declaration of compliance with the order | **C35** |
| ISO 9001 grease-free (cleaned for e.g. oxygen applications) | **C51** |

| Selection and Ordering data | Order code |
|---|---|
| **Designation, calibration** | |
| Stainless steel TAG plate , enter lettering in plain text | **Y15** |
| Plant calibration per 1 point, enter temperature in plain text | **Y33** |
| **Transmitter options** | |
| Transmitter, enter complete setting in plain text (Y01:+/-NNNN ... +/-NNNN C,F), marking on the device when Order code "Y15" is selected | **Y01** |
| Enter measuring point (max. 8 characters) in plain text | **Y17** |
| Transmitter, enter measuring point description (max. 16 characters) in plain text | **Y23** |
| Transmitter, enter measuring point text (max. 32 characters) in plain text | **Y24** |
| Transmitter, enter bus address in plain text | **Y25** |
| Transmitter, fail-safe value 3.6 mA (instead of 22.8 mA) | **U36** |
| Transmitter with a SIL 2 conformity | **C20** |
| Transmitter with a SIL 2/3 conformity | **C23** |
| Transmitter test protocol (5 points) | **C11** |
| ***Further options*** | |
| Connection form, flying leads (for the direct transmitter assembly, delivery without screws and springs) | **G01** |
| M12 device plug (in combination with 1x Pt100 and/or transmitter, Non-Ex and intrinsically safe, max. IP65/67) | **G12** |
| Han 7D 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** |
| with outer earth screw for heads AG0, AH0, AU0 and AV0 | **A02** |
| with inner earth screw for heads BC0, AG0, AH0, AU0 and AV0 | **A03** |
| **Option not found?** | |
| Handling number special version | **Y99** |

[1] Please select Ex i version of the optional transmitter.

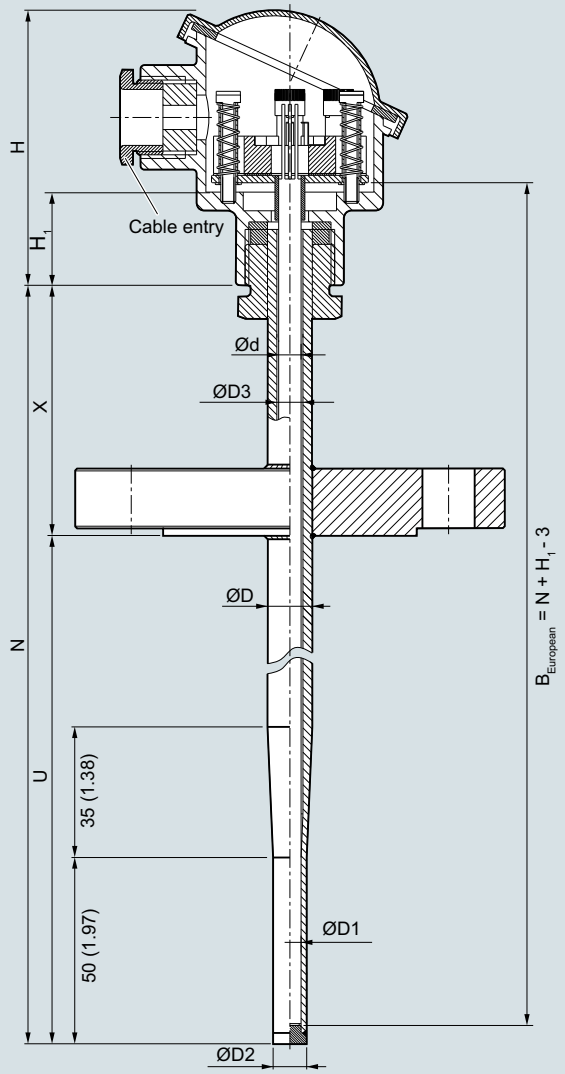
[2] Only with connection heads code AG0, AH0, AU0, AV0, without cable gland (please select non-Ex version of the optional transmitter).

**You find ordering examples on page 2/41.**
**Accessories, see page 2/238.**

## Type 3F, tubular quick, with flange and extension



### Dimensional drawings




| | |
|---|---|
| B | Measuring insert length |
| Ød | Measuring insert outer diameter (6 (0.24)) |
| ØD | Process connection outer diameter |
| ØD1 | Tip internal diameter |
| ØD2 | Tip outer diameter |
| ØD3 | Thermowell internal diameter |
| H | Head height |
| $H_1$ | Type Axx = 41 (1.61)<br>Type Bxx = 26 (1.02) |
| N | Nominal length |
| U | Insertion length |
| X | Extension length |

SITRANS TS500, temperature sensors for vessels and pipelines, tubular version for minimal to medium stress, thermowell as per DIN 43722, Type 3F, with flange, with extension, dimensions in mm (inch)

| Selection and Ordering data | Article No. | Ord. Code |
|---|---|---|
| **SITRANS TS500** ↗ | **7MC751-** | |
| **Tubular thermowell, minimal to medium stress, thermowell as per DIN 43722, Type 3F, with flange, with extension** | - | - |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | | |
| **Material, in contact with media** | | |
| 316Ti (1.4571) | **1** | |
| 316L (1.4404 or 1.4435) | **2** | |
| **Process connection** | | |
| Flange EN; DN25 PN10 ... 40 B1 | **2 A** | |
| Flange ASME; 1"RF150 | **2 E** | |
| Flange ASME; 1"RF300 | **2 F** | |
| Flange ASME; 1.5"RF150 | **2 G** | |
| Flange ASME; 1.5"RF300 | **2 H** | |
| **Thermowell form** | | |
| 3F; 12/9 mm (0.47/0.35 inch) | **K** | |
| **Insertion length U standard** | | |
| 225 mm (8.86 inch) | **1 1** | |
| 285 mm (11.22 inch) | **1 4** | |
| 345 mm (13.58 inch) | **1 7** | |
| **Insertion length U customer-specific** enter customer specific length with Y44, see page 2/89 Order codes | | |
| 121 ... 140 mm (4.76 ... 5.51 inch) Initial: 140 mm (5.51 inch) | **0 3** | |
| 141 ... 160 mm (5.55 ... 6.30 inch) Initial: 160 mm (6.3 inch) | **0 4** | |
| 161 ... 180 mm (6.34 ... 7.09 inch) Initial: 180 mm (7.09 inch) | **0 5** | |
| 181 ... 200 mm (7.13 ... 7.87 inch) Initial: 200 mm (7.87 inch) | **0 6** | |
| 201 ... 220 mm (7.91 ... 8.66 inch) Initial: 220 mm (8.66 inch) | **0 7** | |
| 221 ... 240 mm (8.7 ... 9.45 inch) Initial: 225 mm (8.86 inch) | **1 1** | |
| 241 ... 260 mm (9.48 ... 10.24 inch) Initial: 250 mm (9.84 inch) | **1 2** | |
| 261 ... 280 mm (10.28 ... 11.02 inch) Initial: 280 mm (11.02 inch) | **1 3** | |
| 281 ... 300 mm (11.02 ... 11.81 inch) Initial: 285 mm (11.22 inch) | **1 4** | |
| 301 ... 320 mm (11.85 ... 12.6 inch) Initial: 315 mm (12.4 inch) | **1 5** | |
| 321 ... 340 mm (12.64 ... 13.39 inch) Initial: 340 mm (13.39 inch) | **1 6** | |
| 341 ... 360 mm (13.43 ... 14.17 inch) Initial: 345 mm (13.58 inch) | **1 7** | |
| 361 ... 380 mm (14.21 ... 14.96 inch) Initial: 380 mm (14.96 inch) | **2 1** | |
| 381 ... 400 mm (15 ... 15.75 inch) Initial: 400 mm (15.75 inch) | **2 2** | |
| 401 ... 420 mm (15.79 ... 16.54 inch) Initial: 420 mm (16.54 inch) | **2 3** | |
| 421 ... 440 mm (16.57 ... 17.32 inch) Initial: 440 mm (17.32 inch) | **2 4** | |
| 441 ... 460 mm (17.36 ... 18.11 inch) Initial: 460 mm (18.11 inch) | **2 5** | |
| 461 ... 480 mm (18.15 ... 18.90 inch) Initial: 465 mm (18.30 inch) | **2 6** | |
| 481 ... 500 mm (18.94 ... 19.68 inch) Initial: 500 mm (19.68 inch) | **2 7** | |

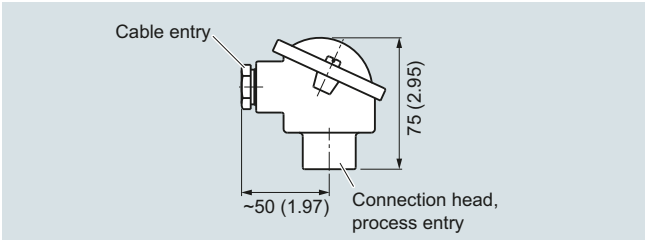
| Selection and Ordering data | Article No. | Ord. Code |
|---|---|---|
| **SITRANS TS500** | **7MC751-** | |
| **Tubular thermowell, minimal to medium stress, thermowell as per DIN 43722, Type 3F, with flange, with extension** | - | - |
| 501 ... 550 mm (19.72 ... 21.65 inch) Initial: 510 mm (20.08 inch) | **3 1** | |
| 551 ... 600 mm (21.69 ... 23.62 inch) Initial: 600 mm (23.62 inch) | **3 2** | |
| 601 ... 650 mm (23.66 ... 25.59 inch) Initial: 650 mm (25.59 inch) | **3 3** | |
| 651 ... 700 mm (25.63 ... 27.56 inch) Initial: 700 mm (27.56 inch) | **3 4** | |
| 701 ... 750 mm (27.6 ... 29.53 inch) Initial: 750 mm (29.53 inch) | **3 5** | |
| 751 ... 800 mm (29.57 ... 31.50 inch) Initial: 800 mm (31.50 inch) | **3 6** | |
| 801 ... 850 mm (31.53 ... 33.46 inch) Initial: 850 mm (33.46 inch) | **3 7** | |
| 851 ... 900 mm (33.50 ... 35.43 inch) Initial: 900 mm (35.43 inch) | **4 1** | |
| 901 ... 950 mm (35.47 ... 37.40 inch) Initial: 950 mm (37.40 inch) | **4 2** | |
| 951 ... 1 000 mm (37.44 ... 39.37 inch) Initial: 1 000 mm (39.37 inch) | **4 3** | |
| 1 001 ... 1 100 mm (39.41 ... 43.31 inch) Initial: 1 100 mm (43.31 inch) | **4 4** | |
| **Extension** | | |
| Standard length for Type 3F DIN 43772 (X=66 mm (2.60 inch)) | **1** | |
| **Extension length - customer specific** enter customer specific length with Y45, see page 2/89 Order codes | | |
| 45 ...150 mm (1.77 ... 5.91 inch) Initial: 150 mm (5.91 inch) | **9** | **N 1 D** |
| 151 ... 300 mm (5.95 ... 11.81 inch) Initial: 300 mm (11.81 inch) | **9** | **N 2 D** |

**Additional configurations on page after next page!**

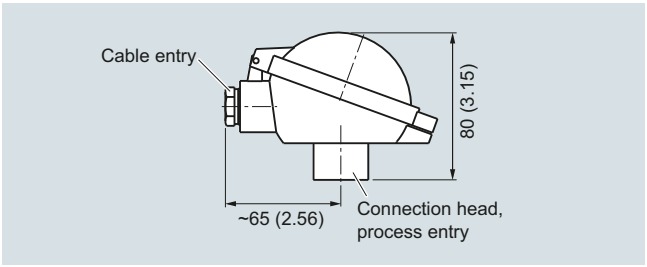
**You find ordering examples on page 2/41!**

## Type 3F, tubular quick, with flange and extension

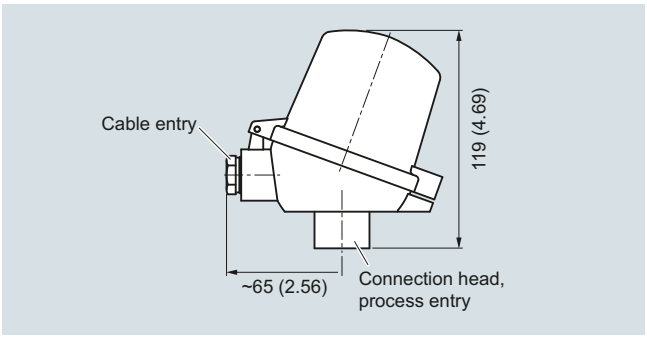




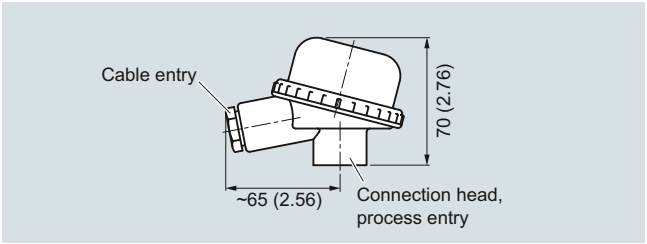

Connection head, aluminum, Type BA0, dimensions in mm (inch)



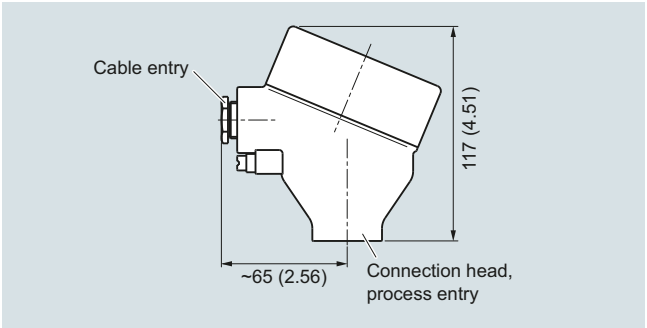

Connection head, aluminum, Type BB0, dimensions in mm (inch)



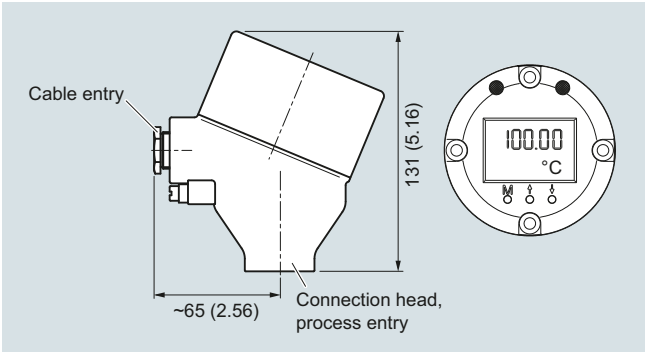

Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)




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




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 | Article No. | Ord. Code |
|---|---|---|
| **SITRANS TS500**<br>**Tubular thermowell, minimal to medium stress, thermowell as per DIN 43722, Type 3F, with flange, with extension** | **7MC751-** | - - - |
| **Head** | | |
| Aluminum head, BA0, flange cover, Standard | | **A** |
| Aluminum head, BB0, low hinged cover, screw connection | | **B** |
| Aluminum head, BC0, high hinged cover, screw connection | | **C** |
| Aluminum head, AG0, screw cover, suitable for Ex d[1] | | **G** |
| Aluminum head, AH0, screw cover, suitable for Ex d, display[1] | | **H** |
| Plastic head, BM0, screw cover | | **M** |
| Plastic head, BP0high hinged cover, screw connection | | **P** |
| Stainless steel head, AU0, screw cover, Ex d[1] | | **U** |
| Stainless steel head, screw cover, Ex d, display[1] | | **V** |
| **Sensor[2]** | | |
| Please note: The accuracy class range can be lower than the measuring range. For more information, see page 2/18 | | |
| Pt100, basis, -50 ... +400 °C (-58 ... +752 °F) | | **A** |
| Pt100, vibration.resistant, -50 ... +400 °C (-58 ... +752 °F) | | **B** |
| Pt100, expanded range, -196 ... +600 °C (-321 ... +1 112 °F) | | **C** |
| Thermocouple Type J, only class 2, -40 ... +750 °C (-40 ... +1 382 °F) | | **J** |
| Thermocouple Type K, -40 .. . +1 000 °C (-40 ... +1 832 °F) | | **K** |
| Thermocouple Type N, -40 ... +1 000 °C (-40 ... 1 832 °F) | | **N** |
| **Sensor number/Accuracy** | | |
| Circuit Pt 100: 1 x 4-wire circuit or 2 x 3-wire circuit, see "Measuring technique: Connection types", page 2/20 | | |
| Single, basic accuracy (Class 2/Class B) | | **1** |
| Single, increased accuracy (Class 1/Class A) | | **2** |
| Single, highest accuracy (Class AA) | | **3** |
| Double, basic accuracy (Class 2/Class B) | | **5** |
| Double, increased accuracy (Class 1/Class A) | | **6** |
| Double, highest accuracy (Class AA) | | **7** |

[1] Ex d in connection with Order code E03

[2] Pt1000 versions are also available. To find these, please switch to Online Configuration in the PIA Life Cycle Portal: www.siemens.com/pia-portal

| Selection and Ordering data | Order code |
|---|---|
| ***Further designs***<br>Add "**-Z**" to Article No. and specify Order code. | |
| **Insertion length customer-specific**<br>Select range, enter desired length in plain text (No entry = standard length) | **Y44** |
| **Extension length customer-specific**<br>Select range, enter desired length in plain text (No entry = standard length) | **Y45** |

| Selection and Ordering data | Order code |
|---|---|
| ***Options***<br>Add "**-Z**" to Article No. and add options, separate extensions with "+". | |
| **Built-in head transmitter**<br>Measuring range to be set must be specified with plain text data "Y01". | |
| SITRANS TH100, 4 ... 20 mA, Pt100 | **T10** |
| SITRANS TH100 Ex i (ATEX), 4 ... 20 mA, Pt100 | **T11** |
| SITRANS TH200, 4 ... 20 mA, Universal | **T20** |
| SITRANS TH200 Ex i (ATEX), 4 ... 20 mA, Universal | **T21** |
| SITRANS TH300, HART, Universal | **T30** |
| SITRANS TH300 Ex i (ATEX), HART, Universal | **T31** |
| SITRANS TH400 PA, Universal | **T40** |
| SITRANS TH400 PA Ex i, Universal | **T41** |
| SITRANS TH400 FF, Universal | **T45** |
| SITRANS TH400 FF Ex i, Universal | **T46** |
| **Explosion protection** | |
| Without explosion protection requirements (Europe, Australia, New Zealand) | **E00** |
| Intrinsic safety "i"/"IS[1] according to ATEX and IECEx (Europe, Australia, New Zealand) | **E01** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to ATEX and IECEx (Europe, Australia, New Zealand) | **E03** |
| Non-sparking "nA"/"NI" 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 housing "t"/"DIP"[2] 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"[1] according to cCSAus (USA, Canada) | **E18** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to cCSAus (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"[1] according to NEPSI (China) | **E55** |
| Flameproof enclosure "d"; dust protection through housing "t"[2] according to NEPSI (China) | **E56** |
| Non-sparking "nA"/"NI" according to NEPSI (China) | **E57** |
| Without explosion protection requirements (EAC) | **E80** |
| Intrinsic safety "i"/"IS"[1] according to EACEx (EAC) | **E81** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to EACEx (EAC) | **E82** |
| Non-sparking "nA"/"NI" according to EACEx (EAC) | **E83** |
| **Marine approvals** | |
| Det Norske Veritas Germanischer Lloyd (DNV GL) | **D01** |
| Bureau Veritas (BV) | **D02** |
| Lloyd's Register of Shipping (LR) | **D04** |
| American Bureau of Shipping (ABS) | **D05** |
| **Certificates and approvals** | |
| EN 10204-3.1 Inspection certificate for materials coming into contact with media | **C12** |
| EN 10204-3.1 Inspection certificate for hydrostatic pressure test | **C31** |
| EN 10204-3.1 Inspection certificate for helium leak test | **C32** |
| EN 10204-3.1 Inspection certificate for surface tear test | **C33** |
| EN 10204-3.1 Inspection certificate: visual, measurement and functional inspection | **C34** |
| EN 10204-2.1: Declaration of compliance with the order | **C35** |
| ISO 9001 grease-free (cleaned for e.g. oxygen applications) | **C51** |

## Type 3F, tubular quick, with flange and extension



| Selection and Ordering data | Order code |
|---|---|
| **Designation, calibration** | |
| Stainless steel TAG plate , enter lettering in plain text | **Y15** |
| Plant calibration per 1 point, enter temperature in plain text | **Y33** |
| **Transmitter options** | |
| Transmitter, enter complete setting in plain text (Y01:+/-NNNN ... +/-NNNN C,F) | **Y01** |
| Enter measuring point (max. 8 characters) in plain text | **Y17** |
| Transmitter, enter measuring point description (max. 16 characters) in plain text | **Y23** |
| Transmitter, enter measuring point text (max. 32 characters) in plain text | **Y24** |
| Transmitter, enter bus address in plain text | **Y25** |
| Transmitter, fail-safe value 3.6 mA (instead of 22.8 mA) | **U36** |
| Transmitter with a SIL 2 conformity | **C20** |
| Transmitter with a SIL 2/3 conformity | **C23** |
| Transmitter test protocol (5 points) | **C11** |
| ***Further options*** | |
| Connection form, flying leads (for the direct transmitter assembly, delivery without screws and springs) | **G01** |
| M12 device plug (in combination with 1x Pt100 and/or transmitter, Non-Ex and intrinsically safe, max. IP65/67) | **G12** |
| Han 7D 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** |
| with outer earth screw for heads AG0, AH0, AU0 and AV0 | **A02** |
| with inner earth screw for heads BC0, AG0, AH0, AU0 and AV0 | **A03** |
| Surface treatment: pickled and passivated | **W01** |
| Surface treatment: electropolished RA 1.3 | **W02** |
| **Option not found?** | |
| Handling number special version | **Y99** |

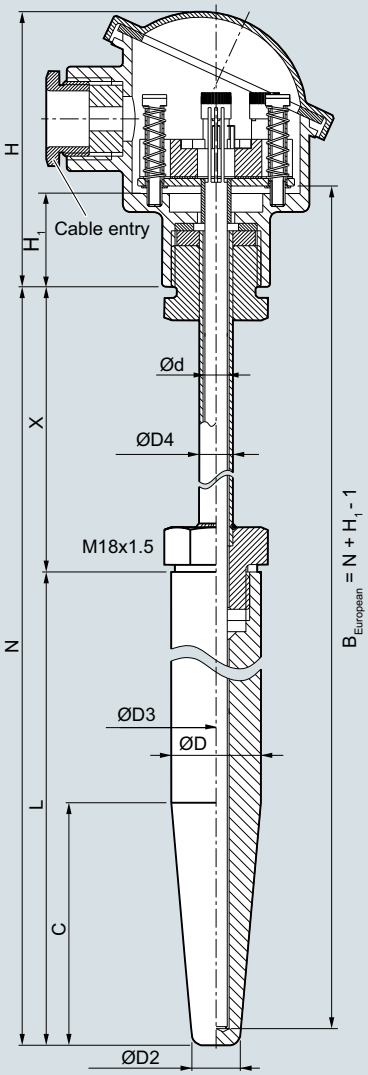
1) Please select Ex i version of the optional transmitter.

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

**You find ordering examples on page 2/41.**
**Accessories, see page 2/238.**

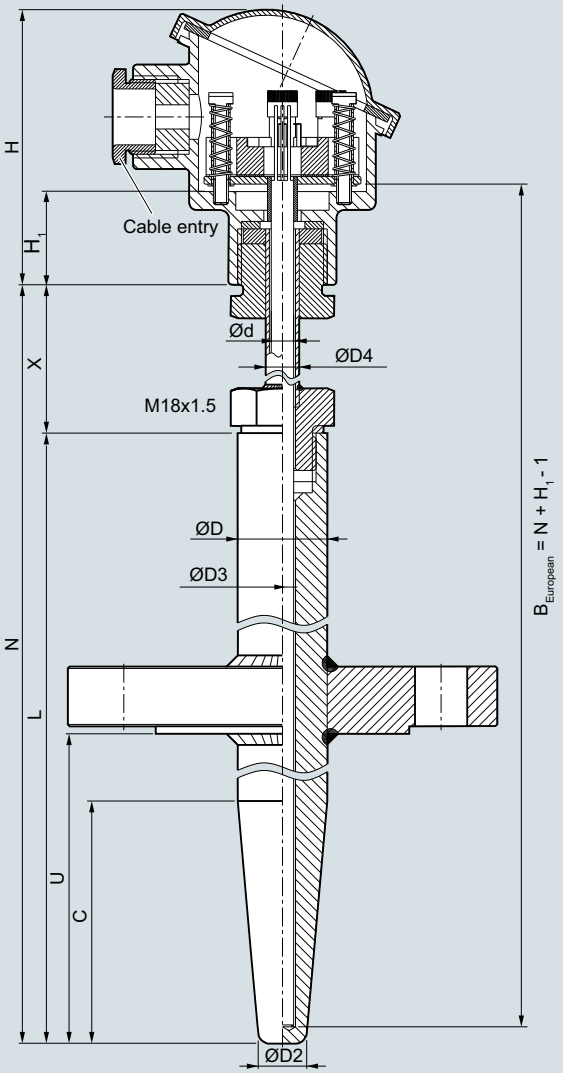
## Dimensional drawings

SITRANS TS500, temperature sensors for vessels and pipelines, barstock version for medium to extreme stress, thermowell as per DIN 43722.




| | |
|---|---|
| B | Measuring insert length |
| C | Cone length = $U_{min}$ |
| Ød | Measuring insert outer diameter (6 (0.24)) |
| ØD | Process connection outer diameter |
| ØD2 | Tip outer diameter |
| ØD3 | Thermowell internal diameter |
| ØD4 | Extension outer diameter |
| H | Head height |
| $H_1$ | Type Axx = 41 (1.61)<br>Type Bxx = 26 (1.02) |
| L | Length of thermowell |
| N | Nominal length |
| X | Extension length |

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




| | |
|---|---|
| B | Measuring insert length |
| C | Cone length = $U_{min}$ |
| Ød | Measuring insert outer diameter (6 (0.24)) |
| ØD | Process connection outer diameter |
| ØD2 | Tip outer diameter |
| ØD3 | Thermowell internal diameter |
| ØD4 | Extension outer diameter |
| H | Head height |
| $H_1$ | Type Axx = 41 (1.61)<br>Type Bxx = 26 (1.02) |
| L | Length of thermowell |
| N | Nominal length |
| U | Insertion length (Standard: U = L - 70 (2.76)) |
| X | Extension length |

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

## Type 4+4F barstock thermowell, with extension

2

| Selection and Ordering data | Article No. | Ord. Code |
|---|---|---|
| **SITRANS TS500** ↗ | **7MC752-** | |
| **Barstock thermowell for medium to highest stress, thermowell as per DIN 43722, Type 4, for welding in, Type 4F with flange, with extension** | ■ - ■■■■■■ - | ■■■ ■■■ |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | | |
| **Material, in contact with media** | | |
| 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** | |
| **Process connection** | | |
| Without (for welding in) | **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** | |
| **Thermowell form** | | |
| For flanged types only: specify with Y44 in plain text if insertion length "U" deviates from standard (U=L-70 mm (2.76 inch)). (Min: U = C; Max; U= L-50 mm (1.97 inch)) | | |
| Type 4/4F, L=140 mm (5.51 inch), C=65 mm (3.74 inch), ØD=24 mm (0.95 inch), Ød=6 mm (0.24 inch) | **A 0 0** | |
| Type 4/4F, L=200 mm (7.87 inch), C=65 mm (3.74 inch), ØD=24 mm (0.95 inch), Ød=6 mm (0.24 inch) | **B 0 0** | |
| Type 4/4F, L=200 mm (7.87 inch), C=125 mm (4.92 inch), ØD=24 mm (0.95 inch), Ød=6 mm (0.24 inch) | **D 0 0** | |
| Type 4/4F, L=260 mm (10.24 inch), C=125 mm (4.92 inch), ØD=24 mm (0.95 inch), Ød=6 mm (0.24 inch) | **E 0 0** | |
| **Extension X** | | |
| as per DIN 43772 (X=149 mm (5.87 inch)) | **1** | |
| **Extension X, customer-specific** enter customer specific length with Y45, see page 2/94 Order codes | | |
| 45 ...150 mm (1.77 ... 5.91 inch) Initial: 150 mm (5.91 inch) | **9** | **N 1 D** |
| 151 ... 300 mm (5.95 ... 11.81 inch) Initial: 300 mm (11.81 inch) | **9** | **N 2 D** |
| 301 ... 450 mm (11.85 ... 17.72 inch) Initial: 450 mm (17.72 inch) | **9** | **N 3 D** |
| 451 ... 600 mm (17.86 ... 23.62 inch) Initial: 600 mm (23.62 inch) | **9** | **N 4 D** |
| 601 ... 750 mm (23.66 ... 29.53 inch) Initial: 750 mm (29.53 inch) | **9** | **N 5 D** |
| 751 ... 900 mm (29.57 ... 45.43 inch) Initial: 900 mm (45.43 inch) | **9** | **N 6 D** |
| 901 ... 1 050 mm (45.47 ... 41.34 inch) Initial: 1 050 mm (41.34 inch) | **9** | **N 7 D** |

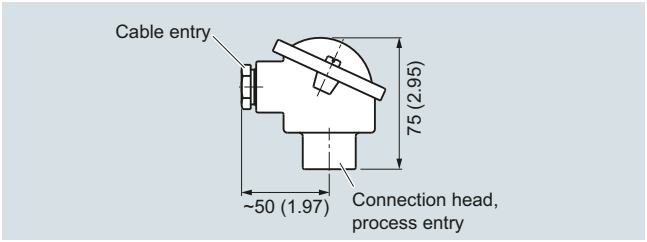
| Selection and Ordering data | Article No. | Ord. Code |
|---|---|---|
| **SITRANS TS500** | **7MC752-** | |
| **Barstock thermowell for medium to highest stress, thermowell as per DIN 43722, Type 4, for welding in, Type 4F with flange, with extension** | ■ - ■■■■■■ - | ■■■ ■■■ |
| **Head** | | |
| Aluminum head, BA0, flange cover, Standard | **A** | |
| Aluminum head, BB0, low hinged cover, screw connection | **B** | |
| Aluminum head, BC0, high hinged cover, screw connection | **C** | |
| Aluminum head, AG0, screw cover, suitable for Ex d[1] | **G** | |
| Aluminum head, AH0, screw cover, suitable for Ex d, display[1] | **H** | |
| Plastic head, BM0, screw cover | **M** | |
| Plastic head, BP0high hinged cover, screw connection | **P** | |
| Stainless steel head, AU0, screw cover, Ex d[1] | **U** | |
| Stainless steel head, AV0, screw cover, Ex d, display[1] | **V** | |
| **Sensor[2]** Please note: The accuracy class range can be lower than the measuring range. For more information, see page 2/18 | | |
| Pt100, basis, -50 ... +400 °C (-58 ... +752) | **A** | |
| Pt100, vibration resistant, -50 ... +400 °C (-58 ... +752) | **B** | |
| Pt100, expanded range, -196 ... +600 °C (-321 ... +1 112) | **C** | |
| Thermocouple Type K, -40 ... +1 000 °C (-40 ... +1 832) | **K** | |
| Thermocouple Type J, only class 2, -40 ... +750 °C (-40 ... +1 382) | **J** | |
| Thermocouple Type N, -40 ... +1 000 °C (-40 ... +1 832) | **N** | |
| **Sensor number/Accuracy** Circuit Pt 100: 1 x 4-wire circuit or 2 x 3-wire circuit, see "Measuring technique: Connection types", page 2/20 | | |
| Single, basic accuracy (Class 2/Class B) | **1** | |
| Single, increased accuracy (Class 1/Class A) | **2** | |
| Single, highest accuracy (Class AA) | **3** | |
| Double, basic accuracy (Class 2/Class B) | **5** | |
| Double, increased accuracy (Class 1/Class A) | **6** | |
| Double, highest accuracy (Class AA) | **7** | |

[1] Ex d in connection with Order code E03

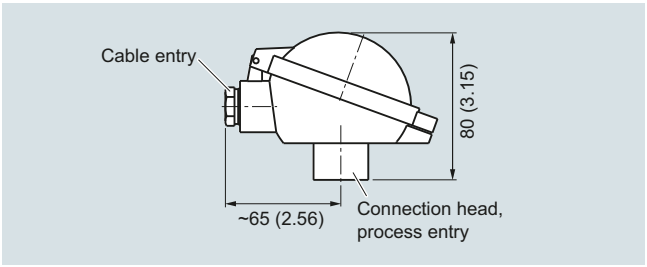
[2] Pt1000 versions are also available. To find these, please switch to Online Configuration in the PIA Life Cycle Portal: www.siemens.com/pia-portal

**Additional configurations on page after next page!**

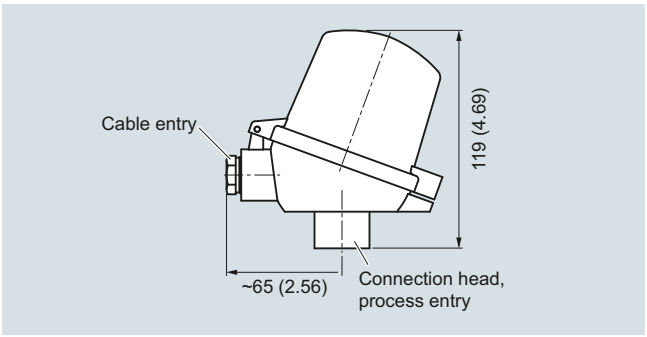
**You find ordering examples on page 2/41!**



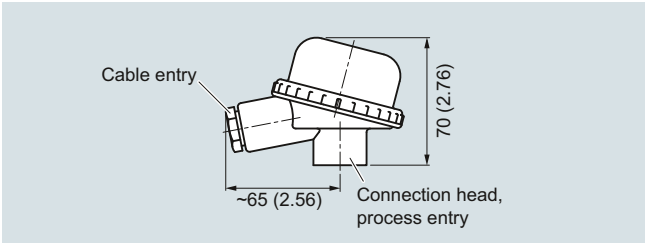

Connection head, aluminum, Type BA0, dimensions in mm (inch)



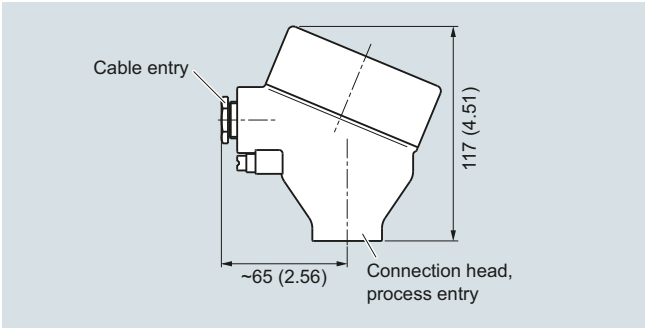

Connection head, aluminum, Type BB0, dimensions in mm (inch)



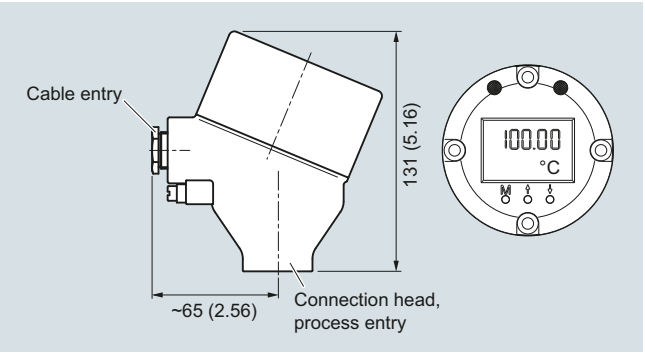

Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)




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




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)

## Type 4+4F barstock thermowell, with extension

2

| Selection and Ordering data | Order code |
|---|---|
| ***Further designs*** | |
| Add "**-Z**" to Article No. and specify Order code. | |
| **Insertion length customer-specific**<br>Select range, enter desired length in plain text Insertion length U deviating from standard;<br>(Min: U = C; Max; U= L-50 mm (1.97 inch)),<br>no entry = standard length (U=L-70 mm (2.76 inch)) | **Y44** |
| **Extension length customer-specific**<br>Select range, enter desired length in plain text<br>(No entry = standard length) | **Y45** |
| ***Options*** | |
| Add "**-Z**" to Article No. and add options, separate extensions with "+". | |
| **Built-in head transmitter**<br>Measuring range to be set must be specified with plain text data "Y01". | |
| SITRANS TH100, 4 ... 20 mA, Pt100 | **T10** |
| SITRANS TH100 Ex i (ATEX), 4 ... 20 mA, Pt100 | **T11** |
| SITRANS TH200, 4 ... 20 mA, Universal | **T20** |
| SITRANS TH200 Ex i (ATEX), 4 ... 20 mA, Universal | **T21** |
| SITRANS TH300, HART, Universal | **T30** |
| SITRANS TH300 Ex i (ATEX), HART, Universal | **T31** |
| SITRANS TH400 PA, Universal | **T40** |
| SITRANS TH400 PA Ex i, Universal | **T41** |
| SITRANS TH400 FF, Universal | **T45** |
| SITRANS TH400 FF Ex i, Universal | **T46** |
| **Explosion protection** | |
| Without explosion protection requirements (Europe, Australia, New Zealand) | **E00** |
| Intrinsic safety "i"/"IS[1] according to ATEX and IECEx (Europe, Australia, New Zealand) | **E01** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to ATEX and IECEx (Europe, Australia, New Zealand) | **E03** |
| Non-sparking "nA"/"NI" 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 housing "t"/"DIP"[2] 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"[1] according to cCSAus (USA, Canada) | **E18** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to cCSAus (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"[1] according to NEPSI (China) | **E55** |
| Flameproof enclosure "d"; dust protection through housing "t"[2] according to NEPSI (China) | **E56** |
| Non-sparking "nA"/"NI" according to NEPSI (China) | **E57** |
| Without explosion protection requirements (EAC) | **E80** |
| Intrinsic safety "i"/"IS"[1] according to EACEx (EAC) | **E81** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to EACEx (EAC) | **E82** |
| Non-sparking "nA"/"NI" according to EACEx (EAC) | **E83** |
| **Marine approvals** | |
| Det Norske Veritas Germanischer Lloyd (DNV GL) | **D01** |
| Bureau Veritas (BV) | **D02** |
| Lloyd's Register of Shipping (LR) | **D04** |
| American Bureau of Shipping (ABS) | **D05** |

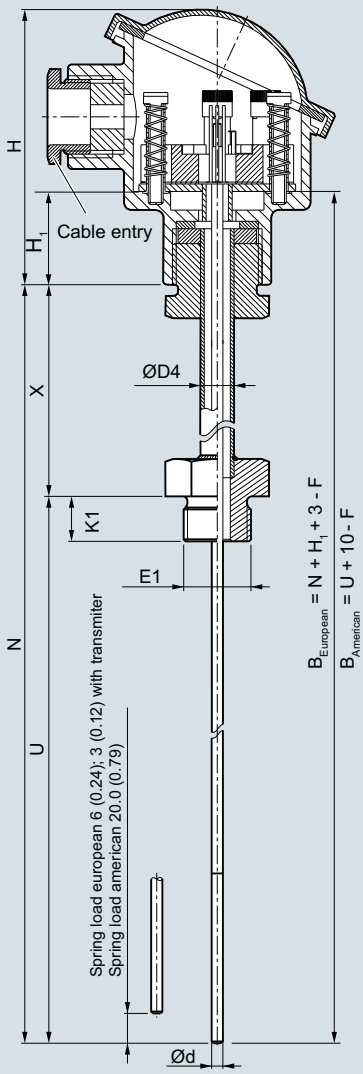
| Selection and Ordering data | Order code |
|---|---|
| **Certificates and approvals** | |
| EN 10204-3.1 Inspection certificate for materials coming into contact with media | **C12** |
| EN 10204-3.1 Inspection certificate for hydrostatic pressure test | **C31** |
| EN 10204-3.1 Inspection certificate for helium leak test | **C32** |
| EN 10204-3.1 Inspection certificate for surface tear test | **C33** |
| EN 10204-3.1 Inspection certificate: visual, measurement and functional inspection | **C34** |
| EN 10204-2.1: Declaration of compliance with the order | **C35** |
| NACE Standard MR-01-75 compliance | **C50** |
| ISO 9001 grease-free (cleaned for e.g. oxygen applications) | **C51** |
| **Designation, calibration** | |
| Stainless steel TAG plate , enter lettering in plain text | **Y15** |
| Plant calibration per 1 point, enter temperature in plain text | **Y33** |
| **Transmitter options** | |
| Transmitter, enter complete setting in plain text (Y01:+/-NNNN ... +/-NNNN C,F), marking on the device when Order code "Y15" is selected | **Y01** |
| Enter measuring point (max. 8 characters) in plain text | **Y17** |
| Transmitter, enter measuring point description (max. 16 characters) in plain text | **Y23** |
| Transmitter, enter measuring point text (max. 32 characters) in plain text | **Y24** |
| Transmitter, enter bus address in plain text | **Y25** |
| Transmitter, fail-safe value 3.6 mA (instead of 22.8 mA) | **U36** |
| Transmitter with a SIL 2 conformity | **C20** |
| Transmitter with a SIL 2/3 conformity | **C23** |
| Transmitter test protocol (5 points) | **C11** |
| ***Further options*** | |
| Connection form, flying leads (for the direct transmitter assembly, delivery without screws and springs) | **G01** |
| Full penetration process connection for 316L/316TI | **G02** |
| M12 device plug (in combination with 1x Pt100 and/or transmitter, Non-Ex and intrinsically safe, max. IP65/67) | **G12** |
| Han 7D 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** |
| with outer earth screw for heads AG0, AH0, AU0 and AV0 | **A02** |
| with inner earth screw for heads BC0, AG0, AH0, AU0 and AV0 | **A03** |
| **Option not found?** | |
| Handling number special version | **Y99** |

[1] Please select Ex i version of the optional transmitter.

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

**You find ordering examples on page 2/41.**
**Accessories, see page 2/238.**

## Dimensional drawings



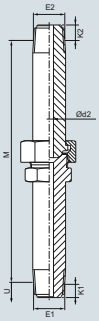

| | |
|---|---|
| B | Measuring insert length |
| Ød | Measuring insert outer diameter |
| ØD4 | Extension outer diameter |
| E1 | Process connection, thread size |
| H | Head height |
| $H_1$ | Type Axx = 41 (1.61)<br>Type Bxx = 26 (1.02) |
| K1 | Screw depth |
| N | Nominal length |
| U | Insertion length |
| X | Extension length |

Recommended rebound:
European versions = inside length of the protective tube + 3 (0.12)
American versions = inside length of the protective tube + 10 (0.39)

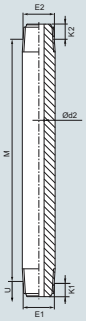
SITRANS TS500, temperature sensors for vessels and pipings, temperature sensors for installation in existing thermowells, suitable for thermowells as per DIN 43772 as well as ASME B40.9-2001 with extension European or American types, dimensions in mm (inch)


Extension (1, 2, 3), adjustable, european, cylindrical, dimensions in mm (inch)


Extension NPT (1, 2, 3), adjustable, european, conical, dimensions in mm (inch)




Extension NUN, adjustable, conical, european (5), american (8), dimensions in mm (inch)




Extension, nipple, non adjustable, conical, european (4), american (6), dimensions in mm (inch)

[1] Numerics 1 ... 8: s. Selection and Ordering data option extension page 2/96

## For installation in existing protective tubes

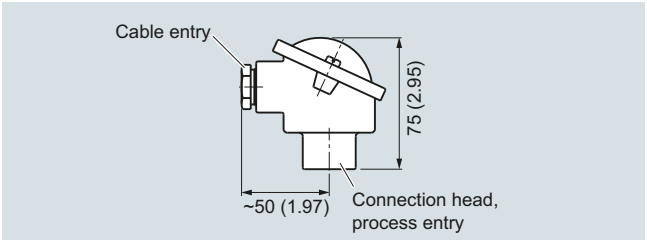
2

| Selection and Ordering data | Article No. | Ord. Code |
|---|---|---|
| **SITRANS TS500** ↗ | **7MC7500-** | |
| **Temperature sensors for installation in existing thermowells, suitable for thermowells as per DIN 43772 as well as ASME B40.9-2001 with extension European or American types** | | |
| ↗ Click on the Article No. for the online configuration in the PIA Life Cycle Portal. | | |
| **Model** | | |
| existing thermowells | 1 | |
| **Thread type** | | |
| 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 version | Z | J 1 Y |
| **Insertion ength U free length, standard lengths** | | |
| 110 mm (4.33 inch) | B 1 | |
| 140 mm (5.51 inch) | B 2 | |
| 200 mm (7.87 inch) | C 1 | |
| 260 mm (10.24 inch) | C 2 | |
| 410 mm (16.14 inch) | E 1 | |
| **Insertion U free length, customer-specific** | | |
| enter customer specific length with Y44, see page 2/99 Order codes | | |
| 30 ... 100 mm (1.18 ... 3.94 inch) Initial: 100 mm (3.94 inch) | A 0 | |
| 101 ... 200 mm (3.98 ... 7.87 inch) Initial: 200 mm (7.87 inch) | B 0 | |
| 201 ... 300 mm (7.91 ... 11.81 inch) Initial: 300 mm (11.81 inch) | C 0 | |
| 301 ... 400 mm (11.85 ... 15.75 inch) Initial: 400 mm (15.75 inch) | D 0 | |
| 401 ... 500 mm (15.79 ... 19.68 inch) Initial: 500 mm (19.68 inch) | E 0 | |
| 501 ... 600 mm (19.72 ... 23.62 inch) Initial: 600 mm (23.62 inch) | F 0 | |
| 601 ... 800 mm (23.66 ... 31.50 inch) Initial: 800 mm (31.50 inch) | G 0 | |
| 801 ... 1 000 mm (31.54 ... 39.37 inch) Initial: 1 000 mm (39.37 inch) | H 0 | |
| 1 001 ... 1 250 mm (39.41 ... 49.21 inch) Initial: 1 250 mm (49.21 inch) | J 0 | |
| 1 251 ... 1 500 mm (49.25... 59.05 inch) Initial: 1 500 mm (59.05 inch) | K 0 | |
| Special length < 30 mm (1.18 inch) or > 1500 mm (59.00 inch) | X 0 | |
| **Measurement tip diameter** | | |
| 6 mm (0.24 inch) | 6 | |
| 8 mm (0.31 inch) (with sleeve) (with sleeve = not replaceable) | 8 | |
| 10 mm (0.39 inch) (with sleeve) (with sleeve = not replaceable) | 0 | |

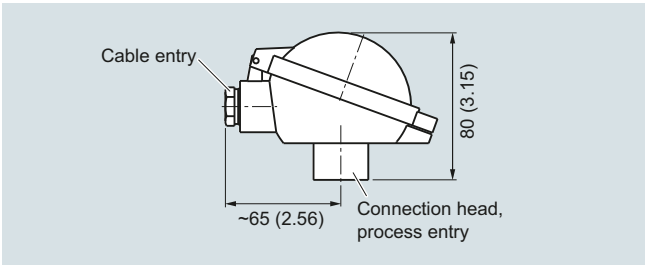
| Selection and Ordering data | Article No. | Ord. Code |
|---|---|---|
| **SITRANS TS500** | **7MC7500-** | |
| **Temperature sensors for installation in existing thermowells, suitable for thermowells as per DIN 43772 as well as ASME B40.9-2001 with extension European or American types** | | |
| **Extension X** | | |
| Without extension | 0 | |
| European type: X=65 (M=81 mm) (3.15 inch) adjustable | 1 | |
| European type: X=139 mm (5.47 inch) (M=155 mm (6.10 inch)) adjustable (DIN standard length for L=110) | 2 | |
| European type: X=149 mm (5.87 inch) (M=165 mm (6.50 inch)) adjustable | 3 | |
| European type:NIP, =150 mm (5.91 inch) not adjustable (NPT½") | 4 | |
| European type: X=150 mm (5.91 inch) NUN adjustable (NPT½") | 5 | |
| American type: X=74 mm (2.91 inch) integrated sensor spring, NIP, not adjustable (NPT½"), Umin = 100 mm | 6 | |
| American type: X=150 mm (5.91 inch) integrated sensor spring NUN adjustable (NPT½") | 8 | |
| **Extension X, customer-specific** | | |
| enter customer specific length with Y45, see page 2/99 Order codes | | |
| 45 ...150 mm (1.77 ... 5.91 inch) Standard: 150 mm (5.91 inch) | 9 | N 1 |
| 151 ... 300 mm (5.95 ... 11.81 inch) Standard: 300 mm (11.81 inch) | 9 | N 2 |
| 301 ... 450 mm (11.85 ... 17.72 inch) Standard: 450 mm (17.72 inch) | 9 | N 3 |
| Special length < 45 mm (1.77 inch) or > 450 mm (17.7 inch) | 9 | N 8 |
| **Model** | | |
| European type (M24 adjustable) | | D |

**Additional configurations on page after next page!**

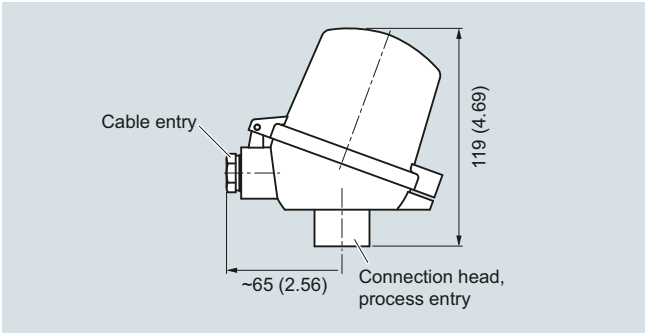
**You find ordering examples on page 2/41!**



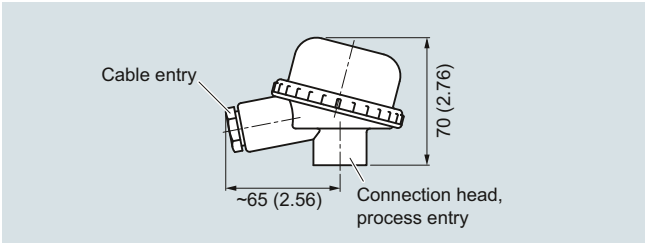

Connection head, aluminum, Type BA0, dimensions in mm (inch)



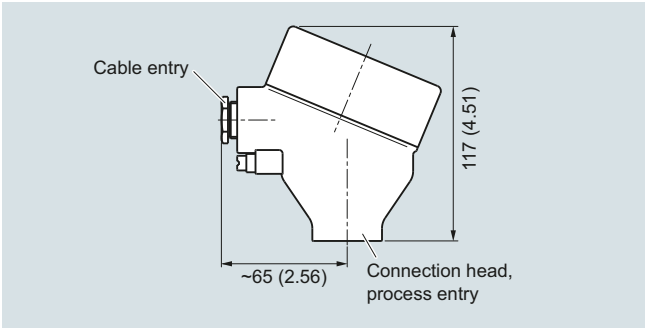

Connection head, aluminum, Type BB0, dimensions in mm (inch)



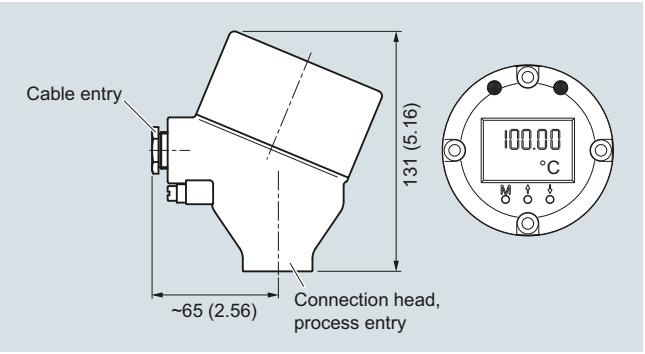

Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)




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



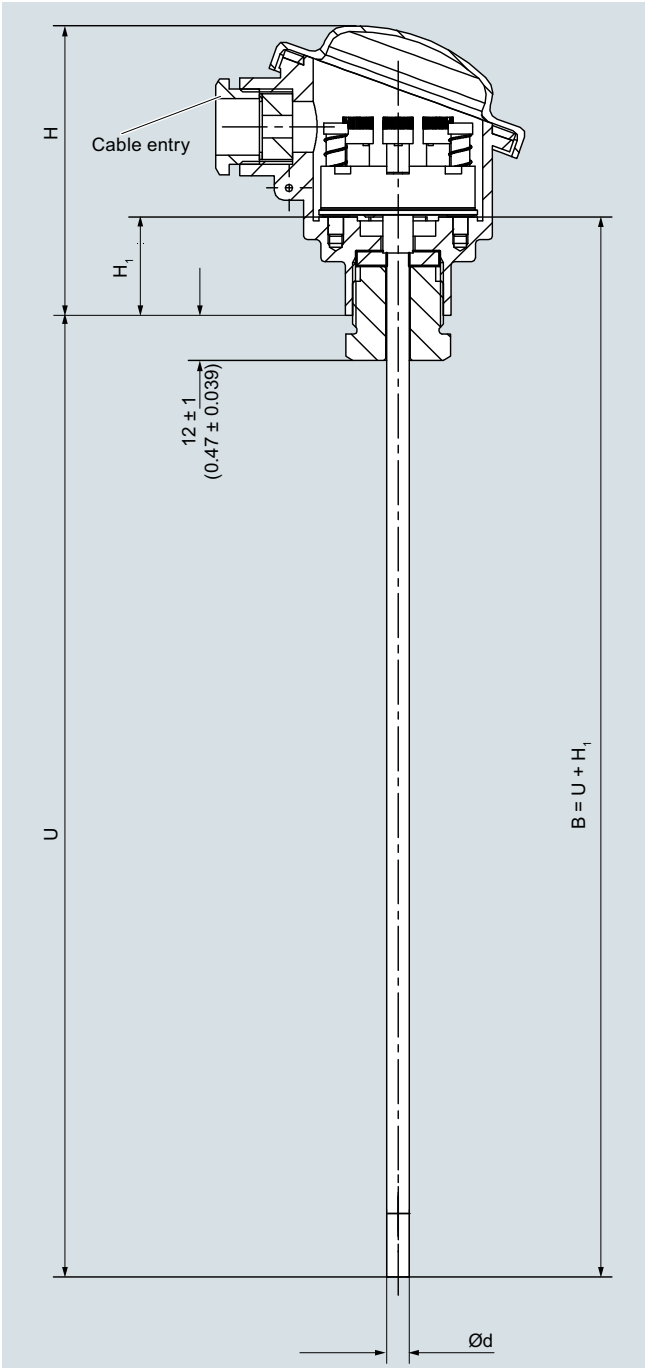

Connection head, aluminum, Type AG0, stainless steel, Type AU0, dimensions in mm (inch)




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

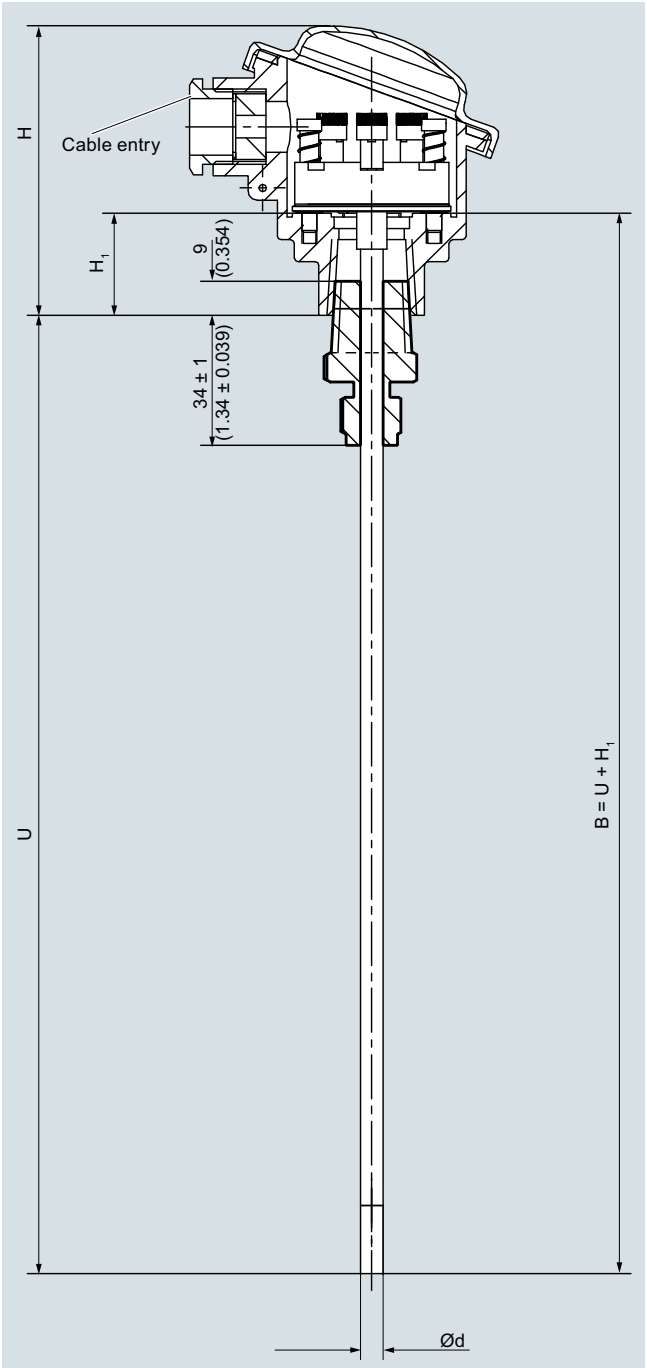
**For installation in existing protective tubes**






| | |
|---|---|
| B | Measuring insert length |
| Ød | Measuring insert outer diameter |
| H | Head height |
| $H_1$ | Type Axx = 41 (1.61)<br>Type Bxx = 26 (1.02) |
| U | Insertion length |

SITRANS TS500, option G50 with seal,
input of connection head: M24x1.5, dimensions in mm (inch)




| | |
|---|---|
| B | Measuring insert length |
| Ød | Measuring insert outer diameter |
| H | Head height |
| $H_1$ | Type Axx = 41 (1.61)<br>Type Bxx = 26 (1.02) |
| U | Insertion length |

SITRANS TS500, option G51 with seal,
input of connection head: ½" NPT, dimensions in mm (inch)

| Selection and Ordering data | Article No. | Ord. Code |
|---|---|---|
| **SITRANS TS500**<br>**Temperature sensors for installation in existing thermowells, suitable for thermowells as per DIN 43772 as well as ASME B40.9-2001 with extension European or American types** | **7MC7500-** | - |
| **Head** | | |
| Aluminum head, BA0, flange cover, Standard | | **A** |
| Aluminum head, BB0, low hinged cover, screw connection | | **B** |
| Aluminum head, BC0, high hinged cover, screw connection | | **C** |
| Aluminum head, AG0, screw cover, suitable for Ex d[1] | | **G** |
| Aluminum head, AH0, screw cover, suitable for Ex d, display[1] | | **H** |
| Plastic head, BM0, screw cover | | **M** |
| Plastic head, BP0high hinged cover, screw connection | | **P** |
| Stainless steel head, AU0, screw cover, Ex d[1] | | **U** |
| Stainless steel head, AV0, screw cover, Ex d, display[1] | | **V** |
| **Sensor[2]** | | |
| Please note: The accuracy class range can be lower than the measuring range. For more information, see page 2/18 | | |
| Pt100, Basis, -50 ... +400 °C (-58 ... +752 °F) | | **A** |
| Pt100, vibration resistant, -50 ... +400 °C (-58 ... +752 °F) | | **B** |
| Pt100, expanded range, Umin = 100 mm -196 ... +600 °C (-321 ... +1 112 °F) | | **C** |
| Thermocouple Type J, only class 2, -40 ... +750 °C (-40 ... +1 382 °F) | | **J** |
| Thermocouple Type K, -40 .. . +1 000 °C (-40 ... +1 832 °F) | | **K** |
| Thermocouple Type N, -40 ... +1 000 °C (-40 ... +1 832 °F) | | **N** |
| **Sensor number/Accuracy** | | |
| Circuit Pt 100: 1 x 4-wire circuit or 2 x 3-wire circuit, see "Measuring technique: Connection types", page 2/20 | | |
| Single, basic accuracy (Class 2/Class B) | | **1** |
| Single, increased accuracy (Class 1/Class A) | | **2** |
| Single, highest accuracy (Class AA) | | **3** |
| Double, basic accuracy (Class 2/Class B) | | **5** |
| Double, increased accuracy (Class 1/Class A) | | **6** |
| Double, highest accuracy (Class AA) | | **7** |

[1] Ex d in connection with Order code E03

[2] Pt1000 versions are also available. To find these, please switch to Online Configuration in the PIA Life Cycle Portal: www.siemens.com/pia-portal

| Selection and Ordering data | Order code |
|---|---|
| ***Further designs***<br>Add "**-Z**" to Article No. and specify Order code. | |
| **Insertion length customer-specific**<br>Select range, enter desired length in plain text (No entry = standard length) | **Y44** |
| **Extension length customer-specific**<br>Select range, enter desired length in plain text (No entry = standard length) | **Y45** |

| Selection and Ordering data | Order code |
|---|---|
| ***Options***<br>Add "**-Z**" to Article No. and add options, separate extensions with "+". | |
| **Built-in head transmitter**<br>Measuring range to be set must be specified with plain text data "Y01". | |
| SITRANS TH100, 4 ... 20 mA, Pt100 | **T10** |
| SITRANS TH100 Ex i (ATEX), 4 ... 20 mA, Pt100 | **T11** |
| SITRANS TH200, 4 ... 20 mA, Universal | **T20** |
| SITRANS TH200 Ex i (ATEX), 4 ... 20 mA, Universal | **T21** |
| SITRANS TH300, HART, Universal | **T30** |
| SITRANS TH300 Ex i (ATEX), HART, Universal | **T31** |
| SITRANS TH400 PA, Universal | **T40** |
| SITRANS TH400 PA Ex i, Universal | **T41** |
| SITRANS TH400 FF, Universal | **T45** |
| SITRANS TH400 FF Ex i, Universal | **T46** |
| **Explosion protection** | |
| Without explosion protection requirements (Europe, Australia, New Zealand) | **E00** |
| Intrinsic safety "i"/"IS[1] according to ATEX and IECEx (Europe, Australia, New Zealand) | **E01** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to ATEX and IECEx (Europe, Australia, New Zealand) | **E03** |
| Non-sparking "nA"/"NI" 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 housing "t"/"DIP"[2] according to cFMus (USA); NPT connections at the enclosure are mandatory | **E13** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] 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"[1] according to cCSAus (USA, Canada) | **E18** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"2) according to cCSAus (USA, Canada); NPT connections **at the enclosure** are mandatory | **E20** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to cCSAus (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"[1] according to NEPSI (China) | **E55** |
| Flameproof enclosure "d"; dust protection through housing "t"[2] according to NEPSI (China) | **E56** |
| Non-sparking "nA"/"NI" according to NEPSI (China) | **E57** |
| Without explosion protection requirements (EAC) | **E80** |
| Intrinsic safety "i"/"IS"[1] according to EACEx (EAC) | **E81** |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP"[2] according to EACEx (EAC) | **E82** |
| Non-sparking "nA"/"NI" according to EACEx (EAC) | **E83** |
| **Marine approvals** | |
| Det Norske Veritas Germanischer Lloyd (DNV GL) | **D01** |
| Bureau Veritas (BV) | **D02** |
| Lloyd's Register of Shipping (LR) | **D04** |
| American Bureau of Shipping (ABS) | **D05** |
| **Certificates and approvals** | |
| EN 10204-3.1 Factory certificate: visual, measurement and functional inspection | **C34** |
| EN 10204-2.1: Declaration of compliance with the order | **C35** |

## For installation in existing protective tubes



| Selection and Ordering data | Order code |
|---|---|
| **Designation, calibration** | |
| Stainless steel TAG plate , enter lettering in plain text | **Y15** |
| Plant calibration per 1 point, enter temperature in plain text | **Y33** |
| **Transmitter options** | |
| Transmitter, enter complete setting in plain text (Y01:+/-NNNN ... +/-NNNN C,F), marking on the device when Order code "Y15" is selected | **Y01** |
| Enter measuring point (max. 8 characters) in plain text | **Y17** |
| Transmitter, enter measuring point description (max. 16 characters) in plain text | **Y23** |
| Transmitter, enter measuring point text (max. 32 characters) in plain text | **Y24** |
| Transmitter, enter bus address in plain text | **Y25** |
| Transmitter, fail-safe value 3.6 mA (instead of 22.8 mA) | **U36** |
| Transmitter with a SIL 2 conformity | **C20** |
| Transmitter with a SIL 2/3 conformity | **C23** |
| Transmitter test protocol (5 points) | **C11** |
| ***Further options*** | |
| Connection form, flying leads (for the direct transmitter assembly, delivery without screws and springs) | **G01** |
| M12 device plug (in combination with 1x Pt100 and/or transmitter, Non-Ex and intrinsically safe, max. IP65/67) | **G12** |
| Han 7D 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** |
| Input of the connection head: M24x1.5, with sealing screw, Umin = 50 mm | **G50** |
| Input of the connection head: 1/2" NPT, with sealing screw, Umin = 50 mm | **G51** |
| Input of the connection head: M24x1.5, open, Umin = 50 mm | **G52** |
| Input of the connection head: 1/2" NP, open, Umin = 50 mm | **G53** |
| with outer earth screw for heads AG0, AH0, AU0 and AV0 | **A02** |
| with inner earth screw for heads BC0, AG0, AH0, AU0 and AV0 | **A03** |
| **Option not found?** | |
| Handling number special version | **Y99** |

1) Please select Ex i version of the optional transmitter.

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

**You find ordering examples on page 2/41.**
**Accessories, see page 2/238.**