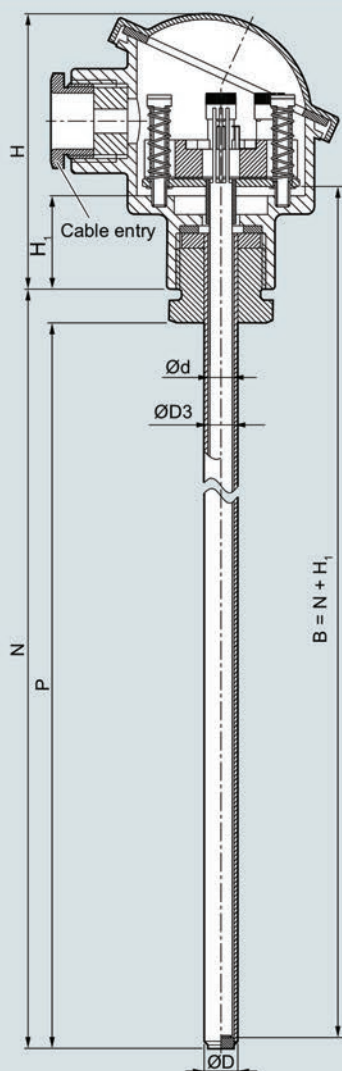


## Dimensional drawings



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

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

## Temperature Measurement

Temperature sensors

SITRANS TS500 - Tubular thermowells

### Type 2, without process connection

| Selection and Ordering data                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Article No.                                                                                                                                                          |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SITRANS TS500</b><br><b>Tubular thermowell for low to medium stress, according to DIN 43722, Type 2, without process connection, without extension, plug-in or use with moveable compression fittings</b><br><a href="#">Click on the Article No. for the online configuration in the PIA Life Cycle Portal.</a>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>7MC751-</b><br>                                                                  |
| <b>Material, in contact with media</b><br>316Ti (1.4571)<br>316L (1.4404 or 1.4435)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | 1<br>2                                                                                                                                                               |
| <b>Process connection</b><br>Without process connection (for compression fitting) N=U                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 0 N                                                                                                                                                                  |
| <b>Thermowell form</b><br>2; 9 mm (0.35 inch)<br>2; 12 mm (0.47 inch)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | A<br>B                                                                                                                                                               |
| <b>Insertion length U (=N), Standard</b><br>160 mm (6.3 inch)<br>250 mm (9.84 inch)<br>400 mm (15.75 inch)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0 4<br>1 2<br>2 2                                                                                                                                                    |
| <b>Insertion length U (=N), customer-specific</b><br>enter customer specific length with Y44, see Order codes on page 2/58<br>80 ... 100 mm (3.15 ... 3.94 inch)<br>Initial: 100 mm (3.94 inch)<br>101 ... 120 mm (3.98 ... 4.72 inch)<br>Initial: 120 mm (4.72 inch)<br>121 ... 140 mm (4.76 ... 5.51 inch)<br>Initial: 140 mm (5.51 inch)<br>141 ... 160 mm (5.55 ... 6.30 inch)<br>Initial: 160 mm (6.3 inch)<br>161 ... 180 mm (6.34 ... 7.09 inch)<br>Initial: 180 mm (7.09 inch)<br>181 ... 200 mm (7.13 ... 7.87 inch)<br>Initial: 200 mm (7.87 inch)<br>201 ... 220 mm (7.91 ... 8.66 inch)<br>Initial: 220 mm (8.66 inch)<br>221 ... 240 mm (8.7 ... 9.45 inch)<br>Initial: 225 mm (8.86 inch)<br>241 ... 260 mm (9.48 ... 10.24 inch)<br>Initial: 250 mm (9.84 inch)<br>261 ... 280 mm (10.28 ... 11.02 inch)<br>Initial: 280 mm (11.02 inch)<br>281 ... 300 mm (11.02 ... 11.81 inch)<br>Initial: 285 mm (11.22 inch)<br>301 ... 320 mm (11.85 ... 12.6 inch)<br>Initial: 315 mm (12.4 inch)<br>321 ... 340 mm (12.64 ... 13.39 inch)<br>Initial: 340 mm (13.39 inch)<br>341 ... 360 mm (13.43 ... 14.17 inch)<br>Initial: 360 mm (14.17 inch)<br>361 ... 380 mm (14.21 ... 14.96 inch)<br>Initial: 380 mm (14.96 inch)<br>381 ... 400 mm (15 ... 15.75 inch)<br>Initial: 400 mm (15.75 inch)<br>401 ... 420 mm (15.79 ... 16.54 inch)<br>Initial: 420 mm (16.54 inch)<br>421 ... 440 mm (16.57 ... 17.32 inch)<br>Initial: 440 mm (17.32 inch)<br>441 ... 460 mm (17.36 ... 18.11 inch)<br>Initial: 460 mm (18.11 inch)<br>461 ... 480 mm (18.15 ... 18.90 inch)<br>Initial: 465 mm (18.30 inch)<br>481 ... 500 mm (18.94 ... 19.68 inch)<br>Initial: 500 mm (19.68 inch)<br>501 ... 550 mm (19.72 ... 21.65 inch)<br>Initial: 510 mm (20.08 inch)<br>551 ... 600 mm (21.69 ... 23.62 inch)<br>Initial: 600 mm (23.62 inch)<br>601 ... 650 mm (23.66 ... 25.59 inch)<br>Initial: 650 mm (25.59 inch) | 0 1<br>0 2<br>0 3<br>0 4<br>0 5<br>0 6<br>0 7<br>1 1<br>1 2<br>1 3<br>1 4<br>1 5<br>1 6<br>2 0<br>2 1<br>2 2<br>2 3<br>2 4<br>2 5<br>2 6<br>2 7<br>3 1<br>3 2<br>3 3 |

| Selection and Ordering data                                                                                                                                                                                  | Article No.                                                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <b>SITRANS TS500</b><br><b>Tubular thermowell for low to medium stress, according to DIN 43722, Type 2, without process connection, without extension, plug-in or use with moveable compression fittings</b> | <b>7MC751-</b><br> |
| 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                                                                                                   |
| <b>Extension X</b><br>Standard length for Type 2 as per DIN 43722 (without extension N=U)                                                                                                                    | 0                                                                                                     |

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

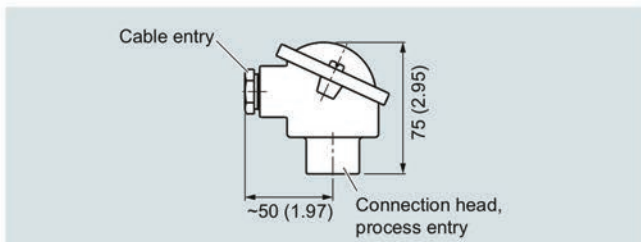
**You find ordering examples on page 2/40!**

## Temperature Measurement

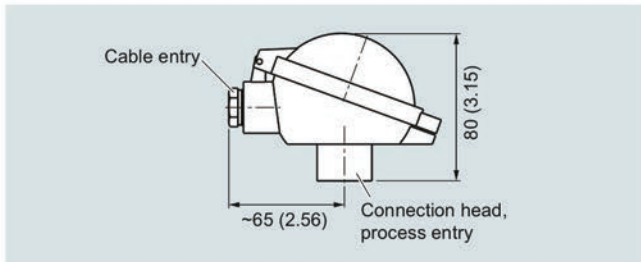
### Temperature sensors

#### SITRANS TS500 - Tubular thermowells

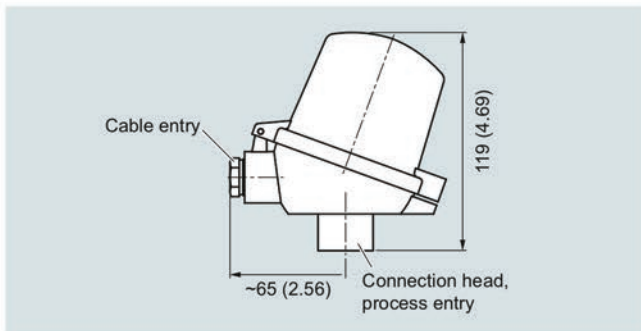
#### Type 2, without process connection



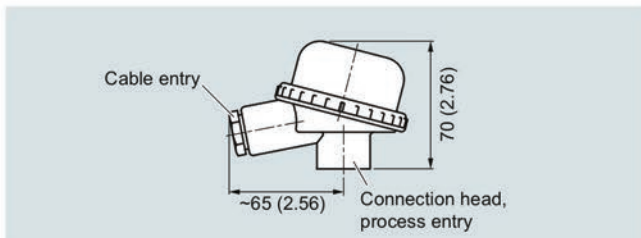
Connection head, aluminum, Type BA0, dimensions in mm (inch)



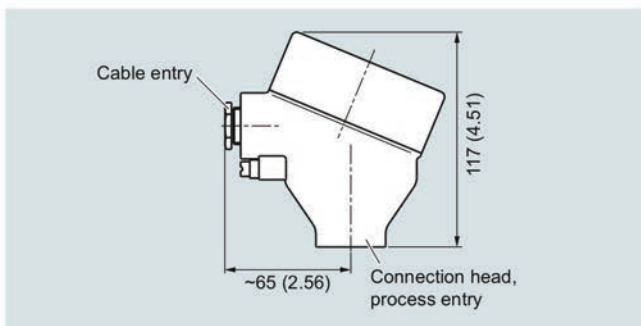
Connection head, aluminum, Type BB0, dimensions in mm (inch)



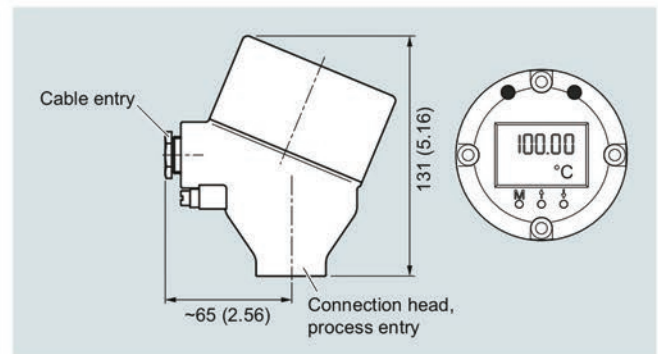
Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)



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)

## Temperature Measurement

Temperature sensors

SITRANS TS500 - Tubular thermowells

### Type 2, without process connection

| Selection and Ordering data                                                                                                                                                                                  | Article No.    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| <b>SITRANS TS500</b><br><b>Tubular thermowell for low to medium stress, according to DIN 43722, Type 2, without process connection, without extension, plug-in or use with moveable compression fittings</b> | <b>7MC751-</b> |
| <b>Head</b><br>Aluminum head, BA0, flange cover, Standard                                                                                                                                                    | <b>A</b>       |
| Aluminum head, BB0, low hinged cover, screw connection                                                                                                                                                       | <b>B</b>       |
| Aluminum head, BC0, high hinged cover, screw connection                                                                                                                                                      | <b>C</b>       |
| Aluminum head, AG0, screw cover, suitable for suitable for Ex d <sup>1)</sup>                                                                                                                                | <b>G</b>       |
| Aluminum head, AH0, screw cover, suitable for Ex d, display <sup>1)</sup>                                                                                                                                    | <b>H</b>       |
| Plastic head, BM0, screw cover                                                                                                                                                                               | <b>M</b>       |
| Plastic head, BP0, high hinged cover, screw connection                                                                                                                                                       | <b>P</b>       |
| Stainless steel head, AU0, screw cover, suitable for Ex d <sup>1)</sup>                                                                                                                                      | <b>U</b>       |
| Stainless steel head, AV0, screw cover, suitable for Ex d, display <sup>1)</sup>                                                                                                                             | <b>V</b>       |
| <b>Sensor<sup>2)</sup></b><br>Please note: The accuracy class range can be lower than the measuring range. For more information, see page 2/21                                                               |                |
| Pt100, basis, -50 ... +400 °C (-58 ... +752 °F)                                                                                                                                                              | <b>A</b>       |
| Pt100, vibration-resistant, -50 ... +400 °C (-58 ... +752 °F)                                                                                                                                                | <b>B</b>       |
| Pt100, expanded range, -196 ... +600 °C (-321 ... +1 112 °F)                                                                                                                                                 | <b>C</b>       |
| Thermocouple Type K, -40 ... +1 000 °C (-40 ... +1 832 °F)                                                                                                                                                   | <b>K</b>       |
| Thermocouple Type J, -40 ... +750 °C (-40 ... +1 382 °F)                                                                                                                                                     | <b>J</b>       |
| Thermocouple Type N, -40 ... +1 000 °C (-40 ... +1 832 °F)                                                                                                                                                   | <b>N</b>       |
| <b>Sensor number/Accuracy</b><br>Pt 100 connection: 1 x 4-wire connection or 2 x 3-wire connection, see "Measuring technology: connection types", page 2/23                                                  |                |
| Single, basic accuracy (Class 2/Class B)                                                                                                                                                                     | <b>1</b>       |
| Single, increased accuracy (Class 1/Class A)                                                                                                                                                                 | <b>2</b>       |
| Single, highest accuracy (Class AA)                                                                                                                                                                          | <b>3</b>       |
| Double, basic accuracy (Class 2/Class B)                                                                                                                                                                     | <b>5</b>       |
| Double, increased accuracy (Class 1/Class A)                                                                                                                                                                 | <b>6</b>       |
| Double, highest accuracy (Class AA)                                                                                                                                                                          | <b>7</b>       |

<sup>1)</sup> Ex d in connection with Order code E03

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

| Selection and Ordering data                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Order code                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| <b>Further designs</b><br>Add <b>"-Z"</b> to Article No. and specify Order code.                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                              |
| <b>Insertion length customer-specific</b><br>Select range, enter desired length in plain text (No entry = standard length)                                                                                                                                                                                                                                                                                                                                                            | <b>Y44</b>                                                                                                   |
| <b>Options</b><br>Add <b>"-Z"</b> to Article No. and add options, separate extensions with "+".                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                              |
| <b>Built-in head transmitter</b><br>Measuring range to be set must be specified with plain text data "Y01".<br>SITRANS TH100, input 1 x Pt100, 4 ... 20 mA<br>SITRANS TH320, input 1 x universal, 4 ... 20 mA<br>SITRANS TH320, input 1 x universal, HART<br>SITRANS TH420, input 2 x universal, HART<br>SITRANS TH400, input 1 x universal, PA<br>SITRANS TH400, input 1 x universal, PA, Ex<br>SITRANS TH400, input 1 x universal, FF<br>SITRANS TH400, input 1 x universal, FF, Ex | <b>T12</b><br><b>T24</b><br><b>T34</b><br><b>T35</b><br><b>T40</b><br><b>T41</b><br><b>T45</b><br><b>T46</b> |
| <b>Explosion protection</b><br>Without explosion protection requirements (Europe, Australia, New Zealand)                                                                                                                                                                                                                                                                                                                                                                             | <b>E00</b>                                                                                                   |
| Intrinsic safety "i"/"IS <sup>1)</sup> " according to ATEX and IECEx (Europe, Australia, New Zealand)                                                                                                                                                                                                                                                                                                                                                                                 | <b>E01</b>                                                                                                   |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP <sup>2)</sup> " according to ATEX and IECEx (Europe, Australia, New Zealand)                                                                                                                                                                                                                                                                                                                                   | <b>E03</b>                                                                                                   |
| Non-sparking "ec" according to ATEX and IECEx (Europe, Australia, New Zealand)                                                                                                                                                                                                                                                                                                                                                                                                        | <b>E04</b>                                                                                                   |
| Without explosion protection requirements (USA, Canada) Basis FM                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>E10</b>                                                                                                   |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP <sup>2)</sup> " according to cFMus (USA, Canada); other connections (M, G, R)                                                                                                                                                                                                                                                                                                                                  | <b>E14</b>                                                                                                   |
| Non-sparking "nA"/"NI" according to cFMus (USA, Canada)                                                                                                                                                                                                                                                                                                                                                                                                                               | <b>E16</b>                                                                                                   |
| Without explosion protection requirements (USA, Canada), Basis CSA                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>E17</b>                                                                                                   |
| Intrinsic safety "i"/"IS <sup>1)</sup> " according to cCSAus (USA, Canada)                                                                                                                                                                                                                                                                                                                                                                                                            | <b>E18</b>                                                                                                   |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP <sup>2)</sup> " according to cCSAus (USA); other connections (M, G, R)                                                                                                                                                                                                                                                                                                                                         | <b>E21</b>                                                                                                   |
| Non-sparking "nA"/"NI" according to cCSAus (USA, Canada)                                                                                                                                                                                                                                                                                                                                                                                                                              | <b>E23</b>                                                                                                   |
| Without explosion protection requirements (China)                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>E54</b>                                                                                                   |
| Intrinsic safety "i"/"IS <sup>1)</sup> " according to NEPSI (China)                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>E55</b>                                                                                                   |
| Flameproof enclosure "d"; dust protection through housing "t" <sup>2)</sup> according to NEPSI (China)                                                                                                                                                                                                                                                                                                                                                                                | <b>E56</b>                                                                                                   |
| Non-sparking "nA"/"NI" according to NEPSI (China)                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>E57</b>                                                                                                   |
| Without explosion protection requirements (EAC)                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>E80</b>                                                                                                   |
| Intrinsic safety "i"/"IS <sup>1)</sup> " according to EACEx (EAC)                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>E81</b>                                                                                                   |
| Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP <sup>2)</sup> " according to EACEx (EAC)                                                                                                                                                                                                                                                                                                                                                                       | <b>E82</b>                                                                                                   |
| Non-sparking "nA"/"NI" according to EACEx (EAC)                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>E83</b>                                                                                                   |
| <b>Marine approvals</b><br>Det Norske Veritas Germanischer Lloyd (DNV GL)                                                                                                                                                                                                                                                                                                                                                                                                             | <b>D01</b>                                                                                                   |

| Selection and Ordering data                                                                                                               | Order code |
|-------------------------------------------------------------------------------------------------------------------------------------------|------------|
| <b>Certificates and approvals</b>                                                                                                         |            |
| 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 dye-penetration-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        |
| EN 10204-3.1 Acceptance test certificate "Positive Materials Identification" (PMI)                                                        | On request |
| <b>Designation, calibration</b>                                                                                                           |            |
| Stainless steel TAG plate, enter lettering in plain text                                                                                  | Y15        |
| Plant calibration per 1 point, enter temperature in plain text                                                                            | Y33        |
| <b>Transmitter options</b>                                                                                                                |            |
| 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        |
| SITRANS TH320/420 transmitter with SIL2/3 certificate                                                                                     | C20        |
| Transmitter test protocol (5 points)                                                                                                      | C11        |
| <b>Further options</b>                                                                                                                    |            |
| Connection form, flying leads (for the direct transmitter assembly, delivery without screws and springs)                                  | G01        |
| M12 device plug (in combination with 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        |
| <b>Option not found?</b>                                                                                                                  |            |
| 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 2/40.**

**Accessories, see page 2/251.**