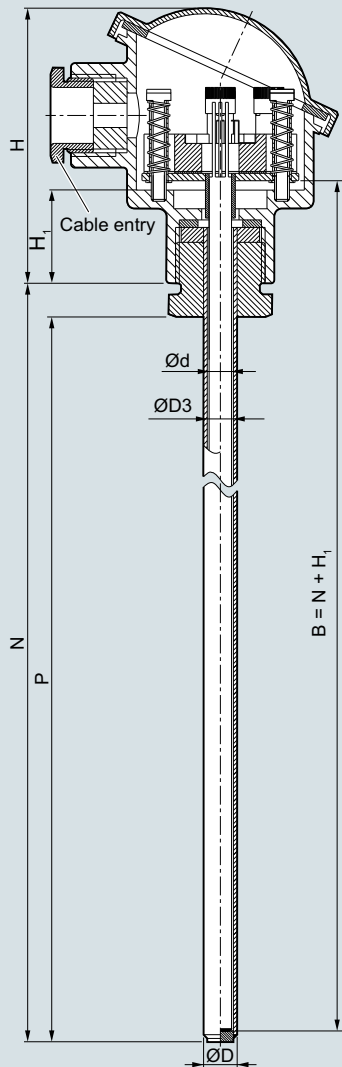


Dimensional drawings



- B Measuring insert length
- Ød Measuring insert outer diameter (6 (0.24))
- ØD Process connection outer diameter
- ØD3 Thermowell internal diameter
- H Head height
- H₁ 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

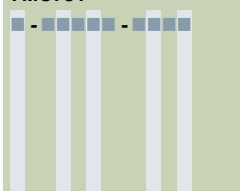
SITRANS TS500, temperature sensors for vessels and pipes, tubular thermowell for low to medium stress, without process connection, without extension, plug-in or for use with sliding compression joints, dimensions in mm (inch)

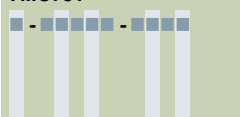
Temperature Measurement

Temperature sensors

SITRANS TS500 - Tubular thermowells

Type 2, without process connection

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

Selection and Ordering data	Article No.
SITRANS TS500 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	7MC751- 
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 (31.5 ... 33.47 inch) Initial: 850 mm (33.47 inch)	3 7
851 ... 900 mm (33.5 ... 35.43 inch) Initial: 900 mm (35.43 inch)	4 1
901 ... 950 mm (35.47 ... 37.4 inch) Initial: 950 mm (37.4 inch)	4 2
951 ... 1 000 mm (37.44 ... 39.37 inch) Initial: 1 000 mm (39.37 inch)	4 3
1001 ... 1 100 mm (39.4 ... 43.30 inch) Initial: 1 100 mm (43.30 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 ... 55.11 inch) Initial: 1400 mm (55.11 inch)	4 7
1 401 ... 1 500 mm (55.15 ... 59.05 inch) 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

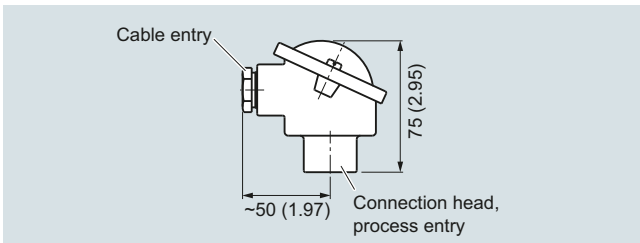
Additional configurations on page after next page!

You find ordering examples on page 2/40!

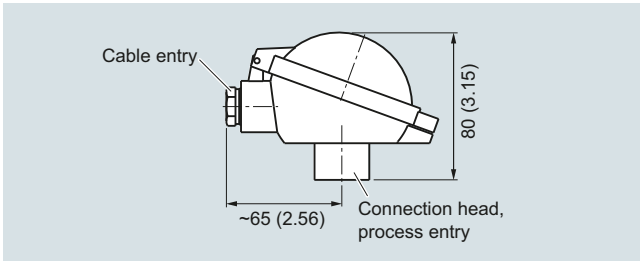
Temperature Measurement

Temperature sensors
SITRANS TS500 - Tubular thermowells

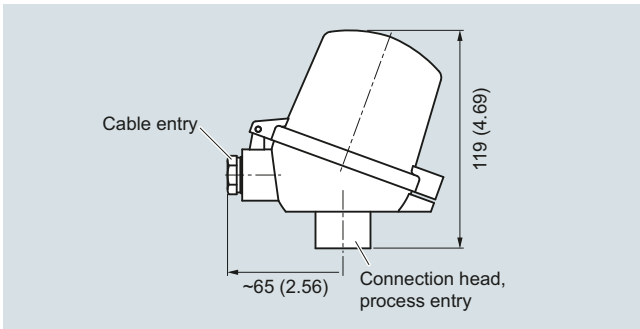
Type 2, without process connection



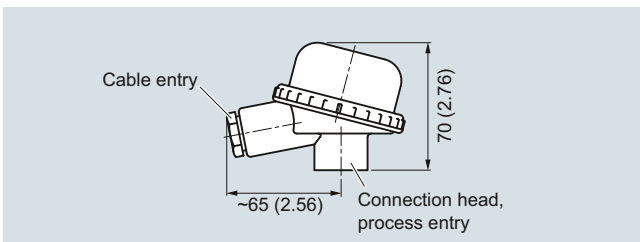
Connection head, aluminum, Type BA0, dimensions in mm (inch)



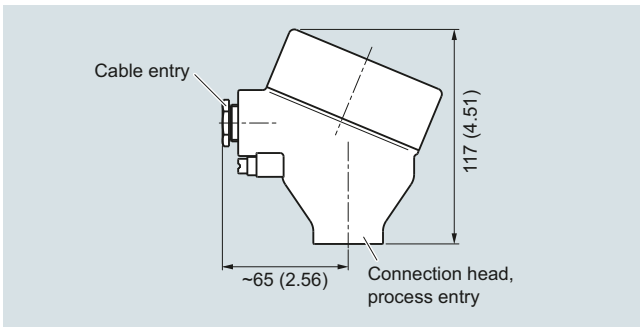
Connection head, aluminum, Type BB0, dimensions in mm (inch)



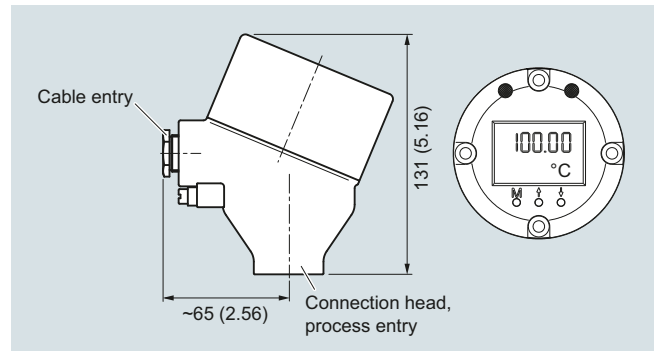
Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)



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)

2

Temperature Measurement

Temperature sensors

SITRANS TS500 - Tubular thermowells

Type 2, without process connection

Selection and Ordering data	Article No.
SITRANS TS500 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	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
Sensor²⁾ 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)	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 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)	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
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, input 1 x Pt100, 4 ... 20 mA	T12
SITRANS TH320, input 1 x universal, 4 ... 20 mA	T24
SITRANS TH320, input 1 x universal, HART	T34
SITRANS TH420, input 2 x universal, HART	T35
SITRANS TH400, input 1 x universal, PA	T40
SITRANS TH400, input 1 x universal, PA, Ex	T41
SITRANS TH400, input 1 x universal, FF	T45
SITRANS TH400, input 1 x universal, FF, Ex	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 "ec" according to ATEX and IECEx (Europe, Australia, New Zealand)	E04
Without explosion protection requirements (USA, Canada) Basis FM	E10
Flameproof enclosure "d"/"XP"; dust protection through 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

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 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
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
SITRANS TH320/420 transmitter with SIL2/3 certificate	C20
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 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 1/2" 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 G1/2", enclosed	A31
Compression fitting NPT1/2", 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 2/40.
Accessories, see page 2/251.**

Temperature Measurement

Temperature sensors

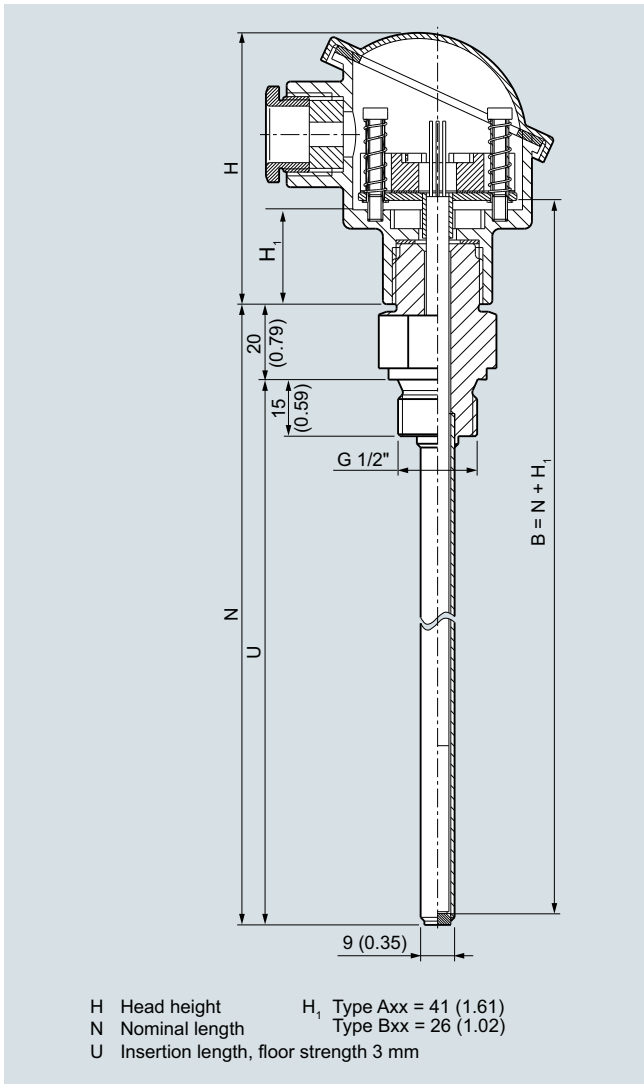
SITRANS TS500 - Tubular thermowells

Type 2N, screwed design

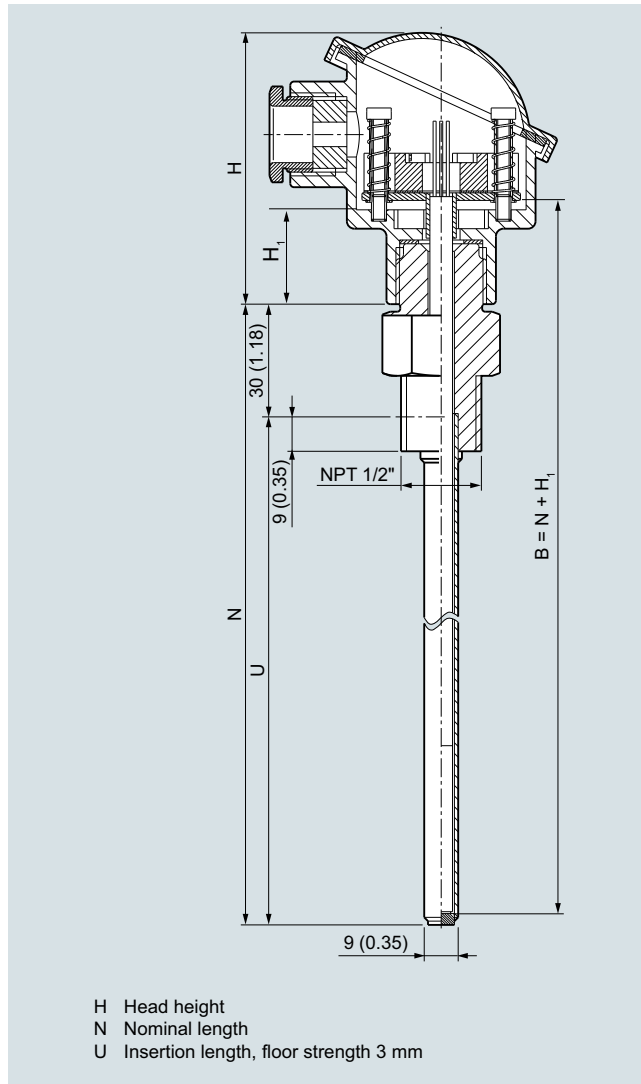
Dimensional drawings

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


2




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



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

Selection and Ordering data	Article No.
SITRANS TS500 Tubular thermowell, low to medium stress, Type 2N similar to DIN 43722, screwed design, without extension	7MC751-
	
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 2/63 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 Tubular thermowell, low to medium stress, Type 2N similar to DIN 43722, screwed design, without extension	7MC751-
	
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, (non-adjustable)	0

Additional configurations on page after next page!

You find ordering examples on page 2/40!

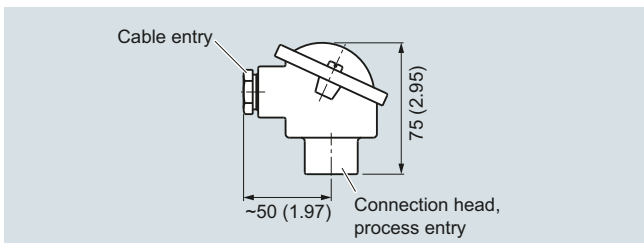
Temperature Measurement

Temperature sensors

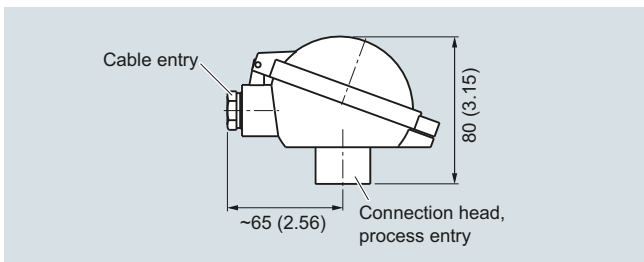
SITRANS TS500 - Tubular thermowells

Type 2N, screwed design

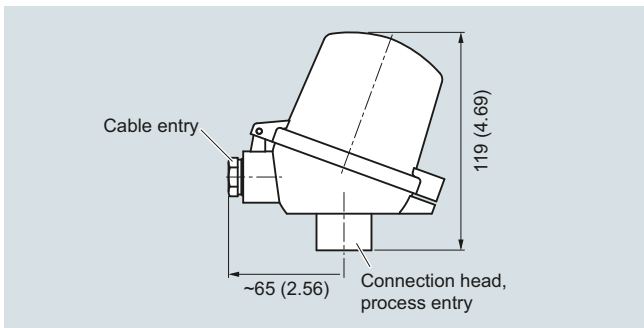
2



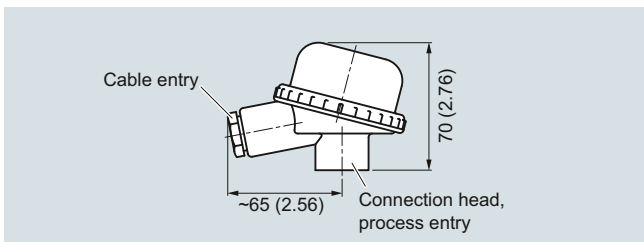
Connection head, aluminum, Type BA0, dimensions in mm (inch)



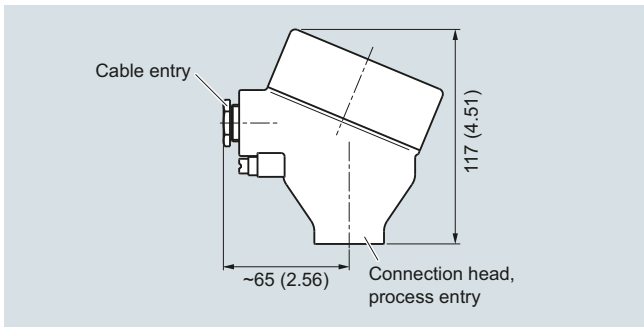
Connection head, aluminum, Type BB0, dimensions in mm (inch)



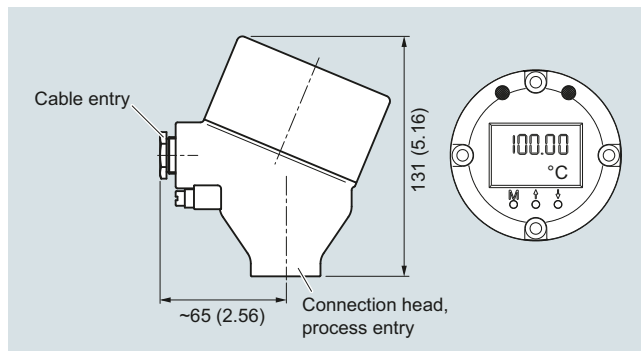
Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)



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.	Selection and Ordering data	Order code
SITRANS TS500 Tubular thermowell, low to medium stress, Type 2N similar to DIN 43722, screwed design, without extension, for maximum process temperatures of 100 °C	7MC751- 	Further designs Add "-Z" to Article No. and specify Order code.	
Head Aluminum head, BA0, flange cover, Standard Aluminum head, BB0, low hinged cover, screw connection Aluminum head, BC0, high hinged cover, screw connection Aluminum head, AG0, screw cover, suitable for Ex d ¹⁾ Aluminum head, AH0, screw cover, suitable for Ex d, display ¹⁾ Plastic head, BM0, screw cover Plastic head, BPOhigh hinged cover, screw connection Stainless steel head, AU0, screw cover, suitable for Ex d ¹⁾ Stainless steel head, AV0, screw cover, suitable for Ex d, display ¹⁾	A B C G H M P U V	Insertion length customer-specific Select range, enter desired length in plain text (No entry = standard length)	Y44
Sensor²⁾ 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) Pt100, vibration-resistant, -50 ... +400 °C (-58 ... +752 °F) Pt100, expanded range, -196 ... +600 °C (-321 ... +1 112 °F) Thermocouple Type K, -40 ... +1 000 °C (-40 ... +1 832 °F) Thermocouple Type J, -40 ... +750 °C (-40 ... +1 382 °F) Thermocouple Type N, -40 ... +1 000 °C (-40 ... +1 832 °F)	A B C K J N	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, input 1 x Pt100, 4 ... 20 mA SITRANS TH320, input 1 x universal, 4 ... 20 mA SITRANS TH320, input 1 x universal, HART SITRANS TH420, input 2 x universal, HART SITRANS TH400, input 1 x universal, PA SITRANS TH400, input 1 x universal, PA, Ex SITRANS TH400, input 1 x universal, FF SITRANS TH400, input 1 x universal, FF, Ex	T12 T24 T34 T35 T40 T41 T45 T46
Sensor number/Accuracy 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) Single, increased accuracy (Class 1/Class A) Single, highest accuracy (Class AA) Double, basic accuracy (Class 2/Class B) Double, increased accuracy (Class 1/Class A) Double, highest accuracy (Class AA)	1 2 3 5 6 7	Explosion protection Without explosion protection requirements (Europe, Australia, New Zealand) Intrinsic safety "i"/"IS ¹⁾ " according to ATEX and IECEx (Europe, Australia, New Zealand) Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP" ²⁾ according to ATEX and IECEx (Europe, Australia, New Zealand) Non-sparking "ec" according to ATEX and IECEx (Europe, Australia, New Zealand) Without explosion protection requirements (USA, Canada) Basis FM Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP" ²⁾ according to cFMus (USA, Canada); other connections (M,G,R) Non-sparking "nA"/"NI" according to cFMus (USA, Canada) Without explosion protection requirements (USA, Canada), Basis CSA Intrinsic safety "i"/"IS ¹⁾ " according to cCSAus (USA, Canada) Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP" ²⁾ according to cCSAus (USA); other connections (M, G, R) Non-sparking "nA"/"NI" according to cCSAus (USA, Canada) Without explosion protection requirements (China) Intrinsic safety "i"/"IS ¹⁾ " according to NEPSI (China) Flameproof enclosure "d"; dust protection through housing "t" ²⁾ according to NEPSI (China) Non-sparking "nA"/"NI" according to NEPSI (China) Without explosion protection requirements (EAC) Intrinsic safety "i"/"IS ¹⁾ " according to EACEx (EAC) Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP" ²⁾ according to EACEx (EAC) Non-sparking "nA"/"NI" according to EACEx (EAC)	E00 E01 E03 E04 E10 E14 E16 E17 E18 E21 E23 E54 E55 E56 E57 E80 E81 E82 E83
		Marine approvals Det Norske Veritas Germanischer Lloyd (DNV GL)	D01

¹⁾ Ex d in connection with Order code E03

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

Temperature Measurement

Temperature sensors

SITRANS TS500 - Tubular thermowells

Type 2N, screwed design

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 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 ISO 9001 grease-free (cleaned for e.g. oxygen applications)	C35 C51
EN 10204-3.1 Acceptance test certificate "Positive Materials Identification" (PMI)	On request

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
SITRANS TH320/420 transmitter with SIL2/3 certificate	C20
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 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 1/2" NPT thread without cable gland, for AU0 and AH0 only	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
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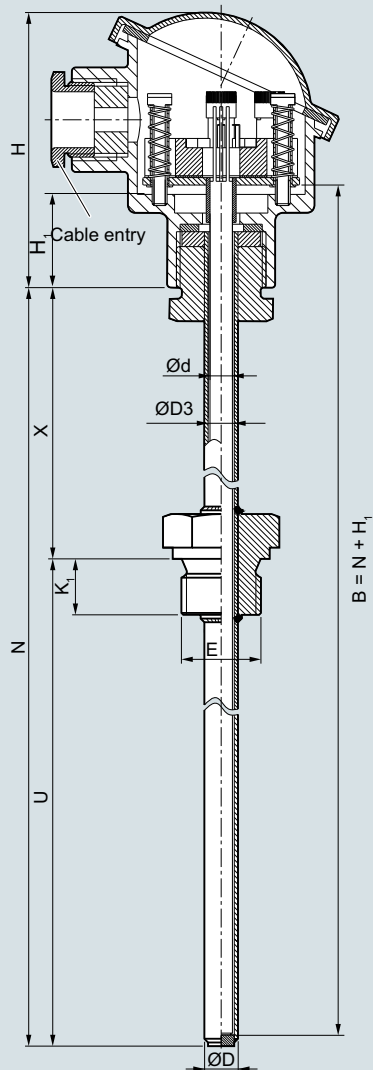
1) Please select Ex i version of the optional transmitter.

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.

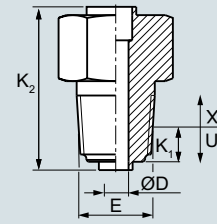
Accessories, see page 2/251.

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
- H₁ Type Axx = 41 (1.61)
Type Bxx = 26 (1.02)
- K₁ Screw depth
- N Nominal length
- U Insertion length
- X Extension length, floor strength 3 mm

SITRANS TS500, temperature sensors for vessels and pipes, tubular thermowell for low to medium stress, according to DIN 43772, type 2G, screwed design, with extension, for screw-in depth dimensions, see page 2/15, dimensions in mm (inch).



Process connection conical, dimensions in mm (inch)

Temperature Measurement

Temperature sensors

SITRANS TS500 - Tubular thermowells

Type 2G, screwed design, with extension

Selection and Ordering data

Selection and Ordering data	Article No.	Ord. Code
SITRANS TS500	7MC751-	
Tubular thermowell, low to medium stress, according to DIN 43722, Type 2G, screwed design, 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: G¾" (¾" BSPP)	1 D	
Tapered: NPT½"	1 J	
Tapered: NPT¾"	1 K	
Tapered: NPT1"	1 L	
Cylindrical: M20 x 1.5	1 V	
Cylindrical: M27 x 2.0	1 W	
Cylindrical: M33 x 2.0	1 Y	
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)	04	
250 mm (9.84 inch)	12	
400 mm (15.75 inch)	22	
Insertion length U customer-specific		
enter customer specific length with Y44, see page 2/68 Order codes		
80 ... 100 mm (3.15 ... 3.94 inch)	01	
Initial: 100 mm (3.94 inch)		
101 ... 120 mm (3.98 ... 4.72 inch)	02	
Initial: 120 mm (4.72 inch)		
121 ... 140 mm (4.76 ... 5.51 inch)	03	
Initial: 140 mm (5.51 inch)		
141 ... 160 mm (5.55 ... 6.30 inch)	04	
Initial: 160 mm (6.30 inch)		
161 ... 180 mm (6.34 ... 7.09 inch)	05	
Initial: 180 mm (7.09 inch)		
181 ... 200 mm (7.13 ... 7.87 inch)	06	
Initial: 200 mm (7.87 inch)		
201 ... 220 mm (7.91 ... 8.66 inch)	07	
Initial: 220 mm (8.66 inch)		
221 ... 240 mm (8.70 ... 9.45 inch)	11	
Initial: 225 mm (8.86 inch)		
241 ... 260 mm (9.49 ... 10.24 inch)	12	
Initial: 250 mm (9.84 inch)		
261 ... 280 mm (10.28 ... 11.02 inch)	13	
Initial: 280 mm (11.02 inch)		
281 ... 300 mm (11.06 ... 11.81 inch)	14	
Initial: 285 mm (11.22 inch)		
301 ... 320 mm (11.85 ... 13.00 inch)	15	
Initial: 315 mm (12.40 inch)		
321 ... 340 mm (12.64 ... 13.39 inch)	16	
Initial: 340 mm (13.39 inch)		
341 ... 360 mm (13.43 ... 14.17 inch)	20	
Initial: 360 mm (14.17 inch)		
361 ... 380 mm (14.21 ... 14.96 inch)	21	
Initial: 380 mm (14.96 inch)		
381 ... 400 mm (14.99 ... 15.75 inch)	22	
Initial: 400 mm (15.75 inch)		
401 ... 420 mm (15.79 ... 16.54 inch)	23	
Initial: 420 mm (16.54 inch)		
421 ... 440 mm (16.57 ... 17.32 inch)	24	
Initial: 440 mm (17.32 inch)		
441 ... 460 mm (17.36 ... 18.11 inch)	25	
Initial: 460 mm (18.11 inch)		
461 ... 480 mm (18.15 ... 18.90 inch)	26	
Initial: 465 mm (18.30 inch)		
481 ... 500 mm (18.94 ... 19.69 inch)	27	
Initial: 500 mm (19.69 inch)		

Selection and Ordering data

Selection and Ordering data	Article No.	Ord. Code
SITRANS TS500	7MC751-	
Tubular thermowell, low to medium stress, according to DIN 43722, Type 2G, screwed design, with extension		
501 ... 550 mm (19.72 ... 21.65 inch)	31	
Initial: 510 mm (20.08 inch)		
551 ... 600 mm (21.69 ... 23.62 inch)	32	
Initial: 600 mm (23.62 inch)		
601 ... 650 mm (23.66 ... 25.59 inch)	33	
Initial: 650 mm (25.59 inch)		
651 ... 700 mm (25.63 ... 27.56 inch)	34	
Initial: 700 mm (27.56 inch)		
701 ... 750 mm (27.60 ... 29.53 inch)	35	
Initial: 750 mm (29.53 inch)		
751 ... 800 mm (29.57 ... 31.50 inch)	36	
Initial: 800 mm (31.50 inch)		
801 ... 850 mm (31.54 ... 33.46 inch)	37	
Initial: 850 mm (33.46 inch)		
851 ... 900 mm (33.50 ... 35.43 inch)	41	
Initial: 900 mm (35.43 inch)		
901 ... 950 mm (35.47 ... 37.40 inch)	42	
Initial: 950 mm (37.40 inch)		
951 ... 1 000 mm (37.44 ... 39.37 inch)	43	
Initial: 1 000 mm (39.37 inch)		
1 001 ... 1 100 mm (39.41 ... 43.31 inch)	44	
Initial: 1 100 mm (43.31 inch)		
1 101 ... 1 200 mm (43.35 ... 47.24 inch)	45	
Initial: 1 200 mm (47.24 inch)		
1 201 ... 1 300 mm (47.28 ... 51.18 inch)	46	
Initial: 1 300 mm (51.18 inch)		
1 301 ... 1 400 mm (51.22 ... 55.12 inch)	47	
Initial: 1 400 mm (55.12 inch)		
1 401 ... 1 500 mm (55.16 ... 59.05 inch)	51	
Initial: 1 500 mm (59.05 inch)		
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 2/68 Order codes		
75 ... 150 mm (2.95 ... 5.91 inch)	9	N 1 D
Initial: 150 mm (5.91 inch)		
151 ... 300 mm (5.95 ... 11.81 inch)	9	N 2 D
Initial: 300 mm (11.81 inch)		
301 ... 450 mm (11.85 ... 17.72 inch)	9	N 3 D
Initial: 450 mm (17.72 inch)		

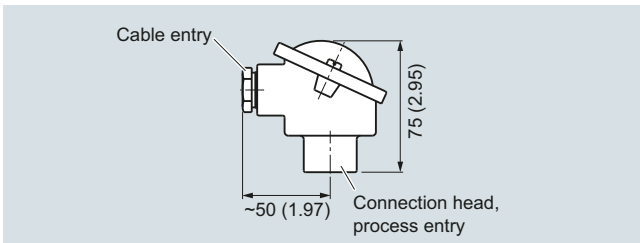
Additional configurations on page after next page.

You find ordering examples on page 2/40.

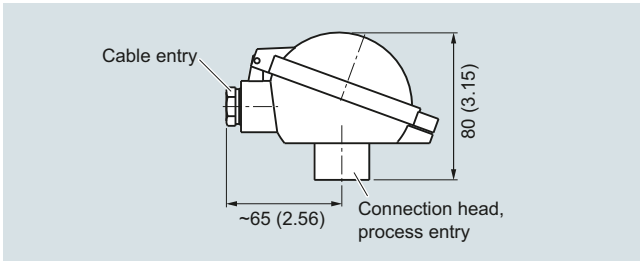
Temperature Measurement

Temperature sensors
SITRANS TS500 - Tubular thermowells

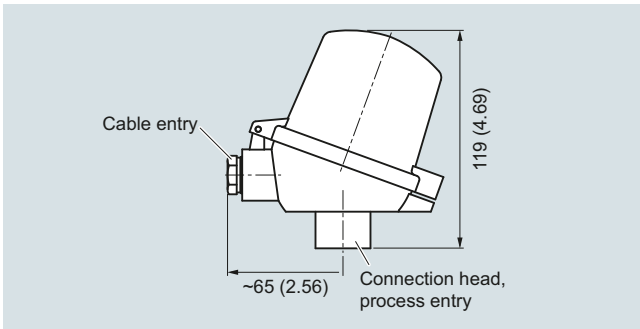
Type 2G, screwed design, with extension



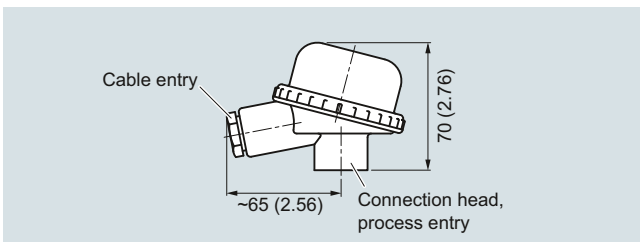
Connection head, aluminum, Type BA0, dimensions in mm (inch)



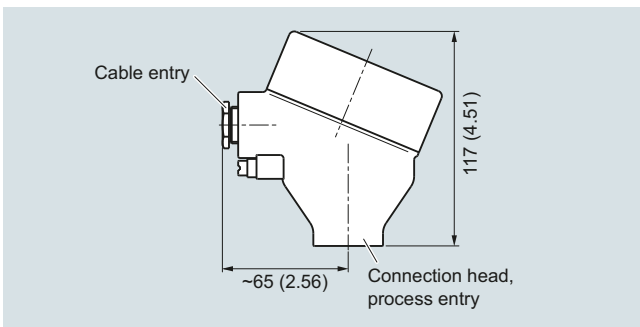
Connection head, aluminum, Type BB0, dimensions in mm (inch)



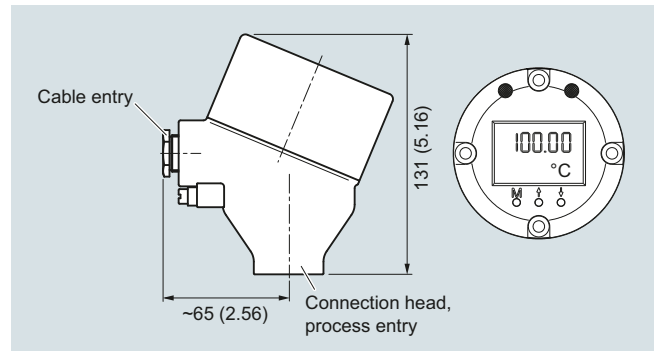
Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)



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)

Temperature Measurement

Temperature sensors

SITRANS TS500 - Tubular thermowells

Type 2G, screwed design, with extension

Selection and Ordering data	Article No.	Ord. Code
SITRANS TS500 Tubular thermowell, low to medium stress, according to DIN 43722, Type 2G, screwed design, 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 connection typesver, suitable for Ex d ¹⁾		U
Stainless steel head, AV0, screw cover, suitable for Ex d, display ¹⁾		V
Sensor²⁾		
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)		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		
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)		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

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	Y44
Select range, enter desired length in plain text (No entry = standard length)	
Extension X length customer-specific	Y45
Select range, enter desired length in plain text (No entry = standard length)	
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, input 1 x Pt100, 4 ... 20 mA	T12
SITRANS TH320, input 1 x universal, 4 ... 20 mA	T24
SITRANS TH320, input 1 x universal, HART	T34
SITRANS TH420, input 2 x universal, HART	T35
SITRANS TH400, input 1 x universal, PA	T40
SITRANS TH400, input 1 x universal, PA, Ex	T41
SITRANS TH400, input 1 x universal, FF	T45
SITRANS TH400, input 1 x universal, FF, Ex	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 "ec" according to ATEX and IECEx (Europe, Australia, New Zealand)	E04
Without explosion protection requirements (USA, Canada) Basis FM	E10
Flameproof enclosure "d"/"XP; dust protection through 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

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 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 ISO 9001 grease-free (cleaned for e.g. oxygen applications)	C35 C51
EN 10204-3.1 Acceptance test certificate "Positive Materials Identification" (PMI)	On request
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
SITRANS TH320/420 transmitter with SIL2/3 certificate	C20
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 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 2/40.
Accessories, see page 2/251.**

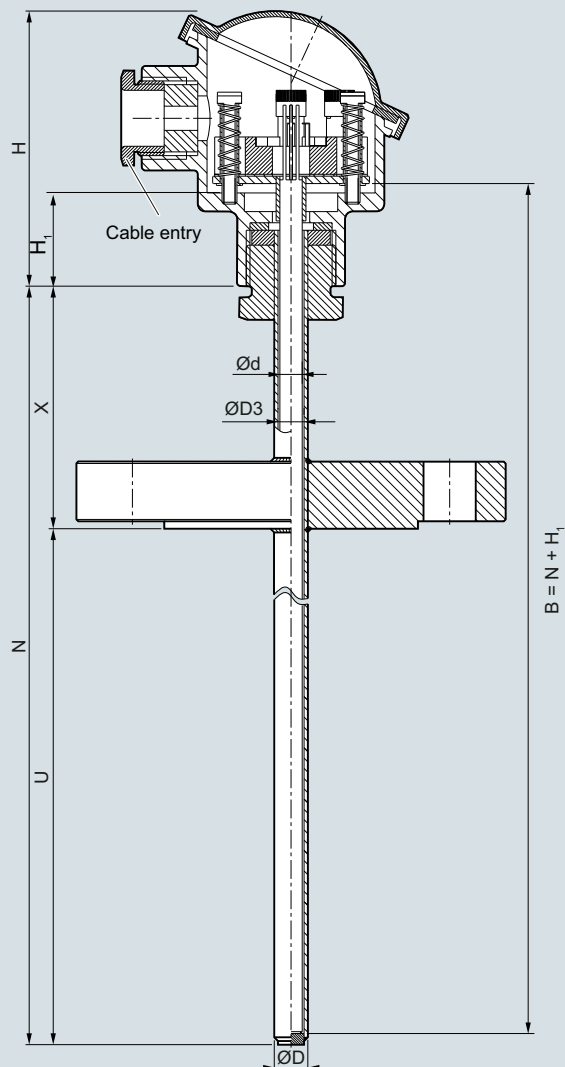
Temperature Measurement

Temperature sensors

SITRANS TS500 - Tubular thermowells

Type 2F, with flange 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
- H Head height
- H₁ Type Axx = 41 (1.61)
Type Bxx = 26 (1.02)
- N Nominal length
- U Insertion length
- X Extension length, floor strength 3 mm

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

Temperature Measurement

Temperature sensors

SITRANS TS500 - Tubular thermowells

Type 2F, with flange and extension

Selection and Ordering data	Article No.	Ord. Code	Selection and Ordering data	Article No.	Ord. Code
SITRANS TS500	7MC751-		SITRANS TS500	7MC751-	
Tubular thermowell, low to medium stress, according to DIN 43722, Type 2F, with flange, with extension			Tubular thermowell, low to medium stress, according to 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		341...360 mm (13.43 ... 14.17 inch) Initial: 360 mm (14.17 inch)	20	
316L (1.4404 or 1.4435)	2		361...380 mm (14.21 ... 14.96 inch) Initial: 380 mm (14.96 inch)	21	
Process connection			381...400 mm (14.99 ... 15.75 inch) Initial: 400 mm (15.75 inch)	22	
Flange EN; DN 25 PN10 ... 40 B1	2 A		401...420 mm (15.79 ... 16.54 inch) Initial: 420 mm (16.54 inch)	23	
Flange EN; DN 40 PN 40 B1	2 B		421...440 mm (16.57 ... 17.32 inch) Initial: 440 mm (17.32 inch)	24	
Flange EN; DN 50 PN 40 B1	2 C		441...460 mm (17.36 ... 18.11 inch) Initial: 460 mm (18.11 inch)	25	
Flange ASME; 1.0" RF 150	2 E		461...480 mm (18.15 ... 18.90 inch) Initial: 465 mm (18.30 inch)	26	
Flange ASME; 1.0" RF 300	2 F		481...500 mm (18.94 ... 19.69 inch) Initial: 500 mm (19.69 inch)	27	
Flange ASME; 1.5" RF 150	2 G		501...550 mm (19.72 ... 21.65 inch) Initial: 510 mm (20.08 inch)	31	
Flange ASME; 1.5" RF 300	2 H		551...600 mm (21.69 ... 23.62 inch) Initial: 600 mm (23.62 inch)	32	
Flange ASME; 2.0" RF 150	2 J		601...650 mm (23.66 ... 25.59 inch) Initial: 650 mm (25.59 inch)	33	
Flange ASME; 2.0" RF 300	2 K		651...700 mm (25.63 ... 27.56 inch) Initial: 700 mm (27.56 inch)	34	
Flange ASME; 1.0" RF 600	2 L		701...750 mm (27.60 ... 29.53 inch) Initial: 750 mm (29.53 inch)	35	
Flange ASME; 1.5" RF 600	2 N		751...800 mm (29.57 ... 31.50 inch) Initial: 800 mm (31.50 inch)	36	
Flange ASME; 1.5" RF 900	2 R		801...850 mm (31.54 ... 33.46 inch) Initial: 850 mm (33.46 inch)	37	
Flange ASME; 2.0" RF 600	2 S		851...900 mm (33.50 ... 35.43 inch) Initial: 900 mm (35.43 inch)	41	
Flange ASME; 2.0" RF 900	2 T		901...950 mm (35.47 ... 37.40 inch) Initial: 950 mm (37.40 inch)	42	
Flange EN; DN 32 PN 40 B1	4 A		951...1 000 mm (37.44 ... 39.37 inch) Initial: 1 000 mm (39.37 inch)	43	
Flange EN; DN 40 PN 100 B1	4 B		1 001...1 100 mm (39.41 ... 43.31 inch) Initial: 1 100 mm (43.31 inch)	44	
Flange EN; DN 50 PN 16 B1	4 C		1 101...1 200 mm (43.35 ... 47.24 inch) Initial: 1 200 mm (47.24 inch)	45	
Flange EN; DN 80 PN 16 B1	4 D		1 201...1 300 mm (47.28 ... 51.18 inch) Initial: 1 300 mm (51.18 inch)	46	
Flange EN; DN 100 PN 16 B1	4 E		1 301...1 400 mm (51.22 ... 55.12 inch) Initial: 1 400 mm (55.12 inch)	47	
Thermowell form		A	1 401...1 500 mm (55.16 ... 59.05 inch) Initial: 1 500 mm (59.05 inch)	51	
2F, 9 mm (0.35 inch)		B	Extension X		
2F, 12 mm (0.47 inch)			Standard length for Type 2F DIN 43772 (X=64 mm (2.52 inch))	1	
Insertion U standard			Extension length X - customer specific		
225 mm (8.86 inch)	11		enter customer specific length with Y45, see page 2/73 Order codes		
315 mm (12.40 inch)	15		75 ...150 mm (2.95 ... 5.91 inch)	9	N 1 D
465 mm (18.31 inch)	26		Initial: 150 mm (5.91 inch)		
Insertion length U customer-specific			151 ... 300 mm (5.95 ... 11.81 inch)	9	N 2 D
enter customer specific length with Y44, see page 2/73 Order codes			Initial: 300 mm (11.81 inch)		
80 ... 100 mm (3.15 ... 3.94 inch)	01		301 ... 450 mm (11.85 ... 17.72 inch)	9	N 3 D
Initial: 100 mm (3.94 inch)			Initial: 450 mm (17.72 inch)		
101 ... 120 mm (3.98 ... 4.72 inch)	02				
Initial: 120 mm (4.72 inch)					
121 ... 140 mm (4.76 ... 5.51 inch)	03				
Initial: 140 mm (5.51 inch)					
141 ... 160 mm (5.55 ... 6.30 inch)	04				
Initial: 160 mm (6.30 inch)					
161 ... 180 mm (6.34 ... 7.09 inch)	05				
Initial: 180 mm (7.09 inch)					
181 ... 200 mm (7.13 ... 7.87 inch)	06				
Initial: 200 mm (7.87 inch)					
201 ... 220 mm (7.91 ... 8.66 inch)	07				
Initial: 220 mm (8.66 inch)					
221 ...240 mm (8.70 ... 9.45 inch)	11				
Initial: 225 mm (8.86 inch)					
241...260 mm (9.49 ... 10.24 inch)	12				
Initial: 250 mm (9.84 inch)					
261...280 mm (10.28 ... 11.02 inch)	13				
Initial: 280 mm (11.02 inch)					
281...300 mm (11.06 ... 11.81 inch)	14				
Initial: 285 mm (11.22 inch)					
301...320 mm (11.85 ... 13.00 inch)	15				
Initial: 315 mm (12.40 inch)					
321...340 mm (12.64 ... 13.39 inch)	16				
Initial: 340 mm (13.39 inch)					

Additional configurations on page after next page!

You find ordering examples on page 2/40!

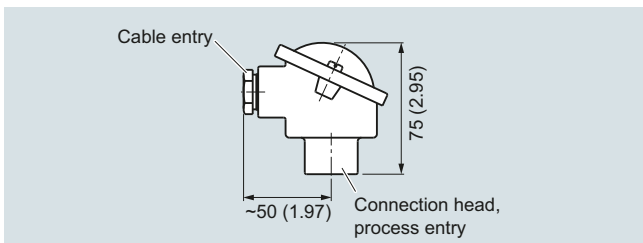
Temperature Measurement

Temperature sensors

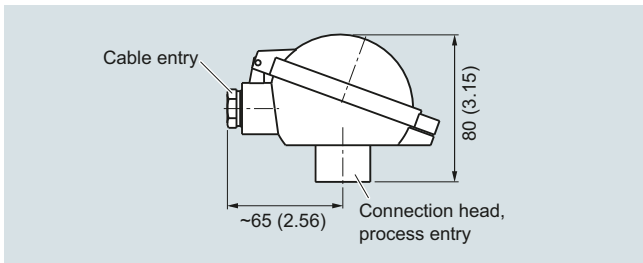
SITRANS TS500 - Tubular thermowells

Type 2F, with flange and extension

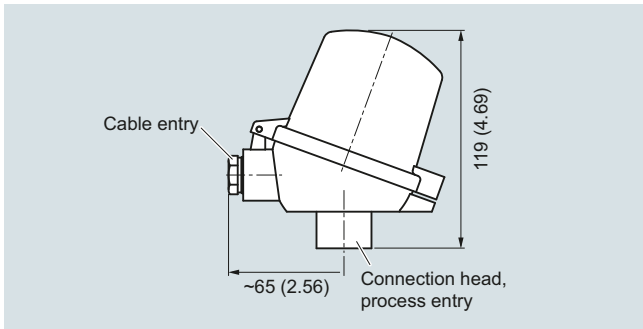
2



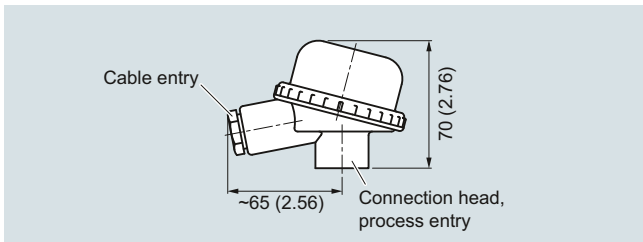
Connection head, aluminum, Type BA0, dimensions in mm (inch)



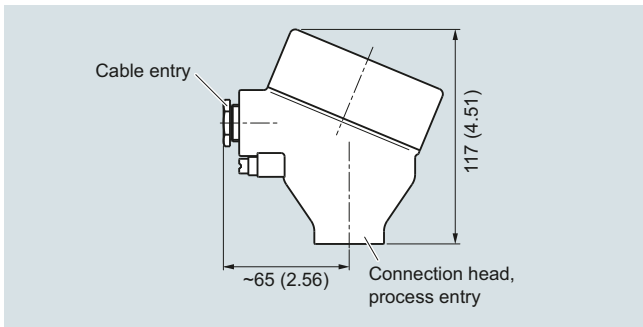
Connection head, aluminum, Type BB0, dimensions in mm (inch)



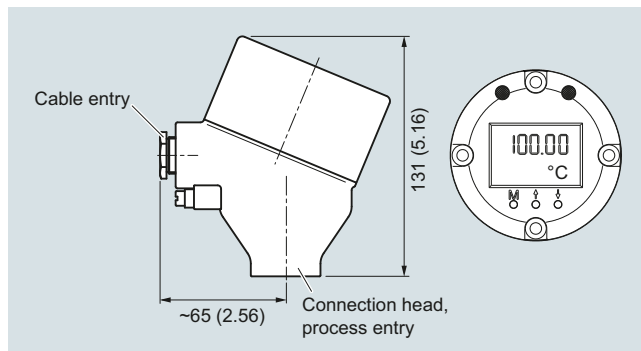
Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)



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 2F, with flange and extension

Selection and Ordering data

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 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 ISO 9001 grease-free (cleaned for e.g. oxygen applications)	C35 C51
EN 10204-3.1 Acceptance test certificate "Positive Materials Identification" (PMI)	On request
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
SITRANS TH320/420 transmitter with SIL2/3 certificate	C20
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 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 1/2" 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

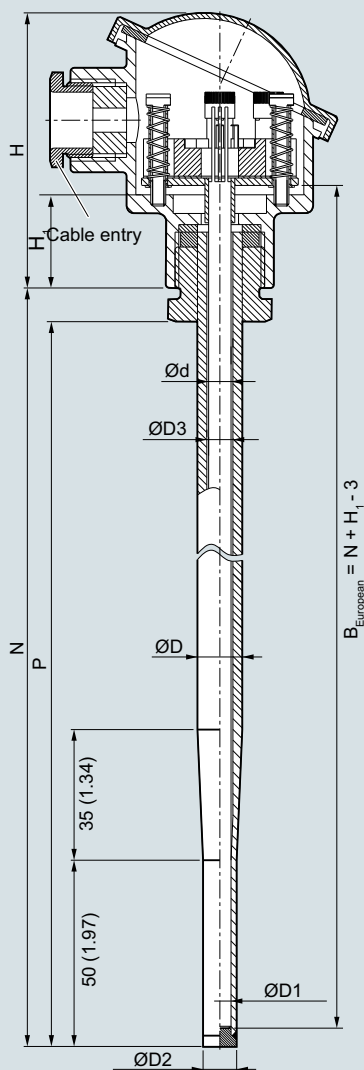
1) Please select Ex i version of the optional transmitter.

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 2/40.

Accessories, see page 2/251.

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
- H₁ Type Axx> 41 (1.61)
Type Bxx> 26 (1.02)
- N Nominal length
- P Space for process connection, floor strength 6 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 3, fast response, without process connection

Selection and Ordering data	Article No.
SITRANS TS500	7MC751-
Tubular thermowell for low to medium stress, according to 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	1
316Ti (1.4571)	2
316L (1.4404 or 1.4435)	
Process connection	0 N
Without process connection (for compression joints) N=U	
Thermowell form	K
3, 12/9 mm (0.47/0.35 inch)	
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 2/78 Order codes	
121 ... 140 mm (4.76 ... 5.51 inch)	0 3
Initial: 140 mm (5.51 inch)	
141 ... 160 mm (5.55 ... 6.30 inch)	0 4
Initial: 160 mm (6.3 inch)	
161 ... 180 mm (6.34 ... 7.09 inch)	0 5
Initial: 180 mm (7.09 inch)	
181 ... 200 mm (7.13 ... 7.87 inch)	0 6
Initial: 200 mm (7.87 inch)	
201 ... 220 mm (7.91 ... 8.66 inch)	0 7
Initial: 220 mm (8.66 inch)	
221 ... 240 mm (8.7 ... 9.45 inch)	1 1
Initial: 225 mm (8.86 inch)	
241 ... 260 mm (9.48 ... 10.24 inch)	1 2
Initial: 250 mm (9.84 inch)	
261 ... 280 mm (10.28 ... 11.02 inch)	1 3
Initial: 280 mm (11.02 inch)	
281 ... 300 mm (11.02 ... 11.81 inch)	1 4
Initial: 285 mm (11.22 inch)	
301 ... 320 mm (11.85 ... 12.6 inch)	1 5
Initial: 315 mm (12.4 inch)	
321 ... 340 mm (12.64 ... 13.39 inch)	1 6
Initial: 340 mm (13.39 inch)	
341 ... 360 mm (13.43 ... 14.17 inch)	2 0
Initial: 360 mm (14.17 inch)	
361 ... 380 mm (14.21 ... 14.96 inch)	2 1
Initial: 380 mm (14.96 inch)	

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

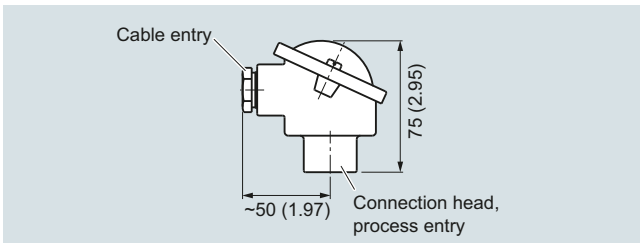
Additional configurations on page after next page!

You find ordering examples on page 2/40!

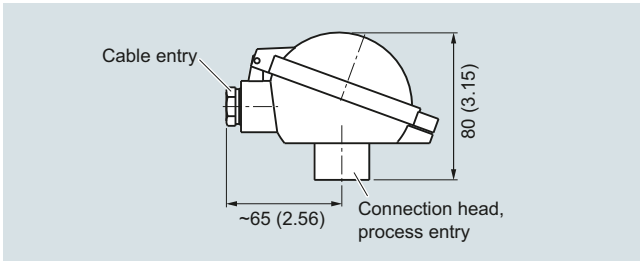
Temperature Measurement

Temperature sensors
SITRANS TS500 - Tubular thermowells

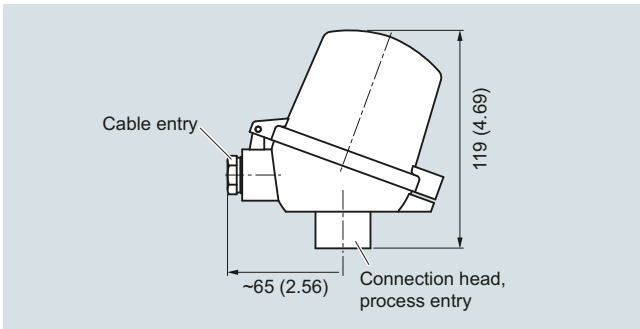
Type 3, fast response, without process connection



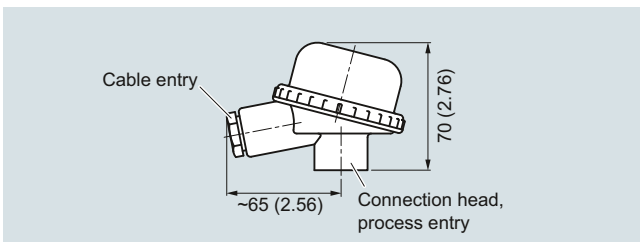
Connection head, aluminum, Type BA0, dimensions in mm (inch)



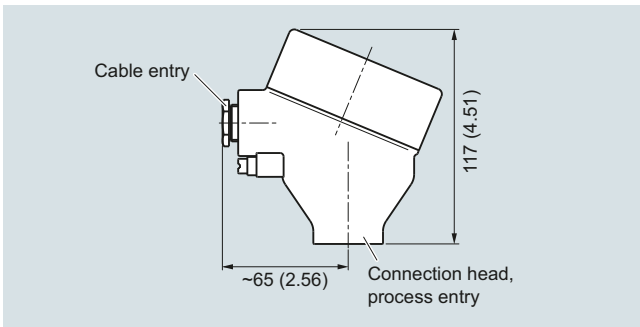
Connection head, aluminum, Type BB0, dimensions in mm (inch)



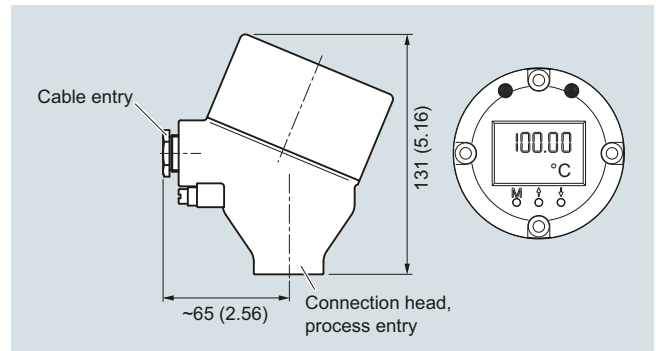
Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)



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)

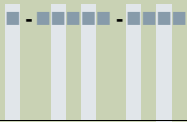
2

Temperature Measurement

Temperature sensors

SITRANS TS500 - Tubular thermowells

Type 3, fast response, without process connection

Selection and Ordering data	Article No.
SITRANS TS500	7MC751-
Tubular thermowell for low to medium stress, according to DIN 43722, Type 3, without process connection, improved response time, plug-in or use with moveable compression fittings	
Head	
Aluminum head, BAO, flange cover, Standard	A
Aluminum head, BBO, low hinged cover, screw connection	B
Aluminum head, BCO, high hinged cover, screw connection	C
Aluminum head, AGO, screw cover, suitable for Ex d ¹⁾	G
Aluminum head, AHO, screw cover, suitable for Ex d, display ¹⁾	H
Plastic head, BMO, screw cover	M
Plastic head, BPOhigh 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
Sensor²⁾	
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)	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, -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	
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)	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	Y44
Select range, enter desired length in plain text (No entry = standard length)	
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, input 1 x Pt100, 4 ... 20 mA	T12
SITRANS TH320, input 1 x universal, 4 ... 20 mA	T24
SITRANS TH320, input 1 x universal, HART	T34
SITRANS TH420, input 2 x universal, HART	T35
SITRANS TH400, input 1 x universal, PA	T40
SITRANS TH400, input 1 x universal, PA, Ex	T41
SITRANS TH400, input 1 x universal, FF	T45
SITRANS TH400, input 1 x universal, FF, Ex	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 "ec" according to ATEX and IECEx (Europe, Australia, New Zealand)	E04
Without explosion protection requirements (USA, Canada) Basis FM	E10
Flameproof enclosure "d"/"XP; dust protection through 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

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 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 ISO 9001 grease-free (cleaned for e.g. oxygen applications)	C35 C51
EN 10204-3.1 Acceptance test certificate "Positive Materials Identification" (PMI)	On request
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
SITRANS TH320/420 transmitter with SIL2/3 certificate	C20
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 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 1/2" 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 G1/2", enclosed	A31
Compression joint NPT1/2", 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 2/40.
Accessories, see page 2/251.

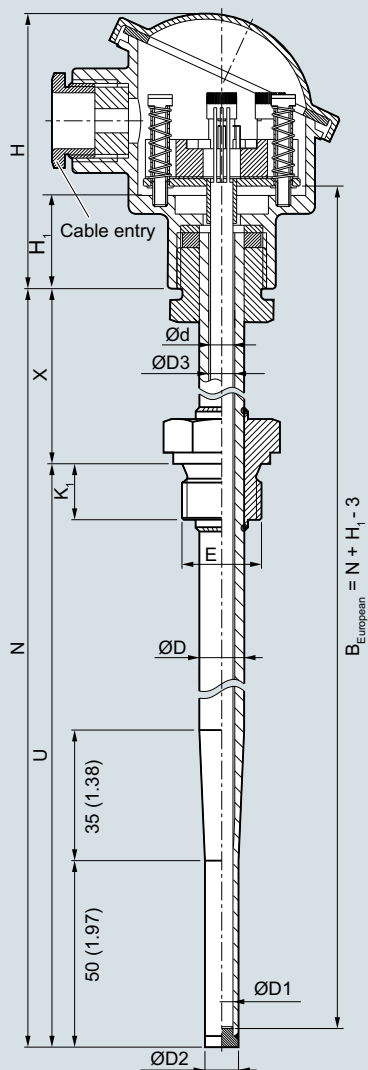
Temperature Measurement

Temperature sensors

SITRANS TS500 - Tubular thermowells

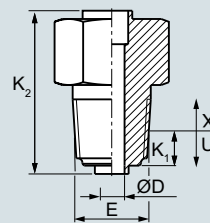
Type 3G, fast response, screwed design, with extension

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
- E Process connection, thread size
- H Head height
- H₁ Type Axx = 41 (1.61)
Type Bxx = 26 (1.02)
- K₁ Screw depth
- N Nominal length
- U Insertion length
- X Extension length, floor strength 6 mm

SITRANS TS500, temperature sensors for vessels and pipes, tubular thermowell for low to medium stress, according to DIN 43772, type 3G, screwed design, without process connection, with extension, for screw-in depth dimensions, see page 2/15, dimensions in mm (inch).



Process connection conical, dimensions in mm (inch)

Temperature Measurement

Temperature sensors

SITRANS TS500 - Tubular thermowells

Type 3G, fast response, screwed design, with extension

Selection and Ordering data	Article No.	Ord. Code	Selection and Ordering data	Article No.	Ord. Code
SITRANS TS500 Tubular thermowell, low to medium stress, according to DIN 43722, Type 3G, screwed design, with extension	7MC751-		SITRANS TS500 Tubular thermowell, low to medium stress, according to DIN 43722, Type 3G, screwed design, with extension	7MC751-	
➤ Click on the Article No. for the online configuration in the PIA Life Cycle Portal.					
Material, in contact with media					
316Ti (1.4571)	1		501 ... 550 mm (19.72 ... 21.65 inch) Initial: 510 mm (20.08 inch)	3 1	
316L (1.4404 or 1.4435)	2		551 ... 600 mm (21.69 ... 23.62 inch) Initial: 600 mm (23.62 inch)	3 2	
Process connection			601 ... 650 mm (23.66 ... 25.59 inch) Initial: 650 mm (25.59 inch)	3 3	
Cylindrical: G½" (½" BSPP)	1 C		651 ... 700 mm (25.63 ... 27.56 inch) Initial: 700 mm (27.56 inch)	3 4	
Cylindrical: G¾" (¾" BSPP)	1 D		701 ... 750 mm (27.6 ... 29.53 inch) Initial: 750 mm (29.53 inch)	3 5	
Tapered: NPT½"	1 J		751 ... 800 mm (29.57 ... 31.50 inch) Initial: 800 mm (31.50 inch)	3 6	
Tapered: NPT¾"	1 K		801 ... 850 mm (31.53 ... 33.46 inch) Initial: 850 mm (33.46 inch)	3 7	
Tapered: NPT1"	1 L		851 ... 900 mm (33.50 ... 35.43 inch) Initial: 900 mm (35.43 inch)	4 1	
Cylindrical: M20 x 1.5	1 V		901 ... 950 mm (35.47 ... 37.40 inch) Initial: 950 mm (37.40 inch)	4 2	
Cylindrical: M27 x 2.0	1 W		951 ... 1 000 mm (37.44 ... 39.37 inch) Initial: 1 000 mm (39.37 inch)	4 3	
Cylindrical: M33 x 2.0	1 Y		Extension X Standard length for Type 2G DIN 43772 (X=131 mm (5.08 inch))	1	
Thermowell form			Extension length - customer specific enter customer specific length with Y45, see page 2/83 Order codes		
3G, 12/9 mm (0.47/0.35 inch)	K		75 ... 150 mm (2.95 ... 5.91 inch) Initial: 150 mm (5.91 inch)	9	N 1 D
Insertion length U standard			151 ... 300 mm (5.95 ... 11.81 inch) Initial: 300 mm (11.81 inch)	9	N 2 D
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 2/83 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				

Additional configurations on page after next page!

You find ordering examples on page 2/40!

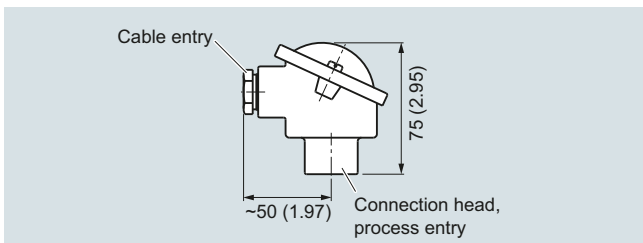
Temperature Measurement

Temperature sensors

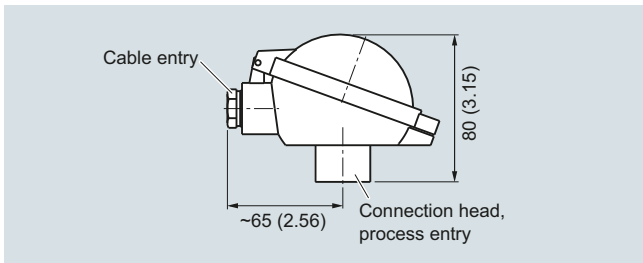
SITRANS TS500 - Tubular thermowells

Type 3G, fast response, screwed design, with extension

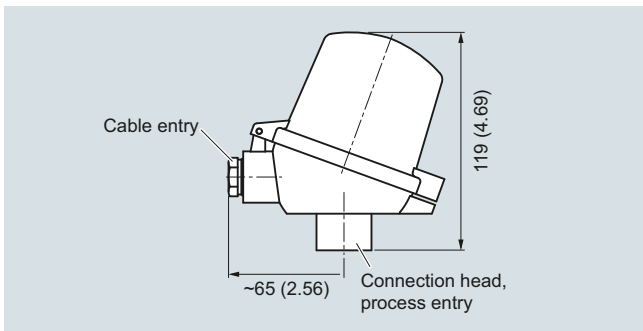
2



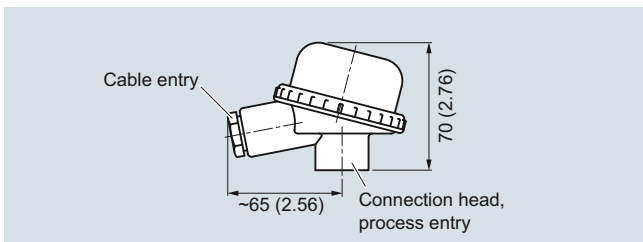
Connection head, aluminum, Type BA0, dimensions in mm (inch)



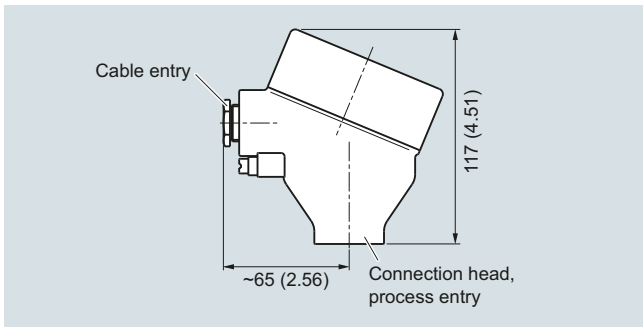
Connection head, aluminum, Type BB0, dimensions in mm (inch)



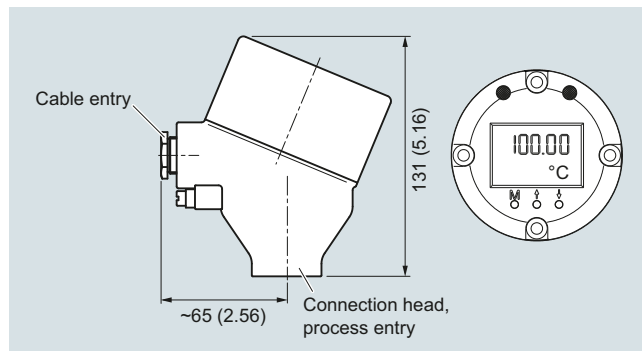
Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)



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 3G, fast response, screwed design, with extension

Selection and Ordering data	Article No.	Selection and Ordering data	Order code
SITRANS TS500 Tubular thermowell, low to medium stress, according to DIN 43722, Type 3G, screwed design, with extension	7MC751- 	Further designs Add "-Z" to Article No. and specify Order code.	
Head Aluminum head, BAO, flange cover, Standard Aluminum head, BBO, low hinged cover, screw connection Aluminum head, BC0, high hinged cover, screw connection Aluminum head, AG0, screw cover, suitable for Ex d ¹⁾ Aluminum head, AH0, screw cover, suitable for Ex d, display ¹⁾ Plastic head, BMO, screw cover Plastic head, BPOhigh hinged cover, screw connection Stainless steel head, AU0, screw cover, Ex d ¹⁾ Stainless steel head, screw cover, Ex d, display ¹⁾	A B C G H M P U V	Insertion length customer-specific Select range, enter desired length in plain text (No entry = standard length)	Y44
		Extension length customer-specific Select range, enter desired length in plain text (No entry = standard length)	Y45
		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, input 1 x Pt100, 4 ... 20 mA SITRANS TH320, input 1 x universal, 4 ... 20 mA SITRANS TH320, input 1 x universal, HART SITRANS TH420, input 2 x universal, HART SITRANS TH400, input 1 x universal, PA SITRANS TH400, input 1 x universal, PA, Ex SITRANS TH400, input 1 x universal, FF SITRANS TH400, input 1 x universal, FF, Ex	T12 T24 T34 T35 T40 T41 T45 T46
Sensor²⁾ 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) Pt100, vibration resistant, -50 ... +400 °C (-58 ... +752 °F) Pt100, expanded range, -196 ... +600 °C (-321 ... +1 112 °F) Thermocouple Type J, -40 ... +750 °C (-40 ... +1 382 °F) Thermocouple Type K, -40 ... +1 000 °C (-40 ... +1 832 °F) Thermocouple Type N, -40 ... +1 000 °C (-40 ... +1 832 °F)	A B C J K N	Explosion protection Without explosion protection requirements (Europe, Australia, New Zealand) Intrinsic safety "i"/IS ¹⁾ according to ATEX and IECEx (Europe, Australia, New Zealand) Flameproof enclosure "d"/XP; dust protection through housing "t"/DIP ²⁾ according to ATEX and IECEx (Europe, Australia, New Zealand) Non-sparking "ec" according to ATEX and IECEx (Europe, Australia, New Zealand) Without explosion protection requirements (USA, Canada) Basis FM Flameproof enclosure "d"/XP; dust protection through housing "t"/DIP ²⁾ according to cFMus (USA, Canada); other connections (M,G,R) Non-sparking "nA"/NI" according to cFMus (USA, Canada) Without explosion protection requirements (USA, Canada), Basis CSA Intrinsic safety "i"/IS ¹⁾ according to cCSAus (USA, Canada) Flameproof enclosure "d"/XP; dust protection through housing "t"/DIP ²⁾ according to cCSAus (USA); other connections (M, G, R) Non-sparking "nA"/NI" according to cCSAus (USA, Canada) Without explosion protection requirements (China) Intrinsic safety "i"/IS ¹⁾ according to NEPSI (China) Flameproof enclosure "d"; dust protection through housing "t" ²⁾ according to NEPSI (China) Non-sparking "nA"/NI" according to NEPSI (China) Without explosion protection requirements (EAC) Intrinsic safety "i"/IS ¹⁾ according to EACEx (EAC) Flameproof enclosure "d"/XP; dust protection through housing "t"/DIP ²⁾ according to EACEx (EAC) Non-sparking "nA"/NI" according to EACEx (EAC)	E00 E01 E03 E04 E10 E14 E16 E17 E18 E21 E23 E54 E55 E56 E57 E80 E81 E82 E83
Sensor number/Accuracy 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) Single, increased accuracy (Class 1/Class A) Single, highest accuracy (Class AA) Double, basic accuracy (Class 2/Class B) Double, increased accuracy (Class 1/Class A) Double, highest accuracy (Class AA)	1 2 3 5 6 7	Marine approvals Det Norske Veritas Germanischer Lloyd (DNV GL)	D01
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			

Temperature Measurement

Temperature sensors

SITRANS TS500 - Tubular thermowells

Type 3G, fast response, screwed design, with extension

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 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 ISO 9001 grease-free (cleaned for e.g. oxygen applications)	C35 C51
EN 10204-3.1 Acceptance test certificate "Positive Materials Identification" (PMI)	On request
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
SITRANS TH320/420 transmitter with SIL2/3 certificate	C20
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 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 1/2" 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

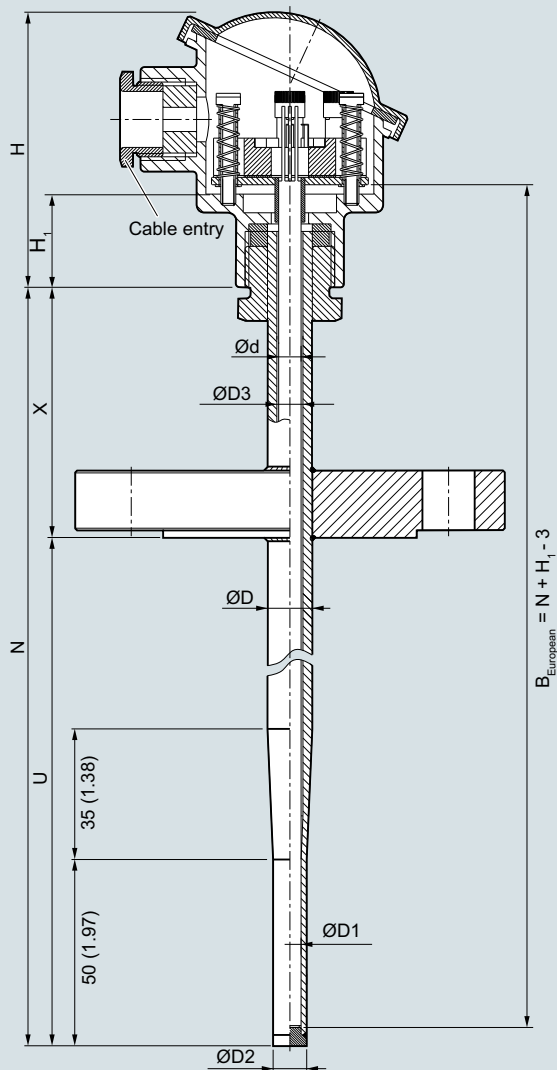
1) Please select Ex i version of the optional transmitter.

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 2/40.

Accessories, see page 2/251.

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
- H₁ Type Axx = 41 (1.61)
Type Bxx = 26 (1.02)
- N Nominal length
- U Insertion length
- X Extension length, floor strength 6 mm

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

Temperature Measurement

Temperature sensors

SITRANS TS500 - Tubular thermowells

Type 3F, fast response, with flange and extension

Selection and Ordering data

Selection and Ordering data	Article No.	Ord. Code
SITRANS TS500	7MC751-	
Tubular thermowell, low to medium stress, according to 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; DN 40 PN 40 B1	2 B	
Flange EN; DN 50 PN 40 B1	2 C	
Flange ASME; 1.0" RF 150	2 E	
Flange ASME; 1.0" RF 300	2 F	
Flange ASME; 1.5" RF 150	2 G	
Flange ASME; 1.5" RF 300	2 H	
Flange ASME; 2.0" RF 150	2 J	
Flange ASME; 2.0" RF 300	2 K	
Flange ASME; 1.0" RF 600	2 L	
Flange ASME; 1.5" RF 600	2 N	
Flange ASME; 1.5" RF 900	2 R	
Flange ASME; 2.0" RF 600	2 S	
Flange ASME; 2.0" RF 900	2 T	
Flange EN; DN 32 PN 40 B1	4 A	
Flange EN; DN 40 PN 100 B1	4 B	
Flange EN; DN 50 PN 16 B1	4 C	
Flange EN; DN 80 PN 16 B1	4 D	
Flange EN; DN 100 PN 16 B1	4 E	
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 2/88 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

Selection and Ordering data	Article No.	Ord. Code
SITRANS TS500	7MC751-	
Tubular thermowell, low to medium stress, according to 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 2/88 Order codes		
75 ... 150 mm (2.95 ... 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

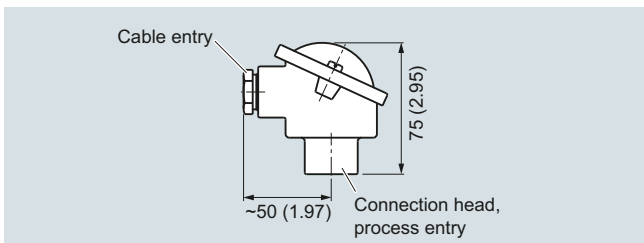
Additional configurations on page after next page!

You find ordering examples on page 2/40!

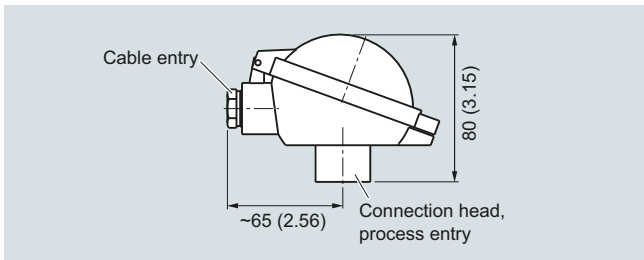
Temperature Measurement

Temperature sensors
SITRANS TS500 - Tubular thermowells

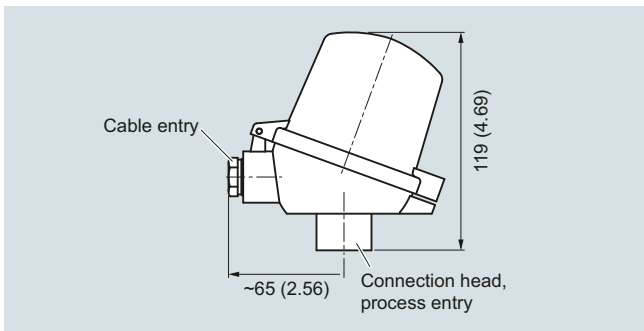
Type 3F, fast response, with flange and extension



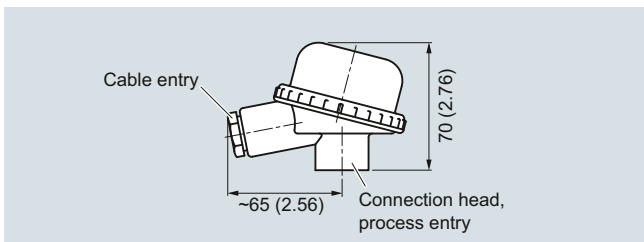
Connection head, aluminum, Type BA0, dimensions in mm (inch)



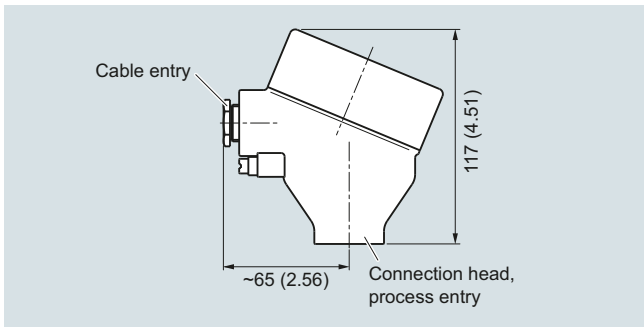
Connection head, aluminum, Type BB0, dimensions in mm (inch)



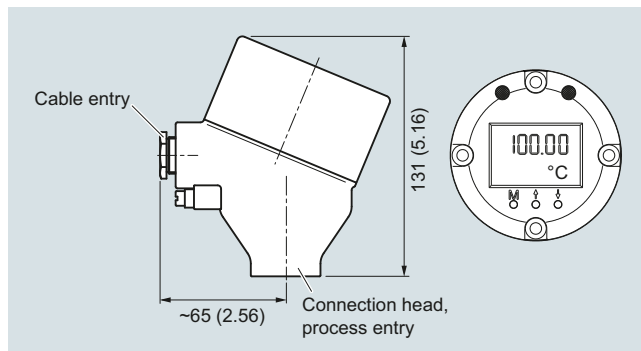
Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)



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)

2

Temperature Measurement

Temperature sensors

SITRANS TS500 - Tubular thermowells

Type 3F, fast response, with flange and extension

Selection and Ordering data	Article No.	Ord. Code
SITRANS TS500 Tubular thermowell, low to medium stress, according to DIN 43722, Type 3F, with flange, with extension	7MC751-	
Head		
Aluminum head, BAO, flange cover, Standard		A
Aluminum head, BBO, 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, BMO, screw cover		M
Plastic head, BPOhigh 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
Sensor²⁾		
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)		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, -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		
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)		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	Y44
Select range, enter desired length in plain text (No entry = standard length)	
Extension length customer-specific	Y45
Select range, enter desired length in plain text (No entry = standard length)	
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, input 1 x Pt100, 4 ... 20 mA	T12
SITRANS TH320, input 1 x universal, 4 ... 20 mA	T24
SITRANS TH320, input 1 x universal, HART	T34
SITRANS TH420, input 2 x universal, HART	T35
SITRANS TH400, input 1 x universal, PA	T40
SITRANS TH400, input 1 x universal, PA, Ex	T41
SITRANS TH400, input 1 x universal, FF	T45
SITRANS TH400, input 1 x universal, FF, Ex	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 "ec" according to ATEX and IECEx (Europe, Australia, New Zealand)	E04
Without explosion protection requirements (USA, Canada) Basis FM	E10
Flameproof enclosure "d"/"XP; dust protection through 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

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 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
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
SITRANS TH320/420 transmitter with SIL2/3 certificate	C20
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 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 1/2" 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 2/40.

Accessories, see page 2/251.

Temperature Measurement

Temperature sensors

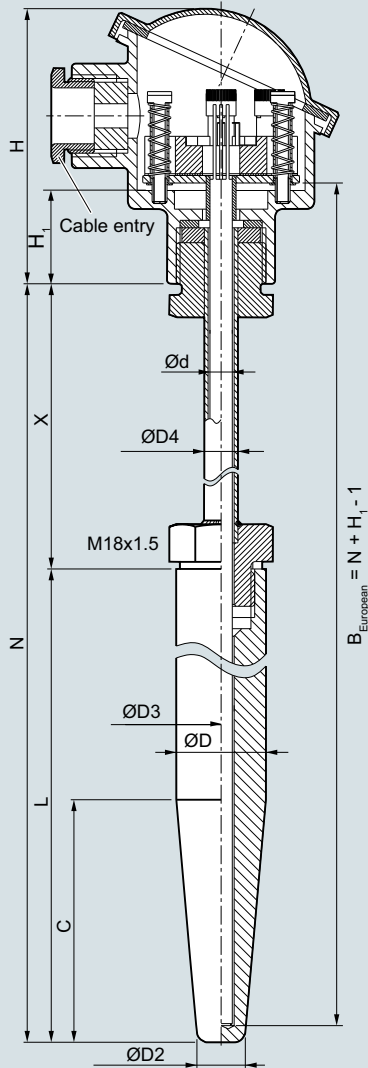
SITRANS TS500 - Barstock thermowells

Type 4+4F, with extension

Dimensional drawings

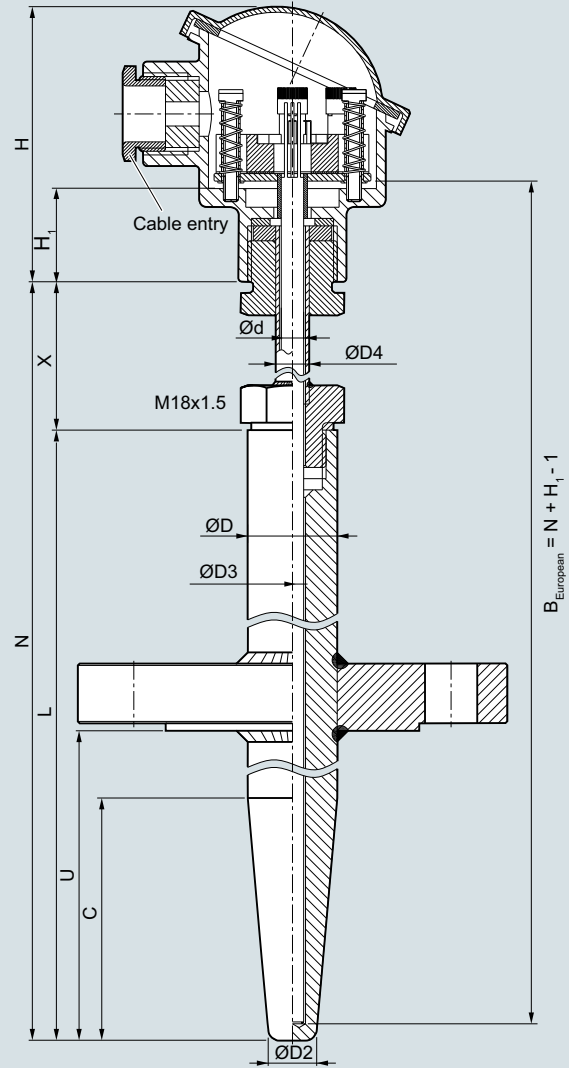
SITRANS TS500, temperature sensors for vessels and pipes, barstock thermowell for medium to extreme stress, according to DIN 43772..

2



- 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, 12.5 (0.49)
- ØD3 Thermowell internal diameter
- ØD4 Extension outer diameter
- H Head height
- H₁ Type Axx = 41 (1.61)
Type Bxx = 26 (1.02)
- L Length of thermowell
- N Nominal length
- X Extension length, floor strength 4 mm

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, 12.5 (0.49)
- ØD3 Thermowell internal diameter
- ØD4 Extension outer diameter
- H Head height
- H₁ Type Axx = 41 (1.61)
Type Bxx = 26 (1.02)
- L Length of thermowell
- N Nominal length
- U Insertion length (Standard: $U = L - 70$ (2.76))
- X Extension length, floor strength 4 mm

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

Selection and Ordering data	Article No.	Ord. Code	Selection and Ordering data	Article No.	Ord. Code
SITRANS TS500	7MC752-		SITRANS TS500	7MC752-	
Barstock thermowell for medium to extreme stress, according to DIN 43722, Type 4, for welding in, Type 4F with flange, with extension			Barstock thermowell for medium to extreme stress, according to 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			Head		
316Ti (1.4571)	1		Aluminum head, BA0, flange cover, Standard		A
316L (1.4404 or 1.4435)	2		Aluminum head, BB0, low hinged cover, screw connection		B
1.7335 heat resistant, only for versions without flange	3		Aluminum head, BC0, high hinged cover, screw connection		C
1.5415 heat resistant, only for versions without flange	4		Aluminum head, AG0, screw cover, suitable for Ex d ¹⁾		G
Process connection			Aluminum head, AH0, screw cover, suitable for Ex d, display ¹⁾		H
Without (for welding in)	0 N		Plastic head, BM0, screw cover		M
Flange DN25 PN10 ... 40 B1	2 A		Plastic head, BP0high hinged cover, screw connection		P
Flange 1*RF150	2 E		Stainless steel head, AU0, screw cover, Ex d ¹⁾		U
Flange 1*RF300	2 F		Stainless steel head, AV0, screw cover, Ex d, display ¹⁾		V
Flange 1.5*RF150	2 G				
Flange 1.5*RF300	2 H		Sensor²⁾		
Thermowell form			Please note: The accuracy class range can be lower than the measuring range. For more information, see page 2/21		
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))			Pt100, basis, -50 ... +400 °C		A
Type 4/4F,			Pt100, vibration resistant, -50 ... +400 °C		B
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	Pt100, expanded range, -196 ... +600 °C (-321 ... +1 112)		C
Type 4/4F,			Thermocouple Type K, -40 ... +1 000 °C (-40 ... +1 832)		K
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	Thermocouple Type J, -40 ... +750 °C (-40 ... +1 382)		J
Type 4/4F,			Thermocouple Type N, -40 ... +1 000 °C (-40 ... +1 832)		N
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,			Sensor number/Accuracy		
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	Pt 100 connection: 1 x 4-wire connection or 2 x 3-wire connection, see "Measuring technology: connection types", page 2/23		
Extension X			Single, basic accuracy (Class 2/Class B)		1
as per DIN 43772			Single, increased accuracy (Class 1/Class A)		2
(X=149 mm (5.87 inch))	1		Single, highest accuracy (Class AA)		3
Extension X, customer-specific			Double, basic accuracy (Class 2/Class B)		5
enter customer specific length with Y45, see page 2/93 Order codes			Double, increased accuracy (Class 1/Class A)		6
75 ... 150 mm (2.95 ... 5.91 inch)	9	N 1 D	Double, highest accuracy (Class AA)		7
Initial: 150 mm (5.91 inch)					
151 ... 300 mm (5.95 ... 11.81 inch)	9	N 2 D			
Initial: 300 mm (11.81 inch)					
301 ... 450 mm (11.85 ... 17.72 inch)	9	N 3 D			
Initial: 450 mm (17.72 inch)					
451 ... 600 mm (17.86 ... 23.62 inch)	9	N 4 D			
Initial: 600 mm (23.62 inch)					
601 ... 750 mm (23.66 ... 29.53 inch)	9	N 5 D			
Initial: 750 mm (29.53 inch)					
751 ... 900 mm (29.57 ... 45.43 inch)	9	N 6 D			
Initial: 900 mm (45.43 inch)					
901 ... 1 050 mm (45.47 ... 41.34 inch)	9	N 7 D			
Initial: 1 050 mm (41.34 inch)					

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 2/40!

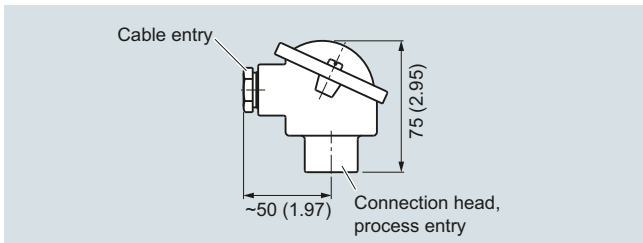
Temperature Measurement

Temperature sensors

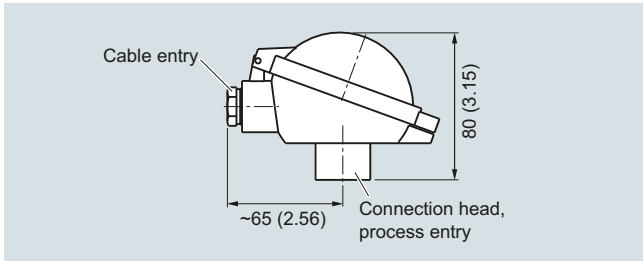
SITRANS TS500 - Barstock thermowells

Type 4+4F, with extension

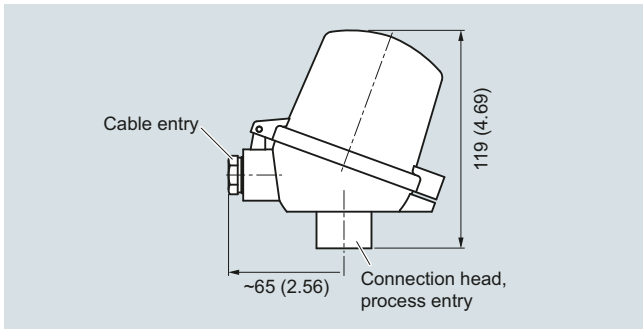
2



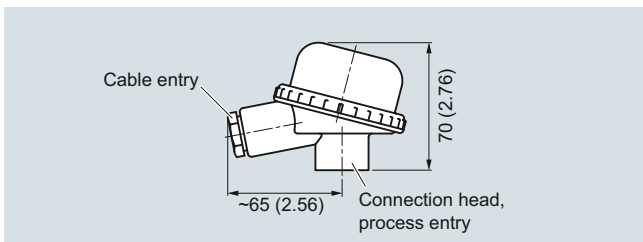
Connection head, aluminum, Type BA0, dimensions in mm (inch)



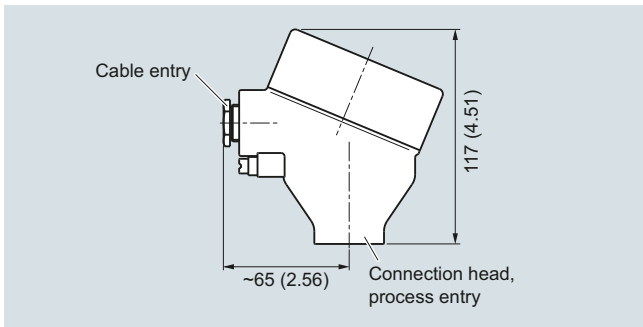
Connection head, aluminum, Type BB0, dimensions in mm (inch)



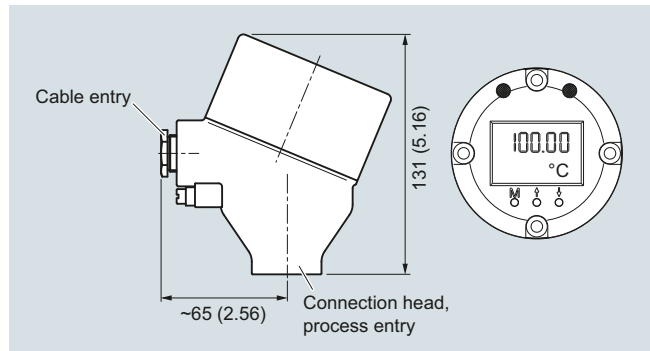
Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)



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	Order code	Selection and Ordering data	Order code
Further designs		Certificates and approvals	
Add "-Z" to Article No. and specify Order code.		EN 10204-3.1 Inspection certificate for materials coming into contact with media	C12
Insertion length customer-specific	Y44	EN 10204-3.1 Inspection certificate for hydrostatic pressure test	C31
Select range, enter desired length in plain text Insertion length U deviating from standard; (Min: U = C; Max: U= L-50 mm (1.97 inch)), no entry = standard length (U=L-70 mm (2.76 inch))		EN 10204-3.1 Inspection certificate for helium leak test	C32
Extension length customer-specific	Y45	EN 10204-3.1 Inspection certificate for dye-penetration-test	C33
Select range, enter desired length in plain text (No entry = standard length)		EN 10204-3.1 Inspection certificate: visual, measurement and functional inspection	C34
Options		EN 10204-2.1: Declaration of compliance with the order	C35
Add "-Z" to Article No. and add options, separate extensions with "+".		NACE Standard MR-01-75 compliance	C50
Built-in head transmitter		ISO 9001 grease-free (cleaned for e.g. oxygen applications)	C51
Measuring range to be set must be specified with plain text data "Y01".		EN 10204-3.1 Acceptance test certificate "Positive Materials Identification" (PMI)	On request
SITRANS TH100, input 1 x Pt100, 4 ... 20 mA	T12	Designation, calibration	
SITRANS TH320, input 1 x universal, 4 ... 20 mA	T24	Stainless steel TAG plate , enter lettering in plain text	Y15
SITRANS TH320, input 1 x universal, HART	T34	Plant calibration per 1 point, enter temperature in plain text	Y33
SITRANS TH420, input 2 x universal, HART	T35		
SITRANS TH400, input 1 x universal, PA	T40	Transmitter options	
SITRANS TH400, input 1 x universal, PA, Ex	T41	Transmitter, enter complete setting in plain text (Y01:+/-NNNN ... +/-NNNN C,F), marking on the device when Order code "Y15" is selected	Y01
SITRANS TH400, input 1 x universal, FF	T45	Enter measuring point (max. 8 characters) in plain text	Y17
SITRANS TH400, input 1 x universal, FF, Ex	T46	Transmitter, enter measuring point description (max. 16 characters) in plain text	Y23
Explosion protection		Transmitter, enter measuring point text (max. 32 characters) in plain text	Y24
Without explosion protection requirements (Europe, Australia, New Zealand)	E00	Transmitter, enter bus address in plain text	Y25
Intrinsic safety "i"/"IS ¹ " according to ATEX and IECEx (Europe, Australia, New Zealand)	E01	Transmitter, fail-safe value 3.6 mA (instead of 22.8 mA)	U36
Flameproof enclosure "d"/"XP"; dust protection through housing "t"/"DIP ² " according to ATEX and IECEx (Europe, Australia, New Zealand)	E03	SITRANS TH320/420 transmitter with SIL2/3 certificate	C20
Non-sparking "ec" according to ATEX and IECEx (Europe, Australia, New Zealand)	E04	Transmitter test protocol (5 points)	C11
Without explosion protection requirements (USA, Canada) Basis FM	E10	Further options	
Flameproof enclosure "d"/"XP"; dust protection through housing "t"/"DIP ² " according to cFMus (USA, Canada); other connections (M,G,R)	E14	Connection form, flying leads (for the direct transmitter assembly, delivery without screws and springs)	G01
Non-sparking "nA"/"NI" according to cFMus (USA, Canada)	E16	Full penetration process connection for 316L/316Ti M12 device plug (in combination with transmitter, Non-Ex and intrinsically safe, max. IP65/67)	G02
Without explosion protection requirements (USA, Canada), Basis CSA	E17	Han 7D device plug (Non Ex and intrinsically safe, without mating connector max. IP65/67)	G12
Intrinsic safety "i"/"IS ¹ " according to cCSAus (USA, Canada)	E18	Connection head with ½ NPT thread without cable gland, for AU0 and AH0 only IP66	G13
Flameproof enclosure "d"/"XP"; dust protection through housing "t"/"DIP ² " according to cCSAus (USA); other connections (M, G, R)	E21	with outer earth screw for heads AG0, AH0, AU0 and AV0	G20
Non-sparking "nA"/"NI" according to cCSAus (USA, Canada)	E23	with inner earth screw for heads BC0, AG0, AH0, AU0 and AV0	A02
Without explosion protection requirements (China)	E54	Option not found?	A03
Intrinsic safety "i"/"IS ¹ " according to NEPSI (China)	E55	Handling number special version	Y99
Flameproof enclosure "d"; dust protection through housing "t ² " according to NEPSI (China)	E56		
Non-sparking "nA"/"NI" according to NEPSI (China)	E57	1) Please select Ex i version of the optional transmitter.	
Without explosion protection requirements (EAC)	E80	2) Only with connection heads code AG0, AH0, AU0, AV0, without cable gland (please select non-Ex version of the optional transmitter).	
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		

You find ordering examples on page 2/40. Accessories, see page 2/251.

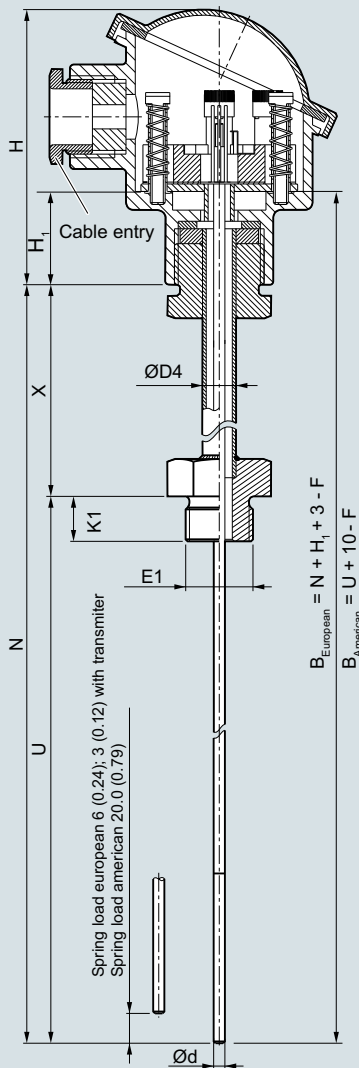
Temperature Measurement

Temperature sensors
SITRANS TS500

For installation in existing thermowells

Dimensional drawings

2



- B Measuring insert length
- Ød Measuring insert outer diameter
- ØD4 Extension outer diameter
- E1 Process connection, thread size
- H Head height
- H₁ Type Axx = 41 (1.61)
Type Bxx = 26 (1.02)
- K1 Screw depth
- N Nominal length
- U Insertion length
- X Extension length

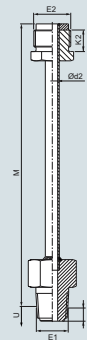
Recommended spring-load:

- European versions = inside length of the thermowell + 3 (0.12)
- American versions = inside length of the thermowell + 10 (0.39)

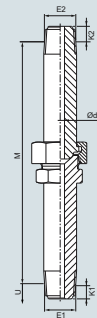
SITRANS TS500, temperature sensors for vessels and pipes. Temperature sensors for installation in existing thermowells, suitable for thermowells in accordance with DIN 43772 and ASME B40.9-2001, with extension of European or American type, dimensions in mm (inch)



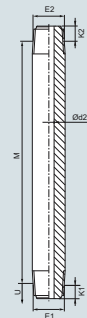
Extension (1, 2, 3)¹⁾, adjustable, european, cylindrical



Extension (1, 2, 3)¹⁾, adjustable, European, tapered



Extension NUN, adjustable, tapered, American (8)¹⁾



Extension NIP, non-adjustable, tapered, American (6)¹⁾

¹⁾ Numbers 1 ... 8: s. Selection and Ordering data option extension page 2/95

Selection and Ordering data	Article No.	Ord. Code
SITRANS TS500 Temperature sensors for installation in existing thermowells, suitable for thermowells according to DIN 43772 as well as ASME B40.9-2001 with extension European or American types	7MC7500-	
Click on the Article No. for the online configuration in the PIA Life Cycle Portal.		
Model existing thermowells	1	
Thread type G1/2" (1/2"BSPP) (not for American type) NPT1/2" M14x1.5 (not for American type) M18x1.5 (not for American type) M20x1.5 (not for American type) Without thread Special version	C J T U V N Z	J 1 Y
Insertion length U free length, standard lengths 110 mm (4.33 inch) 140 mm (5.51 inch) 200 mm (7.87 inch) 260 mm (10.24 inch) 410 mm (16.14 inch)	B 1 B 2 C 1 C 2 E 1	
Insertion U free length, customer-specific enter customer specific length with Y44, see page 2/98 Order codes 30 ... 100 mm (1.18 ... 3.94 inch) Initial: 100 mm (3.94 inch) 101 ... 200 mm (3.98 ... 7.87 inch) Initial: 200 mm (7.87 inch) 201 ... 300 mm (7.91 ... 11.81 inch) Initial: 300 mm (11.81 inch) 301 ... 400 mm (11.85 ... 15.75 inch) Initial: 400 mm (15.75 inch) 401 ... 500 mm (15.79 ... 19.68 inch) Initial: 500 mm (19.68 inch) 501 ... 600 mm (19.72 ... 23.62 inch) Initial: 600 mm (23.62 inch) 601 ... 800 mm (23.66 ... 31.50 inch) Initial: 800 mm (31.50 inch) 801 ... 1 000 mm (31.54 ... 39.37 inch) Initial: 1 000 mm (39.37 inch) 1 001 ... 1 250 mm (39.41 ... 49.21 inch) Initial: 1 250 mm (49.21 inch) 1 251 ... 1 500 mm (49.25... 59.05 inch) Initial: 1 500 mm (59.05 inch) Special length < 30 mm (1.18 inch) or > 1500 mm (59.00 inch)	A 0 B 0 C 0 D 0 E 0 F 0 G 0 H 0 J 0 K 0 X 0	
Measurement tip diameter 6 mm (0.24 inch) 8 mm (0.31 inch) (with sleeve) (with sleeve = not replaceable) 10 mm (0.39 inch) (with sleeve) (with sleeve = not replaceable)	6 8 0	

Selection and Ordering data	Article No.	Ord. Code
SITRANS TS500 Temperature sensors for installation in existing thermowells, suitable for thermowells according to DIN 43772 as well as ASME B40.9-2001 with extension European or American types	7MC7500-	
Extension X Without extension European type: X=65 (M=81 mm) (3.15 inch) adjustable European type: X=139 mm (5.47 inch) (M=155 mm (6.10 inch)) adjustable (DIN standard length for L=110) European type: X=149 mm (5.87 inch) (M=165 mm (6.50 inch)) adjustable American type: X=74 mm (2.91 inch) integrated sensor spring, NIP, not adjustable (NPT1/2"), Umin = 100 mm American type: X=150 mm (5.91 inch) integrated sensor spring NUN adjustable (NPT1/2")	0 1 2 3 6 8	
Extension X, customer-specific enter customer specific length with Y45, see page 2/98 Order codes 75 ...150 mm (2.95 ... 5.91 inch) Initial: 150 mm (5.91 inch) 151 ... 300 mm (5.95 ... 11.81 inch) Standard: 300 mm (11.81 inch) 301 ... 450 mm (11.85 ... 17.72 inch) Standard: 450 mm (17.72 inch) Special length < 45 mm (1.77 inch) or > 450 mm (17.7 inch)	9 9 9 9 9	N 1 N 2 N 3 N 8
Model European type (M24 adjustable)		D

Additional configurations on page after next page!

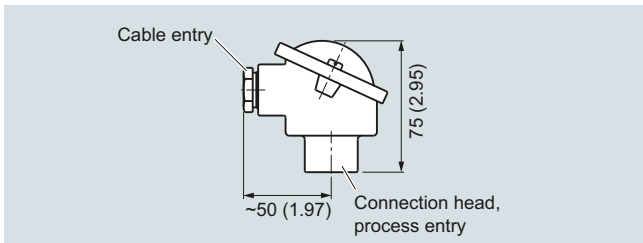
You find ordering examples on page 2/40!

Temperature Measurement

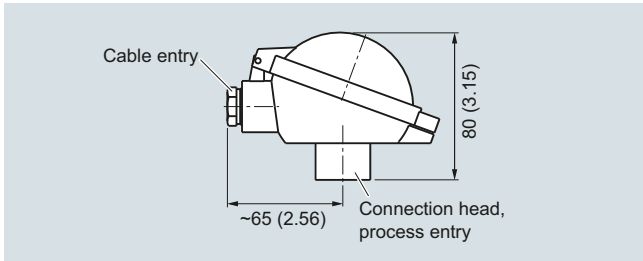
Temperature sensors
SITRANS TS500

For installation in existing thermowells

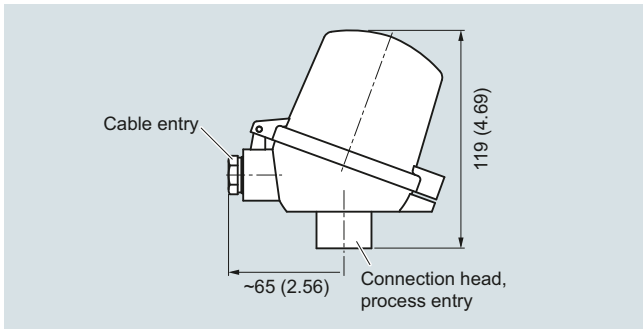
2



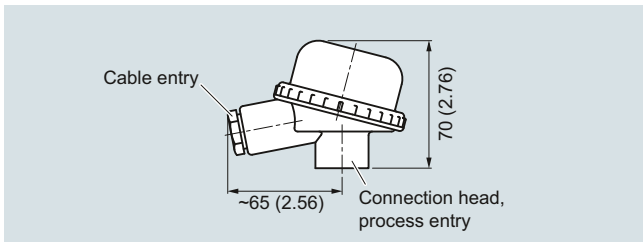
Connection head, aluminum, Type BA0, dimensions in mm (inch)



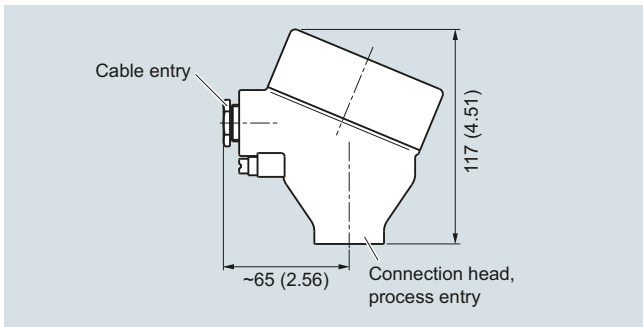
Connection head, aluminum, Type BB0, dimensions in mm (inch)



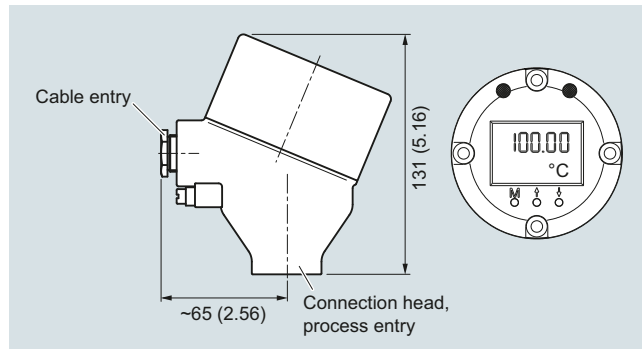
Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)



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

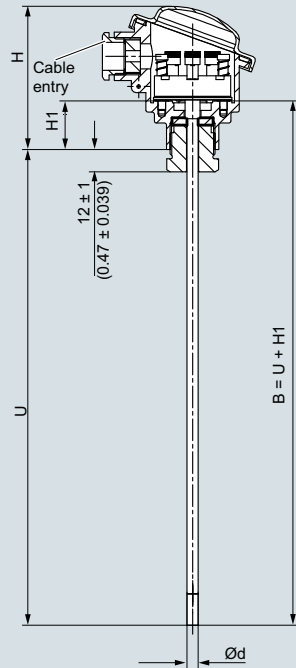


Connection head, aluminum, Type AG0, stainless steel, Type AU0, dimensions in mm (inch)



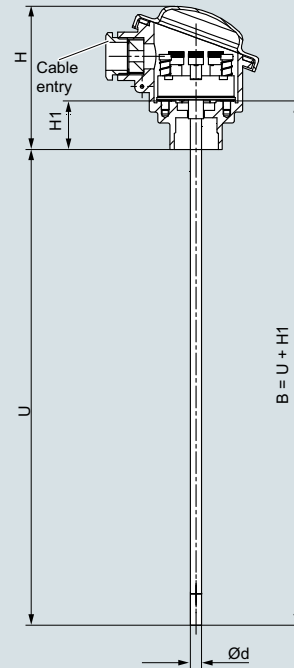
Connection head with 4-20 mA display, aluminum, Type AH0, stainless steel, Type AV0, dimensions in mm (inch)

Option G50: M24x1.5, with seal



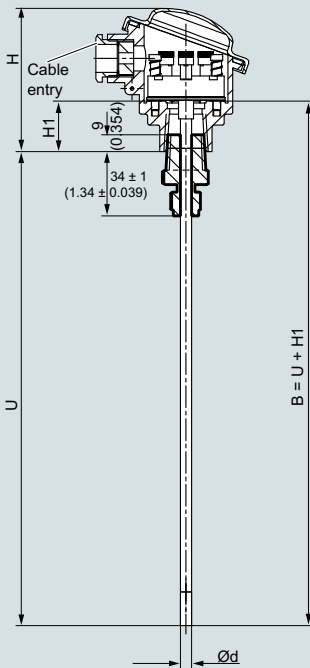
- B Measuring insert length
- Ød Measuring insert outer diameter
- H Head height
- H1 Type Axx = 41 (1.61)
Type Bxx = 26 (1.02)
- U Insertion length

Option G52: M24x1.5, open



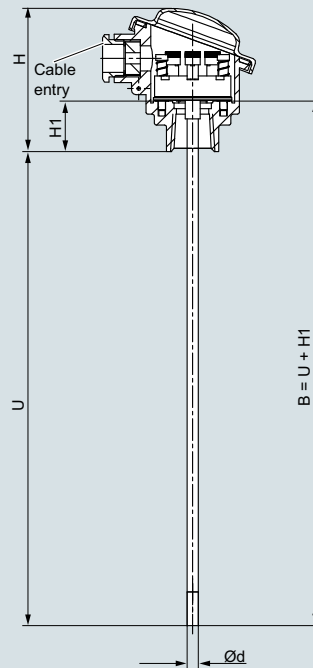
- B Measuring insert length
- Ød Measuring insert outer diameter
- H Head height
- H1 Type Axx = 41 (1.61)
Type Bxx = 26 (1.02)
- U Insertion length

Option G51: ½" NPT, with seal



- B Measuring insert length
- Ød Measuring insert outer diameter
- H Head height
- H1 Type Axx = 41 (1.61)
Type Bxx = 26 (1.02)
- U Insertion length

Option G53: ½" NPT, open



- B Measuring insert length
- Ød Measuring insert outer diameter
- H Head height
- H1 Type Axx = 41 (1.61)
Type Bxx = 26 (1.02)
- U Insertion length

Input of connection head: Umin = 50 mm (1.97 inch), dimensions in mm (inch)

Temperature Measurement

Temperature sensors

SITRANS TS500

For installation in existing thermowells

Selection and Ordering data

SITRANS TS500
Temperature sensors for installation in existing thermowells, suitable for thermowells according to DIN 43772 as well as ASME B40.9-2001 with extension European or American types

Article No. Ord. Code

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 d¹⁾ **G**
 Aluminum head, AH0, screw cover, suitable for Ex d, display¹⁾ **H**
 Plastic head, BM0, screw cover **M**
 Plastic head, BP0high hinged cover, screw connection **P**
 Stainless steel head, AU0, screw cover, Ex d¹⁾ **U**
 Stainless steel head, AV0, screw cover, Ex d, display¹⁾ **V**

Sensor²⁾
 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) **A**
 Pt100, vibration resistant, -50 ... +400 °C (-58 ... +752 °F) **B**
 Pt100, expanded range, U_{min} = 100 mm -196 ... +600 °C (-321 ... +1 112 °F) **C**
 Thermocouple Type J, -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
 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) **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 **Y44**
 Select range, enter desired length in plain text (No entry = standard length)

Extension length customer-specific **Y45**
 Select range, enter desired length in plain text (No entry = standard length)

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, input 1 x Pt100, 4 ... 20 mA **T12**

SITRANS TH320, input 1 x universal, 4 ... 20 mA **T24**

SITRANS TH320, input 1 x universal, HART **T34**

SITRANS TH420, input 2 x universal, HART **T35**

SITRANS TH400, input 1 x universal, PA **T40**

SITRANS TH400, input 1 x universal, PA, Ex **T41**

SITRANS TH400, input 1 x universal, FF **T45**

SITRANS TH400, input 1 x universal, FF, Ex **T46**

Explosion protection

Without explosion protection requirements (Europe, Australia, New Zealand) **E00**

Intrinsic safety "i"/"IS¹⁾" according to ATEX and IECEx (Europe, Australia, New Zealand) **E01**

Flameproof enclosure "d"/"XP"; dust protection through housing "t"/"DIP²⁾" according to ATEX and IECEx (Europe, Australia, New Zealand) **E03**

Non-sparking "ec" according to ATEX and IECEx (Europe, Australia, New Zealand) **E04**

Without explosion protection requirements (USA, Canada) Basis FM **E10**

Flameproof enclosure "d"/"XP"; dust protection through housing "t"/"DIP²⁾" according to cFMus (USA); NPT connections at the enclosure are mandatory **E13**

Flameproof enclosure "d"/"XP"; dust protection through housing "t"/"DIP²⁾" 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"/"IS¹⁾" according to cCSAus (USA, Canada) **E18**

Flameproof enclosure "d"/"XP"; dust protection through housing "t"/"DIP²⁾" according to cCSAus (USA, Canada); NPT connections **at the enclosure** are mandatory **E20**

Flameproof enclosure "d"/"XP"; dust protection through housing "t"/"DIP²⁾" 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"/"IS¹⁾" according to NEPSI (China) **E55**

Flameproof enclosure "d"; dust protection through housing "t²⁾" according to NEPSI (China) **E56**

Non-sparking "nA"/"NI" according to NEPSI (China) **E57**

Without explosion protection requirements (EAC) **E80**

Intrinsic safety "i"/"IS¹⁾" according to EACEx (EAC) **E81**

Flameproof enclosure "d"/"XP"; dust protection through housing "t"/"DIP²⁾" according to EACEx (EAC) **E82**

Non-sparking "nA"/"NI" according to EACEx (EAC) **E83**

Marine approvals

Det Norske Veritas Germanischer Lloyd (DNV GL) **D01**

Selection and Ordering data	Order code
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
EN 10204-3.1 Acceptance test certificate "Positive Materials Identification" (PMI)	On request
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
SITRANS TH320/420 transmitter with SIL2/3 certificate	C20
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 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 1/2" 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 2/40.

Accessories, see page 2/251.