

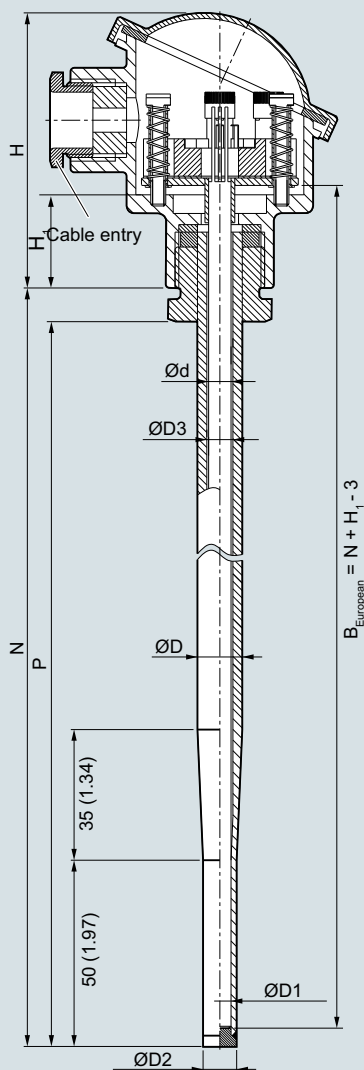
Temperature Measurement

SITRANS TS500

Type 3, tubular quick, without process connection

Dimensional drawings

2



- B Measuring insert length
- Ød Measuring insert outer diameter (6 (0.24))
- ØD Process connection outer diameter
- ØD1 Tip internal diameter
- ØD2 Tip outer diameter
- ØD3 Thermowell diameter
- H Head height
- H₁ Type Axx > 41 (1.61)
Type Bxx > 26 (1.02)
- N Nominal length
- P Space for process connection

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

Temperature Measurement
SITRANS TS500

Type 3, tubular quick, without process connection

2

Selection and Ordering data	Article No.
SITRANS TS500	7MC751-
Tubular version for minimal to medium stress, thermowell per DIN 43722, Type 3, without process connection, improved response time, plug-in or use with moveable compression fittings	
Click on the Article No. for the online configuration in the PIA Life Cycle Portal.	
Material, in contact with media	
316Ti (1.4571)	1
316L (1.4404 or 1.4435)	2
Process connection	
Without process connection (for compression joints) N=U	0 N
Thermowell form	
3, 12/9 mm (0.47/0.35 inch)	K
Insertion length U (=N), Standard	
160 mm (6.3 inch)	0 4
220 mm (8.66 inch)	0 7
280 mm (11.02 inch)	1 3
Insertion length U (=N), customer-specific	
enter customer specific length with Y44, see page 2/79 Order codes	
121 ... 140 mm (4.76 ... 5.51 inch)	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)	

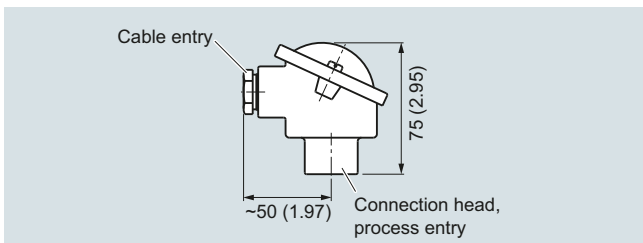
Selection and Ordering data	Article No.
SITRANS TS500	7MC751-
Tubular version for minimal to medium stress, thermowell per DIN 43722, Type 3, without process connection, improved response time, plug-in or use with moveable compression fittings	
381 ... 400 mm (15 ... 15.75 inch)	2 2
Initial: 400 mm (15.75 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 2/41!	

Temperature Measurement

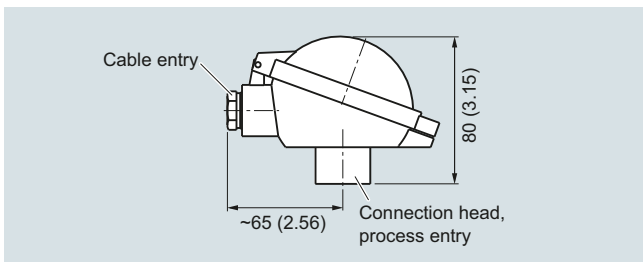
SITRANS TS500

Type 3, tubular quick, without process connection

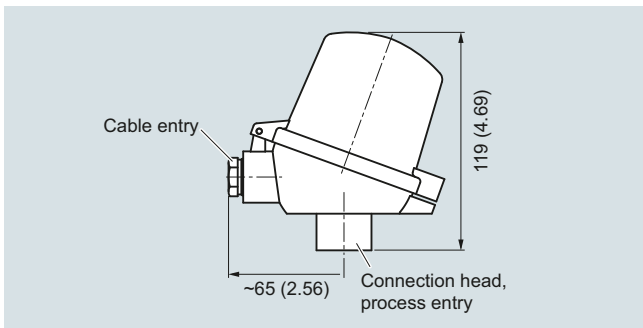
2



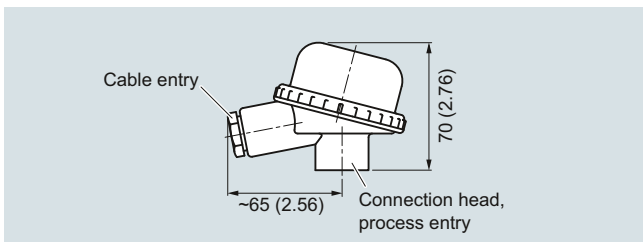
Connection head, aluminum, Type BA0, dimensions in mm (inch)



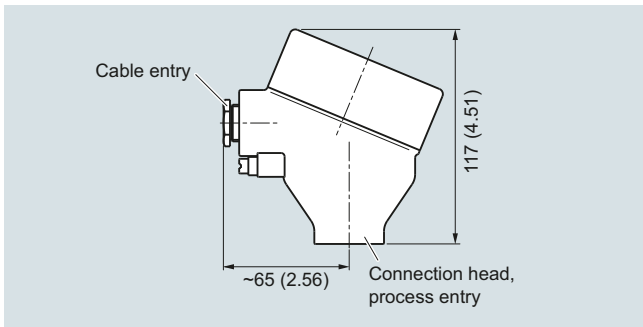
Connection head, aluminum, Type BB0, dimensions in mm (inch)



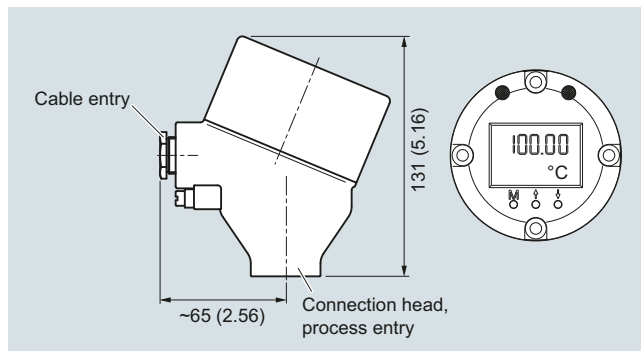
Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)



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
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Type 3, tubular quick, without process connection

2

Selection and Ordering data	Article No.
SITRANS TS500	7MC751-
Tubular version for minimal to medium stress, thermowell as per DIN 43722, Type 3, without process connection, improved response time, plug-in or use with moveable compression fittings	
Head	
Aluminum head, 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, 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 2/18	
Pt100, basis, -50 ... +400 °C (-58 ... +752 °F)	A
Pt100, vibration-resistant, -50 ... +400 °C (-58 ... +752 °F)	B
Pt100, expanded range, -196 ... +600 °C (-321 ... +1 112 °F)	C
Thermocouple Type J, only class 2, -40 ... +750 °C (-40 ... +1 382 °F)	J
Thermocouple Type K, -40 ... +1 000 °C (-40 ... +1 832 °F)	K
Thermocouple Type N, -40 ... +1 000 °C (-40 ... +1 832 °F)	N
Sensor number/Accuracy	
Circuit Pt 100: 1 x 4-wire circuit or 2 x 3-wire circuit, see "Measuring technique: Connection types", page 2/20	
Single, basic accuracy (Class 2/Class B)	1
Single, increased accuracy (Class 1/Class A)	2
Single, highest accuracy (Class AA)	3
Double, basic accuracy (Class 2/Class B)	5
Double, increased accuracy (Class 1/Class A)	6
Double, highest accuracy (Class AA)	7

¹⁾ Ex d in connection with Order code E03
²⁾ Pt1000 versions are also available. To find these, please switch to Online Configuration in the PIA Life Cycle Portal: www.siemens.com/pia-portal

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

Selection and Ordering data	Order code
Options	
Add "-Z" to Article No. and add options, separate extensions with "+".	
Built-in head transmitter	
Measuring range to be set must be specified with plain text data "Y01".	
SITRANS TH100, 4 ... 20 mA, Pt100	T10
SITRANS TH100 Ex i (ATEX), 4 ... 20 mA, Pt100	T11
SITRANS TH200, 4 ... 20 mA, Universal	T20
SITRANS TH200 Ex i (ATEX), 4 ... 20 mA, Universal	T21
SITRANS TH300, HART, Universal	T30
SITRANS TH300 Ex i (ATEX), HART, Universal	T31
SITRANS TH400 PA, Universal	T40
SITRANS TH400 PA Ex i, Universal	T41
SITRANS TH400 FF, Universal	T45
SITRANS TH400 FF Ex i, Universal	T46
Explosion protection	
Without explosion protection requirements (Europe, Australia, New Zealand)	E00
Intrinsic safety "i"/"IS ¹⁾ " according to ATEX and IECEx (Europe, Australia, New Zealand)	E01
Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP" ²⁾ according to ATEX and IECEx (Europe, Australia, New Zealand)	E03
Non-sparking "nA"/"NI" according to ATEX and IECEx (Europe, Australia, New Zealand)	E04
Without explosion protection requirements (USA, Canada) Basis FM	E10
Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP" ²⁾ according to cFMus (USA, Canada); other connections (M,G,R)	E14
Non-sparking "nA"/"NI" according to cFMus (USA, Canada)	E16
Without explosion protection requirements (USA, Canada), Basis CSA	E17
Intrinsic safety "i"/"IS" ¹⁾ according to cCSAus (USA, Canada)	E18
Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP" ²⁾ according to cCSAus (USA); other connections (M, G, R)	E21
Non-sparking "nA"/"NI" according to cCSAus (USA, Canada)	E23
Without explosion protection requirements (China)	E54
Intrinsic safety "i"/"IS" ¹⁾ according to NEPSI (China)	E55
Flameproof enclosure "d"; dust protection through housing "t" ²⁾ according to NEPSI (China)	E56
Non-sparking "nA"/"NI" according to NEPSI (China)	E57
Without explosion protection requirements (EAC)	E80
Intrinsic safety "i"/"IS" ¹⁾ according to EACEx (EAC)	E81
Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP" ²⁾ according to EACEx (EAC)	E82
Non-sparking "nA"/"NI" according to EACEx (EAC)	E83
Marine approvals	
Det Norske Veritas Germanischer Lloyd (DNV GL)	D01
Bureau Veritas (BV)	D02
Lloyd's Register of Shipping (LR)	D04
American Bureau of Shipping (ABS)	D05
Certificates and approvals	
EN 10204-3.1 Inspection certificate for materials coming into contact with media	C12
EN 10204-3.1 Inspection certificate for hydrostatic pressure test	C31
EN 10204-3.1 Inspection certificate for helium leak test	C32
EN 10204-3.1 Inspection certificate for surface tear test	C33
EN 10204-3.1 Inspection certificate: visual, measurement and functional inspection	C34
EN 10204-2.1: Declaration of compliance with the order	C35
ISO 9001 grease-free (cleaned for e.g. oxygen applications)	C51

Temperature Measurement

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Selection and Ordering data

Selection and Ordering data	Order code
Designation, calibration	
Stainless steel TAG plate , enter lettering in plain text	Y15
Plant calibration per 1 point, enter temperature in plain text	Y33
Transmitter options	
Transmitter, enter complete setting in plain text (Y01: +/-NNNN ... +/-NNNN C,F), marking on the device when Order code "Y15" is selected	Y01
Enter measuring point (max. 8 characters) in plain text	Y17
Transmitter, enter measuring point description (max. 16 characters) in plain text	Y23
Transmitter, enter measuring point text (max. 32 characters) in plain text	Y24
Transmitter, enter bus address in plain text	Y25
Transmitter, fail-safe value 3.6 mA (instead of 22.8 mA)	U36
Transmitter with a SIL 2 conformity	C20
Transmitter with a SIL 2/3 conformity	C23
Transmitter test protocol (5 points)	C11
Further options	
Connection form, flying leads (for the direct transmitter assembly, delivery without screws and springs)	G01
M12 device plug (in combination with 1x Pt100 and/or transmitter, Non-Ex and intrinsically safe, max. IP65/67)	G12
Han 7D device plug (Non Ex and intrinsically safe, without mating connector max. IP65/67)	G13
Connection head with 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 2/41.

Accessories, see page 2/238.