

Temperature Measurement

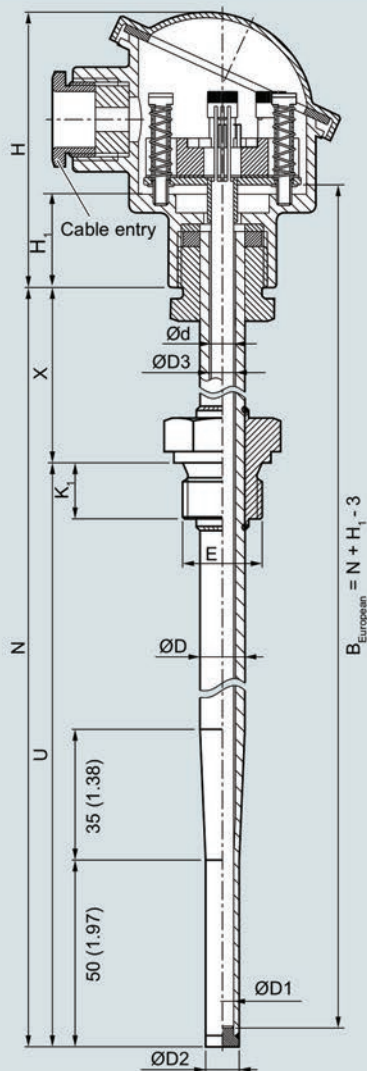
Temperature sensors

SITRANS TS500 - Tubular thermowells

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

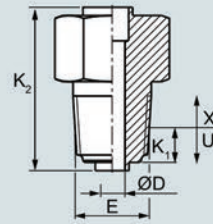
Dimensional drawings

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 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)

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SITRANS TS500 - Tubular thermowells

Type 3G, fast response, 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 3G, screwed design, with extension 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 Cylindrical: G½" (½" BSPP) Cylindrical: G¾" (¾" BSPP) Tapered: NPT½" Tapered: NPT¾" Tapered: NPT1" Cylindrical: M20 x 1.5 Cylindrical: M27 x 2.0 Cylindrical: M33 x 2.0	1 C 1 D 1 J 1 K 1 L 1 V 1 W 1 Y	
Thermowell form 3G, 12/9 mm (0.47/0.35 inch)	K	
Insertion length U standard 160 mm (6.30 inch) 220 mm (8.66 inch) 280 mm (11.02 inch)	0 4 0 7 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) 141 ... 160 mm (5.55 ... 6.30 inch) Initial: 160 mm (6.30 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 (8.70 ... 9.45 inch) Initial: 225 mm (8.86 inch) 241 ... 260 mm (9.49 ... 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 (11.06 ... 11.81 inch) Initial: 285 mm (11.22 inch) 301 ... 320 mm (11.85 ... 13.00 inch) Initial: 315 mm (12.40 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 (14.99 ... 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 ... 19.69 inch) Initial: 500 mm (19.69 inch)	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	

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-	
501 ... 550 mm (19.72 ... 21.65 inch) Initial: 510 mm (20.08 inch)	3 1	
551 ... 600 mm (21.69 ... 23.62 inch) Initial: 600 mm (23.62 inch)	3 2	
601 ... 650 mm (23.66 ... 25.59 inch) Initial: 650 mm (25.59 inch)	3 3	
651 ... 700 mm (25.63 ... 27.56 inch) Initial: 700 mm (27.56 inch)	3 4	
701 ... 750 mm (27.6 ... 29.53 inch) Initial: 750 mm (29.53 inch)	3 5	
751 ... 800 mm (29.57 ... 31.50 inch) Initial: 800 mm (31.50 inch)	3 6	
801 ... 850 mm (31.53 ... 33.46 inch) Initial: 850 mm (33.46 inch)	3 7	
851 ... 900 mm (33.50 ... 35.43 inch) Initial: 900 mm (35.43 inch)	4 1	
901 ... 950 mm (35.47 ... 37.40 inch) Initial: 950 mm (37.40 inch)	4 2	
951 ... 1 000 mm (37.44 ... 39.37 inch) Initial: 1 000 mm (39.37 inch)	4 3	
Extension X Standard length for Type 2G DIN 43772 (X=131 mm (5.08 inch))	1	
Extension length - customer specific enter customer specific length with Y45, see page 2/83 Order codes 75 ... 150 mm (2.95 ... 5.91 inch) Initial: 150 mm (5.91 inch) 151 ... 300 mm (5.95 ... 11.81 inch) Initial: 300 mm (11.81 inch)	9 9	N 1 D N 2 D

Additional configurations on page after next page!

You find ordering examples on page 2/40!

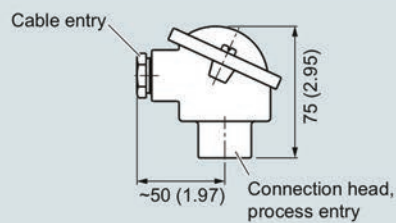
Temperature Measurement

Temperature sensors

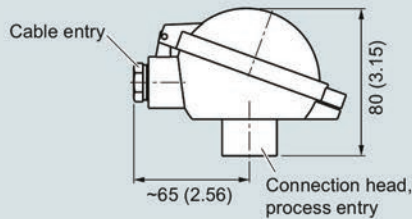
SITRANS TS500 - Tubular thermowells

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

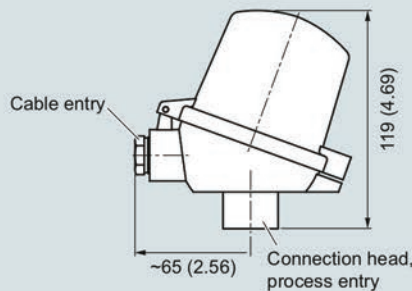
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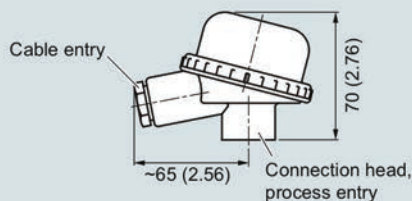
Connection head, aluminum, Type BA0, dimensions in mm (inch)



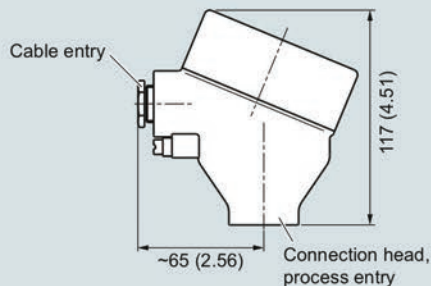
Connection head, aluminum, Type BB0, dimensions in mm (inch)



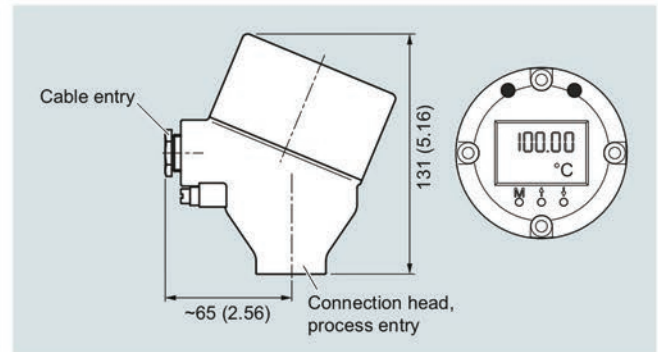
Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)



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)

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Selection and Ordering data		Article No.	Selection and Ordering data		Order code
SITRANS TS500		7MC751-	Further designs		
Tubular thermowell, low to medium stress, according to DIN 43722, Type 3G, screwed design, with extension			Add "-Z" to Article No. and specify Order code.		
Head			Insertion length customer-specific		Y44
Aluminum head, BA0, flange cover, Standard		A	Select range, enter desired length in plain text (No entry = standard length)		
Aluminum head, BB0, low hinged cover, screw connection		B	Extension length customer-specific		Y45
Aluminum head, BC0, high hinged cover, screw connection		C	Select range, enter desired length in plain text (No entry = standard length)		
Aluminum head, AG0, screw cover, suitable for Ex d ¹⁾		G	Options		
Aluminum head, AH0, screw cover, suitable for Ex d, display ¹⁾		H	Add "-Z" to Article No. and add options, separate extensions with "+".		
Plastic head, BM0, screw cover		M	Built-in head transmitter		
Plastic head, BP0high hinged cover, screw connection		P	Measuring range to be set must be specified with plain text data "Y01".		
Stainless steel head, AU0, screw cover, Ex d ¹⁾		U	SITRANS TH100, input 1 x Pt100, 4 ... 20 mA		T12
Stainless steel head, screw cover, Ex d, display ¹⁾		V	SITRANS TH320, input 1 x universal, 4 ... 20 mA		T24
Sensor²⁾			SITRANS TH320, input 1 x universal, HART		T34
Please note: The accuracy class range can be lower than the measuring range. For more information, see page 2/21			SITRANS TH420, input 2 x universal, HART		T35
Pt100, basis, -50 ... +400 °C (-58 ... +752 °F)		A	SITRANS TH400, input 1 x universal, PA		T40
Pt100, vibration resistant, -50 ... +400 °C (-58 ... +752 °F)		B	SITRANS TH400, input 1 x universal, PA, Ex		T41
Pt100, expanded range, -196 ... +600 °C (-321 ... +1 112 °F)		C	SITRANS TH400, input 1 x universal, FF		T45
Thermocouple Type J, -40 ... +750 °C (-40 ... +1 382 °F)		J	SITRANS TH400, input 1 x universal, FF, Ex		T46
Thermocouple Type K, -40 ... +1 000 °C (-40 ... +1 832 °F)		K	Explosion protection		
Thermocouple Type N, -40 ... +1 000 °C (-40 ... +1 832 °F)		N	Without explosion protection requirements (Europe, Australia, New Zealand)		E00
Sensor number/Accuracy			Intrinsic safety "i"/"IS ¹⁾ " according to ATEX and IECEx (Europe, Australia, New Zealand)		E01
Pt 100 connection: 1 x 4-wire connection or 2 x 3-wire connection, see "Measuring technology: connection types", page 2/23			Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP ²⁾ " according to ATEX and IECEx (Europe, Australia, New Zealand)		E03
Single, basic accuracy (Class 2/Class B)		1	Non-sparking "ec" according to ATEX and IECEx (Europe, Australia, New Zealand)		E04
Single, increased accuracy (Class 1/Class A)		2	Without explosion protection requirements (USA, Canada) Basis FM		E10
Single, highest accuracy (Class AA)		3	Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP ²⁾ " according to cFMus (USA, Canada); other connections (M, G, R)		E14
Double, basic accuracy (Class 2/Class B)		5	Non-sparking "nA"/"NI" according to cFMus (USA, Canada)		E16
Double, increased accuracy (Class 1/Class A)		6	Without explosion protection requirements (USA, Canada), Basis CSA		E17
Double, highest accuracy (Class AA)		7	Intrinsic safety "i"/"IS ¹⁾ " according to cCSAus (USA, Canada)		E18
¹⁾ Ex d in connection with Order code E03			Flameproof enclosure "d"/"XP; dust protection through housing "t"/"DIP ²⁾ " according to cCSAus (USA); other connections (M, G, R)		E21
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			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

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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
EN 10204-3.1 Acceptance test certificate "Positive Materials Identification" (PMI)	C51
	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.