

Temperature Measurement

Temperature sensors

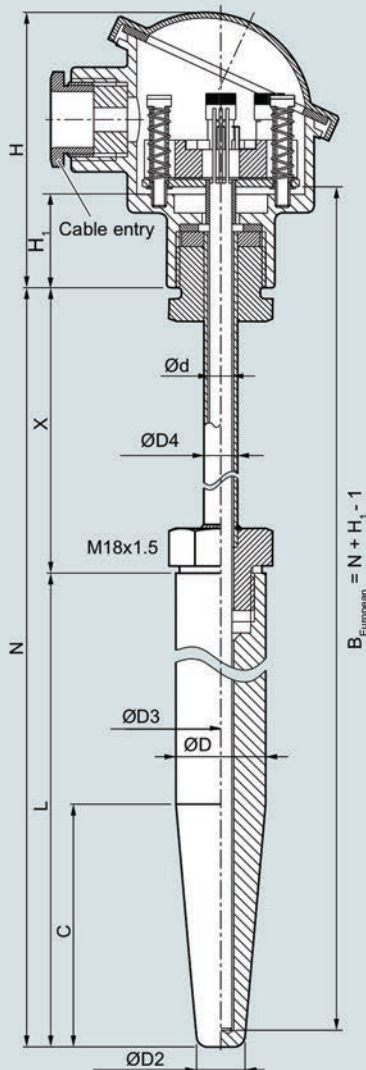
SITRANS TS500 - Barstock thermowells

Type 4+4F, with extension

Dimensional drawings

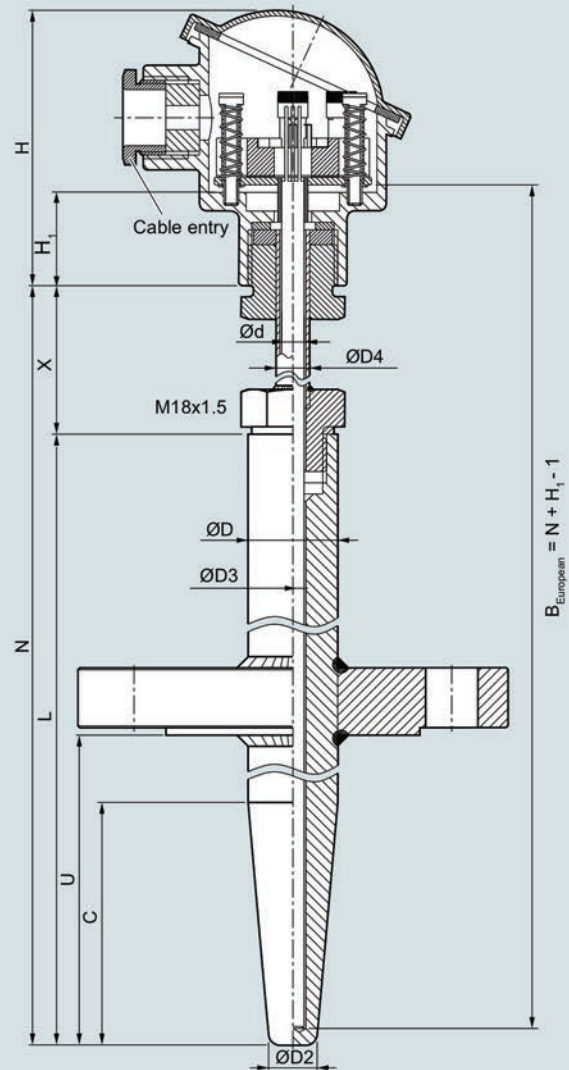
SITRANS TS500, temperature sensors for vessels and pipes, barstock thermowell for medium to extreme stress, according to DIN 43772..

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)

Temperature Measurement

Temperature sensors

SITRANS TS500 - Barstock thermowells

Type 4+4F, with extension

Selection and Ordering data	Article No.	Ord. Code
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		
Click on the Article No. for the online configuration in the PIA Life Cycle Portal.		
Material, in contact with media		
316Ti (1.4571)	1	
316L (1.4404 or 1.4435)	2	
1.7335 heat resistant, only for versions without flange	3	
1.5415 heat resistant, only for versions without flange	4	
Process connection		
Without (for welding in)	0 N	
Flange DN25 PN10 ... 40 B1	2 A	
Flange 1"RF150	2 E	
Flange 1"RF300	2 F	
Flange 1.5"RF150	2 G	
Flange 1.5"RF300	2 H	
Thermowell form		
For flanged types only: specify with Y44 in plain text if insertion length "U" deviates from standard (U=L-70 mm (2.76 inch)). (Min: U = C; Max: U = L-50 mm (1.97 inch))		
Type 4/4F,	A 0 0	
L=140 mm (5.51 inch), C=65 mm (3.74 inch), ØD=24 mm (0.95 inch), Ød=6 mm (0.24 inch)		
Type 4/4F,	B 0 0	
L=200 mm (7.87 inch), C=65 mm (3.74 inch), ØD=24 mm (0.95 inch), Ød=6 mm (0.24 inch)		
Type 4/4F,	D 0 0	
L=200 mm (7.87 inch), C=125 mm (4.92 inch), ØD=24 mm (0.95 inch), Ød=6 mm (0.24 inch)		
Type 4/4F,	E 0 0	
L=260 mm (10.24 inch), C=125 mm (4.92 inch), ØD=24 mm (0.95 inch), Ød=6 mm (0.24 inch)		
Extension X		
as per DIN 43772	1	
(X=149 mm (5.87 inch))		
Extension X, customer-specific		
enter customer specific length with Y45, see page 2/93 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)		
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)		

Selection and Ordering data	Article No.	Ord. Code
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		
Head		
Aluminum head, BA0, flange cover, Standard		A
Aluminum head, BB0, low hinged cover, screw connection		B
Aluminum head, BC0, high hinged cover, screw connection		C
Aluminum head, AG0, screw cover, suitable for Ex d ¹⁾		G
Aluminum head, AH0, screw cover, suitable for Ex d, display ¹⁾		H
Plastic head, BM0, screw cover		M
Plastic head, BP0high hinged cover, screw connection		P
Stainless steel head, AU0, screw cover, Ex d ¹⁾		U
Stainless steel head, AV0, screw cover, Ex d, display ¹⁾		V
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)		A
Pt100, vibration resistant, -50 ... +400 °C (-58 ... +752)		B
Pt100, expanded range, -196 ... +600 °C (-321 ... +1 112)		C
Thermocouple Type K, -40 ... +1 000 °C (-40 ... +1 832)		K
Thermocouple Type J, -40 ... +750 °C (-40 ... +1 382)		J
Thermocouple Type N, -40 ... +1 000 °C (-40 ... +1 832)		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 E03²⁾ 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!**

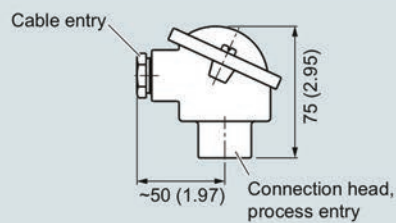
Temperature Measurement

Temperature sensors

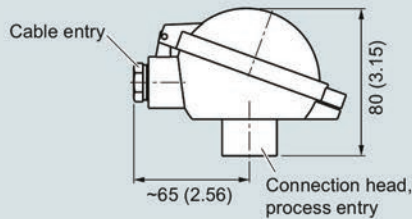
SITRANS TS500 - Barstock thermowells

Type 4+4F, with extension

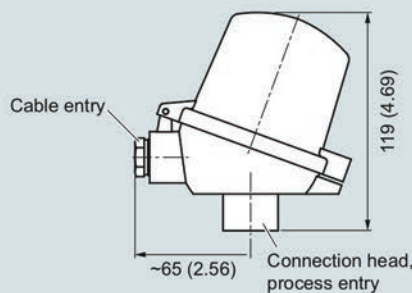
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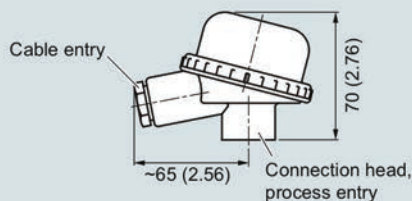
Connection head, aluminum, Type BA0, dimensions in mm (inch)



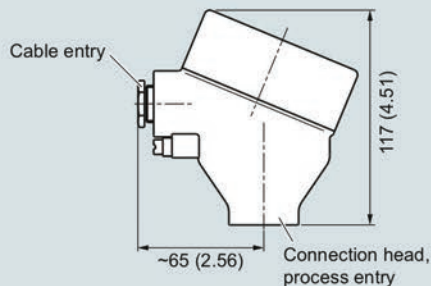
Connection head, aluminum, Type BB0, dimensions in mm (inch)



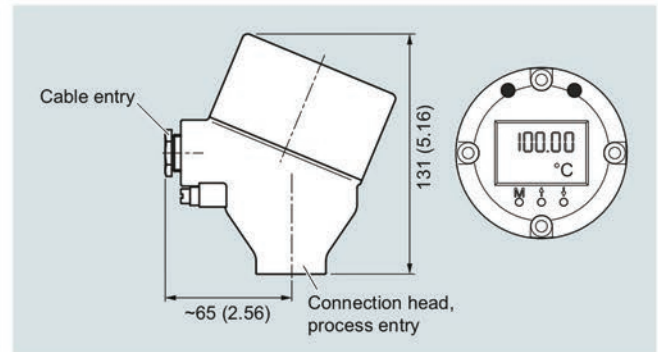
Connection head, aluminum, Type BC0, plastic, type BP0, dimensions in mm (inch)



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)

Temperature Measurement

Temperature sensors

SITRANS TS500 - Barstock thermowells

Type 4+4F, with extension

2

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	Transmitter options	
SITRANS TH400, input 1 x universal, PA	T40	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, PA, Ex	T41	Enter measuring point (max. 8 characters) in plain text	Y17
SITRANS TH400, input 1 x universal, FF	T45	Transmitter, enter measuring point description (max. 16 characters) in plain text	Y23
SITRANS TH400, input 1 x universal, FF, Ex	T46	Transmitter, enter measuring point text (max. 32 characters) in plain text	Y24
Explosion protection		Transmitter, enter bus address in plain text	Y25
Without explosion protection requirements (Europe, Australia, New Zealand)	E00	Transmitter, fail-safe value 3.6 mA (instead of 22.8 mA)	U36
Intrinsic safety "i"/IS ¹⁾ according to ATEX and IECEx (Europe, Australia, New Zealand)	E01	SITRANS TH320/420 transmitter with SIL2/3 certificate	C20
Flameproof enclosure "d"/XP; dust protection through housing "t"/DIP ²⁾ according to ATEX and IECEx (Europe, Australia, New Zealand)	E03	Transmitter test protocol (5 points)	C11
Non-sparking "ec" according to ATEX and IECEx (Europe, Australia, New Zealand)	E04	Further options	
Without explosion protection requirements (USA, Canada) Basis FM	E10	Connection form, flying leads (for the direct transmitter assembly, delivery without screws and springs)	G01
Flameproof enclosure "d"/XP; dust protection through housing "t"/DIP ²⁾ according to cFMus (USA, Canada); other connections (M, G, R)	E14	Full penetration process connection for 316L/316Ti	G02
Non-sparking "nA"/NI according to cFMus (USA, Canada)	E16	M12 device plug (in combination with transmitter, Non-Ex and intrinsically safe, max. IP65/67)	G12
Without explosion protection requirements (USA, Canada), Basis CSA	E17	Han 7D device plug (Non Ex and intrinsically safe, without mating connector max. IP65/67)	G13
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	G20
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	A02
Non-sparking "nA"/NI according to cCSAus (USA, Canada)	E23	with inner earth screw for heads BC0, AG0, AH0, AU0 and AV0	A03
Without explosion protection requirements (China)	E54	Option not found?	
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		
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		

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.

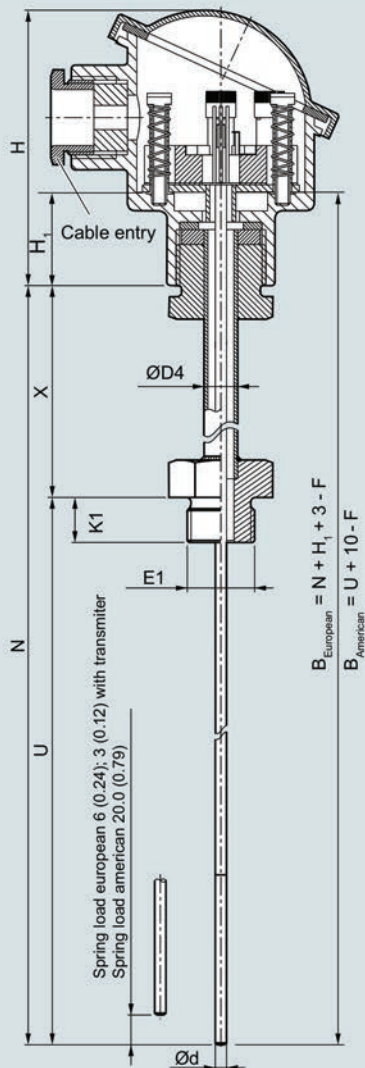
Temperature Measurement

Temperature sensors
SITRANS TS500

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)

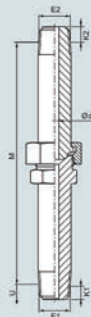
SITRANS TS500, temperature sensors for vessels and pipes. Temperature sensors for installation in existing thermowells, suitable for thermowells in accordance with DIN 43772 and ASME B40.9-2001, with extension of European or American type, dimensions in mm (inch)



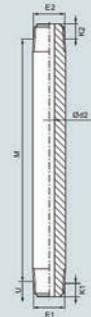
Extension (1, 2, 3)¹⁾, adjustable, European, cylindrical



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