

PROTECTION TUBES
for Bimetal-Thermometer
Type 11-13 and Typ 14-16
for gas-actuated thermometer
Type 31, 32, 33, 34



Description

Protection tubes for thermometers disconnect the sensor from the process liquid.

The thermometer sensor are protected by the protection pipe front of process-related chemical and/or mechanical stress (high process pressures or flow velocities).

Remains the thermowell at the measuring point , the thermometer can be easily disassembled in order to carry out repairs / maintenance / replacement can.

Features

- single or multi-part
- with thread or
- for welding or
- with flange
- Special dimensions and - materials on request

Overview

Protection tube	Type	Suitable temperature stem model
Form 4	S977	B4, B4.1, B5, B6 ; G4, G4.1, G5, G6
Form 4.1	009	B3 ; G3
Form 4F	S977 with flange	B4, B4.1, B5, B6 ; G4, G4.1, G5, G6
Form 4.1F	009 with flange	B3 ; G3
Form 5	B976	B4, B4.1, B5, B6 ; G4, G4.1, G5, G6
Form 6,7	E978; B976	B4, B4.1, B5, B6 ; G4, G4.1, G5, G6
Form 8	CD876	B3 ; G3
Form 9	CE236	B3 ; G3

Temperature stem see data type 11 up to 16 an type 31 up to 34

03/2016

DRUCK & TEMPERATUR	S977 - Form 4 (DIN 43 772)	009 - Form 4.1																																																																																																
Connection to the sensor	Female thread M18 x 1,5, G ½ or G ¾	Male thread G ½ B or G ¾ B																																																																																																
Construction type	Solid drilled (manufactured of one piece), with cone																																																																																																	
Material	CrNi-steel 1.4571 or 1.7335 (13 CrMo 4-5)																																																																																																	
Process connect.	for welding																																																																																																	
Suitable temp. stem model	B4, B4.1, B5, B6, G4, G4.1, G5, G6	B3, G3																																																																																																
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Connection to the sensor	Female thread M18 x 1,5, G ½ or G ¾	Male thread G ½ B or G ¾ B																																																																											
Construction type	Identical with protection tube 4.1, solid drilled with cone, with welded process connection flange for high process loads																																																																												
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DRUCK & TEMPERATUR

B976 - Form 5 (DIN 43 772)

Connection to the sensor	Female thread G ½ or G ¾
Construction type	multipart screw fitting welded to protection tube resp. soldered by brass
Material	CrNi-steel 1.4571 , brass
Process connect.	Male thread G½B or G¾B; ½"NPT or ¾"NPT
Suitable temp. stem model	B4, B4.1, B5, B6, G4, G4.1, G5, G6
Internal diameter d1	Ø7 mm suitable for stem-Ø dF 6 mm, Ø9 mm suitable for stem-Ø dF 8 mm Ø11 mm suitable for stem-Ø dF 10 mm, Ø13 mm suitable for stem-Ø dF 12 mm
Total length L	110, 170, 260, 410 mm
Process temp.	Stainless steel 400°C, brass 160°C
Process pressure	CrNi-steel 1.4571 40 bar , brass 25 bar

Options	<ul style="list-style-type: none"> o Other materials and Ø on request o Other protection tube length (L) and installation length (U) on request o Free of grease and oil o Coating adjusted to medium and medium temperature on request o Connection screw fitting, neck tube o Other combination process connection - thermometer sensor e.g. M20x1,5 / M20x1,5; M27x2 / M20x1,5; M27x2 / M27x2
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Dimension drawings Dimensions in mm	Process connection cylindrical thread	Process connection conical thread

Protection tube Diameter and connection dimensions	G1	G	d1	d2	H1	H2	k	SW					
	G ½ B (M20X1,5)	G ½ (M20X1,5)	7	12	19	15	14	27					
			9	14									
			11	14									
	G ¾ B (M27x2)		7	12									
			9	14									
			11	14									
	½ - 14 NPT	G ½ (M27x2)	13	16	22	17	16	32					
			7	12									
			9	14									
	¾ - 14 NPT		G ½	7					12	19	15	19	27
				9					14				
				11					14				
		13		16									

protection tube total length, installation length and thermometer stem length	Suitable stem length					Calculation: Stem model B4/G4: L= L(stem)+H1+5mm Stem model B4.1/G4.1: L= L(stem)+5mm
			Type B4, G4		Type B4.1, G4.1	
	L⁺¹	U⁺²	G½B	G¾B	G¾B, G½B, M18x1,5	
	110	82	86	83	105	
	170	142	146	143	165	
	260	232	236	233	255	
410	382	386	383	405		

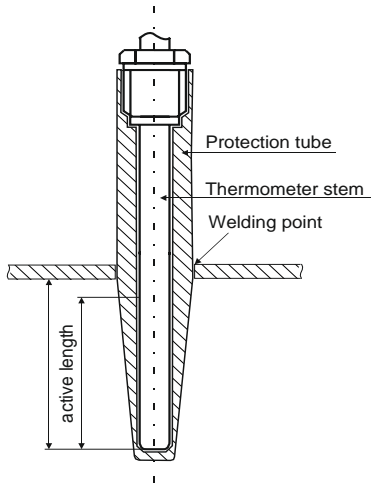
DRUCK & TEMPERATUR	E978 - Form 6 (DIN 43 772)	B976 - Form 7 (DIN 43 772)																																																																						
Connection to the sensor	Female thread G ½ or G ¾																																																																							
Construction type	Solid drilled (manufactured of one piece) for high loads by the process																																																																							
Material	CrNi-steel 1.4571 or 1.7335 (13 CrMo 4-5)																																																																							
Process connect.	Male thread G½B or G¾B	Male thread ½"NPT or ¾"NPT																																																																						
Suitable temp. stem model	B4, B4.1, B5, B6, G4, G4.1, G5, G6																																																																							
Internal diameter d1	Ø7mm suitable for stem-Ø dF6 mm, Ø9mm suitable for stem-Ø dF8 mm, Ø11mm suitable for stem-Ø dF 10mm, Ø13mmsuitable for stem-Ø dF12 mm, Ø14mm suitable for stem-Ø dF 13mm																																																																							
Total length L	110, 170, 60, 410 mm																																																																							
Process temp.	400°C																																																																							
Process pressure	150 bar																																																																							
Options	<ul style="list-style-type: none"> Other materials and Ø on request Other protection tube length (L) and installation length (U) on request Free of grease and oil Coating adjusted to medium and medium temperature on request Connection screw fitting, neck tube Other combination process connection - thermometer sensor e.g. M20x1,5 / M20x1,5; M27x2 / M20x1,5; M27x2 / M27x2 																																																																							
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Calculation	Stem model B4/G4: L= L(stem)+H1+8mm Stem model B4.1/G4.1: L= L(stem)+8mm																																																																							

DRUCK & TEMPERATUR		CD876 - Form 8 (DIN 43 772)																																																																					
Connection to the sensor	Male thread G ½ oder G ¾																																																																						
Construction type	multipart screw fitting welded to protection tube																																																																						
Material	CrNi-steel 1.4571																																																																						
Process connect.	Male thread G½B or G¾B, ½"NPT or ¾"NPT																																																																						
Suitable temp. stem model	B3, G3																																																																						
Internal diameter d1	Ø7 mm suitable for stem-Ø dF 6 mm, Ø9 mm suitable for stem-Ø dF 8 mm Ø11 mm suitable for stem-Ø dF 10 mm, Ø13 mm suitable for stem-Ø dF 12 mm																																																																						
Total length L	101, 138, 198, 288, 438 mm																																																																						
Process temp.	400°C																																																																						
Process pressure	40 bar																																																																						
Options	<ul style="list-style-type: none"> ○ Other materials and Ø on request ○ Other protection tube length (L) and installation length (U) on request ○ Free of grease and oil ○ Coating adjusted to medium and medium temperature on request ○ Other combination process connection - thermometer sensor e.g. M20x1,5 / M20x1,5; M27x2 / M20x1,5; M27x2 / M27x2 																																																																						
Dimension drawings Dimensions in mm	Process connection cylindrical thread		Process connection conical thread																																																																				
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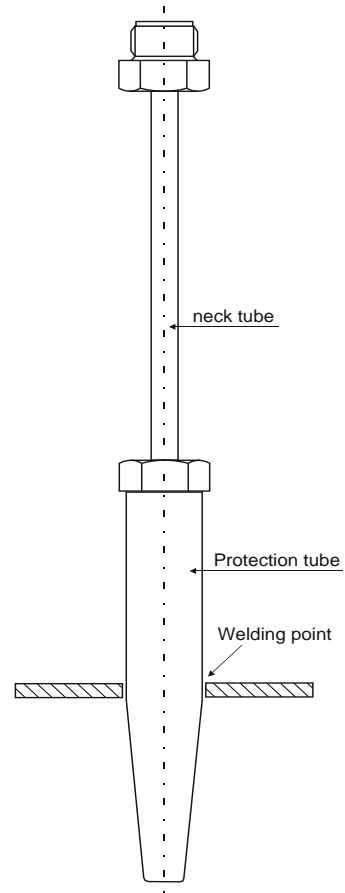


DRUCK & TEMPERATUR		CE236 - Form 9 (DIN 43 772)																																																						
Connection to the sensor	Male thread G ½ or G ¾																																																							
Construction type	Solid drilled (manufactured of one piece) for high loads by the process																																																							
Material	CrNi-steel 1.4571 or 1.7335 (13 CrMo 4-5)																																																							
Process connect.	Male thread G½B or G¾B, ½"NPT or ¾"NPT																																																							
Suitable temp. stem model	B3, G3																																																							
Internal diameter d1	Ø7 mm suitable for stem-Ø dF 6 mm, Ø9 mm suitable for stem-Ø dF 8 mm Ø11 mm suitable for stem-Ø dF 10 mm, Ø13 mm suitable for stem-Ø dF 12 mm																																																							
Total length L	101, 138, 198, 288, 438 mm																																																							
Process temp.	400°C																																																							
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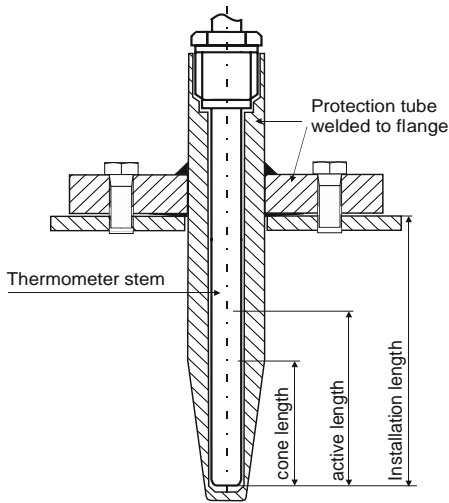
Examples for installation



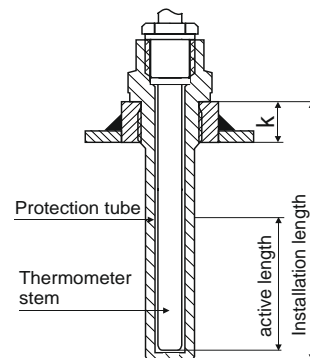
Protection tube type 4 with stem B4, G4



Protection tube type 4 with stem B3, G4
Combination with neck tube



Protection tube type 4F with stem B4, G4



Protection tube type 5 with stem B4, G4