

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	Suitable temperature stem model
Form 4	B4, B4.1, B5, B6 ; G4, G4.1, G5, G6
Form 4.1	B3 ; G3
Form 4F	B4, B4.1, B5, B6 ; G4, G4.1, G5, G6
Form 4.1F	B3 ; G3
Form 5	B4, B4.1, B5, B6 ; G4, G4.1, G5, G6
Form 6,7	B4, B4.1, B5, B6 ; G4, G4.1, G5, G6
Form 8	B3 ; G3
Form 9	B3 ; G3

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

03/2016

DRUCK & TEMPERATUR	Protection tube Form 4 (DIN 43 772)	Protection tube 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																																																																						
Material	CrNi-steel 1.4571																																																																						
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Protection tube 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"> ○ 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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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	16	32
			9	14				
			11	14				
	G ¾ B (M27x2)		7	12				
			9	14				
			11	16				
	½ - 14 NPT	G ½	7	12	19	15	19	27
			9	14				
			11	14				
	¾ - 14 NPT		7	12				
			9	14				
			11	16				

protection tube total length, installation length and thermometer stem length	Suitable stem length				
			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	

Calculation:

Stem model B4/G4: L= L(stem)+H1+5mm

Stem model B4.1/G4.1: L= L(stem)+5mm



DRUCK & TEMPERATUR		Protection tube-Form 6 (DIN 43 772)	Protection tube 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																																																																																									

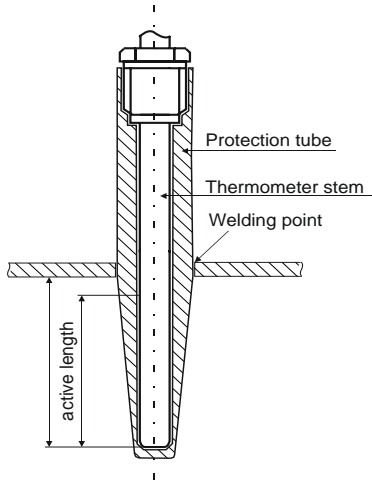


DRUCK & TEMPERATUR		Protection tube 8 (DIN 43 772)																																																											
Connection to the sensor	Male thread G ½ oder G ¾																																																												
Construction type	multipart screw fitting welded to protection tube																																																												
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 																																																												
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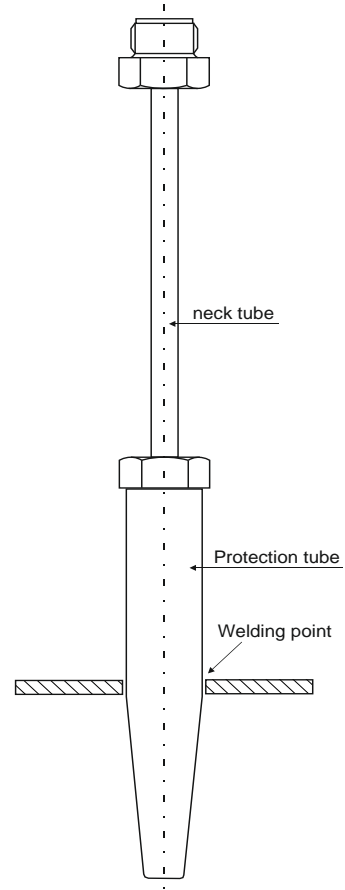


DRUCK & TEMPERATUR		Protection tube 9 (DIN 43 772)																																																														
Connection to the sensor	Male thread G ½ or G ¾																																																															
Construction type	Solid drilled (manufactured of one piece) for high loads by 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																																																															
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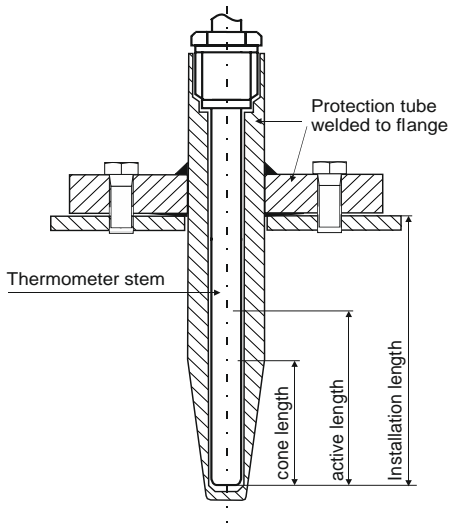
Examples for installation



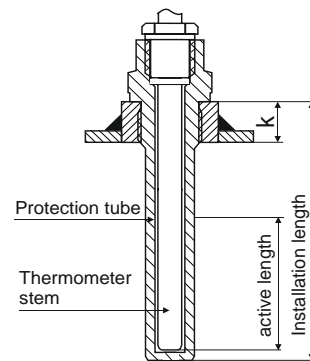
Protection tube type 4 with stem B4, G4



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