

Thermowells according to DIN 43772

Models
SF4
SF4F

Form 4 Weld-in Connection, Form 4F Flange Connection, Tapered for High Pressure

for Thermometer Stem Types A4 (Turnable Male Thread Connection) and A4.1 (Rigid Male Thread Connection)

Application

Thermowells are applied to protect thermometer stems against difficult chemical and / or mechanical process conditions. Furthermore it is far easier to dismount a thermometer e.g. for repair or other reasons when a thermowell stays at the measuring point.

Thermowells form 4 (model SF4) and 4F (model SF4F) according to DIN 43772 replace the thermowells form BS acc. to DIN 16179 that have been part of our stem types A12 (compare former data sheet 8300).

Standard Configuration

Process Connection

Model SF4: Weld-in connection

Model SF4F: Flange connection with flange acc. DIN EN 1092-1,

Sealing face: EN 1092-1 form B1,

Nom. sizes: DN 25, DN 50

Nom. pressure: PN 16...40

Material

Model SF4: 316 stainless steel (1.4571), alloy steel 1.7335¹⁾, or carbon steel 1.0501²⁾

Model SF4F: 316 stainless steel (1.4571)

Instrument Connection

G 1/2 (1/2" BSP) female (with inside-Ø d1 = 7 or 9 mm [.27" or .35"])

G 3/4 (3/4" BSP) female (with inside-Ø d1 = 11 or 13 mm [.43" or .51"])

Thermowell Diameter

Inside-Ø 7 mm / .27" (with G 1/2 [1/2" BSP] female; outside-Ø 26 mm [1.02"])

Ø 9 mm / .35" (with G 1/2 [1/2" BSP] female; outside-Ø 26 mm [1.02"])

Ø 11 mm / .43" (with G 3/4 [3/4" BSP] female; outside-Ø 32 mm [1.26"])

Ø 13 mm / .51" (with G 3/4 [3/4" BSP] female; outside-Ø 32 mm [1.26"])

Thermowell Length L

Model SF4: 110, 140, 170, 200, 260, or 410 mm
4.33", 5.51", 6.69", 7.87", 10.24", or 16.14"

Model SF4F: — — — 200, 260, or 410 mm
7.87", 10.24", or 16.14"

Insertion Length

Model SF4: see table overleaf, length U

Model SF4F: see table overleaf, length U1

Temperature Limitations

Process temperature max. +600 °C (1,112 °F) [for 1.4571], with further limitations depending on thermowell version (dimensions, material) and operation conditions (pressure, temperature, flow rate, medium); load diagram see DIN 43772

Max. Allowed Working Pressure

150 bar at static pressure [valid only for 1.4571], with further limitations depending on thermowell version (dimensions, material) and operation conditions (pressure, temperature, flow rate, medium); load diagram see DIN 43772

¹⁾ alloy special steel **13 CrMo 44** ²⁾ carbon steel (non alloy quality steel) **C15**

Thermowell form 4,
model SF4,
weld-in connection



Thermowell form 4F,
model SF4F,
flange connection



Special Options

- Instrument connection M 20x1.5 (instead of G 1/2) or M27x2 (instead of G 3/4);
Instrument connection M 18x1.5 (outside-Ø F2 = 24 mm [.94"] – bottom-Ø F3 = 12.5 mm [.49"] x inside-Ø d1 = 7 mm [.27"]); others upon request
- Other thermowell diameter, outside-Ø F2 – bottom-Ø F3 x inside-Ø d1 (compare overleaf) upon request
- Other thermowell lengths upon request
- Other materials upon request
- Model SF4F: Flange acc. ASME B 16.5, sealing face form RF, nominal sizes 1", 2"; flange acc. to former DIN 2527, sealing face form C, and other flange connections upon request
- Model BS according DIN 16179, data sheet 8300 upon request
- Inspection certificate for the material / stamp confirmation certificate upon request

How to Order:

Please note the data sheet of the thermometer for the information about how to order the thermometer and stem. Additionally requested ordering information for the thermowell (separate item):

- Model: **SF4** or **SF4F**
- Inside-Ø d1: **7, 9, 11, or 13 mm**
(.27", .35", .43", or .51")
- Instrument connection: Female thread **G 1/2 (1/2" BSP)**
or **G 3/4 (3/4" BSP)**
(compare left; others see above)
- For model SF4F: Nom. size and pressure for flange
(**DN 25** or **DN 50, PN...**)
- Length: Length **L** and insertion length **U**
respectively **U1** for SF4F
- Material: SF4: **1.4571, 1.7335, or 1.0501**
SF4F: **1.4571**

Examples for Ordering Information:

- SF4, d1=11, G 3/4, L=170, U=133, 1.4571
- SF4F, d1=13, G 3/4, flange DN 25, PN 40,
L=200, U1=130 (U=65), 1.4571



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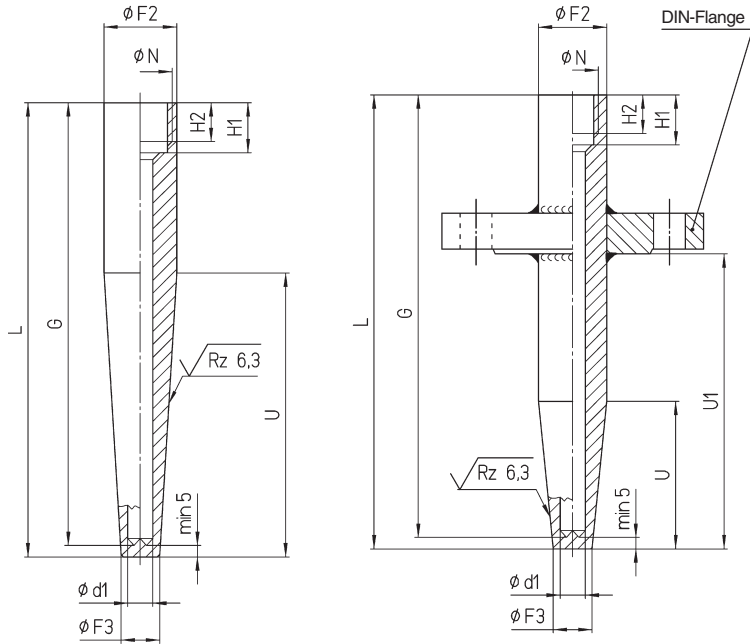
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Versions, Dimensions and Weight

**Thermowell form 4,
model SF 4,
weld-in connection**

**Thermowell form 4F,
model SF4F,
flange connection**



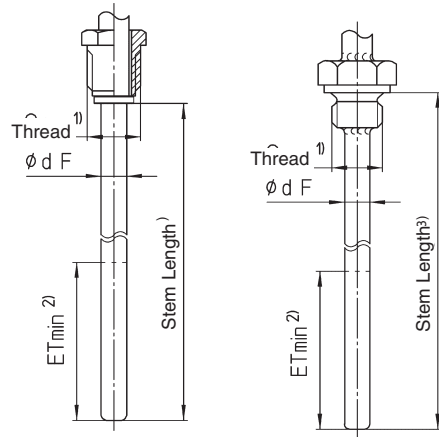
**Thermowell Diameter and Instrument Connection
(mm / inches)**

Inside- Ø d1	Outside- Ø F2	Bottom- Ø F3	Instrument Con- nection (Stem) N	H1	H2
7 .27	24 ^{h7} .94	12.5 .49	M18x1.5	16 .63	13 .51
9 .35	26 ^{h7} 1.02	15 .59	G½ ½" BSP-F	19 .75	15 .59
11 .43	32 ^{h11} 1.26	17 .67	G¾ ¾" BSP-F	22 .87	17 .67
13 .51		19 .75			

Suitable thermometer stems ("temperature detecting element") compare data sheets 8210, 8220, 8230, 8240:

A4: turnable male thread connection (DIN EN 13190 form 4)

A4.1: rigid male thread connection (DIN EN 13190 form 6)



- 1) Male thread suitable for female thermowell instrument connection N
- 2) ETmin, the minimum immersion length of the stem (= L2 acc. DIN EN 13190) has to be considered when choosing thermowell and stem, compare table below resp. data sheet of the thermometers and stems.
- 3) corresponding to L1 acc. to DIN EN 13190

**Stem-Ø and Minimum Immersion Length ETmin*
(mm / inches)**

Ø dF A4, A4.1	Rigid stem or capillary line ≤ 5 m		Capillary line > 5 m up to max. 15 m**	
	≤ 500 °C ≤ 932 °F	> 500 °C > 932 °F	≤ 500 °C ≤ 932 °F	> 500 °C > 932 °F
6 .24"	120 4.72	285 11.22	190 7.48	570 22.44
8 .31"	75 2.95	165 6.50	115 4.53	320 12.60
10 .39"	45 1.77	105 4.13	80 3.15	200 7.87
12 .47"	35 1.38	75 2.95	53 2.09	150 5.90

* corresponding to L2 acc. to DIN EN 13190
** not for all temperature ranges!

Length of Thermowells Models SF4 and SF4F (mm / inches)

L ⁺² ₀	Insertion length thermowell		G ⁺¹ ₀
	SF4: U ⁺² ₀	SF4F: U1 ⁺² ₋₂	
110 4.33	65 2.56 73 2.87	—	105 4.13
140 5.51	65 2.56	—	135 5.31
170 6.69	133 5.24	—	165 6.50
200 7.87	65 2.56 125 4.92	130 5.12	195 7.68
260 10.24	125 4.92	190 7.48	255 10.04
410 16.14	275 10.83	340 13.38	405 15.94

Stem Length*

A4 (Stem length = G – H1 – 3 mm / .12")			A4.1 (Stem length = G – 3 mm / .12")
G ½ B (½" BSP-M)	G ¾ B (¾" BSP-M)	M18 x 1.5	G ½ B, G ¾ B or M18x1.5
83 3.27	80 3.15	86 3.38	102 4.01
113 4.45	110 4.33	116 4.57	132 5.20
143 5.63	140 5.51	146 5.74	162 6.38
173 6.81	170 6.69	176 6.93	192 7.56
233 9.17	230 9.05	236 9.29	252 9.92
383 15.08	380 14.96	386 15.20	402 15.83

The information in this leaflet is given in good faith, but we reserve the right to make changes without notice.

* corresponding to L1 acc. to DIN EN 13190