

Thermowell, weld-in or with flange (solid-machined)

Version per DIN 43772 form 4, 4F

Models TW55-6, TW55-7

WIKA data sheet TW 95.55

Applications

- Chemical industry, process technology, apparatus construction
- For high process loads

Special features

- Version per DIN 43772
- Model TW55-6: Form 4 to weld-in
Model TW55-7: Form 4F with flange
- For highly corrosion-resistant coating (model TW55-7)



Fig. left: Weld-in thermowell, model TW55-6

Fig. right: Thermowell with flange, model TW55-7

Description

Each thermowell is an important component of any temperature measuring point. It is used to separate the process from the surrounding area, thus protecting the environment and operating personnel and keeps aggressive media, high pressures and flow rates from the temperature sensor itself and thereby enables the thermometer to be exchanged during operation.

Based on the almost limitless application possibilities, there are a large number of variants, such as thermowell designs or materials. The type of process connection and the basic method of manufacture are important design differentiation criteria. A basic differentiation can be made between threaded and weld-in thermowells, and those with flange connections.

Furthermore, one can differentiate between fabricated and solid-machined thermowells. Fabricated thermowells are constructed from a tube, that is closed at the tip by a welded solid tip. Solid-machined thermowells are manufactured from solid bar stock.

The TW55 series of solid-machined thermowells for weld-in or with flange connection are suitable for use with numerous electrical and mechanical thermometers from WIKA.

Due to their design to DIN 43772, these thermowells for high process loads are suitable for use in the chemical industry, process technology and apparatus construction.

Standard version

Thermowell material

Stainless steel 1.4571, 316/316L
Steel 1.0460, 1.5415, 1.7335, 1.7380

Process connection

- Thermowell outer diameter (head diameter) Ø 18 mm, Ø 24 mm, Ø 26 mm, Ø 32 mm ...
- Flanges to valid national or international standards like e.g. EN 1092-1, DIN 2527, ASME

Connection to thermometer

M14 x 1.5, M18 x 1.5, G ½, G ¾ female

Bore size

Ø 3.5 mm, Ø 7 mm, Ø 9 mm, Ø 11 mm

Insertion length U₁, cone length U and overall length L

Version combinations see table on page 4

Coating

- PFA
Coat thickness min. 0.4 mm (standard) or min. 0.6 mm (optional)
- ECTFE (Halar®)
Coat thickness min. 0.6 mm

Max. process temperature, process pressure

Depending on

- Load diagram DIN 43772
- Thermowell design
 - Dimensions
 - Material
 - Flange pressure rating
 - Coating
- Process conditions
 - Flow rate
 - Medium density

Halar® ECTFE is a registered trademark of the company Solvay Solexis.

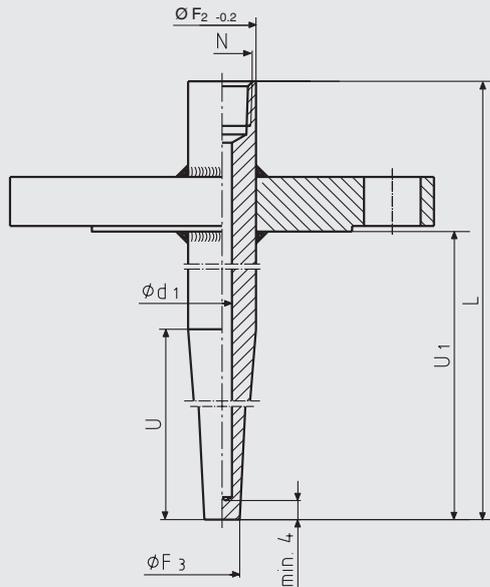
Options

- Other dimensions and materials
- Certificates
- Thermowell calculation to Dittrich/Klotter is recommended in critical applications as a WIKA engineering service.

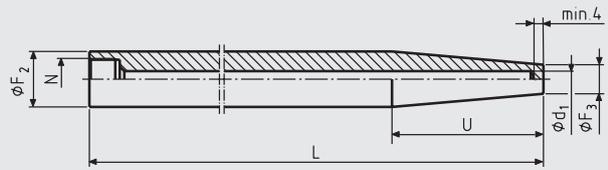
For further information, see Technical information IN 00.15 "Strength calculation for thermowells".

Dimensions in mm

Model TW55-7



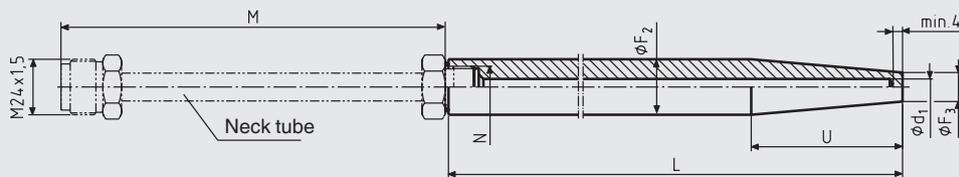
Model TW55-6



Legend:

- L Overall length
- U₁ Insertion length
- U Cone length
- N Connection to thermometer
- Ø d₁ Bore size
- Ø F₂ Thermowell outer diameter (head diameter)
- Ø F₃ Tip diameter
- M Neck tube length

Model TW55-6 with neck tube



Standard lengths model TW55-7

Dimensions in mm			Weight in kg	
L	U	U ₁	DN 25, PN 40	DN 50, PN 40
200	65	130	1.9	3.8
260	125	190	2.1	4.0
410 ¹⁾	275	340	2.3	4.2

Standard lengths model TW55-6

Dimensions in mm		Weight in kg
L	U	
110	65	0.24
110	73	0.23
140	65	0.34
170	133	0.34
200	65	0.54
200	125	0.45
260	125	0.65
410 ²⁾	275	0.92

Standard connection thread

Dimensions in mm					
N	Ø d ₁	Ø F ₂	Ø F ₃	H ₁	H ₂
M14 x 1.5	3.5	18	9	16	13
M18 x 1.5	7	24	12.5	16	13
G ½	7	26	12.5	19	15
G ½	9	26	15	19	15
G ¾	11	32	17	22	17

1) Not with bore size Ø d₁ = 3.5 mm

2) Standard of the neck tube length M = 165 mm

Suitable stem lengths

■ Dial thermometers

Connection design	Stem length l_1	
	without neck tube	with neck tube
S, 4, 5	$l_1 = L - 10 \text{ mm}$	-
2	$l_1 = L - 30 \text{ mm}$	-
3	-	$l_1 = L + M - 10 \text{ mm}^{3)}$

■ Machine glass thermometer

Connection design	Stem length l_1	
	without neck tube	with neck tube
E	$l_1 = L - 10 \text{ mm}$	-
3	-	$l_1 = L + M - 10 \text{ mm}^{3)}$

3) Standard of the neck tube length $M = 165 \text{ mm}$

Version combinations insertion length U_1 , cone length U and overall length L in mm

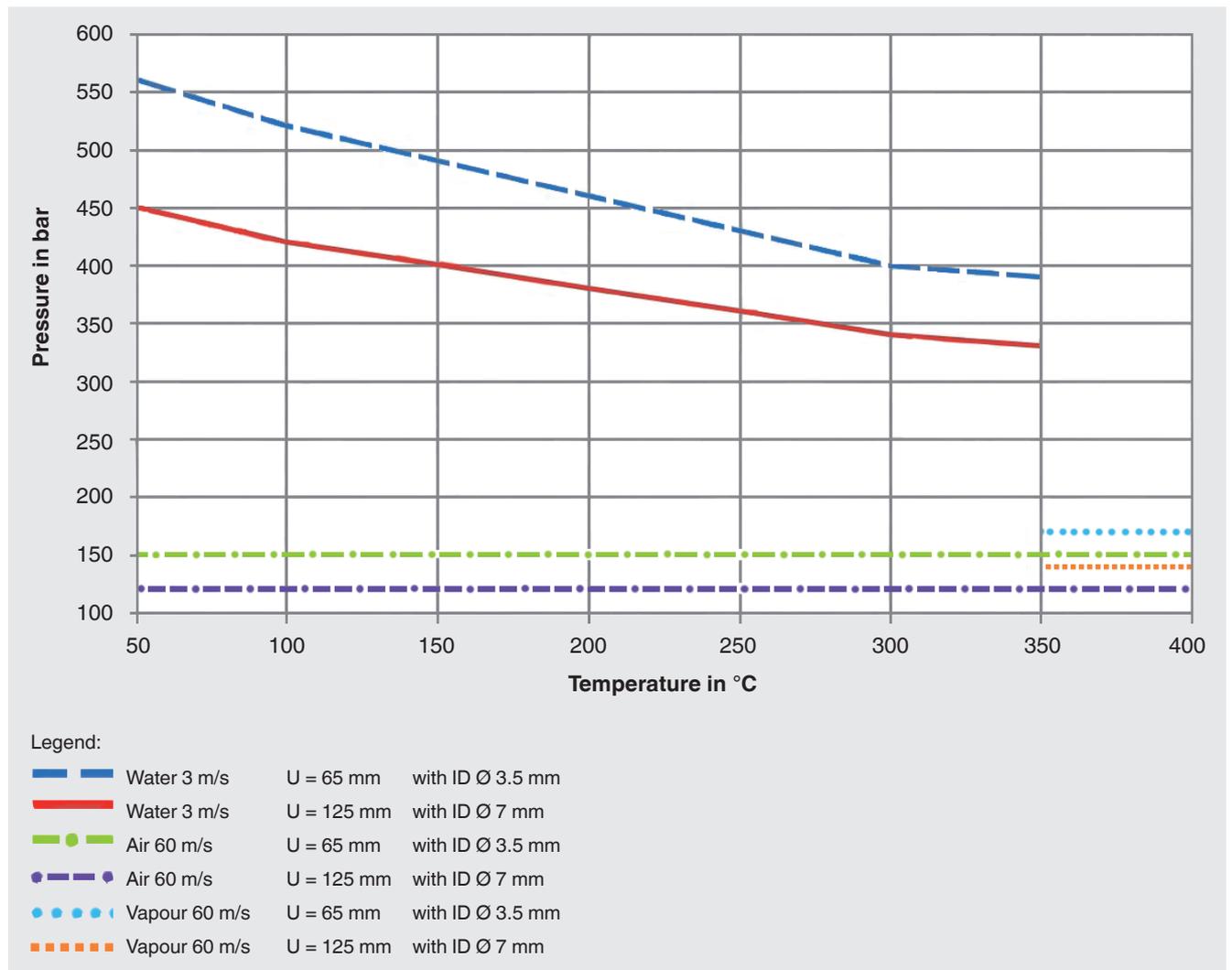
Thermowell	Insertion length	Cone length	Overall length
Model	U_1	U	L
TW55-6 (form 4 to weld-in)	-	65, 73, 125, 133, 275	110, 140, 170, 200, 260, 410
TW55-7 (form 4F with flange)	130, 190, 340	65, 125, 275	200, 260, 410

Sealing face roughness

Flange standard		AARH in μinch	Ra in μm	Rz in μm
ASME B16.5	Stock finish	125 ... 250	3.2 ... 6.3	-
	Smooth finish	< 125	< 3.2	-
	RTJ	< 63	< 1.6	-
	Tongue/groove	< 125	< 3.2	-
EN 1092-1	Form B1	-	3.2 ... 12.5	12.5 ... 50
	Form B2	-	0.8 ... 3.2	3.2 ... 12.5
DIN 2527	Form C	-	-	40 ... 160
	Form E	-	-	< 16

Pressure-temperature diagram ¹⁾

Thermowell model TW55 made of stainless steel 1.4571



1) Rating depends on the parameters below:

- Process medium
- Process pressure
- Process temperature (dependent on the selected coating)
- Flow rate
- Thermowell design (dimensions, material)

Ordering information

Model / Thermowell form / Thermowell material / Head diameter Ø F₂ / Connection to the thermometer / Bore size Ø d₁ / Nominal width DN / Pressure rating PN / Sealing face / Tip diameter Ø F₃ / Insertion length U₁ / Cone length U / Overall length L / Coating / Assembly with thermometer / Certificates / Options

© 2007 WIKA Alexander Wiegand SE & Co. KG, all rights reserved.
The specifications given in this document represent the state of engineering at the time of publishing.
We reserve the right to make modifications to the specifications and materials.

