

Threaded thermowell (solid-machined)

Version per DIN 43772 form 6, 7, 9

Model TW50

WIKA data sheet TW 95.50

Applications

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

Special features

- Version per DIN 43772
- Model TW50-H: Form 6
- Model TW50-I: Form 7
- Model TW50-J: Form 9

Description

Each thermowell is an important component of any temperature measurement 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.



Fig. left: Threaded thermowell, model TW50-H
Fig. right: Threaded thermowell, model TW50-J

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 barstock.

The TW50 series of solid-machined threaded thermowells 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 equipment manufacture.

Standard version

Thermowell material

Stainless steel 1.4571

Process connection

Models TW50-H, TW50-J: G ½ B, G ¾ B male

Model TW50-I: Male thread ½ NPT, ¾ NPT, 1 NPT

Connection to thermometer

Model TW50-H: G ½, G ¾ female

Model TW50-I: G ½ female

Model TW50-J: G ½ B, G ¾ B male

Bore size

Ø 7 mm, Ø 9 mm, Ø 11 mm

Insertion length U_1

Models TW50-H, TW50-I: 82, 142, 182, 232, 382 mm

Model TW50-J: 73, 110, 170, 260, 410 mm

Overall length L

Insertion length U_1 + 28 mm

Max. process temperature, process pressure

Depending on

- Load diagram DIN 43772

- Thermowell design

- Dimensions
- Material

- Process conditions

- Flow rate
- Density of medium

Options

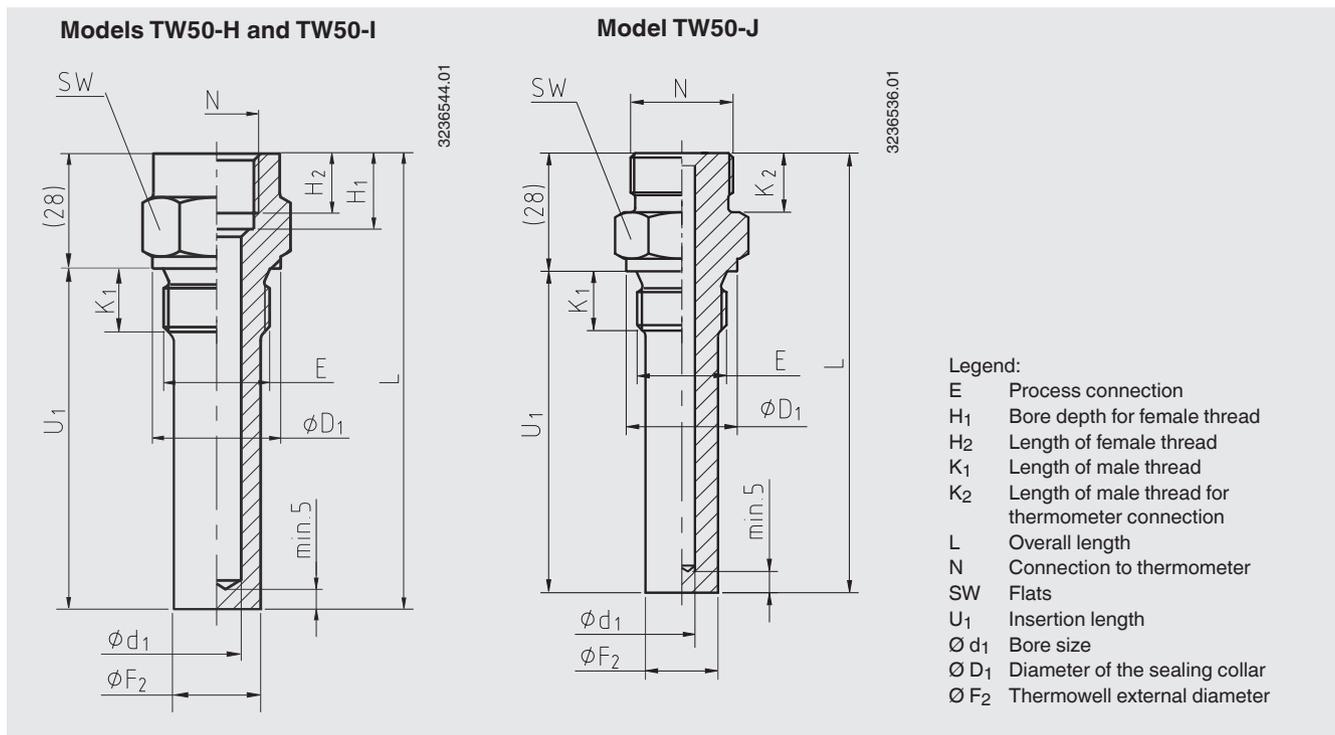
- Other dimensions and materials

- Quality 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 "Wake frequency calculation".

Dimensions in mm



Models TW50-H, TW50-I

Model	Dimensions in mm									Weight in kg	
	E	N	Ø d ₁	Ø D ₁	Ø F ₂	H ₁	H ₂	K ₁	SW	U ₁ = 82 mm	U ₁ = 382 mm
TW50-H	G ½ B	G ½ B	7	26	17	19	15	14	27	0.22	0.67
	G ½ B	G ½ B	9	26	17	19	15	14	27	0.21	0.59
	G ½ B	G ½ B	11	26	17	19	15	14	27	0.19	0.50
	G ¾ B	G ½ B	7	32	17	19	15	16	32	0.28	0.72
	G ¾ B	G ½ B	9	32	17	19	15	16	32	0.27	0.65
	G ¾ B	G ½ B	11	32	19	19	15	16	32	0.25	0.63
	G ¾ B	G ¾ B	7	32	17	22	17	16	32	0.31	0.82
	G ¾ B	G ¾ B	9	32	17	22	17	16	32	0.30	0.75
	G ¾ B	G ¾ B	11	32	19	22	17	16	32	0.29	0.74
TW50-I	½ ... 14 NPT	G ½ B	7	32	17	19	15	≈ 20	27	0.22	0.67
	½ ... 14 NPT	G ½ B	9	32	17	19	15	≈ 20	27	0.21	0.59
	½ ... 14 NPT	G ½ B	11	32	17	19	15	≈ 20	27	0.19	0.50
	¾ ... 14 NPT	G ½ B	7	32	17	19	15	≈ 21	27	0.24	0.69
	¾ ... 14 NPT	G ½ B	9	32	17	19	15	≈ 21	27	0.23	0.61
	¾ ... 14 NPT	G ½ B	11	32	19	19	15	≈ 21	27	0.21	0.52
	1 ... 11.5 NPT	G ½ B	7	32	17	19	15	≈ 25	36	0.32	0.85
	1 ... 11.5 NPT	G ½ B	9	32	20	19	15	≈ 25	36	0.30	0.75
	1 ... 11.5 NPT	G ½ B	11	32	22	19	15	≈ 25	36	0.29	0.74

Model TW50-J

Dimensions in mm								Weight in kg	
E	N	Ø d ₁	Ø D ₁	Ø F ₂	K ₁	K ₂	SW	U ₁ = 73 mm	U ₁ = 410 mm
G ½ B	G ½ B	7	26	17	14	12	27	0.22	0.72
	G ½ B	9	26	17	14	12	27	0.20	0.64
	G ½ B	11	26	17	14	12	27	0.18	0.53
G ¾ B	G ¾ B	7	32	17	16	14	32	0.31	0.79
	G ¾ B	9	32	17	16	14	32	0.29	0.71
	G ¾ B	11	32	19	16	14	32	0.29	0.78

Suitable stem lengths

■ Dial indicating thermometers

Thermowell model	Connection type	Stem length l ₁
TW50-H	S, 4, 5	l ₁ = L - 10 mm or l ₁ = U ₁ + 18 mm
TW50-H	2	l ₁ = L - 30 mm or l ₁ = U ₁ - 2 mm
TW50-J	3	l ₁ = L - 12 mm or l ₁ = U ₁ + 16 mm

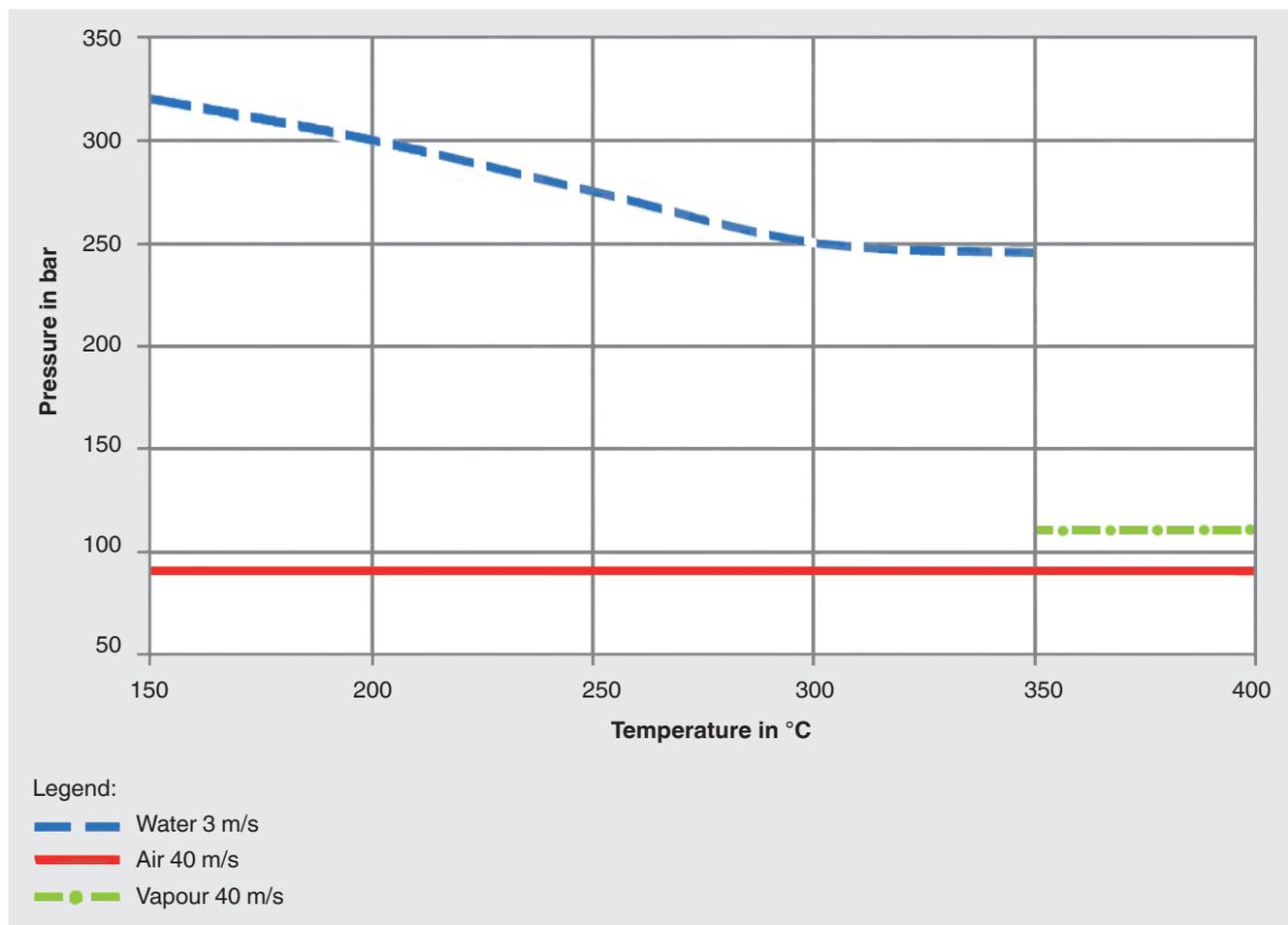
■ Machine glass thermometers

Thermowell model	Connection type	Process connection of the thermometer	Stem length l ₁
TW50-H	E	all	l ₁ = L - 10 mm or l ₁ = U ₁ + 18 mm
TW50-H	3	G ½	l ₁ = L - 12 mm or l ₁ = U ₁ + 16 mm
TW50-J	3	G ¾	l ₁ = L - 8 mm or l ₁ = U ₁ + 20 mm

Pressure temperature diagram ¹⁾

Thermowell model TW50 made of stainless steel 1.4571

$U_1 = 232$ mm with $\varnothing F_2 = 17$ mm and $\varnothing d_1 = 7$ mm



1) Rating depends on the parameters below:

- Process medium
- Process pressure and temperature
- Flow rate
- Design of thermowell (dimensions, material)

Ordering information

Model / Thermowell form / Thermowell material / Process connection / Connection to thermometer / Insertion length U_1 / Drilling $\varnothing d_1$ / Assembly with thermometer / Certificates / Options

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