

# Thermowell for lap flanges (solid-machined) Vanstone design Model TW30

WIKA data sheet TW 95.30

## Applications

- Petrochemical industry, on-/offshore, plant construction
- For high process loads

## Special features

- Heavy-duty design
- Solid machined version without welding
- Possible thermowell forms:
  - Model TW30-A: tapered
  - Model TW30-B: straight
  - Model TW30-C: stepped
- For lap flanges per ASME B16.5



Thermowell for lap flanges, model TW30

## 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.

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 TW30 series of solid-machined thermowells for lap flanges are suitable for use with numerous electrical and mechanical thermometers from WIKA.

Due to the heavy-duty design, these international design thermowells are the first choice for use the chemical and petrochemical industries and in plant construction.

## Standard version

### Thermowell material

Stainless steel 304/304L, 316/316L, 1.4571,  
Hastelloy C4 (2.4610), Hastelloy C276 (2.4819),  
Monel 400 (2.4360), titanium grade 2 (3.7035), A105  
Materials per ASTM specifications

### Connection to thermometer

G ½, ½ NPT (female)

### Bore size

Ø 6.6 mm, Ø 8.5 mm

### Insertion length U

To customer specification

### Connection length H

57 mm (standard)  
others on request

### Sealing face diameter g

per ASME B16.5 (raised face RF):

for DN 1": 51 mm

for DN 1 ½": 73 mm

for DN 2": 92 mm

### Max. process temperature, process pressure

Depending on

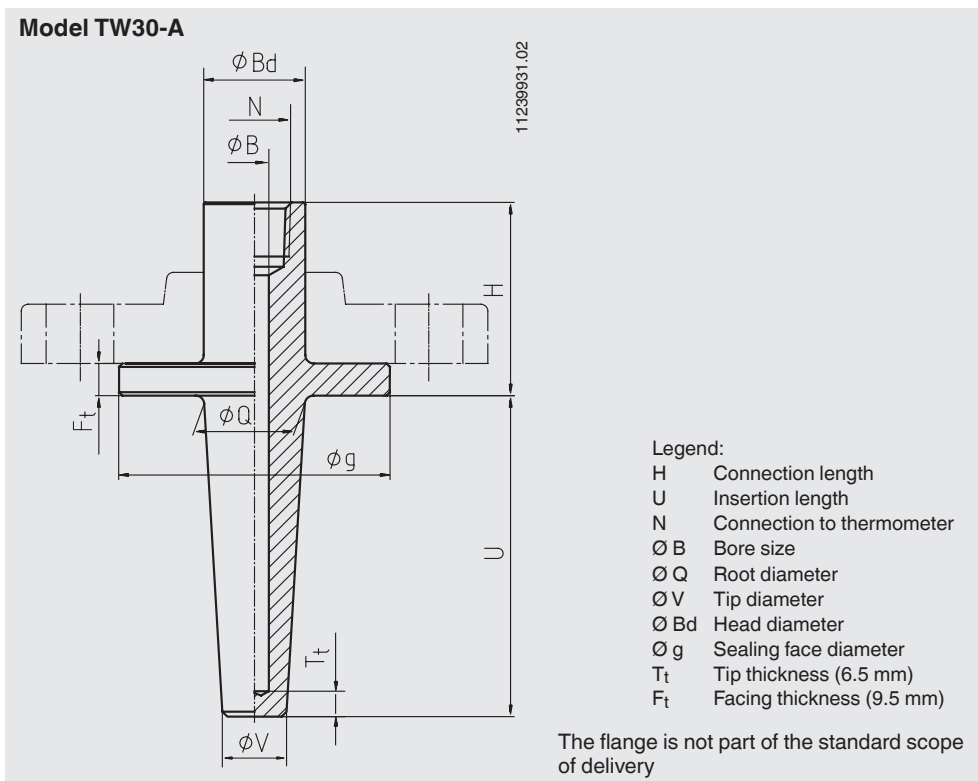
- Thermowell design
  - Dimensions
  - Material
  - Flange pressure rating of the clamping flange
- Process conditions
  - Flow rate
  - Density of medium

## Options

- Other dimensions and materials
- Quality certificates
- Wake frequency calculation to ASME PTC 19.3 TW-2016 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



## Tapered thermowell form, model TW30-A

Lap flange		Dimensions in mm						Weight in kg		
DN	PN in lbs	H	Ø Q	Ø V	Ø B	Ø Bd	Ø g	U = 4"	U = 13"	U = 22"
1"	150	2 ¼" (approx. 57 mm)	19	16	6.6 or 8.5	33.4	51	1.1	1.6	2.1
	300	2 ¼" (approx. 57 mm)	19	16	6.6 or 8.5	33.4	51	1.1	1.6	2.1
	600	2 ¼" (approx. 57 mm)	19	16	6.6 or 8.5	33.4	51	1.1	1.6	2.1
	1500	3 ¼" (approx. 83 mm)	19	16	6.6 or 8.5	33.4	51	1.1	1.6	2.1
1½"	150	2 ¼" (approx. 57 mm)	27	19	6.6 or 8.5	48.3	73	1.8	2.5	3.3
	300	2 ¼" (approx. 57 mm)	27	19	6.6 or 8.5	48.3	73	1.8	2.5	3.3
	600	2 ¼" (approx. 57 mm)	27	19	6.6 or 8.5	48.3	73	1.8	2.5	3.3
	1500	3 ¼" (approx. 83 mm)	27	19	6.6 or 8.5	48.3	73	1.8	2.5	3.3
2"	150	2 ¼" (approx. 57 mm)	27	19	6.6 or 8.5	60.3	92	2.7	3.4	4.1
	300	2 ¼" (approx. 57 mm)	27	19	6.6 or 8.5	60.3	92	2.7	3.4	4.1
	600	2 ¼" (approx. 57 mm)	27	19	6.6 or 8.5	60.3	92	2.7	3.4	4.1
	1500	3 ¼" (approx. 83 mm)	27	19	6.6 or 8.5	60.3	92	2.7	3.4	4.1

## Suitable stem lengths of mechanical dial thermometers

Connection type	Stem length $l_1$
S, 4, 5	$l_1 = U + H - 10 \text{ mm}$
2	$l_1 = U + H - 30 \text{ mm}$

## Sealing face roughness

Flange standard		AARH in $\mu\text{inch}$	Ra in $\mu\text{m}$
ASME B16.5	Stock finish	125 ... 250	3.2 ... 6.3
	Smooth finish	< 125	< 3.2

## Ordering information

Model / Thermowell form / Thermowell material / Connection to thermometer / Wall thickness of flange nozzle / Bore diameter Ø B / Nominal width DN / Pressure rating PN / Insertion length U / Connection length H / Head diameter Ø Bd / Root diameter Ø Q / Tip diameter Ø V / Assembly with thermometer / Certificates / Options

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