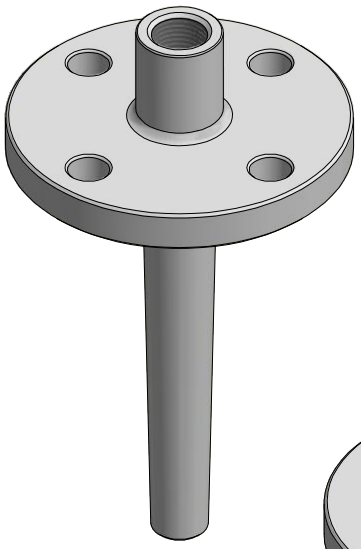
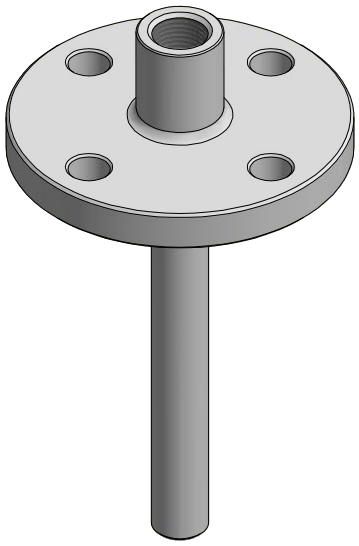
Features

- Instrument connection:
  thread G1/2", 1/2"NPT or others
- Immersion lengths:
  acc. to customer's specification
- Flange according to standard:
  EN 1092-1, DIN 2527, ASME B16.5 or others
- Maximal process pressure and temperature
  depends on thermowell dimension and material[1)]
- Drilled hole diameters:
  Ø3.5 mm, Ø7 mm, Ø9 mm
- Thermowell materials:
  1.4401 (AISI316), 1.4404 (AISI316L)
  1.4541 (AISI321), 1.4571 (AISI316Ti)
  2.4816 (Alloy 600), 2.4819 (Alloy C276)
  2.4602 (Alloy C22), 3.7035 (Tytan gr. 2)



Drilled Thermowell with Flange, tapered. Type WF-Z.



Drilled Thermowell with Flange, straight. Type WF-P.

Options

- Certificate 3.1 acc. to EN 10204
- PMI test
- Designation with individual serial number
- Other materials, threads and dimensions
- Protective coatings: PFA, silicon carbide or others

Description

Thermowells are use to separate sensor from process environment. They are designed to work with high process loads such as high pressure and flow rates. Flange process connection allows to install thermowells into process.

Drilled thermowells with welded flange type WF are mainly use in energy and petrochemical industries.

Rating depends on the parameters below:
- Process medium
- Process pressure and temperature
- Flow rate
- Design of thermowell (dimensions, material)

Protective coatings

Additional protective coatings are commonly used in applications where resistance to abrasion, corrosion or erosion is critical.

This solution is also an alternative to expensive materials - it allows to lower production costs compared to thermowells made entirely of desired material. Coat can be applied for example to standard stainless steel AISI316L (1.4404).

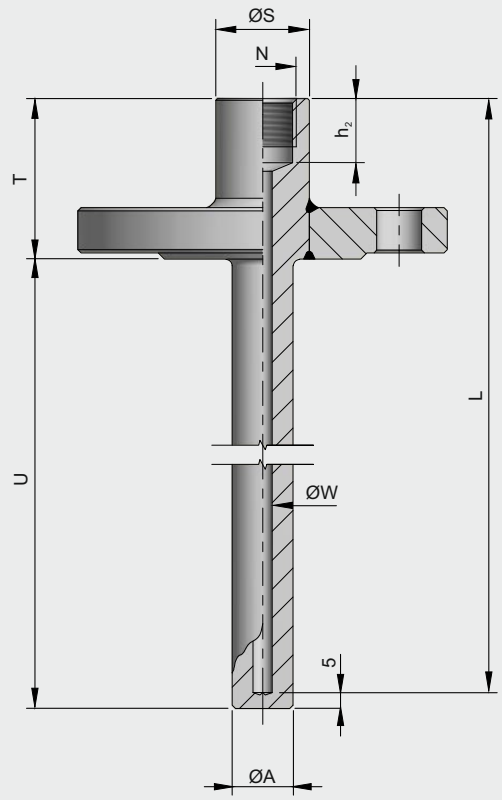
Termoaparatura Wrocław offers following protective coating materials:

- Teflon® PTFE/PFA
- Stellit®
- Hard chrome
- Silicon carbide SiC
- Aluminum oxide

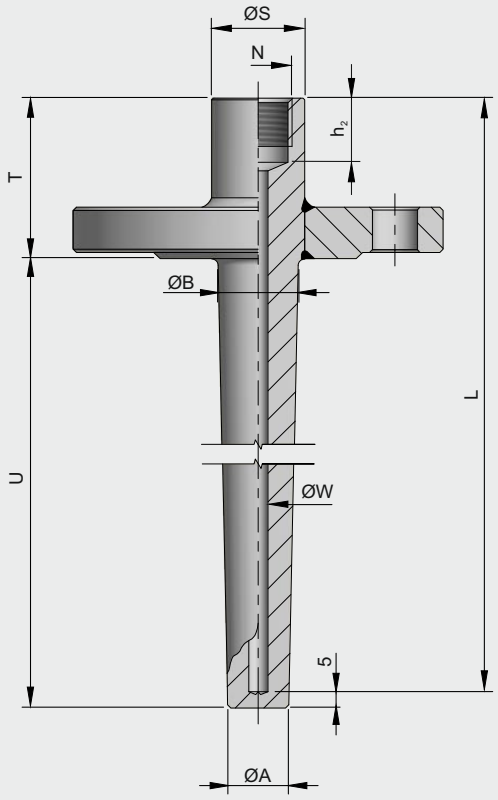
Wake frequency calculations in accordance with ASME PTC 19.3 are recommended in critical applications. TERMOAPARATURA offer this as an engineering service.

Designs

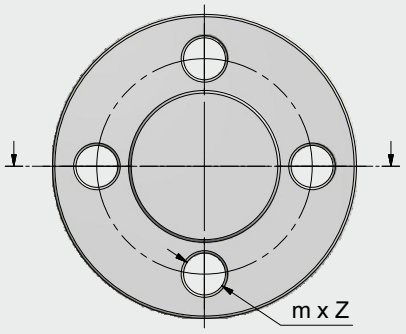
WF-P
straight thermowell

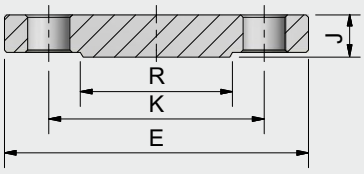


WF-Z
tapered thermowell



Flange (process connection) acc. to EN 1092-1





Connection flanges can be made in accordance with standards EN 1092-1, DIN 2527, ASME B16.5. Other types available upon request.

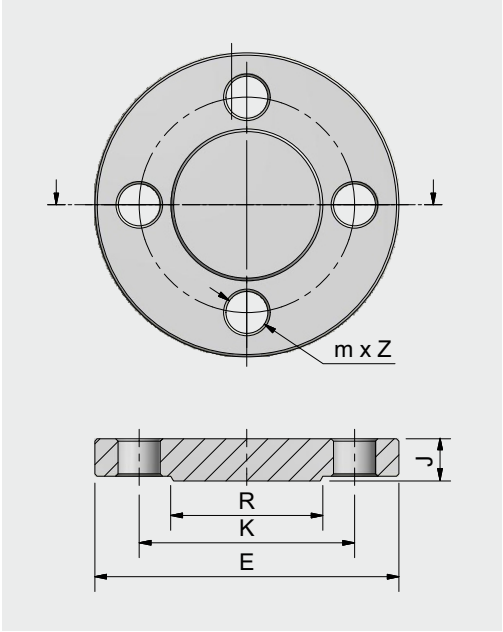
DN20 PN16 - PN40 05 B				
Diameter E	**Diameter K**	**Diameter R**	**Height J**	**Dimension m x Z**
Ø105 mm	Ø75 mm	Ø58 mm	18 mm	4 x Ø14 mm

DN25 PN16 - PN40 05 B				
Diameter E	**Diameter K**	**Diameter R**	**Height J**	**Dimension m x Z**
Ø115 mm	Ø85 mm	Ø68 mm	18 mm	4 x Ø14 mm

DN50 PN25 - PN40 05 B				
Diameter E	**Diameter K**	**Diameter R**	**Height J**	**Dimension m x Z**
Ø165 mm	Ø125 mm	Ø102 mm	20 mm	4 x Ø18 mm

DN80 PN25 - PN40 05 B				
Diameter E	**Diameter K**	**Diameter R**	**Height J**	**Dimension m x Z**
Ø200 mm	Ø160 mm	Ø138 mm	24 mm	4 x Ø18 mm

Flange (process connection) acc. to ANSI B16.5



	1" RF				
	Diameter E	Diameter K	Diameter R	Height J	Dimension m x Z
150 Lbs	Ø110 mm	Ø79,4 mm	Ø51 mm	14,7 mm	4 x Ø16 mm
300 Lbs	Ø125 mm	Ø88,9 mm	Ø51 mm	17,9 mm	4 x Ø19 mm

	1 ½" RF				
	Diameter E	Diameter K	Diameter R	Height J	Dimension m x Z
150 Lbs	Ø125 mm	Ø98,4 mm	Ø73 mm	17,9 mm	4 x Ø16 mm
300 Lbs	Ø155 mm	Ø114,3 mm	Ø73 mm	21,1 mm	4 x Ø22 mm
600 Lbs	Ø155 mm	Ø114,3 mm	Ø73 mm	29,3 mm	4 x Ø22 mm

	2" RF				
	Diameter E	Diameter K	Diameter R	Height J	Dimension m x Z
150 Lbs	Ø150 mm	Ø120,7 mm	Ø92 mm	19,5 mm	4 x Ø19 mm
300 Lbs	Ø165 mm	Ø127 mm	Ø92 mm	22,7 mm	8 x Ø19 mm
600 Lbs	Ø165 mm	Ø127 mm	Ø92 mm	32,4 mm	8 x Ø19 mm

Materials

DIN material number designation	DIN	PN
1.5415	16Mo3	16Mo
1.7335	13CrMo4-5	15HM
1.7380	10CrMo9-10	10H2M
1.4571	X6CrNiMoTi17-12-2	H17N13M2T

Material	Maximal temperature	Material properties	Applications
1.5415	530°C	High resistance in water vapor environment. Perfect for applications that requires high pressure resistance. Very well weldable material.	Industrial boilers and furnaces, pressure tanks, heat exchangers, chemical industry.
1.7335	560°C	Good welded properties, does not require special preliminary heat treatment. Increased resistance to hydrogen and water vapor environment. Resistant up to 560°C.	Power and chemical industry, tank and boiler construction.
1.7380	590°C	Good welded properties. Increased resistance to hydrogen and water vapor environment. Resistant up to 590°C.	Power and chemical industry, boiler construction and pressure vessels.
1.4571	800°C	High resistance to intercrystalline corrosion after welding. Good resistance to heavy oils, steam and exhaust gases. High resistance to oxidation. Can be used continuously up to approximately 800°C. Can be use as an alternative to steel 1.4404.	Nuclear power and reactor construction, chemical apparatus engineering, annealing furnaces, heat exchangers, petrochemical and crude oil industry, food processing industry.

Ordering code

	1	2	3	4	5	6	7	8	9	10
WF -		-		-		-		-		-		-		-		-	

1		**Design**		
		Z	tapered	
		P	straight	
2		**Process connection**		
		xxx	specify type of flange and pressure rating	
3		**Thermowell material**		
		xxx	to be specified	
4		**Diameter A**		
		xxx	please specify in milimeters	
5		**Diameter B (for thermowell WF-P dimension B=A)**		
		xxx	please specify in milimeters	
6		**Bore diameter W**		
		xxx	please specify in milimeters	
7		**Instrument connection**		
		xxx	specify type of thread	
8		**Length U**		
		xxx	please specify in milimeters	
9		**Length T**		
		xxx	please specify in milimeters	
10		**Diameter S**		
		xxx	please specify in milimeters	

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