

# Flange mounting component, welded (fabricated)

## Per 2014/68/EU PED

### Model TW40-V

WIKA data sheet SP 95.40

#### Applications

- Assemblies with pressure accessories for pipelines and vessels, used as components for temperature measuring locations
- Chemical industry, process technology, equipment manufacturing
- For low and medium process loads
- For high chemical demands

#### Special features

- Risk analysis in accordance with pressure equipment directive (PED)
- External hydrostatic testing in accordance with the requirements of the pressure equipment directive
- Dye penetrant testing of all weld seams
- Static and dynamic investigation of the assembly

#### Description

Each flange mounting component is an important part of any temperature measuring location. 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 various designs of the flange mounting component or materials. The type of process connection and the basic method of manufacture are important design differentiation criteria.



**Fig. left: Flange mounting component, model TW40-V-8**  
**Fig. right: Flange mounting component with tantalum cover, model TW40-V-E**

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

The TW40-V series of fabricated flange mounting components with flange connection are suitable for use with numerous electrical and mechanical thermometers from WIKA.

Due to the design proven over many years, these international design assemblies are the first choice for use in the chemical and petrochemical industries and in plant construction.

## Standard version

### Material

Stainless steel 1.4571, alloy C4, alloy C276, alloy 400, titanium grade 2, tantalum

### Process connection

Flanges > DN 25 / 1" to valid national or international standards like e.g. EN 1092-1, DIN 2527, ASME B 16.5

With flange disc (design TW40-V-E, TW40-V-D):

- per EN 1092-1 with sealing face form B1
- per DIN 2527 with sealing face form C per DIN 2526
- per ASME B16.5 with sealing face form RF (smooth sealing face with tantalum)

### Connection to thermometer

M24 x 1.5 pressure screw rotatable or G ½, ½ NPT female thread, M20 x 1.5

### Insertion length U<sub>1</sub>

50 ... 3,500 mm

### Overall length L

- Design TW40-V-8, TW40-V-D <sup>1)</sup>, TW40-V-E <sup>1)</sup>:  
Insertion length U<sub>1</sub> + 80 mm
- Design TW40-V-9:  
Insertion length + 82 mm

### Coating (option, design TW40-V-8, TW40-V-9)

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

### Bore size

Design	Pipe	Inner diameter	For probes
TW40-V-8	9 x 1 mm	7 mm	6 mm
	11 x 2 mm	7 mm	6 mm
	12 x 1.5 mm	9 mm	8 mm
	12 x 2.5 mm	7 mm	6 mm
	14 x 2.5 mm	9 mm	8 mm
	15 x 2 mm	11 mm	10 mm
TW40-V-9	12 x 2.5 mm to 9 mm	6.1 mm	6 mm
TW40-V-D	13.7 x 2.2 mm	9.3 mm	6 or 8 mm
TW40-V-E	11 x 2 mm with tantalum cover	7 mm	6 mm
	15 x 3 mm with tantalum cover	9 mm	8 mm
	12 x 2.5 mm to 9 mm with tantalum cover	6.1 mm	6 mm

1) For versions with tantalum cover, the insertion length will be longer by up to 3 mm

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

### Calculation of the flange mounting component

The strength of the weld seam and static and also dynamic loading

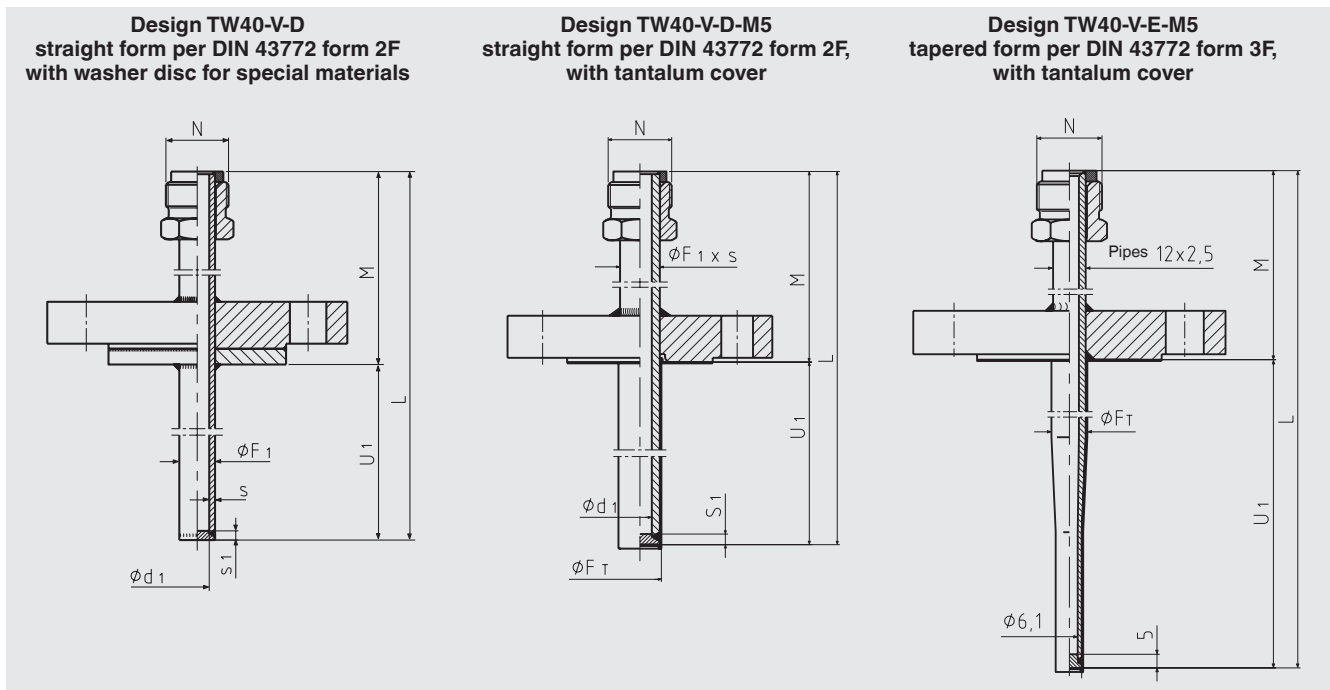
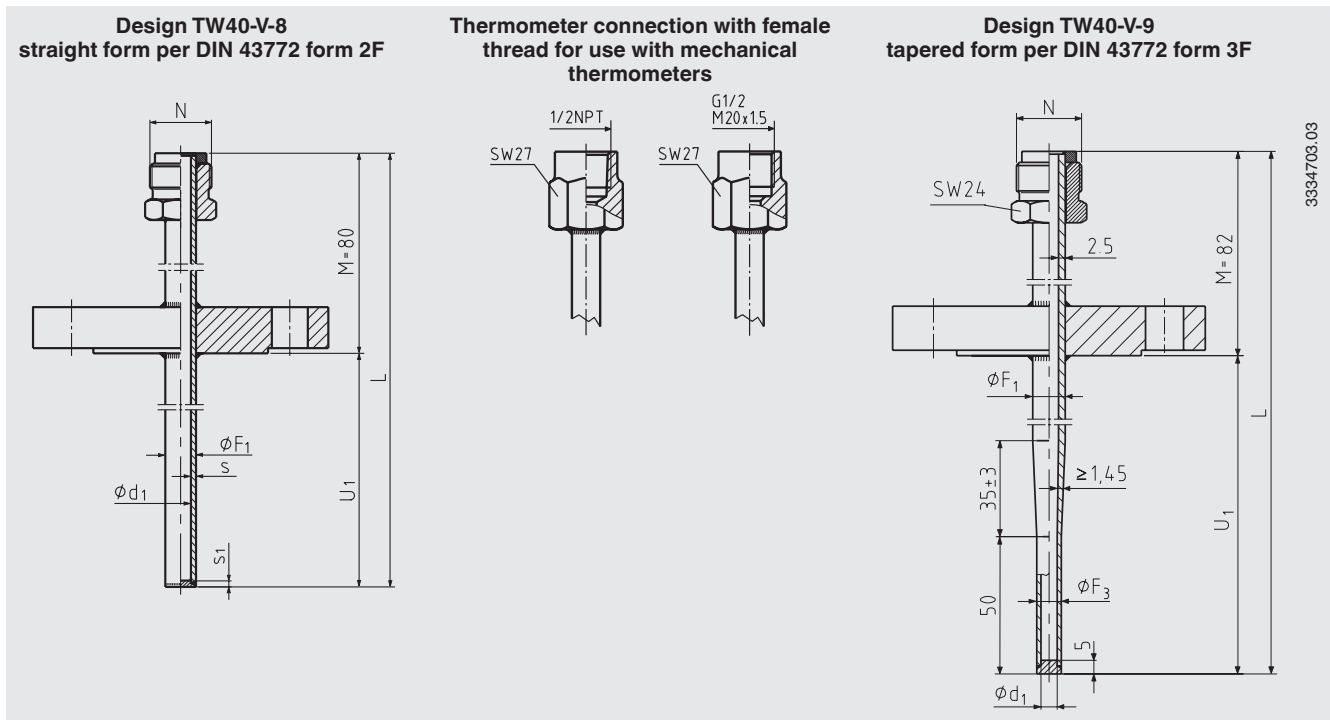
Required process data are:

- Temperature
- Pressure
- Density
- Flow rate

### Options

- Other dimensions and materials
- Quality certificates

# Dimensions in mm



**Legend:**

- L Overall length
- M Neck tube length (min. 60 mm)
- U<sub>1</sub> Insertion length
- N Connection to thermometer
- Ø d<sub>1</sub> Bore size
- Ø F<sub>1</sub> Outer diameter of the flange mounting component
- Ø F<sub>T</sub> Outer diameter of tantalum cover
- S Wall thickness
- S<sub>1</sub> Tip thickness

Dimensions in mm					Weight in kg
$\varnothing d_1$	$\varnothing F_1$	S	$S_1$	N	Flange DN 25 PN 16 ... 40, $U_1 = 225$ mm
7	9	1	3	M24 x 1.5 rotatable / G 1/2 / 1/2 NPT / M20 x 1.5	1.39
7	11	2	3	M24 x 1.5 rotatable / G 1/2 / 1/2 NPT / M20 x 1.5	1.55
7	12	2.5	3.5	M24 x 1.5 rotatable / G 1/2 / 1/2 NPT / M20 x 1.5	1.64
9	14	2.5	3.5	M24 x 1.5 rotatable / G 1/2 / 1/2 NPT / M20 x 1.5	1.71
6.1	12	2.5	5	M24 x 1.5 rotatable / G 1/2 / 1/2 NPT / M20 x 1.5	1.64
11	15	2	3	M24 x 1.5 rotatable / G 1/2 / 1/2 NPT / M20 x 1.5	1.41
13.7 x 2.2	9.3	2.2	3	M24 x 1.5 rotatable / G 1/2 / 1/2 NPT	1.70

Additional weight with other flanges		
DN 40	PN 16 ... 40	+0.76 kg
DN 50	PN 16 ... 40	+1.63 kg
1 1/2"	150 lbs	+0.22 kg
1 1/2"	300 lbs	+1.34 kg
1 1/2"	600 lbs	+1.85 kg

#### Design TW40-V-D-M5 (tantalum)

Dimensions in mm					Weight DN 25 ... 225 mm
$\varnothing d_1$	$\varnothing F_T$	$\varnothing F_1 \times S$	$S_1$	N	
7	12 x 0.4	11 x 2	2.5	M24 x 1.5 rotatable / G 1/2 / 1/2 NPT / M20 x 1.5	1.65
9	16 x 0.4	15 x 3	3.5	M24 x 1.5 rotatable / G 1/2 / 1/2 NPT / M20 x 1.5	1.75
6.1	13 x 0.4	12 x 2.5	5	M24 x 1.5 rotatable / G 1/2 / 1/2 NPT / M20 x 1.5	1.70

#### Suitable stem lengths (dial thermometers)

Connection type	Stem length $l_1$
S, 3, 4, 5	$l_1 = L - 10$ mm [0.4 in] or $l_1 = U_1 + M - 10$ mm [0.4 in]
2	$l_1 = L - 30$ mm [1.2 in] or $l_1 = U_1 + M - 30$ mm [1.2 in]

## Sealing face roughness

Flange standard		AARH in $\mu\text{inch}$	Ra in $\mu\text{m}$	Rz in $\mu\text{m}$
ASME B16.5	Stock finish	125 ... 250	3.2 ... 6.3	-
	Smooth finish	< 125	< 3.2	-
	RTJ	< 63	< 1.6	-
	Groove/tongue	< 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

## Approvals

Logo	Description	Country
	<b>EU declaration of conformity</b> Pressure equipment directive 2014/68/EU	European Union

Approvals and certificates, see website

## Ordering information

Model / Flange mounting component form / Material / Stem dimensions / Connection to the thermometer / Bore size  $\varnothing d_1$  / Nominal width DN / Pressure rating PN / Sealing face / Insertion length  $U_1$  / Overall length L / Coating / Assembly with thermometer / Certificates / Options

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