

Protection tube for multipoint thermometers with flange

Model TW95

WIKA data sheet TW 95.95

Applications

- Chemical and petrochemical industries
- Process technology, equipment manufacturing and plant construction
- Boilers, incinerators, furnaces and reactor vessels

Special features

- Variable length and dimensions
- Large variety of materials
- Secondary containment in assembly with suitable thermometers
- Lifting eyes (on request)

Description

Each protection tube is an important component of a temperature measuring location. It is used to separate the process from the surrounding area, thus protecting the environment and operating personnel and keeping aggressive media, high pressures and flow rates away from the temperature sensor itself and thereby enabling the thermometer to be exchanged during operation.

Based on the almost unlimited areas of application, there are a large number of variants, such as protection tube designs or materials. The type of process connection and the basic manufacturing method are important design differentiation criteria.



TW95-S protection tube with flange

The TW95 protection tube series is designed for use with multipoint thermometers from WIKA.

These protection tubes are intended for low and medium process-side loads, making them suitable for use in the chemical industry, process technology and equipment manufacturing.

Specifications

Overview of versions	
TW95-S	Neck tube with flanged instrument connection
TW95-N	Separated neck tube with union nut
TW95-T	Neck tube with threaded instrument connection
	→ Other versions on request

Basic information	
Material	<ul style="list-style-type: none"> ■ Stainless steel 316 ■ Stainless steel 316L ■ Stainless steel 304 ■ Stainless steel 310 ■ A105/A106 ■ Alloy 600 ■ Alloy X
	→ Further materials on request

Process connection	
Type of process connection	
Flange	<ul style="list-style-type: none"> ■ Per ASME B16.5 ■ Per EN 1092-1 ■ Per DIN 2527
	→ Other flanges on request
Connection to the thermometer N _T	<ul style="list-style-type: none"> ■ 1 NPT ■ 1 ½ NPT ■ 2 NPT ■ 3 NPT ■ Connection flange to customer specification
	→ Other connections on request
Pipe dimension	
Nominal pipe size	<ul style="list-style-type: none"> ■ 1" ■ 1 ½" ■ 2" ■ 3"
Schedule	<ul style="list-style-type: none"> ■ 40 ■ 80 ■ 160 ■ XXS
	→ Others on request
Insertion length U	300 ... 5,000 mm [12 ... 200 in]
	→ Other insertion lengths on request
Head length H	83 ... 254 mm [3.25 ... 10 in]

Permissible pipe and flange size dimensions

Nominal pipe size	Flange size			
	1"	1 ½"	2"	3"
1"	x	x	x	x
1 ½"	-	x	x	x
2"	-	-	x	x
3"	-	-	-	x

Pipe dimensions

(Outer diameter Ø F1 x wall thickness s)

Nominal pipe size	Sched. 40/Std.	Sched. 80/XS	Sched. 160	XXS
1"	33.4 x 3.38 mm [1.315 x 0.133"]	33.4 x 4.55 mm [1.315 x 0.179"]	33.4 x 6.35 mm [1.315 x 0.25"]	33.4 x 9.09 mm [1.315 x 0.358"]
1 ½"	48.3 x 3.68 mm [1.9 x 0.145"]	48.3 x 5.08 mm [1.9 x 0.200"]	48.3 x 7.14 mm [1.9 x 0.281"]	48.3 x 10.16 mm [1.9 x 0.4"]
2"	60.3 x 3.91 mm [2.375 x 0.154"]	60.3 x 5.54 mm [2.375 x 0.218"]	60.3 x 8.74 mm [2.375 x 0.344"]	60.3 x 11.07 mm [2.375 x 0.436"]
3"	88.9 x 5.49 mm [3.5 x 0.216"]	88.9 x 7.62 mm [3.5 x 0.3"]	88.9 x 11.13 mm [3.5 x 0.438"]	88.9 x 15.24 mm [3.5 x 0.6"]

Operating conditions

Max. process temperature, process pressure

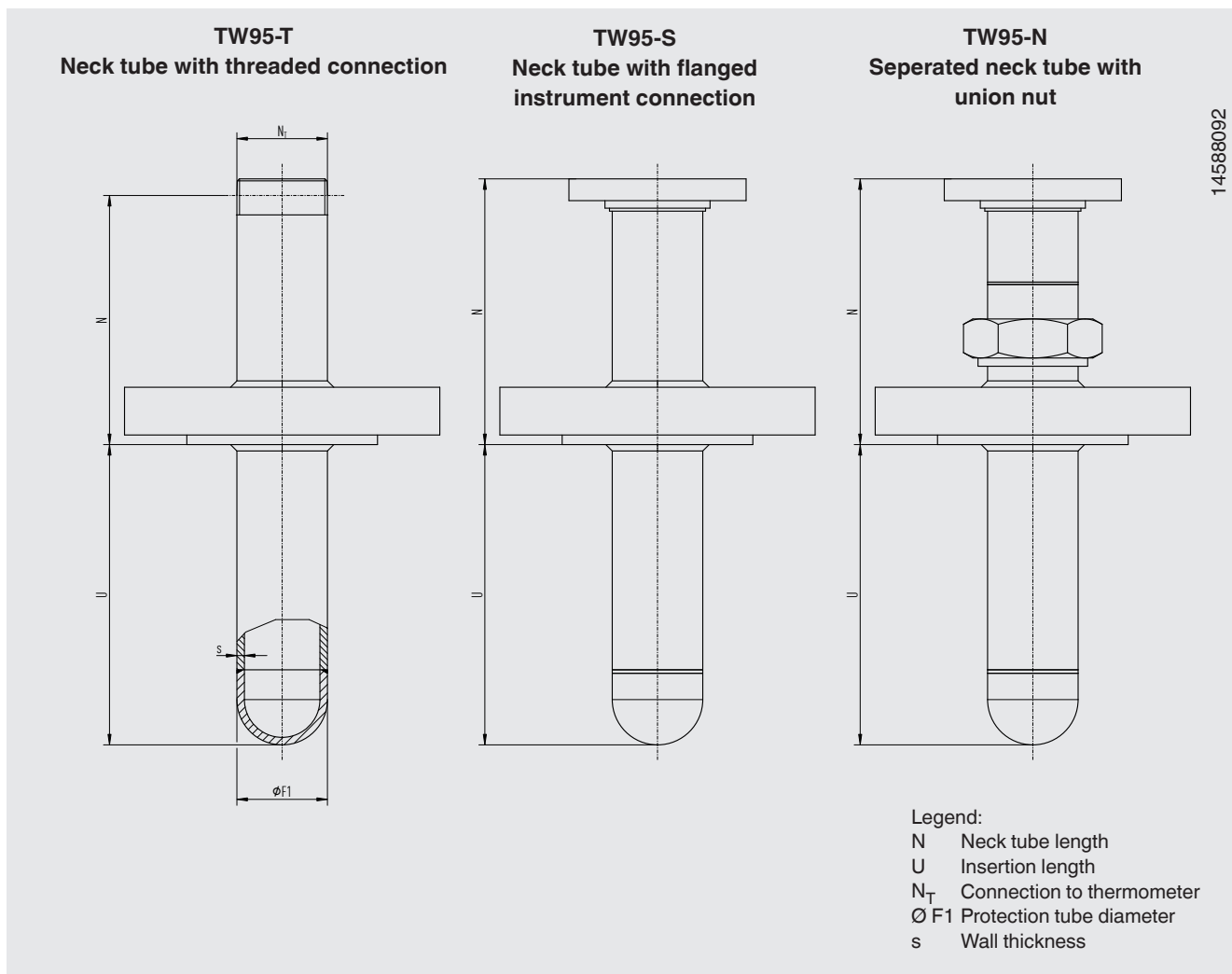
Protection tube design	<ul style="list-style-type: none"> ■ Dimensions ■ Material ■ Coating 	
Process conditions	<ul style="list-style-type: none"> ■ Flow rate ■ Medium density ■ Pressure 	
	<table border="0"> <tr> <td>Temperatures</td> <td> <ul style="list-style-type: none"> ■ Process ■ Connection geometry (flange) ■ Neck tube </td> </tr> </table>	Temperatures
Temperatures	<ul style="list-style-type: none"> ■ Process ■ Connection geometry (flange) ■ Neck tube 	
Wake frequency calculation (on request)	The design of individual protection tubes of the model TW95 is carried out in the case of an order for a charge in accordance with the customer requirements and the applicable national or international standards. On the basis of the operating conditions to be defined by the user, the design requirements between the manufacturer and the customer must be agreed.	

Certificates

Description

Certificates	<ul style="list-style-type: none"> ■ 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, material proof) ■ 3.1 inspection certificate per EN 10204 (e.g. material proof for wetted metal parts)
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Dimensions in mm [in]



Pipe weight

(Standard steel pipe weight according to nominal width and wall thickness)

DN	Sched. 40/Std.	Sched. 80/XS	Sched. 160	XXS
1"	2.5 kg/m [1.7 lb/ft]	3.3 kg/m [2.2 lb/ft]	4.3 kg/m [2.9 lb/ft]	5.5 kg/m [3.7 lb/ft]
1 1/2"	4.1 kg/m [2.9 lb/ft]	5.4 kg/m [3.6 lb/ft]	7.3 kg/m [4.9 lb/ft]	9.6 kg/m [6.5 lb/ft]
2"	5.5 kg/m [3.7 lb/ft]	7.5 kg/m [5.1 lb/ft]	11.2 kg/m [7.6 lb/ft]	13.5 kg/m [9.1 lb/ft]
3"	11.4 kg/m [7.7 lb/ft]	15.3 kg/m [10.3 lb/ft]	21.4 kg/m [14.4 lb/ft]	27.8 kg/m [18.7 lb/ft]

Flange weight

(Flange weight according to pressure ratings and nominal width)

PN in lbs	1"	1.5"	2"	3"
Class 150	0.9 kg [1.9 lb]	1.6 kg [3.4 lb]	2.5 kg [5.3 lb]	5.1 kg [11.2 lb]
Class 300	1.5 kg [3.1 lb]	2.7 kg [5.9 lb]	3.2 kg [7 lb]	6.9 kg [15.2 lb]
Class 600	1.6 kg [3.5 lb]	3.3 kg [7.2 lb]	4.2 kg [9.1 lb]	8.5 kg [18.6 lb]
Class 900	3.6 kg [7.9 lb]	5.8 kg [12.7 lb]	10.5 kg [23.1 lb]	13.1 kg [28.9 lb]
Class 1500	3.6 kg [7.9 lb]	5.8 kg [12.7 lb]	10.5 kg [23.1 lb]	19.5 kg [43 lb]
Class 2500	5 kg [10.9 lb]	10.5 kg [22.9 lb]	15.6 kg [34.4 lb]	35 kg [76.7 lb]

Ordering information

Model / Protection tube type / Version / Material / Pipe size / Pipe schedule / Connection to thermometer N /
Process connection / Insertion length U / Head length H / Tube length / Assembly with thermometers / Certificates / Options

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The specifications given in this document represent the state of the art at the time of publishing.
We reserve the right to make modifications to the specifications and materials.



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