# Threaded thermowell
# Head design: hexagon, milled wrench flats or round with hexagon
# Model TW15



## Applications

- Chemical industry, process technology, equipment manufacturing
- For high chemical stress
- For high process loads

## Special features

- International standard
- Possible thermowell designs: tapered, straight or stepped

**Threaded thermowell, design TW15-H**

## Description

Each thermowell/protection tube is an important component 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 probe 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/protection tubes, and those with flange connections.

Furthermore, one can differentiate between protection tubes and thermowells. Protection tubes are constructed from a tube, that is closed at the tip by a welded solid tip. Thermowells are manufactured from solid bar stock.

The TW15 series of threaded thermowells 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 in the chemical and petrochemical industries and in plant construction.

## Specifications

| Basic information | |
|---|---|
| **Thermowell form** | ■ Tapered<br>■ Straight<br>■ Stepped |
| **Version** | |
| Design TW15-H | Hexagon |
| Design TW15-R | Milled wrench flats |
| Design TW15-M | Round with hexagon |
| **Material (wetted)** | ■ Stainless steel 316/316L<br>■ Stainless steel 304/304L<br>■ A105<br>■ Stainless steel 1.4571<br>■ Alloy C4<br>■ Alloy C276<br>■ Alloy 400<br>■ Titanium grade 2<br>■ Materials per ASTM specifications |
| | Other materials on request |

| Process connection | |
|---|---|
| **Type of process connection** | ■ ½ NPT male thread<br>■ ¾ NPT male thread<br>■ 1 NPT male thread |
| | Other threads on request |
| **Connection to thermometer** | ■ ½ NPT female thread<br>■ G ½ female thread |
| | Other threads on request |
| **Bore size** | ■ Ø 6.6 mm [0.26 in]<br>■ Ø 8.5 mm [0.36 in] |
| | Other bore sizes on request |
| **Insertion length U** | To customer specification |
| **Connection length H** | To customer specification (min. 45 mm [1.77 in]) |
| **Tip thickness** | 6.4 mm [0.25 in] |
| | Other tip thicknesses on request |
| **Suitable stem length $l_1$ (dial thermometer)** | |
| Connection design S, 4 or 5 | $l_1$ = U + H - 10 mm [0.4 in] |
| Connection design 2 | $l_1$ = U + H - 30 mm [1.2 in] |

| Operating conditions | |
|---|---|
| **Max. process temperature, process pressure** | Depending on:<br>■ Thermowell design<br>- Dimensions<br>- Material<br>■ Process conditions<br>- Flow rate<br>- Medium density |
| **Wake frequency calculation (option)** | For critical applications, is recommended as a WIKA engineering service in accordance with ASME PTC 19.3 TW-2016 |
| | → For further information see Technical information IN 00.15 “Wake frequency calculation”. |

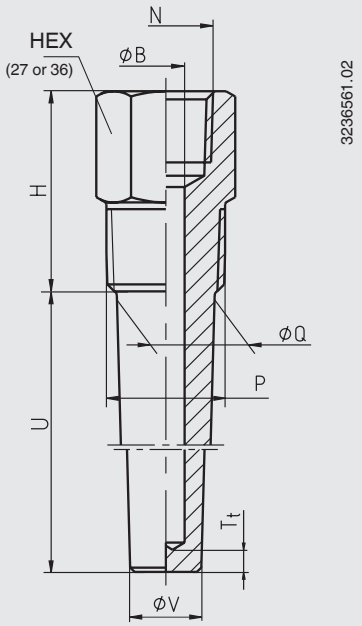
## Certificates (option)

| Certificates | |
|---|---|
| **Certificates** | ■ 2.2 test report<br>■ 3.1 inspection certificate |

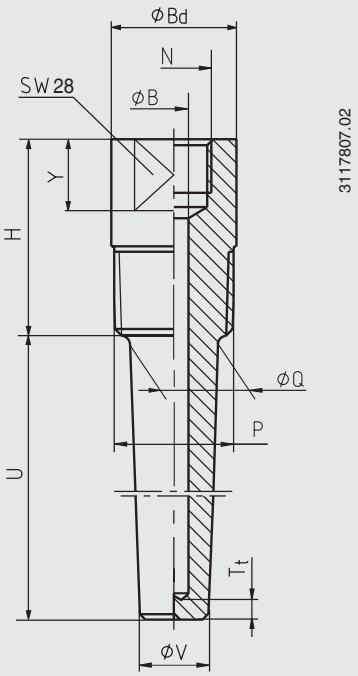
Approvals and certificates, see website

## Dimensions in mm [in]

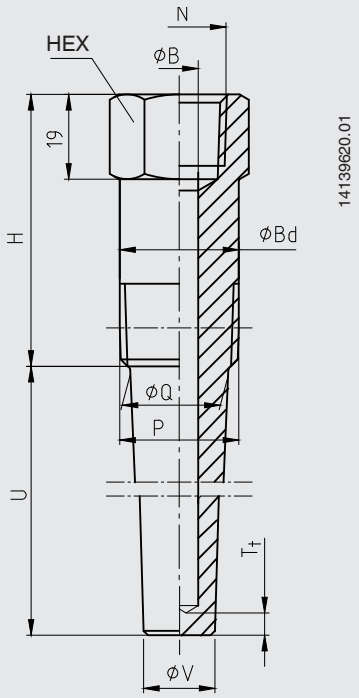
**Design TW15-H**




**Design TW15-R**




**Design TW15-M**




Legend:

| | |
|---|---|
| P | Process connection |
| H | Connection length |
| U | Insertion length |
| N | Connection to thermometer |
| SW | Spanner width |
| Y | Height of wrench flats (20 mm [0.79 in]) |
| Ø B | Bore size |
| Ø Q | Root diameter |
| Ø V | Tip diameter |
| Ø Bd | Bar diameter |
| $T_t$ | Tip thickness (6.4 mm [0.25 in]) |

**Tapered thermowell form**

| Process connection | Head design | | | | Dimensions in mm [in] | | | | | Weight in kg [lbs] | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Hexagon or round with hexagon | | Round with wrench flats | | | | | | | | |
| | Metric | Imperial | Metric | Imperial | N | Ø Q | Ø V | Ø B | H | U = 2 ½ in | U = 7 ½ in |
| **½ NPT** | HEX 27 | HEX 1.125 in | Ø 34 mm with SW 28 | Ø 1.375 in with SW 1 ⅛ in | ■ ½ NPT<br>■ G ½ | 16 [0.625] | 13 [0.512] | ■ 6.6 [0.260]<br>■ 8.5 [0.355] | 45 [1.772] | 0.20 [0.441] | 0.36 [0.794] |
| **¾ NPT** | HEX 27 | HEX 1.125 in | | | ■ ½ NPT<br>■ G ½ | 22 [0.866] | 16 [0.625] | ■ 6.6 [0.260]<br>■ 8.5 [0.355] | 45 [1.772] | 0.31 [0.683] | 0.56 [1.235] |
| **1 NPT** | HEX 36 | HEX 1.375 in | | | ■ ½ NPT<br>■ G ½ | 27 [1.063] | 19 [0.750] | ■ 6.6 [0.260]<br>■ 8.5 [0.355] | 45 [1.772] | 0.50 [1.102] | 0.84 [1.852] |

**Ordering information**

Model / Thermowell form / Process connection / Connection to thermometer / Insertion length U / Connection length H / Thermowell material / Bar diameter Ø Bd / Bore diameter Ø B / Root diameter Ø Q / Tip diameter Ø V / Assembly with thermometer / Certificates / Options





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