Screw-in thermowell (fabricated)
Version per DIN 43772 form 5, 8
Models TW45-F, TW45-G

Applications
- Chemical industry, process technology, apparatus construction
- For low and medium process loads

Special features
- Version per DIN 43772
- Model TW45-F: Form 5
- Model TW45-G: Form 8

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 TW45 series of fabricated 1) screw-in thermowells are suitable for use with numerous electrical and mechanical thermometers from WIKA.

Due to their design to DIN 43772, these thermowells for low and medium process loads are suitable for use in the chemical industry, process technology and equipment manufacture.

1) For short insertion lengths (copper alloy) solid-machined version optionally
Standard version

Thermowell material
Stainless steel 1.4571 or copper alloy

Process connection
G ½ B, G ¾ B male

Connection to thermometer
Model TW45-F: G ½, G ¾ female
Model TW45-G: G ½ B, G ¾ B male

Bore size
Versions per DIN 43772:
Ø 7 mm, Ø 9 mm, Ø 11 mm

Designs similar to DIN 43772, but with fast response:
Ø 6.2 mm, Ø 8.2 mm, Ø 8.5 mm, Ø 10.2 mm

Insertion length U1
Model TW45-F: 82, 142, 182, 232, 382 mm
Model TW45-G: 73, 110, 170, 260, 410 mm

Overall length L
Installation length U1 + 28 mm

Max. process temperature, process pressure
160 °C with copper alloy as thermowell material (6 bar stat.)
Depending on
  ■ Load diagram DIN 43772
  ■ Thermowell design
    - Dimensions
    - Material
  ■ Process conditions
    - Flow rate
    - Density of medium

Options
  ■ Other dimensions and materials
  ■ Quality certificates
  ■ Thermowell calculation to Dittrich/Klotter is recommended in critical applications as a WIKA engineering service.

For further informations, see Technical information IN 00.15 "Strength calculation for thermowells".
Dimensions in mm

Model TW45-F

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<tr>
<th>Material</th>
<th>Dimensions in mm</th>
<th>Weight in kg</th>
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<tr>
<td>Copper alloy</td>
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<td>G ¾ B</td>
<td>G ½</td>
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Suitable insertion lengths

- Mechanical dial thermometers

Connection type | Insertion length \( l_1 \)
--- | ---
S 1), 4, 5 | \( l_1 = L - 10 \text{ mm} \) or \( l_1 = U_1 + 18 \text{ mm} \)
2 | \( l_1 = L - 30 \text{ mm} \) or \( l_1 = U_1 - 2 \text{ mm} \)

1) Not suitable for use with an thermowell inner diameter of Ø 6.2 mm (pipe 8 x 0.9 mm), Ø 8.2 mm (pipe 10 x 0.9 mm) and 10.2 mm (pipe 12 x 0.9 mm).

- Machine glass thermometers

Connection type | Insertion length \( l_1 \)
--- | ---
E | \( l_1 = L - 10 \text{ mm} \) or \( l_1 = U_1 + 18 \text{ mm} \)
Model TW45-G

Legend:
E Process connection
K1 Length of male thread
K2 Length of male thread for thermometer
L Overall length
N Connection to thermometer
S Wall thickness
S1 Tip thickness
SW Flats
U1 Insertion length
Ø d1 Bore size
Ø D1 Diameter of the sealing collar
Ø F1 Thermowell external diameter

Material | Dimensions in mm | Weight in kg
--- | --- | ---
| E | N | Ø d1 | Ø D1 | Ø F1 | K1 | K2 | S | S1 | SW | U1 = 73 mm | U1 = 410 mm
| Stainless steel 1.4571 |
G ½ B | G ½ B | 7 | 26 | 12 | 14 | 12 | 2.5 | 3.5 | 27 | 0.14 | 0.34
G ½ B | G ½ B | 9 | 26 | 14 | 14 | 12 | 2.5 | 3.5 | 27 | 0.14 | 0.37
G ½ B | G ½ B | 11 | 26 | 14 | 14 | 12 | 1.5 | 2.5 | 27 | 0.12 | 0.30
G ½ B | G ½ B | 6.2 | 26 | 8 | 14 | 12 | 0.9 | 1 | 27 | 0.13 | 0.20
G ½ B | G ½ B | 8.2 | 26 | 10 | 14 | 12 | 0.9 | 1 | 27 | 0.13 | 0.20
G ½ B | G ½ B | 10.2 | 26 | 12 | 14 | 12 | 0.9 | 1 | 27 | 0.11 | 0.18
G ¾ B | G ¾ B | 7 | 32 | 12 | 16 | 14 | 2.5 | 3.5 | 32 | 0.22 | 0.43
G ¾ B | G ¾ B | 9 | 32 | 14 | 16 | 14 | 2.5 | 3.5 | 32 | 0.22 | 0.46
G ¾ B | G ¾ B | 11 | 32 | 14 | 16 | 14 | 1.5 | 2.5 | 32 | 0.20 | 0.39
G ¾ B | G ¾ B | 6.2 | 32 | 8 | 16 | 14 | 0.9 | 1 | 32 | 0.21 | 0.28
G ¾ B | G ¾ B | 8.2 | 32 | 10 | 16 | 14 | 0.9 | 1 | 32 | 0.21 | 0.28
G ¾ B | G ¾ B | 10.2 | 32 | 12 | 16 | 14 | 0.9 | 1 | 32 | 0.20 | 0.27

Suitable insertion lengths
- Mechanical dial thermometers
  | Connection type | Insertion length l1 |
  | | |
  3 | l1 = L - 12 mm or l1 = U1 + 16 mm |

- Machine glass thermometers
  | Connection type | Process connection of the thermometer | Insertion length l1 |
  | | |
  3 | G ½ | l1 = L - 12 mm or l1 = U1 + 16 mm |
  | G ¾ | l1 = L - 8 mm or l1 = U1 + 20 mm |

Ordering information
Model / Thermowell form / Thermowell material / Process connection / Connection to thermometer / Insertion length U1 / Dimension of pipe / Assembly with thermometer / Certificates / Options

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