

## Screwing-in thermowell acc. to DIN 43772 form 5, 6, 7, 8



### Description

Thermowells in conductive materials are used to separate the thermometer from the medium.

A thermowell is particularly recommended for service with pressurized media. In addition, thermowells protect the thermometers from aggressive media and facilitate replacement of the thermometer.

An extensive range of standard versions provides for service in variety of applications.

### Features

- for thermometers with male or female thread
- for aggressive media
- Standard material: Stainless steel 1.4571
- Large selection of standard versions available
- Special materials and dimensions as required

### Versions

- fabricated (TW991, TW994)
- solid-drilled (TW992, TW995)

### Form of thermowell acc. to DIN 43772

- Form 5 – TW991
- Form 6 – TW992
- Form 8 – TW994
- Form 9 – TW995

### Options

- other materials or coverings

**Models: TW991, TW992, TW994, TW995**

## Technical Data

|   |                                   |               |                                     |               |
|---|-----------------------------------|---------------|-------------------------------------|---------------|
| <b>Models</b>                                 | TW991                             | TW992         | TW994                               | TW995         |
| <b>Type of thread</b>                         | for thermometers with male thread |               | for thermometers with female thread |               |
| <b>Version</b>                                | Fabricated                        | Solid-drilled | Fabricated                          | Solid-drilled |
| <b>Max. process temperature <sup>1)</sup></b> | 600°C                             | 600°C         | 600°C                               | 600°C         |
| <b>Max. pressure (statical) <sup>1)</sup></b> | 40bar                             | 150 bar       | 40 bar                              | 150 bar       |
| <b>Material of thermowell</b>                 | 1.4571                            |               |                                     |               |
| <b>Thermometer connection</b>                 | G½, G¾                            |               |                                     |               |
| <b>Process connection</b>                     | G½, G¾                            |               |                                     |               |
| <b>Standard lengths U<sub>1</sub></b>         | 82, 142, 182, 232, 382mm          |               | 73, 110, 170, 210, 260mm            |               |

1) Rating depends on the parameters process medium, process pressure and temperature, flow rate and design of thermowell. In critical applications an additional calculation is recommended.

## Correlation thermowell – thermometer for standard lengths

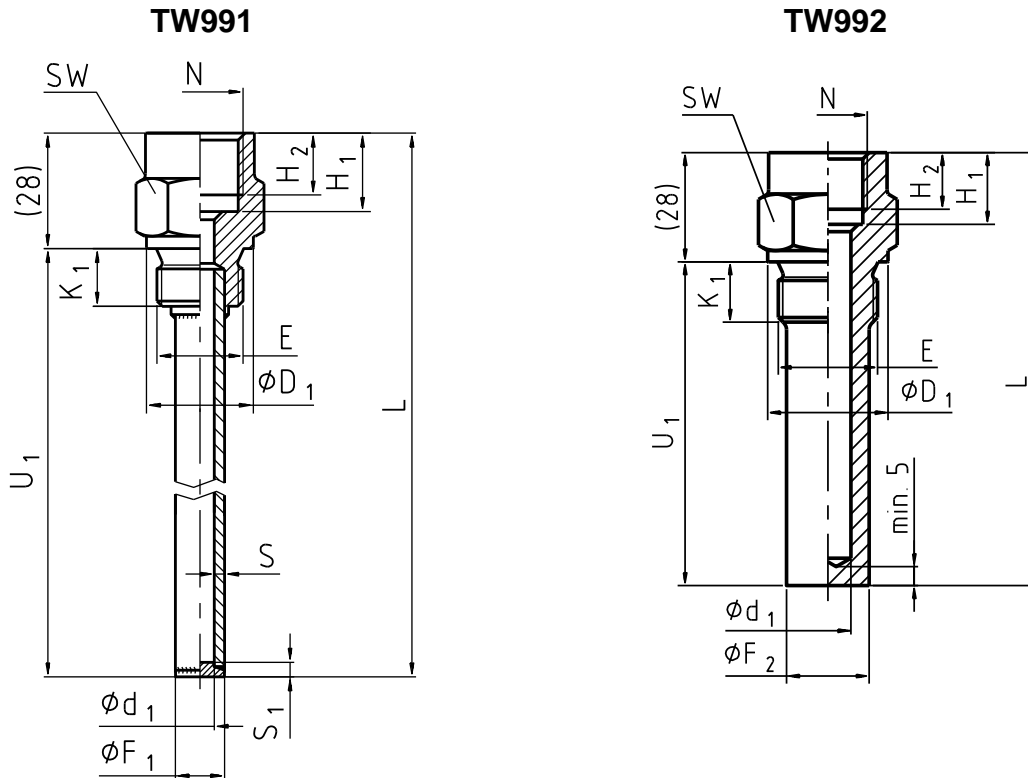
### TW991 / TW992

| thermowell<br>insertion length<br>U <sub>1</sub> | thermometer<br>stem length l <sub>1</sub> |                          |
|--|---|--------------------------|
|  | connection<br>male thread                 | connection<br>male nut   |
| 45   | 63  | ---                      |
| 82   | 100                                       | 80                       |
| 142  | 160                                       | 140                      |
| 182  | 200                                       | 180                      |
| 232  | 250                                       | 230                      |
|  | $l_1 = U_1 + 18\text{mm}$                 | $l_1 = U_1 - 2\text{mm}$ |

### TW994 / TW995

| thermowell<br>insertion length U <sub>1</sub> | thermometer<br>stem length l <sub>1</sub> |
|---|---|
|   | <b>Union nut</b>                          |
| 73  | 89  |
| 110   | 126                                       |
| 170   | 186                                       |
| 210   | 226                                       |
| 260   | 276                                       |
|   | $l_1 = U_1 + 16\text{mm}$                 |

## Dimensions



### Legend

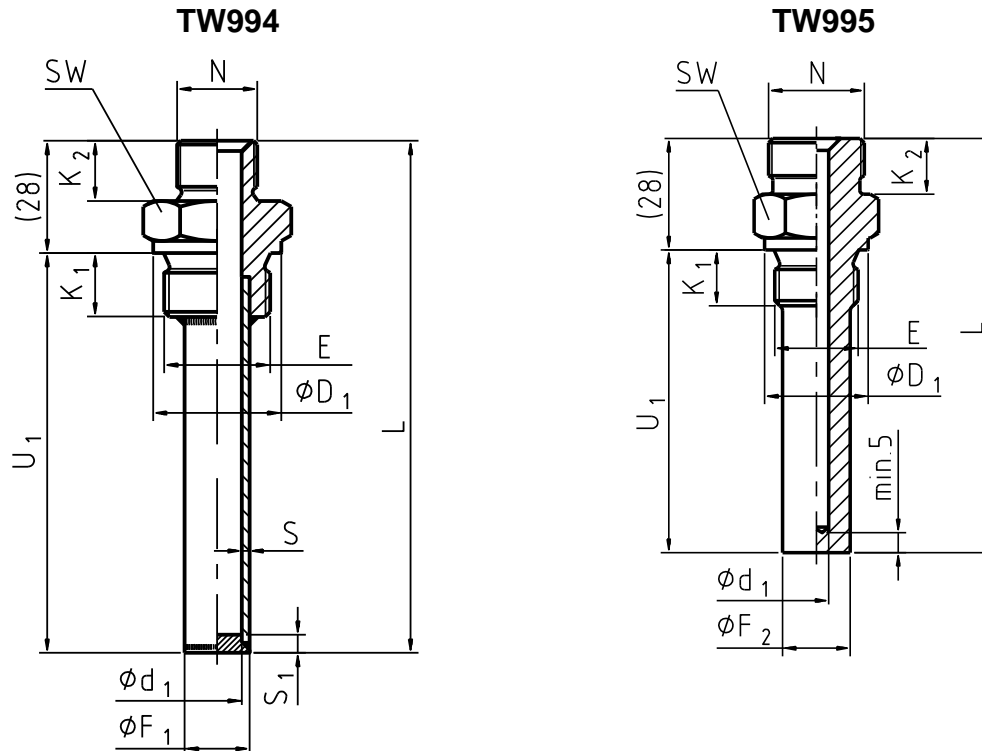
- |                |                              |                 |                              |
|----------------|------------------------------|-----------------|------------------------------|
| E              | Process connection           | S               | Wall thickness               |
| H <sub>1</sub> | Bore depth for female thread | S <sub>1</sub>  | Ground height                |
| H <sub>2</sub> | Length of female thread      | U <sub>1</sub>  | Insertion length             |
| K <sub>1</sub> | Length of male thread        | Ød <sub>1</sub> | Bore size                    |
| L              | Total length                 | ØD <sub>1</sub> | Diameter of sealing face     |
| N              | Instrument connection        | ØF <sub>1</sub> | Outer diameter of thermowell |
| SW             | Flats                        | ØF <sub>2</sub> | Outer diameter of thermowell |

|       | E   | N   | Ød <sub>1</sub> | ØF <sub>1</sub> ; ØF <sub>2</sub> | H <sub>1</sub> | H <sub>2</sub> | K <sub>1</sub> | ØD <sub>1</sub> | S   | S <sub>1</sub> | SW |
|-------|-----|-----|-----------------|-----------------------------------|----------------|----------------|----------------|-----------------|-----|----------------|----|
| TW991 | G ½ | G ½ | 6,2             | 8                                 | 19             | 15             | 14             | 26              | 0,9 | 1              | 27 |
|       |     |     | 8,2             | 10                                |                |                |                |                 |     |                |    |
|       |     |     | 10,2            | 12                                |                |                |                |                 |     |                |    |
|       |     |     | 7               | 14                                |                |                |                |                 |     |                |    |
|       |     |     | 9               |                                   |                |                |                |                 |     |                |    |
| 11    | 17  | --- | ---             |                                   |                |                |                |                 |     |                |    |
| 7     |     |     |                 |                                   |                |                |                |                 |     |                |    |
| 9     |     |     |                 |                                   |                |                |                |                 |     |                |    |
| 11    |     |     |                 |                                   |                |                |                |                 |     |                |    |
| TW992 |     |     | 7               | 17                                |                |                |                |                 |     |                |    |
|       |     |     | 9               |                                   |                |                |                |                 |     |                |    |
|       |     |     | 11              |                                   |                |                |                |                 |     |                |    |

## Calculation of thermometer- stem length

| Connection design |                   | Thermometer length l <sub>1</sub> |                                       |
|-------------------|-------------------|-----------------------------------|---------------------------------------|
| S                 | fixed male thread | l <sub>1</sub> =L - 10mm          | l <sub>1</sub> =U <sub>1</sub> + 18mm |
| 2                 | male nut          | l <sub>1</sub> =L - 30mm          | l <sub>1</sub> =U <sub>1</sub> - 2mm  |

## Dimensions



### Legend

|                |   |                 |                              |
|----------------|---|-----------------|------------------------------|
| E              | Process connection                          | S               | Wall thickness               |
| K <sub>1</sub> | Length of male thread                       | S <sub>1</sub>  | Ground height                |
| K <sub>2</sub> | Length of male thread for therm. connection | U <sub>1</sub>  | Insertion length             |
| L              | Total length                                | Ød <sub>1</sub> | Bore size                    |
| N              | Connection thread for thermometer           | ØD <sub>1</sub> | Diameter of sealing face     |
| SW             | Flats                                       | ØF <sub>1</sub> | Outer diameter of thermowell |
|                |   | ØF <sub>2</sub> | Outer diameter of thermowell |

|       | E   | N   | Ød <sub>1</sub> | ØF <sub>1</sub> ; ØF <sub>2</sub> | K <sub>1</sub> | K <sub>2</sub> | D <sub>1</sub> | S   | S <sub>1</sub> | SW |
|-------|-----|-----|-----------------|-----------------------------------|----------------|----------------|----------------|-----|----------------|----|
| TW994 | G ½ | G ½ | 6,2             | 8                                 | 14             | 12             | 26             | 0,9 | 1              | 27 |
|       |     |     | 8,2             | 10                                |                |                |                |     |                |    |
|       |     |     | 10,2            | 12                                |                |                |                |     |                |    |
|       |     |     | 7               | 14                                |                |                |                |     |                |    |
|       |     |     | 9               | 14                                |                |                |                |     |                |    |
| TW995 |     |     | 7               | 17                                |                |                |                |     |                |    |
|       |     |     | 9               |                                   |                |                |                |     |                |    |
|       |     |     | 11              |                                   |                |                |                |     |                |    |

### Calculation of thermometer-stem length

| Connection design | Thermometer length l <sub>1</sub>                                 |
|-------------------|---|
| 3 union nut       | l <sub>1</sub> =L - 12mm    l <sub>1</sub> =U <sub>1</sub> + 16mm |

Subject to technical modifications