

Instructions for direct installation of temperature sensors into ball valves or tees



1. These mounting instructions apply to the following articles

Article	Order-Nr.	Advice
Ball valve G ½"	68502314	incl. factory-mounted temperature sensor mounting kit
Ball valve G ¾"	68502315	incl. factory-mounted temperature sensor mounting kit
Ball valve G 1"	68504753	incl. factory-mounted temperature sensor mounting kit
Temperature sensor mounting kit M 10x1	68504714	for ball valves with mounting thread M 10x1 screw-in depth 8.2 mm (delivered without ball valve)
Threaded adaptor G ½"	68502316	for tees incl. temperature sensor mounting kit



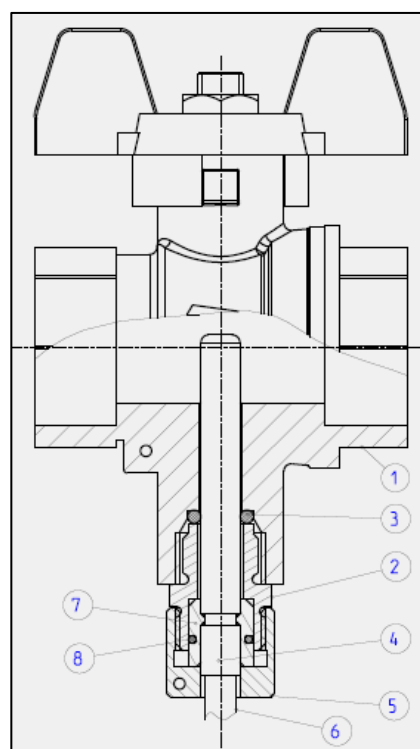
2. Important information to avoid human injuries and/or material damages



- Conduits of heating systems contain hot water and are under pressure (danger of scalding) ! Conduits of chilling systems are also under pressure !
- Therefore, first of all, always set the operating handle of the ball valve to the position „Closed“ before mounting temperature sensors into ball valves or dismantling them (for the operating handle of the Sensus ball valves this position is at right angle to the flow direction, for other ball valves observe the particular marking) !
- If there are no shut-off valves; which have been closed, right beside the left and right side of tees, the pressure shall be discharged from the heating or cooling system before mounting or dismantling directly emerged temperature sensors !
- Any particularly specified admissible operating pressures must not be exceeded !

3. Mounting temperature sensors in ball valve

- 1 Ball valve
- 2 Threaded nipple M 10x1
- 3 O-ring
- 4 Temperature sensor
- 5 Retaining nut
- 6 Temperature sensor cable
- 7 Clamp (2 brass half shells)
- 8 O-ring



Instructions for direct installation of temperature sensors into ball valves or tees



3.1 Ball valves with the order numbers 68502314, 68502315 and 68504753

Technical data:

Operating pressure: ≤ 16 bar at max. 130 °C

Temperature resistance: - 20 to 150 °C

The ball valves are delivered with a metal pin mounted as a sealing plug in the place of the temperature sensor. So the ball valve can be installed and e.g. be opened to rinse the conduit without leakage of the heating or cooling liquid.

3.1.1 Installation of a Sensus temperature sensor with cylindrical protection sleeve (L = 45 mm, D = 5.2 mm or D = 5.0 mm)

1. Set operating handle of the ball valve to position „Closed“
2. Unscrew retaining nut (5) and remove metal pin
3. Take off clamp (7) from the metal pin (do not remove O-ring (8) from the clamp, it is a mounting aid)
4. Slide retaining nut (5) over cable of the temperature sensor (6)
5. Slide clamp (7) onto temperature sensor (4) until it locks in the groove (ensure that the chamfer of the clamp points towards the tip of the temperature sensor)
6. Put temperature sensor (4) together with assembled clamp (7) into threaded nipple (2)
7. Put on retaining nut (5) and screw down
8. Then check whether threaded nipple (2) is securely tightened, **test the installation point on leakages** and seal with sealing wire

3.1.2 Exchange of a Sensus temperature sensor with cylindrical protection sleeve (L = 45 mm, D = 5.2 mm or D = 5.0 mm) after expiry of the verification period of the heat or chill meter

1. Put operating handle of the ball valve to position “Closed”
2. Remove sealing wire
3. Unscrew retaining nut (5) and pull out temperature sensor (4) together with clamp (7)
4. Take off clamp (7) from the temperature sensor (do not remove O-ring (9) from the clamp, it is a mounting aid)
5. Remove retaining nut (5) from the cable of the temperature sensor (6)
6. Unscrew threaded nipple (2) with the help of a fork wrench, remove O-ring (3) and replace it by a new O-ring (size 4.3x2.4 / order number: 03109357)
7. Screw threaded nipple (2) back in place and tighten
8. Proceed as specified in chapter 3.1.1 as from item 4

Instructions for direct installation of temperature sensors into ball valves or tees



3.1.3 Installation of a temperature sensor type „DS 27.5“ according to EN 1434

1. Screw out threaded nipple (2) with the help of a fork wrench and remove O-ring (3)
2. Screw temperature sensor type „DS 27.5“ with **mounted flat packing** (which is part of the delivered temperature sensor) into the mounting thread M 10x1 of the ball valve and tighten
3. Then **test installation point on leakages** and seal with sealing wire



Installation of a temperature sensor type „DS 27.5“

4. Temperature sensor installation kit for ball valves with mounting thread M 10x1, order number: 68504714

This article is suitable for installing Sensus temperature sensors with cylindrical protection sleeve (L = 45 mm, = 5.2 oder 5.0 mm) into customary ball valves DN 15 to 25 of other suppliers (e.g. WESA, Jumo) with mounting thread M 10x1. Regarding the mounting principle refer to chapter 1.
Maximum operating pressure: 16 bar (PN 16)

4.1 Installation

1. Put operating handle of the ball valve to position „Closed“
2. Insert the O-ring (3) into the deepest position of the mounting thread in the ball valve (If required with the help of a suitable blunt object)
3. Screw-in threaded nipple (2), but do not tighten yet
4. Slide retaining nut (5) over the cable of temperature sensor (6)
5. Slide clamp (7) onto temperature sensor (4) until it locks in the groove (ensure that the chamfer points towards the tip of the temperature sensor)
6. Put temperature sensor (4) together with mounted clamp (7) into threaded nipple
7. Cautiously tighten threaded nipple (2) with the help of a fork wrench, torque ca. 5 Nm (Information: For some ball valves there might not be stopping contact between threaded nipple and ball valve during this action)
8. Put on retaining nut (5) and screw down
9. Then **test installation point on leakages** and seal with sealing wire

4.2 Exchange of a Sensus temperature sensor with cylindrical protection sleeve (L = 45 mm, D = 5.2 mm or D = 5.0 mm) after expiry of the verification period of the heat or chill meter

1. Put operating handle of the ball valve to position „Closed“
2. Remove sealing wire
3. Unscrew retaining nut (5)
4. Loosen threaded nipple (2) and pull out temperature sensor (4) together with clamp (7)
5. Remove clamp (7) from temperature sensor (4) (do not remove O-ring (8) from the clamp, it is a mounting aid)
6. Remove retaining nut (5) from the cable of the temperature sensor (6)
7. Screw threaded nipple (2) out with the help of a fork wrench, remove O-ring (3) and replace it by a new O-ring (size: 4.3x2.4 / order number: 03109357)
8. Screw threaded nipple (2) back again, but do not tighten it yet
9. Proceed as specified in chapter 4.1 as from item 4

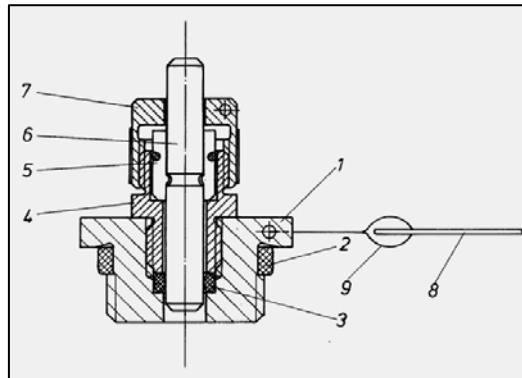
Instructions for direct installation of temperature sensors into ball valves or tees



5. Threaded adaptor G 1/2" for tees including temperature sensor installation kit , order number: 68502316

Mounting principle

- 1 Threaded adaptor for tee
- 2 Sealing ring
- 3 O-ring
- 4 Threaded nipple M 10x1
- 5 Clamp with O-ring
- 6 Plug
- 7 Retaining nut
- 8 Information tag
- 9 Sealing or fastening wire (not delivered)



Screw the threaded adaptor (1) into the tee and tighten. Regarding the further procedure refer to chapters 3.1.1 to 3.1.3, depending on the provided temperature sensor.



Temperature sensor with cylindrical protection sleeve



Temperature sensor type Typ „DS 27.5“

Fasten the information tag (8) together with the sealing wire.

Maximum operating pressure: 16 bar (PN 16)

Material number: 28504965

Edition: 003-0911
Subject to changes

Sensus GmbH Ludwigshafen
Industriestraße 16
D-67063 Ludwigshafen

Telefon: + 49 (0) 621 6904-1113
Fax: + 49 (0) 621 6904-1409
E-Mail: info.de@sensus.com

