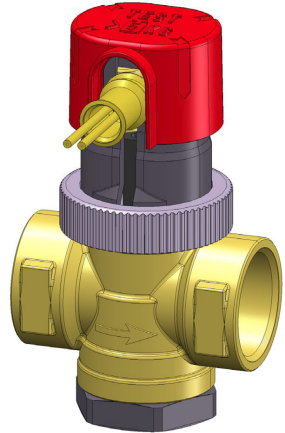


Operating instructions



Thermal safety valve

Type: TAS 03

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1 About these operating instructions

These operating instructions describe the thermal safety valve "TAS 03" (also referred to as "product" in these operating instructions). These operating instructions are part of the product.

- You may only use the product if you have fully read and understood these operating instructions.
- Verify that these operating instructions are always accessible for any type of work performed on or with the product.
- Pass these operating instructions as well as all other product-related documents on to all owners of the product.
- If you feel that these operating instructions contain errors, inconsistencies, ambiguities or other issues, contact the manufacturer prior to using the product.

These operating instructions are protected by copyright and may only be used as provided for by the corresponding copyright legislation. We reserve the right to modifications.

The manufacturer shall not be liable in any form whatsoever for direct or consequential damage resulting from failure to observe these operating instructions or from failure to comply with directives, regulations and standards and any other statutory requirements applicable at the installation site of the product.

2 Information on safety

2.1 Safety messages and hazard categories

These operating instructions contain safety messages to alert you to potential hazards and risks. In addition to the instructions provided in these operating instructions, you must comply with all directives, standards and safety regulations applicable at the installation site of the product. Verify that you are familiar with all directives, standards and safety regulations and ensure compliance with them prior to using the product.

Safety messages in these operating instructions are highlighted with warning symbols and warning words. Depending on the severity of a hazard, the safety messages are classified according to different hazard categories.



WARNING

WARNING indicates a potentially hazardous situation, which, if not avoided, can result in serious injury or equipment damage.

NOTICE

NOTICE indicates a hazardous situation, which, if not avoided, can result in equipment damage.

In addition, the following symbols are used in these operating instructions:



This is the general safety alert symbol. It alerts to injury hazards or equipment damage. Comply with all safety instructions in conjunction with this symbol to help avoid possible death, injury or equipment damage.

2.2 Intended use

This product may exclusively be used for thermal protection of sealed or open solid fuel heating systems as per EN 12828 with a heating capacity of up to 100 kW (86,000 kcal/h).

The boiler of the heating system must have a water heater or a safety heat exchanger.

Any use other than the application explicitly permitted in these operating instructions is not permitted and causes hazards.

Verify that the product is suitable for the application planned by you prior to using the product. In doing so, take into account at least the following:

- All directives, standards and safety regulations applicable at the installation site of the product
- All conditions and data specified for the product
- The conditions of the planned application

In addition, perform a risk assessment in view of the planned application, according to an approved risk assessment method, and implement the appropriate safety measures, based on the results of the risk assessment. Take into account the consequences of installing or integrating the product into a system or a plant.

When using the product, perform all work and all other activities in conjunction with the product in compliance with the conditions specified in the operating instructions and on the nameplate, as well as with all directives, standards and safety regulations applicable at the installation site of the product.

2.3 Predictable incorrect application

The product must never be used in the following cases and for the following purposes:

- The product does not replace the diaphragm safety valve required as per applicable safety regulations.

2.4 Qualification of personnel

Only appropriately trained persons who are familiar with and understand the contents of these operating instructions and all other pertinent product documentation are authorized to work on and with this product.

These persons must have sufficient technical training, knowledge and experience and be able to foresee and detect potential hazards that may be caused by using the product.

All persons working on and with the product must be fully familiar with all directives, standards and safety regulations that must be observed for performing such work.

2.5 Personal protective equipment

Always wear the required personal protective equipment. When performing work on and with the product, take into account that hazards may be present at the installation site which do not directly result from the product itself.

2.6 Modifications to the product

Only perform work on and with the product which is explicitly described in these operating instructions. Do not make any modifications to the product which are not described in these operating instructions.

3 Transport and storage

The product may be damaged as a result of improper transport or storage.

NOTICE

DAMAGE TO THE PRODUCT

- Verify compliance with the specified ambient conditions during transport or storage of the product.
- Use the original packaging when transporting the product.
- Store the product in a clean and dry environment.
- Verify that the product is protected against shocks and impact during transport and storage.

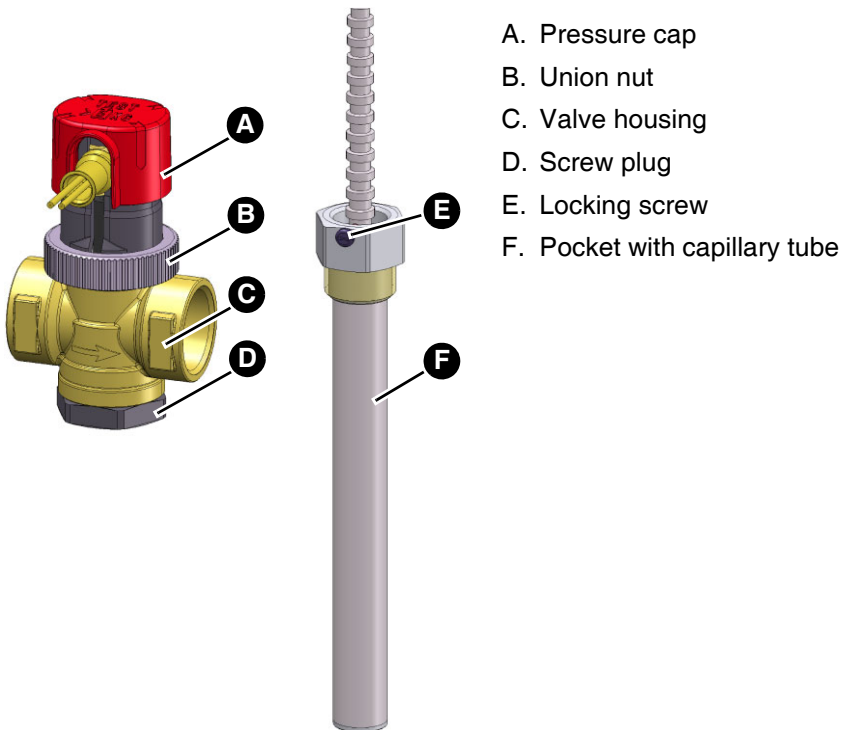
Failure to follow these instructions can result in equipment damage.

4 Product description

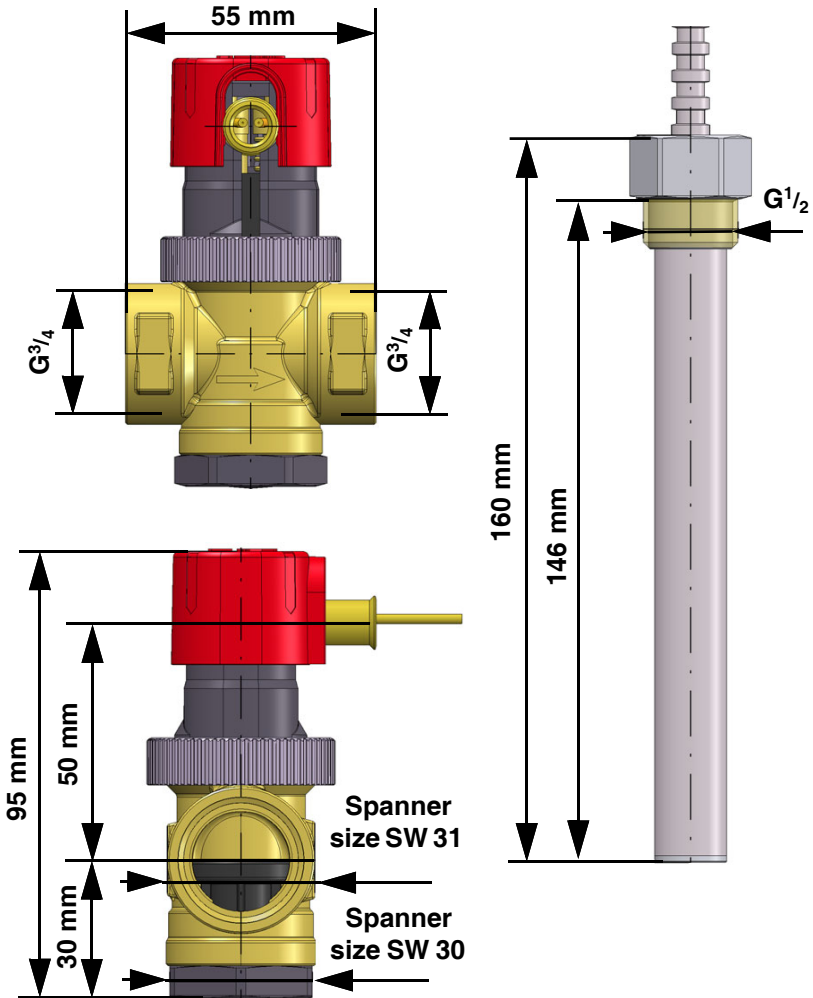
The product is a thermal safety valve with two independently working sensor systems.

The product consists of a valve housing with stroke valve and two bellow type displacement probes operating in parallel with liquid-filled temperature probes in a pocket. If one temperature probe becomes inoperative, the functionality is still given by the second temperature probe. A flexible metal hose helps to protect the capillary tube against bending.

4.1 Overview



4.2 Dimensions and connections



4.3 Function

The product protects the boiler against overheating; it is operated without supply voltage. The heat sensors are connected to a thermally controlled valve (stroke valve) by means of a capillary tube.

If the boiler temperature increases, the capillary liquid in the heat sensor expands and applies pressure to the valve. As soon as the boiler temperature exceeds 99 °C, the valve opens and cold water flows into the heat exchanger. The cold water reduces the boiler temperature. When the boiler temperature has dropped below the maximum temperature, the valve closes due to the reduced volume of the capillary liquid.

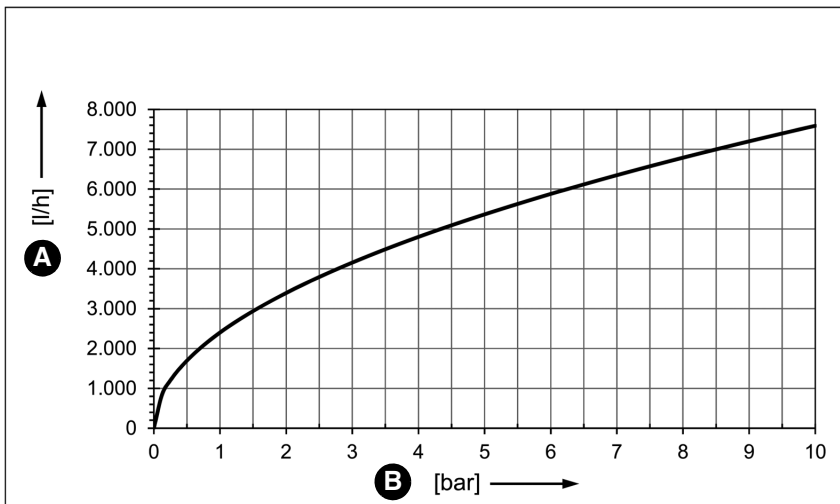
4.4 Technical specifications

Parameter	Value
General specifications	
Housing material	Brass
Spring / pressure bolt	Stainless steel
Functional parts	Plastic
Pocket	Brass, nickel-plated
Probe system	Copper with capillary liquid
Operating pressure	Max. 10 bar
Discharge capacity	2.4 m ³ /h at 110 °C and $\Delta p = 1$ bar
Connections	2 x G ³ / ₄ female
Connection pocket	G ¹ / ₂ male
Length capillary tube	1,300 mm or 4,000 mm
Length pocket	160 mm
Installation length in boiler	146 mm
Operating medium	Water
Mode of action (DIN EN 14597)	Type Th 2KP

Parameter	Value
Operating temperature range	
Operating temperature	5 to 115 °C
At capillary tube and probe	Short-term max. 125 °C
Response temperature (DIN EN 14597)	99 °C (area opening point between 92 °C and 99 °C)
Ambient temperature valve	Max. 80 °C

4.5 Chart

Maximum flow at 110 °C and inlet pressure from 0 to 10 bar



A. Flow value

B. Inlet pressure

4.6 Approvals, conformities, certifications

The product is TÜV-tested as per DIN EN 14597 (report no. T 159 2014 1).

5 Mounting



WARNING

SCALDING DUE TO HOT LIQUID

Water in heating systems is under high pressure and can have temperatures of more than 100 °C.

- Verify that the heating water has cooled down before mounting the product to the system.
- Verify that hazards caused by hot water/vapour at the free outlet of the discharge line into the funnel are excluded.

Failure to follow these instructions can result in death, serious injury or equipment damage.

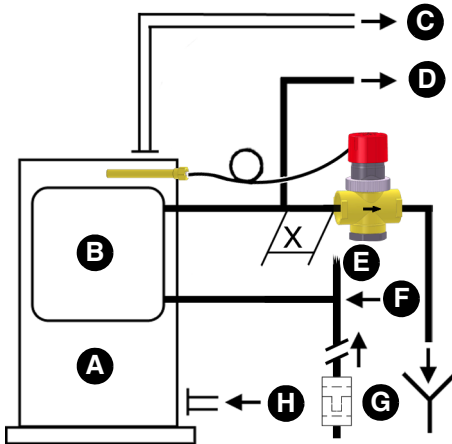
5.1 Preparing mounting

- ⇒ Verify that the area X (with stagnant water) is as short as possible.
- ⇒ Verify that the product is connected to the hot water outlet of the water heater or to the inlet of the safety heat exchanger.
- ⇒ Verify that the capillary tube is not bent or squeezed.
- ⇒ Verify that the pocket is installed in the upper part of the boiler.
- ⇒ Verify that the thermal safety valve is installed with the correct direction of flow as indicated by the arrow.

The capillary tube can be mounted as required. The upper plastic parts can be aligned in the desired direction.

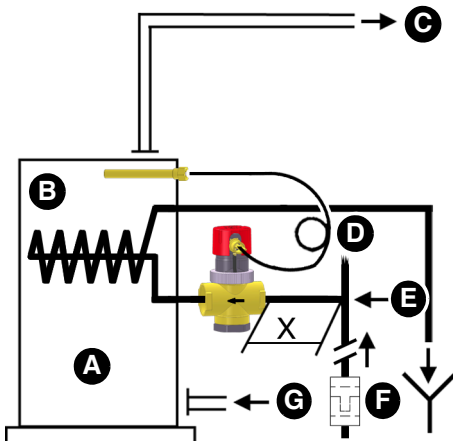
1. Loosen the union nut.
2. After the alignment, fully retighten the union nut.

5.2 Mounting examples



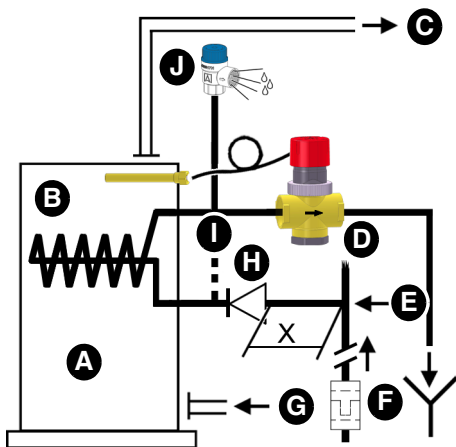
- A. Boiler
- B. Integrated drinking water heater
- C. Boiler flow
- D. Hot water
- E. Consumer (drinking water circuit)
- F. Drinking water connection (cold)
- G. Water filter with filter cartridge
- H. Boiler return
- X = Area with stagnant water

Fig. 1: Boiler with integrated drinking water heater



- A. Boiler
- B. Safety heat exchanger
- C. Boiler flow
- D. Consumer (drinking water circuit)
- E. Drinking water connection (cold)
- F. Water filter with filter cartridge
- G. Boiler return
- X = Area with stagnant water

Fig. 2: Boiler with safety heat exchanger



- A. Boiler
- B. Safety heat exchanger
- C. Boiler flow
- D. Consumer (drinking water circuit)
- E. Drinking water connection (cold)
- F. Water filter with filter cartridge
- G. Boiler return
- H. System separator
- I. Alternative connection point for safety valve
- J. Safety valve (adapted to the system, max. 10 bar)

X = Area with stagnant water

Fig. 3: Boiler with safety heat exchanger, system separator and safety valve

5.3 Mounting the product

NOTICE

DAMAGE DUE TO IMPROPER MOUNTING

- Only loosen and tighten the union nut if the heat source is fully switched off and if the probe system is not in the pocket.
- Only use the pocket shipped with the product.

Failure to follow these instructions can result in equipment damage.

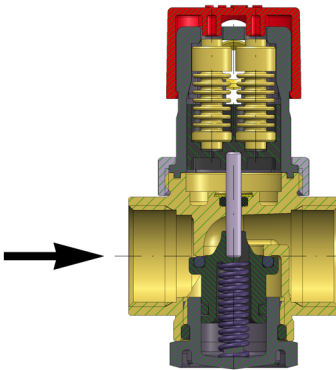
NOTICE

INCORRECT OPERATION

- Only use the pocket shipped with the product.

Failure to follow these instructions can result in equipment damage.

⇒ Verify that the thermal safety valve is installed with the correct direction of flow (as indicated by the arrow).

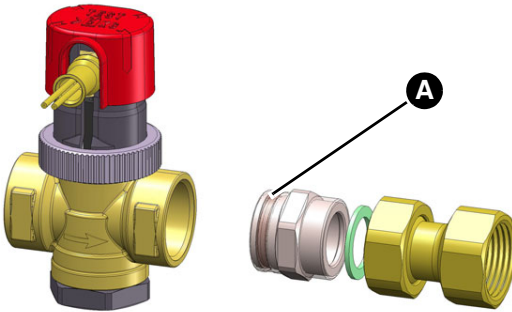


1. Carefully flush the pipes.

The product can be mounted vertically or horizontally (valve outlet pointing down).

Fig. 4: Direction of flow

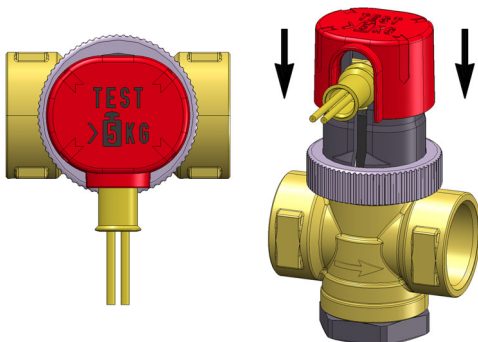
2. The cross section of the discharge line must be DN 20 or greater.
3. Mount the discharge line with a continuous gradient.
 - The maximum number of elbows in the discharge line is 2 and the maximum length of the discharge line is 2 m. If a length of more than 2 is required, the pipe cross section must be DN 25 or greater.
 - If the discharge line is greater than or equal to DN 25, the maximum number of elbows in the discharge line is 3 and maximum length of the discharge line is 4 m.
- ⇒ Verify that the end of the discharge line is approx. 20 ... 40 mm above the drain outlet for inspection.
 - The discharge line must be protected against pollution, frost-protected and permanently installed.
- ⇒ If you use a funnel, verify that cross section of the outlet of the funnel has a cross section of at least DN 40.



If the TAS 03 screw connection is used, the PTFE sealing ring (A) must be screwed into the valve housing.

4. Remove the locking screw of the pocket.
5. Pull out the probe system.
6. Screw the pocket into the appropriate socket so that it is sealed.
7. Refit the probe system.

8. Secure the probe system with the locking screw.



Function test

1. Press down the pressure cap to perform a function test.
 - The outlet must be able to hold at least twice the volume of the maximum flow (see chapter "Chart").

6 Maintenance

The product is safety equipment; maintenance may only be performed by a specialised company.

6.1 Maintenance intervals

Perform a "Function test" at least once per year.

When	Activity
At least once per year	Have the thermal safety valve checked for correct operation by a qualified expert.

7 Troubleshooting

Any malfunctions that cannot be removed by means of the measures described in this chapter may only be repaired by the manufacturer.

NOTICE

DAMAGE TO THE SYSTEM

Excess heat may not be dissipated if the probe element or the capillary tube are damaged.

- Verify that the thermal safety valve is not damaged.

Failure to follow these instructions can result in equipment damage.

Problem	Possible reason	Repair
The product only opens at a temperature higher than 100°C	Union nut is loose	Check union nut after system has cooled down
	Probe system damaged	Check the probe element and the capillary tube
	Discharge line clogged	Check the discharge line

Problem	Possible reason	Repair
The product opens at temperatures of less than 92°C or a small volume of water escapes on an ongoing basis	Sealing elements damaged or worn	Press the pressure cap several times to flush away pollution that may be present Loosen the screw plug and the sealing elements. Clean the sealing surface with water. Mount the screw plug with piston under tension. Grease the bottom O ring. Only use grease approved for drinking water. Replace the product because of potentially incorrect mounting/damage to the seals.
	Incorrect installation (direction of flow)	Mount the product with correct direction of flow
	The ambient temperature is higher than 80 °C	Mount the product at a different position or provide thermal insulation
Other malfunctions	-	Contact the AFRISO service hotline

8 Decommissioning, disposal

Dispose of the product in compliance with all applicable directives, standards and safety regulations.

1. Dismount the product (see chapter "Mounting", reverse sequence of steps).
2. Dispose of the product.

9 Returning the device

Get in touch with us before returning your product.

10 Warranty

See our terms and conditions at www.afriso.com or your purchase contract for information on warranty.

11 Spare parts and accessories

NOTICE

DAMAGE DUE TO UNSUITABLE PARTS

- Only use genuine spare parts and accessories provided by the manufacturer.

Failure to follow these instructions can result in equipment damage.

Product

Product designation	Part no.	Figure
Thermal safety valve "TAS 03" with capillary tube length 1,300 mm	42415	
Thermal safety valve "TAS 03" with capillary tube length 4,000 mm	42418	-

Spare parts and accessories

Product designation	Part no.	Figure
Pocket G $\frac{1}{2}$ „TAS 03“	42449	-
Screw connection G $\frac{3}{4}$ "TAS 03"	42450	-