



PROFACTOR®
DER DEUTSCHE QUALITÄTSSTANDARD

EN

TECHNICAL DATA SHEET AND USER MANUAL



PRODUCT
CODE

PF BS 605

BOILER SAFETY GROUP

1. PURPOSE AND SCOPE

The PROFCTOR® PF BS 605 Safety Group performs the functions of both a safety relief valve and a check valve. It is designed to protect water heating systems from exceeding the maximum allowable operating pressure, and to prevent heated water from flowing back into the supply pipeline in the event of low inlet pressure or no water supply. The device also serves as a shut-off valve for closing the water supply to the boiler. It is intended for installation on storage-type electric water heaters or small boilers with a capacity of up to 10 kW.

2. TECHNICAL SPECIFICATIONS

Cold water inlet connection: 3/4"M
 Boiler connection (two options): 3/4"F or 1/2"F
 Drain outlet connection: 1"M
 Maximum operating pressure: 10 bar
 Safety valve set pressure: 7 bar
 Actual opening pressure of safety relief valve: 7.2 bar
 Actual closing pressure of safety relief valve: 6.5 bar
 Maximum operating medium temperature: 120°C
 Maximum capacity of protected system: 10 kW
 Weight: 430 g

3. DESIGN

The PROFCTOR® PF BS 605 Boiler Safety Group consists of a safety relief valve (3), a check valve (2), and a shut-off ball valve (4), all mounted in a common body (1).

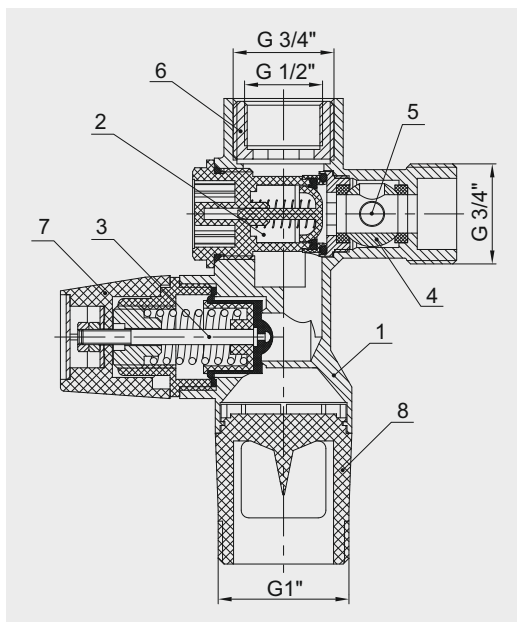
The safety group is equipped with an integrated spring-loaded axial check valve (2), which can be easily removed for cleaning, maintenance, or replacement if necessary.

The safety valve (3) is fitted with a manual release handle (7). The opening pressure of the safety relief valve is factory set to 7 bar and cannot be adjusted. The discharge device (8) features two large air inlets to prevent backflow of discharged water into the boiler and a guide element to prevent splashing during drainage.

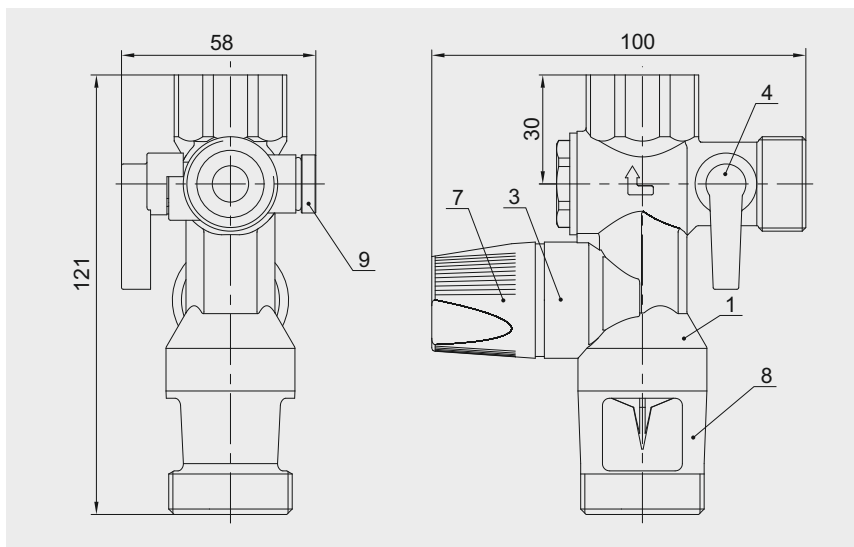
The product package includes an adapter (6), which allows connection of the safety group to various boiler models with 1/2" or 3/4" connection fittings.



All pipe cylindrical threads comply with ISO 228-1:2000, DIN 259.



- 1 – Body
- 2 – Check valve
- 3 – Safety relief valve
- 4 – Shut-off ball valve
- 5 – Port for checking check valve operation
- 6 – Adapter 3/4" to 1/2"
- 7 – Safety valve handle
- 8 – Discharge device (air gap unit)
- 9 – Plug



4. MATERIALS

Body (1) — Brass CW617N (DIN EN 12165), with nickel-plated surfaces
 Adapter (6) — Brass CW617N (DIN EN 12165)
 Ball — Brass CW614N (DIN EN 12165-2011), with chrome-plated surfaces
 Ball sealing rings — PTFE
 Check valve body (2), Jet breaker device (8), Safety relief valve handle (7) — POM
 Springs — Stainless steel AISI 304 (DIN EN 10088)
 Plug (9) — PA66
 Safety valve diaphragm, sealing rings of the check valve and plug — EPDM

5. OPERATING PRINCIPLE

When cold water is supplied, the water flow pressure acts on the disc of the check valve stem, overcoming the spring tension and thereby opening the check valve, allowing water to enter the boiler. If the cold water supply stops, the spring of the check valve pushes the disc of the valve stem back into its seat, closing the valve and preventing the heated water from flowing back into the supply pipeline.

When the pressure inside the boiler exceeds the set pressure, the safety relief valve performs a partial discharge of water into the atmosphere or into the drain pipeline. The water pressure inside the heater becomes greater than the spring tension of the safety relief valve, causing the spring to compress, which opens the valve and releases the heated water through the drain outlet. After the pressure decreases, the spring force returns the valve to the closed position, restoring tightness.

6. INSTALLATION INSTRUCTIONS

The installation of a safety device in water heaters is mandatory!

Before installing the PF BS 605 safety group, the pipeline must be thoroughly cleaned of rust, dirt, scale, sand, and other foreign particles that could affect the proper operation of the device. Upon completion of the installation of the internal cold and hot water supply systems, they must be flushed with water until it flows out free of mechanical impurities.

If the protected boiler has connection fittings with a 1/2" thread, the PF BS 605 safety group should be connected to it using the adapter (6). If the boiler has a 3/4" threaded connection, the adapter (6) must be removed and the safety group connected directly. It is recommended to install a dielectric insert between the boiler tank connection and the safety group.

The device must be installed on the cold-water supply pipe leading to the boiler, in a vertical position, so that the direction of water flow corresponds to the arrow on the body, and the drain outlet with jet breaker (8) is directed downwards. It is recommended to install the PF BS 605 safety group as close as possible to the boiler.

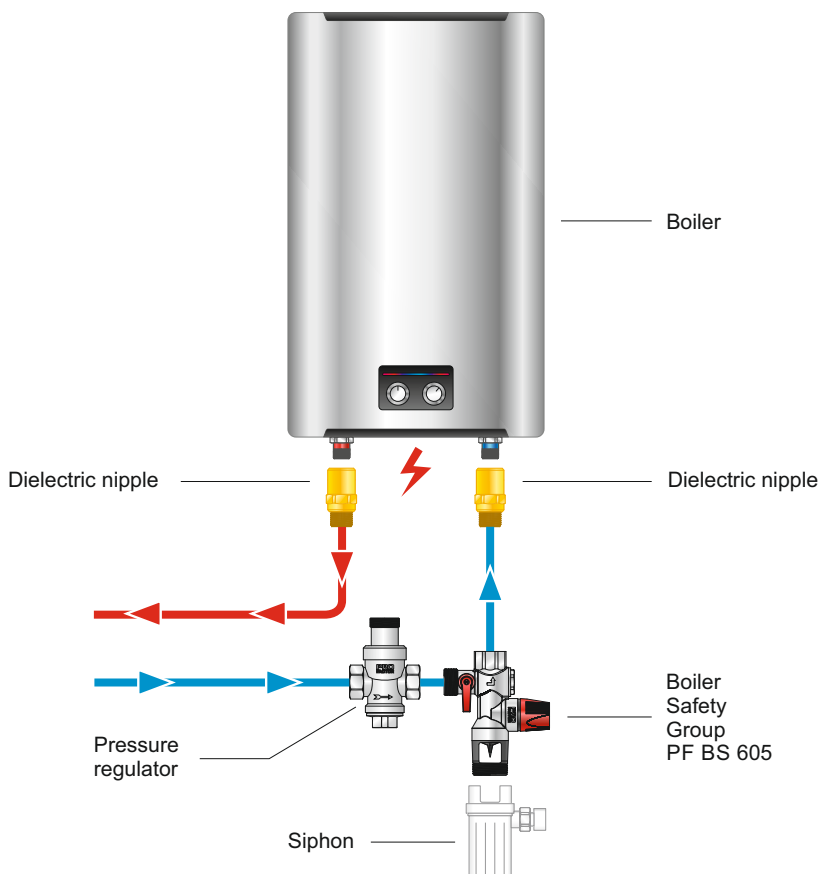
The length of the inlet pipe must not exceed 1 meter, and bends in this section are not allowed. The nominal diameter of the pipe must match the nominal outlet diameter of the safety group. Water withdrawal from the inlet pipeline is not permitted. No check valves, filters, or other devices that reduce the internal cross-section are allowed between the safety group and the boiler.

If the cold-water supply pressure exceeds 5 bar, it is recommended to install a pressure-reducing valve before the safety group.

The safety group must not be subjected to any mechanical loads from the pipeline (bending, compression, tension, twisting, misalignment, vibration, or uneven tightening). If necessary, supports or compensators must be provided to reduce the load on the device from the pipeline. The misalignment of connected pipelines must not exceed 3 mm per meter of length, plus 1 mm for each subsequent meter.

The safety group must be securely fixed to the pipeline, and no water leakage is allowed along the threaded connections. Threaded joints must be sealed using PTFE tape, polyamide thread with silicone, or flax. Care must be taken to ensure that excess sealing material does not enter the mechanisms of the check valve, safety relief valve, or shut-off ball valve (4) — as this may cause the device to malfunction.

A special siphon is recommended for connection to the jet breaker outlet (8), which should be connected to the drainage system. The drain hose diameter must be at least 25 mm. Finally, check the installation for correctness and leaks.



7. OPERATING, ADJUSTMENT AND MAINTENANCE

The Boiler Safety Group PF BS 605 must be operated without exceeding the temperature and pressure limits specified in the Section 2 of this document.

Installation, removal, and any repair operations must be carried out only when the system is depressurized. Allow the equipment to cool down to ambient temperature before performing any maintenance work.

It is recommended to turn the handle of the safety valve (7) counterclockwise at least once a month to flush the valve and remove any deposits or accumulated impurities.

It is recommended to check the operation of the check valve (2) at least once a month. Before performing this check, place a container under the safety group to collect any discharged water. To perform the test, close the shut-off ball valve (4) and then unscrew the plug (9). If water begins to drip from the opening (5), this indicates that the check valve is not providing a tight seal. In this case, the valve must be unscrewed and rinsed to remove any contaminants.

It is also recommended to install a mechanical filter on the pipeline upstream of the safety group to protect the device from solid particles.

8. WARRANTY OBLIGATIONS

The warranty period is 12 months from the date of sale to the end user. During the warranty period, the manufacturer guarantees the proper operation of the product and its compliance with safety requirements, provided that the consumer observes the prescribed rules for storage, transportation, installation, operation, and maintenance. The warranty covers all defects resulting from the manufacturer's fault.

The warranty does not cover defects resulting from:

- Violation of storage, transportation, installation, operation, or maintenance conditions;
- Exposure to substances aggressive to the product materials;
- Evidence of mechanical damage;
- Damage caused by fire, natural disasters, or other force majeure circumstances;
- Damage resulting from improper actions by the user;
- Evidence of unauthorized interference with the product design.

The product described in this technical passport is a technically sophisticated device that must be installed by a qualified specialist experienced with this type of equipment.

Installation and commissioning must be carried out by an authorized and certified company.

Profactor Armaturen GmbH reserves the right to make design modifications that do not affect the technical characteristics or functional features of the product.



INTERNATIONAL WARRANTY CARD

NAME OF THE PRODUCT

PRODUCT CODE, SIZE

QUANTITY

SELLER NAME AND ADDRESS

DATE OF PURCHASE

SELLER STAMP

SELLER SIGNATURE

For the warranty term refer to the Warranty obligation clause in the technical manual

FOLD LINE

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In case of any claims to the product quality the following documents should be submitted:

1. Application with customer and product details:

- Name of the customer, actual address and phone number
- Article of the product
- Reason for the claim and photo
- Plumbing system where installed (name, address, phone number)

2. Invoice copy and receipt

3. Warranty card

RETURN/EXCHANGE COMMENTS

DATE

SIGNATURE



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