



PROFACTOR®
DER DEUTSCHE QUALITÄTSSTANDARD

EN

TECHNICAL DATA SHEET AND USER MANUAL



**PRODUCT
CODE**

**PF RVT 665
PF RVT 666**

**THERMOREGULATING MODULE
FOR UNDERFLOOR HEATING**

1. PURPOSE AND SCOPE

The PROFACTOR® PF RVT 665 and PF RVT 666 thermoregulating modules are designed for connecting an individual underfloor heating loop to an existing high-temperature (radiator) heating system. These modules allow operation without the need for a pump-mixing unit or distribution manifold.

The PF RVT 665 module regulates the underfloor heating system by limiting the return line temperature. It is typically used in combination with a radiator located in the same room. In this configuration, the underfloor heating loop provides the main heat output, while the radiator controls the room temperature.

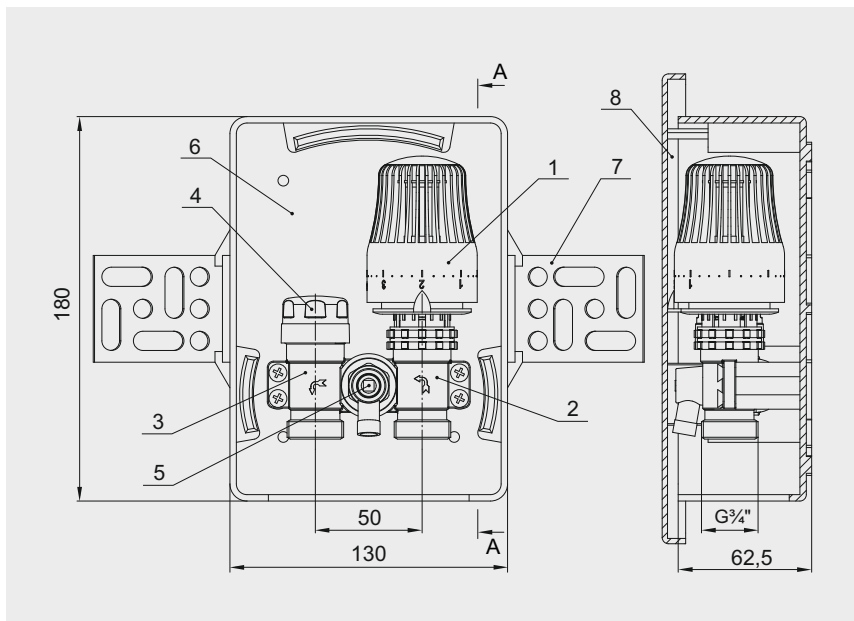
The PF RVT 666 module regulates the underfloor heating system by limiting the return line temperature and additionally allows temperature control based on room air temperature. It can be used without a radiator if the heat output of the underfloor heating system is sufficient.

2. TECHNICAL SPECIFICATIONS

Product Code	PF RVT 665	PF RVT 666
Connection to the system, G	3/4"M	
Maximum operating pressure, bar	10	
Maximum differential pressure, bar	1	
Maximum supply temperature, °C	70	
Return temperature control range, °C	10 – 50	
Room temperature setting range, °C	—	6 – 28
Permissible ambient temperature, °C	5 – 60	
Center-to-center distance of connection pipes, mm	50	
Installation depth, mm	60	
Weight, g	980	1100

3. DESIGN

Thermoregulating module PF RVT 665:



- | | |
|------------------------------|---------------------------|
| 1 – Thermostatic head | 5 – Manual air vent valve |
| 2 – Thermostatic valve | 6 – Mounting box |
| 3 – Balancing (preset) valve | 7 – Bracket |
| 4 – Protective cap | 8 – Cover |

The thermostatic valve (2), balancing (preset) valve (3), and manual air vent valve (5) are mounted in a single H-shaped body. The body material is brass CW617N (DIN EN 12165).

The thermostatic head (1) and thermostatic valve (2) are designed to limit the return line temperature within the range of 10°C to 50°C.

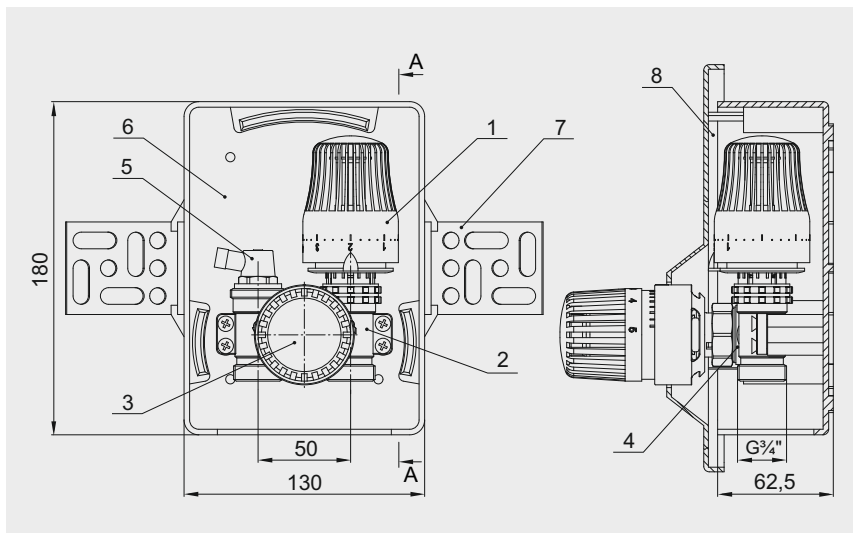
The balancing (preset) valve (3) is used for initial hydraulic balancing of the underfloor heating circuit. The mounting box (6), brackets (7), and cover (8) are made of ABS plastic. The manual air vent valve (5) is equipped with a plastic nozzle for connecting a drain hose.

The package includes a key for the air vent valve, a hex key for the balancing (preset) valve, as well as a set of screws and washers for mounting the module.

The connection of the underfloor heating circuit to the PF RVT 665 module is made using 3/4" Eurocone fittings.

All cylindrical pipe threads are in an accordance with DIN 259 (ISO 228-1).

Thermoregulating module PF RVT 666:



1 – Thermostatic head (range 10°C – 50°C)

2 – Thermostatic valve

3 – Thermostatic head (range 6°C – 28°C)

4 – Thermostatic valve

5 – Manual air vent

6 – Mounting box

7 – Bracket

8 – Cover

The thermostatic valves (2) and (4) and the manual air vent valve (5) are mounted in a single H-shaped body. The body material is brass CW617N (DIN EN 12165).

The thermostatic head (1) and thermostatic valve (2) are designed to limit the return line temperature within the range of 10°C to 50°C.

The thermostatic head (3) and thermostatic valve (4) provide underfloor heating control based on the room air temperature.

The mounting box (6), brackets (7), and cover (8) are made of ABS plastic.

The manual air vent valve (5) is equipped with a plastic nozzle for connecting a drain hose.

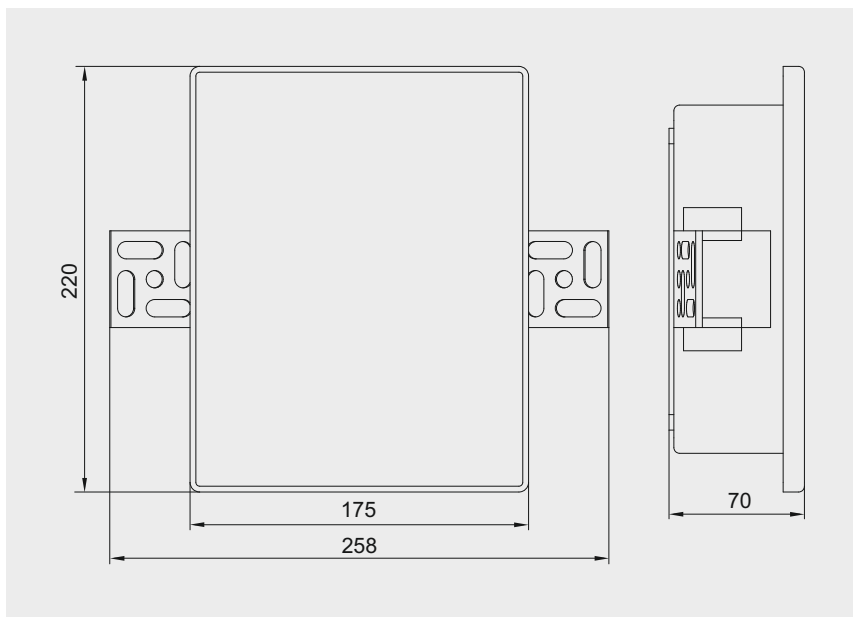
The package includes a key for the air vent, as well as a set of screws and washers for mounting the module.

The connection of the underfloor heating circuit to the PF RVT 666 module is made using 3/4" Eurocone fittings.

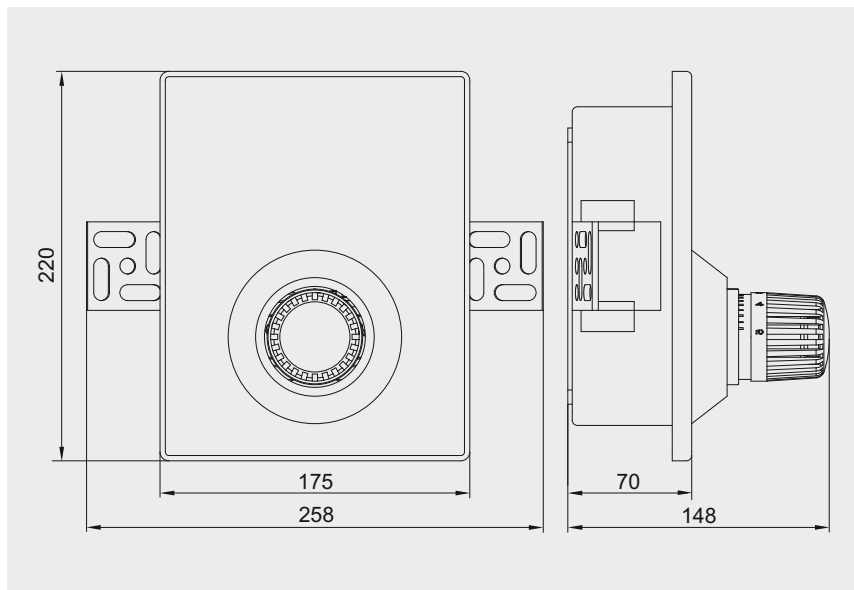
All cylindrical pipe threads are in an accordance with DIN 259 (ISO 228-1).

4. DIMENSIONS

PF RVT 665:



PF RVT 666:



5. PRINCIPLE OF OPERATION

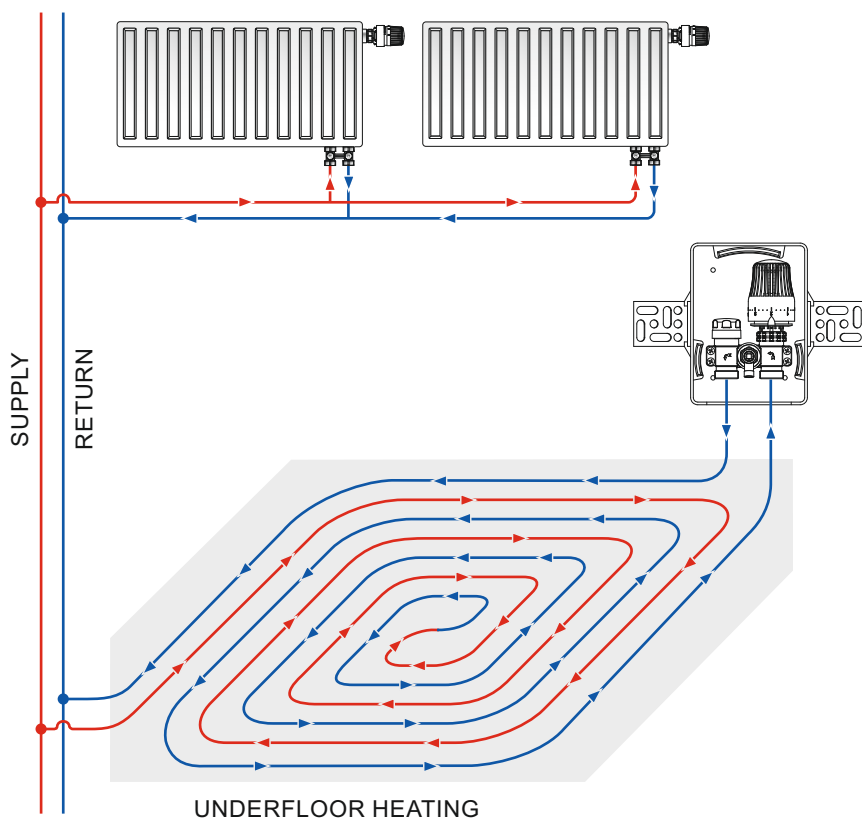
Both PROFACTOR® PF RVT 665 and PF RVT 666 thermoregulating modules are installed at the outlet of the heat transfer medium from the underfloor heating loop. As the medium circulates through the loop, it cools down before returning to the system.

PF RVT 665:

The desired return flow temperature is set on the thermostatic head (1). When this temperature is exceeded, the thermostatic valve (2) closes the flow of the heat transfer medium until its temperature drops to the preset value. Initial hydraulic balancing of the system is performed using the balancing (preset) valve (3).

PF RVT 666:

The desired return flow temperature is set on the thermostatic head (1). When this temperature is exceeded, the thermostatic valve (2) closes the flow of the heat transfer medium until it cools down to the set temperature. The thermostatic head (3) maintains the desired room air temperature by increasing or decreasing the flow of the heat transfer medium through the thermostatic valve (4).

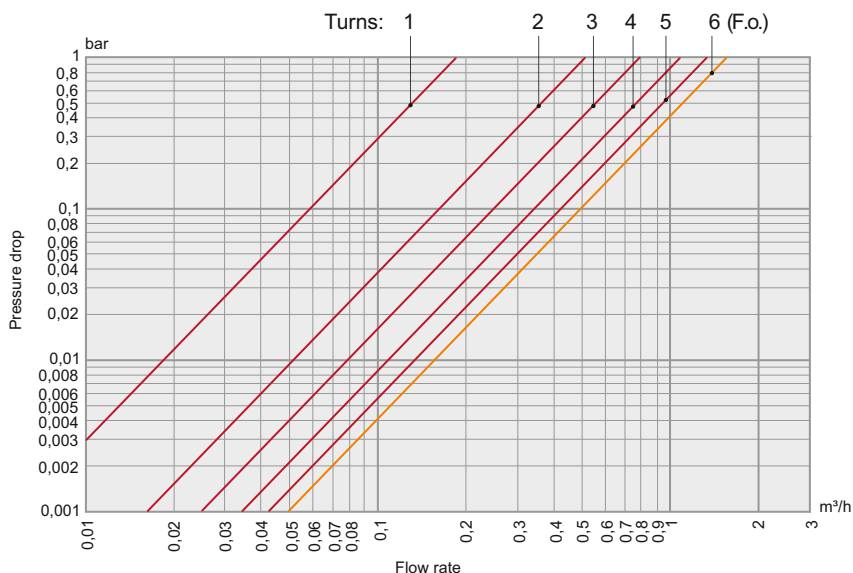


6. HYDRAULIC CHARACTERISTICS

PF RVT 665: flow capacity of the manual balancing (preset) valve (3)

Turns	1	2	3	4	5	6 (Fully open)
Kvs, m ³ /h	0,18	0,51	0,80	1,05	1,30	1,53

PF RVT 665: pressure drop diagram of the manual balancing (preset) valve (3)

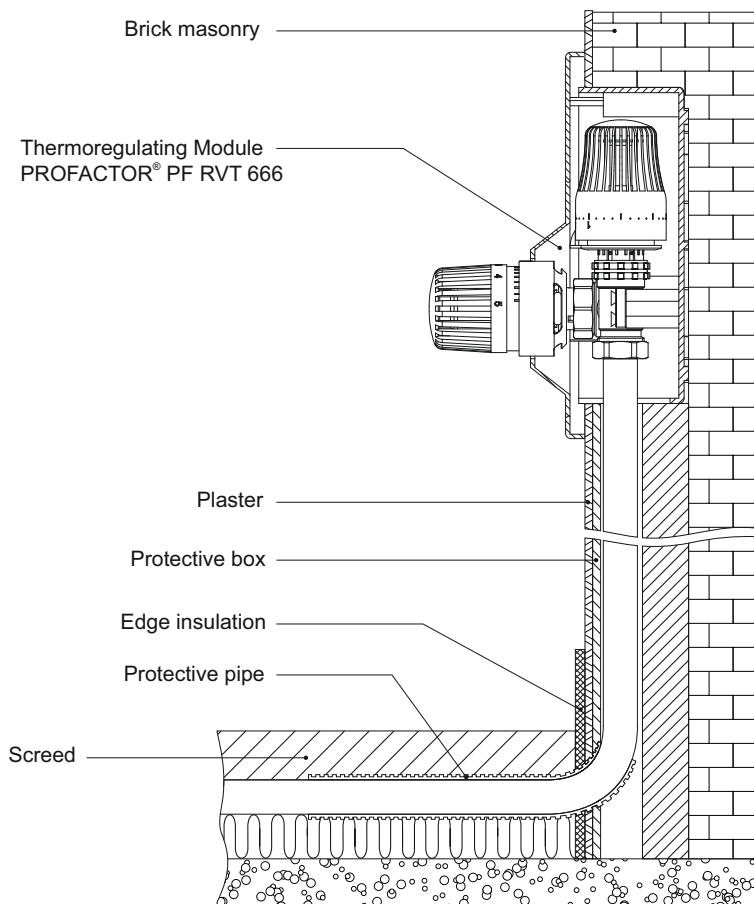


7. INSTALLATION INSTRUCTIONS

The installation location of the PF RVT 665 and PF RVT 666 modules must be selected so that the heat transfer medium first passes through the underfloor heating loop and only then through the thermoregulating module. The lower edge of the module must be positioned at least 20 cm above the finished floor level, and the outer surface must be flush with the finished wall surface. The thickness of plaster or tiles should be taken into account. The mounting box (6) must be installed with its opening facing downward.

When selecting the installation location for the PF RVT 665 and PF RVT 666 modules, it is also important to ensure that the thermostatic head is positioned at a sufficient distance from external heat or cold sources. Therefore, it is not recommended to install the module near radiators, hot pipes, or in draughty areas. Exposure to direct sunlight should also be avoided.

Before installing the mounting box, it is recommended to remove the module body by unscrewing the four screws securing it inside the box. Alignment and fixation of the mounting box are carried out using the angle brackets (7) and screws included in the set. The brackets allow adjustment of the installation depth depending on the thickness of the plaster layer. After alignment, the mounting box is secured into the wall using mortar.



The thermoregulating module must always be installed at the end of the underfloor heating loop. When connecting the pipeline to the regulating module, make sure that the arrows on the module body correspond to the direction of flow of the heat transfer medium. For connecting polymer and multilayer pipes, use Eurocone fittings PROFACTOR® PF MIP 271 or PF MIP 272.

The PROFACTOR® PF RVT 665 and PF RVT 666 thermoregulating modules are designed to control underfloor heating systems in rooms with a heated surface area up to 20 m². Each module is intended for connection to a single underfloor heating loop. If the surface area is larger, the underfloor heating system must be divided into two equal loops. In this case, both loops should be connected to the regulating module using a tee fitting.

When using a pipe with an inner diameter of 12 mm, the length of a single underfloor heating loop must not exceed 100 m. It is recommended to lay the underfloor heating circuit using a spiral (snail) pattern, ensuring that the supply and return pipes alternate within the screed. This ensures even temperature distribution across the floor surface.

Check the correctness of the installation. During system filling, the air vent valves must remain closed. After installation, a pressure test of the system's tightness. This test ensures system integrity and prevents potential leaks or related damage. It is not permitted to perform a hydraulic pressure test with air vents installed or with shut-off valves open in front of them.

Before commissioning the product, tighten the compression nuts of all connectors.

8. SETTING, OPERATION AND MAINTENANCE

The PROFACTOR® PF RVT 665 and PF RVT 666 thermoregulating modules must be operated without exceeding the pressure and temperature limits specified in the technical specifications table (p. 2).

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

To remove air and gases present in the heat transfer medium, the PF RVT 665 and PF RVT 666 modules are equipped with manual air vent valves (5). To release air and gases, turn the air vent valve screw counterclockwise using the special key (S 5) supplied with the module.

It is recommended to rotate the air vent valve nozzle so that the outlet opening is accessible, then connect a drain hose and place a container underneath to collect a small amount of heat transfer fluid. Continue releasing air until the fluid begins to flow steadily from the outlet. After that, tighten the vent screw securely.

Thermoregulating Module PF RVT 665:

First, using the balancing (preset) valve (3), set the required pressure drop in accordance with the calculated flow rate. The degree of valve opening — i.e. the number of turns from the fully closed position required to achieve the specified flow and pressure drop — is determined from the diagram in section 6. To perform the adjustment, remove the protective cap (4), then turn the preset sleeve the required number of turns using the hex key supplied with the module.

The desired maximum return flow temperature is set by turning the handwheel of the thermostatic head (1) until the indicator aligns with the desired value on the scale. Turning the handwheel counterclockwise increases the temperature; turning it clockwise decreases it. The handwheel scale shows the relationship between its markings and the regulated temperature. The temperature values corresponding to the scale markings are approximate.

Correspondence between the scale markings on the thermostatic head (1) and the temperature of the heating medium: 0°C – 10°C, 1°C – 18°C, 2°C – 26°C, 3°C – 34°C, 4°C – 42°C, 5°C – 50°C

Thermoregulating Module PF RVT 666:

The setting of the maximum return flow temperature is carried out in the same way as for the PF RVT 665 module.

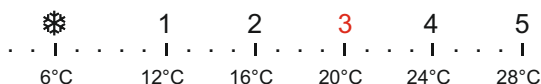
The desired room air temperature is adjusted by turning the handwheel of the thermostatic head (3) until the indicator aligns with the required value on the scale. Turning the handwheel counterclockwise increases the temperature, and turning it clockwise decreases it.

The handwheel scale shows the relationship between its markings and the regulated temperature. The temperature values corresponding to the markings are approximate, since the actual room air temperature may differ from the temperature surrounding the thermostatic element, depending on the installation conditions.

It is recommended to use the setting position "3", corresponding to the standard heating mode, in which the room air temperature is approximately 20°C. Settings of "4" and higher should be avoided if a lower value provides adequate comfort, since increasing the room temperature by 1°C leads to an approximate 6% increase in energy consumption.

The temperature scales are calibrated in accordance with European standards with a proportional band (X_p) = 2°C. This means that the thermostatic valve will fully close when the temperature registered by the sensor exceeds the set temperature on the scale by 2°C.

Correspondence between the scale markings on the thermostatic head (3) and the room air temperature values:



«❄» — Frost protection symbol

The thermostatic head (1) of the PROFACTOR® PF RVT 665 and PF RVT 666 modules allows limiting the adjustment range of the return flow temperature. Two plastic pins are used to either limit or lock the handwheel relative to the indicator flange across the entire scale range.

To lock the setting:

- Remove both plastic pins.
- Set the desired temperature value, making sure that the tip of the indicator is not aligned with a slot on the handwheel, but positioned between two adjacent slots.
- Insert the pins into the slots on both sides of the indicator to fix it in one position.

To limit the upper and lower adjustment limits:

- Remove both plastic pins.
- Turn the handwheel so that the tip of the indicator is positioned within the desired range.
- Insert the pins into the slots opposite the marks of the selected temperature values.

9. WARRANTY OBLIGATIONS

The warranty period is 12 months from the date of sale to the end consumer. Throughout the entire warranty period, the manufacturer guarantees the proper functioning of the product and its compliance with safety requirements, provided that the consumer follows the rules for storage, transportation, installation, operation, and maintenance of the product. The warranty covers all defects arising through 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 materials of the product;
- Signs of mechanical damage;
- Damage caused by fire, natural disasters, or other force majeure circumstances;
- Damage caused by improper actions of the user;
- Evidence of unauthorized interference with the product design.

The product described in this technical manual is a technically complex device that must be installed by a qualified specialist with appropriate experience working 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 changes to the product design that do not affect its technical characteristics or functional features.



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

FOLD LINE

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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