Profactor Armaturen GmbH

EN

PROFACTOR®
DER DEUTSCHE QUALITÄTSSTANDARD

TECHNICAL DATA SHEET AND USER MANUAL

PRODUCT CODE

PF PU 1052
PF PU 1052L

QUICK INSTALLATION PUMPING GROUP WITH A THREE-WAY MIXING VALVE

1. PURPOSE AND SCOPE

The PROFACTOR® PF PU 1052 quick installation pumping group represents a ready assembled set of valves (without a pump) which is intended for forced circulation, control and maintenance of the set temperature of the heat carrier in the heating system with the mixing circuit. The most frequent use is in the underfloor water heating circuit.

The efficiency of such a system is ensured by the principle of the multiple circulation of the heat carrier in the secondary circuit with a partial take-off of the carrier from the high-temperature heat source of the primary circuit and feeding-up the heat carrier from the return line.

The liquids compatible with materials may be applied as a heat carrier: glycol-based solutions. The maximum contents of glycol is up to 40%.

2. TECHNICAL SPECIFICATIONS

Rated size: DN25

Top connection, G: 1"F

Bottom connection, G1: 1½"M

Connection thread for the pump, G2: 1½"F

Pump installation length: 130 mm

Maximum working pressure: 6 bar

Maximum throughput capacity Kvs at Δp=1 bar: 6,3 m³/h

Maximum thermal output Qmax at ΔT=10°C and the heat carrier rate 1 m/s: 24 kW

Maximum thermal output Qmax at ΔT=20°C and the heat carrier rate 1 m/s: 48 kW

Working temperature range: –15°C to +110°C

Maximum environmental temperature: 40°C

Thermometer scale range: from 0°C to 120°C

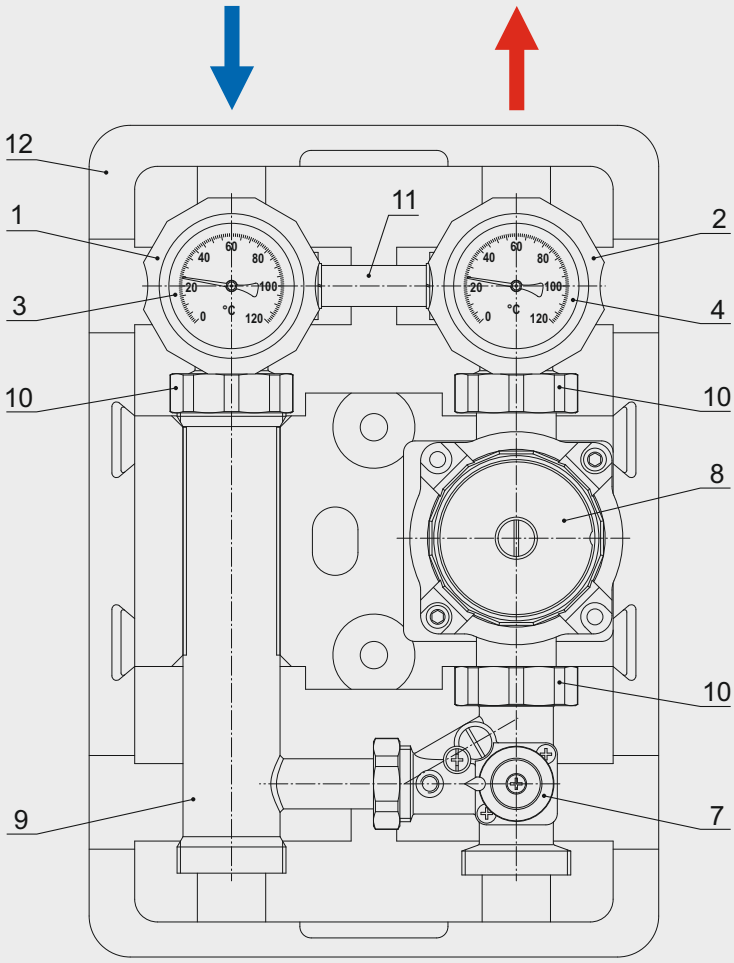
Dimensions when in the insulating jacket (WxHxD): 250x365x250 mm

Weight: 3360 g

PROFACTOR ARMATUREN GMBH
Ruffiniallee 9, c/o Kanzlei Antegra, 82166 Gräfelfing, Germany. Telefon: +49 89 21546092
E-mail: info@pf-armaturen.de, Internet: www.profactor.de

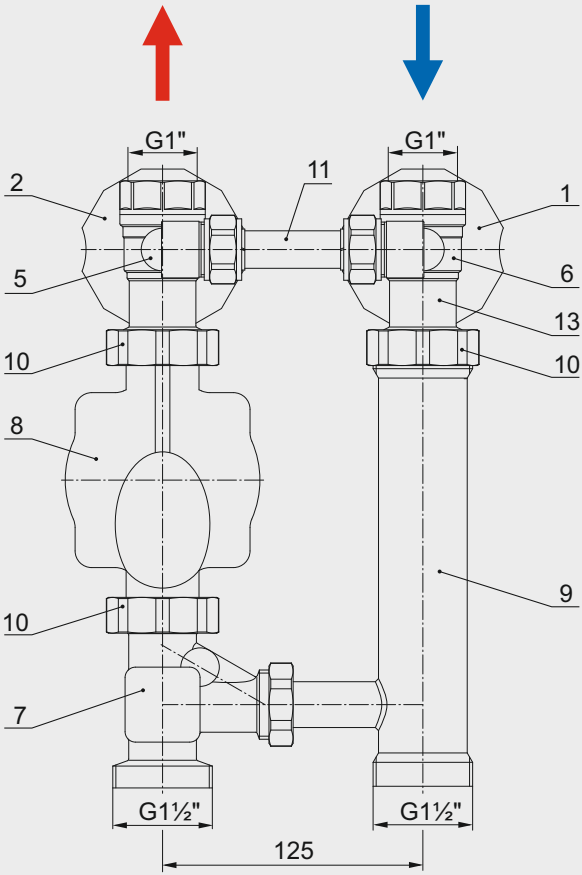
3. DESIGN

Front view in the insulating jacket
(jack cover is not shown)



PROFACTOR ARMATUREN GMBH
Ruffiniallee 9, c/o Kanzlei Antegra, 82166 Gräfelfing, Germany. Telefon: +49 89 21546092
E-mail: info@pf-armaturen.de, Internet: www.profactor.de

Rear view without the insulating jacket



1 – Removable blue handle (for return line)
2 – Removable red handle (for supply line)
3 – Blue thermometer (for return line)
4 – Red thermometer (for supply line)
5 – Shutdown ball valve with a tap for the relief valve to the left
6 – Shutdown ball valve with a tap for the relief valve to the right
7 – Three-way mixing valve with a built-in bypass line
8 – Circulation pump (not included into scope of supply)
9 – Return line sleeve
10 – Cap nut 1½" with a flat O-ring
11 – Blind stabilizing connection
12 – Insulating jacket
13 – Integrated non-return valve (not shown in the drawing)

PROFACTOR ARMATUREN GMBH
Ruffiniallee 9, c/o Kanzlei Antegra, 82166 Gräfelfing, Germany. Telefon: +49 89 21546092
E-mail: info@pf-armaturen.de, Internet: www.profactor.de

Ball valve casings and three-way mixing valve casing, cap nuts, solid stabilizing connection — Brass CW614N (DIN EN 12165-2011)
Return line sleeve (9) — Anti-rust plated carbon steel with black color enamel coating.
Removable handles (1, 2) — Polyamide (PA), reinforced with fiber glass
Return valve (13) — ABS plastic
All the sealed parts — EPDM
All the tube cylindrical threads are in an accordance with (ISO 228-1:2000, DIN 259).

Circulation pump (8) is not included in the scope of supply! PROFACTOR® PF PU 1052 and PF PU 1052L quick installation groups are compatible with pumps with the mounting length of 130 mm and the outer connection thread of 1½".

The PF PU 1052 pumping group supply line is located to the right, and the PF PU 1052L pumping group supply line is located to the left. This type of pumping groups has NO possibility of reversing the supply and return lines.

The PROFACTOR® PF PU 1052 (1052L) pumping group is supplied with the wall fixing set (to be used in case if the group is not installed on the distribution header).

The design of the PROFACTOR® PF PU 1052 (1052L) group provides for the possibility of installing the bypass valve instead of the blind stabilizing connection (11). The bypass valve is not included in the scope of supply.

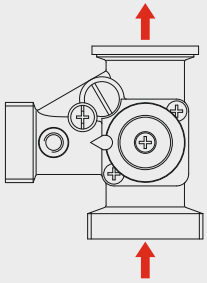
For the automatic feeding up, a respective electric drive should be installed on a three-way mixing valve (7) with connecting it to the control automatics. The electric drive is not included into the scope of supply and is procured separately! The PF PU 1052 (1052L) pumping groups are compatible with the Elodrive electric drives.

The design of the three-way mixing valve (7) provides for a built-in bypass connection allowing to reduce the temperature of the heat carrier in the supply line in case of the insufficient main value of the valve feed-up passage.

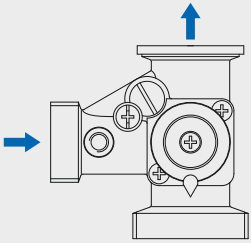
4. THE OPERATING PRINCIPLE OF THE THREE-WAY VALVE

When the heat carrier cools down below the set temperature, the mixing valve shall open the passage for the hot heat carrier from the boiler while mixing it with the cooled heat carrier supplied from the return line.

The valve is open. A full flow of heat carrier from the boiler. The feed-up passage is closed.

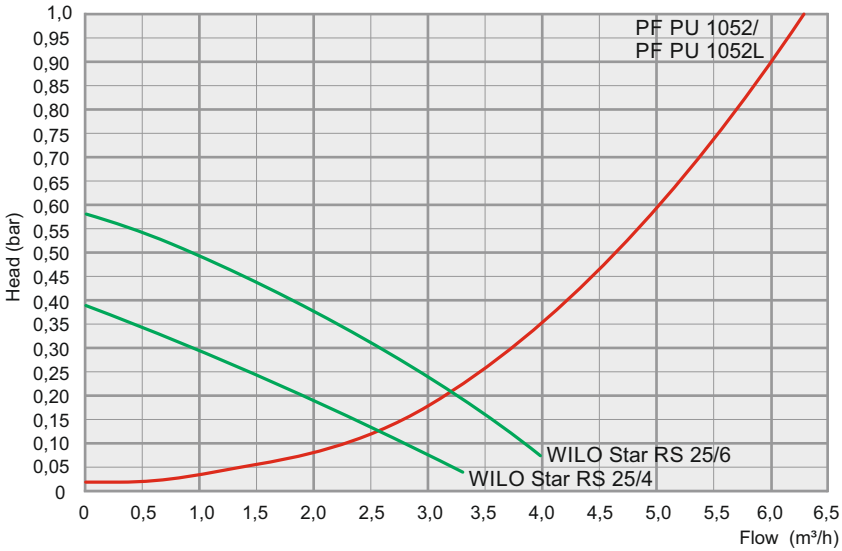


The valve is closed. Circulation in the secondary circuit. The feed-up passage is open.

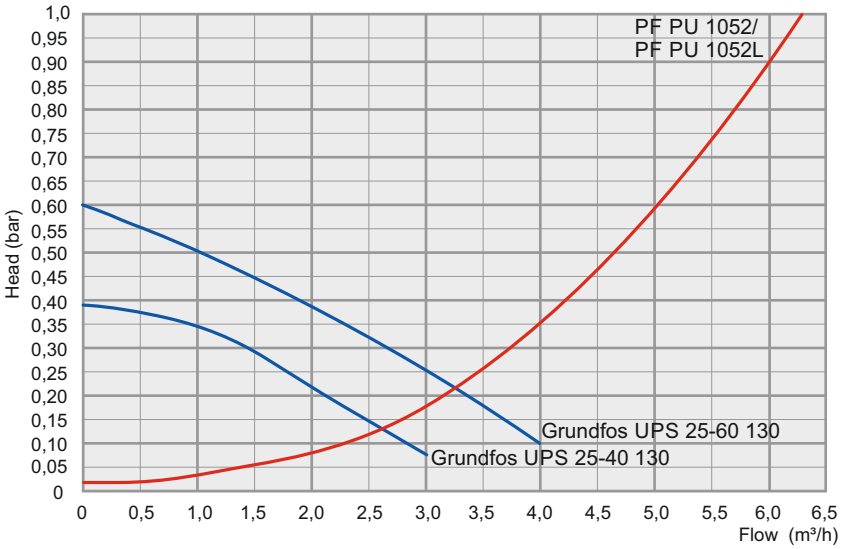


5. HYDRAULIC SPECIFICATIONS

The hydraulic specifications of the PF PU 1052 pumping group as compared to specifications of Wilo pumps:



The hydraulic specifications of the PF PU 1052 pumping group as compared to specifications of Grundfos pumps:



6. REVERSAL OF THE SUPPLY AND RETURN LINE

ATTENTION: The PF PU 1052 (1052L) quick installation pumping groups have NO POSSIBILITY of reversing the supply and the return line!
PF PU 1052 is the supply line from the right
PF PU 1052 is the supply line from the left

7. INSTALLATION INSTRUCTIONS

The PROFACTOR® PF PU 1052 quick installation pumping group may be installed only indoors at the temperature above 0°C! The installation and commissioning should be performed by the specialized installation company only.

The PF PU 1052 pumping group may be installed both separately (wall mounting) and on the distribution header.

Wall mounting:

Mark two openings on the wall with locating them at one vertical line at the distance of 100 mm from each other, then drill those openings and install the expansion bolts (included in the scope of supply) in them. Then screw the rear part of the insulating jacket to the wall using the cap screws (also included in the scope of supply) and insert the pumping group in it. Then connect the piping from the boiler to it.

Installation on the distribution header:

The distribution header should be horizontally located on the wall! The pumping group shall be installed on the header using the cap screws of the header with flat O-rings.

The pump with the base length of 130 mm and the outer thread of 1½" on the counter-flanges should be installed on the pump seat. The connection is made by cap screws. When installing the pump, special flat ring seals should be provided for sealing. The terminal box of the pump should be located in the lower position. The pump flow should be directed from the bottom upwards.

Avoid mechanical damage to the pumping group and contaminating it with building mixtures. The pumping group should not be subjected to loads from the pipeline (bending, compression, stretching, twisting, distortion, vibration, connection pipe misalignment, fixture tightening imbalance). If necessary, supports or expansion joints shall be provided to reduce the load caused on the product by the pipeline. Misalignment of pipelines being connected should not exceed 3 mm at length below 1 m plus 1 mm per each subsequent meter.

The heating circuit pipelines should be connected to the ball valves (5) and (6) using the PTFE-tape (polytetrafluorethylene, a fluoroplastic sealing material), nylon thread with silicone or linen as a sealing material. Furthermore, avoid the residues of this material getting to the shutoff mechanisms of the valves. This may result in the loss of operability of the valves.

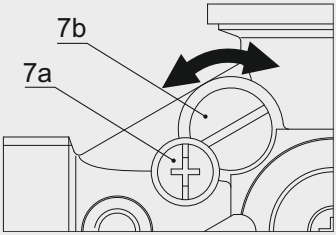
Check the installation. After the installation, perform the pressure testing of the system tightness. This test will protect the system against leakage and damages resulting from it. Before testing, make sure that all the cap nuts are tightened.

8. OPERATION AND MAINTENANCE

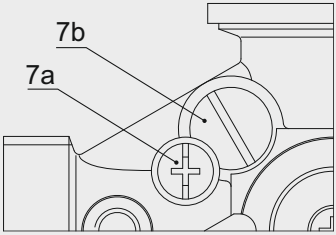
Avoid operation of the PROFACTOR® PF PU 1052 quick installation pumping group at the temperature and pressure above the values shown in p. 2.

Installation, disassembly of the product as well as any repair operations should be performed at no pressure in the system. Let the equipment cool down to the environmental temperature. Before switching on the pump, open the closing ball valves, fill the system with the heat carrier while completely displacing the air. When operating the pumping group, observe the system for the absence of leakages and noise in the pump.

To change the location of the three-way mixing valve bypass (7), a stop screw (7a) should be loosened with turning the bypass shaft (7b) using the flathead screwdriver. When the bypass is open, the shaft spline is parallel to the heat carrier flow channel, when closed — it is perpendicular to it.



The bypass is open



The bypass is closed

If necessary, the thermometers (3) and (4) may be replaced without the system interruption. To replace the thermometer, remove the plastic handle, in which it is installed, by pulling it along the axis. The thermometer is removed together with the handle. When installing, replace the handle first, and then the thermometer.

9. WARRANTY OBLIGATIONS

The warranty period is 24 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.

PROFACTOR ARMATUREN GMBH
Ruffiniallee 9, c/o Kanzlei Antegra, 82166 Gräfelfing, Germany. Telefon: +49 89 21546092
E-mail: info@pf-armaturen.de, Internet: www.profactor.de

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 detailes:
- 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** _____

Profactor Armaturen GmbH

Ruffiniallee 9, c/o Kanzlei Antegra, 82166 Gräfelfing, Germany;
Tel.: +49 89 21546092; info@pf-armaturen.de; www.profactor.de