

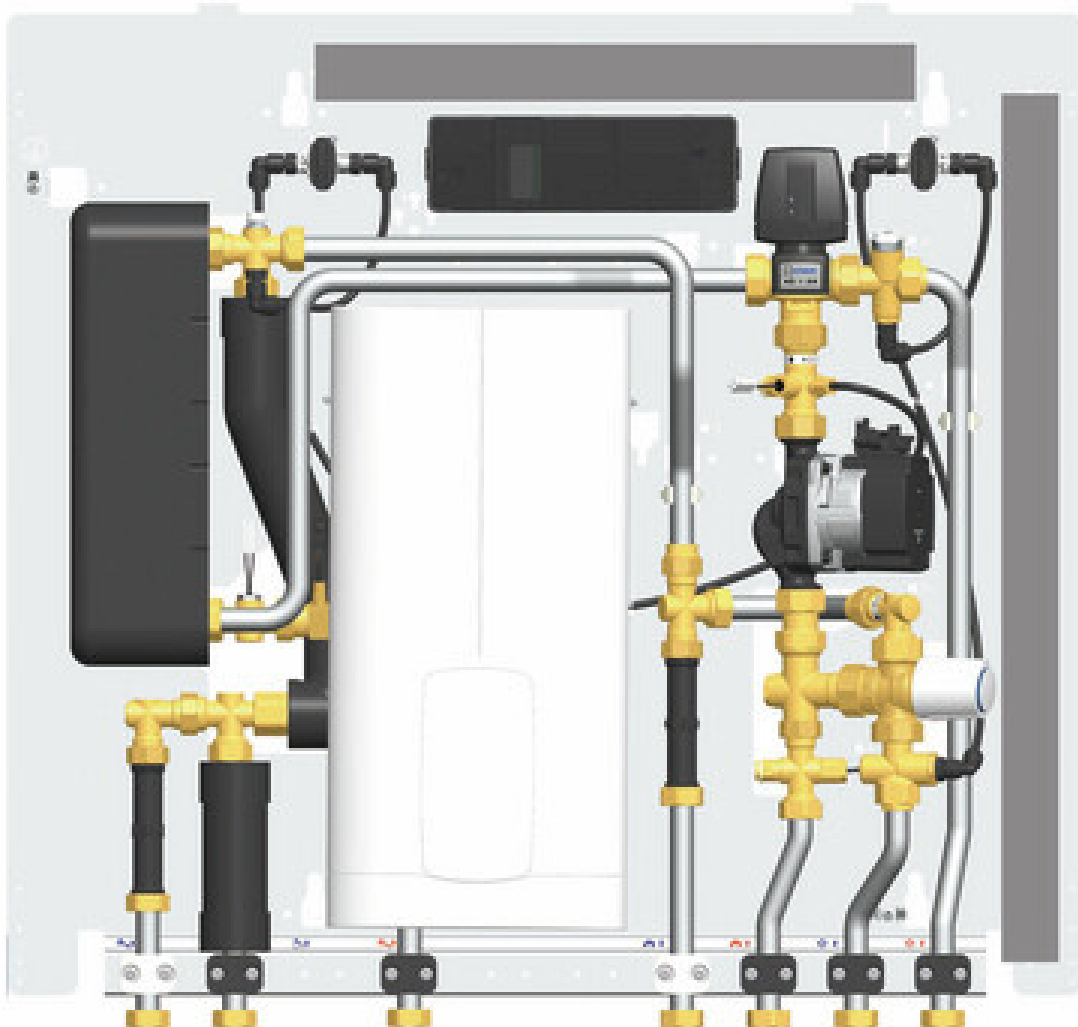


Installation and operation instructions

HomeBloC® Digital

WR / WF / WRF / WRF-E

Fully electronic



HomeBloC® Digital WF with instantaneous water heater

Table of Contents

1	General Information.....	4
1.1	Scope of these instructions.....	4
1.2	Designated use.....	5
1.3	Transport.....	5
1.4	Storage.....	6
2	Safety instructions.....	7
3	Product description.....	10
3.1	Equipment.....	10
3.2	Function.....	12
4	Overview of the main components in the HomeBloC®	13
4.1	HomeBloC® controller HBC.....	13
4.2	Room control unit.....	14
4.3	Fittings for cold water meter and heat meter.....	14
4.4	Mixing valve circuit / injection-type circuit (type WF / WRF-E / WRF).....	15
4.5	Venting.....	16
4.6	Shutoff valves.....	16
4.7	Floor distribution manifold (optional, type WF / WRF-E / WRF).....	17
4.8	Wall- or flush-mounted cabinet (optional).....	17
4.9	Drinking water circulation (optional, type WR / WF).....	18
5	Mounting and installation [specialist].....	19
5.1	Assembly preparations.....	20
5.2	Preparing the pipework.....	21
5.3	Mounting the flat station without floor distribution manifold.....	22
5.4	Mounting the flat station with floor distribution manifold.....	24
5.5	Electrical installation.....	26
5.5.1	Electrical installation of the room control unit.....	26
5.5.2	Electrical installation on the floor distribution manifold.....	27
5.5.3	Electrical installation on the instantaneous water heater.....	28
5.5.4	Electrical installation of the HomeBloC® Digital.....	28

6	Commissioning [specialist].....	28
6.1	Preparation for commissioning.....	28
6.1.1	Checking the station before commissioning.....	28
6.1.2	Flushing and filling.....	29
6.2	Commissioning the flat station.....	30
6.3	Handing over the flat station to the operator.....	34
7	Decommissioning the flat station [specialist].....	35
7.1	General procedure for shutting down / decommissioning.....	35
7.2	Emergency shutdown.....	35
7.3	Installing and removing options / preparation for maintenance work.....	35
7.4	Long-term shutdown of the flat station (longer than 1 week).....	36
7.5	Recommissioning after shutdown.....	36
8	Cleaning and maintenance [specialist].....	37
9	Troubleshooting [specialist].....	39
10	Scope of delivery [specialist].....	43
11	Technical data.....	44
11.1	Hydraulic schemes.....	45
12	Disposal.....	50
13	Acceptance / commissioning protocol [specialist].....	51

1 General Information



Carefully read these instructions before installation and commissioning. Save these instructions in the vicinity of the installation for future reference.

These instructions enable you to use the PAW HomeBloC® flat station safely and efficiently. The instructions are part of the product and must be kept in the immediate vicinity of the HomeBloC® and accessible at all times.

Personnel must have carefully read and understood these instructions before starting any work. The basic prerequisite for safe working is compliance with all the safety and handling instructions in this manual. In addition, the local health and safety regulations and general safety regulations for the area of use of the flat station apply.

The flat station complies with the relevant directives and is therefore labelled with the CE mark. The Declaration of Conformity is available upon request, please contact the manufacturer.

1.1 Scope of these instructions

These instructions describe the installation, commissioning, function and operation of the PAW flat station HomeBloC® Digital in the versions WR, WF, WRF-E and WR + DLE (instantaneous water heater), WF + DLE and WRF + DLE.

The installation and operation of the accessory components ball valve rail, thermal or pressure-controlled heat retention, floor distribution manifold and the wall-mounted and flush-mounted cabinet are described separately in the respective instructions.

For other components of the heating installation, please follow the instructions of the respective manufacturer. The chapters marked with [specialist] are intended for specialists only.

These products are covered by Article 4(3) of the Pressure Equipment Directive 2014/68/EU and are designed and manufactured in accordance with good engineering practice.

1 General Information

1.2 Designated use

The product may only be used taking into consideration these instructions and the technical limit values indicated in these instructions.

It is intended for domestic hot water preparation and for heating living spaces, for example. Use of the product contrary to its intended purpose, e.g. for cooling applications, unauthorised modifications and the installation of unauthorised components can damage the product and endanger safety and will result in the exclusion of any liability claims.

Only use PAW accessories with the product.

1.3 Transport

Transport the product in its original packaging, impact and shock-free, to protect it from dust and dirt.

Check the product immediately upon receipt for completeness and transport damage. In the event of externally recognisable transport damage, proceed as follows:

- Do not accept the delivery or only accept it with reservations.
- Note the extent of the damage on the transport documents or on the carrier's delivery note.
- Initiate a complaint.



WARNING

Risk of back damage due to heavy loads!

The product weighs up to 35 kg. Improper transport can result in long-term damage.

- ▶ Always lift the product with two people.
- ▶ Use suitable lifting and transport equipment such as a forklift truck or sack truck.



CAUTION

Risk of crushing due to falling loads!

There is a risk of body parts being crushed if the product falls.

- ▶ Wear safety shoes and protective gloves.
- ▶ Ensure that the product is always properly secured during transport with transport aids.
- ▶ Ensure that the transport route is clear of people and obstacles.

NOTICE

Material damage due to improper transport!

Packages can fall or topple over if transported incorrectly. This can result in considerable material damage.

- ▶ Take care when unloading the packages on delivery and during internal transport and observe the symbols and instructions on the packaging.
- ▶ Use suitable lifting and transport equipment such as a sack truck or forklift truck and secure the package properly.
- ▶ Do not remove the packaging until shortly before installation.

1.4 Storage

Store the product in its original packaging to protect it from dust and dirt and secure it against damage.

Observe the following storage conditions:

- ambient temperature -20 °C to +70 °C
- dry
- dust-free
- inaccessible to unauthorised persons

If you unpack the product but have not yet installed it, cover it to protect it against dust and dirt.

2 Safety instructions

The installation and commissioning as well as the connection of electrical components require technical knowledge commensurate with a recognised vocational qualification as a fitter for plumbing, heating and air conditioning technology, or a profession requiring a comparable level of knowledge [specialist].

The following must be observed during installation and commissioning:

- relevant local and national regulations
- accident prevention regulations of the professional association
- instructions and safety instructions mentioned in these instructions

WARNING



Risk to life and limb due to electric shock!

- ▶ Before carrying out any electrical work, disconnect the mains plug or remove the fuse and secure it against unintentional reinsertion!
- ▶ Only connect the power supply of the controller to the power supply of the building after all installation, flushing and filling work has been completed. An unintentional start of the motors is thus avoided.
- ▶ De-energise all poles of the station before carrying out any work.
- ▶ The electrical connection must be carried out by a qualified electrician.
- ▶ Connect the station(s) to an earthing system in accordance with the applicable laws. To ensure that all pipework in the station is earthed, the original PAW ball valve rail must be used!

WARNING



Risk to life and limb due to hot fluids!

Depending on the conditions, temperatures of about 100 °C can develop in the product and escape. There is a risk of burns!

- ▶ When carrying out any service, maintenance or repair work, ensure that you are equipped with the necessary protective equipment (gloves / goggles).
- ▶ Before carrying out service, maintenance or repair work, take the product out of operation and wait until it has cooled down.
- ▶ Provide a suitable mixing valve as scalding protection at any existing tapping points; set the mixing valve to the maximum hot water temperature.

 WARNING

Risk of injury due to pipes under pressure!

There can be pressures up to 10 bar within the product. Inappropriate unscrewing of the product / the pipes can cause severe injuries.

- ▶ Only have pipes screwed or opened by a heating engineer.
- ▶ Only have options installed or removed by a heating engineer.
- ▶ Before opening, installing or repairing the product or pipes, always close the pipe section and depressurise the product.
- ▶ If a thread connection does not open, this can be a sign that the pipe is still under pressure. Make sure that the pipe section is depressurised.

 WARNING
Danger in case of misuse!

Misuse of the product can lead to dangerous situations.

- ▶ Never connect the product directly to a heat generator (e.g. boiler or solar circuit).
- ▶ Never use the product in any of the following areas:
 - outdoor areas
 - damp rooms
 - rooms in which the use of electrical appliances is prohibited
 - rooms at risk of frost
- ▶ In the event of water damage, take the product out of operation immediately.

 CAUTION

Personal injury and damage to property!

The product must only be used in heating circuits filled with heating water according to VDI 2035 / Ö-Norm H 5195-1.

- ▶ Only connect drinking water to the connections provided for this purpose.

NOTICE

The station controller and the remote control for the instantaneous water heater have a lithium button cell battery. No liability is accepted for damage caused by leaking batteries. The use of rechargeable batteries and accumulators is not permitted. Non-rechargeable batteries must not be recharged. Please refer to the separate instructions for the controller and instantaneous water heater.

2 Safety instructions



CAUTION



Risk of injury due to hot surfaces!

Surfaces of components can become very hot during operation.

Skin contact with hot surfaces causes severe skin burns.

- ▶ When carrying out any work nearby hot surfaces, in principle wear heat-resistant protective clothes and safety gloves.
- ▶ Before carrying out any work, make sure that all surfaces are cooled down to their ambient temperature.

NOTICE

Material damage due to mineral oils!

Mineral oil products cause lasting damage to seals made of EPDM, whereby the sealant properties are lost. We do not assume liability nor provide warranty for damage to property resulting from sealants damaged in this way.

- ▶ It is imperative to prevent the EPDM sealing elements from making contact with substances containing mineral oils.
- ▶ Use a silicone- or polyalkylene-based lubricant free of mineral oil such as Unisilikon L250L and Syntheso Glep 1 from Klüber or a silicone spray.

Personal protective equipment

Personnel must wear personal protective equipment when working on and with the product.



Protective gloves



Safety goggles



Safety shoes

Tools and aids

• Means for screwing

Depending on the type of installation and floor conditions, suitable drill bits, screws and other aids must be selected. These tools are not included in the scope of delivery and must be provided by the customer.

• Insulation material

During installation, the customer must ensure that the base plate or installation frame is soundproofed using suitable insulating material, e.g. insulating mats or multi-component foam. The insulating material is not part of the scope of delivery. It is optionally available and must be provided by the customer.

• Cloth

• Fork spanner

• Sack truck

• Spirit level

3 Product description

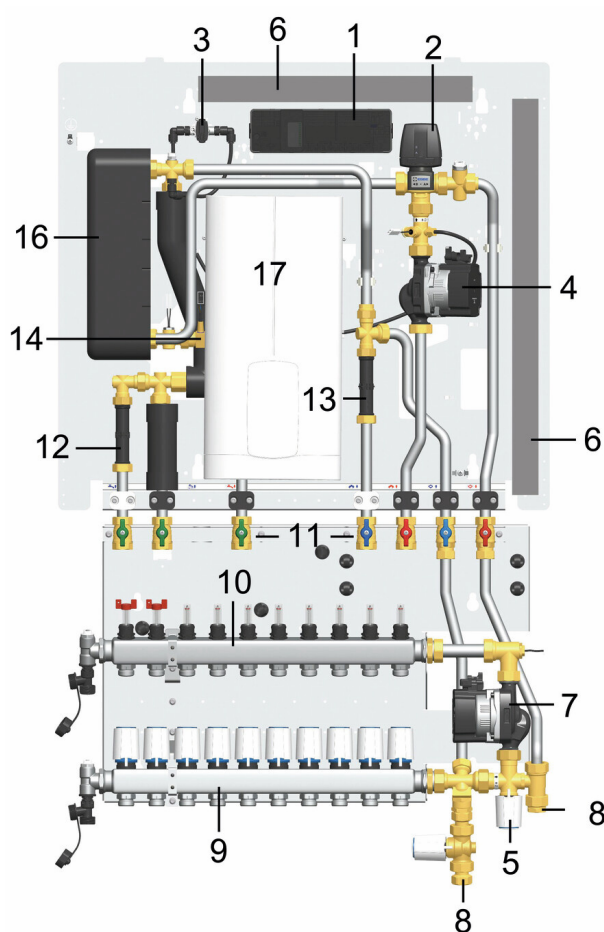
The HomeBloC® is a pre-assembled group of fittings for decentralised DHW heating using the flow-through principle and for supplying up to two heating circuits.

Depending on the equipment and performance selected, it can be used to supply a flat or a floor.

A heat flow meter (not included in the scope of delivery) can be used in the flat station to easily record the heat quantity used. The cold water meter (not included in the scope of delivery) can also be installed at a central point in the flat station.

The HomeBloC® is installed in either a wall-mounted or flush-mounted cabinet.

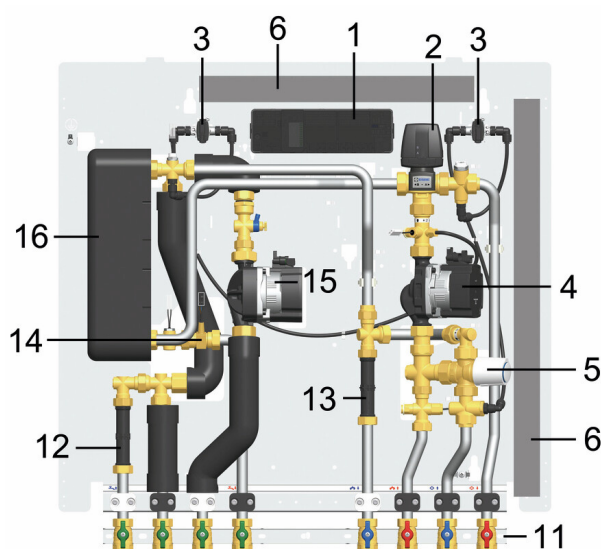
3.1 Equipment



- 1 HomeBloC® controller
- 2 Switch valve, fast-running
- 3 Differential pressure sensor(s)
- 4 Primary pump (differential pressure controlled)
- 5 Mixing unit with thermal drive
- 6 Wiring channel
- 7 Secondary pump (WRF+DLE: self-regulating, WRF-E: differential pressure-controlled)
- 8 Radiator connection
- 9 Return collector radiant floor heating
- 10 Flow distribution manifold radiant floor heating
- 11 Ball valve rail
- 12 Fitting for cold water meter
- 13 Fitting for heat flowmeter
- 14 Flow rate sensor
- 16 Heat exchanger with insulation
- 17 Electronic instantaneous water heater (DLE)

Example: Type WRF with instantaneous water heater and floor distribution manifold 10-fold

3 Product description



- 1 HomeBloC® controller
- 2 Switch valve, fast-running
- 3 Differential pressure sensor(s)
- 4 Primary pump (differential pressure controlled)
- 5 Mixing unit with thermal drive
- 6 Wiring channel
- 11 Ball valve rail
- 12 Fitting for cold water meter
- 13 Fitting for heat flowmeter
- 14 Flow rate sensor
- 15 Circulation pump
- 16 Heat exchanger with insulation

Example: Type WF with circulation and ball valve rail

Symbols of the connections from left to right:

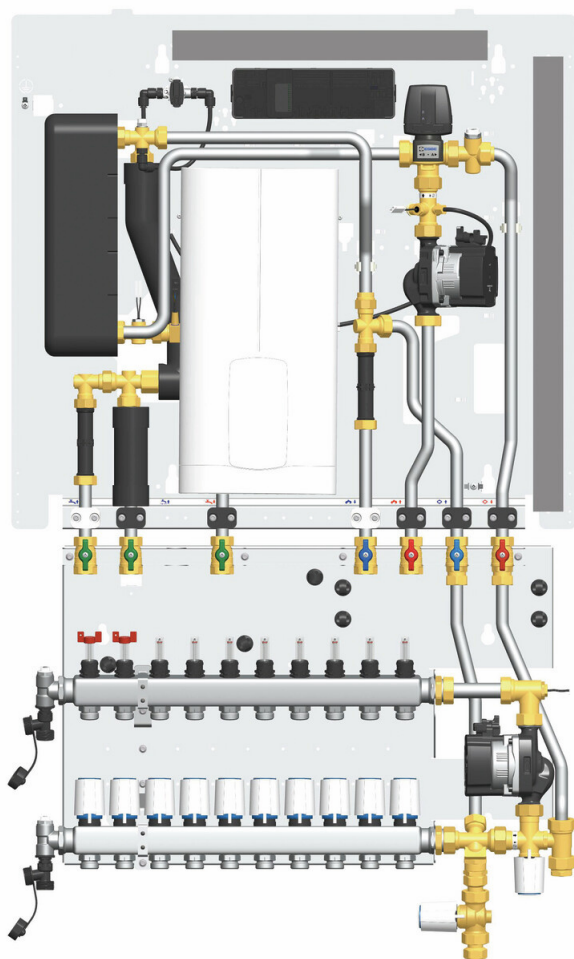
Inlet DCW	Outlet DCW	Inlet / RET circulation*	Outlet DHW	RET heat generator	FL heat generator	RET heating circuit**	FL heating circuit**

Inlet DCW	Domestic cold water from the supply network (inlet)
Outlet DCW	Domestic cold water to the flat distribution
Inlet DW circulation*	Domestic hot water, return from the flat distribution (optional)
Outlet DHW	Domestic hot water to the flat distribution
RET heat generator	Return (cold) to the heat supply
FL heat generator	Flow (hot) from the heat supply
RET heating circuit**	Return (cold) from the flat heating circuit
FL heating circuit**	Flow (hot) to the flat heating circuit

* Circulation is not possible for stations with instantaneous water heater and for the station type WRF-E.

** Connections either for radiator or floor distribution manifold, direct connections for a second heating circuit are only available for type WRF-E.

3.2 Function



The PAW HomeBloC® Digital flat stations are designed for optimum heat distribution. The differential pressure control enables energy-efficient operation, with hydraulic system balancing being carried out directly. Optimum and energy-efficient domestic hot water heating is also guaranteed with priority switching (heating operation is interrupted by a switch valve during withdrawal).

Example: Type WRF with instantaneous water heater and floor distribution manifold 10-fold

The combination with a radiant floor heating circuit system is easily possible. The two assemblies can be positioned one above the other for this purpose.

Application range:

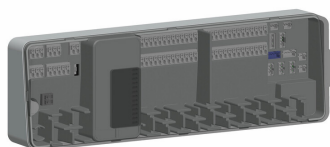
- Flats / floors with a heat requirement of up to 9 kW (at $\Delta T = 10 \text{ K}$)
- Flats / floors with a hot water requirement of up to 22 l/min

4 Overview of the main components in the HomeBloC®

The flat station can be customised to any individual requirement. The following list describes the possible main components (without guarantee of completeness).

Not all components have to be used in the station you have - the station has been configured and equipped in accordance with the order details and requirements. If you have any questions about the product, please contact our service department (stating the serial number, see type plate on the mounting plate).

4.1 HomeBloC® controller HBC



An HBC is installed in every HomeBloC® Digital flat station. This HBC ensures, with the use of differential pressure sensors, pumps and switch valve for

- the hydraulic balancing of the flat station
- quick drinking water heating to the set nominal temperature
- the efficient operation of the radiator and radiant floor heating
- the line heating for heated drinking water at all times (activation / deactivation in the controller)



Instructions

The HBC is prewired, preassembled and completely preset ready for operation.

DHW heating is always prioritised over heating operation by means of a switch valve.



PC software

HomeBloC® Digital

[https://tinyurl.com/PAW-](https://tinyurl.com/PAW-HomeBloC-Digital)

HomeBloC-Digital

With the help of the differential pressure-controlled primary pump and up to two differential pressure sensors, the hydraulic balancing is guaranteed at all times during heating operation. Please note that manual emergency operation of the pump is only possible with the help of the HBC.

By setting various parameters and time programmes, the controller can be adapted to personal needs and habits. Please refer to the separate controller instructions and the instructions for the HomeBloC® Digital PC software.

4.2 Room control unit



The RCD 40 room control unit is available for operating and setting the HBC. It is supplied once with the station and can be ordered optionally for additional zones. The RCD 40 is connected to the HBC by cable and also serves as a room thermostat. It can be used to set the nominal hot water temperature or the nominal room temperature, for example.

It is possible to select a master room unit that controls all other temperature zones. Please refer to the chapter *Commissioning* and the separate instructions for the room control unit.



Instructions



HeatNext Android

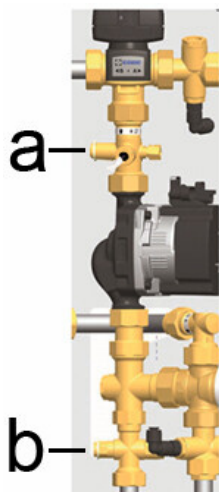


HeatNext iOS

4.3 Fittings for cold water meter and heat meter



Standard counters can be used instead of the fittings. The fittings are 110 mm long, with 2 x G $\frac{3}{4}$ " ext. thread flat-sealing.



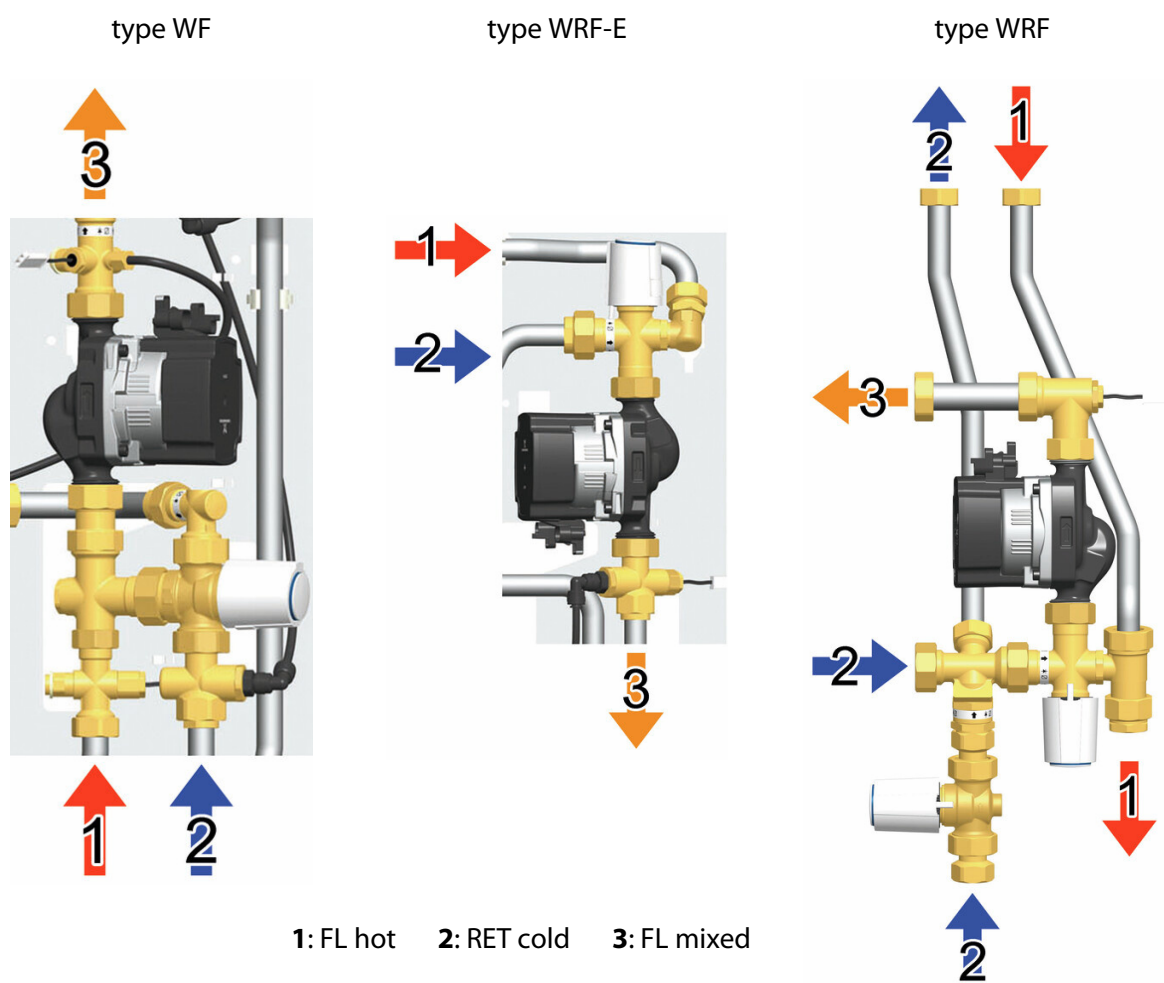
To record the heat quantity, the return temperature in the housing of the heat meter and the flow temperature must be measured.

The connection option / measuring point for the flow sensor is located at

- a** type WR and WRF / WRF-E: above the primary pump
- b** type WF: below the mixing valve circuit

and is prepared for standard M10 x 28.5 mm sensors.

4.4 Mixing valve circuit / injection-type circuit (type WF / WRF-E / WRF)

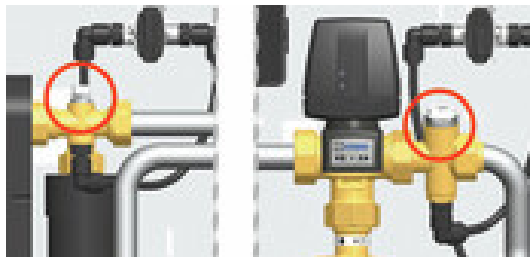


A mixing valve circuit or an injection-type circuit is installed in the flat stations type WF, WRF-E and WRF+DLE in order to regulate to a nominal temperature (radiant heating), which is formed by setting in the room control unit. This is always regulated to the highest temperature required by the heating zones.

The circuits use a thermal actuator and a temperature sensor to regulate a nominal temperature. The HBC is specially designed to control this actuator.

In the station type WRF+DLE, the injection-type circuit is integrated in the floor distribution manifold; the connections to the radiator are located at the injection-type circuit. The floor distribution manifold with injection-type circuit is absolutely necessary. Please observe the separate instructions.

4.5 Venting



The HomeBloC® is equipped with vent valves at the highest point in the heating circuit (primary). The vent valves are used for venting when filling or venting when draining the station and the connected piping network.

4.6 Shutoff valves



The ball valves are arranged on a mounting rail and are easy to assign to the pipes thanks to colour coding. The green ball valves are DVGW (German association for gas and water) approved.

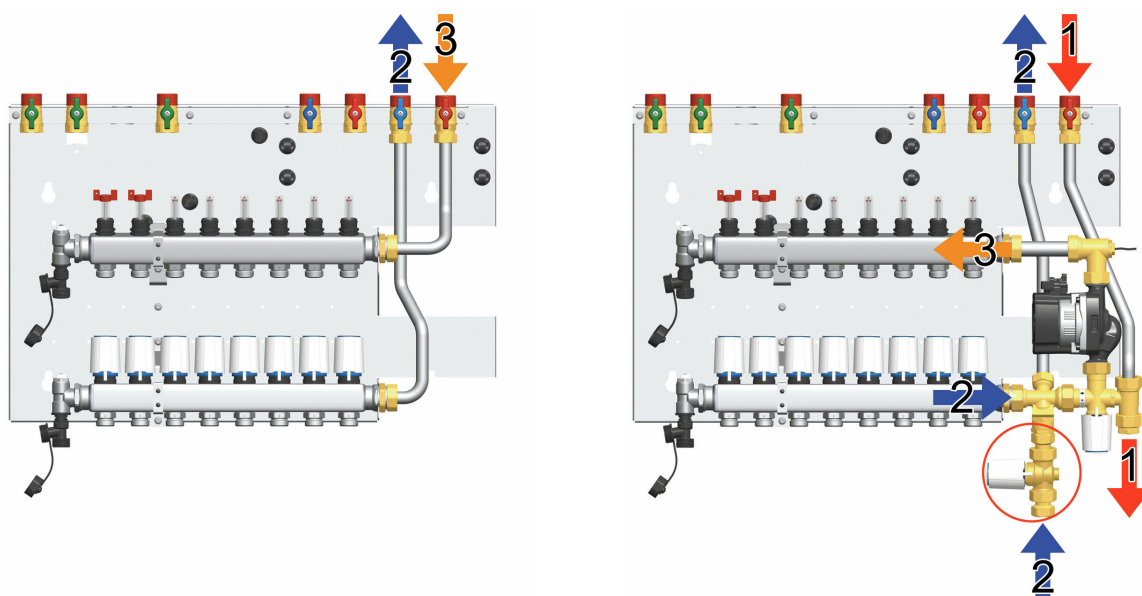
The rail is pre-assembled on the floor distribution manifold or can be purchased separately.

Note: The HomeBloC® Digital may only be used with the original PAW ball valve rail!

The ball valves have a $\frac{3}{4}$ " internal thread for connecting the supply or outgoing pipework and a $\frac{3}{4}$ " external thread for connecting the station.

4 Overview of the main components in the HomeBloC®

4.7 Floor distribution manifold (optional, type WF / WRF-E / WRF)



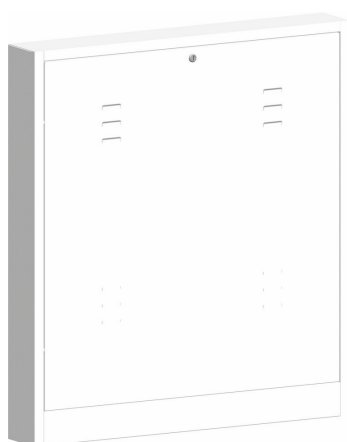
Floor distribution manifold for type WF / WRF-E Floor distribution manifold for type WRF+DLE*

1: FL hot 2: RET cold 3: FL mixed

*To extend the WRF + DLE flat station by a mixed low-temperature heating circuit, the PAW floor distribution manifold with injection-type circuit is absolutely essential!

The floor distribution manifold is not included in the scope of delivery and can be ordered as an option. Please observe the separate instructions.

4.8 Wall- or flush-mounted cabinet (optional)

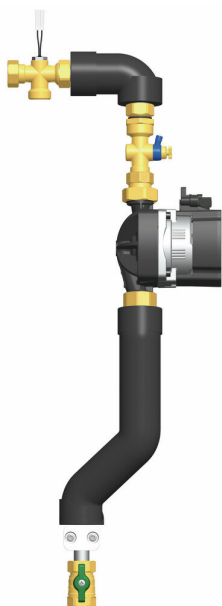


The product is supplied on a mounting plate and can be installed in a flush-mounted or wall-mounted cabinet prepared for this purpose.

The cabinet is powder-coated and contains a rotary lock for locking the cover. The flush-mounted cabinet variant is also height-adjustable and ideal for use with partition walls.

The wall-mounted or flush-mounted cabinet is not included in the scope of delivery and can be ordered as an option.

4.9 Drinking water circulation (optional, type WR / WF)



The flat station can be retrofitted with a drinking water circulation system. It is required if the connected domestic hot water pipe network has a capacity of more than 3 litres.

The drinking water circulation manifold is not included in the scope of delivery and can be ordered as an option. Please observe the separate instructions.

5 Mounting and installation [specialist]

The product can be installed in a flush-mounted cabinet or in a wall-mounted cabinet. We recommend using the cabinets offered by PAW, as these are prepared for simple, quick and precise installation. For installation, please refer to the relevant chapter or the separate installation instructions for the selected cabinet.



WARNING

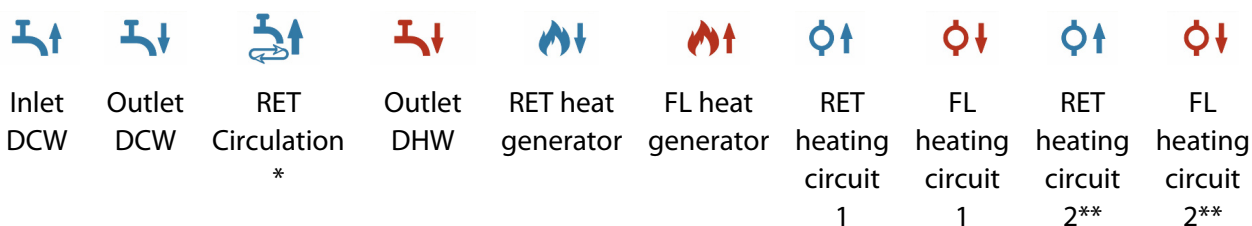
Damage to property!

The installation site must be dry, stable, frost-proof and protected against ultraviolet radiation in order to prevent material damage of the installation. If the load-bearing capacity of the installation location or the means of fastening are not designed for the weight of the product, there is a risk of crushing and material damage due to the product falling.

- ▶ Ensure that the load-bearing capacity of the wall is sufficient.
- ▶ Ensure that the fasteners (wall plugs and screws) are designed for the weight of the product or the nature of the surface. If necessary, other fasteners (depending on the local conditions) must be procured and used on site.
- ▶ Use appropriate tools during mounting and installation. Inappropriate tools significantly increase the risk of injury.

5.1 Assembly preparations

- Check that the packaging is undamaged! Damaged products in opened packaging can no longer be claimed!
- The cabinets must be removed from the packaging and dismantled (removal of the door, front frame and plinth panel). We recommend wearing clean gloves during the disassembly and the assembly the painted sheet metal parts!
- Return the disassembled parts to the packaging / box so that the parts are protected from damage.
- Store the packaging / box in such a way that it is protected from damage and is not disposed of prematurely.
- Check the size of the required installation space. If necessary, arrange for the installation space to be (re)designed in accordance with the requirements.
- Lay the supply lines to the planned installation location of the cabinet. Lay the lines in the cabinet in the order shown on the labelling rail (see below):



* only for type WR / WF (without DLE [=instantaneous water heater])

** only for type WRF-E, for WRF+DLE, the connections for the second heating circuit are located on the optionally available injection-type circuit

To ensure the required energy supply for drinking water heating, use the following nominal pipe diameters for the connection to the boiler circuit / energy generator:

	Multi-layer composite pipe	Copper pipe
Up to 5 m pipe length	Ø 26 x 3 mm	Ø 22 x 1 mm
Up to 20 m pipe length	Ø 32 x 3 mm	Ø 28 x 1.5 mm

Please also note any deviating requirements from the planning and design documents.

5.2 Preparing the pipework

The following points must be checked and ensured before connecting the product:

- The required pipes have been laid to the installation location of the product in accordance with the project planning documents.
- The pipes have been sufficiently rinsed, cleaned and checked for leaks.
- The pipes are insulated in accordance with the requirements.
- The pipes are shut off and depressurised.
- The pipes are fitted with suitable transition pieces to $\frac{3}{4}$ " internal thread (on the product) or to G $\frac{3}{4}$ " Eurocone on the floor distribution manifold.
- The ball valves are closed.

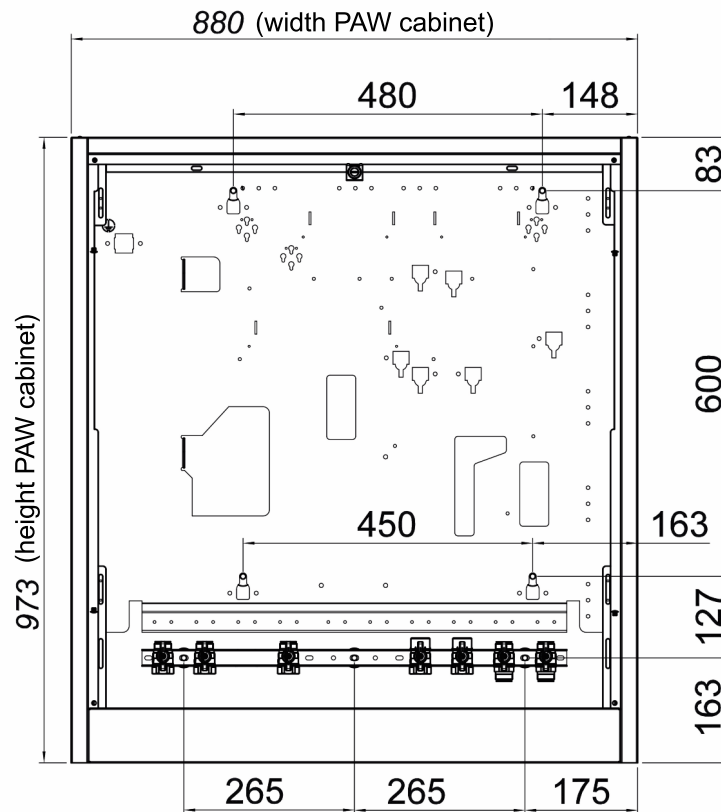
5.3 Mounting the flat station without floor distribution manifold

NOTICE

The following description assumes the use of a PAW wall-mounted or flush-mounted cabinet. Please observe the separate and corresponding instructions. When using a cabinet provided by the customer, please observe the corresponding instructions and its dimensions!

When using a flush-mounted cabinet, the station is fixed or suspended in the cabinet. When using a wall-mounted cabinet, the station is attached to the wall (see drilling template). For this, the following are required:

- for the station: 4x drill hole Ø 10 mm, min. 60 mm deep, for stair bolts M8 x 80 mm
- for the ball valve rail: 3x drill hole Ø 8 mm, min. 50 mm deep

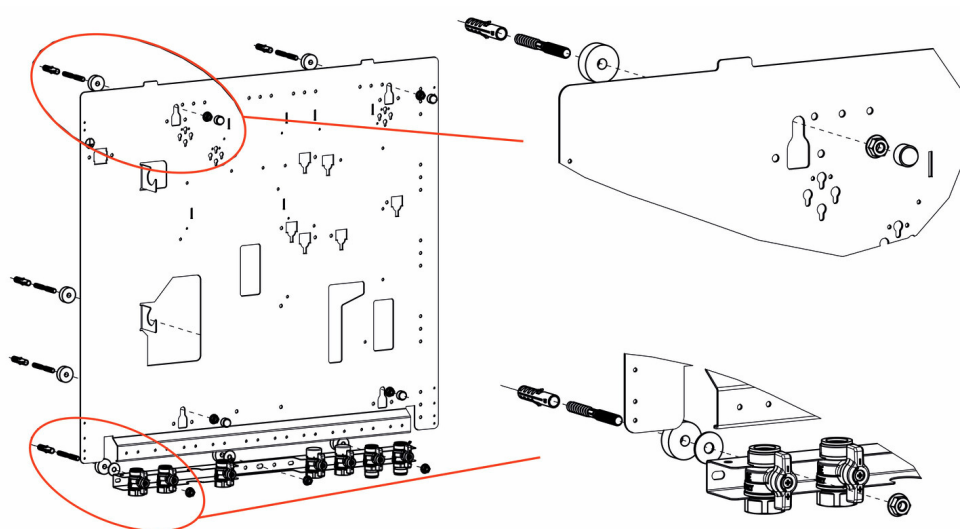


5 Mounting and installation [specialist]

1. Use flush-mounted cabinet: Install the cabinet without the front frame according to the separate instructions.

Use wall-mounted cabinet: Drill suitable holes and screw the M8 stair bolts for the ball valve rail and the station into the wall plugs in such a way that about 25 mm of each screw still stick out. (see drilling template).

2. Fasten the ball valve rail with one distance piece each on the left, centre and right (if using a wall-mounted cabinet, according to the drilling template on the wall).
3. Lay the connecting pipes in the cabinet in the order shown on the labelling rail (see chapter 5.1).
4. Connect the pipework with the corresponding ball valve.
5. Place the distance pieces on the stair bolts / stud bolts and screw the nuts onto the two upper stair bolts / stud bolts so that you can suspend the station and it hangs securely on the stair bolts / stud bolts.



6. Place the station on the ball valves, insert the required seals and screw the connections hand-tight. Align the station, if necessary.
7. Tighten the station with all four nuts on the stair bolts / stud bolts. Firmly tighten all screw connections. Place the cover caps on the stair bolts / stud bolts.
8. The PAW wall-mounted cabinet or the front frame of the PAW flush-mounted cabinet can now be hooked in and fixed (see separate instructions). A cabinet provided by the customer can now be mounted or completed in accordance with the corresponding instructions.

Important: Ensure that the cabinet is sufficiently earthed!

Now start the electrical installation, see chapter 5.5.

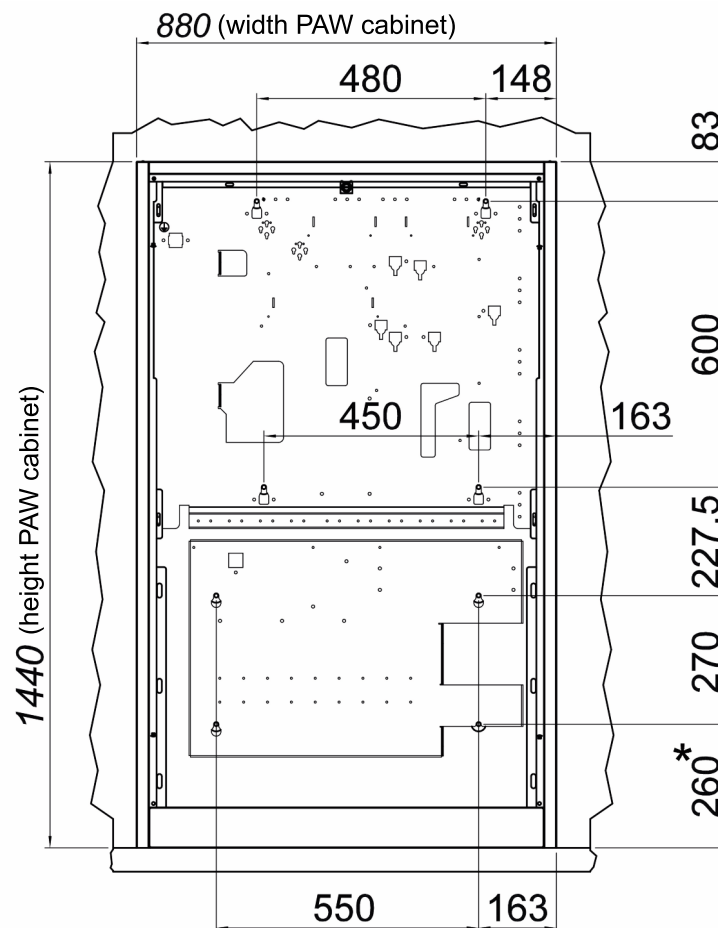
5.4 Mounting the flat station with floor distribution manifold

NOTICE

The following description assumes the use of a PAW wall-mounted or flush-mounted cabinet. Please observe the separate and corresponding instructions. When using a cabinet provided by the customer, please observe the corresponding instructions and its dimensions!

When using a flush-mounted cabinet, the station is fixed or suspended in the cabinet. When using a wall-mounted cabinet, the station is attached to the wall (see drilling template). For this, the following are required:

- for the station: 4x drill hole Ø 10 mm, min. 60 mm deep, for stair bolts M8 x 80 mm
- for the PAW floor distribution manifold: 4x drill hole Ø 10 mm, min. 60 mm deep, for stair bolts M8 x 80 mm



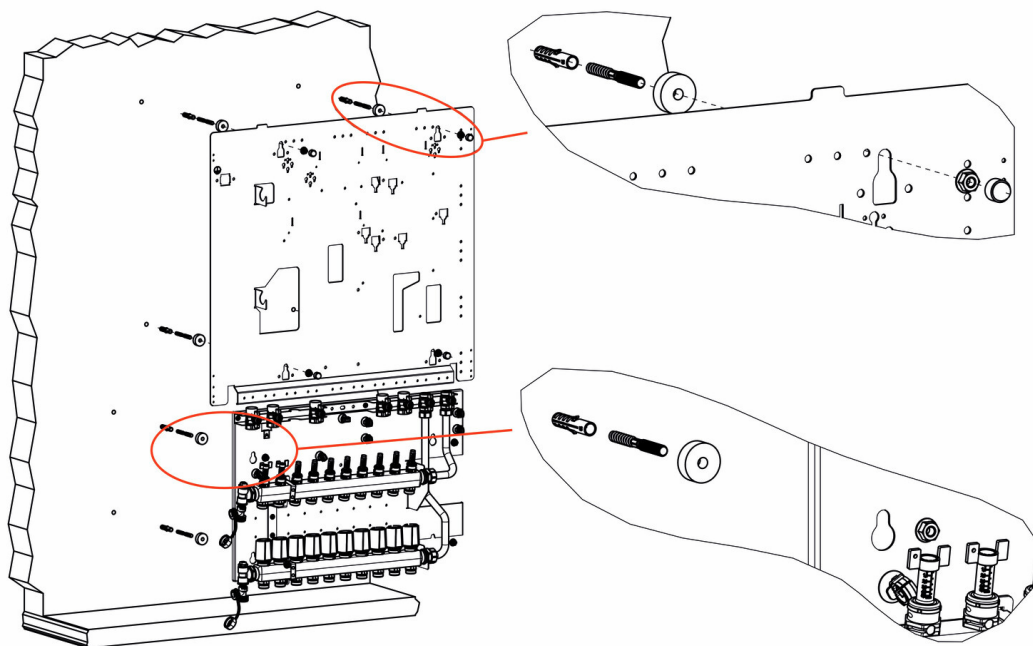
* Dimension for floor-level installation

5 Mounting and installation [specialist]

1. Use flush-mounted cabinet: Install the cabinet without the front frame according to the separate instructions.

Use wall-mounted cabinet: Drill suitable holes and screw the M8 stair bolts for the floor distribution manifold and the station into the wall plugs in such a way that about 25 mm of each screw still stick out. (see drilling template).

2. Put the distance pieces onto the stair bolts / stud bolts. Place the preassembled PAW floor distribution manifold on the stair bolts / stud bolts and secure the distribution manifold with nuts.
3. Lay the connecting pipes in the cabinet in the order shown on the labelling rail, see chapter 5.1.
4. Connect the pipework with the corresponding ball valve. Connect the pipework for the radiant floor heating to the floor distribution manifold.
5. Place the distance pieces on the stair bolts / stud bolts and screw the nuts onto the two upper stair bolts / stud bolts so that you can suspend the station and it hangs securely on the stair bolts / stud bolts.



6. Place the station on the ball valves, insert the required seals and screw the connections hand-tight. Align the station, if necessary.
7. Tighten the station with all four nuts on the stair bolts / stud bolts. Firmly tighten all screw connections. Place the cover caps on the stair bolts / stud bolts.
9. The PAW wall-mounted cabinet or the front frame of the PAW flush-mounted cabinet can now be hooked in and fixed (see separate instructions). A cabinet provided by the customer can now be mounted or completed in accordance with the corresponding instructions. **Important:** Ensure that the cabinet is sufficiently earthed!

Now start the electrical installation, see chapter 5.5.

5.5 Electrical installation

The product is largely prefabricated and wired. Depending on the version / scope of delivery, the controller may still need to be connected:

- one or more room control units (depending on version as radio version or wired), see chapter 5.5.1
- the thermal drives, e.g. for the injection-type circuit, the high-temperature circuit shut-off valve and the individual radiant floor heating circuits, see chapter 5.5.2
- the power supply for the instantaneous water heater, see chapter 5.5.3
- the power supply and earthing of the product, see chapter 5.5.4



WARNING



Risk to life and limb due to electric shock!

The product is fitted with a plug, which is located in the cable channel of the product.

- Only carry out work on the product when it is de-energised.



WARNING



Risk to life and limb due to electric shock!

If the wall-mounted or flush-mounted cabinet is not earthed properly, there is a risk to life if the cabinet is touched.

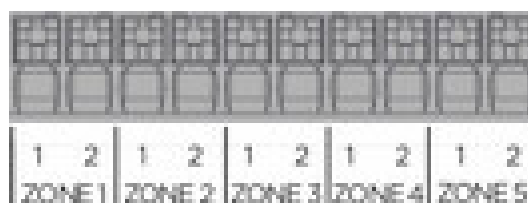
- Ensure that the mounting plates of the station and the floor distribution manifold as well as the housing (of the cabinet) are properly connected to earth!

5.5.1 Electrical installation of the room control unit

The original PAW room control units (wired or radio version) is required for (remote) operation and display of the HomeBloC® controller. The wired room operating units must be connected with a suitable 2-wire cable (wire cross-section 0.25 - 0.5 mm², cable diameter 3.5 - 5 mm, flexible). Please refer to the separate instructions for the room control unit.

5.5.2 Electrical installation on the floor distribution manifold

The thermal actuators of the individual floor circuits on the floor distribution manifold must be connected to the controller.



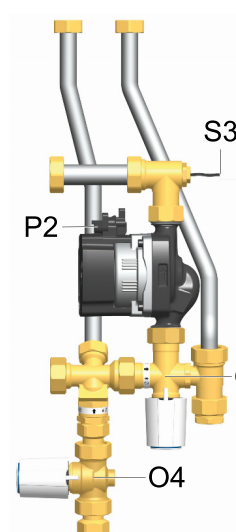
Connect the thermal actuators of the individual floor heating circuit zones to the corresponding terminals according to the zone in the controller (see illustration above). By default, two heating circuits / zones belong to each room control unit. The assignment of the individual zones to a room control unit can be changed in the controller. Please refer to the separate controller instructions.

With the HomeBloC® type WRF + DLE, the injection circuit and the shut-off valve for the high temperature circuit and the pump are also located on the floor distribution manifold.

NOTICE

Damage to property!

The floor circuit pump (P2) can be protected in the controller via a thermostat (safety temperature limiter). This is necessary if the heat generator temperature can be higher than the maximum floor circuit temperature (due to the material or the surface temperature). A corresponding temperature thermostat must be provided by the customer and is available from PAW accessories (item no. 1280601101). Non-observance can lead to damage to the building.



The cables for the flow temperature sensor (S3) and for the power supply to the floor circuit pump (P2) are already connected in the controller. Connect the cable to the sensor S3 on the injection circuit and put the plug (P2) into the pump socket.

Snap the thermal actuator for the valve of the injection circuit onto the valve "O3" and connect it to the terminals "O3" in the controller.

Snap the thermal actuator for the valve of the high-temperature circuit onto valve "O4" and connect it to terminals "O4" in the controller.

5.5.3 Electrical installation on the instantaneous water heater

The instantaneous water heater is connected directly to the power supply. Please refer to the separate instructions for the instantaneous water heater used.

5.5.4 Electrical installation of the HomeBloC® Digital

The controller of the HomeBloC® Digital is equipped with a flexible cable with a Wieland plug, which is located on the right in the cable channel. The corresponding connection socket including installation instructions can be found in the mounting equipment. The HomeBloC® is connected directly to the power supply via the Wieland plug connection mentioned above. Please refer to the corresponding instructions for wiring the connection socket in the accessory bag. Connect the PE cable coming from the connection socket to the retaining plate.

Important: Connecting the HomeBloC® Digital to the power supply (connecting the Wieland connector) is the last step in commissioning!



WARNING



Risk to life and limb due to electric shock!

- Check the earthing of the station, the ball valve rail, the floor distribution manifold and the housing!

6 Commissioning [specialist]

6.1 Preparation for commissioning



WARNING

Damage to property!

Improper commissioning can lead to property damage and personal injury.

- Commissioning may only be carried out by an authorised specialist installer.

6.1.1 Checking the station before commissioning

- Carry out a thorough visual inspection of the station.
- Remove dirt, dust and remnants of assembly work from the station.
- Check whether the earthing is properly connected.

6.1.2 Flushing and filling

To flush and fill the product, install fill and drain valves in a suitable position on site.

Please proceed as follows:

- During flushing and filling of the radiant floor heating system, all ball valves of the product remain closed.
- Fill and flush the individual radiant floor heating circuits one after the other via the connections on the floor distribution manifold. Flush in the direction of flow (into the flow distribution manifold, out of the return collector).
- Fill the station on the heating side via the generator circuit. To do this, **slowly** open all shut-off devices (ball valves with red and blue handles)! Recommended procedure:
 1. Open the ball valve with **red** handle.
 2. Vent the heating side.
 3. Open the ball valve with **blue** handle.
 4. Vent the heating and domestic hot water side.
- Vent the station by means of the valves at the highest point of the station.
- Vent each radiator as well as the floor distribution manifolds.
- The drinking water side is filled via the drinking water supply line. To do this, **slowly** open all shut-off valves (ball valves with green handles)!
- Open the withdrawal points (hot and cold, in the kitchen and bathroom) and let the water run for a few minutes. **Note:** If circulation is installed, the circulation pipe must be vented via the corresponding vent valve in the circulation line!
- Check the tightness of the entire system.
- Check the heating system pressure and top up the heat generator if necessary until the system pressure is restored in accordance with the operating and installation instructions for the heat generator.

6.2 Commissioning the flat station

The control is preset according to the type plate. The desired temperatures and time programmes can be set on the room control unit(s). Please refer to the separate operating instructions of the room control unit.

The following values are preset at the controller:

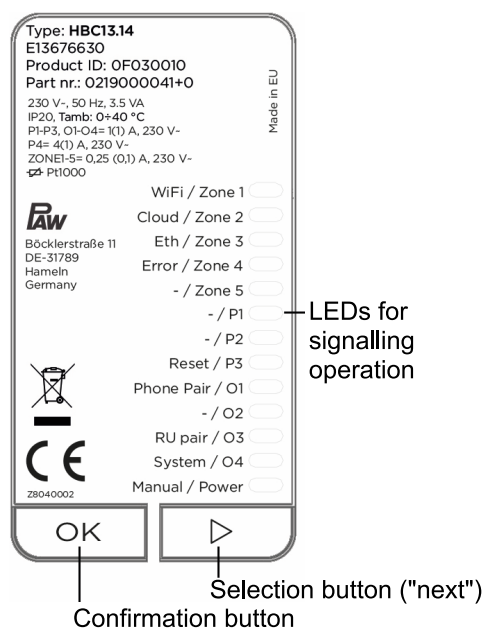
Station (type)	WR	WF	WRF	WRF-E
(without DLE:) Domestic hot water temperature	45 °C			
(with DLE:) Domestic hot water temperature inlet DLE*	Heat generator FL - 5 K			
Differential pressure radiator circuit	50 mbar		50 mbar	50 mbar
Differential pressure radiant floor circuit		150 mbar		150 mbar

For further settings, please refer to the separate instructions of the controller. *recommended setting of instantaneous water heater: 50 °C (up to 7 l/min). For setting, please refer to the separate instructions for the instantaneous water heater.

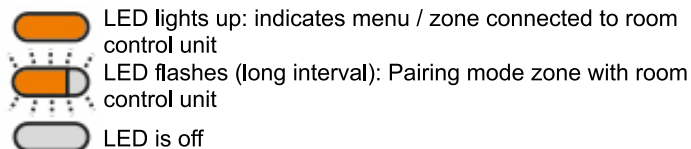
For commissioning, please proceed as follows:

1. Make sure that
 - the ball valves below the station are open.
 - the heating system is in operation and provides a sufficient flow temperature.
 - the drinking water supply system is in operation and set according to the requirements.
 - the supply lines are flushed, filled and pressurised as intended An automatic heating filling valve ideally ensures a constant, correct initial pressure.
 - the electrical installation has been completed so that the HomeBloC® can be put into operation. The relevant electrical circuits are energised or connected to the power supply.
2. Check any strainers and filters before commissioning and clean or replace them if necessary.
3. Check that all valve actuators are connected and fitted and ensure that the room control units are connected.
4. The station is put into operation by connecting the power supply of the station (the controller / instantaneous water heater, if applicable) to the mains. For commissioning the instantaneous water heater, please refer to the corresponding separate instructions.
5. For proper operation, all room control units must be paired with the controller. Please note the following:

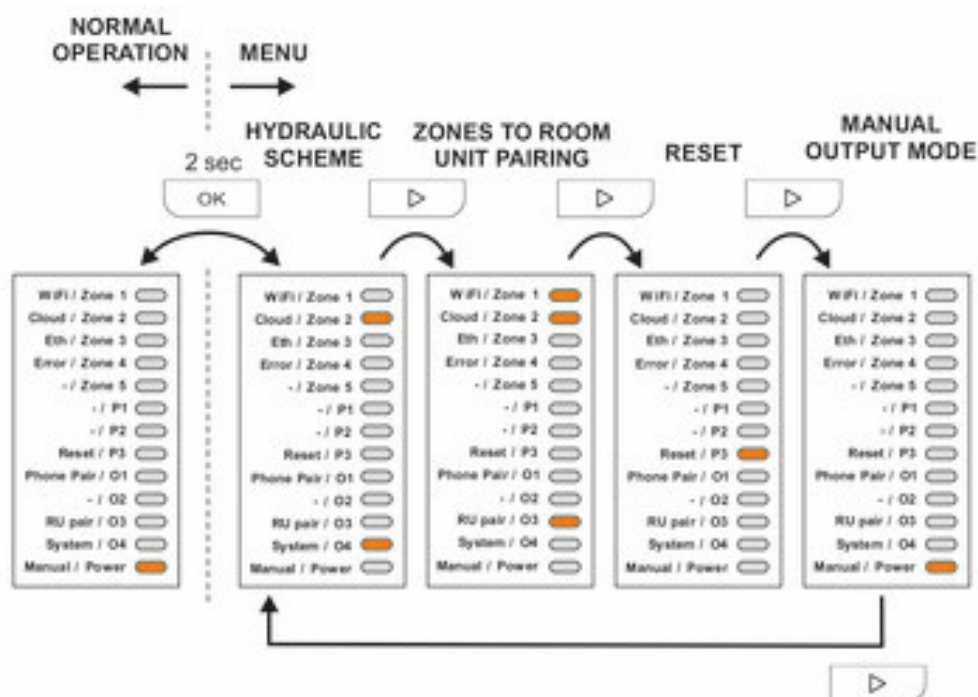
Operating level of the controller



Operation display of the controller in relation to the pairing with room control units



Menu structure of the controller



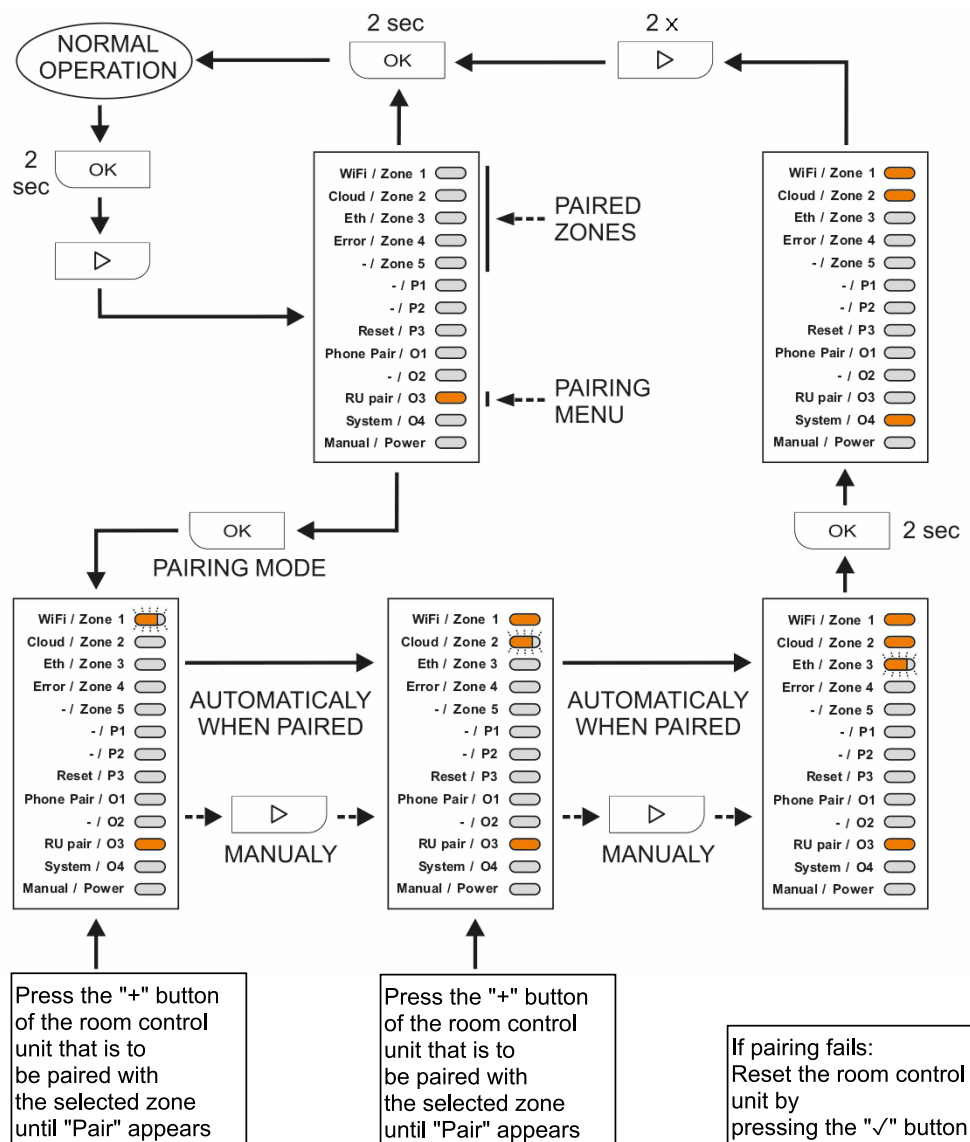
This menu is used to make the basic settings.

To switch from the operation display to the menu, press the confirmation button for 2 seconds.

To switch between the individual groups in the menu, press the selection button.

Pairing room control units with zones

During the pairing process, the room control unit "RCD40" is paired to the controller and simultaneously assigned to the zone(s) (which belong to the room control unit). The following example shows the assignment of zones 1 and 2:



Note: A room control unit can be assigned to several zones.

Performing the pairing

To pair the unit with the HBC13.14 controller, please proceed as follows:

1. Ensure that the controller is in the normal menu (the *Manual / Power* LED is flashing). If this is not the case, please press the  button once. If the LED still does not flash, please disconnect the controller from the mains, wait 10 seconds and then reconnect it to the mains. Once the controller has started up (the LED is no longer flashing), please press the  button once.
2. When the *Manual / Power* LED is flashing, press and hold the  button until the *System / O4* LED lights up. In addition, one of the upper 5 LEDs will light up.
3. Press the  button once. The *RU pair / O3* LED lights up.
4. Press the  button once. The *WiFi / Zone 1* LED flashes, or the LED for the zone to which the RCU is to be assigned. Use the  button to select the zone to which the RCU is to be assigned.
5. When the selected zone flashes on the controller, press and hold the "+" button on the RCU until the message "Pair" appears on the display.
6. The message "Zone" appears on the RCU display, showing the assigned zones. After 2 seconds, the display returns to the main screen. The pairing of this RCU is completed.
7. The zone previously assigned now lights up on the controller. In addition, the next zone flashes. The controller is ready to assign an RCU to this zone. This can be a new RCU or the one previously paired.
8. To complete the pairing process on the controller, proceed as follows: Whilst a zone LED is flashing, hold down the  button until the LED stops flashing. Then press the  button twice until the *Manual / Power* LED lights up. Now hold down the  button until the *Manual / Power* LED flashes.

Note: If no button is pressed on the controller for an extended period, it will terminate the pairing process and automatically return to the normal display. In the normal display, the active outputs are indicated by the LEDs.

The station starts operating approx. 1 minute after the power supply is connected. The primary pump starts and attempts to pump sufficient hot heating water (primary flow line) into the station to heat the drinking water. To do this, the 3-way valve switches to "FriWa operation" and the heat exchanger is flown through, even if no hot water is being tapped. As soon as the controller recognises that sufficient hot water is available in the primary flow line or that the maximum runtime has been reached, normal control operation begins (heating operation as long as no hot water is being tapped).

Please note the information on the following page.



WARNING



Risk to life and limb due to electric shock!

- ▶ Before inserting the cabinet door, the earthing of the station, of the ball valve rail, of the floor distribution manifold and of the housing must be connected.
- ▶ Check the connection of the earthing cable of the cabinet door to the housing and the PE connection!

6.3 Handing over the flat station to the operator

1. Explain the functions of the station to the operator of the system and familiarise him/her with the components.
2. Draw the operator's attention to possible dangers.
3. Advise the operator that the flat station may not function correctly if the controllers are adjusted incorrectly. In addition, only a heating engineer should adjust / set the flat station.
4. Enter the set parameters in the commissioning protocol.
5. Suggest that the operator concludes a maintenance contract.
6. Hand over the installation and operating instructions to the operator.

These instructions should be kept in the vicinity of the flat station.

7 Decommissioning the flat station [specialist]

7.1 General procedure for shutting down / decommissioning

1. Close all ball valves on the flat station.
2. Disconnect all poles of the power supply to the flat station / switch off the fuse and secure it against unintentional restarting.

7.2 Emergency shutdown

1. Proceed as described in *"General procedure for shutting down / decommissioning"*.
2. Commission a heating engineer to rectify the fault.
3. Check the flat station before recommissioning and ensure that all components are correctly installed and functional.
4. Check the settings according to the commissioning protocol or add / supplement.

7.3 Installing and removing options / preparation for maintenance work

1. Proceed as described in *"General procedure for shutting down / decommissioning"*.
2. Check and, if necessary, wait until the flat station has cooled down.
3. Before loosening / opening screw connections, relieve any overpressure in the station by opening the vent valves.
4. In the area of the drinking water installation / drinking water heating, depressurise the station by opening a withdrawal point and the ball valves to the outgoing drinking water pipe.

The cold water inlet pipe must remain closed!

Once the area of the drinking water installation has been depressurised, close these ball valves again.

5. Place sufficient cleaning cloths in the station to catch any escaping water.
6. Loosen screw connections with suitable tools.
7. Install options according to the corresponding installation instructions.
8. To recommission the station, fill it as described in *"Flushing and filling"*.

7.4 Long-term shutdown of the flat station (longer than 1 week)

1. Proceed as described in *"General procedure for shutting down / decommissioning"*.
2. Empty all withdrawal points and leave them open. Open the ball valves to the outgoing drinking water pipe.
3. Open the vent valves to ventilate the pipework.
4. Place sufficient cleaning cloths in the station to catch any escaping water.
5. Loosen screw connections with suitable tools. Empty all pipes in the flat station.
6. Ensure that the flat station is frost-proof.

7.5 Recommissioning after shutdown



WARNING

Danger of legionella formation due to standing water!

If the product is not used for a longer period of time, there is a risk of legionella forming due to standing water. Legionella are bacteria that can be dangerous to the human body. They can multiply in pipes with warm, stagnant water.

Flushing the pipes with a water temperature of at least 60 °C kills the legionella bacteria.

- Flush drinking water pipes with hot water at a temperature of at least 60 °C when recommissioning.

1. Check all screw connections and tighten with the appropriate tool.
2. Put the flat station back into operation as described in chapter *"Commissioning"*.

8 Cleaning and maintenance [specialist]



WARNING



Risk to life and limb due to electric shock!

- ▶ Disconnect all poles of the power supply to the flat station, switch off the fuse and secure it against unintentional restarting.
- ▶ Only restore the power supply after all installation, flushing and filling work has been completed. An unintentional start of the motors is thus avoided.

Preparation for maintenance work

Take the flat station out of service as described in *"Decommissioning the flat station"* (in particular *"General procedure for shutting down / decommissioning"* and *"Installing and removing options / preparation for maintenance work"*).

Maintenance work

The guideline *VDI/DVGW 6023:2013-04 Hygiene in drinking water installations - Requirements for planning, execution, operation and maintenance* was used for maintenance work.

Maintenance should be carried out once a year. This ensures that the system remains functional for a long time and any faults can be recognised and rectified in good time.

NOTICE

Material damage due to cleaning agents containing alcohol!

Cleaning agents containing alcohol damage the product, which can lead to leaks. We do not assume liability nor provide warranty for damage to property resulting from products damaged in this way.

- ▶ Avoid at all costs that the product comes into contact with substances containing alcohol.
- ▶ Use alcohol-free cleaning agents and a clean cloth for cleaning.

Activities required as part of the maintenance work:

1. Clean the flat station:

- Remove dust and loose dirt with a Hoover.
- Clean pipework, valves and fittings and frame with a damp cloth.
- Do not use aggressive cleaning agents!

2. Check pipework and screw connections in the flat station for leaks, actuate all ball valves once (close / open).

In the event of any leaks:

- Try to eliminate the leaks by retightening the screw connections.
- Replace defective seals or parts.

3. Clean any existing strainers:

- Depressurise the line (close the ball valves), unscrew the cover of the strainers, remove the filter and rinse / clean it.
- Make sure that the strainer in the drinking water pipe is hygienically clean before reassembly so that the drinking water cannot be contaminated!
- After cleaning the strainers, reinsert the filter and screw the cover back on. Reopen the corresponding ball valves **slowly**.

4. Check all settings according to the commissioning protocol.

Question any existing deviations (operator or user).

Correct obvious incorrect settings, log changed comfort settings.

5. Check the functionality of the flat station after you have put it back into operation in accordance with chapter "*Commissioning*".

6. Keep a log of the maintenance.

9 Troubleshooting [specialist]



WARNING



Risk of injury due to improper troubleshooting!

Improperly performed troubleshooting work can lead to serious injuries and considerable material damage.

- ▶ Only rectify faults that require intervention once you have ensured that the flat station is at a standstill and secured against being switched on again.
- ▶ Do not release blockages until you have ensured that releasing them will not cause any dangerous movement of machine parts.
- ▶ If in doubt, contact the PAW customer service.
- ▶ Before recommissioning, ensure that all troubleshooting work has been carried out and completed in accordance with the information and instructions in this manual.
- ▶ Ensure that no persons are present in the danger zone.
- ▶ Ensure that all covers and safety devices are installed and functioning properly.

Error description	Cause	Remedy
No hot water at the withdrawal points.	Ball valves closed	● Open the ball valves.
	Controller defective / no power supply	After connecting the controller to the 230 V mains, the "Manual / Power" LED lights up. When properly connected, ● check the power supply. ● check the pot fuse of the controller. ● replace the controller, if necessary.
	Setting at the room control unit	● Check the hot water nominal temperature. ● Check the operating modes. ● Check the time programmes.
	Sensors defective (flow rate / temperature sensor, FS / S2)	The "P1" and "O1" LEDs light up during tapping operation. ● Check whether the FS and S2 sensors are connected and installed in the controller.

Error description	Cause	Remedy
No hot water at the withdrawal points.	Primary pump defective	- Check whether sufficient hot heating water arrives at the primary pump. - Check the electrical connection of the primary pump P1 and control signal PWM 1 (apply a maximum of 18 V to PWM1!). - Check the circulation pump according to the manufacturer's instructions and repair / replace, if necessary.
	3-way valve defective / incorrectly connected	In domestic hot water mode, the "- / P1" and "Phone Pair / O1" LEDs light up, the position indicator of the valve is set to "B" at the top. - Check whether sufficient hot heating water arrives at the heat exchanger. - Check the electrical connection of the 3-way valve (O1-2): blue: N brown: O1 black: O2
	Heat exchanger defective	Replace the heat exchanger.
Black water at the withdrawal points.	Heat exchanger defective	- Replace the heat exchanger. - Check the water quality.
Insufficient water pressure at the withdrawal points.	Pressure reducer or pressure booster system defective	Check the pressure reducer or pressure booster system.
	Calcified tap at the withdrawal point	Unscrew and descale the tap.
	Calcified pipes in the flat station or in the entire pipework system	- Check the water quality. - If necessary, check the temperature settings (a DHW temperature above 60 °C leads to increased limescale formation and risk of scalding).

Error description	Cause	Remedy
The radiator is not warm enough.	Controller defective / no power supply	See "No hot water at the withdrawal points".
	Setting at the room control unit	• Check the room nominal temperature. • Check the operating modes. • Check the time programmes.
	Pump defective	• Check for correct connection. • Check the pump according to the manufacturer's instructions and repair / replace, if necessary.
	Safety temperature limiter defective / incorrectly set	• Check safety temperature limiter (setting / function), replace if necessary.
	Thermal actuator defective / incorrectly installed	The valve type can be set to "NO" in the controller. When a zone (2 valve actuators) is controlled, the corresponding LED "Zone 1 ... 5" lights up in the controller. • Check whether the thermal actuator is an "NC" actuator. • Check whether the electrical connection has been made correctly and whether the actuator is properly latched onto the valve. • Check whether the actuator retracts when voltage is applied / extends without voltage. • Replace the actuator, if necessary. • Check whether suitable valve adapters are (correctly) fitted.
	3-way valve defective / incorrectly connected	In heating mode, the "P1" and "P2" LEDs (if present), as well as "O1" and "O2" light up, the position indicator of the valve is at "A" at the top. • Check whether sufficient hot heating water arrives at the station. • Check the electrical connection of the 3-way valve (O1-2): blue: N brown: O1 black: O2

Error description	Cause	Remedy
The radiator is not warm enough.	Differential pressure sensor defective / blocked	• Check for blockage and clean if necessary. • Check whether the cable is defective and replace, if necessary. • Replace the sensor, if necessary.
	Valves defective	• Check whether the valve can be closed or opened using the lifting rod when the thermal actuators are removed. • Check whether suitable valve adapters are (correctly) fitted.

10 Scope of delivery [specialist]

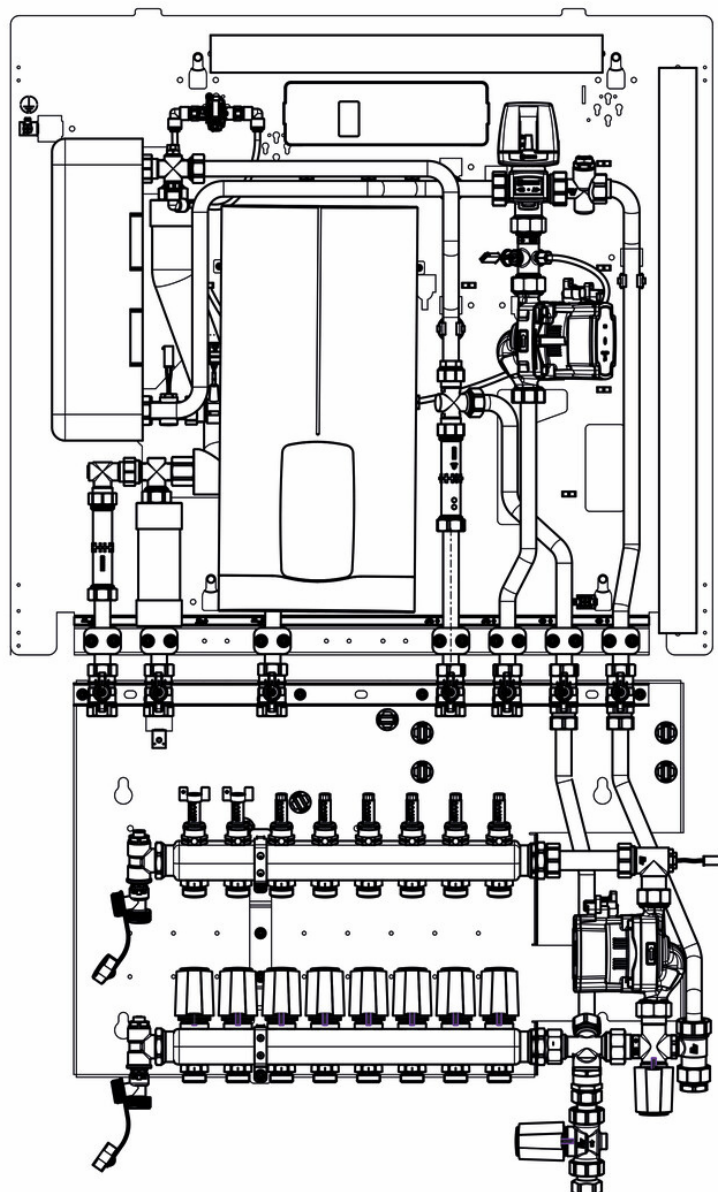
NOTICE

Serial number

Complaints and requests / orders of spare parts will only be processed with information on the serial number!

The serial number is placed on the base plate of the station.

The scope of delivery is specified in the order or delivery note. The following illustration shows optional equipment of the type WRF + DLE:

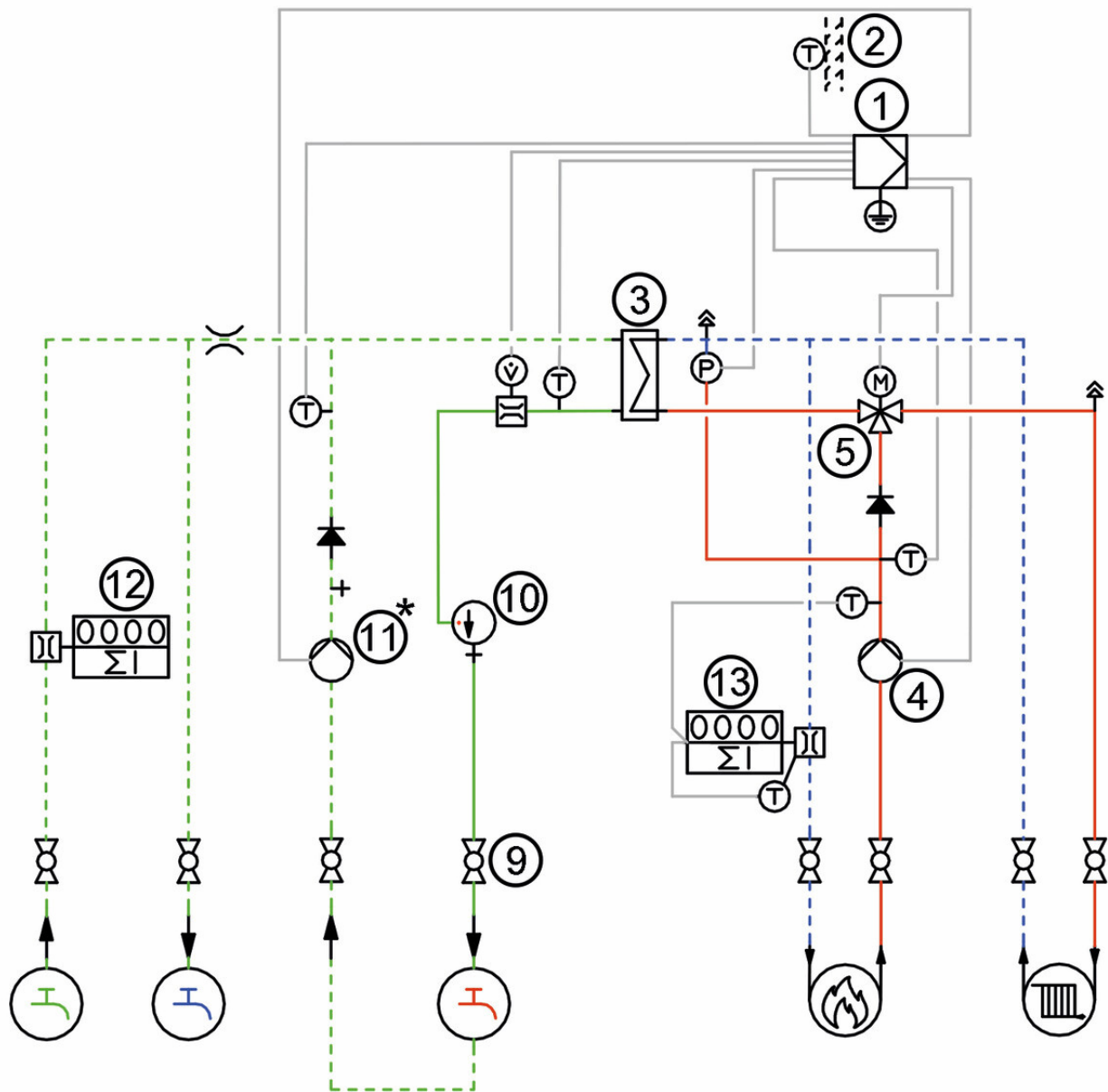


11 Technical data

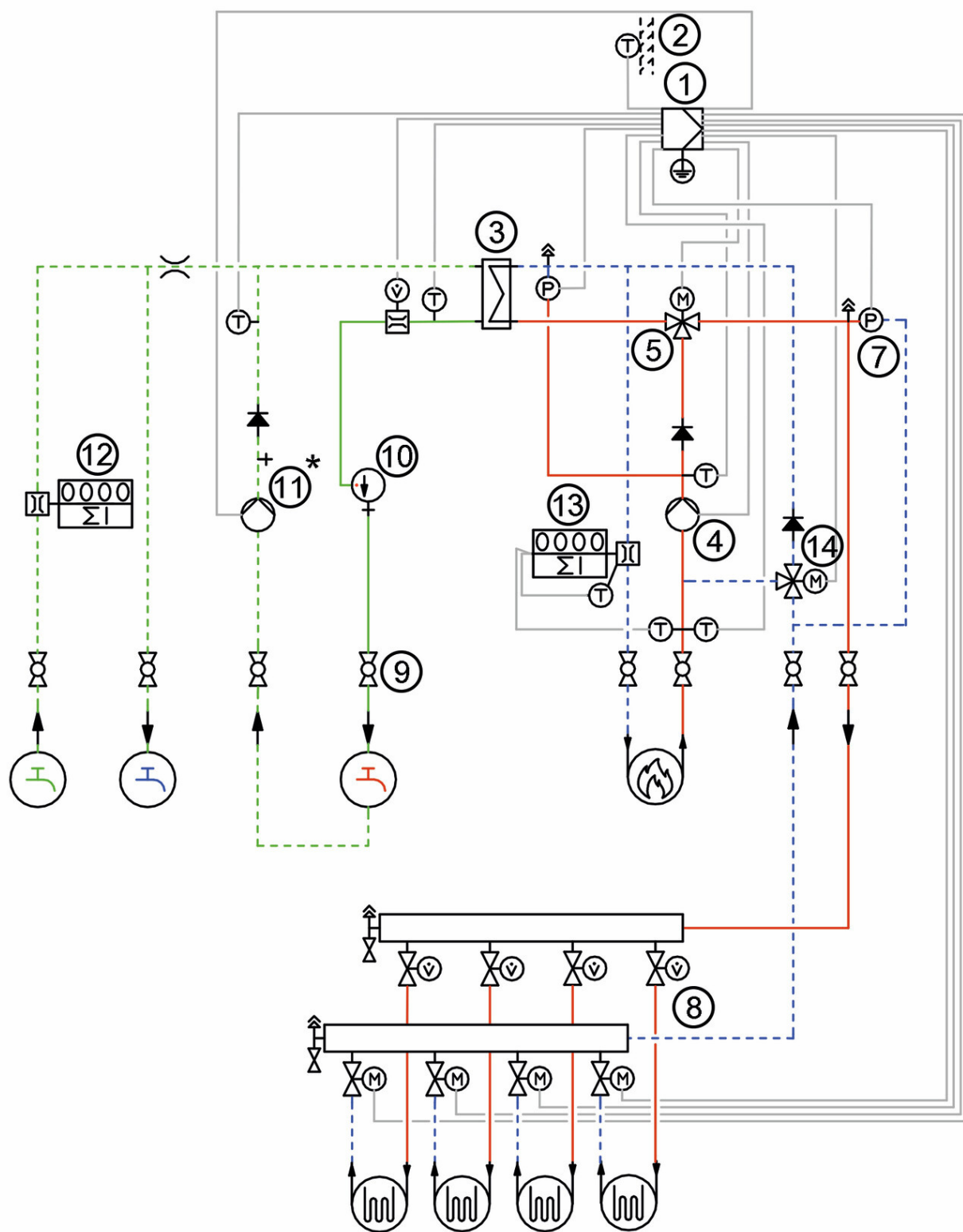
The following data are examples. The technical data on the type plate apply!

Flat station HomeBloC® Digital	
Dimensions	
All connections	¾" int. thread, flat sealing
Construction depth	110 mm possible, dependent on the equipment and the requirements
Height / width	dependent on the equipment and the requirements
Electrical connection	power supply 230 V~, 50 Hz
Power consumption controller	5 W
Max. power consumption	specific to equipment
Operating data	
Max. pressure (drinking water)	10 bar
Max. pressure (heating)	3 bar
Max. temperature (drinking water)	60 °C
Max. temperature (heating)	70 °C
Materials	
Base plate / Flush-mounted cabinet	zinc-galvanised steel sheet
Cover frame, door, plinth panel	standard: steel sheets, powder-coated, white (RAL 9016), other colours or designs possible on request optional: plastic, solid-coloured or printed
Ball valves, valves and fittings (drinking water)	brass, approved for domestic hot water
Ball valves, valves and fittings (heating)	brass
Pipes	stainless steel, approved for domestic hot water (1.4404)
Seals	fibre composite, EPDM, teflon
Heat exchanger	standard: stainless steel plates soldered with copper optional: coated / full stainless steel
Outputs (depending on the heat exchanger)	
Output capacity (10 -> 45 °C)	see type plate
Heating capacity	see type plate
Instantaneous water heater	11 - 13 kW, depending on the electrical connection

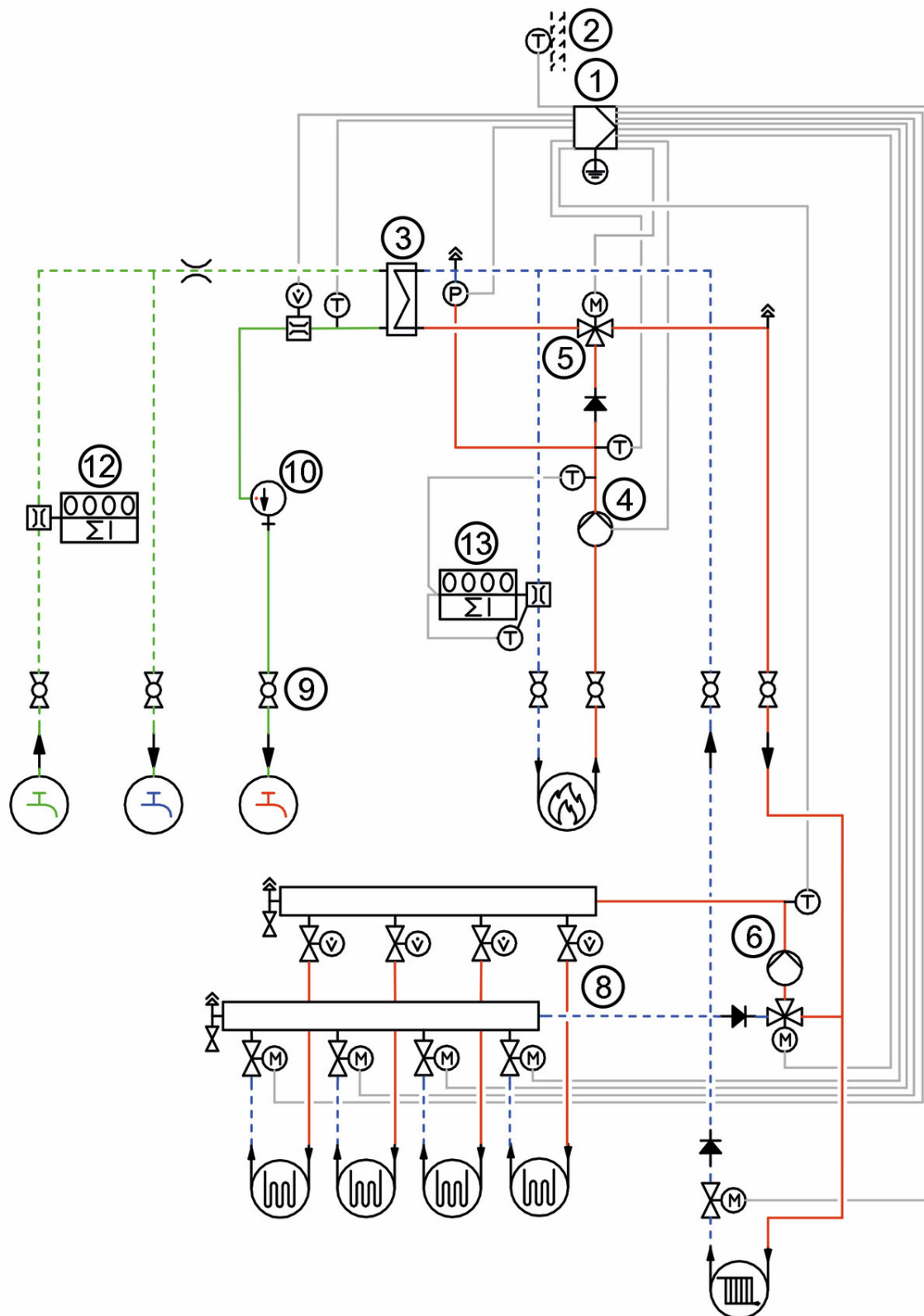
11.1 Hydraulic schemes



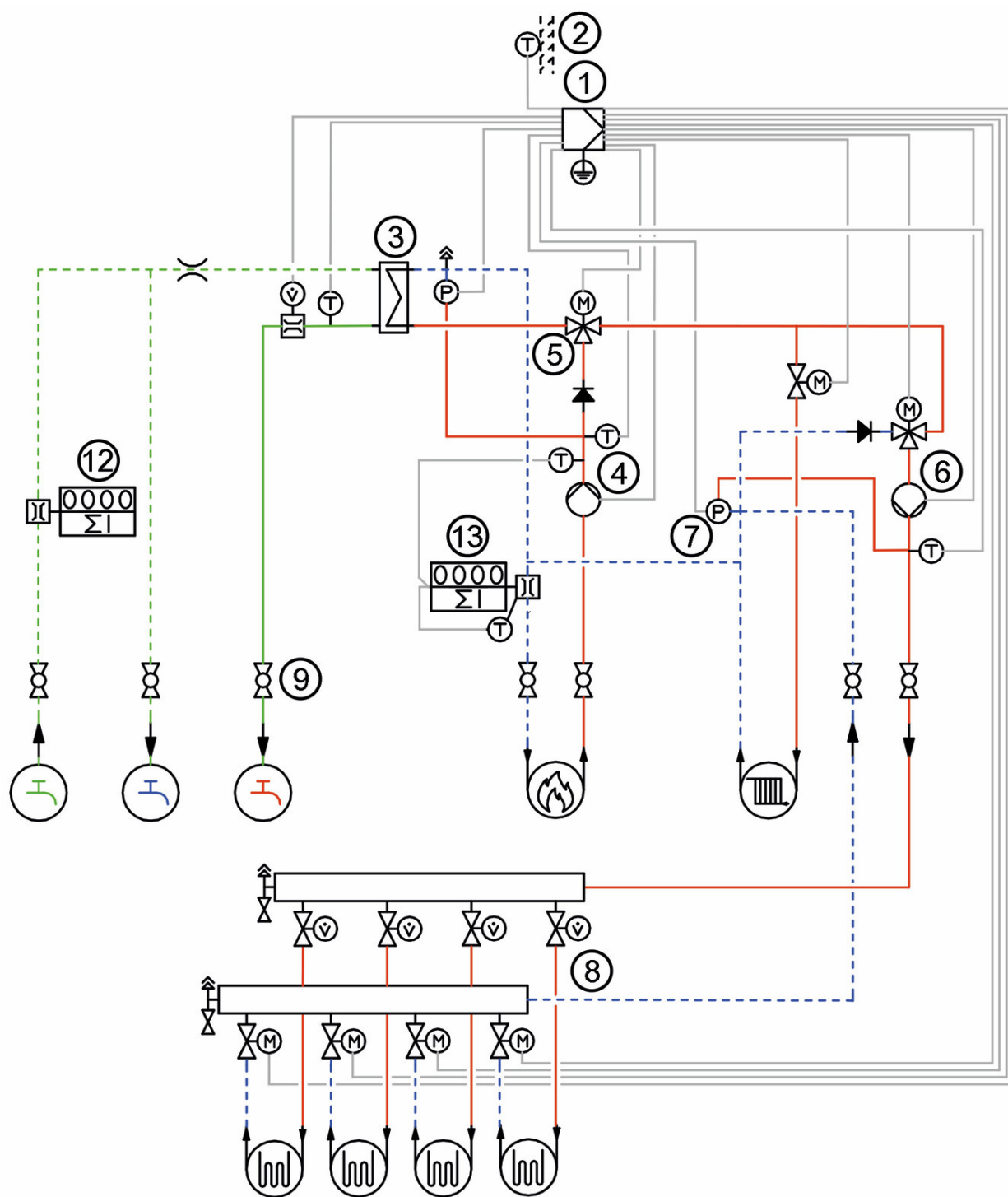
Hydraulic scheme type WR, incl. optional equipment



Hydraulic scheme type WF, incl. optional equipment



Hydraulic scheme type WRF, incl. optional equipment



Hydraulic scheme type WRF-E, incl. optional equipment

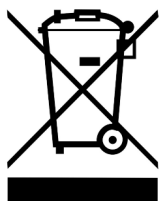
11 Technical data

1	Controller HBC13.14	2	Room control unit
3	Heat exchanger	4	Primary pump
5	3-way switch valve	6	Injection-type circuit for low-temperature heating circuit
7	Differential pressure control for low-temperature heating circuit (only included in the scope of delivery for type WF and WRF-E)	8	Floor distribution manifold with thermal drives (optional, e.g. 4-fold)
9	Shutoff valves	10	Instantaneous water heater (optional)
11*	Circulation pump (optional)	12	Fitting for cold water meter
13	Fitting for hot water meter	14	3-way mixing valve

* Circulation is only possible for stations without instantaneous water heaters!

12 Disposal

NOTICE



Electrical and electronic devices must not be disposed of in the household waste. For your return, there are free collection points for electrical appliances and, if necessary, additional points of acceptance for the reuse of the devices in your area. The addresses can be obtained from your city or communal administration.

If the old electrical or electronic device contains personal data, you are responsible for deleting it before returning the device.

Batteries and rechargeable batteries must be removed prior to the disposal of the product. Depending on the product equipment (partly with optional accessories), single components can also contain batteries and rechargeable batteries. Please observe the disposal symbols on the components.

NOTICE



Disposal of transport and packaging materials

The packaging materials are made of recyclable materials and can be disposed of with recyclable materials.

13 Acceptance / commissioning protocol [specialist]

13 Acceptance / commissioning protocol [specialist]

Customer:		Address, telephone, e-mail:	
Specialist trade company:		Address, telephone, e-mail:	
Commissioning by:			
Object:		Living area: m ²	Heating requirements: kW
Flat station type:		Item no.:	
		Serial number:	
Commissioning work		Completed	
Checks before commissioning		☐	
Flushing		☐	
Filling		☐	
Venting		☐	
Check setting values		☐	
Heating circuits:	☐ Radiator ☐ Floor		
Values:	Domestic hot water temperature: °C		
	Flow temp.: °C	Return temp.: °C	Radiator circuit
	Flow temp.: °C	Return temp.: °C	Floor circuit
	Safety temperature limiter setting value: °C		
	Differential pressure setting value:	Radiator circuit: mbar	Floor circuit: mbar
Remarks / agreements:			
Commissioning has been carried out correctly.			
Date	Signature customer	Signature specialised craftsman	

Item no. 9912xxxx10x-mub-en

Translation of the original instructions

We reserve the right to make technical changes without notice!

Printed in Germany – Copyright by PAW GmbH & Co. KG

PAW GmbH & Co. KG

Böcklerstraße 11

31789 Hameln, Germany

www.paw.eu

Phone: +49-5151-9856-0

Fax: +49-5151-9856-98