

Combi Port PRO

EN Installation and operation manual

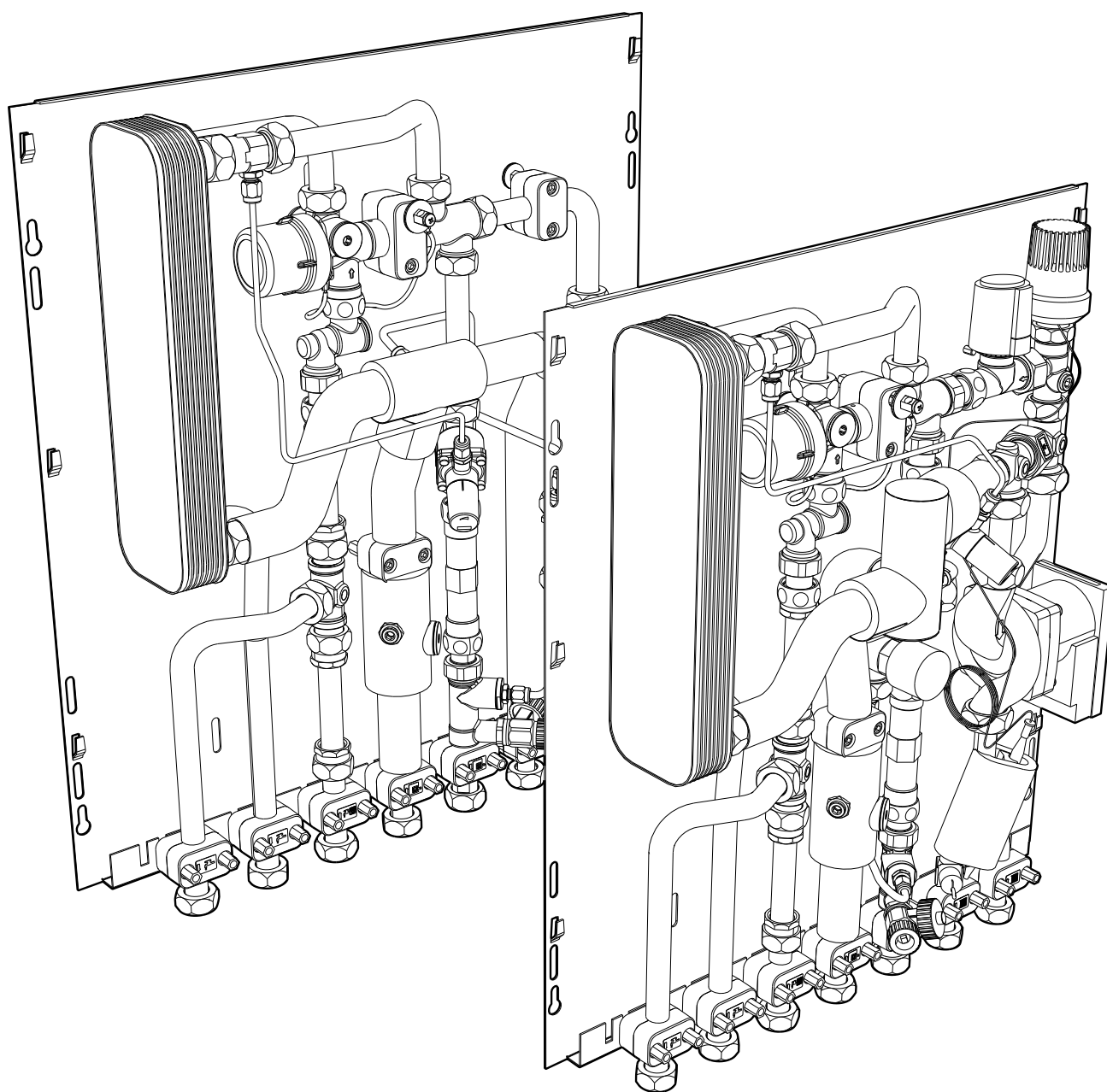


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- has not been (temporarily or continuously) exposed to temperatures, pressure and/or voltages that exceed the limits printed on the products or stated in any instructions supplied by Uponor;
- remain in its originally installed location and is not repaired, replaced or interfered with, without prior written consent of Uponor;
- is connected to potable water supplies or compatible plumbing, heating and/or cooling products approved or specified by Uponor;
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2 Preface




The manual shows an example of a Combi Port PRO connection variant. Information about other variations, as well as further technical data can be found in the "Combi Port PRO Technical Information".

This installation and operation manual describes how to install and operate the components of the system.





2.1 Safety instructions

Warnings used in this manual


The following symbols are used in Uponor documentation to indicate special precautions when installing and operating any Uponor equipment:

	Warning! Risk of injury. Ignoring warnings can cause injury or damage components.
	Caution! Ignoring cautions can cause malfunctions.
	Note Important information to the section in the manual.

Power

	Warning! Risk of electric shock if touching the components! The unit operates with a 230 V AC voltage.
	Warning! Risk of electrical shock! Electrical installation and service behind secured 230 V AC covers must be carried out under the supervision of a qualified electrician.
	Warning! The Uponor system uses 50 Hz, 230 V AC power. In case of emergency, immediately disconnect the power.
	Warning! Prior to any work on the controller or the components connected to it, switch off the controller according to the regulations.

Technical constraints

	Caution! To avoid interference, keep installation/data cables away from power cables of more than 50 V.
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Safety measures


Conform to the following measures when installing and operating any Uponor equipment:

- Read and follow the instructions in the installation and operation manual.

- Installation must be performed by a competent person in accordance with local regulations.
- It is prohibited to make changes or modifications not specified in this manual.
- All power supplies must be switched off before starting any wiring work.
- Do not use water to clean Uponor components.
- Do not expose the Uponor components to flammable vapours or gases.

Uponor cannot accept any responsibility for damage or breakdown that can result from ignoring these instructions.

2.2 Standards and regulations

	Note The installation must be carried out in accordance with current local standards and regulations!
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Planning and designing of the heating system must be performed in accordance with applicable global and country-specific standards and guidelines

- Ensure that no aggressive substances, such as acids, lubricants, bleach, flux, strong liquid cleaning agents, contact sprays or concrete including its components, come into contact with the stainless steel manifold and manifold components.
- A water analysis is recommended for each installation. In the event of warranty claims, it is mandatory. It is essential that the heating circuits are regulated on the water side so that a sufficient hydraulic function of the individual heating circuits or the entire underfloor heating system is guaranteed!

For Combi Ports with an assembled water meter, **planning and implementation of the drinking water system** must be done in accordance with the Infection Protection Ordinance.

A few points to be high-lighted:

- Flush and disinfect the system before commissioning and handing over to the user.
- Provide the domestic hot water pipes with required thermal insulation strength.
- Insulate the drinking cold water pipes to secure that no heating in excess of the requirements takes place.

2.3 Correct disposal of this product (Waste Electrical and Electronic equipment)

	Note Applicable in the European Union and other European countries with separate collection systems
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This marking shown on the product or its literature indicates that it should not be disposed with other household waste at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

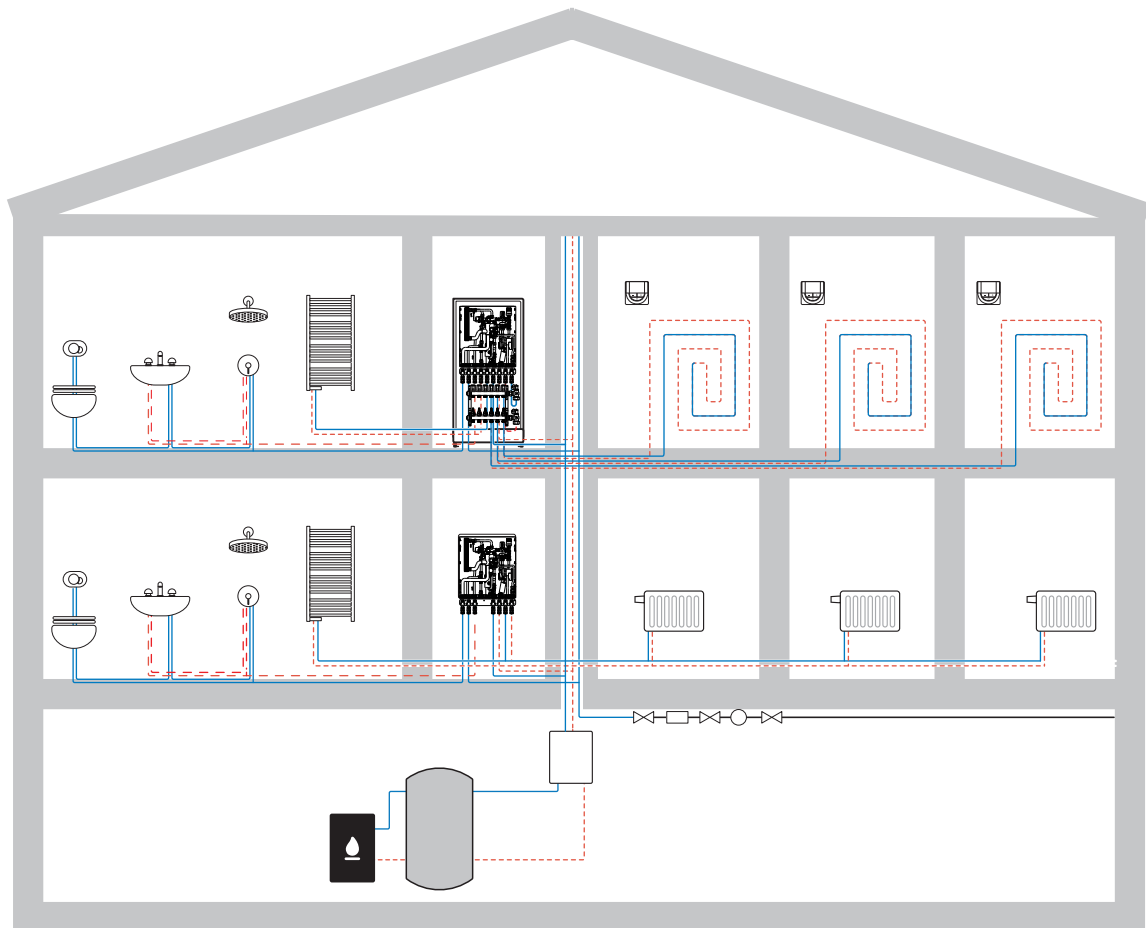
Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes of disposal.

3 Combi Port PRO system description

Combi Port PRO is a prefabricated heating cabinet suited for use in multifamily houses or large residential buildings due to enormous time and cost savings. The ready-to-install heat interface unit

supplies domestic hot water and control of the domestic heating system, measurement of heating energy and cold water consumption.

3.1 Operating principle



3.2 Functional description

In the Combi Port PRO heat interface unit, the cold water is heated only when required in the flow-through principle via a stainless steel high performance plate heat exchanger. This always ensures a low return temperatures on the heating water. The energy is supplied by heating water with a flow temperature of at least 55 °C via the heating water flow.

Domestic hot water: The domestic hot water is generated only on demand. A mechanical proportional quantity control valve is controlling the process. As more hot water is required, as more the valve is opening the flow of the heating water through the heat exchanger. This ensures a constant hot water temperature. If no hot water is needed, the valve stops the supply of heating water through

the heat exchanger. It can cool down which is beneficial for the hygiene.

Domestic heating: A hydraulic balancing of the domestic heating circuit for hot water preparation within the heat interface unit can be carried out with the control valves. The room temperature control is carried out in the underfloor heating system in connection with either Uponor Smatrix or Uponor Base flexiboard.

Combi Port PRO is available in two different versions, in-wall and on-wall mounting, for most common system installations and installation situations. When delivered to the construction site the cabinet is ready for installation according to customer specifications.

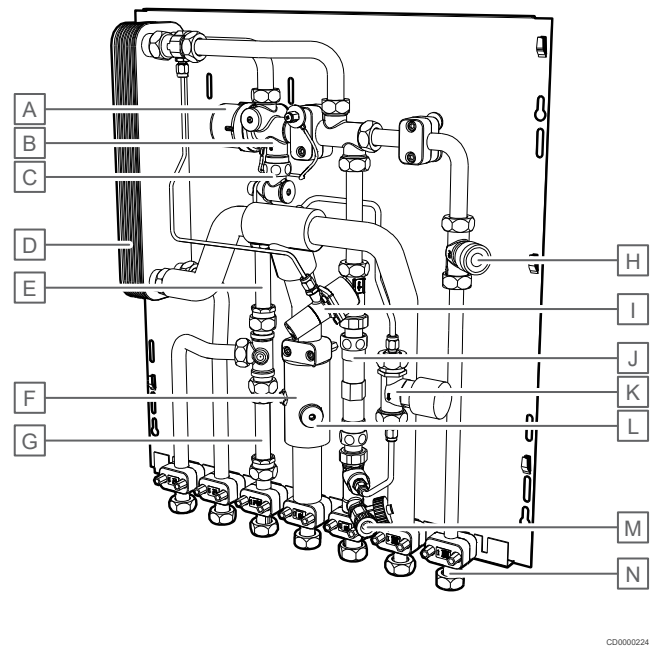
3.3 Components

Note

The following illustrations show example set-ups for all units. Individual modules may vary in appearances.

The Combi Port PRO units are divided into two groups of models: for radiator connections (RC) and for underfloor heating (UFH).

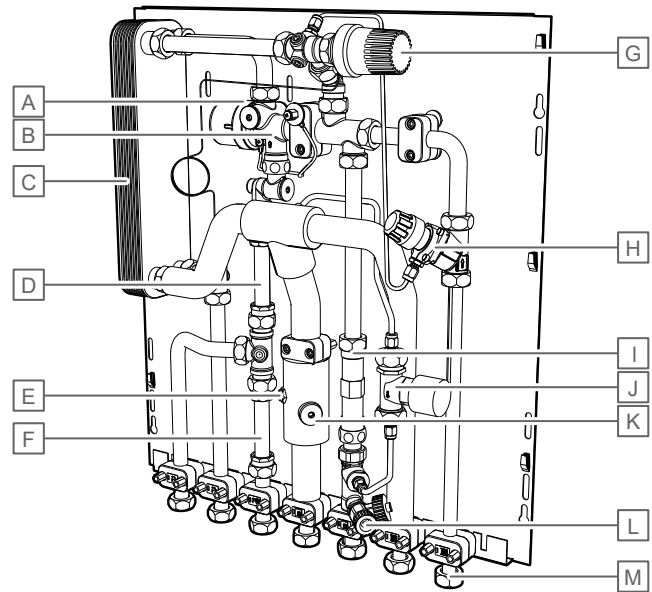
Combi Port PRO RC



CD0000224

Item	Description
A	Proportional volume control (PM)
B	Cold water throttle disc
C	Strainer
D	Plate heat exchanger
E	Hot water meter distance piece
F	Sensor pocket heat meter
G	Cold water meter distance piece
H	Zone valve for limiting heating flow to apartment
I	Differential pressure regulator
J	Heat meter distance piece
K	Thermostatic lead module (TTV)
L	Strainer
M	Draining and filling valve
N	Connection, ball valve

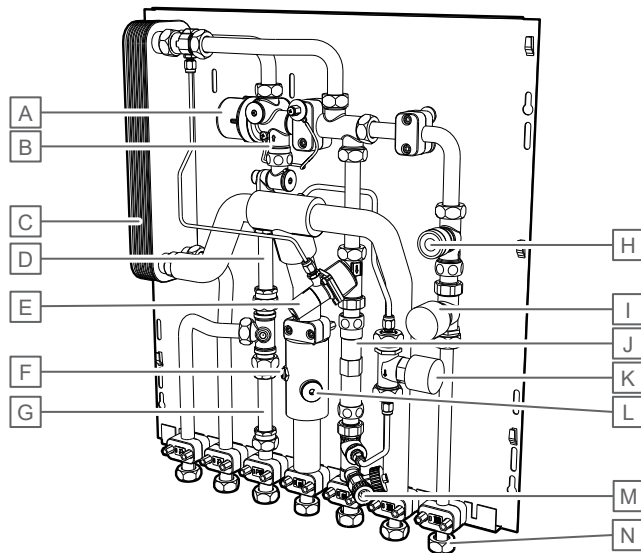
Combi Port PRO RC-TWB



CD0000226

Item	Description
A	Proportional volume control (PM)
B	Cold water throttle disc
C	Plate heat exchanger
D	Hot water meter distance piece
E	Sensor pocket heat meter
F	Cold water meter distance piece
G	Thermostatic hot water temperature limiter (TWB)
H	Differential pressure regulator
I	Heat meter distance piece
J	Thermostatic lead module (TTV)
K	Strainer
L	Draining and filling valve
M	Connection, ball valve

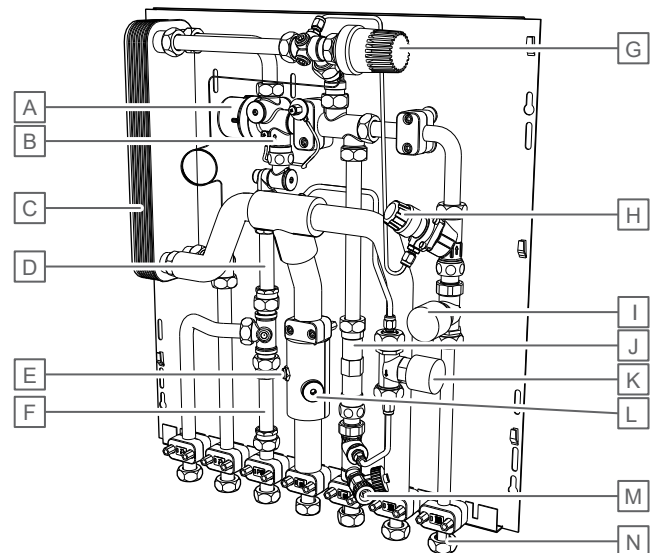
Combi Port PRO RC-RTB



CD0000253

Item	Description
A	Proportional volume control (PM)
B	Cold water throttle disc
C	Plate heat exchanger
D	Hot water meter distance piece
E	Differential pressure regulator
F	Sensor pocket heat meter
G	Cold water meter distance piece
H	Zone valve for limiting heating flow to apartment
I	Return temperature limiter (RTB)
J	Heat meter distance piece
K	Thermostatic lead module (TTV)
L	Strainer
M	Draining and filling valve
N	Connection, ball valve

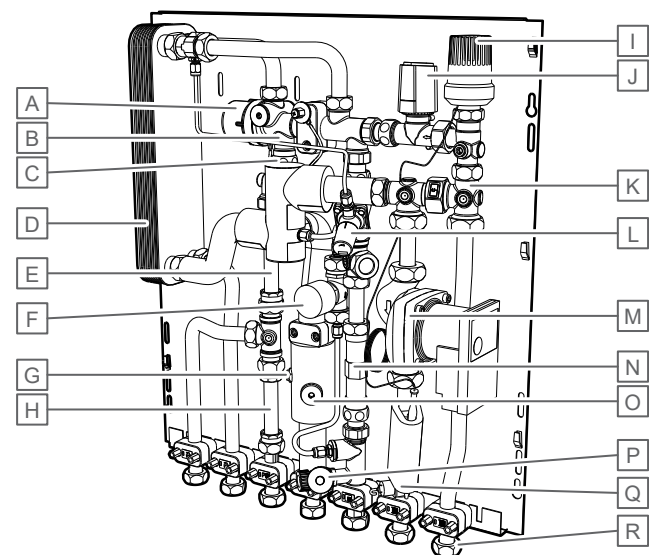
Combi Port PRO RC-TWB-RTB



CD0000252

Item	Description
A	Proportional volume control (PM)
B	Cold water throttle disc
C	Plate heat exchanger
D	Hot water meter distance piece
E	Sensor pocket heat meter
F	Cold water meter distance piece
G	Thermostatic hot water temperature limiter (TWB)
H	Differential pressure regulator
I	Return temperature limiter (RTB)
J	Heat meter distance piece
K	Thermostatic lead module (TTV)
L	Strainer
M	Draining and filling valve
N	Connection, ball valve

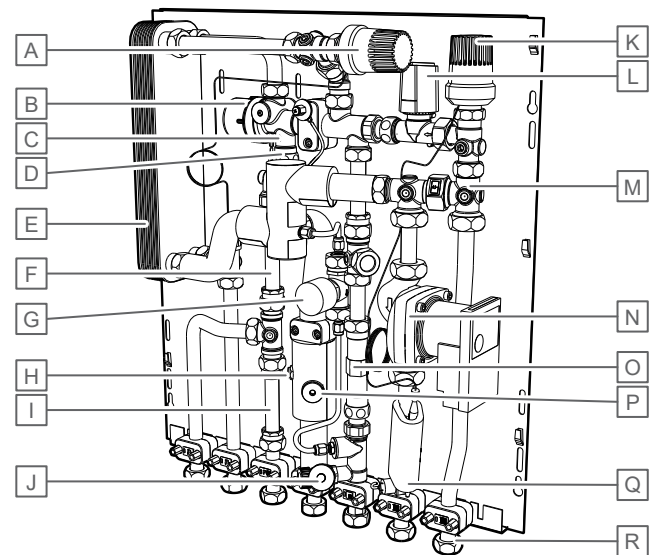
Combi Port PRO UFH



CD00000228

Item	Description
A	Proportional volume control (PM)
B	Cold water throttle disc
C	Strainer
D	Plate heat exchanger
E	Hot water meter distance piece
F	Thermostatic lead module (TTV)
G	Sensor pocket heat meter
H	Cold water meter distance piece
I	Thermostatic regulation
J	Zone valve for limiting heating flow to apartment
K	Check valve
L	Differential pressure regulator
M	Pump
N	Heat meter distance piece
O	Strainer
P	Draining and filling valve
Q	Safety temperature limiter
R	Connection, ball valve

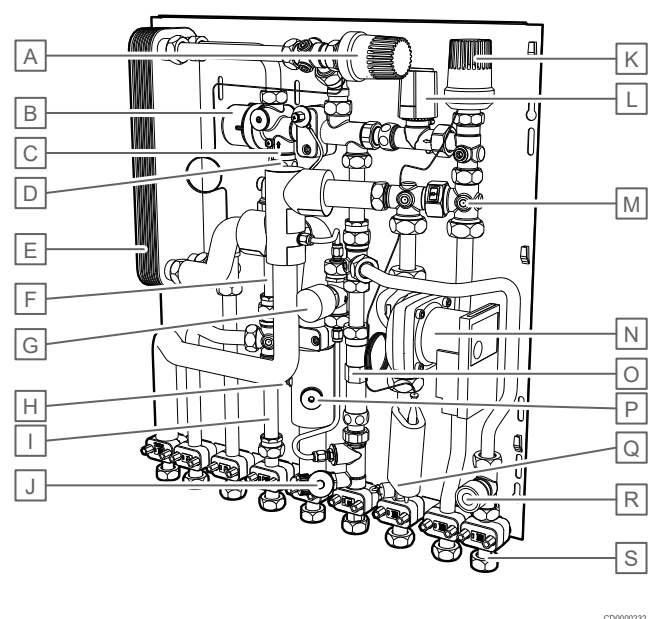
Combi Port PRO UFH-TWB



CD00000230

Item	Description
A	Thermostatic hot water temperature limiter (TWB)
B	Proportional volume control (PM)
C	Cold water throttle disc
D	Strainer
E	Plate heat exchanger
F	Hot water meter distance piece
G	Thermostatic lead module (TTV)
H	Sensor pocket heat meter
I	Cold water meter distance piece
J	Draining and filling valve
K	Thermostatic regulation
L	Zone valve for limiting heating flow to apartment
M	Check valve
N	Pump
O	Heat meter distance piece
P	Strainer
Q	Safety temperature limiter
R	Connection, ball valve

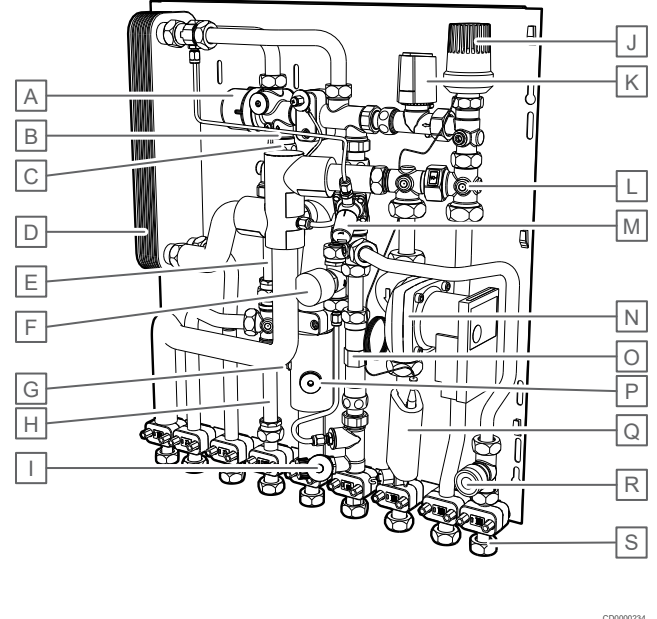
Combi Port PRO UFH-TWB-Additional heating



CD0000232

Item	Description
A	Thermostatic hot water temperature limiter (TWB)
B	Proportional volume control (PM)
C	Cold water throttle disc
D	Strainer
E	Plate heat exchanger
F	Hot water meter distance piece
G	Thermostatic lead module (TTV)
H	Sensor pocket heat meter
I	Cold water meter distance piece
J	Draining and filling valve
K	Thermostatic regulation
L	Zone valve for limiting heating flow to apartment
M	Check valve
N	Pump
O	Heat meter distance piece
P	Strainer
Q	Safety temperature limiter
R	Zone valve for limiting heating flow to apartment
S	Connection, ball valve

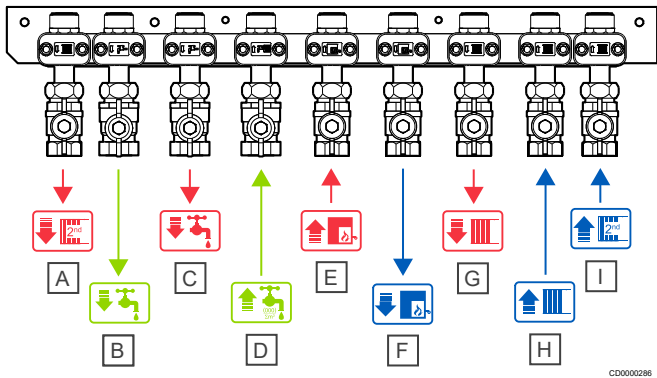
Combi Port PRO UFH-Additional heating



CD0000234

Item	Description
A	Proportional volume control (PM)
B	Cold water throttle disc
C	Strainer
D	Plate heat exchanger
E	Hot water meter distance piece
F	Thermostatic lead module (TTV)
G	Sensor pocket heat meter
H	Cold water meter distance piece
I	Draining and filling valve
J	Thermostatic regulation
K	Zone valve for limiting heating flow to apartment
L	Check valve
M	Differential pressure regulator
N	Pump
O	Heat meter distance piece
P	Strainer
Q	Safety temperature limiter
R	Zone valve for limiting heating flow to apartment
S	Connection, ball valve

Connection description



CD0000286

Item	Description
A	Heating circuit supply (secondary, 2nd)
B	Cold water to apartment (CW)
C	Domestic hot water to apartment (DHW)
D	Cold water from riser (CW)
E	Heating supply (primary)
F	Heating return (primary)
G	Heating supply (secondary)
H	Heating return (primary)
I	Heating circuit return (secondary, 2nd)

3.4 Optional components

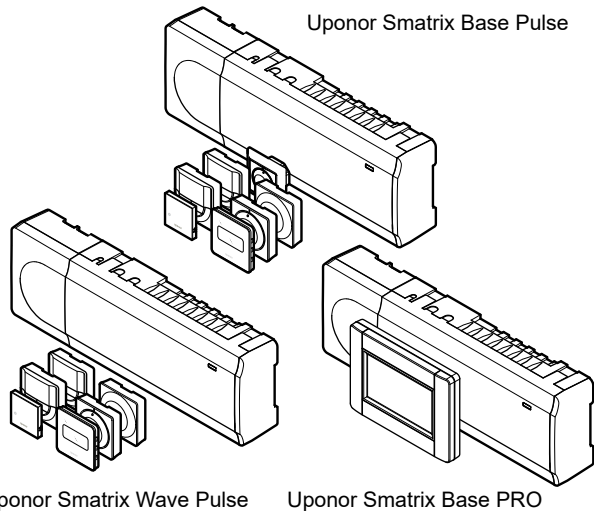
Room temperature control



Note

Thermostats and remote control modules are not part of the Combi Port delivery. They must be ordered separately.

Uponor Smatrix



Uponor Smatrix is a fully equipped range of components for room temperature control, optionally via radio or wired. The unique auto-balancing technology eliminates the need for manual balancing of the loops. The smart system accurately determines and controls the exact energy needed for an optimal room temperature. The result is highly comfortable underfloor heating and cooling with reduced energy consumption.

Room control functions

This list shows available functions for the different systems.

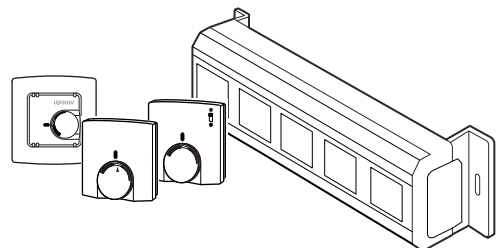
Basic functions	Wave Pulse	Base Pulse	Base PRO
Autobalancing	✓	✓	✓
Cooling function	✓	✓	✓
Modularity	✓	✓	✓
Installation and configuration functions	Wave Pulse	Base Pulse	Base PRO
Installation wizard	✓	✓	
Offline configuration	✓	✓	
Over-the-air updates	✓	✓	
Remote support	✓	✓	

Comfort functions	Wave Pulse	Base Pulse	Base PRO
Mobile app	✓	✓	
Smart notifications	✓	✓	
Trend visualization	✓	✓	✓
Multi home control	✓	✓	
Smart home integration	✓	✓	
Comfort settings	✓	✓	✓
ECO profiles	✓	✓	✓
Electrical underfloor heating control	✓	✓	
Ventilation integration	✓	✓	
Fan coil integration	✓		

Technical functions	Wave Pulse	Base Pulse	Base PRO
Uponor cloud services	✓	✓	
Data storage	✓	✓	✓
Pump management	✓	✓	✓
System diagnostics	✓	✓	✓
Heat pump (HP) integration	✓*)	✓*)	✓
Room bypass	✓	✓	✓
Room check			✓
KNX BMS integration			✓
Modbus RTU BMS integration			✓

*) cloud connectivity with selected HP for dynamic heat curve adjustment

Uponor Base flexiboard






Uponor Base flexiboard is a 230 V control that enables individual room control for 6 or 8 rooms. There are also 2 variants with integrated pump logic available. This switches the circulating pump on or off as required and enables an energy-efficient operation.

3.5 Spare parts

For spare parts to the Combi Port units, see separate price list.

4 Prepare for installation

4.1 General information

	<p>Warning!</p> <p>The fittings are under pressure. Escaping pressurized media can cause serious injury such as scalding or eye damage.</p> <p>Depressurise the system before performing any installation work.</p> <p>For retrofits to an existing system:</p> <p>Drain the system or close the supply lines of the section and depressurise it.</p>
	<p>Warning!</p> <p>Risk of injury due to the heavy weight of the unit:</p> <p>Do not perform the installation alone.</p> <p>Always wear safety shoes during the assembly. The unit can be of considerable weight, depending on the configuration. If the station falls over, this could lead to injuries, particularly to the feet.</p>
	<p>Caution!</p> <p>Leaks in the unit may occur during transport or installation. Check the nuts to ensure that they are properly tightened before the connection to avoid property damages.</p>

Before installing the heat interface unit ensure that:

- the primary pipes are laid in the building site.
- the primary pipe installation is flushed and checked for leaks
- the power and ground cables are routed to the installation site.
- the unit can be installed in a dry and frost-free room with an ambient temperature lower than +40 °C.
- the unit can be mounted upright (not inclined, upside down or lying down).
- the unit is always easy to access even after the assembly.

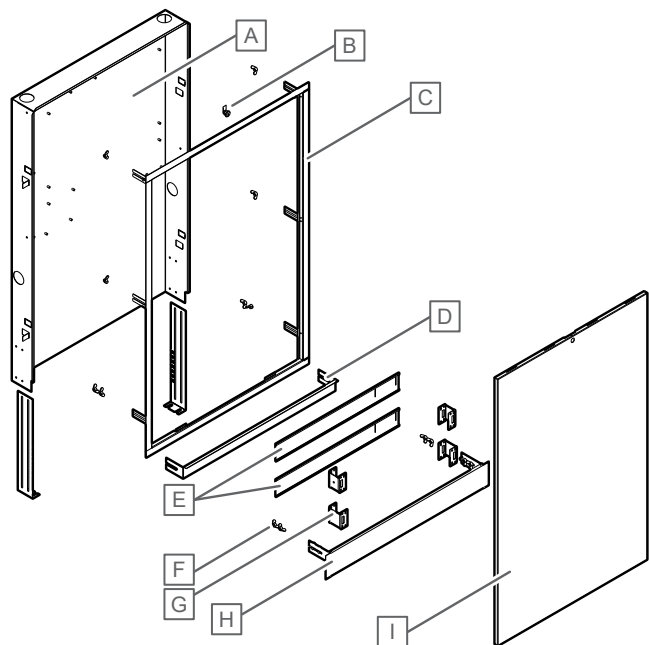
4.2 Water analysis

A water analysis of the tap water must be checked before using the device. The limit values can be found in our technical information. The heating water quality must be in accordance to VDI 2035. In case of warranty claims, the report must be presented.

5 Mechanical installation

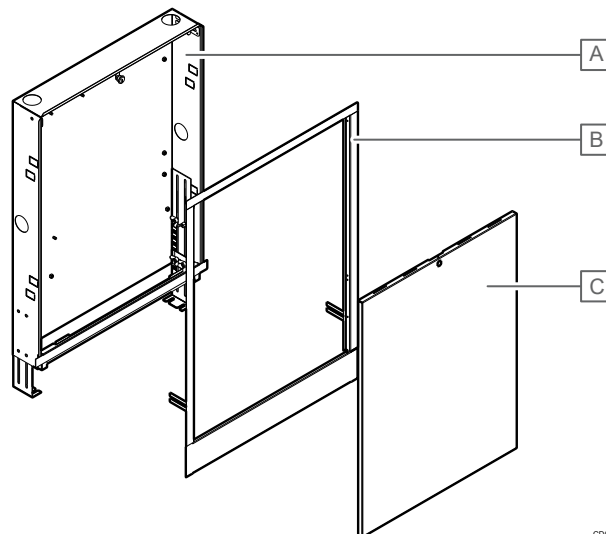
5.1 In-wall installation

Included parts



Item	Description
A	Cabinet body
B	Coin lock
C	Frame
D	Supporting plate for dry construction
E	Bracket without hole
F	Wingnut
G	Bracket with hole
H	Screed baffle plate
I	Door

Preparations



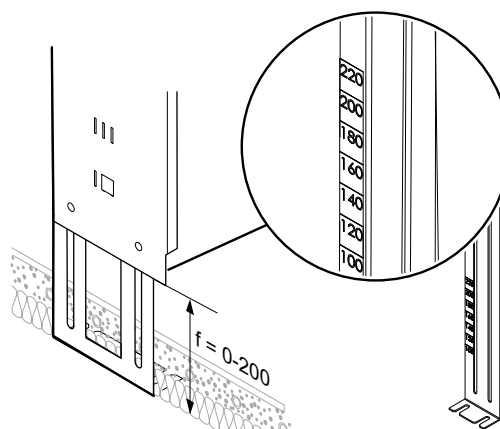
Item	Description
A	Cabinet body
B	Frame
C	Door

1. Dismount the frame and door.
2. Store the frame and door for later mounting.

Adjusting the in-wall cabinet

The in-wall cabinets are adjustable inside the niche in height and depth.

The niche height is calculated using the floor height and is measured from the bare floor. The specified floor installation height has to be set according to the values visible on the feet.



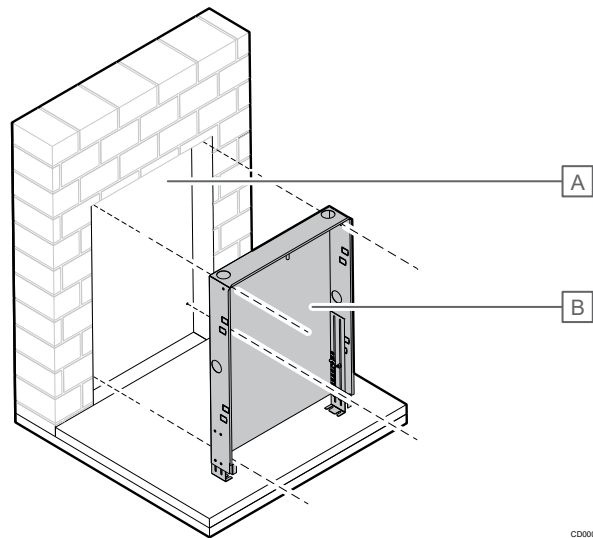
Dimensions of in-wall mounted cabinet (width x height x depth mm)	Niche dimensions in-wall (width x height x depth mm)
610 x 840 x 110	630 x (840 + 30 + f) x 115
750 x 1190 x 110	770 x (1190 + 30 + f) x 115

Install the in-wall cabinet

!

Note

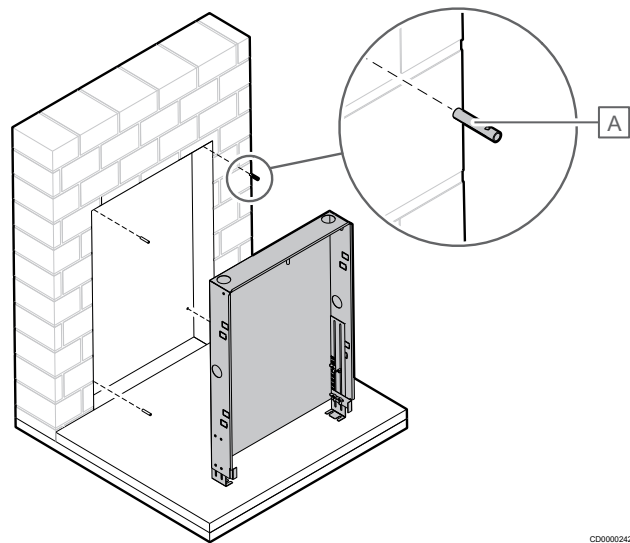
For freestanding installations, set the height according to the table and adjust the feet accordingly. Pay attention to the horizontal alignment.



CD00000241

Item	Description
A	Wall aperture
B	In-wall mounted cabinet

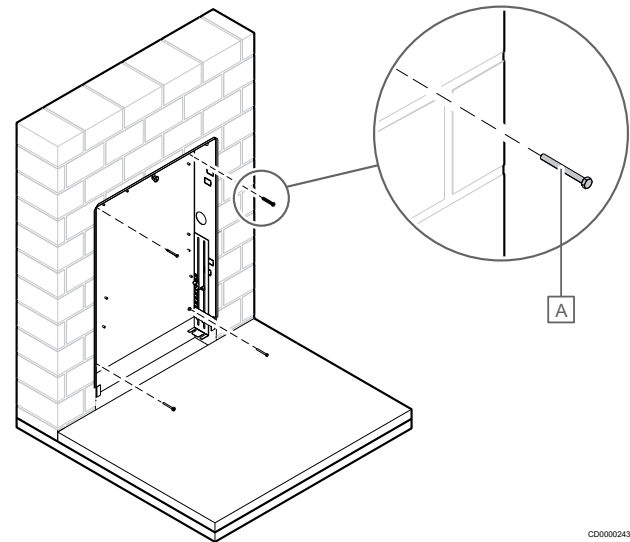
1. Mark the hole positions in the wall aperture using the in-wall cabinet holes as a pattern.
2. Drill holes suitable for the plug.



CD00000242

Item	Description
A	Plug (4 pcs)

3. Mount the enclosed plugs in the drilled holes and place the cabinet body in the wall aperture.

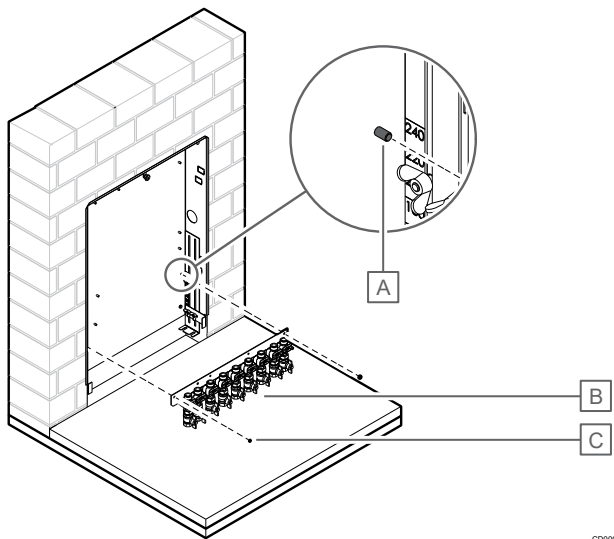


CD00000243

Item	Description
A	Hexagon bolt (4 pcs)

4. Secure the cabinet body to the wall aperture with the enclosed hexagon bolts.

Install the connection rail

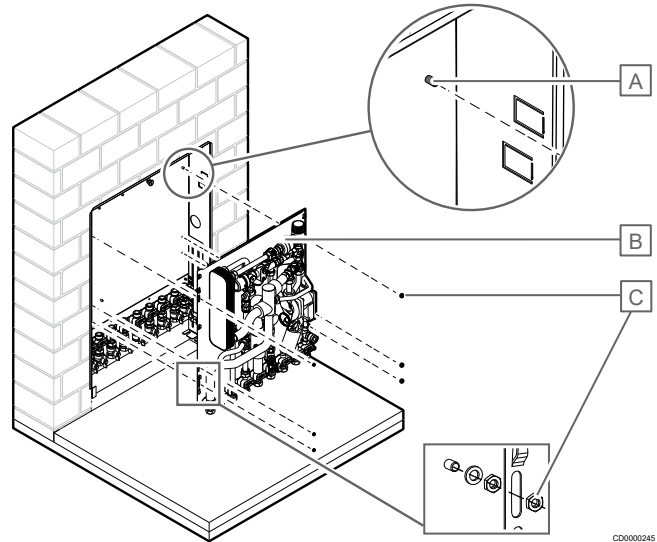


CD00000244

Item	Description
A	Fixed bolt
B	Connection rail
C	Nut (2 pcs)

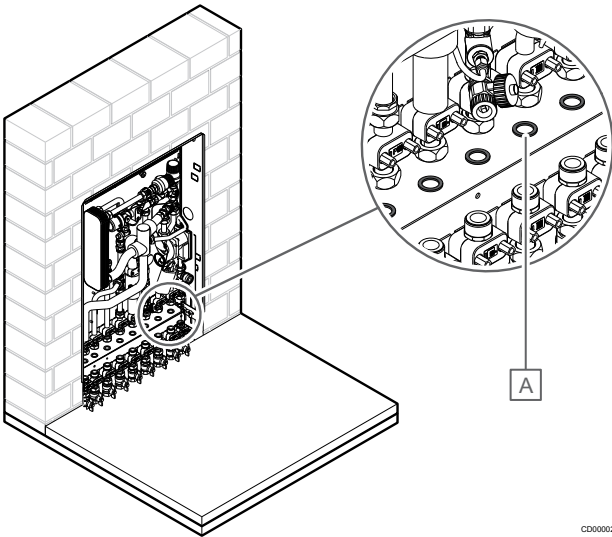
1. Mount the connection rail to the fixed bolts on the cabinet wall, tighten with the enclosed nuts.
2. Connect all pipes to screw connections.

Install the heat interface unit



Item	Description
A	Fixed bolts
B	Heat interface unit
C	Hexagon nut (6 pcs)

1. Mount the heat interface unit on the fixed bolts in the cabinet wall.
2. Tighten with **6** hexagon nuts.
3. Place the flat gaskets on to the connection rail 3/4" screw connection.



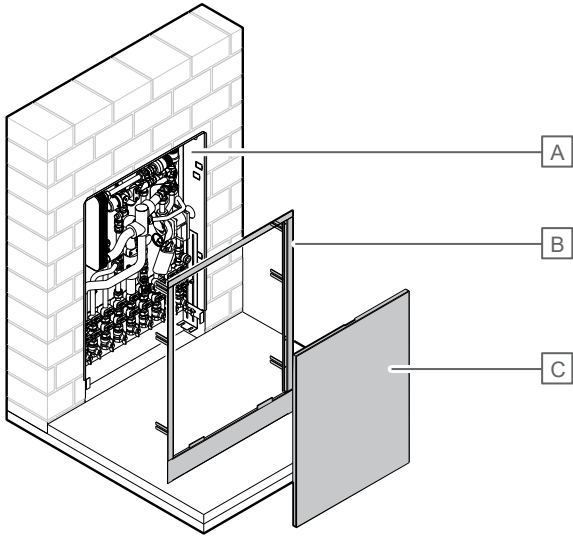
Item	Description
A	Flat gasket

Note

Check the flat gasket for damage.

4. Tighten the 3/4" swivel nuts.

Install the frame and door to the cabinet



Item	Description
A	In-wall cabinet
B	Frame
C	Door

1. Attach the frame to the cabinet body using wing nuts.
2. Mount the door in the frame by fitting the two frame brackets into the recesses in the door.

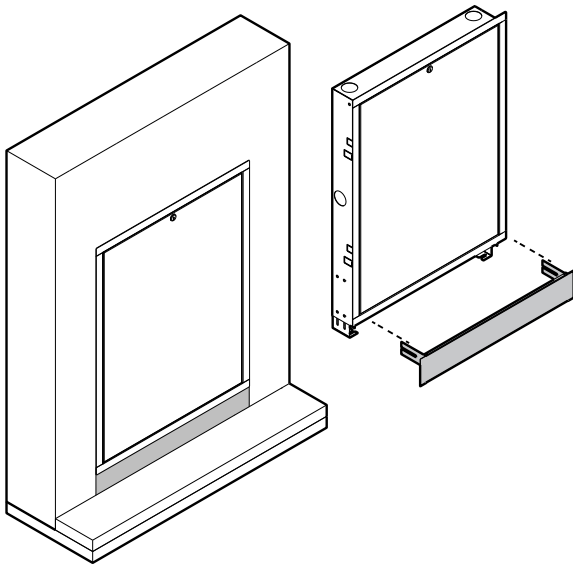
Screed baffle plate or supporting plate

For the in-wall cabinets two different sheets are available, depending on the application the corresponding cabinet version should be used:

- **Wide** = screed baffle plate.
- **Narrow** = supporting plate for dry construction.

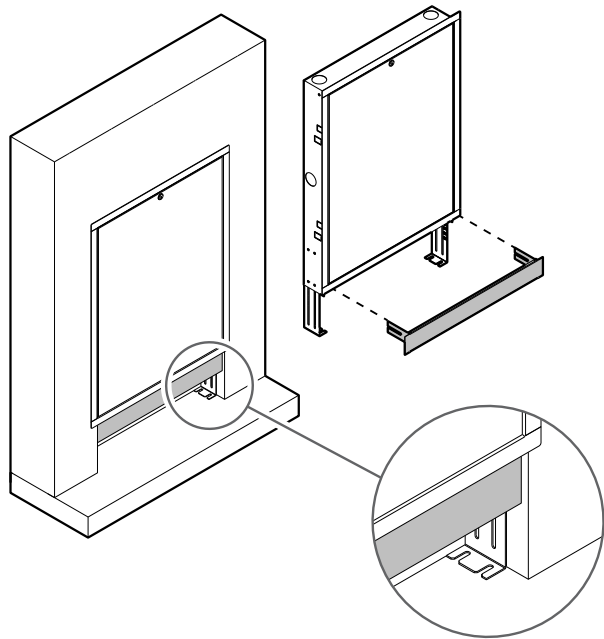
The mounting plate is already fastened into the in-floor mounting cabinet body, the screed impact plate is installed on the floor stands.

Screed baffle plate



Screed baffle plate: The screed baffle is mounted from the front. It has two ends on the top of the finish floor and is visible after assembly.

Supporting plate



In-wall cabinet with supporting plate for dry construction. The supporting plate is mounted from the front and can later be covered with plasterboard.

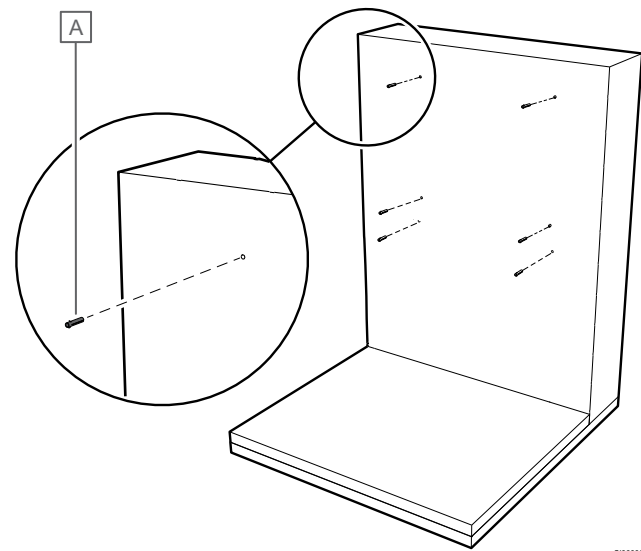
5.2 On-wall installation

Note

For disassembling the on-floor cabinet, leave **3 cm** space above and to the sides.

The on-wall mounted cabinets are equipped with venting systems to prevent unnecessary build-up of heat and condensation.

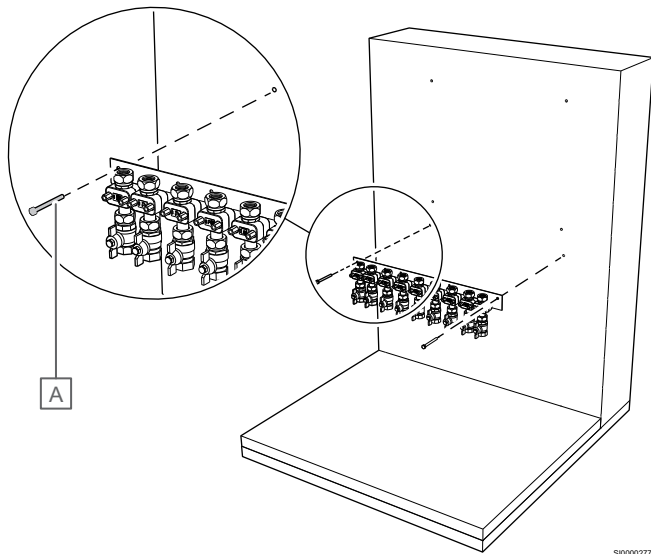
Assembling the on-wall connection rail



Item	Description
A	Plug (6 pcs)

1. Mark the hole positions on the wall and drill holes using a **6 mm** drill.
 2. Insert the plug in the drilled holes.
- Note**

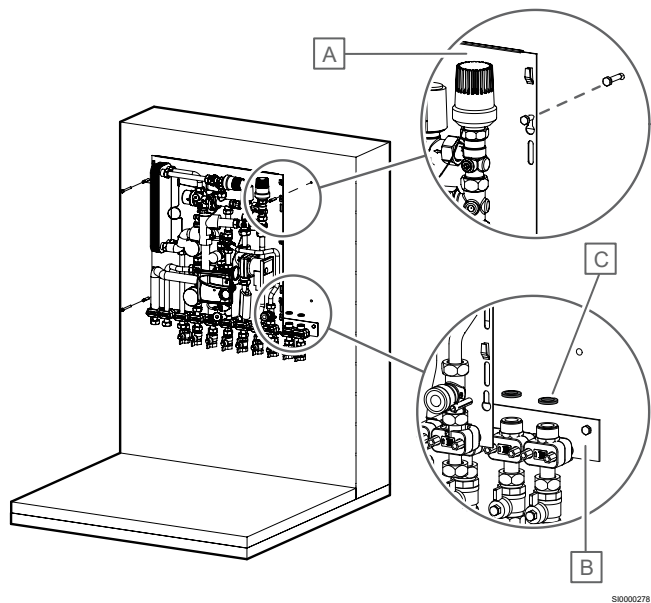
See the dimensional drawings for measurements. Pay attention to the horizontal alignment.
3. Attach the on-wall rail to the wall using the hexagon bolts.



Item	Description
A	Hexagon bolt (2 pcs)

4. Install all pipes to the on-wall rail connections.

Install the heat interface unit



Item	Description
A	Heat interface unit
B	Connection rail
C	Flat gasket

1. Screw the heat interface unit to the wall using the hexagon bolts
2. Place the flat seals on to the connection rail $\frac{3}{4}$ " screw connection.



Note

Check the flat seals for damage.

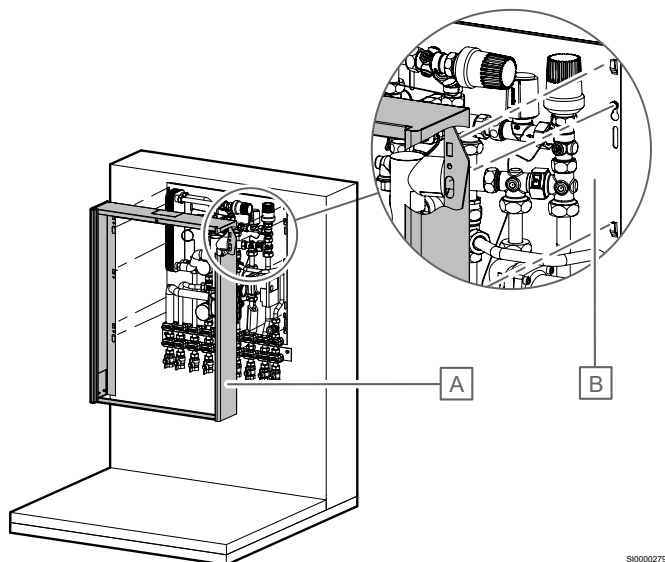
3. Tighten the $\frac{3}{4}$ " swivel nuts.

Install the on-wall covering



Caution!

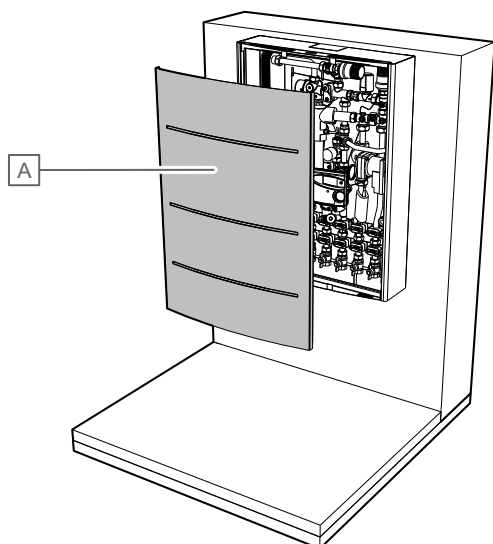
Mount according to the condition of the walls and supports



SI0000279

Item	Description
A	Frame
B	Base sheet

1. Hang the on-wall frame on to the lateral strips of the base sheet.



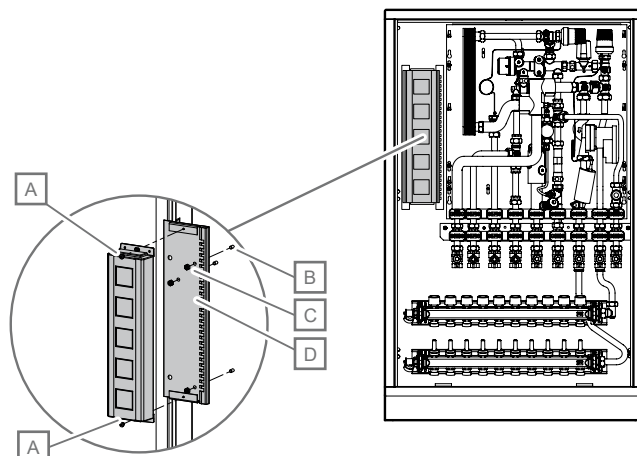
SI0000280

Item	Description
A	Door

5.3 Installation of optional components

In-wall installation

Uponor Base flexiboard

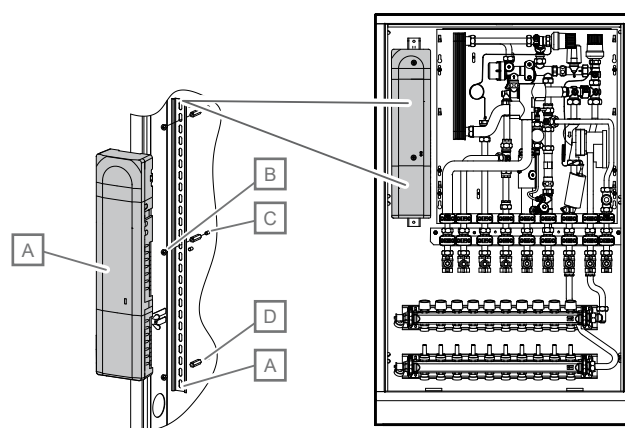


CD0000297

Item	Description
A	Uponor Base flexiboard room controller including screws
B	Bolt in wall cover
C	Nut
D	Mounting plate

1. Attach the mounting plate to the bolts.
2. Screw the nuts onto the bolts.
3. Attach the Uponor Base flexiboard room controller onto the mounting plate with the screws provided.

Uponor Smatrix



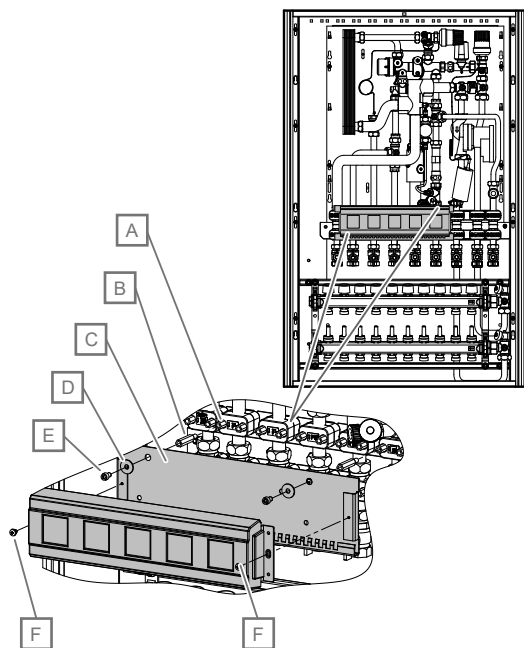
CD0000298

Item	Description
A	Uponor Smatrix Wave Pulse room controller
B	Screws
C	Bolts
D	Distance nut

1. Fasten the distance nuts on the bolts.
2. Fasten the DIN-rail with the screws on the distance nut.
3. Attach the Uponor Smatrix room controller to the DIN-rail.

On-wall installation

Uponor Base flexiboard

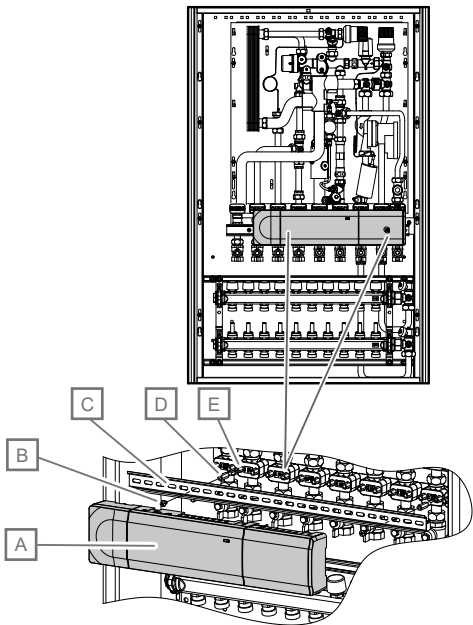


CD0000299

Item	Description
A	Spacer
B	Distance bolt
C	Mounting plate
D	Washer
E	Screw
F	Uponor Base flexiboard room controller including screws

1. Fasten the distance bolt on the spacers.
2. Mount the mounting plate using the washers and the screws.
3. Attach the Uponor Base flexiboard room controller onto the mounting plate with the screws provided.

Uponor Smatrix



CD0000300

Item	Description
A	Uponor Smatrix Wave Pulse room controller
B	Screws
C	DIN-rail
D	Distance nut
E	Spacer

1. Mount the distance nuts on the bolts.
2. Fasten the DIN-rail with the screws on the distance nut.
3. Attach the Uponor Smatrix controller to the DIN-rail.

Additional information



Note

Visit the Uponor download centre for more information regarding the installation and configuration of Uponor Smatrix and Uponor Base flexiboard.





Uponor Smatrix
Uponor Base Flexiboard



www.uponor.com/services/download-centre

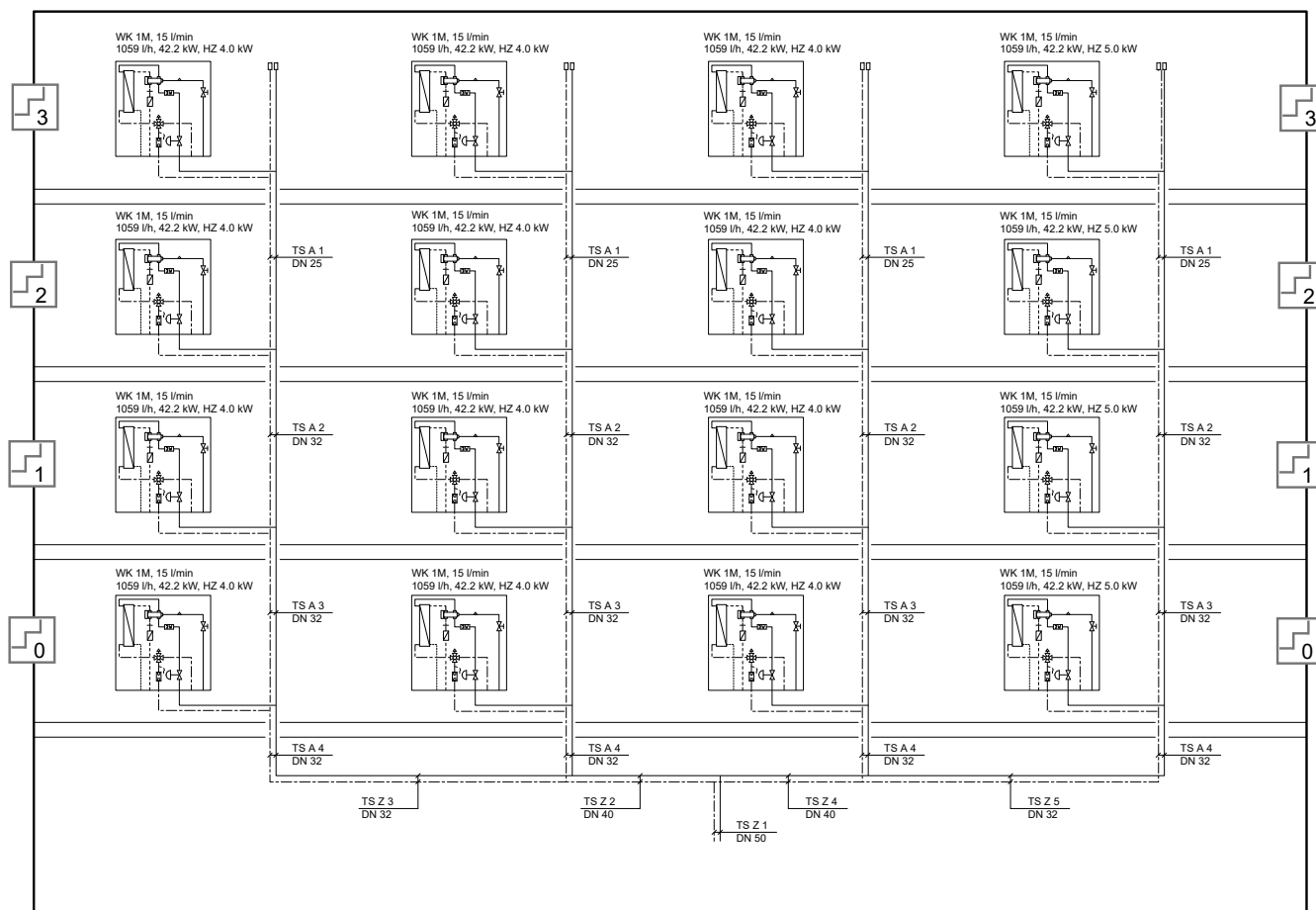
6 Finishing installation

	Warning! Leaking connections can cause personal injury and property damages.
	Note Install the pipes in accordance with planning documentation.

To ensure proper functionality for the heating system, do not reduce the specified cable cross-sections. Use black adapters to connect the heat meter.



If the fittings are not to be replaced with optional components, replace the plastic fittings with stainless steel **1.4401** pipes. Contact manufacturer for more information.

- Connect the hydraulics correctly.
- When connecting the pipes, use the supplied seals.
- Connect the heating supply, heating return and the hot and cold water.
- Install a filling and draining valve on site at a suitable central point to fill the central heating system.
- Observe the hydraulic diagram as an installation guide example.



CD0000264

6.1 Visual inspection

	Caution! Improper commissioning can lead to property damage.
	Note If an installation error is found during visual inspection, temporarily stop commissioning and rectify the error.

Complete commissioning by following these steps:

1. Make a complete check up of the installation prior to commissioning:
 - 1.1. Make sure that the hydraulics are connected correctly

- 1.2. Check that any dirt accumulated during installation and/or dust on the unit has been removed properly. Check strainers and, if necessary, flush/clean them.
- 1.3. Check the tightness of all seals on pipe - and device connections and tighten them if necessary. When tightening connections, always lock the opposite side
- 1.4. Optional: Check that all electrical connections have been made correctly, including polarity of the mains connection and that grounding is assured.
2. Check that the installation is filled/flushed and vented.

7 Operation

7.1 Heat meter distance piece



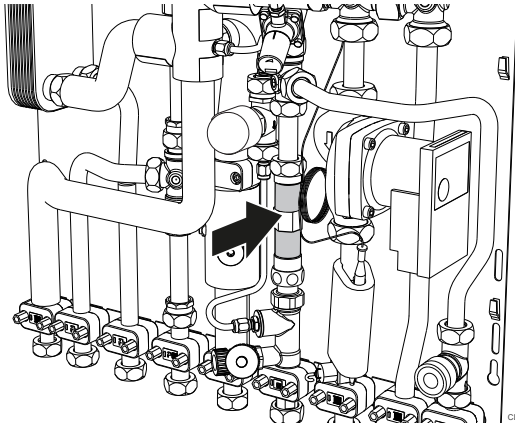
Note

The heat meter to be installed must have following specifications: **Qn = 1,5** 1,5-2 seconds. Construction length of **110 mm** and **¾"** external threaded connection.



Note

The heat meter distance piece is not suitable for continuous operation.

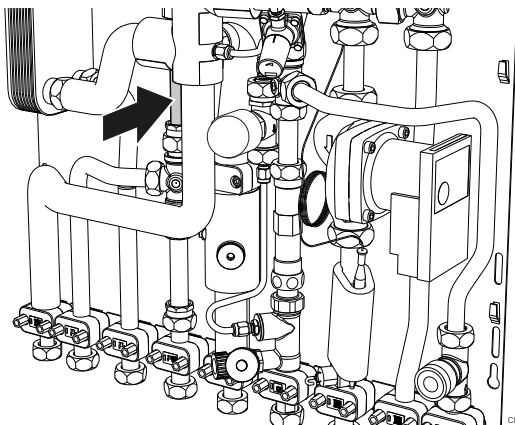


CD00000296

The heat meter distance piece is intended to be replaced with a heat meter to record energy consumption. This is recorded by adding a heat meter with a fast scanning frequency that fully measures the volume flow rate every 3-4 secs, including kWh calculation.

7.2 Hot water meter distance piece

The hot water meter distance piece is intended to be replaced with a hot water meter to record water consumption.



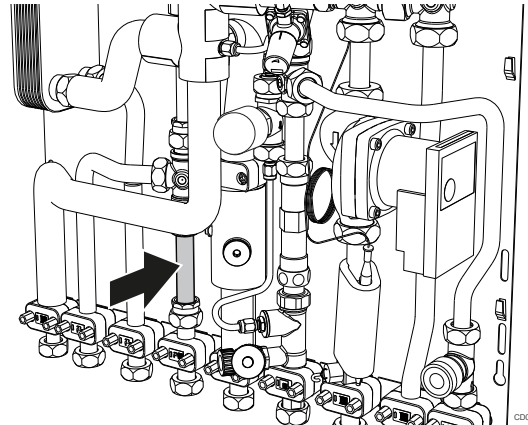
CD00000344

7.3 Cold water meter distance piece



Note

Operating pressure: **PN 10**



CD00000294

The cold water meter distance piece (**110 mm x ¾"**) is intended to be replaced with a water meter that count the units overall cold water consumption. The outflow supplies cold water and heating once this has been counted by the cold water meter.

7.4 Strainer



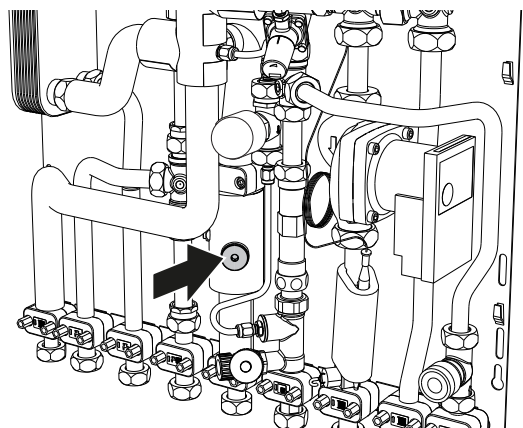
Caution!

Lock the unit and relieve the pressure before any work with the strainer.



Note

To open the cold water/primary flow strainer, use internal hexagon (**6 mm**).



CD00000295

The strainer collects dirt and its filter can be removed for inspection and cleaning.

7.5 Thermostatic lead module (TTV) (optional)



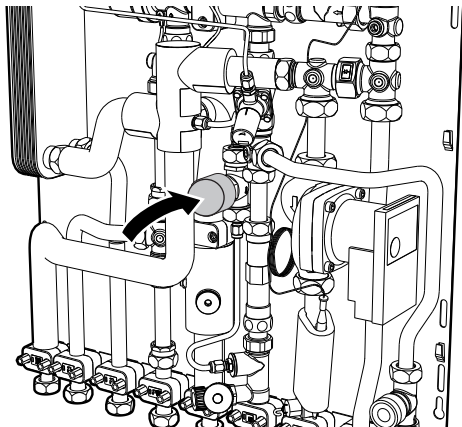
Note

A too high value can cause the heating water return temperature to rise.



Note

A too low maintenance temperature setting can lead to longer waiting times when preparing domestic hot water.



CD0000269

A thermostatic lead module (TTV) is used to prevent the risers from cooling down when not dispensing.

1. Set the TTV line temperature to approximately **15 K** below the network flow temperature.

7.6 Thermostatic hot water temperature limiter (TWB)

A maximum temperature limitation of the domestic hot water is achieved through a thermostatically controlled hot water limiter.

Scales	1	2	3	4	5	6	7	8
WW temp. (35-70 °C)	35	40	50	55	60	65	65	70

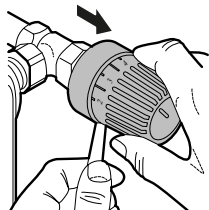
Changing default settings



Caution!

Make sure not to bend or break the capillary line.

1. **Remove the thermostatic tip from the valve**

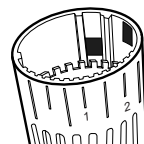


SI0000286

- 1.1. Using a welding wire, slide out the locking tabs next to the adjustment number, on the left and right, in the direction of the swivel nut.
- 1.2. If the valve tip is limited in an upward direction (valve can be closed), only one locking tab needs be to removed. Using a welding wire, slide out the locking tabs next to the adjustment number, on the left and right, in the direction of the swivel nut.

- 1.3. Remove the top part of the valve head and lift out the internal anchor using a strong round object.

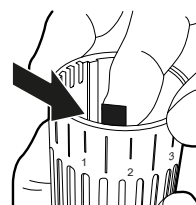
2. **Adjust the handwheel**



SI0000287

- 2.1. Line up the white marking on the toothed sleeve with the white alignment mark underneath the lettering.
- 2.2. Gently turn the handwheel to desired setting.

3. **Block the setting**



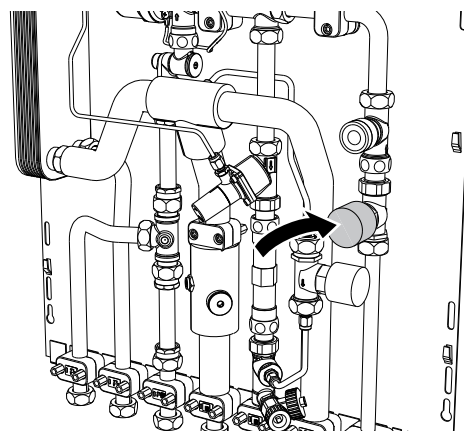
SI0000288

- 3.1. Insert the clips behind the number set on the handwheel.
- 3.2. Reinstall the handwheel to the set value so that it is blocked with the new setting.

4. **Install the thermostatic tip**

- 4.1. Screw the valve tip on to the valve and the standard setting is changed.

7.7 Return temperature limiter (RTB)




CD0000279

The return temperature valve has a setting scale, which range is printed on the limiter cap. The cap can be secured with the grub screw using a hexagon socket (**1.5 mm**).

7.8 Differential pressure regulator


The differential pressure regulator protects other control valves, such as the proportional volume control or the radiator valves, from the excessive differential pressure and ensures the hydraulic balancing of the installation. The differential pressure regulator works independently and without auxiliary energy and is adjustable from the outside.

Combi Port PRO RC



Caution!

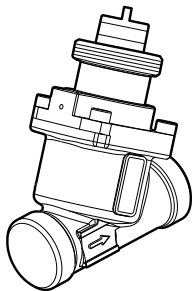
Mounting an actuator can cause the volume flow to reduce.



Caution!

The max. permitted differential pressure before the differential pressure regulator is **2.5 bar**


For the Combi Port PRO RC, the differential pressure regulator is installed in the residential heating circuit to ensure the hydraulic balancing.



CD0000266

- A 2-point actuator (30 x 1.5) can be attached to this valve for regulation. Setting range (5–15 kPa) See regulator flow diagram (Combi Port PRO RC, Page 40)

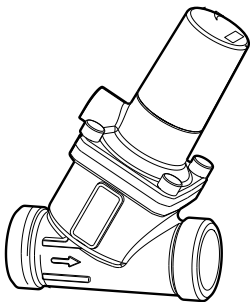
Combi Port PRO UFH



Caution!

The max. permitted differential pressure before the differential pressure regulator is **2.5 bar**.

For Combi Port PRO UFH, the differential pressure regulator is installed in the device inflow for the adjustment of the devices in the heating system. The settings can be made directly at the valve and setting values are printed on the handwheel.

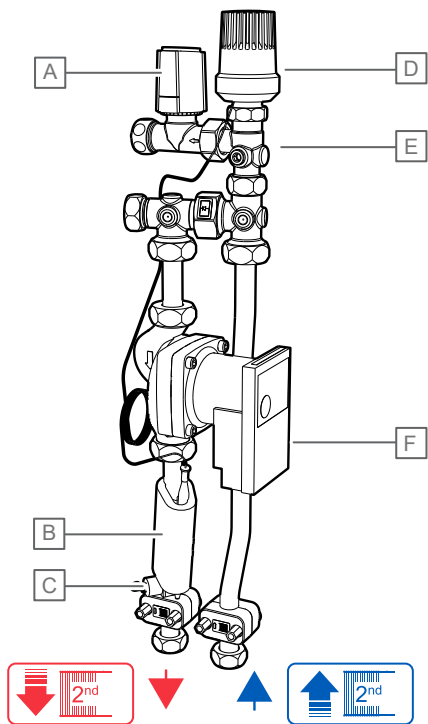


CD0000263

- Setting range (5-30 kPa). For volume flow settings, see diagram (Combi Port PRO UFH, Page 41).

7.9 Thermostatic regulated mixed circuit

The thermostatically regulated, mixed injection circuit provides control of the flow temperature. The following overview shows the position of the components. There is an insert check valve mounted in the screw connection of the bypass (E).




CD0000262

Item	Description
A	Zone valve (AV 9)
B	Contact sensor
C	Safety temperature limiter
D	Limiter of water temperature
E	Corner valve housing with valve insert
F	Heating pump


Scale value	1	2	3	4	5	6	7
Flow temp. 20-50 °C	20	25	30	35	40	45	50

7.10 Heating pump settings



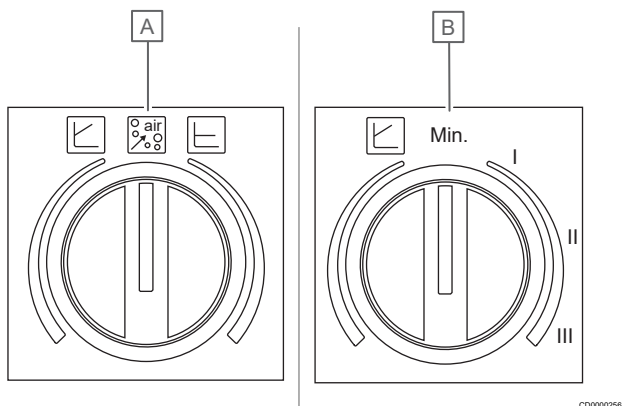
Note

Please read the installation manual from the pump manufacturer.



Note

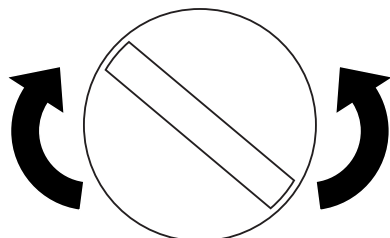
In the event of a power outage, all settings and displays are retained.



Item	Description
A	RKA = Pump with operating button for $\Delta p-v$, $\Delta p-c$
B	RKC = Version with operating button for $\Delta p-v$, constant speed I, II, III

The delivered heating circulation pump can either switch between constant or variable curves, or be set to operate with a constant speed.

Regulation type settings

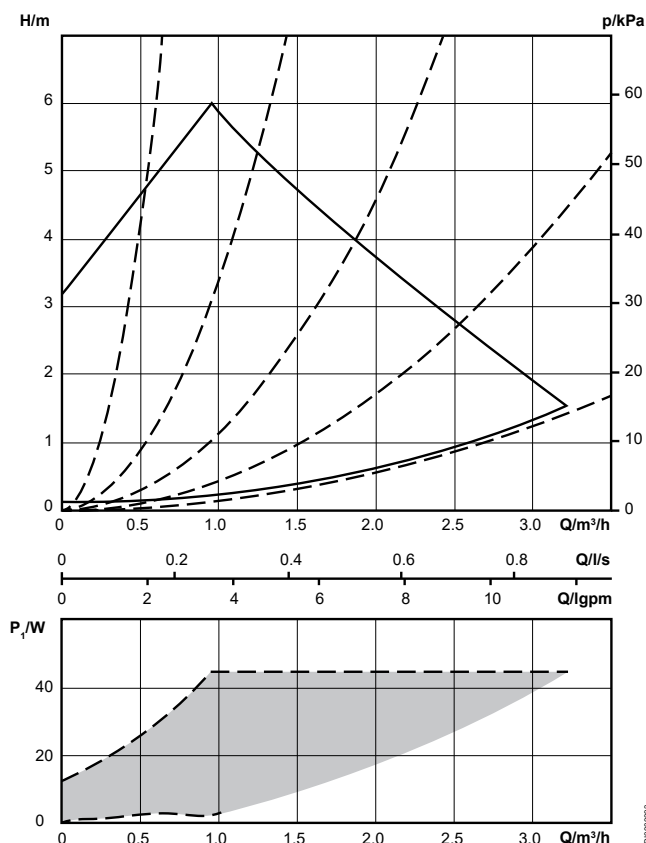


Set pump regulation type by turning the operating dial to the desired symbol.

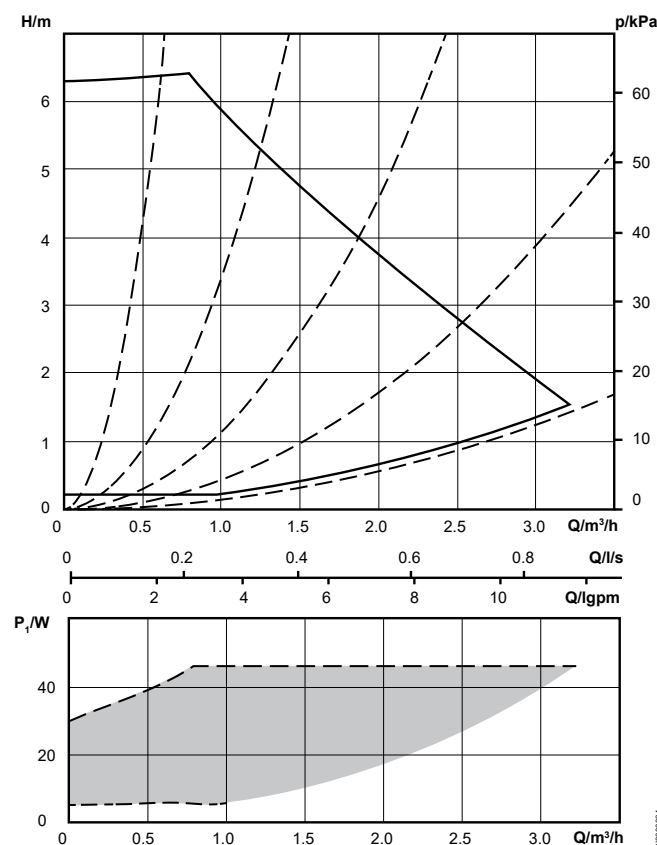
- Variable differential pressure ($\Delta p-v$):
The variable mode ($\Delta p-v$) is positioned to the left of the centre position.
- Constant differential pressure ($\Delta p-c$):
The constant mode ($\Delta p-c$) is positioned to the right of the centre position.
Constant speed I, II, III:
The constant speed mode is positioned to the right of the centre position.

Pump values

Variable values $\Delta p-v$



Constant values $\Delta p-c$



7.11 Zone valve (AV 9)



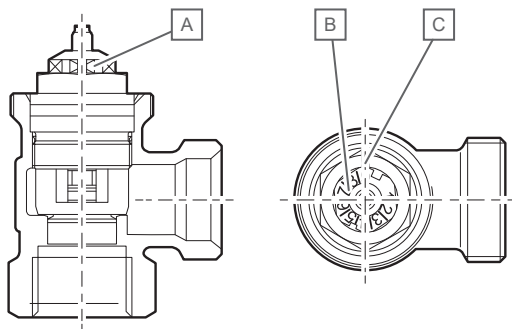
Note

It is possible to change the valve setting during operation; the water will not escape.



Note

The required setting value must correspond to the marking. The default setting between **1-9** can be selected. Factory default settings = **7**.

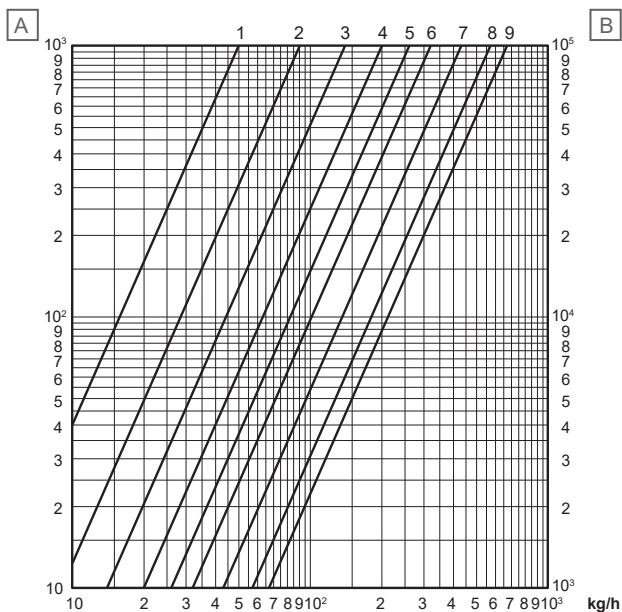


CD0000254

Item	Description
A	Hexagonal 13 mm
B	Setting value
C	Mark

The domestic heating circuit can be adjusted with the regulating zone valve. This valve has a threaded connection (**30 x 1,5**) for a 2-point actuator.

Change setting value



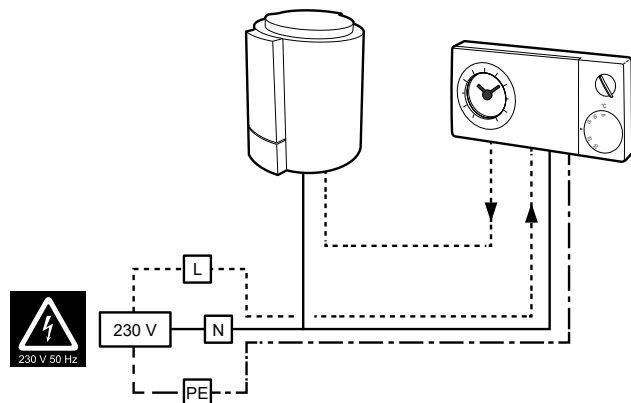
CD0000252

Item	Description
A	Pressure loss Δp [mbar]
B	Pressure loss Δp [Pascal]
kg/h	Mass flux q_m

Pre-setting	1	2	3	4	5	6	7	8	9
Kv value / 2 K P deviation	0.05	0.09	0.14	0.20	0.26	0.32	0.43	0.57	0.67

- Adjust from default setting to the desired value using a hexagonal (**SW 13 mm**) open-ended spanner, or with a special key.

Actuator on the zone valve



CD0000260

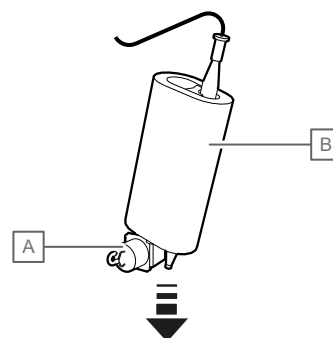
The thermal actuator is mounted on the zone valve and is controlled by a room thermostat. All users can set the required room temperature here including night-time reduction.

The unit is EnEV compliant in this combination.

Description	Value
Operating voltage	230 V AC, 50/60 Hz
Operating line	1 W
Line	2 x 0.75 mm ² (1 x Blue / 1 x Brown)

7.12 Pipe clip sensor safety temperature monitor (STW)

Before the secondary heating supply is connected, the pipe clip sensor safety temperature monitor (STW) prevents excessive temperatures and provides an emergency-off function for the radiant heating circuit.



CD0000268

Item	Description
A	Contact sensor
B	Safety temperature monitor

- Open the response temperature: **55 °C +/- 3 K**
- Close the reset: **45 °C +/- 4 K**

- Use an oil flex cable **110 mm, 2 x 0.75 mm²**, length **1000 mm** for fastening and mounting on the pipeline.
- Use supply cable ends with ferrules.

7.13 Cold water throttle disc



Note

The installed cold water throttle disc can be replaced by a corresponding throttle disc if required (see table below). The colour indicates the maximum inserted volume flow.

A cold water throttle disc is located in the connection between the cold water connection of the volume control valve and the strainer.

The throttle disc limits the amount of cold water to the heat exchanger and prevents the hot water supply from exceeding the calculated volume.

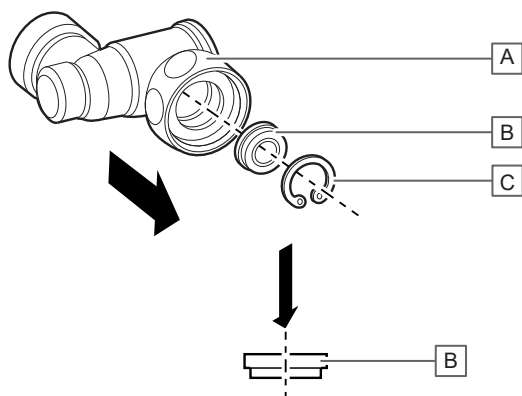
Flow regulator insert colour	l/min
Black	6
White	8
Orange	9
Blue	10
Red	12
Green	15
Brown	17
Black	19
Purple	22

Replacing the throttle disc



Note

Observe the flow direction when replacing the throttle disc!



CD0000258

Item	Description
A	Strainer
B	Throttle disc
C	Retaining ring

1. Dismantle the strainer.
2. Dismantle the retaining ring. Use special pliers for this.
3. Replace the throttle disc in accordance with the desired setting value.
4. Fix the retaining ring.
5. Fix the strainer.

7.14 Hydraulic balancing on the manifold



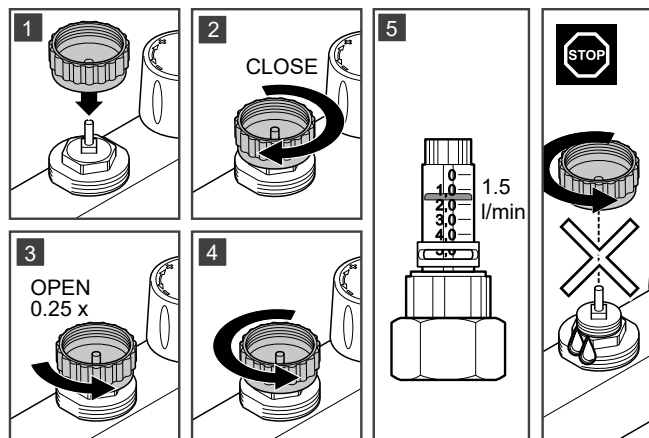
Warning!

The pressure in the valves can cause personal injury.



Caution!

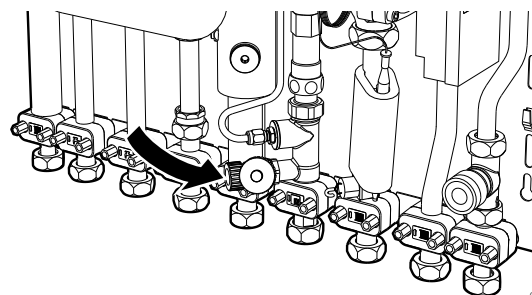
Never turn the valves counter clockwise more than five (5) turns. When the cap is completely unscrewed, the valves will shoot out of the thread.



CD0000301

1. Remove the cap from the fill/flush valve on the return manifold bar. Turn it around until the square connector is down.
2. Close the valve.
3. Open the regulation valve **0.25 x**
4. Adjust the regulation valve as many turns as necessary to achieve desired loop setting.
5. Consider the planning documentation when adjusting the flow rate on the relevant top meter.

7.15 Filling and flushing





CD0000265

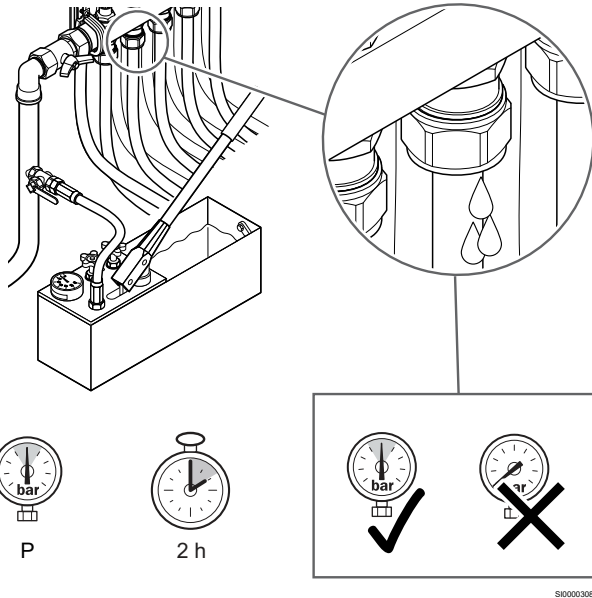
The filling and draining valve on the heat interface unit is used to fill and flush the system.

Filling and flushing the system

1. Open the draining valve (A).
2. Fill and flush the system with heating water.


7.16 Tightness testing

	Warning! Leaking connections can cause personal injury and property damages.
	Caution! Pressure leaks may occur even at normal operating pressure, and must be fixed immediately.



1. Test the heating circuit for two hours according to the applicable guidelines.
2. Fix any leaks immediately.

7.17 Commissioning and hand over

	Caution! Improper commissioning can lead to property damage.
-------------------------------------------------------------------------------------	------------------------------------------------------------------------

Complete commissioning by following these steps:

1. Check the settings.
2. Complete the acceptance/commissioning protocol.
3. Hand over the documentation and protocol to the homeowner.

8 Maintenance

8.1 General information

Important information

To ensure the correct and safe operation of the system, this information must be read and followed.

Following these instructions will help avoid hazards and downtime and increase the reliability and life of the system.

Function and energy savings


The heat interface unit is a compact station that can operate in a system with several units or as a supplement to an existing heating system. It is assigned to a residential unit and is used to measure and control central heating and heating of the water.

The heat interface unit combines:

- water heating in the flow system via a plate heat exchanger (water heating is controlled without auxiliary energy)
- the metering of the energy consumption for central heating and hot water and, as an option, the amount of cold water
- heating control in the apartment with hydraulic balancing and energy saving by ECO-mode.

Hot water is only prepared when needed. Service water is not stored. This is one of the most convenient ways to heat fresh water. This enables dispensing of large amounts of hot water. Restrictions are only imposed by the central heating.

Water heating



Caution!

All water pipes are filled and pressurised.

The cold water supply for the apartment is provided via the central house connection and distribution line.

The heat interface unit is equipped with a central shut-off ball valve for cold water (B). As an option there is a shut-off ball valve for installation purposes.

All ball valves should be exercised (open-close) at regular intervals (about once per month).

The ball valves (B) and (C) should only be closed for assembly/disassembly reasons.

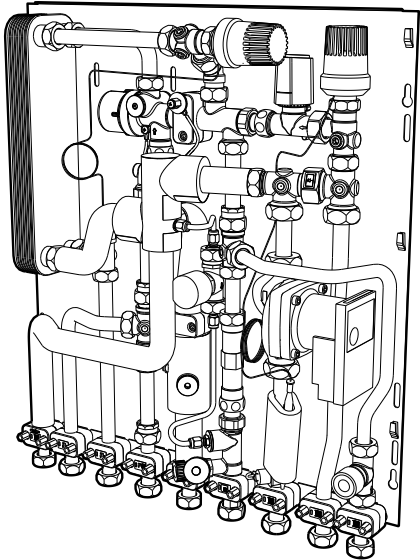
Water hygiene

Although the water system follows the flow principle, which is the most hygienic method of water heating, the water pipes should always be flushed if not used for a longer period.

The tapping duration should then be around 1-2 minutes. The water must be allowed to run at least every 7 days for about 1-2 minutes.

8.2 Turning off heat interface unit

Ball valves C, D and E must be closed in the event of malfunctions. A visual inspection is required every 3 to 6 months.



CD0000255

Item	Description
A	Heating circuit supply (secondary, 2nd)
B	Cold water to apartment (CW)
C	Domestic hot water to apartment (DHW)
D	Cold water from riser (CW)
E	Heating supply (primary)
F	Heating return (primary)
G	Heating supply (secondary)
H	Heating return (primary)
I	Heating circuit return (secondary, 2nd)

If the system is to be shut down for a longer period:

1. Shut off the cold water tap. Do not close ball valves D, E, F, G.
2. Protect the heating unit against frost.
3. At return, let the hot water run for about 5 minutes at start up.

8.3 Setting log heat interface units

Date:	Setting log heat interface units												
Site:			Type:					Serial no:					
Component	Description										Setting range	Factory setting	Set on site
Set zone valve for the flow rate	Setting value	1	2	3	4	5	6	7	8	9	1-9 continuous	7	
	Kv value / 2 K P deviation	0.05	0.09	0.14	0.20	0.26	0.32	0.49	0.57	0.67			
TTV	Thermostatic lead module, capillary 6 mm, Kvs 1.55										35-60 °C	45 °C	
DRG	Differential pressure regulator the heating circuit										50-150 mbar	100 mbar	
TWB	The thermostatic hot water temperature limiter, infinitely adjustable downwards										35-70 °C	6	
	Scale value 35-70 °C	1	2	3	4	5	6	7	8		(limited to 60 °C)		
	Hot water temperature	35 °C	40 °C	45 °C	50 °C	55 °C	60 °C	65 °C	70 °C				
RTB	Return temperature limiter, Kvs 1.55										0-40 °C	37.5 °C	
STW	Safety temperature monitor is fixed on a setting value											55 °C	
Component	Description										Type		
Cold water throttle disc	Colour	Green				Black							
	Max. flow l/min	15				19							
Exchanger	Type	GBS-240H-24 (CU)				GBS-240H-40 (CU)							
		GVH-228H-24 (Vaclnox)				GVH-228H-40 (Vaclnox)							
Heat meter distance piece	Heat meter line Qn 1.5 installation length, 110 mm x ¾"												

Other components/devices

Component	Description	Type	Not used
Installer, signature:	Installer, in capital letters:	Service partner:	

9 Troubleshooting

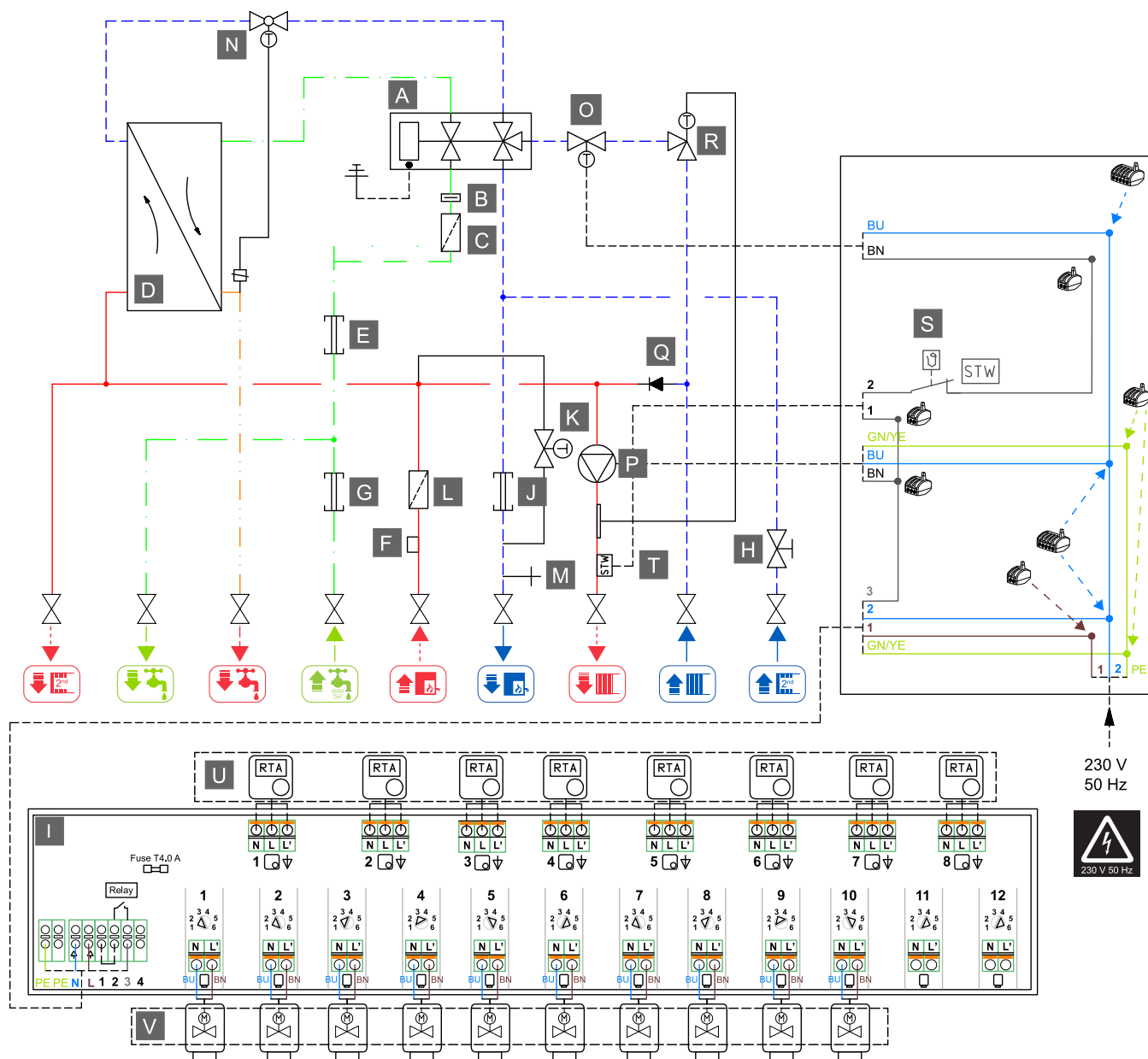
9.1 Fault description

Fault description	Cause	Solution
Hot water function		
Hot water temperature too low or fluctuating	Central heating	
	Buffer temperature too low	Buffer temperature must be 5-10 K above hot water setpoint
	Heating circuit pump type not supported	The following pump type is supported: Wilo Stratos
	Setting for heating circuit pump is not correct	Heating circuit pump setting: Constant pressure
	Pump performance too low	Check the pump performance
	Mixing valve faulty	Check the mixing valve function
	Setting for heating circuit control is not correct	Check the heating circuit control setting
	Heating circuit control faulty	Check the heating control function
	Air trapped in buffer storage	Vent buffer storage tank
	Cold water pressure too low/too high	Cold water pressure at unit: Min. 2 bar, Max. 4 bar
	Heat interface unit	
	Strainer in primary flow dirty	Clean the strainer in the primary flow
	Strainer in cold water input dirty	Clean the strainer in the cold water input
	Insufficient differential pressure	Clean the capillary of the differential pressure control, and check that the differential pressure control is working
	Air in the system	Vent the system while dispensing
	Insufficient heating volume flow passes through the heat exchanger	Check the volume flow during maximum dispensing using heat meters: Uponor Combi Port PRO - 24 approximately 500-600 l/h Uponor Combi Port PRO - 40 approximately 800-900 l/h
	Heat meter type not supported	Use heat meter type with Qn 1.5 ultrasound
	Insufficient heating volume flow	Increase differential pressure
	Heat exchanger dirty	Clean the heat exchanger
	Thermostatic hot water temperature limiter setting is not correct	Check the thermostatic hot water temperature limiter is working and correctly set
	Proportional volume control does not switch over	Replace the proportional volume control
Waiting time for hot water is too long	Check the pump setting in the central heating system	Pump setting: Constant pressure
	The temperature setting on the thermostatic lead module (TTV) is too low	Increase the temperature setting on the thermostatic lead module (TTV) or in the line
	The capillary on the thermostatic lead module (TTV) is dirty	Clean the capillary on the thermostatic lead module (TTV) or in the line
	No thermostatic lead module (TTV) available	Retrofit the thermostatic lead module (TTV) or line
Noise generation		
Noise generated in the station	Pipe clamps too tight	Loosen the pipe clamps
Whistling noises during dispensing	Cold water dirt collector is dirty	Clean the cold water strainer
	Cold water throttle disc is dirty	Clean the cold water throttle disc
Noise generated in the PM valve	Noise generated via a third route	Replace the inductor disc, spring and locking ring using are placement kit for PM valves, 3rd route
Heating function		
Heating system does not heat up	General	
	Supply temperature too low at the heat source	Check the supply temperature at the heat source
	Volumetric flow rate is too low	Check the fittings in the device
	Check the heat meter type	The heat meter type must be Qn 1.5
	Check the pump setting in the central heating system	Pump setting: Constant pressure
	Air trapped in buffer storage	Vent the buffer storage tank

Fault description	Cause	Solution
	Insufficient differential pressure	Clean the capillary of the differential pressure control, and check that the differential pressure control is working
	Air in the system	Vent the system
	Radiator supply	
	Zone valve flow too low / too high	Check the Kv value on the zone valve
	Setting for room temperature controller is not correct	Check the setting for the room temperature controller
	Strainer is dirty	Clean the strainer
	Room temperature controller wiring is not correct	Check the wiring for the room temperature controller
	Actuator not connected to the zone valve	Actuator closed without current on the zone valve Connect this electrically
	Radiator thermostatic valves or return screw connections closed	Check the thermostatic valves and return screw connections
Heating system does not heat up	Underfloor heating controlled by setpoint values	
	Setting for setpoint value control head not correct	Check the setpoint value control head setting
	Actuator for "second safety" not connected electrically	Connect this electrically
	Setting Kv value of zone valve is not correct	Check the Kv value setting on the zone valve
	Regulating screw connection bypass closed	Check the regulating screw connection bypass
	Pump not connected	Check the pump connection
	Strainer is dirty	Clean the strainer
	Pump setting is not correct	Check the pump setting
	Underfloor heating, weather compensated	
	Controller setting is not correct	Check the controller setting
	Actuator for "second safety" not connected electrically	Connect this electrically
	Setting Kv value of zone valve is not correct	Check the Kv value setting on the zone valve
	Regulating screw connection bypass closed	Check the regulating screw connection bypass
	Sensor faulty	Check the sensor
	Pump not connected	Check the pump connection
	No heating/no hot water	
No hot water and no heating	Ball valves/locking devices closed	Open locking devices
	Central heating circuit pump not working	Check that the central heating circuit pump is working and correctly set
	Central strainer is dirty	Clean the central strainer
	Heating system is not working correctly	Check the heating system
	Buffer storage tank is not filled	Check the buffer storage tank filling

10 Technical data

10.1 Wiring diagram



WD0000060

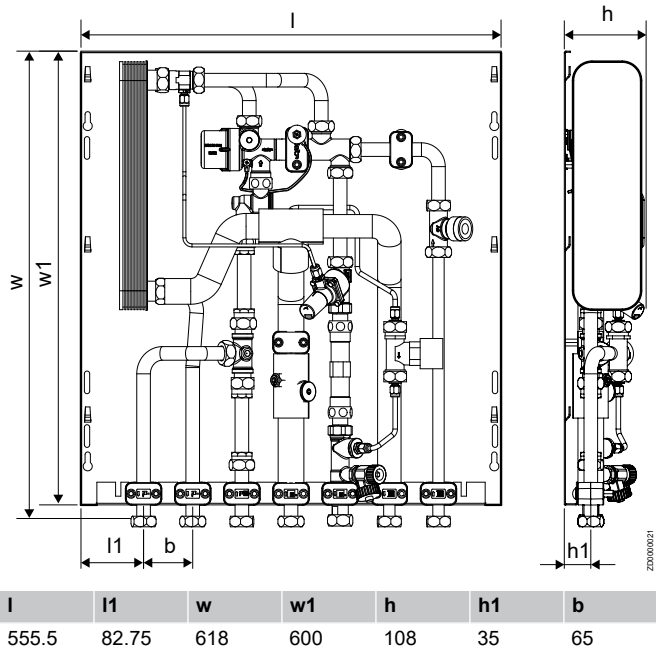
Item	Description
A	Proportional volume control (PM)
B	Cold water throttle disc
C	Strainer
D	Plate heat exchanger
E	Hot water meter distance piece
F	Sensor pocket heat meter
G	Cold water meter distance piece
H	Zone valve for limiting heating flow to apartment
I	Uponor Base flexiboard
J	Heat meter distance piece
K	Thermostatic lead module (TTV)
L	Strainer

Item	Description
M	Draining and filling valve
N	Thermostatic hot water temperature limiter (TWB)
O	Zone valve for limiting heating flow to apartment
P	Pump
Q	Check valve
R	Thermostatic regulation
S	Safety temperature limiter
T	Safety temperature limiter
U	Room temperature control
V	Zone valve for limiting heating flow to apartment

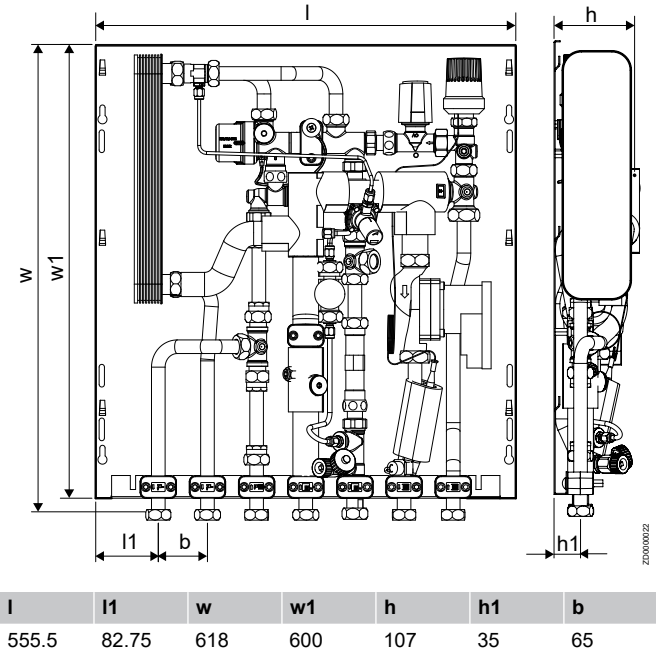
10.2 Dimensional drawings

All dimensions are given in mm.

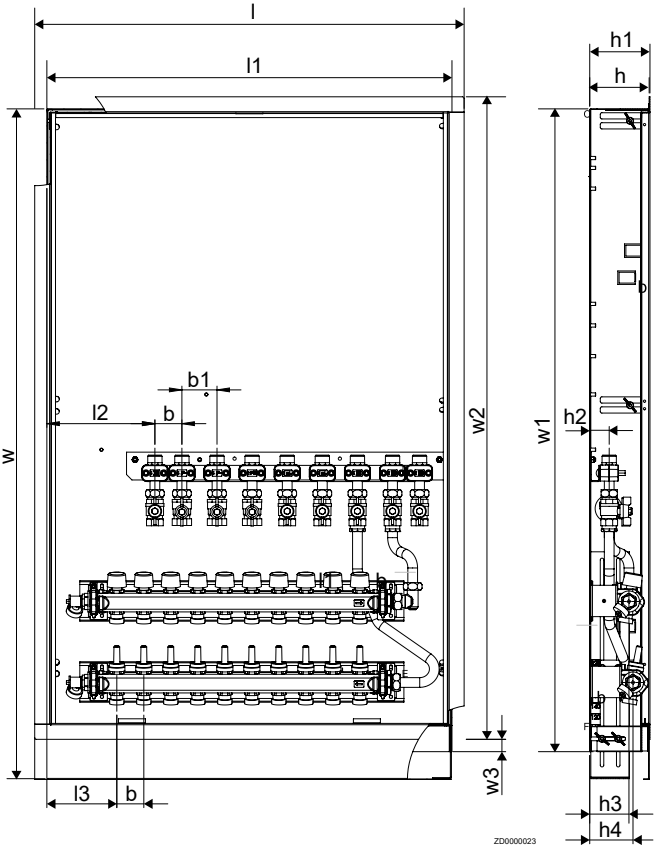
Combi Port PRO RC



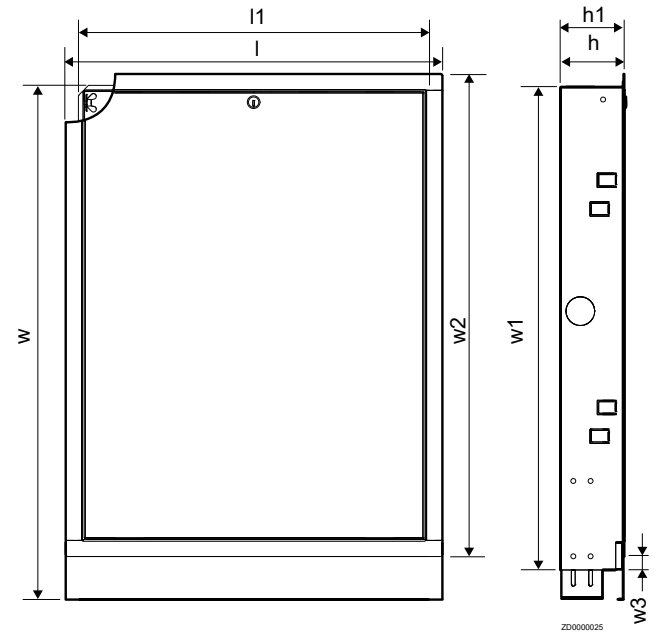
Combi Port PRO UFH



In-wall cabinets



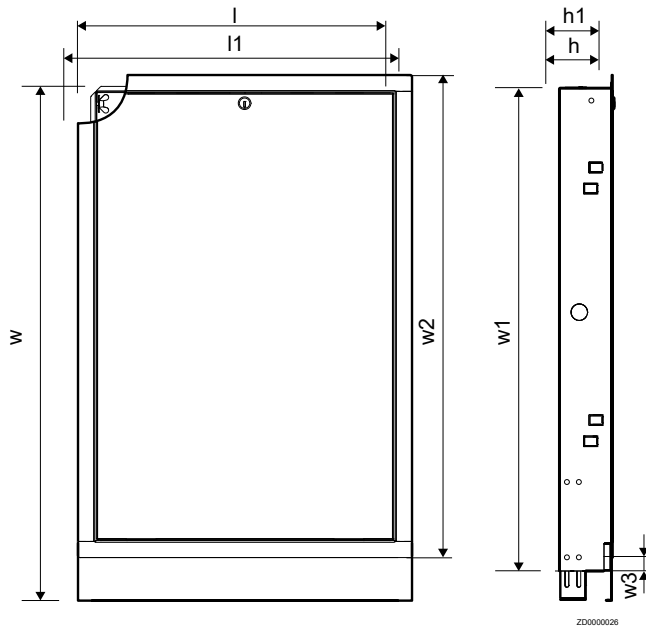
h	h1	h2	h3	h4	b	b1	
110	135	36	73	80	50	65	



l	l1	w	w1	h	h1	b	b1
655	610	1090	840	110	135	839	23.35

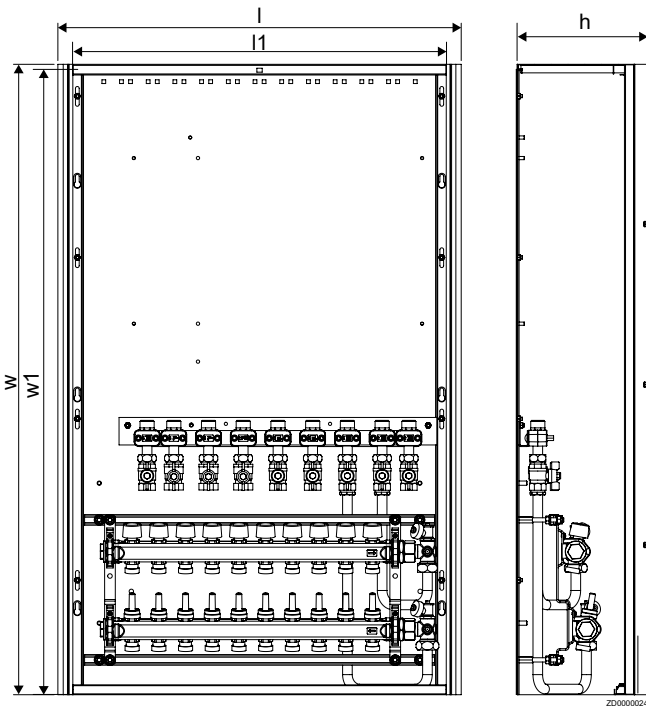
10.3 Hydraulic schemes

Combi Port PRO RC

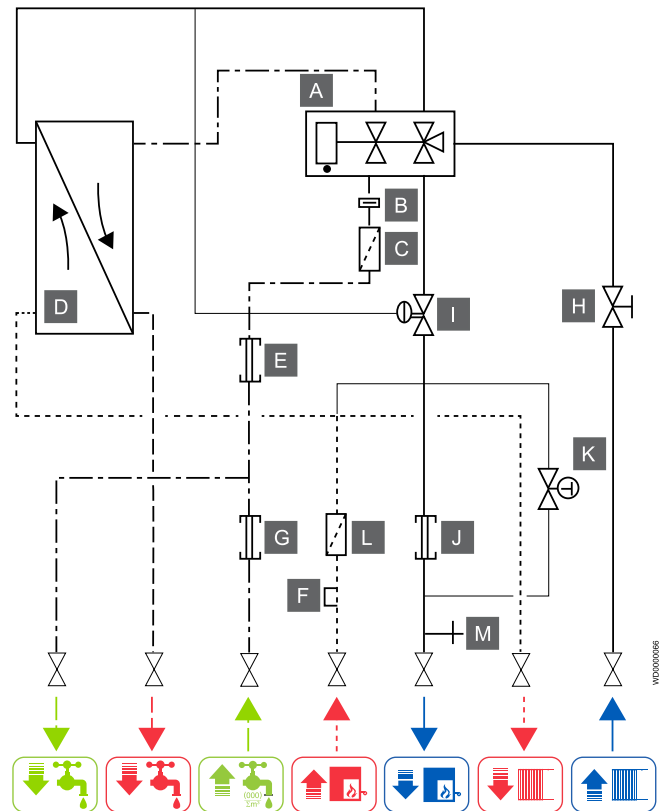


l	l ₁	w	w ₁	h	h ₁	b	b ₁
795	750	1240	1190	110	135	1189.5	22.35

On-wall cabinet

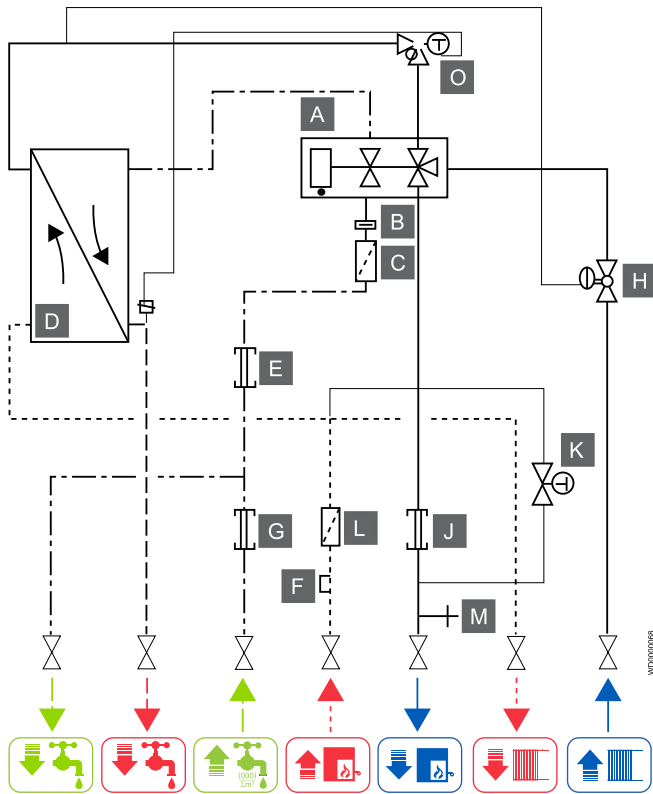


l	l ₁	w	w ₁	h
755	700	1180	1170	247



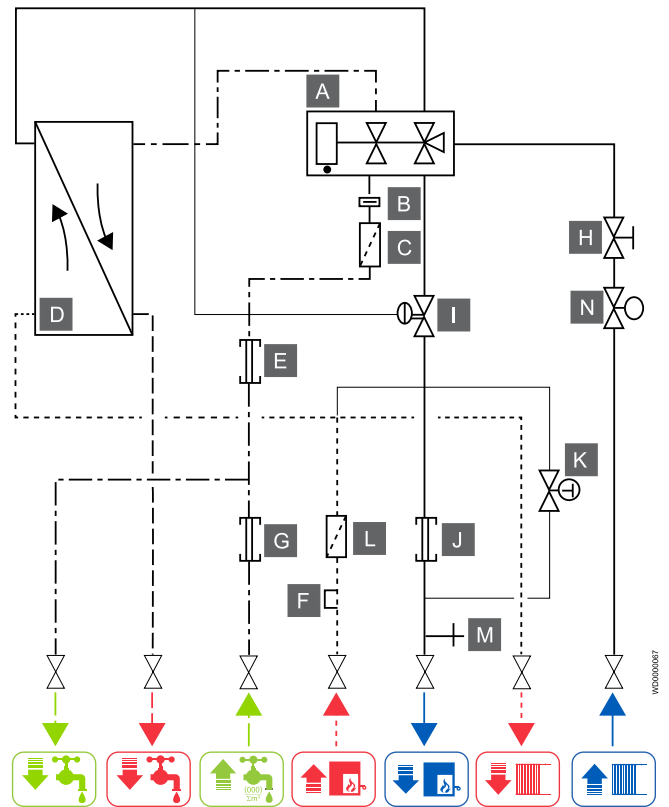
Item	Description
A	Proportional volume control (PM)
B	Cold water throttle disc
C	Strainer
D	Plate heat exchanger
E	Hot water meter distance piece
F	Sensor pocket heat meter
G	Cold water meter distance piece
H	Zone valve for limiting heating flow to apartment
I	Differential pressure regulator
J	Heat meter distance piece
K	Thermostatic lead module (TTV)
L	Strainer
M	Draining and filling valve

Combi Port PRO RC TWB



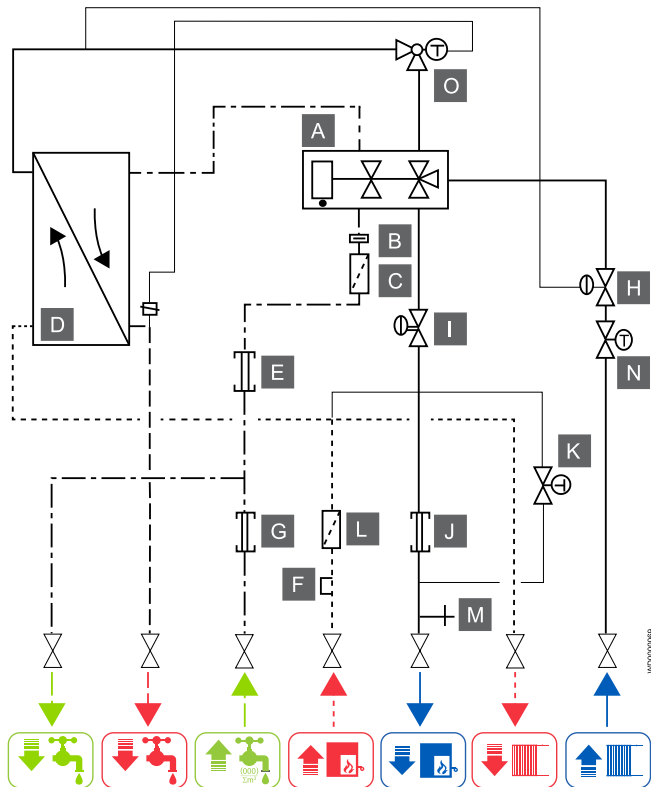
Item	Description
A	Proportional volume control (PM)
B	Cold water throttle disc
C	Strainer
D	Plate heat exchanger
E	Hot water meter distance piece
F	Sensor pocket heat meter
G	Cold water meter distance piece
H	Zone valve for limiting heating flow to apartment
J	Heat meter distance piece
K	Thermostatic lead module (TTV)
L	Strainer
M	Draining and filling valve
O	Thermostatic hot water temperature limiter (TWB)

Combi Port PRO RC RTB



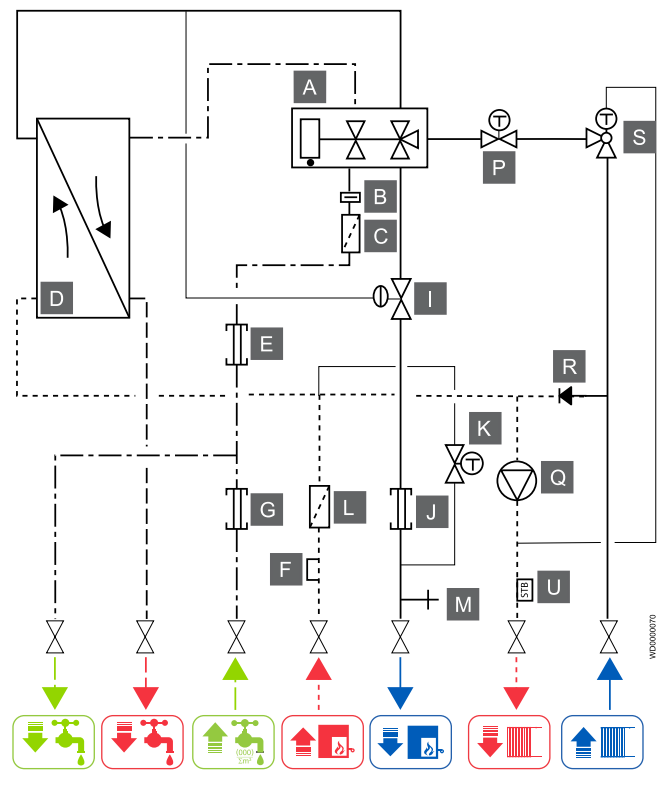
Item	Description
A	Proportional volume control (PM)
B	Cold water throttle disc
C	Strainer
D	Plate heat exchanger
E	Hot water meter distance piece
F	Sensor pocket heat meter
G	Cold water meter distance piece
H	Zone valve for limiting heating flow to apartment
I	Differential pressure regulator
J	Heat meter distance piece
K	Thermostatic lead module (TTV)
L	Strainer
M	Draining and filling valve

Combi Port PRO RC TWB-RTB



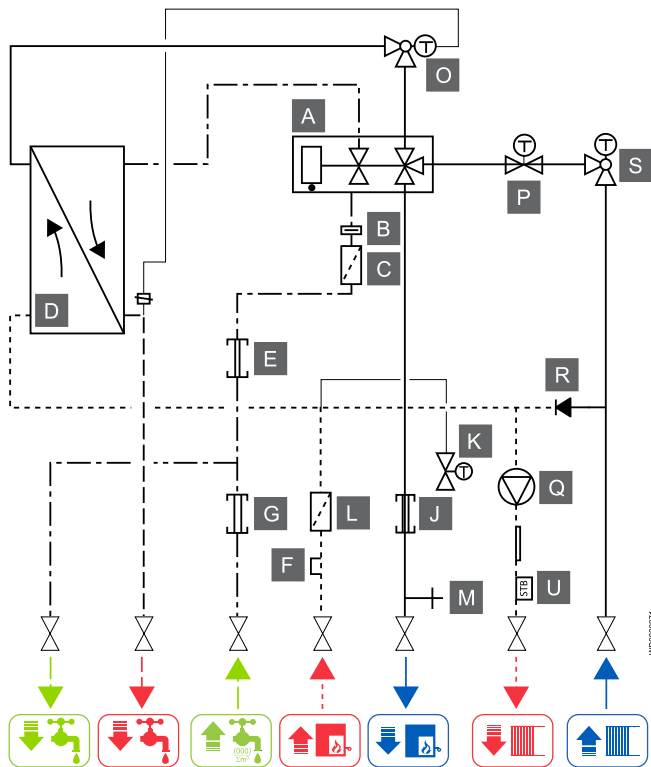
Item	Description
A	Proportional volume control (PM)
B	Cold water throttle disc
C	Strainer
D	Plate heat exchanger
E	Hot water meter distance piece
F	Sensor pocket heat meter
G	Cold water meter distance piece
H	Zone valve for limiting heating flow to apartment
I	Differential pressure regulator
J	Heat meter distance piece
K	Thermostatic lead module (TTV)
L	Strainer
M	Draining and filling valve
N	Return temperature limiter (RTB)
O	Thermostatic hot water temperature limiter (TWB)

Combi Port PRO UFH



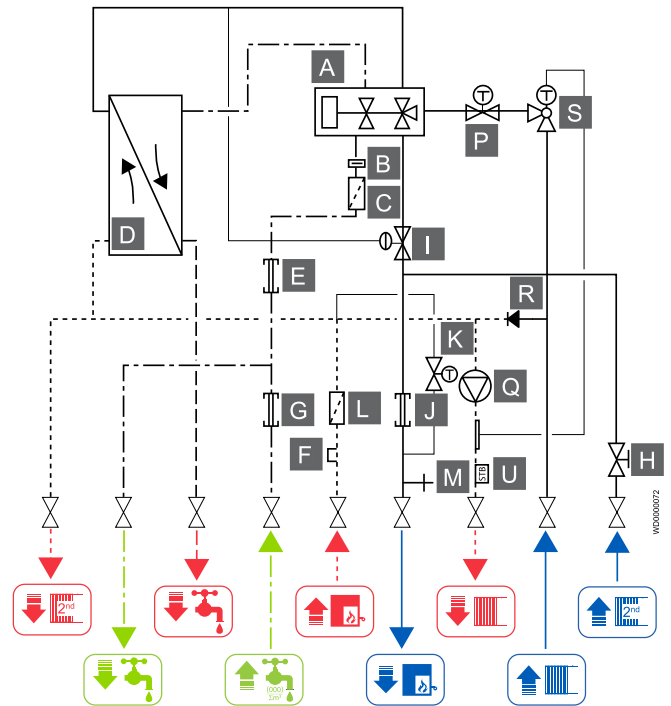
Item	Description
A	Proportional volume control (PM)
B	Cold water throttle disc
C	Strainer
D	Plate heat exchanger
E	Hot water meter distance piece
F	Sensor pocket heat meter
G	Cold water meter distance piece
I	Differential pressure regulator
J	Heat meter distance piece
K	Thermostatic lead module (TTV)
L	Strainer
M	Draining and filling valve
P	Zone valve for limiting heating flow to apartment
Q	Pump
R	Check valve
S	Thermostatic regulation

Combi Port PRO UFH-TWB



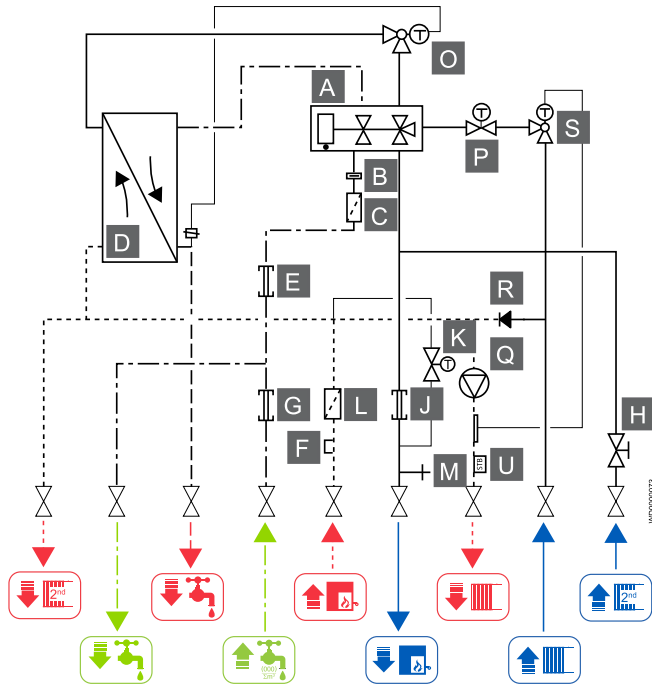
Item	Description
A	Proportional volume control (PM)
B	Cold water throttle disc
C	Strainer
D	Plate heat exchanger
E	Hot water meter distance piece
F	Sensor pocket heat meter
G	Cold water meter distance piece
J	Heat meter distance piece
K	Thermostatic lead module (TTV)
L	Strainer
M	Draining and filling valve
P	Zone valve for limiting heating flow to apartment
Q	Pump
R	Check valve
S	Thermostatic regulation
V	Thermostatic hot water temperature limiter (TWB)

Combi Port PRO UFH - additional heating



Item	Description
A	Proportional volume control (PM)
B	Cold water throttle disc
C	Strainer
D	Plate heat exchanger
E	Hot water meter distance piece
F	Sensor pocket heat meter
G	Cold water meter distance piece
H	Zone valve for limiting heating flow to apartment
I	Differential pressure regulator
J	Heat meter distance piece
K	Thermostatic lead module (TTV)
L	Strainer
M	Draining and filling valve
P	Zone valve for limiting heating flow to apartment
Q	Pump
R	Check valve
S	Thermostatic regulation
U	Safety temperature limiter

Combi Port PRO UFH-TWB - additional heating

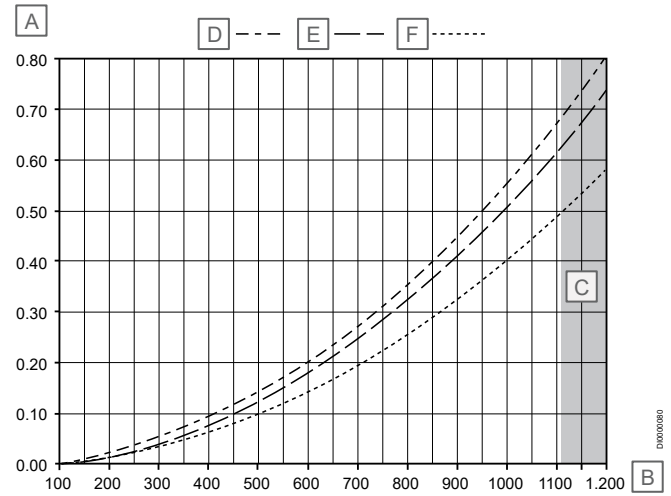


Item	Description
A	Proportional volume control (PM)
B	Cold water throttle disc
C	Strainer
D	Plate heat exchanger
E	Hot water meter distance piece
F	Sensor pocket heat meter
G	Cold water meter distance piece
H	Zone valve for limiting heating flow to apartment
J	Heat meter distance piece
K	Thermostatic lead module (TTV)
L	Strainer
M	Draining and filling valve
O	Thermostatic hot water temperature limiter (TWB)
P	Zone valve for limiting heating flow to apartment
Q	Pump
R	Check valve
S	Thermostatic regulation
U	Safety temperature limiter

10.4 Performance curves

Pressure losses with 24 plates

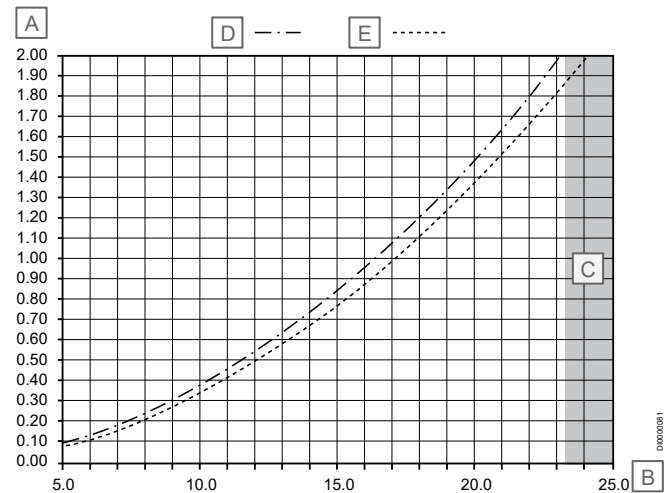
Heating side (primary)



Item	Description
A	Pressure loss in bar
B	Primary heating demand in litres/hour (l/h)
C	Max range
D	dP station including TWB
E	dP station including differential pressure control
F	dP station

Pressure losses including ball valve. Additional pressure losses, e.g. heatmeter with $Q_n 1.5$ of approximately **0.05 bar** and other internal/external fixtures must be included.

Domestic hot water side (secondary)



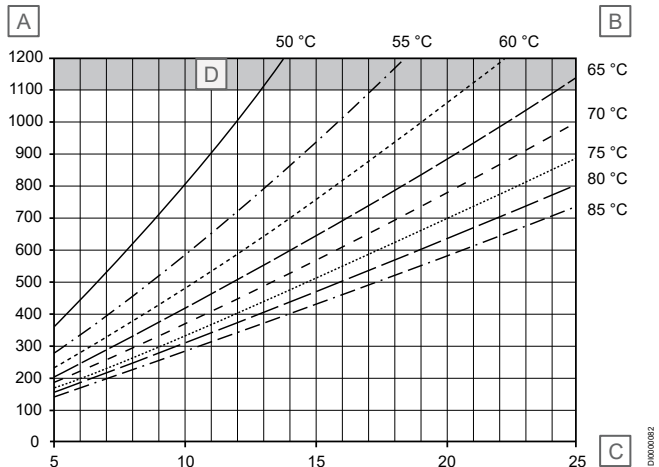
Item	Description
A	Pressure loss in bar
B	Tapping capacity in litres/minute (l/min)
C	Max range
D	dP station without throttle disc, including TWB
E	dP station without throttle disc

Pressure losses at the throttle disc must be included in the calculation.

- 10 l/min = 0.65 - 0.85 bar
- 12 l/min = 0.68 - 0.88 bar
- 15 l/min = 0.70 - 0.90 bar
- 17 l/min = 0.75 - 0.95 bar
- 19 l/min = 1.00 - 1.20 bar

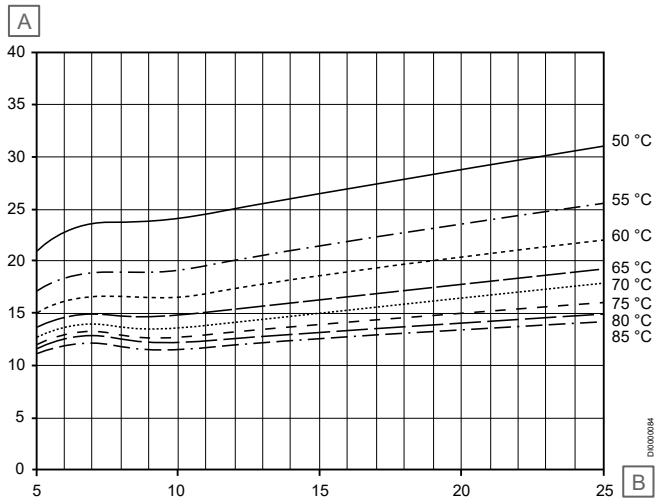
Performance curves and return temperatures with 24 plates

Cold water warming 35 K (10-45 °C)



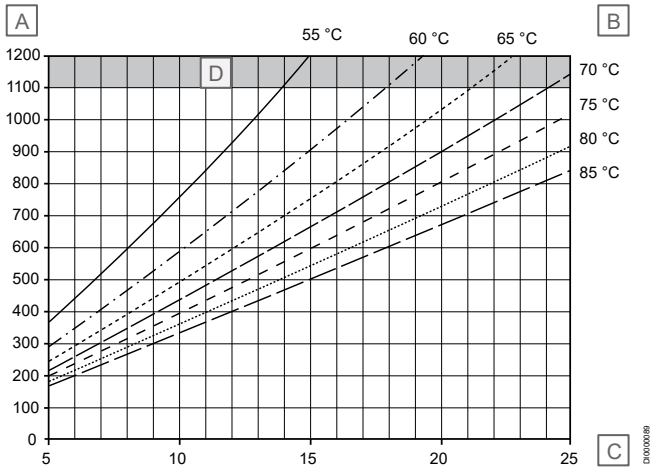
Item	Description
A	Primary heating demand in litres/hour (l/h)
B	Primary heating supply temperatures
C	Tapping capacity in litres/minute (l/min)
D	Max range

Tapping capacity 35 K (10-45 °C)



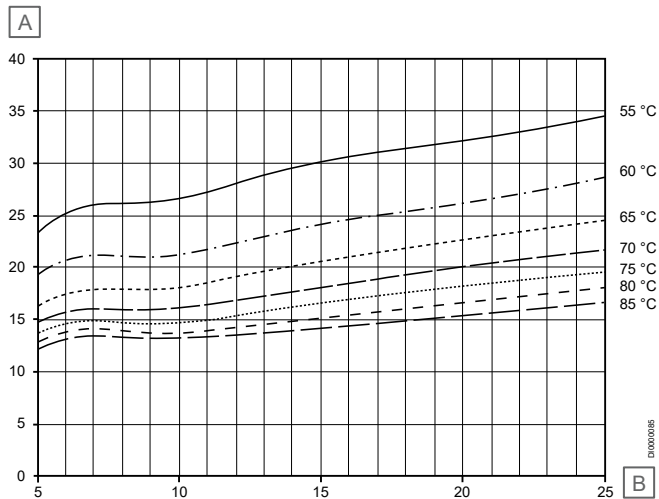
Item	Description
A	Return temperature °C
B	Tapping capacity in litres/minute (l/min)

Cold water warming 40 K (10-50 °C)



Item	Description
A	Primary heating demand in litres/hour (l/h)
B	Primary heating supply temperatures
C	Tapping capacity in litres/minute (l/min)
D	Max range

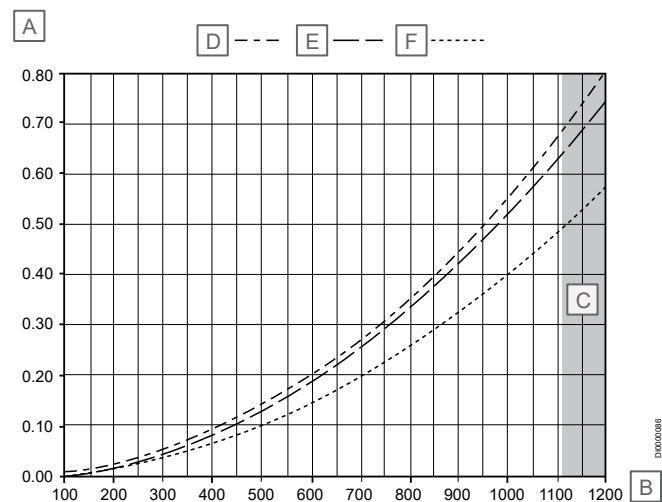
Tapping capacity 40 K (10-50 °C)



Item	Description
A	Return temperature °C
B	Tapping capacity in litres/minute (l/min)

Pressure losses with 40 plates

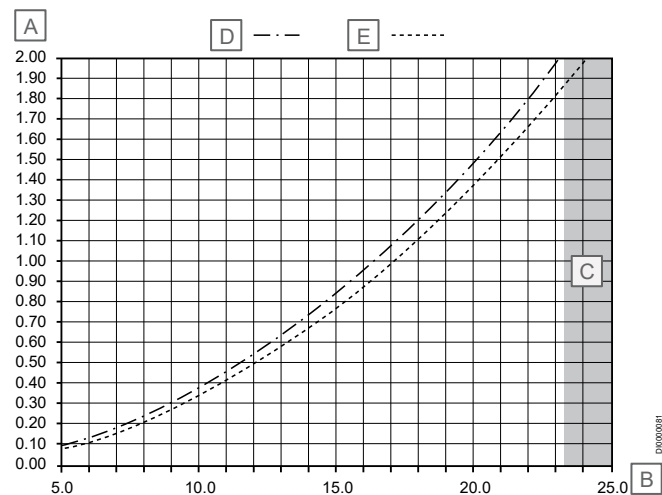
Heating side (primary)



Item	Description
A	Pressure loss in bar
B	Primary heating demand in litres/hour (l/h)
C	Max range
D	dP station including TWB
E	dP station including differential pressure control
F	dP station

Pressure losses including ball valve. Additional pressure losses, e.g. heat meter with $Q_n 1.5$ of approximately **0.05 bar** and other internal/external fixtures must be included.

Domestic hot water side (secondary)



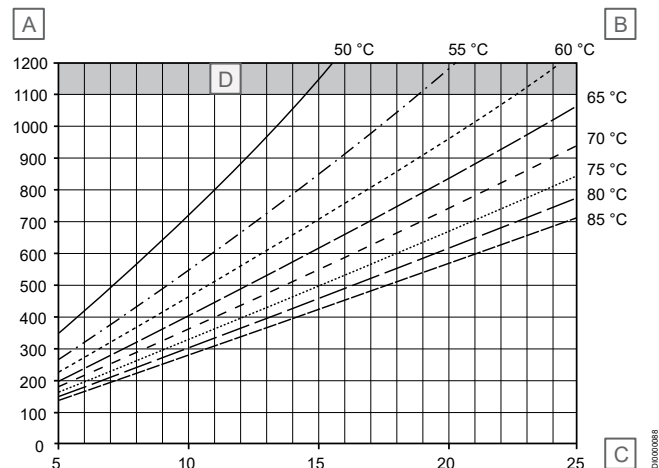
Item	Description
A	Pressure loss in bar
B	Tapping capacity in litres/minute (l/min)
C	Max range
D	dP station without throttle disc, including TWB
E	dP station without throttle disc

Pressure losses at the throttle disc must be included in the calculation.

- 10 l/min = 0.65 - 0.85 bar
- 12 l/min = 0.68 - 0.88 bar
- 15 l/min = 0.70 - 0.90 bar
- 17 l/min = 0.75 - 0.95 bar
- 19 l/min = 1.00 - 1.20 bar

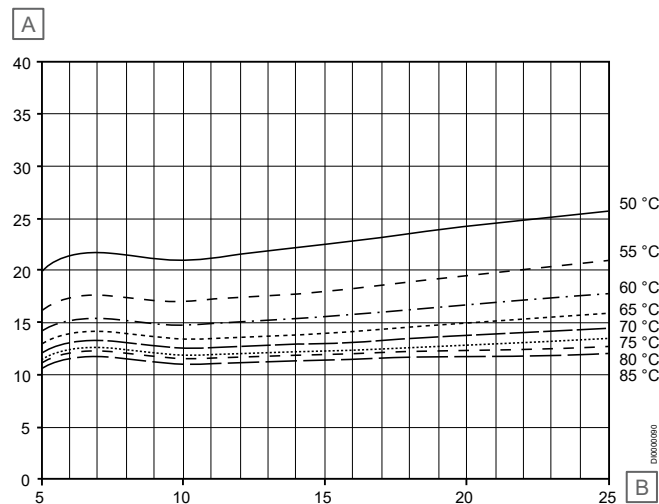
Performance curves and return temperatures with 40 plates

Cold water warming 35 K (10-45 °C)



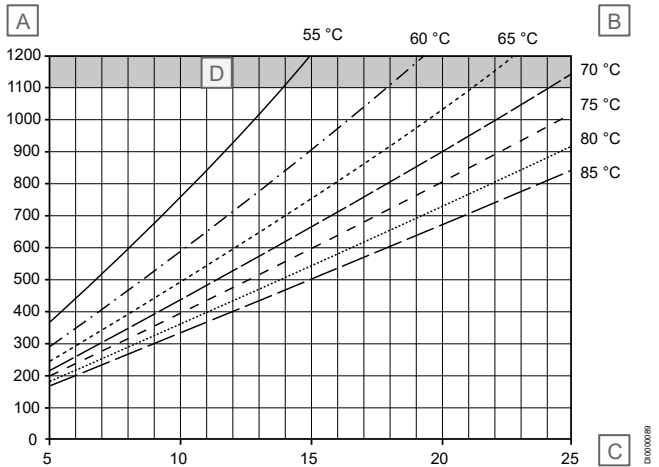
Item	Description
A	Primary heating demand in litres/hour (l/h)
B	Primary heating supply temperatures
C	Tapping capacity in litres/minute (l/min)
D	Max range

Tapping capacity 35 K (10-45 °C)



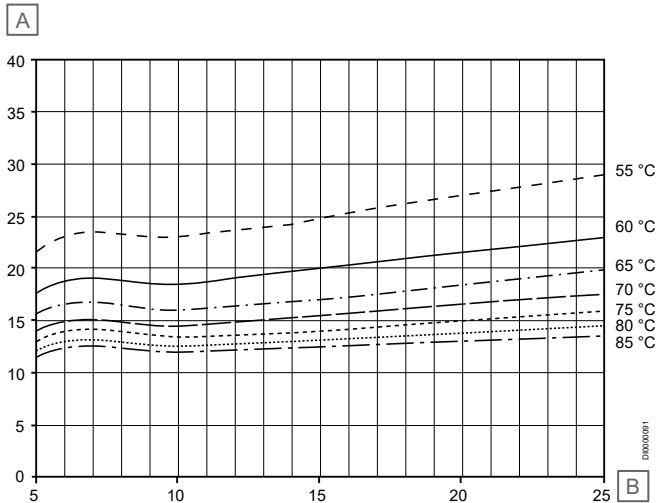
Item	Description
A	Return temperature °C
B	Tapping capacity in litres/minute (l/min)

Cold water warming 40 K (10-50 °C)



Item	Description
A	Primary heating demand in litres/hour (l/h)
B	Primary heating supply temperatures
C	Tapping capacity in litres/minute (l/min)
D	Max range

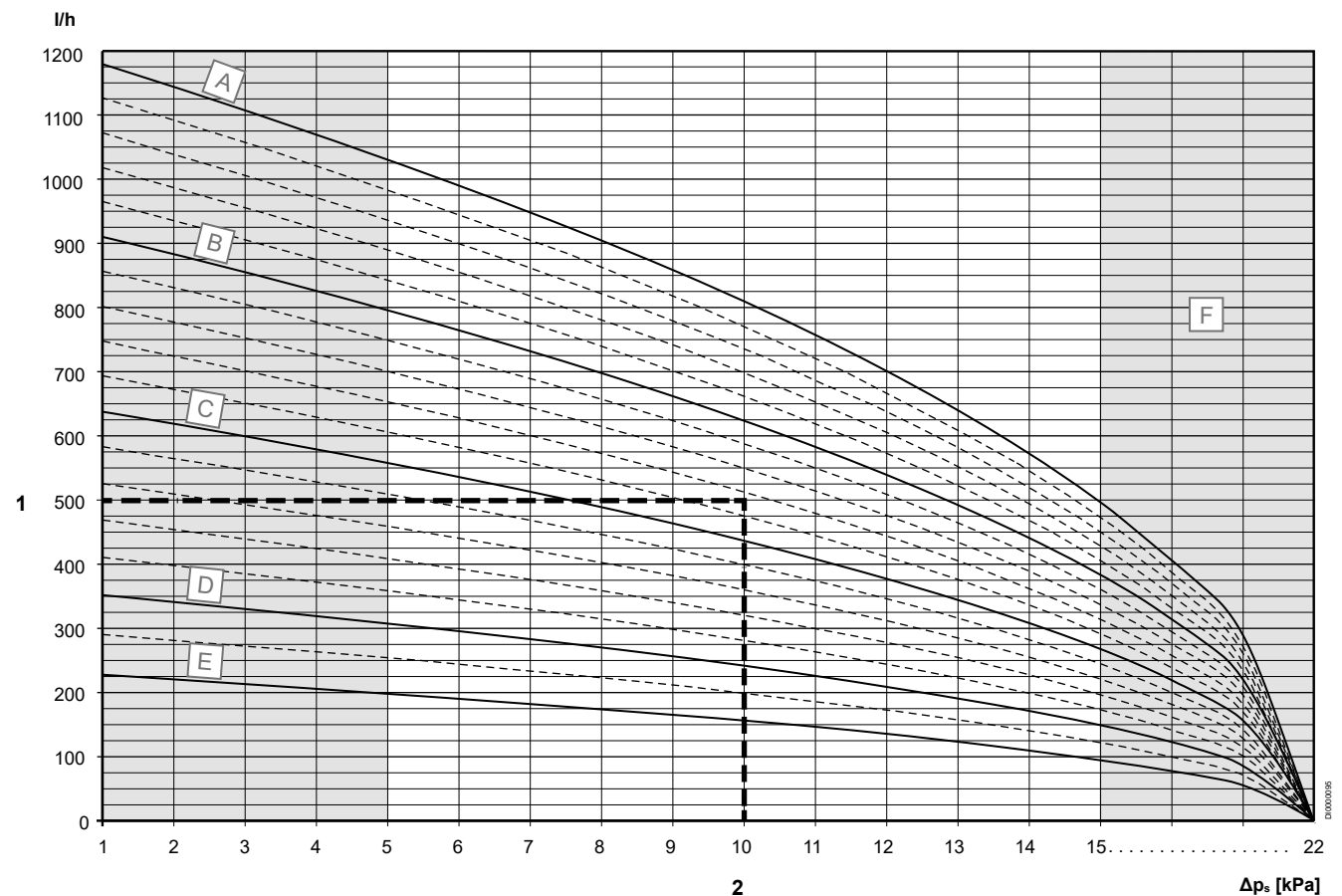
Tapping capacity 40 K (10-50 °C)



Item	Description
A	Return temperature °C
B	Tapping capacity in litres/minute (l/min)

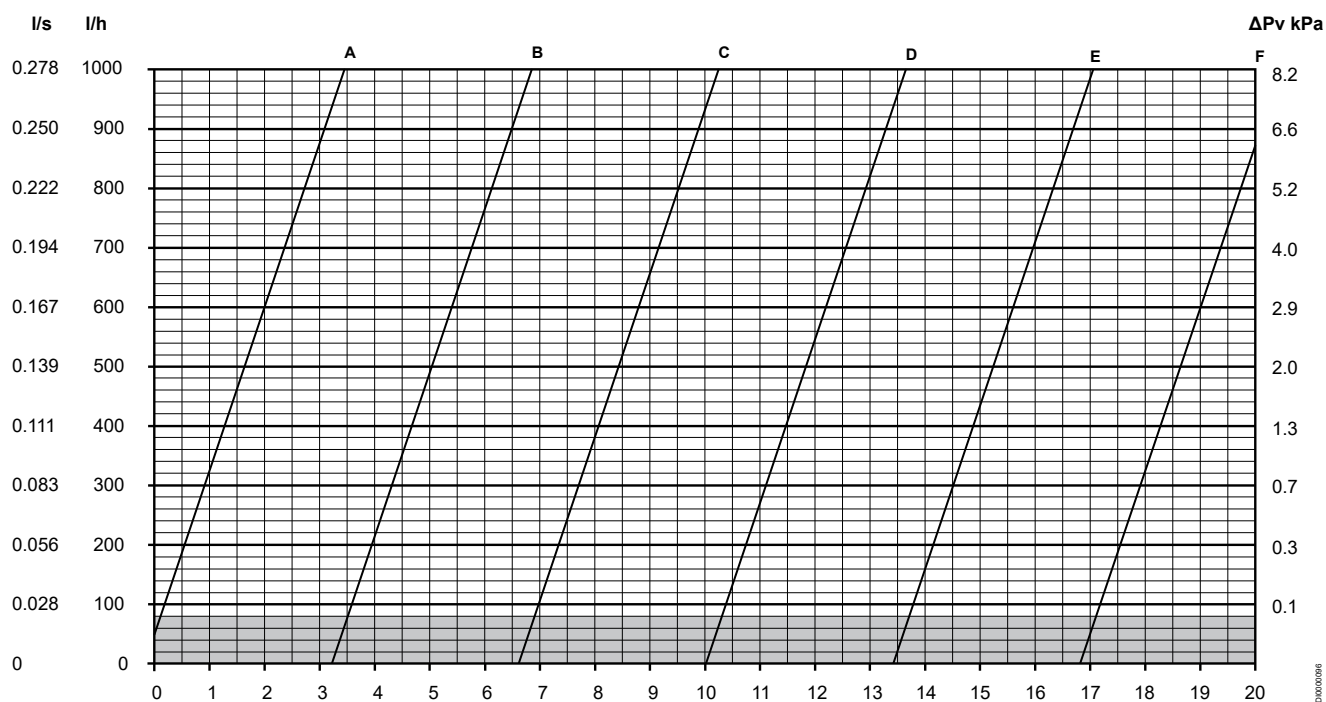
10.5 Regulator flow settings

Combi Port PRO RC



Item	Description
A	Preset 4
B	Preset 3
C	Preset 2
D	Preset 1
E	Preset 0,6
F	Outside range

Combi Port PRO UFH



Number of turns (default settings)

Item	Description
A	5 kPa
B	10 kPa
C	15 kPa
D	20 kPa
E	25 kPa
F	30 kPa



Uponor GmbH

Industriestraße 56,
D-97437 Hassfurt, Germany

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Production: Uponor/ELO/DCO

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continuous improvement and development.



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