

Combi Port E D

EN Installation and operation manual

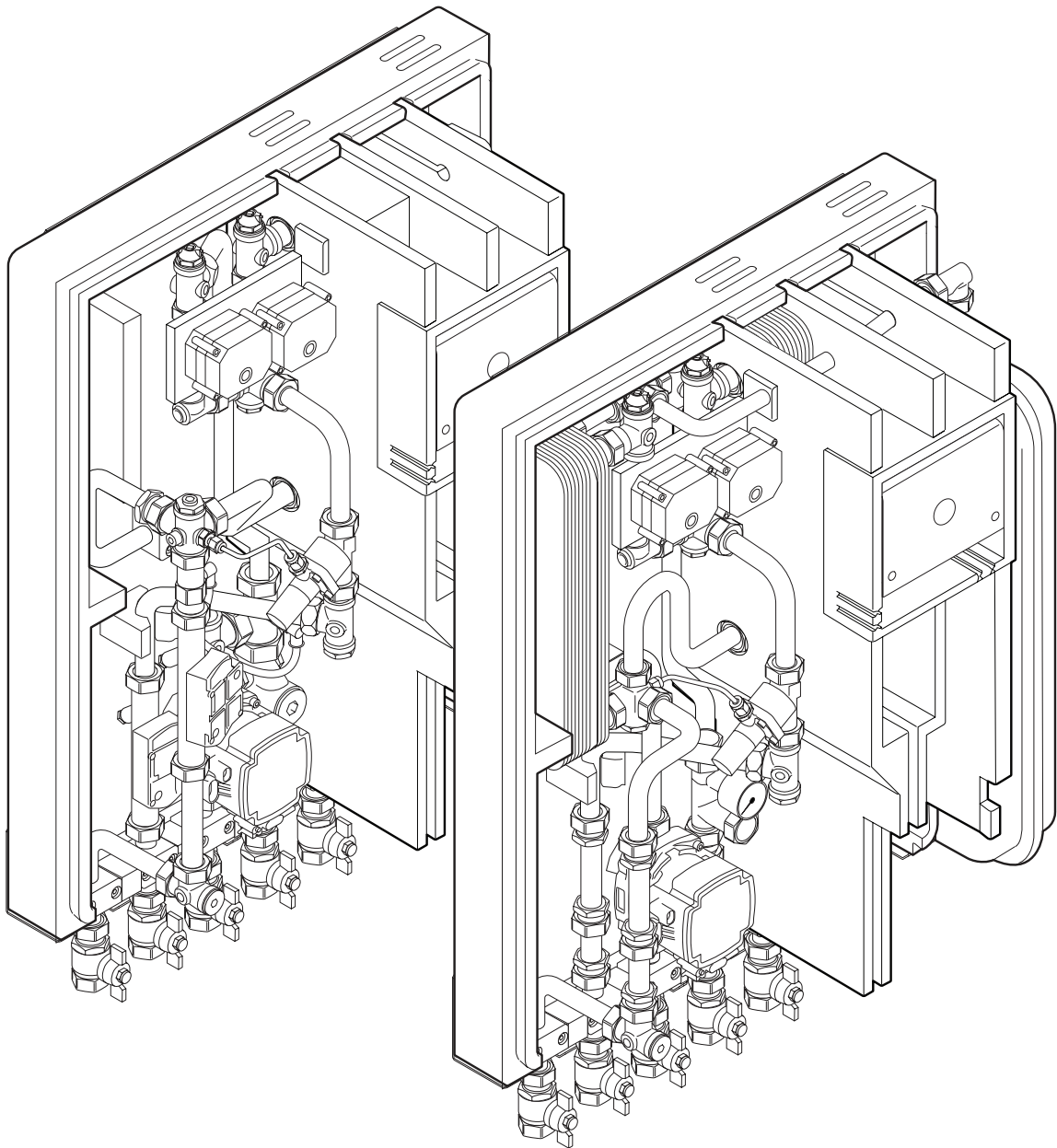


Table of contents

1	Copyright and disclaimer.....	3	9.4	Differential pressure regulator	23
2	Preface.....	4	9.5	Hydraulic balancing on the manifold.....	23
2.1	Safety instructions.....	4	9.6	Wiring diagram.....	24
2.2	Standards and regulations.....	4	9.7	Dimensional drawings.....	27
2.3	Correct disposal of this product (Waste Electrical and Electronic equipment).....	4	9.8	Performance curves for domestic water heat exchanger.....	28
3	System description Combi Port E D.....	6	9.9	Performance curves for heating heat exchanger.....	33
3.1	Operating principle.....	6			
3.2	Components.....	6			
3.3	Accessories.....	7			
4	Installation.....	9			
4.1	Installation example.....	9			
4.2	Heat interface unit view.....	9			
4.3	Heat interface unit with UFH manifold.....	9			
4.4	Heat interface unit with Port Base.....	11			
5	Additional installation.....	13			
5.1	Strainer.....	13			
5.2	Differential pressure regulator	13			
5.3	Combi Port E D-X.....	13			
5.4	Other components/devices.....	14			
5.5	Filling, flushing and venting.....	14			
6	Operation.....	15			
6.1	Hydraulic balancing on the manifold.....	15			
6.2	Constant pressure pump control.....	15			
6.3	Combi Port E mobile application.....	16			
6.4	Commissioning and hand over.....	18			
7	Maintenance.....	19			
7.1	General information.....	19			
7.2	Turning off heat interface unit.....	19			
8	Troubleshooting.....	20			
8.1	Fault description.....	20			
8.2	App alarms.....	21			
9	Technical data.....	22			
9.1	Technical specifications.....	22			
9.2	Electrical connection controller.....	22			
9.3	Data output.....	23			

1 Copyright and disclaimer

Uponor has prepared this installation and operation manual and all the content included solely for information purposes. The contents of the manual (including graphics, logos, icons, text, and images) are copyrighted and protected by worldwide copyright laws and treaty provisions. You agree to comply with all copyright laws worldwide in your use of the manual. Modification or use of any of the contents of the manual for any other purpose is a violation of Uponor's copyright, trademark and other proprietary rights.

The presumption for the manual is that the safety measures have been fully complied with and, further, that Uponor Combi Port E system, including any components that are part of such system, covered by the manual:

- is selected, planned and installed and put into operation by a licensed and competent planner and installer in compliance with current (at the time of installation) installation instructions provided by Uponor as well as in compliance with all applicable building and plumbing codes and other requirements and guidelines;
- 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;
- is not connected to or used with non-Uponor products, parts or components except for those approved or specified by Uponor; and
- does not show evidence of tampering, mishandling, insufficient maintenance, improper storage, neglect or accidental damage before installation and being put into operation.

While Uponor has made efforts to ensure that the manual is accurate, Uponor does not guarantee or warrant the accuracy of the information contained herein. Uponor reserves the right to modify the specifications and features described herein, or discontinue manufacture of the Uponor products described at any time without prior notice or obligation. The manual is provided "as is" without warranties of any kind, either expressed or implied. The information should be independently verified before using it in any manner.

To the fullest extent permissible, Uponor disclaims all warranties, expressed or implied, including, but not limited to, the implied warranties of merchantability, fitness for particular purpose and non-infringement.

This disclaimer applies to, but is not limited to, the accuracy, reliability or correctness of the manual.

Under no circumstances shall Uponor be liable for any indirect, special, incidental or consequential damages or loss that result from the use of or the inability to use the materials or information in the manual, or any claim attributable to errors, omission or other inaccuracies in the manual, even if Uponor has been advised of the possibility of such damages.

This disclaimer and any provisions in the manual do not limit any statutory rights of consumers.

2 Preface




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

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





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.
---	---

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!
---	---

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
---	---



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.

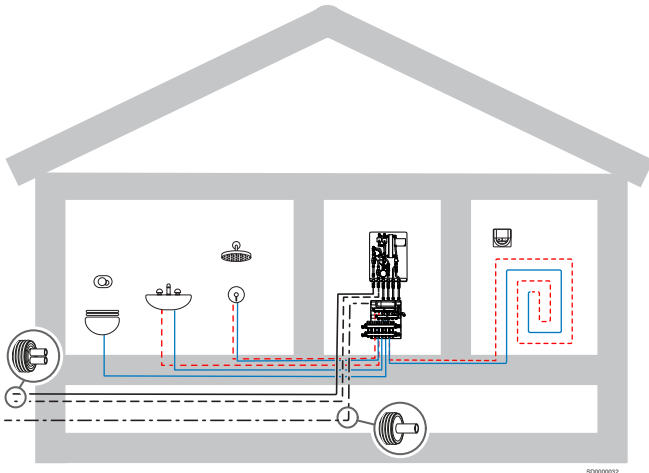
3 System description Combi Port E D

3.1 Operating principle

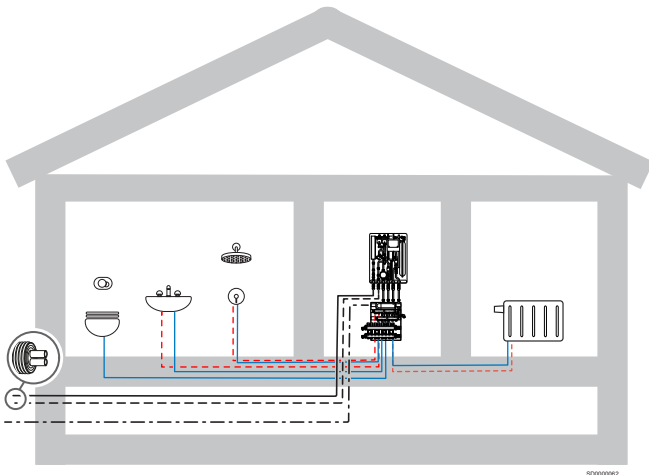
Combi Port E D is available in two different versions:

1. **Combi Port E D-UFH**, for domestic water and direct heating. This can be used in single or multi family houses.
2. **Combi Port E D-X**, for domestic water and indirect heating (additional heat exchanger on the heating side). These are intended for single family houses.

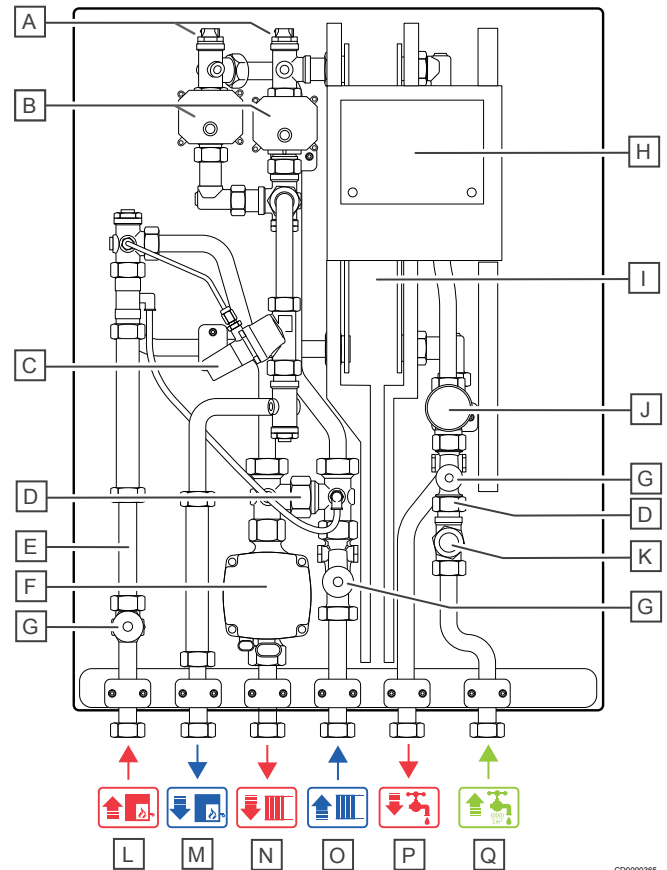
Direct heating, single or multi family houses



Indirect heating, single family house



Combi Port E D-UFH



Item	Description
A	Venting screw
B	Motor valve
C	Differential pressure regulator
D	Back flow preventer
E	Heat meter distance piece
F	Heating pump
G	Strainer
H	Combi Port E controller
I	Domestic water heat exchanger
J	Water hammer arrester
K	Connection point for circulation line
L	Heating supply (primary)
M	Heating return (primary)
N	Heating supply (secondary)
O	Heating return (secondary)
P	Domestic hot water to apartment (DHW)
Q	Cold water from riser (CW)

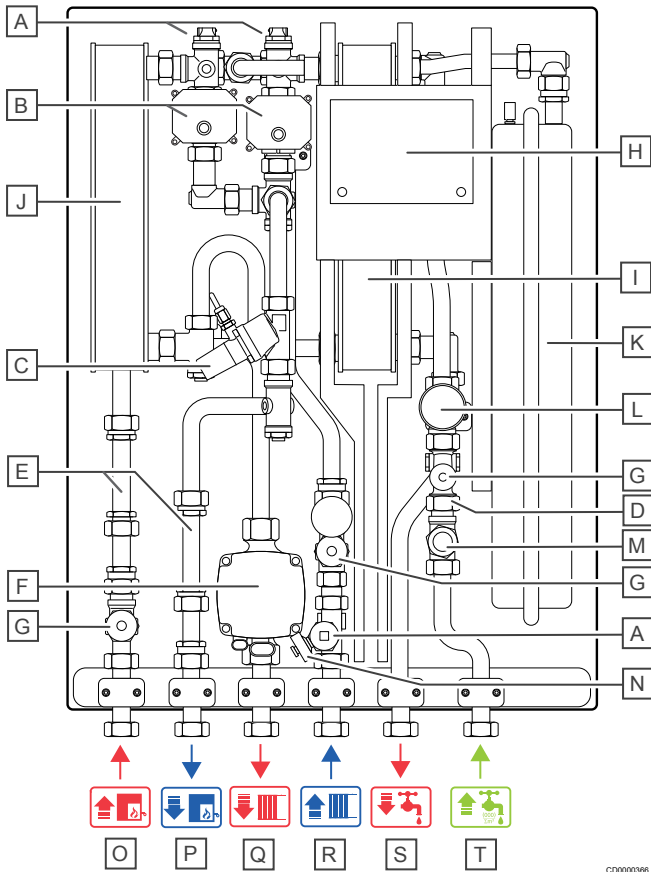
3.2 Components

Note

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

Combi Port E D consists of many individual components which are described below. The unit can also be equipped with accessories like heat meters and components from the Uponor room temperature control system, both wired and as a flexible and convenient radio solution.

Combi Port E D-X



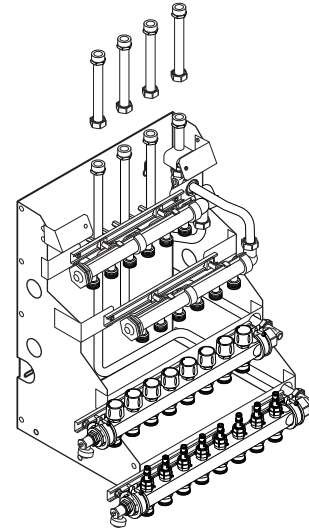
Item	Description
A	Venting screw
B	Motor valve
C	Differential pressure regulator
D	Back flow preventer
E	Heat meter distance piece
F	Heating pump
G	Strainer
H	Combi Port E controller
I	Domestic water heat exchanger
J	Heating heat exchanger
K	Expansion vessel
L	Water hammer arrester
M	Connection point for circulation line
N	Draining and filling valve
O	Heating supply (primary)
P	Heating return (primary)
Q	Heating supply (secondary)
R	Heating return (secondary)
S	Domestic hot water to apartment (DHW)
T	Cold water from riser (CW)

3.3 Accessories

Uponor offers a variety of accessories for use with the standard portfolio.

The following accessories are optional. Their use completes the product portfolio. The application is described in more detail in the following chapters.

Port Base and pipe connection set



CD0000367

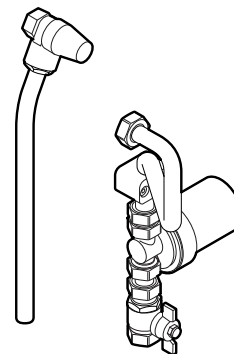
Port Base is a station prepared for connection to the heat interface unit by using the available pipe connection set.

Port Base consists of following components:

- Underfloor heating manifold
- Tap water manifold
- Primary connection pipes
- Pump group with regulating 3-way valve
- Room temperature control unit connected to manifold via actuators
- Assembled on brackets

Further information about Port Base is given in the relevant technical information.

Circulation line

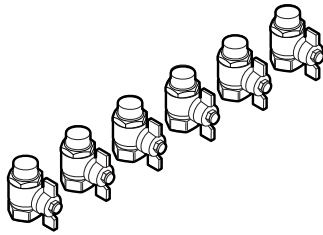


CD0000368

A circulation line can be connected to Combi Port E D on demand.

Installation of the circulation line is described in the section **Install the circulation line (optional), Page 12**

Ball valve set



CD0000389

The ball valves set consists of a range of valves with flow direction marks required for connecting the pipes and the heat interface unit.

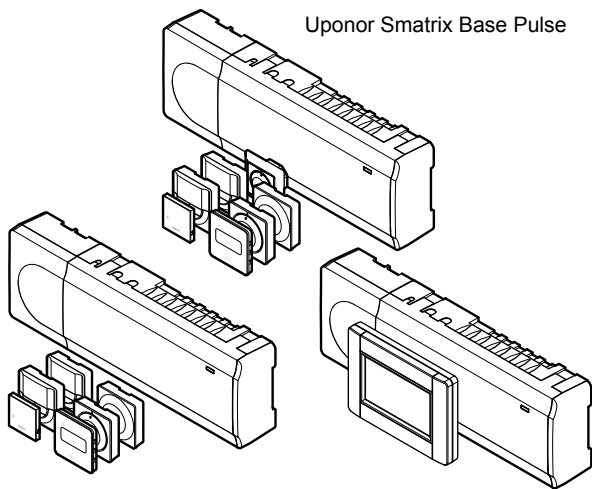
Connection of the ball valve set is described in the section **Connect the ball valve set, Page 10**

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 Wave Pulse Uponor Smatrix Base PRO

CD0000271

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.

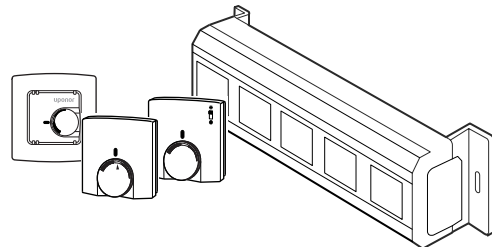
Basic Functions	Wave Pulse	Base Pulse	Base PRO
Autobalancing	✓	✓	✓
Cooling function	✓	✓	✓
Modularity	✓	✓	✓

Installation and configuration functions	Wave Pulse	Base Pulse	Base PRO
Installation wizard	✓	✓	
Offline configuration	✓	✓	
Over-the-air updates	✓	✓	
Third-party remote support	✓	✓	

Comfort function	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 function	Wave Pulse	Base Pulse	Base PRO
Uponor cloud services	✓	✓	
Data storage	✓	✓	✓
Pump management	✓	✓	✓
System diagnostics	✓	✓	✓
HP integration			✓
Room bypass	✓	✓	✓
Room check			✓
BMS integration			✓
SMS module			✓

Uponor Base flexiboard

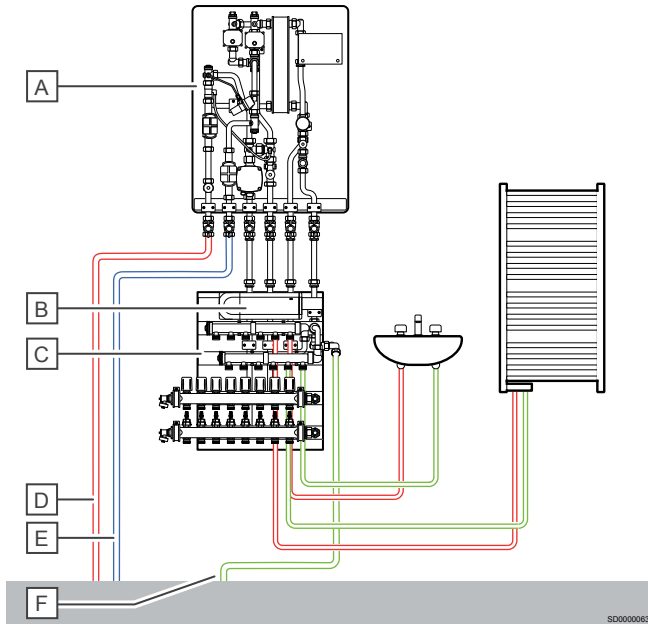


CD0000270

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.

4 Installation

4.1 Installation example



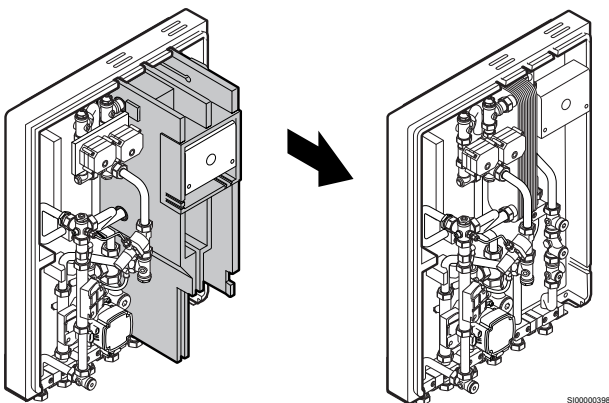
Item	Description
A	Combi Port E D
B	Room temperature controller
C	Port Base
D	Heating supply (primary)
E	Heating return (primary)
F	Cold water from riser (CW)

The above installation example shows a typical installation with Combi Port E with tap water and underfloor heating manifolds.

A Uponor Smatrix controller for room temperature control is mounted and connected to the manifold.

4.2 Heat interface unit view

Note
The insulation should never be removed from the unit!



The illustrations in the following installation steps describe the process with Combi port E D-UFH unless nothing else is mentioned.

The insulation mounted in the unit is removed in the illustrations only to show all components and increase the understanding.

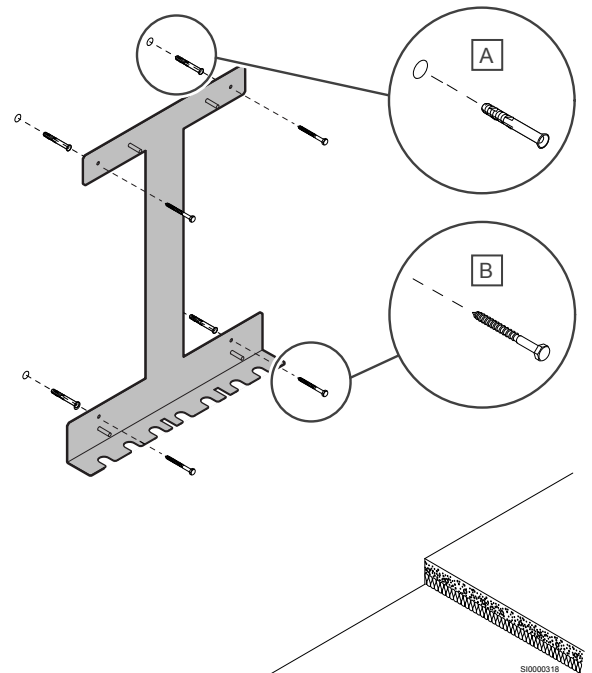
The installation of Combi Port E D-X is performed in the same way.

4.3 Heat interface unit with UFH manifold

Install the wall bracket

Note
See the dimensional drawings for measurements. Pay attention to the horizontal alignment.

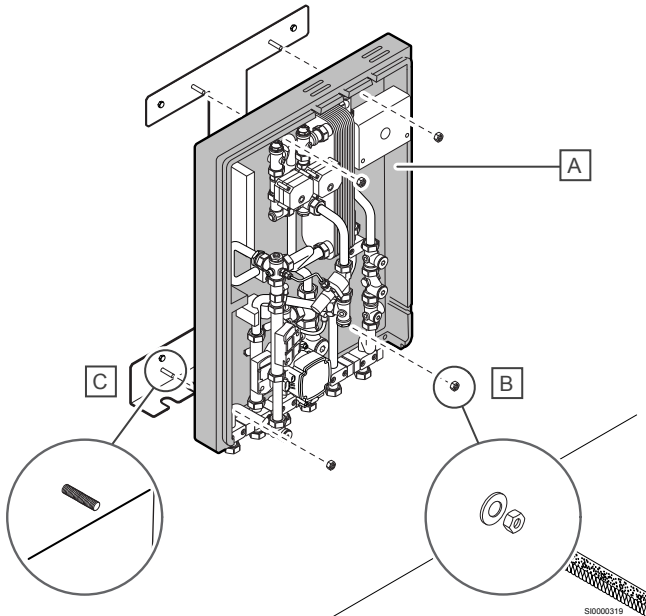
Note
Consider the height from the floor surface to ensure that there is space left for the installation of underfloor heating manifold.



Item	Description
A	Plug (4 pcs)
B	Hexagon bolt (4 pcs)

1. Mark the hole positions on the wall and drill holes using a **6 mm** drill.
2. Insert the plugs in the drilled holes.
3. Attach the wall bracket to the wall using the hexagon bolts.

Install the heat interface unit

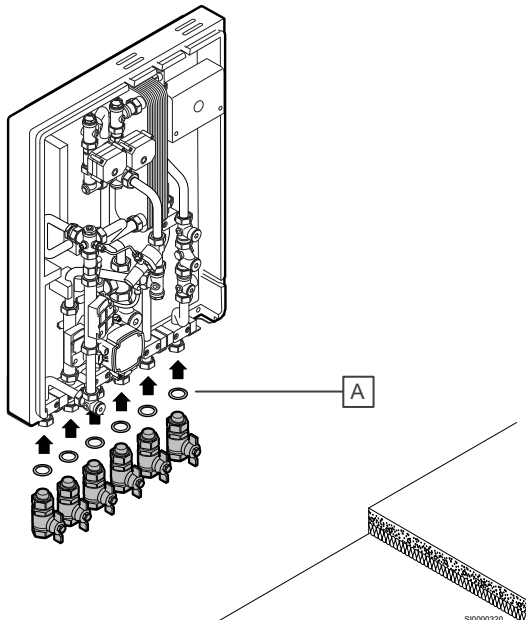


Item	Description
A	Heat interface unit
B	Hexagon nut (4 pcs)
C	Fixed bolt (4 pcs)

1. Screw the heat interface unit to the wall bracket using the hexagon bolts

Connect the ball valve set

Note
Check the flat gasket for damage.



Item	Description
A	Flat gasket

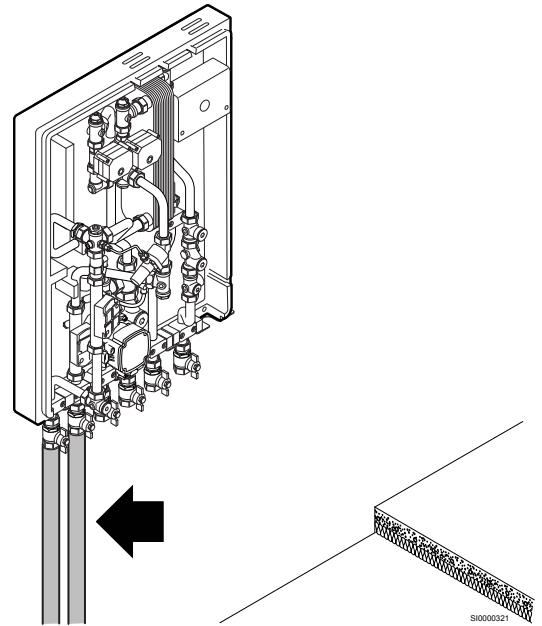
1. Place the flat seals on to the ball valves 3/4" screw connection.
2. Tighten the 3/4" swivel nuts.

Connect the primary supply pipes

Note
Install the pipes in accordance with planning documentation.

Note
Ensure the use of supplied seals when connecting the pipes!

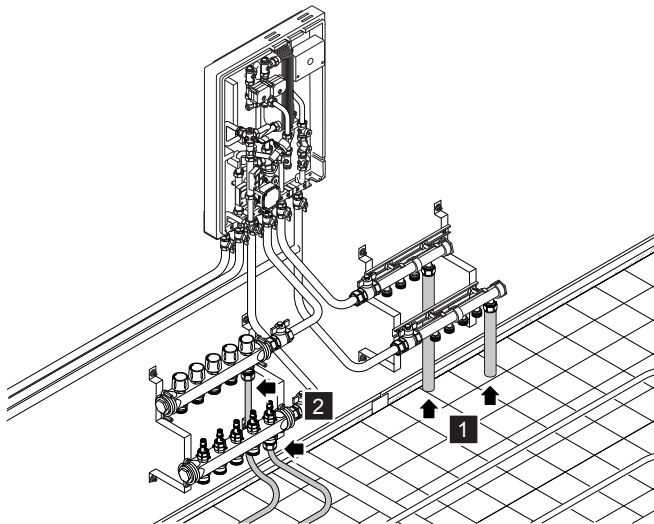
Note
Ensure that pipe insulation and fixing is made in accordance with EnEV.



1. Connect the supply pipes to the ball valves by using desired fittings.

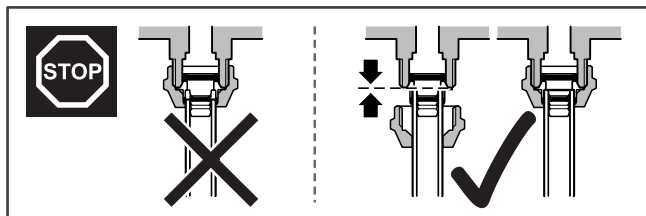
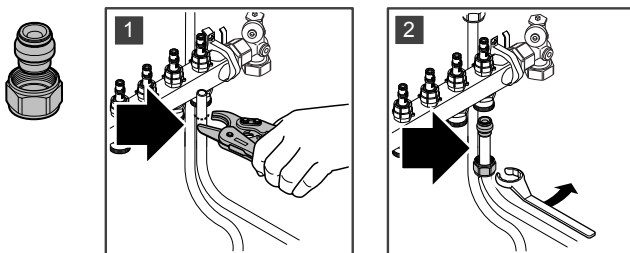
Connect the underfloor heating and tap water pipes

!	Note Install the pipes in accordance with planning documentation.
!	Note Ensure the use of supplied seals when connecting the pipes!
!	Note Ensure that pipe insulation and fixing is made in accordance with EnEV.



1. Connect the tap water pipes to the tap water manifold by using desired fittings.
2. Connect the underfloor heating pipes to the underfloor heating manifold by using desired fittings.

Connect the compression fittings



1. Cut the pipe in required length.
2. Connect the pipe to the manifold with the compression fitting.

Install the room temperature control

!	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

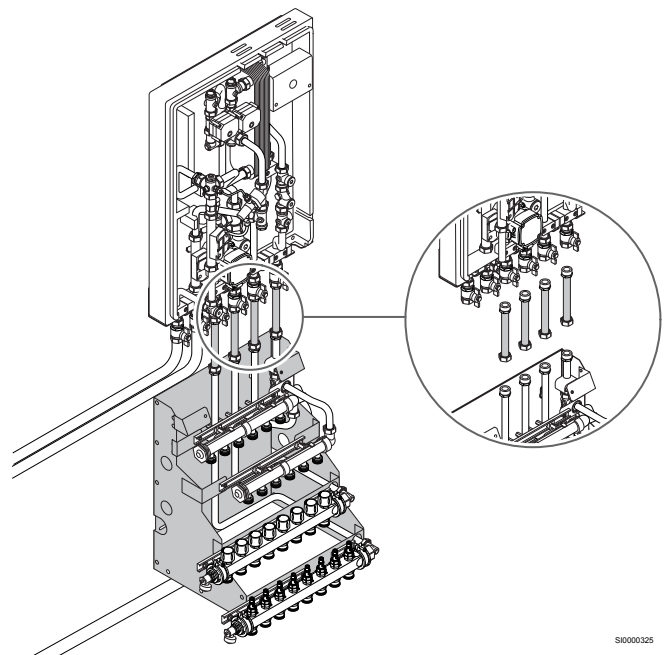
4.4 Heat interface unit with Port Base

Install the heat interface unit

Install the wall bracket, heat interface unit and ball valve set by following the same process as described in the section "Heat interface unit with UFH manifold".

Install Port Base

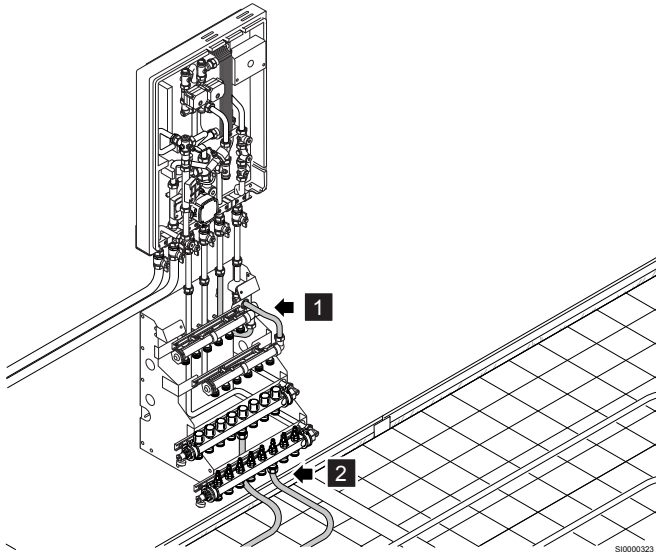
!	Note See the dimensional drawings for measurements. Pay attention to the horizontal alignment.
---	--



1. Make the hole positions on the floor and drill holes.
2. Insert plugs in the drilled holes if necessary.
3. Screw the Port Base unit to the floor.
4. Connect Port Base and the heat interface unit by using the supplied pipe connection set.

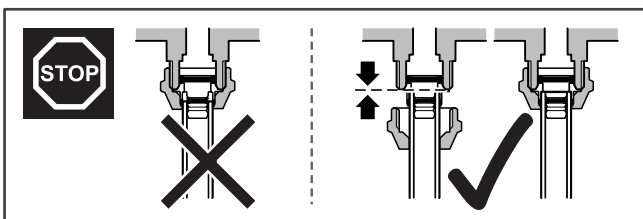
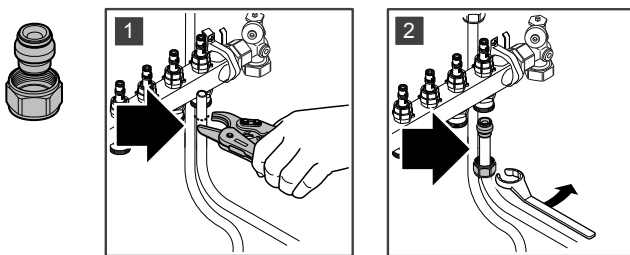
Connect the tap water and underfloor heating pipes

!	Note Install the pipes in accordance with planning documentation.
!	Note Ensure the use of supplied seals when connecting the pipes!
!	Note Ensure that pipe insulation and fixing is made in accordance with EnEV.



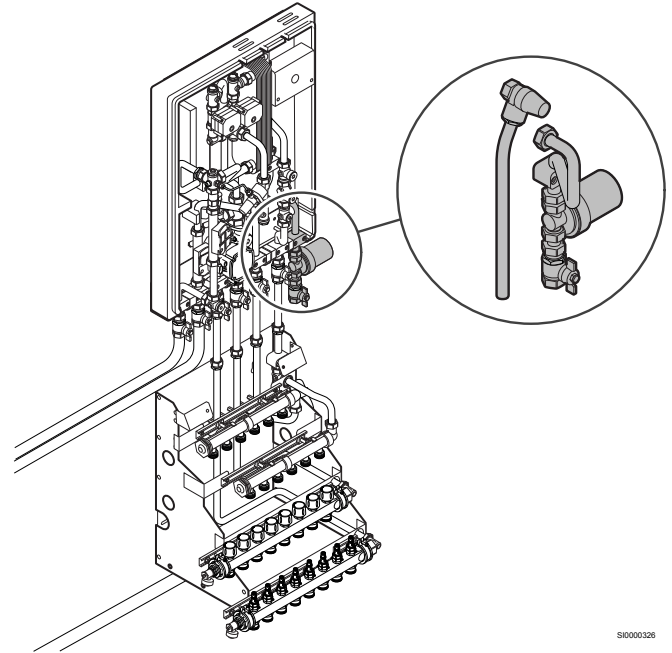
1. Connect the tap water pipes to the tap water manifold by using desired fittings.
2. Connect the underfloor heating pipes to the underfloor heating manifold by using desired fittings.

Connect the compression fittings



1. Cut the pipe in required length.
2. Connect the pipe to the manifold with the compression fitting.

Install the circulation line (optional)



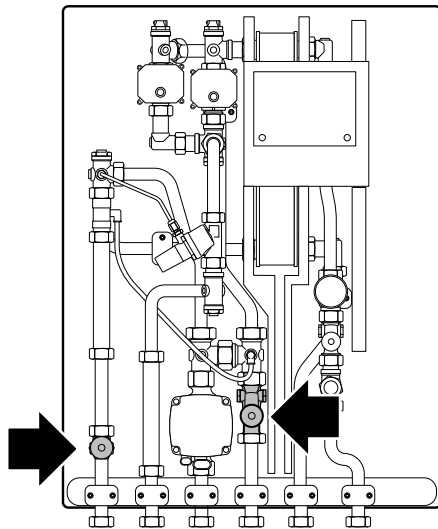
1. Connect the circulation line to the heat interface unit.
2. Connect the circulation pump to the power supply.

!	Note Please read the installation manual from the pump manufacturer.
---	--

5 Additional installation

5.1 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).

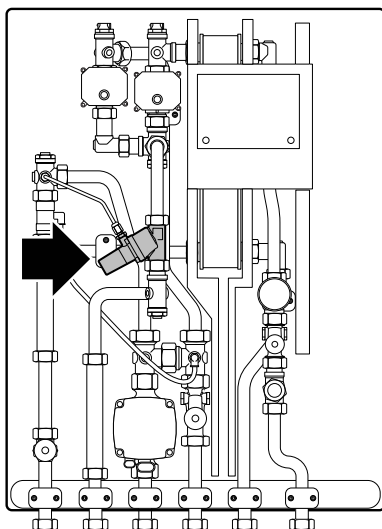


CD0000389

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

5.2 Differential pressure regulator

	Note Pay attention to the diagram "Differential pressure regulator" in the chapter Technical data.
--	--



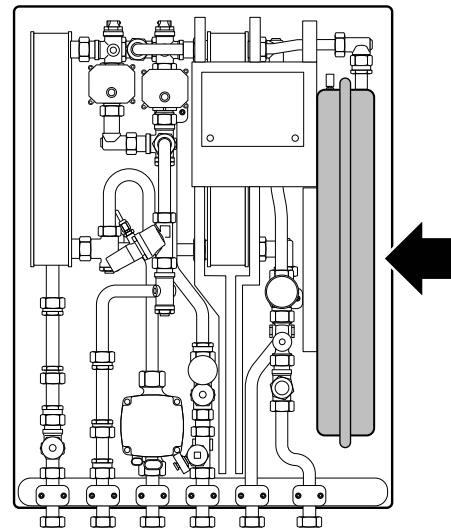
CD0000391

The differential pressure controller secures for constant pressure difference in the system.

The setting is made by turning the spindle.

5.3 Combi Port E D-X

Expansion vessel



CD0000388

The heat interface unit Combi Port E D-X is equipped with an expansion vessel.

The pre-set pressure is defined based on the calculated static height from the expansion vessel to the highest point in the heating system.

$$p_0 [\text{bar}] = \frac{H [\text{m}]}{10} + 0.2 \text{ bar}$$

D0000023

The pressure in the vessel is pre-set to **1.0 bar** which normally fits most systems.

Safety valve

	Warning! Never block the flushing pipe from the safety valve!
	Note Check the function of the safety valve at minimum once a year.

The heat interface unit Combi Port E D-X is equipped with a safety valve to protect the heating system from a rising pressure. The safety valve is a part of the optional circulation line.

The opening pressure is pre-set to **3.0 bar**.

Safety temperature limiter

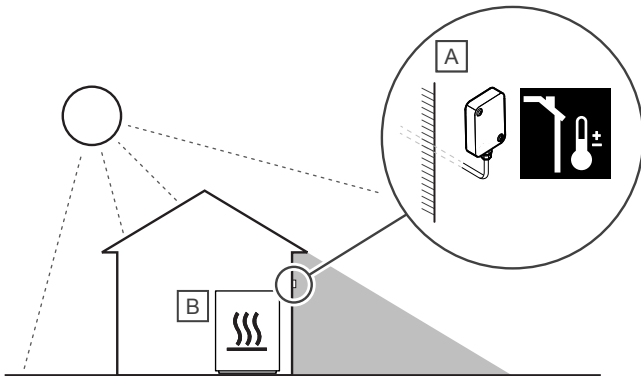
The safety temperature limiter serves to limit the flow temperature of the heating (secondary).

If the heating should be operated with a flow temperature higher than 58 °C, the safety temperature limiter must be disconnected in the

controller. At this connection, a bridge must be installed by an electrician.

5.4 Other components/devices

Outdoor temperature sensor



SI0000327

Item	Description
A	Outdoor temperature sensor

The outdoor temperature sensor serves as an input signal and ensures perfect heating control.

Install the outdoor sensor at least 2 meters above the ground, on a north-facing wall, protected from direct sunlight. Ensure that it is not located near openings that may effect its operation, such as doors, windows, vents etc.

BUS master

The BUS master is used in multi-family houses with large number of apartments. It enables the control of up to 128 heat interface units with one external sensor.

Room thermostat connection set

The room thermostat connection set is used to connect an external room thermostat. This ensures perfect heating control especially when no outdoor sensor is installed.

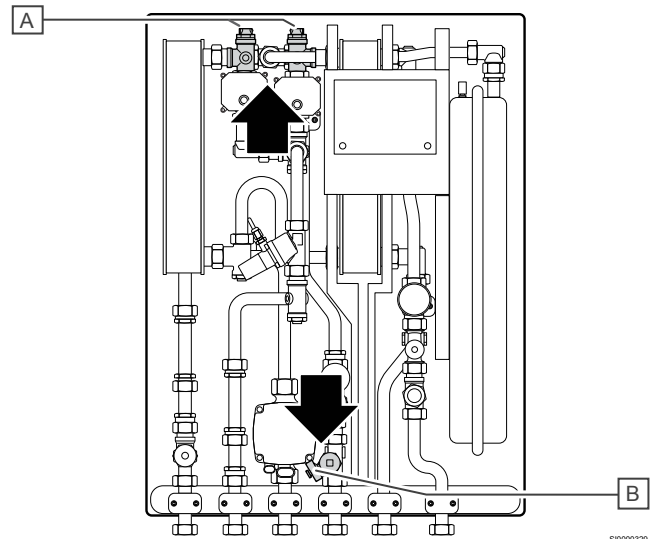
The room temperature signal can also be activated via the individual room control (Uponor Smatrix or Uponor Base flexiboard).

5.5 Filling, flushing and venting



Note

Switch off the pump before filling and venting the system!



SI0000329

Item	Description
A	Venting screw
B	Draining and filling valve

The filling and draining valve on the primary heating can be used for filling and flushing of the heating system.

Filling and flushing the system

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

Venting the system

1. Open the venting valve (A).
2. Vent the heat interface unit.

Filling the secondary side






Warning!

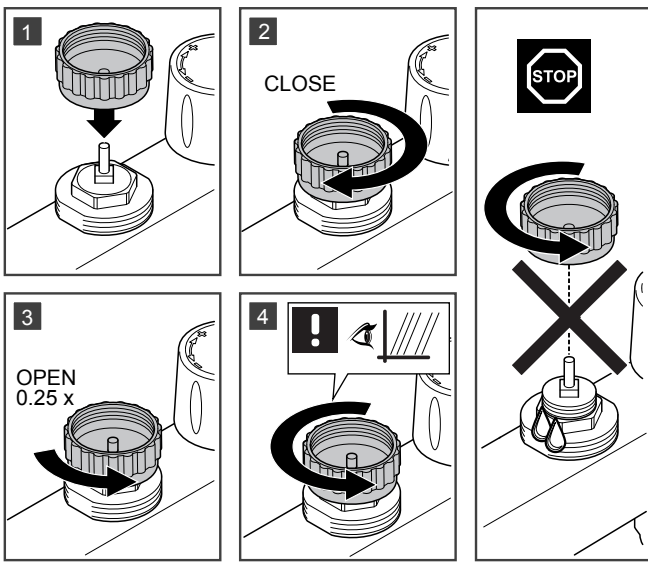
Never exceed 2.5 bar when filling the system!

1. The safety valve has a opening pressure at 3 bar. Pay attention to the pressure gauge when filling the secondary side.
2. Stop filling the system when the pressure is between 1.5 and 2 bar depending on application.
3. Vent the secondary side.
4. If necessary, fill with more water until the pressure rises to 1.5–2 bar.

6 Operation

6.1 Hydraulic balancing on the manifold

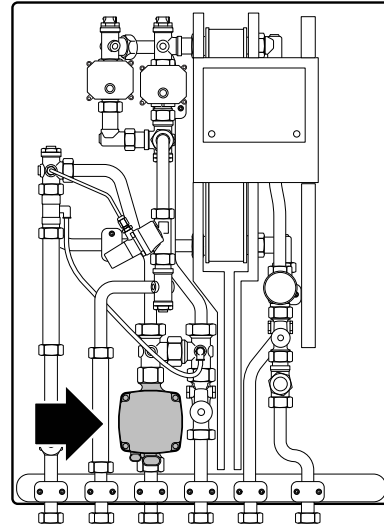
	Warning! The pressure in the valves can cause personal injury.
	Caution! Never turn the valves counter clockwise more than five (5) turns. When the cap is completely unscrewed, the valves will shoot out of the thread.
	Note Pay attention to the diagram "Hydraulic balancing on the manifold" in the chapter Technical data.



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 according to the design calculation.
5. Consider the planning documentation.

6.2 Constant pressure pump control

	Note Please read the installation manual from the pump manufacturer.
---	--

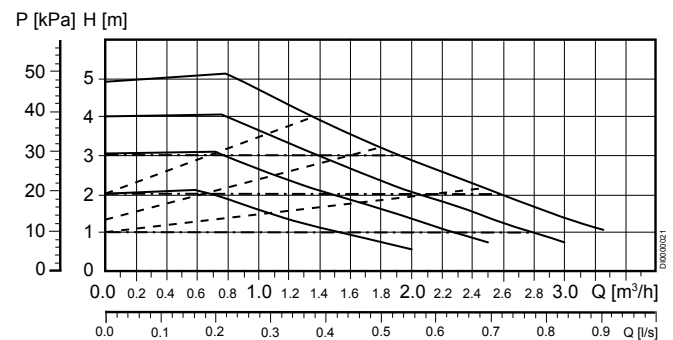


CD0000392

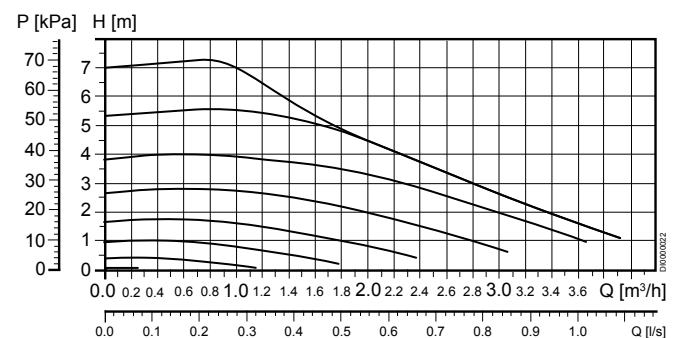
The Combi Port E unit has an injection circuit. A non-return valve is mounted in the screw connection of the by-pass.

Constant values $\Delta p-c$

UPM3 15-50, 5 m (option)



UPM3 15-70, 7 m



Changing the pump settings

Note

It is recommended that the pump runs at constant pressure when used for underfloor heating. The factory setting of the pump is not set to constant pressure and must therefore be changed

The pump (Grundfos UPM3) has to be set to the constant pressure modus (Δp -c) to enable an optimal operation of the underfloor heating system.

The settings are done on the pump house as described below.

Pump settings

Note

Leave the pump on the selected program. It goes back into operation automatically and has saved the settings.

Enable setting	Press and hold, sec	Factory setting		Underfloor heating constant pressure	Step
	4		2 x		1
	4		3 x		2
	4		4 x		3

Pump effect

EEI ≤ 0.20 Part 3	Value
Speed	P ₁ [W]
Min.	2
Max.	33

Pump operation

Display view	Operation settings
	0 % ≤ P ₁ ≤ 25 %
	25 % ≤ P ₁ ≤ 50 %
	50 % ≤ P ₁ ≤ 75 %
	75 % ≤ P ₁ ≤ 100 %

Pump alarms

Display view	Alarm status
	Blocked
	Low voltage
	Electrical fault

6.3 Combi Port E mobile application

The Combi Port E controller has preset default settings and is only operated via the app. Likewise, all settings for domestic water and heating are made via the app.

Combi Port E app

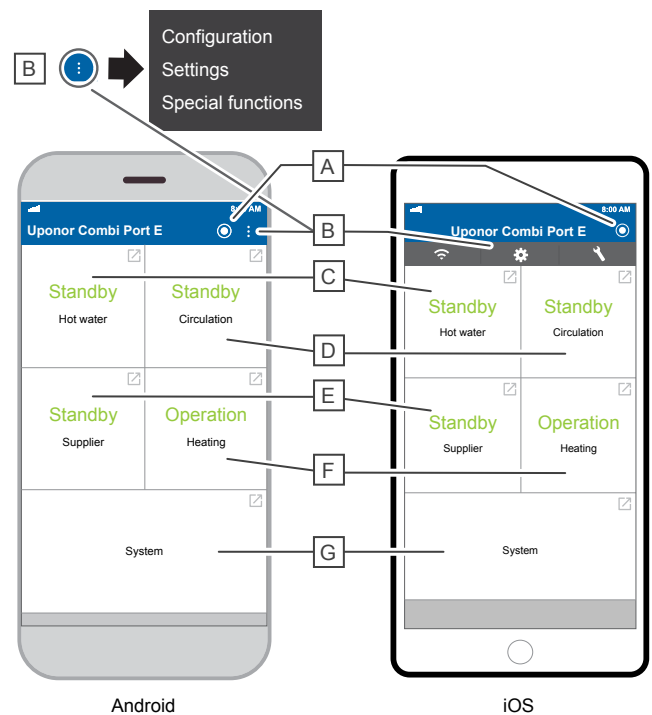
1. Download the Combi Port E app. It is available both for iOS and Android mobile devices.
2. Scan the QR code available on the Combi Port E controller.
3. Press the blue button in the middle of the Combi Port E controller until it flashes. Continue in the App.
4. Helptexts and guidance is available in the app.
5. The app consists of three different user levels. Access is given by activating the received code.
6. Fill in the code in menu "Settings".
7. Reconnect the controller to get the new level (push A, see below).

App advantages

- Display with live update of values, e.g. flow, temperature etc
- Software updates available (customer service only)
- Daily evaluation directly to service
- Commissioning protocol (content of all set points and operating modes)

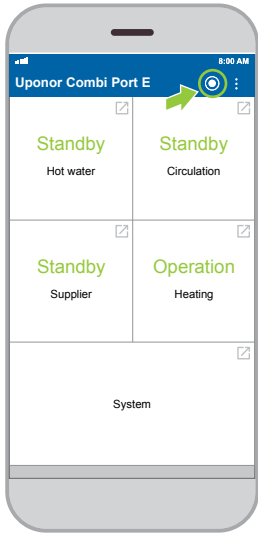
App structure

Overview



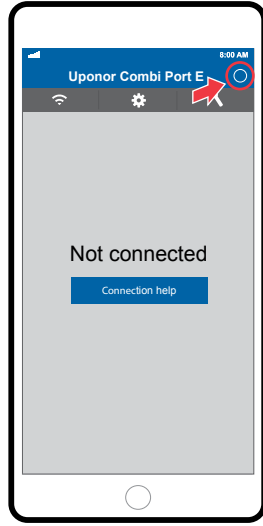
Item	Description
A	Connection status
B	Settings
C	Hot water
D	Circulation
E	Supplier
F	Heating
G	System

A Connection status



Android

A

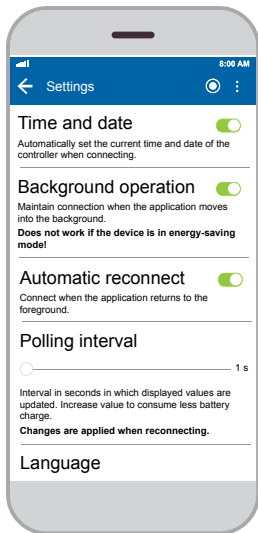


iOS

CD0000322

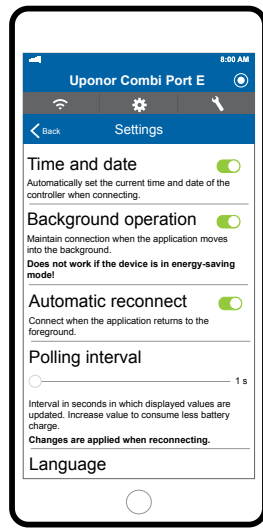
- Indication of successful connection
- Connection can be manually activated or deactivated

B Settings



Android

B



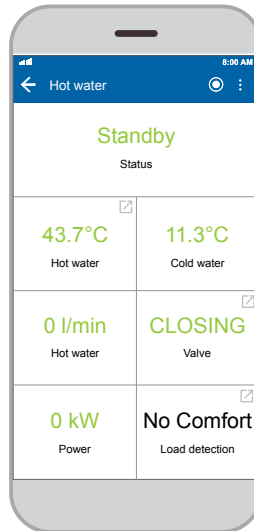
iOS

CD0000323

POSSIBLE SETTINGS

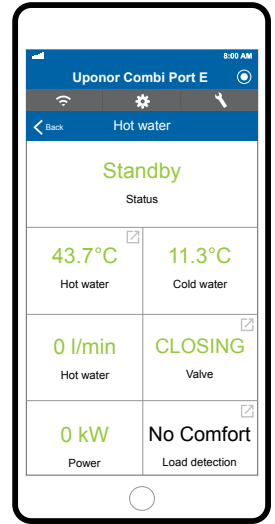
- Time/date
- Language
- Controller settings
- Load/save configuration
- Startup protocol

C Hot water



Android

C



iOS

CD0000324

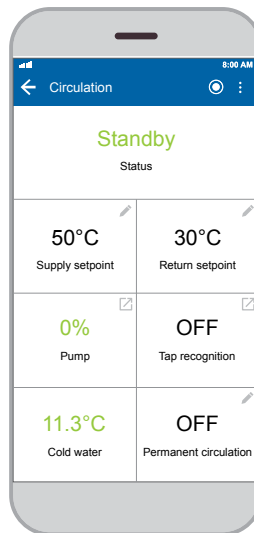
POSSIBLE SETTINGS

- Hot water temperature
- Valve position
- Load detection

DISPLAYED VALUES

- Hot water temperature
- Hot water flow
- Cold water temperature
- Performance

D Circulation



Android

D



iOS

CD0000325

POSSIBLE SETTINGS

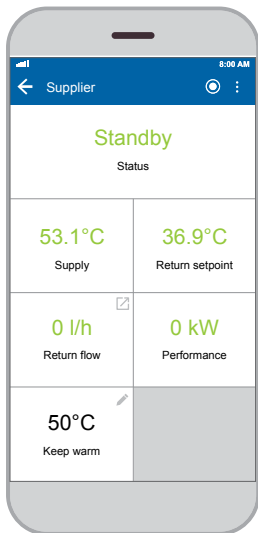
- Supply setpoint
- Return setpoint
- Follow-up time
- Permanent circulation
- Time program

DISPLAYED VALUES

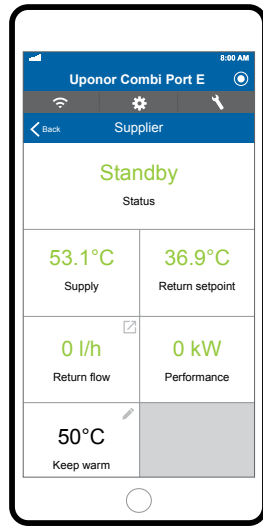
- Pump status

E Supplier

E



Android



iOS

CD0000328

POSSIBLE SETTINGS

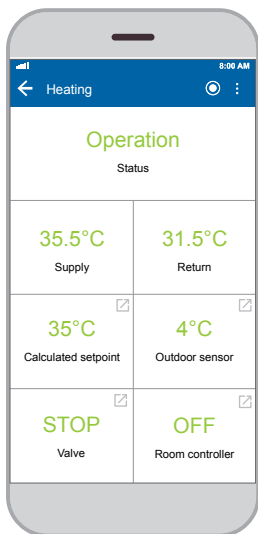
- Supply primary
- Return primary
- Keep warm temperature

DISPLAYED VALUES

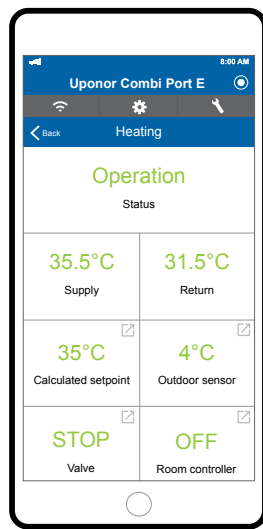
- Flow primary

F Heating

F



Android



iOS

CD0000327

POSSIBLE SETTINGS

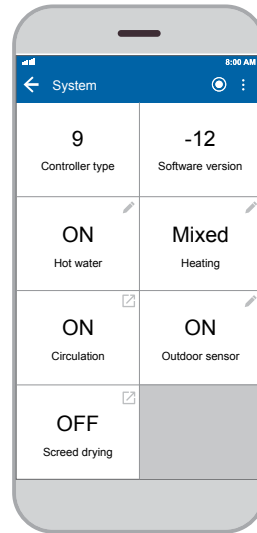
- Operating mode
- Control mode
- Time program
- Heating curve (optional)
- ECO mode (heating)

DISPLAYED VALUES

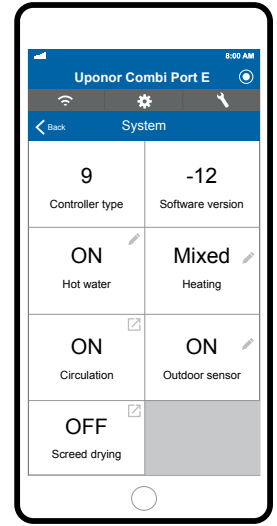
- Supply secondary
- Return secondary
- Outdoor temperature (optional)
- Room temperature (optional)
- External input (optional)

G System

G



Android



iOS

CD0000328

POSSIBLE SETTINGS

- Module selection
- Screenshot drying program
- Start up, step by step

DISPLAYED VALUES

- Software version
- Controller type

6.4 Commissioning and hand over

1. Complete the acceptance/commissioning protocol via the App.
2. Hand over the documentation and protocol to the homeowner.

7 Maintenance

7.1 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 (F). 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 (E) and (F) 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.

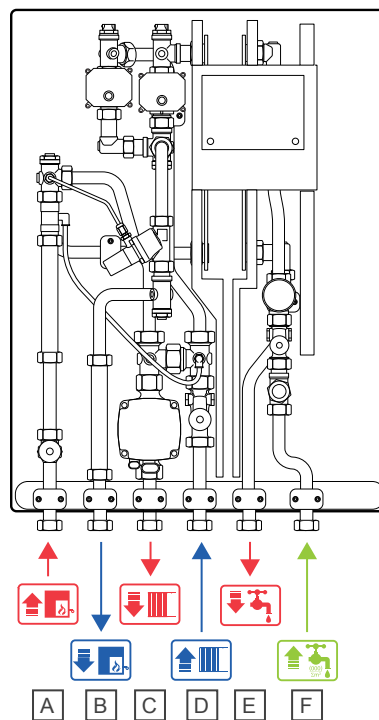
The tapping duration should then be around 1-2 minutes. The water must be allowed to run at least every 7 days for about 1-2 minutes.

7.2 Turning off heat interface unit

Note

If droplets of water are detected, call a qualified service personnel.

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



CD0000383

Item	Description
A	Heating supply (primary)
B	Heating return (primary)
C	Heating supply (secondary)
D	Heating return (secondary)
E	Domestic hot water to apartment (DHW)
F	Cold water from riser (CW)

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

- Close ball valves A, B and F. Close the cold water tap.
- Protect the heating unit against frost.
- Let the hot water run for about 5 minutes at restart.
- Switch off the controller (pull out the plug, settings remain saved).

8 Troubleshooting

8.1 Fault description

Fault description	Cause	Solution	
Hot water function			
Hot water temperature too low or volatile	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: Grundfos UMP3	
	Setting for heating circuit pump is not correct	Heating circuit pump setting: Constant pressure	
	Pump performance too low	Check the pump performance	
	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	
	Insufficient differential pressure	Clean the capillary of the differential pressure control, and check that the differential pressure control is working	
	Heat interface unit		
	Strainer in heating supply (primary) dirty	Clean the strainer in the heating supply (primary)	
	Air in the system	Vent the system	
	Insufficient heating volume flow passes through the heat exchanger	Check the volume flow	
	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	
	Hot water temperature limiter setting is not correct	Check setpoints via the App, in the display "Hotwater"	
	Check the controller setting	Check setpoints via the App, in the display "Hot water"	
	Waiting time for hot water is too long	Check the pump setting in the central heating system	Pump setting: Constant pressure
The temperature setting in the controller is too low		Increase the temperature setting via the App in the display "Supply" or in the line	
Noise generation			
Noise generated in the station	Insulation is not closed or not present	Fully close the insulation cover	
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	Pump setting: Constant pressure	
	Air trapped in buffer storage	Vent the buffer storage tank	
	Air in the system	Vent the system	
	Setting for room thermostat is not correct	Check the setting at the room thermostat	
	Strainer is dirty	Clean the strainer	
	Check the controller setting	Check the setpoints via the App, in the display "Heating"	
	Heating system does not heat up	Underfloor heating controlled by setpoint values	
		Pump not connected	Check the pump connection
		Strainer is dirty	Clean the strainer
Pump setting is not correct		Check the pump setting	
Setpoint is not correct		Check the setpoints via the App, in the display "Heating"	
Underfloor heating, weather compensated			
Controller setting is not correct		Check the setting via the App, in the display "Heating"	
Outdoor sensor faulty		Replace the outdoor sensor	

Fault description	Cause	Solution
No hot water and no heating	Pump not connected	Check the pump connection
	Ball valves/locking devices closed	Open locking devices
	Controller is not working	Check if the check valve is installed in the circulation line (when the circulation set is installed)
	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

8.2 App alarms

Alarms occurring in the Combi Port E app are described directly in the app instead of in this installation and operation manual.

9 Technical data

9.1 Technical specifications

Combi Port E D-UFH	Value
Medium	Heating water according to VDI 2035
Operating temperature	5-85 °C (90 °C temporary)
Max. operating pressure	10 bar, heating 10 bar, domestic water
Max. primary differential pressure	1.2 bar (4.5 bar with differential pressure regulator)

Combi Port E D-X	Value
Medium	Heating water according to VDI 2035
Operating temperature	5-85 °C (90 °C temporary)
Max. operating pressure	10 bar, primary heating 3 bar, secondary heating 10 bar, domestic water
Max. primary differential pressure	1.2 bar (4.5 bar with differential pressure regulator)

Combi Port E controller	Value
Operating voltage	230 V AC, 50 Hz
Power consumption	1 W
Safety	T 2 A, 250 V
Ambient temperature	-10 °C ... +40 °C (max.)
Protection code	IP 42
Pump/relay output	230 V AC, 200 W (max.)
Valve output	See table below

Material	Value
Fittings, sanitary	CW617N
Fittings, heating	CW617N, CW614N
Seals	According to DVGW KTW, W270
Turbine	POM with KTW approval
Insulation	EPP
Plate heat exchanger	1.4404
Soldering	Copper, vacinox
Pipes	1.4404

Uponor Vario S manifold	Value
Medium	Heating water according to VDI 2035
Operating temperature	5-60 °C
Operating pressure	10 bar

Grundfos pump UPM3	Value
Medium	Heating water according to VDI 2035
Operating temperature	5-95 °C
Operating pressure	10 bar
Connection	DN 15 (G1")
Power connection	230 V, 50/60 Hz
Electrical current, max.	0.44 A

9.2 Electrical connection controller

Electrical net connection, 230 V AC

Contacts	Description	Marking
L (X1)	Phase	Black/Brown Net
N	Neutral	Blue Net
PE	Protective conductor	Green/Yellow Net

Relay outputs, max 230 V AC, 200 W

Contacts	Description	Marking
L2 (X3)	Phase	Black/Brown Circulation pump
N	Neutral	Blue Circulation pump
PE	Protective conductor	Green/Yellow Circulation pump
L3 (X4)	Phase	Black/Brown Heating pump 1
N	Neutral	Blue Heating pump 1
PE	Protective conductor	Green/Yellow Heating pump 1

DC valve outputs for motor valves

Contacts	Description	Marking
V1 (X27)	Control signal	Red Valve cold water
	Control signal	Black Valve cold water
V2 (X28)	Control signal	Red Valve heating 1
	Control signal	Black Valve heating 1

Temperature sensor input

Contacts	Description	Marking
⊥	Earthing on site for T1-T10	
T1 (X15)	Measurement signal	Domestic hot water
T2 (X16)	Measurement signal	Heating supply (primary)
T3 (X17)	Measurement signal	Heating supply (secondary)
T4 (X18)	Measurement signal	Heating return (secondary)
T7 (X22)	Measurement signal	Cold water
T8 (X21)	Measurement signal	Heating return (primary)
T9 (X23)	Measurement signal	Room thermostat
T10 (X24)	Measurement signal	Outdoor temperature sensor

Note

Only suitable for connecting motor valves.

Note

Room thermostat and/or outdoor temperature sensor must be connected to a 2-pin connector on site.

Flow sensor input

Contacts	Description	Marking
I1 (X22)	Impulse signal	Cold water from riser (CW) (Flow sensor)
⊥	Earthing on site for I1	—
+	Supply for I1	—
I2 (X21)	Impulse signal	Heating return (primary) (Flow sensor)
⊥	Earthing on site for I2	—
+	Supply for I2	—

External On/Off

Contacts	Description	Marking
(X6)		Room thermostat for heating
(X7)		Safety temperature monitor (STW)

RS485 interface

Note	
It is possible to read current measured values, controller - and output states with an external device (e.g. PC) and to change the setting values.	

Contacts	Description	Marking
⊥	(X13) Earthing on site	RS485 for Modbus/terminal
⊥	Earthing on site	RS485 for Modbus/terminal
B	B signal	RS485 for Modbus/terminal
A	A signal	RS485 for Modbus/terminal

9.3 Data output

Current measured values, controller status and output states can be read and value settings changed in an external device, e.g. computer.

RS485 interface (4-pin terminal X14)

- For terminal output or Modbus RTU communication.

Modbus RTU

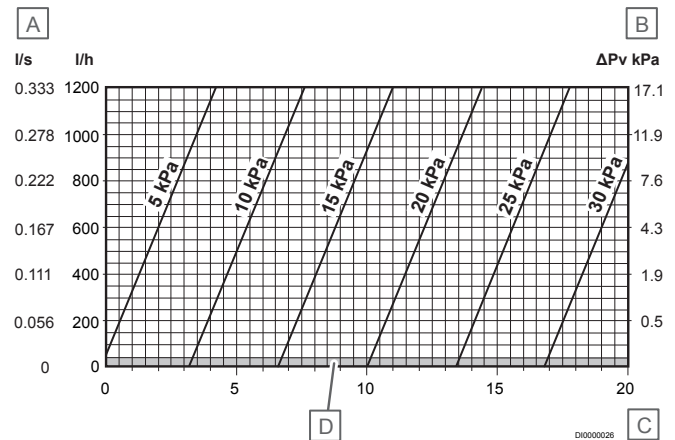
- For data output and possibility to change setting values.
- For communication, a Modbus RTU master program (download, for example "Modbus Poll") is required.
- SETUP value "Address" must be set to "1 ... 253".

Transfer settings

Description	Value
Transmission rate	19200 bit/s
Data bits	8
Parity	No
Stop bits	1
Protocol	No protocol

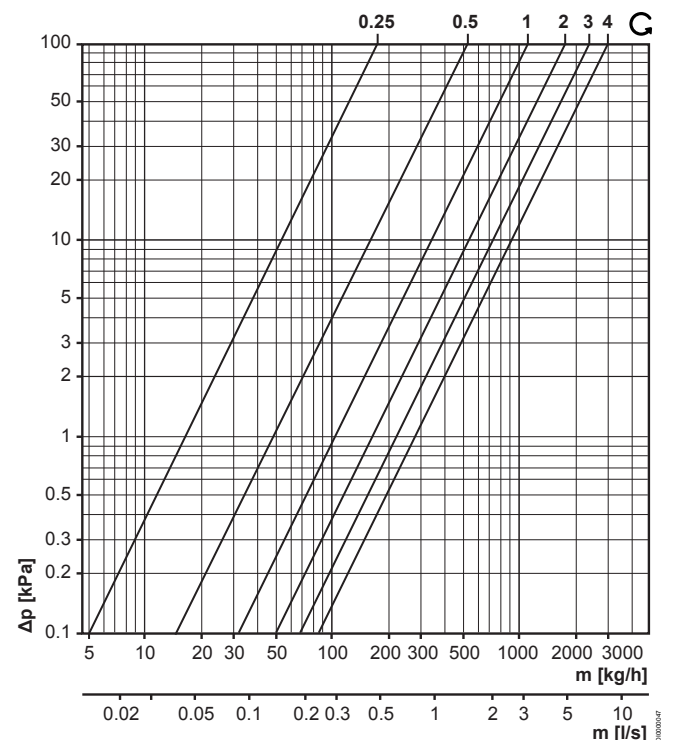
Description	Value
Address	1 ... 253 (for Modbus)

9.4 Differential pressure regulator



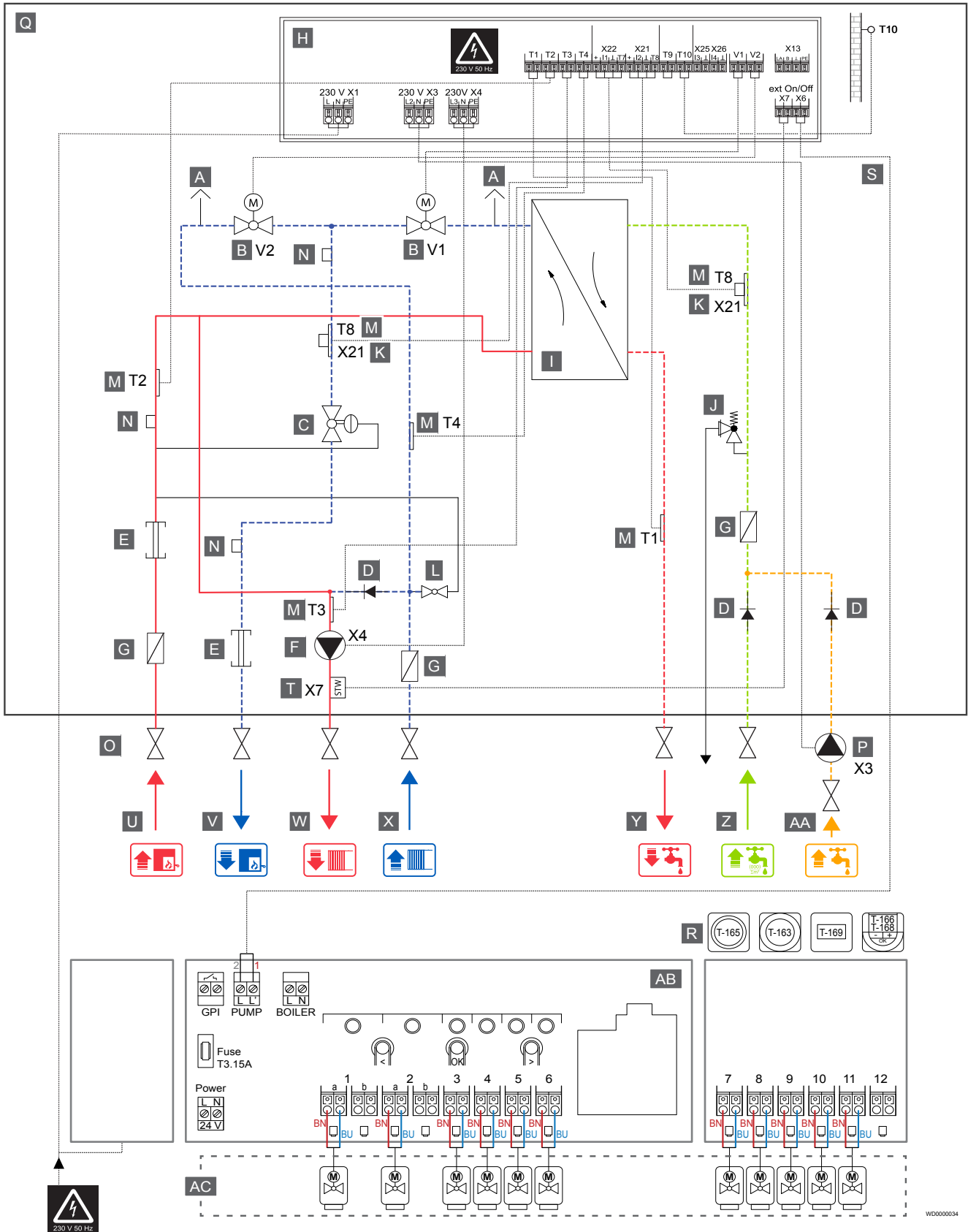
Item	Description
A	Volume flow
B	Δp across the valve kPa
C	Number of turns (default settings)
D	Outside volume range

9.5 Hydraulic balancing on the manifold



9.6 Wiring diagram

Combi Port E D with Uponor Smatrix Wave Pulse



WD0000034

Description of wiring diagram

Item	Description
A	Venting screw
B	Motor valve
C	Differential pressure regulator
D	Backflow preventer
E	Heat meter distance piece
F	Heating supply pump
G	Strainer
H	Combi Port E controller
I	Plate heat exchanger
J	Safety valve
K	Flow sensor
L	Bypass valve
M	Contact sensor
N	Sensor pocket heat meter
O	Connection, ball valve
P	Circulation pump
Q	EPP cover
R	Room thermostat (optional)
S	Potential isolation cable (optional)
T	Safety temperature limiter
U	Heating supply (primary)
V	Heating return (primary)
W	Heating supply (secondary)
X	Heating return (secondary)
Y	Domestic hot water to apartment (DHW)
Z	Cold water from riser (CW)
AA	Circulation (optional)
AB	Uponor Smatrix Wave Pulse room controller
AC	Zone valve for limiting heating flow to apartment

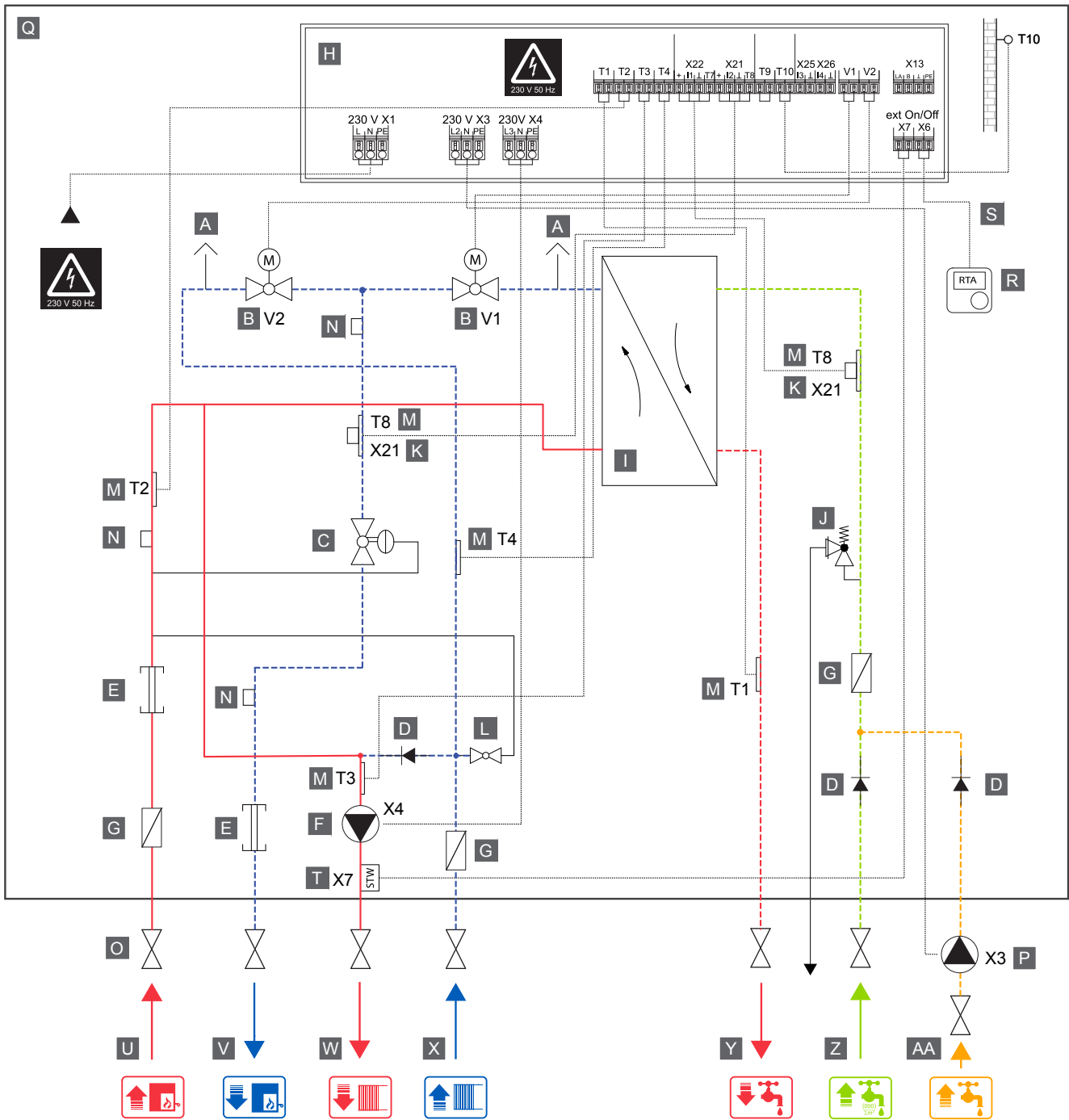
Flow sensors

Contact	Description	Colour cable tie
X21	Heating return (primary)	Blue
X22	Cold water from riser (CW)	Green
X25	(optional)	
X26	(optional)	

Temperature sensors

Contact	Description	Colour cable tie
T1	Domestic hot water	Red
T2	Heating supply (primary)	Orange
T3	Heating supply (secondary)	Yellow
T4	Heating return (secondary)	Black
T7	Cold water from riser (CW)	Green
T8	Heating return (primary)	Blue
T9	Room temperature sensor (optional)	
T10	Outdoor temperature sensor	

Combi Port E D with single room thermostat



WD0000035

Description of wiring diagram

Item	Description
A	Venting screw
B	Motor valve
C	Differential pressure regulator
D	Backflow preventer
E	Heat meter distance piece
F	Heating supply pump
G	Strainer
H	Combi Port E controller
I	Plate heat exchanger
J	Safety valve
K	Flow sensor
L	Bypass valve
M	Contact sensor
N	Sensor pocket heat meter
O	Connection, ball valve
P	Circulation pump
Q	EPP cover
R	Room thermostat (optional)
S	Potential isolation cable (optional)
T	Safety temperature limiter
U	Heating supply (primary)
V	Heating return (primary)
W	Heating supply (secondary)
X	Heating return (secondary)
Y	Domestic hot water to apartment (DHW)
Z	Cold water from riser (CW)
AA	Circulation (optional)

Flow sensors

Contact	Description	Colour cable tie
X21	Heating return (primary)	Blue
X22	Cold water from riser (CW)	Green
X25	(optional)	
X26	(optional)	

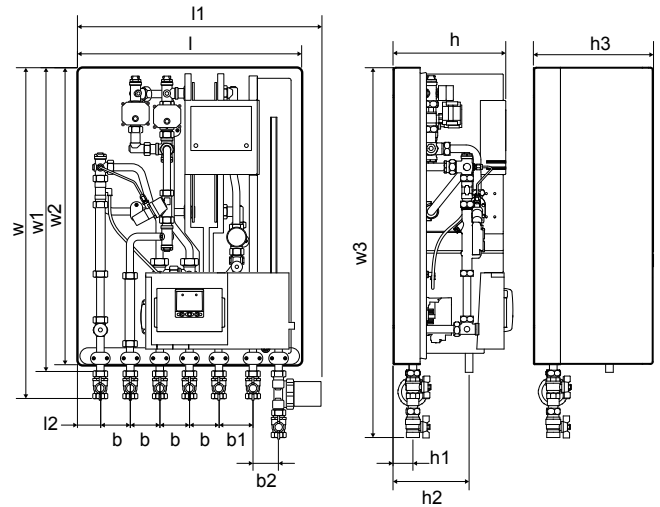
Temperature sensors

Contact	Description	Colour cable tie
T1	Domestic hot water	Red
T2	Heating supply (primary)	Orange
T3	Heating supply (secondary)	Yellow
T4	Heating return (secondary)	Black
T7	Cold water from riser (CW)	Green
T8	Heating return (primary)	Blue
T9	Room temperature sensor (optional)	
T10	Outdoor temperature sensor	

9.7 Dimensional drawings

All dimensions are given in mm.

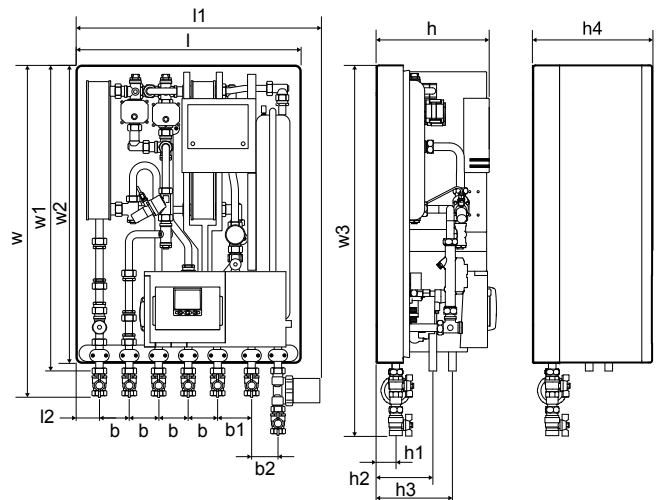
Combi Port E D-UFH



ZD0000027

l	l ₁	l ₂	w	w ₁	w ₂	w ₃
530	578	55	781.8	718	702	874
h	h ₁	h ₂	h ₃	b	b ₁	b ₂
266.5	47	180	284	70	80	60

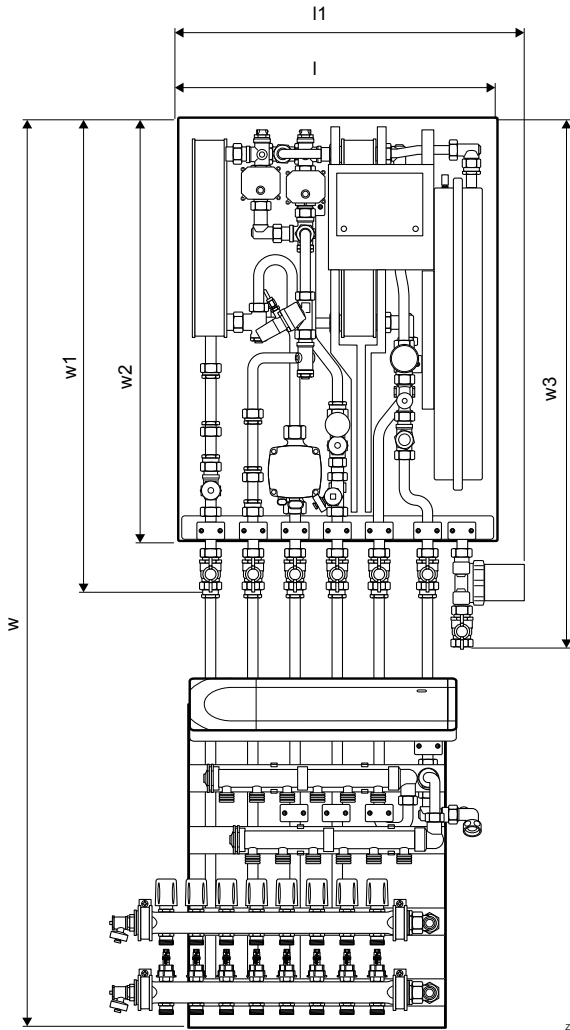
Combi Port E D-X



ZD0000028

l	l ₁	l ₂	w	w ₁	w ₂	w ₃
530	578	55	781.8	718	702	874
h	h ₁	h ₂	h ₃	b	b ₁	b ₂
266.5	47	134	180	70	80	60

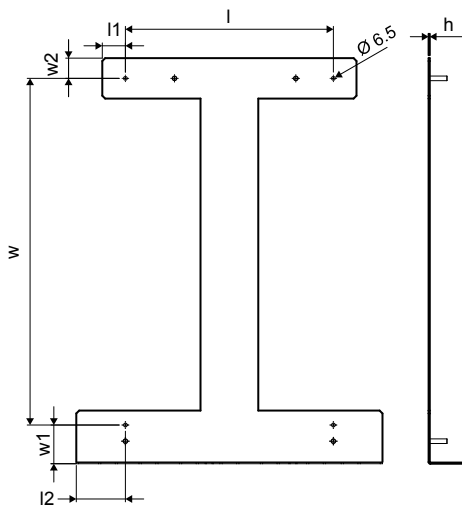
Port Base connection set



ZD0000030

l	l_1	w	w_1	w_2	w_3
530	578	1500	782	700	874

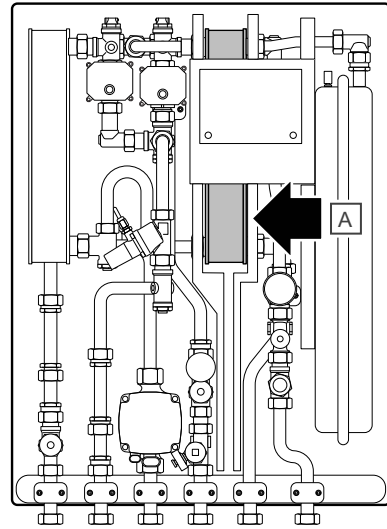
Wall bracket



ZD0000029

l	l_1	l_2	w	w_1	w_2	h
360	40	86	600	67	35	2

9.8 Performance curves for domestic water heat exchanger



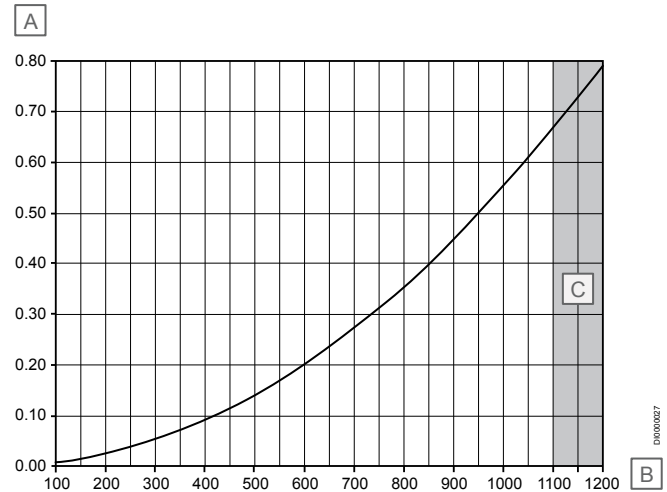
CD0000396

Item	Description
A	Domestic water heat exchanger

Combi Port E D-UFH, Combi Port E D-X — 24 plates

Pressure losses

Heating side (primary)

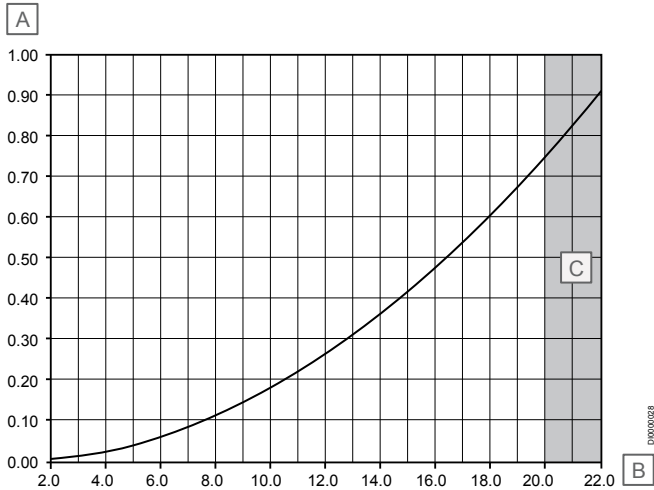


D0000027

Item	Description
A	Pressure loss in bar
B	Primary heating demand in litres/hour (l/h)
C	Max range

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)

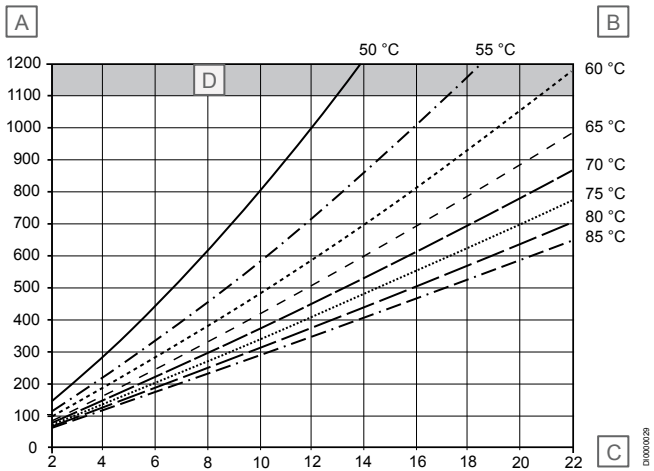


Item	Description
A	Pressure loss in bar
B	Tapping capacity in litres/minute (l/min)
C	Max range

Additional pressure losses of other external fixtures at drinking water must be included.

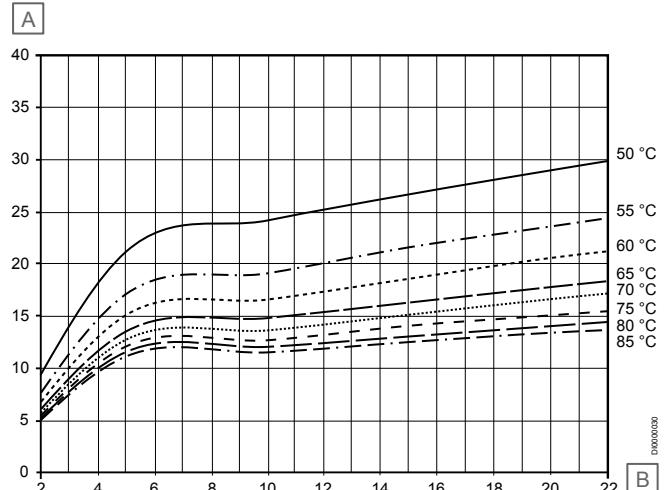
Primary heating demand and return temperatures

Cold water warming 35 K (10-45 °C)



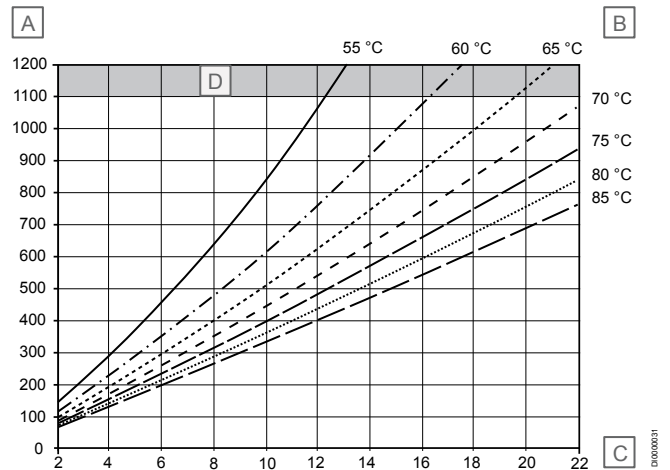
Item	Description
A	Primary heating demand in litres/hour (l/h)
B	Primary heating supply temperatures
C	Tapping capacity in litres/minute (l/min)
D	Max range

Tapping capacity 35 K (10-45 °C)



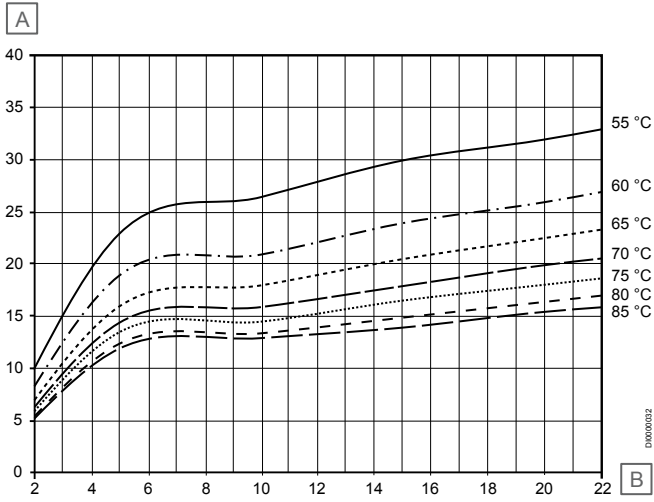
Item	Description
A	Return temperature °C
B	Tapping capacity in litres/minute (l/min)

Cold water warming 40 K (10-50 °C)



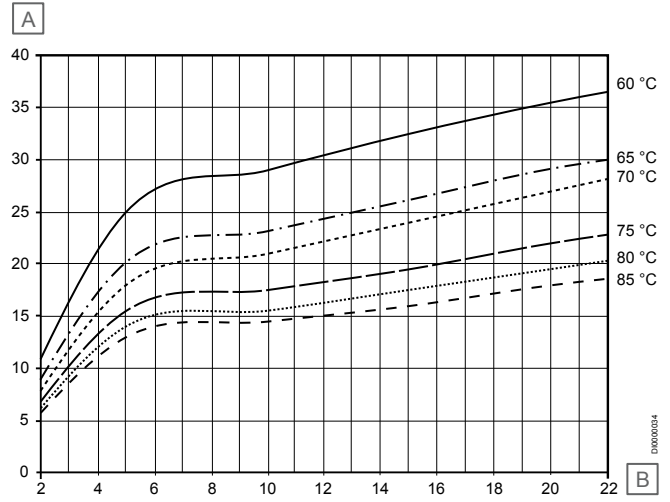
Item	Description
A	Primary heating demand in litres/hour (l/h)
B	Primary heating supply temperatures
C	Tapping capacity in litres/minute (l/min)
D	Max range

Tapping capacity 40 K (10-50 °C)



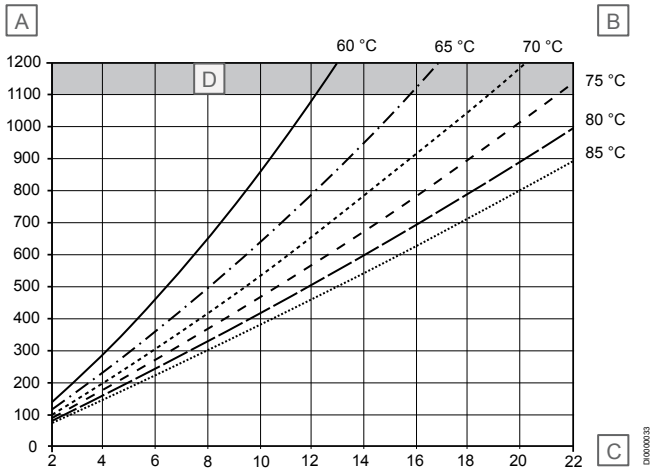
Item	Description
A	Return temperature °C
B	Tapping capacity in litres/minute (l/min)

Tapping capacity 45 K (10-55 °C)



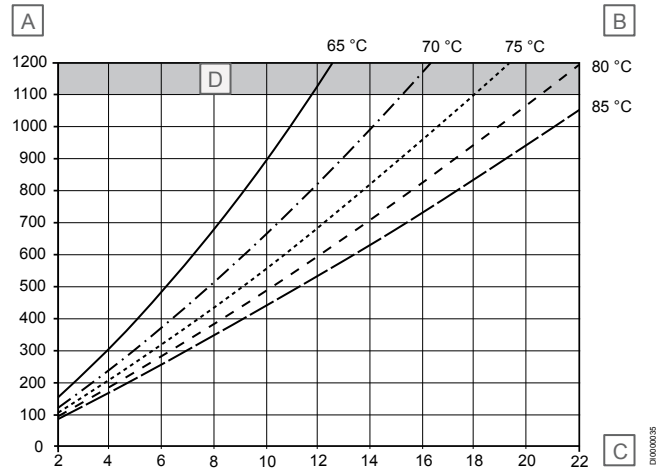
Item	Description
A	Return temperature °C
B	Tapping capacity in litres/minute (l/min)

Cold water warming 45 K (10-55 °C)



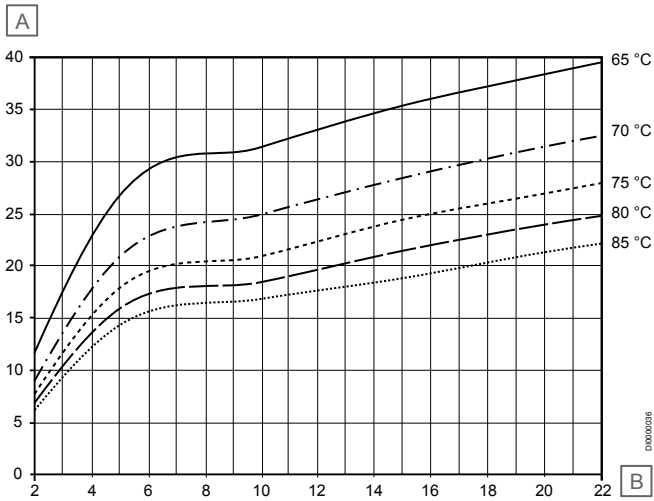
Item	Description
A	Primary heating demand in litres/hour (l/h)
B	Primary heating supply temperatures
C	Tapping capacity in litres/minute (l/min)
D	Max range

Cold water warming 50 K (10-60 °C)



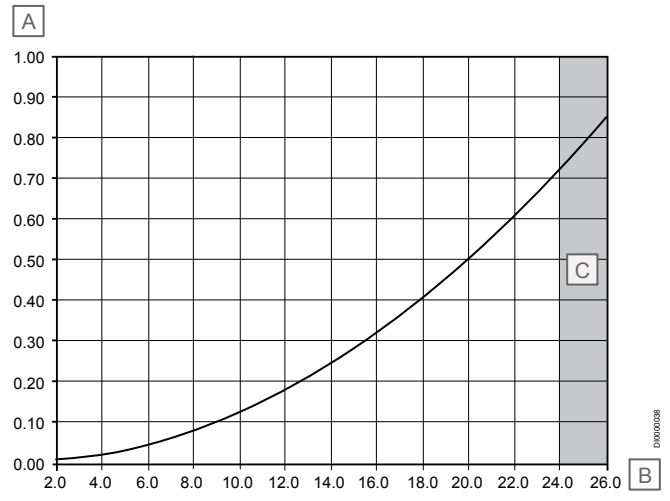
Item	Description
A	Primary heating demand in litres/hour (l/h)
B	Primary heating supply temperatures
C	Tapping capacity in litres/minute (l/min)
D	Max range

Tapping capacity 50 K (10-60 °C)



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

Domestic hot water side (secondary)



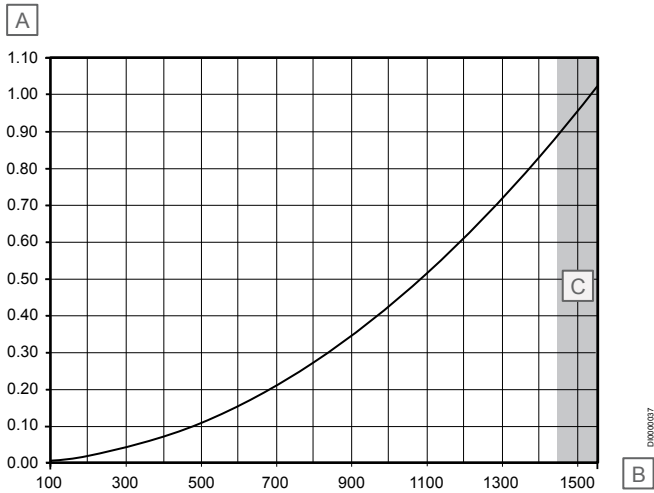
Item	Description
A	Pressure loss in bar
B	Tapping capacity in litres/minute (l/min)
C	Max range

Additional pressure losses of other external fixtures at drinking water must be included.

Combi Port E D-UFH, Combi Port E D-X — 40 plates

Pressure losses

Heating side (primary)

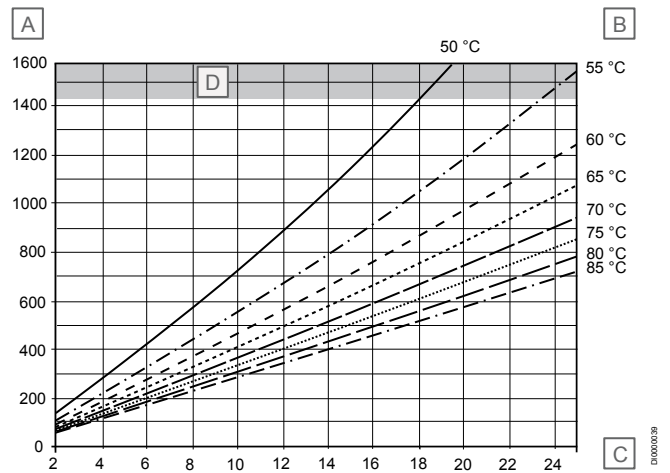


Item	Description
A	Pressure loss in bar
B	Primary heating demand in litres/hour (l/h)
C	Max range

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

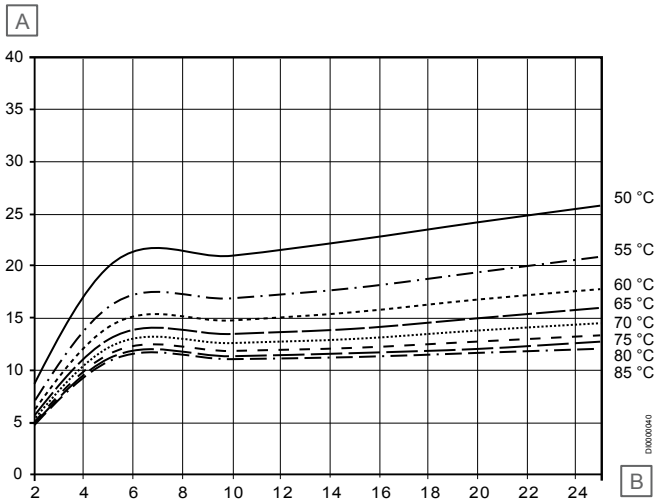
Primary heating demand and return temperatures

Cold water warming 35 K (10-45 °C)



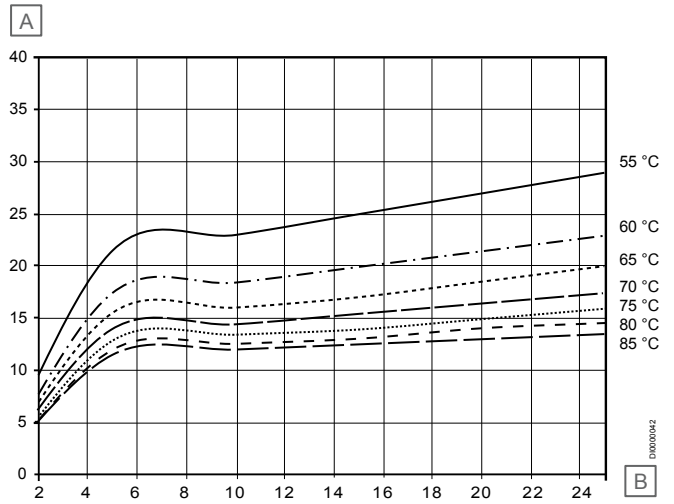
Item	Description
A	Primary heating demand in litres/hour (l/h)
B	Primary heating supply temperatures
C	Tapping capacity in litres/minute (l/min)
D	Max range

Tapping capacity 35 K (10-45 °C)



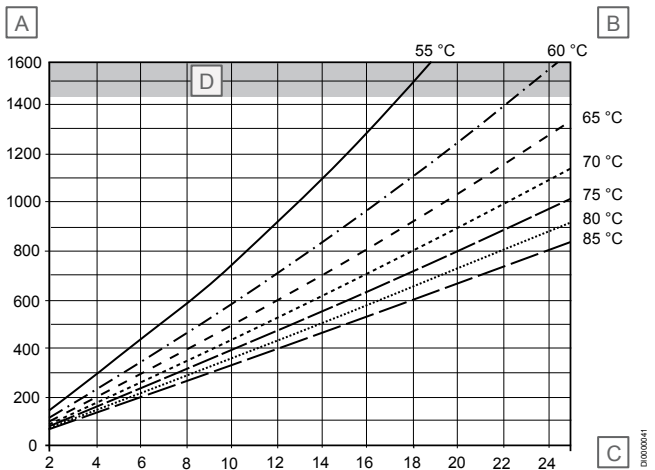
Item	Description
A	Return temperature °C
B	Tapping capacity in litres/minute (l/min)

Tapping capacity 40 K (10-50 °C)



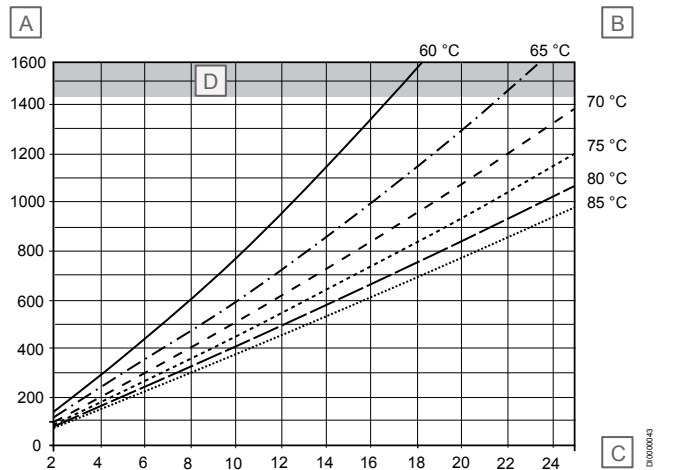
Item	Description
A	Return temperature °C
B	Tapping capacity in litres/minute (l/min)

Cold water warming 40 K (10-50 °C)



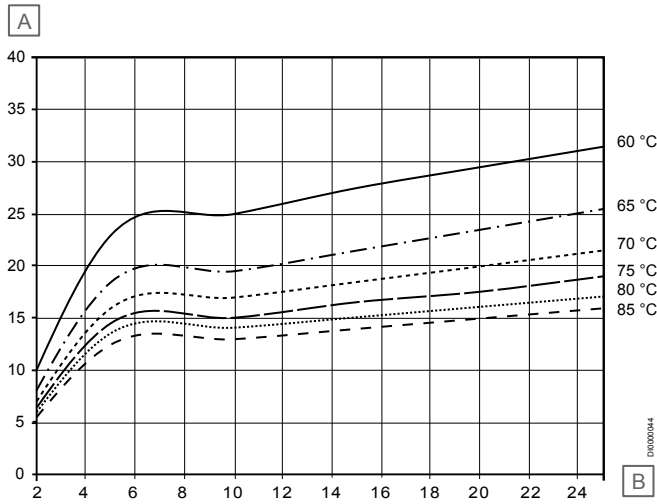
Item	Description
A	Primary heating demand in litres/hour (l/h)
B	Primary heating supply temperatures
C	Tapping capacity in litres/minute (l/min)
D	Max range

Cold water warming 45 K (10-55 °C)



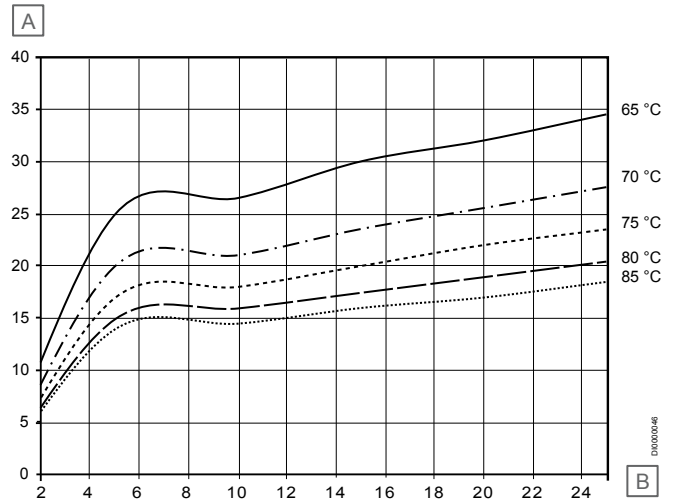
Item	Description
A	Primary heating demand in litres/hour (l/h)
B	Primary heating supply temperatures
C	Tapping capacity in litres/minute (l/min)
D	Max range

Tapping capacity 45 K (10-55 °C)



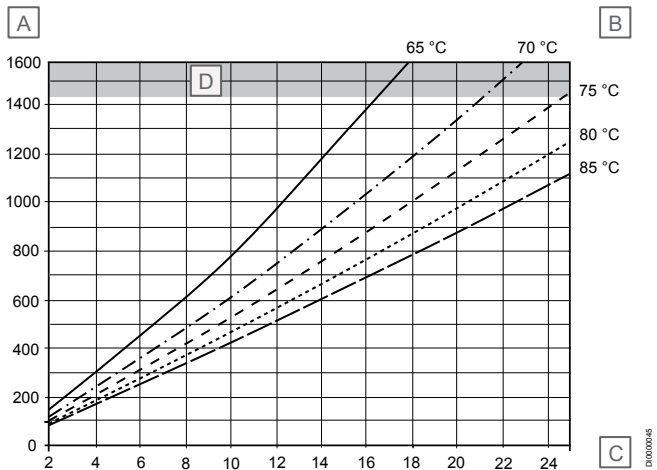
Item	Description
A	Return temperature °C
B	Tapping capacity in litres/minute (l/min)

Tapping capacity 50 K (10-60 °C)



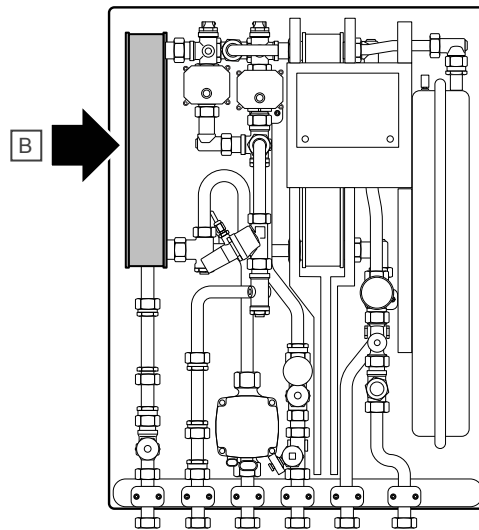
Item	Description
A	Return temperature °C
B	Tapping capacity in litres/minute (l/min)

Cold water warming 50 K (10-60 °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

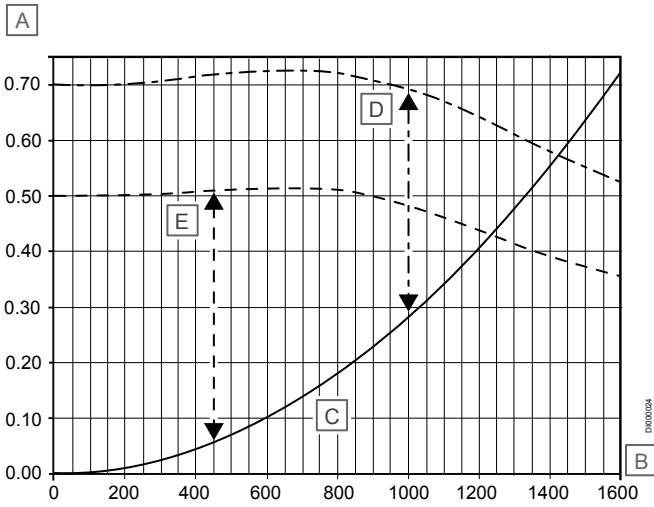
9.9 Performance curves for heating heat exchanger



Item	Description
B	Heating heat exchanger

Combi Port E D-UFH, Combi Port E D-X — 24 plates

Pressure losses

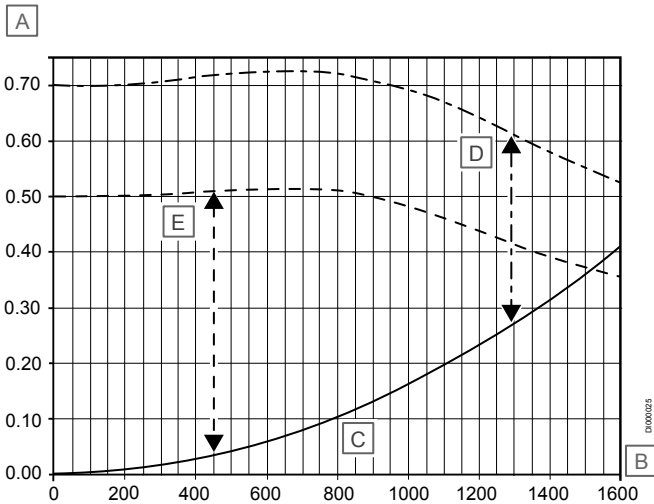


Item	Description
A	Pressure loss in bar
B	Hot water requirement, litre/hour (l/h)
C	Δp heat interface unit secondary heating
D	Secondary pump = type UPM3 15-70
E	Secondary pump = type UPM3 15-50 (option)

The difference between the curves describes the residual pressure.

Combi Port E D-X — 40 plates

Pressure losses



Item	Description
A	Pressure loss in bar
B	Hot water requirement, litre/hour (l/h)
C	Δp heat interface unit secondary heating
D	Secondary pump = type UPM3 15-70
E	Secondary pump = type UPM3 15-50 (option)

The difference between the curves describes the residual pressure.

Heating heat exchanger values

Primary heating supply 70 °C

Primary				
KW	Supply °C	Return °C	ΔT	l/h
1.0	70.0	41.0	29.0	29.6
2.0	70.0	41.0	29.0	59.3
4.0	70.0	41.0	29.0	118.6
8.0	70.0	41.5	28.5	241.4
10.0	70.0	42.0	28.0	307.1
12.0	70.0	42.0	28.0	368.5
15.0	70.0	43.0	27.0	477.7

Secondary				
KW	Supply °C	Return °C	ΔT	l/h
1.0	60.0	40.0	20.0	43
2.0	60.0	40.0	20.0	86
4.0	60.0	40.0	20.0	172
8.0	60.0	40.0	20.0	344
10.0	60.0	40.0	20.0	430
12.0	60.0	40.0	20.0	516
15.0	60.0	40.0	20.0	645

Primary heating supply 60 °C

Primary				
KW	Supply °C	Return °C	ΔT	l/h
1.0	60.0	35.5	24.5	35.1
2.0	60.0	35.5	24.5	70.2
4.0	60.0	35.5	24.5	140.4
8.0	60.0	35.5	24.5	280.8
10.0	60.0	35.5	24.5	351.0
12.0	60.0	35.5	24.5	421.1
15.0	60.0	35.5	24.5	526.4

Secondary				
KW	Supply °C	Return °C	ΔT	l/h
1.0	45.0	35.0	10.0	86
2.0	45.0	35.0	10.0	172
4.0	45.0	35.0	10.0	344
8.0	45.0	35.0	10.0	688
10.0	45.0	35.0	10.0	860
12.0	45.0	35.0	10.0	1032
15.0	45.0	35.0	10.0	1290



KaMo GmbH

Max-Planck-Straße 11
D-89584 Ehingen, Germany



www.kamo.de

Uponor GmbH

Industriestraße 56,
D-97437 Hassfurt, Germany



www.uponor.com

1105741 v1_03_2020
Production: Uponor/ELO

Uponor reserves the right to make changes, without prior notification, to the specification of incorporated components in line with its policy of continuous improvement and development.