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Installation and operating instruction Cetetherm Pioneer

Heating & domestic hot water HIU for apartments and single-family home

For additional on-line information, latest version of this manual please use the link
https://www.cetetherm.com/pioneer

Content

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Cetetherm Pioneer
Installation, service and operating instruction

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General information

Cetetherm Pioneer is a complete, ready-to-install heating network HIU for hot water and heating. It is designed for buildings with a connection to a heating network.
Cetetherm has years of experience in heating network technology and has developed Cetetherm Pioneer with well-planned pipe work and with all components accessible for inspection and future servicing.

Pioneer has fully automatic temperature control for heating and hot water.
The hot water is controlled and maintained at the desired temperature.
The heating circuit is controlled in relation to outdoor temperature or desired room temperature.

Storage and transport

Pioneer should be transported and stored in a dry place.

Installation

Read this manual before installing the HIU.

Compact dimensions, light weight, well arranged plumbing make installation easy.
The pipes can be connected to Pioneer both up and down, what suits best.
A pre-programmed control unit and a power cable already fitted with a plug allow immediate start-up.

Pioneer is designed for hanging on wall and is mounted on an insulated frame and includes an insulated cover.
Better insulation means less energy usage and better energy efficiency.
Pioneer must be placed indoors in a space that can withstand water.

Long-term security

The heat exchanger plates are manufactured in acid-resistant stainless steel. Most of the pipes are manufactured in copper.
All components are closely matched and carefully tested to function in accordance with 3rd party certified quality assurance system ISO 9001.
For future servicing requirements, all components are accessible and individually replaceable.
Pioneer is Swedish P-labelled.

CE-marking

Cetetherm Pioneer follows the rules and legislation specified in the Declaration of Conformity.
To maintain the validity of the CE/UKCA marking, only identical replacement parts must be used.

Information about the document

All pictures in this document are general images.
Pioneer is available in different models and levels of equipment.

The room thermostat, RMU S40C is called RMU in this document.
The communication module, CMO40 is called CMO in this document.

Symbols

Explanation of symbols that may be present in this manual.

-ᗘ̣-	**Tip!** This symbol indicates tips on how to facilitate using the product.
☞	**Caution!** This symbol indicates important information about what you should consider when installing or servicing the installation.
⚠	**NOTE!** This symbol indicates danger to person or machine.

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General warnings

⚠	The installation work must be carried out by an authorized installation contractor. Before the system is taken into operation, it must be pressure tested in accordance with relevant regulations.
⚠	Both temperature and pressure of the primary heating water are very high. **Only qualified technicians** can work with the HIU. Incorrect operation may cause serious personal injury and result in damage to the building.
⚠	If the hot water temperature is set too high, people may be scalded. If the hot water temperature is set too low, unwanted bacteriological growth may occur in the hot water system. This can result in serious personal injury.
⚠	Parts of the HIU may get very hot and should not be touched.
⚠	When starting up the HIU: To avoid the risk of scalding, make sure that no-one draws any hot water until the hot water temperature has been adjusted.
⚠	Start heating circulation by first opening the valves in the **primary supply** and then **return** lines, to avoid pollutions in the system. Open the valves slowly to avoid pressure surges. Then open **heat return** and then **supply**.
⚠	Before the HIU is connected to the electrical supply, make sure that the heating system is topped up with water. Starting up the system without water will damage the circulation pump.
⚠	The HIU comes prepared with an electrical plug to be connected to the main supply. If necessary, the plug-and-socket connection can be replaced with a permanent installation with an all-pole isolate switch. This must be carried out by a qualified electrician.
⚠	Do not shut off the electrical supply to the room thermostat for longer periods, this can damage the circulation pump, valves, actuators etc. When the power is off there are no active valves- or pump anti seizing measure.

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Plant data

Product	Pioneer	RMU	CMO40
Serial number			
Installation date			
Installer			

Menu	Name	Factory set	Settings
1.3	Room sens setting		
1.30.4	Lowest supply heat	20 ºC	
1.30.6	Max supply heat.	60ºC	
1.30.1.1	Curve, heating	9	
	Parallel offset	0	
4.1	Oper. Mode	Indoor control	

Accessories	

SERIAL NUMBER MUST ALWAYS BE GIVEN
Certification that the installation is carried out according to instructions in the accompanying installer manual and applicable regulations.

Date _____

Signature _____

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Operating instructions

Both temperature and pressure of the incoming heating network water are very high.
The heat from the heating network water is transferred to the heating and hot water systems of the building in the heat exchangers. The heat is transferred through thin plates of acid-resistant stainless steel which keep the heating network water separate from the systems in the building.

The hot water temperature is controlled by a temperature control system which is set to about 50 ºC.
Setting the hot water temperature too low may result in unwanted bacteriological growth in the hot water system.

The heating circuit is controlled in different ways, in relation to outdoor temperature using an outdoor sensor or the set indoor temperature using an indoor temperature sensor or a combination of both.

When no heating flow is required, the heating circulation pump stops automatically, but is run occasionally to prevent seizing up due to standing still for a long time.

After adjustment, the Pioneer operates completely automatically. However, in areas with hard water it is advisable to be attentive and to remedy any faults in good time. If the temperature of the hot water is too high; the risk of lime deposits in the heat exchanger may increase.

The energy supplier registers the use of energy. Measurement is done by recording the flow of heating network medium through the system, and by measuring the temperature difference between the primary supply and return flow.

Safety equipment/inspection

- Weekly inspection to check for leaks from pipes or components.

- Weekly inspection to make sure that the operation of the heating and hot water control systems is stable, and that the temperature does not fluctuate. Temperature variation causes unnecessary wear of valves, thermostats, and heat exchangers.

- Every three months check the safety valves and the pressure in the heating system.

To check the operation of a safety valve, turn its wheel/knob until water escapes from the waste pipe of the valve, then close the wheel/knob quickly. Occasionally a safety valve may open automatically to release excess pressure. After a safety valve has been open it is important that it closes properly and does not drip.

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Product overview
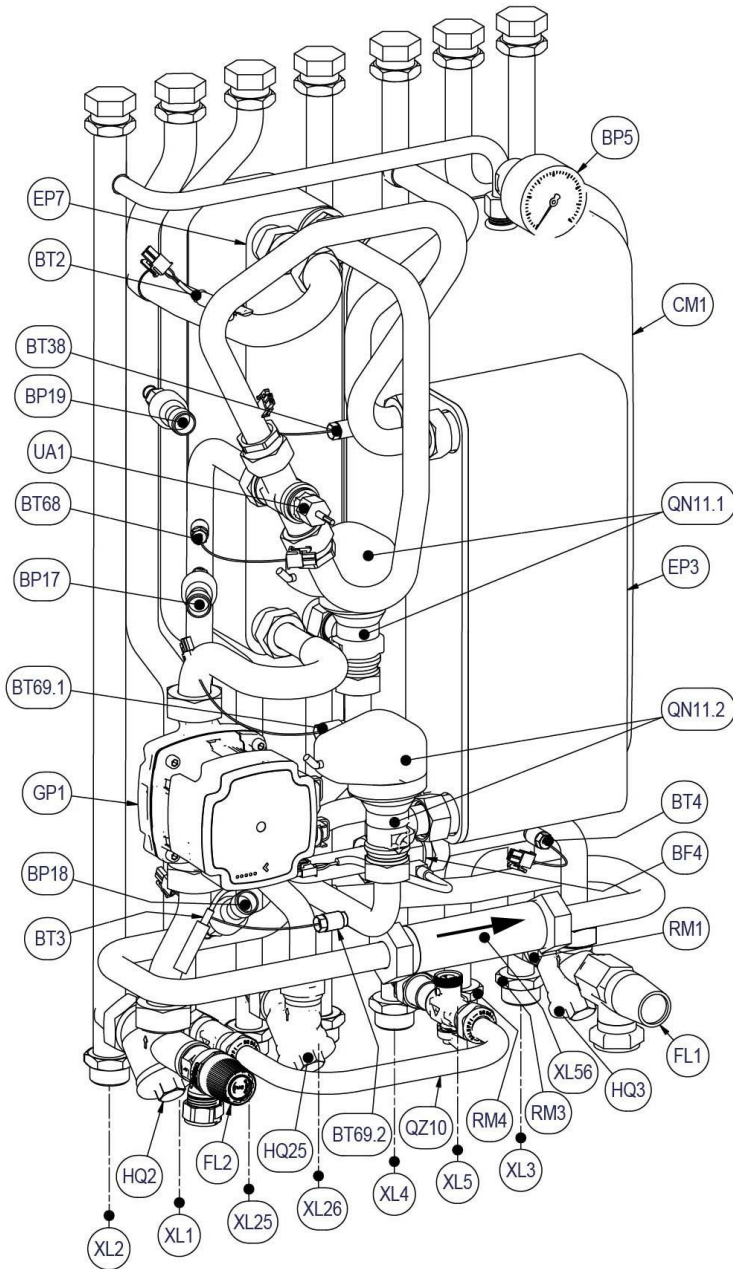
*) must be installed when using DHWC

Connections

XL1	Heating system, supply
XL2	Heating system, return
XL3	CW inlet
XL4	DHW
XL5	DHWC in /CW out
XL25	Primary network, supply
XL26	Primary network, return
XL56	Heat meter connection

Sensors

BF4	DHW flow sensor
BP5	Pressure gauge, heating system
BP17	Pressure sensor, Primary network supply
BP18	Pressure sensor, Primary network return
BP19	Pressure sensor, heating system
BT1	Outdoor sensor
BT2	Temperature sensor, heating system Flow
BT3	Temperature sensor, heating system return
BT4	CW/DHWC temperature sensor
BT38	DHW temperature sensor
BT50	Room sensor (included in RMU)
BT68	Temperature sensor, Primary network supply
BT69.1	Temperature sensor, Primary network return, RAD
BT69.2	Temperature sensor, Primary network return DHW
UA1	Heat meter sensor connection
CM1	Expansion vessel, heating
EP3	DHW, heat exchanger
EP7	Heating system, heat exchanger
FL1	Safety valve DHW
FL2	Safety valve, heating system
GP1	Circulator pump, heating system
GP11	DHWC pump (accessory)
HQ2	Strainer, heating circuit
HQ3	Strainer, CW
HQ25	Strainer, Primary network supply
QM40 1-7	First fix jig with isolation valves, option
QN11.1	Heating system, control valve
QN11.2	DHW, control valve
RM1	Check valve for CW
RM3	Check valve for CW*)
RM4	Check valve DHWC *)
QZ10	Filling loop
	WN1 Filling hose
	QM10 Filling valve, hot water
	RM2 Check valve, filling loop
	QM11 Filling valve, heating circuit

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Primary circuit

Pipe connections

XL25	Primary network, supply
XL26	Primary network, return
XL56	Heat meter connection

Sensors

BP17	Pressure sensor, Primary network supply
BP18	Pressure sensor, Primary network return
BT68	Temperature sensor, Primary network supply
BT69.1	Temperature sensor, Primary network return, RAD
BT69.2	Temperature sensor, Primary network return DHW
UA1	Heat meter sensor connection

QM40 1-7	First fix jig with isolation valves, option
QN11.1	Heating system, control valve
QN11.2	DHW, control valve

Heating circuit
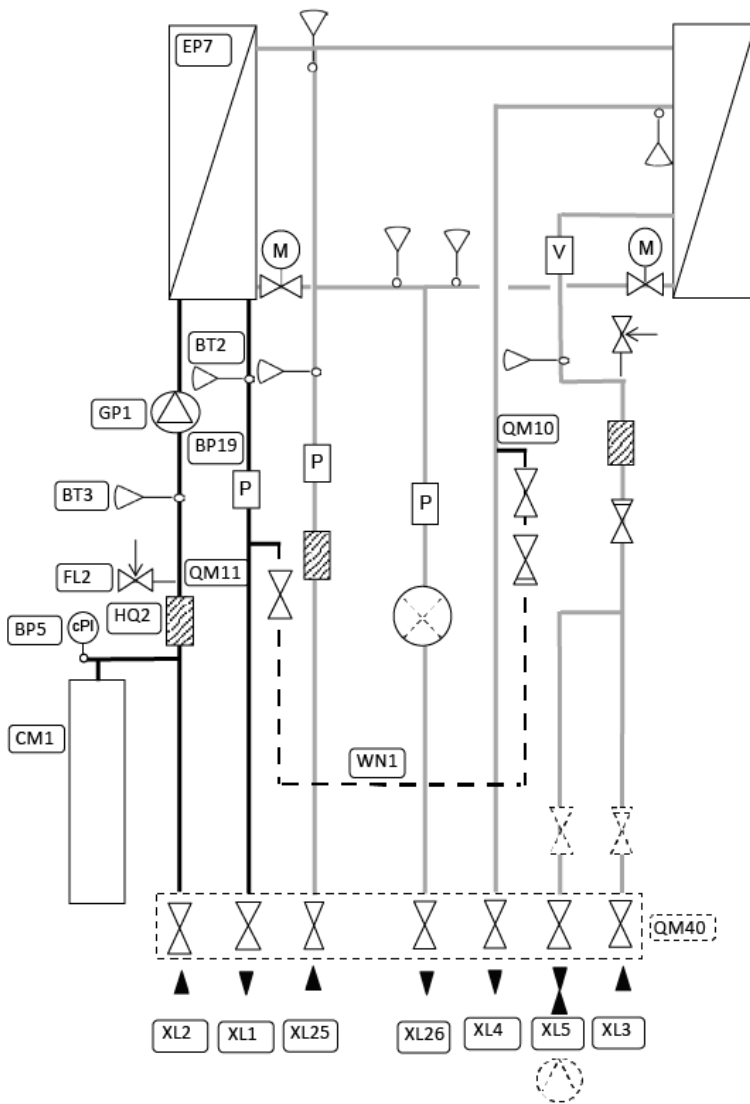
Connections

XL1	Heating system, supply
XL2	Heating system, return

Sensors

BP5	Pressure gauge, heating system
BP19	Pressure sensor, heating system
BT2	Temperature sensor, heating system Flow
BT3	Temperature sensor, heating system return
CM1	Expansion vessel, heating
EP7	Heating system, heat exchanger
FL2	Safety valve, heating system
GP1	Circulator pump, heating system
HQ2	Strainer heating circuit
QZ10	Filling loop
	WN1 Filling hose
	QM10 Filling valve, hot water
	RM2 Check valve, filling loop
	QM11 Filling valve, heating circuit

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Hot water circuit
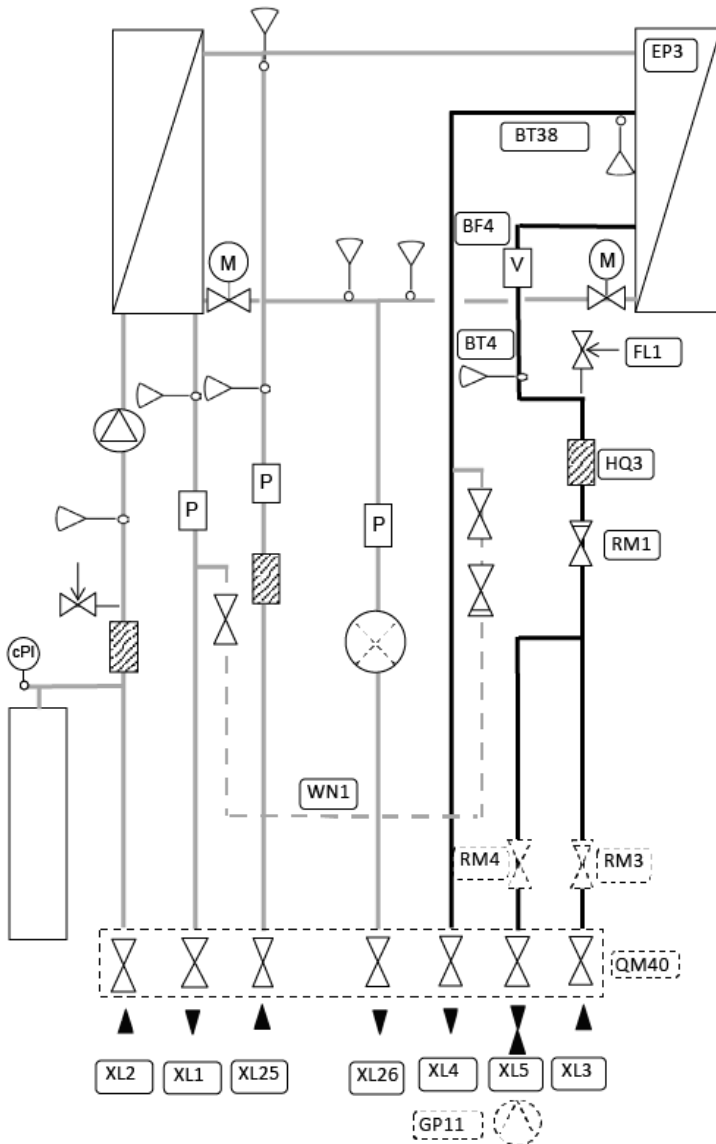
Connections

XL3	CW inlet
XL4	DHW
XL5	DHWC in /CW out

Sensors

BF4	DHW flow sensor
BT4	CW/DHWC temperature sensor
BT38	DHW temperature sensor

EP3	DHW, heat exchanger
FL1	Safety valve DHW
HQ3	Strainer, CW
RM1	Check valve for CW
RM3	Check valve for CW*)
RM4	Check valve DHWC*)

* Must be installed when using DHWC

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Installation, service and operating instruction

Electronic
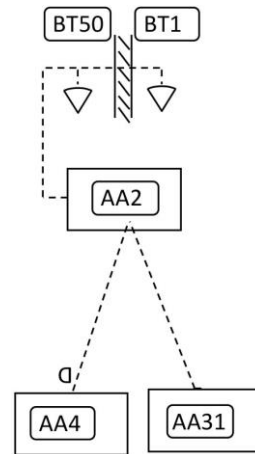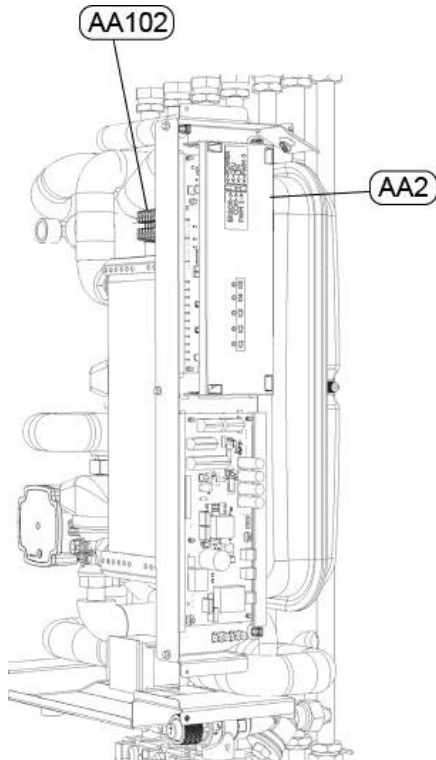
Electronic components

AA2	Main controller
AA4	Room control unit RMU S40C, including a room sensor (BT50)
AA31	Communication module, CMO40
AA102-X1	Terminal block
BT1	Outdoor sensor
BT50	Room sensor, option

Terminal block

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19		P E	N	L	P E	N	L	P E	N	L
BT1	GND	BT50	GND	1	GND	2	GND	GP11 12V	GP11 LIN	GND	12V	COM A	COM B	GND	12V	HMI A	HMI B	GND		P E	N	L	P E	N	L	P E	N	L
BT1		BT50		AUX		AUX		DHWC			CMO				RMU					230 Out			AUX Out			230 IN		

- BT1 (1–2) – outdoor sensor, with a conductor area of 0.5 mm^2, the maximum cable length is 50 meters, maximum 5 Ω/conductor.

- BT50 (3–4) – extra room sensor.

- AUX 1 (5–6) – to connect e.g., Pre-Payment or other potential free options.

- AUX 2 (7–8) – to connect e.g., Pre-Payment or other potential free options.

- DHWC (9–11) – LIN DHWC pump.

- CMO (12–15) – Communication module, connect with LiYY, EKKX or similar, with a conductor area of 0.5 mm^2, the maximum cable length is 50 meters.

- RMU (16–19) – Room thermostat with built in temperature sensor. connect with LiYY, EKKX or similar, with a conductor area of 0.5 mm^2, the maximum cable length is 50 meters.

- 230 Out – 0-230 VAC, 3A, e.g., energy meter.

- AUX Out – 0-230 VAC, 3A, to read alarms and home/away settings.

- 230 IN – Power feed to the HIU.

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Installation

Unpacking

- Remove the transport packaging and check that the product has not been damaged in transit and that the consignment agrees with the specifications.

- When lifting the unit take care not to apply stress to pipes and heat exchanger as this may weaken them. Avoid lifting the unit by holding the heat exchanger.

  Note: Risk of injury lifting heavy objects.

Preparation

NOTE! See chapter *Measure sketch*.

- Pioneer must be placed indoors in a space that can withstand water. Because water can come from Pioneer, the area where the is located must be equipped with floor gully. Pioneer has IP21 class.

- Pioneer must be placed on a wall suitable for its weight, in upright position. Mount the unit and the first fix-jig using screws or bolts suitable for the material of the wall and for the weight of the unit.

⚠️ Place Pioneer, with at least 25cm free space on the right-hand side.

- Choose a suitable installation area in accordance with official regulations.
  The HIU may generate sounds during operation caused by pumps, regulators systems, flows etc. This should be taken in consideration during installation of the unit so that possible operational sounds affect the surroundings as little as possible.

- Cetetherm recommends that the HIU is mounted on well-insulated walls, such as outer walls or on concrete walls.

- Check the applicable regulations of the primary heating supplier. The available differential pressure should be at least 50 kPa and at most 600 kPa.

- Where the differential pressure is higher, a differential pressure controller should be added to the installation.

- The pipes should be pressure tested before installing the HIU.

Preparation UK market

- The maximum operating pressure for the heating 2,5 bar and for the DWH 5,5 bar.

Mounting the first fix-jig, option

See section *First fix jig*.
NOTE! When connecting the pipes at top, use free valves instead.

⚠️ Be careful when handling the first-fix jig, use gloves to avoid cut.

- Mount the first fix-jig on the wall with two screws.
  Make sure that there is enough space above for the HIU.
  Cetetherm recommends having 900mm from floor to upper edge of the first fix-jig.

- Close all valves.

- Connect the pipe work to the first fix-jig connection points. The closing valves are 1" out, with ¾" nut.

⚠️ The temperature and the pressure of the primary heating water are very high.
Only qualified technicians can work with the HIU. Incorrect operation may cause serious personal injury and result in damage to the building.

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Mounting the HIU

- Before mounting the HIU retighten the pipe connection that can be accessed, with 45Nm.

- Lift the HIU let the frame rest on the first fix-jig.

- Mark the whole pattern and lift down the HIU.

- Fasten two screws to hang the HIU on.

- Place gaskets on the first fix-jig valves and lift the HIU. Use hand power and fasten the nuts to the valves on first fix jig.

- Tighten with 45Nm.

- Fasten the two screws that hold the HIU. If not using the first fix jig, fasten a third screw under the HIU.

- Energy meters see *Product overview*, must be installed at a prepared location, replacing a gauge block, or following the instructions of the energy supplier.
  The size of the energy meter should be ¾" 110mm or 1" 130mm. depending on model.
  The flow is from left to right see *Product overview*.

- If necessary, the HIU and first fix-jig can be assembled before mounting it on the wall.

Mounting the safety equipment

- Connect a hose or a pipe from the safety valves to the floor gully.

Filling up the system

- Fill up the system with water by opening the valves on the first fix-jig.

⚠️ The valves must be opened in the correct order to avoid pollutions in the system.
Open the valves slowly to avoid pressure surges.

Filling up the tap water circuit

- Open the valves Cold-water, Cold-water outlet (if connected) and Hot water.

- Open all water taps in the building to get rid of trapped air. Let them be open until all air is gone.

Filling up and bleeding the heating circuit

- Open the valves Heating circuit return and Heating circuit supply.

- Open the filling valves (QM10 & QM11).

- Fill up the system until the manometer shows 2 Bar.

- Close the filling valves.

- Bleed the heating system via high point at the HIU and at the heating systems draining places e.g., radiator valves.

- If the pressure is low after bleeding the system, open the filling valves and fill up to 2 Bar again.

- The first time the heating system is filled up, this procedure might have to be repeated several times.

**Connect to heating network**

- Open the valves *Primary supply,* and *Primary return.*
  Start with supply then return.

- When all connections are done and all circuits are pressurized, look for leaks.

- If connections need retightening after the installation has been taken into service, the system must be depressurised. If the system is not depressurised, gaskets will be damaged.

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Installation, service and operating instruction

Mounting the room unit RMU
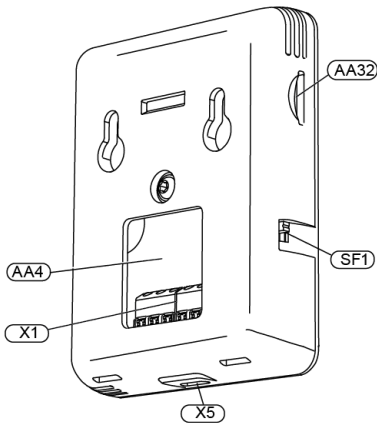
AA4	Display unit
AA32	Space for memory card (Micro-SD)
X1	Terminal block, communication, and voltage
X5	Micro-USB, not used
SF1	On/Off button (Switch)

Use all mounting points and mount the module upright, flat against the wall. Leave at least 100 mm of free space around the module to allow access and make cable routing easier during installation and servicing.

Install the RMU at an appropriate location that is representative to the indoor temperature.

1,5 m
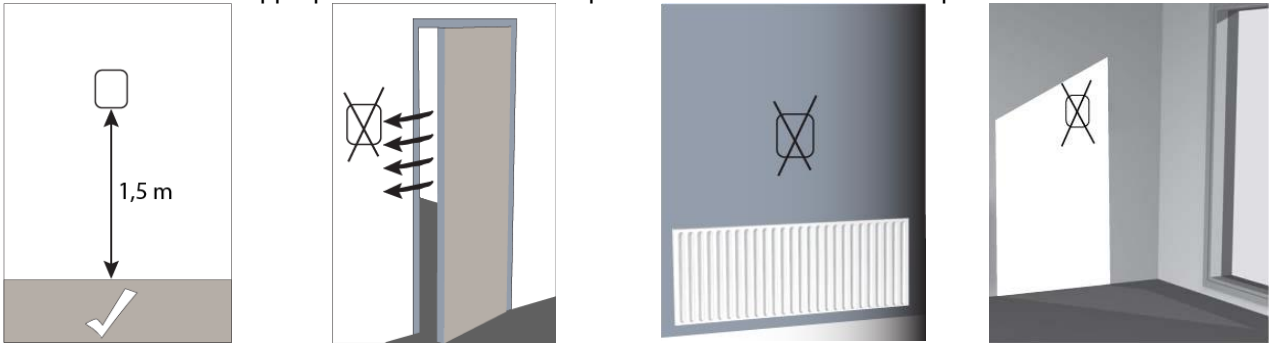
Installation with rear panel

- Screw the rear panel to the wall using 2 screws.

- Pull in the RMU cable through one of the three cable glands located in the lower edge of the substation, use straps to hold the cable.

- Connect RMU to the HIU, see *Connecting the RMU to Pioneer*.

- Angle the display unit and secure the unit to the two clamps at the bottom of the rear panel.

- Press RMU firmly to the top of the rear panel.
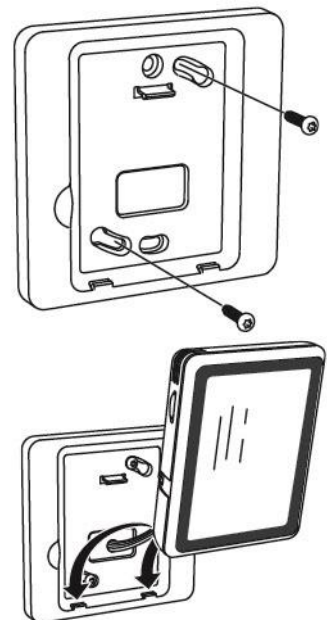
Installation without rear panel

- Screw 2 screws with 32 mm distance.

- Connect RMU to the substation, see *Connecting the RMU to Pioneer.*

- Hang RMU on the screws.

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Connecting the RMU to Pioneer

☞ Caution!
Pull in the RMU cable through one of the three cable glands located in the lower edge of the substation, use straps to hold the cable.

The minimum area of communication cables must be 0.5 mm² up to 50 m, for example EKKX, LiYY or equivalent. Connect the RMU to terminal block AA102-X1, marked RMU (16-19).

RMU	Pioneer AA102-X1			
AA4-X1	**RMU**		With LiYY cable	
+12V	1 □	–	12V	16	White
A	2 □	–	HMI A	17	Brown
B	3 □	–	HMI B	18	Green
GND	4 □	–	GND	19	Yellow
	5 □				

Connecting the outdoor sensor

Pull in the cable from outdoor sensor (BT1) through one of the three cable glands located in the lower edge of the substation, use straps to hold the cable. Connect the outdoor sensor (BT1) to the terminal block AA102-X1, far left, marked BT1 (1-2).

With a conductor area of 0.6 mm² the maximum cable length is 50 metres, maximum 5 Ω/conductor.
Place the outdoor sensor (BT1) in a shaded place to the north or northwest.

If the outdoor temperature sensor is connected later, for example in a construction period, the room thermostat must be restarted and configurated.

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Connecting the communication module CMO

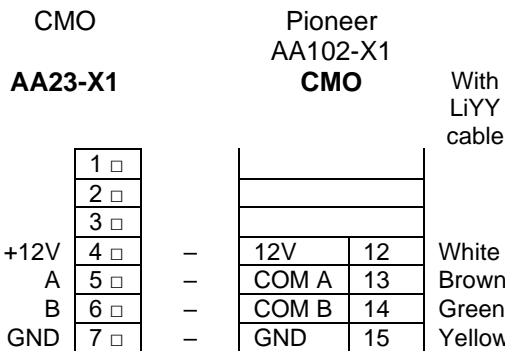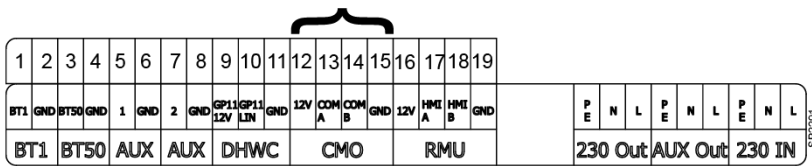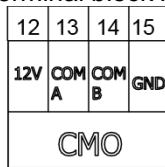CMO40 is a gateway that is used to connect the substation to the cloud for monitoring and control, using the app myUplink. It must be placed with access to Wi-Fi.
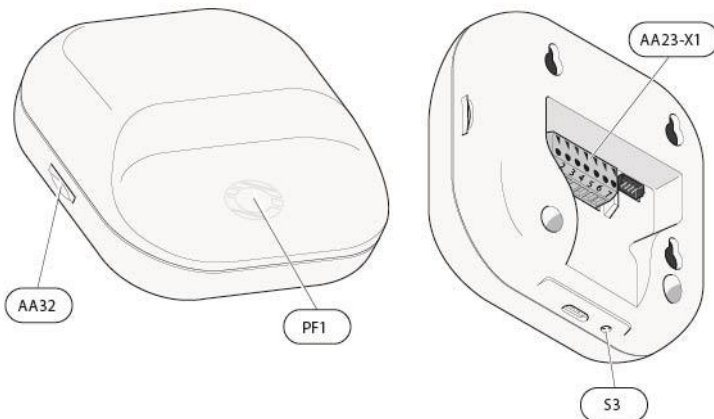
AA32	Space for memory card (Micro-SD)
PF1	LED Ring (status Indication)
S3	Reset button
AA23-X1	Terminal block, power supply

Pull in the CMO cable through one of the three cable glands located in the lower edge of the substation, use straps to hold the cable.

Connect the CMO to terminal block AA102-X1, marked CMO (12-15).

12	13	14	15
12V	COM A	COM B	GND
	CMO		

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19									
BT1	GND	BT50	GND	1	GND	2	GND	GP11 12V	GP11 LIN	GND	12V	COM A	COM B	GND	12V	HMI A	HMI B	GND		P E	N	L	P E	N	L	P E	N	L
BT1		BT50		AUX		AUX		DHWC			CMO				RMU					230 Out			AUX Out			230 IN		

CMO

AA23-X1

Pioneer
AA102-X1
CMO

With LiYY cable

|						
	1 □					
	2 □					
	3 □					
+12V	4 □	–	12V	12	White	
A	5 □	–	COM A	13	Brown	**CMO**
B	6 □	–	COM B	14	Green	
GND	7 □	–	GND	15	Yellow	

The minimum area of communication cables must be 0.5 mm² up to 50 m, for example EKKX, LiYY or equivalent.
The AA23-X1 connector in CMO, can be removed for easier wire installation, remember to mount it back before turning on the power.

Mounting the CMO on wall

Use all mounting points and mount the CMO upright, flat against the wall, screw size M2.5 with a maximum head diameter of 5.5mm. Leave at least 100 mm of free space around the module to allow access and make cable routing easier during installation and servicing.
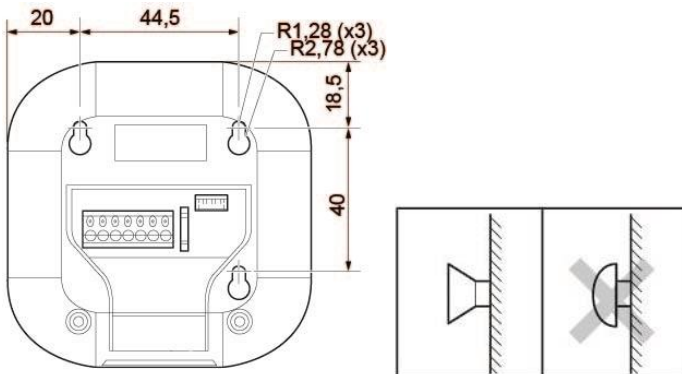
General

The property owner must be instructed in the operation, setting and care of the unit.
It is particularly important to provide information about the safety systems and about hazards that may arise in relation to the high pressure and temperature of the primary heating water.

Dismantlement

When the time comes for the HIU to be dismantled and scrapped it must be disposed of in the correct manner in accordance with local or national regulations.

Commissioning Pioneer

- The HIU must be water filled and vented.

- Communication unit CMO must be connected to the terminal block AA102-X1 in the Pioneer.

- Room unit RMU must be connected to the terminal block AA102-X1 in the Pioneer.

- Connect the power cable to power supply.

Starting up RMU

- Start up the RMU by moving the switch (SF1) up.

- Follow the start-up instructions on the display. The RMU is factory set but a few settings and check must be done while starting up. Browse menus with correct settings with the arrow in upper left corner.

  o Choose language.

  o Choose country – has nothing to do with language.

  o In menu Time and Date

    o Set time and date.

    o Choose time zone.

- In menu Lowest supply heat (also available in menu 1.30.4)

  o Choose Climate system 1, set 20°C.

- In menu Max supply heat (also available in menu 1.30.6)

  o Choose Climate system 1, set 60°C.

> ☞ Caution!
> With underfloor heating, normally the Highest supply heat is set to 35°C.

- In menu Curve, heating (also available in menu 1.30.1.1)

  o Check that curve 9 is chosen.

  o Parallel offset should be 0.

- In menu Operating mode (also available in menu 4.1)

  o Choose Outdoor control, it the outdoor sensor has been installed.

  o Choose Indoor control if the outdoor sensor is missing.

- It the start guide does not start when starting the RMU, the start guide is also available in menu 7.7.
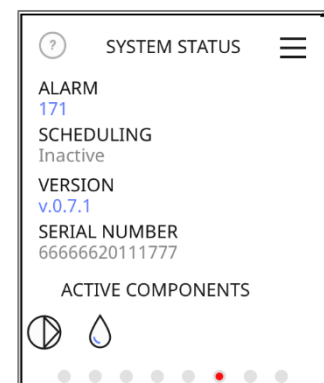
When the RMU has started the following is displayed on the screen.

NOTE! If the serial number contains only 0, restart the RMU.

If the RMU alarm about wrong serial number, restart the RMU.

If the problem continues, contact your installer.

It the outdoor sensor has not been installed the RMU can alarm depending on operating mode.
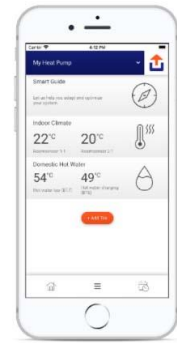
```
┌────────────────────────────┐
│ (?)   SYSTEM STATUS    ≡    │
│ ALARM                      │
│ 171                        │
│ SCHEDULING                 │
│ Inactive                   │
│ VERSION                    │
│ v.0.7.1                    │
│ SERIAL NUMBER              │
│ 66666620111777             │
│      ACTIVE COMPONENTS     │
│  ◑  ◊                      │
│    • • • • • • ● • •        │
└────────────────────────────┘
```

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The app myUplink

- Download the app myUplink from AppStore or Google play.

- Press Registrate and create your account.

- Fill in:
  - Mail address
  - password
  - tick in the two boxes.

then press Next.

- Fill in:
  - name
  - address

then press Next.

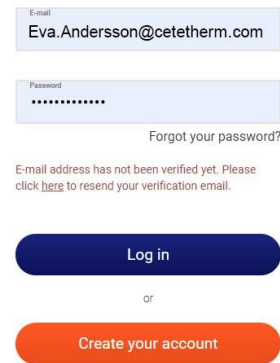A confirmation mail will be sent to the specified address.
Open the mail and follow the instructions.

- In the app, press Log in and use mail address and password to log in.

Confirmation link was sent to your email

Log in

Send again

Log in

E-mail
Eva.Andersson@cetetherm.com

Password
....
Forgot your password?

E-mail address has not been verified yet. Please click here to resend your verification email.

Log in

or

Create your account
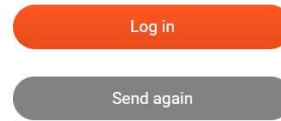
Connect the substation to myUplink

- On the RMU, go to menu 7.2.1 Activate access, choose, and activate the CMO .

- On the RMU, go to menu 5.6 Connection, activate, Access point . A temporary Wi-Fi will be created so be able to find the correct CMO.

- In the app myUplink, choose "Add facility", scan the QR-code on the RMU.
  If the QR-code is not visible on the screen, it can be found in the menu 5.6 Connection.
  Follow the instructions in the app myUplink app.

- In the RMU, confirm the paring request by pressing .

Confirm pairing request?

✗   ✓
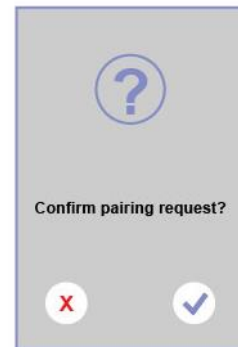
- Specify the wireless network to use, with the name and password. Follow the instructions in the app myUplink.
  CMO40 only support the 2,4 GHz network.

Tip!
In the app

Time and date are set automatic when connected to myUplink. To get correct time, time zone must be set.

Tip!
To ensure access to the latest version of software, make sure the HIU is connected.

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Room unit RMU

With RMU you can control and monitor your substation.

1   Space for memory card, AA32
2   Display, AA4
3   Status lamp
4   On/Off button, SF1

The status lamp

The status lamp indicates current operating status.

- It is not lit during normal operation.

- It lights red in the event of a deployed alarm.

If the status lamp is red, you receive information and suggestions for suitable actions on the display.

-ọ́- Tip!
Same information is also available in the app myUplink.

The ON/OFF button

The on/off button has two functions:

- Start

- switch off

To start: Move the switch up.
To turn off: Move the switch down.

The display

Instructions, settings, and operational information are shown on the display.

Space for memory card

On the left side of the room unit, there is space for a memory card (MicroSD).
The memory card can be used to:

- update the software

- store settings

- restore settings
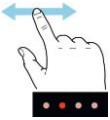
- log values.

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Navigation

The room unit has a touchscreen where you simply navigate by pressing and dragging with your finger.

SELECT

Most options and functions are activated by lightly pressing on the display with your finger.

BROWSE

The dots at the bottom edge show that there are more pages.

Drag to the right or left with your finger to browse between the pages.

Drag to the left to delete a scheduling.

SCROLL

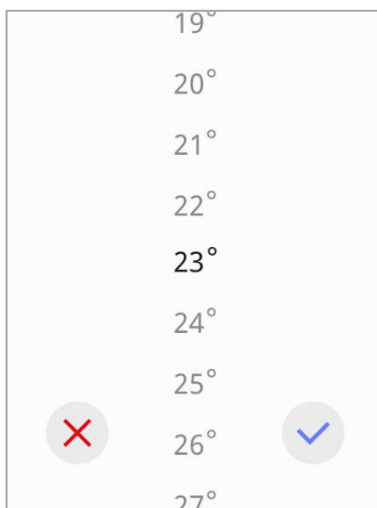If the menu has several sub-menus, see more information by scrolling up or down.

Change a setting
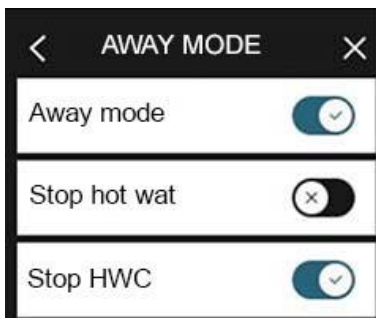
CHANGE A SETTING

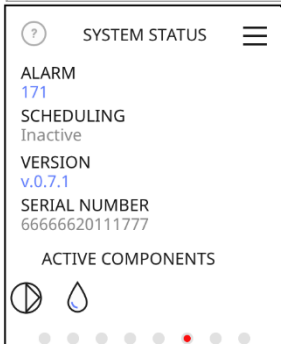Press the setting you want to change.

If it is an on/off setting, it changes as soon as you press it.

If there are several possible values, a spinning-wheel appears that you drag up or down to find the desired value.

Press ✓ to save your change or press ✗ to cancel.

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Home screens
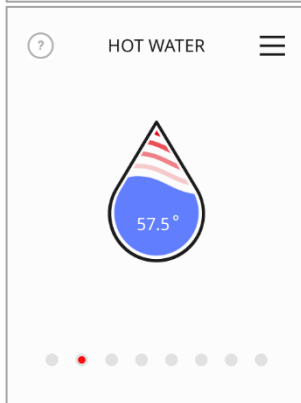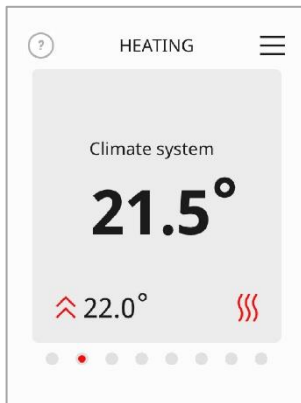
Information pages
The function pages that you see depend on the product you have and the accessories that are connected to the product, if there is an active scheduling.

Function pages
On the function pages, you can both view information about the status and easily make the most common settings.
The function pages that you see depend on the product you have and the accessories that are connected.
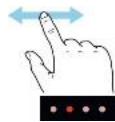
Scroll to the right or left with your finger to browse between the pages.

Active components
Press on a component to open current information about the component.

HOT WATER	
BT38	44°
BT4	30°
Position (QN11.2)	66%
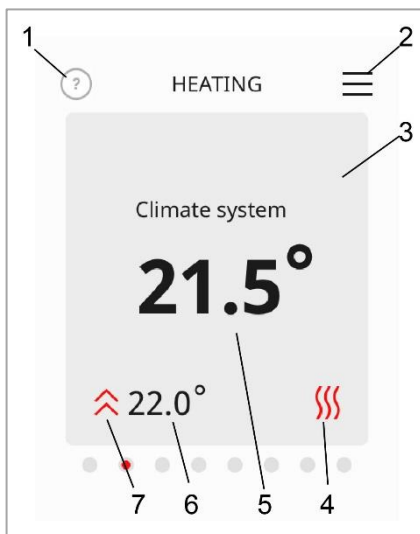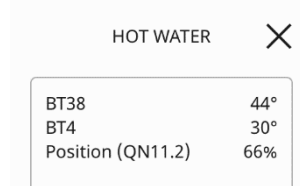
1	**Help menu (information)** Press the symbol to open the help text. Scroll with your finger to see all text. Press" X" to return to the home screens.
2	**Menu tree** In the menu tree, you find all menus and can make more advanced settings.
3	**Board** Press the card to adjust the desired value. On certain function pages, drag your finger up or down to obtain more cards.
4	Menu symbol
5	Current temperature
6	Set temperature
7	Works to set temperature

Icons on the home screen

📅	The room sensor uses a scheduling. The schedule is defined in menu 6.
🚶	Away mode This mode is defined in menu 6.
🌡	External adjustment

Screen saver

The screen saver shows the measured in- and outdoor temperature.
An outdoor sensor must be installed to be able to see the outdoor temperature.
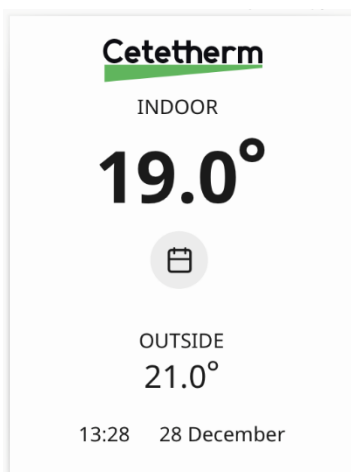
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INDOOR

19.0°

📅

OUTSIDE
21.0°

13:28   28 December

Night mode

Night mode means that the display is turned off completely.
Activate and choose between what time the night mode should be active, see menu 4.11.

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Setting time and date

Time and date are set in menu 4.8 – Time and date.

> Tip!
> Time and date are set automatically if connected to myUplink. To obtain the correct time, the time zone must be set.

Change heating curve

In menu 1.30.1.1 Curve, heating change set heating curve or parallel adjust the curve.
Each step the heating curve is parallel adjusted change the calculated supply temperature with 2,5°.

Change pump curve and pump operating mode

In menu 7.1.2.1 Heating pump GP1, change set operating mode or speed.
The pump is pre-set to run with operation mode, proportional pressure mode 5, PP5.

Choose operating mode

Choose operating mode in menu 4.1 Operating mode.
- Outdoor control
- Indoor control
- Outdoor control with room sensor

Lowest and max supply temperature is pre-set and can be changed in menu 1.30.4 Lowest supply temperature and menu 1.30.6 Max supply temperature.

Outdoor control

Pre-conditions: require a connected outdoor sensor.

The used outdoor temperature is always an average temperature calculated on the last 24 hours.
The time 24 hours is factory set (filtering time).

At operating mode outdoor control is the outdoor temperature and the set heating curve (menu 1.30.1.1 Curve, heating or 1.30.1.3 Own curve heating) that decides the calculated supply temperature.

For example, with an outdoor temperature at 0° and heating curve 9 calculated supply temperature is approximately 42°, see.Menu 1.30.1.1 – Curve, heating.

Start heating

The heating is turned on:
- When the average outdoor temperature is lower than Stop heating, in menu 7.1.10.2 Outdoor control. *Stop heating* is factory set to 17°.
- Degree minutes, DM are -60 or less.

Stop heating

The heating is turned off:
- When the outdoor temperature is higher than the *Stop heating*, in menu 7.1.10.2 Outdoor control. *Stop heating* is factory set to 17°.
- Degree minutes, DM are 0.

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Parallel adjustment of the heating curve

The heating curve can if needed be parallel adjusted (offset).
The system uses 20°C as desired indoor temperature. The desired indoor temperature can be changed in two different ways.

- Home screen Heating, press the temperature in the middle of the screen and change the temperature. Each 0,5° C correspond to a parallel adjustment with 1 step.

- Menu 1.1.1 Heating, each step corresponds to 0,5° change of desired temperature.

Each step the heating curve is parallel adjusted change the calculated supply temperature with 2,5°.

Point offset

Point offset means that at a set outdoor temperature the heating curve is point offset with set number of degrees. This is done in menu 1.30.1.4.

Degree minutes, DM

The controller uses degree minutes as measurement of the current heating/cooling demand in the house. Degree minutes are calculated every minute.

When starting the RMU, DM is 0. When DM is -60, heating is allowed. The heating turns of when DM is 0. Read current value in menu 3.1.3 Heating.

Indoor control

Pre-conditions: require a connected room sensor.

Select controlling room sensor

Factory set room sensor is the built in the RMU. To change, see Use room sensor in menu 7.1.10.4 Indoor control settings.
- BT50(Embed) –built in the room unit RMU
- BT50 ASB – connect to terminal block AA102-X1, marked BT50 (3-4).

Start heating

The heating is turned on:
- when current indoor temperature is 0,5°C lower than desired temperature, for 30 minutes.

Quick start heating

Set desired temperature 1°C or higher than current temperature. The heating will start immediately without waiting 30 minutes.

Stop heating

The heating is turned off when average temperature the last 24 hours is 1°C higher than desired room temperature.

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Outdoor control with room sensor

Pre-conditions: require a connected outdoor- and room sensor.

This operating mode works as outdoor control with addition that set desired temperature, menu 1.1.1. Heating is used to calculate offset on supply temperature.

Select controlling room sensor

Factory set room sensor is the built in the RMU. To change, see Use room sensor in menu 7.1.10.4 Indoor control settings.

- BT50(Embed) –built in the room unit RMU
- BT50 ASB – connect to terminal block AA102-X1, marked BT50 (3-4).

3	4
BT50	GND

BT50

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19											
BT1	GND	BT50	GND	1	GND	2	GND	GP11 12V	GP11 LIN	GND	12V	COM A	COM B	GND	12V	HMI A	HMI B	GND			P E	N	L	P E	N	L	P E	N	L
BT1		BT50		AUX		AUX		DHWC			CMO				RMU						230 Out			AUX Out			230 IN		
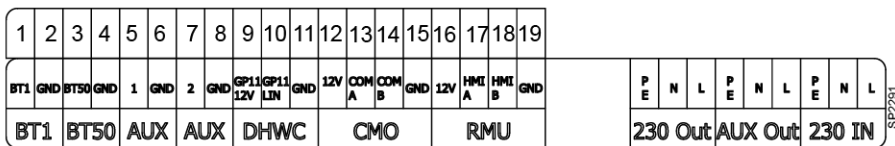
Menu 1 – Indoor climate

Settings for the indoor temperature.

☞ **Caution!**
Wait 24 hours before making a new setting, so that the room temperature has time to stabilise.

1.1 Temperature	1.1.1 Heating	
1.30 Advanced	1.30.1 Curve, heating	1.3.0.1.1 Heating curve
		1.30.1.3 Own curve heating
		1.30.1.4 Point offset
	1.30.3 External adjust.	
	1.30.4 Lowest supply heat	
	1.30.6 Highest supply heat.	

Menu 1.1.1 –Temperature, heating

Here you can see and change the set value for heating. This can also be done on the home screen.

Depending on active operating mode, the temperature is changed differently.
- Indoor control or outdoor control with room sensor, temperature changes is done in degrees.

- Outdoor control, temperature changes is done with offset/steps, setting range is -10 till 10. Each step is 0,5°.

If there is more than one heating system, the setting is made separately for each system.
Offset is preset to 0 and 20°.

Meny 1.30 – Advanced, curve heating

Menu 1.30.1.1 – Curve, heating

Here you can view and change the heating curve for your house. The task of the heating curve is to provide an even indoor temperature, regardless of the outdoor temperature. It is from this heating curve that HIU determines the temperature of the water to the climate system, the supply temperature, and therefore the indoor temperature. There are 15 different curves to choose between,

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Menu 1.30.1.3 – Own curve heating

You can create your own heating curve if there are special requirements. Sett the desired supply temperatures for different outdoor temperatures.
Setting range:5°– 80°.

> ☞ Caution!
> Curve 0 must be selected in menu
> 1.30.1.1, for own curve to apply.

Menu 1.30.1.4 – Point offset

Here you can set an extra offset to increase the capacity at a defined outdoor temperature.

Menu 1.30.3 – External adjust

Parallel adjustment of the heating curve.
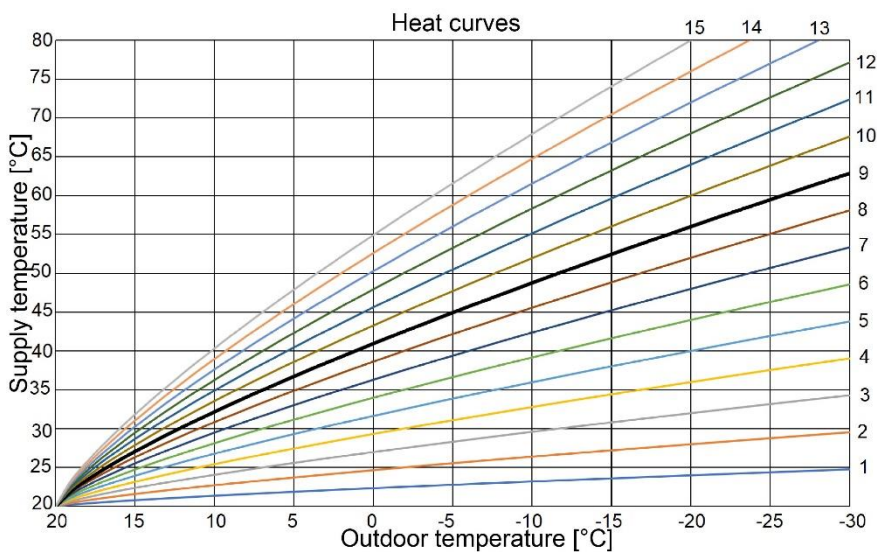Depending on active operating mode the temperature is shown and adjusted differently.

- Indoor control or outdoor control with room sensor, temperature changes is done in degrees.
- Outdoor control, temperature changes is done with offset/steps, setting range is -10 till 10.

Menu 1.30.4 – Lowest supply heat

Here, you set the lowest permitted temperature for the heating system.
Setting range:5°– 80°.
If there is more than one heating system, the setting is made separately for each system.

Menu 1.30.6 – Max supply heat.

Here, you set the highest permitted supply temperature for the heating system.

Setting range: 5°– 80°.
If there is more than one heating system, the setting is made separately for each system.

> ☞ Caution!
> With underfloor heating systems,
> "Maximum supply temperature for
> heating" should normally be set at
> 35°C.

Menu 2 – Hot water

Changing the hot water temperature, setting range area 45–60°C.
The hot water temperature is factory set to 50°C.

⚠️ If the hot water temperature is set too high, people may be scalded. If the hot water temperature is set too low, unwanted bacteriological growth may occur in the hot water system. This can result in serious personal injury.

Menu 3 – Info.

Current operational and different logs with older information.

3.1 Operating info	3.1.2 Overview
	3.1.3 Heating
	3.1.4 Hot water
	3.1.10 Circulation pumps
	3.1.14 External in/outputs
	3.1.30 QR code

| 3.3 Energy log |

| 3.4 Alarm log |

| 3.5 Product info. |

| 3.6 Licences |

Menu 3.1 – Operating info

Information about the installation's current operating status e.g., current temperatures, pump speed.
The information is read only, no changes can be made.

Menu 3.3 – Energy log

The estimated energy use for the last day/ week/ month/ year.

Menu 3.4 – Alarm log

Here you see information for the 10 most recent class 1 alarms. To view operating status in the event of an alarm, select the relevant alarm from the list.

Menu 3.5 – Product info.

Here, you see general information about your system, such as software versions and serial number.

Menu 3.6 – Licences

The current licences.

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Menu 4 – My system

Setting date, language, operating mode, among others.
Land – choose the land where the HIU is installed.

| 4.1 Oper. Mode |
| 4.5 Away mode |
| 4.8 Time and date |
| 4.9 Language |
| 4.10 Country |
| 4.11 Night mode |
| 4.12 Installation date |

Menu 4.1 – Oper. Mode

Operating mode *Indoor control* is factory set.
There are three different operating modes, that allow heating at different settings and compliance with requirements.

- Indoor control- The calculated supply temperature is based on demand room temperature and the measured room temperature.

- Outdoor control – Require a connected outdoor temperature sensor. Calculated primary supply temperature is based on the heating curve in relation to the outdoor temperature.

- Outdoor control with room sensor – requires a connected outdoor- and room sensor.
  Works as outdoor control with addition that set desired temperature, menu 1.1.1. Heating is used to calculate offset on supply temperature.

Menu 4.5 – Away mode

In this menu, you activate/deactivate "Away mode".
Away mode can also be activated/deactivated in the app MyUplink or on the Home Screen in the display.
It can also be scheduled in menu 6.

When away mode is activated, the following functions can affect:
- Stop hot water.
- Setting for heating is lowered with 1–5°C.

Menu 4.8 – Time and date

Set the time, date, time zone and 24hr format.

Tip!
Time and date can be set automatically if connected to myUplink. This function is activated in menu 4.8. To obtain the correct time, the time zone must be set.

Menu 4.9 – Language

Choose which language the information on the display should be shown in.

Menu 4.10 – Country

Select the country in which the product is installed.
Language settings can be made regardless of this selection.

Menu 4.11 – Night mode

Night mode means that the display is turned off completely.
Activate and choose between what time the night mode should be active.

Menu 4.12 – Installation date

The date when the HIU was installed. Should be set the first time the HIU starts up.

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Menu 5 – Connection

To connect the facility to the app and make network settings.

5.6 Connection

5.7 Status info

> ☞ **Caution!**
> For the connection to work, a
> connected CMO is required.
> See *Connecting the communication
> module CMO.*

Menu 5.6 – Connection

Here you connect Pioneer to the app MyUplink and make network settings.
Here is CMO access point activated. To change between access point mode and normal mode – press the
reset button on the CMO for at least 3 seconds. This might have to be done when changing the password for
the wireless network.

The QR-code needed to connect the RMU and CMO can be found in this menu.

Menu 5.7 – Status information

Here you see the network the RMU, via communication module CMO, is connected to.

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Menu 6 – Scheduling

Scheduling of different parts of the facility.

Tip!

Scheduling is also visible on the display home screen with the icon

.

| 6.1 Modes |
| 6.2 Scheduling |

See available schedules in menu 6.2 Scheduling.
Active schedules are marked with a tick in front.
Scheduling is made in two steps in menu 6.1 Modes and 6.2 Scheduling.

Menu 6.1 – Modes

A mode contains settings that will apply to scheduling.
Create a new mode with one or more settings by pressing the plus-symbol in the upper right corner or change in an existing mode. Browse to the left to delete a mode.
Maximum 19 modes can be saved.

- Select the settings that the mode will contain, heating or hot water or both.

- Set the temperature for heating and/or hot water.
  Hot water can be blocked.

- Give the mode a name, press Enter to exit the keyboard.

- Press Save mode.

- A mode must be active to be included in a scheduling.

Menu 6.2 – Scheduling

In this menu, you schedule active modes.
Create a new schedule by pressing the plus-symbol in the upper right corner or change in an existing schedule by pressing it.

- Select a mode or Away mode.

- Select if the schedule is valid for weekdays and/or weekends.

- Select start and stop time.

- Press Save schedule.

NOTE! A waring will appear if there is a conflict.

Caution!

A schedule repeats according to the selected setting until you go into the menu and switch it off.

Menu 7 – Service

This menu is for installers or service technicians.
In this menu you can make advanced settings. When entering you must first answer the following question.
"*You are coming to advances menus. Do you want to continue?*"

7.1 Operating settings	7.1.2 Circulation pump	7.1.2.1 HMP Settings GP1
	7.1.10 System settings	7.1.10.2 Outdoor control sett
		7.1.10.3 Degr. Minute setting
		7.1.10.4 Indoor control sett
	7.1.11 Room regulator	
	7.1.13 Hot water	7.1.13.1 HW general sett
		7.1.13.4 Keep warm mode
	7.1.14 Heating	7.1.14.1 Heat general sett
	7.1.15 Pressure settings	
	7.1.16 Primary side	7.1.16.1 Primary side sett
		7.1.16.2 Primar side param
7.2 Accessory setting	7.2.1 Activate access.	
7.4 External in/outputs		
7.5 Tools	7.5.3 Forced control	
7.6 Fact. Settings serv.		
7.7 Start guide		
7.9 Logs	7.9.2 Extended alarm log	
	7.9.4 Alarm	

Menu 7.1.2 Circulation pump

Read and change operating mode and pump curve in menu 7.1.2.1 Heating circuit pump (GP1).
Factory setting is Proportional Pressure curve 5, PP5.

Menu 7.1.10 System settings

Here you set the temperature for when heating is allowed depending on operating mode.
Here you change the controlling room sensor, pre-set is the room controller built in.

Degree minutes are a measurement of the current heating/cooling demand in the house and decide when the heating will start/stop.

Menu 7.2 Accessory setting

Here you activate accessories.

To connect the CMO, enter menu 7.2.1 Activate accessories, choose, and activate the CMO ⬤.

Menu 7.4 External inputs/outputs

In this menu different choices can be made for the AUX in/outputs. E.g., activating pre-payment.

⚠ NOTE!

If e.g., pre-payment has been activated, it requires a service key to deactivate it.

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Menu 7.5 Tools

Here you can activate force control of the pump and valves.
This is a temporary measure only active for max 10 minutes before going back to normal operation.

Menu 7.6 Fact. Settings service

The room controller can be reset at different levels.

- User settings
  - o All settings made by the user in menu 1–6.
- Service settings
  - o Reset settings in menu 7.
- Complete
  - o Reset user and service settings.
- Alarm log
  - o Reset the alarm log.

The following settings cannot be retored:

- Country, menu 4.10
- Type of product
- Installation date, menu 4.12
- Extended alarm log
- Energy log
- Pre-Payment, option.

Menu 7.7 Start guide

Here is the start guide, shown when starting up the RMU for the first time.

Menu 7.9 Logs

Alarms are classified in three different classes.
- Class 1, alarms that cause operational disruption. May be perceived comfort disturbance or markedly increased cost for the operation of the primary functions.

- Class 2, alarms that should be addressed to avoid operational disruption or increased costs in the future. Text box with a service person becomes visible.

- Class 3, alarms that do not significantly affect the plant's performance.

Menu 8 – uSD

This menu is only visible when the memory card (Micro SD) is connected.
In this menu you can update the software.

Use Micro SD (uSD) FAT32 format.

Menu 9 -12

Information and measured values on:
- LIN controlled components
- temperature sensors
- pressure sensors
- flow sensors

Cetetherm myUplink

The Cetetherm myUplink application provides a quick overview of the Pioneer status and of the heating in your home.
A push notification is sent if the Pioneer is affected by operational disturbances.

The HIU's parameters are being logged in a history chart, that can be exported. In the exported file GMT time is used.

Factory settings

Parameter	Menu	Factory set	Alternative settings	
			Display	Description
Offset. Clim. Syst. 1	1.1.1	0	-10 – +10	
Room sens setting	1.3	Active	Active/inactive	
Heating curve	1.30.1.1	9	0 – 15	
Parallel offset	1.30.1.1	0	-1 – +1	Heating curve offset
Lowest supply heat	1.30.4	20°	5° – 80°	Lowest supply temperature, heating
Max supply heat.	1.30.6	60°	5° – 80°	Max supply temperature, heating
HW setpoint	2	50°	45° – 60°	Desired hot water temperature
Oper. Mode	4.1	Indoor control	Outdoor control Manual Control Indoor control	The HIU uses the room sensor in the RMU for control
Away mode	4.2.	Inactive	Active/Inactive	Special schedule to use when away from home. Make settings in menu 6. Can be activate/inactivated from app MyUplink.
Time and date	4.8	24h format	Active/Inactive	Time format for the clock in the RMU
Language	4.9	English	Svenska English	RMU display language
Country	4.10	Sverige		Country where the HIU is installed
Night mode	4.11	Inactive	Active/Inactive	Turns off the display during night.
Heating pump GP1	7.1.2.1	PP 5	Const. curve Const pressure Prop. pressure	See information about the pump.
Outdoor cntr settings. Stop heating & Filtering time	7.1.10.2	17° / 1h	-20° – 40° / 0h – 48h	At outdoor control, heating is allowed if outdoor temperature sensor, (BT1) average temperature (filtering time) is lower than set value for stop heating.
Room sensor only setting Use room sensor	7.1.10.4	BT50 (Int)	BT50 ASB BT50 (Int)	• Connected directly to the ASB card. • The one built in to the RMU
HW general sett. HW priority	7.1.13.1	Inactive	Active/Inactive	Active – heating turns off during hot water demand.
Keep warm mode	7.1.13.4	ECO -10K	ECO/Normal	**ECO**: Operates primary supply, BT68, with adjustable DT (-20° – 20°) to keep setpoint HW temp + DT. ECO=0 try to keep primary supply at same temperature as hot water setpoint. **Normal**: Open heating valve (QN11.2) for adjustable interval and adjustable amount of water during an adjustable time.

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Pump settings and performance

The HIU is equipped with a heating circuit pump Grundfos UPM LIN.
When the pump is switched on it runs with the factory pre-setting or the last setting.
The pump is pre-set to run with operation mode, proportional pressure mode 5, PP5.

QH Chart
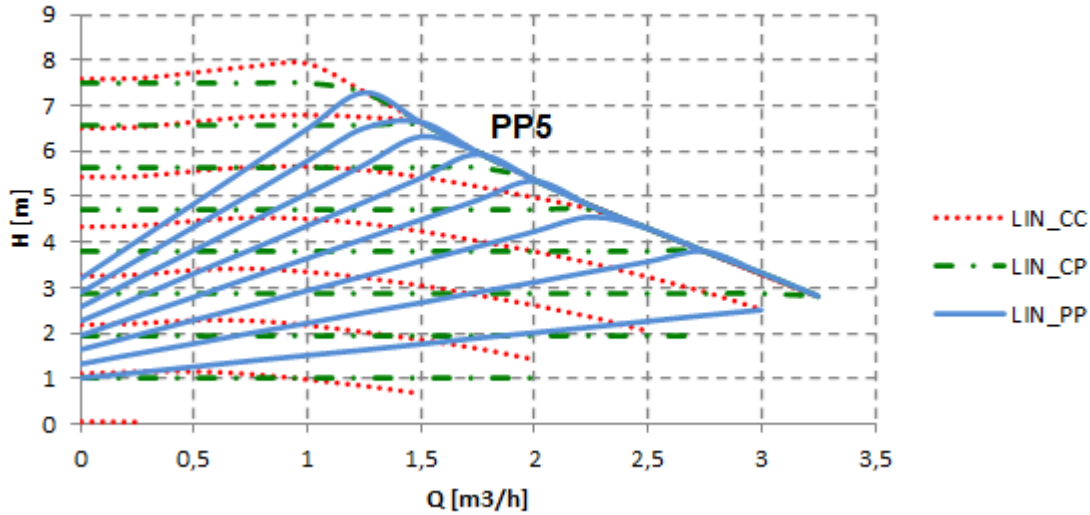
Position	Description
A	LED – indicates if the pump is operated externally or not, or if there is a fault.
B	Indication of extern communication With LIN and PWM communication the LED flashes when communication is established.
C	Fault indicator

Proportional-pressure curve, PP
The head (pressure) is reduced at falling heat demand and increased at rising heat demand.

The duty point of the pump will move up or down on the selected proportional-pressure curve, depending on the heat demand.
- PP1 is the lowest and PP8 is the highest proportional pressure curve.

Constant-pressure curve, CP
The head (pressure) is kept constant, irrespective of the heating demand.

The duty point of the pump will move out or in on the selected constant-pressure curve, depending on the heat demand in the system.
- CP1 is the lowest and CP8 is the highest constant-pressure curve.

Constant curve, CC
The circulator runs on a constant curve, which means that it runs at a constant speed and power.

The duty point of the circulator moves up or down on the selected constant curve, depending on the heat demand in the system.
- CC1 is the lowest and CC8 is the highest constant curve.

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Service instructions

 To avoid the risk of scalding, make sure that no-one draws any water while servicing the HIU.

 Grey marked service actions must be carried out by an authorized service technician.

 Before removing the front cabinet, turn off the power supply to the HIU.

NOTE! Make sure that the HIU has been correctly installed.

Service instructions, tap water

Tap water temperature too low

Reason	Action
Scheduling does not permit tap water	Check if there is an active schedule that does not permit tap water. See menu 6 Scheduling
Limitations are activated	In menu 3.1.14 External in/outputs, check that all AUX outputs are "not used".
Primary heating supply too low	**Check the primary inlet temperature.** The primary temperature can be checked by means of the energy meter (min 65 º C) or on the display menu 3.1.4 Hot water, Primary in (BT68). Primary supply should be 10°C higher than hot water setpoint.
Setpoint tap water temperature to low	**Adjust tap water temperature.** Check the tap water temperature, in menu 3.1.4 Hot water, Hot water out (BT38). Change the HW setpoint in menu 2. Adjust the hot water temperature by having a hot water tap open at normal flow rate. Measure the temperature at the draw-off point with a thermometer. It takes about 20 seconds to get a stable tap water temperature. The temperature should be minimum 50 °C. Cetetherm recommends that the primary inlet temperature is at least 10º higher than the tap water temperature. **NOTE**: Make sure that no cold water is mixed with the hot water while making this adjustment.
Strainer, Primary supply, clogged	**See** *Cleaning primary strainer, HQ25*.
Hot water valve does not work	When using tap water check Hot water flow BF4 in menu 3.1.4 and that Position QN11.2 percent is changing.

Tap water temperature too high

Reason	Action
Setpoint tap water temperature to low	**Adjust tap water temperature.** Check the tap water temperature, in menu 3.1.4 Hot water, Hot water out (BT38). Change the HW setpoint in menu 2. Adjust the hot water temperature by having a hot water tap open at normal flow rate. Measure the temperature at the draw-off point with a thermometer. It takes about 20 seconds to get a stable tap water temperature. The temperature should be minimum 50 °C. Cetetherm recommends that the primary inlet temperature is at least 10º higher than the tap water temperature. **NOTE**: Make sure that no cold water is mixed with the hot water while making this adjustment.
Hot water valve does not work	When using tap water check Hot water flow BF4 in menu 3.1.4 and that Position QN11.2 percent is changing.

Unstable or too low hot water temperature

Reason	Action
Alternating pressure on primary side	Check the available differential pressure in menu 3.1.4 Hot water, Primary diff pressure. Differential pressure must be between 50kPa and 600kPa. The primary temperature can be checked by means of the energy meter (min 65 º C) or on the display menu 3.1.4 Hot water, Primary in (BT68) Primary supply should be 10°C higher than hot water setpoint.
Strainer, Primary supply, clogged	**See** *Cleaning primary strainer, HQ25*.

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Heating system service instructions

Heating system temperature too high or too low

Reason	Action
Heating curve needs to be adjusted	Check and adjust the heating curve. If needed the set heating curve can be fine-tuned. Increase/ decrease the room temperature by parallel adjust the heating curve in menu 1.30.1.1 Curve, heating.
Heating supply temperature sensor and outdoor temperature sensor does not work	Check that the heating supply temperature sensor and outdoor temperature sensor are correctly sited and working. Check that the specified temperatures are reasonable, menu 3.1.3 Heating. - Outdoor temp BT1 – not shown in operating mode Indoor control. - Supply temp.BT2 - Room temp. BT50
The pressure in the system is too low or there is not enough water in the heating system	Check the pressure on BP19 in menu 3.1.3 Heating and top up the system with water when needed. The pressure should not be below 1.0 Bar. The heating circuit should only be topped up with fresh water when necessary. The water used for topping up contains oxygen which can lead to corrosion in the system. The circuit should therefore be topped up as seldom as possible. Fill up by opening the top up valves until BP19 or the pressure meter shows desired value, or up to maximum 2.0 Bar. Then close the top up valve. The safety valve opening pressure is 2.5 Bar.
Air in the heating system	Bleed the heating system. Disconnect the HIU power supply cable. Bleed the radiators.
Heating valve does not work	In menu 3.1.3 check the valve, ON11.1 opening precent.
Strainer heating circuit clogged	See *Cleaning heating circuit strainer, HQ2*
Air in the heating system	**Bleed the heating system.** Disconnect the HIU power supply cable. Bleed the heating system at highest point in the heating system.

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No heating

Reason	Action
Closed radiator or floor heating valves	**Check that all radiator valves and floor heating valves are fully open**
Scheduling does not permit heating	Check if there is an active schedule that does not permit heating. See menu 6 Scheduling.
Limitations are activated	In menu 3.1.14 External in/outputs, check that all AUX outputs are "not used".
Heating is not allowed	Check the used operating mode in menu 4.1. **Indoor control (factory set)** - heating is turned on when current indoor temperature is 0,5°C lower than desired temperature, for 30 minutes. - heating is turned off when average temperature the last 24 hours is 1°C higher than desired room temperature. **Outdoor control with or without room sensor** Heating is turned on: - when the average outdoor temperature is lower than Stop heating, in menu 7.1.10.2 Outdoor control. Stop heating is factory set to 17°. - Degree minutes, DM are -60. Heating is turned off: - when the outdoor temperature is higher than the Stop heating, in menu 7.1.10.2 Outdoor control. Stop heating is factory set to 17°. - Degree minutes, DM are 0.
Heating supply temperature sensor and outdoor temperature sensor does not work	Check that the heating supply temperature sensor and outdoor temperature sensor are correctly sited and working. Check that the specified temperatures are reasonable, menu 3.1.3 Heating. - Outdoor temp BT1 – not shown in operating mode Indoor control. - Supply temp.BT2 - Room temp. BT50
Circulation pump not running	Check that the electrical power is on
	Check and, if needed, change operating mode. See menu 7.1.2.1 Heating circuit pump GP1.
The pressure in the system is too low or there is not enough water in the heating system	Check the pressure on BP19 in menu 3.1.3 Heating and top up the system with water when needed. The pressure should not be below 1.0 Bar. The heating circuit should only be topped up with fresh water when necessary. The water used for topping up contains oxygen which can lead to corrosion in the system. The circuit should therefore be topped up as seldom as possible. Fill up by opening the top up valves until BP19 or the pressure meter shows desired value, or up to maximum 2.0 Bar. Then close the top up valve. The safety valve opening pressure is 2.5 Bar.
Air in the heating system	**Bleed the heating system**. Disconnect the HIU power supply cable. Bleed the radiators.
Strainer heating circuit clogged	See *Cleaning heating circuit strainer, HQ2*
Air in the heating system	**Bleed the heating system.** Disconnect the HIU power supply cable. Bleed the heating system at highest point in the heating system.

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Heating temperature unstable

Reason	Action
Heating supply temperature sensor and outdoor temperature sensor does not work	Check that the heating supply temperature sensor and outdoor temperature sensor are correctly sited and working. Check that the specified temperatures are reasonable, menu 3.1.3 Heating. • Outdoor temp BT1 – not shown in operating mode Indoor control. • Supply temp.BT2 • Room temp. BT50
Alternating pressure on primary side	Check the available differential pressure in menu 3.1.4 Hot water, Primary diff pressure. Differential pressure must be between 50kPa and 600kPa. The primary temperature can be checked by means of the energy meter (min 65 º C) or on the display menu 3.1.4 Hot water, Primary in (BT68).
Strainer, Primary supply, clogged	**See** *Cleaning primary strainer, HQ25*.

Disturbing noise from the circulation pump or in the radiator system

Reason	Action
Air in the heating system	Bleed the heating system. Disconnect the HIU power supply cable. Bleed the radiators.
Air in the pump	**Let the pump run** The pump vents itself over time. Air in the pump may cause noise. This noise ceases after a few minutes run time.
Pump runs with incorrect operating mode	Check and, if needed, change operating mode. Se menu 7.1.2.1 Heating circuit pump GP1.
Wrong pressure in the heating circuit	Check the pressure in the circuit, in menu 3.1.3 Heating, Heating pressure (BP19).
Pump damaged	**See** *Change pump, GP1.*
Air in the heating system	**Bleed the heating system.** Disconnect the HIU power supply cable. Bleed the heating system at highest point in the heating system.

Heating system often needs topping up

Reason	Action
Leaks in the HIU or in the system	Check the HIU and the system for leaks. Leaks from the HIU or the heating system cause pressure drop. Contact your service technician if finding any leaks.
The expansion vessel cannot handle the changes in the system	See *Check the volume take-up and pressure equalizing of the expansion vessel*.
The heating system safety valve is leaking or does not work	Check the heating system safety valve. Check that the heating system safety valve is not leaking and that it works properly. Check the safety valves' function by turning the knob until water runs out of the valve's waste pipe and then close the valve quickly

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Maintenance and repairs

When carrying out repairs, please contact your local service partner.

⚠	Before starting out repairs always close the correct shutoff valves.
⚠	When dismounting a component there will be water coming out, hot and under pressure.
⚠	Before removing the front cabinet, turn off the power supply to the HIU.

Cleaning primary strainer, HQ25

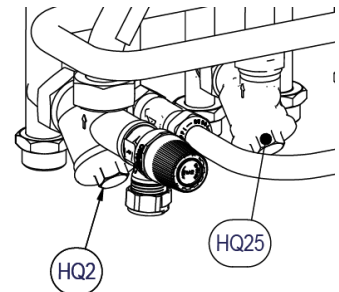| ⚠	Service actions must be carried out by an authorized service technician.
⚠	The temperature and the pressure of the district heating water are very high. Only qualified technicians can work with the district heating HIU. Incorrect operation may cause serious personal injury and result in damage to the building.
⚠	Before starting out repairs close the **primary supply** and **primary return** shutoff valves.
⚠	After finishing repair, open the shutoff valves. Start with **primary supply** and then the **return** line, to avoid pollutions in the system. Open the valves slowly to avoid pressure surges.

- Disconnect the power feed to the HIU.

- Close the shut-off valves.

- Use a wrench and release the strainer cover (HQ25) and remove the cartridge.

- Clean the filter with water and refit the cartridge. Screw the strainer cover with a momentum of 10–20 Nm.

- Open the shutoff valves and connect the power feed to the HIU.

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Cleaning heating circuit strainer, HQ2

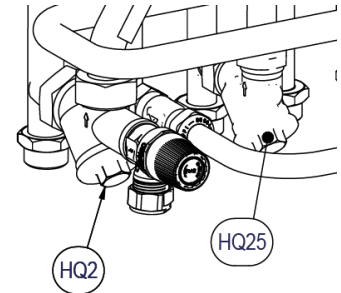| ⚠	Service actions must be carried out by an authorized service technician.
⚠	Before starting out repairs, close the shutoff valves **primary supply**, **primary return**, **heating supply and heating return**. Release the pressure using the heating circuit safety valve.
⚠	After finishing repair, fill up the circuit and vent. Open the valves slowly to avoid pressure surges. Open the shutoff valves, start with **primary supply** and then the **return** line, to avoid pollutions in the system. Then open **heat return** and then **supply**.

- Disconnect the power feed to the HIU.

- Close the shut-off valves.

- Use a wrench and release the strainer cover (HQ2) and remove the cartridge.

- Clean the filter with water and refit the cartridge. Screw the strainer cover with a momentum of 10–20 Nm.

- Fill up the heating circuit, vent the heating circuit.

- After final bleeding, the pressure should between 1.0–2 bar.

- Open the shutoff valves and connect the power feed to the HIU.

Cleaning cold-water strainer, HQ3

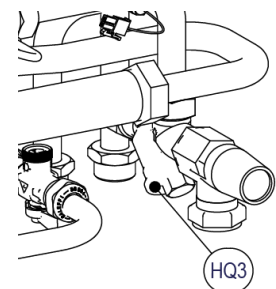| ⚠	Service actions must be carried out by an authorized service technician.
⚠	Before starting out repairs, close the shutoff valves **primary supply**, **primary return**, **hot water,** and **cold water**. Release the pressure using the cold safety valve DHW (FL1).
⚠	After finishing repair, open the shutoff valves. Open the valves slowly to avoid pressure surges. Start with **primary supply** and then the **return** line, to avoid pollutions in the system. Then open **cold water** and then **hot water**.

- Disconnect the power feed to the HIU.

- Close the shut-off valves.

- Use a wrench and release the strainer cover (HQ3) and remove the cartridge.

- Clean the filter with water and refit the cartridge. Screw the strainer cover with a momentum of 10–20 Nm.

- Open the shutoff valves and connect the power feed to the HIU.

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Change pump, GP1

Maintenance and repairs must be carried out by an authorized service technician.

Before starting out repairs, close the shutoff valves **primary supply**, **primary return**, **heating supply** and **heating return**.

Release the pressure using the heating safety valve.

After finishing repair, fill up the heating circuit and vent. Open the valves slowly to avoid pressure surges.

Open the shutoff valves, start with **heating return** and then **heating supply**, then **primary supply** and **primary return**, to avoid pollutions in the system.

- Disconnect the power cable to the pump.
- Close the shut-off valves.
- Release the brass nuts with a spanner and replace the pump.
- Connect the pump cable.
- Fill up the heating circuit. Vent the heating circuit.
- Open the shut-off valves and connect the power feed to the HIU.
- After final bleeding, the pressure should between 1.0–2 bar.
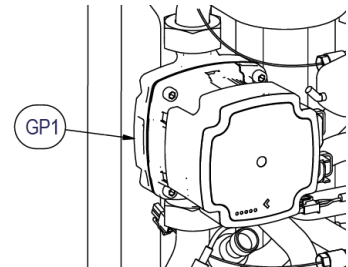
Change outdoor sensor, BT1

- Disconnect the power feed to the HIU.
- Remove the lid on the outdoor temperature sensor.
- Unscrew the cables and loosen the cable fitting.
- Install a new outdoor temperature sensor.
- Connect the power feed to the HIU.
- Check the sensors value on the control panel after 5 min.

Forced control by control valves and pump

In menu 7.5.3 Forced control, can forced control be activated.
Forced control can be made on the control valves and the pump. This is a temporary solution that is active maximum 10 minutes before returning to normal operation.

Check the volume take-up and pressure equalizing of the expansion vessel

Check the expansion vessel for possible leakage. Check the pre-pressure in the expansion vessel.
The cause may be that the expansion vessel cannot manage the volume changes on the heating side. The expansion vessel may have to be replaced.

Alternatively, the system´s total volume of water may be too high, i.e., the volume changes are too large for the expansion vessel. If so, add extra expansion volume.

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Change cold water check valve RM1

|	
⚠	Service actions must be carried out by an authorized service technician.
⚠	Before starting out repairs, close the shutoff valves **primary supply**, **primary return**, **hot water,** and **cold water**. Release the pressure using the DHW safety valve
⚠	After finishing repair, open the shutoff valves. Start with **primary supply** and then the **return** line, to avoid pollutions in the system. Then open **cold water** and then **hot water**. Open the valves slowly to avoid pressure surges.

- Disconnect the power feed to the HIU.

- Close the shut-off valves.

- Use a wrench and unscrew the strainer, HQ3, the check valve is placed in the strainer.

- Remove the old check valve and mount a new.
  NOTE! Make sure that the check valve is mounted in the correct way.
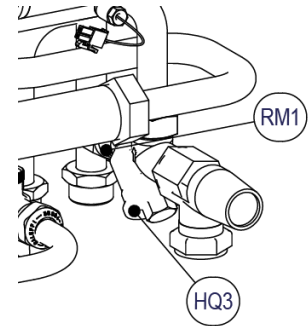
Flow direction

- Mount the strainer again.

- Open the shutoff valves cold and hot water.

- Vent the circuit by opening a hot water tap.

- Connect the power feed to the HIU. Open the shutoff valves primary supply and then primary return.

Alarm list

Example of occurring alarms. Alarm list is in priority order.

Alarm number	Alarm class	Alarm name
101	1	BT1 fails Outdoor sensor
104	1	BT4 fails
105	1	BT68 fails
106	1	BT69.2 fails
107	1	Incorrect difference between BP17 and BP18
108	1	BT38 too hot
110	1	BT38 fails
111	1	Broken flow sensor (BF4)
116	1	Dirty filter primary side
132	1	GP1 voltage error
134	1	GP1 electrical fault
136	1	GP1 under voltage
137	1	GP1 pump blocked
138	1	GP1 dry run
139	1	QN11.1 high temp
140	1	QN11.2 high temp
143	1	Pos Error QN11.1
144	1	Pos Error QN11.2
149	1	Valve error QN11.1
150	1	Valve error QN11.2
152	1	GP11 voltage error
155	1	GP11 electrical fault
157	1	GP11 under voltage
158	1	GP11 pump blocked
159	1	GP11 dry run
160	1	BT2 heat exchanger fails
161	1	BT3 heat exchanger fails
162	1	BT69.1 fails
163	1	BT2 too warm
164	1	Com error QN11.1
165	1	Com error QN11.2
166	1	Com error GP1
167	1	Com error GP11
171	1	Incorrect serial number
172	1	BP17 error
173	1	BP18 error
368	1	Communication error ASB
109	2	BT38 too hot
145	2	Pos Warning QN11.1
146	2	Pos Warning QN11.
153	2	BT50 fails
218	2	Freeze protection of radiator system

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Measure sketch

445

789

256

D739368 I1

710

432

247
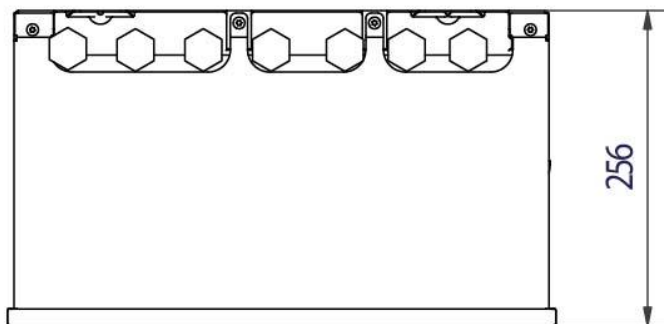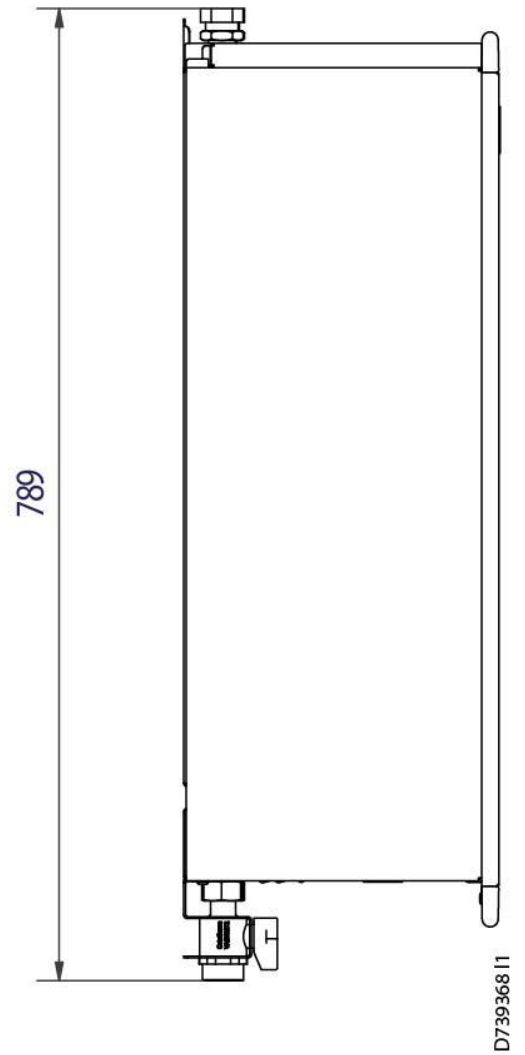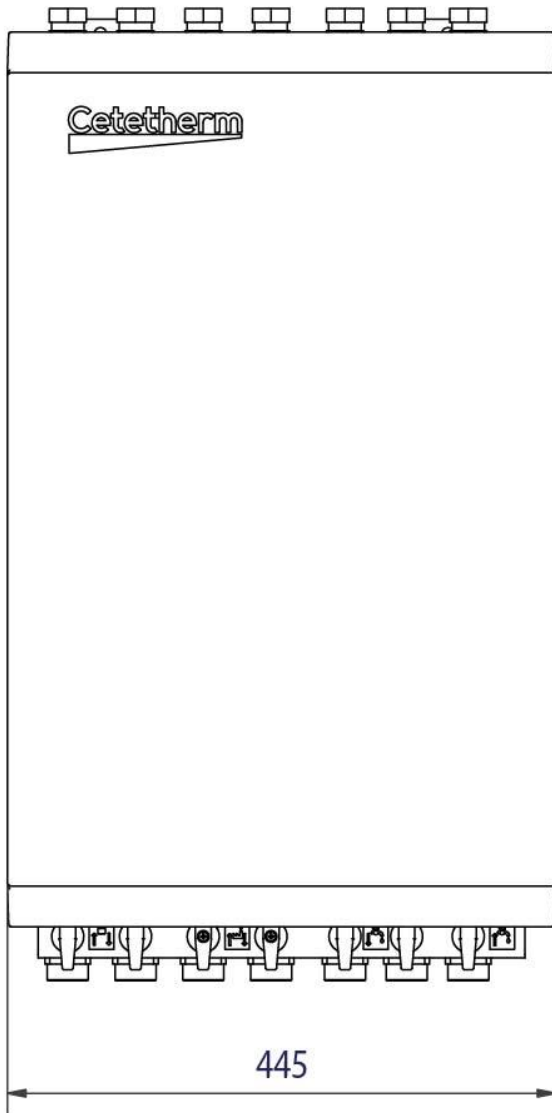
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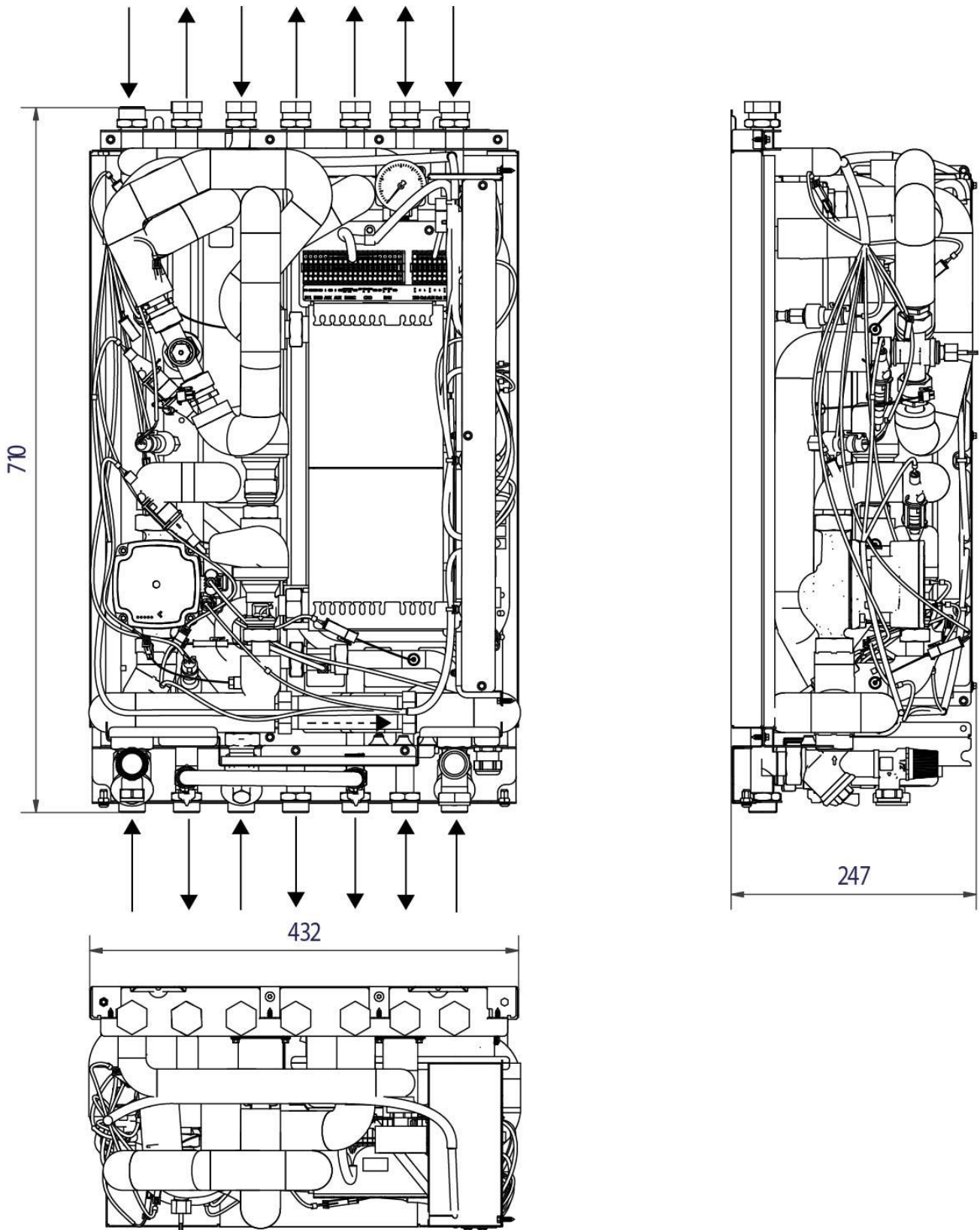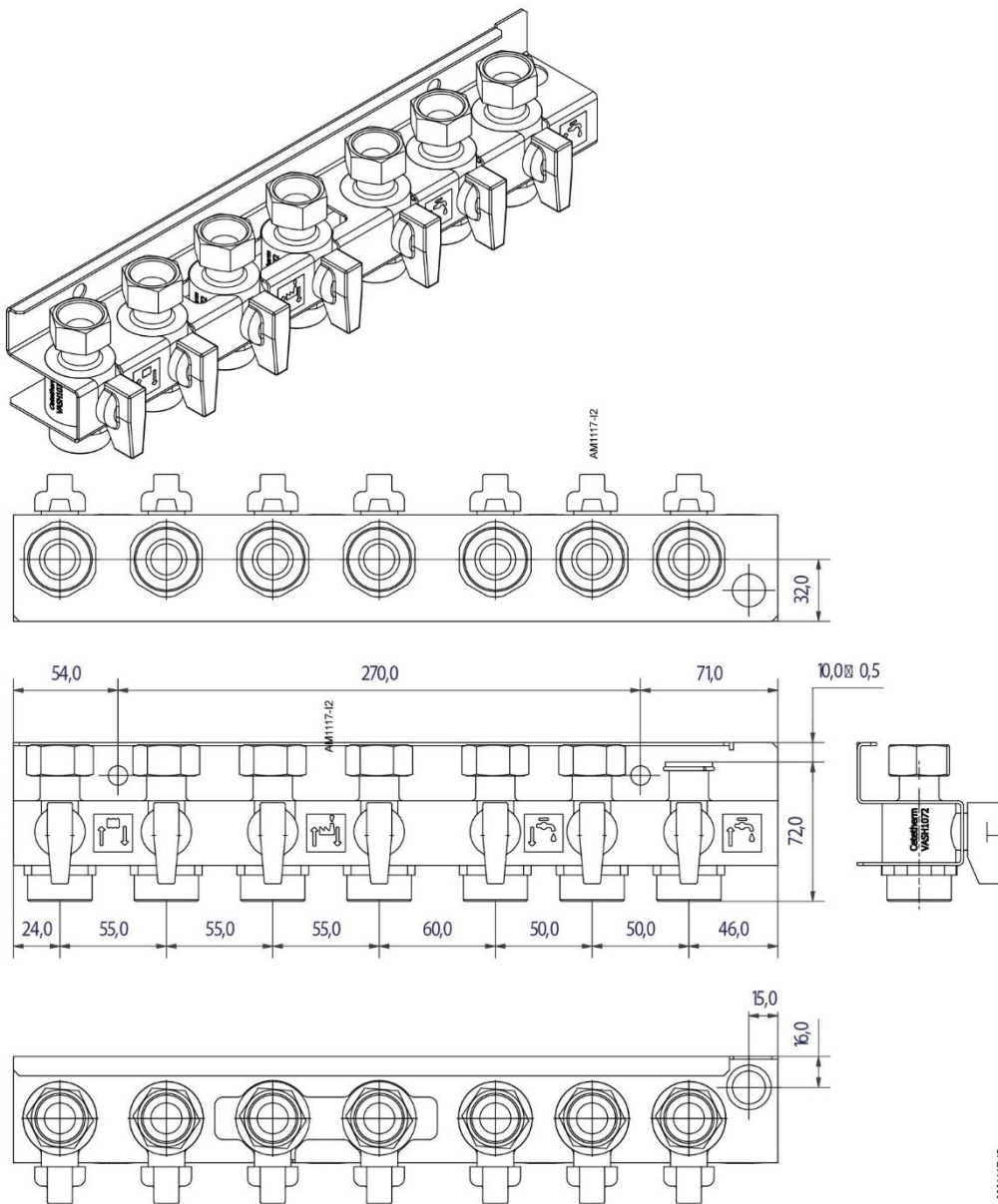
First fix jig

Isolation valves are 1"out, with ¾" nut.

Technical data

Main measures	See Measure sketch
• With cover, and first fix jig	445x256x789 (mm, WxDxH))
Weight	35 kg
Electrical data	230 V, 1-phase, 50 W
Rated output	250 W
Sound level	<55 dB (A) 1.6 m from floor, 1 m from unit
	Pump <32dB
IP-class	IP21
Overvoltage Category	II
Isolation valves	1" out, with ¾" nut
Heat meter	¾" 110mm or 1" 130mm
Location	at least 25cm free space on the right-hand side.
CMO	Only support the 2,4 GHz network
AUX 1 & 2	Input for external potential free contact function or senso
RMU	For logging and updating use Micro SD (uSD) NTFS or FAT32. If forced update at startup use Micro (uSD) FAT32 format.
Diff pressure	50kPa–600kPa
Maximum altitude of installation	2000m over sea level
Storage Temperature Range	-40°C to +70°C
Operating Temperature Range	5°C to + 35°C
Storage Humidity Range	0%-70% non-cond.
Operating Humidity Range	0%-98% non-cond.
Pollution Degree	2

Operating data

	Primary	Heating	DHW
Design pressure PS, Bar	16	10	10
Design temperature TS, °C	120	90	90
Relief pressure safety valve, Bar		2,5/3	6/10

Model	Dimensioned temperature program (°C)	Capacity (kW)	Flow P (l/s)	Flow L (l/s)
DHW				
Pi1 2250	65-22/10-50	50	0,28	0,30
Pi1 2255	65-22/10-50	55	0,31	0,33

Model		Capacity	Flow P	Flow L
Heating				
	100-63/60-80	14	0,09	0,17
	100-43/40-60	22	0,09	0,26
	100-30/30-35	5,3	0,02	0,25

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Product sign

1	Product name	10	Design Temp
2	Manufactory number	11	Leakage tested
3	Article number	12	Volume – heat exchanger volume
4	Manufactory year	13	Relief pressure safety valve
5	Cetetherm model designation	14	Capacity
6	Primary circuit	15	Temp. program, heating and DHW
7	Heating circuit	16	Electrical conn.
8	DHW circuit	17	Fluid group according to PED
9	Design pressure	18	Manufacturer, name, and address