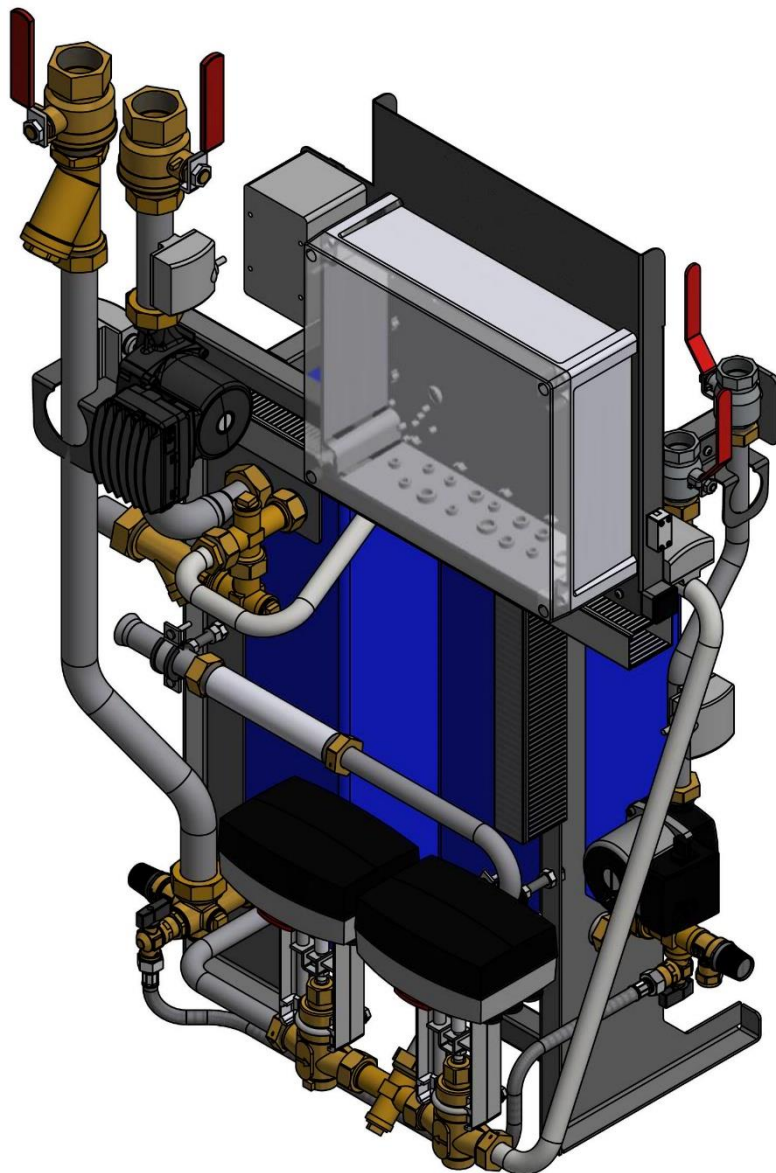


Installation, service and operating instruction Cetetherm Midi Wall IQHeat


Heating and domestic hot water substation for apartment houses (10-30 apts.)

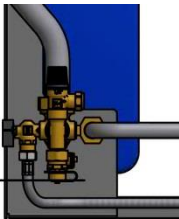


For additional online information and manual:

QR-code:



Cetetherm				
Heat exchanger - district heating				
Mod. Wall 70		xxxxxx		
Man. No.		xxxxxx		
Art. No.		2017		
Man. Year				
		Primary	Heating	DHW
Design pressure	PS bar	0/10	0/0	0/10
Design temp.	TS °C	0/120	0/90	0/90
Leakage test	bar	2	2	2
Volume	V L	1.96/1.90	2.08	2.08
Safety Valve adjust.	bar	3.0	9.0	
Capacity	KW	62	128	
Temp. Program	°C	100-63/	65-22/10-55	
		60-80		
Connection Voltage 230V, 1 ~				
Fluid group 2, PED 2014/68 art 4.3				
Manufacturer Alfa Laval, Sweden				
				



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Cetetherm can without further notice make changes and improvements to the content in this manual if it is necessary due to printing mistakes, wrong information or changes in the hardware or software.

All these types of changes will be included in future release of the manual.

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1 General

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

1.1 Comfort

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

1.2 Installation

Well planned pipe work and readymade electrical wiring make installation very simple. A pre-programmed controller and plug-and-socket connection provide further simplification, so that the substation can be started without delay. The Midi Wall is designed for hanging on the wall.

Before installation this manual must be read.

1.3 Long-term security

All components are adjusted together and undergo thorough function testing in accordance with ISO 9001:2008 quality assurance system. For future servicing requirements, all components are easily accessible and individually replaceable.











1.4 CE-marking

Midi Wall is CE-marked to certify that the substation conforms to international safety regulations. To maintain the validity of the CE marking, only identical replacement parts must be used.

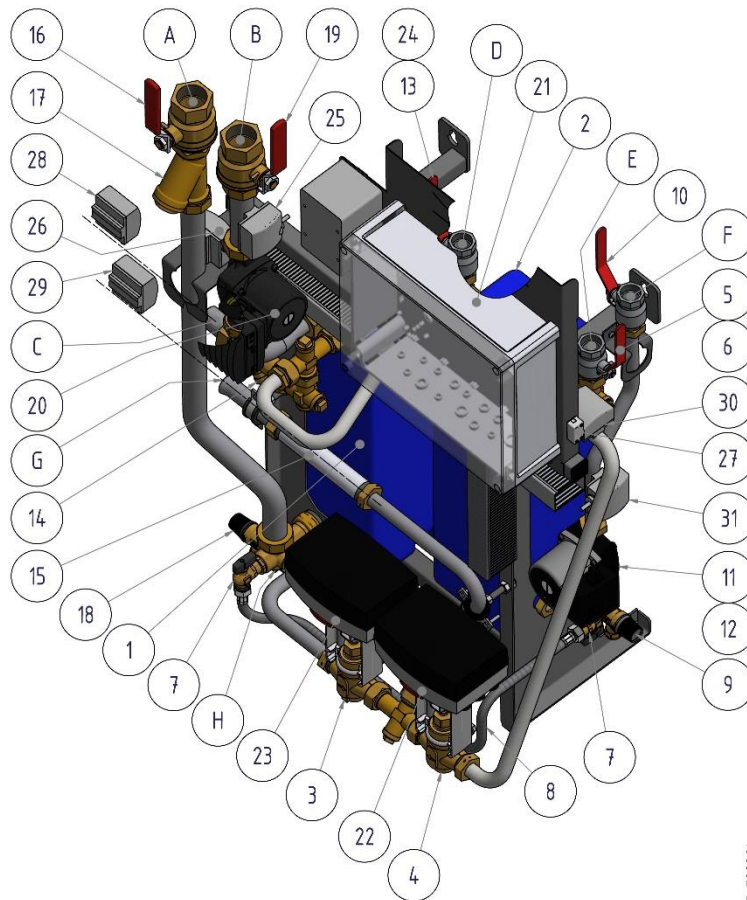
1.5 Information about the document

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

1.6 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.
	The temperature and the pressure of the district heating water are very high. Only qualified technicians can work with the district heating substation. 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 Midi Wall may get very hot and should not be touched.
	Before the substation is connected to the electrical supply, make sure that the secondary heating system is topped up with water. Starting up the system without water will damage the circulation pump.
	The substation comes prepared with an electrical plug to be connected to the main supply. The strain relief clips of the cable must be fitted so that there is no risk of damage. 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.
	When starting up the district heating substation: to avoid the risk of scalding, make sure that no-one draws any hot water until the hot water temperature has been adjusted.
	Start district heating circulation by first opening the valve in the district heating supply and then return lines, to avoid pollutions in the system. Open the valves slowly to avoid pressure surges. Do the same way with the heating circuit, first open the valve for heating supply then return .
	Do not shut of the electrical supply to the operator control panel. This will damage the circulation pump, valves, actuators etc.
	The heating station should be placed in a locked space, non-accessible for unauthorized personnel.

1.7 Product overview Midi Wall



D-738861

Picture 1

1.	Heat exchanger, heating
2.	Heat exchanger, DHW
3.	Control valve, heating
4.	Control valve, DHW
5.	Shutoff valve, cold water
6.	Check valve, cold water
7.	Filling valve
8.	Hose
9.	Safety valve, cold water
10.	Shutoff valve, DHWC
11.	Pump, DHWC
12.	Non-return valve, DHWC
13.	Shutoff valve, DHW
14.	Strainer, primary in
15.	Dummy, heat meter
16.	Shutoff valve, heating return
17.	Strainer, heating return
18.	Safety valve, heating
19.	Shutoff valve, heat supply
20.	Pump, heating

21.	Control centre
22.	Actuator, DHW
23.	Actuator, heating
24.	Temperature sensor, DHW
25.	Temperature sensor, heating supply
26.	Temperature sensor, heating return
27.	Temperature sensor, outdoor
28.	Temperature sensor, district heating supply
29.	Temperature sensor, district heating return
30.	Temperature sensor, primary heating return
31.	Temperature sensor, DHWC
A.	Heating return
B.	Heating supply
C.	District heating supply
D.	DHW
E.	CW
F.	DHWC
G.	District heating return
H.	Connection expansion vessel

2 Operating instructions

2.1 Operation

The temperature and pressure of the incoming heating network water from the culvert network are very high. For this reason, only the heat from this water is used. The heating network water does not enter the heating and hot water systems of the building.

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.

Midi Wall has automatic temperature control for heating and hot water. The heating circuit is controlled in relation to outdoor temperature and/or desired room temperature by means of a controller and temperature sensor. When no heat is needed, the circulation pump in the heating circuit stops automatically, but is started regularly to make sure that it does not seize up during long idle periods. The hot water temperature is controlled by a temperature control system which is set to about 55 °C.

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

2.2 Safety equipment/inspection

- Daily 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 hunting causes unnecessary wear of valves, actuators 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 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.

Hot water temperature in apartments or one family houses can be set to about 55°C. If the temperature is set too high, there is a risk of scalding. Setting the hot water temperature too low may result in unwanted bacteriological growth in the hot water system.

For setting and (if necessary) fine adjustment of the heating and hot water temperatures, see [User instruction IQHeat Doc-1552](#).

The heating system is topped up via the topping up valve. Be sure to close the valve when the correct pressure is reached. The water used to top up the system contains oxygen and may cause corrosion in the system. For this reason, the system should be topped up as seldom as possible, at most once

If a joining must be loosened and then re-installed, for example when installing the substation or when replacing a filter unit, the joining gaskets should be exchanged to prevent leaks.

3 Installation

3.1 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 exchangers as this may weaken them. Lift the unit in the frame; avoid lifting the unit by holding the heat exchangers. Use pallet lift where applicable, if using back straps these should be attached to the substructure of the substation.

NOTE: Risk of injury lifting heavy objects.

3.2 Preparation

- Choose a suitable installation area in accordance with official regulations. The system may generate sounds during operation caused by pumps, regulators systems, flows etc. This should be taken into consideration during installation of the unit, so that possible operational sounds affect the surroundings as little as possible. This means that the system should be installed on well-insulated walls, such as outer walls or on concrete walls.
- Check the applicable regulations of the district heating supplier. The available differential pressure should be at least 100 kPa and at most 600 kPa. Where the differential pressure is higher, a differential pressure controller should be added to the installation.
- Flush heating and hot water systems.

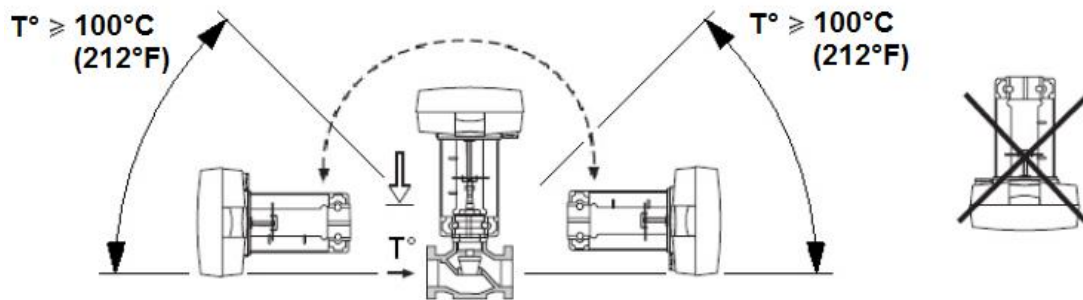
3.3 Mounting

- Mount the substation on a wall with screws and bolts suitable for mounting wall material and substation weight. The distance between floor and screw bracket should be 1420 mm. Note that distance between screws are 400 mm. Mount the floor support on the central, use the middle mounting hole. Raise the central and mount it on the wall.
- Place the substation so that connections, adjustment equipment and safety valves are easily accessible.
- Mount the shutoff valves on district heating supply and return. Shutoff valves are not supplied.
- Connect the pipe works to the connection points, see [3.8 Connection overview](#).
- When executing hot work on or close by the substation, all incendiary components should be demounted and removed.
- With supply temperatures above 100°, it is recommended that the actuator is tilted or closed down, see [Picture 2](#).
- Take rules and instructions regarding hot work into account.
- Connecting pipes shall be suspended so that their weight does not stress the unit.
- All connecting pipes within and connecting to the units' system shall be insulated according to standards and regulations.
- Drainage pipes from safety valves must be taken to floor gully.
- Energy meters must be installed at a prepared location, replacing a gauge block, or following the instructions of the energy supplier.

NOTE: the connection pipe between the valves is just for draining.

- Retighten all connections, including those made at the factory. If connections need retightening after the installation has been taken into service, the system should be depressurised before retightening. **If the system is not depressurised before retightening, gaskets will be damaged.**
- Required expansion volume shall be installed and provided with adequate pre-charge before start up.
- Remount plugs in drain valves after possible draining of circuit.

- Mount the outdoor temperature sensor on the north side of the building, 2 metres above the ground, or higher. For installation of the outdoor temperature sensor, see [6.3 Installation of outdoor temperature sensor](#).



Picture 2

3.4 Mounting the options

- If the substation shall be provided with a 3-point HB metering, see mounting instructions [12.1 3-point HB metering](#).
- If the substation shall be provided with a floor stand, see mounting instructions [12.2 Mounting floor stand](#).

3.5 Adjustments and settings for start up

- Open incoming cold water supply and fill the service water and heating circuits, bleeding off any trapped air.
- Check the operation and opening pressures of the safety valves.
- Adjust the hot water temperature by having a hot water tap open at normal flow rate for a time. Measure the temperature at the draw-off point with a thermometer. The temperature should be approximately 55°C. It takes about 20 seconds to get stable tap water temperature. See troubleshooting chart for adjusting hot water temperature.

NOTE: Make sure that no cold water is mixed with hot water while making this adjustment.

- Start the heating circulation pump at the strongest flow setting during some minutes. The pressure should be at least 100 kPa during winter and at least 60 kPa during summer.
- Set the pump capacity of the heating circulation pump according to chapter 8, [Pump settings and capacity](#). Use the lowest setting that manages the heating demand for best electrical efficiency. Make any necessary adjustment of the heating curve of the control and regulating equipment. Information about the controller can be found in this document.
- Set time, date and hot water temperature on the adjustment center.
- The property owner must be informed on how to operate, adjust and maintain the unit. It is overly important to inform about the safety systems and the risks associated with the high pressure and temperature of the district heating systems water supply.

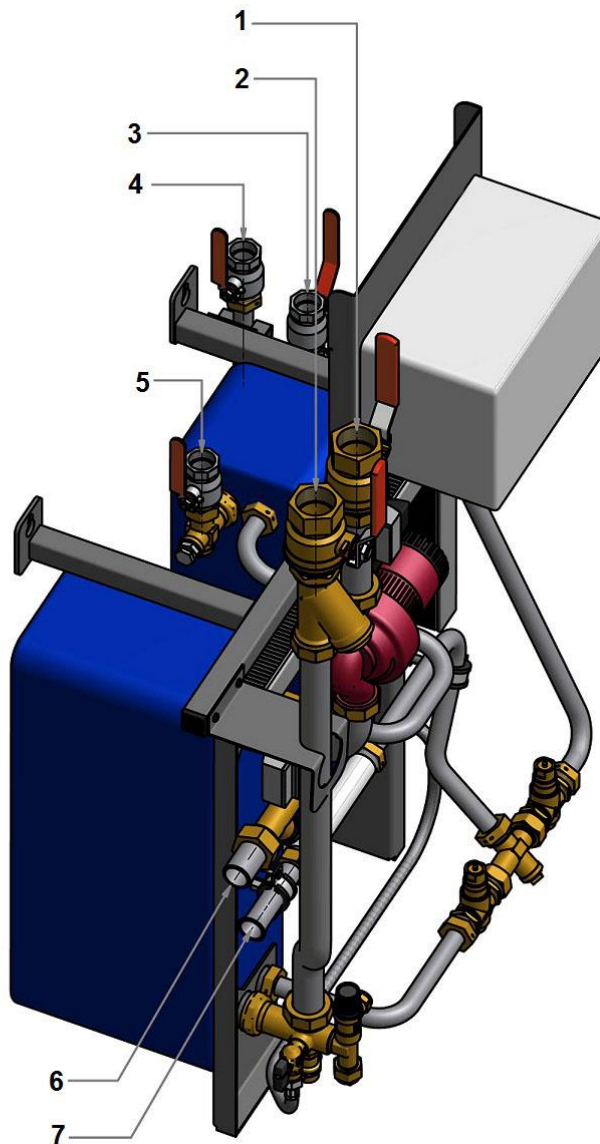
3.6 Dismantlement

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

3.7 Commissioning advice

The controller has been set at the factory. If any function needs tuning, values can be changed with reference to this manual for parameter setting. Initially, the commissioning process should be carried out with the factory settings. The parameter settings need tuning only if the district heat terminal does not function accordingly.

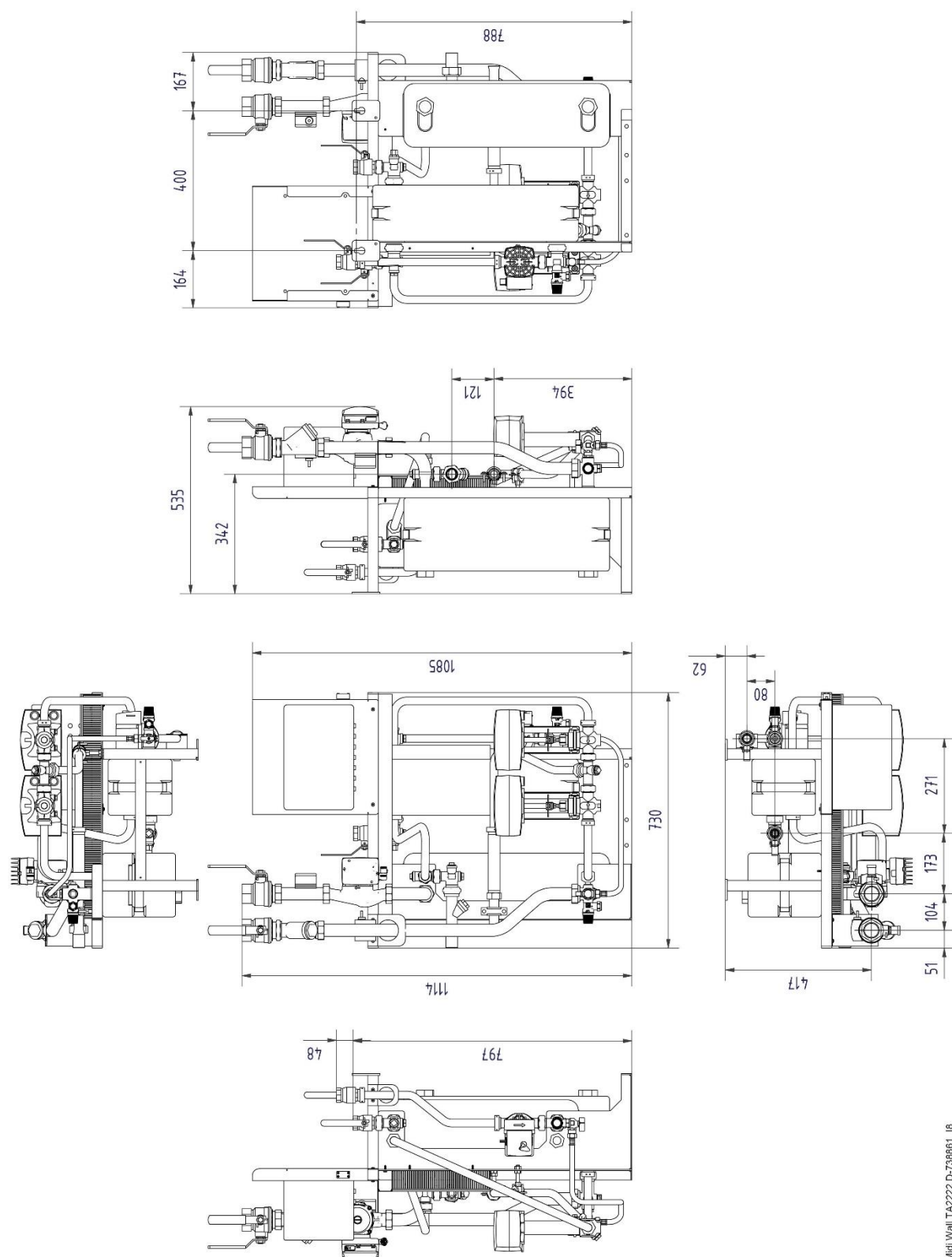
3.8 Connection overview



Picture 3

1	Heat Supply G1 1/4"	5	DHW G1"
2	Heat Return G1 1/4"	6	DH Supply DN25, weld
3	CW G1"	7	DH Return DN25, weld
4	VVC G1"		

3.9 Measure sketch Midi Wall IQHeat



Midi Wall TA2222 D-738861_18

Picture 4

4 Control center IQHeat

IQHeat is an intelligent controller for district heating and cooling substations.

Whether it is energy saving, energy cost reduction or comfort monitoring that is the goal, IQHeat from Cetetherm is an excellent choice.

IQHeat is fitted with a display.

IQHeat has always a temperature sensor on the primary side supply and return, and on the secondary side supply and return. The sensors allow for the effective limitation of return temperatures and simple monitoring and remote troubleshooting of functional or comfort problems.

IQHeat is always factory tested and factory set.

Midi Wall can be equipped with different IQHeat models:

- IQHeat50: serves one heating circuit
- IQHeat100: serves one heating circuit and one hot water circuit

Communication with the processing unit takes place with ModBus or TCP/IP.

Different methods of communication are available, depending on the external communication modules that are connected.

The following add-on modules are available as options and can be connected to a Midi Wall:

- MBus
- BacNet IP
- Advanced Web

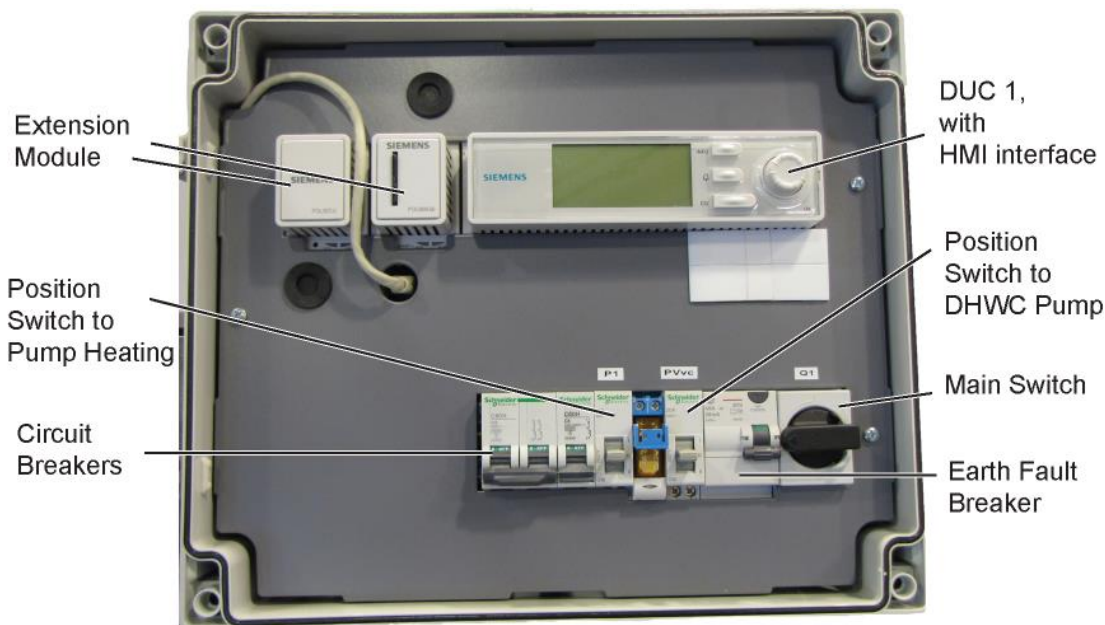
Add-on modules give you the option of

- meter data via MBus
- Integrated WEB server where all data and history from IQHeat is available through a simple web browser without requiring any special software or server connections
- BacNet and LON as well as ModBus give you the option of controlling IQHeat from the central building automation system.

For more information about the IQHeat please see [User instruction IQHeat Doc-1552](#).

This manual describes all the services, functions and settings that can be made with the processing unit, which is common to all models of IQHeat.

Not all the services, functions and settings are utilised by the different models.



4.1 Password and login

The controller has password protection, allowing access to different menus. The following log-in levels are available:

All users: no log-in, no password required

- read access to all menus except the system parameters, configuration and detail menus
- read access to alarm lists and alarm history

End user, level 6, password 1000

- appears with one key in the upper left corner of the display
- all rights as for in "all users"
- read access to all menus except configuration menus
- write access to the main set points (Setpoints/Settings. > Setpoints)
- alarms and alarm history can be acknowledged and reset

Service level, level 4, password 2000

Used for configuring I/Os and system settings. Only qualified service personnel should make changes at this level.

- appears with two keys in the upper left corner of the display
- all rights as for "End users"
- access to all menus except I/O configuration and system settings

OEM, level 2

- appears with three keys in the upper left corner of the display
- all rights as for System Administrator
- access to all menus and system settings.

Contact Cetetherm if there is a need to change anything at this level.

4.1.1 Log in

Main index	
Password enter	▶
Common	▶
Heating circuit 1 BuildProt	▶
Dom.hot water Normal	▶
Overviews	▶
Systemobjects	▶

1. Keep the *OK* button pressed to access the Password menu.
2. The first digit of four is marked with 0.
3. Turn the navigation dial until the desired number appears.
4. Press *OK* to proceed to the next digit, continue until all four are entered correctly and press *OK*.

The current key symbol will appear in the upper left corner of the display window.

4.2 Time functions setting of time and date

The controller's clock includes the functions for summer and winter time changes and leap years. The clock has a backup function to cover at least 24 hours of power cuts.

4.2.1 Reading date and time

Main overview	
28.04.2017	14:56:39
Outside temp.	44.8 °C
Outside temp.2	14.6 °C
Heating circuit 1	Auto
-Heat limit ECO	BuildProt
Act.fl.temp.setp.	20.0 °C
Flow temperature	49.4 °C

1. Press *Info* to access Main overview.
2. The top line shows the set date and time.


4.2.2 Setting date and time

Requires login at end user level.

1. Press *Info* until the page with the date and time are displayed.
2. Move the cursor to the line for date and time.
3. Press *OK* to edit the day.
4. Set the correct day with the navigation dial, press *OK* to confirm and continue to edit the month and year.
5. Continue to edit the hours, minutes and seconds in the same way.
6. Exit the menu with *ESC*.

5 Troubleshooting

5.1 Fault indication for IQHeat

The processing unit alerts for different situations. Alarms are indicated on the control display with the alarm symbol .

Alarms are divided into three classes:

- A or 1 = Alarm, High
- B or 2 = Alarm, Low
- C or 3 = Alarm, Warning

Active alarms:

- alarm symbol in the display flashes
- alarm button on the control panel flashes

Acknowledged but still active alarm:

- alarm symbol in the display lights
- alarm button on the control panel lights

If a GSM modem is connected to the processing unit, an alarm is sent by text message to the specified telephone number.

For more information please see [User instruction IQHeat Doc-1552](#).

6 Electrical installation

6.1 General

The wiring in Midi Wall conforms to the applicable rules for CE marking and has undergone electrical safety testing and function testing. For permanent installation must the substation be connected to an all-pole isolator switch. This must be done by a duly qualified electrician.

The substation must be connected to a grounded power outlet.

6.2 Connection to internet

For connection to internet the control panel has a cable with RJ45-contact.

6.3 Installation of outdoor temperature sensor

Connect the outdoor temperature sensor to a terminal strip in accordance with the electrical diagram, if there is a resistor, remove it.

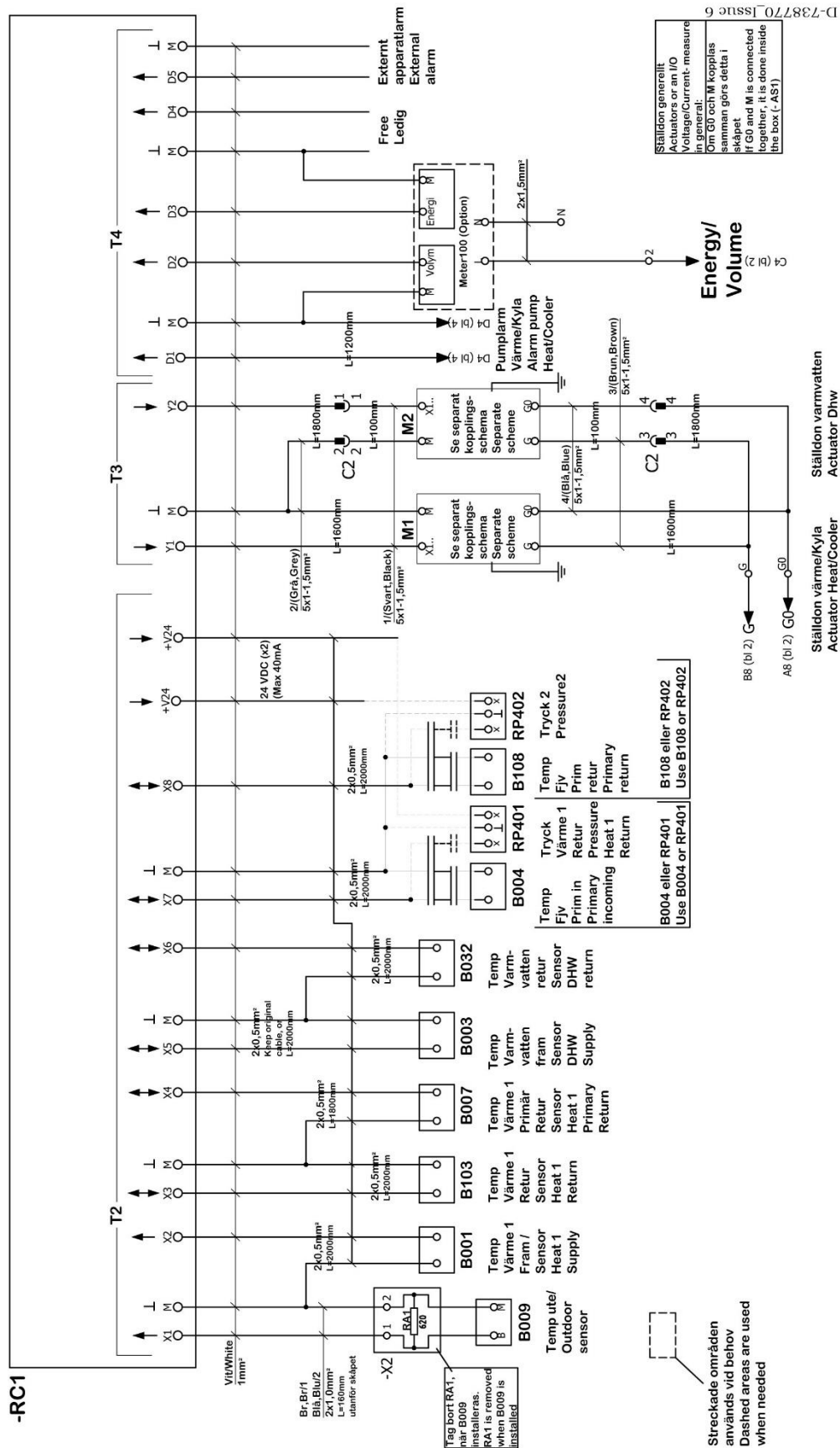
The resistor simulates an outdoor temperature of 0°C.

If using a cable with two conductor area of 0.75mm² the maximum cable length is 80 meters.



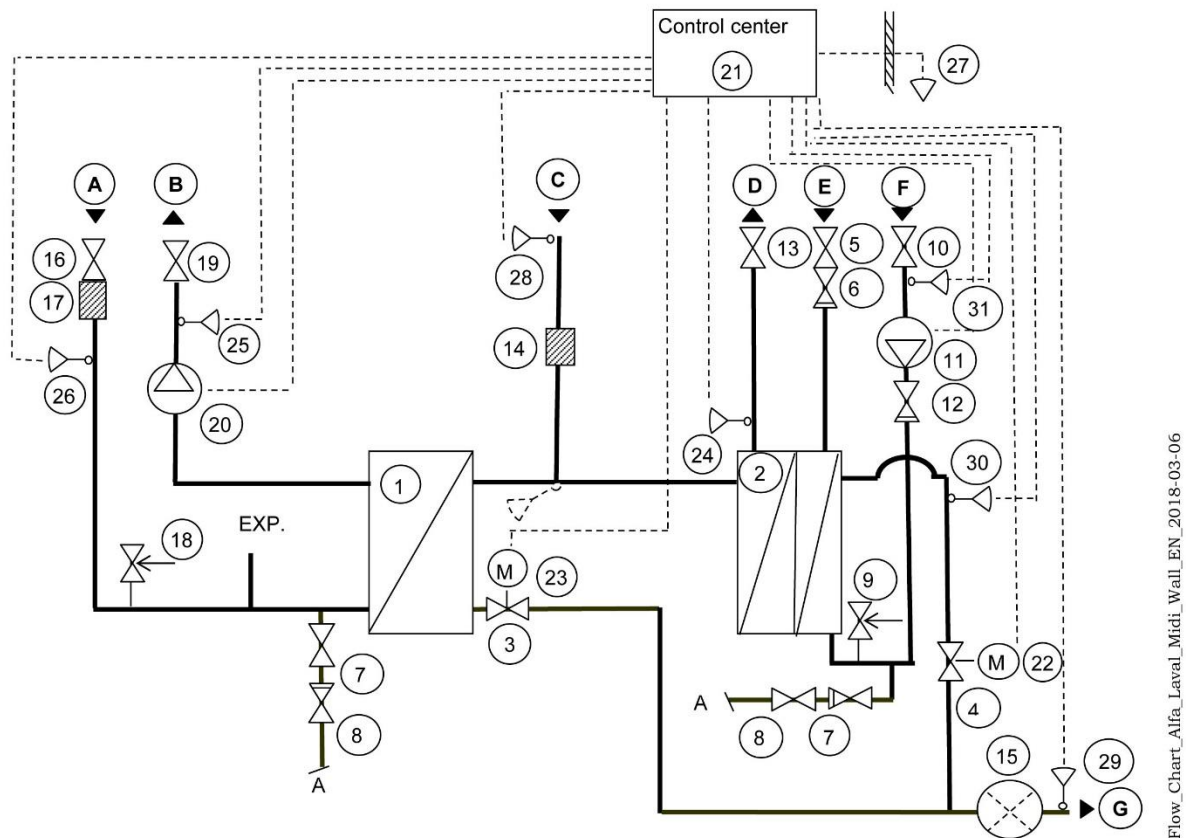
Picture 5

6.4 Electrical circuit diagram



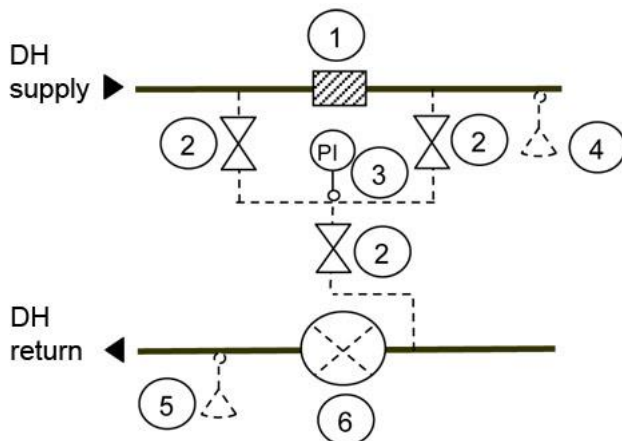
Picture 6

7 Schematic diagram, main components



Picture 7

7.1 Option 3-point HB metering



Picture 8

1.	Welded filter
2.	Shut off valves
3.	Manometer clock
4.	Sensor pocket energy meter primary in
5.	Sensor pocket energy meter primary out
6.	Flanged dummy 260mm energy meter

8 Pump settings and capacity

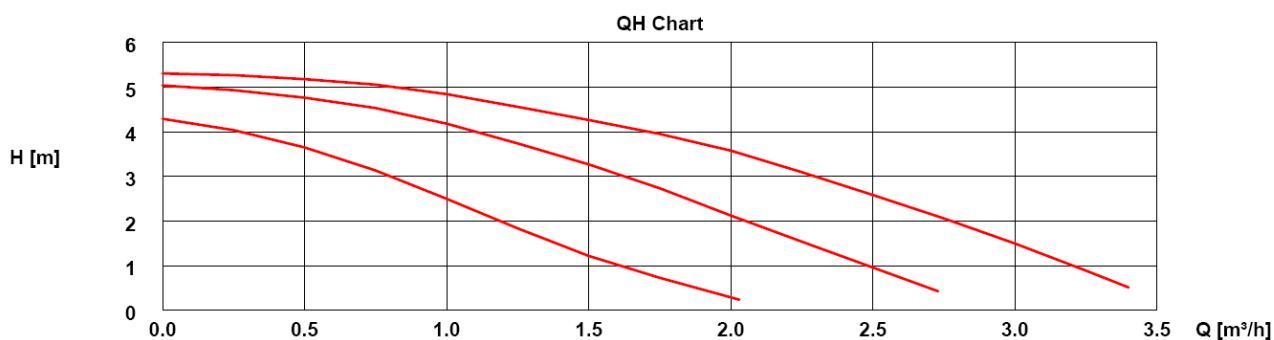
8.1 General

Mini Wall is equipped with two circulation pumps, one for the hot water circulation, DHWC-pump, and one for the heating circuit.

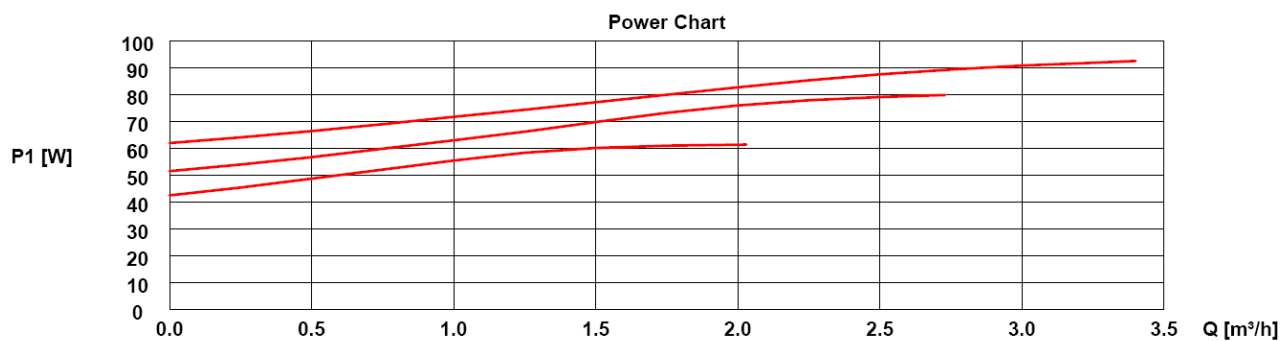
The DHWC pump is a traditional three speed circulation pump. The DHWC pump has a switch where the speed/capacity can be set.

The heating circuit can be equipped with two different circulation pumps, both pumps are pressure controlled.

8.2 DHWC pump Grundfos UPSO 15-55, capacity

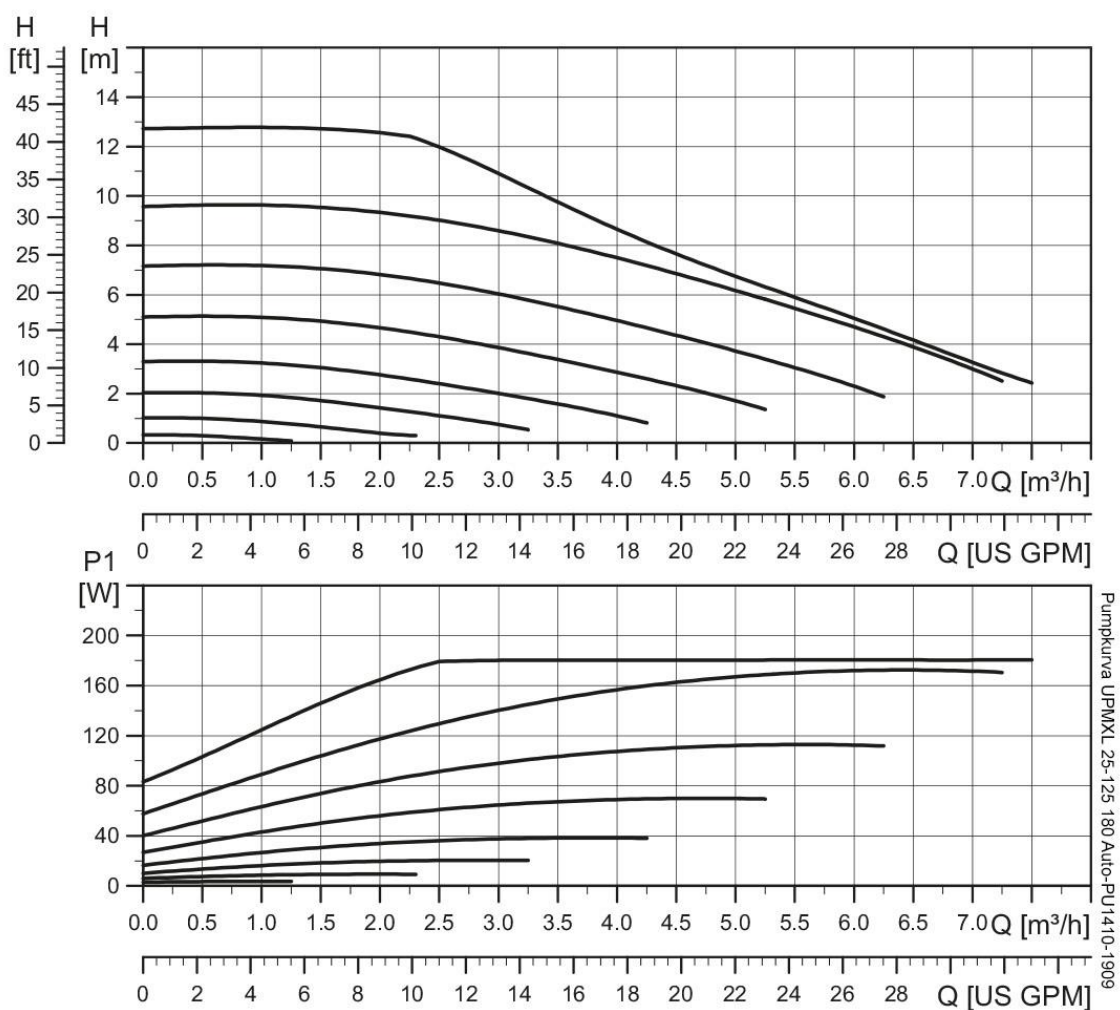


Picture 9



Picture 10

8.3 Heating circuit pump Grundfos UPMXL 25-125 180 Auto (GFJOC), settings and capacity



Picture 11

Settings	MAX.H _{nom}
CP1	7,5 m
CP2	10 m
CP3	12,5 m
PP1	8 m
PP2	9,5 m
PP3	11 m

Cetetherm Midi Wall IQHeat







Installation, service and operating instruction

The heating pump is internally controlled via digital pulse-width modulation.

The user interface allows to select between six control curves in two control modes:

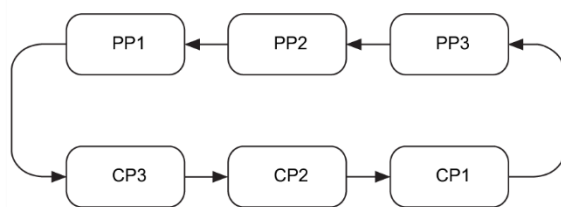
- three proportional pressure curves (PP)
- three constant pressure/power curves (CP).

The pump is factory preset to Proportional pressure curve, PP2.

Flashing fast 	PP1
Flashing fast 	PP2
Flashing fast 	PP3
Flashing slow 	CP1
Flashing slow 	CP2
Flashing slow 	CP3

Picture 12, LED indication of the curve setting

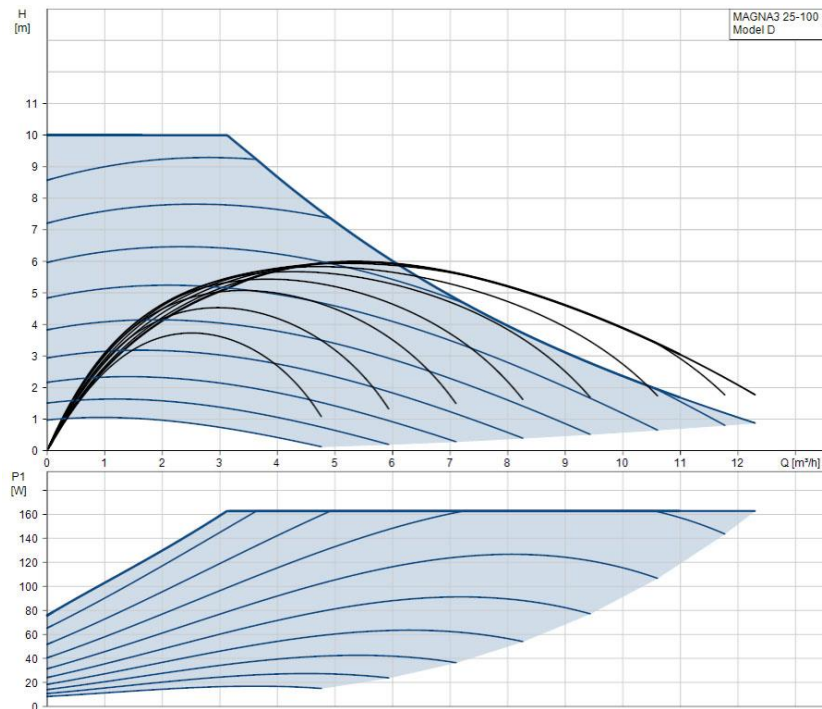
8.3.1 Changing pump curve setting



Picture 13, Serial curve setting

1. Push the button for two seconds
Pump goes to setting mode - LED starts flashing.
2. With each push, the setting changes:
LED 1-2-3 are permanently on, and then the control curve and mode is changed.
3. Flashing mode:
 - Fast: Proportional pressure
 - Slow: Constant pressure/power
4. After ten seconds not pushing the button:
 - Setting is adapted.
 - Pump returns to operating mode
5. LED 1 or 2 or 3 is permanently on.
 - Pump is running with the selected curve and mode.

8.4 Heating circuit pump Grundfos Magna3 25-100, capacity



Picture 14

9 Service instructions



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



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

NOTE: Make sure that the Midi Wall substation has been correctly installed.
For more information about IQHeat, see [User instruction IQHeat Doc-1552](#).

9.1 Tap water, service instructions

9.1.1 Tap water too cold

Reason	Action
District heating supply too low	Check the primary inlet temperature The temperature can be checked by means of the energy meter, minimum 65°C, or at the district heating medium supply. The hot water drain temperature can be monitored on the control panel display, see User instruction IQHeat Doc-1552 chapter Hot water circuit .
District heating strainer clogged	See 10.1 Check if the district heating strainer is blocked.
Hot water valve and actuator does not work	See 10.2 Check the function of the heating and hot water valve and actuator.

9.1.2 Tap water too warm

Reason	Action
Hot water valve and actuator does not work	See 10.2 Check the function of the heating and hot water valve and actuator.

9.1.3 Hot water temperature unstable

Reason	Action
Pending differential pressure	Check available differential pressure and the primary inlet temperature The temperature can be checked by means of the energy meter, minimum 65°C, or at the district heating medium supply.
Faulting settings for drain hot water	Check pre-set parameters on control panel display Check set value for drain hot water, see User instruction IQHeat Doc-1552 chapter Hot water circuit .
District heating strainer clogged	See 10.1 Check if the district heating strainer is blocked.
DHWC pump is not running	Check that the electrical power is on.
	See 10.4 Check DHWC pump.

9.1.4 Noise in the DHWC system

Reason	Action
The DHWC pump capacity set too high	Reduce the pump capacity Reduce the pump capacity by selecting a lower setting on the pump when needed.
Air in the DHWC pump	Vent the DHWC pump Set the pump to speed III. Loosen the pump motor end nut to and let it stay opened until the air in the pump is released. When the pump has been vented, i.e. when the noise has ceased, set the pump according to the recommendations.
The DHWC pump motor or pump component damaged	Change pump components or the complete DHWC pump If it becomes necessary to change the driving side of the pump, it can be dismantled without removing the whole pump. See chapter 11 Maintenance and repairs .

9.2 Heating system, service instruction

9.2.1 Heating system temperature too high or too low

Reason	Action
Heating supply temperature sensor and outdoor temperature sensor does not work	Check the heating supply temperature sensor and outdoor temperature sensor for correct placement and function. The two temperatures can be monitored on the control panel display, see document User instruction IQHeat Doc-1552 chapter General Functions section Reading the current temperatures and valve modes .
The heating control equipment may need to be adjusted	Check and adjust the heating curve See chapter Heating circuit in User instruction IQHeat Doc-1552 .
Heating circuit strainer clogged	See 10.3 Check heating circuit strainer.
Heating valve and/or actuator does not work	See 10.2 Check the function of the heating and hot water valve and actuator.

9.2.2 No heating

Reason	Action
Circulation pump not running	Check that the electrical power is on.
Air pockets in the substation or in the heating circuit	Check the circulation pump If the pump fails to start after stopping, start the pump at the highest setting. Check pre-set heating parameters on the control panel display <ul style="list-style-type: none"> • set operating mode • set time and date • night time decrease • week program • weekend decrease See User instruction IQHeat Doc-1552 . To check operating mode, time and date see section Reading the current temperatures and valve modes in chapter General Functions . For more information about heating settings see chapter Heating Circuit .

	Vent the pump The pump is self-venting. Possible remaining air in the pump may cause noise. This noise ceases after a few minutes run time.
Heating supply temperature sensor and outdoor temperature sensor does not work	Check the heating supply temperature sensor and outdoor temperature sensor for correct placement and function. The two temperatures can be monitored on the control panel display, see document <i>User instruction IQHeat Doc-1552</i> chapter <i>General Functions</i> section <i>Reading the current temperatures and valve modes</i> .
Loss of function in the heating control unit.	See 10.5 Run the pump manually.
Heating circuit strainer clogged	See 10.3 Check heating circuit strainer.

9.2.3 Noise in the radiator system

Reason	Action
The heating pump capacity set too high	Reduce the pump capacity Reduce the pump capacity by selecting a lower setting on the pump when needed.
Air in the heating pump	Vent the pump The pump is self-venting. Possible remaining air in the pump may cause noise. This noise ceases after a few minutes run time.
The heating pump motor or pump component damaged	Change pump components or the complete pump If it is necessary to change the driving side of the pump, it can be dismantled without removing the entire pump. See chapter <i>11 Maintenance and repairs</i> .

9.2.4 Heating temperature unstable

Reason	Action
Pending differential pressure	Check available differential pressure and the primary inlet temperature The temperature can be checked by means of the energy meter, minimum 65°C, or at the district heating medium supply.
Heating supply temperature sensor and outdoor temperature sensor does not work	Check the heating supply temperature sensor and outdoor temperature sensor for correct placement and function. The two temperatures can be monitored on the control panel display, see document <i>User instruction IQHeat Doc-1552</i> chapter <i>General Functions</i> section <i>Reading the current temperatures and valve modes</i> .
District heating strainer clogged	See 10.1 Check if the district heating strainer is blocked.

9.2.5 Heating system often needs topping up

Reason	Action
Leaks in the substation or in the system	Check the substation and the system for leaks Leaks from the substation or the heating system cause pressure drops. Repair any leaks on the substation.
The heating system safety valve is leaking or does not work	Check the heating system safety valve Check that the safety valve is not leaking and that it works properly. Check the safety valves' function by turning the wheel/knob until water runs out of the valve's waste pipe and then close the valve quickly.
The expansion vessel cannot handle the systems volume changes	See 10.6 Check the volume take-up and pressure equalizing of the expansion vessel.

10 Service actions for the installer

10.1 Check if the district heating strainer is blocked



Service actions must be carried out by an authorized service technician.

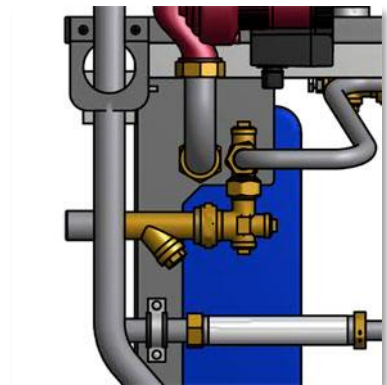


Before starting out repairs always close the primary supply and return shutoff valves and drain the system.

After finishing repair; open the shutoff valves. Start with primary supply and then the return lines, to avoid pollutions in the system. Open the valves slowly to avoid pressure surges. Do the same on the heating side open first heat return and then supply. Fill up the system, start the pump and vent.

Release the strainer holder and remove the cartridge.
Clean the strainer with water and refit the cartridge.

Screw the strainer holder with a momentum of 10-20 Nm.



Picture 15

10.2 Check the function of the heating and hot water valve and actuator

See *User instruction IQHeat Doc-1552* chapter *Tests* section *Testing the valves*.



Service actions must be carried out by an authorized service technician.

Before the hot water valve can be checked the actuator must be dismantled.
Unscrew the screws on the shackle holding the actuator to the valve and
dismantle the actuator from the valve



Picture 16

Press the valve guide pin gently and check the valve's travel and spring back.

Note: The valve may be very hot!



Picture 17

10.3 Check heating circuit strainer



Service actions must be carried out by an authorized service technician.



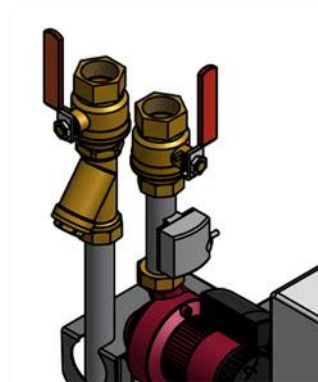
Before starting out repairs always close the primary supply and return shutoff valves and drain the system.

After finishing repair; open the shutoff valves. Start with primary supply and then the return lines, to avoid pollutions in the system. Open the valves slowly to avoid pressure surges. Do the same on the heating side open first heat return and then supply. Fill up the system, start the pump and vent.

Disconnect the electrical power supply.

Release the strainer holder and remove the cartridge.

Clean the strainer in water and refit the cartridge. Screw the strainer holder with a momentum of 10-20 Nm.



Picture 18

10.4 Check DHWC pump



Service actions must be carried out by an authorized service technician.



Disconnect the power feed to the pump by pulling off the connector before carrying out this task. If the current is on when you use a screwdriver to assist the pump to start, the screwdriver may be wrenched out of your hand when the pump starts.

If the pump does not start, can it normally be started by removing the pump motor end nut and helping the pump to start with the aid of a screwdriver in the notch on the engine shaft.

If possible, use a short screwdriver. If the pump is difficult to access, disconnect the heating actuator.

Connect the power feed to the pump and try to start again.



Picture 19

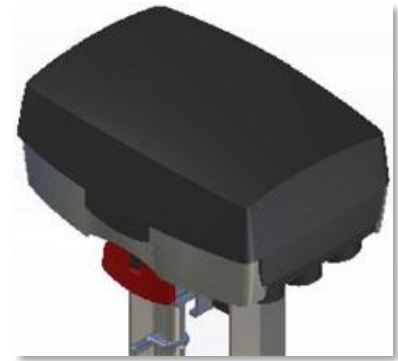
10.5 Run the pump manually

If it becomes necessary to run the pump and actuator manually, this can be done by disconnecting the power to the operator control panel.

Disconnect the electrical plug for the pump and connect the replacement cable to the power supply and to the circulation pump.

Next, open the heating valve manually using the red knob on the actuator.

Flick down the red knob and open the valve enough to supply the house property's heating demand. This is to be regarded as a temporary solution until the control unit problem is solved.



Picture 20

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

Check the expansion vessel for possible leakage.

The cause may be that the expansion vessel cannot manage the volume changes on the heating side.
See [11.6 Change the expansion vessel](#).

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.

11 Maintenance and repairs



Maintenance work must be carried out by an authorized service technician.

11.1 Change the pumps

Either change the complete pump or just the pump motor.



Maintenance work must be carried out by an authorized service technician.



Disconnecting the power feed to the pump and the substation.



Before starting out repairs always close the primary supply and return shutoff valves and drain the system.
After finishing repair; open the shutoff valves. Start with primary supply and then the return lines, to avoid pollutions in the system. Open the valves slowly to avoid pressure surges.
Do the same on the heating side open first heat return and then supply. Fill up the system, start the pump and vent.

1. Release the brass nuts with a wrench and replace the pump.
2. Reattach the power feed.
3. If only changing the motor, release it by unscrewing four socket head cap screws and replace the motor.
4. Reattach the power feed.



Picture 21

11.2 Change the heating and hot water actuator

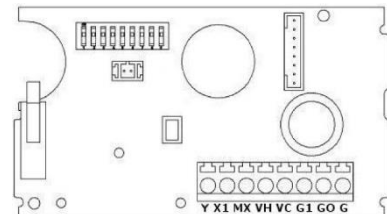


Maintenance work must be carried out by an authorized service technician.



Disconnecting the power feed to the pump and the substation.

1. Open actuator lid and unscrew connecting wires attached to the wire terminal (Picture 38).
2. Unscrew the brace attaching the actuator to the valve and lift of the actuator.
3. Mount a new actuator on the valve, slide the actuator onto the valve neck, thus making the square nut on the valve spindle fit into the groove on the cross bar. Then slide the brace into the groove on the valve neck and secure the nuts.
4. Reattach the wire terminal per the [6.4 Electrical circuit diagram](#).



Picture 22

11.3 Change the heating or hot water valve



Maintenance work must be carried out by an authorized service technician.



Disconnecting the power feed to the pump and the substation.



Before starting out repairs always close the primary supply and return shutoff valves and drain the system.
After finishing repair; open the shutoff valves. Start with primary supply and then the return lines, to avoid pollutions in the system. Open the valves slowly to avoid pressure surges.
Do the same on the heating side open first heat return and then supply. Fill up the system, start the pump and vent.

1. Unscrew the heating actuator from the control valve.
2. Use a wrench to remove the control valve. Note the arrow direction on the valve.
3. Mount a new valve; **and take especially care to the arrow direction.**
4. Mount the actuator on the valve, slide the actuator onto the valve neck, thus making the square nut on the valve spindle fit into the groove on the cross bar. Then slide the brace into the groove on the valve neck and secure the nuts.



Picture 23

11.4 Change the temperature sensor heating supply/return

1. Carefully lift the sensor cover with a screwdriver and unscrew the connecting wires in attached to the wire terminal.
2. Loosen the band that holds the sensor to the pipe. Replace with a new sensor.



Picture 24



Picture 25

11.5 Change the outdoor temperature sensor

1. Disconnect the electrical power supply.
2. Unscrew the lid by turning it anti-clockwise.
3. Unscrew the cables.
4. Loosen the cable fitting.
5. Install a new outdoor temperature sensor.



Picture 26

11.6 Change the expansion vessel



Maintenance work must be carried out by an authorized service technician.



Disconnecting the power feed to the pump and the substation.

Close the shutoff valves for the radiator supply and return.
Replace the expansion vessel.

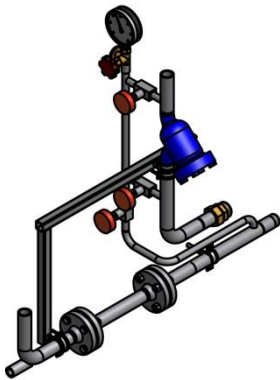
12 Options

The mounting instructions are described for a new installation. If the kits are supposed to be installed on an already installed subsystem, you will have to release the water pressure and disconnect the electrical power supply before starting. The installation must be carried out by a fully qualified electrician.

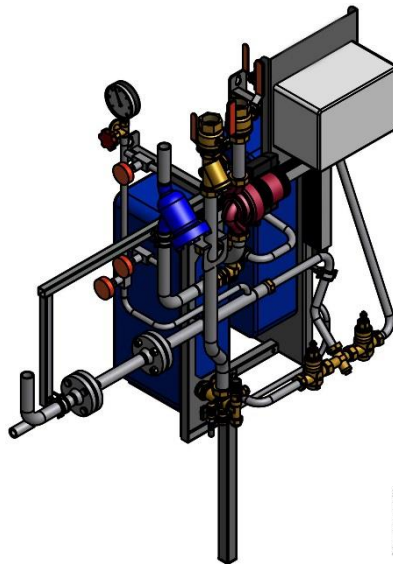
12.1 3-point HB metering

Mounting the 3-point HB metering:

1. Close the shut-off valves for primary inlet and return.
2. Unscrew the nut preceding the energy meter and remove energy meter and pipe.
3. Unscrew the nut following primary inlet and remove the filter and welding end.
4. Thread the metering profile into the frame's.
5. Screw the metering and the central together.
6. Open the shut-off valves, first primary inlet then primary return.



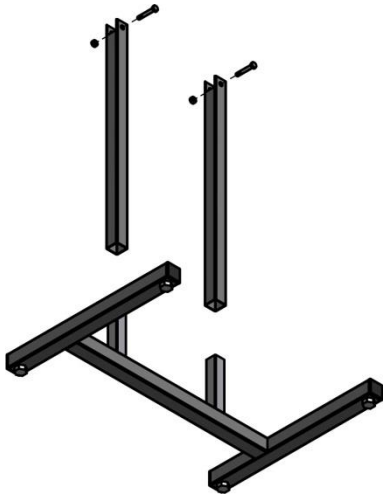
Picture 27



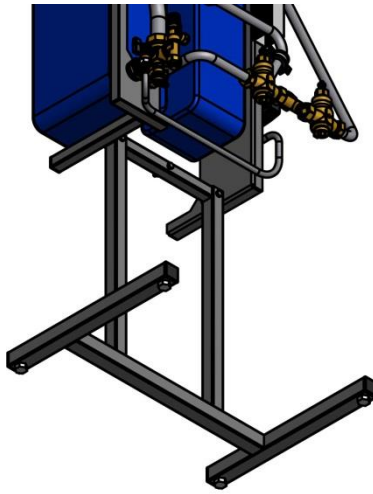
Picture 28

12.2 Mounting floor stand

1. Mount two floor supports to the central. Use the outer mounting holes.
2. Mount the floor stand feet on the floor support.
3. Raise the central against a wall.
4. We recommend that the central is mounted to the wall.
The distance between floor and screw bracket should be 1330 mm. Note that distance between screws are 400 mm.



Picture 29



Picture 30

12.3 Balancing valve DHWC

Set the valve to a specific pressure drop according to:

1. Close the valve fully.
2. Open the valve the correct numbers of turns.
3. See the diagram for numbers of turns. In this example 2,3 turns.
4. Using a 3 mm Allen key, turn the inner spindle clockwise until stop.
5. The valve is now set.

To check the setting: Close the valve, the indicator shows 0.0. Open it to the stop position. The indicator then shows the set value, in this case 2.3.

The diagram shows the pressure drop for different settings and flow rates.

Four turns correspond to fully opened valve. Opening it further will not increase the capacity.



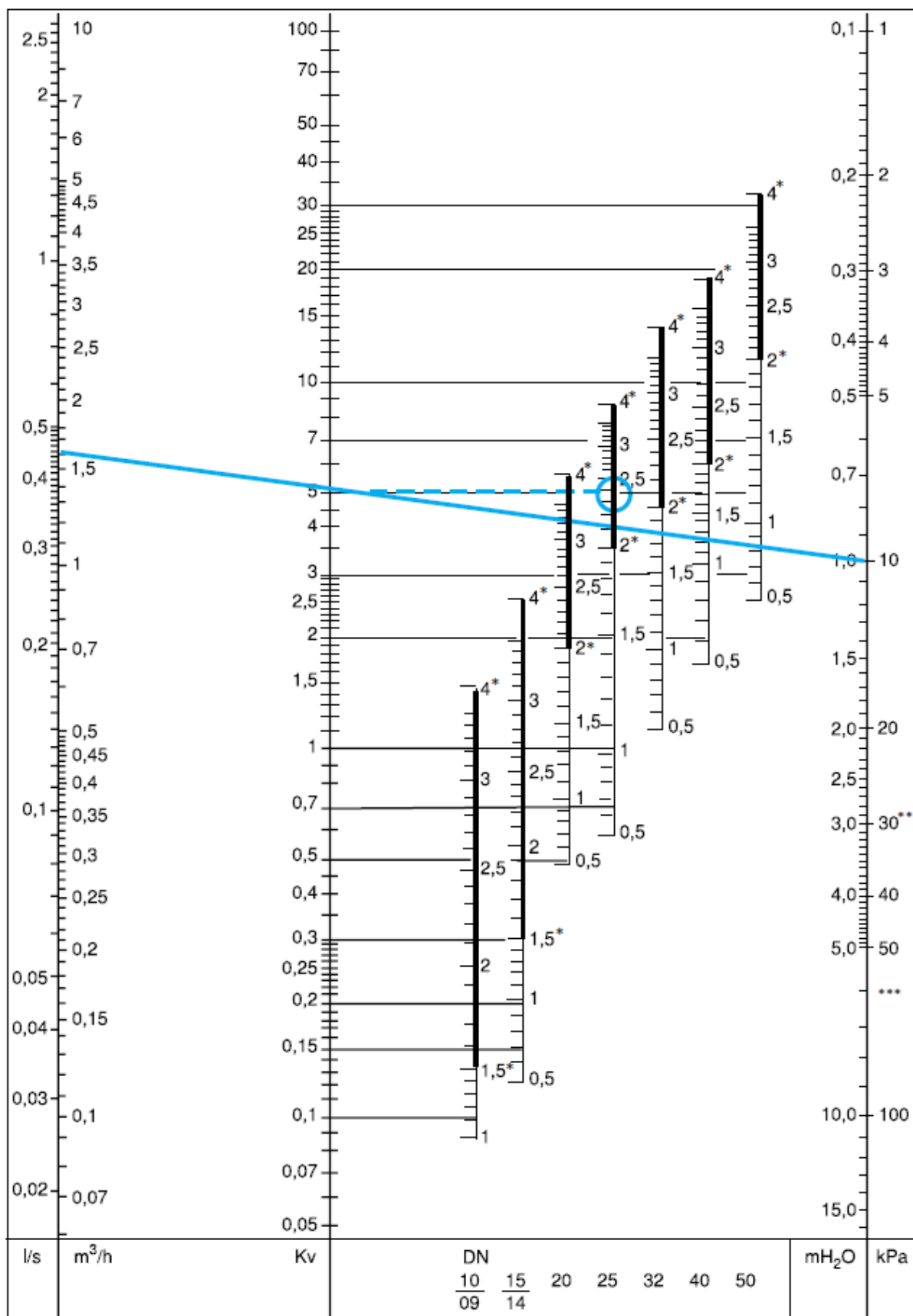
Picture 31



Picture 32



Picture 33



Picture 34

*) recommended area

**) 25 dB (A)

***) 35 dB (A)

13 Technical data and performance

13.1 Operation data Midi Wall 70

	Primary side	Heating	DHW
Design pressure PS	16 Bar	6 bar	10 Bar
Design temperature TS	120°C	90°C	90°C
Relief pressure safety-valve	-	3 Bar	9 Bar
Volume Heat exchanger, L	1,96/1,96 L	2,06 L	2,06 L

CB60AQ-40L

Temperature program									
(°C) Heating	Capacity kW	CB type	Plates no	Plates primary	Plates secondary	Flow P l/s	dPp kPa	Flow S l/s	dPs kPa
100-63/60-80 (62,6)	70	60AQ	40	1*19L	1*20L	0,47	2,0	0,85	5,2
100-63/60-80	82	60AQ	40	1*19L	1*20L	0,55	2,8	1,00	7,0
100-53/50-70	118	60AQ	40	1*19L	1*20L	0,63	3,6	1,43	14,0
100-48/45-60 (46,2)	91,3	60AQ	40	1*19L	1*20L	0,42	1,7	1,48	15,0
100-43/40-60 (42,5)	121,5	60AQ	40	1*19L	1*20L	0,53	2,6	1,47	15,0
100-43/40-70	67,5	60AQ	40	1*19L	1*20L	0,30	0,9	0,54	2,3
100-43/40-80	26	60AQ	40	1*19L	1*20L	0,11	0,2	0,16	0,2
100-36/33-40 (33,08)	42	60AQ	40	1*19L	1*20L	0,16	0,3	1,45	15,0
100-33/30-60	85	60AQ	40	1*19L	1*20L	0,32	1,0	0,68	3,6

CB60AQ-40L:2

Temperature program									
(°C) DHW	Capacity kW	CB type	Plates no	Plates primary	Plates secondary	Flow P l/s	dPp kPa	Flow S l/s	dPs kPa
80-23/10-60 (19,1)	157	60AQ	40	1*10 L+1*9 L	2*10 L	0,62	23,0	0,75	29,9
80-23/10-60 (16,1)	92	60AQ	40	1*10 L+1*9 L	2*10 L	0,34	7,8	0,44	11,1
80-23/10-55 (16,2)	141	60AQ	40	1*10 L+1*9 L	2*10 L	0,53	17,5	0,75	30,2
80-23/10-55 (13,9)	83	60AQ	40	1*10 L+1*9 L	2*10 L	0,30	6,1	0,44	11,2
70-25/10-55 (19,8)	141	60AQ	40	1*10 L+1*9 L	2*10 L	0,67	27,2	0,75	29,9
70-25/10-55(16,7)	83	60AQ	40	1*10 L+1*9 L	2*10 L	0,37	9,0	0,44	11,1
70-22/10-55 (19,75)	141	60AQ	40	1*10 L+1*9 L	2*10 L	0,67	27,1	0,75	29,9
70-22/10-55 (16,65)	83	60AQ	40	1*10 L+1*9 L	2*10 L	0,37	9,0	0,44	11,1
65-22/10-55	126	60AQ	40	1*10 L+1*9 L	2*10 L	0,70	29,3	0,66	24,1
65-22/10-55 (19,3)	83	60AQ	40	1*10 L+1*9 L	2*10 L	0,43	12,0	0,44	11,0

13.2 Operation data Midi Wall 100

	Primary side	Heating	DHW
Design pressure PS	16 Bar	6 bar	10 Bar
Design temperature TS	120°C	90°C	90°C
Relief pressure safety-valve	-	3 Bar	9 Bar
Volume Heat exchanger, L	2,47/1,96 L	2,58 L	2,06 L

CB60AQ-50L

Temperature program (°C) Heating	Capacity kW	CB type	Plates no	Plates primary	Plates secondary	Flow P l/s	dPp kPa	Flow S l/s	dPs kPa
100-63/60-80	105	60AQ	50	1*24 L	1*25 L	0,71	3,3	1,28	7,8
100-53/50-70 (52,95)	147,6	60AQ	50	1*24 L	1*25 L	0,78	4,0	1,79	15,0
100-48/45-60 (46,1)	110,1	60AQ	50	1*24 L	1*25 L	0,51	1,8	1,78	15,0
100-43/40-60 (42,3)	146,4	60AQ	50	1*24 L	1*25 L	0,63	1,8	1,77	15,0
100-43/40-70	87,1	60AQ	50	1*24 L	1*25 L	0,38	1,0	0,70	2,6
100-43/40-80	33,9	60AQ	50	1*24 L	1*25 L	0,15	0,2	0,20	0,3
100-36/33-40 (33,1)	50,75	60AQ	50	1*24 L	1*25 L	0,19	0,3	1,75	15,0
100-33/30-60	109	60AQ	50	1*24 L	1*25 L	0,41	1,2	0,88	4,05

CB60AQ-40L:2

Temperature program (°C) DHW	Capacity kW	CB type	Plates no	Plates primary	Plates secondary	Flow P l/s	dPp kPa	Flow S l/s	dPs kPa
80-23/10-60 (19,1)	157	60AQ	40	1*10 L+1*9 L	2*10 L	0,62	23,0	0,75	29,9
80-23/10-60 (17,1)	113	60AQ	40	1*10 L+1*9 L	2*10 L	0,43	11,8	0,54	16,2
80-23/10-55 (16,2)	141	60AQ	40	1*10 L+1*9 L	2*10 L	0,53	17,5	0,75	30,2
80-23/10-55 (14,65)	102	60AQ	40	1*10 L+1*9 L	2*10 L	0,37	9,1	0,54	16,4
70-25/10-55 (19,8)	141	60AQ	40	1*10 L+1*9 L	2*10 L	0,67	27,2	0,75	29,9
70-25/10-55(17,7)	102	60AQ	40	1*10 L+1*9 L	2*10 L	0,47	13,7	0,54	16,3
70-22/10-55 (19,75)	141	60AQ	40	1*10 L+1*9 L	2*10 L	0,67	27,1	0,75	29,9
70-22/10-55 (17,7)	102	60AQ	40	1*10 L+1*9 L	2*10 L	0,47	13,7	0,54	16,3
65-22/10-55	126	60AQ	40	1*10 L+1*9 L	2*10 L	0,70	29,3	0,66	24,1
65-22/10-55 (20,55)	102	60AQ	40	1*10 L+1*9 L	2*10 L	0,55	18,4	0,54	16,1

13.3 Operation data Midi Wall 130

	Primary side	Heating	DHW
Design pressure PS	16 Bar	6 bar	10 Bar
Design temperature TS	120°C	90°C	90°C
Relief pressure safety-valve	-	3 Bar	9 Bar
Volume Heat exchanger, L	2,99/1,96 L	3,10 L	2,06 L

CB60AQ-60L

Temperature program									
(°C) Heating	Capacity kW	CB type	Plates no	Plates primary	Plates secondary	Flow P l/s	dPp kPa	Flow S l/s	dPs kPa
100-63/60-80	128,5	60AQ	60	1*29 L	1*30 L	0,86	3,9	1,57	8,7
100-53/50-70 (52,75)	169,6	60AQ	60	1*29 L	1*30 L	0,89	4,2	2,06	15,0
100-48/45-60 (46)	126,6	60AQ	60	1*29 L	1*30 L	0,58	1,9	2,05	15,0
100-43/40-60 (42,15)	168,4	60AQ	60	1*29 L	1*30 L	0,73	2,8	2,04	15,0
100-43/40-70	106,3	60AQ	60	1*29 L	1*30 L	0,47	1,2	0,86	2,9
100-43/40-80	41,5	60AQ	60	1*29 L	1*30 L	0,18	0,2	0,25	0,3
100-36/33-40 (33,06)	58,47	60AQ	60	1*29 L	1*30 L	0,22	0,3	2,01	15,0
100-33/30-60	133	60AQ	60	1*29 L	1*30 L	0,50	1,4	1,07	4,5

CB60AQ-40L:2

Temperature program									
(°C) DHW	Capacity kW	CB type	Plates no	Plates primary	Plates secondary	Flow P l/s	dPp kPa	Flow S l/s	dPs kPa
80-23/10-60 (19,1)	157	60AQ	40	1*10 L+1*9 L	2*10 L	0,62	23,0	0,75	29,9
80-23/10-60 (18,1)	134	60AQ	40	1*10 L+1*9 L	2*10 L	0,52	16,6	0,64	22,3
80-23/10-55 (16,2)	141	60AQ	40	1*10 L+1*9 L	2*10 L	0,53	17,5	0,75	30,2
80-23/10-55 (15,35)	121	60AQ	40	1*10 L+1*9 L	2*10 L	0,45	12,7	0,64	22,5
70-25/10-55 (19,8)	141	60AQ	40	1*10 L+1*9 L	2*10 L	0,67	27,2	0,75	29,9
70-25/10-55(18,7)	121	60AQ	40	1*10 L+1*9 L	2*10 L	0,56	19,4	0,64	22,3
70-22/10-55 (19,75)	141	60AQ	40	1*10 L+1*9 L	2*10 L	0,67	27,1	0,75	29,9
70-22/10-55 (18,7)	121	60AQ	40	1*10 L+1*9 L	2*10 L	0,56	19,4	0,64	22,3
65-22/10-55	126	60AQ	40	1*10 L+1*9 L	2*10 L	0,70	29,3	0,66	24,1
65-22/10-55 (21,7)	121	60AQ	40	1*10 L+1*9 L	2*10 L	0,67	26,5	0,64	22,1

13.4 Technical data

Electrical data: 230V 50Hz 1-phase 290-315W
 Noise level: <70dB(A), 1,6 m above floor level, 1 m from source
 Main measurements: 730x510x1115 mm (WxDxH)
 Weight: 65-85 kg

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Cetetherm

NIBE GROUP MEMBER