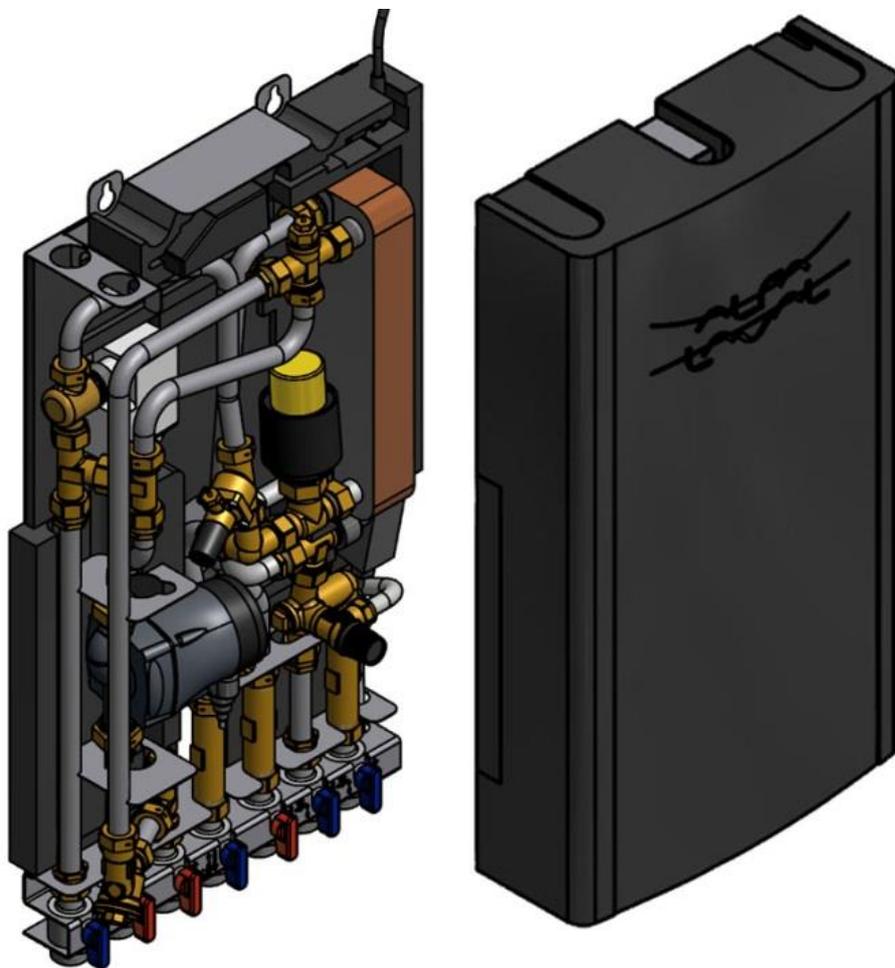




Installation, service and operating instruction Alfa Laval Micro

Heating & domestic hot water substation for apartments and single family houses



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1 General information

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

1.1 Comfort

Alfa Laval Micro has fully-automatic temperature control for heating and hot water. The hot water is controlled and maintained at the desired temperature. The heating is controlled in relation to desired room temperature.

1.2 Installation

Compact dimensions, light weight, well arranged plumbing and factory-complete internal wiring – all make installation very simple. A pre-programmed control unit and a power cable already fitted with a plug make things even simpler to allow immediate start-up.

Micro 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.

1.3 Long-term security

The heat exchanger plates and all piping are manufactured in acid-resistant stainless steel. All components are closely matched and carefully tested for function in accordance with Alfa Laval's quality assurance system ISO9001:2008.

For future servicing requirements, all components are easily accessible and individually replaceable.

1.4 CE-marking

Alfa Laval Micro follows the rules and legislation specified in the Declaration of Conformity, see [section 22](#). To maintain the validity of the CE marking, only identical replacement parts must be used.

1.5 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 primary heating water are very high. **Only qualified technicians** are allowed to work with the 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 substation may get very hot and should not be touched.



When starting up the 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 heating circulation by first opening the valves in the primary heating supply and then return lines, to avoid pollutions in the system. Open the valves slowly to avoid pressure surges.

1.6 Micro STC and Micro STC2 warnings



Before the substation 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 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.



Do not shut of the electrical supply to the room thermostat, this will damage the circulation pump, valves, actuators etc.

2 Operating instructions

2.1 General operation

The 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.

Micro has automatic temperature control for hot water. This measures the temperature of the hot water in the heat exchanger and automatically controls the primary flow.

The hot water temperature is controlled by a temperature control system which is set to about 50 °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.

After adjustment, the Micro 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.

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 medium's supply and return flow.

2.2 Heating operation Alfa Laval Micro STC and Alfa Laval Micro STC2

With an Alfa Laval Micro STC or an Alfa Laval Micro STC 2, the heating circuit is controlled in relation to outdoor temperature (option) and/or desired room temperature by means of a room thermostat 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.

Micro STC2 has an extra heating connection that can be connected to radiators or towel heating.

2.3 Heating operation Alfa Laval Micro RTC

With an Alfa Laval Micro RTC, the heating circuit is controlled with a desired room temperature by means of a room thermostat. When the measured room temperature is too low according to desired room temperature, the relay box sends a signal to open the relay.

2.4 Safety equipment/inspection

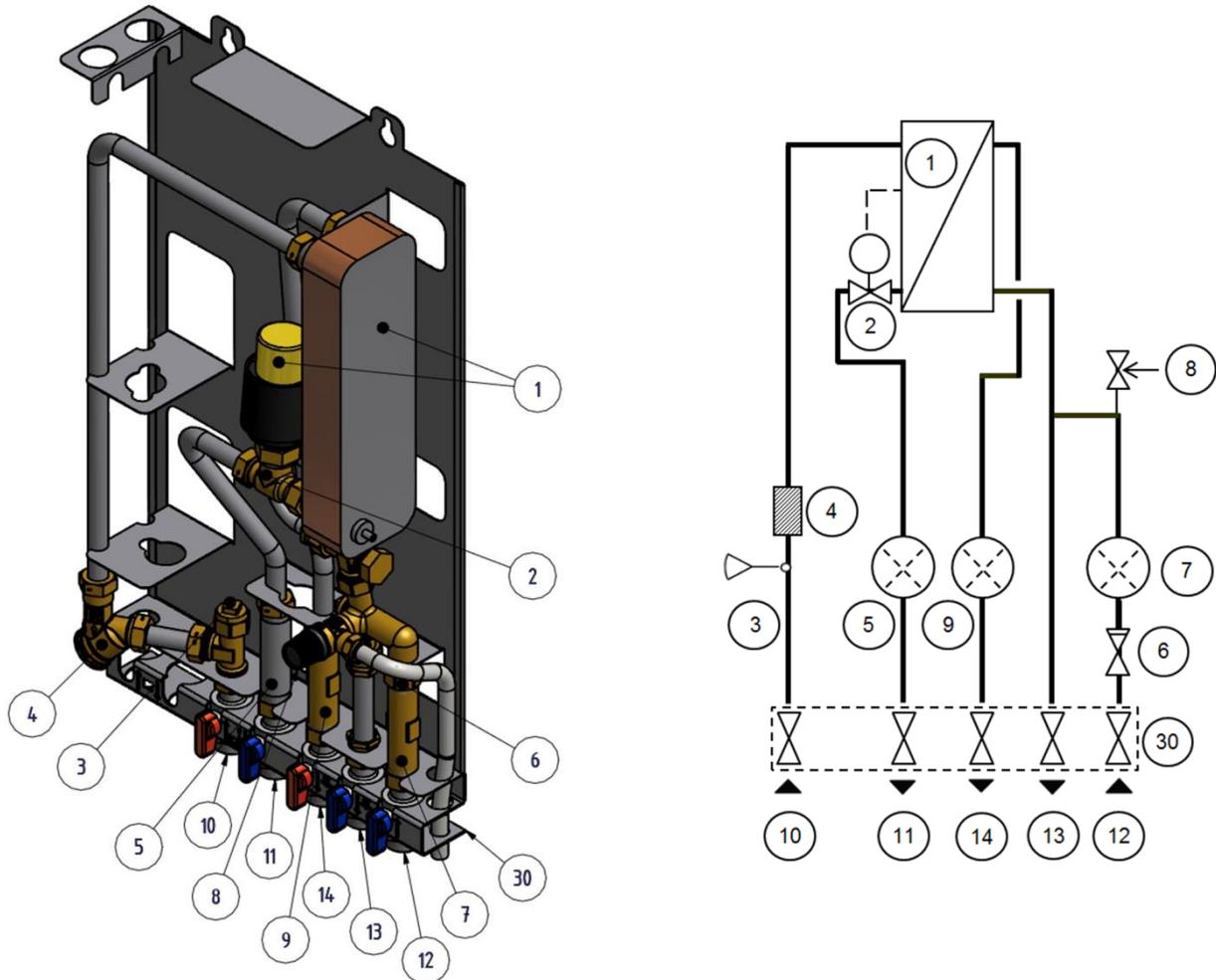
- Daily inspection to check for leaks from pipes or components.
- Weekly inspection to make sure that the operation of the heating and hot water control systems is stable and that the temperature does not fluctuate. Temperature hunting causes unnecessary wear of valves, thermostats and heat exchangers.
- 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.

3 Product overview

Note: The product overview pictures are shown without the insulation.

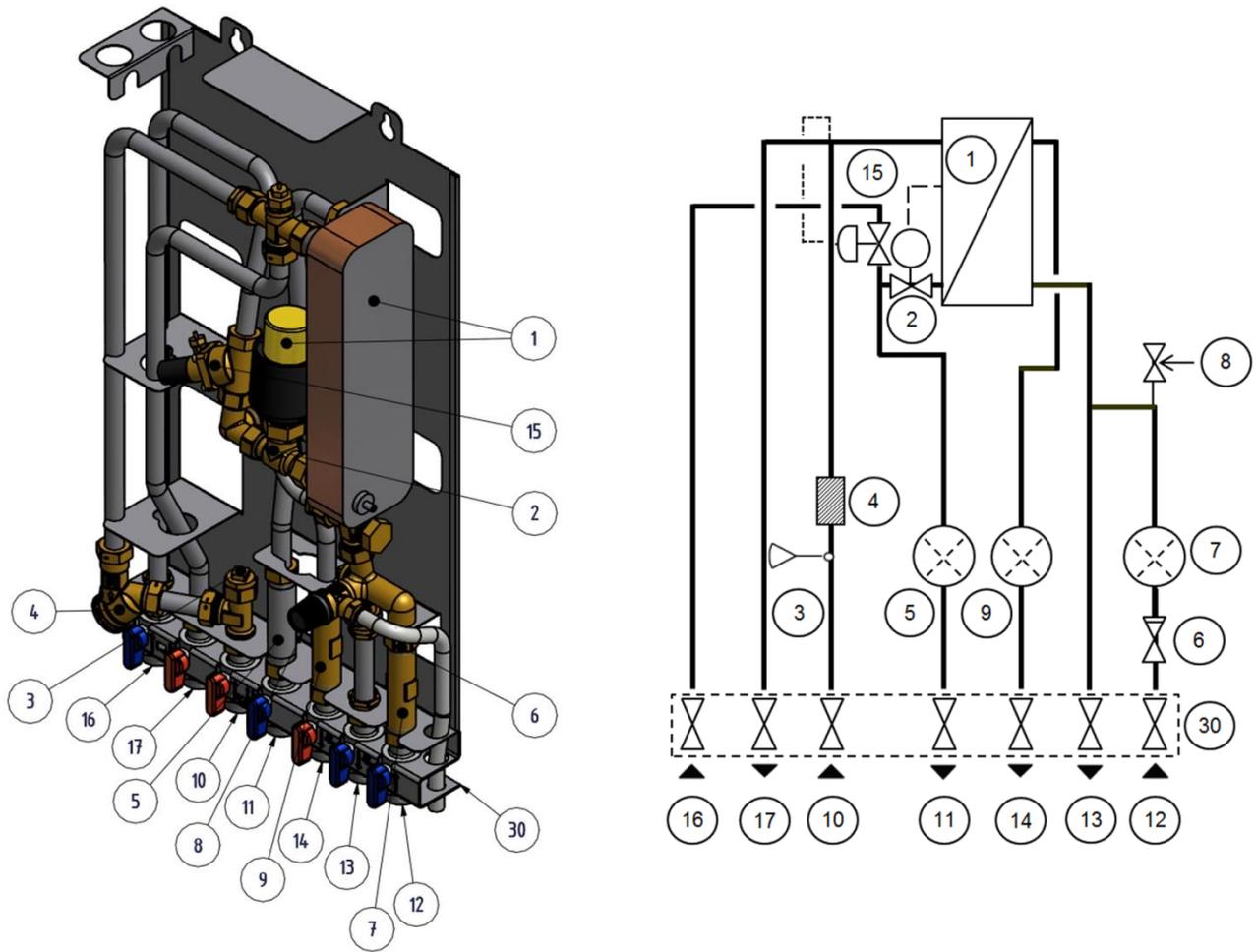
3.1 Product overview AquaMicro



Picture 1

1	Heat exchanger and temperature controller for hot water	9	Adapter for Hot water flow meter
2	Control valve for hot water	10	Heating network media, supply
3	Temperature sensor connection, heating media supply	11	Heating network media, return
4	Filter for heating media	12	Cold water (cw)
5	Adapter for energy meter	13	Cold water outlet (cw)
6	Check valve for cold water	14	Hot water (hw)
7	Adapter for Cold water flow meter	30	First fix jig including shut-off valves (option)
8	Safety valve for domestic hot water		

3.2 Product overview Micro DPC

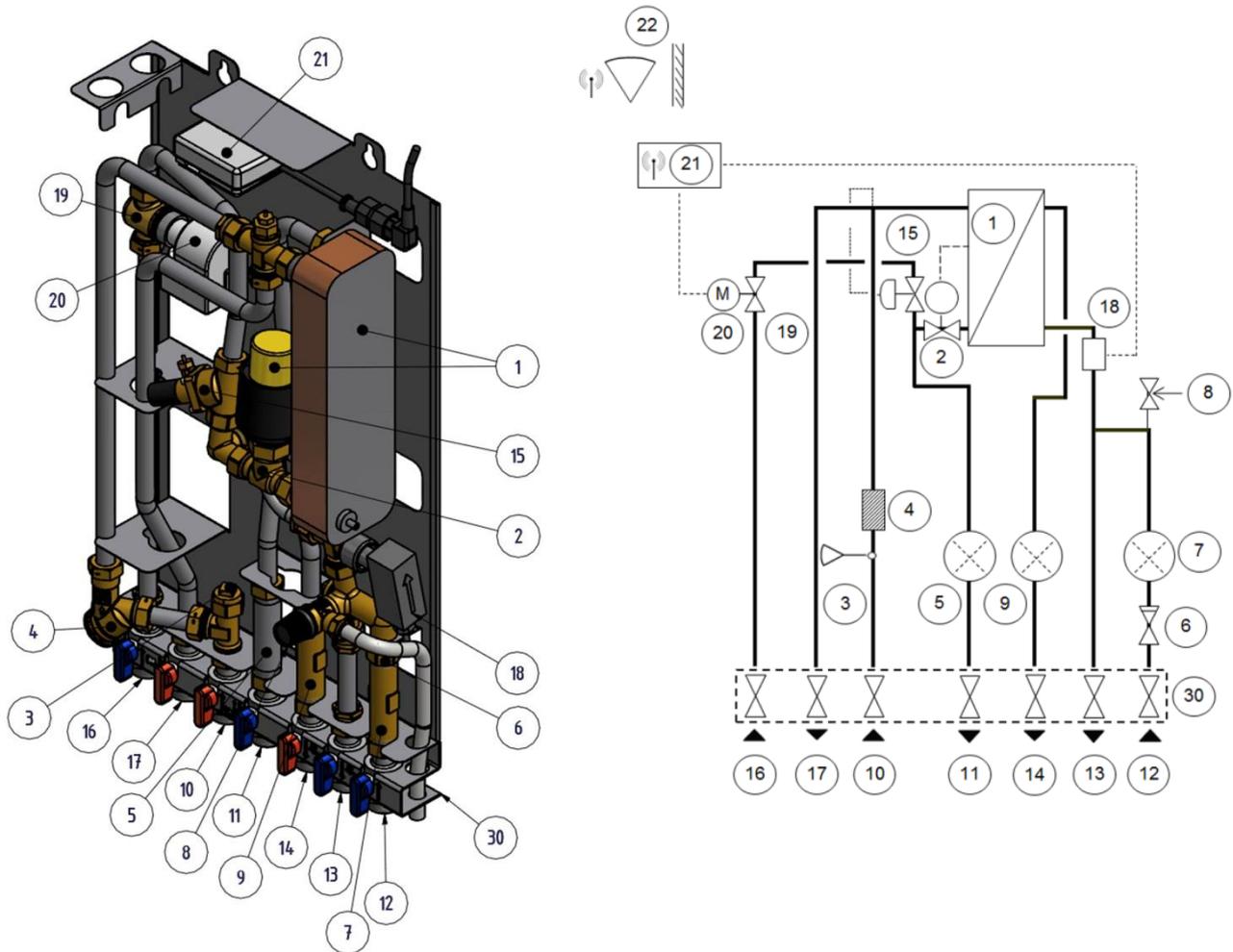


Picture 2

1	Heat exchanger and temperature controller for hot water	10	Heating network media, supply
2	Control valve for hot water	11	Heating network media, return
3	Temperature sensor connection, heating media supply	12	Cold water (cw)
4	Filter for heating media	13	Cold water outlet (cw)
5	Adapter for energy meter	14	Hot water (hw)
6	Check valve for cold water	15	Differential pressure controller
7	Adapter for Cold water flow meter	16	Heating circuit, return
8	Safety valve for domestic hot water *)	17	Heating circuit, supply
9	Adapter for Hot water flow meter	30	First fix jig including shut-off valves (option)

*) included depending on model

3.3 Product overview Micro RTC



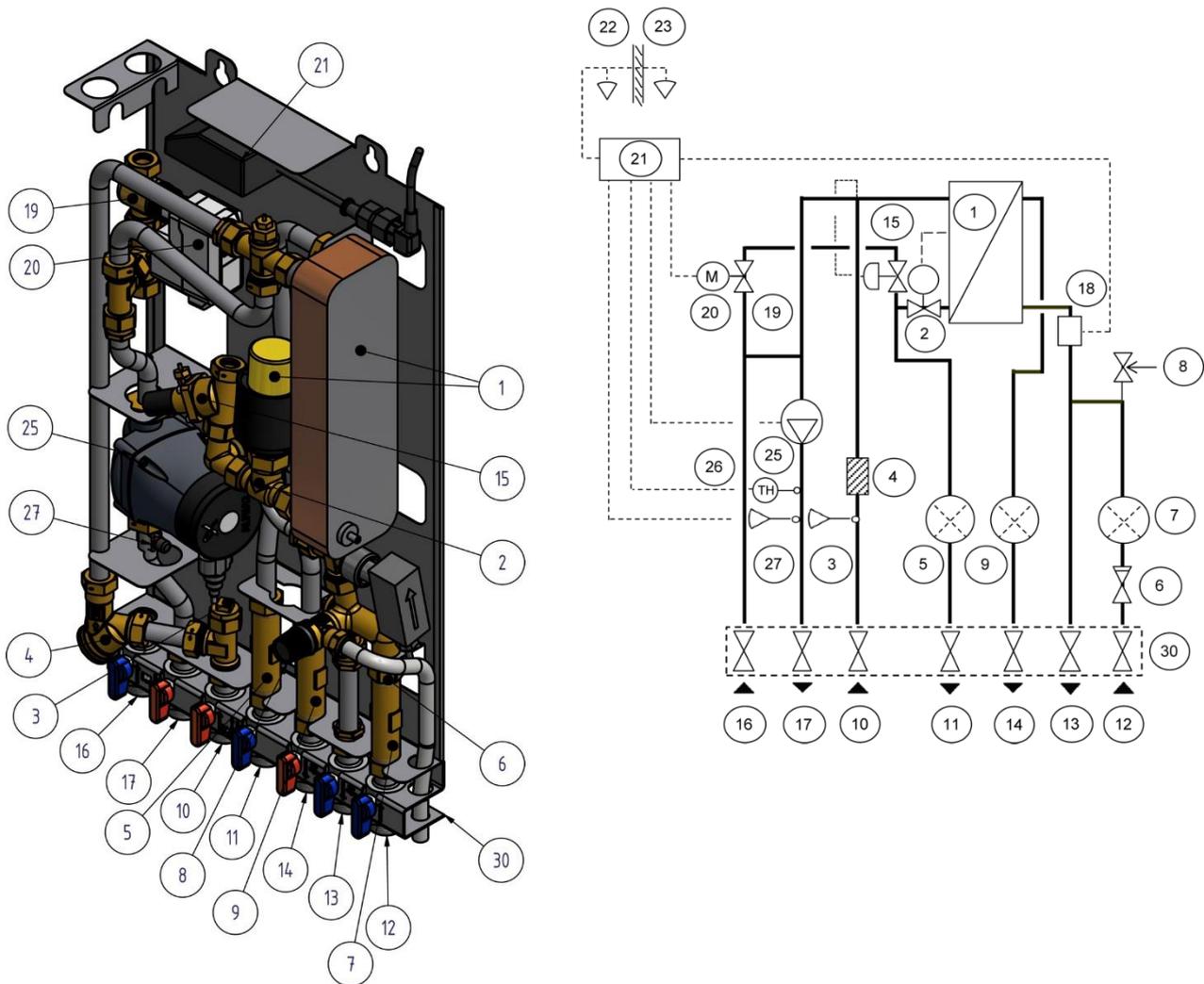
Picture 3

1	Heat exchanger and temperature controller for hot water
2	Control valve for hot water
3	Temperature sensor connection, heating media supply
4	Filter for heating media
5	Adapter for energy meter
6	Check valve for cold water
7	Adapter for Cold water flow meter
8	Safety valve for domestic hot water *)
9	Adapter for Hot water flow meter
10	Heating network media, supply
11	Heating network media, return
12	Cold water (cw)

13	Cold water outlet (cw)
14	Hot water (hw)
15	Differential pressure controller
16	Heating circuit, return
17	Heating circuit, supply
18	Flow switch for domestic hot water *)
19	Control valve, heating circuit
20	Actuator, heating circuit
21	Connection box for electric power and sensors, heating circuit
22	Room thermostat/control panel *)
30	First fix jig including shut-off valves (option)

*) included depending on model

3.4 Product overview Micro STC



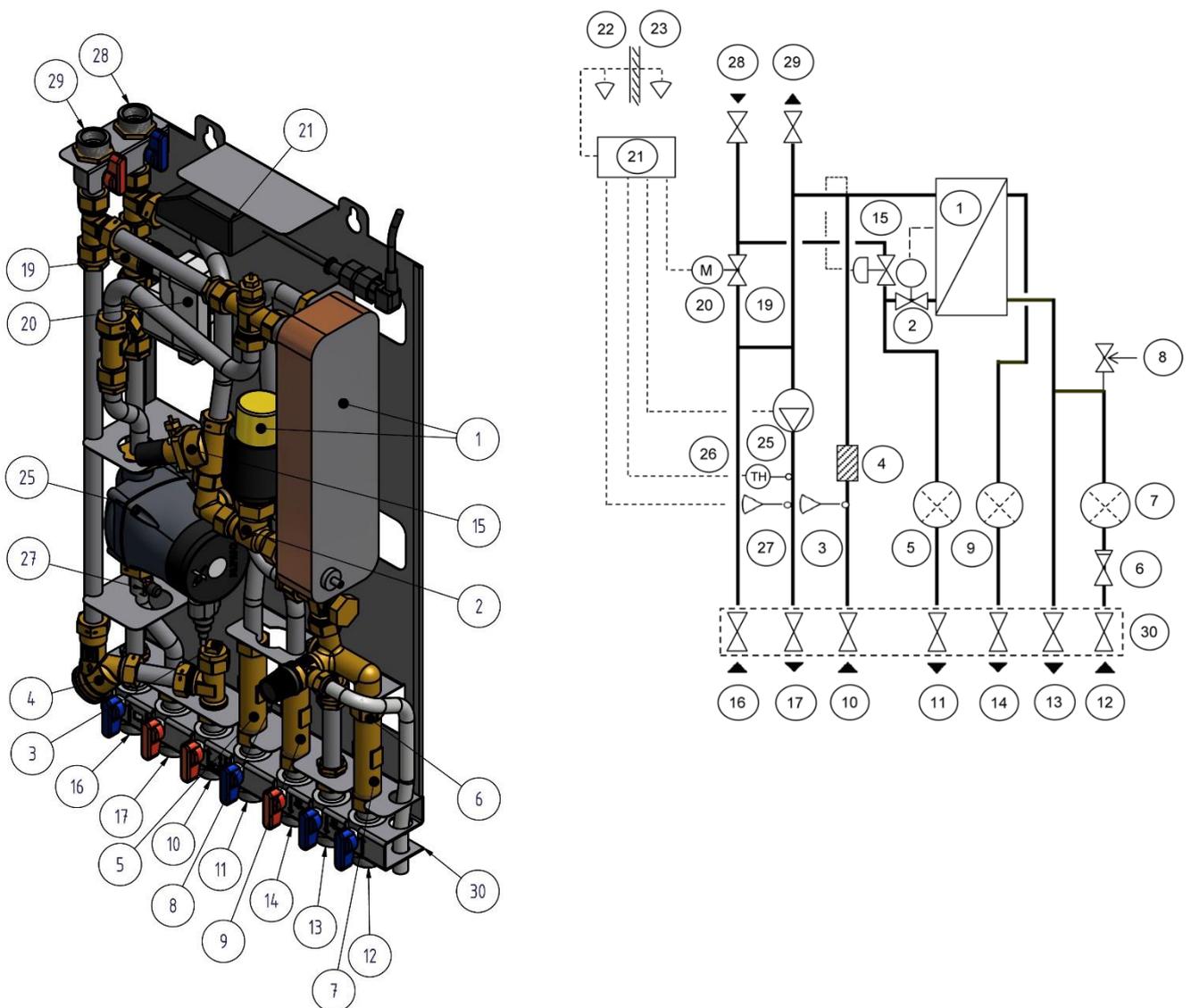
Picture 4

1	Heat exchanger and temperature controller for hot water
2	Control valve for hot water
3	Temperature sensor connection, heating media supply
4	Filter for heating media
5	Adapter for energy meter
6	Check valve for cold water
7	Adapter for Cold water flow meter
8	Safety valve for domestic hot water *)
9	Adapter for Hot water flow meter
10	Heating network media, supply
11	Heating network media, return
12	Cold water (cw)
13	Cold water outlet (cw)
14	Hot water (hw)

15	Differential pressure controller *)
16	Heating circuit, return
17	Heating circuit, supply
18	Flow switch for domestic hot water *)
19	Control valve, heating circuit
20	Actuator, heating circuit
21	Connection box for electric power and sensors, heating circuit
22	Room thermostat/control panel
23	Outdoor temperature sensor *)
25	Circulation pump, heating circuit
26	Safety thermostat (option)
27	Supply temperature sensor, heating circuit
30	First fix jig including shut-off valves (option)

*) included depending on model

3.5 Product overview Micro STC2



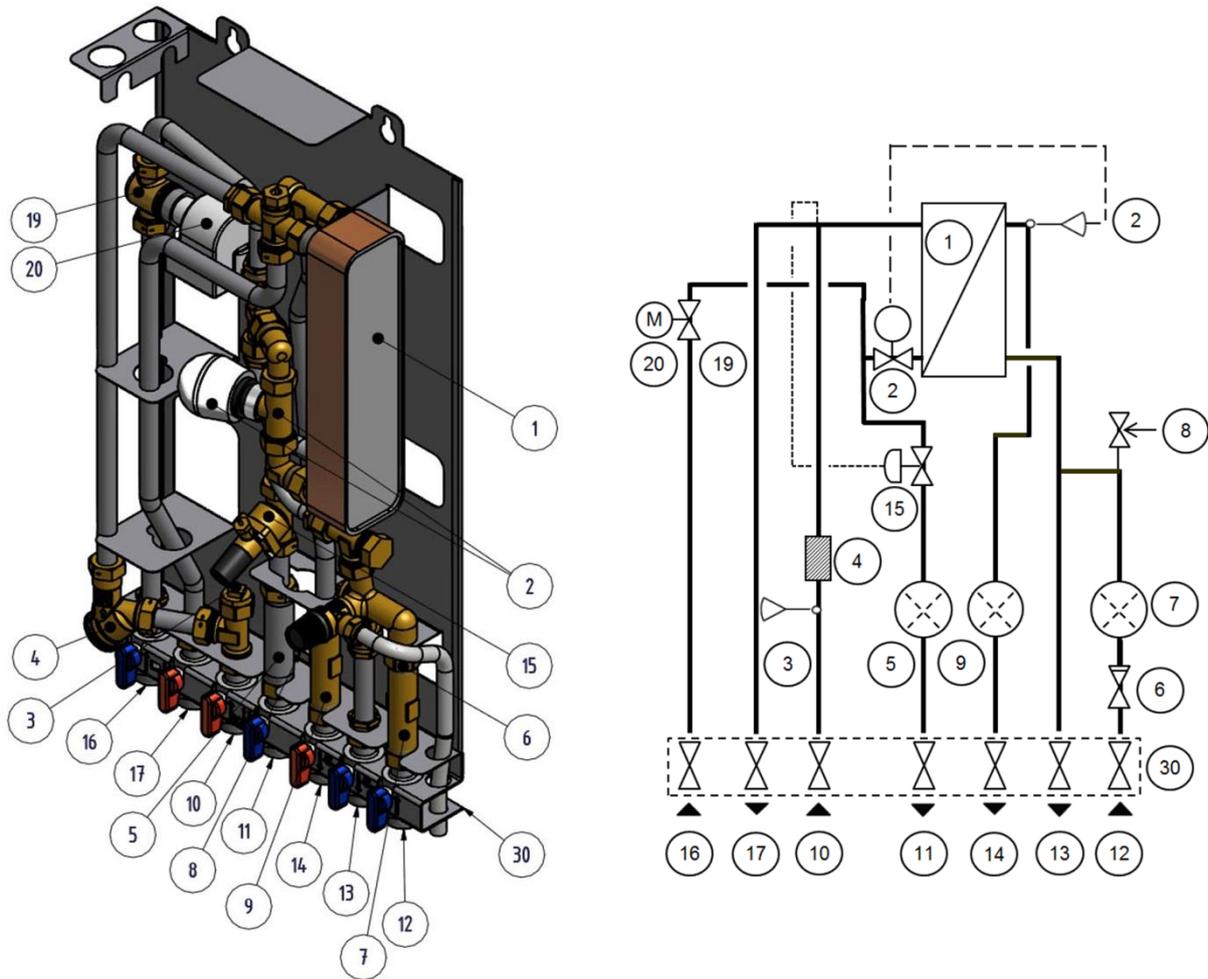
Picture 5

1	Heat exchanger and temperature controller for hot water
2	Control valve for hot water
3	Temperature sensor connection, heating media supply
4	Filter for heating media
5	Adapter for energy meter
6	Check valve for cold water
7	Adapter for Cold water flow meter
8	Safety valve for domestic hot water *)
9	Adapter for Hot water flow meter
10	Heating network media, supply
11	Heating network media, return
12	Cold water (cw)
13	Cold water outlet (cw)
14	Hot water (hw)

15	Differential pressure controller *)
16	Heating circuit, return
17	Heating circuit, supply
19	Control valve, heating circuit
20	Actuator, heating circuit
21	Connection box for electric power and sensors, heating circuit
22	Room thermostat/control panel
23	Outdoor temperature sensor
25	Circulation pump, heating circuit
26	Safety thermostat (option)
27	Supply temperature sensor, heating circuit
28	Heating circuit primary temp, return
29	Heating circuit primary temp, supply
30	First fix jig including shut-off valves (option)

*) included depending on model

3.6 Product overview Micro HTC

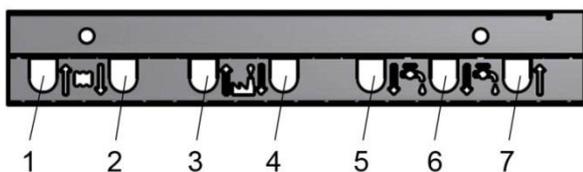


Picture 6

1	Heat exchanger and temperature controller for hot water	11	Heating network media, return
2	Control valve for hot water	12	Cold water (cw)
3	Temperature sensor connection, heating media supply	13	Cold water outlet (cw)
4	Filter for heating media	14	Hot water (hw)
5	Adapter for energy meter	15	Differential pressure controller
6	Check valve for cold water	16	Heating circuit, return
7	Adapter for Cold water flow meter	17	Heating circuit, supply
8	Safety valve for domestic hot water	19	Control valve, heating circuit
9	Adapter for Hot water flow meter	20	Actuator, heating circuit
10	Heating network media, supply	30	First fix jig including shut-off valves (option)

3.7 Symbols on the first fix-jig

The first fix-jig has symbols that show which supply and return pipe that should connect to the different connection points.



Picture 7

1	Heating circuit, return
2	Heating circuit, supply
3	Heating network media, supply
4	Heating network media, return
5	Hot water (hw)
6	Cold water outlet (cw)
7	Cold water (cw)

4 Installation

4.1 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 exchanger as this may weaken them. Avoid lifting the unit by holding the heat exchanger.

Note: Risk of injury lifting heavy objects.

4.1.1 Unpacking Micro RTC

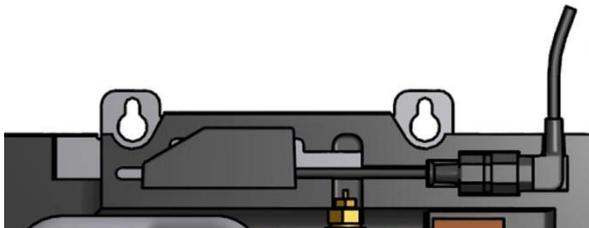
- Make sure that each individual room thermostat and its relay box are kept together. They are pre-configured at the factory. If they are separated see [7 Binding/rebinding the CM721](#).

4.2 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 in 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 primary heating supplier. The available differential pressure should be for:
 - AquaMicro: at least 50kPa and at most 600 kPa
 - Micro DPC, RTC STC, STC2 and HTC at least 50 kPa and at most 400 kPa

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

- Flush out the heating and hot water systems.
- Mount the first fix-jig (option) to the connection points. Tighten with 45 Nm.
- Carefully loosen the electrical plug from the insulation and attached it to the correct power cable. See [Picture 8](#). Make sure that the cable is fasten in the insulation



Picture 8

4.3 Mounting

- Mount the substation on the wall using four screws or bolts suitable for the material of the wall and for the weight of the unit. The unit may be mounted at any height on the wall, but a distance of 1500 – 1800 mm from floor to keyhole fixing may be taken as a guide. The hole pattern for screws/bolts and the piping connection measures is shown in [20.3 Measure sketch](#).
- Drainage pipe from the safety valve 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.
- Retighten all connections, including those made at the factory. Tighten with 45 Nm. 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.

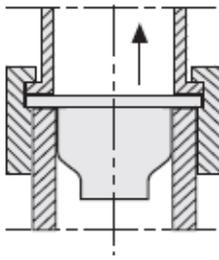
Alfa Laval Micro

Installation, service and operating instruction

- Connect the pipe work to the first fix-jig (option) connection points. Tighten with 45 Nm.
- Bleed the heating system.
Start the heating circulation pump with the highest output setting. Let the heating system heat up and bleed the system again.
- Set the pump capacity of the heating circulation pump according to the pressure head diagram.
Use the lowest setting that manages the heating demand for best electrical efficiency.

4.4 Mounting options general

- If the substation is connected to a system sensitive to high temperature or to a low temperature system, for example floor heating, a safety thermostat must be mounted and activated before start up. See [21.1](#).
For more information; contact the supplier of the under-floor heating system.
- Install enclosed non-return valve for cold water in cold water pipe, see [Picture 9](#).



Picture 9; Installation of non-return valve in cold water pipe.

4.4.1 Mounting options Micro RTC

- See [6 Installing the CM721 wireless system](#).

4.4.2 Mounting options Micro STC

- See [5 Installing the room thermostat CM737](#).
- Mount the outdoor temperature sensor (option) on the north side of the building, 2 metres above the ground, or higher. See [5.4 Installing the outdoor temperature sensor \(option\)](#).

4.5 Adjustments and settings general

- Open up 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 valve.
- 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. It takes about 20 seconds to get stable tap water temperature. The temperature should be approximately 50°C, this corresponds to a set point of approximately 1,5 on the actuator. See chapter [18 Service instructions](#) for adjusting hot water temperature.

Alfa Laval recommends that the tap water temperature is set to 10° less than the primary inlet temperature.

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

- 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.



Picture 10

4.5.1 Adjustments and settings With a Micro HTC:

Recommended set point for the actuator is 5 or 6.

Set point	2	3	4	5	6	7
°C (approx.)	20	30	40	50	60	70

Alfa Laval recommends that the tap water temperature is set to 15° less than the primary inlet temperature with a Micro HTC

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

- 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.

4.6 Commissioning advice Micro RTC and Micro STC

The room thermostat has been set at the factory. If any function needs tuning, values can be changed see [12 Activation of installer parameters](#). Initially, the commissioning process should be carried out with the factory settings.

4.7 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.

4.8 User instruction HTC hot water actuator

Hot water temperature in apartments or one family houses can be set to about 50°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.

5 Installing the room thermostat CM737

5.1 General

CM737 in Micro STC and Micro STC2 controls the supply temperature to the heating system. When connecting the unit to the power supply, CM737 verifies the connected sensors and then automatically chooses to control by room or outdoor temperature sensor or both.

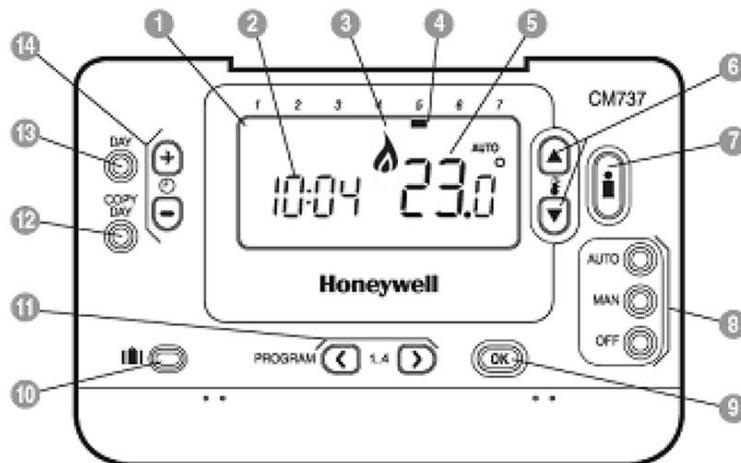
5.2 Room thermostat CM737

Description

The Honeywell CM737 is a programmable heating controller designed to control the heating system efficiently, providing comfortable temperatures when you are at home and energy savings when you are away.

Features

- Ergonomic user interface
- Large LCD (Liquid Crystal Display) Screen
- Four independent temperature levels per day, from 5°C to 35°C
- Built-in Memory holds the user program indefinitely
- Holiday button saves energy by letting you reduce the temperature for 1 to 99 days
- 7- days heating program to match your lifestyle, and maximising energy savings



Picture 11

1 LCD display	6 Temperature change buttons	11 Program buttons
2 Time display	7 Temperature enquiry button	12 Copy day button
3 Heating indicator	8 Operating mode buttons	13 Day select button
4 Day indicator	9 OK button, green	14 Time change buttons
5 Temperature display	10 Holiday function button	

Micro STC and Micro STC2 with CM737 are supplied fully wired. The wiring conforms to the applicable rules for CE marking and has undergone electrical safety tests testing and function tests.

OK-button (9)

When changing settings/values in CM737 the numbers in the display is flashing. Confirm the new settings with the green OK-button (9) and the new setting will be confirmed.

Info-button (7)

Operating with outdoor compensation, target room temperature is shown on the display

Press the Info-button to review:

- target room temperature
- error code, if any
- the text **ext** and measured outside temperature (if connected)
- measured supply water temperature.

After ca. five seconds the display return to show measured room temperature.

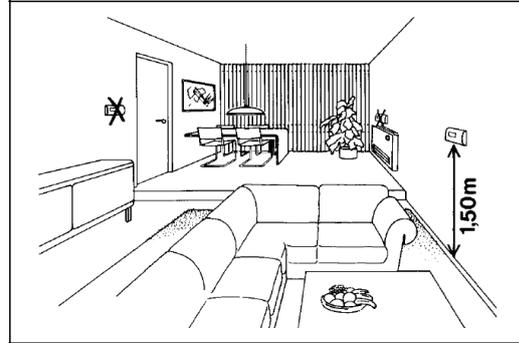
5.3 Installing the room thermostat



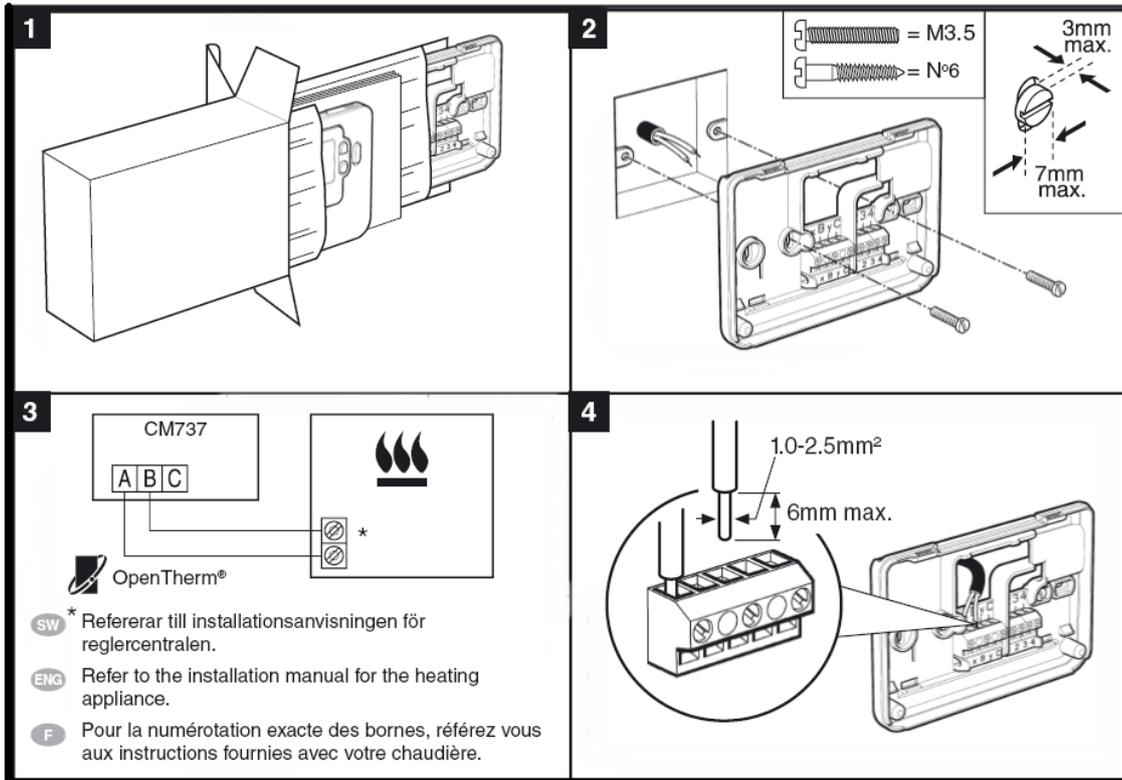
Before installation make sure that the electrical power supply is disconnected.

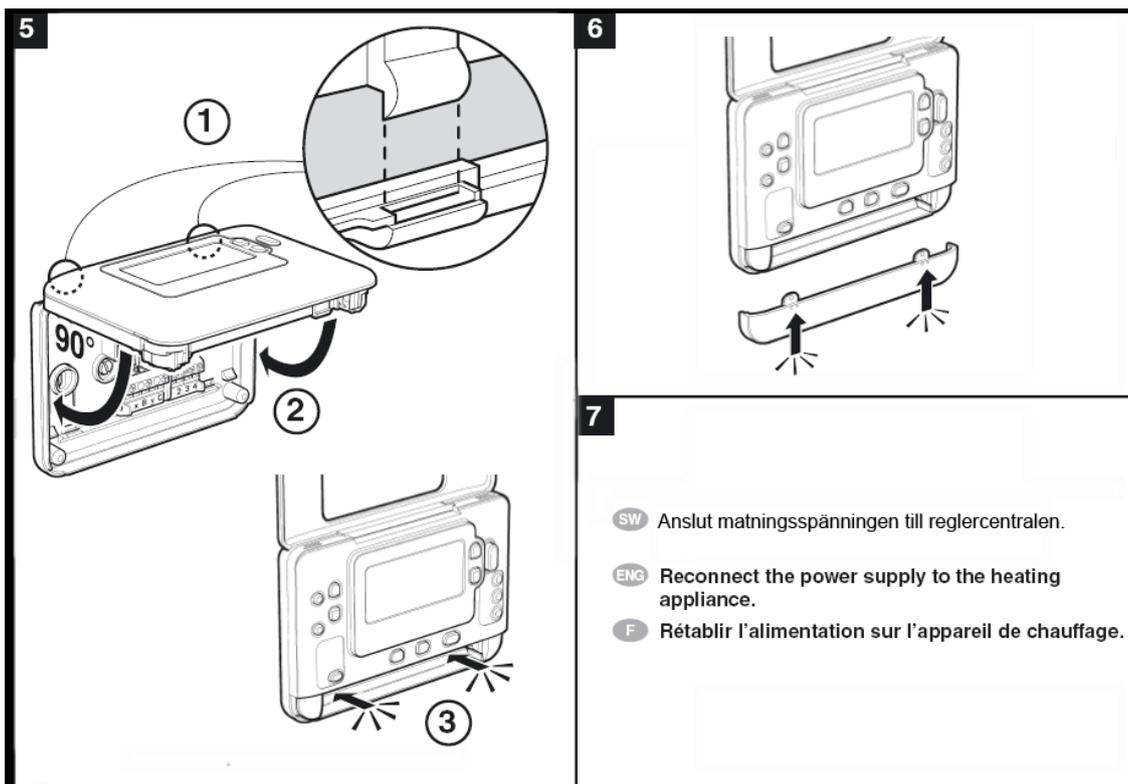
Install the room thermostat in the living space per following:

- A suitable installation is about 1.5 meters above floor and on an inner wall.
- The room thermostat must not be combined with other thermostats in the same control zone.



Picture 12





Picture 13

5.4 Installing the outdoor temperature sensor (option)

Connect the outdoor temperature sensor to the terminal strip in accordance with the electrical diagram, remove any resistor.

If the outdoor temperature sensor is connected later, for example in a construction period, the current must be disconnected for a few minutes.

Set parameter 14 per requested compensation; see [5.6 Configure the room thermostat after installation](#).

5.5 Starting up and component control of the room thermostat CM737

Note: The substation must be filled with water before starting the room thermostat, if not the pump can be damaged.

The room thermostat, CM737, controls the supply temperature to the heating system. When connecting the unit to the power supply, the CM737 verifies the connected sensors and then automatically chooses to control by room or outdoor temperature sensor.

- Put the electrical cable from the control panel into a wall outlet.
- Check the actuator and pump function. In start-up mode, the components manoeuvres by the following schedule:
 - 10s actuator closes
 - 10s actuator opens
 - 10s actuator closes
 - 10s pump runs
 - 150s actuator closes
- After approximately another 4 minutes CM737 changes from start up to normal regulation.
- Press the **MAN** (8) button for a fixed set point (no reduction) of the room temperature.
- Adjust the room temperature with the increase/decrease buttons on the right (6).

By outdoor temperature compensation this change represents a standard parallel shift of the heat curve, recalculated for room temperature. For more details see chapter [16 Pump settings and pump performance](#).

5.6 Configure the room thermostat after installation

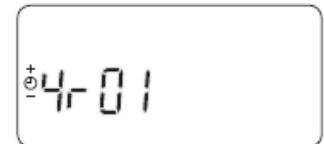
CM737 can be configured in three different ways. All installation parameters can be found in the parameter list under category 1, see [12.2](#).

Set parameter 14, under category 1, according to requested compensation.

- Outdoor compensation, require a connected outdoor temperature sensor:
Set parameter 14 to 1
- Room compensation: Set parameter 14 to 0.
- Outdoor and room compensation, require a connected outdoor temperature sensor:
Set parameter 14 to 2.

5.7 Setting the date

- Press the DATE/DAY button to begin setting the date. When you set the date for the first time after the batteries are inserted, the display will show:
Press the   or  buttons to set the current day of the month (e.g. d 01 = 1st day of the month) then press the green  button to confirm.
- Press the   or  buttons to set the current month of the year (e.g. m 01 = January) then press the green  button to confirm.
- Press the   or  buttons to set the current year (e.g. yr. 06 = 2006) then press the green  button to confirm.
The date is now stored.



5.8 Setting the time

- Press either of the   or  buttons once to enter timer setting mode. The LCD screen flashes the time digits. When the unit is powered for the first time the display shows 12:00.
- Use the   or  buttons to set the correct time then press the green  button to confirm.
Each press of the buttons will change the time by one minute and holding them down will change the time slowly at first and get progressively quicker.



Note: to leave this mode, press the AUTO, MAN or OFF buttons.

6 Installing the CM721 wireless system

6.1 General

Note: The individual room thermostat (CM721) and relay box (BDR91) in system packs is pre-configured at the factory and therefore SHOULD be installed at the same site.

This makes the installation process fast and easy, but if products from individual system packs are separated, or mixed with other pre-configured system packs during installations please refer to section [7 Binding/rebinding the CM721](#), to bind the desired units together and allow them to communicate with each other.

The CM721, room thermostat communicates with the relay box on an 868MHz Radio Frequency (RF) band to control a single heating system component such as a boiler, pump or zone valve. Neither product will communicate with other RF products that use different frequencies or communication protocols.

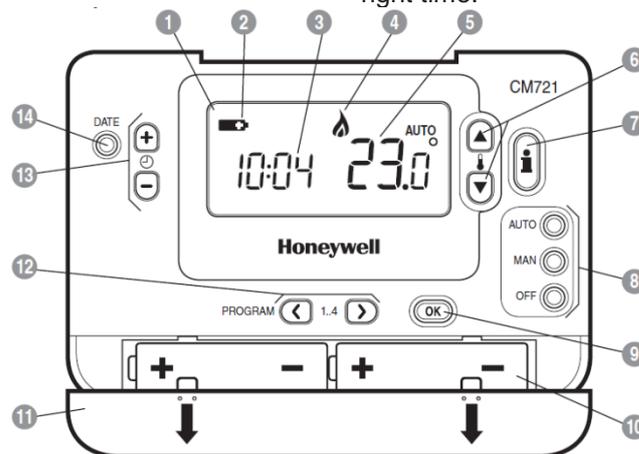
6.2 Room thermostat CM721

Description

The Honeywell CM721 is a programmable room thermostat designed to control the heating system efficiently, providing comfortable temperatures when you are at home and energy savings when you are away.

Features

- Ergonomic user interface
- Large LCD (Liquid Crystal Display) Screen
- Four independent temperature levels per day, from 5°C to 35°C
- Built-in Memory holds the user program indefinitely
- Automatic summer/winter time change.
- Optimum start to achieve the right temperature at the right time.



Picture 14

1	LCD display	6	Temperature change buttons	11	Battery cover
2	Battery low indicator	7	Temperature enquiry button	12	Program buttons
3	Time display	8	Operating mode buttons	13	Time change buttons
4	Burner ON indicator	9	OK button, green	14	Set date button
5	Temperature display	10	Battery compartment		

OK-button (9)

When changing settings/values in CM737 the numbers in the display is flashing. Confirm the new settings with the green OK-button (9) and the new setting will be confirmed.

Info-button (7)

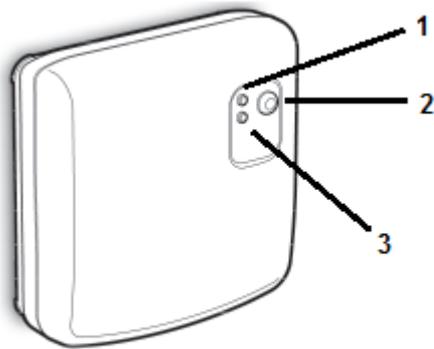
Operating with outdoor compensation, target room temperature is shown on the display

Press the Info-button to review:

- target room temperature
- error code, if any
- measured supply water temperature

After ca. five seconds the display return to show measured room temperature.

6.3 Relay box BDR91



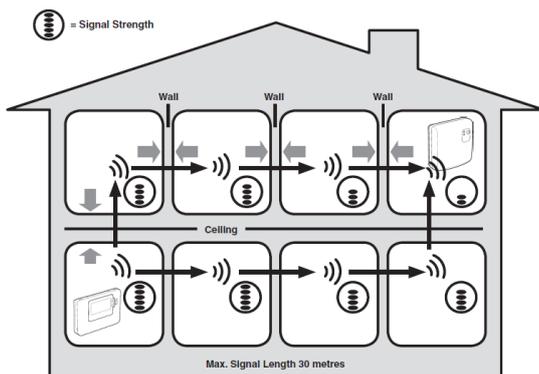
1. Relay status indicator, green LED
2. Manually override button
3. Fault indicator, red LED

Picture 15

6.4 Installation information

Special care must be taken during installation with product that communicates using RF technology. The location of the RF components as well as the building structure may influence performance of the RF system.

Within a typical residential building the two products should communicate reliably within a 30m range. It is important to take into consideration that wall and ceilings will reduce the RF signal. The strength of the RF signal reaching the relay box depends on the number of walls and ceilings separating it from the room thermostat, as well as the building construction – see [Picture 16](#) for an example of typical signal strength reduction. Walls and ceilings reinforced with steel or plasterboard walls lined with metal foil reduce the RF signal significantly more.



Picture 16

When a position is selected for the room thermostat, check the position using the RF Communication Test mode, described in section [6.6.1 Locating and mounting the room thermostat](#). If the position is unsuitable the relay box will not respond and an alternative position must be selected.

6.5 Preparing the room thermostat

6.5.1 Installing the batteries

The thermostat constantly monitors the battery power level, which typically lasts for about 2 years before needing replaced. When the power is running low a flashing symbol will be displayed on the screen.

- Lift the front cover of the thermostat to reveal the battery cover and product controls.
- Remove the battery cover by pressing down and sliding out.
- Insert the 2 x AA LR6 Alkaline Batteries supplied with the thermostat, ensuring the correct orientation).
- After a short pause the thermostat will display information on the screen and is now ready for use.
- Replace the battery cover by sliding it firmly back into the front of the thermostat.

Note: While changing the batteries the program settings will be stored but the time needs to be adjusted.

6.5.2 Setting the Date

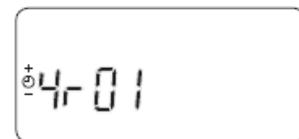
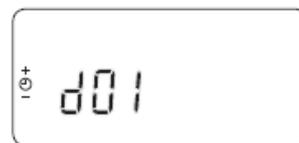
- Press the DATE/DAY button to begin setting the date. When you set the date for the first time after the batteries are inserted, the display will show:

Press the   or  buttons to set the current day of the month (e.g. d 01 = 1st day of the month) then press the green  button to confirm.

- Press the   or  buttons to set the current month of the year (e.g. m 01 = January) then press the green  button to confirm.

- Press the   or  buttons to set the current year (e.g. yr. 06 = 2006) then press the green  button to confirm.

The date is now stored.



6.5.3 Setting the time

- Press either of the   or  buttons once to enter timer setting mode. The LCD screen flashes the time digits. When the unit is powered for the first time the display shows 12:00.

- Use the   or  buttons to set the correct time then press the green  button to confirm.

Each press of the buttons will change the time by one minute and holding them down will change the time slowly at first and get progressively quicker.

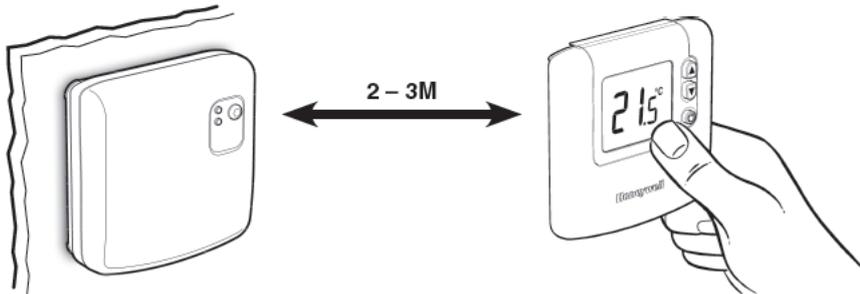


Note: to leave this mode, press the AUTO, MAN or OFF buttons.

6.6 RF Communication check (test mode)

To check the RF communication:

- Hold the room thermostat about 2-3 meters from the installed relay box.



Picture 17

- On the room thermostat, press the **OFF** button, then press the  and  buttons together with the  button for 3 seconds.
- The unit will display 'TEST TRANSMIT' and it will send test signals to the relay box. The relay box will be flashing the green LED on every 6 seconds (relay output will remain off) for a maximum of 10 minutes.

NOTE: If the green LED is not switched at specified intervals, the red LED is flashing or if you are installing a replacement relay box or room thermostat, follow the procedures described in section [7 Binding/rebinding the CM721](#).

6.6.1 Locating and mounting the room thermostat

While still in the Test Mode, as described in section [6.6](#), the room thermostat should be located taking the following into consideration.

The room thermostat should be installed:

- in an open space for best performance as it is a radio frequency device
 - 1.2 meters above the floor and on an inner wall
 - at least 30 cm distance from any metal objects including wall boxes and at least 1 metre from any other electrical equipment e.g. radio, TV, PC etc.
 - do not mount onto metal wall boxes.
- On the room thermostat, press the  for 5 seconds. The display shows:



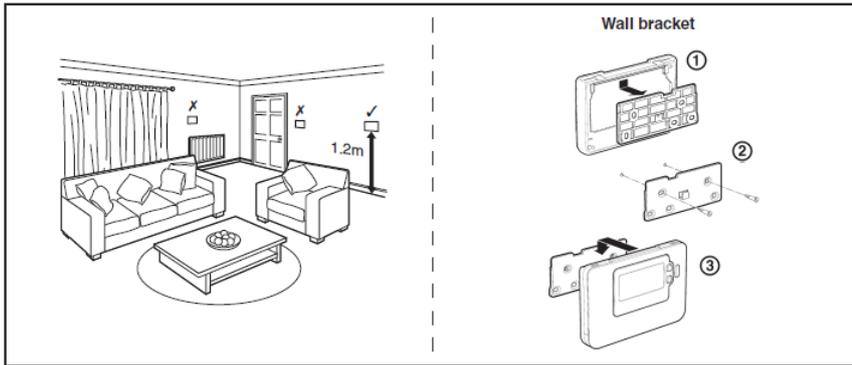
Picture 18

- The relay box's red light flashes the signal strength. Five flashes are perfect. If less than two flashes, look for another location.
- Exit the Test Mode by pressing the **AUTO** or **OFF** button on the room thermostat.
- Mount the room thermostat on the wall, with the wall brackets.

NOTE: It is recommended that the relay box is fully installed.

Alfa Laval Micro

Installation, service and operating instruction



Picture 19

6.7 System check

Check that the full system has been installed correctly:

- Press the button on the relay box, to make a temporary override.
- Check the boiler supply is on and check that the green LED on the relay box is off.
- Press the **MAN** button, on the room thermostat.
- Adjust the set point up to the maximum (35°C) by pressing the  button. The boiler turns on, green LED is ON at the relay box, after a few seconds and the  symbol appears on the room thermostat LCD display.
- Press the **OFF** button on the room thermostat. The boiler will go off (green LED **OFF** on relay box) after a few seconds and the  symbol disappears.
- Check the system operation by alternately pressing the **MAN** and **OFF** buttons several times, bearing in mind the switching delay referred to above.
- The installation is completed.
- Choose operating mode, see [8.1 Choosing the operating mode](#). Alfa Laval recommends **MAN** mode.
- The room thermostat has been set at the factory. If any function needs tuning, values can be changed with see [12.3 CM721– Installer parameters table](#). Initially, the commissioning process should be carried out with the factory settings.

7 Binding/rebinding the CM721

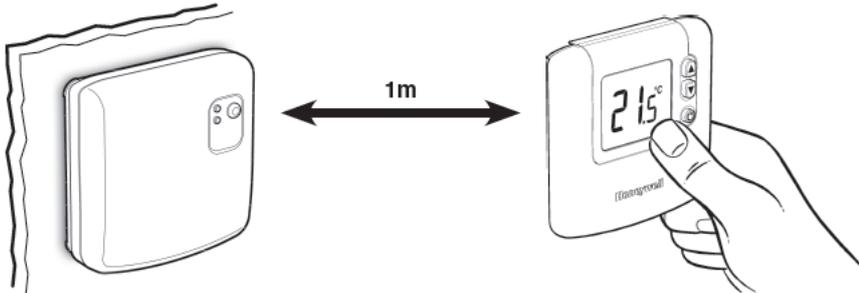
The pictures are general.

The binding operation is required if:

- Any of the system components (room thermostat or relay box) are replaced.
- The relay box has incorrect or no binding data stored e.g. when pre-bound system pack components have been mismatched.

Pairing the units

- During the binding procedure keep approximately 1m distance between the room thermostat and the relay box.

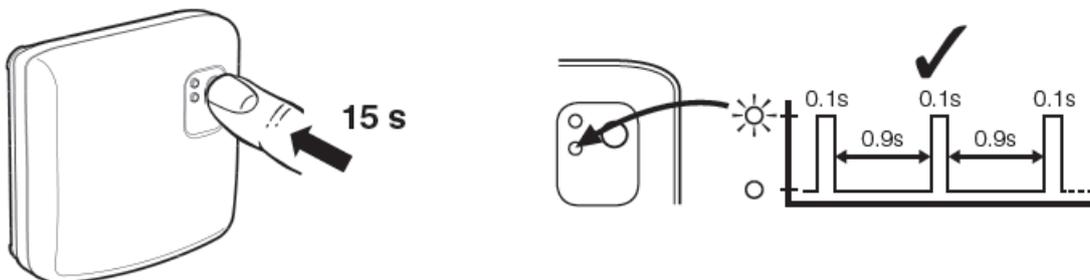


Picture 20

Reset stored data in the relay box

- Press and hold the relay box push button for 15 seconds to reset any previously stored data. After 15 seconds the red LED will change to flashing 0.1sec on/0.9sec off.

NOTE: After 5 seconds the red LED will start to flash 0.5sec on/0.5sec off, but continue to hold the button.

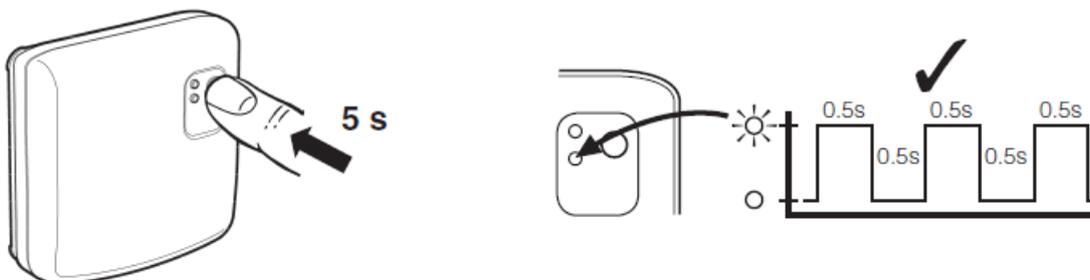


Picture 21

- Release the push button.

Put Relay Box into Binding mode

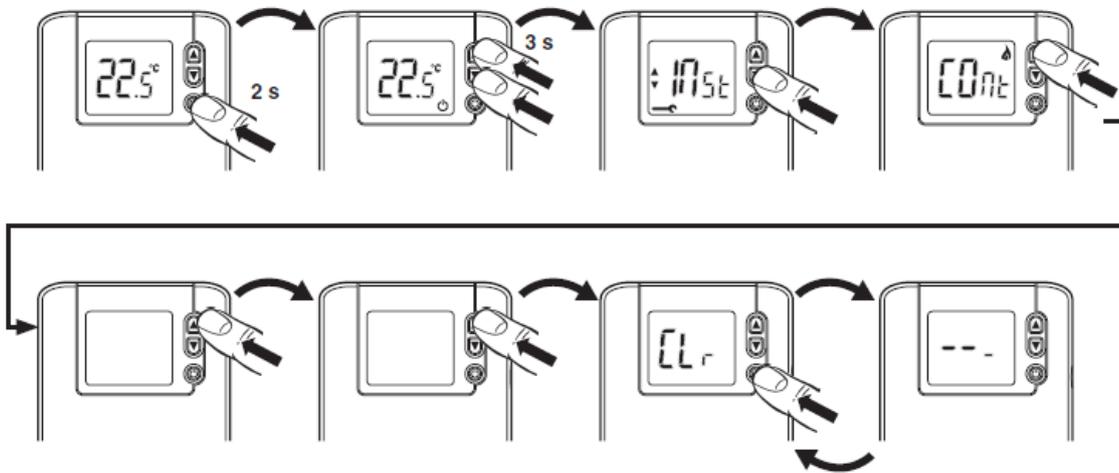
- Press and hold the relay box push button for 5 seconds to enter the binding mode. The Red LED will start flashing at 0.5sec on/0.5sec off to confirm the binding mode has been entered



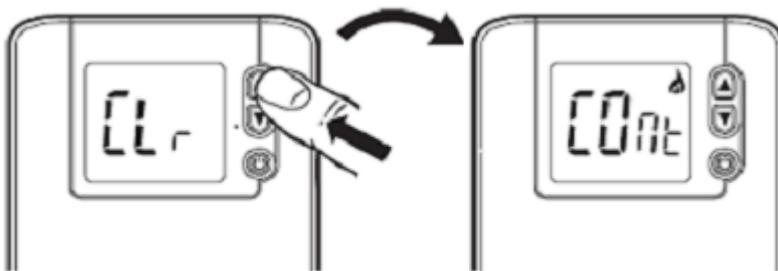
Picture 22

Reset stored data in the room unit (if required)

- Press the **OFF** button on the room thermostat. Then press the  and  buttons together along with the  button. The unit will display InSt and 'CONTROL BINDING'.



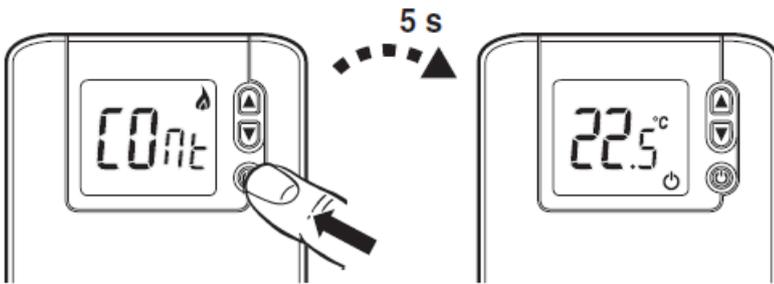
Picture 23
Set Room Unit into binding mode



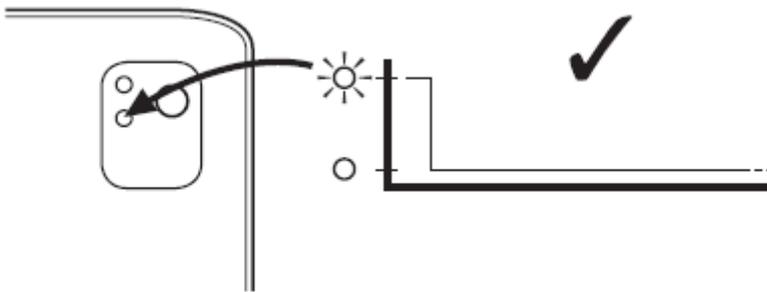
Picture 24

Send the binding signal

- Press the green **OK** button to send the binding signal out to the relay box. The red LED is switched off to confirm successful binding operation. If the red LED still flashes push the button again until binding is successful.



Picture 25
Acknowledgment of binding



Picture 26

- Go to chapter [6 Installing the CM721 wireless system](#) to setup the system.

8 Running the room thermostat CM737 and CM721

8.1 Choosing the operating mode

The room thermostat can operate in three different modes; Automatic, Manual or Off.

To set the operating mode press either of the **AUTO**, **MAN** or **OFF** buttons. The screen indicates which mode is currently active by displaying **AUTO**, **MAN** or **OFF**.

NOTE: Alfa Laval recommends the mode **MAN**.

- **AUTO (automatic)** the room thermostat follows the built-in temperature program, default or modified. Using this mode is the best way to maintain a high level of temperature comfort whilst maximising the energy savings.
- **MAN (manual)** the room thermostat acts with a fixed set point throughout the day. The set point can be adjusted from 5°C to 35°C by using the  or  buttons. The thermostat will continue to maintain this temperature until another operating mode or temperature is selected.
- **OFF** the room thermostat controls to a minimum temperature. Default setting of 5°C acts as a frost protection for your home.

NOTE: The built-in heating program has been designed to provide normal comfort requirements, but to customise the settings please see [8.3 Programming the room thermostat – efficient daily use](#).

8.2 During normal operation

- **Temperature Enquiry**
In **AUTO**, **MAN** and **OFF** operating modes the room thermostat will display the current room temperature.
To review the programmed 'target' temperature (the temperature which the thermostat is trying to maintain) press the  button. This temperature value will be displayed flashing for 5 seconds before returning to the current room temperature value.
- **Temperature Override**
During **AUTO** mode the programmed temperature can be adjusted manually. The 'target' temperature will be displayed and flash for 5 seconds - during this time the  or  or buttons can be used to modify the set value.

NOTE: This temperature override is cancelled at the next programmed temperature change.

8.3 Programming the room thermostat – efficient daily use

8.3.1 The Built-in Heating Program

The built-in heating program has four temperature level changes per day that can be set between 3.00am and 2.50am the following day - allowing the evening temperature to maintain after midnight. Each temperature level can be set between 5°C and 35°C, and adjusted in 0.5°C increments.

The factory default program for heating is as follows:

Period	1	2	3	4
Time	6:30	8:00	18:00	22:30
Temperature	21 °C	18 °C	21 °C	16 °C

Room thermostat CM737:

The room thermostat CM737 can be programmed with different heating programs for each day of the week.

8.4 Reviewing the Heating Program

To review or edit the heating program use the **PROGRAM**  or  buttons to navigate between the four individual programming periods.

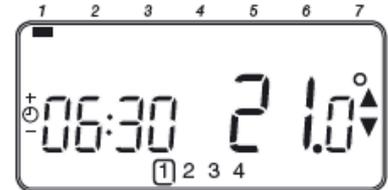
Room thermostat CM737: Use the **DAY** button to step through each day of the week, so the complete 7-day heating program can be reviewed or edited.

8.5 Modifying the heating program in the CM737

To change the heating program:

- a) Press either of the **PROGRAM**  or  buttons to enter the programming mode.

The time /temperature settings for period  on Monday day 1 will be flashing. The active period is highlighted by a flashing square around the numbers at the bottom of the screen and the selected day is shown with the day indicator.



- b) To adjust the period start time use the   or  buttons, the 'OK?' indicator will be displayed to confirm the change. Holding the button down will change the time quickly.

Note: If you are pressing the   or  buttons and the display flashes the next period, it means the next period will be pushed forward.

- c) Once the required time is reached press the green  button to confirm.

Note: If the original time setting did not require adjustment press the green  button to move to step 'd'.

- d) The temperature setting for period  on Monday (Day 1) will now be flashing. To adjust this press the  or  buttons and confirm the setting again by pressing the green  button.

- e) The next time and temperature period will now be active. Adjust this by repeating steps b - d above until all four periods are set or press the **AUTO** button to run the program as set, at any time.

Chose how to set the program for the next day:

- f) Press the **COPY DAY** button to copy Monday's program into Tuesday. The display will go blank apart from the 'non-flashing' day indicator, which indicates the day copied and the 'flashing' target day to copy the program to. To accept this day, press the green  button. To select a different target day press the **DAY** button until the 'flashing' day indicator is under the required day, and then accept it by pressing the green  button.

Note: Once the target day is confirmed it becomes the day that is copied if the **COPY DAY** button is pressed again.

Or

Press the **DAY** button to move the day indicator to Tuesday (Day 2). The program for that day can then be adjusted by following steps b to e. Programs for the remaining days can be set in the same way, using the **DAY** button to move to the next day.

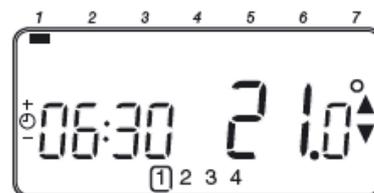
To exit the programming mode, select the desired operating mode by pressing the **AUTO**, **MAN** or **OFF** buttons.

Note: To run the adjusted program; select the **AUTO** mode.

8.6 Modifying the heating program in the room thermostat CM721

To change the heating program:

- a) Press either of the **PROGRAM**  or  buttons to enter the programming mode.
The time /temperature settings for period  will be flashing. The active period is highlighted by a flashing square around the numbers at the bottom of the screen.



- b) To adjust the period, start time use the ,  or  buttons, the 'OK?' indicator will be displayed to confirm the change. Holding the button down will change the time quickly.

Note: If you are pressing the ,  or  buttons and the display flashes the next period, it means the next period will be pushed forward.

- c) Once the required time is reached press the green  button to confirm.

Note: If the original time setting did not require adjustment press the green  button to move to step 'd'.

- d) The temperature setting for period  will now be flashing. To adjust press the  or  buttons and confirm the setting again by pressing the green  button.
- e) The next time and temperature period will now be active. Adjust this by repeating steps b - d above until all four periods are set or press the **AUTO** button to run the program as set, at any time.

8.7 Disabling/enabling time periods

Any of the heating period from 2 to 4 can be removed from (or returned to) the heating program profile.

To disable or enable time periods:

- a) To disable unwanted periods, go to the desired period (2 to 4) using the **PROGRAM**  or  buttons to navigate, ensure the correct period is highlighted with the flashing square symbol.

Press and hold the  button for at least 2 seconds and the display will indicate the period has been removed from the program.

- b) To enable periods again follow the same procedure as above, navigating to the already disabled period. To enable this period again press and hold the  button for at least 2 seconds.

8.8 Adjusting the Time

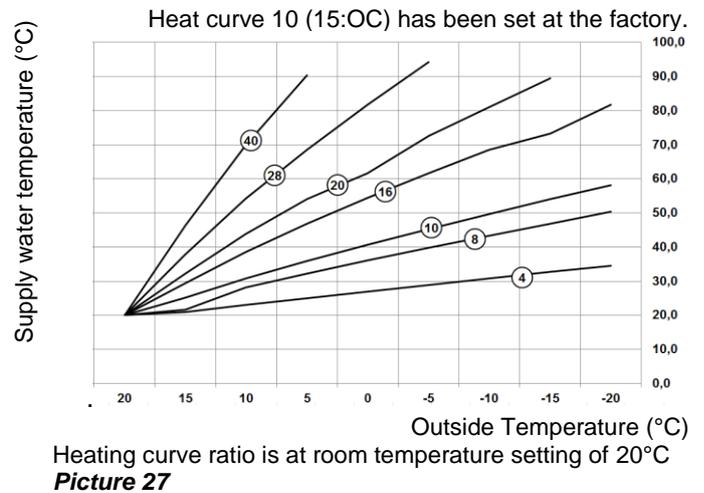
To adjust only the time during normal operation use the ,  or  buttons to adjust the time and press the green  button again to confirm any changes.

9 Special functions for the CM737

9.1 OTC heating curve

The CM737 controls the indoor temperature as a function of the measured outside air temperature. The heating curve is the ratio between the measured outside air temperature and the calculated supply water temperature.

The ideal heating curve is dependent on the type of installation (radiators, convectors, etc.), the thermal properties and the location of the property. A heating curve ratio of 1 to 40 can be set. The figure shows several heating curve ratios for a room temperature setting of the 20°C **without** room temperature compensation.

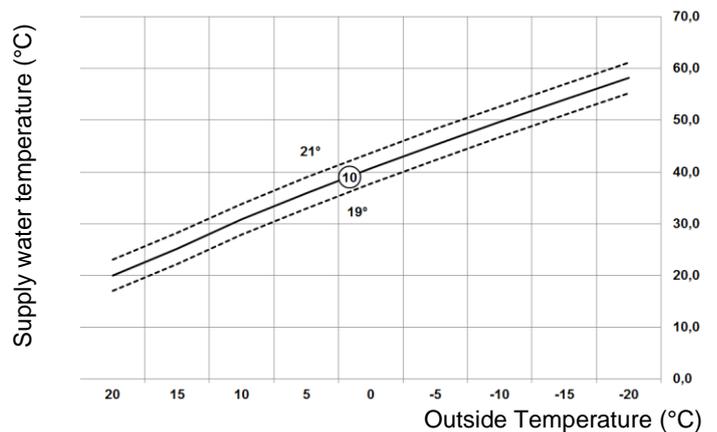


9.2 Parallel adjustment of heating curve

If any other room temperature set point than 20°C is used the selected curve will be parallel compensated.

Every change of the room temperature set point from 20°C will change the supply temperature with approximately 3°C. If the room temperature set point is increased from 20°C to 21°C the supply temperature will increase with approximately 3°C.

This example shows parallels of curve 10 by 19°C and 21°C.



9.3 Holiday function

The holiday function allows you to set a constant temperature (default = 10°C) for a specified number of days (from 1 - 99 days). This saves energy and related costs when the house is empty, but resumes normal operation on the day of return.

To set the Holiday function:

- Ensure the CM737 is running in **AUTO** or **MAN** operating modes.
- Press the holiday button to display the holiday day's counter and temperature setting, along with the holiday indicator .
- Press the or time buttons to set the holiday time (1-99 days) and press the green button to confirm.
- Press the or buttons to set the holiday temperature (5°C - 35°C) and press the green button to confirm.

The CM737 will now control to the new temperature for the set number of days that the home is vacant. At midnight, the holiday counter will be reduced by one until the selected number of days have passed. The CM737 will then return to normal operation as set by the **MAN** or **AUTO** mode. To cancel the HOLIDAY function or to exit the function at any time: press the button a second time.

10 Basic operation of the system CM721

10.1 Setting one temperature for the whole day

To operate as a simple thermostat with one temperature throughout the day, select the manual operating mode by pressing the **MAN** button. Adjust the temperature by pressing the  or  buttons - this can be set anywhere from 5°C to 35°C in 0.5°C steps. The thermostat will continue to maintain this temperature until another operating mode is selected or the temperature is adjusted.

10.2 Automatic operation

The relay box receives the heat demand (0-100%) signal from the room thermostat. The room thermostat will display the  symbol on the LCD display whenever more heat is required. Depending on the demand the relay box will switch the heating device on to match the current requirements of the system.

The green LED indicates the status of the relay output:

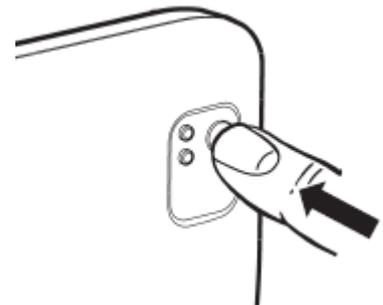
- Green LED on = relay on
- Green LED off = relay off



Picture 29

10.3 Temporary manual override

Pressing the relay box button will override the current relay position. As soon as the next signal is received from the room thermostat the relay box will return to automatic operation as the automatic control has higher priority than manual operation.



Picture 30

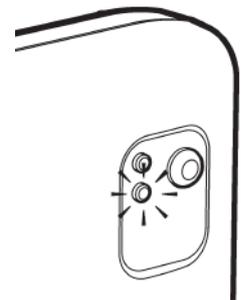
10.4 Communications loss

If the RF communication is lost for a period of 1 hour the red LED on the relay box will illuminate to indicate that no RF messages have been received during the last hour.

The factory setting keeps the relay permanently off when communications is lost. The factory settings can be changed, see [11.2 BDR91 relay box fail safe mode setup](#).

To allow manual control of the relay box output, manual override is available in fail-safe mode. See [10.3 Temporary manual override](#).

When RF communication is restored the relay box will automatically return to normal operation.



Picture 31

11 Special functions for CM721

11.1 Service indicator

NOTE: This option only works if activated by the installer.

The 'SERVICE' indicator is displayed at set intervals as a reminder to make a routine check of the heating system.

The 'SERVICE' indicator will remain on the display of the CM721 until it is either reset or disabled by your installer. The CM721 and heating system will continue to operate as normal.



11.2 BDR91 relay box fail safe mode setup

The failsafe mode defines the relay box output relay status if the RF communication is lost (e.g. when the room thermostat stops communicating due to discharged batteries). The factory setting keeps the relay permanently off when communications is lost. If this factory setting needs to be changed follow the instructions below:

- Enter Installer mode as described in [12.1 Entering the installer set-up mode](#).
- Press the  button to enter category 2 parameters.
- Select the parameter 7:LC by pressing the   button.
- Select the fail-safe mode by pressing  or  buttons:
 - 0 - when RF communication is lost the relay will be held in **OFF** position.
 - 1 - when RF communication is lost the relay output will cycle at 20% on 80% off.
- Press the green  button to accept the change.
- Attach appropriate label to the relay box to indicate the selected fail-safe mode.

NOTE: To enable the frost protection when RF communication is lost, select the fail-safe mode 1.

11.3 Automatic Summer/Winter Time Change

The CM721 has a built-in Automatic Summer/Winter Time Change feature that will automatically adjust the clock forward or backward by one hour for 'Daylight Saving Time'. This is carried out on the last Sunday of March and October each year.

11.4 Optimum Start

Optimum Start is a program which ensures that the optimum temperature conditions are achieved at the required times.

This is an Energy Efficiency feature that adjusts the start time of the heating system depending upon how cold it is. For example, on cold days the heating system will be started earlier to ensure that your home is warm when you get up (at the target temperature) and on warmer days the heating system will be started later to save energy.

NOTE: When the Optimum Start Feature is used, the time / temperature settings which are entered into the thermostat should be set to when you want it to be warm and not when you want the heating system to start.

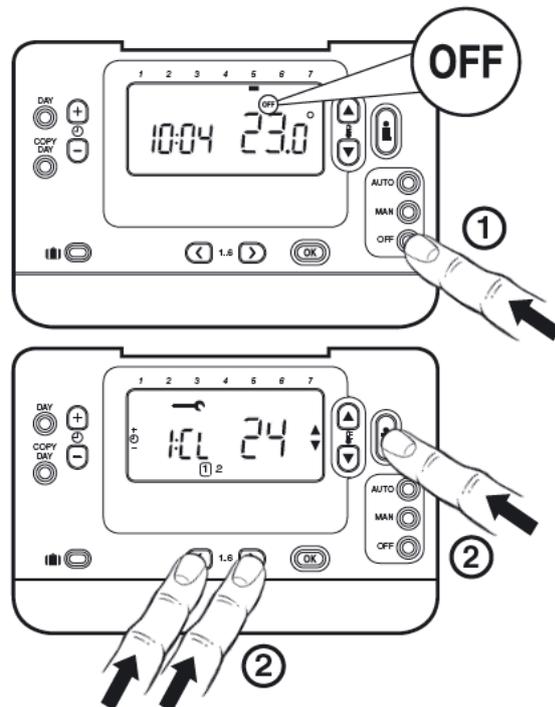
12 Activation of installer parameters

Installer Mode is used to alter the system settings for specific applications, to use the special features of the room thermostat in a different way or to alter the factory present parameters. Parameters are divided into groups:

- Category 1 Room Thermostat Setup
- Category 2 System Setup.
- Category 3 Boiler Settings, only available for H737
- Category 4 Transparent Boiler Parameter, only available for H737
- Category 5 Fault History, only available for H737

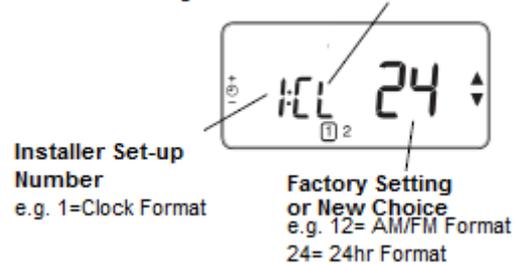
12.1 Entering the installer set-up mode

- Press the **OFF** button.
- Press and hold the  button and the two **PROGRAM**  and  buttons together.
- The unit will display the first parameter of installer parameter group category 1.
- Press the  or  button to change the factory setting.
The display will flash indicating that a change has been made.
- Press the green  button to confirm the change. The display will stop flashing.
- Press the   button to go to the next parameter.
- Press the **PROGRAM**  button to go to the next parameter category.
- To exit installer mode, press the **AUTO**, **MAN** or **OFF** button.



Picture 32

Abbreviated Set-Up Description
e.g. Cl=Clock Format



Picture 33

12.2 CM737-Installer parameters table

12.2.1 CM737-Category 1: Room Thermostat Settings

Parameter	Parameter N:o	Factory Default Setting		Optional Setting	
		Display	Description	Display	Description
AM-PM / 24hr Display	1:CL	24	24 hr. clock display format	12	12 hr. – AM/PM clock display format
Reset Time/ Temp Program	2:rP	1	Time / Temperature profile set to factory default. Changes to 0 when one of the time/temp profiles are changed.	0	Factory Time / Temperature profile has been modified To restore the factory profile set to 1
Upper Temp Limit	6:uL	35	35°C Upper Temp. Limit	21 to 34	21°C to 34°C, adjustment in 1°C steps
Lower Temp Limit	7:LL	5	5°C Lower Temp. Limit	6 to 21	5°C to 21°C, adjustment in 1°C steps
Temperature Offset	12:tO	0	No temperature offset	-3 to +3	-3°C to +3°C, adjustment in 0.1°C steps
Proportional Band Width	13:Pb	1.5	Proportional band of 1.5 degree	1.6 to 3.0	1.6°C to 3.0°C, adjustment in 0.1°C steps
Room control / OTC (1)	14:rC	0	Room temperature control (thermostat)	1 or 2	1 – OTC control without room temperature compensation 2 – OTC control with room temperature compensation
OTC heat curve	15:OC	10		1 to 40	1 to 40 adjustment in steps of 1
Reset Parameters to Factory Defaults	19:FS	1	All settings at factory defaults Changes to 0 when one of the parameter is changed	0	Settings are as modified above. To restore the factory parameters set to 1

12.2.2 CM737-Category 2: System Settings

Parameter	Parameter N:o	Factory Default Setting		Optional Setting	
		Display	Description	Display	Description
Summer heating in OTC mode	1:SH	0	Summer heating disabled	1 to 40	Minimum set point for the heating and the pump will be held on.
Economy function	2:SL	20	The outside temperature at which the heating will switch off	10 to 30	The economy function will be disabled if the setting for summer heating is not 0
Economy function	3:Pd	10	Diff between outside and calculated water supply temperature		If the calculated water supply temperature is not greater than the outside temperature by this amount the heating will switch off.

12.2.3 CM737-Category 3: Boiler Settings

Parameter	Parameter N:o	Factory Default Setting		Optional Setting	
		Display	Description	Display	Description
Maximum central heating set point 2)	1:CH	90	90°C or obtained from the boiler	40 to 90	40°C to 90°C adjustment in 1°C steps
DHW set point 2)	2:HS	55	55°C or obtained from the boiler	40 to 80	40°C to 80°C adjustment in 1°C steps
Supply water temperature 3)	3:St	Actual temp	Temperature obtained from the boiler (between 0°C and 99°C)	N/A	Not applicable
Return water temperature 3)	4:rt	Actual temp	Temperature obtained from the boiler	N/A	Not applicable
DHW temperature 3)	5:Ht	Actual temp	Temperature obtained from the boiler	N/A	Not applicable
Outside temperature 4)	6:Ot	Actual temp	Between -30°C and 99°C	N/A	Not applicable
Water pressure 3)	7:Pr	Actual press	Between 0.0 bar and 4.0 bar	N/A	Not applicable
DHW storage overnight	8:HO	1	DHW storage enabled after last period of day	0	DHW storage disabled after last period of day
DHW storage during HOLIDAY	9:HH	0	DHW storage disabled during HOLIDAY	1	DHW storage enabled during HOLIDAY
Low capacity control	10:LD	1	Not applicable	0	Not applicable

12.2.4 CM737-Category 4: Transparent Boiler Parameter

Parameter	Parameter N:o	Factory Default Setting		Optional Setting	
		Display	Description	Display	Description
P_heat	1	0	Proportional band		1K
I_heat	2	1	Integral factor		0.1 / minute
Run time valve	3	15	Time needed to open or close valve completely		10 seconds

12.2.5 CM737-Category 5: Fault History

Parameter	Parameter N:o	Factory Default Setting		Optional Setting	
		Display	Description	Display	Description

In this category the occurred boiler errors can be viewed, beginning with the most recent boiler error.

- 1) Only if the setting is allowed by the heating appliance. Standard settings and limits can be set by the heating appliance.
- 2) Only available if supported by the heating appliance.
- 3) Only available if the outside temperature sensor is mounted.
- 4) Category 4 & 5 parameters are only available if supported by the heating appliance. This will depend on the type of boiler electronics in the heating appliance connected with the CM737.

Notes: Always remember to press the green **OK** button to confirm that you want to store the new Installer Set-Up setting. To exit the Installer Set-Up Mode press the **AUTO** or **MAN** button.

12.3 CM721– Installer parameters table

12.3.1 CM721- Category 1: Room Thermostat Settings

Parameter	Parameter No.	Factory Default Setting		Optional Setting	
		Display	Description	Display	Description
AM-PM / 24hr Display	1:CL	12	12 hr. – AM/PM clock display format	24	24 hr. clock display format
Reset Time/ Temp Program	2:rP	1	Time / Temp profile set to factory default Changes to 0 when one of the time/temp profiles are changed	0	Time / Temperature are as programmed To restore the factory profile set to 1
Auto Summer/Winter Time Change	3:tC	1	Auto Summer/Winter Time Change Enabled	0	Auto Summer/Winter Time Change Disabled
LCD Backlighting	5:bL	1	Backlighting Enable	0	Backlighting Disabled
Upper Temp Limit	6:uL	35	35°C Upper Temp. Limit	21 to 34	21°C to 34°C adjustment in 1°C steps
Lower Temp Limit	7:LL	5	5°C Lower Temp. Limit	5 to 21	6°C to 21°C adjustment in 1°C steps
Optimisation	8:OP	0	Optimisation Disabled	1	Optimisation Enabled
Temperature Offset	12:tO	0	No temperature offset	-3 to +3	-3°C to +3°C adjustment in 0.1°C steps
Proportional Band Width	13:Pb	1.5	Proportional band of 1.5 degrees	1.6 to 3.0	1.6°C to 3.0°C adjustment in 0.1°C steps
Scheduled Maintenance Alert Period (months)	19:SP	0	Scheduled Maintenance Alert Period disabled	0 to 48	0 to 48 months adjustment in 1 month steps
Reset Parameters to Factory Defaults	20:FS	1	All settings at factory defaults Changes to 0 when one of the parameter is changed	0	Settings are as modified above To restore the factory profile set to 1

Note

1) Remember to always press the green button to confirm that you want to store your new Installer Set-Up setting. To exit the Installer Mode press the **AUTO** or **MAN** button.

12.3.2 CM721- Category 2: System Settings

Parameter	Parameter No.	Factory Default Setting		Optional Setting	
		Display	Description	Display	Description
Minimum boiler ON time	1:Ot	1	1 minute minimum ON time	2 to 5	Selection of 2, 3, 4 or 5 minutes minimum ON time
Cycle Rate	2:Cr	6	6 cycles per hour (cph)	3,9 or 12	Selection of 3, 9 or 12 cph
Pump Exercise	5:PE	0	Pump exercise disabled	1	Pump exercise enabled
System Synchronisation	6:Sn	0	Standard operation of the Room Unit	1	Room unit configured as Synchroniser
Loss of Communications Instruction	7:LC	0	Relay Off	1	Relay 20% on / 80% off

Note

1) Remember to always press the green button to confirm that you want to store your new Installer Set-Up setting. To exit the Installer Mode press the **AUTO** or **MAN** button.

12.3.3 Using the room thermostat for specific applications

Specific Application		Setting		What to change
		Cycle/Hour	Minimum ON Time	Note: All parameters listed below belong to category 2 - System Parameters
Heating	Gas Boiler (<30kW)	6	1	No changes required
	Oil Boiler	3	4	Set 1:Ot parameter to 4 Set 2:Cr parameter to 3
	Thermal Actuator	12	1	Set 2:Cr parameter to 12
	Zone Valve	6	1	No changes required

13 Troubleshooting the CM737

Symptom	Possible Cause	Remedy
A flashing  symbol appears on the display within one minute of the CM737 being powered on.	The CM737 receives power supply from the heating appliance, but no information.	The CM737 is not connected to the correct terminals of the heating appliance. Check if the wiring is connected to the Open Therm connection terminals of the heating appliance.
		The heating appliance is not configured correctly. Contact Alfa Laval.
A  symbol appears permanently (no flashing) on the display.	Communication error due to an interrupt or short circuit in the link between the heating appliance and the CM737.	Check if the power supply cable of the heating appliance is connected.
		Check the wiring.
		Contact Alfa Laval.
Display is blank	After installing the CM737 no power to the heating appliance is supplied and the rechargeable battery hasn't been charged (takes max 1hr until fully charged).	Check if the power supply cable of the heating appliance is connected otherwise contact Alfa Laval.
	The power supply or the communication link between the CM737 and the heating appliance has been interrupted for more than 8 hrs.	Check if the power supply cable of the heating appliance is connected. After the power is restored the time may need to be adjusted – otherwise contact Alfa Laval.
A flashing  symbol appears on the display after the CM737 being operating for a period	The heating appliance is showing an error	Press the  button, to see the error code. This fault code depends on the type of heating appliance See 13.1 Fault Codes on the CM737 .
A flashing  symbol appears on the display and the room temperature is replaced by “—“	Internal fault in the temperature measuring circuit.	Contact Alfa Laval.

13.1 Fault Codes on the CM737

If a spanner is visible on the display, there is an on ongoing alarm. Press the Info-button to view the fault code.

Error source	Error code
No fault (power-up)	0
Supply water temperature sensor out of range	1
Outside air temperature sensor out of range	2
Case temperature out of range	3
Secondary pump or district heating supply	4
No OT communication	7

Fault code 0 This fault code can just be seen in the fault history, parameter settings category 5.

Fault code 1 Supply sensor failure

Cause Measured supply water temperature lies below 0°C or above 100°C.

Actions Respond with 'invalid data' when thermostat asks for supply temperature Turn the pump off, and enter off mode.

Fault code 2 Outside sensor out of operating range. This fault code can only occur after the measured outside temperature has been in range: -40°C to 60°C.

Cause Measured outside temperature lies below -40°C or above 60°C

Actions When the thermostat asks for the outside temperature the DHC will respond with 'invalid data'.

After a reset this fault code will not occur again, until a valid temperature has been measured, and then a non-valid temperature will be measured again.

Fault code 3 Housing sensor out of operating range

Cause Measured environment temperature lies below 0°C or above 60°C

Actions Turn the pump off, and enter off mode

Fault code 4 Secondary pump or district heating supply:

Cause Cannot reach the set supply water temperature

Actions Air in the pump, low temp/ not district heating supply

Fault code 7 No OT communication:

Cause Thermostat doesn't communicate by OT for 60 seconds

Actions 10 seconds after occurring, the DHC assumes an on/off thermostat is controller.

CH bit is cleared = 0.

Requested supply set point is cleared.

Fault is only cleared after a power cycle, OT thermostat is connected or communication is working again.

14 Troubleshooting the CM721

Symptom		Remedy
Blank Display	No power to the thermostat.	Check batteries are installed by removing the battery cover.
		Check batteries have been installed in the correct orientation.
		Replace the batteries.
Display shows flashing  symbol	The batteries in the thermostat are low on power.	Replace the batteries.
Display shows  symbol.	A fault has occurred in your heating system.	Remove and re-insert the batteries. If the  symbol does not clear after a few minutes, contact Alfa Laval.
Display shows the word ' SERVICE '	The installer has set a scheduled maintenance alert period on your CM721 as a recommendation that your heating system should receive a routine inspection.	Call your installer to arrange a maintenance visit. Note: The CM721 and heating system will continue to operate as normal.
Relay Box (BDR91) red LED is constantly on or flashing	The relay box receives no RF messages from the room thermostat: RF signal is blocked due to wrong location of the room thermostat. Room thermostat batteries are exhausted.	Re-locate the room thermostat following instructions in section 6 Installing the CM721 wireless system . Replace batteries in the room thermostat. NOTE: The boiler can be controlled manually when the RF communication is lost: Press the BDR91 push button to switch the boiler on and off. When the green LED is on – the boiler is on.
The room thermostat displays the  symbol but the relay box relay does not switch on	This is normal operation. The relay box cycles the relay on and off for times proportional to the demand signal (0-100%) from the room thermostat. The  symbol only indicates that the demand value is greater than 0%.	Using the  button change the temperature set point by a few degrees. The relay box should switch the relay on after a few seconds' delay.
The relay box does not react to set point changes on the room thermostat.	The room thermostat and relay box are not bound.	Reset the relay box by pressing and holding the push button for 15 seconds. Then follow the binding / rebinding procedure as described in chapter 7 Binding/rebinding the CM721 .
After the binding procedure the red LED is on and the green one is flashing once every 3 sec on the relay box	Incorrect or incomplete binding procedure. Incorrect position of the room thermostat during binding.	Repeat the binding procedure. Repeat the binding procedure keeping approx. 1 m distance between the relay box and the room thermostat.

14.1 Diagnostic mode, CM721

The CM721 room thermostat has a user accessible mode that provides information useful to a remote service person and a means of checking whether the boiler is working.

To access this:

- Press the **OFF** button, then press and hold the  button for 5 seconds.
- The room thermostat will enter the user settings mode.
- Next press and hold the  and   buttons together.
- The room thermostat will hold the relay on for 5 minutes and the following information can be viewed on the display by pressing the   or  button:
 - Model ID, date code (WW/YY) & checksum.

15 Differential pressure control valve, DPC



Adjusting the DPC must be carried out by an authorized service technician.

15.1 Setting the DPC valve

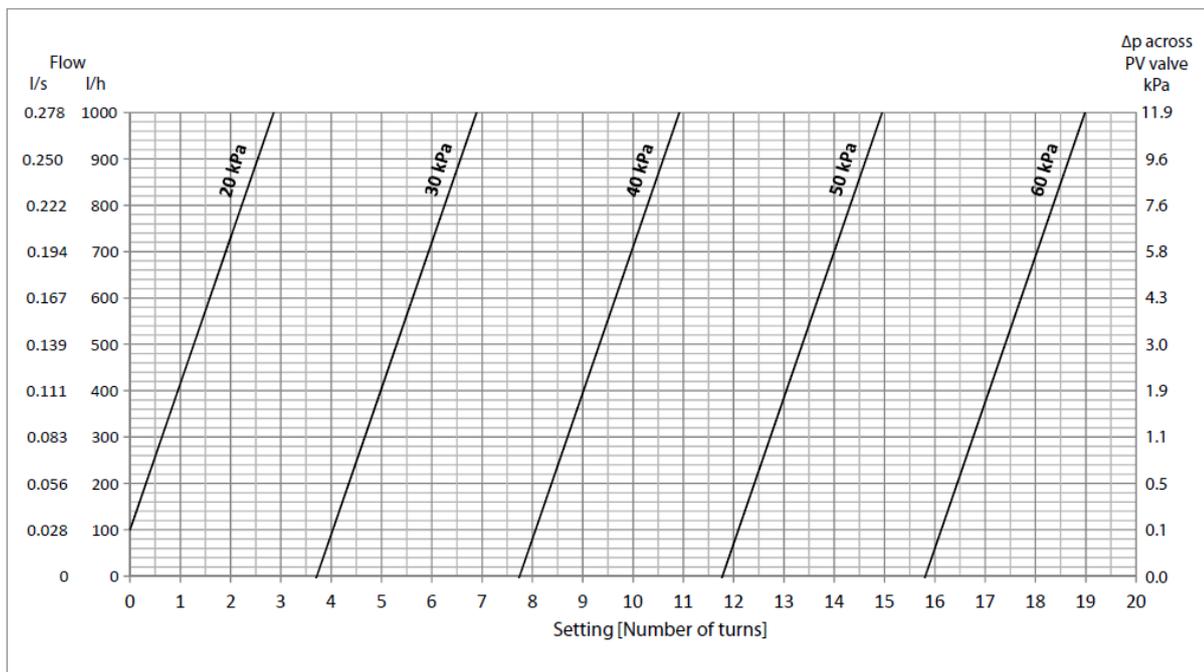
Set the valve to the differential pressure 25kPa.
 Start with the valve at minimum position and then open with 3 numbers of turns.
 Use a 4mm hexagonal key.

NOTE: Always start from the minimum position of the valve, before making new settings.



Picture 34

15.2 Flow rate graph of the DPC

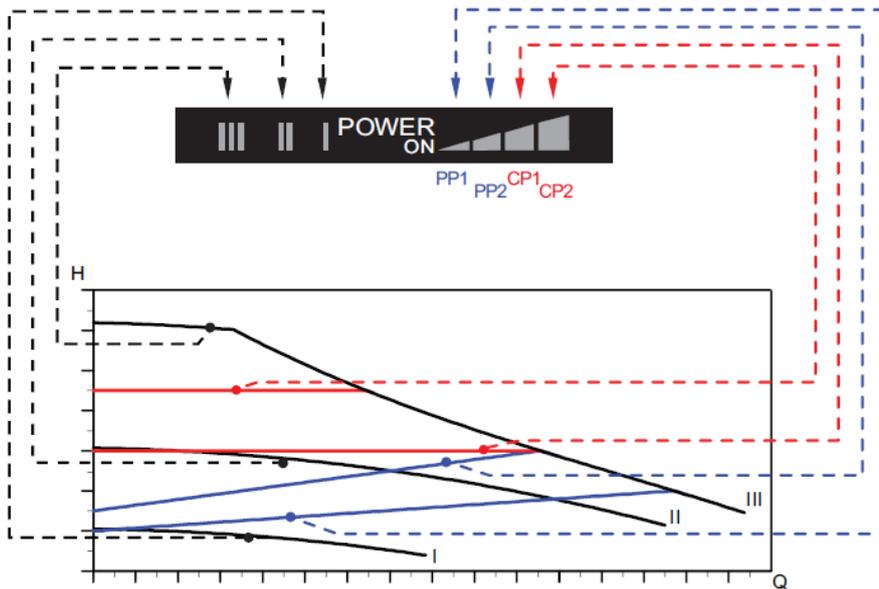


Picture 35

16 Pump settings and pump performance

The Micro STC is equipped with a Grundfos Alpha2L pump.

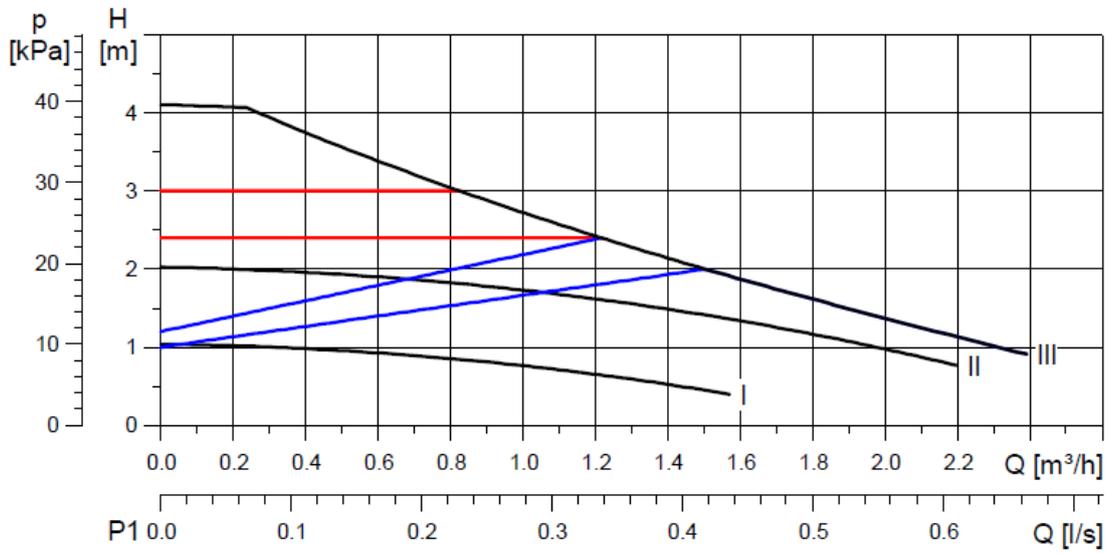
16.1 Grundfos Alpha2L settings



Picture 36

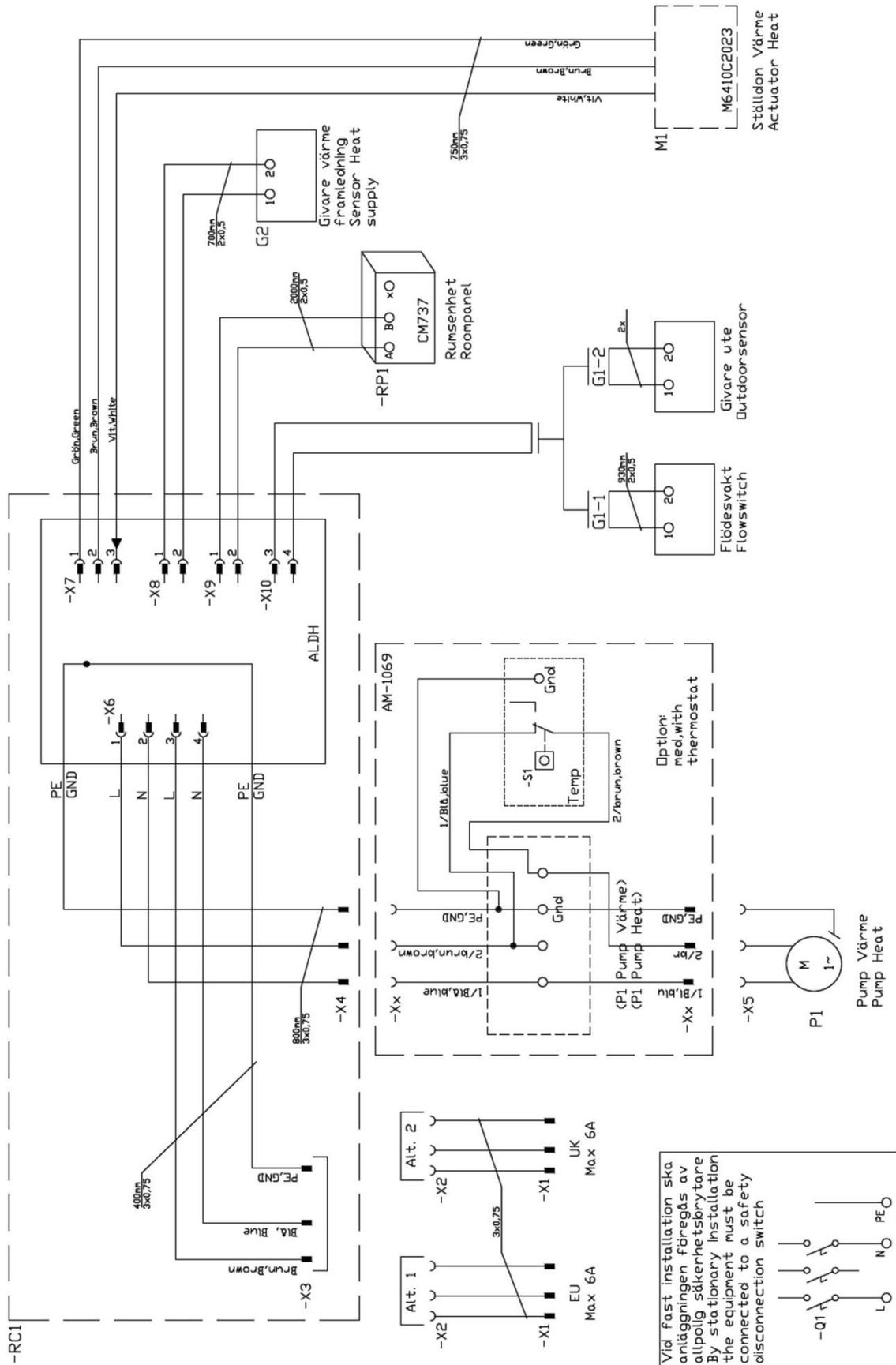
Settings	Pump curve	Function
PP1	Lowest proportional pressure curve	The duty point of the pump will move up or down on the lowest proportional-pressure curve, depending on the heating demand. The head (pressure) is reduced at falling heating demand and increased at rising heating demand.
PP2	Highest proportional pressure curve	The duty point of the pump will move up or down on the highest proportional-pressure curve, depending on the heating demand. The head (pressure) is reduced at falling heating demand and increased at rising heating demand.
CP1	Lowest constant pressure curve	The duty point of the pump will move out or in on the lowest constant-pressure curve, depending on the heating demand in the system. The head (pressure) is kept constant, irrespective of the heating demand.
CP2	Highest constant pressure curve	The duty point of the pump will move out or in on the highest constant-pressure curve, depending on the heating demand in the system. The head (pressure) is kept constant, irrespective of the heating demand.
III	Speed III	ALPHA2 L runs at a constant speed and consequently on a constant curve. In speed III, the pump is set to run on the max. curve under all operating conditions. Quick venting of the pump can be obtained by setting the pump to speed III for a short period.
II	Speed II	ALPHA2 L runs at a constant speed and consequently on a constant curve. In speed II, the pump is set to run on the medium curve under all operating conditions.
I	Speed I	ALPHA2 L runs at a constant speed and consequently on a constant curve. In speed I, the pump is set to run on the min. curve under all operating conditions.

16.2 Pump curve



Picture 37

17.2 Micro STC and Micro STC2



Picture 39

18 Service instructions

Always start with the general service instruction before the specific instructions for each model.



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 substation has been correctly installed.

18.1 General service instructions

Symptom	Reason	Action
Tap water temperature too low	Primary heating supply too low	Check the primary inlet temperature The temperature can be checked by means of the energy meter (min 65° C) or contact the primary heating medium provider.
	Handle on control valve incorrectly positioned	See 18.5.1 Adjust the handle on the control valve.
	Filter for heating media clogged	See 18.5.2 Check if the filter for heating media is blocked.
	Hot water valve does not work	See 18.5.3 Check the function of the valve for hot water
Tap water temperature too high	Handle on control valve incorrectly positioned	See 18.5.1 Adjust the handle on the control valve.
	Hot water valve and/or actuator does not work	Check the valve according to 18.5.3 Check the function of the valve for hot water If the water temperature is too high when the handle is in position 0, the actuator or the exchanger is damaged and requires replacing.
Hot water temperature unstable or too low	Alternating pressure on primary side	Check available differential pressure and temperature at the primary heating medium provider
	Filter for heating media clogged	See 18.5.2 Check if the filter for heating media is blocked.

Symptom	Reason	Action
Heating system temperature too high or too low	Filter for heating media clogged	See 18.5.2 Check if the filter for heating media is blocked.
	Differential pressure control valve incorrectly adjusted (option)	See 15 Differential pressure control valve, DPC.
No heating	Closed radiator or floor heating valves	Check that all radiator valves and floor heating valves are fully open
	Filter for heating media clogged	See 18.5.2 Check if the filter for heating media is blocked.
	Differential pressure control valve incorrectly adjusted(option)	See 15 Differential pressure control valve, DPC
Heating temperature unstable	Alternating pressure on primary side	Check available differential pressure and temperature at the primary heating medium provider
	Filter for heating media clogged	See 18.5.2 Check if the filter for heating media is blocked.
	Differential pressure control valve incorrectly adjusted (option)	See 15 Differential pressure control valve, DPC

18.2 STC service instructions



Hand manoeuvre of the heating actuator

The room thermostat must be without current when manoeuvring the actuator by hand.

NOTE: if manually adjusting the actuator, the operator control panel must be restarted before use.

Symptom	Reason	Action
Heating system temperature too high or too low	The heating control equipment may need to be adjusted	Check and adjust the heating curve See 12.2 CM737-Installer parameters table and change the selected heating curve with parameter 15 category 1. If needed the set heating curve can be fine-tuned. Increase/ decrease the room temperature to parallel adjust the heating curve. Also see section 9.1 OTC heating curve and 9.2 Parallel adjustment of heating curve.
	Heating valve and/or actuator does not work	See 18.5.4 Check the actuator and valve function
	Heating supply temperature sensor and outdoor temperature sensor (option) does not work	Check the heating supply temperature sensor and outdoor temperature sensor (option) Check that they are correctly cited and working. To confirm that sensors are connected and operating, press the info button on the room thermostat, check that the specified temperatures are reasonable.

Symptom	Reason	Action
No heating	Circulation pump not running	Check that the electrical power is on
		Check the circulation pump If the pump fails to start after stopping, try to start it at the highest setting.
		Check the heating parameters in room thermostat Summer reduction (Economy function) parameter 2, category 2: If measured outdoor temperature is higher than target temperature, the pump should not be operating. Pump difference (Economy function) parameter 3, category 2: If the calculated water supply temperature is not greater than the outside temperature by this amount the heating will switch off. If parameter 3 is set to 0, the pump operation will not be affected by this parameter.
	Heating supply temperature sensor and outdoor temperature sensor (option) does not work	Check the heating supply temperature sensor and outdoor temperature sensor (option) Check that they are correctly cited and working. To confirm that sensors are connected and operating, press the info button on the room thermostat, check that the specified temperatures are reasonable.
	Loss of function in the heating control unit.	See 18.5.5 Run the pump manually
Disturbing noise from the circulation pump/ Noise in the radiator system	Pump capacity set too high	Reduce the pump capacity The pump has been set at a too high capacity level. Reduce the level by choosing a lower output setting on the pump. The lowest setting is the most economical.
	Air in the pump	Vent the pump The pump is self-venting. Air in the pump may cause noise. This noise ceases after a few minutes run time. Quick venting of the pump can be obtained by setting the pump to speed III for a short period, depending on system size and design. When the pump has been vented, i.e. when the noise has ceased, set the pump according to the recommendations.
	Pump motor or pump component damaged	See 18.5.6 Change pump components or the complete pump
	Differential pressure control valve set too high	See 15 Differential pressure control valve, DPC
Heating temperature unstable	Heating supply temperature sensor and outdoor temperature sensor (option) does not work	Check the heating supply temperature sensor and outdoor temperature sensor (option) Check that they are correctly cited and working. To confirm that sensors are connected and operating, press the info button on the room thermostat, check that the specified temperatures are reasonable

18.3 RTC service instructions

Symptom	Reason	Action
Heating system temperature too high or too low	The heating control equipment may need to be adjusted	Check and adjust the heating program in the room thermostat. See 8.6 Modifying the heating program in the room thermostat CM721
	Heating valve and/or actuator does not work	Check that the relay is on See 10.3 Temporary manual override See 18.5.4 Check the actuator and valve function
No heating	Loss of function in the heating control unit.	Check the batteries in the room thermostat When the power is running low, a flashing symbol will be displayed on the screen, see 6.5.1 Installing the batteries . See 14 Troubleshooting the CM721
	RF communication problem	Make a manual override If there is a communication problem between the room thermostat and the relay, make a manual override see 10.3 Temporary manual override .

18.4 HTC service instructions

Symptom	Reason	Action
Tap water temperature too low/ hot water temperature unstable or too low	Differential pressure control valve incorrectly adjusted (option)	See 15 Differential pressure control valve, DPC
Heating system temperature too high or too low	Heating valve and/or actuator does not work.	See 18.5.4 Check the actuator and valve function

18.5 Service actions for the installer

18.5.1 Adjust the handle on the control valve



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

The hot water temperature can be controlled by turning the handle, on the control valve for domestic hot water, anti-clockwise for increased tap water temperature. To decreasing tap water temperature, turn the handle clockwise until the desired tap water temperature is reached (50°C approx.). The stabilisation time for the hot water temperature is about 20 seconds.

18.5.2 Check if the filter for heating media is blocked

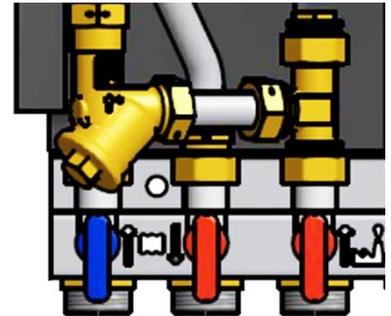


Service actions must be carried out by an authorized service technician.



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

Check if the filter for heating media is blocked
Release the filter holder and remove the cartridge.
Clean the filter with water and refit the cartridge. Screw the filter holder with a momentum of 10-20 Nm.



Picture 40

18.5.3 Check the function of the valve for hot water



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

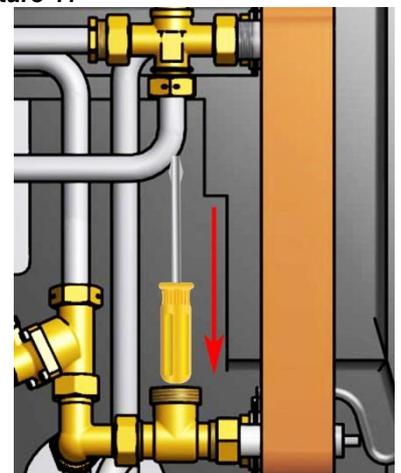
Check the function of the valve for hot water.
Release the actuator from the valve.



Picture 41

Carefully press the valve's spindle with a tool and check the valve's travel and spring back.

Note: The valve may be very hot



Picture 42

Check that hot water gets through the valve. Carefully feel the pipe after the valve.

18.5.4 Check the actuator and valve function



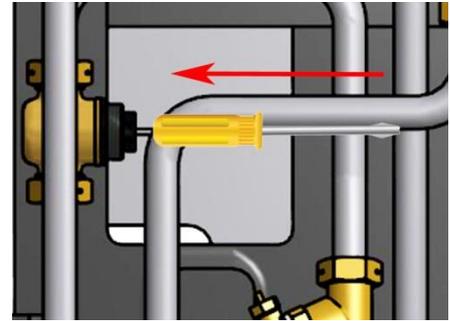
Service actions must be carried out by an authorized service technician.

Check the actuator and valve function

Check the actuator by pulling out the electrical cable and refit it again; this will start an automatic self-test for the actuator. Check the flow using the energy meter while test-running the valve.

If no energy meter is available, disconnect the heating actuator from the valve. Carefully depress the valve's spindle with a tool and check the valve's travel and spring back.

Note: The valve may be very hot



Picture 43

18.5.5 Run the pump manually



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

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

Disconnect the electrical plug for the pump. Connect the replacement cable (option) to the power supply and to the circulation pump. Next, open the heating valve manually using the knob on the actuator. Open the control valve sufficiently to satisfy the heating needs.

18.5.6 Change pump components or the complete pump



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

If it becomes necessary to change the driving side of the pump, it can be dismantled without removing the whole pump. See chapter [19.5 Change the pump](#).

19 Maintenance and repairs

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

19.1 Change the hot water actuator and exchanger



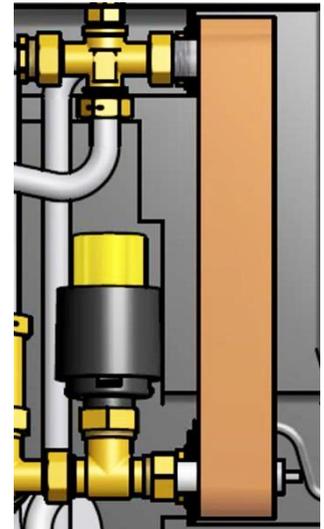
Maintenance and repairs must be carried out by an authorized service technician.



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

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.

- Release the four nuts on the heat exchanger.
- Separate the actuator from the valve.
- Refit a new heat exchanger, actuator and open the shutoff valves.



Picture 44

19.2 Change the hot water valve



Maintenance and repairs 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 with the draining valves.

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.

- Unscrew the tap water actuator from the control valve.
- Use a spanner to remove the control valve. Note the arrow direction on the valve.
- Mount a new valve; and take especially care to the arrow direction.
- Fasten the actuator.



Picture 45

19.3 Change the heating actuator



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

- Disconnect the electrical power supply.
- Unscrew the heating actuator from the valve.
- Disconnect the cable from heating actuator in the connection box.
- The cable to the heating actuator is held by straps, cut them off. Replace the old actuator and cable with a new. Attach the cable with new straps.



Picture 46

19.4 Change the heating valve



Maintenance and repairs 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 with the draining valves.
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.

- Unscrew the heating actuator from the control valve.
- Use a spanner to remove the control valve.

Note the arrow direction on the valve.

- Mount a new valve; and take especially care to the arrow direction.
- Fasten the actuator.



Picture 47

19.5 Change the pump



Maintenance and repairs 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 with the draining valves.
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.

Either change the complete pump or just change the pump motor.

- Disconnect the electrical plug.
- When changing the complete pump, release the brass nuts with a spanner and replace the pump.
- If only changing the motor, release it by unscrewing four sockets head cap screws and replace the motor.
- Connect the power plug and open the shutoff valves.
- Check all the connections for leaks.



Picture 48

19.6 Change the heating circuit supply temperature sensor



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

- Disconnect the electrical power supply.
- Disconnect the quick-connect terminals and replace the sensor with a new one.



Picture 49

19.7 Change the outdoor temperature sensor



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

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



Picture 50

19.8 Change the differential pressure control valve



Maintenance and repairs 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 with the draining valves.
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.

- Use a spanner to remove the differential pressure control valve. **Note** the position of the P/T plugs on the valve.
- Mount a new valve; and take especially care to the P/T plugs position.



Picture 51

19.9 Change the flow switch



Maintenance and repairs 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 with the draining valves.
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.

- Disconnect the substation electrical power supply cable. Disconnect the electrical plug to the flow switch.
- Loosen the nut that holds the flow switch.
- Carefully mount the new flow switch.

Note: Hold the flow switch in position when tightening the nut by hand. The flow switch breaks if it is turned around with the nut.

- Connect the power plug and the substation electrical power supply.



Picture 52

20 Operating data and performance

20.1 Operating data

Operating data			
	Heating medium	Heating circuit	Hot water circuit
Design pressure, MPa	1,0 (1,6) ¹⁾	1,0	1,0
Design temperature, °C	100 (120) ¹⁾	100	100
Opening pressure, safety valve, MPa			0,9
Volume, l	0,34	---	0,36 (0,38) ²⁾
	¹⁾ AquaMicro		
	²⁾ Micro HTC		

20.1.1 AquaMicro

Performance at available differential pressure 50-600 kPa				
Designed temperature programme (°C)	Capacity (kW)	Primary flow (l/s)	Actual return temp. (°C)	Secondary flow (l/s)
Hot water circuit				
80-25/10-55	79	0,34	25	0,42
70-25/10-58	36	0,19	25	0,18
65-25/10-50	55	0,33	25	0,33

20.1.2 Micro DPC, Micro RTC, Micro HTC, Micro STC, Micro STC2

Performance at available differential pressure 50-400 kPa				
Designed temperature programme (°C)	Capacity (kW)	Primary flow (l/s)	Actual return temp. (°C)	Secondary flow (l/s)
Hot water circuit				
Micro DPC, Micro RTC, (Micro HTC), Micro STC, Micro STC2				
80-25/10-55	79 (66)	0,34 (0,29)	25	0,42 (0,35)
70-25/10-58	36 (29)	0,19 (0,15)	25	0,18 (0,14)
65-25/10-50	55 (46)	0,33 (0,28)	25	0,33 (0,28)
Heating Circuit 1				
Micro DPC, Micro RTC (Micro HTC)				
80-50 (80-60)	10	0,08 (0,12)	50 (60)	0,08 (0,12)
Heating circuit 1				
Micro STC, Micro STC2				
80-50/50-70	10	0,08	50	0,12
80-60/60-70	7	0,08	60	0,16
80-45/45-60	12	0,08	45	0,19
80-30/30-35	7	0,03	30	0,33
Heating circuit 2				
Micro STC2				
80-50	10	0,08	50	0,08

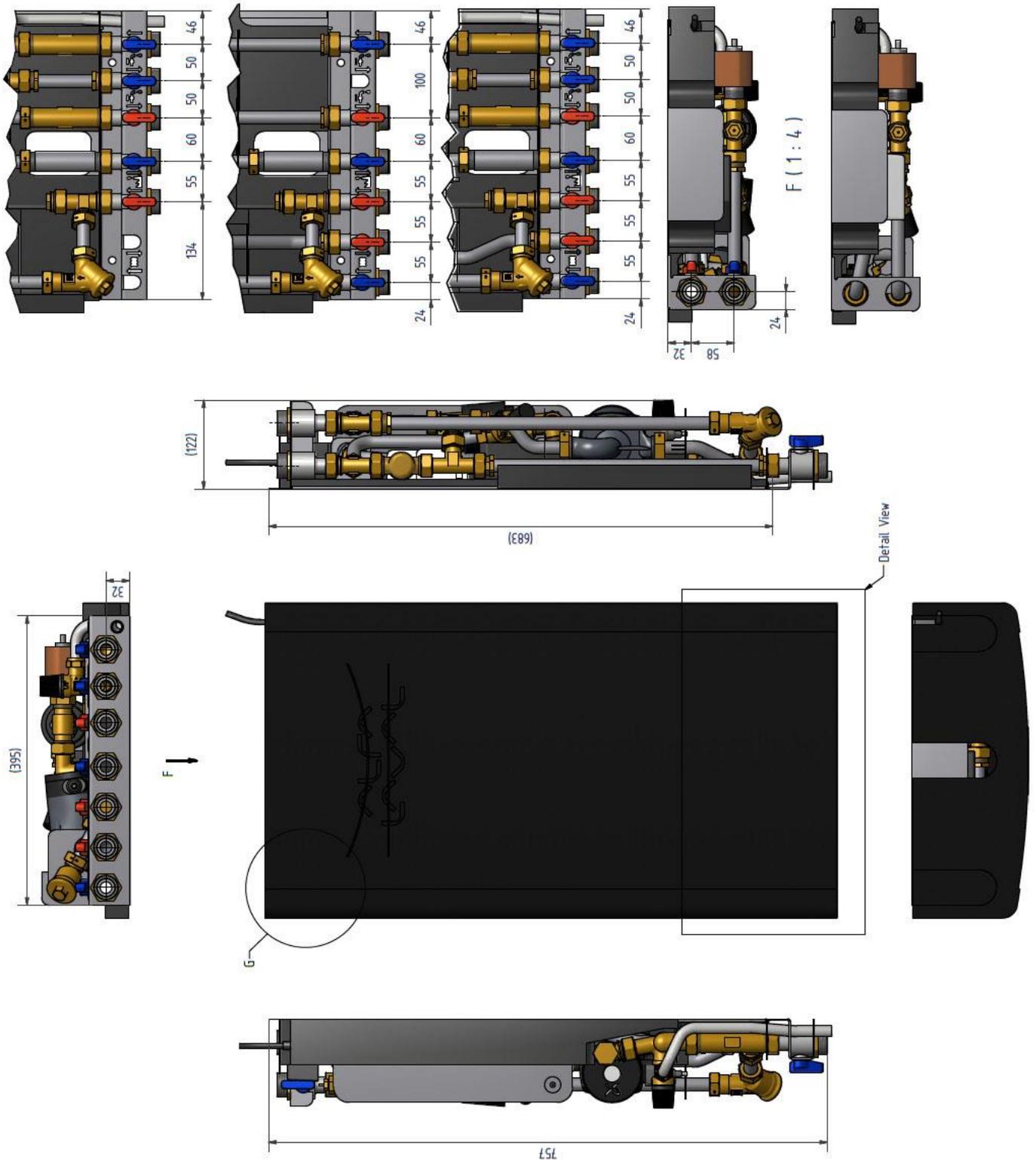
Alfa Laval Micro

Installation, service and operating instruction

20.2 Technical Data

Main measures	See Measure sketch
• With cover	430x160x775 (mm, WxDxH)
• Without cover	400x120x630 (mm, WxDxH)
Weight	12-15kg, cover 2kg
Electrical connection	
• Micro STC & Micro STC2	230 V, 1-phase, 50 W
• Micro RTC	230 V, 1-phase, 25 W
• Micro HTC	230 V, single phase, 2 W
Transportation	Total weight 19-22 kg, 0.08 m ³
Sound level	<70dB (A) 1.6 m from floor, 1 m from unit

20.3 Measure sketch



Picture 53

21 Options

The mounting instructions are described for a new installation. If the kits are supposed to be installed on an already installed subsystem, release the water pressure and disconnect the electrical power supply before starting. The options must be installed by an authorized installation contractor.

21.1 Safety thermostat

Heating systems sensitive to high temperatures for example under-floor heating must be equipped with a safety thermostat. If the heating system is not equipped with the thermostat, the under-floor heating system and floors in general might get damaged

21.2 Installing the safety thermostat

- First disconnect the substation electrical power supply cable. Disconnect the electrical plug on the circulation pump.
- Attach the safety thermostat electrical box.
Connect the new power supply cable from the electrical box to the circulation pump.
- Reconnect the existing power supply cable to the connection on the electrical box.
- Attach the thermostat to the pipe for heating supply.
- Set the correct maximum temperature value for the thermostat.
- Attach all electrical wires with the necessary number of straps. It is important not to attach electrical wires on primary heating pipes and sharp edges.

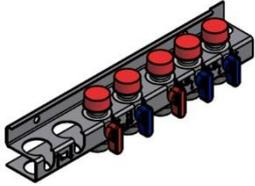
21.2.1 Parameters and recommended settings for under floor heating

The following changes must be done before starting up with a safety thermostat.
Instructions regarding installation parameters see [chapter 12](#).

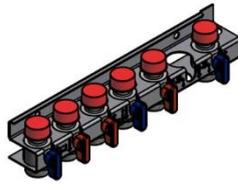
Parameter	Parameter N:o	Factory Default Setting		Optional Setting	
		Display	Description	Display	Description
Category 1 Parameters - Programmable Thermostat Settings					
OTC heat curve	15:OC	5		1 to 40	1 to 40 adjustment in steps of 1
Category 2 Parameters - System Settings (press PROGRAM to access this category)					
Economy function	3:Pd	0	Diff between outside and calculated water supply temperature	0 to 20	If the calculated water supply temperature is not greater than the outside temperature by this amount the heating will switch off.
Category 3 parameters – Boiler settings (press PROGRAM to access this category)					
Maximum central heating set point	1:CH	45	90°C or obtained from the boiler	40 to 90	40°C to 90°C adjustment in 1°C steps

21.3 First fix-jig

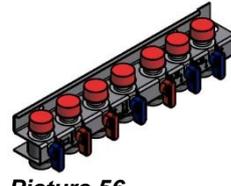
To save time and efficiency the installation, Alfa Laval offers a first-fix- jig including shut-off valves. The first fix-jig is available in three different models, with five, six or seven shut-off valves.



Picture 54



Picture 55



Picture 56

- Mount the first fix-jig to the connection points. Tighten with 45 Nm.
- Mount and connect the substation to the first fix-jig. Tighten with 45 Nm.

22 Declaration of conformity

Försäkran om överensstämmelse
Vaatumusten mukaisuusvakuutus
Declaration of Conformity
Déclaration de conformité
Konformitätserklärung

PED 2014/68/EU art 4.3, LVD, EMC, MD

Tillverkare/Valmistaja/ Manufacturer/ Fabricant /Hersteller:
HES Manufacturing
Alfa Laval Lund AB, Ronneby Sweden

- * Värmeväxlarenhet, Fjärrvärmecentral för värme och / eller varmvatten
- * Lämmönjakokeskus, Kaukolämmitys, lämpimälle käyttövedelle ja lämmitykselle
- * Heat exchanger unit, District heating System, for heating and/ or Domestic Hot Water
- * Échangeur thermique, système de chauffage urbain, pour le chauffage et l'eau chaude sanitaire
- * Fernwärme-Kompaktstationen, für Heizung und/oder Trinkwarmwasser

Produkter/ Tuote/ Products/ Produits/ Produkte	Varianter/Mallit/models/ Modèles /Varianten
Alfa Laval AquaMicro, Alfa Laval Micro	Honeywell/Samson/Grundfos/Wilo

Ovanstående produkter ligger i artikel 4.3 enligt PED 2014/68/EU
Tuotteet ovat valmistusluokaltaan artikla 4.3 2014/68/EU mukaisia
Above mentioned products are in article 4.3 according to PED 2014/68/EU
Les produits susmentionnés figurent à l'article 4.3 conformément à la DESP 2014/68/EU
Vorstehend benannte Produkte fallen unter Artikel 4.3 der DGRL 2014/68/EU

Tillämpade direktiv/ Käytetyt direktiivit / Used directives / Directives utilisées/ Angewendete Direktiv
- PED 2014/68/EU
- LVD 2014/35/EU
- EMC 2014/30/EU
- MD 2014/42/EC

Tillämpade harmoniserade standarder / Käytetyt standardit / Used harmonised standards /
Normes harmonisées utilisées/ Angewendete harmonisierte Standards
- SS-EN 61439-1

Tillämpade övriga standarder och specifikationer/ Muut standardit ja spesifikaatiot/ Used other standards and
specifications / Autres normes et spécifications utilisées/ Weitere angewendete Standards
- Boverkets Byggregler BBR 99: BFS 1993:57 - 1998:38
- Varm och Hetvattenanvisningar 1993: VVA 93
- FVF F:101, F:103-7
- Suomen kaukolämpö ry: K1/2003
- Suomen ympäristöministeriö: Määräyskokoelma D1

Konformitetsprocedur:
Vaatumusten mukaisuusarvion menettelytapa:
Conformity Assessment procedure:
Procédure d'évaluation de conformité:
Konformitätsbewertungsverfahren:

God teknisk praxis
Hyvän konepajatekniikan mukaisesti
Sound Engineering practice
Règle d'ingénierie sonore
Gute Ingenieurpraxis



Ronneby, 2016-12-15
Andreas Stieger,
Produktchef/ Tuotepäällikkö/ Product manager/ Responsable de la conformité/ Bevollmächtigter