

# INSTALLATION AND CONFIGURATION MANUAL

## OUMAN<sup>®</sup> C203

Regulation for three circuits



### Types of heating systems:

- Radiator heating
- Floor heating
- Preregulation of air conditioning
- Hot water regulation

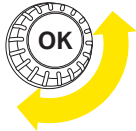
[www.ouman.fi](http://www.ouman.fi)

XM1023D: Version 3.0 ->

# Ouman C203 overview

This is the installation and configuration for C203. It describes configuration and set-up of the regulator, customer-specific configuration as well as value settings.

The C203 is a heat regulator for three circuits that can be used to control two heating circuits and one hot water circuit. Regulator can show in the display various usage modes depending on the connections and configuration. You can navigate between functions by turning the C203's selection knob. When you press the selection knob (OK), you can view the details of specific functions.



Turn the control knob to navigate in the menu.

Press the control button to enter the menu.



Control knob and OK

## Navigating between favourite views or returning to basic view

- The regulator has the Basic view for H1 circuit as default
- Users can save their views if they want.



Cancel button

Holding the key down for an extended period of time returns the regulator to its basic mode. The display shows the basic view, the monitor dims and the keyboard locks if the locking function is in use.

How to acknowledge alarms: Press OK and the alarm sound will stop. If the reason for the alarm has not been corrected, the exclamation point in the top right will continue to blink.

### Deviation alarm

PRI01 GROUP1  
H1 Supply water=10.2 °C  
Received: 08.12.2020 02:27  
Press OK to acknowledge the alarm

## Alarm notice

Ouman C203 can generate alarms for several different reasons. In the event of an alarm, an alarm window pops up showing detailed alarm information and a beeping alarm signal goes on.

If there are several unacknowledged alarms, the latest activated alarm is always shown in the display. As soon as all active alarms have been acknowledged, the alarm window disappears and the alarm signal goes off.

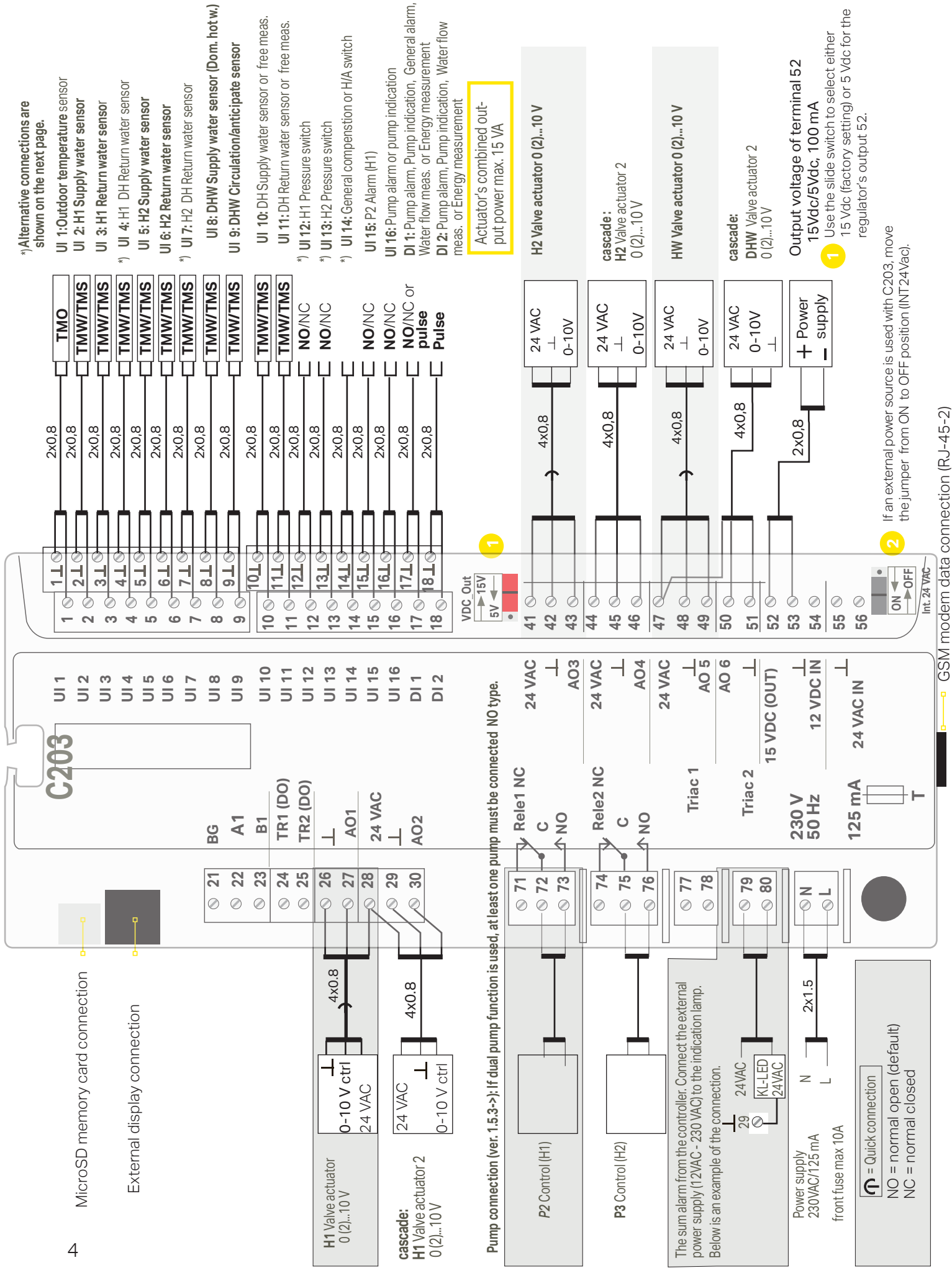
Alarm signal of all active alarms may also be muted by pressing Esc button. When you press Esc, the alarm signal stops and the last alarm windows disappear from the display.

You may look into the alarms later by going to "Alarms" > "Active alarms". If an alarm has not been acknowledged, an exclamation mark will appear in the beginning of the row.

# Content

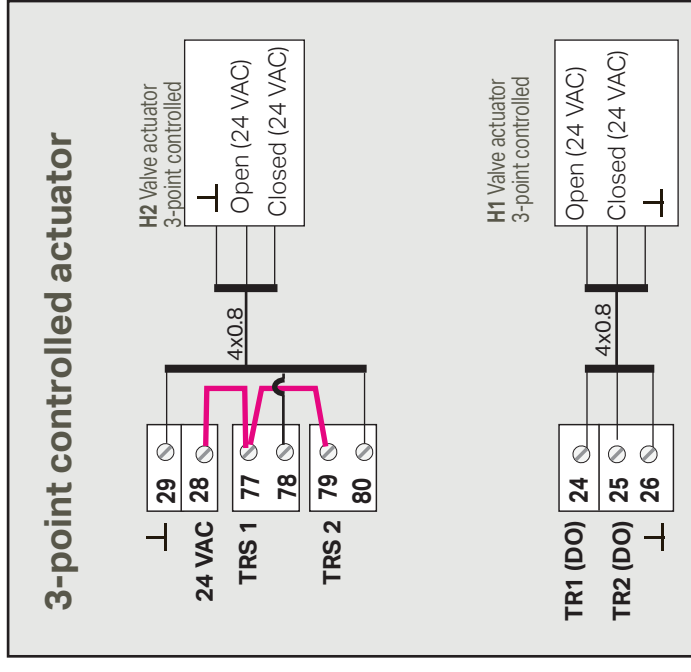
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# 1 Connection instructions



## Alternative connections

Primary connection	Alternative connection	C203
<b>UI 4</b> H1 Heat exchanger DH Return water sensor	H1 Room temperature sensor, TMR (more information p.9)	
<b>UI 7</b> H2 Heat exchanger DH Return water sensor	H2 Room temperature sensor, TMR (more information p.9)	
<b>UI 10</b> DH Supply water sensor (Freely labelled)	General measurement Freely labelled	
<b>UI 11</b> DH Return water sensor (Freely labelled)	General measurement Freely labelled	
<b>UI 12</b> H1 Pressure switch (more information p. 10)	H1 Pressure transmitter, 0-20 mA or 0...10 V	
	H1 Pressure switch, 2-wire connection	
	General measurement Freely labelled	
<b>UI 13</b> H2 Pressure switch (more information p. 10)	H2 Pressure transmitter, 0-20 mA or 0...10 V	
	H1 Pressure transmitter, 2-wire connection	
	General measurement Freely labelled	
<b>UI 14</b> General compensation (can be labelled, more information p. 10)	Home/Away-switch NO = normal open (default)	
	General compensation, Transmitter measurement from separate control unit.	
	General compensation, Transmitter measurement from separate control unit.	



### UI 12

#### H1 Pressure transducer



### UI 13

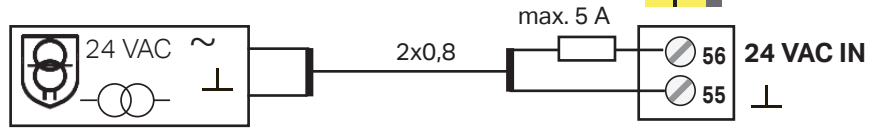
#### H2 Pressure transducer



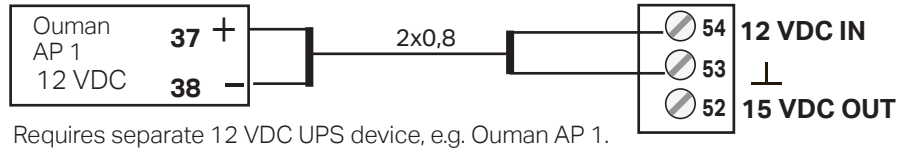
**Connection of external power source:**

If an external power source is used with C203, move the jumper from ON to OFF position (INT24Vax).

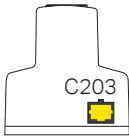
Jumper	Explanation
	Internal 24 VAC power supply in use
	Internal 24 VAC power supply not in use



**Battery backup:**

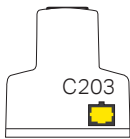


**GSM-modem connection:**



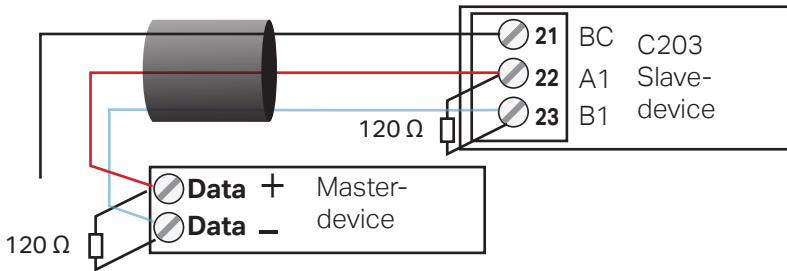
Current supply for the GSM modem can come from the network via a network device. The modem is connected to C203's RJ45 contact. If M-LINK is connected to C203, the modem is connected to M-LINK device's C-connector.

**M-LINK device connection:**



M-LINK is connected to C203's RJ45 contact.

**Modbus RTU connection:**



Twisted pair cable is used to connect RTU devices, e.g. DATAJAMAK 2 x (2 + 1) x 0.24. The bus cable's fault detector (FE) is connected to the BG connector of the C203. In the master device the fault detector can be left disconnected or be connected to a potential free contact. A 120 Ω terminating resistor is connected to both ends of the bus.

The factory default for the device's slave address is 10 and the bus speed is 9600 bauds. If necessary, make changes to the regulator's system settings.

# 2 Start up wizard



Language

- Finnish
- English
- Swedish
- Estonian
- Latvijas

Time

Enter the hours:

**19:44**

hh:mm

Date

Enter the day:

**Wed 03.05.2023**

dd.mm.yyyy

H1 Control circuit

- In use
- Not in use

H1 Heating mode

- Floor heating
- Radiator heating

H2 Control circuit

- In use
- Not in use

DHW Control circuit

- In use
- Not in use

Do you want to run the start up wizard again?

- No
- Yes

13:51 03.05.2023		Selection  3
Outdoor temp.	5.4°C	
H1 Supply water	23.2°C	Automatic
H2 Supply water	24.8°C	Automatic
DHW Dom.hot water	58.0°C	Automatic

**Start-up wizard allows you to specify the regulator’s basic settings. Accept the selection by pressing the selection knob (OK). Change the selection by rotating the selection knob.**

### Time

Next, set the time. Hours and minutes can be set separately. Set hours and press OK to accept. Set minutes and press OK to accept.

### Date

Set the date and press OK (the day of the week is updated automatically). Set the month and accept by pressing OK. As final point set the year and accept by pressing OK.

### H1 Circuit configuration

When the circuit is taken into use, you must also select a heating method. Regulation curves and settings for various heating methods have been pre-set at the factory and usually do not need to be changed.

#### Select a circuit-specific heating method:

**Floor heating** is intended for normal floor heating

**Radiator heating:** suited for a number of new radiator-heated locations such as passive or energy efficient houses.

Select the type of actuator.

### H2 Circuit configuration

H2 circuit configuration follows the same steps as H1 circuit configuration.

### DHW Circuit configuration

When you take the circuit into use, you can select a voltage-controlled motor type.

### Perform start-up sequence again?

If you select "Yes", the regulator will display the start-up sequence when it is powered on. If you select "No", the regulator will display the basic view when it is powered on. The heating method can then be set in the circuit settings and service mode settings. Time and language settings are found under system settings.

NOTE! If you later want to implement controlled start-up again, select in the service mode "Activate startup wizard."

### Regulator basic mode

**Heating control of the main factors has been gathered to the home screen of the controller. When the device is in sleep mode (button has not been pressed for 10 minutes), the display shows the basic display.**

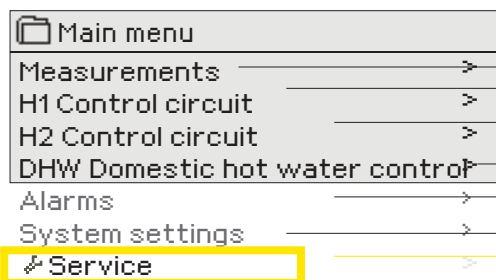
#### Alarm notice

- A blinking exclamation mark indicates that the device is active alarms.
- This number shows the number of active alarms.

# 3 Service

Here is the C203 controller menu structure. Press the control button (OK) to enter the menu.

Turn the control knob to navigate in the menu.  
Press OK at the "Service" row.

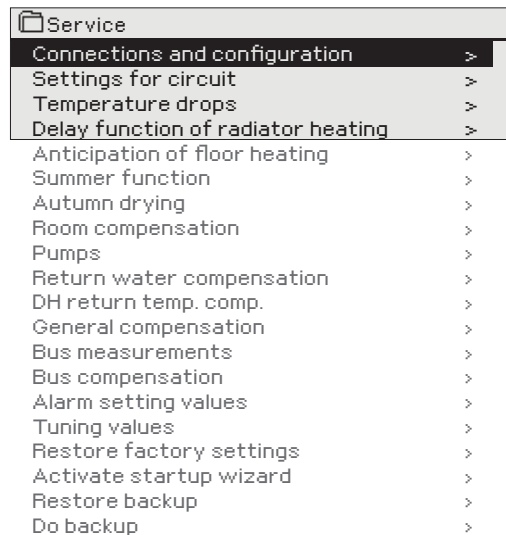
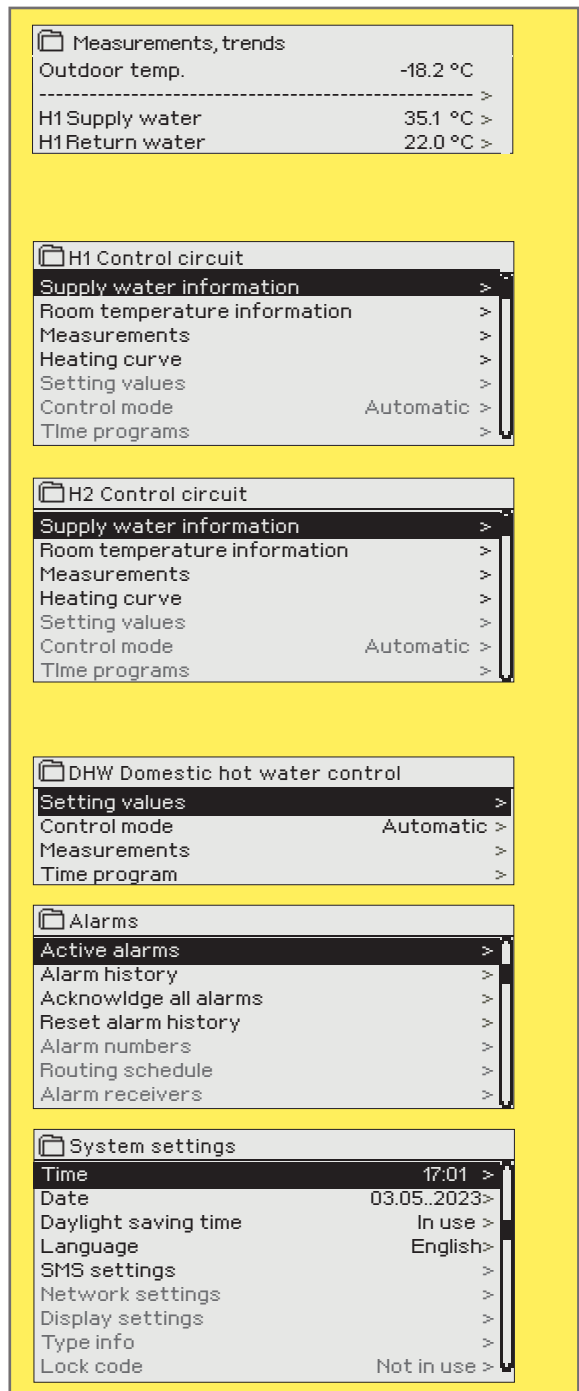


Service mode can be accessed with a service code.

Enter the service code and press OK.

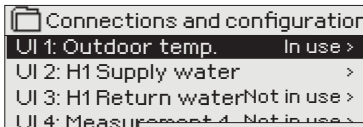
Service mode shows the regulator's connections and is used to service functions.

Regulator tuning is also done in service mode and it includes all of the regulator's value settings.

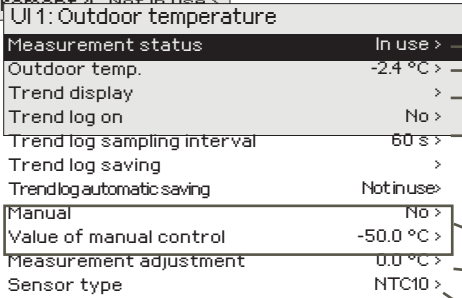




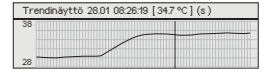
# 3.1 Connections and configuration



Usage connections are grouped according to connection points and functions. When you press OK, a menu will open by the measurement/connection point that you can use to:



- You can take inputs/outputs into use
- read measurement information
- inspect connection point trends
- change trend log settings
  - The trend log can hold 2,000 measurement samples. (if the sample interval is 60 seconds -> log for 33 hours)
  - The regulator produces a separate trend log for each measurement.
  - The trend log is saved in a file (for example UI1.csv). operate a connection point manually
- If for example the measurement reads 0.5°C too much, set the temperature correction to -0.5°C.
- you can select type of temperature sensor NTC10, NTC1.8, NTC2.2, NTC20, NI1000, NI1000DIN or PT1000
- rename some of the connection points, see page 11.



If the sensor is defective, the measurement value shown will be -50 or 130 °C.

Check the functions which have been taken in use in the controller.

Inputs	Alternative measurement options
UI1 Outdoor temp.	<input type="checkbox"/> In use Note! Outdoor temperature can also read from bus.
UI2 H1 Supply water	<input type="checkbox"/> In use
UI3 H1 Return water	<input type="checkbox"/> In use -> <input type="checkbox"/> H1 Return water compensation
UI4 Meas. 4	<input type="checkbox"/> Temperature measurement-> Name: , specify _____ <input type="checkbox"/> H1 Room temp. Note! H1 Room temperature can also read from bus. <input type="checkbox"/> H1 Room temp. 0-10 V -> <input type="checkbox"/> H1 DH Return
<b>Message scaling (Room temp. 0-10 V)</b> Temperature minimum _____ (0.0 °C) Temperature max _____ ( 50.0 °C)	
UI5 H2 Supply water	<input type="checkbox"/> In use
UI6 H2 Return water	<input type="checkbox"/> In use -> <input type="checkbox"/> H2 Return water compensation
UI7 Meas. 7	<input type="checkbox"/> Temperature measurement -> Name, specify _____ <input type="checkbox"/> H2 Room temp. Note! H2 Room temperature can also read from bus. <input type="checkbox"/> H2 Room temp. 0-10 V -> <input type="checkbox"/> H2 DH Return
<b>Message scaling (Room temp. 0-10 V)</b> Temperature minimum _____ (0.0 °C) Temperature max _____ ( 50.0 °C)	
UI8 DHW Domestic hot water	<input type="checkbox"/> In use
UI9 DHW Circulation water	<input type="checkbox"/> In use
UI10 Meas. 10	<input type="checkbox"/> Temperature measurement
<input type="checkbox"/> Switch alarm Name: Switch alarm (M10), other, specify _____	
<b>Switch alarm:</b> Digital input type: <input type="checkbox"/> normally open <input type="checkbox"/> normally closed Alarm entry delay _____ (30s) Alarm priority ____ (1=Emergency)	
<b>Temperature measurement:</b> UI 10 Alarm entry delay ____ (60 s) UI 10 Alarm max limit ____ (131 °C) UI 10 Alarm min limit ____ (-51 °C) Alarm priority ____ (Emergency) Name of meas.: <b>DH Supply</b> , other specify _____	
UI11 Meas. 11	<input type="checkbox"/> Temperature measurement
<input type="checkbox"/> Switch alarm Name: M11 Switch alarm mode, other,, specify _____	
<b>Switch alarm:</b> Digital input type: <input type="checkbox"/> normally open <input type="checkbox"/> normally closed Alarm entry delay _____ (30s) Alarm priority ____ (1=Emergency)	
<b>Temperature measurement:</b> UI 11 Alarm entry delay ____ (60 s) UI 11 Alarm max limit ____ (131 °C) UI 11 Alarm min limit ____ (-51 °C) Alarm priority ____ (Emergency) Name of meas.: <b>DH Return temp</b> , other specify _____	

Inputs	Alternative measurement options	Attention
UI12 Meas. 12	<input type="checkbox"/> Temperature measurement -> <input type="checkbox"/> Pressure switch <input type="checkbox"/> Pressure transmitter V <input type="checkbox"/> Pressure transmitter mA	Name: Meas. UI12; other specify _____ <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <b>Pressure switch:</b>            Digital input type:  <input type="checkbox"/> normally open  <input type="checkbox"/> normally closed         </div> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin-top: 10px;"> <b>Pressure transmitter:</b>            Measuring area _____ (16.0 bar)            Measurement adjustment _____ (0.0)            Name: (Pressure measurement 1) , other specify _____            Pressure meas. 1 low limit alarm: _____ (0.5bar)            Pressure meas. 1 high limit alarm: _____ (15.0bar)         </div>
UI13 Meas. 13	<input type="checkbox"/> Temperature measurement -> <input type="checkbox"/> Pressure switch <input type="checkbox"/> Pressure transmitter V <input type="checkbox"/> Pressure transmitter mA	Name: Meas. UI13; other specify _____ <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <b>Pressure switch:</b>            Digital input type:  <input type="checkbox"/> normally open  <input type="checkbox"/> normally closed         </div> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin-top: 10px;"> <b>Pressure transmitter:</b>            Measuring area _____ (16.0 bar)            Measurement adjustment _____ (0.0)            Name: (Pressure measurement 2) , other specify _____            Pressure meas. 2 low limit alarm: _____ (0.5bar)            Pressure meas. 2 high limit alarm: _____ (15.0bar)         </div>
UI14 Meas. 14	<input type="checkbox"/> General compens. 0-10 V, <input type="checkbox"/> General compens. 0-20 mA, <input type="checkbox"/> Home/Away switch	<p><b>General compensation:</b> In circuit-specific value settings you can specify the measurement message range in which compensation is used, as well as the maximum correction to supply water temperature that can be made using compensation. You can assign names to general compensation (e.g. solar compensation, wind compensation or pressure compensation).</p> <hr/> <p><b>Home/Away control:</b>            The control will be taken separately in use (see Service -&gt; Temperature drops). You can also do Home/Away control in "Measurements"-menu or by SMS message /"Home"/"Away", requires GSM-modem).</p>

### ALARMS, INDICATIONS AND PULSE MEASUREMENTS

Input / Output	Alternative measurement options	Attention
UI15 Alarm/ Indication 15	<input type="checkbox"/> Indication -> Name: P2.1 Pump <input type="checkbox"/> Alarm-> Alarm priority ____ (1=Emergency)	<div style="border: 1px solid black; padding: 5px;"> <b>Digital input type:</b>  <input type="checkbox"/> normally open  <input type="checkbox"/> normally closed            Name _____         </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <b>Pump indication</b> can be selected when pump control is also connected. The regulator emits a conflict alarm if the regulator switches the pump on but it does not activate. The alarm has a 5 s delay.  <b>Pump alarm:</b> Pump indication data is supplied by the frequency converter unit. The regulator emits a pump alarm when a conflict state occurs.         </div>
UI16 Alarm/ Indication 16	<input type="checkbox"/> P3.1 Indication -> Name: P3.1 Pump <input type="checkbox"/> P3.1 Alarm -> Alarm priority ____ (1=Emergency) <input type="checkbox"/> P2.2 Indication -> <input type="checkbox"/> P2.2 Alarm ->	<div style="border: 1px solid black; padding: 5px;"> <b>Digital input type:</b>  <input type="checkbox"/> normally open  <input type="checkbox"/> normally closed            Name _____         </div>
DI1 Digital input 17	<input type="checkbox"/> P1 Alarm-> Name: P1 Pump <input type="checkbox"/> General alarm -> Name: General alarm status Alarm priority ____ (1=Emerg.)  <input type="checkbox"/> P2.2 Indication -> <input type="checkbox"/> P2.2 Alarm -> <input type="checkbox"/> P3.2 Indication -> <input type="checkbox"/> P3.2 Alarm ->  <input type="checkbox"/> Water flow meas. <input type="checkbox"/> Energy measurement	<div style="border: 1px solid black; padding: 5px;"> <b>Digital input type:</b>  <input type="checkbox"/> normally open  <input type="checkbox"/> normally closed            Name _____         </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <b>Pulse measurement settings:</b>  <b>Water flow measurement</b>            Pulse input scaling: _____ 10 l/pulse (setting range 1 ... 100 l/pulse)            Counter initial value: _____ 0.0 m3            Name of meas. DI1(2) Water volume <hr/> <b>Energy measurement</b>            Pulse input scaling: _____ 10 kWh/pulse (setting range 1 ... 100 kWh/pulse)            Counter initial value: _____ 0.0 MWh            Name of meas. DI1(2) Energy measurement <hr/> <b>When the counter initial value is set, go to the line "Save initial value into the counter" and click "OK".</b> </div>
DI2 Digital input 18	<input type="checkbox"/> Water flow meas. <input type="checkbox"/> Energy measurement <input type="checkbox"/> P2.2 Indication -> <input type="checkbox"/> P2.2 Alarm ->  <input type="checkbox"/> P3.2 Indication -> <input type="checkbox"/> P3.2 Alarm ->	Name _____          <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <b>When the counter initial value is set, go to the line "Save initial value into the counter" and click "OK".</b> </div>

## ACTUATOR CONTROLS

Name	Output	Actuator selection	Actuator running time / factory setting (setting range)
<b>H1</b> Actuator control	AO1 AO1 TR1, TR2	<input type="checkbox"/> 0-10 V / <input type="checkbox"/> 2-10 V / <input type="checkbox"/> 10-0 V / <input type="checkbox"/> 10-2 V <input type="checkbox"/> 3-point	Actuator running time open ____ 150 s (10...500 s) Actuator running time close ____ 150 s (10...500 s)
<b>H2</b> Actuator control	AO3 AO3 TRS 1, TRS2	<input type="checkbox"/> 0-10 V / <input type="checkbox"/> 2-10 V / <input type="checkbox"/> 10-0 V / <input type="checkbox"/> 10-2 V <input type="checkbox"/> 3-point	Actuator running time open ____ 150 s (10...500 s) Actuator running time close ____ 150 s (10...500 s)
<b>DHW</b> Actuator control	AO5 AO5	<input type="checkbox"/> 0-10 V / <input type="checkbox"/> 2-10 V <input type="checkbox"/> 10-0 V / <input type="checkbox"/> 10-2 V	Actuator running time ____ 15 s (10...500 s)
<b>H1</b> Actuator control 2 (serial driving)	AO2 AO2	<input type="checkbox"/> 0-10 V / <input type="checkbox"/> 2-10 V <input type="checkbox"/> 10-0 V / <input type="checkbox"/> 10-2 V	Running time ____ 150 s (10...500 s)
<b>H2</b> Actuator control 2 (serial driving)	AO4 AO4	<input type="checkbox"/> 0-10 V / <input type="checkbox"/> 2-10 V <input type="checkbox"/> 10-0 V / <input type="checkbox"/> 10-2 V	Running time ____ 150 s (10...500 s)
<b>DHW</b> Actuator control 2 (serial driving)	AO6 AO6	<input type="checkbox"/> 0-10 V / <input type="checkbox"/> 2-10 V <input type="checkbox"/> 10-0 V / <input type="checkbox"/> 10-2 V	Running time ____ 15 s (10...500 s)

## PUMP CONTROLS

Name	Output	Control mode	Manual control
<b>P2.1</b> Pump control (H1)	<input type="checkbox"/> (72, 73) NO, normally open <input type="checkbox"/> (72, 71) NC, normally closed	<input type="checkbox"/> Automatic <input type="checkbox"/> Manual ->	<input type="checkbox"/> Stop <input type="checkbox"/> Run
<b>P3.1</b> Pump control (H2)	<input type="checkbox"/> (75,76) NO, normally open <input type="checkbox"/> (75,74) NC, normally closed	<input type="checkbox"/> Automatic <input type="checkbox"/> Manual ->	<input type="checkbox"/> Stop <input type="checkbox"/> Run
<b>P2.2</b> Pump control (H1)	<input type="checkbox"/> (75,76) NO, normally open <input type="checkbox"/> (75,74) NC, normally closed <input type="checkbox"/> TR1/ <input type="checkbox"/> TR2/ <input type="checkbox"/> TRS1 <input type="checkbox"/> TRS2/ <input type="checkbox"/> AO2/ <input type="checkbox"/> AO4 / <input type="checkbox"/> AO6	<input type="checkbox"/> Automatic <input type="checkbox"/> Manual -> <input type="checkbox"/> Off <input type="checkbox"/> On	Double pump function: <input type="checkbox"/> Backup pump <input type="checkbox"/> Alternate pump
<b>P3.2</b> Pump control (H2)	<input type="checkbox"/> (72,73) NO, normally open/ <input type="checkbox"/> (72,71) NC, normally closed/ <input type="checkbox"/> TR1/ <input type="checkbox"/> TR2/ <input type="checkbox"/> TRS1 <input type="checkbox"/> TRS2/ <input type="checkbox"/> AO2/ <input type="checkbox"/> AO4 / <input type="checkbox"/> AO6	<input type="checkbox"/> Automatic <input type="checkbox"/> Manual -> <input type="checkbox"/> Off <input type="checkbox"/> On	Double pump function: <input type="checkbox"/> Backup pump <input type="checkbox"/> Alternate pump

**Double pump function:** If dual pump function is used, at least one pump must be connected NO type.

**Backup pump/ Automatic:** Backup pump/ Automatic: If pump 1 goes into a malfunction the controller automatically switches on the backup pump (pump 2) and gives an alarm from pump 1.

Backup pump interval use: The controller drives the main pump (PX.1) once a week, on Mondays at 8.00-8.01 and the backup pump (PX.2) 8.01-8.02. Backup pump function from version 1.5.3.

**Alternate pump/ Automatic:** Pumps 1 and 2 are controlled by the controller to function on alternate time periods as a main pump. The other pump then functions as a backup pump. If pump goes into a malfunction the controller automatically switches on the backup pump and gives an alarm from main pump. The pumps are used alternatively so they both get the same amount of wear and thus have a longer lifespan.

The operation of the pumps is measured by a running time counter. The pump and the alternate pump vary by run time and the pump change can be adjusted by the user (default 7 days, setting range 0...365 days). An alternative pump function can be found from the version 1.53.

Interval operation also works in the alternating pump case. During interval operation, the co-pump is stopped, so only one pump runs at a time.

## SUM ALARM

Sum alarm	TRS 2 (connectors 79-80)	Note! If a 3-point actuator is in use in H2 control circuit, the sum alarm is not in use.	<input type="checkbox"/> 1-class <input type="checkbox"/> 2-class <input type="checkbox"/> 1- or 2-class	<b>An aggregate alarm is emitted if an alarm in a selected alarm class (priority) is activated.</b>
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### Renaming:

Name of meas.:

G e n e r a l c o m p e n s a t i

Approve: Press OK a number of seconds  
Cancel: Press ESC a number of seconds

Navigate to "Measurement name" and press OK. A naming dialogue box will open. Turn the selection knob and accept a letter by pressing OK.

Continue to the next screen by pressing OK.

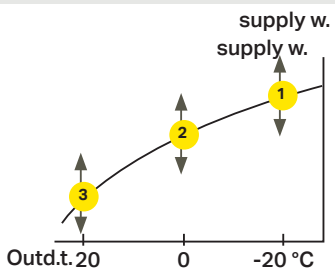
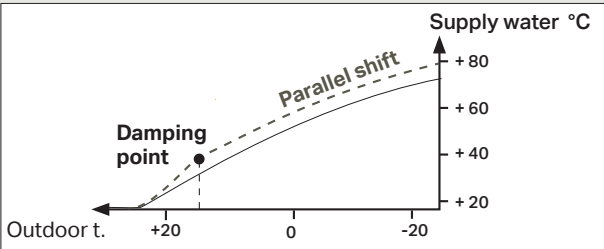
Return to the previous screen by pressing ESC.

Accept the name by pressing OK for an extended period of time.

## 3.2 Settings for circuit

Service mode includes all value settings for the regulator. Some of the value settings can also be found in the circuit's "Value settings" menu. Value settings preceded by a **F**-symbol are found only in service mode. Changing a value setting: Select the desired value setting by turning the selection knob. Press OK. A new window will open where changes can be made. Accept the changes by pressing OK. Exit change mode by pressing ESC.

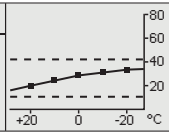
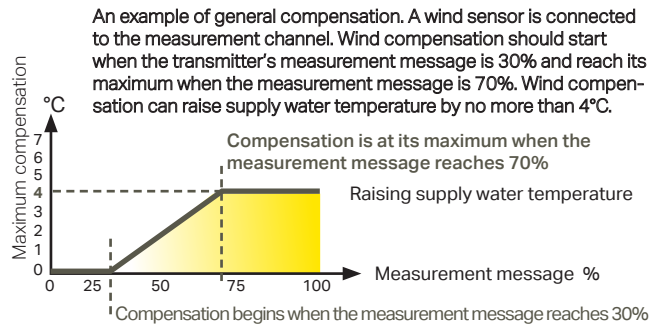
The regulator shows H1 circuit regulation curve settings first and then H2 circuit settings. Both circuits have the same factory settings and setting ranges.

CONTROL CIRCUIT SETTINGS			
Setting	Factory setting	Range	Explanation
<b>Control circuit</b>	In use	In use/ Not in use	Control circuits are already taken into use in start-up wizard. If you want to have the control disabled, select "Not in use".
<b>Heating circuit</b>	Radiator heating	Radiator heating/ Floor heating	If the radiator heating is chosen as a heating mode, the controller uses the outdoor temperature delay in supply water control (see. Radiator heating delay). If you have selected the floor heating, the controller uses the outdoor temperature anticipation in supply water control (see. Floor heating anticipation).
<b>Heating curve</b>	5-point curve	3-point curve/ 5-point curve	<div style="display: flex; align-items: flex-start;">  <div style="margin-left: 10px;"> <p>Using the 5-point curve you can change the regulation curve to the outdoor temperature values -20°C and +20°C as well as to three other outdoor temperatures between -20°C and +20°C. To change the outdoor temperature point, press OK for a long period of time.</p> <p>Using the 3-point curve you can change supply water temperatures with the outdoor temperature values -20°C, 0°C and +20°C.</p> </div> </div>
<b>Parallel shift</b>	0.0	-15 ... +15 °C	If room temperature is continuously above or below the setting value despite the outdoor temperature, you can add a permanent compensation value to the supply water setting value.
<b>Parallel shift damping point</b>	7.0	-20 ... +20 °C	Outdoor temperature set by the user at which the effect of parallel shift begins to dampen. When the outdoor temperature reaches +20°C, the effect of parallel shift has already completely stopped. The factory default setting for the damping point is 7°C. At a value setting of more than 17°C parallel shift damping is not enabled (the function is not available if room temperature measurement is connected).
			
<b>Min.limit</b>	18.0 °C	0 ... 99 °C	The low limit for supply water. For comfort reasons, the higher low limit is used in bath rooms than e.g. in rooms with parquet floor. This also removes the moisture from path rooms at summer time.
<b>Max.limit</b>	Radiator heating 70 °C Floor heating, norm. 45 °C	0 ... 99 °C	High limit of supply water. With high limit settings it's prevented that there will not be too hot water in the circulation which might damages the floor material of the heating pipes.
<b>Actuator calibration</b>	In use	Not in use/In use	The controller automatically calibrates the valve once a week on (Monday at 09 am). The controller first completely closes the valve and then opens to the position determined by the controller.

Setting	Factory setting	Range	Explanation
<b>DHW Control circuit</b>	Not in use	In use/ Not in use	The control circuits will be taken into use already in start up wizard. If you want to have the control disabled, select "Not in use".
<b>DHW Domestic hot water setting value</b>	58.0 °C	20 ... 90 °C	DHW Supply water temperature setting.
<b>DHW increase/drop time prog.</b>	Not in use	In use/ Not in use	Domestic hot water increases and drops can be made by DHW time program. The change of temperature setting value is made either by the week calendar or exception calendar.
<b>Domestic hot water drop</b>	10.0 °C	0 ... 30 °C	The amount of drop in domestic hot water drop/increase time programs.
<b>Domestic hot water increase</b>	10.0 °C	0 ... 30 °C	The amount of increase in domestic hot water drop/increase time programs.
<b>DHW Actuator calibration</b>	In use	Not in use/ In use	The controller automatically calibrates the valve once a week on (Monday at 09 am). The controller first completely closes the valve and then opens to the position determined by the controller.
<b>Temperature drops</b>			
<b>Temperature drop</b>		0... 40 °C	Temperature drop in supply water, which can start due to scheduling software or a Home/Away text message command or when selecting constant big temperature drop as the circuit's mode. If room temperature measurement has been taken into use, the temperature drop is given directly as a room temperature drop.
Supply water, radiator heating	3		
Supply water, floor heating	1.5		
<b>Big temperature drop</b>		0... 40 °C	A big temperature drop in supply water temperature can be initiated by the scheduling programme or a command from the home/away switch, or when the continuous big temperature mode mode is selected. If room temperature measurement has been taken into use, the big temperat. drop is given directly as a room temperature drop.
Supply water, radiator heating	5.0		
Supply water, floor heating	2.0		
<b>Supply water pre-increase</b>		0... 25 °C	
Supply water	4.0		
Room temperature	1.5		
<b>Supply water pre-increase</b>	In use	In use/ Not in use	
<b>Pre-increase time</b>	1	0... 10 h	The pre-increase time defines the time, when the pre-increase is started. If pre-increase time is one hour, the pre-increase will start one hour before the time program ends the temperature drop (returning to normal temperature).
<b>Home/Away control</b>	Not in use	In use/ Not in use	The Home/Away mode makes transitions between temperature levels. If transmission measurement is connected to the regulator for general compensation, you cannot connect the Home/Away switch but you can use the Home/Away mode via SMS or from the regulator's "Measurements" menu.
<b>Temp.lev. of Away control</b>	Temp.drop	Temp.drop/ Big temp. drop	If the Home/Away mode is in use, you can select the desired temperature in the "Away" mode. The selections are temperature drop or big temperature drop. The default is temperature drop.
<b>Delay function of radiator heating</b>			
<b>Outd.temp.delay on temp.drop</b>		0... 15 h	<b>Outdoor temperature delay is in use, if the radiator heating is selected as a heating mode in the control circuit settings.</b> The amount of the outdoor temperature delay is defined with "Outd.temp. delay on temp.drop" setting. The delayed outdoor temperature is used for regulating the supply water temperature. The typical outdoor temperature delay for radiator heating is 2 hours. If the room temperature rises too much when temperatures lowers, increase the "Outd.temp. delay on temp.drop" If the opposite occurs, lower the delay time.
Radiator heating	2.0		
<b>Outd.temp.delay on temp.increase</b>		0... 15 h	Typically 2 hours delay time is used in radiator heating. If room temperature decreases too much when outdoor temperatures increase below the freezing point, increase the setting value "Outd.temp.delay on temp.increase." "Outd.temp.delay on temp.increase."
Radiator heating	2.0		

Setting	Factory setting	Range	Explanation
<b>Anticipation of floor heating</b>			
<b>Floor heat. anticipate on temp.drop</b> Floor heating	2.0	0... 15 h	The anticipation drop of floor heating is in use, if the the floor heating is selected as a heating mode in the control circuit settings. Typically 2 hours delay time is used in floor heating. If room temperature falls too much when freezing temperatures fall further, increase anticipation. If the opposite occurs, lower anticipation.
<b>Floor heat. anticipate on temp.Incr.</b> Floor heating	2.0	0... 15 h	Anticipation of floor heating is used for stabilizing room temperature when outdoor temperature changes. In floor heating, the concrete mass of the floor slows transmission of heat from floor to room air temperature. If room temperature rises too much when temperatures rises in winter, increase anticipation.
<b>Summer function</b>			
<b>Pump summer stop</b>	In use	In use/ Not in use	If C203 controls also the pump, the pump can be stopped while the summer function mode is active.
<b>Summer function outd. temp. limit</b>	19.0	10 ... 35 °C	Summer function outdoor temperature limit. When the measured or forecast outdoor temperature exceeds the outdoor temperature limit of the summer function, the regulation valve closes and the circulation water pump stops (if valve summer shut-down is in use).
<b>Summer function inhibition limit</b>	6.0	-10...20	The summer function is turned off immediately if the real-time outdoor temperature falls to the "Summer function inhibition limit." The summer function is also turned off if room temperature falls at least 0.5°C below the value setting or when the C203 restarts.
<b>Summer function off delay max</b>	10	0...20h	The summer function switch off delay determines the starting time for heating. This helps avoid unnecessary heating during summer in case the outdoor temperature falls momentarily. The switch off delay is calculated as follows: [the duration of the summer function] x [summer function off delayfactor] (limited to the set max delay value). The switch off delay is reset if the room sensor is active and the room temperature drops more than 0.5 °C below the set value, or in the event of a power cut.
<b>Summer function off delay factor</b>	1.5	1.0...3.0	
<b>Outdoor temp. forecast</b>	Not in use	In use/ Not in use	S203 uses temperature forecasts from bus for continousing.
<b>Valve summer shut-down</b>	In use	In use/ Not in use	The setting is used to select whether or not the regulation valve is closed when the summer function is in use.
<b>Valve summer flushing</b>	In use	In use/ Not in use	If controller is in summer function mode the flushing operation is activated every Monday at 8.00. The controller opens the valve 20% open and then closed. If the controller also controls the circulation pump, the circulation pump is used during valve flushing.
<b>Autumn drying</b>			
<b>Autumn drying</b>	In use	In use/ Not in use	In autumn dry mode, supply water temperature is automatically raised for 20 days. The function is turned on automatically when the average daytime temperature has been more than 7°C for a minimum of 20 days and then falls below +7°C. The function remains on for the following 20 days if the outdoor temperature is below 7°C.
<b>Effect of autumn dry</b>			The setting value shows how much the autumn dry function raises supply water temperature. If room temperature is in use, the user sets how much the room temperature's setting value is increased.
<b>Autumn dry effect on supply water</b>			
Supply water (Radiator heating)	4.0	0... 25 °C	
Supply water (Floor heating)	1.5	0... 1.5 °C	
<b>Autumn dry effect on room temp.</b>	1.0	0... 1.5 °C	

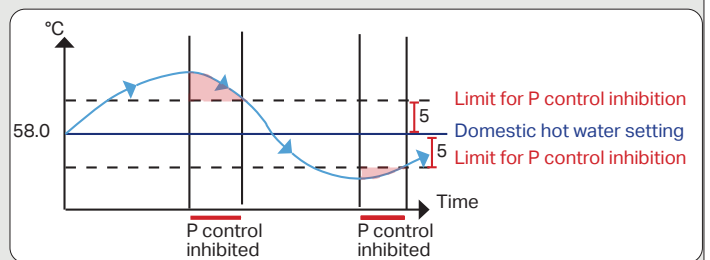
Setting	Factory setting	Range	Explanation
<b>Room compensation</b>			
<b>Room compensation</b>	In use	In use/ Not in use	It can be defined whether room temperature affects the control of supply water. If the measured room temperature differs from its setting value, room compensation corrects the temperature of the supply water.
<b>Room temperature</b>	21.5	5... 50 °C	Basic room temperature setting for the controller set by the user. This setting value is not visible unless room compensation is in use.
<b>Room temp. measurement delay</b>	2.0	0...2 h	Amount of room temperature measurement delay. Different buildings react to temperature changes at different rates. This setting value can reduce the effect of the building on the room temperature control.
<b>Room compensation ratio</b>		0...7	Coefficient used in applying the difference between room measurement and the room setting value to the supply water setting value. For example, if room temperature in radiator heating is one degree below the setting value, supply water is raised by four degrees.
Radiator heating	4.0		
Floor heating	1.5		
<b>Comp. max.effect on supply water</b>		0...25 °C	Room compensation's maximum effect on the supply water.
Radiator heating	16.0		
Floor heating	5.0		
<b>Room comp.adjustm. time (I-time)</b>		0.5 ... 7 h	Time correction improves the room compensation function (I-regulation). In massive houses or houses where floor heating has been installed on a concrete floor, longer room compensation correction times are used.
Radiator heating	1.0		
Floor heating	2.5		
<b>I control's max effect on supply water</b>		0 ... 15 °C	Room compensation time correction can change supply water temperature to no more than this setting value. If room temperature continuously fluctuates, check whether the problem is resolved by lowering the setting value.
Radiator heating	3.0		
Floor heating	2.0		
<b>Pumps</b>			
<b>Double pump function</b>	Backup pump	Alternate pump/ Backup pump	The other pump can function either as an alternate pump or as a backup pump. If you choose an alternate pump use, the pump operates alternately as a main pump and as a backup pump. The backup pump starts when the main pump fails.
<b>Pumps run time period</b>	7 days	1 ... 3 6 5 days	In alternate pump use the pumps 1 and 2 are controlled by the controller to function on alternate time periods as a main pump and a backup pump. The alternate use is aimed at constant pump wear and a longer lifetime. The operation of the pumps is measured by a run time counter.
<b>Pump run time</b>			Information to be read from the pump running time counter.
<b>Reset run time counter</b>	No	No/Yes	It is good to reset the run time counter when replacing the old pump with a new one.
<b>Pump control</b>	Auto-matic	Automatic/ Manual	Pump control status: on / off. If necessary, you can force the pump to manual control and select whether the pump is in on mode or in off mode. If the control is set to manual, the palm image will appear at the beginning of the line.
<b>Return water compensation</b>			
<b>Return water compensation ratio</b>	2.0	0 ... 7.0	If the return water temperature decreases below the low limit (freeze risk), the supply water temperature will be increased. The amount of increase is the amount of undershoot (low limit - return water temperature) multiplied by the compensation ratio.

Setting	Factory setting	Range	Explanation										
<b>DH return water compensation</b>													
<b>H1 (H2) DH return temp. comp.</b>	Not in use	In use/ Not in use	The function, which drops the setting value of heating circuit supply water, if the DH return water temperature from the heat exchanger exceeds the value of the compensation curve which is proportional to outdoor temperature.										
<b>H1 (H2) DH return temp. max comp .</b>	20	0 ... 50 °C	The value by which DH Return compensation can affect in maximum to supply water setting.										
<b>H1 (H2) DH return t. comp. curve</b>			Enabled a 5-point curve, which can be edited. <div style="display: flex; align-items: flex-start;"> <table border="1" style="margin-right: 10px;"> <tr><td colspan="2">H1 DH return temp. comp.</td></tr> <tr><td>-20 = 65 °C</td><td>-10 = 59 °C</td></tr> <tr><td>0 = 47 °C</td><td>+10 = 42 °C</td></tr> <tr><td>+20 = 42 °C</td><td></td></tr> <tr><td colspan="2">Min.limit: 42 Max.limit: 65</td></tr> </table>  </div>	H1 DH return temp. comp.		-20 = 65 °C	-10 = 59 °C	0 = 47 °C	+10 = 42 °C	+20 = 42 °C		Min.limit: 42 Max.limit: 65	
H1 DH return temp. comp.													
-20 = 65 °C	-10 = 59 °C												
0 = 47 °C	+10 = 42 °C												
+20 = 42 °C													
Min.limit: 42 Max.limit: 65													
<b>Min. limit</b>	42	20... 60 °C	When DH return water temperature from heating exchanger is smaller than min. limit, the effect of DH retur water compensation is zero.										
<b>Max.limit</b>	65	50... 70 °C	When DH return water temperature from heating exchanger is higher than max limit, the effect of DH retur water compensation affects always.										
<b>H1 (H2) DH ret. water comp. P-area</b>	200	2... 500 °C	P-area of DH ret. water comp. in PI-control.										
<b>H1 (H2) DH ret. water comp. I-time</b>	180	0 ... 300 s	I-time of DH ret. water comp. in PI-control.										
<b>General compensation</b>													
			General compensation can increase or decrease the temperature of supply water. Transmitter measurement allows to utilize wind or solar measurement or pressure differential measurement over the heating network.										
<b>Compensation min Comp.reaches max on meas.signal</b>	0 100	0 ...100 % 0 ...100 %	Setting limit values for a compensation area. Set the transmitter measurement message value at which compensation begins and the value at which it reaches its maximum level. The amount of compensation is linear between the limit values. (The transmitter is taken in use and setting values for the measurement area defined in the configuration of the particular measurement channel.)										
<b>Compensation min effect</b>	0	-20 ... 20 °C	Minimum compensation defines how much the supply water temperature is changed when compensation begins.										
<b>Compensation max effect</b>	0	-20 ... 20 °C	Maximum compensation defines the maximum amount that compensation can raise or lower supply water temperature. If wind measurement is used in transmitter measurement the setting value is positive, i.e. supply water temperature is raised due to the wind. If solar measurement is used in transmitter measurement the setting value is negative, i.e. supply water temperature is lowered due to solar radiation.										
			<div style="border: 1px solid black; padding: 5px;"> <p>An example of general compensation. A wind sensor is connected to the measurement channel. Wind compensation should start when the transmitter's measurement message is 30% and reach its maximum when the measurement message is 70%. Wind compensation can raise supply water temperature by no more than 4°C.</p>  <p>Maximum compensation °C</p> <p>Measurement message %</p> <p>Compensation begins when the measurement message reaches 30%</p> <p>Compensation is at its maximum when the measurement message reaches 70%</p> <p>Raising supply water temperature</p> </div>										
<b>Compensation filtering</b>	5	0...300 s	Output signal filtering. The filtering attenuates the effect of rapid changes.										
<b>Bus compensation</b>													
			In channel compensation the need for compensation can be specified by an external device that relays the need for a supply water temperature exception to the C203 through a communication channel (e.g. Ounet S-compensation).										
<b>Supply water max. increase</b>	0	0 ... 30.0 °C	Channel compensation cannot increase supply water temperature more than allowed by the setting value.										
<b>Supply water max. drop</b>	0	0 ... 30.0 °C	Channel compensation cannot drop supply water temperature more than allowed by the setting value.										

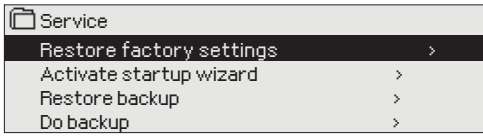
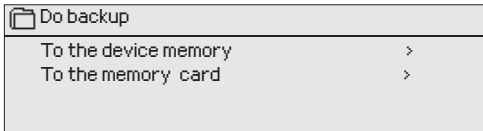
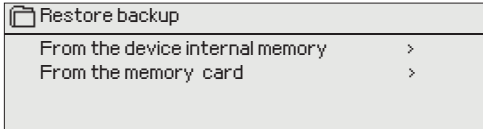
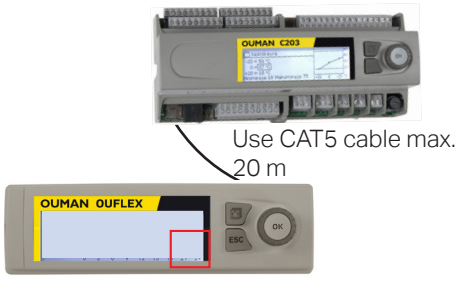


Setting	Factory setting	Range	Explanation
<b>Bus measurements</b>			
<b>Outdoor temperature from bus</b>	Not in use	Not in use/ In use	A outdoor temperature measurement can be read either from bus or through UI1.
<b>H1 Room temp. from bus</b>	Not in use	Not in use/ In use	A room temperature measurement specific to H1 control circuit can be read either from bus or through UI4.
<b>H2 Room temp. from bus</b>	Not in use	Not in use/ In use	A room temperature measurement specific to H2 control circuit can be read either from bus or through UI7.
<b>Alarm setting values</b>			
<b>Alarm signal</b>	In use	In use/ Not in use	The alarm sound can choose to mute. The alarm is displayed in the active alarms and forwarded even if the alarm sound is turned off.
<i>H1 (H2) Control: Alarm settings</i>			
<b>Supply water deviation alarm</b>	10.0	1...50 °C	Amount of difference between measured supply water temperature and the supply water temperature set by the regulator that causes an alarm when the deviation has continued for the return delay time. A deviation alarm is not allowed when heating has been turned off for the summer, when the regulator is not on automatic or when outdoor temperature is more than 10°C and supply water temperature is less than 35°C. The alarm allows for a 5 s delay.
<b>Deviation alarm delay</b>	60min	0...120 min	The alarm goes off if the deviation has lasted for the set time.
<b>Supply water high limit alarm</b>		40...100 °C	Supply water high limit alarm
Radiator heating	80.0		
Floor heating	70.0		
<b>High limit alarm delay</b>	5	0...120 min	A deviation alarm occurs when the value defined as the upper limit for supply water alarm is exceeded for more than the delay time specified.
<b>Return water freezing risk limit</b>	8.0	5...25 °C	The return water freezing risk alarm is activated when return water temperature has remained below the freezing risk limit for longer than the allowed delay time. The exit delay for freezing risk alarm is 5 seconds.
<b>Return water alarm delay</b>	5	1...120 min	
<i>DHW control - Alarm settings:</i>			
<b>DHW over heating alarm limit</b>	68	65...120 °C	The controller gives a domestic hot water alarm when the temperature of domestic hot water exceeds the preset overheating alarm limit or falls below the low limit alarm limit and the excess/drop has lasted the delay time of overheating/ low limit alarm. The exit delay of the alarms is 5 minutes. If either DHW increase or drop is in use, the alarm limits will change so that in increase/drop mode the alarm limit is always at least 5 degrees above/below the current DHW setting value.
<b>DHW low limit alarm limit</b>	40.0	20...70 °C	
<b>DHW over heat./low limit alarm delay</b>	10	0 ... 15 min	
<b>Pressure measurements 1 and 2 have their own value settings.</b>			
<b>Pressure 1(2) low limit alarm</b>	0.5	0...20 bar	A lower limit alarm is activated when the pressure measurement decreases below the lower limit of the pressure measurement set value. Alarm is deactivated when the pressure is 0.1 bar over the limit.
<b>Pressure 1(2) high limit alarm</b>	15	0 ... 20 bar	The controller gives the upper limit alarm when the pressure measurement is greater than the upper limit of the pressure set value. Alarm goes off when the pressure is 0.1 bar below the limit.
<b>Alarm limits of temperature measurements UI 10 and UI11</b>			
<b>UI10 (11) Entry delay</b>	60	0...300 s	An alarm is activated, when the measured temperature has been under defined low limit or over high limit for longer than entry delay.
<b>UI10 (11) Alarm min limit</b>	-51	-51...131 °C	Low limit alarm is activated, when the temperature drops below the defined low limit. The alarm is deactivated, when the temperature is 1.0 °C over the lower limit.
<b>UI10 (11) Alarm max limit</b>	131	-51...131 °C	High limit alarm is activated, when the temperature increases above the defined high limit. The alarm is deactivated when the temperature is 1.0°C below the high limit.
<b>Contact alarm of free measurements UI 10 and UI11</b>			
<b>UI10 (11) Alarm delay</b>	30	0...300 s	Contact alarm is activated, when the entry delay has passed after an alarm activation.

Setting	Factory setting	Range	Explanation
<b>Tuning values</b>			
<b>H1 and H2 Tuning values:</b>			
<b>P-area</b>	200	2...600 °C	Supply water temperature change at which the actuator runs the valve at 100%. E. g. If the supply water temperature changes 10 °C and the P area is 200 °C the position of the actuator changes 5 % ( $10/200 \times 100 \% = 5 \%$ ).
<b>I-time</b>	50	5 ... 300 s	The deviation in the supply water temperature from the set value is corrected by P amount in I time. For example, if deviation is 10°C, P-range is 200°C and I time is 50 s, the actuator will be run at 5 % for 50 seconds.
<b>D-time</b>	0	0 ... 10 s	Regulation reaction speed up in the event of a temperature change. Beware of constant oscillation!
<b>Supply w. max.effect of change</b>	4.0	0.5... 5°C/min	The maximum speed at which the supply water can be raised when switching from a temperature drop to a nominal temperature. If the radiators knock, slow down the change rate (set the setting smaller).
<b>Actuator open running time</b>	150	10 ... 500 s	The running time indicates how many seconds go by when the actuator runs a valve nonstop from a closed position to an open position.
<b>Actuator close running time</b>	150	10 ... 500 s	The running time indicates how many seconds go by when the actuator runs a valve nonstop from a open position to a close position.
<b>DHW Tuning values</b>			
<b>P-area</b>	70	2 ... 500 °C	Supply water temperature change at which the actuator runs the valve at 100%.
<b>I-time</b>	14	5 ... 300 s	The deviation in the supply water temperature from the set value is corrected by P amount in I time.
<b>D-time</b>	0	0 ... 100 s	Regulation reaction speed up in the event of a temperature change. Beware of constant oscillation!
<b>Anticipating</b>	120	1...250 °C	Uses anticipation sensor measurement information to speed up regulation when DHW consumption changes. Increase the anticipation value to decrease reaction to changes in consumption.
<b>Quick run</b>	60	0 ... 100 %	Functions during consumption changes. Decrease this value to decrease reaction to quick temperature changes.
<b>Actuator open running time</b>	15	10 ... 500 s	The running time indicates how many seconds go by when the actuator runs a valve nonstop from a closed position to an open position.
<b>Actuator close running time</b>	15	10 ... 500 s	The running time indicates how many seconds go by when the actuator runs a valve nonstop from an open position to a close position.
<b>Limit for P control Inhibition</b>	5.0	0 ... 50 °C	If the measured temperature differs from the setting of the "Limit for P control inhibition" and the temperature change is toward the setting value, the P control is blocked for as long as the measured temperature reaches the "Limit for P control inhibition".

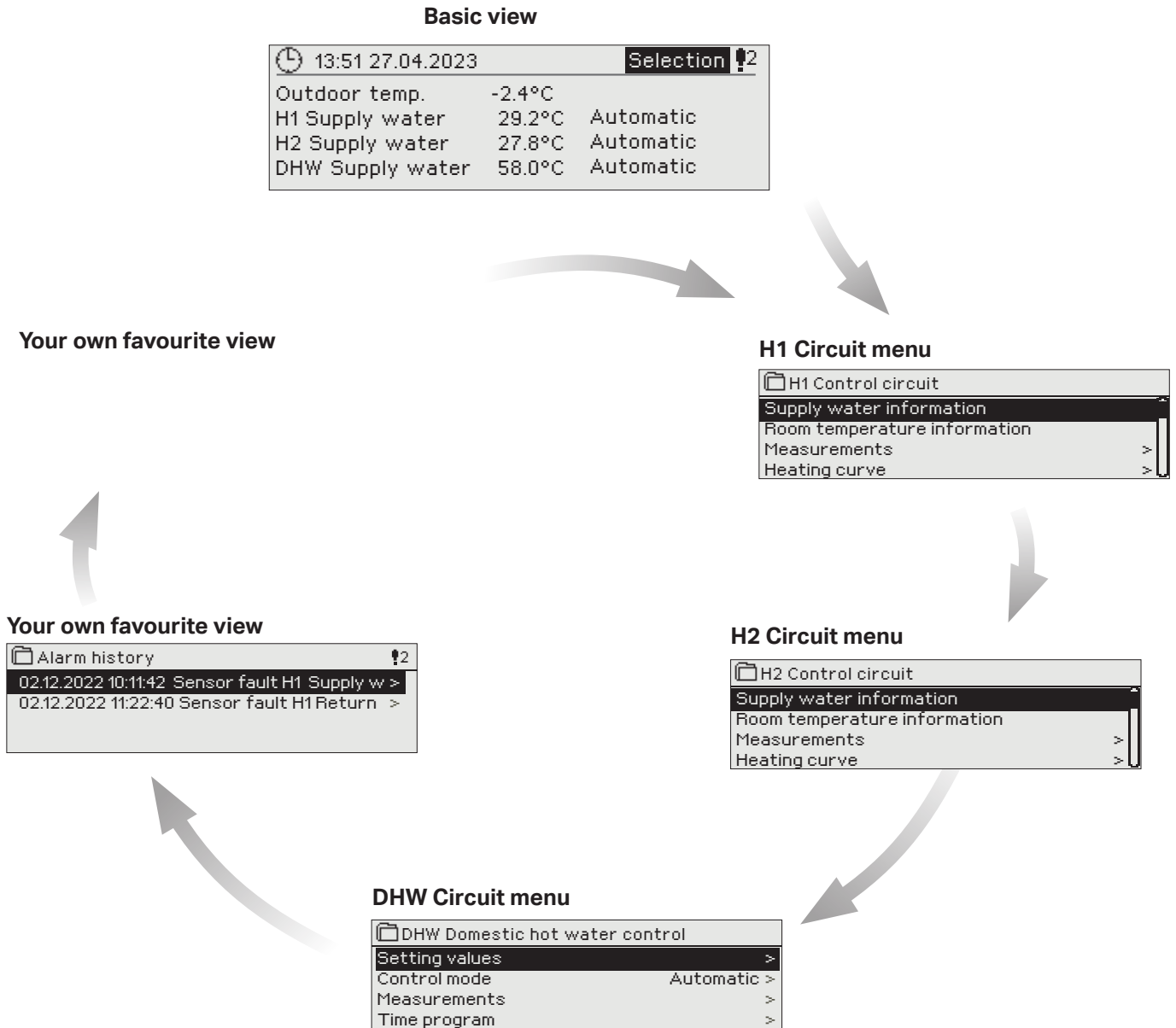


# 3.3 Restore factory settings and updates

<b>Restore factory settings</b>	
	When you reset the system to factory default settings, the regulator will revert to controlled start-up mode.
<b>Do backup</b>	
	<p><b>Create a backup, when C203 has been configured and the device-specific settings have been set.</b></p> <p><b>If desired, also the factory settings can be restored to the device. All the parameters which are saved in the non-volatile memory will be included in the backup. Such parameters are e.g. all the setting values and time programs. The backup can be saved to the internal memory or to micro SD memory card. Memory card backups can be copied from one device to another.</b></p> <p><b>Technical requirements to microSD memory card:</b></p> <ul style="list-style-type: none"><li>• Standard: micro SDHC, UHS</li><li>• Capacity: 512 MB...32 GB,</li><li>• File system: FAT 32</li><li>• Class: 4...10+</li></ul>
<b>Restore backup</b>	
	The latest backup may later be restored if necessary. The controller automatically creates backup every hour to the controller's internal memory and to the memory card if the controller has a memory card inserted. You can restore a backup from a memory card or internal memory. When you select "restore backup", the controller restores the backup you have made yourself, if any. If it is not found, the controller automatically restores the backup that it has created.
<b>Software updates</b>	
	<p><b>It is recommended to create a backup of the system before software update.</b> The software update is done with following steps: Insert microSD memory card which includes new software to controller C203 asks: "Would you like to restart device?" Select: "Yes" C203 reboot to start the update of the new software. The updating of the software takes few minutes.</p>
<b>Update external display firmware</b>	
 <p>Use CAT5 cable max. 20 m</p>	Press OK- and ESC -buttons of the external display and connect the display to C203. The software update is started (the display flashes). The update process takes few minutes.
<b>Activate startup wizard</b>	
	Start-up wizard allows you to specify the regulator's basic settings. Accept the selection by pressing the selection knob (OK) (see page 7).


# 4 Favourite views

You can easily navigate from the basic view to the desired menu using the favourite view function. By tapping the button you can navigate from one favourite view to another. There can be a maximum of five of these views. The pre-installed favourite views show the circuits' main menus. You can also save a particular regulator view as your own favourite view. You can return from favourite views to the basic view by tapping the ESC key until the basic view appears.



## Setting a favourite view

Get to set your own favorite displays when you exit the service mode of the controller back to basic mode. If you want to immediately go from the service mode to the basic mode, press and hold the ESC key as long as the control displays the main screen and the backlight is dimmed. (The controller automatically goes to base mode, where the keys of the controller is not touched for 10 minutes.)

Navigate to the view you want to add to your favourite views. Hold down the  key for an extended period of time until the "Save view in memory location:" menu opens. Use the dial to select the position where you want to add the favourite view and press OK. If you select a location where a favourite view has already been saved, the new favourite view will replace the existing one.

**Note!** Favorite the screens can not be stored in the service mode screens.

# Optional equipments and remote control options



M-LINK or  
GSM modem

Additional Control  
panel

## M-LINK

Adapter for C203 for networking  
M-LINK is an C203 adapter that is providing Modbus TCP/IP interface to C203 device.

- Integrated Ouman Access connection
- Modbus TCP/IP
- Modbus TCP/IP ↔ RTU Gateway
- SNMP alarm transfer
- Trend file storage and transfer (FTP + HTTP)

## GSMMOD

By connecting the modem to the C203 regulator, you can communicate with the regulator text messages and pass this information on alarms to your mobile via SMS. When controlling the regulator with using the browser web interfaces, the alarms can still sent to a GSM phone as SMS messages if needed.

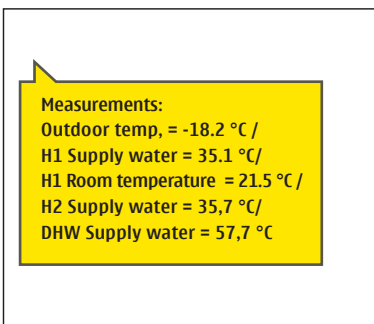
Ouman's GSM modem (GSMMOD) is connected to the C203 unit or to a M-LINK device if the C203's RJ-45 port has been connected to a M-LINK device. The modem has a fixed antenna that can be changed to an external antenna with a 2,5m cord (optional equipment) if needed. The modem's indicator light shows what mode it is in.



## Additional Control panel

The external display is connected to the RJ45-II port. Use e.g. a CAT-5 cable up to 20 m.

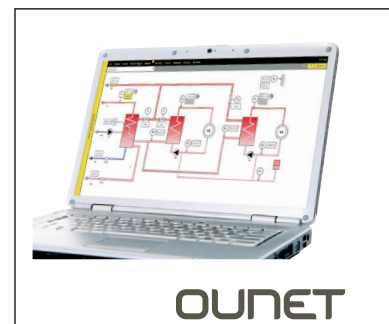
## Remote control options



Use a GSM phone requires that the GSM modem (optional) is connected to the controller.



Local Web Server remote control and monitoring (optional).



Internet-based on-line control room for professional remote control and monitoring (optional).

# Product information , warranty, and product disposal

<b>Product:</b>	Heat regulator for three circuits
<b>Manufacturer:</b>	Ouman Oy Linnunrata 14 FI-90440 Kempele FINLAND tel. +358 424 840 1 www.ouman.fi
<b>Product name:</b>	C203
<b>Models :</b>	C203 16 MB
<b>Version:</b>	HW and SW version on the type label
<b>Valid:</b>	2023/04

**There is a type label on the end of the device**



Year/month of manufacture

## WARRANTY

The seller provides a 24-month warranty for the quality of the materials and workmanship of all delivered goods. The warranty period begins on the date of purchase. In the event that material or workmanship defects are detected and the goods are sent, without delay or no later than by the end of the warranty period, back to the seller, the seller agrees to address the defect at their own discretion either by repairing the damaged goods or by delivering a new, defect-free goods, free of charge, to the buyer.

The buyer is responsible for the costs resulting from delivering the goods to the seller for warranty repairs, while the seller is responsible for the costs resulting from returning the goods to the buyer.

The warranty shall not cover damages resulting from accidents, lightning, floods or other natural events, normal wear and tear, inappropriate, negligent or unusual use of the goods, overloading, incorrect maintenance, or reconstruction, alteration and installation work which is not carried out by the seller (or their authorised representative).

The buyer shall be responsible for selecting material of equipment susceptible to corrosion, unless other agreements are signed. In the event that the seller alters the structure of their equipment, they shall not be obligated to make similar changes to previously procured equipment. The validity of the warranty requires that the buyer has fulfilled their contractual obligations related to the delivery.

The seller shall provide a new warranty for goods replaced or repaired under the original warranty. However, the new warranty shall only be valid until the expiration of the warranty period of the original goods. For any repairs not covered by the warranty shall be subject to a 3-month maintenance warranty covering the material and workmanship.

## Product disposal



The enclosed marking on the additional material of the product indicates that this product must not be disposed of together with household waste at the end of its life span. The product must be processed separately from other waste to prevent damage caused by uncontrolled waste disposal to the environment and the health of fellow human beings. The users must contact the retailer responsible for having sold the product, the supplier or a local environmental authority, who will provide additional information on safe recycling opportunities of the product. This product must not be disposed of together with other commercial waste.

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<b>Dimensions</b>	width 165 mm, height 110 mm, length 245 mm
<b>Weight</b>	1.3 kg
<b>Protection class</b>	IP 20
<b>Operating temperature</b>	0 °C...+40 °C 0 °C...+50 °C under the following conditions: - 24 Vac outputs the maximum load: a total of 300 mA - 15 Vdc output maximum load: 100 mA - The relay and triac outputs, maximum load: 230V/450 mA individual relay and triac outputs per
<b>Storing temperature</b>	-20 °C...+70 °C
<b>Power supply</b>	
Operating voltage/ Power requirement	230 Vac / 125 mA
Maximum load for internal 24 VAC power supply	0.4 A/10 VA continuously, temporary (60 s) 15 VA
Internal fuse	125 mA
Front fuse	max 10A
Backup input	12 Vdc
<b>Measurement inputs</b>	
Sensor measurement (inputs 1-13)	Measurement channel accuracy: Also sensor tolerances and the effect of cables must be considered when calculating total accuracy.  - <b>NTC10:</b> ±0.1 °C between -50 °C...+100 °C and ±0.25 °C between 100 °C...130 °C - <b>NTC20:</b> ±0.1 °C between -20 °C...130 °C and ±0.5 °C between -50 °C...-20 °C - <b>NTC1.8:</b> ±0.1 °C between -50 °C...+100 °C and ±0.4 °C between 100 °C...+130 °C - <b>NTC2.2:</b> ±0.1 °C between -50 °C...+100 °C and ±0.6 °C between 100 °C...+130 °C - <b>-Ni1000LG:</b> ±0,2 °C between -50 °C...+130 °C - <b>-Ni1000DIN:</b> ±0,2 °C between -50 °C...+130 °C - <b>-Pt1000:</b> ±0,2 °C between -50 °C...+130 °C
Milliampere signal (inputs 12- 14)	0 - 20 mA current message, meas. accuracy 0.1 mA
Voltage measurement (inputs 4, 7, 12-14)	0 -10V voltage message, meas. accuracy 50 mV
Digital inputs (inputs 12 - 17)	Contact voltage 15 Vdc (input 17), Contact voltage 5 Vdc (inputs 12-16). Switching current 1.5 mA (input 17), switching current 0.5 mA (inputs 12-16). Transfer resistance max. 500 Ω (closed), min. 11 k Ω (open).
Counter inputs (17, 18)	Minimum pulse length 30 ms.
<b>Analog outputs (27, 30, 43, 46, 49, 50)</b>	Output voltage range 0...10 V. Output current max 10 mA /output
24 VAC voltage outputs (28, 41, 44, 47)	Output current max. 1A / output. Without external power supply outputs current max. a total of 10 VA continuously, temporary (60 s) 15 VA.
<b>Relay outputs</b>	
Change-over contact relays (71...76)	2 pcs, 230 V, 1 A
<b>Triac outputs</b>	
Triac (77...80)	2 pcs, 230 V, max 1 A Potential-free AC switch. DC controls require intermediate relay.
Triac (24, 25)	24 Vac. Output current max. a total of 1 A. Without external power supply the total continuous load capacity of outputs is max. 10VA continuously, temporary (60 s) 15 VA.
<b>Data transfer connections</b>	
RS-485-bus (A1 and A2)	Galvanically isolated, supported protocols Modbus-RTU
MicroSD memory card	Memory card is not included in the delivery. Technical requirements to microSD memory card: Standard micro SDHC, UHS, Capacity 512 MB...32 GB, File system FAT 32, Class: 4...10+
<b>Optional accessories</b>	See page 21.
<b>APPROVALS</b>	
EMC-directive	2014/30/EU
Interference tolerance	EN 61000-6-1:2007
Interference emissions	EN 61000-6-3:2007/A1:2011
Safety	EN 60730-1:2011
Low voltage directive	2014/35/EU
RoHS directive	2011/65/EU



We reserve the right to make changes to our products without a special notice.

[www.ouman.fi](http://www.ouman.fi)

XM1023D\_C203\_Configuration and service\_ENG\_v3.0\_20230816