

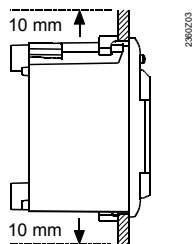
Installation without base

Place of installation

- Compact station front or control panel front
- Permissible ambient temperature: 0...50 °C
- The controller may not be exposed to dripping water

Mounting

- Above and below the controller, there must be a clearance of at least 10 mm:



- That space should not be accessible and no objects may be placed there
- Panel cutout required:
Dimensions of cutout: 92 × 138 mm
Maximum thickness: 2...10 mm

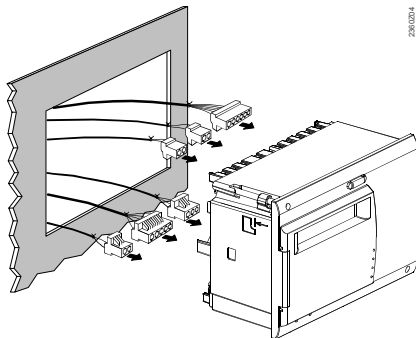
Electrical installation

- Local regulations for electrical installations must be complied with
- Cable tension relief must be ensured
- The terminal strip at the top is used for low voltage connections, that at the bottom for the mains voltage connections
- The cables from the controller to the actuators and pumps carry mains voltage
- The cables to the sensors should not be run parallel to mains carrying cable (safety class II to EN 60730!)

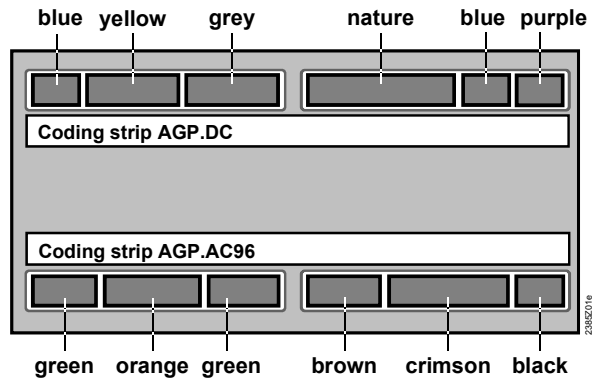
Caution: Power to the controller may be supplied only after it is completely fitted in the cutout. If this is not observed, there is a risk of electric shock near the terminals and through the cooling slots.

Mounting procedure

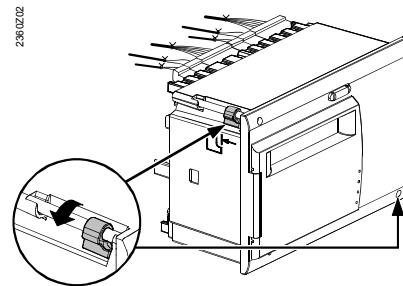
1. Turn off power supply.
2. Fit the coding strips.
3. Pull the prefabricated cables through the cutout.



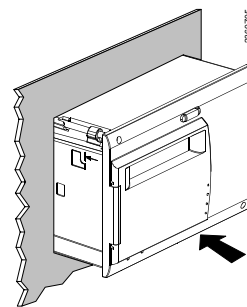
4. Plug the connectors into the respective sockets at the rear of the controller.
Note: The connectors are coded to make certain they cannot be mixed up.



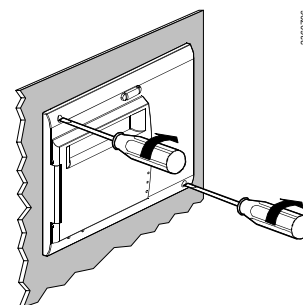
5. Check to ensure the fixing levers are turned inward.
6. Check to make certain there is sufficient space between the front panel and the fixing levers.



7. Slide the controller into the panel cutout without applying any force. Do not use any tools when inserting the unit into the cutout.
If the unit does not fit, check the size of the cutout and the housing.



8. Secure the fixing levers by tightening alternately the two screws on the front of the controller.



Connection terminals

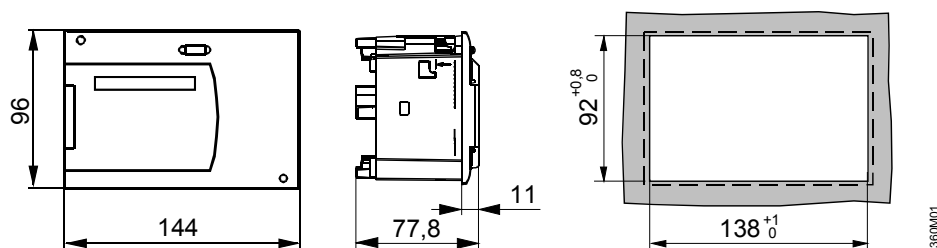
Low voltage connections

No.	Marking on controller	Marking on connector	Colour of connector	Type reference of connector	RVD139	Unit connected or function
5	B9	1	nature/ milky (white)	AGP2S.06A/109	●	Multi-purpose sensor
6	B1	2			●	Flow temperature sensor
7	M	M			●	Ground for sensors (analog)
8	B3	4			●	D.h.w. temperature sensor
9	B7	5			●	Multi-purpose sensor
10	B71	6			●	Multi-purpose sensor
15		1	yellow	AGP2S.04C/109	●	Not used
16	M	M			●	Ground (analog)
17		3			●	Not used
18	H5	4			●	Binary input

Mains voltage connections

No.	Marking on controller	Marking on connector	Colour of connector	Type reference of connector	RVD139	Function
1	N	N	black	AGP3S.02D/109	●	Neutral AC 230 V
2	L	L			●	Live AC 230 V
3	F1	F	crimson	AGP3S.05D/109	●	Input for Y1 and Y2
4	Y1	2			●	Valve OPEN
5		F			●	Not used
6	Y2	4			●	Valve CLOSED
7		5			●	Not used
8	F3	F	brown	AGP3S.03B/109	●	Input for Q3
9		2			●	Not used
10	Q3	3			●	Pump ON
11	F4	F	green	AGP3S.03K/109	●	Input for Y5 und Y6
12	Y5	2			●	Valve OPEN
13	Y6	3			●	Valve CLOSED
14	F7	F	orange	AGP3S.04F/109	●	Input for Q7
15		2			●	Not used
16		3			●	Not used
17	Q7	4			●	Pump ON

Dimensions



Dimensions in mm

Installation with base

Place of installation

- In a dry room, e.g. in the heat exchanger room
- Installation choices:
 - Compact station
 - Control cabinet (in the front, on the inner wall or on a DIN rail)
 - Control panel
 - Sloping front of a control desk
- Permissible ambient temperature 0...50 °C

Electrical installation

- The local regulations for electrical installations must be complied with
- Cable tension relief must be ensured
- The cables from the controller to the actuators and pumps carry mains voltage
- The cables to the sensors should not be run parallel to mains carrying cable (safety class II to EN 60730)

Permissible cable lengths for sensors and contacts

Copper cable 0.6 mm dia.	max. 20 m
Copper cable 1.0 mm ²	max. 80 m
Copper cable 1.5 mm ²	max. 120 m

Mounting and wiring the base

Wall mounting

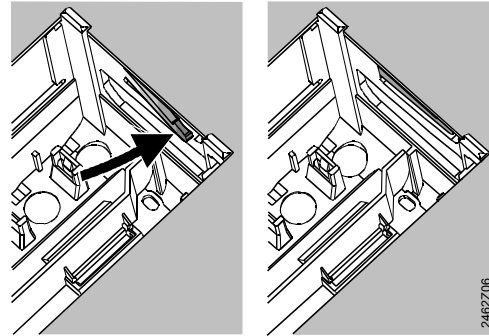
1. Separate base from the controller.
2. Hold base against the wall. Marking "TOP" must be at the top!
3. Mark fixing holes on the wall.
4. Drill holes.
5. If required, knock out holes on the base for cable entry glands.
6. Screw base to the wall.
7. Wire up base.

DIN rail mounting

1. Fit rail.
2. Separate base from the controller.
3. If required, knock out holes on the base for cable entry glands.
4. Fit base to the rail. Marking "TOP" must be at the top!
5. If required, secure base (depending on the type of rail used).
6. Wire up base.

Flush panel mounting

- Maximum thickness: 3 mm
 - Panel cutout required: 92 × 138 mm
1. Separate base from the controller.
 2. If required, knock out holes on the base for cable entry glands.
 3. Insert base in the panel cutout from behind until stop is reached. Marking "TOP" must be at the top!
 4. Push lateral tongues behind the front panel (refer to illustration below).
 5. Wire up base. Make sure the cable lengths are such that there is sufficient space to open the control panel door.



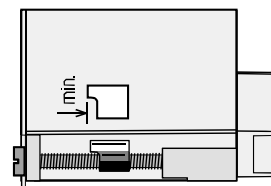
Wrong

Correct

Place tongues on both sides correctly – they may not be located inside the cutout!

Securing the controller to the base

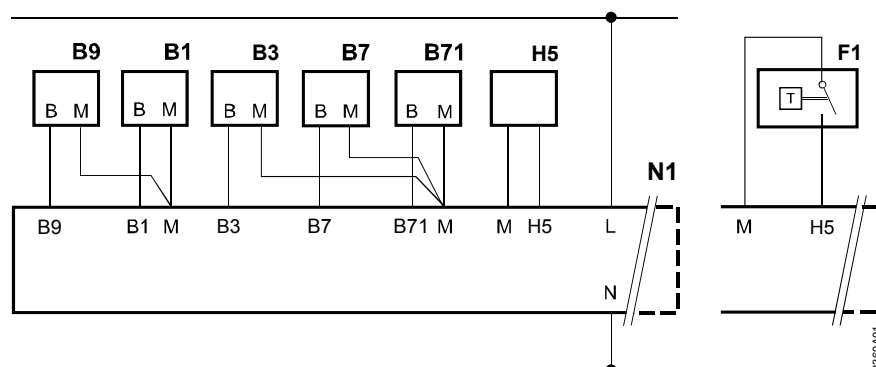
1. Ensure correct position and location of levers by turning the fixing screws (refer to illustration on the lateral wall of the unit).



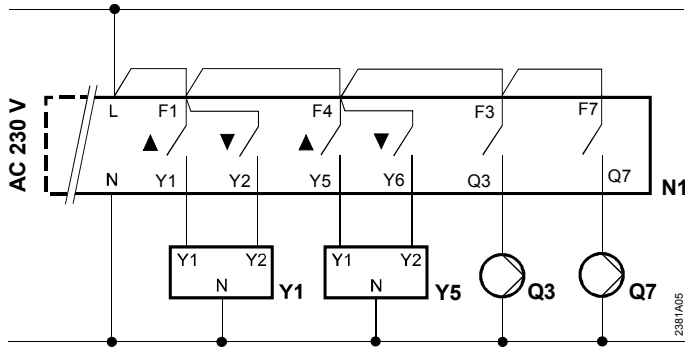
2. Insert controller in the base until stop is reached. Marking "TOP" must be at the top!
3. Tighten fixing screw alternately.

Connection diagrams

Low voltage side

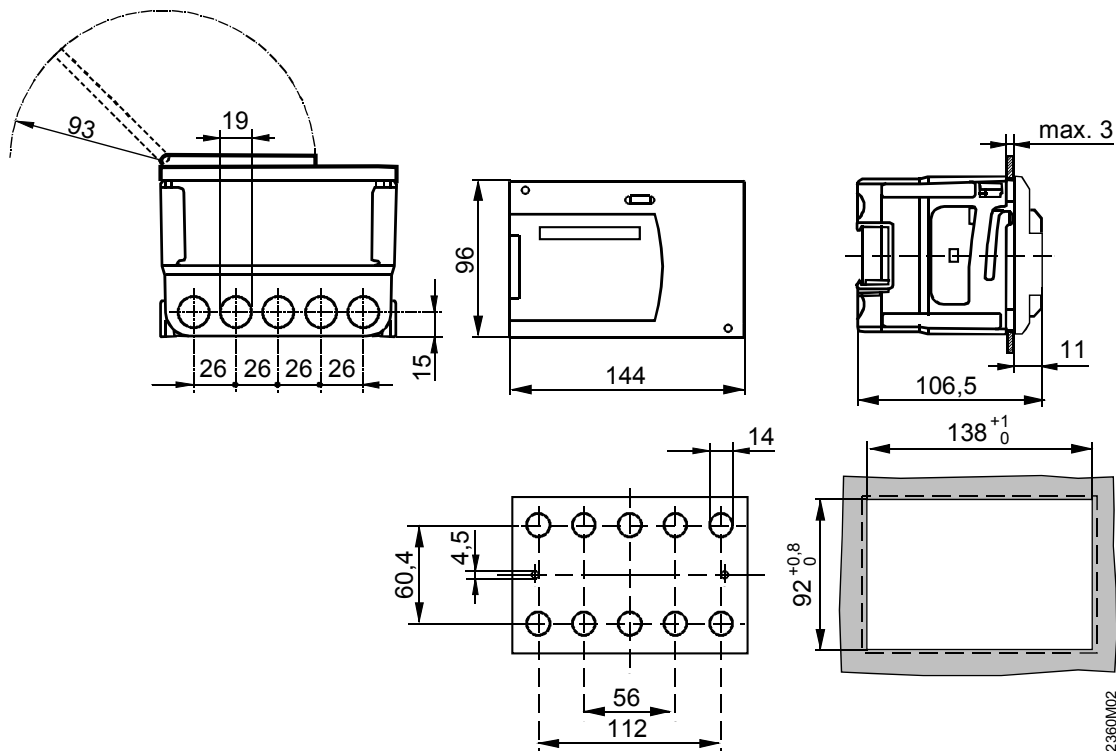


Mains voltage side



B1	Flow temperature sensor	H5	Flow switch
B3	D.h.w. temperature sensor	N1	RVD139 controller
B7	Multi-purpose sensor	Q3	Charging pump
B71	Multi-purpose sensor	Q7	Circulating pump
B9	Multi-purpose sensor (-50...+50 °C)	Y1	Actuator of two-port valve in the primary return
F1	D.h.w. thermostat	Y5	Actuator of two-port valve in the primary return or actuator of mixing valve in the d.h.w. flow

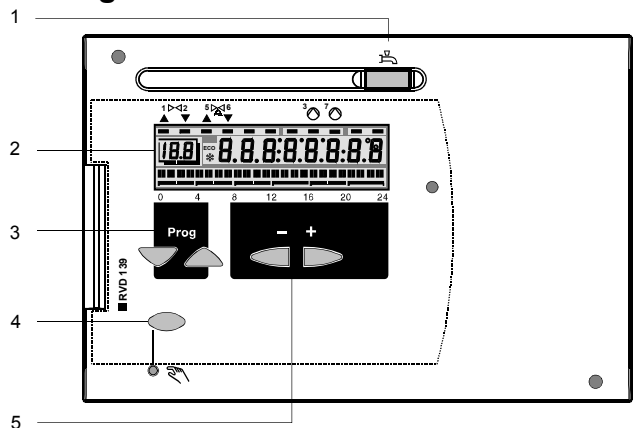
Dimensions



Dimensions in mm

All information given below applies to both mounting methods (without and with base)

Setting elements



- 1 Button for d.h.w. heating ON / OFF
- 2 Display
- 3 Buttons for selecting operating lines
- 4 Button for manual operation ON / OFF
- 5 Buttons for making readjustments of values

Commissioning

Preparatory checks

- DO NOT switch on power yet.
- Check wiring according to the plant connection diagram.
- Check each motorized valve: see if
 - it is correctly installed (observe direction of flow indicated on the valve body)
 - the manual lever is disengaged
- Switch on power. The display must show something (e.g. the time of day). If not, the reason may be one of the following:
 - No mains voltage
 - Main fuse defective
 - Mains isolator or main switch not set to ON

General information about operation

- On the display, one operating line is assigned to each setting
- Buttons for selecting and readjusting the values:
 - To select the next operating line below
 - To select the next operating line above
 - To decrease the displayed value
 - To increase the displayed value
- Adopting a setting value:
The setting value is adopted by selecting the next operating line or by pressing of the button , but than – if required – press button again to switch d.h.w. heating on again
- Entering --: / --: / -- (deactivating a function):
Keep or depressed until the required display appears

- Block jump function:
To select a single operating line quickly, two button combinations can be used:
Keep depressed and press to select the next line block above.
Keep depressed and press to select the next line block below.

Setting procedure

- Enter the adjusted values in the table!
- Make settings on the "End-user" level (operating lines 4...50).
 - Configure plant type on operating lines 51...55.
 - Make the relevant settings in the parameter list below.
All functions and operating lines configured for the type of plant are activated and adjustable. All operating lines that are not required are locked.
 - Make settings on the "Heating engineer's" level (operating lines 81...150).
 - Make settings on the "Locking functions" level (operating lines 162 and 163).

Commissioning and functional check

- Specific operating lines for the functional check:
141 = sensor test
142 = relay test
149 = reset of service settings
- If **Er** (ERROR) appears on the display: Prompt operating line 50 to pinpoint the error
- If no line selection button has been pressed for eight minutes, or if the button is pressed (controller in the non-operated status), setting buttons and can be used to prompt all actual values and the time of day.

Parameter list

Line	Function, display	Default	Range	Setting	Explanations, notes and tips
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Settings on the "End-user" level

Press or to activate the "End-user" level

6	Weekday, for entering the switching program 1	Current weekday	1...7, 1-7		1 = Monday, 2 = Tuesday, etc. 1-7 = entire week
7	Period of usage 1 start	6:00	00:00...24:00	....:....	Switching program 1 --:-- = period of usage inactive
8	Period of usage 1 end	22:00	00:00...24:00:....	
9	Period of usage 2 start	--:--	00:00...24:00:....	
10	Period of usage 2 end	--:--	00:00...24:00:....	
11	Period of usage 3 start	--:--	00:00...24:00:....	
12	Period of usage 3 end	--:--	00:00...24:00:....	
13	Time of day	Undefined	00:00...23:59		
14	Weekday	--:--	1...7		1 = Monday, 2 = Tuesday, etc.
15	Date	01.01	01.01...31.12.		Day.Month
16	Year	2004	1995...2094		
17	Weekday, for entering the switching program 2	Current weekday	1...7, 1-7		1 = Monday, 2 = Tuesday, etc. 1-7 = entire week
18	Period of usage 1 start	6:00	00:00...24:00	....:....	Switching program 2 --:-- = period of usage inactive
19	Period of usage 1 end	22:00	00:00...24:00:....	
20	Period of usage 2 start	--:--	00:00...24:00:....	

Line	Function, display	Default	Range	Setting	Explanations, notes and tips
21	Period of usage 2 end	--:--	00:00...24:00	....:....	Switching program 2 --:-- = period of usage inactive
22	Period of usage 3 start	--:--	00:00...24:00:....	
23	Period of usage 3 end	--:--	00:00...24:00:....	
26	D.h.w. temperature	Display function			
41	Setpoint d.h.w. temperature NORMAL	55 °C	variabel	..... °C	
42	Setpoint d.h.w. temperature REDUCED	40 °C	8...setpoint NORMAL	..... °C	
49	Reset of operating lines 6...12, 17...23 and 41, 42				Press ◀ and ▶ until display changes: 0 (flashing) = normal status 1 = reset to factory settings completed
50	Display of faults	Display function			10 = fault multi-purpose sensor B9 30 = fault flow temperature sensor B1 40 = fault multi-purpose sensor B7 42 = fault multi-purpose sensor B71 50 = fault d.h.w. temperature sensor B3

Settings on the "Heating engineer's" level

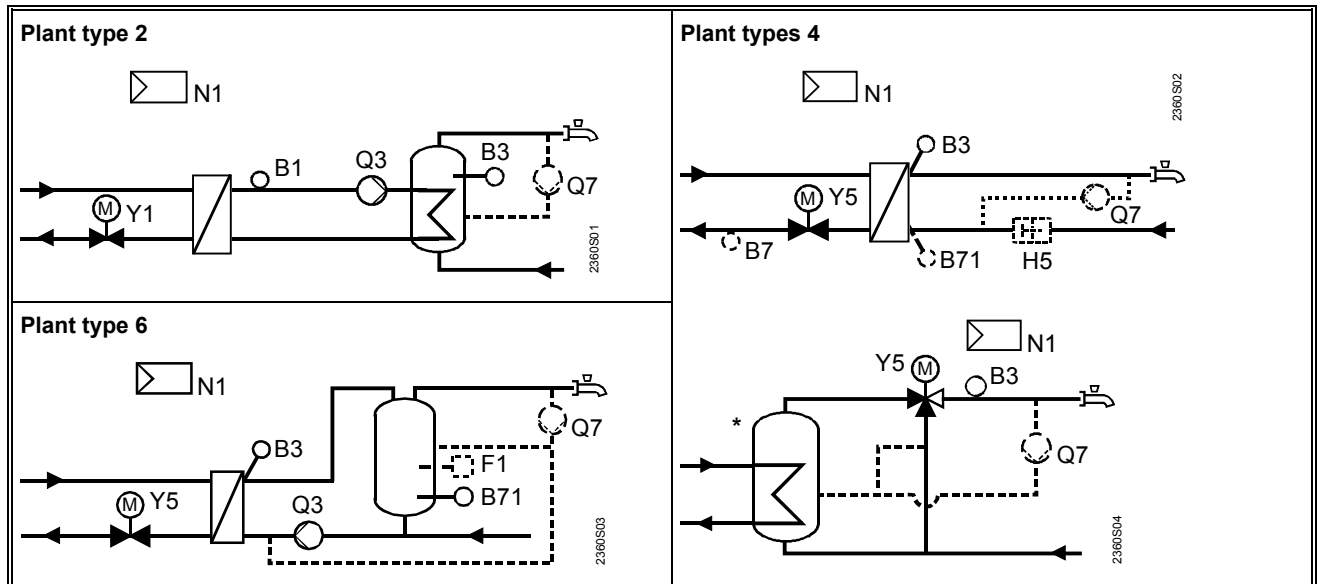
Press ▼ and ▲ simultaneously for 3 seconds, thus activating the "Heating engineer's" level for configuring the plant type and for setting the plant-related variables. The "End-user" level remains activated.

Configuration of plant

The required plant type must be configured on operating lines 51...55. This activates all functions and operating lines required for the particular type of plant, which can then be set. Ignore the other types of plant!

51	Plant type	4	2, 4, 6	.....	For diagram, refer to the following section	
53	Use of multi-purpose sensor connected to B71	1	0 / 1	.....	0 = multi-purpose sensor 1 = d.h.w. temperature sensor	
54	Flow switch present / circulating pump present (compensation of heat losses)	0	0...3	.....	<i>Flow switch present</i>	<i>Circulating pump present</i>
					0	no	insignificant (heat losses fully compensated [100 %])
					1	yes	no
					2	yes	yes, heat losses partly compensated (80 %)
					3	yes	yes, heat losses fully compensated (100 %)
55	Return flow of circulating pump	0	0...2	.....	0 = d.h.w. storage tank / no circulating pump 1 = heat exchanger, heat losses partly compensated (80 %) 2 = heat exchanger, heat losses fully compensated (100 %)	
56	Periodic pump run (pump kick)	0	0 / 1	.....	0 = no periodic pump run 1 = weekly pump run enabled	
57	Winter- / summertime changeover	25.03	01.01. ...31.12	.....	Setting: earliest possible changeover date	
58	Summer- / wintertime changeover	25.10	01.01. . 31.12	.....	Setting: earliest possible changeover date	

Plant types



- B1 Flow temperature sensor
- B3 D.h.w. temperature sensor
- B7 Primary return temperature sensor (required only, if cooling down protection is provided by a sensor)
- B71 Multi-purpose sensor
- F1 D.h.w. thermostat (to be connected to H5)
- H5 Flow switch
- N1 RVD139 controller
- Q3 Charging pump
- Q7 Circulating pump
- Y1 Two-port valve in the primary return
- Y5 Two-port valve in the primary return or mixing valve in the d.h.w. flow

* The storage tank temperature of plant type 4 must be controlled by a separate controller

Line	Function, display	Default	Range	Setting	Explanations, notes and tips
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Block "Actuator heat exchanger"

81	Running time, actuator Y1	120 s	10...873 s s	
82	P-band, control of actuator Y1	35 K	1...100 K K	
83	Integral action time, control of actuator Y1	120 s	10...873 s	..... s	

Block "D.h.w. heating"

101	Release of d.h.w. heating	0	0...3	.....	0 = permanently (24 h / day) 1 = acc. to switching program 2 2 = acc. to switching program 1
102	Release of circulating pump	1	0...2	.....	0 = permanently (24 h / day) 1 = acc. to switching program 2 2 = acc. to switching program 1
103	D.h.w. switching differential	5 K	1...20 K	..... K	
104	Legionella function	6	---, 1...7, 1-7	.....	1 = Monday 2 = Tuesday, etc. 1-7 = entire week --- = no legionella function
105	Setpoint legionella function	65 °C	60...95 °C	..... °C	
107	Overrun time charging pump Q3	4 min	0...40 min	..... min	

Block "D.h.w. actuator"

111	Actuator Y5 opening time d.h.w. circuit	35 s	10...873 s	..... s	
112	Actuator Y5 closing time d.h.w. circuit	35 s	10...873 s	..... s	
113	P-band d.h.w. control	35 K	1...100 K	..... K	
114	Integral action time d.h.w. control	35 s	10...873 s	..... s	
115	Derivative action time d.h.w. control	16 s	0...255 s	..... s	
116	Setpoint boost with d.h.w. heating	16 K	0...50 K	..... K	
117	Max. d.h.w. temperature setpoint	65 °C	20...95 °C	..... °C	

Block "D.h.w. load limit"




124	Load limit when flow switch is activated	25 %	0...60 % %	Setting in % of the current max. stroke
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Line	Function, display	Default	Range	Setting	Explanations, notes and tips
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Block "Additional legionella functions"



126	Time for charging	--:--	--:--, 00:00...23:50	...:...	
127	Dwelling time at legionella setpoint	---	---, 10...360 minmin	
128	Circulating pump operation during legionella function	1	0 / 1	...	0 = no 1 = yes

Block "Test and display"

141	Sensor test 0 = multi-purpose sensor B9 1 = flow temperature sensor B1 2 = d.h.w. temperature sensor B3 4 = multi-purpose sensor B7 5 = multi-purpose sensor B71	0	0...5		--- = open-circuit or no sensor ooo = short-circuit
142	Relay test 0 = normal operation (no test) 1 = all relays de-energized 2 = relay at terminal Y1 energized 3 = relay at terminal Y2 energized 5 = relay at terminal Q3 energized 6 = relay at terminal Y5 energized 7 = relay at terminal Y6 energized 8 = relay at terminal Q7 energized	0	0...8		To terminate the relay test: • Select another operating line • Press button  • Automatically after 8 minutes Note: always close main valve when making the relay test
143	Display of active limitations	Display function			2 = max. limitation f of common flow temperature 12 = min. limitation J of common flow temperature
146	Contact status at terminal H5	Display function			0 = contact open 1 = contact closed
149	Reset of operating lines 56...128	Display function			Press  and  until display changes: 0 (flashing) = normal status 1 = reset to factory settings completed
150	Software version	Display function			

Settings on the "Locking functions" level

To access the "Locking functions" level, proceed as follows:

1. Press  and  simultaneously for 6 seconds.
2. The display shows **Cod 00000**.
3. Enter the code (for information about code, contact your SIEMENS HVAC Products service centre).

The "End-user" and "Heating engineer's" levels remain activated.

Block "Locking functions"

162	Daily forced d.h.w. heating at the start of release period 1	1	0 / 1		Only with plant types 2 and 6 0 = function deactivated 1 = function activated
163	Idle heat function primary flow	---	---, 3...255 min	..... min	Only with plant type 4 --- = function deactivated

Keep Instructions

After the settings have been entered in the tables, keep the Installation Instructions in a safe place!