SIEMENS

District heating controller for 2 heating circuits and d.h.w.

RVD260

⚠ Keep these instructions with the controller!

Installation

Place of installation

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

Electrical installation

- Local regulations for electrical installations must be complied with
- Only qualified personnel may carry out the electrical installation
- Cable strain relief must be ensured
- Cable glands used must be made of plastic
- Cables from the controller to the actuating devices and pumps carry mains voltage
- Sensor cables must not be run parallel to mains carrying cables (safety class II to EN 60730)
- A defective or damaged device must immediately be disconnected from power

Permissible cable lengths

- For all sensors:
  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
- For room units:
  Copper cable 0.25 mm^2 max. 25 m
  Copper cable from 0.5 mm^2 max. 50 m
- For data buses: According to Siemens specification in:
  LPB   Basic System Data N2030 and Basic Engineering Data N2032
  M-bus   System Data N5361 and Planning Manual J5361

## Mounting and wiring the base

Wall mounting
1. Remove 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 the holes.
5. If required, knock out holes on the base to fit cable glands.
6. Screw base to the wall.
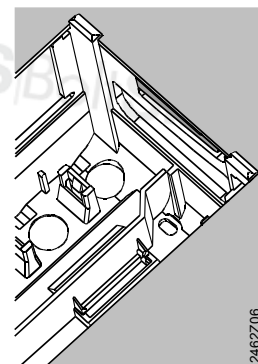7. Wire up the base.

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

Flush-panel mounting
- Maximum thickness of front panel: 3 mm
- Required panel cutout: 138 × 92 mm
1. Remove base from the controller.
2. If required, knock out holes on the base to fit cable 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 (see illustration).
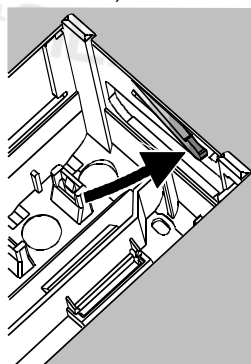

Wrong   Correct

Place left and right tongue correctly – they must not protrude inside the cutout!

5. Wire up the base. The cable lengths should be chosen such that sufficient space is left to open the control panel door.

Securing the controller to the base

1. Ensure correct position and location of the levers by turning the fixing screws. Symbol on the lateral wall of the controller:
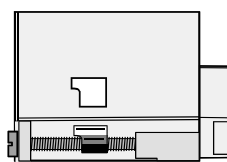
2. Insert controller in the base until stop is reached. Marking TOP must be at the top!
3. Tighten the fixing screws alternately.

Commissioning

Preparatory checks

1. Do NOT turn on power yet.
2. Check wiring to ensure it accords with the plant connection diagram.
3. Check each actuating device to see if…
   – it is correctly installed (observe direction of flow indicated on the valve body),
   – manual control is disengaged.
4. **Exercise caution in the case of underfloor and ceiling heating systems!**
   The limit thermostat must be correctly set. During the function test, the flow temperature must not exceed the maximum permissible level (usually 55 °C); if it does, proceed immediately as follows:
   – either close the valve manually, or
   – switch off the pump, or
   – close the pump isolating valve.
5. Turn power on. The display must show 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
6. Make addressing on the room units:
   - Room unit heating circuit 1 = address 1 (factory setting)
   - Room unit heating circuit 2 = address 2

General information on operation

- Operating elements for commissioning:
  – Nominal room temperature setpoint: Use the setting knob, **sparate adjustment for heating circuit 1 and 2!**
  – Other variables: On the display, where each setting is assigned an operating line. **Separate settings for heating circuit 1 and 2, where required!**
- Buttons for selecting and adjusting the values:
  - $\triangledown$ Press to select the next lower operating line
  - $\triangle$ Press to select the next higher operating line
  - $\sphericalangle\!\!\!-$ Press to decrease the displayed value
  - $\overset{+}{\rhd}$ Press to increase the displayed value
- Adopting a setting value:
  The setting value is adopted by selecting a new operating line or by pressing one of the operating mode buttons

- Entry of --.- / --:-- / --- (deactivation of function):
  Keep $\sphericalangle\!\!\!-$ or $\overset{+}{\rhd}$ depressed until the required display appears
- Block jump function:
  To select an individual operating line quickly, 2 button combinations can be used: Keep $\triangledown$ depressed and press $\overset{+}{\rhd}$ to select the next higher line block.
  Keep $\triangledown$ depressed and press $\sphericalangle\!\!\!-$ to select the next lower line block
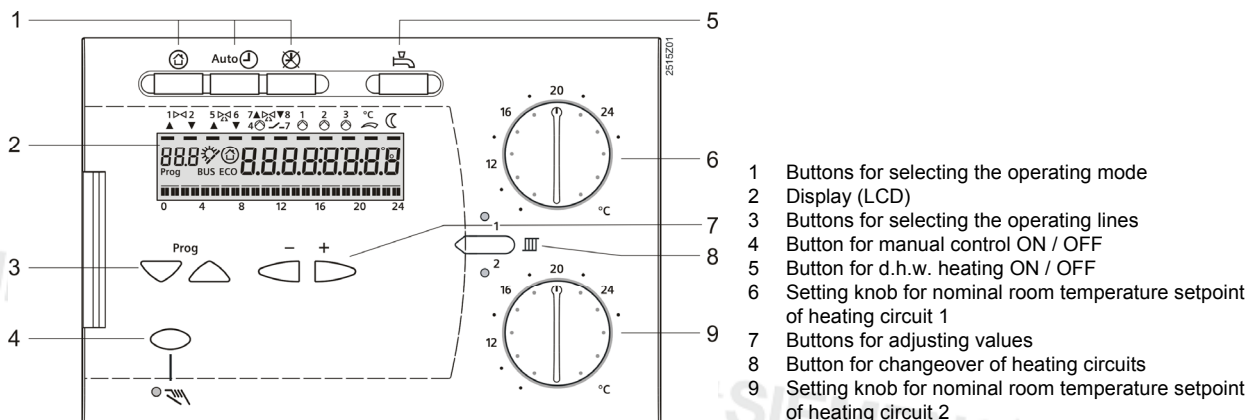- When pressing one of the buttons, the display lighting is switched on for a certain period of time

Setting procedure

1. Make the required settings on the "Enduser" level (operating lines 1…50).
2. Configure the plant type on operating lines 51…58.
3. Enter the relevant settings on the parameter list below. All functions and operating lines required for the configured plant type are activated and adjustable; all operating lines that are not required are disabled.
4. Make the required settings on the "Heating engineer" level (operating lines 61…222).
5. Make the required settings on the "Locking functions" level (operating lines 226…251).

Commissioning and function check
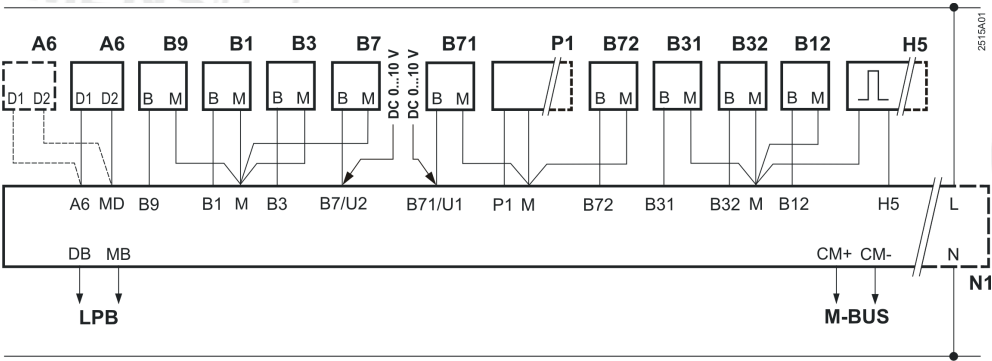
- Specific operating lines for the function check:
  161 = sensor test
  162 = display of setpoint
  163 = relay test
  165 = test of digital input
- If *Er* (error) appears on the display: Query operating line 50 to pinpoint the fault
- If no operating line is selected for 8 minutes, or if one of the operating mode buttons is pressed, the controller switches to "non-operated" status.
  Setting buttons $\sphericalangle\!\!\!-$ and $\overset{+}{\rhd}$ can be used to query the time of day and all actual values. The display of the actual values is analogous to operating line 161

Operating elements

1   Buttons for selecting the operating mode
2   Display (LCD)
3   Buttons for selecting the operating lines
4   Button for manual control ON / OFF
5   Button for d.h.w. heating ON / OFF
6   Setting knob for nominal room temperature setpoint of heating circuit 1
7   Buttons for adjusting values
8   Button for changeover of heating circuits
9   Setting knob for nominal room temperature setpoint of heating circuit 2
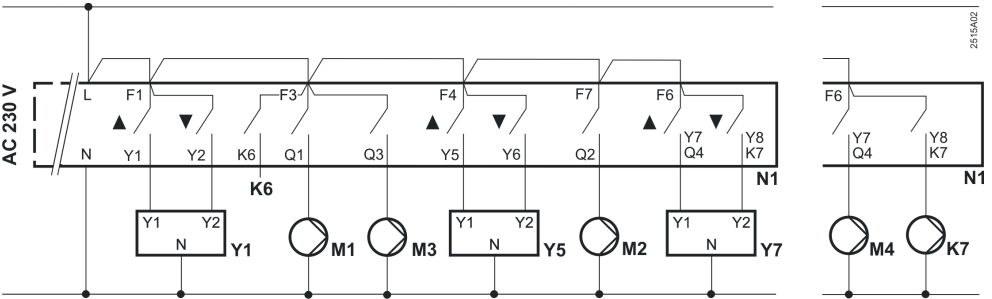
Connection diagrams

Low voltage side

Mains voltage side

A6 Room unit
B1 Flow sensor heating circuit 1 / common flow*
B12 Flow sensor heating circuit 1 / heating circuit 2*
B3 Flow sensor d.h.w. / heating circuit 2*
B31 D.h.w. storage tank sensor
B32 D.h.w. storage tank sensor / return sensor*
B7 Primary return sensor**
B71 Primary / secondary return sensor*
B72 Primary / secondary return sensor / collector sensor
B9 Outside sensor
H5 Heat meter, flow switch, alarm contact, etc.
Kx K6, K7 = multifunctional outputs for refill function / electric immersion heater / collector pump / circulating pump / flow alarm*

N1 Controller RVD260
P1 Speed-controlled pump (PWM output)
M1 Heating circuit pump
M2 Heating circuit pump
M3 D.h.w. intermediate circuit / storage tank charging / circulating pump
M4 Storage tank charging pump
U1 Secondary pressure sensor / external heat request
U2 Primary pressure sensor
Y1 Actuator of 2-port valve in the primary return
Y5 Actuator*
Y7 Actuator*
* Depending on plant type
** For suppression of hydraulic creep

"Enduser" level

To activate the "Enduser" level, press ▽ or △.

Note: The values set on the controller should be entered on the following parameter list, and the Installation Instructions should be kept with the controller or in a suitable place.

➔ **Grayed out operating lines: Set the values for heating circuit 1 (HC 1) and heating circuit 2 (HC 2) and then enter them on the parameter list!**

Line	Function, display	Factory setting (range)	HC 1 HC 2	Explanations, notes and tips
1	Current room temperature setpoint	Display function		
2	Reduced room temperature setpoint	14 °C (variable*)	..............°C ....°C	* From setpoint for frost protection to nominal room temperature setpoint
3	Setpoint for frost protection / holiday mode	8 °C (variable*)	..............°C ....°C	* From 8 °C to reduced setpoint
5	Heating curve slope	1.5 (0.25…4.0)	....	See "Heating curve diagram"
6	Weekday for entering the heating program	Current weekday (1…7 / 1-7)		1 = Monday 2 = Tuesday, etc. 1-7 = entire week
7	Heating period 1 start	6:00 (--:-- / 00:00…24:00)	....	Switching program for the heating circuit
8	Heating period 1 end	22:00 (--:-- / 00:00…24:00)	....	--:-- = period inactive

9	Heating period 2 start	--:-- (--:-- / 00:00…24:00)	....	Switching program for the heating circuit --:-- = period inactive
10	Heating period 2 end	--:-- (--:-- / 00:00…24:00)	....	
11	Heating period 3 start	--:-- (--:-- / 00:00…24:00)	....	
12	Heating period 3 end	--:-- (--:-- / 00:00…24:00)	....	
13	Time of day	(00:00…23:59)	....	
14	Weekday	Display function		1 = Monday 2 = Tuesday, etc.
15	Date	dd.mm (01.01…31.12)	....	
16	Year	yyyy (2009…2099)	....	
17	Weekday for entering the d.h.w. program	Current weekday (1…7 / 1-7)		1 = Monday 2 = Tuesday, etc. 1-7 = entire week
18	Release period 1 start	6:00 (--:-- / 00:00…24:00)	....	Switching program for d.h.w. --:-- = period inactive
19	Release period 1 end	22:00 (--:-- / 00:00…24:00)	....	
20	Release period 2 start	--:-- (--:-- / 00:00…24:00)	....	
21	Release period 2 end	--:-- (--:-- / 00:00…24:00)	....	
22	Release period 3 start	--:-- (--:-- / 00:00…24:00)	....	
23	Release period 3 end	--:-- (--:-- / 00:00…24:00)	....	
24	Room temperature	Display function		
25	Outside temperature	Display function		Press ◁ and ▷ for 3 seconds: Current outside temperature is adopted as the attenuated outside temperature
26	D.h.w. temperature	Display function		Keep ◁ or ▷ depressed: Current setpoint is displayed
27	Flow temp. heating circuit			
31	Holiday period	1 (1…8)	....	
32	Date of first day of holiday period	--.-- (01.01…31.12)	....	Day.Month --.-- = holiday period inactive
33	Date of last day of holiday period	--.-- (01.01…31.12)	....	
41	Nominal d.h.w. setpoint	55 °C (variable)	...... °C	
42	Reduced d.h.w. setpoint	40 °C (variable*)	...... °C	* From 8 °C to nominal d.h.w. setpoint
50	Faults	Display function		10 = fault outside sensor B9 30 = fault flow sensor B1 32 = fault flow sensor B12 40 = fault primary return sensor B7 42 = fault return sensor B71 43 = fault return sensor B72 50 = fault storage tank sensor B31 52 = fault storage tank sensor B32 54 = fault flow sensor B3 61 = fault room unit A6, heating circuit 1 62 = device with wrong PPS identification connected, heating circuit 1 66 = fault room unit A6, heating circuit 2 67 = device with wrong PPS identification connected, heating circuit 2 73 = fault collector sensor B72 78 = fault secondary pressure sensor U1

50	Faults (cont'd)	Display function	81 = short-circuit on data bus (LPB)
			82 = 2 devices with the same bus address (LPB)
			86 = short-circuit PPS
			100 = 2 clock time masters
			120 = flow alarm common flow
			121 = flow alarm heating circuit 1
			122 = flow alarm heating circuit 2
			123 = flow alarm d.h.w. flow
			140 = inadmissible bus address (LPB)
			170 = fault primary pressure sensor U2
			171 = alarm from input H5
			180 = connection to heat meter at input H5 interrupted
			181 = configuration error PWM pump, (operating lines 52, 54, 58, 231, 232, 235)
			182 = configuration error temperature difference (operating lines 52, 53, 234)
			183 = configuration error secondary return maximum limitation (operating lines 52, 54, 58, 226, 231, 232, 235)
			184 = configuration error refill function (operating lines 52, 129, 130, 211)
			185 = configuration error solar function (operating lines 54, 98, 129, 130)
			195 = maximum refill period per charging cycle reached
			196 = maximum refill period per week reached

Heating curve diagram

s   Slope
T_{AM} Composite outside temperature
T_V Flow temperature

"Heating engineer" level

To activate the "Heating engineer" level, press ▽ and △ simultaneously for 3 seconds. This level is used for configuring the plant type and for setting the plant-specific variables.

Note: The "Enduser" level remains activated.

Configuring the plant type:

Select the required plant type on operating line 51 (see following pages). This activates all functions needed for the particular type of plant, and the required operating lines appear.

Example:
Display for plant type 2 - 1

51 Operating line
 2 Heating circuit type
 1 D.h.w. type

Plant types

For meaning of B9, Y5, M3, etc., see "Connection diagrams".

Plant types 1 - x	
1 - 0	**1 - 3**
1 - 4	**1 - 8**
1 - 9	

Plant types 2 - x

2 - 0

2 - 1

2 - 2

2 - 6

Plant types 3 - x

3 - 0

3 - 1

Plant types 4 - x

4 - 4

4 - 8

4 - 9
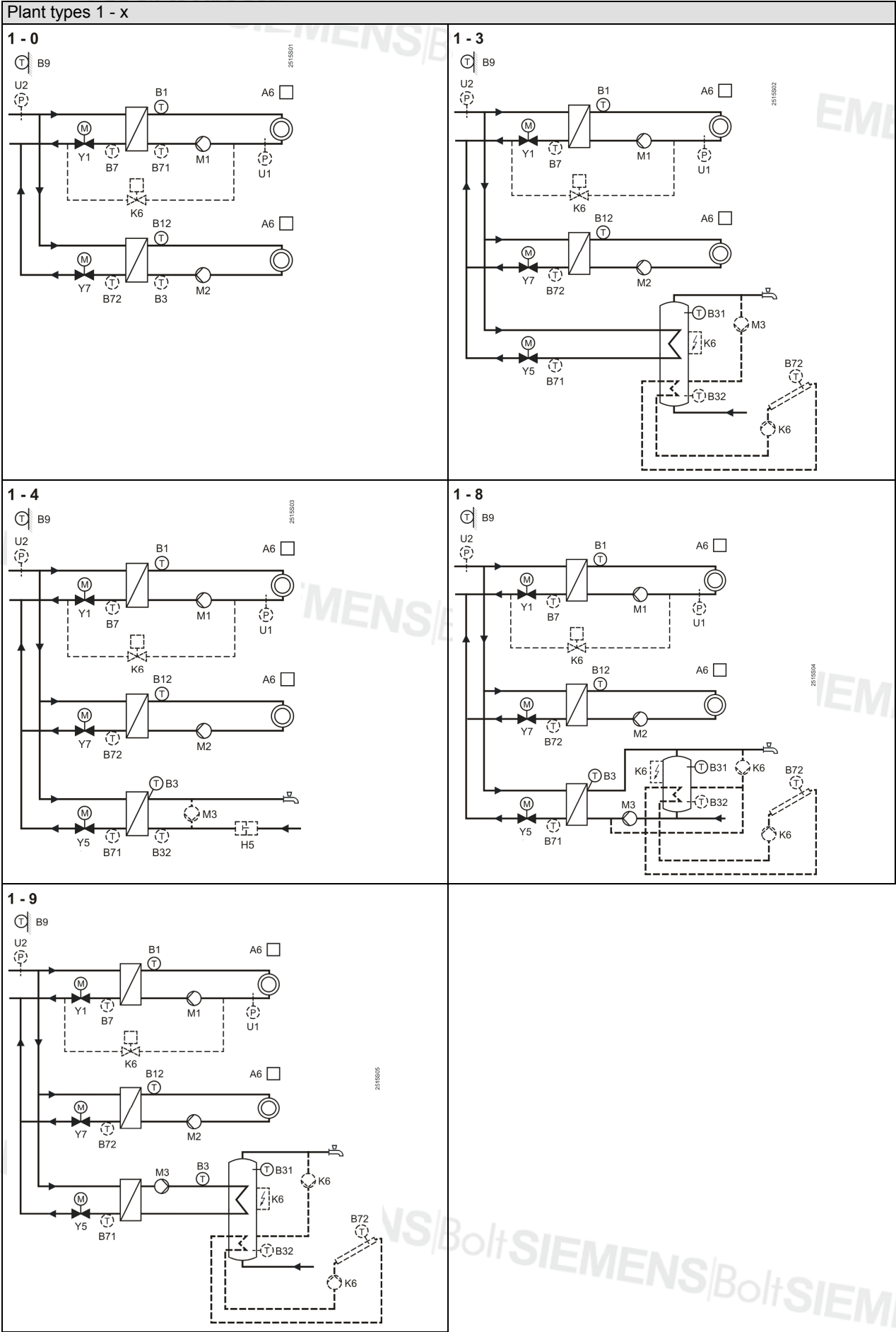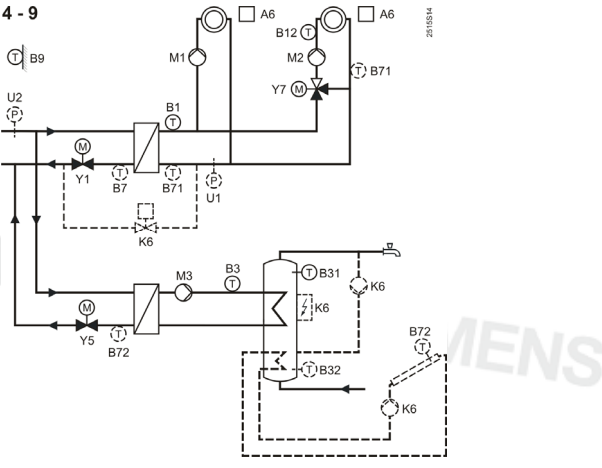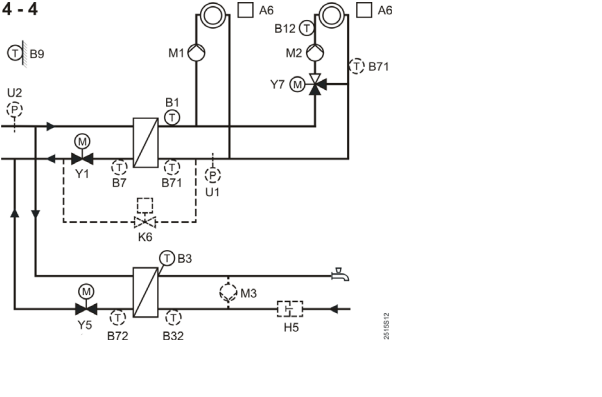
Function block "Plant configuration"

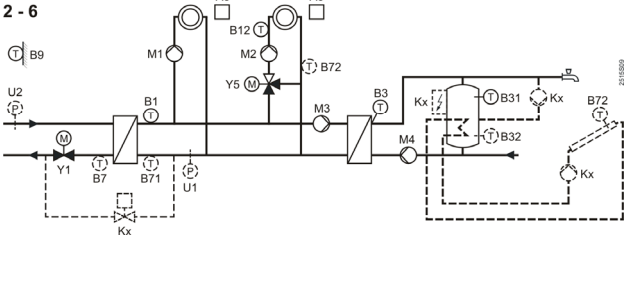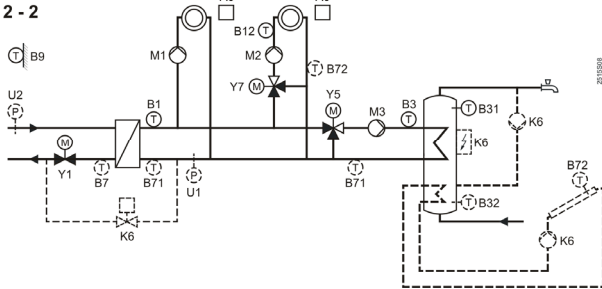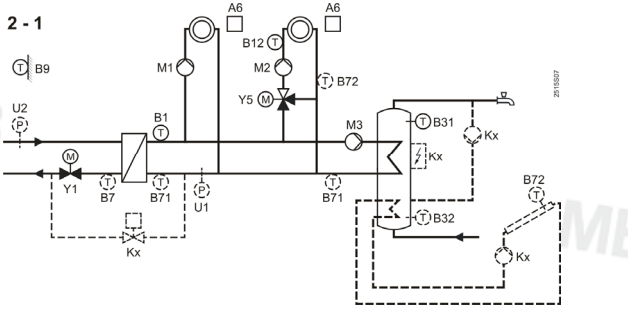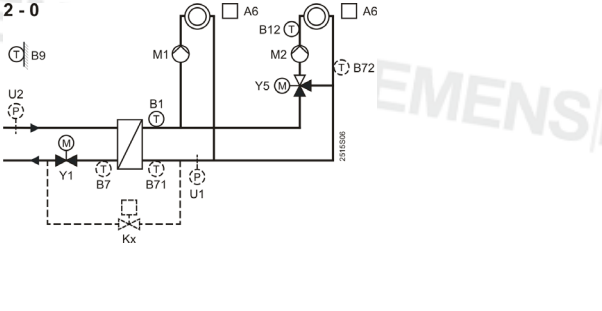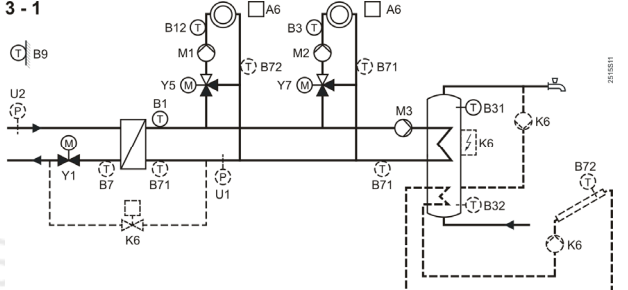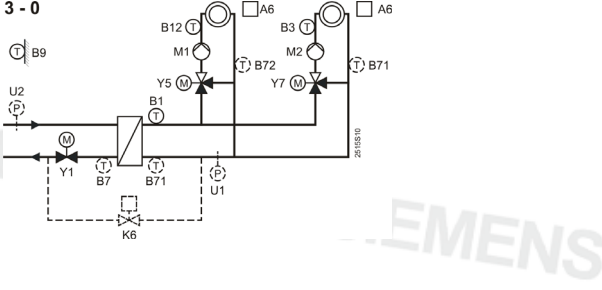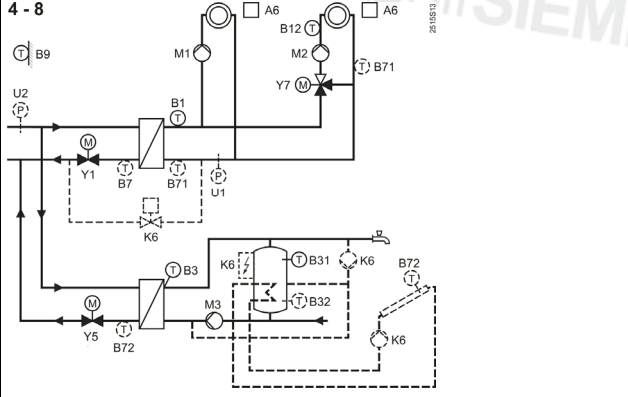|				
51	Plant type	1-0 (1-0...4-9)	....	For plant types, refer to preceding pages
52	Function of input at terminal B71/U1	1 (0...4)	....	0 = sensor for temperature difference (DRT) 1 = return sensor in the heating or d.h.w. circuit 2 = signal reception DC 0...10 V 3 = heat demand DC 0...10 V 4 = secondary pressure sensor
53	Function of input at terminal B7/U2	0 (0...2)	....	0 = primary return sensor 1 = primary pressure sensor display 2 = primary pressure sensor monitoring
54	Function of input at terminal B72	0 (0...1)	....	0 = return sensor 1 = collector sensor
55	Function of circulating pump	0 (0...3)	....	0 = no circulating pump present 1 = feeding the d.h.w. storage tank 2 = feeding the heat exchanger's secondary return (80% compensation of heat losses) 3 = feeding the heat exchanger's secondary return (100% comp. of heat losses)
56	Function of contact connected to terminal H5	0 (0...4)	....	0 = no function 1 = input for pulses 2 = input for heat demand signal 3 = alarm input 4 = input for flow switch
57	Impact of pulse input on the heating circuits (only with plant types 1-x)	1 (1...3)	....	1 = acting on heating circuit 1 2 = acting on heating circuit 2 3 = acting on heating circuits 1 and 2
58	Assignment of speed-controlled pump	0 (0...4)	....	0 = no speed-controlled pump 1 = pump M1 2 = pump M2 3 = pump M3 4 = pump M4

Function block "Space heating"

61	Heating limit (ECO)	–3 K (--- / –10…10)	...........K ....K	--- = function deactivated
62	Type of building construction	20 h (0…50)	...........h	10 h = light building construction 20 h = medium building construction 50 h = heavy building construction
64	Date of first day of heating period	01.01 (01.01...31.12)	....	Day.Month Function deactivated when date of first day coincides with date of last day
65	Date of last day of heating period	01.01 (01.01...31.12)	....	
70	Influence of room temperature (gain factor)	10 (0…20)	....	Function can only be provided in connection with a room sensor
71	Parallel displacement of heating curve	0.0 K (--- / –15…15)	...........K ....K	Setting in K room temperature
72	Overrun time heating circuit or system pump	4 min (0…40)	...........min ....min	0 = no pump overrun
73	Maximum limitation of room temperature	--- K (--- / 0.5…4)	...........K ....K	Limit value: Nominal setpoint plus value of operating line 73 --- = function deactivated
74	Optimization with / without room sensor	0 (0 / 1)	....	0 = without room sensor 1 = with room sensor
75	Maximum heating up period	0:00 h (0:00...42:00)	...........h ....h	Maximum forward shift for switching on before occupancy starts 0:00 = no optimum start control
76	Maximum early shutdown	0:00 h (0:00...6:00)	...........h ....h	Maximum forward shift for switching off before occupancy ends 0:00 = no optimum stop control
77	Maximum rate of flow temperature increase	--- K/h (--- / 1….600)	...........K/h ....K/h	--- = function deactivated
78	Quick setback (with / without room sensor)	1 (0 / 1)	....	0 = without quick setback 1 = with quick setback

Function block "Valve actuator heat exchanger"

81	Running time actuator heat exchanger	120 s (10…873)	...............s	
82	P-band heat exchanger control	35 K (1…100)	...............K	2-port valve Y1 in the primary return
83	Integral action time heat exchanger control	120 s (10…873)	...............s	
84	Setpoint boost heat exchanger	10 K (0...50)	...............K	
85	Maximum limitation flow temperature	--- °C (--- / variable*…140)	...............°C	* Minimum value = operating line 86 --- = no limitation
86	Minimum limitation flow temperature	--- °C (--- / 8…variable*)	...............°C	* Maximum value = operating line 85 --- = no limitation
87	External heat demand contact	60 °C (0...100)	...............°C	Temperature request from an external consumer to the control loop (B1/Y1). Function is active when operating line 56 = 2
88	Priority external heat demand (contact and DC 0…10 V)	0 (0 / 1)	....	0 = maximum selection between external and internal heat demand 1 = external heat demand has priority
89	Heat demand input DC 0…10 V	100 °C (5…130)	...............°C	Function is active when operating line 52 = 3 Set value °C = signal value DC 10 V

Function block "Valve actuator space heating"

91	Actuator running time heating circuit	120 s (10…873)	...............s ....s	• Plant types 1-x: Y1 in the heating circuit 1, Y7 in the heating circuit 2
92	P-band heating circuit control	35 K (1…100)	...............K ....K	• Plant types 2-0, 2-1 and 2-6: Y5 in the heating circuit
93	Integral action time heating circuit control	120 s (10…873)	...............s ....s	• Plant types 2-2 and 4-x: Y7 in the heating circuit • Plant types 3-x: Y5 in the heating circuit 1, Y7 in the heating circuit 2
94	Setpoint boost mixing valve / heat exchanger	10 K (0…50)	...............K ....K	
95	Maximum limitation flow temperature	--- °C (--- / variable*…140)	...............°C ....°C	* Minimum value = operating line 96 --- = no limitation
96	Minimum limitation flow temperature	--- °C (--- / 8…variable*)	...............°C ....°C	* Maximum value = operating line 95 --- = no limitation

Function block "D.h.w. heating"

98	D.h.w. temperature sensor	0 (0…2)	....	0 = automatically, without solar d.h.w. heating 1 = solar d.h.w. heating with 1 sensor 2 = solar d.h.w. heating with 2 sensors **Caution:** Plant types without solar d.h.w. charging require setting = 0
99	D.h.w. charging	0 (0…3)	....	0 = charging by heating 1 = charging in changeover mode heating / electric → changeover according to own controller 2 = charging in changeover mode heating / electric → changeover according to all controllers in the network with same segment number 3 = charging in changeover mode heating / electric → changeover according to all controllers in the network
101	Release of d.h.w. heating	0 (0…2)	....	0 = always (24 h/day) 1 = according to the heating program, with forward shift 2 = according to the d.h.w. program
102	Release of circulating pump	1 (0…2)	....	0 = always (24 h/day) 1 = according to the heating program 2 = according to the d.h.w. program
103	Switching differential d.h.w.	5 K (1…20)	...............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		
106	D.h.w. priority	4 (0…4)	....	D.h.w. priority:	Flow temperature setpoint acc. to…
				0 = absolute	d.h.w.
				1 = shifting	d.h.w.
				2 = shifting	maximum selection
				3 = none (parallel)	d.h.w.
				4 = none (parallel)	maximum selection
107	Overrun time intermediate circuit pump	4 min (0…40)	............min		
108	Extra overrun time charging pump	60 s (10...2400)	............s		
109	Maximum period d.h.w. charging	150 min (--- / 5…250)	............min	--- = no limitation of charging period	
110	Protection against discharging during overrun of d.h.w. pump	0 (0 / 1)	....	0 = without protection against discharging 1 = with protection against discharging	

Function block "Valve actuator d.h.w."

111	Opening time actuator in the d.h.w. circuit	35 s (10…873)	............s	
112	Closing time actuator in the d.h.w. circuit	35 s (10…873)	............s	• Plant types 1-x and 4-x: Y5 in the d.h.w. primary return
113	P-band d.h.w. control	35 K (1…100)	............K	• Plant types 2-2: Y5 in the d.h.w. flow
114	Integral action time d.h.w. control	35 s (10…873)	............s	
115	Derivative action time d.h.w. control	16 s (0…255)	............s	
116	Setpoint boost d.h.w. charging	16 K (0…50)	............K	
117	Maximum setpoint d.h.w. temperature	65 °C (20…95)	............°C	
118	Setpoint boost mixing valve / heat exchanger d.h.w.	10 K (0…50)	............K	
119	Reduction d.h.w. setpoint for storage tank sensor at the bottom	5 K (0…20)	............K	Only with 2 sensors
120	Circulating pump during d.h.w. charging	0 (0 / 1)	....	0 = OFF during d.h.w. charging 1 = ON during d.h.w. charging
124	Load limit for actuation of flow switch	25% (0…60)	............%	Setting in % of the current maximum stroke

Function block "Assignment of d.h.w."

125	Assignment d.h.w. charging	0 (0…2)	....	0 = locally 1 = all controllers in the network with the same segment number 2 = all controllers in the network

Function block "Extra legionella functions"

126	Starting point legionella function	--:-- (--:-- / 00:00…23:50)	....	
127	Dwelling time at legionella setpoint	--- min (--- / 10…360)	............min	
128	Operation of circulating pump during legionella function	1 (0 / 1)	....	0 = no 1 = yes

Function block "Multifunctional relays"

129	Function multifunctional relay K6	0 (0…5)	....	0 = no function 1 = refill function 2 = electric immersion heater 3 = collector pump 4 = circulating pump 5 = flow alarm (refer to operating line 143) **Caution:** Wrong configurations are not prevented!
130	Function multifunctional relay K7	0 (0…5)	....	0 = no function 1 = refill function 2 = electric immersion heater 3 = collector pump 4 = circulating pump 5 = flow alarm (refer to operating line 143) **Caution:** Wrong configurations are not prevented!

Function block "LPB parameters"

131	Device number for bus address	0 (0...16)	....	
132	Segment number for bus address	0 (0...14)	....	
133	Clock mode	0 (0...3)	....	0 = autonomous clock 1 = clock is slave without remote adjustment 2 = clock is slave with remote adjustment 3 = clock is the master
134	Bus power supply, operating mode and status indication	A (0 / 1 / A)	....	0 = OFF (no bus power supply) 1 = bus power supply ON A = automatic bus power supply
135	Outside temperature source	A (A / 00.01…14.16)	....	A = automatically, or segment and device number
136	Locking signal gain	100% (0...200)	........% %	Response to locking signals
137	Response to uncritical locking signals from data bus	1 (0 / 1)	....	0 = function OFF 1 = function ON

Function block "Device functions"

141	Pulse lock actuator	1 (0 / 1)	....	0 = function OFF 1 = function ON
142	Frost protection for the plant	1 (0 / 1)	....	0 = without frost protection for the plant 1 = with frost protection for the plant
143	Flow alarm	--:-- h (--:-- / 0:10...10:00)	..........h	Period of time during which the flow temperature may stay outside its limits --- = function deactivated
144	Changeover winter- / summertime	25.03 (01.01...31.12)	....	Setting: Earliest possible changeover date
145	Changeover summer- / wintertime	25.10 (01.01...31.12)	....	Setting: Earliest possible changeover date
146	Pump kick	1 (0 / 1)	....	0 = without periodic pump kick 1 = with weekly pump kick
147	Minimum speed of speed-controlled pump	50% (0...variable*)	........%	* Maximum value = operating line 148
148	Maximum speed of speed-controlled pump	100% (variable*...100)	........%	* Minimum value = operating line 147
149	Power factor at reduced pump speed	85% (0...100)	........%	Set pumping power at minimum speed, as a percentage of maximum speed

Function block "M-bus parameters"

151	M-bus primary address	0 (0...250)	....	
152	M-bus secondary address	Display function		Corresponds to the production number
153	Baud rate	2400 baud (300...9600)	....	300, 600, 1200, 2400, 4800, 9600 baud
154	Forwarding of M-bus power control signals (load management)	0 (0...2)	....	0 = locally 1 = to all controllers in the network with the same segment number 2 = to all controllers in the network
155	M-bus power control in the heating circuit (load management)	Display function		Display in %. If 100% is displayed, the internal heat request is adopted unchanged

Function block "PPS parameters"

158	Impact of room unit functions on the heating circuits when using 1 room unit. Adjacent table: Heating circuit 1 → 1 Heating circuit 2 → 2 Heating circuits 1 and 2 → 1+2	0 (0…5)	....

Room unit functions	Setting					
	0	1	2	3	4	5
Actual value of room temperature acts on flow temperature control of heating circuit →	1	1	2	2	1+2	1+2
Display of flow temperature of heating circuit →	1	1	2	2	1	1
Switching program, presence button in automatic operation and setpoint adjustments act on heating circuit →	1	1	2	2	1	1
Operating mode, presence button in continuous operation and holiday program act on heating circuit →	1	1+2	2	1+2	1	1+2

Function block "Test and display"

161	Sensor test − − − = open circuit / no sensor o o o = short-circuit	0 (0…11)	0 = B9 Outside sensor 1 = B1 Flow sensor 2 = B3 Flow sensor 3 = A6 Room unit sensor, heating circuit 1 4 = A6 Room unit sensor, heating circuit 2 5 = B7/U2 Primary return / prim. pressure 6 = B71/U1 Primary / secondary return / secondary pressure 7 = B72 Prim. / sec. return / collector 8 = B31 D.h.w. storage tank sensor 9 = B32 D.h.w. storage tank sensor / return sensor 10 = B12 Flow sensor 11 = U1 DC 0...10 V / 0…130 °C
162	Display of setpoint − − − = no setpoint available	0 (0…11)	0 = B9 Composite outside temperature 1 = B1 Flow sensor 2 = B3 Flow sensor 3 = A6 Room unit sensor, heating circuit 1 4 = A6 Room unit sensor, heating circuit 2 5 = B7/U2 Primary return / prim. pressure 6 = B71/U1 Primary / secondary return / secondary pressure 7 = B72 Prim. / sec. return / collector 8 = B31 D.h.w. storage tank sensor 9 = B32 D.h.w. storage tank sensor / return sensor 10 = B12 Flow sensor 11 = − − − No setpoint available
163	Relay test	0 (0…11)	0 = normal operation (no test) 1 = all relays deenergized 2 = relay Y1 energized 3 = relay Y2 energized 4 = relay K6 energized 5 = relay Q1 energized

163	Relay test (cont'd)	0 (0…11)	6 = relay Q3 energized 7 = relay Y5 energized 8 = relay Y6 energized 9 = relay Q2 energized 10 = relay Y7/Q4 energized 11 = relay Y8/K7 energized *To end the relay test:* • Select another operating line • Press an operating mode button • Automatically after 8 minutes **Caution:** Make the relay test only with main valve fully closed!
164	Speed of controlled pump	Display function	Display as a percentage of the nominal speed (assignment of pump: Operating line 58)
165	Test of digital input: Contact H5	Display function	0 = contact open 1 = contact closed
	Pulse input		Shows the number of pulses per minute
169	Display of active limitations	Display function	Query with ◁ or ▷ *Maximum limitation Γ :* 1 = volumetric flow or output prim. controller 2 = common primary return 3 = temperature difference precontrolled flow 4 = common secondary flow 5 = volumetric flow or output heating circuits 6 = primary return heating circuit 1 7 = secondary return heating circuit 1 8 = temperature difference heating circuit 1 9 = secondary flow heating circuit 1 10 = room temperature heating circuit 1 11 = flow temperature rise heating circuit 1 12 = primary return heating circuit 2 13 = secondary return heating circuit 2 14 = temperature difference heating circuit 2 15 = secondary flow heating circuit 2 16 = room temperature heating circuit 2 17 = flow temperature rise heating circuit 2 18 = primary return d.h.w. 19 = secondary return d.h.w. 20 = storage tank charging temperature 21 = maximum storage tank temperature 22 = evaporation temperature of heat conducting medium 23 = collector overtemp. protection level *Minimum limitation ⌐:* 24 = common flow rate primary side* 25 = common secondary flow 26 = flow rate heating circuit 1* 27 = secondary flow heating circuit 1 28 = reduced room setpoint heating circuit 1 29 = flow rate heating circuit 2* 30 = secondary flow heating circuit 2 31 = reduced room setpoint heating circuit 2 * Suppression of hydraulic creep
170	Software version	Display function	

Function block "Solar d.h.w."

201	Temperature differential solar ON	8 K (0…40)	............K	Temperature differential between collector and storage tank
202	Temperature differential solar OFF	4 K (0…40)	............K	Temperature differential between collector and storage tank
203	Frost protection temperature for collector	--- °C (--- / –20…5)	............°C	--- = no frost protection for the collector
204	Overtemperature protection for collector	105 °C (--- / 30…240)	............°C	--- = no overtemperature protection for the collector
205	Evaporation temperature of heat conducting medium	140 °C (--- / 60…240)	............°C	--- = no protection for the collector pump

206	Maximum limitation of charging temperature	80 °C (8…100)	............°C	
207	Maximum limitation of storage tank temperature	90 °C (8…100)	............°C	**Caution:** This is not a safety function!
208	Collector start function gradient	--- min/K (--- / 1…20)	............min/K	--- = function deactivated

Function block "Refill functions"

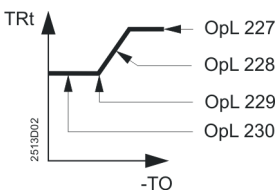| 211	Relative secondary minimum pressure	--- bar (--- / 0.5…10)	............bar	--- = refill function deactivated
212	Refill locking time after shutdown	10 min (--- / 10…2400)	............min	--- = function deactivated
213	Minimum secondary underpressure period	10 s (--- / 10…2400)	............s	
214	Secondary switching differential	0.3 bar (0.1…1.0)	............bar	
216	Maximum refill period per charging cycle	--- s (--- / 10…2400)	............s	--- = function deactivated
217	Maximum refill period per week	--- min (--- / 1…1440)	............min	
218	Secondary pressure sensor U1: Pressure at 10 V	10 bar (0…100)	............bar	Scaling for DC 10 V
219	Secondary pressure sensor U1: Pressure at 0 V	0 bar (–10…0)	............bar	Scaling for DC 0 V
220	Primary pressure sensor U2: Pressure at 10 V	10 bar (0…100)	............bar	Scaling for DC 10 V
221	Primary pressure sensor U2: Pressure at 0 V	0 bar (–10…0)	............bar	Scaling for DC 0 V
222	Resetting the counters: "Refill period per charging cycle" "Refill period per week"	0 (0 / 1)	....	Keep ⊲ and ⊳ depressed until the display changes: 0 = normal status (0 blinks when pressing) 1 = reset completed

"Locking functions" level

To activate the "Locking functions" level, proceed as follows:
1. Press ▽ and △ simultaneously for 6 seconds.
2. The display shows *Cod 0 0 0 0 0*
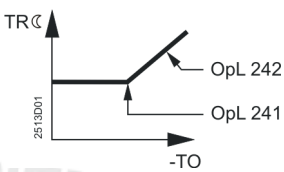3. Enter the code (for information, contact your Siemens Service Center).

Note: The "Enduser" and "Heating engineer" levels remain activated.

Function block "DRT and maximum limitation of return temperature"

226	Maximum limitation of primary return temperature	0 (0 / 1)	....	0 = without limitation 1 = with limitation
227	Upper constant value, maximum limitation of primary return temperature	70 °C (variable…140)	............°C	
228	Slope, maximum limitation of primary return temperature	7 (0...40)	....	
229	Start of compensation (point of inflection), maximum limitation of primary return temperature	10 °C (–50...50)	............°C	
230	Lower constant value, maximum limitation of primary return temperature	50 °C (0…variable)	............°C	
231	Maximum setpoint of return temperature during d.h.w. charging	--- °C (--- / 0...140)	............°C	--- = no limitation
232	Maximum limitation of secondary return temperature, difference to the primary limit value	--- K (--- / 0….50)	............K	Secondary limit value always lies by this setting value below the primary limit value. Applies to the heating circuit **and** d.h.w. circuit --- = no limitation

The figure (right of rows 227–230):

TRt ↑ with operating line, labels:
OpL 227
OpL 228
OpL 229
OpL 230
2513D02
→ -TO
OpL = operating line
TO = outside temperature
TRt = primary return temperature

233	Integral action time of primary return temperature limitations	30 min (0…60)	.............min	Limitation of temperature difference and maximum limitation
234	Limit value of maximum limitation of temperature difference (DRT)	--.- K (0.5…50.0)	.............K ....K	Maximum limitation of difference between the primary and secondary return temperature --.- = no limitation of temperature difference
235	Maximum setpoint of return temperature during d.h.w. heating to the legionella setpoint	--- °C (--- / 0…140)	.............°C	

Function block "Miscellaneous"

236	Limit function at contact H5	1 (1 / 2)	....	1 = limitation with adjustable limit value (operating line 237) 2 = limitation with a fixed limit value (75 pulses/min) Function active when operating line 56 = 1
237	Limit value of volumetric flow or power limitation	75 pulses/min (5…1500)	.... puls/min	Active only when operating line 236 = 1
238	Integral action time of limit function at contact H5	60 min (0….240)	.............min	
240	Locking time after minimum limitation for the suppression of hydraulic creep	6 min (--- / 1…20)	.............min ....min	--- = function deactivated
241	Start of compensation (point of inflection), increase of reduced room temperature setpoint	5 °C (–50...50)	.............°C ....°C	Influence of outside temperature on the reduced room temperature setpoint
242	Slope, increase of reduced room temperature setpoint	0 (0…10)	....	Slope 0 = function deactivated OpL = operating line TO = outside temperature TR☾ = reduced room temperature setpoint
243	Forced charging at the beginning of release period 1	1 (0 / 1)	....	0 = function deactivated 1 = function activated
244	Cooling down protection primary flow	--- min (--- / 3…255)	.............min	--- = function deactivated

Function block "Operation locking functions"

250	Locking on the software side	0 (0…4)	....	0 = no locking 1 = d.h.w. settings locked 2 = "Heating engineer" level locked 3 = d.h.w. settings and "Heating engineer" level locked 4 = all settings and levels locked
251	Locking of "Locking functions" level on the hardware side	0 (0 / 1)	....	0 = no locking 1 = code can be entered only when terminals B31-M on the base are bridged

Dimensions

2515M01

93

16.4

96

144

26 26 26 26

14.3

max. 8   max. 5

M16

22

EN 50262

EN 60715

35 ±0.3

max. 3

12.6

108.5

4.5   56   14

60.4

112

138^{+1}_{0}

$92^{+0.8}_{0}$

IEC 61554 - 144 × 96

[mm]

SIEMENS|Bolt SIEMENS|Bolt SIEMENS|Bolt SIEMEN

SIEMENS|Bolt SIEMENS|Bolt SIEMENS|Bolt SIEM

Subject to change