

Installation

Place of installation

- In a dry room, e.g. in the boiler room
- Installation choices:
 - Control panel (in the panel front, on the inner wall, or on a DIN rail)
 - Control cabinet
 - 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 strain relief must be ensured
- The cables from the controller to the actuators and pumps carry mains voltage
- Sensor cables should not be run parallel to mains carrying cables
- To protect the solar collector sensor from voltage surges (caused by lightning for example), the separately available conduit box for overvoltage protection (AGS2S.200/109) should be installed

Permissible cable lengths

- For all sensors, thermostats and external 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
- For the data bus:

0.75...2.5 mm ²	according to Data Sheets N2030E and N2032E
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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 the holes.
5. If required, knock out holes on the base for the cable entry glands.
6. Screw base to the wall.
7. Wire up the base.

DIN rail mounting

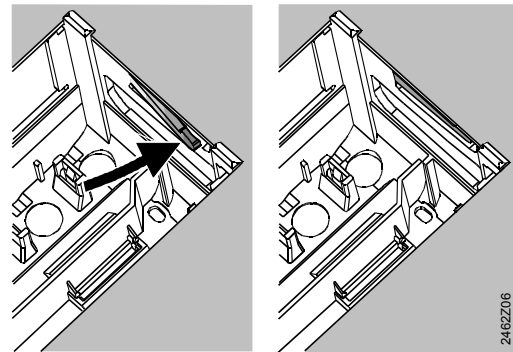
1. Fit rail.
2. Separate base from the controller.
3. If required, knock out holes on the base for the cable entry glands.
4. Fit base to the rail. Marking «TOP» must be at the top!
5. If required, secure the base (depending on the type of rail).
6. Wire up the base.

Flush panel mounting

- Panel cutout required: 92 x 138 mm
- Max. thickness: 3 mm

 1. Separate base from the controller.
 2. If required, knock out holes on the base for the 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).



Wrong

Correct

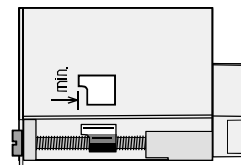
Place tongues on both sides correctly – they may not be located inside the cutout!

5. Wire up the base. Make sure the cable lengths are such that there is sufficient space for opening the control panel door.

Commissioning

Preparatory checks

1. DO NOT switch on power yet.
2. Check wiring according to the plant connection diagram.
3. Ensure correct position and location of the levers by turning the fixing screws (refer to illustration on the lateral wall of the unit)



4. Insert controller in the base until stop is reached. Marking «TOP» must be at the top!
5. Tighten fixing screws alternately.
6. Check the motorized valves: See if
 - they are correctly installed (observe direction of flow as indicated on the valve body)
 - the manual lever is disengaged.
7. Switch on power. The display must show something (e.g. time of day). If not, the reason may be one of the following:
 - No mains voltage
 - Main fuse blown
 - Mains isolator or main switch not set to ON

General information about operation

- Setting elements:
 - Display; an operating line is assigned to each setting
 - Buttons for selecting and adjusting setting values:
 - ▼ Next operating line below
 - ▲ Next operating line above
 - ◀ Decrease the displayed value
 - ▶ Increase the displayed value
- Adopting a setting value:
The setting value is adopted by selecting the next operating line (or by pressing one of the operating mode buttons)
- 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:
Press ▼ and ▶ to select the next line block above.
Press ▼ and ◀ to select the next line block below.

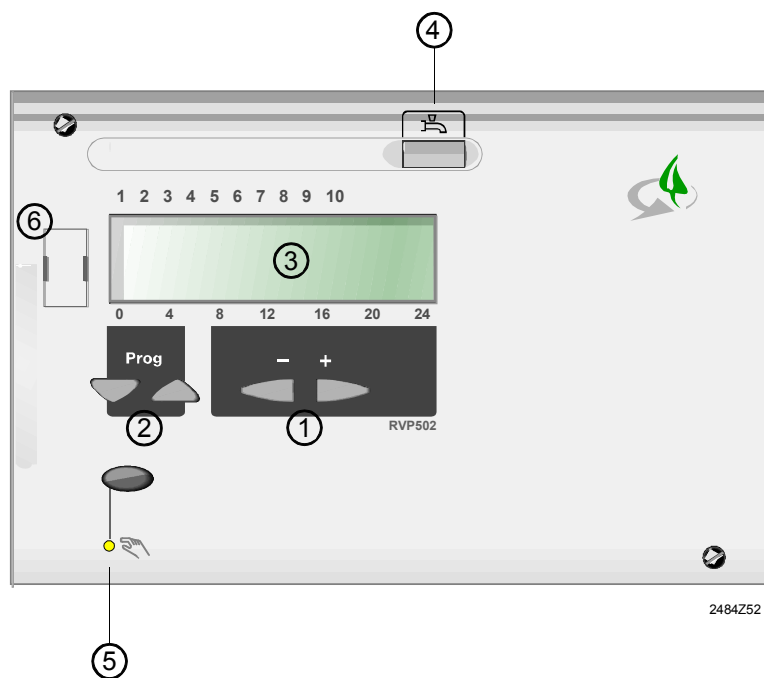
Setting procedure

1. Make settings on the operating lines according to the instructions released by your local Siemens HVAC Products sales office.
2. Select plant type on operating line 100.
3. Make the required settings on the controller. All functions and operating lines required for the selected type of plant will be activated and can be set. Operating lines not used will be hidden.
4. Enter the adjusted values in the table!
5. Set the general functions (independent of the type of plant).

Commissioning and functional check

- Specific operating lines for the functional check:
 - 200 = output test
 - 201 = input test
 - 345 = functional test solar
 - 545 = functional test d.h.w. storage tank
 - 888 = output test P1
 - 894 = output test Ux
- If **Er** (ERROR) appears on the display: Query operating line 50 to find the error

Operating elements



- ① Setting buttons
Parameter settings (+ / -)
- ② Operating line selection buttons (Prog)
Selection of parameters / switching operating lines
- ③ Display
Readout of actual values and settings
- ④ Operating mode button d.h.w.
Recharging DHW with the electric immersion heater or the heat source, manual DHW push
- ⑤ Function button with LED for manual operation
Manual mode ON / OFF
- ⑥ Connection facility for PC tool for diagnostics and service

An illuminated button or signal lamp means that the relevant function is activated.

Front of RVP502

Connection diagrams

Markings of connection terminal on the low voltage side

Terminal	Terminals
M	Ground
Ux	Output DC 0...10 V
P1	PWM output
B109	Temperature sensor
M	Ground sensors
B108	Temperature sensor
B107	Temperature sensor
M	Ground sensors

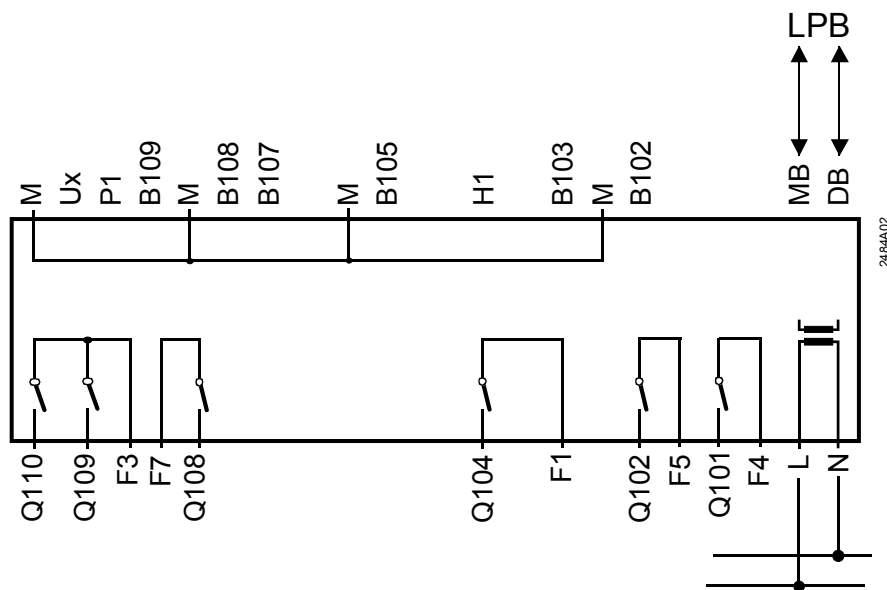
Terminal	Terminals
B105	Temperature sensor
H1	Input H1 (contact or DC 0...10 V)
B103	Temperature sensor
M	Ground sensors
B102	Temperature sensor
MB	Ground bus (LPB)
DB	Data bus (LPB)

Markings of connection terminal on the mains voltage side

Terminal	Terminals
Q110	Multifunctional output
Q109	Multifunctional output
F3	Phase Q109 / Q110
F7	Phase Q108
Q108	Multifunctional output
Q104	Multifunctional output
F1	Phase Q103 / Q104

Terminal	Terminals
Q102	Multifunctional output
F5	Phase Q102
Q101	Multifunctional output
F4	Phase Q101
L	Live AC 230 V
N	Neutral conductor

Electrical connections



Selection

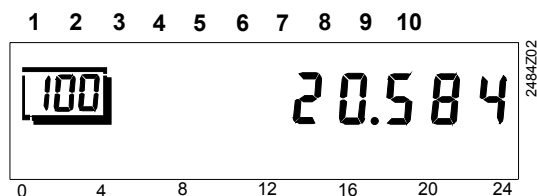
Selecting the plant type:

Select the required type of plant (basic diagram number) on **operating line 100** (refer to page 7). The selection activates all functions that are required for the specific plant and shows the operating lines needed.

In addition, operating parameters 120 - 173 will be set to their default values required for the basic plant.

During the setting procedure, the basic diagram number on the display flashes. The required number must be confirmed by **pressing the +/- buttons twice for 3 seconds**. Then, the basic diagram number will stop flashing.

Example:



Plant type

The basic plant diagram for the required type of plant and additional setting information will be provided by your local **Siemens Building Technologies / HVAC Products sales office**.

Designations of relays and sensors

The relay designations used in the supplied basic diagram have the following meaning:

Relays	Function (use)	Relays	Function (use)
K6	Electric immersion heater for d.h.w.	Y4	Heat generation lock
K8	Solar collector pump or diverting valve heat exchanger 2	Q3	D.h.w. charging pump
K9	Solar bypass valve or heat exchanger pump	Q4	D.h.w. circulating pump
K10	Alarm output	Q5	Solar collector pump 1
K11	Overtemperature protection	Q11	Storage tank heat transfer pump
K12	Solar collector pump or diverting valve heat exchanger 1	Q13	D.h.w. storage tank heat transfer pump
K13	Output K13 for free time switch program	Q15	Pump H1
K14	Release of external oil- / gas-fired boiler	Q16	Solar collector pump 2
K16	Electric immersion heater for buffer storage tank	L	Live (mains connection)
K18	Output for solar swimming pool heating	N	Neutral conductor (mains connection)

Sensor designations

The sensor designations used in the supplied basic diagram have the following meaning:

Sensor	Function (use)	Types of sensors	Sensor	Function (use)	Types of sensors
B3	D.h.w. sensor 1	LG-Ni 1000	B63	Solar flow sensor for yield measurement	LG-Ni 1000 / Pt 1000
B31	D.h.w. sensor 2	LG-Ni 1000	B64	Solar return sensor for yield measurement	LG-Ni 1000 / Pt 1000
B32	D.h.w. sensor 3	LG-Ni 1000	B10	Common flow sensor	LG-Ni 1000
B33	D.h.w. sensor 4	LG-Ni 1000	B13	Sensor for solar swimming pool heating	LG-Ni 1000
B4	Buffer storage tank sensor 1	LG-Ni 1000	M	Ground sensors H1, U1, P1	-
B41	Buffer storage tank sensor 2	LG-Ni 1000	H1	Contact or DC 0...10 V input	-
B42	Buffer storage tank sensor 3	LG-Ni 1000	U1	DC 0...10 V output	-
B6	Solar collector sensor 1	LG-Ni 1000 / Pt 1000	P1	PWM output	-
B61	Solar collector sensor 2	LG-Ni 1000 / Pt 1000	DB	LPB data	-
B62	Solar collector flow sensor	LG-Ni 1000	MB	LPB ground	-

Parameter list

Settings to be made on the «Enduser» level

Settings to meet individual enduser needs.

	Buttons	Explanation	Line
1	Prog	Press one of the operating line selection buttons. <i>This will take you directly to the programming mode “Enduser”.</i>	
2	Prog	Press the operating line selection buttons to select the required operating line. <i>The following parameter list contains all settings that can be made.</i>	
3		Press the + or – button to set the required value. The setting will be stored as soon as you leave the programming mode or change to another line.	
4		To leave the programming mode “Enduser”, press the operating mode button “d.h.w.”. → Note: <i>If no button is pressed for about 8 minutes, the controller automatically returns to the operating mode selected last.</i>	Continuous display

Overview of the enduser parameters

Line	Function	Range	Unit	Values	Factory setting
Allgemein / Uhrzeit / Info					
1	Actual value of the collector temperature B6	-50...350	°C	–	–
2	Actual value of the collector temperature B61	-50...350	°C	–	–
3	Actual value of d.h.w. temperature sensor B3 / BMU	-50...350	°C	–	–
4	Actual value of d.h.w. temperature sensor B31	-50...350	°C	–	–
5	24-hour yield solar energy Automatic reset at 24:00 hrs or when resetting the total solar yield	0...999.9	kWh	–	0
6	Total yield solar energy To reset the total yield to 0, press the +/- buttons simultaneously for 3 s	0...9999999.9	kWh	–	0
7	Actual value of the buffer storage tank temperature B4 at the top	-50...350	°C	–	–
8	Actual value of the buffer storage tank temperature B41 at the bottom	-50...350	°C	–	–
9	Actual mean value of the buffer storage tank temperature B42	-50...350	°C	–	–
10	Actual value of the swimming pool temperature B13	-50...350	°C	–	–
15	Time of day	00:00...23:59	h / min :	–
16	Weekday	1...7	Day	..... day	–
17	Date	01.01...31.12	Day / month :	–
18	Year	2003...2094	Year	..... year	–
Time switch program for d.h.w. heating					
19	Weekday – preselection d.h.w. 1-7 7-day block 1...7 Individual days	1-7 / 1...7	Day	..... day	–
20	Switch-on time 1 st period d.h.w.	00:00...24:00	h / min	.... : .... h / min	06:00
21	Switch-off time 1 st period d.h.w.	00:00...24:00	h / min	.... : .... h / min	22:00

<i>Line</i>	<i>Function</i>	<i>Range</i>	<i>Unit</i>	<i>Values</i>	<i>Factory setting</i>
22	Switch-on time 2 nd period d.h.w.	00:00...24:00	h / min	.... : .... h / min	--:--
23	Switch-off time 2 nd period d.h.w.	00:00...24:00	h / min	.... : .... h / min	--:--
24	Switch-on time 3 rd period d.h.w.	00:00...24:00	h / min	.... : .... h / min	--:--
25	Switch-off time 3 rd period d.h.w.	00:00...24:00	h / min	.... : .... h / min	--:--
D.h.w. values					
26	Nominal setpoint of the d.h.w. temperature (TBWw) TBWR Line 770 TBWmax Line 750 _{EXP}	TBWR...TBW max	°C	..... °C	55
General / Free time switch program					
30	Weekday – preselection free time switch pr. 1-7 7-day block 1...7 Individual days	1-7 / 1...7	Day	..... day	–
31	Switch-on time 1 st period free time switch pr.	00:00...24:00	h / min	.... : .... h / min	06:00
32	Switch-off time 1 st period free time switch pr.	00:00...24:00	h / min	.... : .... h / min	22:00
33	Switch-on time 2 nd period free time switch pr.	00:00...24:00	h / min	.... : .... h / min	--:--
34	Switch-off time 2 nd period free time switch pr.	00:00...24:00	h / min	.... : .... h / min	--:--
35	Switch-on time 3 rd period free time switch pr.	00:00...24:00	h / min	.... : .... h / min	--:--
36	Switch-off time 3 rd period free time switch pr.	00:00...24:00	h / min	.... : .... h / min	--:--
38	Resetting the enduser parameters To reset the parameters of the enduser level to their standard values, press the +/- buttons simultaneously for 3 s	0 / 1	–	–	0
39	Resetting the d.h.w. time switch program To reset the d.h.w. time switch program to his standard value, press the +/- buttons simultaneously for 3 s	0 / 1	–	–	0
General / service					
50	Indication of errors	0..255 / 00.01...14.16	–	–	–

Settings to be made on the «Heating engineer» level

Settings required for the configuration and parameterization by the heating engineer.

	Buttons	Explanation	Line
1		Press both operating line selection buttons for at least 3 seconds. This will take you to the programming level "Enduser".	
2		Press the operating line selection buttons to select the required operating line. <i>The parameter list on the next pages contains all operating lines on which settings can be made.</i>	
3		Press the + or – button to set the required value. The setting will be stored as soon as you leave the programming mode or change to another operating line.	
4		To leave the programming level "Heating engineer", press the operating mode button "d.h.w." → Note: <i>If no button is pressed for about 8 minutes, the controller automatically returns to the operating mode selected last.</i>	Continuous display

Overview of the heating engineer parameters

Line	Function	Range	Unit	Values	Factory setting
General / service					
<i>Basic diagrams</i>					
100	Selection of the basic diagram 0 No basic diagram selected 1...99.998 Basic diagrams To adopt the selected diagram number, press the +/- buttons simultaneously for 3 s.	0...99.998	–	.....	0
Configuration					
<i>Partial diagrams</i>					
120	Selection of partial diagram oil-fired / gas-fired boiler 0 Partial diagram inactive (OeG0) 7 Partial diagram OeG7 9 Partial diagram OeG9	0, 7, 9	–	.....	0
121	Selection of partial diagram solar collectors 0 Partial diagram inactive (OeG0) 1...16 Partial diagrams Sol1 through Sol16	0...16	–	.....	0
124	Display of partial diagram buffer storage tank 0 Partial diagram inactive (Sp0) 1...3 Partial diagrams Sp1 through Sp3	0...3	–	.....	0
125	Display of partial diagram d.h.w. storage tank 0 Partial diagram inactive (BwSp0) 1...10 Partial diagrams BwSp1 through BwSp10	0...10	–	.....	0
126	Selection of partial diagram combi storage tank 0 Partial diagram inactive (KoSp0) 1...6 Partial diagrams KoSp1 through KoSp6	0...6	–	.....	0

Line	Function	Range	Unit	Values	Factory setting
	<i>Hiding sensors that are not required</i>				
131	Reduction 1 st d.h.w. sensor B3 0 Without sensor B3 1 With sensor B3	0 / 1	–	.....	0
132	Reduction 2 nd d.h.w. sensor B31 0 Without sensor B31 1 With sensor B31	0 / 1	–	.....	0
133	Reduction 2 nd buffer storage tank sensor B41 0 Without sensor B41 1 With sensor B41	0 / 1	–	.....	0
	<i>Auxiliary functions</i>				
146	Storage tank heat transfer pump Q11 (ZuFu3) --- None 101..110 Relay Q11 at relay terminal Q101...110	101...110	–	.....	---
147	D.h.w. circulating pump Q4 (ZuFu4) --- None 101..110 Relay Q4 at relay terminal Q101...110	101...110	–	.....	---
150	Pump H1 Q15 (ZuFu7) --- None 101..110 Relay Q15 at relay terminal Q101...110	101...110	–	.....	---
151	Alarm output K10 (ZuFu8) --- None 101..110 Relay K10 at relay terminal Q101...110	101...110	–	.....	---
152	Output overtemperature protection K11 (ZuFu9) --- None 101..110 Relay K11 at relay terminal Q101...110	101...110	–	.....	---
156	3 rd buffer storage tank sensor B42 (ZuFu11) --- None 101..109 Sensor B42 at sensor terminal B101...109	101...109	–	.....	---
157	Common flow sensor B10 (ZuFu12) --- None 101..109 Sensor B10 at sensor terminal B101...109	101...109	–	.....	---
158	Solar flow sensor B62 (ZuFu13) --- None 101..109 Sensor B62 at sensor terminal B101...109	101...109	–	.....	---
159	Solar flow sensor for yield measurement B63 (ZuFu14) --- None 101..109 Sensor B63 at sensor terminal B101...109	101...109	–	.....	---
160	Solar return sensor for yield measurement B64 (ZuFu14) --- None 101..109 Sensor B64 at sensor terminal B101...109	101...109	–	.....	---
169	Output K13 for free time switchprogram (ZuFu23) --- None 101..110 Relay K13 to relay terminal Q101...110	101...110	–	.....	---
170	Electric immersion heater buffer storage tank K16 (ZuFu24) --- None 101..110 Relay K16 at relay terminal Q101...110	101...110	–	.....	---
171	Electric immersion heater d.h.w. storage tank K6 (ZuFu25) --- None 101..110 Relay K6 at relay terminal Q101...110	101...110	–	.....	---
173	Heat generation lock Y4 (ZuFu27) --- None 101..110 Relay Y4 to relay terminal Q101...110	101...110	–	.....	---
175	Solar swimming pool heating K18 (ZuFu28) --- None 101..110 Relay K18 at relay terminal Q101...110	101...110	–	.....	---
177	Solar swimming pool heating sensor B13 (ZuFu28) --- None 101..109 Sensor B13 at sensor terminal B101...109	101...109	–	.....	---

Line	Function	Range	Unit	Values	Factory setting
Miscellaneous					
193	D.h.w. heating with charging pump or diverting valve (Q3) 0 Charging pump 1 Diverting valve	0 / 1	–	.....	0
194	Setpoint and time switch program for d.h.w. heating with BMU 0 No 1 Yes	0 / 1	–	.....	0
General					
Diagnosis configuration					
200	Display of relay terminal assignment Query with the +/- buttons	101...110	–	–	–
201	Display of sensor terminal assignment Query with the +/- buttons	101...109	–	–	–
202	Display of configuration error Blank = no error	1...99	–	–	–
203	Display of plant diagram identification number part 1	0...99'999'999	–	–	–
204	Display of plant diagram identification number part 2	0...99'999'999	–	–	–
205	Display of plant diagram identification number part 3	0...99'999'999	–	–	–
206	Display of plant diagram identification number part 4	0...99'999'999	–	–	–
Terminal test					
210	Output test (relay test) --- Control mode according to the operating state 0 All outputs are deactivated 1 Q101 ON 2 Q102 ON 3 Reserved (no function) 4 Q104 ON 5 Reserved (no function) 6 Reserved (no function) 7 Reserved (no function) 8 Q108 ON 9 Q109 ON 10 Q110 ON	0...10	–	–	–
211	Input test (sensor test) 1 Reserved (no function) 2 Sensor at B102 3 Sensor at B103 4 Reserved (no function) 5 Sensor at B105 6 Reserved (no function) 7 Sensor at B107 8 Sensor at B108 9 Sensor at B109 10 Reserved (no function) 11 Input H1 (ontact or DC 0...10 V) 12 Reserved (no function)	1...12	–	–	–
Setpoint / actual value of common flow					
220	Display of common flow temperature setpoint --- No value available	0.0...140.0	°C	–	–
221	Actual value of the common flow temperature --- No value available	0...140	°C	–	–
Solar collectors					
Setpoints / actual values					
300	Actual value of the collector temperature B6 --- No value available	-50...350	°C	–	–
301	Actual value of the collector temperature B61 --- No value available	-50...350	°C	–	–
302	Actual value of the collector flow temperature B62 --- No value available	-50...350	°C	–	–
303	Max. value of the collector temperature 1 (B6) To make a reset to the actual value, press the +/- buttons simultaneously for 3 s	-50...350	°C	–	0
304	Max. value of the collector temperature 2 (B61) To make a reset to the actual value, press the +/- buttons simultaneously for 3 s	-50...350	°C	–	0

Line	Function	Range	Unit	Values	Factory setting
<i>Temperature differential collector / heat exchanger</i>					
305	Display of the temperature differential collector 1 / heat exchanger 1 --- No value available	-50...350	K	–	–
306	Display of the temperature differential collector 1 / heat exchanger 2 --- No value available	-50...350	K	–	–
307	Display of temperature differential collector 2 / heat exchanger 1 --- No value available	-50...350	K	–	–
308	Display of temperature differential collector 2 / heat exchanger 2 --- No value available	-50...350	K	–	–
309	Temperature differential collector 1 / swimming pool --- No value available	-50...350	K	–	0
310	Temperature differential collector 2 / swimming pool --- No value available	-50...350	K	–	0
<i>Hours run counter</i>					
311	Operating hours collector pump 1 (output Q5) To make a reset to 0, press the +/- buttons simultaneously for 3 s	0...999'999	h	–	0
312	Operating hours collector pump 2 (output Q16) To make a reset to 0, press the +/- buttons simultaneously for 3 s	0...999'999	h	–	0
313	Operating hours pump K12 To make a reset to 0, press the +/- buttons simultaneously for 3 s	0...999'999	h	–	0
314	Operating hours diverting valve K8 To make a reset to 0, press the +/- buttons simultaneously for 3 s	0...999'999	h	–	0
315	Operating hours swimming pool heating K188 To make a reset to 0, press the +/- buttons simultaneously for 3 s	0...999'999	h	–	0
<i>Swimming pool heating</i>					
317	Setpoint temperature swimming pool	0...line 321	°C	..... °C	25
318	Actual value of the swimming pool temperature B13 --- No value available	-50...350	°C	–	–
319	Temperature differential swimming pool ON	Line 320...40	K	..... K	8
320	Temperature differential swimming pool OFF	0...line 319	K	..... K	4
321	Max. swimming pool charging temperature	20...95	°C	..... °C	35
322	Heat exchanger pump operation for swimming pool 1 Alternately 2 Parallel	1 / 2	–	.....	1
323	Measured value correction swimming pool sensor B13	-10.0...10.0	K	..... K	0.0
<i>Functions</i>					
324	Selection of collector sensor B6 / B61 1 LG-Ni 1000 2 Pt 1000	1...2	–	.....	1
325	Measured value correction of collector sensor 1 B6	-10.0...10.0	K	..... K	0.0
326	Measured value correction of collector sensor 2 B61	-10.0...10.0	K	..... K	0.0
327	Measured value correction of collector flow sensor B62	-10.0...10.0	K	..... K	0.0
328	Heat exchanger pump operation partial diagram Sol5 1 Alternative operation 2 Parallel operation	1...2	–	.....	2
329	Temperature differential ON heat exchanger 1 1	Line 330...40	°C	..... °C	8
330	Temperature differential OFF heat exchanger 1	0...line 329	°C	..... °C	4
331	Temperature differential ON heat exchanger 2	Line 332...40	°C	..... °C	8
332	Temperature differential OFF heat exchanger 2	0...line 331	°C	..... °C	4
333	Priority with 2 heat exchangers 1 No priority 2 Rel. priority buffer storage tank (heat exchanger 1) 3 Abs. priority buffer storage tank (heat exchanger 1) 4 Rel. priority d.h.w. storage tank (heat exchanger 2) 5 Abs. priority d.h.w. storage tank (heat exchanger 2)	1...5	–	.....	4

Line	Function	Range	Unit	Values	Factory setting
Solar yield / return cooling measurement					
338	Type of antifreeze added 1 None (only water) 2 Ethylenglycol 3 Propylenglycol 4 Mixture of Ethylen- and Propylenglycol	1...4	–	.....	1
339	Antifreeze concentration	1...100	%	..... %	30
340	Pulse value flow meter (supports 1, 2.5, 10, 25, 100 liters / pulse)	1.0 / 2.5 / 10 / 25 / 100	–	.....	10.0
341	Volumetric flow solar pump	10...1500	Liter/h	..... Liter/h	200
342	Selection of sensor for solar yield measurement (B63 and B64) 1 LG-Ni 10004 2 Pt 1000	1 / 2	–	.....	2
343	Actual value of the solar flow temperature B63 --- No value available	–50...350	°C	–	–
344	Actual value of the solar return temperature B64 --- No value available	–50...350	°C	–	–
Speed-controlled pump					
345	Display of speed of the solar pump Q5 / K9	0...100	%	–	–
346	Min. speed of the solar pump	0...line 347	%	..... %	40
347	Max. speed of the solar pump	Line 346 ...100	%	..... %	100
Diagnosis					
349	Functional test solar --- No test 0 Everything OFF 1 Q5 ON 2 Q5/K12 + Q16 ON 3 Q5/K12 + Q16 + K9 ON 4 Q5/K12 + Q16 + K9 + K8 ON	--- / 0...4	–	–	---
Buffer storage tank					
Setpoints / actual values					
450	Actual value of the buffer storage tank temperature B4 at the top --- No value available	–50...350	°C	–	–
451	Actual value of the buffer storage tank temperature B41 at the bottom --- No value available	–50...350	°C	–	–
452	Actual mean value of the buffer storage tank temperature B42 --- No value available	–50...350	°C	–	–
454	Max. value of the buffer storage temperature B4 To make a reset to the actual value, press the +/- buttons simultaneously for 3 s	–50...350	°C	–	0
456	Display of setpoint of the buffer storage tank temperature To adjust the setpoint of the buffer storage tank temperature to the current heat demand, press the +/- buttons simultaneously for 3 s	0...140	°C	–	0
Functions					
471	Min. buffer storage tank level when charging with the collector (TPmin)	0...line 472	°C	..... °C	0
472	Max. buffer storage tank charging temperature	Line 471... line 450 _{EXP}	°C	..... °C	80
473	Automatic heat generation lock --- OFF 0 With B4 1 With B4 and B41 / B42	--- / 0...1	–	.....	0
474	ΔT between buffer storage tank and heat demand of heating circuit (for automatic heat generation lock)	–20...20	K	..... K	–2

Line	Function	Range	Unit	Values	Factory setting
	<i>Electric immersion heater</i>				
484	Release outside temperature for electric immersion heater buffer storage tank --- Function deactivated	--- / -30...30	°C	..... °C	5
485	Selection of control sensor for electric immersion heater of the buffer storage tank 0 Common flow sensor B10 1 Buffer storage tank sensor B4	0 / 1	–	.....	1
	<i>Overtemperature protection</i>				
489	Differential of max. storage tank temperature (MSP) and buffer storage tank safety temperature	1...50	K	..... K	5
490	Hysteresis for buffer storage tank cooling function with priority 1	1...20	°C	..... °C	5
491	Priority buffer storage tank cooling with heat transfer pump --- Function deactivated 1 Priority 1 2 Priority 2	--- / 1...2	–	.....	---
492	Priority buffer storage tank cooling with collector pump --- Function deactivated 1 Priority 1 2 Priority 2	--- / 1...2	–	.....	---
494	Priority buffer storage tank cooling with overtemperature protection output --- Function deactivated 1 Priority 1 2 Priority 2	--- / 1...2	–	.....	---
Storage tank temperature					
	<i>Functions</i>				
520	D.h.w. heating with electric immersion heater K6 1 Frost protection for the storage tank 2 Only in summer operation 3 Always	1...3	–	.....	2
521	Recharge control d.h.w. storage tank 0 With sensor B3 (switching differential) 1 With sensors B3 and B31 (start / stop) 2 D.h.w. heating like setting 0, legionella function like setting 1	0...2	–	.....	0
522	Min. d.h.w. storage tank level when charging with collector (TBmin)	0...line 523	°C	..... °C	0
523	Max. d.h.w. storage tank charging temperature	Line 522... line 500 _{EXP}	°C	..... °C	80
	<i>Heat transfer d.h.w. storage tank</i>				
530	Heat transfer with d.h.w. sensor 0 With sensor B3 1 With sensor B31	0 / 1	–	.....	0
531	Automatic heat transfer from the buffer to the d.h.w. storage tank --- Function deactivated 1 With Q3 2 With Q11	--- / 1...2	–	.....	1
532	Heat transfer strategy in the summer 0 Only for frost protection 1 According to d.h.w. release 2 Always	0...2	–	.....	2
533	Heat transfer strategy in the winter 0 Only for frost protection 1 According to d.h.w. release 2 Always	0...2	–	.....	2
534	Temperature differential ON heat transfer	Line 535...40	°C	..... °C	6
535	Temperature differential OFF heat transfer	0...line 534	°C	..... °C	4
	<i>Overtemperature protection d.h.w. storage tank</i>				
539	Differential of max. storage tank temperature (MSB) and d.h.w. storage tank safety temperature	1...50	K	..... K	5
540	Hysteresis of the d.h.w. cooling function with priority 1	1...20	°C	..... °C	5

Line	Function	Range	Unit	Values	Factory setting
541	Priority of d.h.w. storage tank cooling with transfer pump --- Function deactivated 1 Priority 1 2 Priority 2	--- / 1...2	–	.....	---
542	Priority of d.h.w. storage tank cooling with collector pump --- Function deactivated 1 Priority 1 2 Priority 2	--- / 1...2	–	.....	---
544	Priority of d.h.w. storage tank cooling with overtemperature protection output K11 --- Function deactivated 1 Priority 1 2 Priority 2	--- / 1...2	–	.....	---
Diagnosis					
545	Functional test of d.h.w. storage tank --- No test 0 Everything off 1 Charging pump ON (Q3) 2 In addition, diverting valve ON (Q3 + Y3) 3 Transfer pump ON (Q11)	--- / 0...3	–	.....	---
Combi storage tank					
570	B4 delivers temperature for functionality B31 0 No 1 Yes	0 / 1	–	.....	0
D.h.w. values					
<i>Setpoints / actual values</i>					
750	Display of the d.h.w. temperature setpoint (TBWw)	0...140	°C	–	–
751	Actual value of d.h.w. temperature sensor B3 / BMU --- No value available	--- / -50...350	°C	–	–
752	Actual value of d.h.w. temperature sensor B31 --- No value available	--- / -50...350	°C	–	–
753	Actual value of d.h.w. temperature sensor B32 --- No value available	--- / -50...350	°C	–	–
754	Actual value of d.h.w. temperature sensor B33 --- No value available	--- / -50...350	°C	–	–
755	Max. value of d.h.w. temperature B3 To make a reset to the actual value, press the +/- buttons simultaneously for 3 s --- No value available	--- / -50...350	°C	–	–
756	Max. value of d.h.w. temperature B32 To make a reset to the actual value, press the +/- buttons simultaneously for 3 s --- No value available	--- / -50...350	°C	–	–
Functions					
770	Reduced setpoint of the d.h.w. temperature (TBWR) TBWwLine 26	8...TBWw	°C	..... °C	40
771	Release of d.h.w. heating 0 24 h / day 1 According to the heating circuit time switch program(s) with forward shift 2 According to the d.h.w. time switch program (lines 19...25)	0...2	–	.....	2
772	Selection of program for the circulating pump 0 Reserved (no function) 1 According to the release of d.h.w. heating (line 771) 2 According to a free time switch program 3 According to the d.h.w time switch program	0...3	–	.....	1
773	Assignment of d.h.w. heating 0 Reserved (no function) 1 For all consumers in the same segment 2 For all consumers in the system	0...2	–	.....	2
774	Number of d.h.w. charging cycles 0 Once per day (forward shift 2.5 h) 1 Several times per day (forward shift 1h)	0 / 1	–	.....	1
775	Type of d.h.w. demand 0 Sensor 1 Control thermostat	0 / 1	–	.....	0

<i>Line</i>	<i>Function</i>	<i>Range</i>	<i>Unit</i>	<i>Values</i>	<i>Factory setting</i>
776	Boost of the flow temperature setpoint for d.h.w.	0...30	K	..... K	16
777	D.h.w. priority 0 MC + PC absolute 1 MC + PC shifting 2 None (parallel) 3 MC shifting, PC absolute	0...3	–	.....	1
778	D.h.w. priority when charging with the buffer storage tank 0 Absolute priority 1 Shifting priority 2 No priority	0...2	–	.....	1
779	Automatic d.h.w. push 0 No 1 Yes	0 / 1	–	.....	0
780	Limitation of the d.h.w. charging time --- OFF	--- / 5...250	min	..... min	150
781	Changeover to d.h.w. charging with electric immersion heater --- OFF	--- / 20...80	°C	..... °C	---
Legionella function					
790	Periodicity of the legionella function --- OFF 1...7 Duration / weekday	--- / 1...7	–	.....	7
791	Legionella function strategy 1 Max. period 2 Fixed period 3 Fixed weekday	1...3	–	.....	1
792	Setpoint of the legionella function	60...95	°C	..... °C	65
793	Time for the legionella function	00:00...24:00	hh:mm	.... : .... hh:mm	18:00
794	Dwelling time at legionella function setpoint --- Function deactivated	--- / 10...360	min.	..... min	30
795	Circulating pump operation during the legionella function 0 No 1 Yes	0 / 1	–	.....	1
General functions					
804	Central setpoint compensation --- Function deactivated	1...100	K	..... K	---
LPB / system					
850	LPB device address 0 Standalone 1 Device number	0 / 1	–	.....	1
851	LPB segment address 0 Heat generation segment 1...14 Consumer segments	0...14	–	.....	0
852	LPB power supply 0 OFF (central bus power supply) 1 AUTOMATIC (controller – bus power supply)	0 / 1	–	.....	1
853	Display LPB power supply	ON / OFF	–	–	–
Clock					
865	Clock mode 0 Autonomous clock 1 System time without remote adjustment 2 System time with remote adjustment 3 System clock (master)	0...3	–	.....	3
866	Changeover date winter- / summertime	01.01...31.12	tt.mm	.... : .... dd.mm	25.03
867	Changeover date summer- / wintertime	01.01...31.12	tt.mm	.... : .... dd.mm	25.10

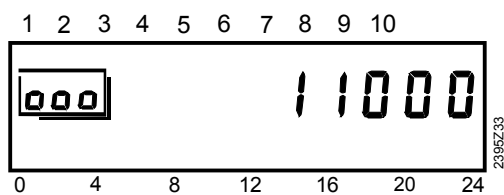
Line	Function	Range	Unit	Values	Factory setting
Input H1					
870	Function selection input H1 1 Changoover of operating mode (HC standby / d.h.w. OFF) 2 Reserved (no function) 3 Min. setpoint of flow temperature (setting on line 871) 4 Heat generation lock oil / gas or heat pump 5 Heat demand DC 0...10 V 6 Error signal / alarm 7 Reserved (no function) 8 Reserved (no function) 9 Reserved (no function) 10 Reserved (no function) 11 Reserved (no function) 12 Reserved (no function) 13 Reserved (no function) 14 Yield mesurement solar	1...14	–	–	1
871	Min. setpoint of flow temperature contact H1 (TVHw) If activated at input H1 (setting 3)	8...TKmax	°C	..... °C	70
872	Max. value of heat demand signal DC 0...10 V (H1) If activated at input H1 (setitng 5)	5...130	°C	..... °C	100
873	Operating action of the contact connected to H1 0 N.C. contact 1 N.O. contact	0 / 1	–	.....	1
Output P1 (PWM)					
885	Assignment of pump P1 1 Reserved (no function) 2 Pump Q10 of wood-fired boiler 3 Heating circuit pump Q2 4 Reserved	1...4	–	.....	1
886	PWM signal logic 0 Standard 1 Inverted	0 / 1	–	.....	0
887	Display PWM output P1	0...100	%	–	–
888	Output test P1 --- No test 0-100 PWM setpoint in %	--- / 0...100	%	–	---
Output Ux (0...10 V)					
890	Function selection Ux 1 Solar pump Q5 / K9 2 Reserved (no function) 3 Reserved (no function) 4 Reserved (no function) 5 Setpoint of heat generation 6 Reserved (no function) 7 Reserved (no function) 8 Reserved (no function) 9 Reserved (no function)	1...9	–	.....	1
891	Max. value of heat demand (when used as the temperature setpoint)	5...130	°C	1	100
892	Voltage signal logic 0 Standard 1 Inverted	0 / 1	–	.....	0
893	Displaying voltage output Ux	0...100	%	–	–
894	Output test Ux --- No test 0-100 Voltage setpoint DC 0...10 V (0...100 %)	--- / 0...100	%	–	---
Reset					
899	Resetting the heating engineer parameters to the default values To reset the parameters of the heating engineer level to the default values, press the +/- buttons simultaneously for 3 s	0 / 1	–	–	0

Parameter settings on the «Experts» level

Settings and protective functions for the experts.

	Buttons	Explanation	Line
1		Press one of the operating line selection buttons. <i>This will take you first to the programming level "Enduser".</i>	
2	 9 s	Press both operating line selection buttons for at least 9 seconds. The heating engineer level appears after 3 seconds and – after another 6 seconds – the EXP programming level with a special display for entering the code.	
3	CODE	Press buttons and to enter the required combination of the access code. <i>If the combination of buttons is correct, you reach the programming mode "EXP".</i> → Wrong code: If the code has been entered incorrectly, the display will return to "Parameterization heating engineer".	
4		Press the operating line selection buttons to select the required line. <i>The following parameter list contains all operating lines on which settings can be made.</i>	
5		Press the + / - button to set the required value. The setting will be stored as soon as you leave the programming mode or change to another operating line.	
6		To leave the EXP programming level, press the operating mode button "d.h.w.". → Note: <i>If no button is pressed for about 8 minutes, the controller will automatically return to the operating mode selected last.</i>	Continuous display

Access code



Whether correct or incorrect, each push of a button represents irrevocably a digit of the code.

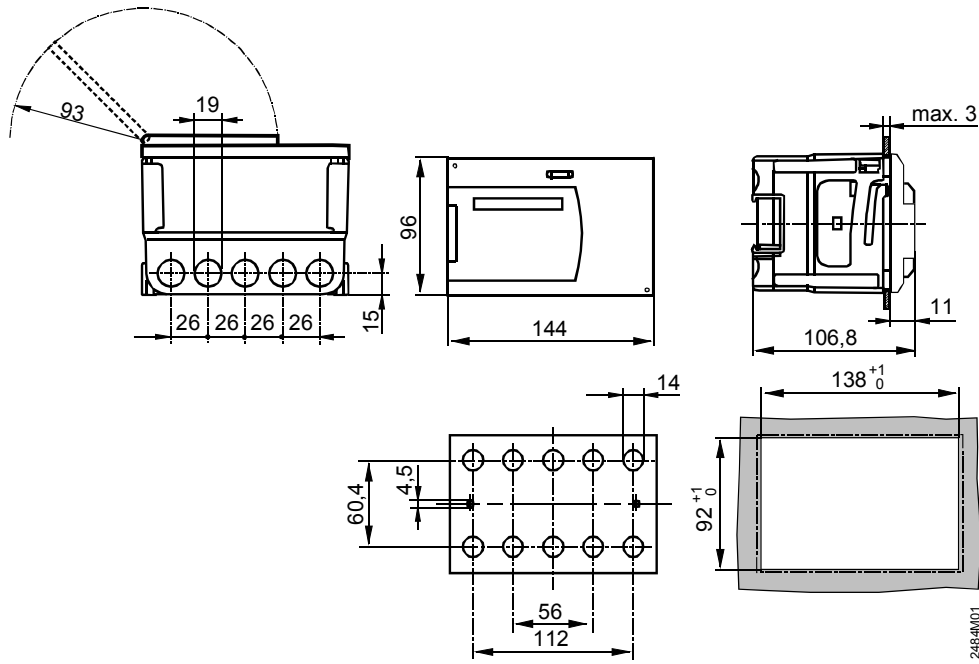
As a confirmation, the respective digit changes to 1.

You receive the code from your local Siemens Building Technologies / HVAC Products sales office.

Overview of the EXP parameters

Line	Function	Range	Unit	Values	Factory setting
Solar heating plant EXP					
300	Max. temperature collector 1 --- Overtemperature protection OFF	20...350	°C	..... °C	120
301	Max. temperature controller 2 --- Overtemperature protection OFF	20...350	°C	..... °C	120
302	Hysteresis of max. limitation of the collector temperature	1...20	°C	..... °C	5
303	Frost protection temperature collector 1 + 2 --- Frost protection OFF	-20...5	°C	..... °C	- - -
304	Max. storage tank charging time	1...60	min	..... min	20
305	Max. waiting time	1...40	min	..... min	5
307	Changeover / startup delay bypass valve / charging pump K9	1...15	min	..... min	3
<i>Collector pump protection</i>					
310	Evaporation temperature of heat carrier --- Function deactivated	--- / 80...350	°C	..... °C	---
311	Switching differential to evaporation temperature of heat carrier	1...50	K	..... K	15
Buffer storage tank EXP					
450	Buffer storage tank safety temperature	20...95	°C	..... °C	90
D.h.w. storage tank EXP					
500	D.h.w. storage tank safety temperature	20...95	°C	..... °C	90
D.h.w. EXP					
750	Max. nominal setpoint of the d.h.w. temperature (TBWmax)	8...80	°C	..... °C	60
751	Switching differential of the d.h.w. temperature (SDBW)	0...20	K	..... K	5
753	D.h.w. discharge protection when charging with the oil-fired / gas-fired boiler 0 Inactive 1 Supervision of sensor of the oil- / gas-fired boiler 2 Supervision of sensor of the oil- / gas-fired boiler and buffer storage tank	0...2	-	.....	1
General / service EXP					
800	Software version	00.0...99.9	-	-	-
801	Device operating hours	0...999'999	h	-	-
802	Resetting the OEM parameters To reset the parameters of the OEM level to their default values, press the +/- buttons simultaneously for 3 s	0 / 1	-	-	0
803	Display version table with basic diagrams	0...32'767	-	-	-

Dimensions



Dimensions in mm