



# Heating Circuit ZONE Controller

ALBATROS 

## RVA 46.531/109

**Zonal temperature controller for control of a low-temperature heating system, for use with condensing gas boilers**

***Instructions for the INSTALLER***

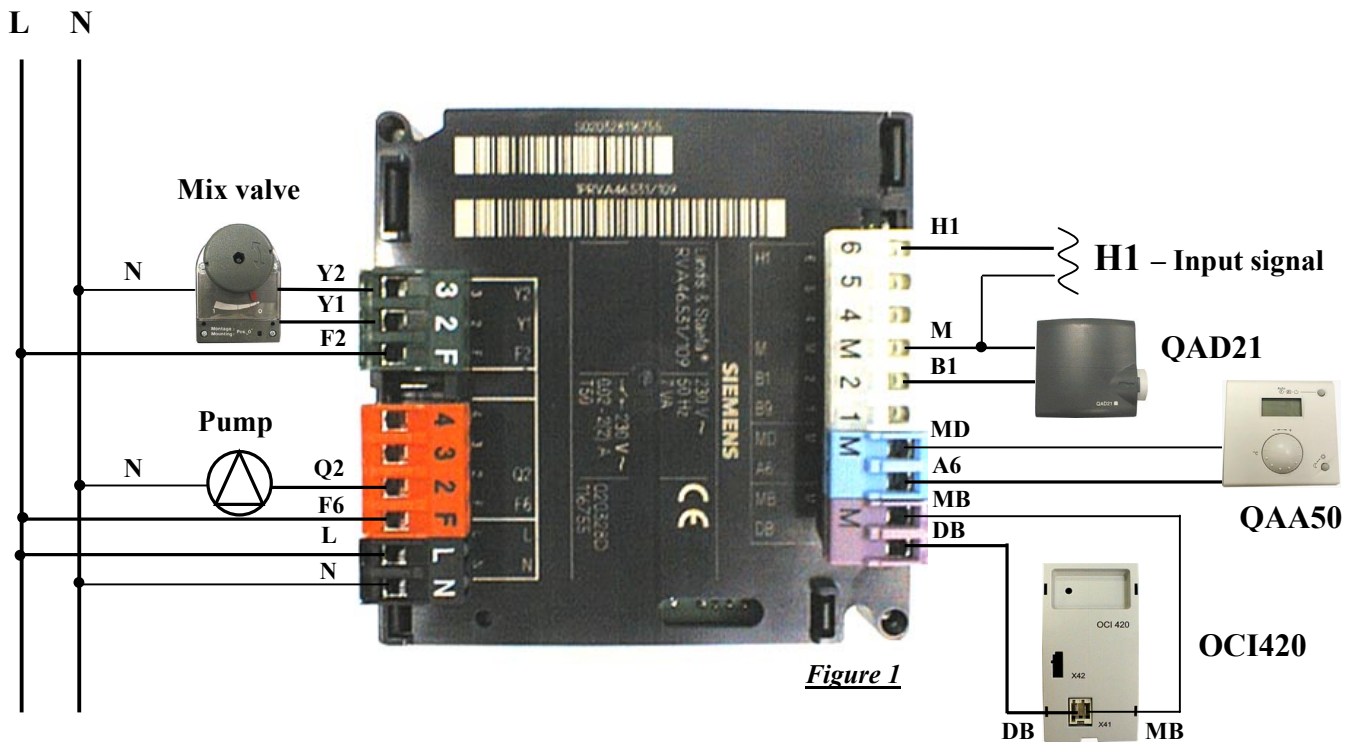
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## CAUTION

**THE DIAGRAMS PROVIDED IN THIS DOCUMENTATION ARE PURELY GUIDELINE AND MUST BE CONFIRMED BY A HEATING ENGINEER'S ANALYSIS.**

# 1 Electrical connections of RVA 46 controller



6 pins connector WHITE colour	{	<b>H1</b> : Input signal (thermostat contact, if present)) <b>M</b> : Ground sensors <b>B1</b> : Flow sensor mixing valve SIEMENS QAD21	}	<b>LOW VOLTAGE</b>
2 pins connector LIGHT BLUE colour	{	<b>MD</b> : Room unit ground <b>A6</b> : Room unit SIEMENS QAA50 (if present)		
* 2 pins connector VIOLET colour	{	<b>DB</b> : Data bus SIEMENS OCI420 <b>MB</b> : Bus's ground SIEMENS OCI420 (LPB)		
3 pins connector GREEN colour	{	<b>Y2</b> : Mixing valve CLOSE <b>Y1</b> : Mixing valve OPEN <b>F2</b> : Phase Y1 and Y2	}	<b>230 V AC</b>
4 pins connector ORANGE colour	{	<b>Q2</b> : Heating circuit pump <b>F6</b> : Phase (Q2)		
2 pins connector BLACK colour	{	<b>L</b> : Mains connection - live AC 230 V <b>N</b> : Mains connection - neutral conductor		

**Nota :** the outside sensor SIEMENS QAC34 must be connected directly in the gas boiler.  
 The employment of the room thermostat connected to the input signal connector (H1), is an alternative solution of using the room unit SIEMENS QAA50.

\* **Attention :** do NOT invert the polarity

## 2. Wall installation of RVA 46

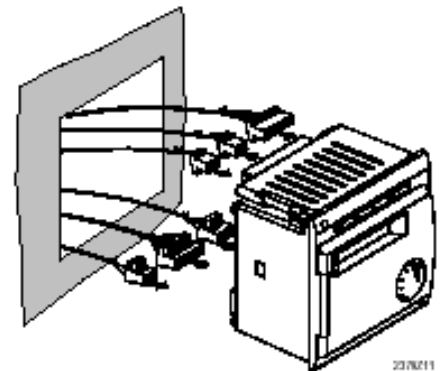
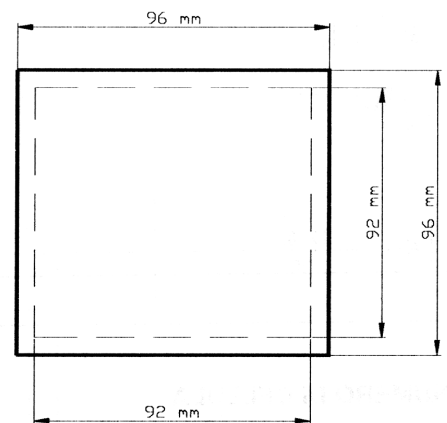
### 2.1 Regulations for installation

- Air circulation around the controller must be ensured, allowing the unit to emit the heat produced by it.  
A clearance of at least 10 mm must be provided for the controller's cooling slots which are situated at the top and bottom of the housing.  
The space should not be accessible and no objects should be placed there.  
If the controller is enclosed in another (insulating) casing, a clearance up to 100 mm must be observed on all sides.
- The controller is designed conforming to the directives for safety class II mounted in compliance with these regulations.
- Power to the controller may be supplied only after it is completely fitted in the cut-out.  
If this is not observed, there is a risk of electric shock hazard near the terminals and through the cooling slots.
- The controller may not be exposed to dripping water.
- Permissible ambient temperature when mounted and when ready to operate: 0..0.50 °C.

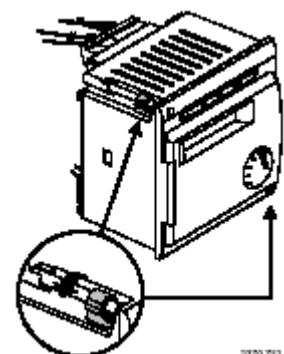
### 2.2 Mounting procedure

- Turn off power supply
- The controller's mounting dimensions are 91 x 91 mm.  
Due to the dimensions of the front, however, the standard spacing is 96 mm.  
The controller can be fitted in front panels of different thickness.
- Pull the prefabricated cables through the cut-out
- Plug the connectors into the respective sockets at the rear of the controller (fig. 2 paragraph 1.1).

*Note: The connectors are coded to make certain they cannot be mixed up.*

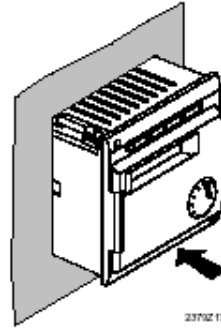


- Check to ensure the fixing levers are turned inward.
- Check to make certain there is sufficient space between the front panel and the fixing levers.



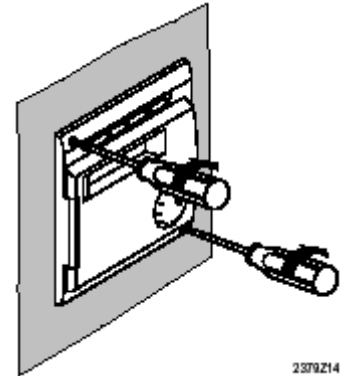
- Slide the controller into the panel cut-out without applying any force

*Note: do not use any tools when inserting the unit into the cutout. If it does not fit, check the size of the cutout and the position of the fixing levers.*

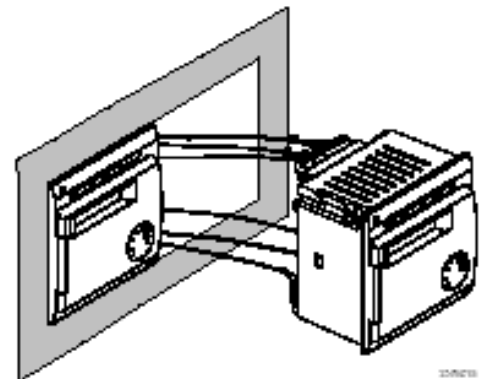


- Tighten the 2 screws on the front of the controller

*Note: tighten the screws only slightly, applying a torque of maximum 20 Ncm. When tightening the screws, the fixing levers automatically assume their correct positions.*

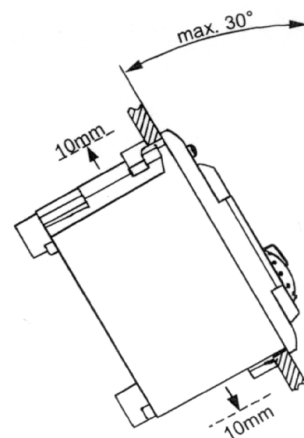


- The mechanical mounting facility makes it possible to arrange several controllers in a row in one cutout. In that case, it is merely necessary to have a wider panel cut-out.

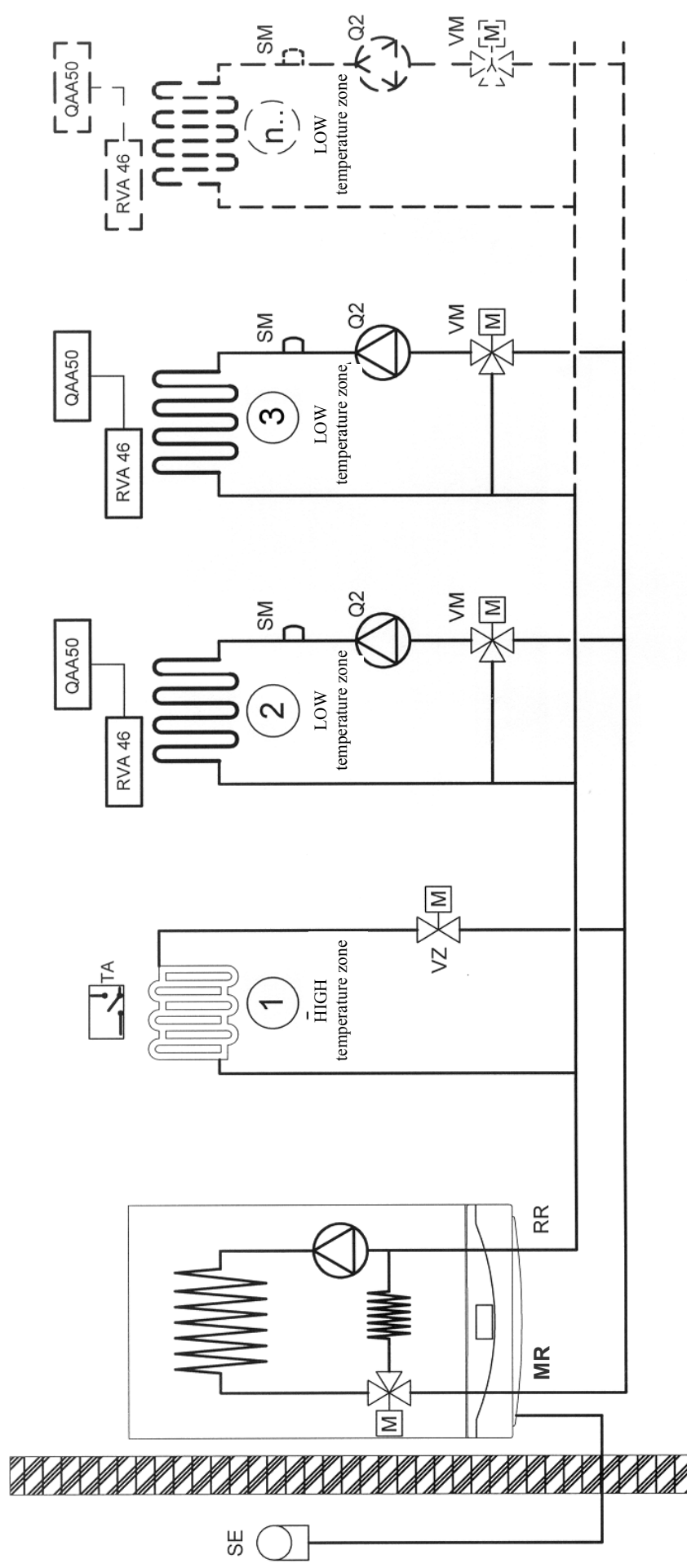


- To avoid over temperatures inside the controller, the inclination may be no more than 30° and there must be a clearance of at least 10 mm above and below the cooling slots.

This allows the controller to emit the heat generated during operation.



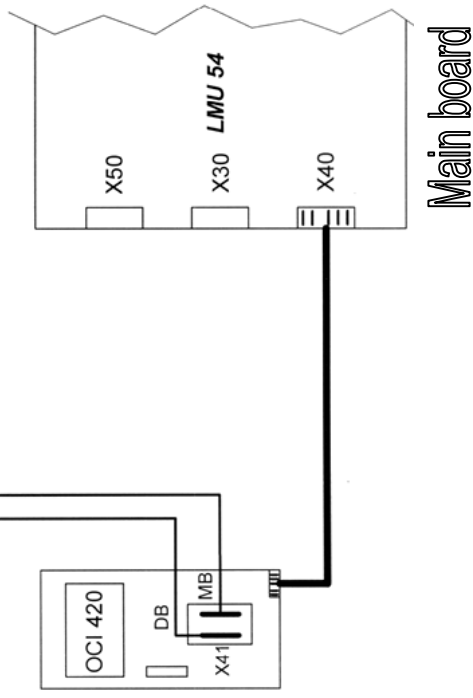
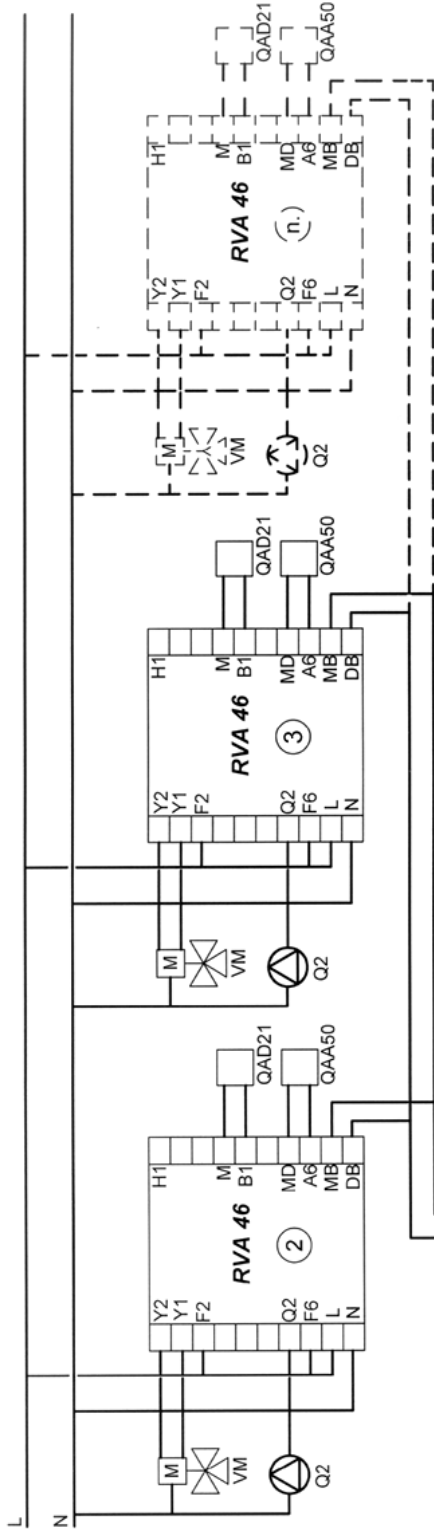
# Hydraulic system example of heating zone circuit controlled by RVA 46



**LEGEND**

- MR** : FLOW TEMPERATURE
- RR** : RETURN TEMPERATURE
- SE** : OUTSIDE SENSOR
- VZ** : ZONE VALVE
- Q2** : HEATING CIRCUIT PUMP
- SM** : FLOW TEMPERATURE SENSOR (QAD21)
- TA** : ROOM THERMOSTAT
- VM** : MIXING VALVE

# Electrical diagram of heating zone circuit controlled by RVA 46



## LEGEND

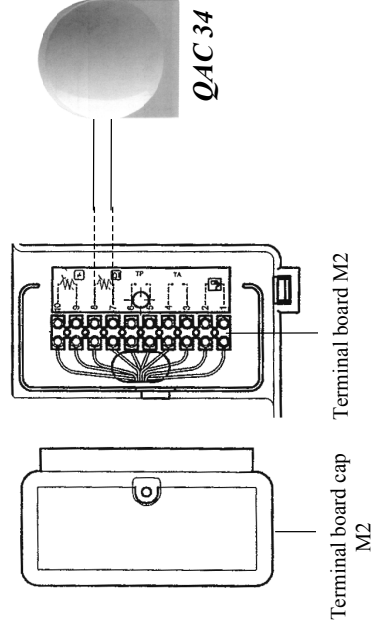
- L : MAINS CONNECTION LIVE AC 230 V
- N : MAINS CONNECTION NEUTRAL CONDUCTOR
- VM : MIXING VALVE MOTOR
- Q2 : HEATING CIRCUIT PUMP
- QAD21 : FLOW TEMPERATURE SENSOR
- QAA50 : ROOM UNIT

## Outside sensor installation / floor thermostat

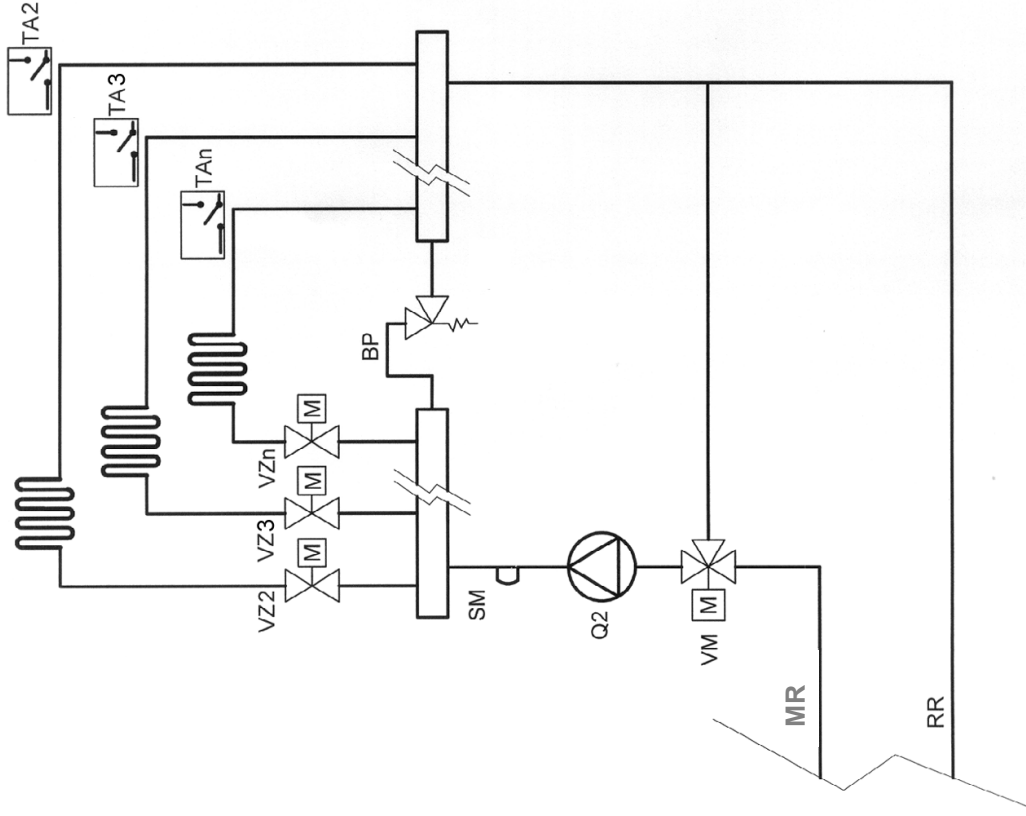
(Also refer to gas boiler's instructions)

Outside sensor: connect directly to gas boiler terminal block M2 (pin 7-8).

Low temperature circuit Safety thermostat: connect on same M2 terminal block (pin 5-6)

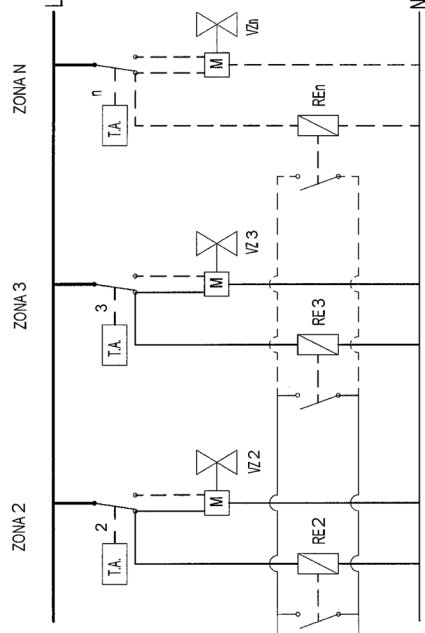


# Heating low temperature zone circuit example controlled by room thermostat TA



Y2	H1								
Y1		M	B1	MD	A6	MB	DB		
F2									
				Q2	F6	L	N		

**RVA 46**



## LEGEND

- MR: FLOW TEMPERATURE
- RR: RETURN TEMPERATURE
- VM: MIXING VALVE
- Q2 : HEATING CIRCUIT PUMP
- VZ : VALVE ZONE
- SM : FLOW TEMPERATURE SENSOR (QAD21)
- TA : ROOM THERMOSTAT
- BP : BYPASS
- RE : RELAY
- L : MAINS CONNECTION LIVE AC 230 V
- N : MAINS CONNECTION NEUTRAL CONDUCTOR
- TA : ROOM THERMOSTAT

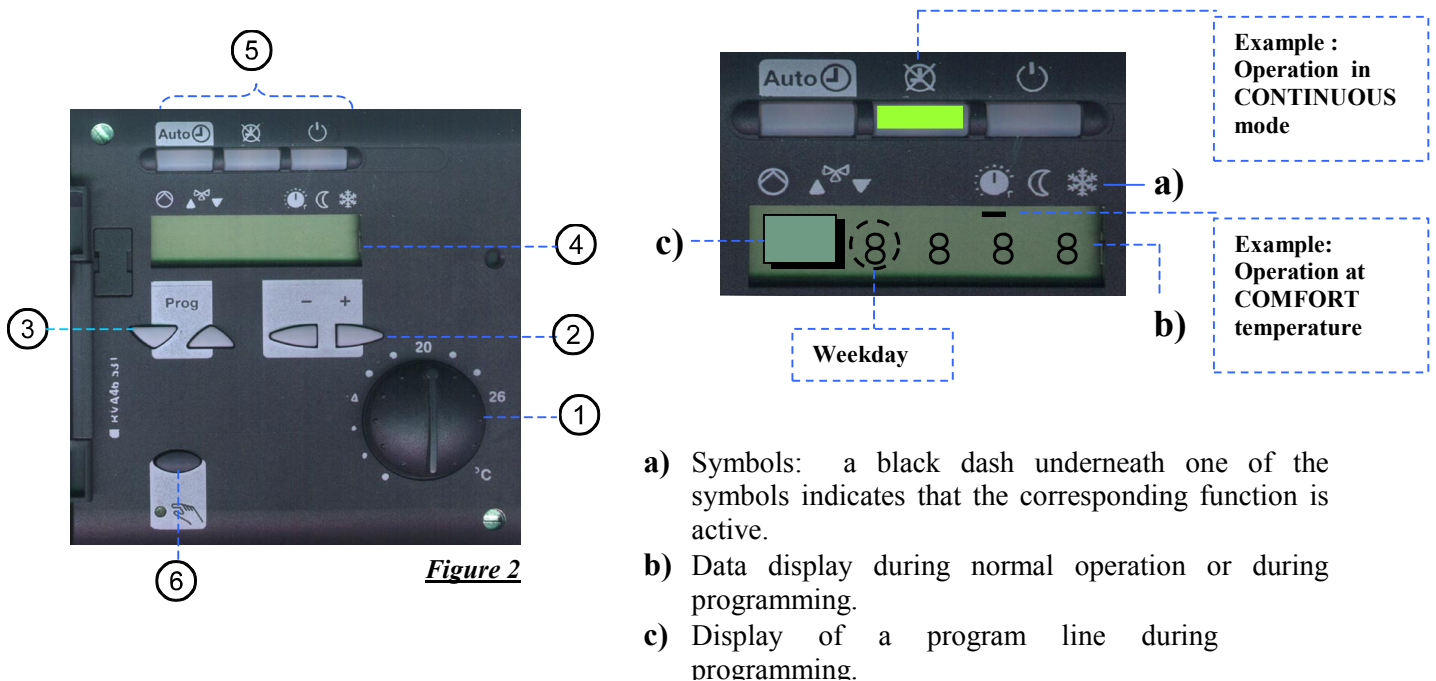


### 3. Description of the RVA 46

The RVA 46 Temperature Regulator is an electronic device designed to control low-temperature zone-type heating systems.





The following components are necessary for operation of the RVA 46 Temperature Regulator.

- SIEMENS OCI 420 communications interface (see instructions supplied with the accessory itself for installation and electrical connection to the boiler);
- SIEMENS QAC 34 outdoor temperature sensor (connected to the boiler, see instructions supplied with the boiler for the electrical connection);
- SIEMENS VXP459 three-way valve and relative SIEMENS SQY 31 motor (a commercial three-way valve / motor with the same characteristics can be used);
- SIEMENS QAD 21 delivery temperature sensor for zone-type systems



**Figure 2**

- a) Symbols: a black dash underneath one of the symbols indicates that the corresponding function is active.
- b) Data display during normal operation or during programming.
- c) Display of a program line during programming.

	Description of elements	Functions
①	Room temperature knob	Room temperature setting
②	Programming keys	Modification of parameters
③	Program line selection keys	Program line selection
④	Display	Display of values
⑤	Heating circuit operating modes	Selection of operating modes:  Automatic  Continuous  Standby
⑥	Manual operating key with associated LED	 Starts the system in manual mode. Key for use by the <u>SERVICE</u> only.





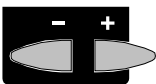

## 4. Setting the parameters

### 4.1 Parameter setting level

- a) End user           1.....50  
b) Installer           51.....98

To access one of these parameters, follow the instructions provided below:

#### a) Parameter settings for the end-user







	<i>Buttons</i>	<i>Explanation</i>	<i>Line</i>
1		Press one of the line selection buttons. This will take you to the programming mode "End user".	
2		Press the line selection buttons to select the required line.	
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.  <b><i>The end-user parameter list contains all settings that can be made.</i></b>	
4		By pressing any of the operating mode buttons, you leave the programming mode "End-user". <b>Note:</b> <b><i>If no button is pressed for about 8 minutes, the controller will automatically return to the operating mode selected last.</i></b>	<i>Continuous display</i>

### *End-user parameters*

<i>Parameters</i>	<i>Function</i>	<i>Range</i>	<i>Unit</i>	<i>Resolution</i>	<i>Factory setting</i>
<b>Setting the clock</b>					
1	Time of day	0...23:59	h / min	1 min	00:00
2	Weekday 1 = Monday	1...7	Day	1 day	1
3	Date (day, month)	01.01...31.1 2	Day, month	1	-
4	Year	...2099	jjjj	1	-
<b>Time switch program 1 (CH)</b>					
5	Pre-selection of weekday 1-7   7-day block 1...7   Individual days (1 = Monday)	1-7 / 1...7	Day	1 day	-
6	Switch-on time 1. period	- :- -...24:00	h / min	10 min	06:00
7	Switch-off time 1. period	- :- -...24:00	h / min	10 min	22:00
8	Switch-on time 2. period	- :- -...24:00	h / min	10 min	- :- -
9	Switch-off time 2. period	- :- -...24:00	h / min	10 min	- :- -
10	Switch-on time 3. period	- :- -...24:00	h / min	10 min	- :- -
11	Switch-off time 3. period	- :- -...24:00	h / min	10 min	- :- -
<b>Heating circuit</b>					
14	Reduced setpoint of room temperature	-	°C	0,5	16
15	Frost protection setpoint of room temperature	-	°C	0,5	10

<i>Parameters</i>	<i>Function</i>	<i>Range</i>	<i>Unit</i>	<i>Resolution</i>	<i>Factory setting</i>
16	Summer / winter changeover temperature	8...30	°C	0,5	17
17	Slope of heating curve	2,5...40	°C	0,5	15
18	Actual value of room temperature (QAA50)	0...50	°C	0,5	-
19	Actual value of outside temperature <i>To reset the attenuated outside temperature to, press the + and - buttons simultaneously for 3 seconds.</i>	-50...+50	°C	0,5	-
<b>Standard values</b>					
23	Standard times (line 6...11) <i>To activate, press the + and - buttons simultaneously for 3 seconds</i>	0/1	-	1	0
<b>Service</b>					
50	Indication of faults	0...255	-	1	-

## b) Parameter settings for the heating engineer

	<i>Buttons</i>	<i>Explanation</i>	<i>Line</i>
1		Press both line selection buttons for at least 3 seconds. This will take you to the programming mode "Heating engineer".	
2		Press the line selection buttons to select the required line. <b><i>The installer parameter list contains all settings that can be made.</i></b>	
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		By pressing any of the operating mode buttons you leave the programming mode "Heating engineer". <b>Note:</b> <i>If no button is pressed for about 8 minutes, the controller will automatically return to the operating mode selected last.</i>	

## Installer parameters

<i>Parameters</i>	<i>Function</i>	<i>Range</i>	<i>Unit</i>	<i>Resolution</i>	<i>Factory setting</i>
51	Output test 0 Control mode according to the operating state 1 All outputs OFF 2 heating circuit pump Q2 3 Mixing valve open Y1 4 Mixing valve closed Y2	0...4	-	1	0
52	Input test 0 Flow sensor B1 1 Outside sensor B9 2 Room sensor A6 3 Display of input H1	0...3	-	1	0
54	Display of the nominal room temperature setpoint  Nominal setpoint incl. room unit readjustment (QAA 50).	0...35	°C	0,5	-
55	Actual value of flow temperature Input B1				

<i>Parameters</i>	<i>Function</i>	<i>Range</i>	<i>Unit</i>	<i>Resolution</i>	<i>Factory setting</i>
<b>Service values</b>					
58	Attenuated outside temperature	-50...+50	°C	1	–
59	Composite outside temperature	-50...+50	°C	1	–
63	Flow temperature setpoint	0...140	°C	1	–
<b>Heating circuit</b>					
64	Parallel displacement of heating curve	-4,5...+4,5	°C (K)	0,5	0,0
65	Room influence 0 Inactive 1 Active	0 / 1	–	1	1
67	Switching differential of the room temperature -- - Inactive 0.5...4.0 Active	--...4,0	°C (K)	0,5	--:-
68	Minimum limitation of flow temperature setpoint	8..(Line 69)	°C	1	8
69	Maximum limitation of flow temperature setpoint	(Line 68)..95	°C	1	80
70	Type of building construction 0 Heavy 1 Light	0/1	–	1	1
71	Adaptation of heating curve 0 Inactive 1 Active	0/1	–	1	1
73	Maximum forward shift of optimum start control 0 No forward shift	00:00..06:00	hh:mm	10 min	00:00
74	Maximum forward shift of optimum stop control 0 No forward shift	00:00..06:00	hh:mm	10 min	00:00
77	Floor curing dates 0 Off 1 Functional heating 2 Floor curing heating 3 Functional and floor curing heating	0...3	–	1	0
78	Floor curing dates Day Flow temperature setpoint	0...32 0...95	°C	1	–
<b>LPB / system</b>					
85	LPB device address 0 Standalone 1...16 Device address (system)	0...16	–	1	0
86	LPB segment address 0 Heat source segment 1...14 Heat consumption segments	0...14	–	1	0
87	Clock mode 0 Autonomous clock 1 System time with remote adjustment 2 (System time with adjustment) 3 System clock (master)	0...3	–	1	0

<i>Parameters</i>	<i>Function</i>	<i>Range</i>	<i>Unit</i>	<i>Resolution</i>	<i>Factory setting</i>
90	Winter- / summertime changeover	01.01..31.12	Day, month	1	25.03
91	Summer- / wintertime changeover	01.01..31.12	Day, month	1	25.10
<b>Input signal H1</b>					
96	Input H1 0 Changeover of operating mode of all HK and d.h.w. 1 Changeover of operating mode of all HK 2 Minimum flow temperature setpoint (par. 97)	0..2	–	1	0
97	Minimum flow temperature setpoint contact H1	8...95	°C	1	70
98	Operating action of contact H1 0 N.C. 1 N.O.	0 / 1	–	1	1

***N.B.:*** all parameters displayed on the RVA46 controller and not present in this documentation are irrelevant for this type of application.

## 5. Setting the MASTER address and clock

### 5.1 Setting the address

In order to ensure correct communications, each RVA 46 temperature regulator must be correctly addressed. The input of the device addresses (program line n. 85) is particularly important when a combination of more than one unit is used, or in a system. The addresses of the temperature regulators must be assigned in consecutive order depending on the devices connected (see table 1 and 2). Assigning two identical addresses is not permitted.

### 5.2 Setting the clock

After the devices' addresses have been set, the installer has to set which of them is to be the main (MASTER) clock. Once the clock of a temperature regulator has been set as MASTER, the clocks of all the other temperature regulators connected to the system will be set as SLAVES.

The day of the week is always shown on the display during normal operation (parameter n. 2).



***Figure 3***

**TABLE 1 - RVA 46 MASTER Setting**

<i>PARAMETER</i>	<i>DESCRIPTION</i>	<i>Factory setting</i>	<i>Value to be set</i>
85	ADDRESS	0	2
87	Setting of RVA 46 MASTER clock (e.g. first RVA46 encountered on the system)	0	3

**TABLE 2 - Setting of SLAVE RVA 46 devices (N= 3..4..5...etc. depending on the number of RVA46 regulators in the system)**

<i>PARAMETER</i>	<i>DESCRIPTION</i>	<i>Factory setting</i>	<i>Value to be set</i>
85	ADDRESS	0	N (3,4,5,etc.)
87	Setting of SLAVE RVA 46 clocks (e.g. second, third, fourth, etc. RVA 46 units in the system)	0	1

**N.B.:** if the heating system has a RVA47 regulator for control of a system with cascade-connected boilers, set the clock of the RVA47 as MASTER clock (see instructions supplied with the regulator itself).

The time, day and year must only be set on the MASTER regulator. All the RVA 46 devices connected to the MASTER are updated automatically.

## 6. Setting the RVA46 parameters for the type of room temperature control used

### 6.1 With QAA50 digital room units

**PARAMETERS TO BE SET:**

PARAMETER	DESCRIPTION	Factory setting	Value to be set
96	Input signal	0	0
98	Input signal contact H1	1	1

### 6.2 With TA room temperature thermostats

**PARAMETERS TO BE SET:**

PARAMETER	DESCRIPTION	Factory setting	Value to be set
96	Input signal	0	1
98	Input signal contact H1	1	0

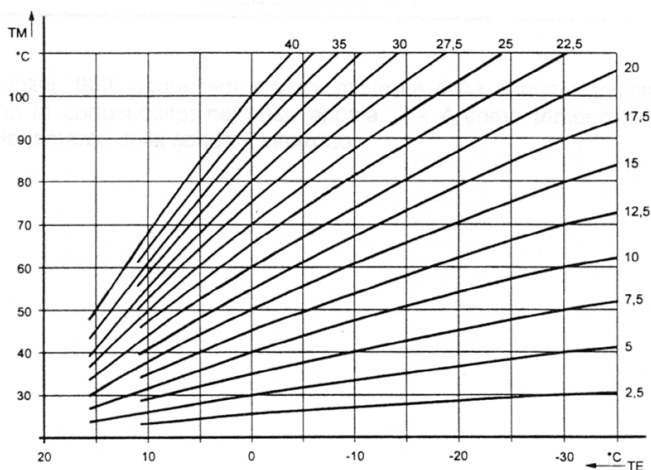
### 6.3 No direct control (without QAA50/TA)

**PARAMETERS TO BE SET:**

PARAMETER	DESCRIPTION	Factory setting	Value to be set
96	Input signal	0	0
98	Input signal contact H1	1	1

## 7. Selecting the heating curve

The heating curve (or temperature curve) sets the setpoint value of the heating circuit delivery temperature in relation to the value measured by the outdoor sensor.



**Legend:**

**TM** = Flow temperature

**TE** = Composite outside temperature

**Figure 4**

To set the heating curve, proceed as follows:

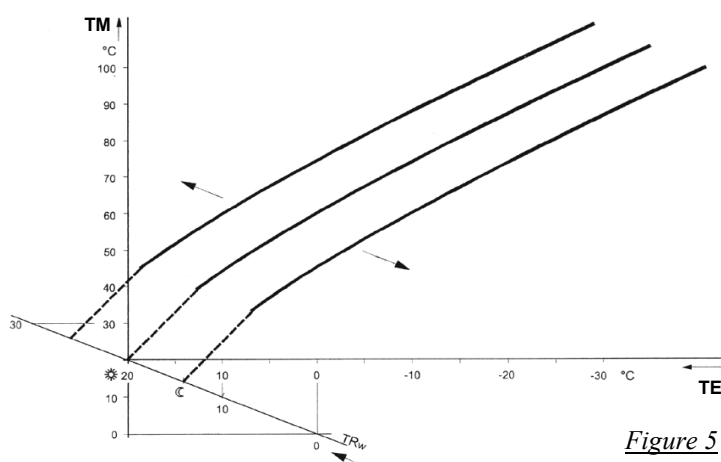
- Select program line **n° 17**.
- Press the +/- keys to set the curve required (factory setting = 15).
- For **low temperature** heating systems (e.g. underfloor systems), set a low gradient curve.

**N.B.:** if the *QAA50* digital room unit is connected to the system, the *RVA 46* regulator will adapt the curve automatically by selecting the one best suited to the room's heat requirement.

### 7.1 Parallel location of the heating curve

The correct parallel location of the heating curve ensures that the room temperature required will be provided quickly, especially in systems without QAA 50 digital room unit.

The room temperature setpoint can be increased or decreased appropriately by changing the set value.



#### **Legend:**

- TM** = Flow temperature
- TE** = Composite outside temperature
- TR<sub>w</sub>** = Room temperature setpoint

To increase or decrease the setpoint of the heating system delivery temperature, proceed as follows:

- Select program line **n° 64**.
- Press the +/- keys to locate the curve, with the following effects:
- 

**Increase in value:** the delivery temperature increases;

**Decrease in value:** the delivery temperature decreases;

**N.B.:** the parallel location of the curve can also be optimised by turning the knob ① (fig. 2).

## 8. System delivery temperature minimum and maximum threshold

The minimum and maximum thresholds set the range within which the delivery temperature is permitted to vary, in order to prevent excessively high or low delivery temperatures.

To set the thresholds, proceed as follows:

- Select program line n° 68.
- Press the +/- keys to set the delivery temperature value minimum limit.
- Select program line n° 69.
- Press the +/- keys to set the delivery temperature value maximum limit.

## 9. Building type

As the outdoor temperature changes, the indoor temperature varies in relation to the building's heat storage capacity. This means that the type of building set directly affects the heating circuit delivery temperature.

To set the type of building, proceed as follows:

- Select program line n° 70.
- Press the +/- keys to set the type of building (0/1):
  - 0: **heavyweight** buildings (with thick walls or good thermal insulation);
  - 1: **lightweight** buildings (with thin walls or poor thermal insulation).

**N.B.:** with a QAA50 digital room unit connected, in order to optimise heat production in relation to the building type, parameter n° 71 in point 4.1- b (INSTALLER LEVEL) must be active.

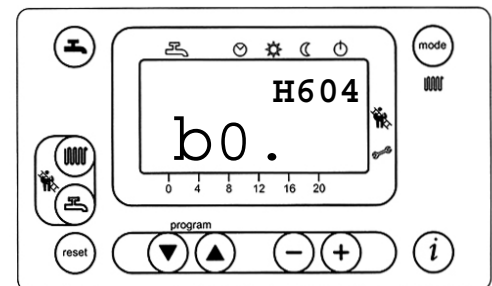
## 10. Setting up the LMU54 boiler electronic circuit board

### 10.1 Setting the clock

This parameter must be only be modified if the users wishes to set the time shown on the boiler's front panel subordinate to the time of the temperature regulator RVA 46.

The procedure for changing the boiler settings using the control panel is as follows:

- a) press the ▼▲ keys on the boiler front panel (fig. 6) simultaneously for about 3 seconds, until parameter H90 appears on the display;
- b) press the ▼▲ keys to select parameter H 604;
- c) press the +/- keys to modify the value;
- d) press the ⓘ key to exit the programming function and save.
- e) once programming is complete, the flashing message E183 appears for about 3 seconds.



**Figure 6**

### **Important**

The number to be changed is preceded by the code "b0." and is the first to appear when program line n. 604 is selected.

**N.B.** Never modify the numbers preceded by the codes "b1...b7"

Level	Parameter N.	Description	Factory setting	Value to be set
H	604	Time setting	0	1



## 10.2 Setting the system type

The electronic circuit board must be set up for the type of system present.

- Select program line n° 552 as described in the previous point;
- Press the +/- keys to set the boiler's water system type (see table).

Level	Parameter N.	Description	Factory setting		Value to be set	
			<i>single purpose</i> <i>(central heating only)</i>	<i>dual purpose</i>	<i>single purpose</i> <i>(central heating only)</i>	<i>dual purpose</i>
H	552	System setting	35	67	38	70

## 11. TEST description

Once the regulator has been installed and the relative electrical connections made, the following tests should be performed for rapid identification of malfunctions and/or failures:

- *output test (or relay test)*
- *input test (or sensor test)*

### 11.1. OUTPUT test (or relay test)

- Select program line n° 51.
- Press the +/- keys to perform the various stages of the test.

The test sequence is as follows:

- 0 = all contacts activated in accordance with the operating mode;
- 1 = contacts deactivated
- 2 = low-temperature heating circuit pump (Q2) on
- 3 = opening of the mixer valve (Y1) activated;
- 4 = closure of the mixer valve (Y2) activated;

**N.B.:** operation of pump Q2 or the mixer valve must be checked directly on the system.

### 11.2. INPUT test (or sensor test)

- Select program line n° 52.
- Press the +/- keys to perform the various stages of the test.

At each stage of the test the relative output is activated and can therefore be checked.

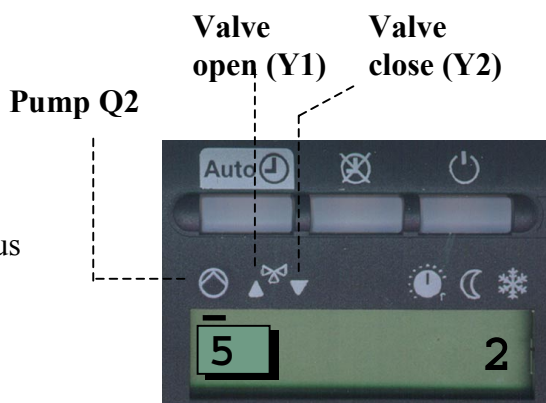


Figure 7

At each stage in the test the relay contact is active and can therefore be tested.

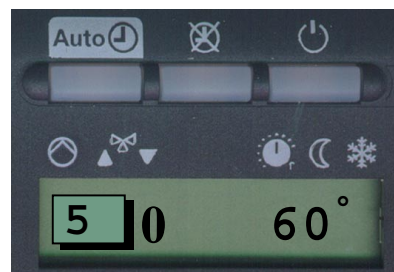


Figure 8

The test sequence is as follows:

- 0 = displays the instantaneous delivery temperature of the delivery sensor SM;
- 1 = not covered;
- 2 = displays the instantaneous temperature measured by the QAA 50 digital room unit (if connected);
- 3 = displays the input status of the contact of the room temperature thermostat TA:
  - 000 : thermostat short-circuited;
  - - - - : no thermostat connected or no heat demand (thermostat with open circuit)

## 12. LED flash functions

**Case 1:** RVA 46 with QAA50 digital room unit.

In this case, the operating mode of the RVA 46 temperature regulator must be set as "AUTO".

The "AUTO" LED flashes when the demand of the QAA50 digital room unit is different from that of the RVA 46 temperature regulator.



Figure 9

**Case 2:** RVA 46 with TA room temperature thermostat.

When the room temperature thermostat is not requesting heat, the STAND-BY LED (figure 9) flashes.

**Case 3:** If STANDBY operating mode has been selected on the boiler's front panel, the LED of the temperature regulator flashes on the STANDBY setting.

*N.B.:* in a system with more than one RVA 46 device, they will all flash on the STANDBY setting.

## 13. Description of MANUAL operation key

Manual operation is an operating mode in which all the system's components must be regulated and monitored by hand. The temperature regulator's functions no longer affect the relays. Manual operation is active when the key shown in figure 10 is pressed and the associated LED is on (the key and the LED can only be seen when the lid is opened).

**N.B.:** the temperature of the heating circuit can be regulated by adjusting the mixer valve by hand.

The temperature setpoint is that set in parameter n. 69 (point 8).

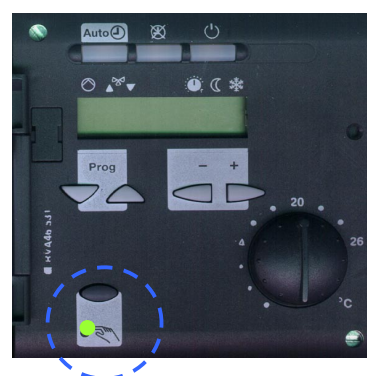


Figure 10

The relay contacts are modified as follows

{	HEATING CIRCUIT PUMP Q2	→ ON
	MIXER VALVE OUTPUTS	→ OFF (not supplied)

**THIS KEY MUST ONLY BE ACTIVATED BY THE SERVICE, TO ALLOW THE SYSTEM TO OPERATE IF THE TEMPERATURE REGULATOR MALFUNCTIONS.**

## 14. Troubleshooting

In case of malfunctions, the message "Er" (Error - Figure 11) appears on the display.

Malfunctions can be displayed as follows:

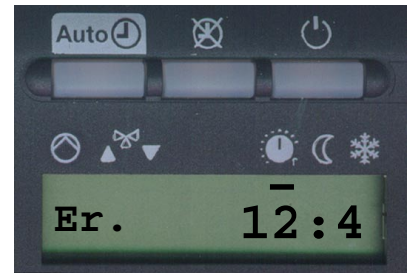
- Select program line n° 50.
- Press the +/- keys to display the malfunctions.

**N.B.:** the RVA 46 regulator is able to save up to 2 malfunctions, which can be called onto the display in sequence by pressing the +/- keys.

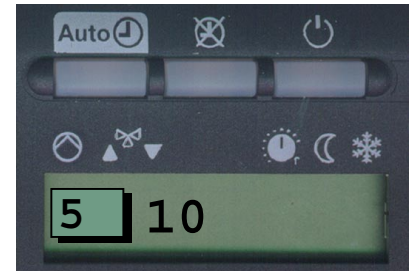
Malfunctions can be displayed in two ways:

- only the error code (e.g. 10 - figure 11 ).
- address and segment combined with the error code (e.g.10.0.01)

| | |  
 | | | Address  
 | | | segment  
 | | | code



*Figure 11*



*Figure 11.1*

### Indication of faults

<i>Display</i>	<i>Description of fault</i>
“ “	No fault
10	Outside temperature sensor failure
20	Fault boiler temperature NTC flow sensor
30	Fault of flow sensor
50	Fault D.H.W. temperature sensor
60	Fault room unit QAA73
61	Fault room unit QAA50
81	Short-circuit of LPB or no power supply
82	Address collision on LPB (same address several times)
86	Short-circuit QAA50
100	2 clock masters present
110	Safety or flue gas thermostat tripped
132	Safety shutdown floor thermostat tripped
133	No gas (no flame after safety time)
135	Fan electricity supply failure
140	Connected unit not compatible (other than OCI 420) or segment number <> 0 (parameter n. 86 must be = 0)
145	Wrong type of room unit
150	General BMU fault
151	Internal fault LMU...
153	The RESET key has been pressed inappropriately
160	Fan speed threshold not reached
164	No hydraulic differential pressure switch enabling signal
183	Saving parameters

## 15. Technical data

Nominal voltage	AC 230 V (+/-10%)
Nominal frequency	50 Hz (/ - 6%)
Power consumption	7 VA max
Safety class	II to EN 60730
Degree of protection	IP 40 to EN 60529
Electromagnetic immunity	EN 50082-2
Electromagnetic emissions	EN 50081-1
Maximum temperature admitted: <i>Storage</i> <i>Transport</i> <i>Operation</i>	-25...+70°C (1K3 to IEC 721-3-1) -25...+70°C (2K3 to IEC 721-3-2) 0.....+50°C (3K5 secondo IEC 721-3-3)
Output relays <i>voltage range</i> <i>nominal current</i> <i>switch-on peak</i> <i>fusing</i>	AC 24.....230 V 50 mA.....2° (with cosφ > 0.6) 10 A max 1 sec. 10 A max
<i>Bus extention - terminals MD-A6</i> <i>(2 wire 0.5 mm<sup>2</sup>)</i>	50 m
<i>Max length - terminals MB-DB</i> <i>(2 wire 1.5 mm<sup>2</sup>)</i>	500 m
Perm. sensor cable lengths   Ø 0.6 mm 1.0 mm <sup>2</sup> 1.5 mm <sup>2</sup>	   max. 20 m max. 80 m max. 120 m
Weight of controller	Approx. 0.5 Kg

In its commitment to constantly improve its products, reserves the right to alter the specifications contained herein at any time and without previous warning.

These Instructions are only meant to provide consumers with use information and under no circumstance should they be construed as a contract with a third party.

Code 922.886.1