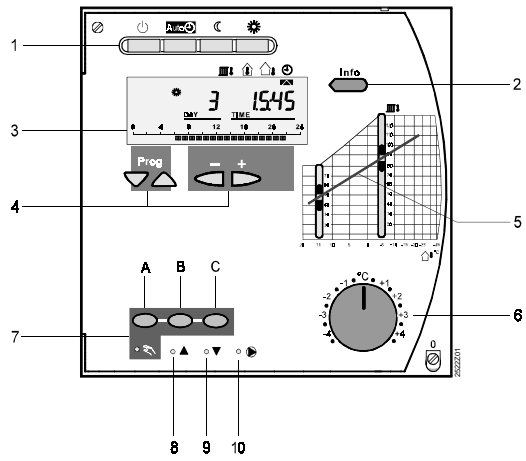







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Overview – what is where?





- 1 Operating mode buttons; button of the current operating mode is lit
- 2 Info button
- 3 Display
- 4 Buttons for selecting and readjusting values
- 5 Heating curve adjustment
- 6 Knob for readjustment of room temperature
- 7 Buttons for manual operation:
 - A = manual operation ON (LED lit)
 - B = valve OPENS
 - C = valve CLOSES or 2nd burner stage ON / OFF
- 8 LED for valve OPENS, **or** 1st burner stage ON
- 9 LED for valve CLOSES, **or** 2nd burner stage ON
- 10 LED for pump ON


Meaning of symbols in the display

	NORMAL heating
	REDUCED heating
ECO	No heating required (according to prevailing outside temperature)
	Holidays mode
	Heating OFF (frost protection ensured)
ERROR	Fault in the plant
	One of the maximum limitations is active
	One of the minimum limitations is active
BUS	Controller is connected to data bus

You want to obtain information








Press  button several times for the display of:

-  Time of day
-  Outside temperature
-  Room temperature (only if a sensor is used)
-  Flow temperature

The arrow  points at the displayed variable.



The info selected last will be continuously displayed.


The individual operating modes

-  Heating OFF
-  Automatic heating up and setback according to the heating program – Heating automatically OFF during the holiday period entered – Heating automatically OFF if permitted by the prevailing outside temperature (ECO function)
-  Continuously REDUCED heating
-  Continuously NORMAL heating
-  Frost protection ensured in all operating modes.
-  Remote operation with a room unit only possible in AUTO mode.
If the  button flashes, the room unit overrides the controller's heating program.

In AUTO mode, the RVL470 is a fully automatic controller throughout the year.

You want to switch the heating ON

- Is heating plant ready to operate? Check position of main switch
- Press  button several times until the weekday and the time of day appear in the display
- Check time of day and date. Correct if necessary (refer to section «You want to set the clock» on page 17)
- Press  button for AUTO mode

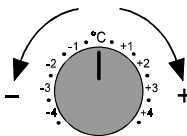
 Correction of entries: for procedure, refer to pages 12 and 17.

During commissioning, practice-oriented and proven values were entered!

The room temperature is not correct

If the room temperature is never correct, that is, neither in mild nor in cold weather, make a readjustment with the setting knob:

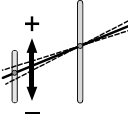
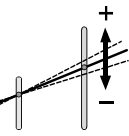
- Room temperature too low:
Turn setting knob towards +
- Room temperature too high:
Turn setting knob towards -



The knob's scale gives the room temperature readjustment in °C.

If the room temperature is not correct in mild weather only **or** in cold weather only, make the readjustment with the heating curve. For this purpose, there are three setting choices available, depending on the entries made by your heating engineer.



To make a readjustment, proceed as follows:


Setting choice	Room temperature is not correct in mild weather	Room temperature is not correct in cold weather
<input type="checkbox"/> Analog	Use slider on the left and readjust by about 5 °C 	Use slider on the right and readjust by about 5 °C 
<input type="checkbox"/> Digital	Readjust line [14] by about 5 °C	Readjust line [15] by about 5 °C
<input type="checkbox"/> Via data bus	Contact plant operator	Contact plant operator

↑ (☒ mark with a cross whichever applies)

After a readjustment, wait two days – the control system requires a certain time to adapt!









You don't want to heat according to the heating program

- No REDUCED heating:
Press the  button to select the NORMAL mode
- Maintaining REDUCED heating:
Press the  button to select the REDUCED mode

 Don't forget to return to the normal heating program!





The controller operates according to the heating program only when in AUTO mode.







How to display or readjust the setting values

- Press  or  to access the setting level.
- The settings are assigned to 20 lines:
 -  Select next line below
 -  Select next line above
- Readjustment of values:
 -  Reduce
 -  Increase
- Values are adopted by selecting the next line or when leaving the setting level
- Leaving the setting level: press button of the required operating mode, or the  button, or automatically after 30 minutes
-  For list of lines, refer to the last page of these instructions.

To «practise», reset the time of day – refer to section «You want to set the clock» on page 17.

You want to select other room temperature setpoints





Selecting lines: press  or 
Readjusting values: press  or 

- On line , change the setpoint of NORMAL heating (display ).
Standard setting is **20 °C**
- On line , change the setpoint of REDUCED heating (display ).
Standard setting is **14 °C**
- On line , change the setpoint of frost protection and holidays mode (display ).
Standard setting is **10 °C**

Leaving setting level: select required operating mode

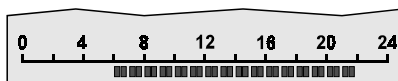
Don't forget temperature-sensitive objects like plants!

You want to change the heating program

Selecting lines: press  or 
Readjusting values: press  or 

For the daily heating up and setback, the controller is supplied with a standard heating program:

- Daily from 06:00 to 22:00: NORMAL heating
- Daily from 22:00 to 06:00: REDUCED heating



You can enter a maximum of **three heating periods** per day. For each heating period, the following times must be entered:

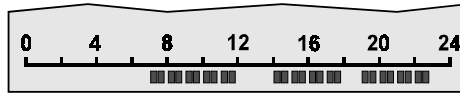
- Start of NORMAL heating
- End of NORMAL heating

Proceed as follows:

1. On line , select the weekday whose times shall be changed:
1 = Monday, 2 = Tuesday, etc.
1-7 = valid for all weekdays
 2. On line , set the time for the start of NORMAL heating
 3. On line , set the time for the end of NORMAL heating
If additional daily heating periods are required:
 4. On lines and , enter the times required for the start and the end of the **2nd** heating period
 5. On lines and , enter the times required for the start and the end of the **3rd** heating period
- To cancel a heating period, change line , or until --:-- appears.

Leaving setting level: select required operating mode



Example of a 24-hour program with three heating periods:





NORMAL heating from 07:00 to 12:00, from 14:00 to 18:00, and from 19:00 to 23:00

If the entries for the weekend shall differ, first enter the times for the entire week (1-7), then change days 6 and 7 individually.

You want to enter your holidays

Selecting lines: press  or 

Readjusting values: press  or 

Proceed as follows to enter the data for one period:

1. On line , enter the number of the holiday period
2. On line , enter the date of the first day of holiday
3. On line , enter the date of the last day of holiday
(possible only when an entry was made on line)





To deactivate an entry, change line until --.-- appears.

At the end of a holiday period, its data will be cancelled.

Leaving setting level: select required operating mode


Before making entries, prepare a holiday plan on a piece of paper.

You want to set the clock

Selecting lines: press  or 
Readjusting values: press  or 

1. Select **[30]** (time of day) and set the time
2. Use same procedure for weekday, date and year:
 - The weekday on line **[39]** (1 = Monday, 2 = Tuesday, etc.)
 - The date (day and month) on line **[40]**
 - The year on line **[41]**

Leaving setting level: select required operating mode

 The change from wintertime to summertime, and vice versa, is made automatically.

Savings tips without sacrificing comfort

- During the day, make certain that a room temperature of 21 °C will not be exceeded. Every degree above that level increases heating costs by 6 to 7 %
- Renew air in the house quickly, but open windows fully
- In unoccupied rooms, set the thermostatic radiator valves to their frost protection position
- Radiators should not be covered by curtains, furniture, etc., as this reduces heat emission
- Closed window shutters, blinds, etc., reduce heat losses
- Check heating energy consumption at regular intervals

Tips to follow if something seems wrong

- The heating system does not work:
 - Check the display: if **ECO** (Economy) is shown, the heating is shut down by the ECO function!
- The heating system always maintains the same room temperature:
 - Check the operating mode (only AUTO mode reduces and heats up again!)
- The control has a room unit, but it cannot be operated:
 - Check controller's operating mode. To enable the controller to be operated from the room unit, it must be in AUTO mode
- The desired room temperature is reached either too early or too late:
 - Change the heating program
 - If the building is well insulated, you can expect long cooling down times

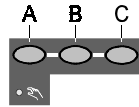
Faults and manual operation

- If you are uncertain:
 - Is the plant switched on?
 - Are all fuses of the plant in order?
 - Is there sufficient fuel in the tank?
 - Has the controller been readjusted by unauthorized persons (time of day, setpoints, etc.)?
 - Check the display: if ERROR is shown, line 50 displays an error code. The error codes have the following meaning:
 - 10 = fault outside sensor
 - 30 = fault flow or boiler temperature sensor
 - 40 = fault return temp. sensor (primary circuit)
 - 42 = fault return temp. sensor (secondary circuit)
 - 60 = fault room temperature sensor
 - 61 = fault room unit
 - 81 = short-circuit on LPB bus
 - 82 = same bus address assigned several times
 - 100 = two clock time masters on LPB

120 = flow alarm
140 = wrong controller address (LPB)
These error codes are helpful for service staff.

- If the controller uses a room temperature sensor (room unit):
 - Is the room temperature sensor affected by draughts, solar radiation, etc.?
 - Is the sensor affected by heat gains, such as people, machines, lighting, etc.?
 - Is the room temperature sensor covered by furniture, curtains, or similar?
 - Are all thermostatic radiator valves in the "sensor's room" in their fully open position?

- The control does not work:
If heat producer and circulating pump still operate: press button **A** to select **manual operation**.



- **Plant with a valve:**
The valve can be manually operated by pressing button **B** (opening) or **C** (closing)
- **Plant with no valve:**
The burner runs continuously. With two-stage burners, the second stage can be switched ON and OFF by pressing button **C**

☞ Switch manual operation off again: press button **A** or select the required operating mode.

- The heat producer no longer works:
 - The burner has gone to lockout. Press the reset button!
 - The circulating pump and/or the boiler pump do not operate. Check the fuses!
 - The coupling mechanism between actuator and valve is disengaged. Engage it!

☞ If you cannot correct the cause of the trouble, call in your heating engineer!

Address and phone no. of your heating engineer:

- 1** Setpoint of NORMAL heating ☼
- 2** Setpoint of REDUCED heating ☾
- 3** Setpoint of holidays and frost protection mode ☼
- 4** Weekday, for entering the heating program (1 to 7)
- 5** 1st heating period, start of NORMAL heating
- 6** 1st heating period, end of NORMAL heating
- 7** to **10** 2nd and 3rd heating period
- 11** Number of holiday period (1 to 8) 📅
- 12** First day of holiday period (day.month) 📅
- 13** Last day of holiday period (day.month) 📅
- 14** Heating curve, flow temperature at +15 °C
- 15** Heating curve, flow temperature at -5 °C
- 30** Time of day (hour:minute)
- 39** Weekday (1 to 7)
- 40** Date (day.month)
- 41** Year
- 50** Display of faults