



## Wireless room temperature controller with 24-hour time switch and large LCD

## RDJ10RF/SET

Programmable, for heating systems

- Operating modes: Automatic, Comfort, Energy Saving, and Frost Protection
- Large LCD
- Battery-powered: 2 x alkaline type AA batteries, 1.5 V
- RCR10/433 receiver

### Use

The RDJ10RF is used to control the room temperature in heating or cooling systems.

Typical applications:

- Homes
- Residential buildings
- Schools
- Offices

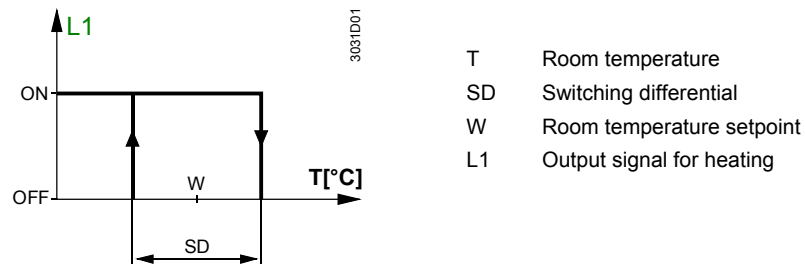
The controller is used together with the following equipment:

- Thermal valves or zone valves
- Combi boilers
- Gas or oil burners
- Fans
- Pumps

## Functions

The controller acquires the room temperature with its integrated sensor.

### Function diagram



### Temperature sensor


The RDJ10RF provides room temperature control only.

## Operating modes


The RDJ10RF provides the following modes: Automatic, Comfort, Energy Saving, and Frost Protection.

The changeover between the operating modes is made by moving the operating mode slider to the respective position.


### Automatic mode

When Automatic mode is active, symbol  appears on the display. The RDJ10RF operates according to the selected 24-hour time program.

### Comfort mode

When Comfort mode is active, symbol  appears on the display. The RDJ10RF controls to the temperature setpoint adjusted at  $T_{\text{gear}}$ . This setpoint can be readjusted by setting the programming slider to  $T_{\text{gear}}$ .

### Energy Saving mode

When Energy Saving mode is active, symbol  appears on the display. The RDJ10RF controls to the temperature setpoint adjusted at  $T_{\text{C}}$ . This setpoint can be readjusted by setting the programming slider to  $T_{\text{C}}$ .

### Frost Protection

When Frost Protection is active, symbol  appears on the display. The RDJ10RF controls to the fixed temperature setpoint for frost protection.

### Display

The digital display shows the actual room temperature and the comfort temperature setpoint. When the heating output is active, the triangle symbol appears.



### Backup

When taking out the batteries, the setpoints and the information required for operating mode changeover are retained for max. 2 minutes.

## Ordering

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When ordering, please give name and product number: Room temperature controller RDJ10RF/SET.

Valves and actuators are to be ordered as separate items.

## Equipment combinations

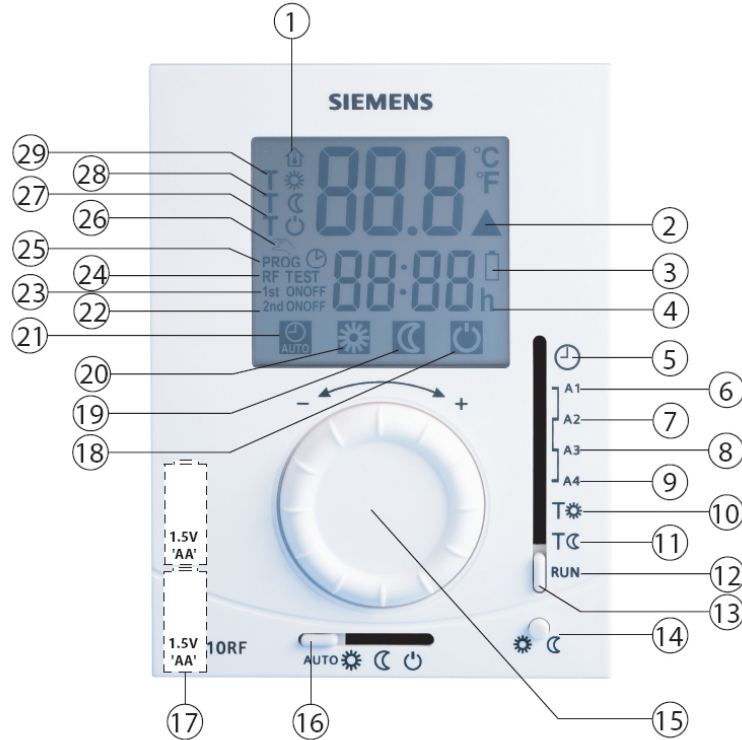
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| Type of unit                                      | Product number       | Data sheet |
|---------------------------------------------------|----------------------|------------|
| Electromotoric actuator                           | <b>SFA21...</b>      | 4863       |
| Electrothermal actuator (for radiator valves)     | <b>STA21...</b>      | 4877       |
| Electrothermal actuator (for small valves 2.5 mm) | <b>STP21...</b>      | 4878       |
| 2- or 3-port zone valve                           | <b>MXI/MVI421...</b> | 4867       |
| Electromotoric actuator for zone valves V..146..  | <b>SUA21</b>         | 4830       |
| Electric actuator                                 | <b>SUA11/22</b>      | 4832       |
| Air damper actuator                               | <b>GDB...</b>        | 4624       |
| Air damper actuator                               | <b>GSD/GQD...</b>    | 4606       |
| Air damper actuator                               | <b>GXD...</b>        | 4622       |

The unit consists of 4 parts:







- Plastic housing with digital display accommodating the electronics, operating elements and built-in room temperatures sensor
- Baseplate (mounting base)
- Removable battery compartment
- Fold-out stand

The housing engages in the baseplate and snaps on. The baseplate carries the screw terminals. There is a reset button on the rear of the unit.

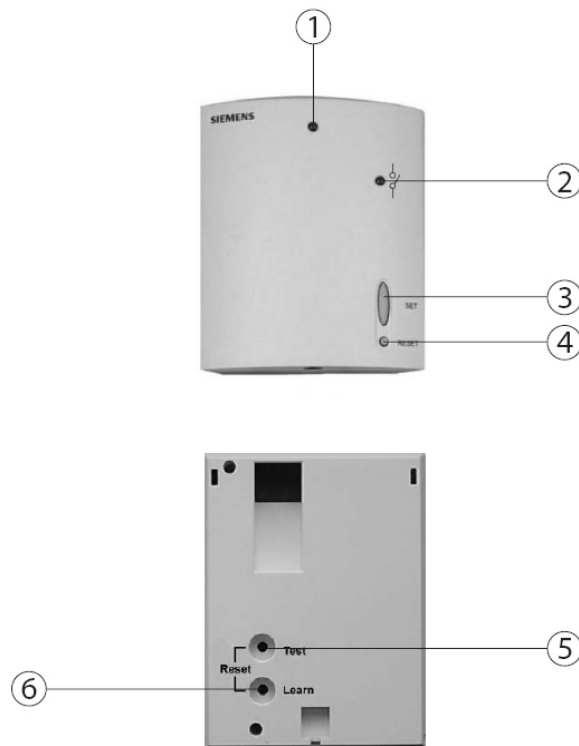


Key

- 1 Display of the room temperature in °C
- 2 Indicates a request for heat
- 3 Indicates low battery power; replace batteries
- 4 Time of day (00:00...23:59 format)
- 5 Time setting position
- 6 First switch ON time
- 7 First switch OFF time
- 8 Second switch ON time
- 9 Second switch OFF time
- 10 Comfort temperature setting
- 11 Energy saving temperature setting
- 12 RUN position
- 13 Programming slider
- 14 Advance button (override / presence button)
- 15 Temperature setting knob
- 16 Operating mode slider
- 17 Battery compartment
- 18 Frost Protection; the RDJ10RF controls to the fixed temperature setpoint for frost protection
- 19 Energy Saving mode; the RDJ10RF controls continuously to the energy saving temperature setpoint

- 20  Comfort mode; the RDJ10RF controls continuously to the comfort temperature setpoint
- 21  Automatic mode; the RDJ10RF operates according to the selected time and temperature program
- 22 Indicates second switch ON / OFF time
- 23 Indicates first switch ON / OFF time
- 24 RF  
**TEST** Indicates RF signal test
- 25 Indicates that programming is taking place.
- 26  Setpoint is overridden temporarily until the next switching time
- 27  The RDJ10RF controls to the fixed frost protection temperature setpoint
- 28  The RDJ10RF controls to the adjusted energy saving temperature setpoint
- 29  The RDJ10RF controls to the adjusted comfort temperature setpoint

The RCR10/433 receiver is located in a plastic housing with LEDs and buttons.



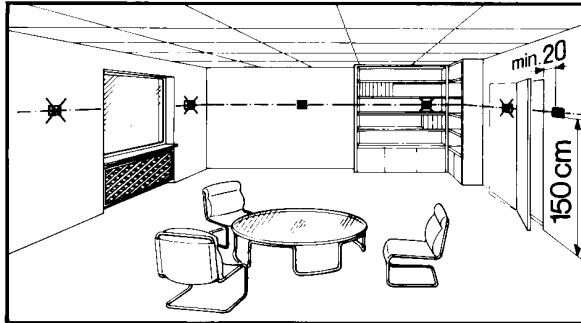
Key

- 1 LED signal indicator
- 2 LED relay indicator
- 3 SET button
- 4 RESET button
- 5 Test button
- 6 Learn button

Mount the room temperature controller in a location where the air temperature can be acquired as accurately as possible without getting adversely affected by direct solar radiation or other heat or refrigeration sources.

The controller can also be used in a portable manner. It features a fold-out stand allowing it to be placed on a horizontal surface such as a bedside table.

Mounting height is about 1.5 m above the floor.



The unit can be fitted to a recessed conduit box.

**Mounting, installation and commissioning**

When mounting the controller, fix the baseplate first. The receiver does not require any baseplate. Make the electrical connections and fit and secure the receiver (also refer to the separate mounting instructions).


Mount the controller on a flat wall and in compliance with local regulations.

If there are thermostatic radiator valves in the reference room, set them to their fully open position.

**Maintenance**

Controller and receiver are maintenance-free.

**Change of batteries**

If the battery symbol  appears, the batteries are almost exhausted and must be replaced.

**Reset**

To reset the controller, press both the Test and Learn buttons on the rear of the unit.

To reset the receiver, press the RESET button on the unit front.




All individual settings are then reset to their default values.

## Technical data

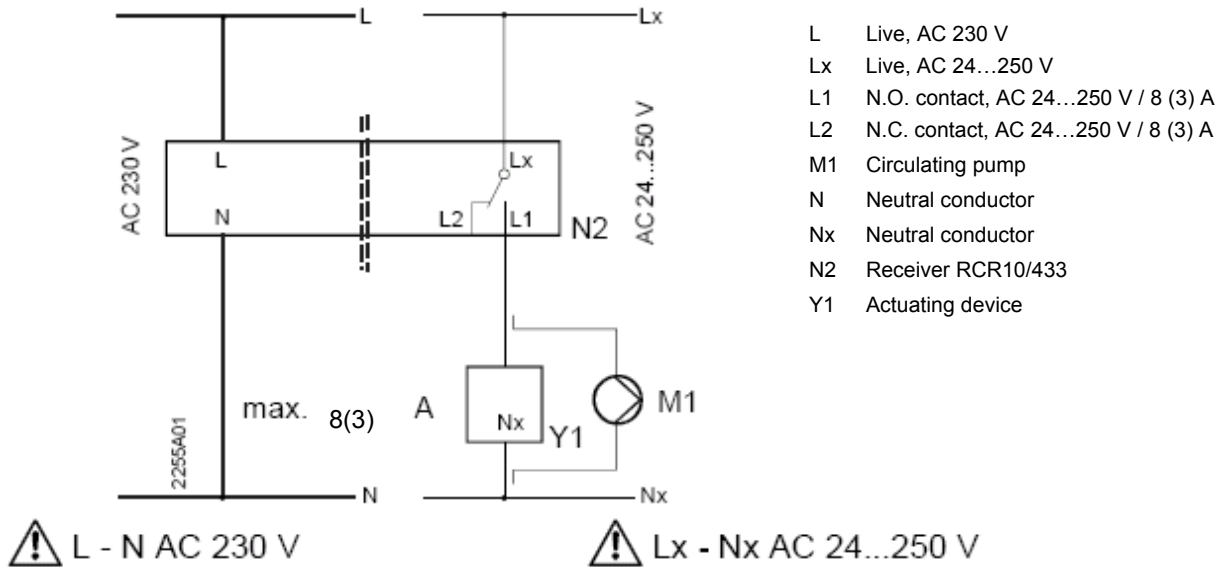
|                                                                              |                                        |                                                                                                    |             |
|------------------------------------------------------------------------------|----------------------------------------|----------------------------------------------------------------------------------------------------|-------------|
| Power supply                                                                 | Operating voltage<br>Battery life      | DC 3 V (2 x 1.5 V AA alkaline batteries)<br>>1 year (AA alkaline batteries)                        |             |
| Sensor inputs                                                                | <b>Internal:</b><br>Thermistor         | 10 kΩ ± 1% at 25 °C                                                                                |             |
| Operational data                                                             | Switching differential SD              | 1 K                                                                                                |             |
|                                                                              | Setpoint setting range                 | 5...30 °C (Comfort mode)<br>5...30 °C (Energy Saving mode)<br>5 °C (Frost Protection, fixed value) |             |
|                                                                              | Factory setting comfort setpoint       | 20 °C                                                                                              |             |
|                                                                              | Factory setting for energy saving mode | 10 °C                                                                                              |             |
|                                                                              | Resolution of settings and displays    |                                                                                                    |             |
|                                                                              | Setpoints                              | 0.5 °C                                                                                             |             |
|                                                                              | Actual value displays                  | 0.5 °C                                                                                             |             |
|                                                                              | Display of time of day                 | 1 min                                                                                              |             |
| Environmental conditions                                                     | Operation                              | IEC 721-3-3                                                                                        |             |
|                                                                              | Climatic conditions                    | Class 3K5                                                                                          |             |
|                                                                              | Temperature                            | 0...+40 °C                                                                                         |             |
|                                                                              | Humidity                               | <90% r.h.                                                                                          |             |
|                                                                              | Transport                              | IEC 721-3-2                                                                                        |             |
|                                                                              | Climatic conditions                    | Class 2K3                                                                                          |             |
|                                                                              | Temperature                            | -25...+60 °C                                                                                       |             |
|                                                                              | Humidity                               | <95 % r. h.                                                                                        |             |
|                                                                              | Mechanical conditions                  | Class 2M2                                                                                          |             |
|                                                                              | Storage                                | IEC 721-3-1                                                                                        |             |
|                                                                              | Climatic conditions                    | Class 1K3                                                                                          |             |
|                                                                              | Temperature                            | -10...+60 °C                                                                                       |             |
|                                                                              | Humidity                               | <90% r.h.                                                                                          |             |
|                                                                              | Standards                              | <b>CE</b> conformity to                                                                            |             |
|                                                                              |                                        | EMC directive                                                                                      | 2004/108/EC |
| Low-voltage directive                                                        |                                        | 2006/95/EC                                                                                         |             |
| Radio equipment                                                              |                                        | 1999/5/EC                                                                                          |             |
| <b>C-tick</b> conformity to                                                  |                                        |                                                                                                    |             |
| Test standards and requirements                                              |                                        | EN 61000-6-3, AS/NZS 4251.1: 1999                                                                  |             |
| Test standards for radio equipment                                           |                                        | AS/NZS 4268: 2003                                                                                  |             |
| Product safety                                                               |                                        |                                                                                                    |             |
| Automatic electrical controls for household and similar use                  |                                        | EN 60 730-1 and<br>EN 60 730-2-9                                                                   |             |
| Information technology equipment - Safety - General Requirements             |                                        | EN 60950-1                                                                                         |             |
| Generic standards - Compliance to lower power electronic apparatus           | EN 50371-1                             |                                                                                                    |             |
| Electromagnetic compatibility and radio spectrum matters—Short range devices | EN 300220-3 V1.1.1                     |                                                                                                    |             |
| Electromagnetic compatibility and radio spectrum matters – EMC               | EN 301489-3 V1.4.1                     |                                                                                                    |             |
| Safety class                                                                 | III as per EN 60950-1                  |                                                                                                    |             |
| Pollution degree                                                             | 2                                      |                                                                                                    |             |
| Degree of protection of housing                                              | IP20                                   |                                                                                                    |             |
| General                                                                      | Weight (including package)             |                                                                                                    |             |
|                                                                              | RDJ10RF/SET                            | 515 g                                                                                              |             |
|                                                                              | Color of housing front                 | Signal-white RAL9003                                                                               |             |
|                                                                              | Housing material                       | ABS (LCD lens: PC)                                                                                 |             |



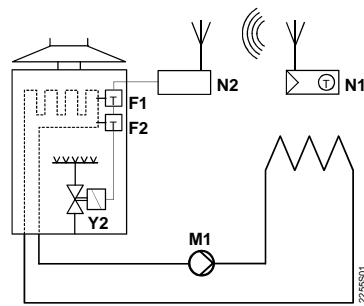
## Receiver RCR10/433

|                                                                                                                         |                                                                                                |                                                     |
|-------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| <b>General unit data</b>                                                                                                | Operating voltage                                                                              | AC 230 V +10/-15%                                   |
|                                                                                                                         | Power                                                                                          | <10 VA                                              |
|                                                                                                                         | Frequency                                                                                      | 50...60 Hz                                          |
|                                                                                                                         | Switching capacity of relays                                                                   |                                                     |
|                                                                                                                         | Voltage                                                                                        | AC 24...250 V                                       |
|                                                                                                                         | Current                                                                                        | 8 (3) A                                             |
| <b>Outputs</b>                                                                                                          | Relay contacts                                                                                 |                                                     |
|  Switching outputs<br>(LX, L1, L2)     | Switching voltage                                                                              | Max. AC 250 V<br>Min. AC 24 V                       |
|                                                                                                                         | Switching current<br>At 250 V                                                                  | Max. 8 A res., 3 A ind.<br>Min. 200 mA              |
|                                                                                                                         | Contact life at AC 250 V<br>At 5 A res.                                                        | Guide value:<br>1 x 10 <sup>5</sup> cycles          |
|                                                                                                                         | Insulating strength                                                                            |                                                     |
|                                                                                                                         | Between relay contacts and coil                                                                | AC 5,000 V                                          |
|                                                                                                                         | Between relay contacts (same pole)                                                             | AC 2,500 V                                          |
| <b>Electrical connections</b>                                                                                           | Connection terminals                                                                           | Screw terminals                                     |
|                                                                                                                         | For solid wires                                                                                | 2 x 1.5 mm <sup>2</sup>                             |
|                                                                                                                         | For stranded wires                                                                             | 1 x 2.5 mm <sup>2</sup> (min. 0.5 mm <sup>2</sup> ) |
| <b>Environmental conditions</b>                                                                                         | Operation                                                                                      | IEC 60 721-3                                        |
|                                                                                                                         | Climatic conditions                                                                            | Class 3K3                                           |
|                                                                                                                         | Temperature                                                                                    | 0...+45 °C                                          |
|                                                                                                                         | Humidity                                                                                       | <85% r.h.                                           |
|                                                                                                                         | Storage and transport                                                                          | IEC 60 721-3                                        |
|                                                                                                                         | Climatic conditions                                                                            | Class 2K3                                           |
|                                                                                                                         | Temperature                                                                                    | -25...+70 °C                                        |
|                                                                                                                         | Humidity                                                                                       | <93% r.h.                                           |
|                                                                                                                         | Mechanical conditions                                                                          | Class 2M2                                           |
| <b>Standards</b>                                                                                                        |  conformity |                                                     |
|                                                                                                                         | EMC directives                                                                                 | 2004/108/EC                                         |
|                                                                                                                         | Low-voltage directives                                                                         | 2006/95/EC                                          |
|                                                                                                                         | Radio equipment                                                                                | 1999/5/EC                                           |
|                                                                                                                         | Product safety                                                                                 |                                                     |
|                                                                                                                         | Automatic electrical controls for household and similar use                                    | EN 60 730-1 and<br>EN 60 730-2-9                    |
|                                                                                                                         | Information technology equipment - Safety - General Requirements                               | EN 60950-1                                          |
|                                                                                                                         | Generic standards - Compliance to lower power electronic apparatus                             | EN 50371-1                                          |
|                                                                                                                         | Electromagnetic compatibility and radio spectrum matters-Short range devices                   | EN 300220-3 V1.1.1                                  |
|                                                                                                                         | Electromagnetic compatibility and radio spectrum matters - EMC                                 | EN 301489-3 V1.4.1                                  |
|  approval in the following countries | All ECC countries,<br>Norway, Iceland and Switzerland                                          |                                                     |
| Safety class                                                                                                            | II as per EN 60 730                                                                            |                                                     |
| Degree of pollution                                                                                                     | 2                                                                                              |                                                     |
| <b>Color</b>                                                                                                            | Unit front                                                                                     | Signal-white RAL 9003                               |
|                                                                                                                         | Base                                                                                           | Gray RAL 7035                                       |
|                                                                                                                         | Dimensions                                                                                     | 83x104x32 mm                                        |

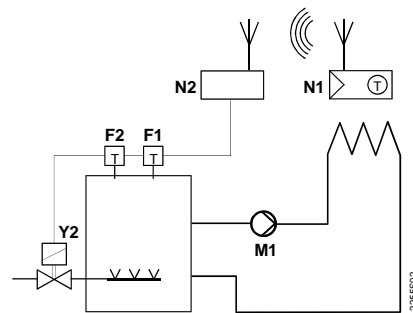
**Connection diagram**



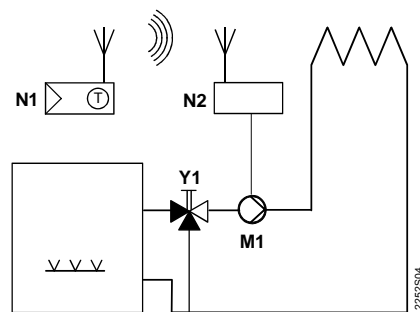
**Application examples**



Wireless room temperature controller with receiver control of a gas-fired wall-hung boiler



Wireless room temperature controller with receiver control of atmospheric gas burner

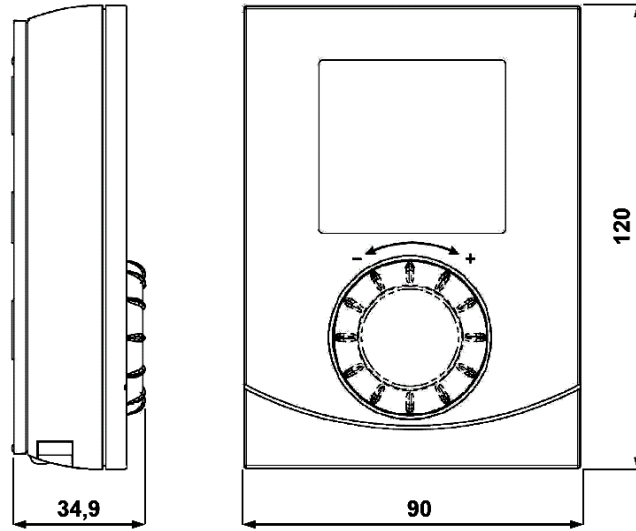


Wireless room temperature controller with receiver control of a heating circuit pump (precontrol by manual mixing valve)

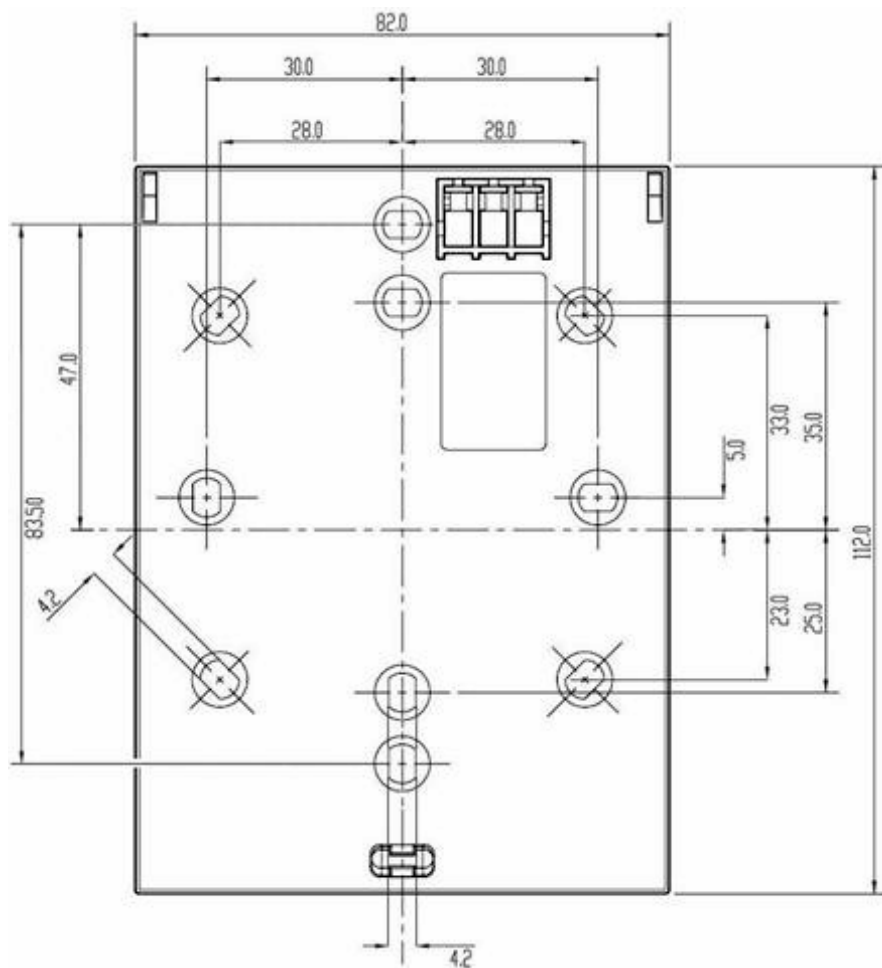
- |    |                                |    |                                     |
|----|--------------------------------|----|-------------------------------------|
| F1 | Thermal reset limit thermostat | N1 | Room temperature controller RDJ10RF |
| F2 | Safety limit thermostat        | N2 | Receiver RCR10/433                  |
| M1 | Circulating pump               | Y1 | 3-port valve with manual adjustment |
|    |                                | Y2 | Magnetic valve                      |

## Dimensions

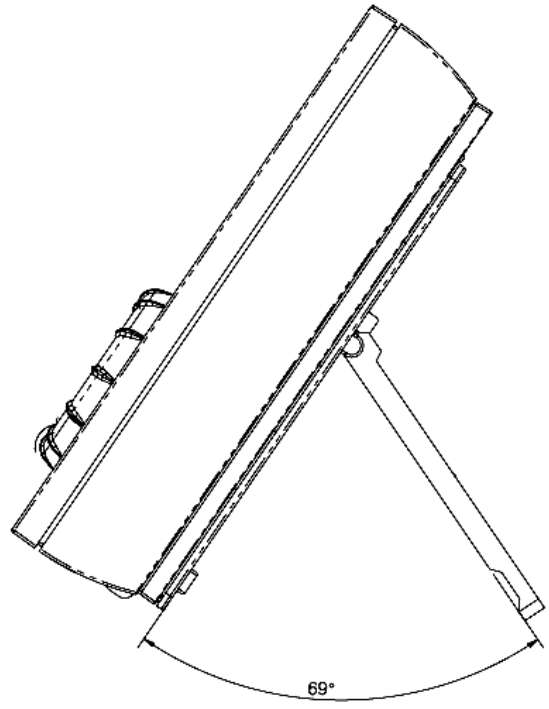
### Room temperature controller



### Baseplate



With fold-out stand



Receiver

