RPW401P-FTL Room control module

Room control module with temperature sensor with SolarFunk technology, integrated bidirectional EnOcean wireless interface and algorithm for self-learning of utilization time profiles/heating profiles in rooms.

Application

Solar-powered, self-learning room control module with LCD and smart communication management.

for measuring room temperature, independent generation of utilization time profiles and their continuous dynamic adjustment/optimization and for wireless transmission of measured values.

Occupancy button for manually changing the comfort mode or economy mode status.

Together with the Valve controller MD10-FTL-HE, the room control module RPW401P-FTL constitutes a functional unit for easy room temperature control.

Direct radio communication with Enocean system gateway possible.

This allows connection to a Building and Energy Management System BEMS.

The following EnOcean radio telegrams are supported:

■ Manufacturer Specific Communication MSC* radio communication with MD10-FTL-HE

■ EnOcean Equipment Profile EEP D2-10-30* radio communication with an Enocean system gateway

* You can find information about the protocol description on the EnOcean Technology website
  https://www.enocean-alliance.org/eep/

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Important Information on Product Safety

Safety instructions

This data sheet contains information on installing and commissioning the product "RPW401P-FTL".

Read this product description prior to installation, commissioning or operation. No previous special knowledge is required to commission and operate this product.

If you have any questions that are not resolved by this data sheet, you can obtain further information from the supplier or manufacturer.

If the product is not used in accordance with this data sheet, intended use could be impaired.

Unauthorized conversion and modifications to the device are not permitted for safety reasons and will result in the loss of all claims against the manufacturer.

The applicable local regulations must be observed when installing and using the device.

Symbol meanings

WARNING

Indicates a hazard of medium risk which can result in death or severe bodily injury if it is not avoided.

CAUTION

Indicates a hazard of medium risk which can result in material damage or malfunctions if it is not avoided.

NOTE

Indicates additional information that can simplify the work with the product for you.

Notes on disposal

In accordance with the applicable laws and directives of the European Union countries, the product should not be disposed of with household waste. This ensures environmental protection and sustainable recycling or raw materials.

Private users should contact their local retailer or their local authority for information regarding environmentally safe recycling of old appliances.

Commercial users should contact their supplier and observe the conditions of the purchase agreement. This device may not be disposed of together with other commercial waste.

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Care instructions

The room control module should be cleaned with due care. Moisture must not be allowed to enter the housing.

CAUTION

Housing with a sensitive surface.

Shocks and abrasive cleaning materials can lead to scratches and a dulling of the surface.

Remove the protective foil only after you have finished all work.

Do not use any abrasive cleaning materials or cleaning products to clean the device. Clean the housing with a moist, lint-free cloth.

NOTE

The operating modes described here only apply for the self-learning room temperature control consisting of:

- Valve controller MD10-FTL and
- room control module RPW401P-FTL.

Other radio partners such as gateways can generate other functions.

Comfort mode: Operating mode for a room that is in use (usage status: "Present"). The controller operates with comfort setpoint according to the value set on the MD10-FTL-HE valve controller.

Economy mode: Energy-saving operating mode (usage status: "Absent") for a room that is not in use. The setpoint is decreased by approximately 4 °C depending on the value set on the value controller.
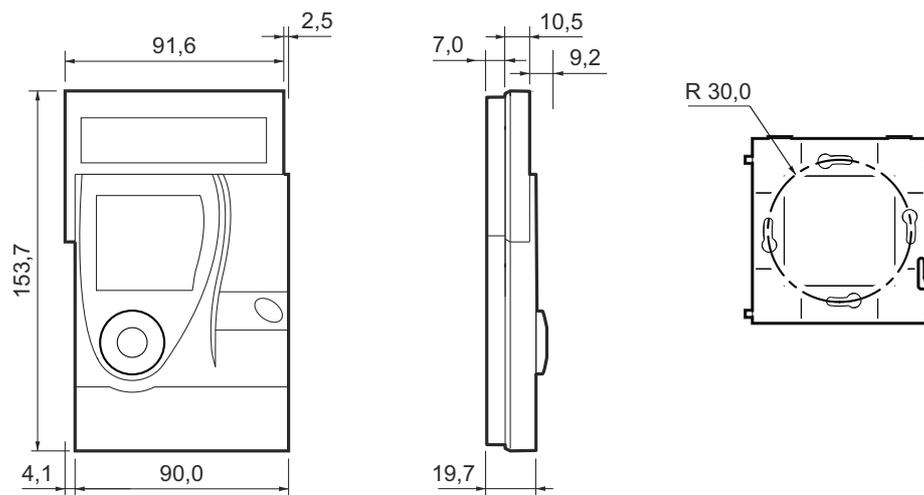
Item

RPW401P-FTL Room control module with temperature sensor, with SolarFunk technology, integrated bidirectional EnOcean wireless interface.
Automatic determination of the utilization time profile/heating profile in the room for automatic control of comfort mode and economy mode
For self-learning, energy self-sufficient and occupation-dependent control of the room temperature in conjunction with the MD10-FTL-HE valve controller

Technical Data

Nominal voltage	Dual power supply consisting of a solar cell and an internal energy storage unit with priority management additional internal energy storage unit uses 2 replaceable 3.6 V AA lithium batteries
Measured quantity	Room temperature in homes or offices
Measuring system	Temperature sensor: - Integrated digital sensor Occupancy sensor: - Integrated PIR ("Passive infrared") sensor
Measuring range	0..50 °C
Measuring tolerance	Typically ±0.3 K
Display	LCD: ■ Room temperature, time or date, selectable ■ Status indicators
Controls	■ ⌂ Occupancy button: manually switch between comfort mode/economy mode for selecting menus an setting e.g. the time
Interfaces	EnOcean® radio interface: ■ Radiogram: EnOcean radiogram, bidirectional ■ Frequency: 868.3 MHz ■ Duty cycle: < 1% ■ Cyclic transmission/reception intervals
Communication cycle	10 min
Transmission power	< 10 mW
Illumination strength	Min. 150 lux recommended
Operating range	Radio: Approx. 30 m in buildings (depending on building structure) Occupancy sensor: Approx. 10 m
Housing	Plastic housing, RAL 9010 (pure white), 7001
Protection class	III
Degree of protection	IP30
Ambient temperature	0..50 °C
Ambient humidity	During operation: 20..85% r.h., non-condensing Out of operation: 5..90% r.h., non-condensing
Mounting	Flexible mounting using screws or adhesive
Maintenance	Maintenance-free
Weight	0.22 kg
Dimensions	WxHxD in mm: 90 x 153.7 x 26.7

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Dimensions

Radio Interface

The radio communication with the radio partner is cyclical, bidirectional and includes an intelligent synchronization process.

If the radio communication between the room control module and the radio partner is interrupted, an internal resynchronization algorithm starts automatically.

Radio interference is indicated on the screen by corresponding icons (see page 28).

CAUTION

This product uses only EnOcean wireless telegrams.

Only devices that support the EncOcean radio standard can be used as radio partners.

Installation

> **CAUTION**
>
> This product description describes the specific settings and functions of the RPW401P-FTL room control module. In addition to these instructions, the product description of the radio partner must also be observed.

General installation instructions

It is not always possible to freely select the installation location of devices which communicate wirelessly, as radio data transmission is influenced to a greater or lesser extent by structural or spatial factors.

In order to establish operational and reliable communication paths, the following aspects must be considered before and during planning:

■ Structural factors restrict the transmission ranges which can be reached. Building materials and screening elements (e.g. suspended ceiling elements, installation shafts, fire doors, etc.) must be taken into consideration during planning.

> **CAUTION**
>
> Elevated humidity increases natural signal damping.

> **NOTE**
>
> Recommendation: Plan radio paths **horizontally on a single level** with max. 30 m between the trasmitting and receiving modules.

■ Designed only for use in rooms.
■ Observe minimum distances to potential sources of interference.
  - Min. 0.5 m to high-frequency sources of interference (such as microwaves, transformers or computers)
  - Min. 0.5 m to transmitters of other radio systems (such as a cordless telephone or headphones)
  - Min. 0.1 m to metal and door frames
■ Minimize the effect of wall thickness (for example partition walls or room dividers) by ensuring that the radio signal passes through the walls at as close to a right angle as possible.
■ Do not select installation locations in the radio shadow of screening building parts/structures → No direct reception possible.
■ Where the device is installed at the limits of reliability, change the position of the transmitter/receiver slightly if possible (reduce overlapping effects of radio waves).

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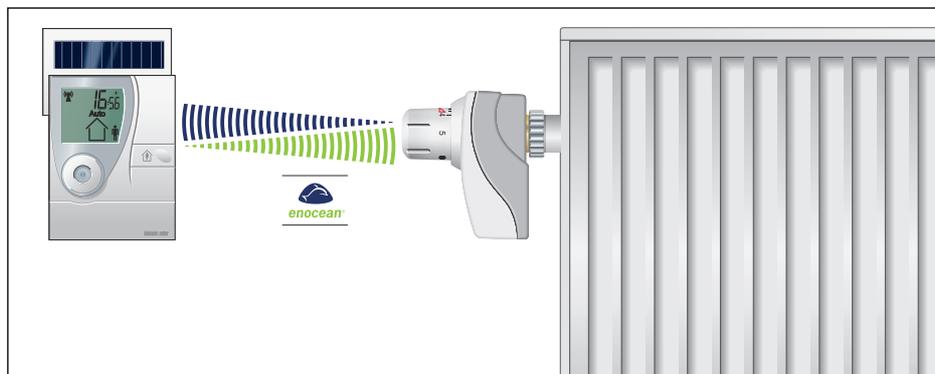
■ The room control module should be installed in a location where it is exposed to the air circulation in the room so that it can quickly and accurately capture the room temperature.
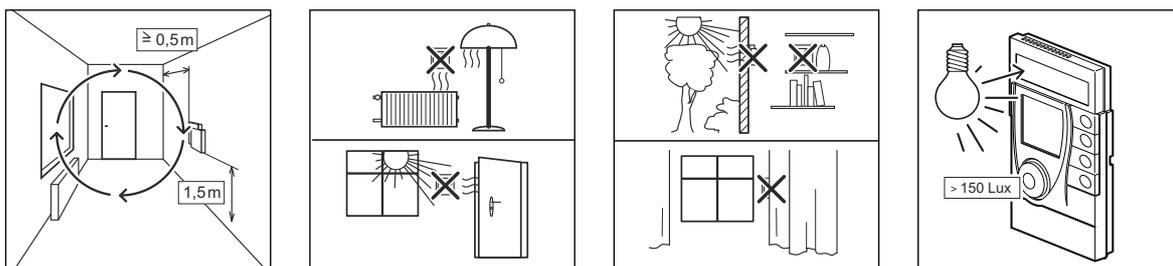
■ As a result of the autonomous operation and wireless installation of RPW401P-FTL, the selected installation location can be changed and optimized at any time without additional effort.

The installation location must have sufficient lighting; using the device in unlit rooms (such as interior kitchens/bathrooms) shortens long-term functionality.

The solar cell is optimized for indoor use and it works particularly efficiently with diffuse lighting.
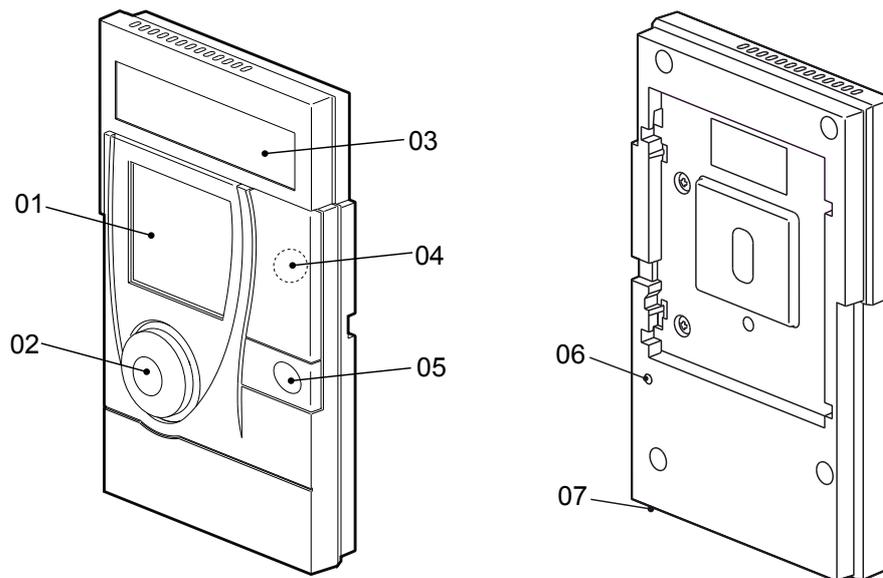
CAUTION

Prolonged illumination at high intensities, e.g.
- direct sunlight or
- artificial light (such as halogen emitters) can cause damage to the solar cell.

Controls and functional components

| Item	Designation	Explanation
01	Display	Displays information regarding the current status
02	Occupancy sensor	Detects presence/absence for the utilization time profile
03	Solar cell	Generates the energy for the room control module
04	Magnetic contact (below the housing)	For information about selecting the service level, see page 23
05	Occupancy button	- Switching between comfort mode/economy mode, see page 16 - For switching the RPW401-FTL on/off (with the setting button), see page 11 - For setting functions
06	Setting button	- Switches the room control module on (together with the occupancy button); see page 11 - Starts the login process; see page 13 - Resets the room control module to factory settings; see page 17
07	Service connection (underside)	For authorized service technicians only

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Indicators on the display
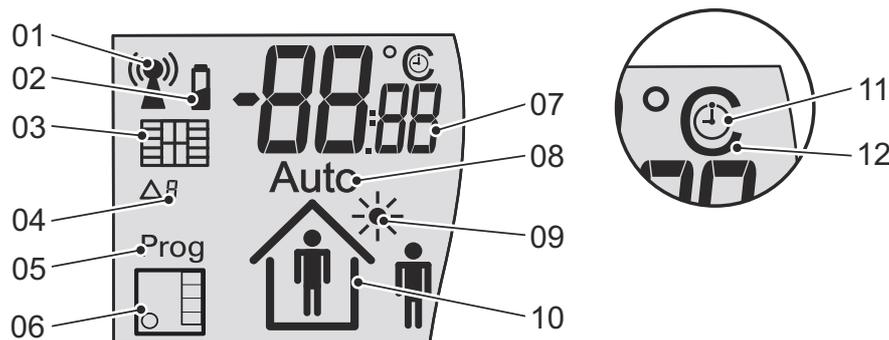
Item	Icon/display	Explanation
01	Antenna	Status of the radio connection
02	Battery	Room control module energy storage unit charging state < 30%
03	Window	Rapid temperature drop detected
04	Code	Status and malfunction messages
05	Prog	Radio partners can be registered, registration status active
06	Gateway	Remote access through the EnOcean system gateway
07	Information field	Display of the room temperature, time, date (= initial display, can be configured) or messages
08	Auto	Learned utilization time profile is active
09	Sun	The solar cell is active (test installation location). Summer mode is active
10	Occupancy	Occupancy sensor is active (test installation location), detected presence/absence and vacation mode
11	o'clock	The information field displays the time (hh:mm)
12	Degrees Celsius	The information field displays the temperature (°C)

Commissioning

Switching the device on/off
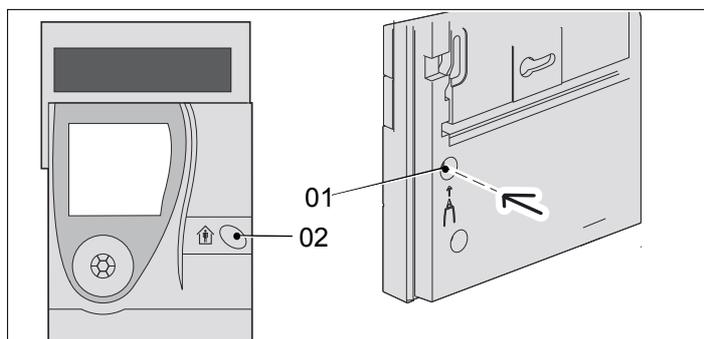
(01) Setting button
(02) Occupancy button

■ Switching on

The device is delivered in storage mode (switched off).

All functions are deactivated and the device does not consume any power. The energy storage unit has been fully charged at the factory for initial commissioning.

► Press the "Occupancy button (02)" and the "Setting button (01)" simultaneously for 5 seconds.

   The display is activated. The icons "Sun", "Occupancy" and the text "**InSt**" appear.

   The occupancy sensor and the solar cell are active. (= installation/commissioning mode for evaluating the installation location).

NOTE

The "Test installation location" function remains active as long as the text "**InSt**" is displayed (see page 12).

NOTE

If a radio partner has not been taught-in after 15 minutes, the room control module automatically switches off.

■ Switching off

The room control module must be decommissioned (switched off) before transportation or storage. The device does not consume any power and is sufficiently charged when recommissioned.

► Press the "Setting button (01)" for 5 seconds.

   The text "**Res**" briefly appears on the display.

   The display goes completely blank.

Or

► Run the "Restore default settings and switch off room control module" on the service level, see page 25.

NOTE

The taught-in radio partners are then deleted and the room control module is reset to the default settings.

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"Test installation location" function

The room control module provides assistance in selecting the optimum installation location.

This function is active after switching on the device (see the "Switching the Device On/Off" section page 11), provided a radio partner has not been registered (for a maximum of 15 minutes).

The text "**InSt**" is displayed.

► Switch on the room control module, see page 11.

The display switches on. The "Sun"and "Occupancy" icons and the text "**InSt**" appear. The occupancy sensor and the solar cell are active.

► Position the room control module at the potential installation location.

► Check the "Sun" icon on the display.

► Move about in the room and check the "Occupancy" icon.

Evaluation	Display
Installation location good	The "Sun" icon is permanently displayed and the "Occupancy" icon switches from "Person inside the house" to "Person outside the house" and back again
Installation location bad	The "Sun" icon is not displayed or the "Occupancy" icon does not switch to "Person inside the house" and remains unchanged.

► Once a suitable installation location has been found, the room control module can be mounted and commissioned.

NOTE

If a radio partner has not been taught-in after 15 minutes, the room control module automatically switches off.

NOTE

If the energy storage unit is empty, the "Sun" icon will not appear even if the location is good. The energy storage unit must be charged first. Charge the energy storage unit by placing the room control module in a source of light for two hours (day light or artificial light, but not direct sun light).

Occupancy sensor

The room control module automatically detects a presence in the room with its occupancy sensor. Depending on the distance, the range of movement in the detection area is important. The further a person is away from the occupancy sensor, the greater the movement must be.

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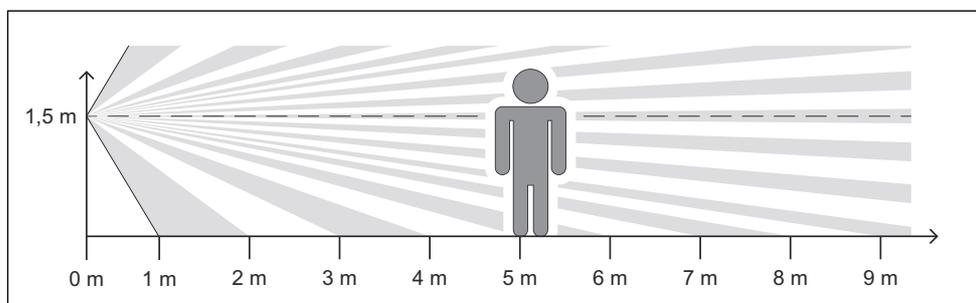
Teaching in the MD10-FTL-HE radio partner on the RPW401P-FTL

CAUTION

This product description describes the specific settings and functions of the RPW401P-FTL. In addition to these instructions, the product descriptions of the radio partners must also be observed.

Up to 4 MD10-FLT-HE valve controllers can be taught-in on the room control module.

► Switch on the room control module, see page 11.

► Press the set button (01) briefly.

"**ACT**" appears on the display.

► Press the Occupancy button for approximately 5 seconds. The "Antenna" icon also flashes on the display.

► A teach-in radio telegram has to be triggered on the MD10-FTL-HE. Details can be found in the documentation of the MD10-FTL-HE.

► If multiple MD10-FTL valve controllers are to be taught in, the teach-in radio telegrams must be triggered consecutively.

The number of taught-in valve controllers is displayed after approx. 15 s.

The "Antenna" icon appears after another 45 s. Data has been exchanged between the radio partners.

All valve controllers must be taught-in within a **single** teach-in sequence.

The time between each valve controller teach-in may not exceed 15 s.

The MD10-FTL-HE acknowledges the start of the teach-in process with a signal tone.

Successful registration of the MD10-FTL-HE is acknowledged with two signal tones.

If the teach-in process was successful, the "Antenna", "Auto" and "Occupancy" icons are displayed.

The current room temperature is displayed.

CAUTION

An error has occurred and registration has failed if the MD10-FTL-HE valve controller acknowledges registration with a downward sequence of tones (two long tones). Start the teach-in process again.

The valve controllers are signed in at the RPW401P-FTL. The room control module now starts to learn the individual utilization time profile.

The room control module controls the room temperature using the default utilization time profile until is has learned the first utilization time profile.

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Default utilization time profile:

Room used: 6:00 AM - 8:00 PM, comfort temperature
Room unused: 8:00 PM - 6:00 AM, economy temperature

NOTE

It is not possible to add an additional valve controller after the procedure is complete.

If you want to do this, you must teach in **all** valve controllers again.

NOTE

If the room control module was already switched on, the "Switching on the device" item is skipped and the room control module uses the utilization profile that is already taught-in.

Mounting

The room control module can be stuck to smooth, flat surfaces using the wall mount and the adhesive pad supplied, or it can be screwed directly onto level surfaces.

Screws and wall plugs are not included in the scope of delivery of the room control module.

WARNING

Flush mounted cabling and piping at the installation location (electricity, gas, water)

Cabling and piping can be damaged by drilling.

Check the installation location for flush mounted piping and cabling, or contact a specialist.

NOTE

Position the wall mount so that the bar (1) can be easily accessed. Ensure a distance of at least 10 cm from other objects (door frames, electrical sockets, cupboards, etc.).
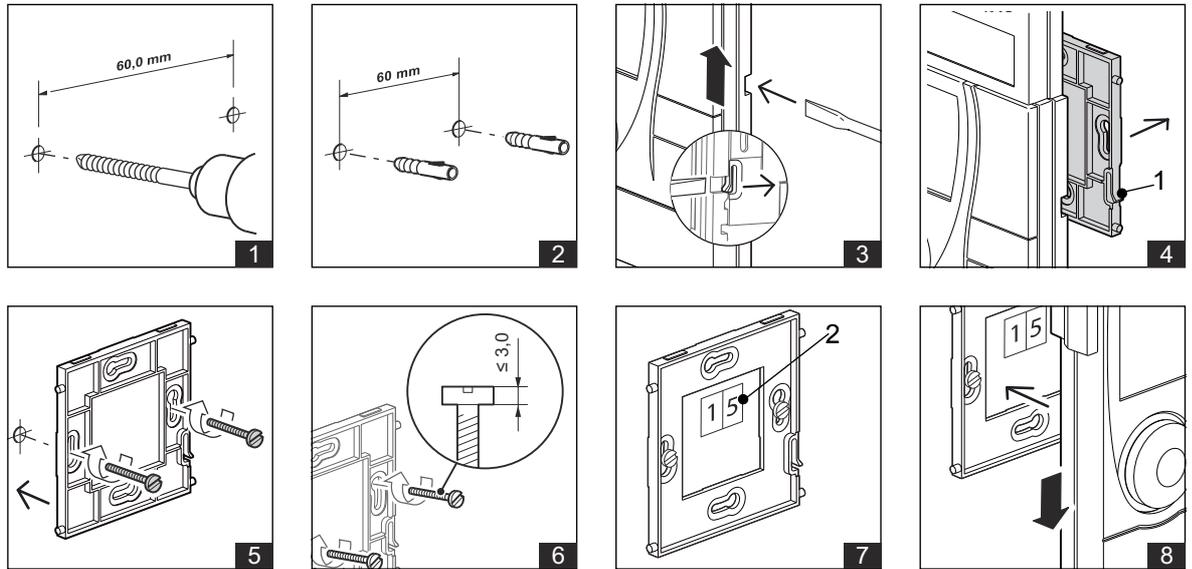
NOTE

Observe the orientation of the wall mount. The bar (1) must be on the right-hand, lower side when the device is installed, see figure 4.

Use the enclosed adhesive numbers (2) to uniquely identify the mounting location and the respective room control module.

► Mark the room control module and the wall mount with a unique number using the enclosed adhesive numbers (2).

Wall mounting

- Flexible screw mounting

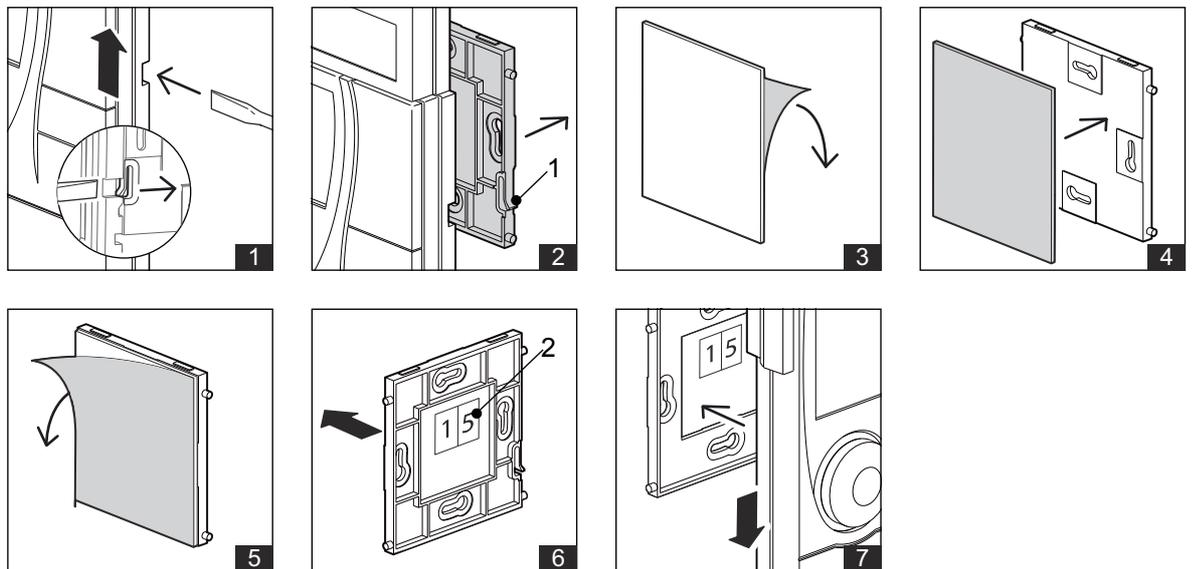(1) bar   (2) adhesive numbers

Wall mounting

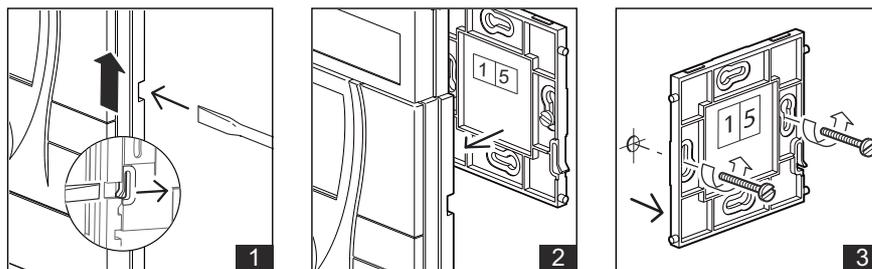- Flexible adhesive mounting with double-sided transparent adhesive strips

NOTE

For a permanent connection, remove any dust and grease from the adhesive surface on the wall mount and the wall.

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Removal

Operating level:

Manually switching between comfort and economy mode

> ► You can manually switch between comfort mode and economy mode and vice versa by pressing the "Occupancy button".
>
> This is displayed by the ⌂ comfort mode or ⌂ economy mode icons. The "Auto" icon also disappears from the display.

■ **Changing from comfort mode to economy mode:**
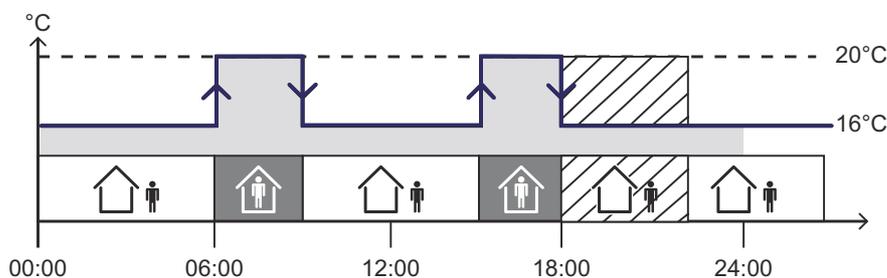economy mode is active for 4 hours.
The utilization time profile is then active again and the "Auto" icon appears on the display.

Example 1:

Comfort temperature 20 °C, economy temperature: 16 °C

Room used: 6:00 AM - 9:00 AM and 3:00 PM - 9:00 PM

Absence set manually (by pressing the "Occupancy button) 6:00 PM - 10:00 PM

■ **Changing from economy mode to comfort mode:**
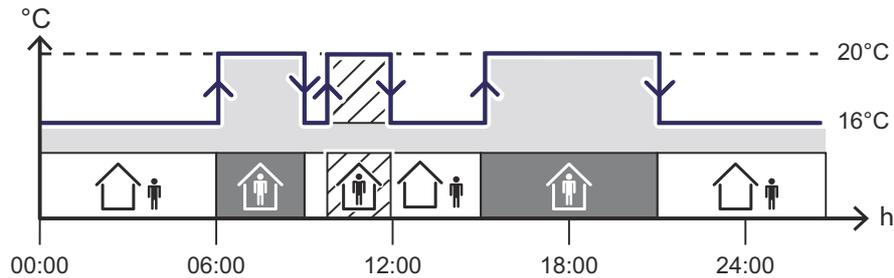comfort mode is active for 2 hours.
The utilization time profile is then active again and the "Auto" icon appears on the display.

Example 2:

Comfort temperature 20 °C, economy temperature: 16 °C

Room used: 6:00 AM - 9:00 AM and 3:00 PM - 9:00 PM

Presence set manually (by pressing the "Occupancy button) 10:00 AM - 12:00 AM

Automatically switching between comfort and economy mode

Automatic switching between comfort or economy mode is performed according to the utilization profile learned.

The utilization profile is generated automatically, and is continuously and dynamically adjusted and optimized.

This is displayed by the 🏠 comfort mode or 🏠 economy mode icons. The "Auto" icon also appears in the display.

Presence/absence is recorded by the occupancy sensor in order to learn the utilization profile.

The room control module continuously adapts the mode depending on real utilization behavior and room environment.

Restore default settings and switch off room control module

When the defaults are restored, the learned utilization time profile and the wireless connections are deleted and all settings are restored to the factory settings.

▶ Press the "Setting button" for 5 seconds.

The text "**rES**" appears briefly and the display goes blank.

The room control module is now switched off.

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Menu level

> **NOTE**
>
> If no settings are made within approx. 5 seconds, the individual setting functions are exited and saved as required.

Config menu

The following functions are available in the Config menu:

- Setting vacation mode
- Setting the time and date
- Setting the 12/24 hour display
- Switching the temperature scale °C/°F
- Setting the initial display

Setting vacation mode
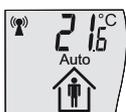
▶ Hold down the "Occupancy button" for 5 seconds.
  "**ConF**" appears on the display.

▶ Release the "Occupancy button".

▶ Briefly press the "Occupancy button" to select the config menu "**ConF**" or the Info menu "**InFo**".

▶ Select the config menu "**ConF**".

▶ Hold down the "Occupancy button" for 5 seconds.

▶ Release the "Occupancy button".

  The "Set vacation" menu appears in the display.
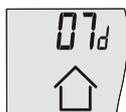
▶ Hold down the "Occupancy button" for 5 seconds.

  The value being set flashes.

▶ Briefly press the "Occupancy button" to set the duration of the vacation to a maximum of 31 days.

  Briefly pressing the "Occupancy button" increases the current value by +1.

Setting "00d" = 0 days deletes all previous vacation settings.

The setting is accepted after 5 seconds of no entry being made. Vacation mode comes into effect upon the end of the day at 0.00 hours.

The display switches back to initial display and the "U" icon appears.

If vacation mode is active, the room control module is in economy mode.

The display also shows the ⌂ (house without little man) symbol.

At the end of vacation mode, the comfort mode becomes active at 0.00 for a duration of 6 h.

Delete vacation mode

To abort vacation mode, you must set vacation duration to "00d" = 0 days.

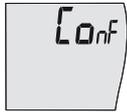The settings procedure is the same as previously described.

Setting the time and date

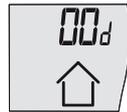The hour, minutes, year, month and day can be set in sequence.

The values to be set flash.

► Hold down the "Occupancy button" for 5 seconds.
  "**ConF**" appears on the display.

► Release the "Occupancy button".

► Briefly press the "Occupancy button" to select the config menu "**ConF**"
  or the Info menu "**InFo**".

► Select the config menu "**ConF**".

► Hold down the "Occupancy button" for 5 seconds.

► Release the "Occupancy button".

  The "Set vacation" menu appears in the display.

► Briefly press the "Occupancy button" repeatedly to select the "**tIME**" function.

► Hold down the "Occupancy button" for 5 seconds.

  The display switches to the menu item for the "Time and date" settings.

  The value being set flashes.

► Press the "Occupancy button" once only to confirm the hour displayed,
  or press it several times/hold it down until the desired set value
  is reached.

► Release the "Occupancy button".

  The next value to be set will start to flash after approximately 3 seconds.

  The setting procedure for minutes, year, month and day are the same as that for setting the hour.

Once the last value for day has been entered, it is displayed by a moving line on the display; the "Prog" icon also appears for approximately 1 second.

The time and date settings are complete and are saved.

The display then switches to the initial display.

NOTE

Pressing the "Occupancy button" increases the current value by +1.

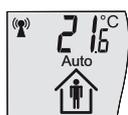Holding down the "Occupancy button" increases the value sequentially.

NOTE

If no input is made for approx. 10 seconds, the display returns to the initial display. Any settings that were previously made are not saved.

Daylight saving time switching occurs automatically according to Central European standards.
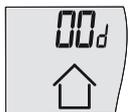
Default setting: current CET Central European Time

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Setting the 12/24 hour display

► Hold down the "Occupancy button" for 5 seconds.
   "**ConF**" appears on the display.

► Release the "Occupancy button".

► Briefly press the "Occupancy button" to select the config menu "**ConF**"
   or the Info menu "**InFo**".

► Select the config menu "**ConF**".

► Hold down the "Occupancy button" for 5 seconds.

► Release the "Occupancy button".

   The "Set vacation" menu appears in the display.

► Briefly press the "Occupancy button" repeatedly to select the "**24h**" function.
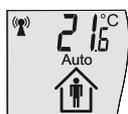
► Release the "Occupancy button".

► If you press the "Occupancy button" for 5 seconds, the 12 hour-display is the set.

   After approx. 3 seconds, the display switches to the initial display.

If 12 hour display is active, an additional **P** is displayed during the afternoon and evening hours.
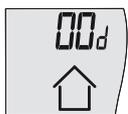
Default setting: 24h

Switching the temperature scale °C/°F

► Hold down the "Occupancy button" for 5 seconds.
   "**ConF**" appears on the display.

► Release the "Occupancy button".

► Briefly press the "Occupancy button" to select the config menu "**ConF**"
   or the Info menu "**InFo**".

► Select the config menu "**ConF**".

► Hold down the "Occupancy button" for 5 seconds.

► Release the "Occupancy button".

   The "Set vacation" menu appears in the display.

► Briefly press the "Occupancy button" repeatedly to select the "**tS °C**" function.

► Release the "Occupancy button".

► If you press the "Occupancy button" for 5 seconds, the °F temperature scale is
   then set.

   After approx. 3 seconds the display switches to the initial display and the
   temperature is now displayed in °F.

Default setting: °C

Setting initial display

► Hold down the "Occupancy button" for 5 seconds.
"**ConF**" appears on the display.

► Release the "Occupancy button".

► Briefly press the "Occupancy button" to select the config menu "**ConF**"
or the Info menu "**InFo**".

► Select the config menu "**ConF**".

► Hold down the "Occupancy button" for 5 seconds.

► Release the "Occupancy button".
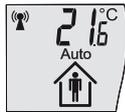
The "Set vacation" menu appears in the display.

► Briefly press the "Occupancy button" repeatedly to select the "**dISP**"
function.

► Release the "Occupancy button".

► Hold down the "Occupancy button" for 5 seconds.

The display then switches to the next initial display.

Here is an example for the initial display for time.

When repeating the previous steps, roll to initial display for room temperature, date or time.

Default setting: Display of the room temperature.

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Info menu

The following information is displayed in the Info menu:

■ Status message
■ Display of taught-in radio partners
  – Radio address for taught-in radio partners
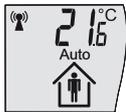
► Hold down the "Occupancy button" for 5 seconds.
  "**ConF**" appears on the display.

► Release the "Occupancy button".

► Briefly press the "Occupancy button" to select the config menu "**ConF**"
  or the Info menu "**InFo**".

► Select the info menu "**Info**".

► Hold down the "Occupancy button" for 5 seconds.

► If you briefly press the "Occupancy button" repeatedly, the system displays the
  aforementioned information in succession.

If you do not take any other actions, the display will return to the initial display after
5 seconds.

Status message

The status message is displayed. Further information can be found on page 26.

Displaying taught-in radio partners

If no radio partners have been taught-in, this display does not appear.

The display fist shows the number of taught-in valve controllers.

► Brifly pressing the "Occupancy button" repeatedly displays the radio IDs of the
  taught-in radio partners one by one.

The last four hexadecimal digits of the taught-in radio partner's radio ID are then shown
on the display.

If other valve controllers have been taught in, briefly pressing the occupancy button
repeatedly will display this information.

The display (1) also indicates which valve controller is currently shown.

■ 1 to 4 = taught-in valve controllers 1 to 4

Service level

The following functions are available on the service level:

- Teach in the MD10-FTL radio partner
- Teaching in an EnOcean system gateway
- Deleting all taught-in radio partners
- Restore default settings and switch off room control module
- Software version display
- Display of taught-in radio partners

A magnet (1) is used to switch to the service level.
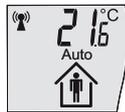
► Briefly slide the magnet along the upper right-hand side of the device (see figure) or briefly press the Setting button.

The room control module switches to the service level.

► Briefly press the "Occupancy button" repeatedly and the system will offer you the aforementioned functions one after the other.

If you do not take any other actions, the display will return to the initial display after 5 seconds.

Teaching in the MD10-FTL-xx radio partner

► Briefly press the "Occupancy button" to select the "**ACt**" function.

► Hold down the "Occupancy button" for about 3 seconds and the "Teach in the MD10-FTL-xx radio partner" function will run (see the "Teaching in the MD10-FTL-HE radio partner on the RPW401P-FTL" section on page 13).

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RPW401P-FTL   **Product Description**

Teaching in an EnOcean system gateway

► Briefly press the "Occupancy button" repeatedly to select the "**GATE**" function.
► Hold down the "Occupancy button" for about 5 seconds and the "Teach in an EnOcean system gateway" function will run.

The "Antenna" icon flashes briefly on the display.

A teach-in radiogram is sent to the system gateway and a teach-in radiogram from the system gateway is awaited.

You can find details in the documentation of the EnOcean system gateway.

The display then returns to the initial display. If the teach-in process was successful, the wireless communication icon also appears.

NOTE

An EnOcean system gateway makes it possible to connect to a Building and Energy Management System BEMS.

This makes it possible to generate additional functions such as:
- Visualizing operating states
- Displaying trend curves e.g. for the room temperature
- Overriding the operating modes with special utilization times such as public holidays.

NOTE

The resources of the energy source are also used when communicating with a system gateway. The increased transmission frequency has an impact on the service life of the energy source (AA lithium batteries),

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Deleting all taught-in radio partners

► Briefly press the "Occupancy button" repeatedly to select the "**dEL**" function.
► Hold down the "Occupancy button" for about 3 seconds and the "Delete all taught-in radio partners" function will run.

NOTE

After all the taught-in radio partners have been deleted, the radio partners must be taught in again. Otherwise, the room control module will switch off after 15 minutes.

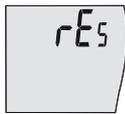**Restoring default settings and switching off the room control module (see also page 11)**

> ► Briefly press the "Occupancy button" repeatedly to select the "**rEs**" function.
> ► Hold down the "Occupancy button" for about 5 seconds and the "Restore default settings and switch off room control module" function will run.

The room control module switches off. The display disappears.

i | **NOTE**
The taught-in radio partners are then deleted and the room control module is reset to the default settings.

Software version display

> ► Briefly press the "Occupancy button" repeatedly to select the "Software version display" function.

Displays the software versio of internal processor 1.

> ► The press the "Occupancy button" or 5 seconds.

The software version of internal processor 2 is displayed.

Displaying taught-in radio partners

If no radio partners have been taught-in, this display does not appear.

> ► Briefly press the "Occupancy button" repeatedly to select the "Display taught-in radio partners" function.
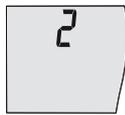
The display fist shows the number of taught-in valve controllers.

> ► Brifly pressing the "Occupancy button" repeatedly displays the radio IDs of the taught-in radio partners one by one.

The last four hexadecimal digits of the taught-in radio partner's radio ID are then shown on the display.

If other valve controllers have been taught in, briefly pressing the occupancy button repeatedly will display this information.

The display (1) also indicates which valve controller is currently shown.

■ 1 to 4 = taught-in valve controllers 1 to 4

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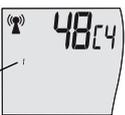
Status messages

Icon/display	State	Explanation
Antenna	On	Fault-free radio connection
Δ InSt	On	"Test installation location" evaluation function is active
Antenna Prog	Flashes On	Valve controllers can be registered
Antenna Δ1, Er01	On On	Radio connection partly interrupted (> 1 hour) At least one valve controller is being received
Antenna Δ1, Er01	Off On	Radio connection interrupted (> 1 hour) No valve controller is being received
Antenna Δ2, Er02	On On	Radio connection partly interrupted (> 4 hours) At least one valve controller is being received
Antenna Δ2, Er02	Off On	Initial registration failed or wireless radio connection interrupted (> 4 hours) No valve controllers are transmitting
Battery	On	Room sensor Charge state < 30%
ΔE, Er04	On	Valve controllers (1 to 4), for at least one valve controller Charge state < 30% On the service level, the battery icon also appears next to each drive.
Window	On	Economy mode for max. 30 minutes
U	On	Vacation mode activated (starts at 0.00)
⌂	On	Extended abscence, vacation mode active
Sun ⌂	On Off	Summer mode System in energy saving mode
Δ6, Er06	On	Radio connection to EnOcean system gateway interrupted.

Radio connection

The "Antenna" displays the current state of the radio connections to the radio partners.

The status of the radio connection is monitored continuously. A message is displayed if the radio connection status changes.

NOTE

Communication is continued automatically once the radio connection between the room control module and the valve controllers is functioning properly again. "Δ1" or "Δ2" disappears and the "Antenna" icon permanently appears.

Energy storage unit

The "Battery" icon indicates the current state of the energy storage unit of the room control module. The room control module continuously monitors the charge state of the energy storage unit. The "Battery" icon appears on the display if the charge state drops below 30%.

NOTE

Charge the energy storage unit by placing the RPW401P-FTL in a source of light for two hours (day light or artificial light, but not direct sun light).

Energy source

The internal AA lithium batteries support solar operation. The resources of the energy source are only used when the internal energy storage unit can no longer guarantee the function of the room control module.

The service life of the AA lithium batteries depends on the transmission frequency, the aging of the batteries and the self-discharge. They generally last for several years.

NOTE

If the "Battery" icon begins to appear in the display more and more frequently, it indicates that the AA lithium batteries need to be replaced.

This must be carried out by an authorized service technician.

Please contact your supplier.

Extended absence

The room control module continuously monitors the room utilization. If the room control module detects a longer absence (more than three days without occupancy), the utilization time profile permanently switches to economy mode and the ⌂ icon appears on the display.

If the "Occupancy button" is pressed after a longer absence, or if the room control module detects room occupancy for a period of 20 minutes, the utilization time profile switches to comfort mode and the learned utilization time profile becomes active again.

Summer mode

The room temperature controller detects longer periods of time during which the MD10-FTL-HE valve controller is not supplied with thermal energy. The room temperature controller switches to summer mode if such a period of time is detected between June 1 and August 31 of a year.

The "Sun" icon appears and the "Occupancy" icon disappears.

The valve controller charge can drop to below 30% in the transition periods before and after summer mode and the "ΔE" symbol is displayed.

If, the en:key valve controller's integrated thermal generator has generates sufficient energy again after the summer break, the room temperature control switches back to automatic mode and controls the room temperature according to the last active utilization schedule profile.

The "Occupancy" icon is displayed. The "Sun" and "ΔE" icons disappear.

Rapid temperature drop

If the room control module detects a rapid drop in temperature (e.g. a window has been opened), economy mode is automatically active for a maximum of 30 minutes.

The "Window" icon appears on the RPW401P-FTL display.

The rapid drop in temperature detected is not included in the learned utilization time profile.

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Malfunction messages

Icon/display	State	Explanation
Antenna Δ8, Er08	Off On	Transmission function on the RPW401P-FTL malfunctioning
Δ3, Er03	On	RPW401P-FTL synchronization malfunctioning

Transmission function malfunctioning

The radio connection is continuously monitored. The "Δ8" icon appears on the display if a transmission function malfunction is detected in the room control module.

The following troubleshooting procedures can be implemented:

► Reset the room control module to factory settings (see p.17).

   The "Δ8" icon disappears from the display.

► Register the radio partner again.

If the Δ8 icon appears again, that means that the room control module has a severe malfunction. It should be checked by an authorized service technician.

NOTE

If the room control module transmission function is malfunctioning, the valve controllers continuously operate in comfort mode without reducing to economy mode.

System time

The room control modules internal system time is monitored constantly. The "Δ3" icon appears on the display if a system time malfunction is detected in the room control module.

► Reset the time (see page 19).

   The "Δ3" icon disappears from the display.

If the Δ3 icon does not disappear, that means that the room control module has a severe malfunction. It should be checked by an authorized service technician.