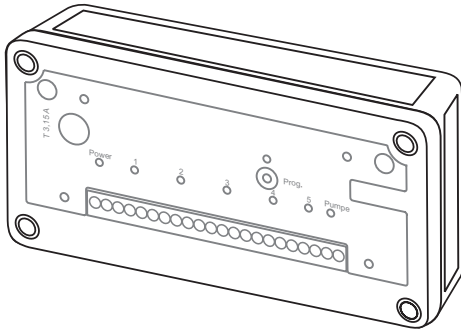


Model



RCH01E5005-01

Technical data

Frequency:	868.30 MHz
Modulation:	FSK
Coding:	Easywave
Supply voltage:	230 V AC 50 Hz
Power consumption:	max. 0.5 W
Outputs:	5 electronic switch outputs
Max. contact load	
- Actuator output:	max. 20 W total load per output
Output 1 - 4:	max. 4 actuators per output
Output 5:	max. 2 actuators, transistor control (only resistive load permitted!)
Pump output:	isolated relay contact (normally open)
Resistive load $\cos\varphi=1.0$:	5.0 A / 1,150 VA
Inductive load $\cos\varphi=0.8$:	4.0 A / 920 VA
Fuse:	T 3.15 A
Level of contamination:	2
Rated impulse voltage:	4 kV
Protection class:	IP55 (as shipped)
Operating temperature:	0 °C to +60 °C
Dimensions (W/L/H):	180/94/57 mm
Weight:	345 g

Scope of delivery

Heating circuit controller, operating instructions, attachment materials

Intended use


This device must only be used for the wireless control of floor heating systems.

The manufacturer is not liable for any damage caused by improper or unintended use!

Safety information



Before connecting this device, please read these instructions carefully!

- **Note: The electrical installation and programming must be performed by a licensed and qualified electrician. Failure to observe this requirement presents a risk of electric shock or fire.**
- The controller and connection terminals will be under a live voltage during the programming process. Avoid touching live parts. 
- Before mounting or maintenance of connecting cables, ensure that the device is electrically disconnected and isolated.
- Observe any applicable laws, standards and regulations as well as manufacturer instructions pertaining to the devices being connected!
- Have any malfunctioning devices inspected by the manufacturer!
- Ensure that children and unauthorized persons cannot use the controller or temperature sensors.
- Do not perform unauthorized modifications to the device!

Function

The RCH01 is a wireless controller that can be used as a heating circuit distributor in floor heating systems.

The controller has five electronic outputs for controlling the temperature of five rooms/control zones. It is possible to connect a maximum of 18 thermoelectric actuators and a circulation pump.

An ST01 wireless temperature sensor in ON/OFF control mode (I/O) can be programmed into each output. If the temperature sensor detects differences relative to a set point temperature value, a sensor telegram is sent and the associated output of the RCH01 is activated. The actuator is opened or closed. Actuator types that are "normally open" or "normally closed" in the absence of current can be used.

If an actuator is opened, the output for the pump is also activated. If all actuators are closed, the pump is deactivated.

BEHAVIOR IN THE EVENT OF A POWER OUTAGE

In the event of a power outage of the controller, all programmed sensor codes will be preserved.

Once the power has been restored, operation will resume as normal. However, the outputs will only be activated again if they receive a valid sensor telegram due to a temperature change, or at the latest after four hours when a control telegram is received.

If you wish to receive a valid sensor telegram immediately and activate the outputs based on the current temperature values, press the F key briefly on all ST01 temperature sensors.

As soon as the ST01 leaves the configuration menu, the currently valid switch command will be sent and the associated output will be switched to the desired position.

BEHAVIOR IN EMERGENCY MODE

If a problem in the connection to the ST01 temperature sensor is found in one or several outputs, the malfunctioning output will switch to "emergency mode".

A malfunction is defined as no valid telegram being received by the ST01 temperature sensor for around 8 hours.

In emergency mode, the affected outputs are alternately activated for 3 minutes and then deactivated for 7 minutes. During the 3-minute activation phase, the pump will also be activated.

If the controller again does not receive a valid telegram from the ST01 temperature sensor, emergency mode will be terminated for the malfunctioning output.

Cutting the supply voltage also enables emergency mode to be terminated. In this connection, please note in the information under "Behavior in the event of a power outage"!

Preparing the controller unit for operation

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A Installing the controller

A1 Selecting a location

The device is deemed to be an installed control device for the purposes of EN 60730-1. The device is designed in particular to be installed in a heating circuit distributor cabinet.



Please note: installing it in a distribution box, metallic housings, in the immediate vicinity of large metallic objects, on the ground or near these can have a negative impact on wireless range.

Where environmental conditions are unfavorable, the external antenna ACC-ANT50-03-21P can be connected to improve wireless reception. This is not included as standard with the product, but can be ordered separately.

A2 Electrical connection

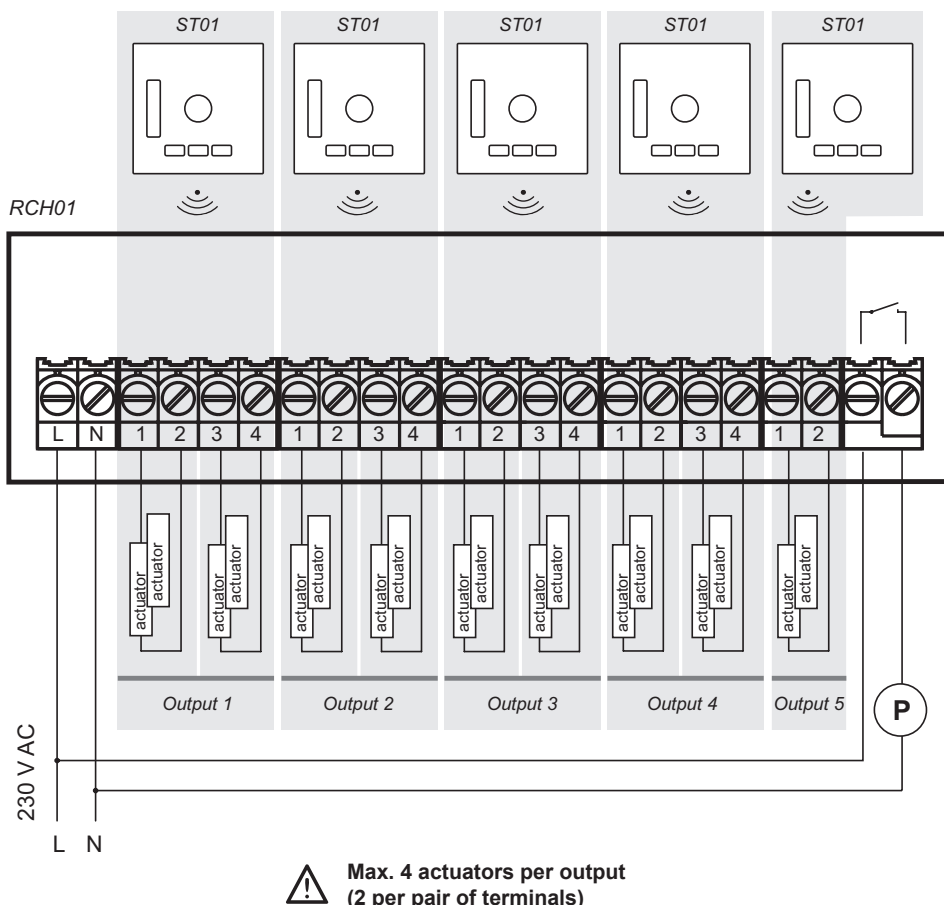


Fig. 1 Connection diagram

A2.1 Mounting the controller

1. Remove the cover of the housing.
2. Fix the controller in place at the installation location. Use the screw threads for the cover screws for this purpose.
3. Cut the graded nub accordingly based on the diameter of the connecting cable.

The cable must fit tightly around the cable.

4. Switch off the power supply.
5. Connect the cable for the power supply, actuators and pump as per connection diagram, Figure 1.

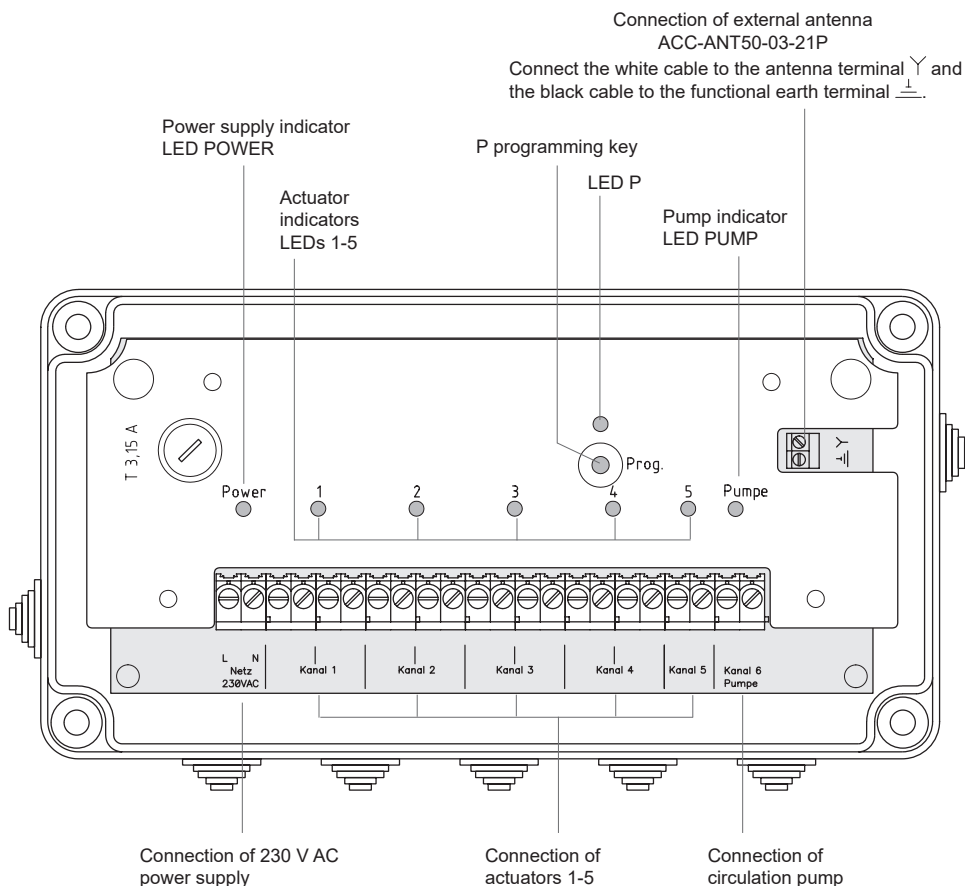
The outputs for the actuators are transistor circuits and only suitable for resistive loads!

6. Connect the external antenna (optional): White wire to the terminal Y and black wire to the terminal $\underline{\text{E}}$.
Caution! Mount the antenna outside of metal housings.
7. Switch on the power supply.
8. Program the transmitter codes of the ST01 temperature sensors into the controller (see section "Programming", "Programming the ST01 temperature sensor").

The controller is under a live voltage during programming! The outputs will be activated as soon as the programming button is pressed. Do not touch the connecting terminal – risk of electric shock!

9. Screw the housing cover back onto the lower part of the housing.

B Device overview



B1 Operating indicators

POWER ON indicator

Once the power supply is switched on, LED POWER will remain green and lit, while LED P will briefly light up red.

LED 1-5 indicators

LEDs	Lit	Output active
LEDs	Off	Output inactive
LED PUMP	Lit	Pump active

Actuator indicators

"Normally closed"

LED 1/2/3/4/5	Lit	Actuator open
LED 1/2/3/4/5	Off	Actuator closed
LED PUMP	Lit	Pump active

"Normally open"

LED 1/2/3/4/5	Lit	Actuator closed
LED 1/2/3/4/5	Off	Actuator open
LED PUMP	Lit	Pump active

LEDs 1-5 for the outputs only indicate the electrical connection state, not the state of the actuators.

Wireless signal indicator

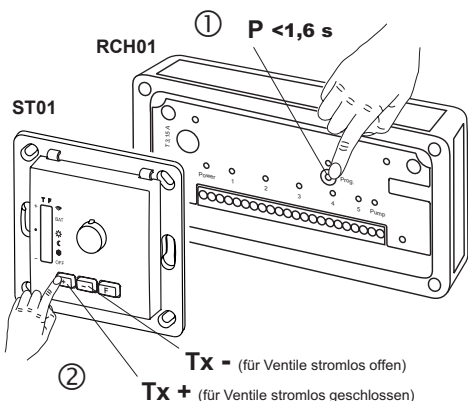
If a wireless signal is registered within range of the controller, the P LED will briefly flash.

C Programming



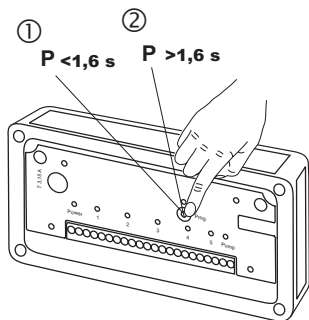
The output is active as soon as the P key is pressed for programming and LEDs 1/2/3/4/5 are lit. Do not touch the connecting terminal – risk of electric shock!

C1 Programming the ST01 temperature sensor



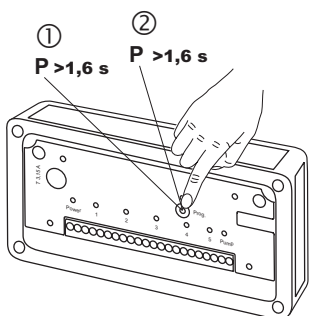
Operate [Press key]	Display	Description
① P briefly < 1.6 s	LED P flashes slowly LED 1 is lit	Keep pressing the P key to select the desired output. The LED of the desired output will light up. The controller remains in programming mode for 30 seconds before switching to operating mode.
② P long > 1.6 s	LED P lights up for 2 seconds	<p>Programming in the transmitter code of the ST01 temperature sensor</p> <p>ST01 TX + or TX -</p> <p>"TX +" for "normally closed" valve type Easywave code A (+) is sent "TX -" for "normally open" valve type Easywave code B (-) is sent</p> <p>Note: The ST01 temperature sensor must be in operating mode, the LEDs must be off.</p> <p>Only one transmitter code can be programmed to each output. Once programmed, the controller will switch to operating mode, all outputs are inactive.</p> <p>If the LED P flickers for around 2 seconds during programming, the transmitter code has already been programmed into the selected output or into another output. It can only be overwritten by a different, currently unused transmitter code, or it must be deleted before being programmed to another output.</p> <p>Each of the outputs will only activate again when they receive a valid sensor telegram after around 4 hours or if the F key is pressed on the ST01 to send a sensor telegram.</p>

C2 Deleting individual transmitter codes



Operate [Press key]	Display	Description
① P briefly < 1.6 s	LED P flashes slowly LED 1 is lit	Keep pressing the P key to select the desired output. The controller remains in programming mode for 30 seconds before switching to operating mode.
② P long > 1.6 s	LED P lights up for 2 seconds	<p>Delete transmitter code for ST01 temperature sensor from selected output</p> <p>The transmitter code has been deleted, the controller switches to operating mode.</p> <p>Each of the outputs will only activate again when they receive a valid sensor telegram after around 4 hours or if the F key is pressed on the ST01 to send a sensor telegram.</p>

C3 Deleting all transmitter codes (RESET)



Operate [Press key]	Display	Description
① P long > 1.6 s	LED P flashes quickly	Controller must not be in programming mode. The controller remains in deletion mode for 30 seconds before switching to operating mode.
② P long > 1.6 s	LED P lights up for 4 seconds	All transmitter codes for the outputs have been deleted. The controller switches to operating mode.

D Troubleshooting

Problem	Indicator	Solution
Controller not receiving wireless signals	LED P not flashing LEDs for outputs not lit	<ul style="list-style-type: none">- Check that temperature sensor is functional (change batteries if necessary)- Program the transmitter code into the controller- Use external antenna
Power supply interrupted	LED POWER not lit	<ul style="list-style-type: none">- Check connections
Fuse has been triggered		<ul style="list-style-type: none">- Connected load too high- Reduce load, use cut-off relay- Replace fuse (T 3.15 A)
Outputs not activated in line with set point temperature value	LED 1/2/3/4/5	<ul style="list-style-type: none">- RCH01 is in emergency mode (see page 1)- Re-establish connection with ST01
Output not activating as expected	LED 1/2/3/4/5	<ul style="list-style-type: none">- Program actuator in correct mode (normally open / normally closed)- Delete transmitter code for affected output and reprogram in correctly
ST01 transmitter code cannot be programmed in	LED P flickers during programming	<ul style="list-style-type: none">- Transmitter code is already programmed into an output. Delete transmitter code and program in again.

E General information

Disposal

Waste electronic equipment must not be disposed of with household waste!

Dispose of the waste equipment via collection facilities for electronic scrap or via your specialist dealer.



Dispose of packaging material in the recycling bins for cardboard, paper and plastic.



Warranty

Within the statutory warranty period, we undertake to rectify free of charge by way of repair or replacement any product defects arising from material or production faults.

Any unauthorized tampering or modifications will render this warranty null and void.

Conformity



Hereby, ELDAT EaS GmbH declares that the radio equipment type RCH01 is in compliance with Directive 2014/53/EU.

The full text of the EU declaration of conformity is available at the following internet address: www.eldat.de

Customer service

If, despite proper handling, the device does not work properly or if the device has been damaged, please contact the manufacturer or your retailer.

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