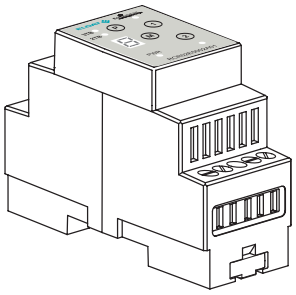
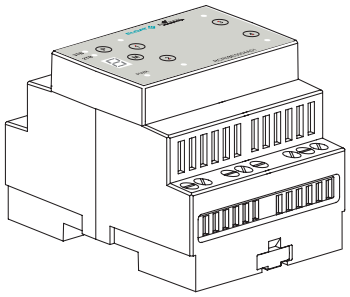
EN DIN Rail receiver RCR03

Models



RCR03E5002A01 **2TE**



RCR03E5004A01 **4TE**

Technical Data

Frequency:	868.30 MHz
Modulation:	FSK
Coding:	Easywave
Power supply:	230 V AC 50 Hz
Output:	2 potential-loaded outputs each with 2 relay contacts
Power consumption:	0.5 W standby 0.8 W relay switched (without load)
Max. contact load:	
- ohmic load cos ϕ=1:	6.0 A / 1,500 VA
- inductive load cos ϕ=0,8:	4.8 A / 1,200 VA
Degree of protection:	IP20
Operating temperature:	-20 °C to +60 °C
Dimensions (B/L/H):	34.5 /89.6/62.8 mm
Weight:	108 g

Technical Data

Frequency:	868.30 MHz
Modulation:	FSK
Coding:	Easywave
Power supply:	230 V AC 50 Hz
Output:	4 potential-free outputs each with 2 relay contacts
Power consumption:	0.5 W standby 0.8 W relay switched (without load)
Max. contact load:	
- ohmic load cos ϕ=1:	6.0 A / 1,500 VA
- inductive load cos ϕ=0,8:	4.8 A / 1,200 VA
Degree of protection:	IP20
Betriebstemperatur:	-20 °C to +60 °C
Dimensions (B/L/H):	70.5 /89.6/62.8 mm
Weight:	186 g

Function

The RCR03 DIN rail receiver is used for control of tubular motors.

Different modes are used for controlling roller shutters and blinds.

Controlling Roller Shutters and Blinds

Roller shutter operating modes (R) generally carry out positioning commands immediately in self-maintained mode. Pressing the transmitter button briefly is all that is needed to move to a position for example or open or close the roller shutter.

In blind operating modes (J), to adjust the slats, each positioning command is initially interpreted as a dead man's command. That means, that the blind will only move for as long as the transmitter button is held down. If the transmitter button is pressed for >1.6 seconds, the control system goes into self-maintained mode and the blind moves independently to a position or an end point.

Terrace Function

The terrace function allows the CLOSE direction of one or several outputs to be locked, therefore preventing accidental lockout. To do this, a separate transmitter must be programmed with the corresponding operating mode. Only transmitters with 2-button-operation (ON/OFF) can be used. If the terrace function is activated with the transmitter, the output only travels in the OPEN direction. If an attempt is made to travel in the CLOSE direction, the command is rejected and the LED for the corresponding channel flashes for 2 seconds.

Positionen

Roller shutters and blinds can both be programmed with up to three positions.

These can then be specifically approached with the relevant programmed transmitter.

Positions are always approached from above to enable maximum precision.

To be able to move positions, a run-time measurement for the connected roller shutter (or blind) is needed first.

Adjustable Run-time

The run-times for each output in OPEN and CLOSE directions are individually measured and saved. The factory default setting is a run-time of 90 seconds.

The maximum run-time that can be set is approx.: 1h:50m.

Adjustable Reversing Time

For blind operating mode (J), each output can be programmed with a separate reversing time. If the reversing time has been programmed, after each STOP signal received during closing (CLOSE), the blind slats move in the OPEN direction for the set amount of time. Also, each time the position is changed, the blind reverses as soon as the position has been reached. So, the desired slat angle can be attained automatically after every position change. In default factory settings the reversing mode is deactivated.

Scope of Delivery

DIN Rail receiver RCR03 2TE or RCR03 4TE, operating manual

Intended Use

The unit may only be used as a wireless receiver for switching electrical devices. To be operated with Easywave wireless transmitters.

The manufacturer shall not be liable for any damage caused by improper or non-intended use.

Safety Advice

Before installing the device, carefully read through this operating manual!

Warning! The electrical installation may only be performed by an authorised and qualified electrician. If it is not, there is a risk of electric shock or fire.

The device shall only be operated at AC voltages of 230 V / 50 Hz.

The devices are part of a building installation. Observe the valid laws, standards and regulations as well as the manufacturer's instructions regarding the devices to be controlled!

Operate the devices only with loads that do not exceed the specified power limits!

This device is only intended for indoor use in dry and dust-free rooms.

Have faulty devices checked by the manufacturer and Do not make any modifications to the device!

Setting up the Receiver

A Installing the Receiver

A1 Mounting the Receiver

Follow the installation instructions for installations in distribution systems.

The device is intended for installation on a standard DIN rail (35 x 7.5 mm). Pull out the slide to allow fixing through mounting points.

Only a qualified electrician may install, connect in accordance with the connection diagram and set up the receiver.

1. Switch off the power supply.
2. Mount the RCR03 onto the rail.
3. Connect the cables for the power supply and for the devices in accordance with the connection diagram (see page 2).
3. Switch on the supply voltage.
4. Programme the receiver according to the operating manual (see pages 4-5).

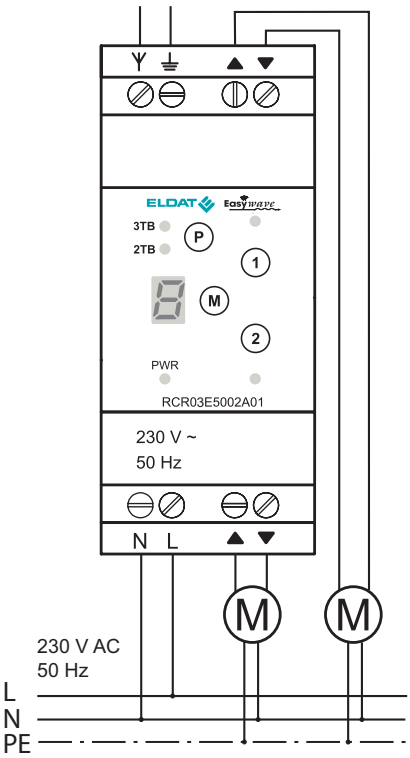
In unfavourable environmental conditions, the external antenna ACC-ANT50-03-21P can be used to improve wireless reception. This is not included in the delivery and can be ordered separately.

Note:
Mount the antenna away from metal housing.

A2 Electrical Connection

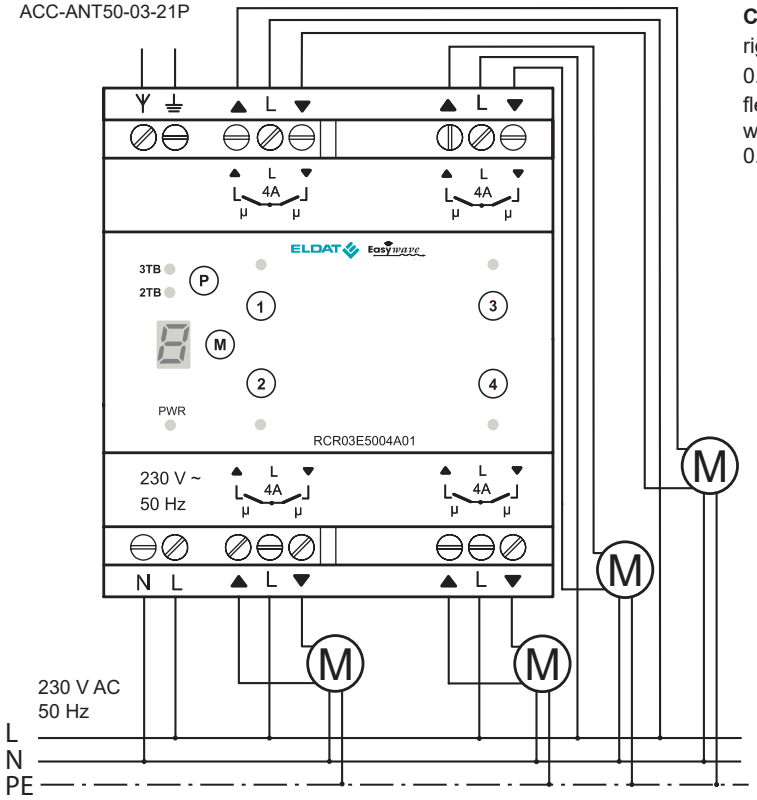
Connection Diagram RCR03 2TE

Connection external antenna
ACC-ANT50-03-21P



Connection Diagram RCR03 4TE

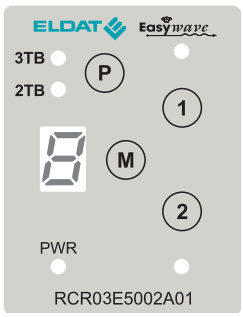
Connection external antenna
ACC-ANT50-03-21P



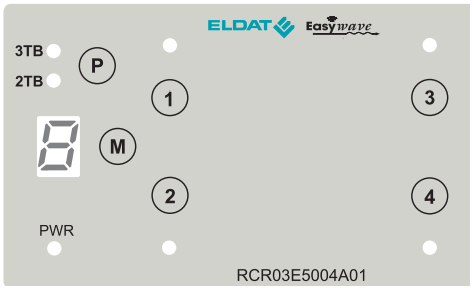
Cable cross-sections
rigid cables:
0.14 – 2.5 mm²
flexible cables with wire end ferrules:
0.14 – 1.5 mm²

B Operation

B1 Operating and Display Elements



RCR03 2TE



RCR03 4TE

DISPLAY		Operating Status	Programming Mode
LED GREEN			
PWR	Power	Supply voltage is on, LED is lit.	
LED RED			
3TB	3-button operation	LED 3TB flashes when a wireless signal is detected.	Displays the selected operation. Signals the programming or delete mode.
2TB	2-button operation		
1	LED output 1 flashes	Output 1 activated	Displays the output selected for programming.
2	LED output 2 flashes	Output 2 activated	
3	LED output 3 flashes	Output 3 activated	
4	LED output 4 flashes	Output 4 activated	
Digital Display			
0....L		Upon receiving a programmed transmission code, the corresponding operating mode is displayed for 2 seconds.	Displays the selected operating mode.

OPERATION		Operating Status	Programming Mode
P	Programming button		Start programming mode, select operation
M	Mode button		Select operating mode
1	Channel 1 button	Operate output 1 manually (OPEN/CLOSE alternately)l)	Select output 1
2	Channel 2 button	Operate output 2 manually (OPEN/CLOSE alternately)	Select output 2
3	Channel 3 button	Operate output 3 manually (OPEN/CLOSE alternately)	Select output 3
4	Channel 4 button	Operate output 4 manually (OPEN/CLOSE alternately)	Select output 4

When changing the programming mode, all outputs are switched off, the HOLD function is deactivated and no control is possible during programming.
When returned to operating mode, the outputs remain switched off.

B Operation

B2 Operating Modes

Press the P button to start the programming and to specify whether you want to programme a transmitter in 3-button operation or in 2-button operation.

Then press the M button repeatedly to select the desired operating mode. The operating mode currently selected is shown in the digital display.

Once you have selected the output to be programmed, the desired transmission code can be programmed with the selected combination of operation and operating modes. To do this, simply press the button for the transmitter that you wish to programme.

3-Button Operationg

In 3-button operation (3TB), transmitter button A has the function OPEN (roller shutters/blinds are opened), transmitter button B has the function CLOSE (roller shutters/blinds are closed) and buttons C and D (if present) have the function STOP (movement is stopped).

For this operation, a transmitter with at least three connected buttons is necessary. Only one transmission button must be programmed in the receiver, the code for additional buttons is assigned automatically.

2-Button Operation

In 2-button operation (2TB), transmitter button A has the function OPEN (roller shutters/blinds are opened), transmitter button B has the function CLOSE (roller shutters/blinds are closed). The movement is stopped by pressing the button for the opposite direction.

For this operation, a transmitter with two connected buttons is sufficient.

Only one transmission button must be programmed in the receiver, the code for additional buttons is assigned automatically.

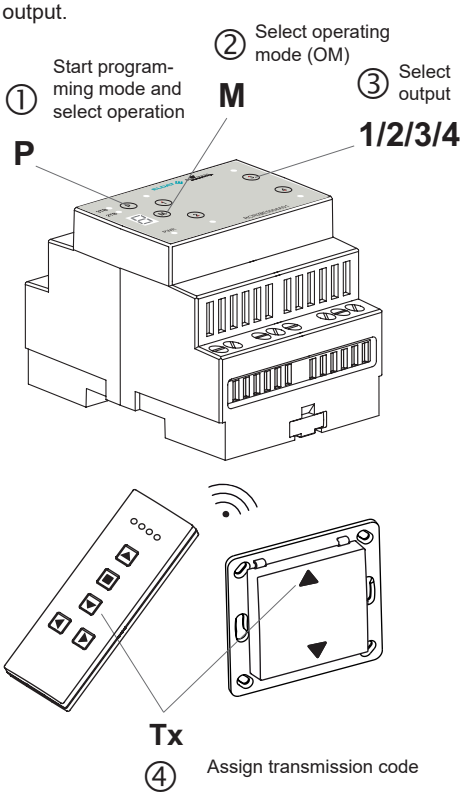
Operating Mode (OM)			**3-Button operation** (3TB) transmitter button				**2-Button operation** (2TB) transmitter button			
			A	B	C	D	A	B	C	D
Standard Control										
0	R 120 s	**Roller shutter run-time 120 seconds** Output activated for 120 seconds. Roller shutter moves in the direction selected.	OPEN	CLOSE	STOP	STOP	OPEN	CLOSE	OPEN	CLOSE
							STOP with the opposite direction			
1	J 120 s	**Blind run-time 120 seconds** 1) Pressing the button <1.6 s = slat adjustment Output activated for as long as the button is pressed 2) Pressing the button >1.6 s = self-maintained for 120 s Output activated for 120 s, blind moves in the direction selected	OPEN	CLOSE	STOP	STOP	OPEN	CLOSE	OPEN	CLOSE
			Slat adjustment				STOP with the opposite direction <1,6 s: Slat adjustment			
Run-time Dependent Control		To be able to use these functions, a run-time must be measured!								
2		**Measure run-time** (see section C2, page 4)								
3	R 100 %	**Roller shutter 100% run-time** Output activated for programmed run-time, roller shutter moves in the direction selected.	OPEN	CLOSE	STOP	STOP	OPEN	CLOSE	OPEN	CLOSE
							STOP with the opposite direction			
4 5 6	R Pos. 1 R Pos. 2 R Pos. 3	**Change roller shutter position** (see section C4, page 5) Direction OPEN (A): roller shutter moves into the upper end position and switches off. Direction CLOSE (B): roller shutter moves into the programmed position (POS). Different positions can be programmed for each output. ☝ The roller shutter opens completely before moving to the programmed position. Programmed positions are always approached from the upper end position.	OPEN	POS	STOP	STOP	OPEN	POS	OPEN	POS
							STOP with the opposite direction			
7	J 100 %	**Blind 100% run-time** 1) Pressing the button <1.6 s = slat adjustmentg Output activated for as long as the button is pressed. 2) Pressing the button >1.6 s = self-maintained for the programmed run-time Output activated for programmed run-time, blind moves in the direction selected.	OPEN	CLOSE	STOP	STOP	OPEN	CLOSE	OPEN	CLOSE
			<1,6 s: Slat adjustment				STOP with the opposite direction <1,6 s: Slat adjustment			
8 9 A	J Pos. 1 J Pos. 2 J Pos. 3	**Change blind position** (see section C4, page 5) 1) Pressing the button <1.6 s = slat adjustment Output activated for as long as the button is pressed. 2) Pressing the button >1.6 s Direction OPEN (A): Blind moves into the upper end position and switches off. Direction CLOSE (B): Blind moves into the programmed position (POS). Different positions can be programmed for each output. ☝ The blind opens completely before moving to the programmed position. Programmed positions are always approached from the upper end position.	OPEN	POS	STOP	STOP	OPEN	POS	OPEN	POS
			<1,6 s: Slat adjustment				STOP with the opposite direction <1,6 s: Slat adjustmentg			
E	J RT	**Measure reversing time** (see section C3, page 5) After every STOP command received whilst closing (CLOSE), the blinds move in the OPEN direction for the time specified. When changing positions, the blinds also reverse as soon as the position has been reached (only with operating modes 7 to A).								
C	max. 36 s	**DEAD MAN** The outputs are only activated for as long as the button is held down (max. 36 sec). In 3TB programmed transmitters, the STOP button (C/D) does not have a function.	OPEN	CLOSE	No function	No function	OPEN	CLOSE	OPEN	CLOSE
H	HOLD	**Terrace function** (see section “Function” page 1) In this function, programmed transmitters can lock the output in the CLOSE direction.	active	inactive	active	inactive	active	inactive	active	inactive
L	DEL	**Delete or RESET function** (see section C5, page 6 and section C6, page 7)								

C Programming

C1 Programming the Transmitter

The transmitter can be programmed in 3-button or 2-button-operation. If a previously programmed transmitter is programmed again in the same output, the previous operating mode is overwritten with the new operating mode.

32 transmission codes can be programmed per output.



		Operation [Press the button]	Display	Description
Programming 3TB	①	**P** 1x briefly	LED 3TB flashes	Programming mode 3-button operation started.
	②	**M** repeatedly	OM number in digital display	Select operating mode.
	③	**1/2/3/4**	LED 1/2/3/4 and LED 3TB flash	Select output. Only one output can be selected, change as often as required.
	④	Transmitter button **Tx** 1x briefly	LED 3TB und LED des gewählten Ausgangs leuchten	Transmission code is learned. When all the LEDS go out, the receiver is ready for operation again.
Programming 2TB	①	**P** 2x briefly	LED 2TB flashes	Programming mode 2-button operation started.
	②	**M** repeatedly	OM number in digital display	Select operating mode.
	③	**1/2/3/4**	LED 1/2/3/4 and LED 2TB flash	Select output. Only one output can be selected, change as often as required.
	④	Transmitter button **Tx** 1x briefly	LED 3TB and LED of the selected output light up	Transmission code is learned. When all the LEDS go out, the receiver is ready for operation again.

If no buttons are pressed within 30 seconds, the RCR03 automatically switches back to operating mode. The settings are not saved.

Programming can be cancelled by pressing the P button several times.
The order is: 3TB --> 2TB --> Operating mode. In operating mode, all red LEDS and the display are off, as long as no output is activated.

C2 Run-time Measurement

The run-time measurement is mandatory for all run-time dependent operating modes (e.g. moving position) and must be carried out separately for each output.

As soon as the run-time measurement is activated (point 5), the roller shutter positioning commands are carried out by the programmed transmitters in self-maintained mode.

Now move the roller shutter to both end positions and give a STOP command as soon as the roller shutter has reached the end position (regardless of whether the roller shutter has already stopped independently).

The more accurately you give the STOP command when it reaches the end position, the more accurate the positions will be later.

The roller shutter must complete the full journey once in both directions (OPEN and CLOSE). It is best to start the measurement when the roller shutter is already in an end position.

You can repeat the journeys as often as you like, as long as the run-time measurement mode is active. The last measurement for each direction is saved.

If the run-time measurement is started with a transmitter, it must be completed with the same transmitter. Other transmitters will not be recognised for the duration of the measurement.

After a reset, the default run-time is 90 seconds for both directions.

	Operation [Press the button]	Display	Description
1.	Fully open or close roller shutter/blind		
2.	**P** 1x briefly	LED 3TB flashes	Programming mode started.
3.	**M** repeatedly	2	Select run-time measurement (OM2).
4.	**1/2/3/4**	LED 1/2/3/4 and LED 3TB flash	Select output. Only one output can be selected, change as often as required.
5.	**P** > 1,6 s	LED 3TB and LED 1/2/3/4 flash very slowly Display: rotating circles	Run-time measurement has started
6.	**TX**		Measure run-time with programmed transmitter. Move the roller shutter with a programmed transmitter to both end positions. Give a STOP command as soon as the roller shutter has reached the end position.
7.	**P** > 1,6 s	LED 3TB + 2TB and LED 1/2/3/4 flash 2 s	Run-time measurement has ended and the run-time is saved. When all the LEDS go out, the receiver is ready for operation again.

To perform the run-time measurement, at least one transmitter must be programmed in a “regular” operating mode.

The run-time measurement does not represent an electronic end position! Due to synchronisation, the programmed end positions are often exceeded by a few percent.

Run-time measurement mode can be cancelled by briefly pressing the **P** button after point 6. Should the run-time measurement be cancelled, all the times already measured are not saved and the control system goes back into programming mode.

C Programming

C3 Measure Reversing Time

The reversing time determines how long the blind automatically moves for in the OPEN direction after receiving a STOP signal. This time applies to ALL blind operating modes.

As soon as a reversing time is programmed, on a CLOSE journey in a blind operating mode, the output reverses as soon as a STOP signal is received.

It also reverses when a set position is reached. However, there is no reversing when the end position is reached.

As soon as the reversing time measurement is activated (point 5), the blind performs the positioning command in DEAD MAN'S mode.

Now move the blind for the desired time in the OPEN direction. It is best to start the measurement when the blind is in an intermediate position and the slats are completely closed.

You can repeat the measurement as often as you like and move the blind in both directions as desired. When the measurement is complete (point 7), the last measured run-time in the OPEN direction is saved.

If the reversing time measurement is started with a transmitter, it must be completed with the same transmitter. Other transmitters will not be recognised for the duration of the measurement.

After a reset, the default reversing time is 0 seconds. You can also restore this value by performing a reversing time measurement without moving the blind.

Operation [Press the button]		Display	Description
1.	Put blind in intermediate position		Move the blind with a programmed transmitter into any intermediate position.
2.	**P** 1x briefly	LED 3TB flashes	Programming mode started.
3.	**M** repeatedly		Select reversing time measurement
4.	**1/2/3/4**	LED 1/2/3/4 and LED 3TB flash	Select output. Only one output can be selected, change as often as required.
5.	**P** > 1,6 s	LED 3TB and LED 1/2/3/4 flash very slowly Display: upper/lower bars flash	Reversing time measurement has started
6.	**TX**		Specify desired reversing time with programmed transmitter. Time of the last OPEN movement is saved.
7.	**P** > 1,6 s	LED 3TB + 2TB and LED 1/2/3/4 flash 2 s Display: for 2 s	Reversing time measurement has ended and the reversing time is saved. When all the LEDS go out, the receiver is ready for operation again.

The reversing time must be programmed separately for each output!

To perform the reversing time measurement, at least one transmitter must be programmed in a "regular" operating mode.

Reversing time measurement mode can be cancelled by briefly pressing the **P** button after point 5. Should the run-time measurement be cancelled, all the times already measured are not saved and the control system goes back into programming mode.

C4 Programming Positions

Each output can be programmed with three separate positions for roller shutters and three separate positions for blinds.

Programmed positions will then always be approached if a CLOSE command is received from a programmed transmitter in the corresponding positioning operating mode. (In blind operating modes, the position is approached after pressing the CLOSE direction button on the transmitter for 1.6 seconds)

To do this, the roller shutter first opens fully and then moves down to the programmed position.

To increase the precision of the programmed position, first fully open the roller shutter and then move from the top to the desired position. Then start the position programming.

You can continue to change the position of the roller shutter during the programming.

The position that is saved is the position that it is in when the programming finishes (point 6).

After a reset, the default position is 100% CLOSED.

Operation [Press the button]		Display	Description
1.	Move roller shutter/blind to the desired position		Move the roller shutter/blind with a programmed transmitter to the upper end position in an intermediate position.
2.	**P** 1x briefly	LED 3TB flashes	Programming mode started
3.	**M** repeatedly	OM number in digital display 	Select the operating mode. (only possible with OM 4, 5, 6, 8, 9 or A)
4.	**1/2/3/4**	LED 1/2/3/4 and LED 3TB flash	Select output. Only one output can be selected, change as often as required.
5.	**P** > 1,6 s	LED 3TB and LED 1/2/3/4 flash, Display: centre line flashes	"Programming positions" has started If necessary, correct the position of the roller shutter/blind with a programmed transmitter.
6.	**P** > 1,6 s	LED output + 3TB + 2TB light up	Current position of the roller shutter/blind is saved. When all the LEDS go out, the receiver is ready for operation again.

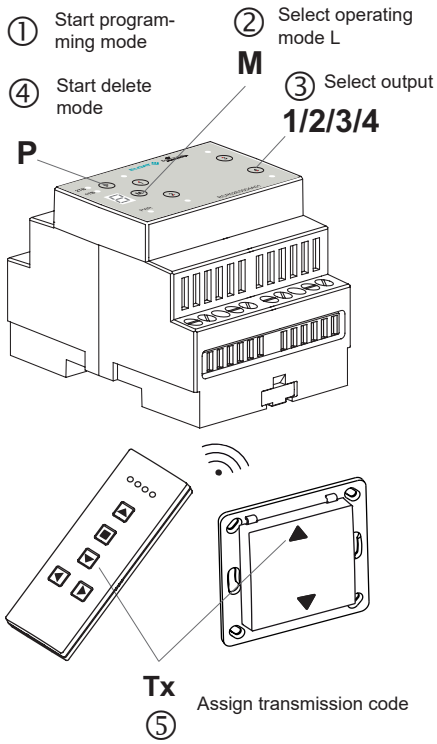
To be able to programme a position, first a run-time measurement must be carried out for the corresponding channel.

If the run-time measurement is missing, the LED for the selected output flashes when an attempt is made to programme a position. In this case, the programming is cancelled.

Position programming can be cancelled by briefly pressing the **P** button after point 5. Should the position programming be cancelled, the current position is not saved and the control system goes back into programming mode.

C5 Deleting Transmitters

In delete mode, individual transmitters can be deleted from the memory of an output.



Operation [Press the button]		Display	Description
①	**P** 1x briefly or **P** 2x briefly	LED 3TB flashes LED 2TB flashes	Programming mode started.
②	**M** repeatedly	L	Select delete function L.
③	**1/2/3/4**	LED 1/2/3/4 and LED xTB flash	Select output. Only one output can be selected, change as often as required.
④	**P** > 1,6 s	LED 3TB + 2TB and LED 1/2/3/4 flash quickly	Delete mode started.
⑤	Transmitter button **Tx** 1x briefly	LED 3TB + 2TB and LED 1/2/3/4 light up	Transmitter deleted from the selected output. When all the LEDS go out, the receiver is ready for operation again.

If the transmitter is programmed in several outputs, it must be deleted individually from each output as necessary.

If an attempt is made to delete a transmitter that is not programmed into the selected output, the LEDS flash quickly and the receiver remains in delete mode.

If no buttons are pressed within 30 seconds, the RCR03 automatically switches back to operating mode.

Delete mode can be cancelled by briefly pressing the **P** button after point 4. If the operation is cancelled, the control system reverts back to programming mode.

C6 RESET

A reset must be performed individually for each output.

All programmed transmitters are deleted and all run-times or positions for the respective output are reset.

Operation [Press the button]		Display	Description
①	**P** 1x briefly or **P** 2x briefly	LED 3TB flashes LED 2TB flashes	Programming mode started.
②	**M** repeatedly	L	Select delete function L.
③	**1/2/3/4**	LED 1/2/3/4 and LED xTB flash	Select output. Only one output can be selected, change as often as required.
④	**P** > 1,6 s	LED 3TB + 2TB and LED 1/2/3/4 flash quickly	Löschmodus gestartet
⑤	**P** > 1,6 s	LED 3TB + 2TB and LED 1/2/3/4 light up	All transmitters from the selected output are deleted and all times are reset to the factory default settings. When all the LEDS go out, the receiver is ready for operation again.

If no buttons are pressed within 30 seconds, the RCR03 automatically switches back to operating mode. The settings are not saved.

Delete mode can be cancelled by briefly pressing the P button after point 4. If the operation is cancelled, the control system reverts back to programming mode.

D General Information

Disposal

Waste electrical products may not be disposed of with household waste!

Dispose of the waste product at a designated collection point for electronic waste or via your specialist retailer.

Dispose of the packaging material in the recycling containers for cardboard, paper and plastics.

Warranty

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

Any unauthorised tampering with, or modifications to, the product shall render this warranty null and void.

Conformity

Hereby, ELDAT GmbH declares that the radio equipment type RCR03 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 correct handling, faults or malfunctions occur or in case of damage, please contact your retailer or the manufacturer.

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