

Operating Instructions

Cleaning

- Carefully wipe the case with a damp lint free cloth.
- Do not use cleansing agents containing organic solvents. These are dangerous to your health and may damage the surface of the casing.

Disposal

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

Dispose of the waste product via a collection point for electronic scrap or via your specialist dealer.



Put the packaging material into the recycling bins for cardboard, paper and plastics.



Warranty

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

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

Conformity

This product conforms to the basic requirements of the R&TTE Directive 1999/5/EC.



For use in: EU/CH/FL/IS/N

The Declaration of Conformity can be found on the Internet at: www.eldat.de.

Customer Service

If, despite correct handling, faults or malfunctions occur or if the product was damaged, please contact the company at the address below:

ELDAT GmbH
Im Gewerbepark 14
15711 Zeesen/Deutschland
Telefon: + 49 (0) 33 75 / 90 37-310
Telefax: + 49 (0) 33 75 / 90 37-90
Internet: www.eldat.de
E-Mail: info@eldat.de



Repeater RTR01

RTR01-4101M-02
RTR01-4101M-05

Operating Instructions

12 V DC
230 V AC



Connection Diagram

Fig. 1 - RTR01-4101M-05 (230 V AC)

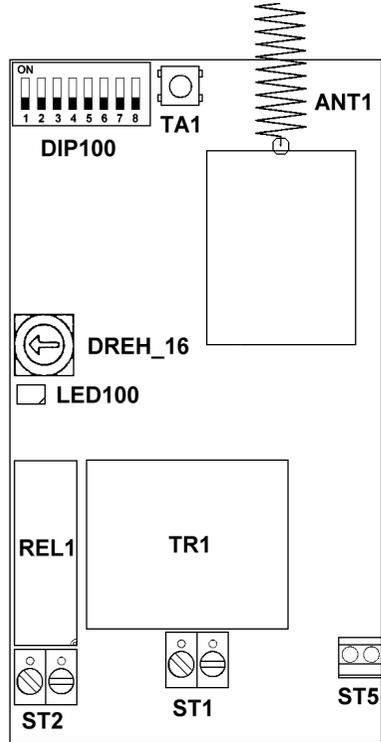
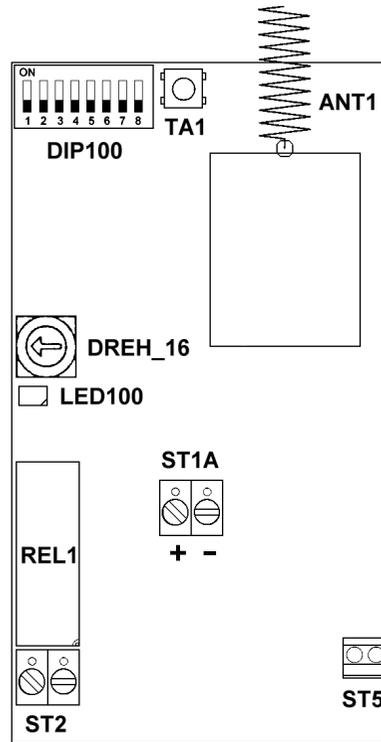


Fig. 2 - RTR01-4101M-02 (12 V DC)



Power supply:	ST1 ST1A	Connection 230 V AC Connection 12 V DC
Output:	ST2	Relay output NO
Input:	ST5	Input for external button
Settings:	DIP100 DREH_16 TA1	Setting for transmission level / transmission delay Setting operation mode Learn-telegram button
	LED100 TR1	Mode indicator Mains transformer

Learning Telegrams



Warning!
While being programmed, the RTR01-4101M-05 repeater is live! Do not touch the connecting terminal ST1!

Operation mode: DREH_16 switch position

LEARN_ACKNOWLEDGEMENT	2
LEARN_ON	3
LEARN_OFF	4

(see chapter „Operation Modes“)

Learning telegram:

- Set the DREH_16 rotary switch to the suitable operation mode 2, 3 or 4.
- Press button TA1 for approx. 2 s, until LED100 briefly flashes.
- Release button TA1.
- Press the hand transmitter button to be learned within 30 s.

When the LED100 lights up for approx. 2 s, the telegram of the hand transmitter has been learned. A different telegram can be learned for each operation mode.

Deleting Telegrams



Warning!
While being programmed, the RTR01-4101M-05 repeater is live! Do not touch the connecting terminal ST1!

Operation mode: DREH_16 switch position

DELETE_ON_OFF_ACKNOWL.	5
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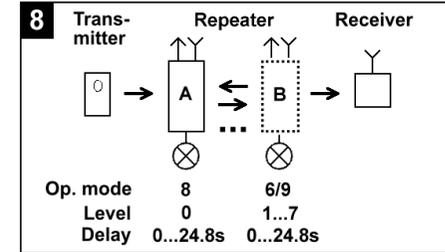
(see chapter „Operation Modes“)

Attention: In this operation mode all memorized telegrams are deleted.

- Set the DREH_16 rotary switch to operation mode 5.
- Press button TA1 for approx. 2 s, until LED100 briefly flashes.
- Release button TA1.

As soon as LED100 lights up for approx. 2s all telegrams have been deleted.

Application (together with other repeaters):
(Care-) emergency calls, interference signals, switching processes with return signal and with local acknowledgement, monitoring of a radio line between several repeaters.

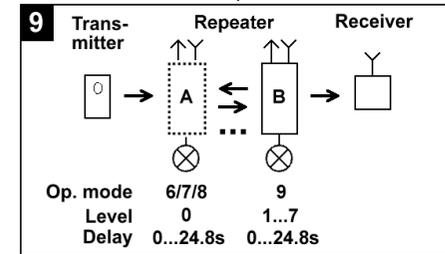


9: MIRROR

(Only repeaters with level setting 1...7)

Function: All repeater telegrams coming from a lower level are mirrored after the preset time delay. In addition all repeater telegrams switch the relay on, only a telegram learned under switch setting 4 (LEARN_OFF) switches the relay off.

Application (together with other repeaters):
(Care-) emergency calls, interference signals, switching processes with return signal and with local acknowledgement, monitoring of a radio line between several repeaters.



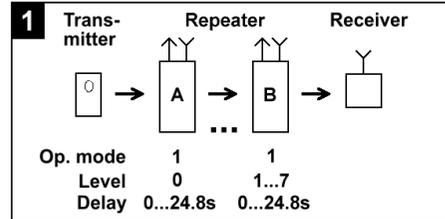
10: ON_IMPULSE_ACKNOWLEDGEMENT

In case the repeater receives a telegram learned under switch setting 3 (LEARN_ON), a relay is triggered and an acknowledgement telegram which was learned under switch setting 2 is transmitted back.

1: ONLY_REPEATER (factory setting)

Function: The repeater transmits every received telegram again after the preset time delay.

Application: Retransmission or transmission amplification of ELDAT telegrams.



2: LEARN_ACKNOWLEDGEMENT

Learning a telegram which after reception is sent back as an acknowledgement telegram in the operation modes ON_OFF_ACKNOWLEDGEMENT and ON_OFF_LOG_ACKNOWLEDGEMENT (see "Learning Telegrams").

3: LEARN_ON

Learning a telegram which after reception switches the relay on (see "Learning Telegrams").

4: LEARN_OFF

Learning a telegram which after reception switches the relay off (see "Learning Telegrams").

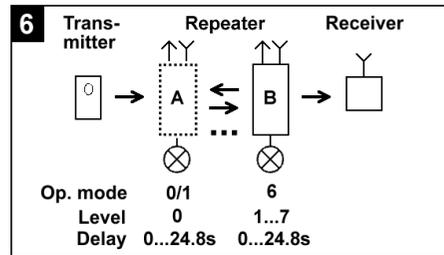
5: DELETE_ON_OFF_ACKNOWLEDGEM.

All learned telegrams are deleted (see "Learning Telegrams").

6: ON_OFF_ACKNOWLEDGEMENT (Only repeaters with level setting 1...7)

Function: The repeater relays every telegram received after the preset time delay. When a telegram which was learned under switch setting 3 (LEARN_ON) or 4 (LEARN_OFF) is received, the telegram learned under switch setting 2 (LEARN_ACKNOWLEDGEMENT) is sent additionally.

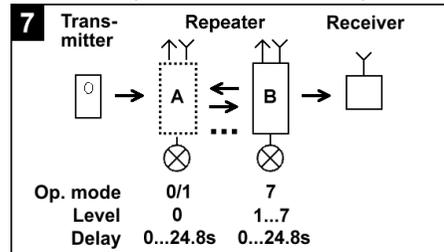
Application: Monitoring of a transmission path between several repeaters, switching process with return signal.



7: ON_OFF_LOG_ACKNOWLEDGEMENT (Only repeaters with level setting 1...7)

Function: The repeater relays every received telegram after the preset time delay. When a telegram is received which was learned under switch setting 3 (LEARN_ON) and afterwards a telegram is received which was learned under switch setting 4 (LEARN_OFF), the telegram learned under switch setting 2 (LEARN_ACKNOWLEDGEMENT) is sent additionally.

Application (together with other repeaters): (Care-) emergency calls, interference signals, switching processes with return signal and with local acknowledgement, monitoring of a transmission path between several repeaters.



8: INPUT_SEND_A_TELEgram (Only repeaters with level setting 0)

Function: When the repeater receives a telegram learned under switch setting 2 (LEARN_ACKNOWLEDGEMENT), a relay is triggered.

When the repeater receives a telegram learned under switch setting 3 (LEARN_ON) or 4 (LEARN_OFF), the corresponding relay is triggered (ON or OFF).

Technical Details

Frequency:	433 MHz
Range:	approx. 350 m (free field conditions)
Power Supply:	
RTR01-4101M-02:	12 V DC ± 20 %
RTR01-4101M-05:	230 V AC ± 10 %
Power Consumption:	
RTR01-4101M-02:	approx. 1 VA
RTR01-4101M-05:	approx. 3 VA
Relay Output:	floating (normally open)
Maximal Load:	230 V AC / 1.800 VA bzw. 30 V DC / 240 W
Degree of Protection	IP65
Operating Temperature:	-20 °C to +60 °C
Dimensions:	70 x 162 x 38 mm
Weight:	
RTR01-4101M-02:	approx. 100 g
RTR01-4101M-05:	approx. 200 g

Intended Use

The repeater is exclusively developed and manufactured as a receiver and transmitter module for 48-bit telegrams!

The manufacturer does not assume any liability for damage caused as a result of improper or non-intended use!

General Information

The repeater works within the 433 MHz range which is also used by other radio services. The operation and range can therefore be affected by devices working on the same or an adjacent frequency.

The reception quality can be affected by a number of factors:

- location
- equipment and systems without interference suppression
- other transmitters within the same frequency range
- atmospheric conditions and other factors.

In case of malfunctions, contact your specialist dealer or the manufacturer.

Safety Advice

 Before connecting and operating the unit, carefully read these operating instructions! We will not accept any liability for personal injury or damage to property caused by failure to observe the operating instructions and in particular the safety advice!

Caution! The device may only be installed and started up by a qualified electrician! Keep to the specified operating voltage during installation!

 **Warning!** While being programmed, the RTR01-4101M-05 repeater is live! Do not touch the connecting terminal ST1! Use only suitable tools!

Have faulty units checked by the manufacturer!

Do not make any unauthorized alterations or modifications to the unit!

Scope of Delivery

Repeater
Mounting accessories (screws and mollies)
Operating instructions

Function

The repeater is a 433 MHz receiver and transmitter module. It can be used to increase the transmission range.

The repeater receives 48-bit telegrams with ELDAT coding and passes them on to a subsequent repeater or receiver. This way the transmission range is extended over a longer distance.

By setting a transmission level and a transmission delay, it is possible to use several repeaters (cascade operation) to extend the range still further.

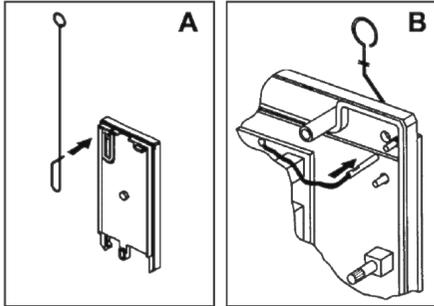
Operating Instructions

Connecting and Mounting

1. Unscrew the housing cover.
2. According to the connection diagram connect the power supply cable to the connecting terminal ST 1 (230 V AC - Fig. 1) or ST1A (12 V DC - Fig. 2).

Max. load:

- The max. load for the relay contacts is:
230 V AC 1.800 VA
30 V DC 240 W



3. Connect the rod antenna (Fig. A).
4. Connect the arial wire (Fig. B).
5. Mount the housing bottom at the chosen location.
6. Put the housing cover back on.

Notes:

- Do not mount the repeater in the proximity of metal parts.
- If reception is weak or interference occurs, realign the antenna or install the device in a different location.
- Before finally fastening the repeater in place, initiate a trial run to optimize the location.

Start-Up

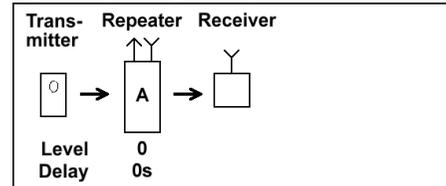
Once the supply voltage is switched on, the receiver is ready for operation:

1. Transfer the hand transmitter telegram to your receiver (learning procedure). For this read the operating instructions of the receiver.
2. Set up the transmission path in accordance with figure 3 or 4.
3. Transmit a telegram to the repeater.
4. The repeater retransmits the incoming telegram to the receiver.

Note:

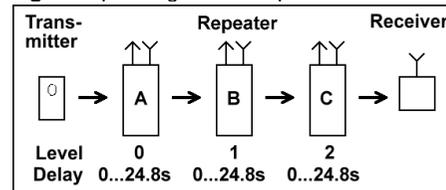
Only repeaters with the level set to 0 can receive and relay transmitter telegrams.

Fig. 3 – Operating one repeater



To operate with several repeaters, the **transmission level** and, if necessary, **transmission delay** must be set. For this read the relevant chapters.

Fig. 4 - Operating several repeaters



Setting the Transmission Level

In case several repeaters are supposed to be used together (cascade operation), the levels are important to make sure that a telegram is sent in the correct direction.

Operating Instructions

A telegram is always transmitted to a repeater of the next highest level. Acknowledgement telegrams are transmitted in the opposite direction.

Notes:

- Only repeaters with the level set to 0 can receive hand transmitter telegrams.
- Therefore, the first repeater should always be set to level 0.
- From repeater to repeater the level setting needs to be increased by 1 (see figure 4).

With the DIP100 dip switch the level of the repeater is set via DIP 1-2-3. All switches set to OFF signify level 0 and all switches set to ON level 7.

DIP100	1	2	3	Level
-	-	-	-	0
ON	-	-	-	1
-	ON	-	-	2
ON	ON	-	-	3
-	-	ON	-	4
ON	-	ON	-	5
-	ON	ON	-	6
ON	ON	ON	-	7

„-“ = Switch Position OFF

Setting the Transmission Delay

The transmission delay causes the received signal to be stored in the repeater for a brief phase. After the set time delay it is transmitted to the next repeater on the same frequency.

In order to exclude interferences on longer ranges, while using several repeaters on the same transmission level, a different time delay should be set for each repeater.

The time delay can be set on the DIP100 dip switch via DIP 4-5-6-7-8 in 800 ms steps (Table 2).

DIP100	4	5	6	7	8	Delay
-	-	-	-	-	-	0 s
	ON	-	-	-	-	0.8 s
	-	ON	-	-	-	1.6 s
		ON	ON	-	-	2.4 s
	-	-	ON	-	-	3.2 s
	ON	-	ON	-	-	4 s
					to	
	ON	ON	ON	ON	ON	24.8 s

„-“ = Switch Position OFF

Operation Modes

With the DREH_16 rotary switch you can set the operation modes of the repeater:

Operation Mode:	DREH_16 switch position
PULSE_OPERATION	0
ONLY_REPEATER	1
LEARN_ACKNOWLEDGEMENT	2
LEARN_ON	3
LEARN_OFF	4
DELETE_ON_OFF_ACKNOWLEDG.	5
ON_OFF_ACKNOWLEDGEMENT	6
ON_OFF_LOG_ACKNOWLEDGEM.	7
INPUT_SEND_A_TELE	8
MIRROR	9
ON_IMPULSE_ACKNOWLEDGEM.	10

0: PULSE OPERATION

Function: The repeater relays every received telegram after the preset time delay. In case a telegram is received which has been learned under switch setting 2 or 3, the relay output is triggered for approx. 1 s.

Application: Function and reception test of a repeater / repeater chain.

