

#### Customer Service

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

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#### Repeater RTR01

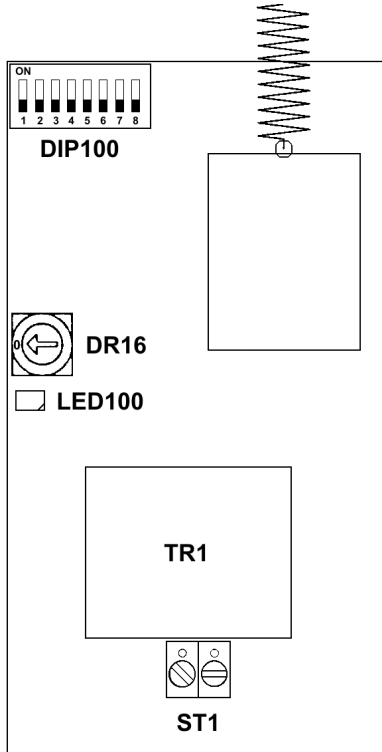
RTR01-4101M-01  
RTR01-4101M-04

#### Operating Instructions

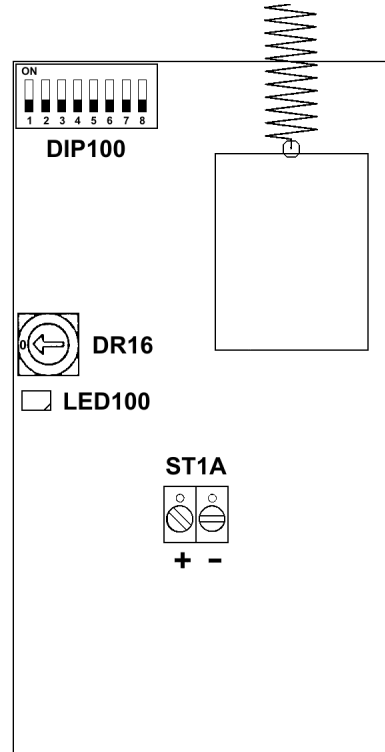
12 V DC  
230 V AC

**Connection Diagram**

**Fig 1 - RTR01-4101M-04 (230 V AC)**



**Fig 2 - RTR01-4101M-01 (12 V DC)**



**Power Supply:** ST1  
ST1A

Connecting terminal 230 V AC  
Connecting terminal 12 V DC

**Settings:** DIP100 Setting for transmission level / transmission delay  
DR16 Rotary switch  
  
LED100 Mode indicator  
TR1 Mains Transformer

**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](http://www.eldat.de).

**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).

**Table 2 – Delay Setting**

DIP100	4	5	6	7	8	Delay
	-	-	-	-	-	0,8 s
	ON	-	-	-	-	1,6 s
	-	ON	-	-	-	2,4 s
	ON	ON	-	-	-	3,2 s
	-	-	ON	-	-	4,0 s
	ON	-	ON	-	-	4,8 s
	-	ON	ON	-	-	5,6 s
	ON	ON	ON	-	-	6,4 s
	-	-	-	ON	-	7,2 s
	ON	-	-	ON	-	8,0 s
	-	ON	-	ON	-	8,8 s
	ON	ON	-	ON	-	9,6 s
	-	-	ON	ON	-	10,4 s
	ON	-	ON	ON	-	11,2 s
	-	ON	ON	ON	-	12,0 s
	ON	ON	ON	ON	-	12,8 s
	-	-	-	-	ON	13,6 s
	ON	-	-	-	ON	14,4 s
	-	ON	-	-	ON	15,2 s
	ON	ON	-	-	ON	16,0 s
	-	-	ON	-	ON	16,8 s
	ON	-	ON	-	ON	17,6 s
	-	ON	ON	-	ON	18,4 s
	ON	ON	ON	-	ON	19,2 s
	-	-	-	ON	ON	20,0 s
	ON	-	-	ON	ON	20,8 s
	-	ON	-	ON	ON	21,6 s
	ON	ON	-	ON	ON	22,4 s
	-	-	ON	ON	ON	23,2 s
	ON	-	ON	ON	ON	24,0 s
	-	ON	ON	ON	ON	24,8 s
	ON	ON	ON	ON	ON	25,6 s

„-“ = Switch Position OFF

**Technical Details**

Frequency: 433 MHz  
 Range: approx. 350 m (free field conditions)  
 Power Supply:  
 RTR01-4101M-01: 12 V DC ± 20 %  
 RTR01-4101M-04: 230 V AC ± 10 %  
 Power Consumption:  
 RTR01-4101M-01: approx. 1 VA  
 RTR01-4101M-04: approx. 3 VA  
 Degree of Protection IP65  
 Operating Temperature: -20 °C to +60 °C  
 Dimensions: 70 x 162 x 38 mm  
 Weight:  
 RTR01-4101M-01: approx. 100 g  
 RTR01-4101M-04: 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! RTR01-4101M-04: During Installation make sure that the electric circuit into which the repeater is to be integrated is completely voltage-free.**

**All settings of the device may only be made while the device is in a voltage-free state!**

**Before opening the installed device all mains voltage circuits have to be disconnected!**

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 mollys)  
 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.

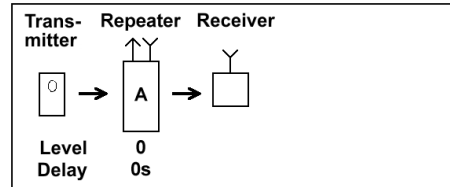
By setting a transmission level and a transmission delay, it is possible to use several repeaters (cascade operation) to extend the range still further.

**Operating Modes**

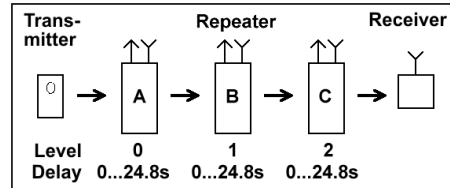
It is possible to set up a transmission path using one repeater (Fig. 3) or several repeaters (cascade operation – Fig. 4).

To operate with several repeaters, the **transmission level** and, if necessary, **transmission delay** must be set.

**Fig. 3 – Operating one repeater (Level 0)**



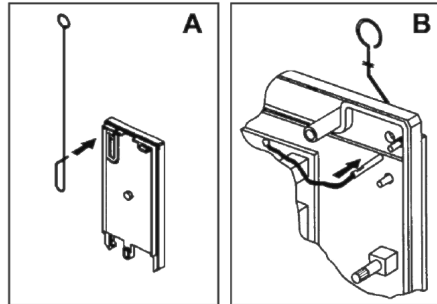
**Fig. 4 - Operating several repeaters**



**Connecting and Mounting**

1. Unscrew the housing cover.
2. Make sure that the DR16 rotary switch position is set to »0« (Fig. 1+2).
3. 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) .

**Note:** All cables are to be fed into the repeater via the openings on the bottom using the watertight PG screw fittings.



4. Connect the rod antenna (Fig. A).
5. Connect the arial wire (Fig. B).
6. Mount the housing bottom at the chosen location.
7. For the operation of several repeaters: Set the transmission level and, if necessary, the transmission delay with DIP100 dip switch. For further information read the relevant chapters.
8. Put the housing cover back on.

**Start-Up**

1. Switch on the power supply.
2. Transfer the hand transmitter telegram to your receiver (for this read the operating instructions of the receiver / radio control).
3. Send a telegram to the repeater. The repeater transmits the received telegram to the repeater of the next highest level or to the receiver.

**Notes:**

- Do not mount the repeater near metal objects.
- If reception is weak or interference occurs, realign the antenna(s) or install the repeater(s) in a different location.
- Before finally fastening the repeater in place, initiate a trial run to optimize the location.

**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.

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

With the DIP100 dip switch (Fig. 1+2) the level of the repeater is set via DIP 1-2-3 (Table 1). All switches at OFF signifies the level 0 and all switches at ON the level 7.

**Table 1 – Level Setting**

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