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CRM-101

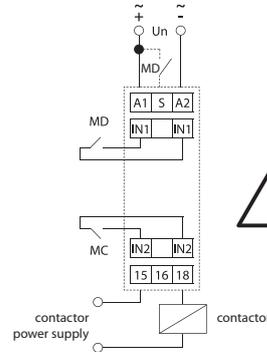
Energy-saving time relay



Characteristic

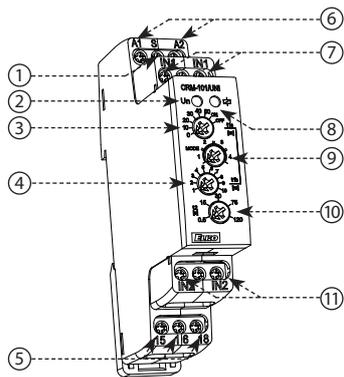
- Time relay for automatic switching on and off of electricity, with the help of connected sensors (can be combined with a regular card switch)
- 2 control inputs – **potential-free contacts**:
 IN1 (MD) – motion detector
 IN2 (MC) – magnetic door contact
- 1 control input – **voltage dependent contact**:
 S (MD) – motion detector
- Adjustable configuration of control inputs:
 (closing – NO / opening – NC, according to the type of connected sensors)
- Time delay t1 (delayed switch-off of electricity)
 Adjustable in the range of 1 – 60 min in minute steps
- Time delay t2 (blocking input for motion detector)
 Adjustable continuously in the range of 0.5 – 120 s

Connection



Do not apply voltage to terminals IN1 and IN2 - the control contacts must be potential-free!

Description



1. Control input (S)
2. Supply voltage indication
3. Time delay setting t1a (tens of minutes)
4. Time delay setting t1b (units of minutes)
5. Output contact (15-16-18)
6. Supply voltage terminals (A1-A2)
7. Control input (IN1)
8. Indication of operating states
9. Setting the type of control inputs
10. Time delay setting t2
11. Control input (IN2)

Setting the type of control inputs

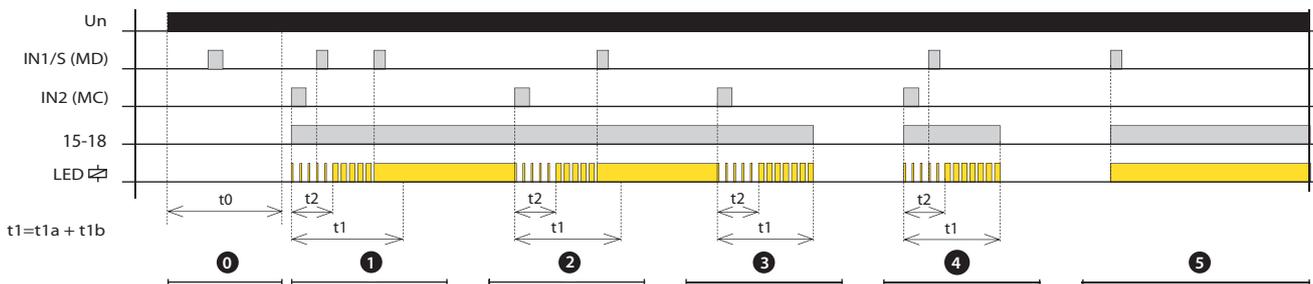
MODE	IN1/S	IN2
1	NO	NO
2	NO	NC
3	NC	NO
4	NC	NC

Setting example:

- Door contact is NC (closed when the door is closed)
- Motion detector has NC contact (closed at rest, opens when motion is detected)
- MODE must be set to position 4

Functions

Graph and description of the function corresponds to the setting of MODE 1 control inputs.



0 Motion detector blocking

After switching on the power supply, inputs IN1/S (MD - motion detector) are blocked for a period of t0.

1 Arrival of persons in the room

When people enter the room, IN2 is activated (MC - magnetic door contact)
 - Closes the relay (turns on the electricity) and at the same time the delay t1 and t2 starts
 - The red LED flashes depending on the delay in progress.
 Contact IN1/S, responds to the movement of people in the room
 - During the delay t2, the MD operation is blocked
 - If IN1/S is activated after the delay t2 has elapsed, the delay t1 ends and the red LED lights up permanently. The relay remains permanently closed.

2 Person leaving the room

When the person leaves the room, contact IN2 is activated
 - Delays t1 and t2 start at the same time
 - If there is a movement in the room after the delay t2 has elapsed, IN1/S is activated, the delay t1 is terminated and the relay remains closed.

3 Last person leaving the room

When the person leaves the room, contact IN2 is activated
 - Delays t1 and t2 start at the same time
 - If IN1/S is not activated after the delay t2 has elapsed (no movement in the room), then after the delay t1 the red LED goes out and the relay opens (switches off the electricity).

4 No movement after delay t2

When people enter the room, IN2 is activated (MC - magnetic door contact)
 - Closes the relay (turns on the electricity) and at the same time the delay t1 and t2 starts
 - If IN1/S is not activated after the delay t2 has elapsed (e.g. a brief insight into the room), then after the delay t1 the red LED goes out and the relay opens (switches off the electricity).

5 Movement at rest

If, after the person leaves the room, the IN1/S is not activated after the t2 delay, it opens the relay (turns off the electricity). However, another person remains in the room motionless (e.g. sleeping)
 - If IN1/S is activated (e.g. by waking up a sleeping person), the relay closes without delay (turns on the electricity).

CRM-101
Power supply

Supply terminals:	A1-A2
Supply voltage:	AC/DC 12 – 240 V (AC 50-60 Hz)
Consumption (max.):	2 VA/1.5 W
Supply voltage tolerance:	-15 %; +10 %

Time circuit

Time delay (t0):	90 s
Time delay (t1a + t1b):	1 – 60 min (t1=t1a + t1b)
Time delay (t2):	0.5 – 120 s*
Time setting:	rotary switches and potentiometers
Time deviation:	5 % – mechanical setting
Repeat accuracy:	0.2 % – set value stability
Temperature coefficient:	0.01 %/°C, at = 20 °C (0.01 %/°F, at = 68 °F)

Output

Contact type:	1× changeover/ SPDT (AgNi)
Current rating:	16 A/AC1; 1 HP 240 Vac, 1/2 HP 120 Vac; PD. B300
Breaking capacity:	4000 VA/AC1, 384 W/DC1
Switching voltage:	250 V AC/24V DC
Power dissipation (max.):	1.2 W
Mechanical life:	10.000.000 ops.
Electrical life (AC1):	100.000 ops.

Control

Control terminals:	A1-S (voltage dependent contact)
Load between S-A2:	Yes
Control terminals:	IN1-IN1, IN2-IN2 (potential-free contacts)
Impulse length:	min. 25 ms / max. unlimited
Reset time:	max. 150 ms

Other information

Operating temperature:	-20 °C .. +55 °C (-4 °F .. 131 °F)
Storage temperature:	-30 °C .. +70 °C (-22 °F .. 158 °F)
Dielectric strength:	AC 4kV (supply – output)
Operating position:	any
Mounting:	DIN rail EN 60715
Protection degree:	IP40 front panel / IP20 terminals
Overvoltage category:	III.
Pollution degree:	2
Cross-wire section – solid/ stranded with ferrule (mm²):	max. 1× 2.5, 2× 1.5/ max. 1× 2.5 (AWG 14)
Dimensions:	90 × 17.6 × 64 mm (3.5" × 0.7" × 2.5")
Weight:	70 g (2.5 oz)
Standards:	EN 61812-1

* Time t2 can be limited by time t1
(t1 = 1 m, t2 = max. 30 s)
(t1 = 2 m, t2 = max. 1 m)

Device is constructed for connection in 1-phase network AC/DC 12 – 240 V and must be installed according to norms valid in the state of application. Connection according to the details in this direction. Installation, connection, setting and servicing should be installed by qualified electrician staff only, who has learnt these instruction and functions of the device. This device contains protection against overvoltage peaks and disturbances in supply. For correct function of the protection of this device there must be suitable protections of higher degree (A, B, C) installed in front of them. According to standards elimination of disturbances must be ensured. Before installation the main switch must be in position "OFF" and the device should be de-energized. Don't install the device to sources of excessive electro-magnetic interference. By correct installation ensure ideal air circulation so in case of permanent operation and higher ambient temperature the maximal operating temperature of the device is not exceeded. For installation and setting use screw-driver cca 2 mm. The device is fully-electronic - installation should be carried out according to this fact. Non-problematic function depends also on the way of transportation, storing and handling. In case of any signs of destruction, deformation, non-function or missing part, don't install and claim at your seller it is possible to dismount the device after its lifetime, recycle, or store in protective dump.