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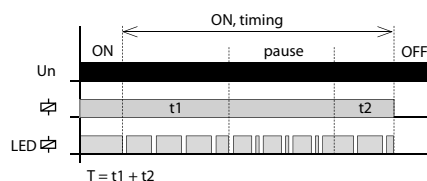
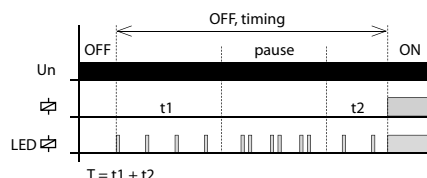
Multifunction time relay with inhibit delay



Characteristic

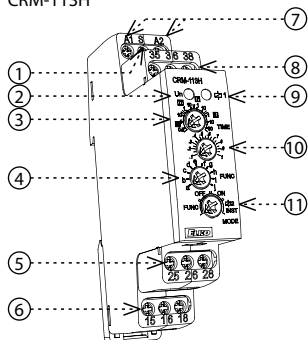
- Multi-function time relay for universal use in automation, control and regulation or in house installations.
- All functions initiated by the supply voltage, except for the flasher function, can use the control input to inhibit the delay (pause).
- Relay mode selection - according to the set function, permanently closed, permanently open, function of memory latch with delay (CRM-111H) / switching of the second relay according to supply voltage (CRM-113H).
- Universal supply voltage AC/DC 12 – 240 V.
- Time scale 50 ms - 30 days divided into 10 ranges: (50 ms - 0.5 s / 0.1 - 1 s / 1 s - 10 s / 0.1 - 1 min / 1 - 10 min / 0.1 hr - 1 hrs / 1 - 10 hrs / 0.1 days - 1 day / 1 day - 10 days / 3 - 30 days).
- Output contact CRM-112H: 2x changeover /SPDT 16A
- Multifunction red LED flashes or shines depending on the operating status.

Indication of operating states



Description

CRM-113H



- Control input (S)
- Supply indication
- Time range setting
- Function setting
- Output contact 2 (25-26-28)
- Output contact 1 (15-16-18)
- Supply terminals (A1-A2)
- Output contact 3 (35-36-38)
- Output indication
- Fine time setting
- Mode selection

Relay mode selection

FUNC. SETTINGS FUNCTION MODE

The desired function a-j is set with the FUNC rotary switch.

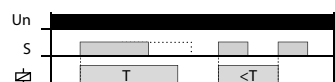
OFF. RELAY OPEN MODE



ON. RELAY CLOSED MODE



Function: MEMORY LATCH with delay (Only for CRM-111H)



When the supply voltage is applied, the relay is open. If the control contact is closed, the relay closes and the time delay T starts. It does not matter the length of the control pulse. When the timing is complete, the relay opens. If the control contact is closed during timing, the relay opens immediately. Each time the control contact closes during relay timing, it changes status.

2 INST. SECOND RELAY INSTANTANEOUS (Only for CRM-113H)



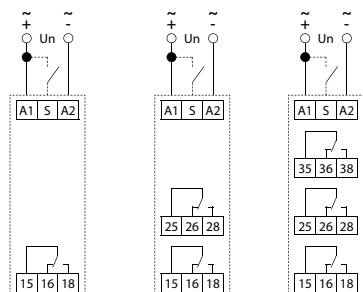
The second relay switches according to the supply voltage. The first relay switches according to the function (a-j) set by the trimmer FUNC.

Connection

CRM-111H

CRM-112H

CRM-113H

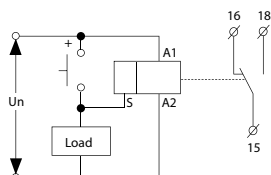


CRM-113H:

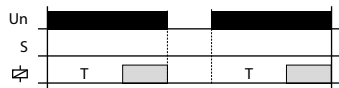
The potential difference between the supply terminals (A1-A2), output contact 2 (25-26-28) and output contact 3 (35-36-38) must be a maximum of AC rms/DC 250V.

Possibility to connect load onto controlling input

It is possible to connect the load (e.g.: contactor) between terminals S-A2, without any interruption of correct relay function.

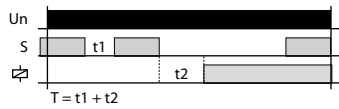


a ON DELAY



When the supply voltage is applied, the time delay T begins. When the timing is complete, the relay closes and this condition continues until the supply voltage is disconnected.

ON DELAY with Inhibit



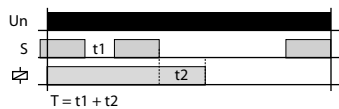
If the control contact is closed and the supply voltage is connected, the relay is opened and timing does not start until the control contact opens. When the timing is complete, the relay closes. If the control contact is closed during timing, the timing is interrupted and continues only after the control contact opens.

b INTERVAL ON



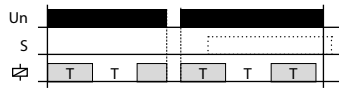
After supply voltage relay closes and starts the delay time T. After the end of the timing relay opens and this state lasts until the supply voltage is disconnected.

INTERVAL ON with Inhibit



If the control contact is closed and the supply voltage is connected, the relay will close and the timing will start only after the control contact has been opened. When the timing is complete, the relay opens. If the control contact is closed during timing, the timing is interrupted and continues only after the control contact opens.

c FLASHER - ON first



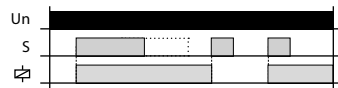
After supply voltage relay closes and starts the delay time T. After the end of the timing relay opens and again runs delay time T. When the timing is complete, the relay closes again and the sequence is repeated until the supply voltage is disconnected. If the control contact is closed during timing, this does not affect the operation of the cyclor.

FLASHER - OFF first



If the control contact is closed during timing; this does not affect the operation of the cyclor. If the control contact is closed and the supply voltage is connected, the cyclor starts with a pause (relay open).

d MEMORY LATCH



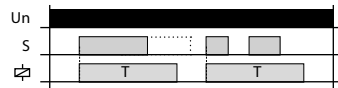
When the supply voltage is applied, the relay is open. When the control contact is closed, the relay closes. The status does not change when the control contact is opened. When the control contact is closed again, the relay opens. Each time the control contact is closed, the relay changes status.

e OFF DELAY



When the supply voltage is applied, the relay is open. When the control contact is closed, the relay closes. When the control contact opens, the time delay T begins. If the control contact is closed during timing, the time is reset and the relay remains closed. When the control contact opens, the time delay T starts again and opens when the relay closes.

f INGLE SHOT



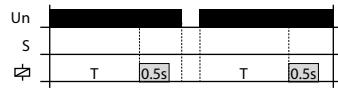
When the supply voltage is applied, the relay is open. When the control contact is closed, the relay closes and the time delay T begins. Closing the control contact during timing is ignored.

g WATCHDOG



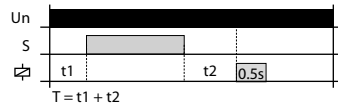
When the supply voltage is applied, the relay is open. When the control contact is closed, the relay closes and the time delay T begins. Closing the control contact during timing triggers a new time delay T - the relay closing time is thus increased.

h PULSE GENERATOR 0.5s



After the supply voltage has been applied, the time delay T begins. When the timing is complete, the relay closes for a fixed time (0.5s).

PULSE GENERATOR 0.5s with Inhibit



After supply voltage starts the time delay T. By closing timing of the control contact during timing is suspended. When the control contact opens, the time interval is completed and the relay closes for a fixed time (0.5s).

CRM-112H

Power supply

Supply terminals:	A1-A2
Supply voltage:	AC/DC 12 - 240 V (AC 50/60 Hz)
Consumption (max.):	2.5 VA/1.5 W
Supply voltage tolerance:	-15 %; +10 %
Supply indication:	green LED

Time circuit

Number of functions:	10
Time ranges:	50 ms – 30 days
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:	1× changeover/SPDT (AgNi)
Current rating:	16 A/AC1; PD. B300
Breaking capacity:	4000 VA/AC1, 384 W/DC1
Electrical life (AC1):	100.000 ops.
Contact type 2 (3):	1× chang./SPDT (AgNi)
Current rating:	16 A/AC1; PD. B300
Breaking capacity:	4000 VA/AC1, 384 W/DC1
Electrical life (AC1):	100.000 ops
Switching voltage:	250V AC/24 V DC
Power dissipation (max.):	2.4 W
Output indication:	multifunction red LED
Mechanical life:	10.000.000 ops.

Control

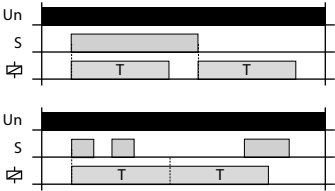
Control terminals:	A1-S
Load between S-A2:	Yes
Impulse length:	min. 25 ms/max. unlimited
Reset time:	max. 150 ms

Other information

Operating temperature:	-20 .. +55 °C (-4 .. 131 °F)
Storage temperature:	-30 .. +70 °C (-22 ..158 °F)
Dielectric strength:	
supply – output 1	AC 4 kV
supply – output 2 (3)	AC 4 kV
output 1 – output 2	AC 4 kV
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 or 2× 1.5/ max. 1× 2.5 (AWG 12)
Dimensions:	90 × 17.6 × 64 mm (3.5" × 0.7" × 2.5")
Weight:	85 g (3 oz.)
Standards:	EN 61812-1

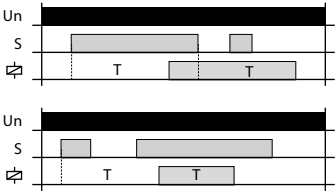
* for adjustable delay <100ms, a time deviation of ± 10ms applies

INTERVAL ON / OFF



When the supply voltage is applied, the relay is open. When the control contact is closed, the relay closes and the time delay T begins. When the control contact is opened, the relay closes and the time delay T begins. If the control contact is open during timing, the relay remains closed for 2T. When the timing is complete, the relay opens. Any other change of control contact status during timing is ignored.

ON / OFF DELAY



When the supply voltage is applied, the relay is open. If control contact is closed, time delay T starts. When the control contact is opened, a new time delay T begins. If the control contact is open during timing, the relay closes at the end of the timing and opens the relay after the new time delay. Any other change of control contact status during timing is ignored.

More accurate setting of timing for long periods of time

Example of time setting to 8 hours period:
For rough setting use time scale 1-10 s on the potentiometer.
For fine time setting aim for 8 s on potentiometer, then recheck accuracy (using stopwatch etc).
On rough time setting, set potentiometer to originally desired scale 1-10 hours, leave a fine setting as it is.

Warning

This 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 an application. Installation, connection, setting and servicing must be carried out by qualified electrician staff only, which have perfectly understood the instructions and functions of the device. This device contains protection against overvoltage peaks and disturbing impulses in the power supply network. For the correct function of the protection of this device, there must be suitable protections of higher degrees (A,B,C) installed in front of them and according to the standards, interference of switching devices must be securely eliminated (contactors, motors, inductive loads, etc.). Before installation, make sure that the device is de-energized and the main switch is in the "OFF" position. Don't install the device to sources of excessive electromagnetic interference. Ensure correct installation by perfect air circulation so that during continuous operation and a higher ambient temperature, the device does not exceed the maximum allowed operating temperature. For installation and setting use a screwdriver with a width of approx 2 mm. Keep in mind that this is a fully electronic device and approach accordingly with the installation. Non-problematic function of the device is also dependent on the previous method of transportation, storage, and handling. In case of any signs of damage, deformation, malfunction, or missing parts, don't install this device and claim it at the dealer. The product must be treated as electronic waste at the end of its life.