CRM-91H, CRM-93H | Multi-function time relay

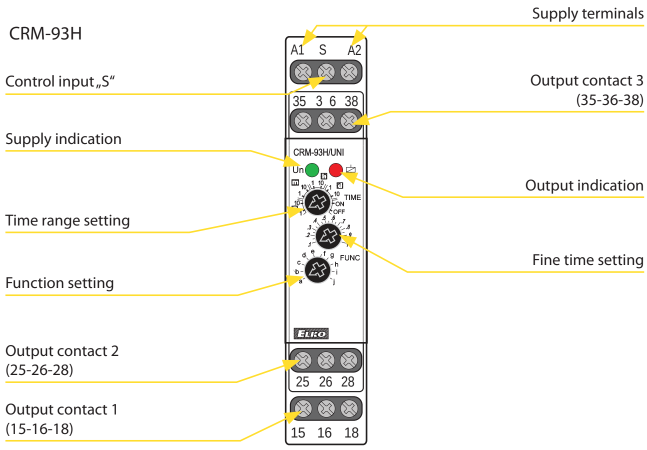
- Multi-function time relay for universal use in automation, control and regulation or in house installations.
- Comfortable and well-arranged function and time-range setting by rotary switches.
- Multifunction red LED flashes or shines depending on the operating status.

EAN code
CRM-91H/230V: 8595188112444
CRM-91H/UNI: 8595188112420
CRM-93H/230V: 8595188112789
CRM-93H/UNI: 8595188112468

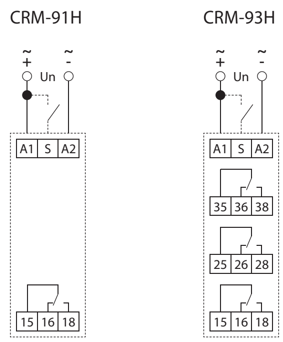
Technical parameters

Technical parameters		CRM-91H	CRM-93H
Power supply			
Supply terminals:		A1 - A2	
Voltage range:	UNI	AC/DC 12 - 240 V (AC 50 - 60 Hz)	
Power input (max.):	UNI	2 VA / 1.5 W	2.5 VA / 1.5 W
Voltage range:	230	AC 230 V (50 - 60 Hz)	
Power input (max.):	230	AC 3VA / 1.4W	AC 4VA / 2W
Supply voltage tolerance:		-15 %; +10 %	
Supply indication:		green LED	
Time circuit			
Number of functions:		10	
Time ranges:		0.1 s - 10 days	
Time setting:		rotary switch and potentiometer	
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			
Number of contacts 1:		1x changeover / SPDT (AgNi)	
Current rating:		16 A / AC1	
Breaking capacity:		4000 VA / AC1, 384 W / DC	
Electrical life (AC1):		50 000 operations	
Number of contacts 2 (3):		x	2x chang. / DPDT (AgNi)
Current rating:		x	8 A/ AC1
Breaking capacity:		x	2000 VA / AC1, 192 W / DC
Electrical life (AC1):		x	10 000 operations
Switching voltage:		250V AC / 24V DC	
Max. power dissipation:		1.2 W	2.4 W
Output indication:		multifunction red LED	
Mechanical life:		10 000 000 operations	
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 °C to +55 °C (-4 °F to 131 °F)	
Storage temperature:		-30 °C to +70 °C (-22 °F to 158 °F)	
Dielectrical strength:			
supply - output 1		4kV AC	
supply - output 2 (3)		x	1kV AC
output 1 - output 2		x	1kV AC
output 2 - output 3		x	1kV AC
Operating position:		any	
Mounting:		DIN rail EN 60715	
Protection degree:		IP40 from front panel / IP20 terminals	
Overvoltage category:		III.	
Pollution degree:		2	
Max. cable size (mm^2):		solid wire max. 1x 2.5 or 2x 1.5 / with sleeve max. 1x 2.5 (AWG 12)	
Dimensions:		90 x 17.6 x 64 mm (3.5 x 0.7 x 2.5 inch)	
Weight:		UNI - 62 g (2.2 oz); 230 - 57 g (2 oz)	UNI - 85 g (3oz); 230 - 80 g (2.8 oz)
Standards:		EN 61812-1	

Description



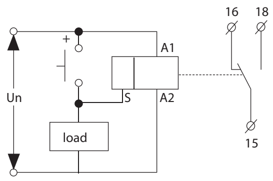
Connection



CRM-93H:
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 250V AC rms / DC.

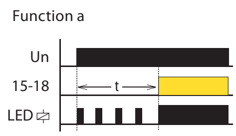
Possibility to connect load onto controlling input

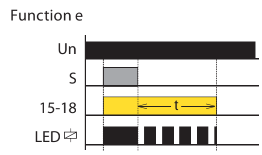
It is possible to connect the load (e.g.: contactor) between terminals S-A2, without any interruption of correct relay function.



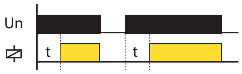
Indication of operating states

Examples of signaling



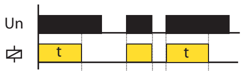


Function

a


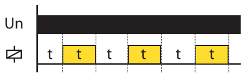
ON DELAY

When the input voltage U is applied, timing delay t begins. Relay contacts R change state after time delay is complete. Contacts R return to their shelf state when input voltage U is removed. Trigger switch is not used in this function.

b


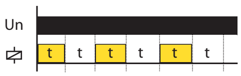
INTERVAL ON

When input voltage U is applied, relay contacts R change state immediately and timing cycle begins. When time delay is complete, contacts return to shelf state. When input voltage U is removed, contacts will also return to their shelfstate. Trigger switch is not used in this function.

c


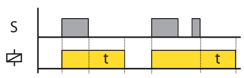
FLASHER - OFF first

When input voltage U is applied, time delay t begins. When time delay t is complete, relay contacts R change state for time delay t. This cycle will repeat until input voltage U is removed. Trigger switch is not used in this function.

d


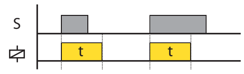
FLASHER - ON first

When input voltage U is applied, relay contacts R change state immediately and time delay t begins. When time delay t is complete, contacts return to their shelf state for time delay t. This cycle will repeat until input voltage U is removed. Trigger switch is not used in this function.

e


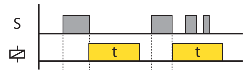
OFF DELAY

Input voltage U must be applied continuously. When trigger switch S is closed, relay contacts R change state. When trigger switch S is opened, delay t begins. When delay t is complete, contacts R return to their shelf state. If trigger switch S is closed before time delay t is complete, then time is reset. When trigger switch S is opened, the delay begins again, and relay contacts R remain in their energized state. If input voltage U is removed, relay contacts R return to their shelf state.

f


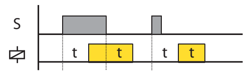
SINGLE SHOT

Upon application of input voltage U, the relay is ready to accept trigger signal S. Upon application of the trigger signal S, the relay contacts R transfer and the preset time t begins. During time-out, the trigger signal S is ignored. The relay resets by applying the trigger switch S when the relay is not energized.

g


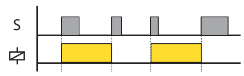
SINGLE SHOT falling edge

Upon application of input voltage U, the relay is ready to accept trigger signal S. Upon application of the trigger signal S, the relay contacts R transfer and the preset time t begins. At the end of the preset time t, the relay contacts R return to their normal condition unless the trigger switch S is opened and closed prior to time out t (before preset time elapses). Continuous cycling of the trigger switch S at a rate faster than the preset time will cause the relay contacts R to remain closed. If input voltage U is removed, relay contacts R return to their shelf state.

h


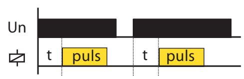
ON/OFF DELAY

Input voltage U must be applied continuously. When trigger switch S is closed, time delay t begins. When time delay t is complete, relay contacts R change state and remain transferred until trigger switch S is opened. If input voltage U is removed, relay contacts R return to their shelf state.

i


MEMORY LATCH

Input voltage U must be applied continuously. Output changes state with every trigger switch S closure. If input voltage U is removed, relay contacts R return to their shelf state.

j


PULSE GENERATOR 0.5 s

Upon application of input voltage U, a single output pulse of 0.5 seconds is delivered to relay after time delay t. Power must be removed and reapplied to repeat pulse. Trigger switch is not used in this function.