



EAN code
 CRM-91 /230 V: 8595188112444
 CRM-91 /UNI: 8595188112420
 CRM-93H /230 V: 8595188112789
 CRM-93H /UNI: 8595188112468
 CRM-9S /UNI: 8595188116008

Technical parameters

	CRM-91H	CRM-93H	CRM-9S
Number of functions:	10		
Supply terminals:	A1 - A2		
Voltage range:	AC/DC 12 - 240 V (AC 50 - 60 Hz)	AC 12-240 V (50-60 Hz)	
Burden:	AC 0.7 - 3 VA / DC 0.5 - 1.7 W	x	
Voltage range:	AC 230 V / 50 - 60 Hz	AC max. 0.35VA	
Consumption (apparent / loss):	AC max. 12VA / 1.3W	AC max. 12VA / 1.9W	x
Supply voltage tolerance:	-15 %; +10 %	x	
Supply indication:	green LED		
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:	1x changeover/ SPDT (AgNi / Silver Alloy)	3x changeover/ SPDT (AgNi / Silver Alloy)	1x static contactless output (triac)
Current rating:	16 A / AC1	8 A / AC1	0.7 A
Breaking capacity:	4000 VA / AC1, 384 W / DC	2000 VA / AC1, 192 W / DC	x
Inrush current:	30 A / < 3 s	10 A / < 3 s	60 A / < 10 ms
Switching voltage:	250 V AC1 / 24 V DC		
Voltage drop on switch:	x	max. 0.9 V at I max.	
Load on B1 terminal:	x	Yes / I max. 0.7 A	
Output indication:	multifunction red LED		
Mechanical life:	3x10 ⁷	> 10 ⁸	
Electrical life (AC1):	0.7x10 ⁹	>10 ⁸	

Controlling

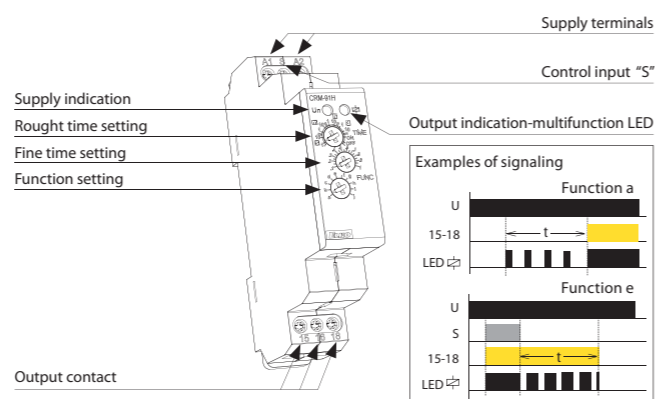
Power on control input:	AC 0.025 - 0.2 VA / DC 0.1 - 0.7 W (UNI), AC 0.53 VA (AC 230 V), AC 0.025 - 0.2 VA (AC 12 - 240 V)
Load between S-A2:	Yes
Control terminals:	A1-S
Glow tubes connections:	230 V - Yes / UNI - No
Max. amount of glow lamps connected to controlling input:	UNI - glow lamps cannot be connected/NO 230 V - max.20 pcs (measured with glow lamp 0.68 mA / 230 V AC) glow lamps cannot be connected/NO
Impulse length:	min. 25 ms / max. unlimited
Reset time:	max. 150 ms

Other information

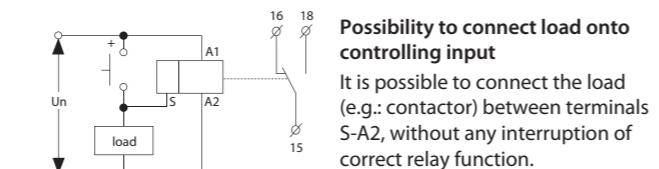
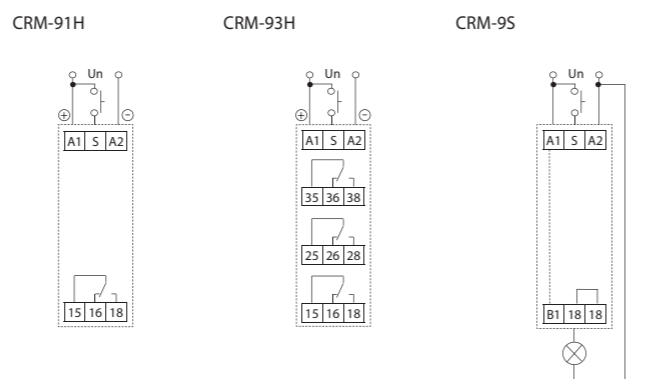
Operating temperature:	-20 °C to +55 °C (-4 °F to 131 °F)
Storage temperature:	-30 °C to +70 °C (-22 °F to 158 °F)
Electrical strength:	4kV (supply-output)
Operating position:	any
Mounting:	DIN rail EN 60715
Protection degree:	IP40 from front panel / IP20 terminals
Overvoltage category:	III.
Pollution 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")
Weight:	(UNI)-64 g (2.26 oz.); (UNI)-89 g (3.1 oz.); (230)-62 g (2.2 oz.); (230)-87 g (3 oz.)
Standards:	EN 61812-1, EN 61010-1

- Multifunction time relay can be used for electrical appliances, control of lights, heating, motors, pumps and fans (10 functions, 10 time ranges, multi-voltage, 16 A or 3x 8 A contacts)
- Fulfills all requirements for time relays
- 10 functions:
 - 5 time functions controlled by supply voltage
 - 4 time functions controlled by control input
 - 1 function of latching relay
- Comfortable and well-arranged function and time-range setting by rotary switches
- Time scale 0.1 s - 10 days divided into 10 ranges: (0.1 s - 1 s / 1 s - 10 s / 0.1 min - 1 min / 1 min - 10 min / 0.1 hrs - 1 hrs / 1 hrs - 10 hrs / 0.1 day - 1 day / 1 day - 10 days / only ON / only OFF)
- **CRM-91H, CRM-93H:**
 - universal supply voltage AC/DC 12 - 240 V or AC 230 V,
 - Output contact: CRM-91H: 1x changeover/SPDT 16 A;
 - CRM-93H: 3 x changeover/SPDT 8 A
- **CRM-9S:**
 - universal supply voltage AC 12 - 240 V AC 12 - 240 V, absolutely noise-less switching
 - 1x static contactless output (triac) 0.7 A (60 A / < 10 ms), switches potential A1
- Multifunction red LED output indicator flashes or shines depending on the status of output
- 1-MODULE, DIN rail mounting

Description

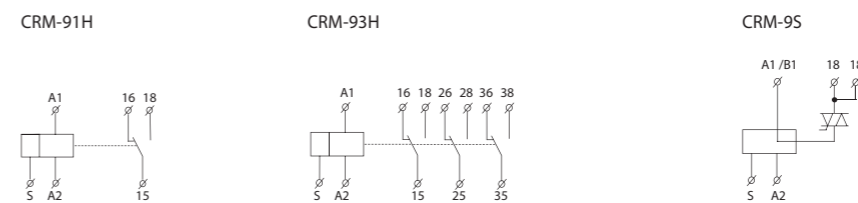


Connection



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.

Symbol



Function

a On Delay (Power On)
 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 Off Delay
 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 Repeat Cycle (Starting Off)
 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 Repeat Cycle (Starting On)
 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 (S Break)
 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.

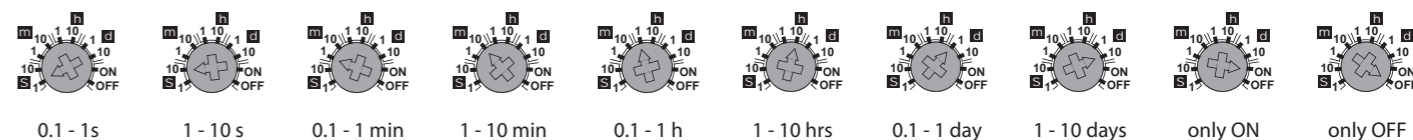
g Single Shot Trailing Edge (Non-Retriggerable)
 Upon application of input voltage U, the relay is ready to accept trigger signal S. Upon application of the trigger signal S, the relay contacts R transfer and the preset time t begins. At the end of the preset time t, the trigger switch S is opened and 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 Latching relay
 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
 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.

Time ranges



Notes

- 1) Output contacts of CRM-93H do not allow switching of different phases or 3-phase voltages (voltage > 250 V).
- 2) When mounting into steal-plated switchboards, it is necessary to keep a safety distance of min. 3 mm from terminal's screws 35-36-38 and 25-26-28 towards the shutter of a switchboard.