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Made in Czech Republic

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## CRM-2T

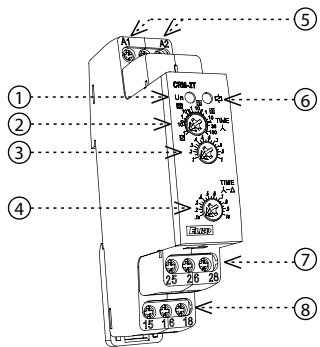
### Star ( $\lambda$ ) / Delta ( $\Delta$ ) time relay



#### Characteristic

- It serves for delay ON of motors star/delta.
- Time t1 (star):
  - time scale 0.1 s - 100 days divided into 10 time ranges: 0.1 s - 1 s / 1 s - 10 s / 0.1 min - 1 min / 1 min - 10 min / 0.1 hrs - 1 h / 1 h - 10 hrs / 0.1 day - 1 day / 1 day - 10 days / 3 days - 30 days / 10 days - 100 days.
  - time range setting by rotary switch
  - fine time setting by potentiometer
- Time t2 (delay) between  $\lambda$  /  $\Delta$ :
  - time scale 0.1 s - 1 s
  - fine time setting by potentiometer
- Voltage range: AC 230 V, AC/DC 12 - 240 V.
- Output contact: 2x changeover / SPDT 16 A.
- Multifunction red LED flashes or shines depending on the operating status.

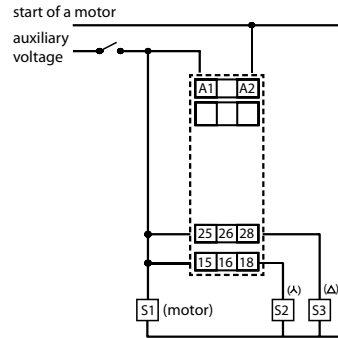
#### Description



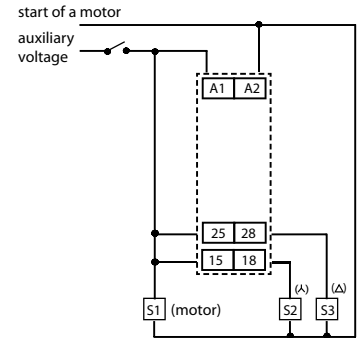
1. Supply indication
2. Time range setting t1
3. Fine time setting t1
4. Fine time setting t2
5. Supply terminals
6. Output indication
7. Output contact 2 (25-26-28)
8. Output contact 1 (15-16-18)

#### Connection

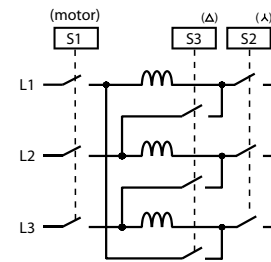
CRM-2T/UNI, CRM-2T/230V



CRM-2T/24-480V

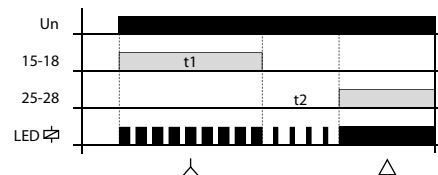


start up of motor ( $\lambda$ - $\Delta$ )



#### Function

STAR / DELTA starter



#### More accurate setting of timing for long periods of time

Example of time setting to 8 hours period:

For rough setting use time scale 1-10s on the potentiometer.

For fine time setting aim for 8s on potentiometer, then recheck accuracy (using stop-watch etc).

On rough time setting, set potentiometer to originally desired scale 1-10 hours, leave a fine setting as it is.

Type of load	$\cos \varphi \geq 0.95$	M	M	AC5a uncompensated	AC5a compensated	AC5b	AC6a	AC7b	AC12
mat. contacts AgNi, contact 16A	250V / 16A	250V / 5A	250V / 3A	230V / 3A (690VA)	x	800W	x	250V / 3A	250V / 10A
Type of load	AC13	AC14	AC15	DC1	DC3	DC5	DC12	DC13	DC14
mat. contacts AgNi, contact 16A	250V / 6A	250V / 6A	250V / 6A	24V / 16A	24V / 6A	24V / 4A	24V / 16A	24V / 2A	24V / 2A

CRM-2T

**Power supply**

Supply terminals:	A1 - A2
Voltage range:	AC/DC 12 - 240 V (AC 50 - 60 Hz)
Power input (max.):	2 VA / 1.5 W
Voltage range:	AC 230 V (50 - 60 Hz)
Power input (max.):	AC 3VA / 1.4W
Supply voltage tolerance:	-15 %; +10 %
Supply indication:	green LED

**Function**

Time scale:	t1: 0.1 s - 100 days, t2: 0.1 s - 1 s
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:	2x changeover / SPDT (AgNi)
Current rating:	16 A / AC1
Breaking capacity:	4000 VA / AC1, 384 W / DC
Inrush current:	30 A / < 3 s
Switching voltage:	250V AC / 24V DC
Max. power dissipation:	1.2 W
Output indication:	multifunction red LED
Mechanical life:	10. 000. 000 operations
Electrical life (AC1):	50. 000 operations
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	4 kV AC
supply - output 2	4 kV AC
output 1 - output 2	4 kV AC
Operating position:	any
Mounting:	DIN rail EN 60715
Protection degree:	IP40 from front panel / IP20 terminals
Overvoltage category:	III.
Pollution degree:	2
Terminal wire capacity (mm <sup>2</sup> ):	max.1x 2.5, 2x1.5, 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 - 78 g (2.8 oz), 230 - 73 g (2.6 oz)
Standards:	EN 61812-1

The device is constructed for 1-phase main installation of AC 230 V or AC/DC 12-240 V and must be installed in accordance with regulations and standards applicable in the country of use. 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.