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02-4/2020 Rev.: 0



## CRM-181J CRM-183J

Single-function time relay

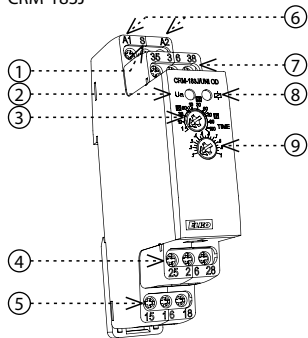


### Characteristic

- Single-function time relays are suitable for applications where there is a clear function requirement in advance and are suitable for universal use in automation, control and regulation or in house installations.
- Choice of four types: ZR, ZN, BL, OD
- All functions initiated by the supply voltage can use the control input to inhibit the ongoing delay (pause).
- Universal supply voltage AC/DC 12 - 240 V.
- Time scale 0.1 s - 100 hrs divided into 10 ranges:  
 (0.1 s - 1 s / 1 s - 10 s / 3 s - 30 s / 6 s - 60 s / 1 min - 10 min / 3 min - 30 min / 6 min - 60 min / 1 h - 10 hrs / 3 hrs - 30 hrs / 10 hrs - 100 hrs).
- Output contact:  
 CRM-181J: 1x changeover / SPDT 16 A  
 CRM-183J: 1x changeover / SPDT 16 A, 2x changeover / DPDT 8 A
- Multifunction red LED flashes or shines depending on the operating status.

### Description

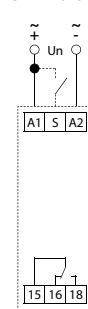
CRM-183J



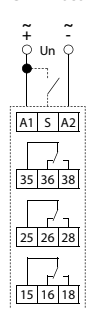
1. Control input „S“
2. Output indication
3. Time setting
4. Output contact 2 (25-26-28)
5. Output contact 1 (15-16-18)
6. Supply terminals
7. Output contact 3 (35-36-38)
8. Supply indication
9. Fine time setting

### Connection

CRM-181J



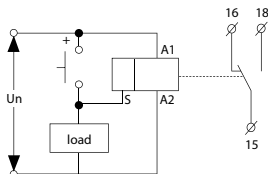
CRM-183J



**CRM-183J:**  
 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

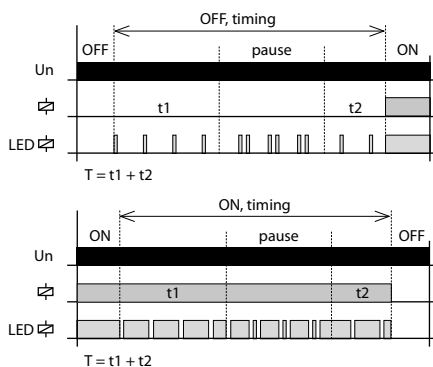
It is possible to connect the load (e.g.: contactor) between terminals S-A2, without any interruption of correct relay function.



### Technical parameters

	CRM-181J	CRM-183J
<b>Supply</b>		
Supply terminals:	A1 - A2	
Voltage range:	AC/DC 12 - 240 V (AC 50 - 60 Hz)	
Power input (max.):	2 VA / 1.5 W	2.5 VA / 1.5 W
Supply voltage tolerance:	-15 %; +10 %	
Supply indication:	green LED	
<b>Time circuit</b>		
Time ranges:	0.1 s - 100 h	
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)	
<b>Output</b>		
Output contact 1:	1x changeover / SPDT (AgNi)	
Current rating:	16 A / AC1	
Breaking capacity:	4000 VA / AC1, 384 W / DC	
Electrical life (AC1):	50 000 operations	
Output contact 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	
<b>Control</b>		
Control terminals:	A1-S	
Load between S-A2:	Yes	
Impulse length:	min. 25 ms / max. unlimited	
Reset time:	max. 150 ms	
<b>Other information</b>		
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 <sup>2</sup> ):	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:	61 g (2.2 oz)	84 g (3 oz)

## Indication of operating states



OD: OFF DELAY

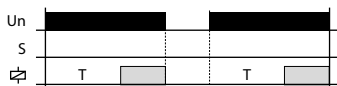


When the supply voltage is applied, the relay is open. When the control contact is closed, the relay closes. When the control contact opens, the time delay  $T$  begins. If the control contact is closed during timing, the time is reset and the relay remains closed. When the control contact opens, the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

Note: ZR, ZN and BL functions are initiated by connecting the supply voltage to the product, i.e. in the event of a failure and recovery of the supply voltage, the relay automatically performs 1 cycle.

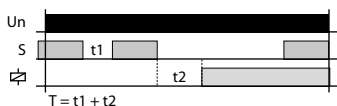
## Functions

ZR: ON DELAY



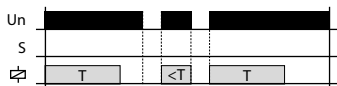
When the supply voltage is applied, the time delay  $T$  begins. When the timing is complete, the relay closes and this condition continues until the supply voltage is disconnected.

ON DELAY with Inhibit



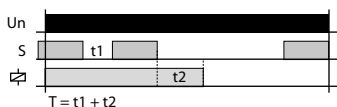
If the control contact is closed and the supply voltage is connected, the relay is opened and timing does not start until the control contact opens. When the timing is complete, the relay closes. If the control contact is closed during timing, the timing is interrupted and continues only after the control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

ZN: INTERVAL ON



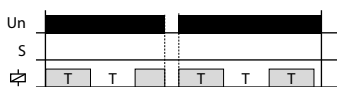
After supply voltage relay closes and starts the delay time  $T$ . After the end of the timing relay opens and this state lasts until the supply voltage is disconnected.

INTERVAL ON with Inhibit



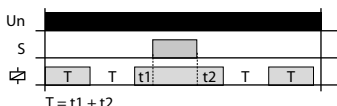
If the control contact is closed and the supply voltage is connected, the relay will close and the timing will start only after the control contact has been opened. When the timing is complete, the relay opens. If the control contact is closed during timing, the timing is interrupted and continues only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

BL: FLASHER - ON first



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.

FLASHER - ON first with Inhibit



If the control contact is closed during an active timer setting, the timing is interrupted and continues only after the control contact opens again.

## 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 stopwatch etc).

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

## Warning

Device is constructed for connection in 1-phase AC/DC 12- 240V main alternating current voltage 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.