MULTIFUNCTIONAL TIME RELAYS (MCB-7 MCB-8 MCB-9)

MCB-7, MCB-8, MCB-9
are microprocessor-based electronic time relays. They have precisely adjustable time ranges (between 0,1 s-30 hours for MCB-7; 0,1 s-999 minutes for MCB-8; 0,5 s-30 hours for MCB-9) and up to 4 different operating modes. Wtih their thin and narrow designs, these time relays are designed for multi-purpose applications.
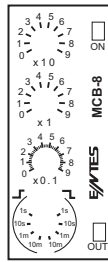
MCB-7
- ER MODE
- EM MODE

MCB-7 is a time relay that works as ER Mode or EM Mode according to the users needs. It can be adjusted between 0,1 seconds and 30 hours.
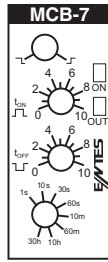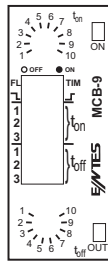
MCB-8
- ER MODE
- EM MODE

MCB-8 is a time relay that works as ER Mode or EM Mode according to the users needs. It can be adjusted between 0,1 seconds and 999 minutes.
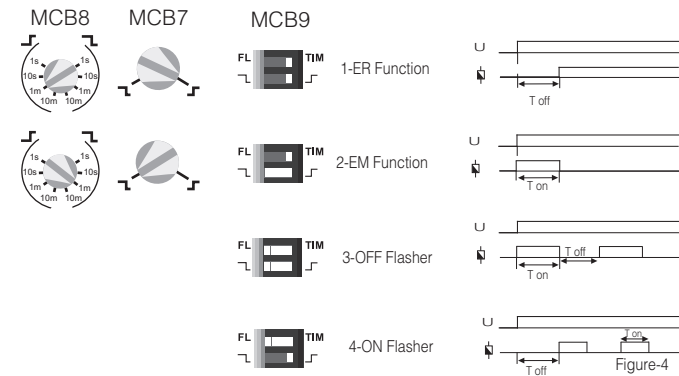
MCB-9
- ER MODE
- EM MODE
- FLASHER
  - ON FLASHER
  - OFF FLASHER

MCB-9 is a time relay that works as ER Mode, EM Mode, ON Flasher or OFF Flasher according to the users needs. It can be adjusted between 0,5 seconds and 30 hours.

Mode Selection (Function Table)

Adjusting The Times
Adjusting the ON and OFF Times

MCB-8: x10 trimpot is used to adjust the tens digit of the desired time, x1 trimpot is used to adjust the ones digit of the desired time and x0.1 trimpot is used to adjust the tenths digit of the desired time.
Example: When the trimpots are adjusted as x10=2, x1=3, x0.1=6, Mode=1s; the relay does the desired function after a 24.6 seconds delay.
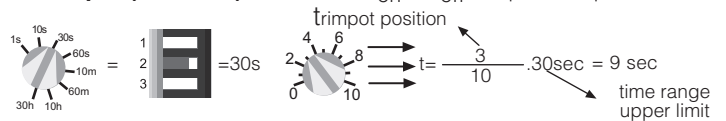
Example (MCB-8):

x10	x1	x0.1	Mode	Adjusted Time
2	4	6	1s	24.6 seconds
2	4	6	10s	246 seconds
2	4	6	1m	24.6 minutes
2	4	6	10m	246 minutes

MCB-7/9: The ON-OFF time is adjusted according to the following formula by using the time range selection trimpot on MCB-7 and by using the switches numbered as 1-2-3 and toff or ton trimpots on MCB-9:
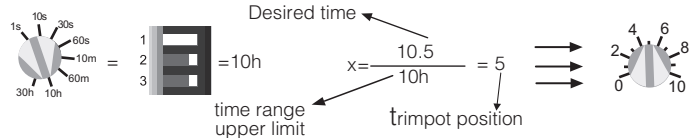a, limit of the selected time range;
t, desired time;
x, trimpot position;

$$X = \frac{10 \cdot t}{a} \qquad \text{and} \qquad t = \frac{x}{10} \cdot a$$

Example (MCB-7,9):

If ton or toff trimpot is at position 3

$$t = \frac{3}{10} \cdot 30\,sec = 9\ sec$$

time range upper limit

To set it to 5 hours;

$$x = \frac{10.5}{10h} = 5$$

time range upper limit / trimpot position

Dimensions

(Figure 5)

(TYPE PK 22)
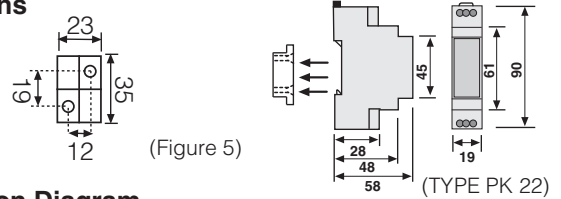
Connection Diagram

MCB 7-8-9

A1-A2 : 115/127/220/230 VAC
(+) A3 - (-) A2 : 12 VAC/DC
24 VAC/DC
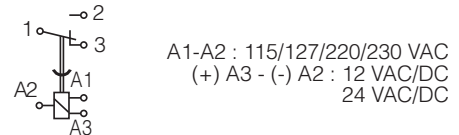
Technical Data

Rated Voltage (Un) : 220 VAC, 230 VAC, 240 VAC, 24 VAC/DC
(115,127 V AC and 12 VAC/DC available upon request)
Operating Range : (0.9-1.1) x Un
Operating Frequency : 50/60 Hz.
Output Contact : 1 Changeover 8A/2000 VA (NO: 8A, NC: 6A)Cosφ =1
Repetition Error : +/-0.1%
Reset Time : <=150 msec.
Ambient Temperature : -5°C ; +50°C
Dimensions : Type PK22
Protection Class : IP 20
Connection : Terminal connection, Rail-mount (Panel mount is available with the plastic adapter part. Refer to fig. 5)
Package Weight : 2.5 kg. (24 pcs. per package)

Caution:
1) Operating voltage must raise to the indicated value in less than 1sec.
2) Do not use with generator.

PRECAUTIONS FOR INSTALLATION AND SAFE USE
Failure to follow those instructions will result in death or serious injury.
- Disconnect all power before installing the equipment.
- When the device is connected to the network, do not remove the front panel.
- Do not try to clean the device with solvent or the like.Only clean with dry cloth.
- Verify correct terminal connections when wiring.
- Electrical equipment should be serviced only by your component seller.
- Device is for panel mount only.
- An F type fuse with 1 ampere limit current value must be used.

⚠ **No responsibility is assured by the manufacturer or any of its subsidiaries for any consequences arising out of the use of this material.**

TIME TABLE

TIME INTERVAL MCB-7	ADJUSTABLE TIME RANGE MCB-7
1 sec	0.1-1 sec
10 sec	0.1-10 sec
30 sec	0.1-30 sec
60 sec	0.1-60 sec
10 min	0.1 sec-10 min
60 min	0.1 sec-60 min
10 hours	0.1 sec-10 h
30 hours	0.1 sec-30 h

3	2	1	TIME INTERVAL MCB-9	ADJUSTABLE TIME RANGE MCB-9
○	○	○	5 sec	0.5-5 sec
○	○	●	10 sec	1-10 sec
○	●	○	30 sec	3-30 sec
○	●	●	60 sec	6-60 sec
●	○	○	10 min	1 min-10 min
●	○	●	60 min	6 min-60 min
●	●	○	10 hours	1 hours-10 hours
●	●	●	30 hours	3 hours-30 hours

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