Timers
Multifunction
Type FMB01

- **Time range 0.05 s to 300 h**
- **Knob selection of time range**
- **Knob adjustable time setting**
- **Knob selection of operating mode (6 functions):**
  - **A - delay on operate**
  - **B - symmetrical recycler OFF first**
  - **B_2 - symmetrical recycler ON first**
  - **C - signal ON/OFF delay**
  - **D - delay on release**
  - **E - interval**
- **Manual start**
- **Repeatability: ±0.3% on full scale**
- **Output: 5 A DPDT relay**
- **48 x 48 mm housing for front panel mounting**
- **11 pin sockets**
- **LED indication for relay status and power supply ON**

Product Description

Multifunction timer with 6 functions and selectable time range from 0.05 seconds to 300 hours. 48 x 48 mm for front panel mounting and on 11-pin socket.

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- **Housing**
- **Function**
- **Type**
- **Item number**
- **Output**
- **Power supply**

Type Selection

Mounting	Output	Plug	Supply: 100 to 240 VAC
Front or socket	DPDT	11-pin	**FMB01DM24**

Time Specifications

Time ranges
Selectable by front knobs

Time unit		sec	min	hrs	10h
Full scale setting	1.2	0.05 to 1.2			0.5 to 12
	3	0.125 to 3			1.25 to 3
	12	0.5 to 12			5 to 120
	30	1.25 to 30			12.5 to 300

Timing accuracy

Repeat accuracy	±0.3% on full scale (±0.3 % ±10 ms max in a range of 1.2 s)
Setting error	±5% on full scale ±50 ms
Voltage drift	±0.5% on full scale (±0.5% ±10 ms max in a range of 1.2 s)
Temperature drift	±2% on full scale (±2% ±10ms in a range of 1.2 s)

Reset

Power supply interruption	>100 ms
Pulse width	> 50 ms

General Specifications

Output	DPDT relay
Output insulation resistance	> 100 MΩ (at 500VDC)
Contact Ratings ($AgCdO_{12}$)	µ
Resistive loads AC 1	5 A @ 250 VAC / 30 VDC
Mechanical life	≥ 1 x 10^7 operations
Electrical life	≥ 1 x 10^5 operations (5 A at 250 VAC, cos φ = 1, 1.8 x 10^3 operations/h)
Operating frequency	< 1800 operations/h

Supply Specifications

Power Supply	**Overvoltage cat II (IEC 60947-1)**
Rated operational voltage throuhgt terminals:	
(FMB01DM24) 2, 10	100 to 240 VAC +10%-15% 50 / 60 Hz
Power consuption	
Rated operational power	10 VA @ 240 VAC (50 Hz)

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General Specifications

Indication for	
Power supply On	LED, green (flashing when timing)
Output relays ON	LED, red
Environment	
Degree of protection	IP 40 (front panel)
Operating temperature	-10 to +55 °C (14 to 131 °F)
R.H.	35 to 85% RH
Housing dimesions	48 x 48 mm
Weight	Approx. 95 g
CE marking	Yes
EMC	Electromagnetic Compatibillity
Immunity	According to EN 61000-6-1
Emission	According to EN 61000-6-3

Function and Time Setting

Upper right knob:
Setting of function
A - delay on operate
B - symmetrical recycler (OFF first)
B2 - simmetrical recycler (On first)
C - signal ON/OFF delay
D - delay on release
E - interval

Lower right knob:
Time unit selector
sec (seconds)
min (minuts)
hrs (hours)
10h (10 hours)

Lower left knob:
Time range selector
1.2, **3**, **12** and **30**

Centre knob:
Time setting on relative scale

Mode of Operation

Function A
Delay on operate
The time period begins as soon as the trigger contact is closed. At the end of the set delay time the relay operates and doesn't release until the power supply is disconnected.
The trigger contact is invalid while the timer is in operation.

Function B
Symmetrical recycler (OFF first)
The time period begins as soon as the input contact is closed. The relay is OFF during the set delay period, after this time it operates for the same time period. This sequence continues with equal OFF- and ON- time periods until power supply is interrupted.

Function B2
Symmetrical recycler (ON first)
The relay operates and the time period begins as soon as the input contact is closed. After the set delay period the relay releases for the same time period. This sequence continues with equal ON- and OFF- time periods until power supply is interrupted.

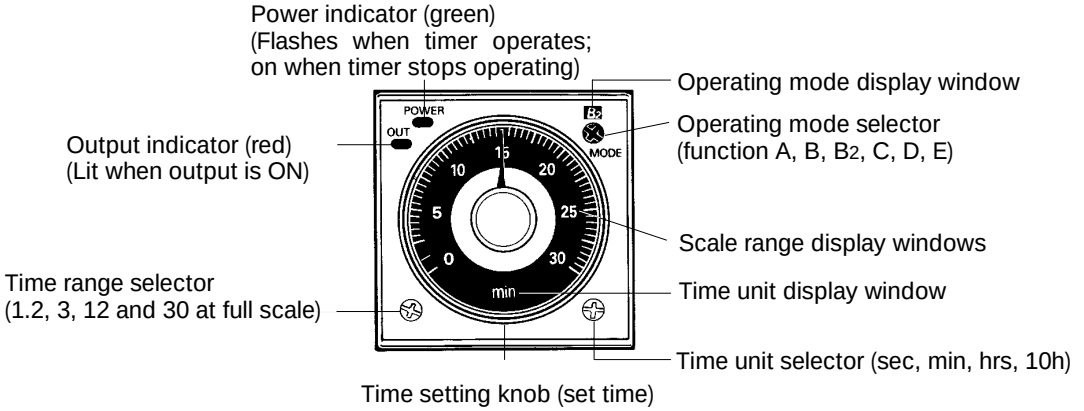
Function C
Signal ON/OFF
The relay operates as soon as the trigger contact is closed. If the trigger contact is released before the set time period, the relay releases after the set delay period; if the trigger contact is released after the set time period, a new time period begins as soon as the input contact is opened. If the trigger contact is closed before the end of the delay time, the device resets and a new period starts.

Function D
Delay on release
The relay operates as soon as the trigger contact is closed. The time period begins when the trigger contact is opened. The relay releases at the end of the set delay time or when the power supply is disconnected. The relay operates again when the input conctact is closed again. If it is opened before the end of the delay time the relay keeps ON, a new time period begins as soon as the contact is closed again.

Function E
Inteval
The relay operates and the time period begins as soon as the trigger contact is closed. The relay releases at the end of this period or when the power supply is disconnected. The relay operates again when the trigger contact is closed again. If the trigger conctact is closed before the end of the delay time, the device resets and a new time period starts.

Additional Load
It's possible to connect an additional load (i.e. a relay) between pins 5 and 10, driven by the trigger contact without damaging the device (see wiring diagram).

Range and operation mode selection



Specifications are subject to change without notice (02.09.04)

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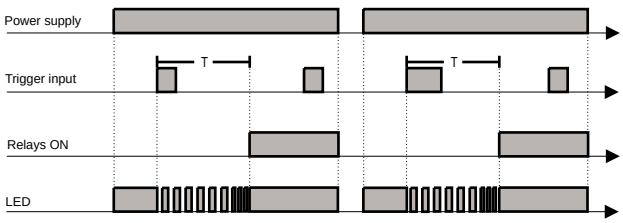
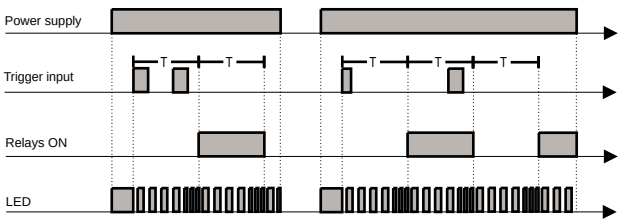
Operating Diagrams

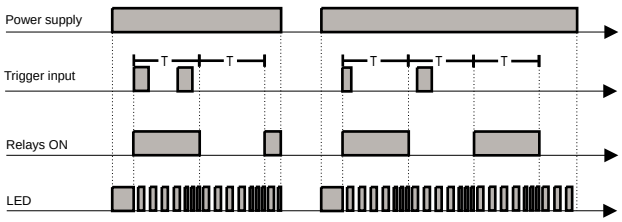
Function A - Delay ON Operate



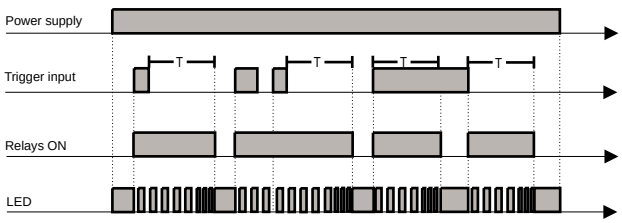
Function B - Symmetrical Recycler OFF first



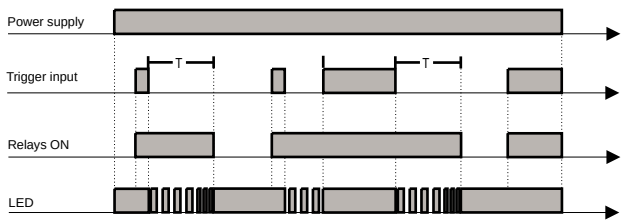
Function B2 - Symmetrical Recycler ON first



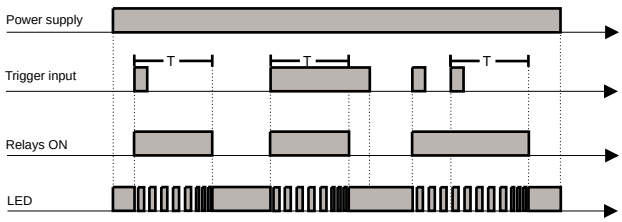
Function C - Signal ON/OFF delay



Function D - Delay ON Release

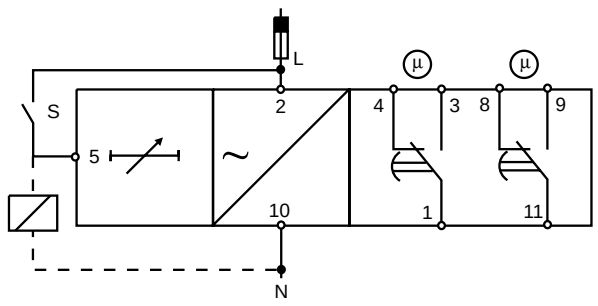


Function E - Interval



Wiring Diagrams

FMB01



Dimensions

FMB01