

Timers Multifunction Types DMB51, DMB71

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DMB51



DMB71

- Selectable time range 0.1 s to 100 h
- 7 knob selectable functions:
 - Op - delay on operate
 - In - interval
 - Io - interval on trigger open
 - Id - double interval
 - Dr - delay on release
 - R - symmetrical recycler ON first
 - Rb - symmetrical recycler OFF first
- Automatic or manual start
- Repeatability: $\leq 0.2\%$
- Output: 5 A SPDT or 5 A DPDT relays
- For mounting on DIN-rail in accordance with DIN/EN 50 022
- 17.5 mm (DMB51C) or 35.5 mm (DMB71D) DIN-rail housing (DIN 43880)
- Combined AC and DC power supply
- LED indication for relay status and power supply ON

Product Description

Multi-voltage timer with 7 knob-selectable functions and 7 knob-selectable time ranges within 0.1s and 100h. For mounting on DIN-rail. Housing 17.5 mm wide for SPDT version and 35.5 mm

for DPDT version, suitable both for back and front panel mounting. Wide power supply range: 24 VDC and 24 to 240 VAC or 12 to 240 VAC/DC.

Ordering Key

DMB 51 C M24

Housing _____
 Function _____
 Type _____
 Item number _____
 Output _____
 Power supply _____

Type Selection

Mounting	Output	Housing	Supply: 12 to 240 VAC/DC	Supply: 24 VDC and 24 to 240 VAC
DIN-rail	SPDT	Mini-D	DMB 51 C W24	DMB 51 C M24
DIN-rail	DPDT	Mini-D	DMB 71 D W24	DMB 71 D M24

Time Specifications

Time ranges Knob selectable	0.1 to 1 s 1 to 10 s 6 to 60 s 60 to 600 s 0.1 to 1 h 1 to 10 h 10 to 100 h
Setting accuracy	$\leq 5\%$
Repeatability	$\leq 0.2\%$
Time variation Within rated power supply Within ambient temperature	$\leq 0.05\%/V$ $\leq 0.2\%/^{\circ}C$
Reset Manual reset of time and/or relay Pulse duration Power supply interruption	Close the trigger contact between pins A1 and Y1 ≥ 100 ms ≥ 200 ms
Automatic start	Connect pins A1 and Y1

Output Specifications

Output	SPDT or DPDT relay
Rated insulation voltage	250 VAC (rms)
Contact Ratings (AgSnO₂)	μ
DMB51 (SPDT): Resistive loads	AC 1 5 A @ 250 VAC DC 12 5 A @ 24 VDC
Small inductive loads	AC 15 2.5 A @ 250 VAC DC 13 2.5 A @ 24 VDC
DMB71 (DPDT) Resistive loads	AC 1 5 A @ 250 VAC AC 15 3 A @ 250 VAC DC 13 3 A @ 24 VDC
Small inductive loads	
Mechanical life	$\geq 30 \times 10^6$ operations
Electrical life	$\geq 10^5$ operations (at 5 A, 250 V, $\cos \varphi = 1$)
Operating frequency	< 7200 operations/h
Dielectric strength Dielectric voltage Rated impulse withstand voltage	2 kVAC (rms) 2.5 kV (1.2/50 μ s)

Supply Specifications

Power supply		Overvoltage cat. II (IEC 60664, IEC 60038)
Rated operational voltage through terminals:		
(DMB51C)	A1, A2 M24:	24 VDC $\pm$ 15% and 24 to 240 VAC + 10% -15%, 45 to 65 Hz
	W24:	12 to 240 VDC + 10% -15% and 12 to 240 VAC + 10% -15%, 45 to 65 Hz
(DMB71D)	A1, A2 M24:	24 VDC $\pm$ 15% 24 to 240 VAC + 10% -15%, 45 to 65 Hz
	W24:	12 to 240 VDC + 10% -15% and 12 to 240 VAC +10% -15%, 45 to 65 Hz
Voltage interruption		$\leq$ 10 ms
Rated operational power		
(DMB51C)	AC supply:	4 VA
	DC supply:	1.5 W
(DMB71D)	AC supply	5.5 VA
	DC supply	2 W

Time Setting

Upper knob:	Centre knob:
Setting of function:	Time setting on relative scale:
Op - delay on operate	1 to 10 with respect to the chosen range.
In - interval	
Io - interval on trigger open	
Id - double interval	Lower knob:
Dr - delay on release	Setting of time range
R - symmetrical recycler (ON first)	
Rb - symmetrical recycler (OFF first)	

Mode of Operation

Function Op

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 does not release until the trigger contact is closed again or the power supply is disconnected. If the trigger contact is closed before the end of the delay time, the device resets and a new time period starts.

Function In

Interval

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 contact is closed before the end of the delay time, the device resets and a new time period starts.

Function Io

Interval on trigger open

The relay operates and the time period begins as soon as the trigger contact is opened. At the end of the set delay or when the power supply is disconnected the relay releases. The relay operates again when the trigger contact is opened again. If the trigger contact

is opened before the end of the delay time the relay keeps ON and a new time period begins.

Function Id

Double interval

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. When the trigger contact is opened the relay operates again for the set delay period. If the trigger contact is opened before the end of the first time period the second one begins; if the trigger contact is closed before the end of

the second time period the device resets and the first time period begins again.

Function Dr

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 contact 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.

General Specifications

Power ON delay		$\leq$ 100 ms
Indication for		
Power supply ON		LED, green
Output relays ON		LED, yellow (flashing when timing)
Environment		(EN 60529)
Degree of protection		IP 20
Pollution degree		2 (IEC 60664)
Operating temperature		-20° to +60°C, R.H. < 95%
Storage temperature		-30° to +80°C, R.H. < 95%
Housing		
Dimensions	DMB51C	17.5 x 81 x 67.2 mm
	DMB71D	35.5 x 81 x 67.2 mm
Material		PA66
Weight		75 g
Screw terminals		
Tightening torque		Max. 0.5 Nm according to IEC EN 60947
Approvals		UL, CSA RINA (DMB 51 only)
CE Marking		Yes
EMC		
Immunity		Electromagnetic Compatibility According to EN 61000-6-2
Emissions		According to EN 61000-6-3

Mode of Operation (cont.)

Function R

Symmetrical recycler, ON-time period 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 the power supply is interrupted.

Function Rb

Symmetrical recycler, OFF-time period 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 the power supply is interrupted.

Additional Load

It's possible to wire an additional load (i.e. a relay) between pins Y1 and A2, driven by the trigger contact without damaging the device.

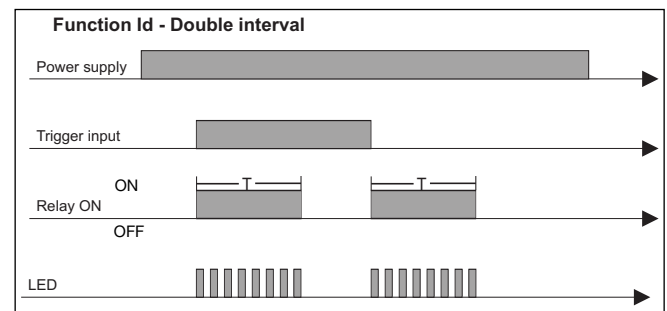
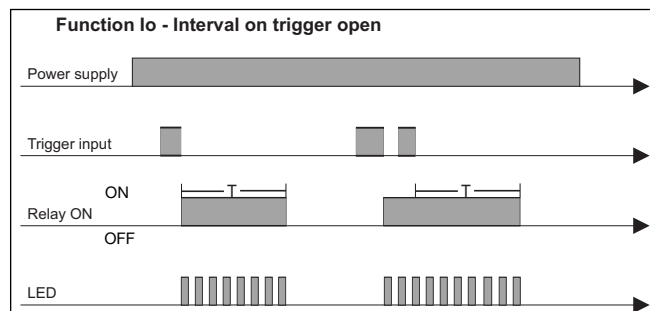
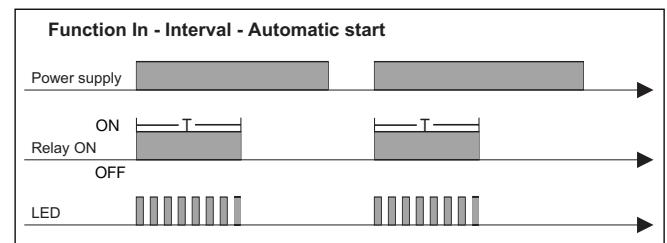
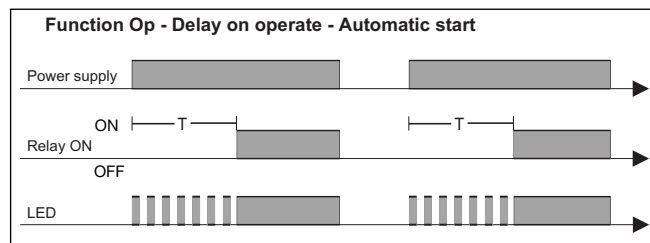
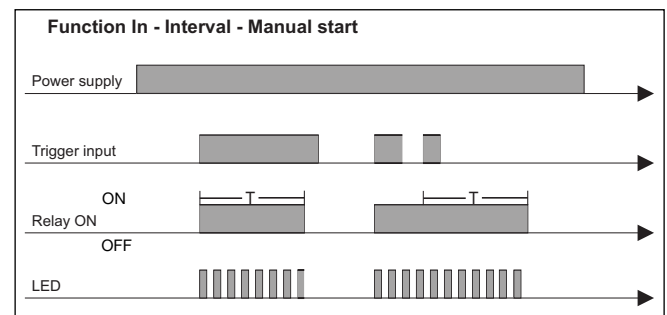
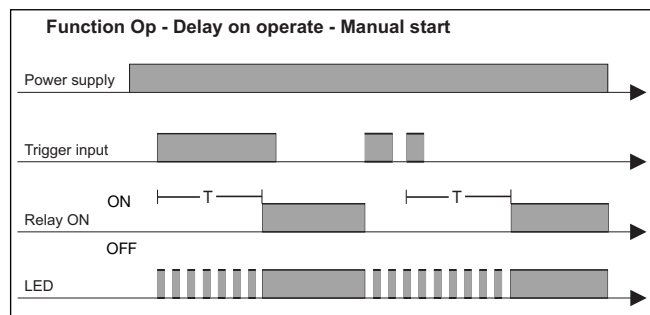
Yellow LED working mode

Timing: Slow blinking

Relay ON: See operation diagrams

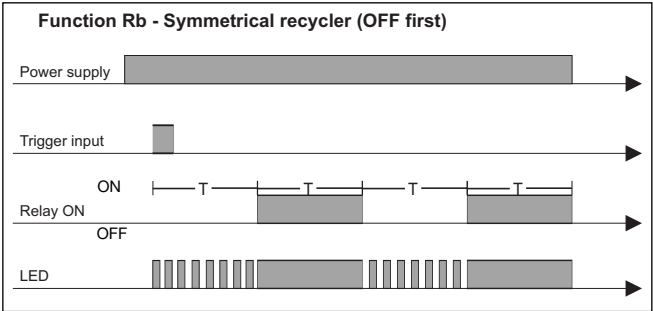
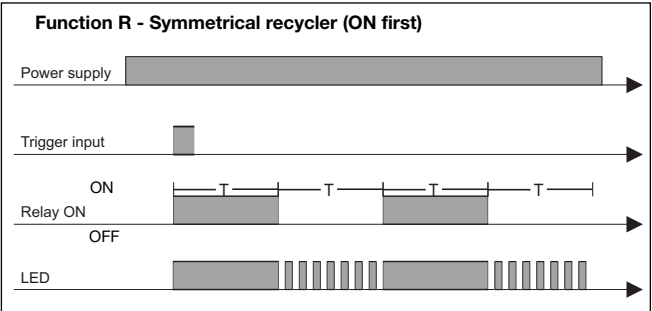
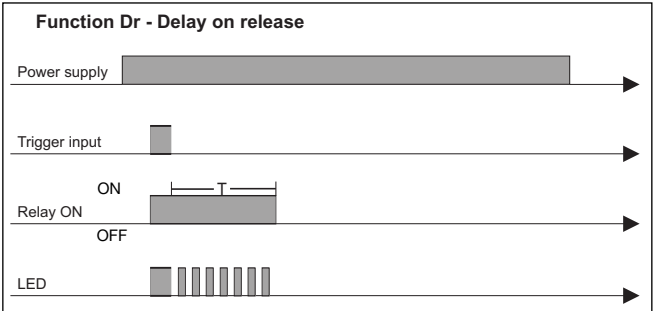
Incorrect knobs position: Fast blinking

Operating Diagrams

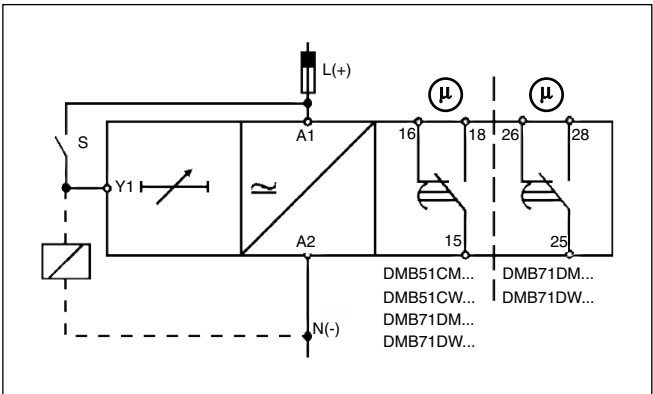




Operating Diagrams (cont.)



Wiring Diagram



Dimensions

