

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/EC 60715
- 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 DMB51 (SPDT): Resistive loads Small inductive loads	μ AC 1 5 A @ 250 VAC DC 12 5 A @ 24 VDC AC 15 2.5 A @ 250 VAC DC 13 2.5 A @ 24 VDC
DMB71 (DPDT) Resistive loads Small inductive loads	AC 1 5 A @ 250 VAC AC 15 3 A @ 250 VAC DC 13 3 A @ 24 VDC
Mechanical life	$\geq 30 \times 10^6$ operations
Electrical life	$\geq 50 \times 10^3$ operations (at 5 A, 250 V, $\cos \varphi = 1$)
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: Setting of function: 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)	Centre knob: Time setting on relative scale: 1 to 10 with respect to the chosen range. Lower knob: Setting of time range
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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.

Function R

Symmetrical recycler, ON-time period first

The relay operates and the time period begins as

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	
DMB51	-25° to +60°C, R.H. < 95%
DMB71	-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
Emissions	According to EN 61000-6-2 According to EN 61000-6-3

Mode of Operation (cont.)

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 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.

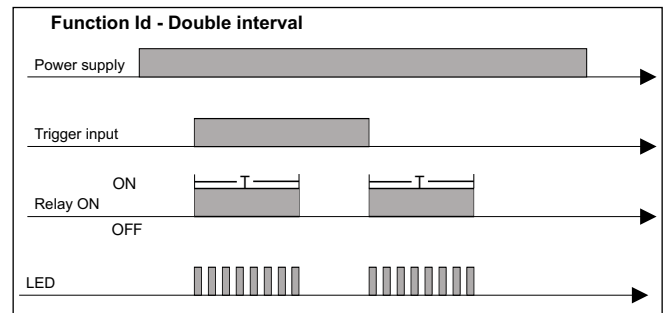
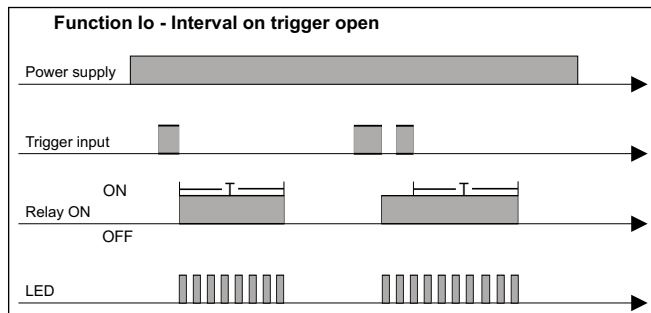
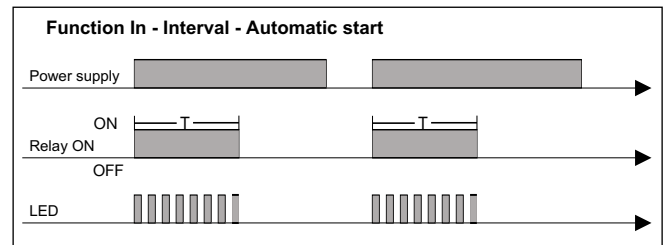
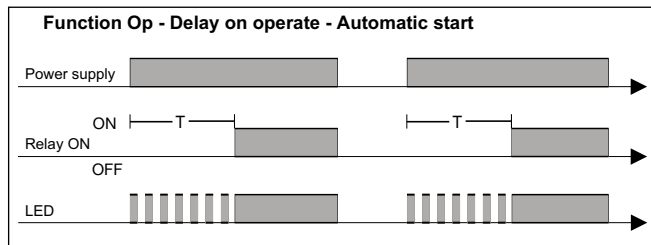
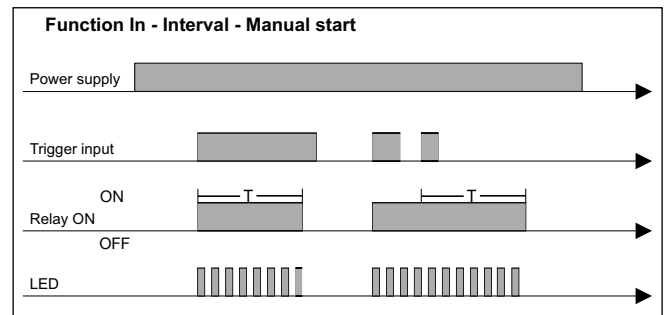
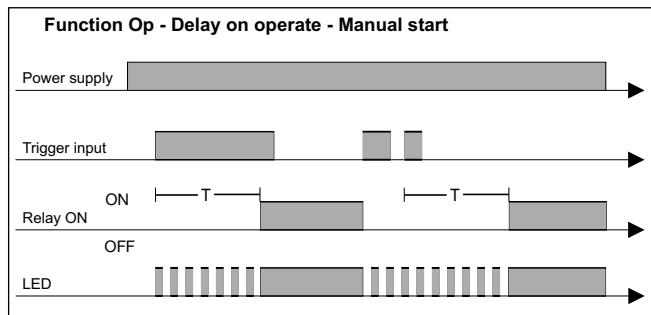
Additional Load
 It's possible to wire an additional load (i.e. a relay)

between pins Y1 and A2, driven by the trigger contact without damaging the device.

Yellow LED working mode

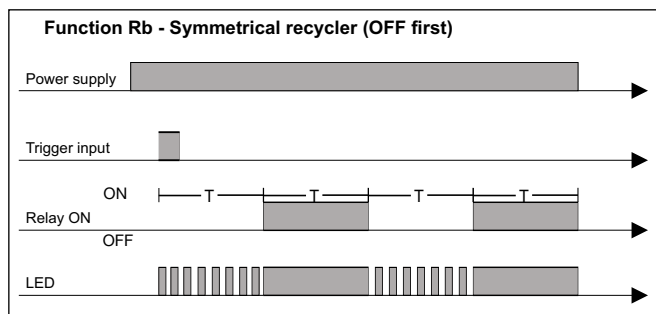
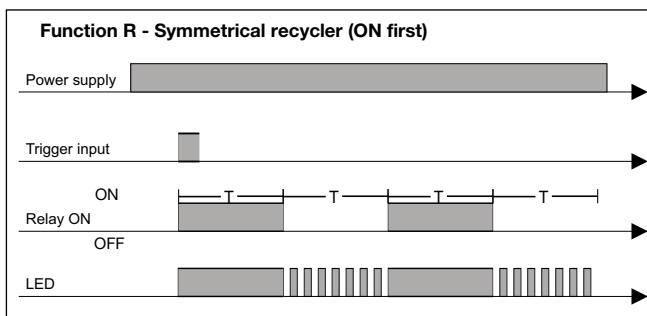
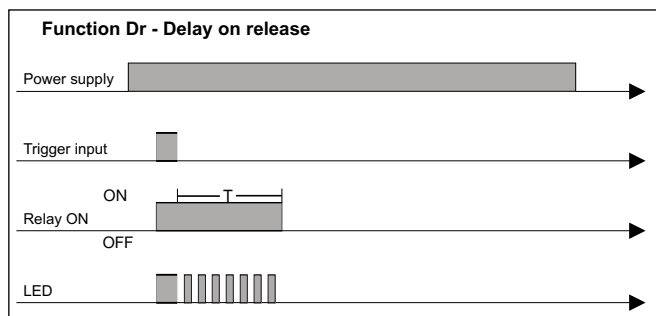
Timing: Slow blinking
 Relay ON: See operation diagrams
 Incorrect knobs position:
 Fast blinking

Operating Diagrams

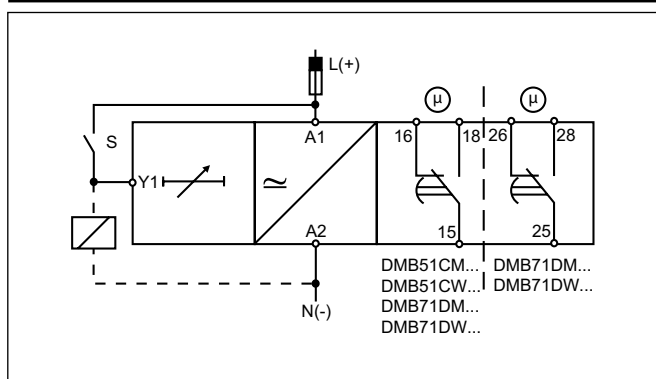




Operating Diagrams (cont.)



Wiring Diagram



Dimensions

