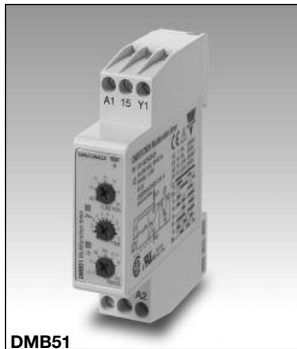# Timers
Multifunction
Types DMB51, DMB71

CARLO GAVAZZI

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: ≤ 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
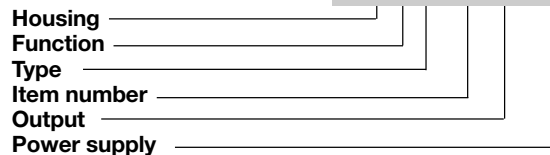
Type Selection

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	≤ 5%
Repeatability	≤ 0.2%
Time variation Within rated power supply Within ambient temperature	≤ 0.05%/V ≤ 0.2%/°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 (AgSnO$_2$) DMB51 (SPDT):	μ
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
Small inductive loads AC 15	3 A @ 250 VAC
DC 13	3 A @ 24 VDC
Mechanical life	≥ 30 x 10^6 operations
Electrical life	≥ 10^5 operations (at 5 A, 250 V, cos φ = 1)
Operating frequency	< 7200 operations/h
Dielectric strength Dielectric voltage Rated impulse withstand voltage	2 kVAC (rms) 2.5 kV (1.2/50 μs)

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Supply Specifications

Power supply			Overvoltage cat. II
Rated operational voltage through terminals:			(IEC 60664, IEC 60038)
(DMB51C)	A1, A2	M24:	24 VDC ± 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 ± 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			≤ 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

General Specifications

Power ON delay	≤ 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	Electromagnetic Compatibillity
Immunity	According to EN 61000-6-2
Emissions	According to EN 61000-6-3

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.
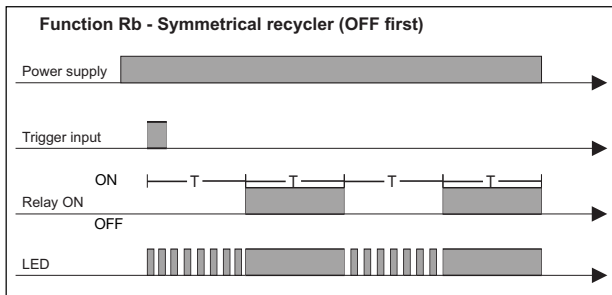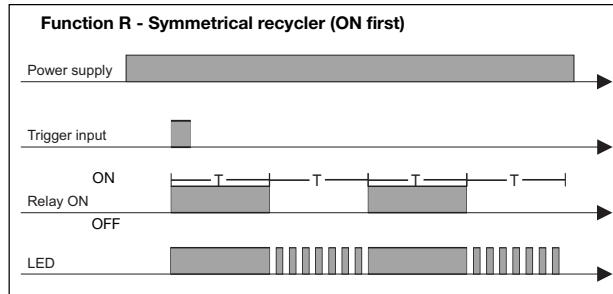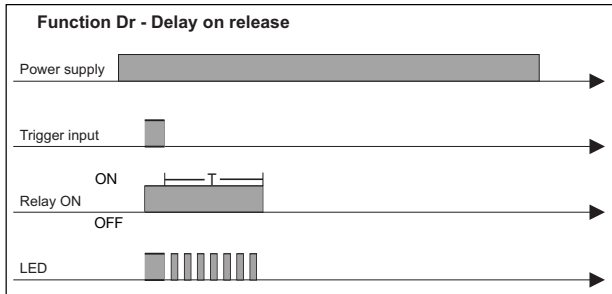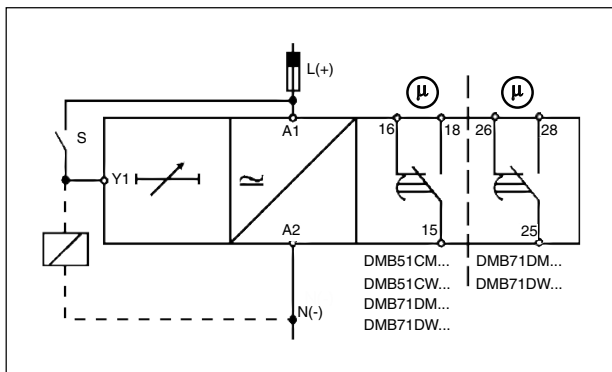
Function Dr
Delay on release
The relay operates as soon as the trigger contact is closed. The time period begins when the trigger contact is opened. The relay releases at the end of the set delay time or when the power supply is disconnected. The relay operates again when the input contact is closed 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.

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Operating Diagrams (cont.)

Function Dr - Delay on release

Power supply

Trigger input

ON
Relay ON
OFF

LED

Function R - Symmetrical recycler (ON first)

Power supply

Trigger input

ON
Relay ON
OFF

LED

Function Rb - Symmetrical recycler (OFF first)

Power supply

Trigger input

ON
Relay ON
OFF

LED

Wiring Diagram

L(+)

A1

16   18   26   28

S

Y1

A2   15   25

DMB51CM...
DMB51CW...
DMB71DM...
DMB71DW...

DMB71DM...
DMB71DW...

N(-)

Dimensions

DMB51

17.5   67.2
18.7
81   45
2

DMB71

35.5   67.2
18.7
81   45
2

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