Timers
Multifunction
Type DMB51

CARLO GAVAZZI

- **Selectable timerange 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: 8 A SPDT relay**
- **For mounting on DIN-rail in accordance with DIN/EN 50 022**
- **17.5 mm DIN-rail housing**
- **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. 17.5 mm wide housing suitable both for back and front panel mounting.

Ordering Key

DMB 51 C M24

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

Type Selection

Mounting	Output	Housing	Supply: 24 VDC and 24 to 240 VAC
DIN-rail	SPDT	Mini-D	**DMB 51 C 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	≤ 0.05%/V
Within ambient temperature	≤ 0.2%/°C
Reset	
Manual reset of time and/or relay	Close the trigger contact between pins A1 and Y1
Pulse duration	≥ 100 ms
Power supply interruption	≥ 200 ms
Automatic start	Connect pins A1 and Y1

Output Specifications

Output		SPDT relay
Rated insulation voltage		250 VAC (rms)
Contact Ratings ($AgSnO_2$)		μ
Resistive loads	AC 1	8 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
Mechanical life		≥ 30 x 10^6 operations
Electrical life		≥ 10^5 operations (at 8 A, 250 V, cos φ = 1)
Operating frequency		< 7200 operations/h
Dielectric strength		
Dielectric voltage		2 kVAC (rms)
Rated impulse withstand voltage		2.5 kV (1.2/50 μs)

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Supply Specifications

Power supply	Overvoltage cat. II (IEC 60664, IEC 60038)
Rated operational voltage through terminals: A1, A2	24 VDC ± 15% and 24 to 240 VAC + 10% -15%, 45 to 65 Hz
Voltage interruption	≤ 10 ms
Rated operational power	1.5 W

General Specifications

Power ON delay	≤ 100 ms
Indication for	
Power supply status	LED, green
Output status	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%
Weight	75 g
Screw terminals	
Tightening torque	Max. 0.5 Nm according to IEC 60947
Approvals	UL, CSA
CE Marking	Yes
EMC	Electromagnetic Compatibillity
Immunity	According to EN 50082-2
Emission	According to EN 50082-1

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

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 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

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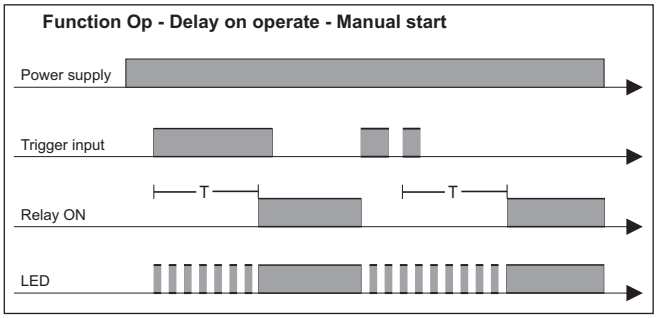
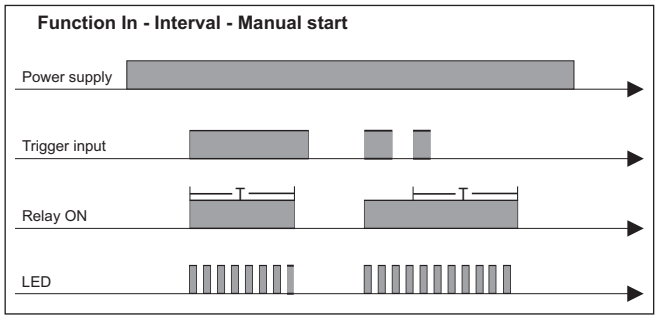
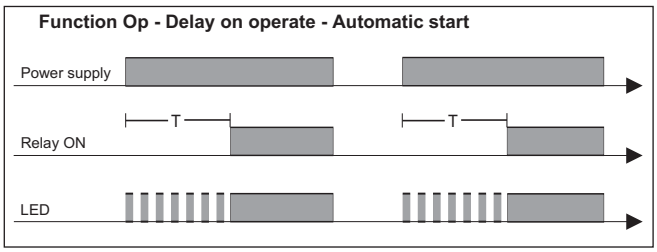
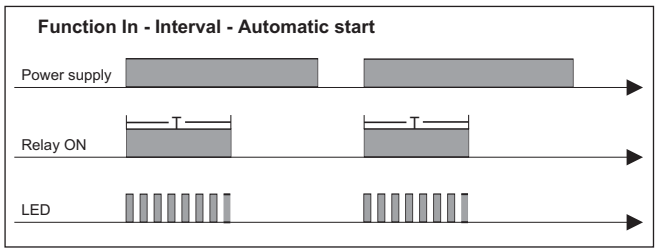
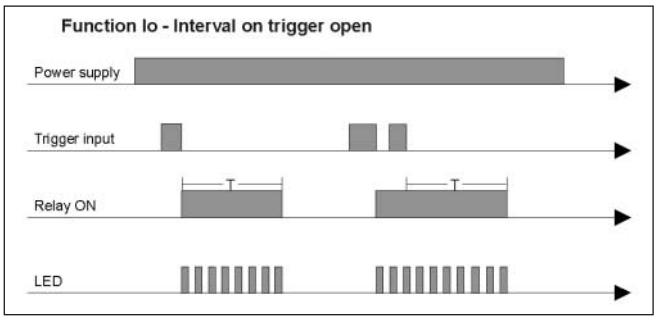
Operating Diagrams

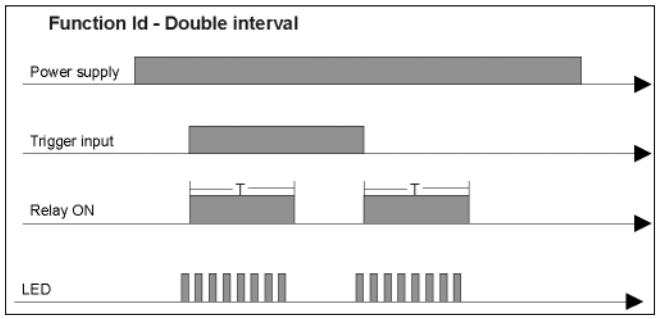


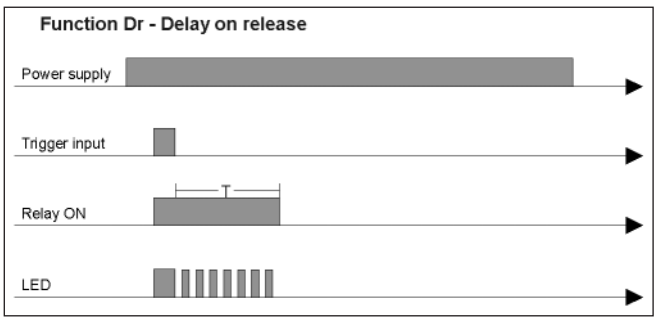


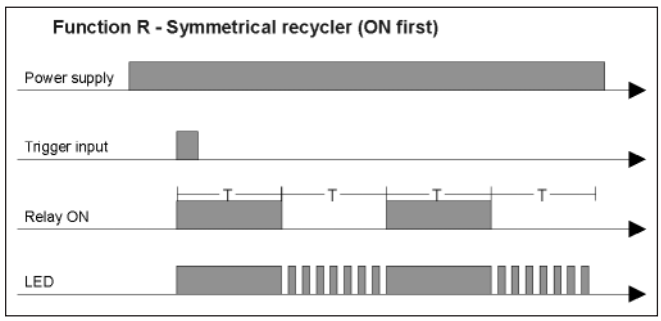


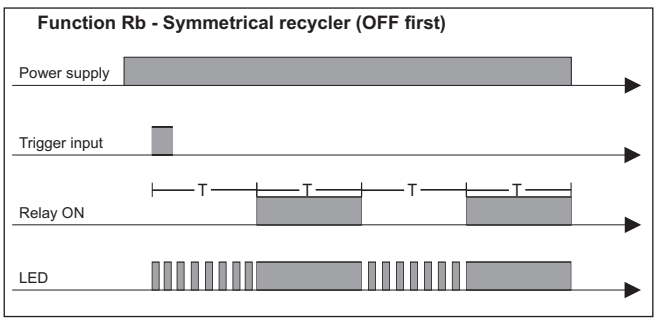












Wiring Diagram