

# Timers Multifunction Types DMB01, PMB01

CARLO GAVAZZI



DMB 01



PMB 01

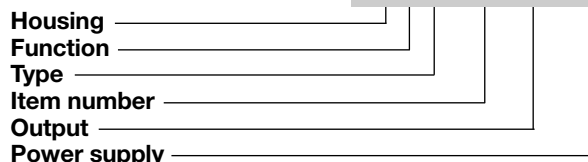
- Time range 0.1 s to 100 h
- 7 knob selectable functions:
  - Op - delay on operate
  - In - interval
  - Io - interval on trigger open
  - Id - double interval
  - Dr - delay on release
  - R - symmetrical recycler ON first
  - Rb - symmetrical recycler OFF first
- Knob selection of time range
- Knob-adjustable time setting
- Automatic or manual start
- Repeatability:  $\leq 0.2\%$
- Output: 8 A SPDT or 8 A DPDT relay
- For mounting on DIN-rail in accordance with DIN/EN 50 022 or Plug-in
- 22.5 mm Euronorm or 36 mm Plug-in module 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 (DMB01) or Plug-in (PMB01).

## Ordering Key

**DMB 01 C M24**



## Type Selection

Mounting	Output	Housing	Supply: 24 VDC and 24 to 240 VAC	Supply: 24 to 240 VAC/DC
DIN-rail	SPDT DPDT	D-Housing	<b>DMB 01 C M24</b>	<b>DMB 01 D M24</b>
Plug-in	SPDT DPDT	P-Housing	<b>PMB 01 C M24</b>	<b>PMB 01 D M24</b>

## Time Specifications

<b>Time ranges</b> 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 100h
<b>Setting accuracy</b>	$\leq 5\%$
<b>Repeatability</b>	$\leq 0.2\%$
<b>Time variation</b> Within rated power supply Within ambient temperature	$\leq 0.05\%/V$ $\leq 0.2\%/^{\circ}C$
<b>Reset</b> Manual reset of time and/or relay	Close the trigger contact between pins A1 and Y1 or 2 and 5
Pulse duration Power supply interruption	$\geq 100$ ms $\geq 200$ ms
<b>Automatic start</b>	Connect pins A1 and Y1 or 2 and 5

## Output Specifications

<b>Output</b>	SPDT or DPDT relay
<b>Rated insulation voltage</b>	250 VAC (rms)
<b>Contact Ratings (AgSnO<sub>2</sub>)</b>	$\mu$
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
<b>Mechanical life</b>	$\geq 30 \times 10^6$ operations
<b>Electrical life</b>	$\geq 10^5$ operations (at 8 A, 250 V, $\cos \varphi = 1$ )
<b>Operating frequency</b>	$< 7200$ operations/h
<b>Dielectric strength</b>	
Dielectric voltage	2 kVAC (rms)
Rated impulse withstand volt.	4 kV (1.2/50 $\mu$ s)

## Supply Specifications

<b>Power supply</b> Rated operational voltage through terminals: (DMB01C) A1, A2 (PMB01C) 2, 10  (DMB01D) A1, A2 (PMB01D) 2, 10	Overvoltage cat. III (IEC 60664, IEC 60038)  24 VDC $\pm 15\%$ and 24 to 240 VAC $+10\%/-15\%$ , 45 to 65 Hz 24 to 240 VAC/DC $+10\%/-15\%$ , 45 to 65 Hz
<b>Voltage interruption</b>	$\leq 10$ ms
<b>Rated operational power</b> AC supply DC supply	4 VA 1.5 W

## Function and Time Setting

<b>Upper knob:</b> 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)	<b>Centre knob:</b> Time setting on relative scale: 1 to 10 with respect to the chosen range.  <b>Lower knob:</b> Setting of time range.
--	--

## Mode of Operation

<b>Function Op</b> <b>Delay on operate</b> 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 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.	keeps ON and a new time period starts.
<b>Function Io</b> <b>Interval on trigger open</b> 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.	
<b>Function Id</b> <b>Double interval</b> 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 relay	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

## General Specifications

<b>Power ON delay</b>	$\leq 100$ ms
<b>Indication for</b> Power supply ON Output relays ON	LED, green LED, yellow (flashing when timing)
<b>Environment</b> Degree of protection Pollution degree  Operating temperature Storage temperature	(EN 60529) IP 20 3 (DMB01), 2 (PMB01) (IEC 60664)  -20 to 60°C, R.H. < 95% -30 to 80°C, R.H. < 95%
<b>Housing dimensions</b> DIN-rail version Plug-in version	22.5 x 80 x 99.5 mm 36 x 80 x 94 mm
<b>Weight</b>	Approx. 130 g
<b>Screw terminals</b> Tightening torque	Max. 0.5 Nm according to IEC EN 60947
<b>Approvals</b>	UL, CSA RINA (DMB01 only)
<b>CE Marking</b>	Yes
<b>EMC</b> Immunity Emission	Electromagnetic Compatibility According to EN 61000-6-2 According to EN 61000-6-3
<b>Timer Specifications</b>	According to EN 61812-1

<b>Function R</b> <b>Symmetrical recycler, ON-time period first</b> 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.	
<b>Function Rb</b> <b>Symmetrical recycler, OFF-time period first</b> 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.	
<b>Function Dr</b> <b>Delay on release</b> 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 closed before the end of the delay time the relay keeps ON, a new time period begins as soon as the contact is opened again.	

## Mode of Operation (cont.)

### Additional Load

It's possible to wire an additional load (i.e. a relay) between pins Y1 and A2, or 5 and 10, driven by the trig-

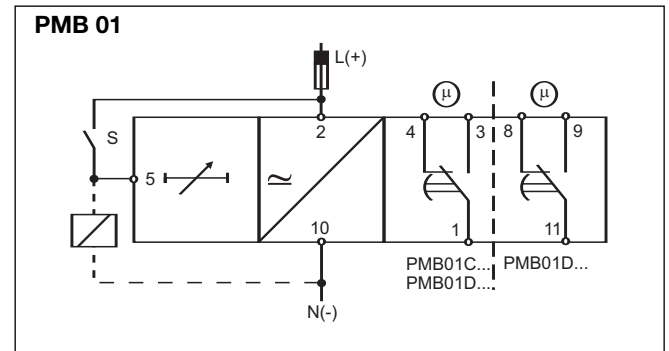
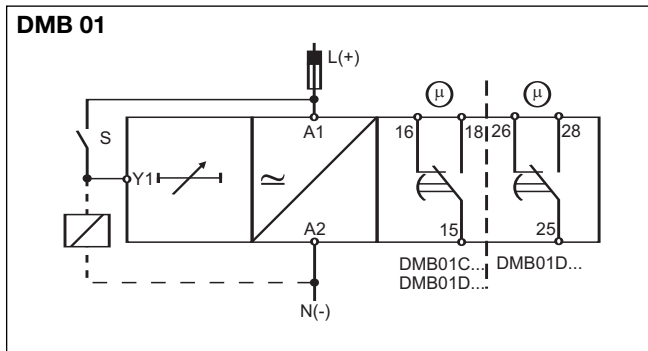
ger contact without damaging the device (see wiring diagram).

### Yellow LED working mode

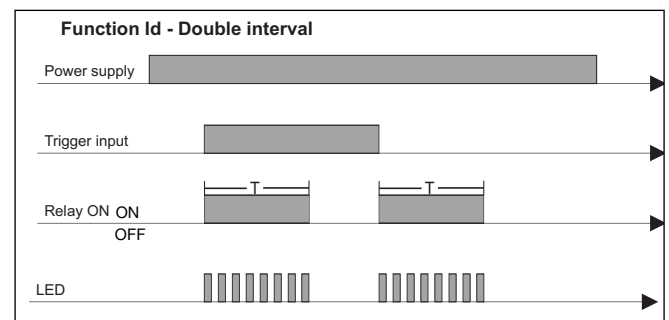
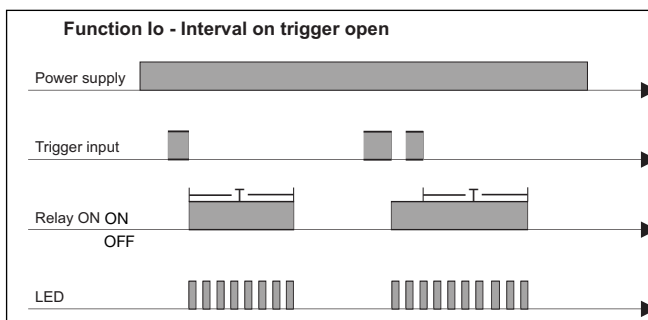
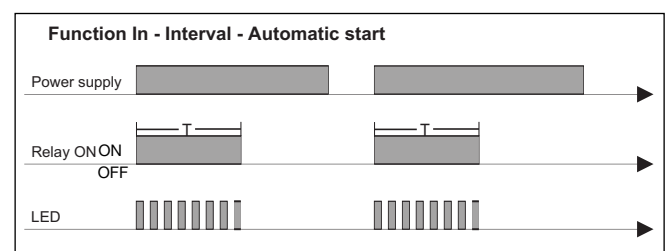
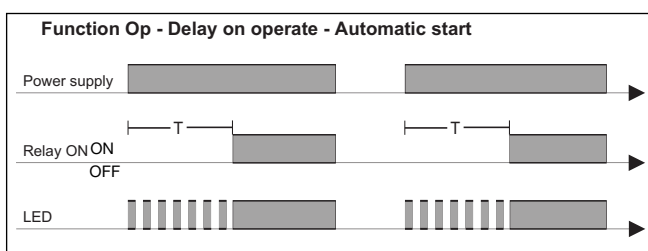
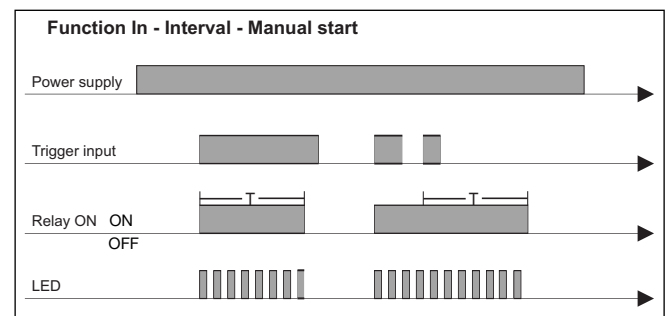
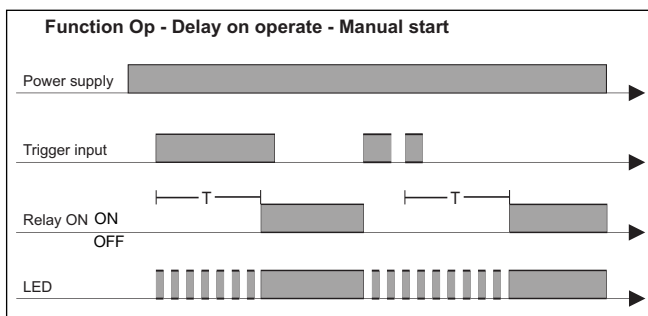
Timing: Slow blinking  
Relay ON: See operation diagrams

Incorrect knobs position:  
Fast blinking

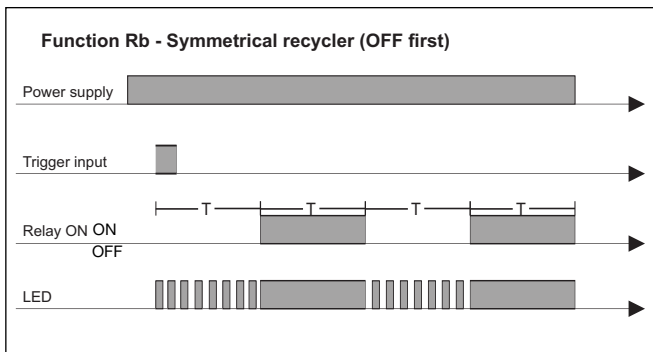
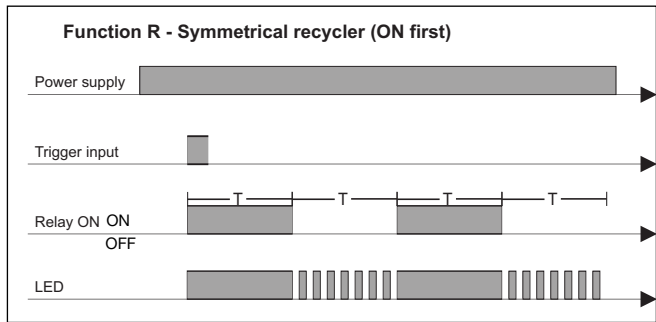
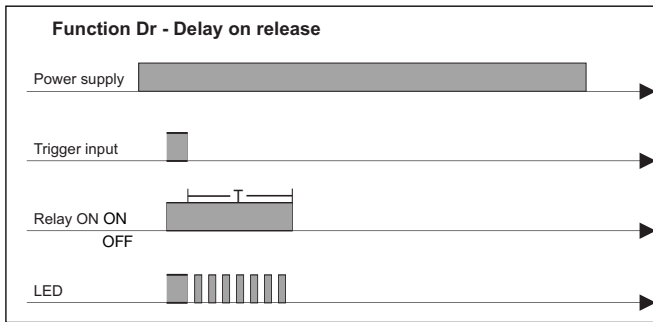
## Wiring Diagrams



## Operation Diagrams



## Operation Diagrams (cont.)



## Dimensions

