Timers
Multifunction Types DMB51, DMB71

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

<table>
<thead>
<tr>
<th>Housing</th>
<th>Function</th>
<th>Type</th>
<th>Item number</th>
</tr>
</thead>
<tbody>
<tr>
<td>DMB 51 C M24</td>
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</tbody>
</table>

Type Selection

<table>
<thead>
<tr>
<th>Mounting</th>
<th>Output</th>
<th>Housing</th>
<th>Supply:</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIN-rail</td>
<td>SPDT</td>
<td>Mini-D</td>
<td>12 to 240 VAC/DC</td>
</tr>
<tr>
<td>DIN-rail</td>
<td>DPDT</td>
<td>Mini-D</td>
<td>DMB 71 D W24</td>
</tr>
</tbody>
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Time Specifications

- 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

Output Specifications

- Output: SPDT or DPDT relay
- Rated insulation voltage: 250 VAC (rms)
- Contact Ratings (AgSnO₂):
  - DMB51 (SPDT): μ
  - DMB71 (DPDT):
    - Resistive loads
      - AC 1 DC 12: 5 A @ 250 VAC
      - AC 15 DC 13: 2.5 A @ 250 VAC
    - Small inductive loads
      - AC 1: 5 A @ 250 VAC
      - AC 15 DC 13: 3 A @ 250 VAC
- Mechanical life: ≥ 30 x 10⁶ operations
- Electrical life: ≥ 10⁶ operations (at 5 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)
### Supply Specifications

<table>
<thead>
<tr>
<th>Power supply</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated operational voltage</td>
<td></td>
</tr>
<tr>
<td>through terminals:</td>
<td></td>
</tr>
<tr>
<td>(DMB51C) A1, A2 M24:</td>
<td></td>
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<tr>
<td>W24:</td>
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<tr>
<td>24 VDC ± 15% and 24 to 240 VAC + 10% -15%, 45 to 65 Hz</td>
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<tr>
<td>(DMB71D) A1, A2 M24:</td>
<td></td>
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<tr>
<td>W24:</td>
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<tr>
<td>24 VDC ± 15% and 24 to 240 VAC + 10% -15%, 45 to 65 Hz</td>
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</table>

| 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              |

### General Specifications

| Power ON delay               | ≤ 100 ms         |

| Indication for               |                  |
| Power supply ON             | LED, green       |
| Output relays ON            | LED, yellow      |
| (flashing when timing)      |                  |

| Environment                  |                  |
| Degree of protection        | (EN 60529)       |
| Pollution degree            | IP 20            |
| Operating temperature       | 2 (-20° to +80°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             |

### 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 opened. The relay releases 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 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 releases. The relay operates again when the trigger contact is opened again. If the trigger contact is closed 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 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 operates at the end of the set delay 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 set delay period or when the power supply is disconnected 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.
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

Function Op - Delay on operate - Manual start
Function In - Interval - Manual start
Function Op - Delay on operate - Automatic start
Function In - Interval - Automatic start
Function Io - Interval on trigger open
Function Id - Double interval
Operating Diagrams (cont.)

Function Dr - Delay on release

- Power supply
- Trigger input
- Relay ON: ON, OFF
- LED

Function R - Symmetrical recycler (ON first)

- Power supply
- Trigger input
- Relay ON: ON, OFF
- LED

Function Rb - Symmetrical recycler (OFF first)

- Power supply
- Trigger input
- Relay ON: ON, OFF
- LED

Wiring Diagram

Dimensions

DMB51

DMB71