Industrial

Multifunction Timer Relay

Specifications and Dimensions

ERSMFT24

Multi-voltage timer with 7 switch-selectable functions and 7 switch-selectable time ranges within 0.1s and 100h. For mounting on DIN-rail. Housing 17.5 mm wide for SPDT version suitable both for back and front panel mounting. Power supply range: 24V DC and 24 to 240V AC.

- Selectable time range 0.1 s to 100 h
- 7 switch 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: 5A SPDT or 5A DPDT relays
- For mounting on DIN-rail in accordance with DIN/EN 50 022
- 17.5 mm (ERSMFT24) DIN-rail housing (DIN 43880)
- Combined AC and DC power supply
- LED indication for relay status and power supply ON

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Time Specifications

Time ranges	
Switch 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 relay
Rated insulation voltage	250V AC (rms)
Contact Ratings ($AgSnO_2$) DMB51 (SPDT): **Resistive loads** AC 1 DC 12 **Small inductive loads** AC 15 DC 13 **Resistive loads** AC 1 **Small inductive loads** AC 15 DC 13	µ 5A @ 250V AC 5A @ 24V DC 2.5A @ 250V AC 2.5A @ 24V DC 5A @ 250V AC 3A @ 250V AC 3A @ 24V DC
Mechanical life	≥ 30 x 10^6 operations
Electrical life	≥ 10^5 operations (at 5A, 250V, cos φ = 1)
Operating frequency	< 7200 operations/h
Dielectric strength Dielectric voltage Rated impulse withstand voltage	 2kV AC (rms) 2.5kV (1.2/50 µs)

Supply Specifications

Power supply Rated operational voltage through terminals: (ERSMFT24) A1, A2 M24: W24:	Overvoltage cat. II IEC 60664, IEC 60038) 24V DC ± 15% and 24 to 240V AC + 10% -15%, 45 to 65 Hz 12 to 240V DC + 10% -15% and 12 to 240V AC + 10% -15%, 45 to 65 Hz
Voltage interruption	≤ 10 ms
Rated operational power (DMB51C) AC supply: DC supply: (DMB71D) AC supply DC supply	 4VA 1.5W 5.5VA 2W

General Specifications

Power ON delay	≤ 100 ms
Indication for Power supply ON Output relays ON	 LED, green LED, yellow flashing when timing)
Environment Degree of protection Pollution degree Operating temperature Storage temperature	(EN 60529) IP 20 2 (IEC 60664) -20° to +60°C, R.H. < 95% -30° to +80°C, R.H. < 95%
Housing Dimensions: ERSMFT24 Material	 17.5 x 81 x 67.2 mm PA66
Weight	75 g
Screw terminals Tightening torque	 Max. 0.5 Nm according to IEC EN 60947
Approvals	UL, CSA RINA (ERSMFT24)
CE Marking	Yes
EMC Immunity Emissions	Electromagnetic Compatibillity According to EN 61000-6-2 According to EN 61000-6-3

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Time Setting

Upper switch:

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 switch:

Time setting on relative scale: 1 to 10 with respect to the chosen range.

Lower switch:

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, ONtime 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 switch position: Fast blinking

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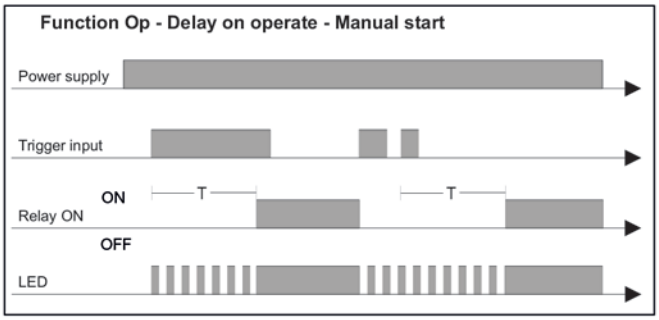

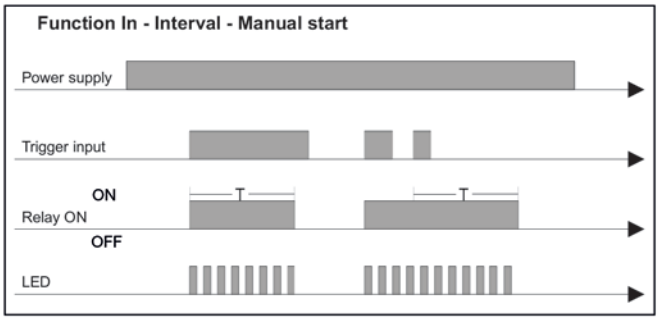

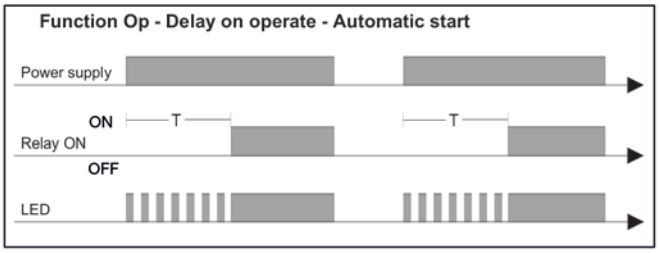

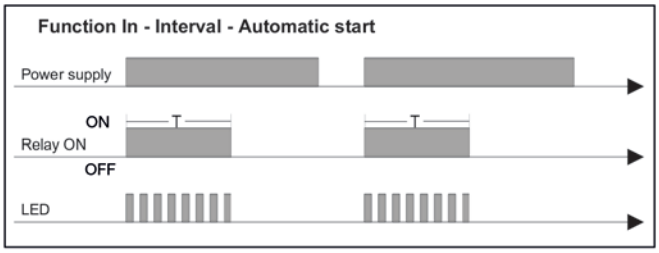

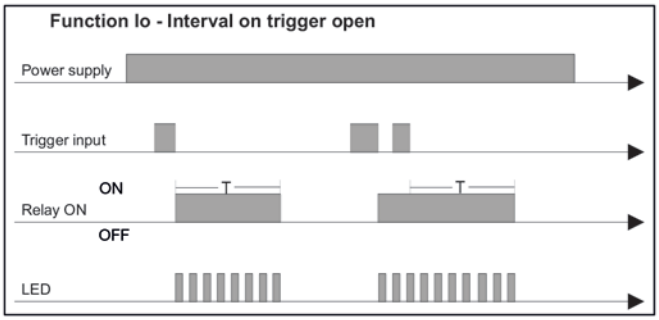

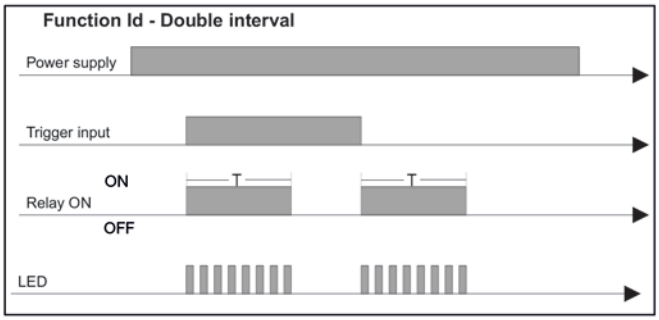

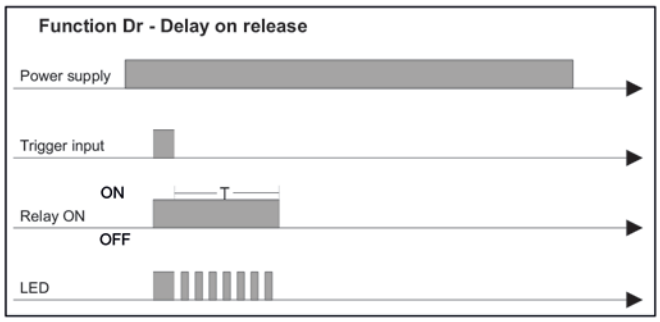

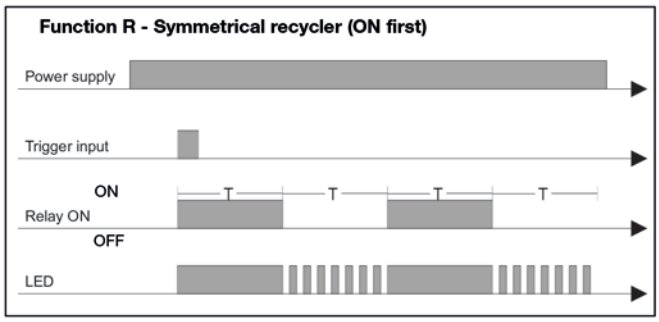

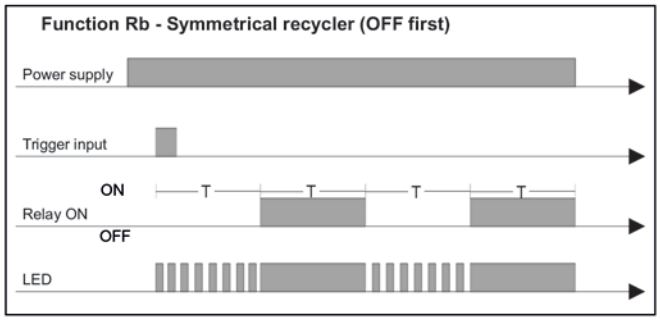

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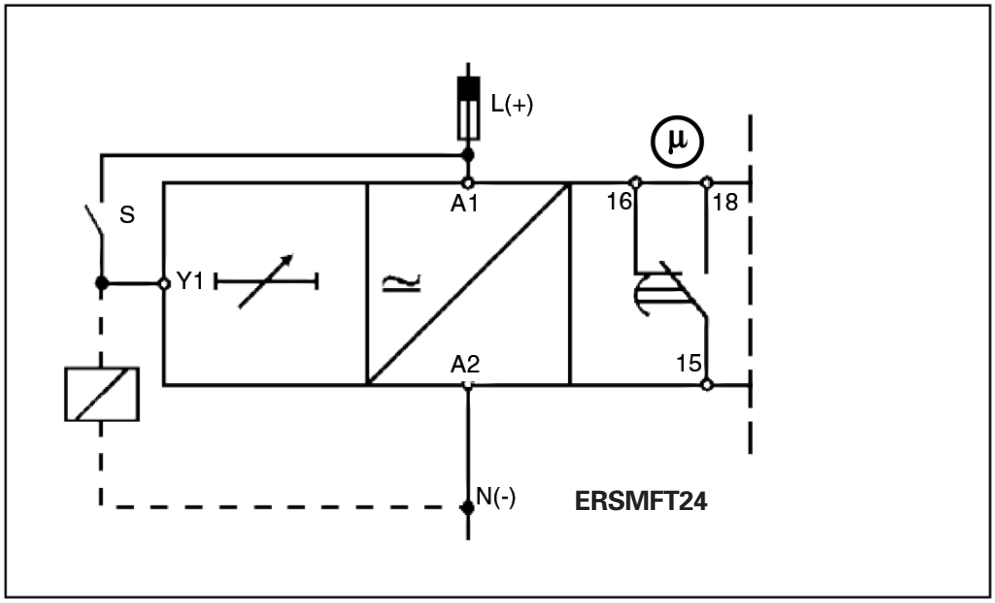
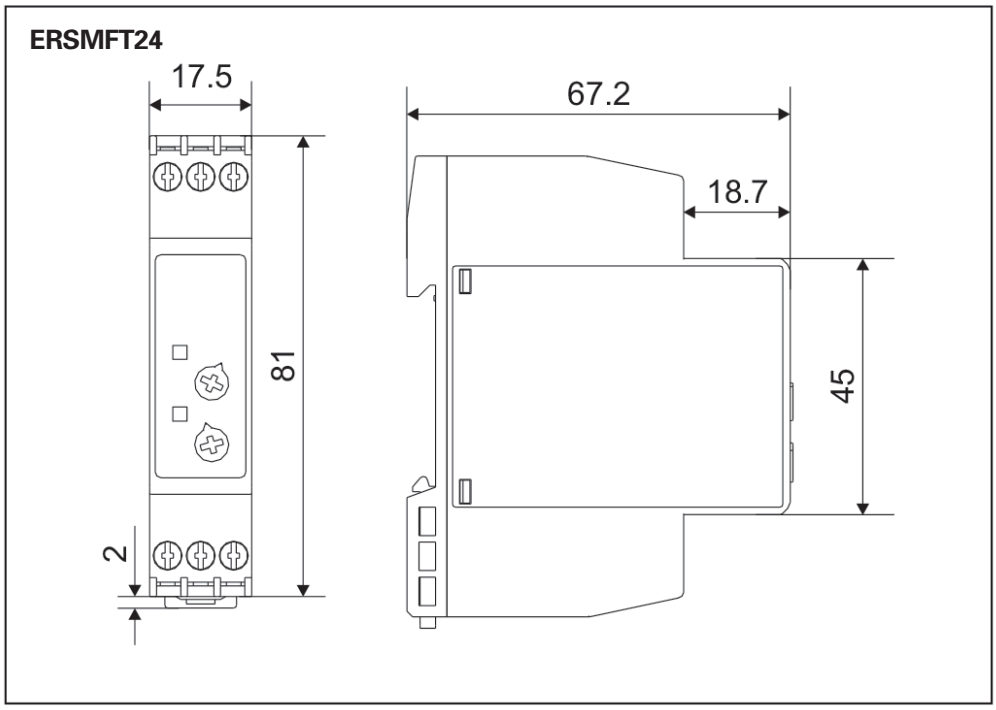
Wiring Diagram



Dimensions



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