D 620
29.12.04 MZ

UNIVERSAL TIMER

TMP 318 Eng.

- **1 input with On-Off switch**
- **1 timer output with SPDT switch**
- **Power supply 230 Volt ~ ; DIN rail mounting**

CE

1. APPLICATION

TMP 318 is designed for use in all those situations where it is necessary to modify or create timed operations starting from a signal of the type OPENS-CLOSES (ON-OFF)..

2. FUNCTIONS

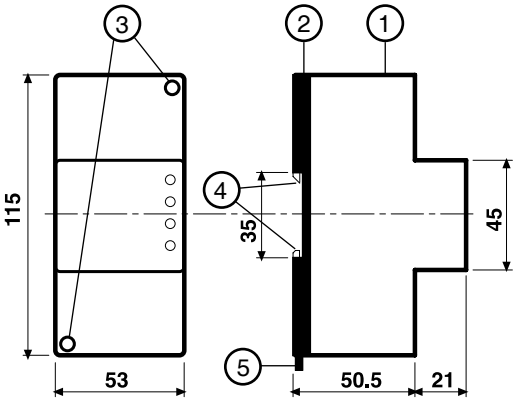
TMP 318 can provide four types of timing (times T1 and T2 programmable separately from 2 seconds to 999 minutes):

- Delay at closure or at opening: when the input closes, the output changes to On with a delay T1; when the input opens, the output switches to Off with a delay T2.
- Free oscillator: when the input is closed, the output oscillates with a time T1 On and a time T2 Off.
- Pulse output: when the input closes, the output provides a pulse which starts after the delay T1 and has a duration T2.
- Pulse control (toggle): each time the input closes for at least 200 milliseconds (push-button) the output changes from On to Off or vice versa.

3. TECHNICAL DATA

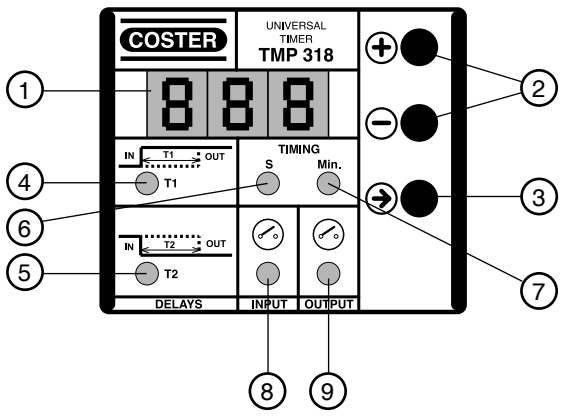
Power supply	230 V ~ ± 10%
Frequency	50…60 Hz
Consumption	2.5 VA
Protection	IP40
Radio disturbance	VDE0875/0871
Vibration test	with 2g(DIN 40 046)
Voltage-free output contacts:	
Maximum switched voltage	250 V ~
Maximum switched current	5 (1) A
Construction standards	Italian Electrotech. Committee (CEI)
Enclosure	DIN 3E module
Mounting	on DIN 35 rail
Materials:	
Base	NYLON
Cover	ABS
Permitted ambient temperature :	
Operating	0…45 °C
Storage	– 25…+ 60 °C
Permitted ambient humidity	Class F DIN 40040
Weight	0.27 kg

4. OVERALL DIMENSIONS



1 – Protective cover
2 – Base with terminal blocks
3 – Screws for securing base-cover
4 – DIN rail securing elements
5 – DIN rail release lever

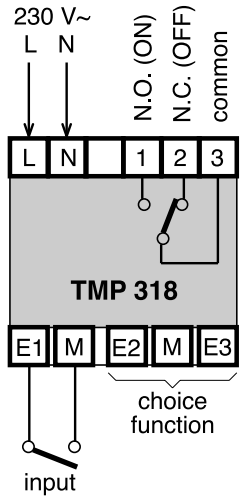
5. FACIA



During the delay periods T1 and T2, the display shows the *count down*, indicating the time remaining before the output relay changes status.

1 – Three-figure numeric display
2 – Keys for changing parameters
3 – Key for displaying parameters
4 – Initial delay
5 – Final delay
6 – Time duration (in seconds)
7 – Time duration (in minutes)
8 – Status of input
Off = switch open
On = switch closed
9 – Status of output
Off = relay Off
On = relay On

6. WIRING DIAGRAM



7. TESTING OUTPUT

By pressing the → key for at least 10 seconds you enter the testing menu: the display shows the letters: CoL.
In this condition it is possible to check the correct operation of the output relay and the plant connections:
Pressing + key the relay switches to ON (1-3 closed, 2-3 open).
Pressing – key the relay switches to OFF (1-3 open, 2-3 closed).

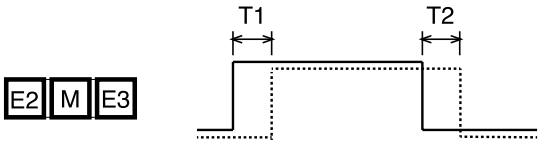
After about 10 seconds from the last operation the display changes automatically to the normal position.

8. SETTING TIMES

The display shows the time set in seconds up to the figure 999 (LED Sec. lit), or in minutes (the 999 seconds change to 16.4 minutes) up to a maximum value of 999 (**LED Min. lit**).
To set the times proceed as follows :
– **Press → key for about 1 second**: LED **T1** and **Sec.** ash. With + or – keys set time T1.
– **Press → key once and release immediately**: LED **T2** and **Sec**. ash. With + or - keys set time T2.
– **Press → key once and release immediately**: the display shows the type of function programmed (F1, F2, …).
After about 10 seconds from the last operation the display returns automatically to its normal position.

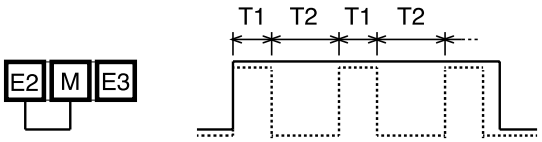
9. OPERATION

9.1 Function 1 (F - 1) = simple delay at closure and at opening



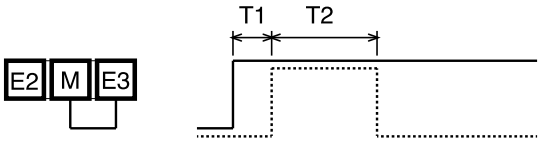
– when the input switch closes, the relay, after the delay T1, switches to ON (1-3 closed, 2-3 open)
– when the input switch opens, the relay, after the delay T2, switches to OFF (1-3 open, 2-3 closed)
– if the switch re-opens during the delay stage T1, the output remains on OFF
– if the switch re-closes during the delay stage T2, the output remains ON.

9.2 Function 2 (F - 2) = oscillator free:



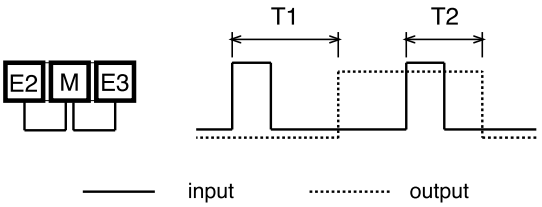
– when the input switch closes, the output relay switches to ON and then starts to oscillate with the time T1 ON and the time T2 OFF,
– if the input switch re-opens during the time T1, the cycle stops and the relay returns to OFF
– if the input switch re-opens during the time T2, the relay remains OFF.

9.3 Function 3 (F - 3) = output with pulse (monostable):



– when the input switch closes, the relay, after the delay T1, switches to ON, remains ON for the time T2, and then returns to OFF
– if the input switch re-opens during the phase T1, the relay remains OFF
– if the input switch re-opens during T2, the relay remains ON and returns to OFF after the delay T2
– if the input switch re-opens during T2 and, before the end of T2, re-closes *for at least 200 milliseconds*, the relay remains ON and the T2 time count re-starts.

9.4 Function 4 (F - 4) = the output is controlled by pulses (toggle function)



– when the input switch closes *for at least 200 milliseconds* (press-button switch), the output relay switches from OFF to ON or vice versa
– the change of the output from OFF to ON takes place with the delay T1
– the change of the output from ON to OFF takes place with the delay T2
– if another pulse arrives during the time T1, the output status does not change and it remains OFF
– if another pulse arrives during the time T2, the output status does not change and it remains ON
– when re-powered after a power shutdown, the output starts from OFF.

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