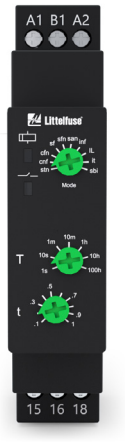
Time Delay Relays
TMM175-11 Series

Multifunction Timer / Asymmetric Timer



TMM175-11-0

TMM175-11-3

Description

The TMM175-11-0 is a Multifunction timer that is manufactured to a high degree of precision and accuracy. The time settings are stepless and can be set with the knob on the front face. The TMM175-11-0 has the following modes: Signal On Delay, Cyclic On / Off, Cyclic Off / On, Signal Off Delay, Signal Off / On, Accumulative Delay On Signal, Impulse On / Off, Leading Edge Impulse, Trailing Edge Impulse, and Leading Edge Bi-stable.

TMM175-11-3 is an Asymmetric On-Off / Off-On Timer that is manufactured to a high degree of precision and accuracy. The time settings are stepless and can be set with the knob in a range of 0.1 s to 100 h. In an Asymmetric On / Off Timer, the "On" duration can be equal or not equal to "Off" duration, mainly used in applications where different time intervals are required.

Features

- **Multifunction: 10 Different (Non-signal & Signal based) modes**
- **Wide voltage range for both AC and DC supplies**
- **Wide time range: 0.1 s - 100 h**
- **LED indications for power and relay status**
- **Independent settings for both ON time and OFF time**
- **Low power consumption**
- **Compliant to IEC 61812-1**

Ordering Information

PART NUMBER	DESCRIPTION
TMM175-11-0	12-240 Vac / Vdc, Multifunction Timer (10 Modes), 1 C/O
TMM175-11-3	12-240 Vac / Vdc, Asymmetric Timer, 1 C/O

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Specifications

Part. No.	TMM175-11-0	TMM175-11-3
Timer Description	Multifunction Timer	Asymmetric Timer
Modes	1. Signal ON Delay 2. Cyclic ON / OFF 3. Cyclic OFF / ON 4. Signal OFF Delay 5. Signal OFF / ON 6. Accumulative Delay on Signal 7. Impulsive ON / OFF 8. Leading Edge Impulsive 9. Trailing Edge Impulsive 10. Leading Edge Bi-stable	1. Asymmetric ON-OFF 2. Asymmetric OFF-ON
Derived Modes	ON delay, Interval	NA
Supply Voltage (⏚)	12 - 240 Vac / Vdc	
Supply Variation	-15 % to +10 % of supply	
Frequency	50 / 60 Hz ±3 Hz	
Power Consumption (Max.)	6 VA	
Timing Range	0.1 s to 100 h	
Reset Time	200 ms (Max)	
Setting Accuracy	±5 % of Full scale	
Repeat Accuracy	±1 %	
Output: **Relay Output** **Contact Rating** **Electrical Life** **Mechanical Life**	 1 C/O 8 A (Resistive) at 240 Vac, 5 A at 24 Vdc $5x10^4$ operations $1x10^7$ operations	
Utilization Category: **AC-15** **DC-13**	 Rated Voltage (Ue): 120 / 240 V, Rated Current (Ie): 3.0 / 1.5 A Rated Voltage (Ue): 24 / 125 / 250 V, Rated Current (Ie): 2.0 / 0.22 / 0.1 A	
Operating Temperature	-20 °C to +60 °C	
Storage Temperature	-25 °C to +70 °C	
LED Indication	Green LED → Power ON Yellow LED → Relay ON	
Enclosure	Flame Retardant UL 94-V0	
Dimension (LxWxH) (in mm)	89.8 x 17.5 x 65.9	
Weight (unpacked)	72 g	
Mounting	DIN-rail	
Degree of Protection	IP20 for Terminals, IP40 for Housing and Front plate	

Certification & Standards

CE	Low Voltage Directive – 2014 / 35 / EU EMC Directive – 2014 / 30 / EU
RoHS	RoHS Directive 2011 / 65 / EU, Delegated Directive 2015 / 863 /EU
IEC	IEC 61812-1
cULus	UL508

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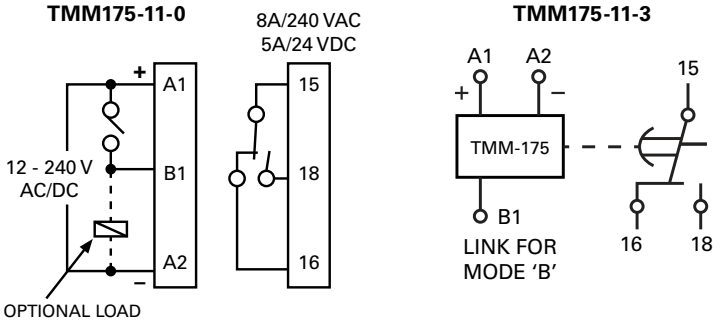
EMI/EMC

Harmonic Current Emissions	IEC 61000-3-2
ESD	IEC 61000-4-2
Radiated Susceptibility	IEC 61000-4-3
Electrical Fast Transients	IEC 61000-4-4
Surges	IEC 61000-4-5
Conducted Susceptibility	IEC 61000-4-6
Voltage Dips & Interruptions (AC)	IEC 61812-1
Voltage Dips & Interruptions (DC)	IEC 61812-1
Conducted Emission	CISPR 11
Radiated Emission	CISPR 11

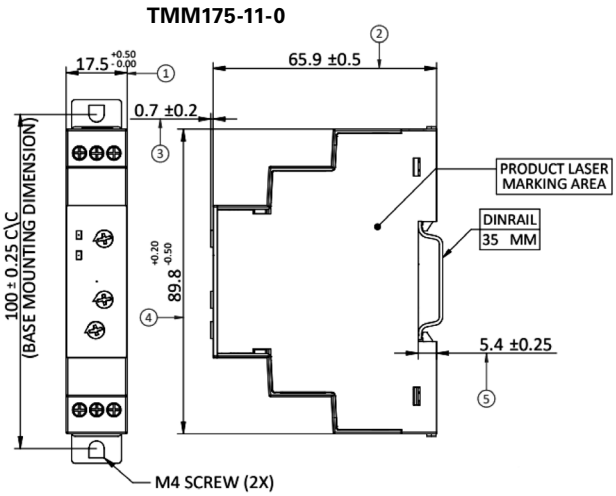
Environmental

Cold Heat	IEC 60068-2-1
Dry Heat	IEC 60068-2-2
Vibration	IEC 60068-2-6

Wiring Diagrams



Dimensions (Millimeters)



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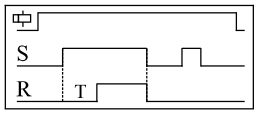
Functional Diagrams (TMM175-11-0)

⏚: Supply Voltage, S: Input Signal, R: Relay Output
T: Preset Time, TON: Preset ON Time, TOFF: Preset OFF Time

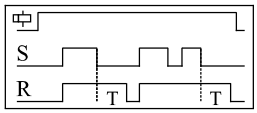
SIGNAL ON DELAY [stn]
On application of input signal, the preset delay time period starts. On completion of the preset time, the output is switched ON and remains ON until the input signal is present.



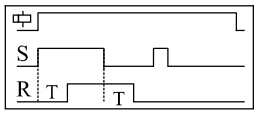
CYCLIC ON/OFF [cnf]
On application of supply voltage, the output is initially switched ON for the preset time duration (T) after which it is switched OFF for the same time duration (T). This cycle continues until the power supply is present.

CYCLIC OFF/ON [cfn]
On application of supply voltage, the output is initially switched OFF for the preset time duration (T) after which it is switched ON for the same time duration (T). This cycle continues until the power supply is present.

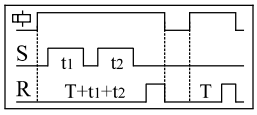
SIGNAL OFF DELAY [sf]
On application of input signal to the timer, the output is immediately switched ON. When the input signal is switched OFF, the preset time delay period starts. On completion of the time period the output is switched OFF.



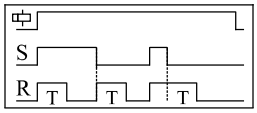
SIGNAL ON/OFF [sfn]
On application of input signal to the timer, the preset delay time period (T) starts. On completion of the time preset time, the output is switched ON. When the input signal is switched OFF, again the preset time delay period (T) starts. On completion of the time period the output is switched OFF.



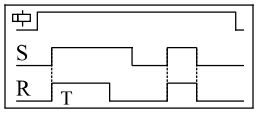
ACCUMULATIVE DELAY ON SIGNAL [san]
On application of supply voltage, the preset delay time period starts. If input signal is applied during this period, the preset time stops and resumes only when the input signal is removed. On completion of the preset time, the output is switched ON.



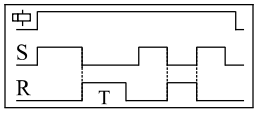
IMPULSE ON/OFF [inf]
On application or removal of input signal to the timer, the output is immediately switched ON for the preset time duration (T). If the state of the input signal is changed during the preset time, the output does not change state-only the time is reset.



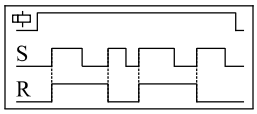
LEADING EDGE IMPULSE [iL]
When input signal is applied to the timer the output is immediately switched ON. The output remains ON for the preset time duration (T) after which it is switched OFF. If the input signal is removed during the preset time, the output is immediately switched OFF.



TRAILING EDGE IMPULSE [it]
When the input signal to the timer is removed, the output is immediately switched ON for the preset time duration (T) after which it is switched OFF. If the input signal is applied during the preset time, the output is immediately switched OFF.



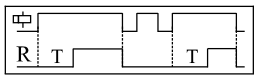
LEADING EDGE BISTABLE [sbi]
On application of input signal to the timer, the output is switched ON and remains ON even after the input signal is removed. On subsequent application of input signal, the output keeps on changing its state.



Derived Modes (TMM175-11-0)

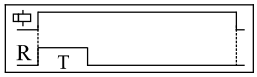
Select 'Signal ON Delay' Mode and short the connection between A1-B1 before power ON OR Select ' Accumulative Delay ON Signal' Mode and keep the connection between A 1- B1 open.

ON DELAY
When supply power is applied to the timer, the preset delay time period starts. On completion of the preset time, the output is switched ON and remains ON untill the input supply is present.



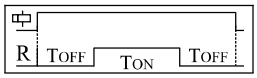
Select mode, "Leading Edge Impulse" and short the connection between A1-B1.

INTERVAL
When supply power is applied to the timer, the output is instantly switched ON. On completion of the preset time, the output is switched OFF.



Functional Diagrams (TMM175-11-3)

MODE A
ASYMMETRIC OFF-ON
On application of supply voltage, the output is initially switched OFF for the preset 'OFF' time duration (T) after which it is switched ON for the preset 'ON' time duration (T). This cycle repeats and continues until the supply is present. The ON time and OFF time are set independently.



MODE B
ASYMMETRIC ON-OFF
On application of supply voltage, the output is initially switched ON for the preset 'ON' time duration (T) after which it is switched OFF for the preset 'OFF' time duration (T). This cycle repeats and continues until the supply is present. The ON time and OFF time are set independently.

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