trumeter
innovation by design

TS Series

DIN Rail Timer Switches

ON Delay, OFF Delay, Star Delta, Multi Function and Asymmetric Timers

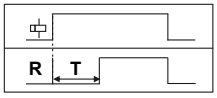
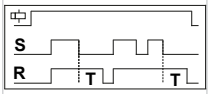
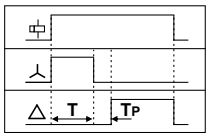
The TS Series of compact DIN rail timers are designed for efficient and reliable timing solutions. Ideal for control panels and automation systems, these timers combine precision, reliability, and efficiency in a compact package.

Measuring less than 19mm in width, these timers are available for a range of supply voltages. They offer versatile timing functions, with models for ON Delay, Signal OFF Delay, Star Delta as well as multifunction and asymmetric timers. They feature a wide timing range from 0.3s to 30h, 3s to 120s or 0.1s to 100h. Each model is equipped with a relay output that ensures reliable switching performance. The timers are also energy efficient, with a maximum power consumption of just 5VA to 10VA.

LED indicators provide clear status updates for both power and relay activity. Constructed with a flame-retardant UL94-V0 enclosure, these timers provide safety and durability and are designed to operate in temperatures ranging from -10°C to +55°C, making them suitable for a variety of environments.

trumeter
innovation by design

Specifications

		TS01	TS02	TS03	TS04	TS05	TS06
Timer Type/Mode		ON-Delay	ON-Delay	ON-Delay	Signal OFF Delay	Star Delta	Star Delta
Function Diagram							
Supply Voltage		12 VDC	240 VAC / 24VAC/DC	110 VAC / 24VAC/DC	240 VAC / 24VAC/DC	110 VAC	240 VAC
Supply Variation		-15% to +10% (of supply voltage)	-20% to +10% (of supply voltage)	-15% to +10% (of supply voltage)		-20% to +10% (of supply voltage)	
Frequency		50/60 Hz				50 Hz	
Power Consumption (Max.)		8 VA				10 VA	
Timing Range		0.3s to 30h				3s to 120s	
Pause Time						60 ms	
Reset Time		100 ms (Max.)	100 ms (Max.)	150 ms (Max.)	150 ms (Max.)	150 ms (Max)	
Setting Accuracy						± 5% of Full Scale	
Repeat Accuracy		± 1%				± 1%	
Output	**Relay Output**	1 C/O				Star - 1 'NO', Delta - 1 'NO'	
	Contact Rating	5A @ 240 VAC / 28 VDC (Resistive)		5A @ 240 VAC / 3A @ 30 VDC (Resistive)		5A @ 240 VAC / 3A @ 30 VDC (Resistive)	
	Electrical Life	$1x10^5$					
	Mechanical Life	$5x10^6$					
Utilization Category	**AC-15**	Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3.0/1.5 A					
	DC-13	Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.1 A					
Operating Temperature		-10C to +55C					
Storage Temperature		-20C to +65C					
Humidity (Non Condensing)		95% (Rh)					
LED Indication		GREEN ➡ Power ON | RED ➡ Relay ON				RED LED 1 ➡ ⅄ ON, RED LED 2 ➡ △ON	
Enclosure		Flame Retardant UL 94-V0					
Dimension (W x H x D) (in mm)		17.5 x 65 x 90				17.5 x 90 x 58.5	
Weight (unpacked) Approx.		75g				65g	
Mounting		Base / DIN Rail					
Certification		c UL us LISTED CE					
Degree of Protection		IP 20 for terminals, IP30 for enclosure, IP40 for front side				IP 20 for terminals, IP40 for enclosure	

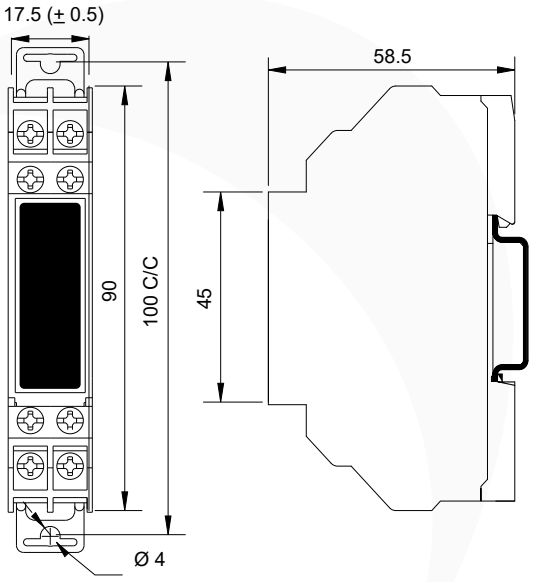
EMI / EMC

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 61000-4-11
Voltage Dips & Interruptions (DC)	IEC 61000-4-29
Conducted Emission	CISPR 14-1
Radiated Emission	CISPR 14-1

Environmental

Cold Heat	IEC 61068-2-1
Dry Heat	IEC 61068-2-2
Vibration	IEC 61068-2-6
Repetitive Shock	IEC 61068-2-27
Non-Repetitive Shock	IEC 61068-2-27

Dimensions



Screw driver: Ø3.5mm, Torque-0.4 N.m (3.6Lb.in), Terminal Screw - M3, 1 x 2.5mm² Solid/Stranded Wire, AWG: 1 x 24 to 12

Part Numbers

TS01	12V DC, ON-Delay, 1 C/O
TS02	240V AC / 24V AC/DC, ON-Delay, 1 C/O
TS03	110V AC / 24V AC/DC, ON-Delay, 1 C/O
TS04	240 VAC / 24VAC/DC, Signal OFF Delay, 1 C/O
TS05	110V AC, Star Delta, 1 C/O
TS06	240V AC, Star Delta, 1 C/O

trumeter
innovation by design

Specifications

		TS07	TS08	TS09
Timer Type/Mode		**Multi Function Timer**	**Asymmetric Timer**	**Multi Function Timer**
Modes		Signal ON Delay	Asymmetric ON/OFF	Signal ON Delay
		Cyclic ON/OFF	Asymmetric OFF/ON	Cyclic ON/OFF
		Cyclic OFF/ON		Cyclic OFF/ON
		Signal OFF/ON		Signal OFF/ON
		Impulse ON/OFF		Impulse ON/OFF
		Accumulative Delay on Signal		Accumulative Delay on Signal
		Impulse ON/OFF		Impulse ON/OFF
		Leading Edge Impulse		Leading Edge Impulse
		Trailing Edge Impulse		Trailing Edge Impulse
		Leading Edge Bi-State		Leading Edge Bi-State
Derived Modes		ON Delay, Interval		ON Delay, Interval
Supply Voltage		12 - 240 VAC/DC		
Supply Variation		-15% to +10% of supply voltage		
Frequency		50/60 Hz		
Power Consumption (Max.)		5 VA		
Timing Range		0.1s to 100h		
Reset Time		200 ms (Max.)		
Setting Accuracy		± 5% of Full Scale		
Repeat Accuracy		± 1%		
Output	**Relay Output**	1 C/O	1 C/O	2 C/O
	Contact Rating	8A @ 240 VAC / 5A @ 24 VDC (Resistive)		
	Electrical Life	$5x10^5$		
	Mechanical Life	$1x10^6$		
Utilization Category	**AC-15**	Rated Voltage (Ue): 120/240 V, Rated Current (Ie): 3.0/1.5 A		
	DC-13	Rated Voltage (Ue): 24/125/250 V, Rated Current (Ie): 2.0/0.22/0.1 A		
Operating Temperature		-10C to +60C		
Storage Temperature		-25C to +70C		
LED Indication		GREEN ➡ Power ON | YELLOW ➡ Relay ON	GREEN ➡ Power ON | AMBER ➡ Relay ON	GREEN ➡ Power ON | YELLOW ➡ Relay ON
Enclosure		Flame Retardant UL 94-V0		
Dimension (W x H x D) (in mm)		18 x 90 x 66		
Weight (unpacked) Approx.		72g		
Mounting		DIN Rail		
Certification		cULus LISTED, CE		
Degree of Protection		IP 20 for terminals, IP30 for enclosure, IP40 for front side		

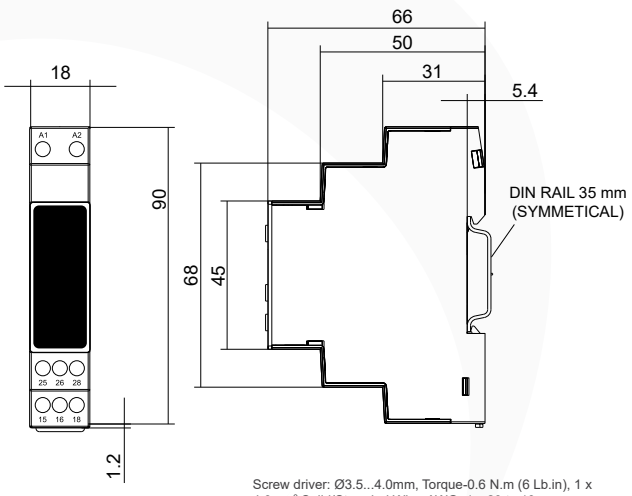
EMI / EMC

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 61000-4-11
Voltage Dips & Interruptions (DC)	IEC 61000-4-29
Conducted Emission	CISPR 14-1
Radiated Emission	CISPR 14-1

Environmental

Cold Heat	IEC 61068-2-1
Dry Heat	IEC 61068-2-2
Vibration	IEC 61068-2-6

Dimensions



Screw driver: Ø3.5...4.0mm, Torque-0.6 N.m (6 Lb.in), 1 x 4.0mm² Solid/Stranded Wire, AWG: 1 x 20 to 10

Part Numbers

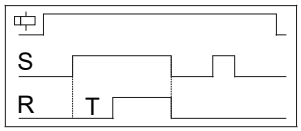
TS07	Multi Function Timer, 12 - 240 VAC/DC, 1 C/O
TS08	Asymmetric Timer, 12 - 240 VAC/DC, 1 C/O
TS09	Multi Function Timer, 12 - 240 VAC/DC, 2 C/O

trumeter
innovation by design

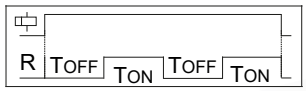
: Supply Voltage; **S**: Input Signal; **R**: Relay Output;
T: Preset Time; **TON**: Preset ON Time; **TOFF**: Preset OFF Time

Functional Diagrams: TS07, TS09

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 till the input signal is present.

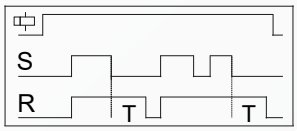


CYCLIC ON/OFF [cnf]
On application of supply voltage, the output is initially switched ON for the preset time duration (T) after which it is switched OFF for the same time duration (T). This cycle continues till the power supply is present.

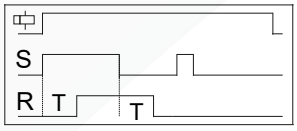


CYCLIC OFF/ON [cfn]
On application of supply voltage, the output is initially switched OFF for the preset time duration (T) after which it is switched ON for the same time duration (T). This cycle continues till the powersupply is present.

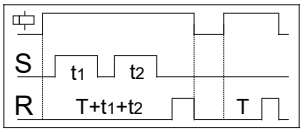
SIGNAL OFF DELAY [sf]
On application of input signal to the timer, the output is immediately switched ON. When the input signal is switched OFF, the preset time delay period starts. On completion of the time period the output is switched OFF.



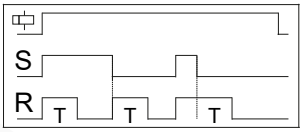
SIGNAL OFF/ON [sfn]
On application of input signal to the timer, the preset delay time period (T) starts. On completion of the time preset time, the output is switched ON When the input signal is switched OFF, again the preset time delay period (T) starts. On completion of the time period the output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



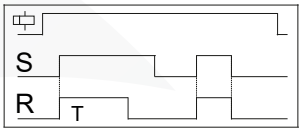
ACCUMULATIVE DELAY ON INVERTED SIGNAL [san]
On application of supply voltage, the preset delay time period starts. If input signal is applied during this period, the preset time stops and resumes only when the input signal is removed. On completion of the preset time, the output is switched ON.



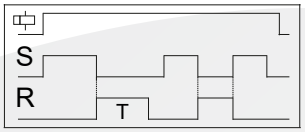
IMPULSE ON/OFF [inf]
On application or removal of input signal to the timer, the output is immediately switched ON for the preset time duration (T). If the state of the input signal is changed during the preset time, the output does not change state only the time is reset.



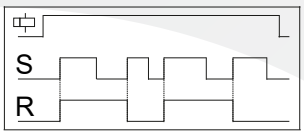
LEADING EDGE IMPULSE [iL]
When input signal is applied to the timer the output is immediately switched ON. The output remains ON for the preset time duration (T) after which it is switched OFF. If the input signal is removed during the preset time, the output is immediately switched OFF.



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.

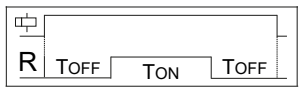


LEADING EDGE BISTABLE [sbi]
On application of input signal to the timer, the output is switched ON and remains ON even after the input signal is removed. On subsequent application of input signal, the output keeps on changing its state.

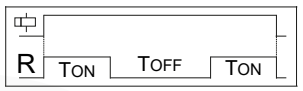


Functional Diagrams: TS08

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 till the supply is present. The ON time & OFF time are set independently.



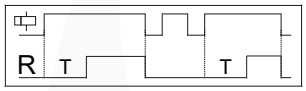
MODE B: ASYMMETRIC ON-OFF
On application of supply voltage, the output is initially switched ON for the preset ON' time duration (T) after which it is switched OFF for the preset OFF' time duration (T). This cycle repeats and continues till the supply is present. The ON time & OFF time are set independently..



Derived Modes

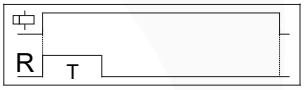
Select Signal ON Delay Mode and short the connection between AI-B1 before power ON OR Select Accumulative Delay ON Signal Mode and keep the connection between AI- BI open.

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 till the input supply is present.



Select mode, "Leading Edge Impulse" and short the connection between AI&BI.

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.



www.trumeter.com

Trumeter (Europe)
Pilot Mill
Alfred Street
Bury,
BL9 9EF
Tel: +44 161 674 0960
Email: sales.uk@trumeter.com

Trumeter (The Americas)
6601 Lyons Rd, Suite H-7,
Coconut Creek, Florida
FL 33073,
USA
Tel: +1 954 725 6699
Email: sales.usa@trumeter.com

Innovative Design Technologies Sdn. Bhd
Lot 5881, Lorong Iks Bukit Minyak 1
Taman Perindustrian Iks, 14000 Bukit Tengah
Penang, Malaysia
Web: www.idtworld.com
Tel: + 604 5015700
Email: sales.my@idtworld.com

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

Trumeter:

TS03 TS02 TS08 TS01 TS04 TS05 TS09 TS06 TS07