trumeter
innovation by design

TS01, TS02, TS03, TS05, TS06
ELECTRONIC TIMER

039344-01 05/2025

Features:

1. Wide Input Supply Range.
2. Wide Timing Range - 300ms to 30hr
3. Compact Size & Easy to install.
4. Suitable for Din-Rail & Base Mounting.
5. High Precision & Accuracy.

Terminal Details:

Ø4.....5.0mm Combi Head Bit./Flat	0.5 N.m (4.4 lb.in) to 0.7N.m (6.2 lb.in)
	2 x 2.5 mm² Solid / Standard Wire
AWG	20 to 12

AWG	CURRENT (A)
12	4.38
14	3.75
16	3.13
18	2.50
20	1.88

NOTE: Use Cu Wire of 75°C Only..

Model

- On Delay Timer
- Star Delta Timer

Installation:

DIN - Rail Mounting : The Timer should be mounted on 35 mm symmetrical DIN - Rail.

On Delay Timer

Models: TS01, TS02, TS03

Mode Description:

Timing starts as soon as the supply is applied and Green LED Blinks. During the last 1 minute of the remaining time the Green LED blinks with higher rate. The Output Relay turns On after the set time and is indicated by the Red LED and Green LED steady ON.

Timing Diagram:

Mode	Function Diagram
On Delay	S, R, T

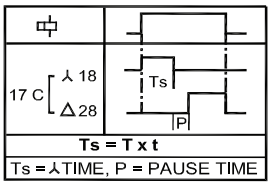
STAR - DELTA Timer

Models: TS05, TS06

Mode Description:

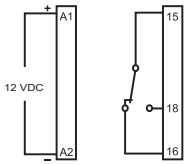
When the supply is applied, Output Star Relay turns ON. After completion of set Star ON time, Star Relay turns OFF and Delta Relay turns ON after 60 ms (Pause Time) and remains ON till the Supply is present.
"Star ON" is indicated by Red LED 1. "Delta ON" is indicated by Red LED 2.

Timing Diagram:

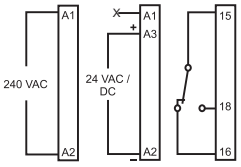


Connection Diagrams:

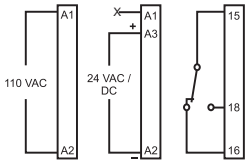
TS01



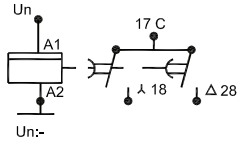
TS02



TS03

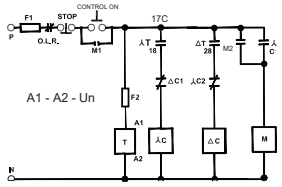


TS05, TS06



TS05 - 240 VAC
TS06 - 110 VAC

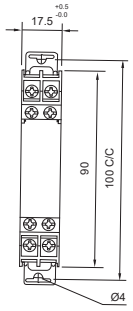
Recommended Star - Delta Control Circuit:



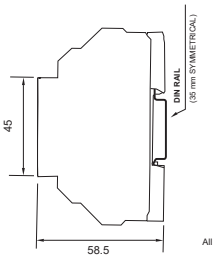
F1	Mains Protection Fuse
F2	Timer Protection Fuse
O.L.R	Over Load Relay
M1	First 'NO' Contact of Main Contactor
M2	Second 'NO' Contact of Main Contactor
M	Main Contactor for driving Motor
C	Star Contactor
C1	'NO' Contact of Star Contactor
C2	'NC' Contact of Star Contactor
C	Delta Contactor
C1	'NC' Contact of Delta Contactor
T	Star Contact of Timer (-)
T	Delta Contact of Timer (-)
T	Star Delta Timer (-)

Overall Dimension:

Base Mounting :



Din Rail Mounting :



All dimensions are in mm

Caution:

1. Always follow instructions stated in this product leaflet.
2. Before installation, check that the specifications agree with the intended application.
3. Installation to be done by skilled electrician.
4. Range and Timing Presets have to be set before powering ON the timer. Changing Range and Timing Presets in power ON condition when the On Delay period has already started will have no effect.
5. Timer can be reset by switching off and then setting the timing range preset to required position. In this case, Timer will reset and will take new set time.
6. Setting of all the potentiometers should be in clockwise direction only.
7. Use 250 mA fuse with product series.
8. The timers shall be placed in an enclosure that is minimum 200% of the size of the timer in the end use application. Use Cu wire of 75°C for connections
9. The technical information provided in this document is correct at the time of going to press. Product innovation being a continuous process, we reserve the right to make any alteration without prior notice.

E-Waste Regulatory notice :

Kindly treat, recycle or dispose of this equipment in an environmentally sound manner after End of Life, as per WEEE (Waste Electrical and Electronic Equipment) regulations or as per local norms.

TECHNICAL SPECIFICATIONS

	TS01	TS02	TS03	TS05	TS06
Functions	On Delay Timer	On Delay Timer	On Delay Timer	Star Delta Timer	Star Delta Timer
Supply Characteristics:					
Supply Voltage (⇨)	12 VDC	240V AC / 24V AC/DC	110 V AC / 24VAC/DC	240 V AC	110 V AC
Supply Variation	-20 % to +10 % (of ⇨)			-20 % to +10 % (of ⇨)	-20 % to +10 % (of ⇨)
Supply Frequency	Not Applicable	50/60 Hz +/-3 Hz		50/60 Hz +/-3 Hz	
Power Consumption (Max.)	5 V A for 110 V AC, 8 V A for 240 V AC, 0.5 W for 24 VDC/12 VDC			8 VA for 240 VAC	5 VA for 110 VAC
Timing and Accuracy:					
Setting Accuracy	+/-5 % of full scale				
Repeat Accuracy	1%				
Initiate Time	100 msec. (Max.)				
Reset Time	100 msec. (Max.)			~ 150 ms @ 240 VAC	
Timing Ranges	3s, 30s, 3m, 30m, 3hr, 30hr			3 s to 120 s	
Pause Time	Not Applicable			60 ms (fixed)	
Switching Frequency (max.)	1000 operations / hour.			1200 operations / hr.	
Status Indication on front panel	Relay ON: Red LED, Power ON: Green LED			Star ⅄ - Red LED Delta Δ - Red LED	
Range of timing Operation	300 msec to 30hr				
One Shot Pulse Duration	Not Applicable				
Operating Temperature	-10˚C to +55˚C				
Housing	Flame Retardant UL 94-V0				
Dimensions in mm (W X H X L)	17.5 (+0.5/-0.5) X 58.5 X 90				
Weight (Unpacked)	65 g (Approx).				
Mounting	Base/ DIN Rail				
Relay O/P Characteristics:					
Contact Rating	5A (Res.) @ 240 V AC / 28 VDC			5A (Res.) @240V AC / 3A (Res.) @ 30 VDC	
Utilization Category	AC-15 and DC -13 (3A @ 240 V AC at power factor 0.6)			AC-15: 250 V AC, 5A General purpose, 0.4pf, 85˚C, 50000 op.	
Contact Material	Ag Alloy				
Mechanical Life	5 X 10^6 operations (At no load and max. Switching frequency)				
Electrical Life	1. 240 VAC. PF = 1.0 rated max load current. 1 x 10^5 operations 2. 240 VAC. PF = 0.4 rated max load current. 4 x 10^4 operations 3. 30 VAC. L / R = 7 ms. 6 x 10^4 operations			1 x 10^5 operations (5 A at 250 V AC), 2 x 10^5 operations (3 A at 30 VDC)	
Contact Arrangement	1 C/O			1 NO + 1 NO	
Certification:	CE, RoHS				
Product Reference Standard	IEC 61010-1				
EMI/EMC:					
Harmonic Current Emissions	Not Applicable	IEC 61000-3-2 Class A		IEC 61000-3-2 Class A	
ESD	IEC 61000-4-2 Level II				
Radiated Susceptibility	IEC 61000-4-3 Level III				
Electrical Fast Transient	IEC 61000-4-4 Level IV				
Surge	IEC 61000-4-5 Level I	IEC 61000-4-5 Level IV 110/240V AC and Level III 24V AC/DC		IEC 61000-4-5 Level IV	IEC 61000-4-5 Level III
Conducted Susceptibility	IEC 61000-4-6 Level III				
Voltage Dips & Interruptions (AC)	Not Applicable	IEC 61000-4-11 (Note: For 24 V AC, Performance Criteria B)		IEC 61000-4-11 (Note: For 24 VAC, Performance Criteria B)	
Voltage Dips & Interruptions (DC)	IEC 61000-4-29 (50% Un for 50ms)	IEC 61000-4-29 (Note: For 24 VDC, Performance Criteria B)		IEC 61000-4-29 (Note: For 24 VDC, Performance Criteria B)	
Conducted Emission	CISPR 14-1				
Radiated Emission	CISPR 14-1				
Safety:					
Test Voltage Between I/P & O/P	1.5 kV			2 KV	
Test Voltage Between all terminal & enclosure	2.5 kV				
Impulse Voltage Between I/P & O/P	IEC 60947-5-1 2 kV				
Single Fault	IEC 61010-1				
Insulation Resistance	UL 508 > 50KΩ				
Leakage Current	UL 508 < 3.5 mA				
Degree of Protection	IP - 20 for Terminal; IP - 40 for Housing				
Pollution Degree	II				
Type of Insulation	Reinforced				
Environmental:					
Cold Heat	IEC 60068-2-1				
Dry Heat	IEC 60068-2-2				
Vibration	IEC 60068-2-6 5 g				
Repetitive Shock	IEC 60068-2-27 40 g, 6 ms				
Non-repetitive Shock	IEC 60068-2-27 30 g, 15 ms				