TS2 / TS6 SERIES

TS2

TS6

Description

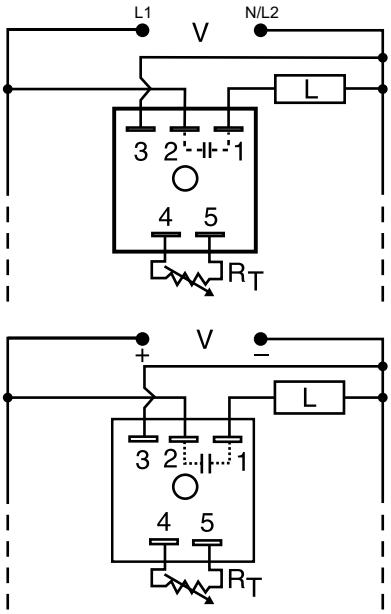
The TS2 Series is designed for 24, 120 or 230VAC and the TS6 Series is designed for 12 or 24VDC. These series are capable of controlling load currents of up to 1A steady state, 10A inrush. Encapsulated circuitry and the reliability of a ±2% repeat accuracy make the TS2 and TS6 ideal for cost sensitive applications.

Operation (Interval)

Upon application of input voltage, the time delay begins. The output energizes during the time delay. At the end of the time delay, the output de-energizes and remains de-energized until input voltage is removed.

Reset: Removing input voltage resets the time delay and the output.

Wiring Diagram



V = Voltage
L = Load

R_T is used when external adjustment is ordered.

Note: TS6 is not reverse polarity protected.

Features & Benefits

FEATURES	BENEFITS
Analog circuitry	Repeat accuracy + / - 2%, Factory calibration + / - 10%
Totally solid state and encapsulated	No moving parts to arc and wear out over time and encapsulated to protect against shock, vibration, and humidity
1A steady, 10A inrush solid-state output	Provides 100 million operations in typical conditions
Rated for operation up to 75°C	Can be used in the harshest environments

Accessories

P1004-XX (fig. A), **P1004-XX-X** (fig. B) **Versa-Pot**
Panel mountable, industrial potentiometer recommended for remote time delay adjustment.

P1023-6 Mounting bracket
The 90° orientation of mounting slots makes installation/removal of modules quick and easy.

P0700-7 Versa-Knob
Designed for 0.25 in (6.35 mm) shaft of Versa-Pot. Semi-gloss industrial black finish.

Ordering Information

MODEL	INPUT VOLTAGE	ADJUSTMENT	TIME DELAY	SWITCHING MODE		MODEL	INPUT VOLTAGE	ADJUSTMENT	TIME DELAY	SWITCHING MODE
TS22120	24VAC	Fixed	20s	n/a		TS2424	120VAC	External	5 - 600s	n/a
TS2223	24VAC	External	2 - 180s	n/a		TS6116P	12VDC	Fixed	6s	Positive
TS2412	120VAC	Fixed	2s	n/a		TS6122P	12VDC	External	0.5 - 20s	Positive
TS24130	120VAC	Fixed	30s	n/a		TS6123P	12VDC	External	2 - 60s	Positive
TS2421	120VAC	External	0.05 - 3s	n/a		TS6321P	24VDC	External	0.05 - 3s	Positive
TS2422	120VAC	External	0.5 - 60s	n/a		TS6323P	24VDC	External	2 - 180s	Positive
TS2423	120VAC	External	2 - 180s	n/a						

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Accessories

P1015-64 (AWG 14/16)
Female Quick Connect
These 0.25 in. (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief.

P1015-18 Quick Connect to Screw Adapter
Screw adapter terminal designed for use with all modules with 0.25 in. (6.35 mm) male quick connect terminals.

C103PM (AL) DIN Rail
35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.

P1023-20 DIN Rail Adapter
Allows module to be mounted on a 35 mm DIN type rail with two #10 screws.

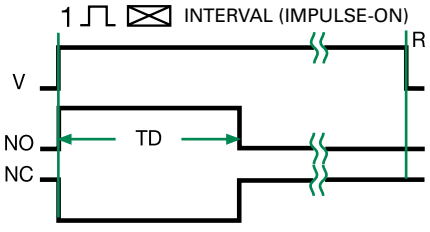
VTP(X)(X) Plug-on Adjustment Module
Mounts on modules with in-line adjustment terminals. Rated at 0.25W at 55°C. Available in resistance values from 5KΩ to 5MΩ.

Selection Table for VTP Plug-on Adjustment Accessory

TS6 12VDC			
Time Delay	VTP P/N	Versa-Pot (potentiometer)	
		Fig. A P/N	Fig. B P/N
1 - 0.05-1s	VTP2A	P1004-16	P1004-16-X
2 - 0.5-20s	VTP2E	P1004-16	P1004-16-X
3 - 2-60s	VTP2F	P1004-16	P1004-16-X
4 - 5-120s	VTP2H	P1004-16	P1004-16-X

TS2 & TS6 All Other Voltages			
Time Delay	VTP P/N	Versa-Pot (potentiometer)	
		Fig. A P/N	Fig. B P/N
1 - 0.05-3s	VTP4B	P1004-12	P1004-12-X
2 - 0.5-60s	VTP4F	P1004-12	P1004-12-X
3 - 2-180s	VTP4J	P1004-12	P1004-12-X
4 - 5-600s	VTP5N	P1004-13	P1004-13-X

Function Diagram



V = Voltage
NO = Normally Open Contact
NC = Normally Closed Contact
TD = Time Delay
R = Reset
= Undefined Time

Selection Guide

R_T Selection Chart				
Desired Time Delay*				R_T
Seconds				
1	2	3	4	Megohm
0.05	0.5	2	5	0.0
0.5	10	30	60	0.5
1.0	20	60	120	1.0
▼	24VDC or AC ONLY†			▼
1.5	30	90	180	1.5
2.0	40	120	240	2.0
2.5	50	150	300	2.5
3.0	60	180	360	3.0
			420	3.5
			480	4.0
			540	4.5
			600	5.0

* When selecting an external R_T add at least 20% for tolerance of unit and the R_T.
† 1 Megohm max for 12 VDC Units

Specifications

Time Delay

Type	Analog circuitry
Range	
12VDC	0.05 - 120s in 4 adjustable ranges or fixed (1 MΩ max. R_T)
Other Voltages	0.05 - 600s in 4 adjustable ranges or fixed
Repeat Accuracy	±2% or 20ms, whichever is greater
Tolerance (Factory Calibration)	≤ ±10%
Time Delay vs Temp. & Voltage	≤ ±10%
Reset Time	≤ 150ms
Input	
Voltage	12 or 24VDC; 24 or20VAC
Tolerance	±15%
DC Ripple	10%
Power Consumption	DC ≤ 1W; AC ≤ 2VA
Output	
Type	Solid state
Form	NO, closed during timing
Maximum Load Current	1A steady state, 10A inrush at 60°C
Voltage Drop	DC ≅ 1.0V @ 1A; AC ≅ 2.5V @ 1A
Protection	
Circuitry	Encapsulated
Polarity	TS6 is not reverse polarity protected
Dielectric Breakdown	≥ 2000V RMS terminals to mounting surface
Insulation Resistance	≥ 100 MΩ
Mechanical	
Mounting	Surface mount with one #10 (M5 x 0.8) screw
Dimensions	**H** 50.8 mm (2"); **W** 50.8 mm (2"); **D** 30.7 mm (1.21")
Termination	0.25 in. (6.35 mm) male quick connect terminals
Environmental	
Operating/Storage Temperature	-40° to 75°C / -40° to 85°C
Humidity	95% relative, non-condensing
Weight	≅ 2.4 oz (68 g)

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