

# TSS SERIES



## Wiring Diagram



V = Voltage  
S1 = Initiate Switch  
L = Timed Load  
UTL = Optional Untimed Load

$R_T$  is used when external adjustment is ordered.

## Description

The TSS Series is a totally solid-state timing module. Its 1A rated, solid-state output provides an excellent method of time control for exposures, dispensing, or for increasing or decreasing a switch closure. Time delays from 0.05 to 600 seconds, in 4 ranges, cover 90% of all OEM applications. Factory calibration of fixed delays is  $\pm 5\%$  and the repeat accuracy is  $\pm 2\%$ . The TSS Series can be surface mounted with a single screw, or snapped on a 35mm DIN rail using the P1023-20 accessory adaptor.

### Operation (Single Shot)

Voltage must be applied before and during timing. Upon momentary or maintained closure of the initiate switch, the output energizes for a measured interval of time. At the end of the delay, the output de-energizes. Opening or reclosing the initiate switch during timing has no effect on the time delay. The output will energize if the initiate switch is closed when input voltage is applied.

**Reset:** Reset occurs when the time delay is complete and the initiate switch opens. Loss of input voltage resets the time delay and output.

## Features & Benefits

FEATURES	BENEFITS
<b>Analog circuitry</b>	Repeat accuracy + / - 2%, Factory calibration + / - 5%
<b>Compact, low cost design</b>	Allows flexibility for OEM applications
<b>Totally solid state and encapsulated</b>	No moving parts to arc and wear out over time and encapsulated to protect against shock, vibration, and humidity
<b>Surface or DIN rail mounting</b>	Provides flexibility for installation

## Ordering Information

MODEL	INPUT VOLTAGE	ADJUSTMENT	TIME DELAY
TSS410.5	120VAC	Fixed	0.5s
TSS421	120VAC	External	0.05 - 3s
TSS422	120VAC	External	0.5 - 60s
TSS424	120VAC	External	5 - 600s
TSS622	230VAC	External	0.5 - 60s
TSS624	230VAC	External	5 - 600s

If desired part number is not listed, please call us to see if it is technically possible to build.

## Accessories



### P1004-95, P1004-95-X 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.



### 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.

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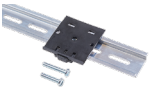
## Accessories



**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.

## Selection Guide

RT Selection Chart				
Desired Time Delay*				RT
Seconds				
1	2	3	4	Kohms
0.05	0.5	2	5	0
0.3	6	20	60	10
0.6	12	38	120	20
0.9	18	55	180	30
1.2	24	73	240	40
1.5	30	90	300	50
1.8	36	108	360	60
2.1	42	126	420	70
2.4	48	144	480	80
2.7	54	162	540	90
3.0	60	180	600	100

\* When selecting an external RT add at least 20% for tolerance of unit and the RT.

## Function Diagram



## Specifications

<b>Time Delay Range</b>	0.05s - 600s in 4 adjustable ranges or fixed
<b>Repeat Accuracy</b>	±2% or 20ms, whichever is greater
<b>Tolerance (Factory Calibration)</b>	≤ ±5%
<b>Reset Time</b>	≤ 150ms
<b>Initiate Time</b>	≤ 20ms
<b>Time Delay vs Temp. &amp; Voltage</b>	≤ ±10%
<b>Input Voltage</b>	24, 120, or 230VAC
<b>Tolerance</b>	±20%
<b>AC Line Frequency</b>	50/60 Hz
<b>Power Consumption</b>	≤ 2VA
<b>Output Type</b>	Solid state
<b>Form</b>	NO, closed during timing
<b>Maximum Load Current</b>	1A steady state, 10A inrush at 60°C
<b>Off State Leakage Current</b>	≅ 5mA @ 230VAC
<b>Voltage Drop</b>	≅ 2.5V @ 1A
<b>Protection</b>	
<b>Circuitry</b>	Encapsulated
<b>Dielectric Breakdown</b>	≥ 2000V RMS terminals to mounting surface
<b>Insulation Resistance</b>	≥ 100 MΩ
<b>Mechanical</b>	
<b>Mounting</b>	Surface mount with one #10 (M5 x 0.8) screw
<b>Dimensions</b>	<b>H</b> 50.8 mm (2.0"); <b>W</b> 50.8 mm (2.0"); <b>D</b> 30.7 mm (1.21")
<b>Termination</b>	0.25 in. (6.35 mm) male quick connect terminals
<b>Environmental</b>	
<b>Operating/Storage Temperature</b>	- 40° to 75°C / - 40° to 85°C
<b>Humidity</b>	95% relative, non-condensing
<b>Weight</b>	≅ 2.4 oz (68 g)