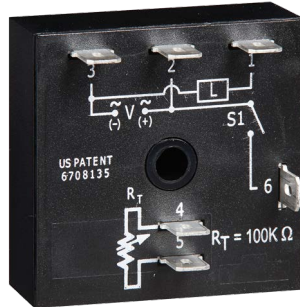
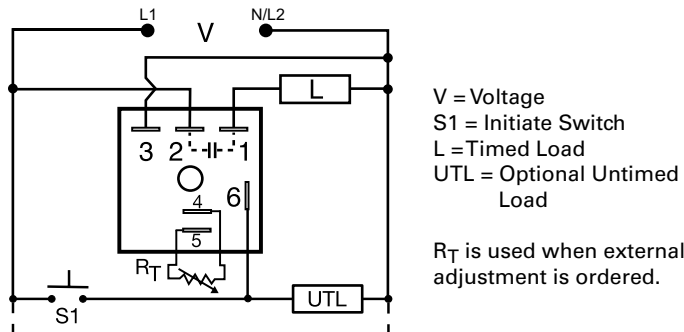


# TSS SERIES



## Wiring Diagram



## 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%,<br>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.

# TSS SERIES

## 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 Tolerance (Factory Calibration)</b> | ±2% or 20ms, whichever is greater   |
| <b>Reset Time</b>                                      | ≤ ±5%   |
| <b>Initiate Time</b>                                   | ≤ 150ms   |
| <b>Time Delay vs Temp. &amp; Voltage</b>               | ≤ 20ms  |
| <b>Input Voltage</b>                                   | ≤ ±10%  |
| <b>Tolerance</b>                                       | 24, 120, or 230VAC  |
| <b>AC Line Frequency</b>                               | ±20%  |
| <b>Power Consumption</b>                               | 50/60 Hz  |
| <b>Output Type</b>                                     | ≤ 2VA   |
| <b>Form</b>  | Solid state   |
| <b>Maximum Load Current</b>                            | NO, closed during timing  |
| <b>Off State Leakage Current</b>                       | 1A steady state, 10A inrush at 60°C   |
| <b>Voltage Drop</b>                                    | ≅ 5mA @ 230VAC  |
| <b>Protection</b>                                      | ≅ 2.5V @ 1A   |
| <b>Circuitry</b>                                       | Encapsulated  |
| <b>Dielectric Breakdown</b>                            | ≥ 2000V RMS terminals to mounting surface                                     |
| <b>Insulation Resistance</b>                           | ≥ 100 MΩ  |
| <b>Mechanical 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");<br><b>D</b> 30.7 mm (1.21") |
| <b>Termination</b>                                     | 0.25 in. (6.35 mm) male quick connect terminals                               |
| <b>Environmental 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)   |