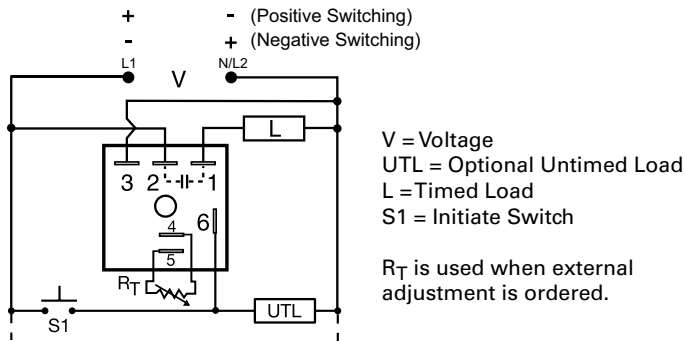


## KSDS SERIES



### Wiring Diagram



### Description

The KSDS Series is ideal for applications that require momentary start interval timing including dispensing, exposure timing, or pulse shaping. This series is available for both AC and DC voltages. This series is designed for general purpose commercial and industrial applications where a small, cost effective, reliable solid-state timer is required. The factory calibration for fixed time delays is within 5% of the target time delay. The repeat accuracy, under stable conditions, is 0.5% of the selected time delay. Time delays of 0.1 seconds to 1000 minutes are available in 6 ranges. The output is rated 1A steady and 10A inrush. The modules are totally solid state and encapsulated to protect the electronic circuitry.

#### Operation (Single Shot)

Input voltage must be applied before and during timing. Upon momentary or maintained closure of the initiate switch (leading edge triggered), 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 not 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 is opened. Loss of input voltage resets the time delay and output.

### Features & Benefits

| FEATURES                                        | BENEFITS                                                                                                         |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| <b>Microcontroller based</b>                    | Repeat Accuracy +/- 0.5%,<br>Factory calibration +/- 5%                                                          |
| <b>1A Steady, 10A inrush solid-state output</b> | Provides 100 million operations in typical conditions.                                                           |
| <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>Compact, low cost design</b>                 | Allows flexibility for OEM applications                                                                          |

### Ordering Information

| MODEL      | INPUT VOLTAGE | ADJUSTMENT | TIME DELAY | SWITCHING MODE |
|------------|---------------|------------|------------|----------------|
| KSDS1115SP | 12VDC         | Fixed      | 15s        | Positive       |
| KSDS230    | 24VAC         | Onboard    | 0.1 - 10s  | n/a            |
| KSDS320P   | 24VAC         | External   | 0.1 - 10s  | Positive       |
| KSDS415M   | 120VAC        | Fixed      | 5m         | n/a            |
| KSDS420    | 120VAC        | External   | 0.1 - 10s  | n/a            |

If you don't find the part you need, call us for a custom product 800-843-8848

### Accessories

|  |                                                                                                                                                                                        |
|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>P1004-95, P1004-95-X Versa-Pot</b><br>Panel mountable, industrial potentiometer recommended for remote time delay adjustment.                                                       |
|  | <b>P1023-6 Mounting bracket</b><br>The 90° orientation of mounting slots makes installation/removal of modules quick and easy.                                                         |
|  | <b>P0700-7 Versa-Knob</b><br>Designed for 0.25 in (6.35 mm) shaft of Versa-Pot. Semi-gloss industrial black finish.                                                                    |
|  | <b>P1015-13 (AWG 10/12), P1015-64 (AWG 14/16) Female Quick Connect</b><br>These 0.25 in. (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief. |

## KSDS SERIES

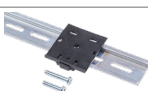
### Accessories



**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.

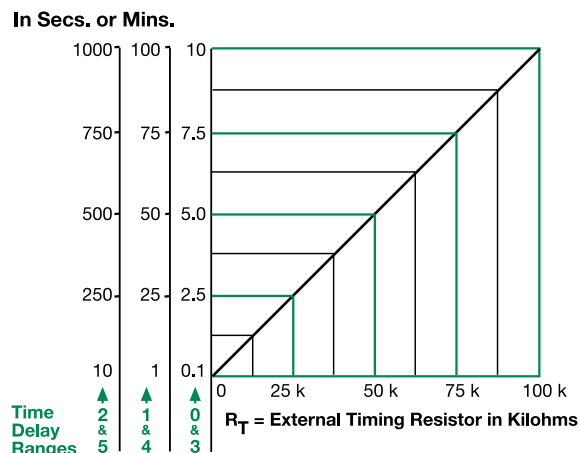


**C103PM (AL) DIN Rail**  
35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.



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

### External Resistance vs. Time Delay

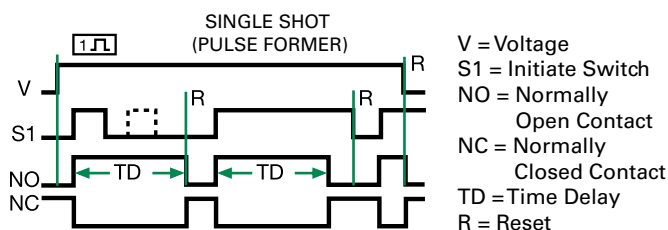


**This chart applies to externally adjustable part numbers.**  
The time delay is adjustable over the time delay range selected by varying the resistance across the  $R_T$  terminals; as the resistance increases the time delay increases.

When selecting an external  $R_T$ , add the tolerances of the timer and the  $R_T$  for the full time range adjustment.

**Examples:** 1 to 50 S adjustable time delay, select time delay range 1 and a 50 K ohm  $R_T$ . For 1 to 100 S use a 100 K ohm  $R_T$ .

### Function Diagram



### Specifications

|                                                    |                                                                               |
|----------------------------------------------------|-------------------------------------------------------------------------------|
| <b>Time Delay Range</b>                            | 0.1s - 1000ms in 6 adjustable ranges or fixed                                 |
| <b>Repeat Accuracy</b>                             | ±0.5 % 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>                               | 12 or 24VDC; 24, 120, or 230VAC                                               |
| <b>Tolerance</b>                                   | ±20%                                                                          |
| <b>AC Line Frequency/DC Ripple</b>                 | 50/60 Hz / ≤ 10 %                                                             |
| <b>Power Consumption</b>                           | AC ≤ 2VA; DC ≤ 1W                                                             |
| <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>                   | AC ≅ 5mA @ 230VAC; DC ≅ 1mA                                                   |
| <b>Voltage Drop</b>                                | AC ≅ 2.5V @ 1A; DC ≅ 1V @ 1A                                                  |
| <b>DC Operation</b>                                | Positive or negative switching                                                |
| <b>Protection Circuitry</b>                        | Encapsulated                                                                  |
| <b>Dielectric Breakdown</b>                        | ≥ 2000V RMS terminals to mounting surface                                     |
| <b>Insulation Resistance</b>                       | ≥ 100 MΩ                                                                      |
| <b>Polarity</b>                                    | DC units are reverse polarity protected                                       |
| <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 60°C / -40° to 85°C                                                   |
| <b>Humidity</b>                                    | 95% relative, non-condensing                                                  |
| <b>Weight</b>                                      | ≅ 2.4 oz (68 g)                                                               |