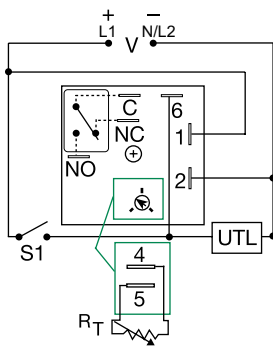


## KRDS SERIES

### Single Shot



### Wiring Diagram



V = Voltage  
S1 = Initiate Switch  
C = Common, Transfer Contact  
NO = Normally Open  
NC = Normally Closed  
UTL = Untimed Load

$R_T$  is used when external adjustment is ordered. A knob is supplied for adjustable units. The untimed load is optional. Relay contacts are isolated.

### Ordering Information

MODEL	INPUT VOLTAGE	ADJUSTMENT	TIME DELAY
KRDS1135M	12VDC	Fixed	35m
KRDS120	12VDC	Onboard	0.1 - 10s
KRDS221	24VAC/DC	Onboard	1 - 100s
KRDS420	120VAC	Onboard	0.1 - 10s
KRDS421	120VAC	Onboard	1 - 100s
KRDS424	120VAC	Onboard	1 - 100m
KRDS430	120VAC	External	0.1 - 10s

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

### Description

The KRDS Series is a compact time delay relay measuring only 2 in. (50.8 mm) square. Its microcontroller timing circuit provides excellent repeat accuracy and stability. Encapsulation protects against shock, vibration, and humidity. The KRDS Series is a cost effective approach for OEM applications that require small size, isolation, reliability, and long life.

#### Operation (Single Shot)

Input voltage must be applied before and during timing. Upon momentary or maintained closure of the initiate switch, the output relay 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 is opened. Loss of input voltage resets the time delay and output.

### Features & Benefits

FEATURES	BENEFITS
<b>Compact, low cost design measuring 2 in. (50.8mm) square</b>	Allows flexibility for OEM applications
<b>Microcontroller based</b>	Repeat Accuracy + / - 0.5%, Factory calibration + / - 5%
<b>Isolated, 10A, SPDT output contacts</b>	Allows control of loads for AC or DC voltages
<b>Encapsulated</b>	To protect against shock, vibration, and humidity

### 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.



**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.

## KRDS SERIES

### Accessories

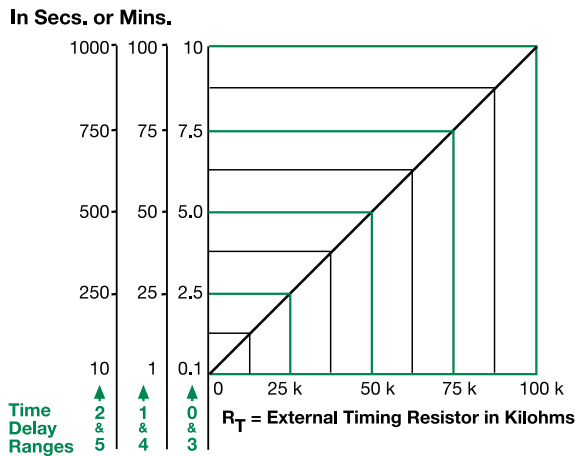


**C103PM (AL) DIN Rail**  
35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.



**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

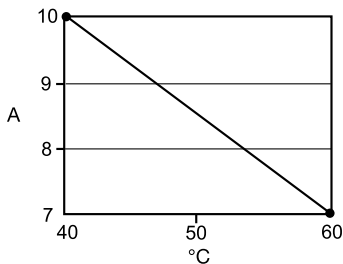


**This chart applies to externally adjustable part numbers.**  
The time delay is adjustable over the time delay range selected by varying the resistance across the  $R_T$  terminals; as the resistance increases the tie delay increases.

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  $R_T$ .

### Output Current/Ambient Temperature



### Specifications

#### Time Delay

**Type** Microcontroller with watchdog circuitry  
**Range** 0.1s - 1000m in 6 adjustable ranges or fixed  
**Repeat Accuracy**  $\pm 0.5\%$  or 20ms, whichever is greater

**Tolerance**  $\leq \pm 5\%$   
**(Factory Calibration)**  
**Reset Time**  $\leq 150\text{ms}$   
**Initiate Time**  $\leq 40\text{ms}$

**Time Delay vs Temp. & Voltage**  $\leq \pm 5\%$

#### Input

**Voltage** 12, 24 or 110VDC; 24, 120 or 230VAC

**Tolerance**  
**12VDC & 24VDC/AC** -15% - 20%  
**110VDC, 120VAC or 230VAC** -20% - 10%

**AC Line Frequency/DC Ripple** 50/60 Hz /  $\leq 10\%$   
**Power Consumption** AC  $\leq 2\text{VA}$ ; DC  $\leq 2\text{W}$

#### Output

**Type** Isolated relay contacts  
**Form** SPDT  
**Rating (at 40°C)** 10A resistive @ 125VAC;  
5A resistive @ 230VAC & 28VDC;  
1/4 hp @ 125VAC  
Mechanical -  $1 \times 10^7$ ; Electrical -  $1 \times 10^5$

#### Life (Operations)

#### Protection

**Circuitry** Encapsulated  
**Isolation Voltage**  $\geq 1500\text{V}$  RMS input to output

**Insulation Resistance**  $\geq 100\text{M}\Omega$

#### Polarity

#### Mechanical

#### Mounting

#### Dimensions

Surface mount with one #10 (M5 x 0.8) screw  
**H** 50.8 mm (2.0"); **W** 50.8 mm (2.0");  
**D** 30.7 mm (1.21")

#### Termination

#### Environmental

#### Operating/Storage

**Temperature** -40° to 60°C/-40° to 85°C  
**Humidity** 95% relative, non-condensing

#### Weight

$\approx 2.6\text{ oz (74 g)}$

### Function Diagram

