

## Single Shot



R<sub>T</sub> is used when external adjustment is ordered.  
A knob is supplied for adjustable units. The untimed load is optional.  
Relay contacts are isolated.

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

## 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 affect 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.

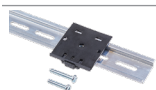
## KRDS SERIES

### Accessories



#### C103PM (AL) DIN Rail

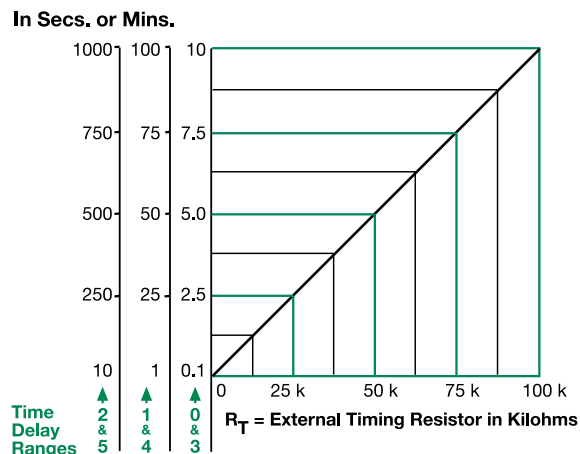
35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.



#### 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



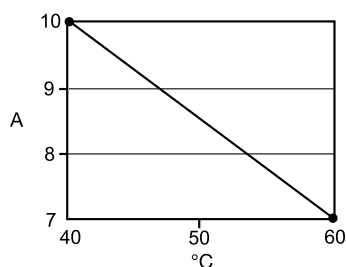
#### This chart applies to externally adjustable part numbers.

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 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  $R_T$ .

### 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

##### (Factory Calibration)

$\leq \pm 5\%$

##### Reset Time

$\leq 150\text{ms}$

##### Initiate Time

$\leq 40\text{ms}$

##### Time Delay vs Temp.

$\leq \pm 5\%$

##### & Voltage

##### 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

DC units are reverse polarity protected

##### Mechanical

##### Mounting

Surface mount with one #10 (M5 x 0.8) screw

##### Dimensions

**H** 50.8 mm (2.0"); **W** 50.8 mm (2.0");

**D** 30.7 mm (1.21")

0.25 in. (6.35 mm) male quick connect terminals

##### 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

