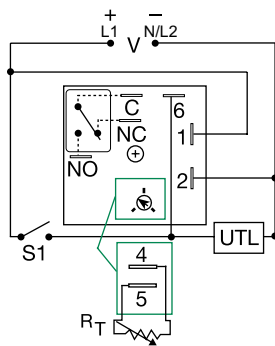


# KRDS SERIES

## 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.

### 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.

### 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

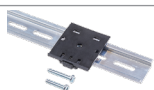
If desired part number is not listed, please call us to see if it is technically possible to build.

## KRDS SERIES

### Accessories

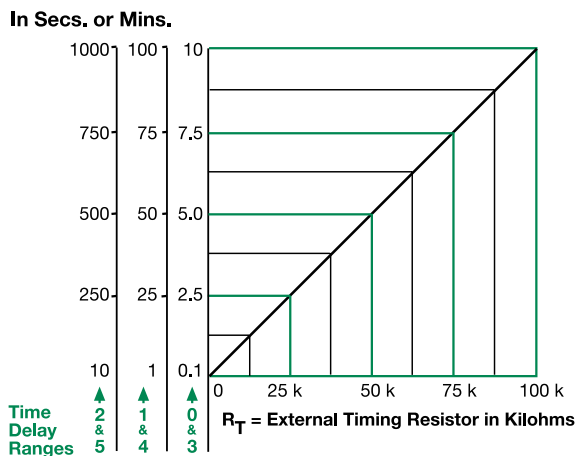


**C103PM (AL) DIN Rail**  
35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.



**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

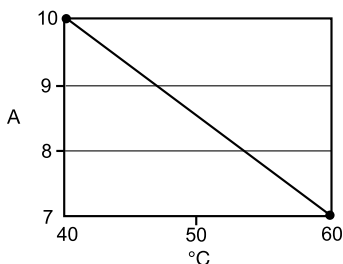


**This chart applies to externally adjustable part numbers.**  
The time delay is adjustable over the time delay range selected by varying the resistance across the  $R_T$  terminals; as the resistance increases the tie delay increases.

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

<b>Time Delay</b>	Microcontroller with watchdog circuitry
<b>Type</b>	0.1s - 1000m in 6 adjustable ranges or fixed
<b>Range</b>	±0.5% or 20ms, whichever is greater
<b>Repeat Accuracy</b>	
<b>Tolerance</b>	
<b>(Factory Calibration)</b>	≤ ±5%
<b>Reset Time</b>	≤ 150ms
<b>Initiate Time</b>	≤ 40ms
<b>Time Delay vs Temp. &amp; Voltage</b>	≤ ±5%
<b>Input Voltage</b>	12, 24 or 110VDC; 24, 120 or 230VAC
<b>Tolerance</b>	
<b>12VDC &amp; 24VDC/AC</b>	-15% - 20%
<b>110VDC, 120VAC or 230VAC</b>	-20% - 10%
<b>AC Line Frequency/DC Ripple</b>	50/60 Hz / ≤ 10%
<b>Power Consumption</b>	AC ≤ 2VA; DC ≤ 2W
<b>Output</b>	
<b>Type</b>	Isolated relay contacts
<b>Form</b>	SPDT
<b>Rating (at 40°C)</b>	10A resistive @ 125VAC; 5A resistive @ 230VAC & 28VDC; 1/4 hp @ 125VAC
<b>Life (Operations)</b>	Mechanical - 1 x 10 <sup>7</sup> ; Electrical - 1 x 10 <sup>5</sup>
<b>Protection</b>	
<b>Circuitry</b>	Encapsulated
<b>Isolation Voltage</b>	≥ 1500V RMS input to output
<b>Insulation Resistance</b>	≥ 100 MΩ
<b>Polarity</b>	DC units are reverse polarity protected
<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</b>	
<b>Temperature</b>	-40° to 60°C/-40° to 85°C
<b>Humidity</b>	95% relative, non-condensing
<b>Weight</b>	≈ 2.6 oz (74 g)

### Function Diagram

