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# KRDM SERIES


## Description

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

### Operation (Delay-on-Make)

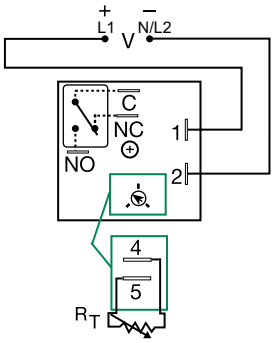
Upon application of input voltage, the time delay begins. The output is de-energized before and during the time delay. At the end of the time delay, the output relay energizes and remains energized until input voltage is removed.

**Reset:** Removing input voltage resets the time delay and output.

## Features & Benefits

| FEATURES | BENEFITS |
|---|---|
| **Microcontroller based** | Repeat Accuracy + / - 0.5% |
| **Compact, low cost design** | Allows flexiblility for OEM applications |
| **Isolated, 10A, SPDT output contacts** | Allows control of loads for AC or DC voltages |
| **Encapsulated** | Protects against shock, vibration, and humidity |

## Wiring Diagram




V = Voltage
C = Common, Transfer Contact
NO = Normally Open
NC = Normally Closed

A knob is supplied for adjustable units, or $R_T$ terminals 4 & 5 for external adjust. See external adjustment vs time delay chart. Relay contacts are isolated.

## 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.

## Ordering Information

| MODEL | INPUT VOLTAGE | ADJUSTMENT | TIME DELAY | MODEL | INPUT VOLTAGE | ADJUSTMENT | TIME DELAY |
|---|---|---|---|---|---|---|---|
| KRDM1110S | 12VDC | Fixed | 10s | KRDM4110M | 120VAC | Fixed | 10m |
| KRDM1130S | 12VDC | Fixed | 30s | KRDM4110S | 120VAC | Fixed | 10s |
| KRDM120 | 12VDC | Onboard knob | 0.1 - 10s | KRDM4145S | 120VAC | Fixed | 45s |
| KRDM121 | 12VDC | Onboard knob | 1 - 100s | KRDM420 | 120VAC | Onboard knob | 0.1 - 10s |
| KRDM2110M | 24VAC/DC | Fixed | 10m | KRDM421 | 120VAC | Onboard knob | 1 - 100s |
| KRDM215M | 24VAC/DC | Fixed | 5m | KRDM424 | 120VAC | Onboard knob | 1 - 100m |
| KRDM220 | 24VAC/DC | Onboard knob | 0.1 - 10s | KRDM430 | 120VAC | External | 0.1 - 10s |
| KRDM221 | 24VAC/DC | Onboard knob | 1 - 100s | KRDM433 | 120VAC | External | 0.1 - 10m |
| KRDM223 | 24VAC/DC | Onboard knob | 0.1 - 10m | KRDM6115M | 230VAC | Fixed | 15m |
| KRDM310.2S | 24VDC | Fixed | 0.2s | | | | |

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## Accessories

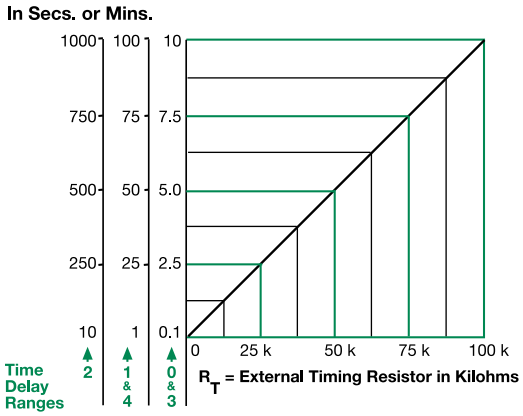
**P1015-13** (AWG 10/12), **P1015-64** (AWG 14/16) **Female Quick Connect**
These 0.25 in. (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief.

**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.

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

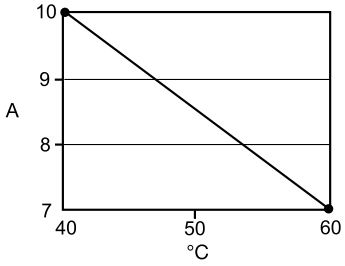
**P1023-20 DIN Rail Adapter**
Allows module to be mounted on a 35 mm DIN type rail with two #10 screws.

## 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 RT terminals; as the resistance increases the time delay increases.
When selecting an external RT, add the tolerances of the timer and the RT for the full time range adjustment.
**Examples:** 1 to 50 S adjustable time delay, select time delay range 1 and a 50 K ohm RT. For 1 to 100 S use a 100 K ohm RT.

## Output Current/Ambient Temperature




## Specifications

**Time Delay**

| | |
|---|---|
| **Range** | 0.1s - 100m in 5 adjustable ranges or fixed |
| **Repeat Accuracy** | ±0.5% or 20ms, whichever is greater |
| **Tolerance (Factory Calibration)** | ≤ ±5% |
| **Recycle Time** | ≤ 150ms |
| **Time Delay vs Temp. & Voltage** | ≤ ±5% |

**Input**

| | |
|---|---|
| **Voltage** | 12, 24 or 110VDC; 24, 120 or 230VAC |
| **Tolerance** | |
| **12VDC & 24VAC/DC** | -15% - 20% |
| **110VDC 120 & 230VAC** | -20% - 10% |
| **AC Line Frequency/DC Ripple** | 50/60 Hz / ≤ 10% |
| **Power Consumption** | AC ≤ 2VA; DC ≤ 2W |

**Output**

| | |
|---|---|
| **Type** | Isolated relay contacts |
| **Form** | SPDT |
| **Rating (at 40°C)** | 10A resistive @ 125VAC;<br>5A resistive @ 230VAC & 28VDC;<br>1/4 hp @ 125VAC |
| **Max. Switching Voltage** | 250VAC |
| **Life (Operations)** | Mechanical - 1 x $10^7$; Electrical - 1 x $10^5$ |

**Protection**

| | |
|---|---|
| **Circuitry** | Encapsulated |
| **Isolation Voltage** | ≥ 1500V RMS input to output |
| **Insulation Resistance** | ≥ 100 MΩ |
| **Polarity** | DC units are reverse polarity protected |

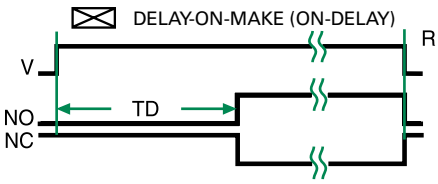
**Mechanical**

| | |
|---|---|
| **Mounting** | Surface mount with one #10 (M5 x 0.8) screw |
| **Dimensions** | **H** 50.8 mm (2.0"); **W** 50.8 mm (2.0");<br>**D** 30.7 mm (1.21") |
| **Termination** | 0.25 in. (6.35 mm) male quick connect terminals |

**Environmental**

| | |
|---|---|
| **Operating/Storage Temperature** | -20° to 60°C / -40° to 85°C |
| **Humidity** | 95% relative, non-condensing |
| **Weight** | ≅ 2.6 oz (74 g) |

## Function Diagram




V = Voltage
NO = Normally Open Contact
NC = Normally Closed Contact
TD = Time Delay
R = Reset
= Undefined Time

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