

## KRDB SERIES



### Description

The KRDB 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 KRDB Series is a cost effective approach for OEM applications that require small size, isolation, reliability, and long life.

#### Operation (Delay-on-Break)

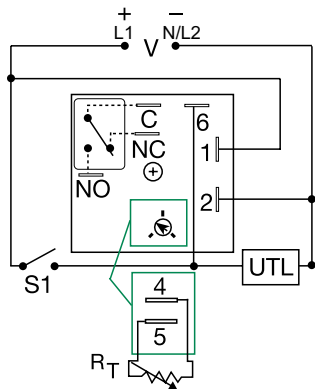
Input voltage must be applied before and during timing. Upon closure of the initiate switch, the output relay energizes. The time delay begins when the initiate switch is opened. The output remains energized during timing. At the end of the time delay, the output de-energizes. The output will energize if the initiate switch is closed when input voltage is applied.

**Reset:** Reclosing the initiate switch during timing resets the time delay. Loss of input voltage resets the time delay and output.

### Features & Benefits

FEATURES	BENEFITS
<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>	No moving parts to arc and wear out over time and encapsulated to protect against shock, vibration, and humidity
<b>Compact, low cost design measuring 2 in. (50.8mm) square</b>	Allows flexibility for OEM applications

### Wiring Diagram



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

A knob is supplied for adjustable units. The untimed load is optional. 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
KRDB110.1S	12VDC	Fixed	0.1s	KRDB31120S	24VDC	Fixed	20s
KRDB112.5S	12VDC	Fixed	2.5s	KRDB415S	120VAC	Fixed	5s
KRDB1120M	12VDC	Fixed	20m	KRDB4160S	120VAC	Fixed	60s
KRDB115M	12VDC	Fixed	5m	KRDB420	120VAC	Onboard	0.1 - 10s
KRDB120	12VDC	Onboard	0.1 - 10s	KRDB421	120VAC	Onboard	1 - 100s
KRDB124	12VDC	Onboard	1 - 100m	KRDB422	120VAC	Onboard	10 - 1000s
KRDB21180S	24VAC/DC	Fixed	180s	KRDB423	120VAC	Onboard	0.1 - 10m
KRDB217S	24VAC/DC	Fixed	7s	KRDB424	120VAC	Onboard	1 - 100m

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

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## Accessories



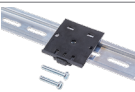
**P1015-64 (AWG 14/16) Female Quick Connect**  
These 0.25 in. (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief.



**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.

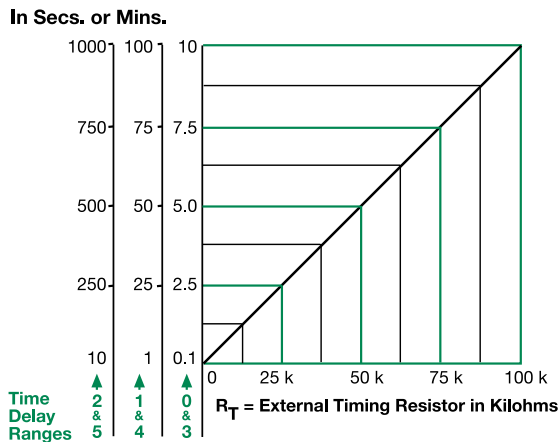


**C103PM (AL) DIN Rail**  
35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.



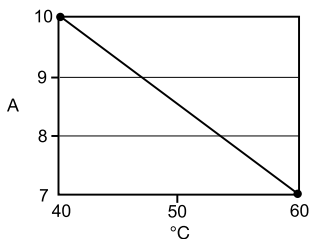
**P1023-20 DIN Rail Adapter**  
Allows module to be mounted on a 35 mm DIN type rail with two #10 screws.

## 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  $R_T$  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

<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 (Factory Calibration)</b>	≤ ±5%
<b>Recycle Time</b>	≤ 150ms
<b>Initiate Time</b>	≤ 40ms
<b>Time Delay vs Temp. &amp; Voltage</b>	≤ ±5%
<b>Input Voltage</b>	12, 24, 110VDC; 24, 120 or 230VAC
<b>Tolerance</b>	
<b>12VDC &amp; 24VDC/AC</b>	-15% - 20%
<b>110VDC, 120 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>Max. Switching Voltage</b>	250VAC
<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 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

