

Delay On Break (Release)

KRDB Digi-Timer Time Delay Relay

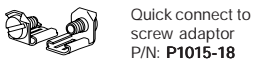
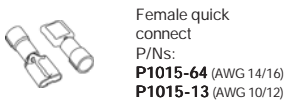
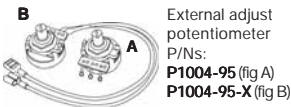
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- Compact Time Delay Relay
- Microcontroller Circuitry, +/-0.5% Repeat Accuracy
- Isolated 10 A SPDT Output Contacts
- Onboard or External Adjustment or Fixed Time Delay
- Delays from 100 ms ... 1000 m in 6 Ranges
- Input Voltages from 12... 120 V in 4 Ranges
- +/-5% Factory Calibration

Approvals:

Accessories



DIN rail adaptor P/N: P1023-20

See accessory pages for specifications.

Description

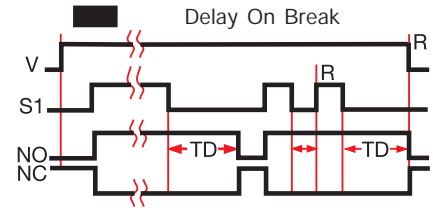
The KRDB Series is a compact time delay relay measuring only 2 in. (50.8 mm) square. Its microcontroller timing circuit provides excellent repeat accuracy and stability. Encapsulation protects against shock, vibration, and humidity. The KRDB Series is a cost effective approach for OEM applications that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

Operation

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.

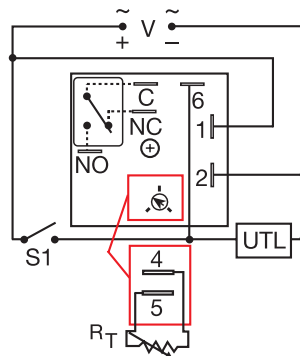
Reset: Reclosing the initiate switch during timing resets the time delay. Loss of input voltage resets the time delay and output.

Function



V = Voltage S1 = Initiate Switch R = Reset
NO = Normally Open NC = Normally Closed
TD = Time Delay — = Undefined time

Connection



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

A knob is supplied for adjustable units. The untimed load is optional. Relay contacts are isolated. Dashed lines are internal connections.

Ordering Table

KRDB Series	X Input	X Adjustment	X Time Delay *
-1	12 V DC	Fixed	0 - 0.1 ... 10 s
-2	24 V AC/DC	Onboard Adjustment	1 - 1 ... 100 s
-4	120 V AC	External Adjustment	2 - 10 ... 1000 s
-5	110 V DC	External Adjustment	3 - 0.1 ... 10 m
			4 - 1 ... 100 m
			5 - 10 ... 1000 m

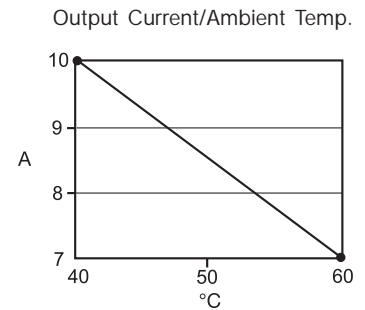
* If Fixed Delay is selected, insert delay [0.1 ... 1000] followed by (S) sec. or (M) min.

Example P/N: KRDB421 Fixed - KRDB410.5S

Delay On Break (Release) KRDB Digi-Timer Time Delay Relay

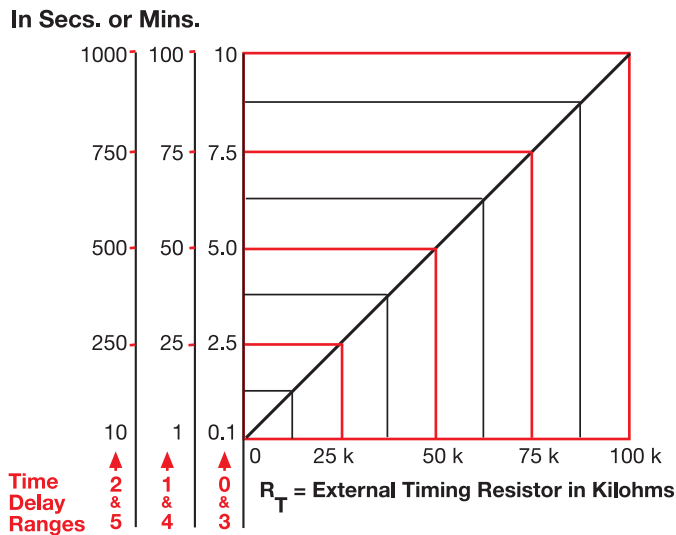
Technical Data

Time Delay		
Type		Microcontroller with watchdog circuitry
Range		0.1 s ... 1000 m in 6 adjustable ranges or fixed
Repeat Accuracy		+/-0.5% or 20 ms, whichever is greater
Tolerance (Factory Calibration)		≤ +/-5%
Recycle Time		≤ 150 ms
Initiate Time		≤ 40 ms
Time Delay vs. Temperature & Voltage		≤ +/-5%
Input		
Voltage		12, 24 or 110 V DC; 24 ... 120 V AC
Tolerance	12 V DC & 24 V DC/AC	-15% ... +20%
	110 V DC & 120 V AC	-20% ... +10%
Line Frequency/DC Ripple		50 ... 60 Hz/≤ 10%
Power Consumption		AC ≤ 2 VA; DC ≤ 2 W
Output		
Type		Isolated relay contacts
Form		Single pole double throw (SPDT)
Rating (at 40°C)		10 A resistive at 125 V AC
		5 A resistive at 28 V DC; 1/4 hp at 125 V AC
Life		Mechanical -- 1×10^7 ; Electrical -- 1×10^5
Protection		
Circuitry		Encapsulated
Isolation Voltage		≥ 1500 V 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
Package		2 x 2 x 1.21 in. (50.8 x 50.8 x 30.7 mm)
Termination		0.25 in. (6.35 mm) male quick connect terminals
Environmental		
Operating/Storage Temperature		-40°C ... +60°C/-40°C ... +85°C
Humidity		95% relative, non-condensing
Weight		≅ 2.6 oz (74 g)

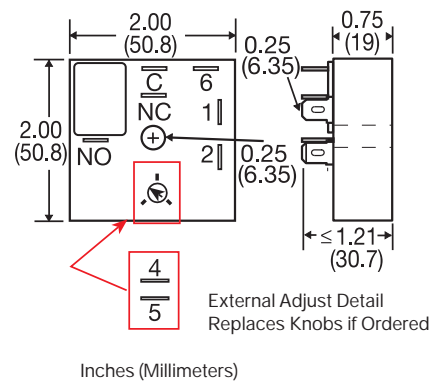


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External Resistance vs Time Delay



Mechanical View



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 .