

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



10 YEAR WARRANTY

- Compact Time Delay Relay
- Microcomputer Circuitry, +/-1% Repeat Accuracy
- Isolated 10 A SPDT Output Contacts
- Onboard Adjustment or Fixed Time Delay
- Delays from 100 ms ... 1000 m
- Input Voltages from 12 ... 120 V in 5 Ranges

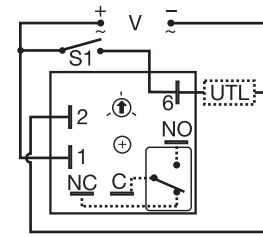
## Description

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.

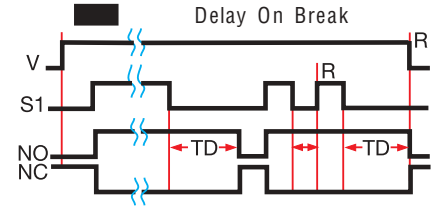
## Operation

Input voltage must be applied to the input before and during timing. Upon closure of the initiate switch, the output relay is energized. 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 is de-energized. 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.

Approvals:



Relay contacts are isolated. Dashed lines are internal connections



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

## Ordering Table

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

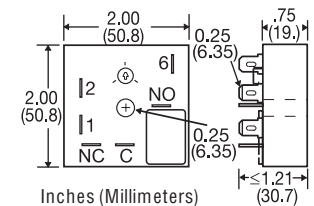
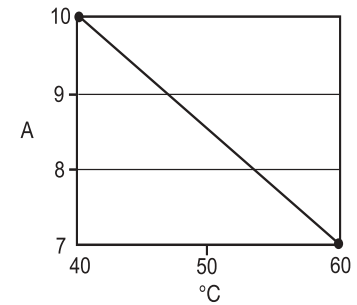
\* If Fixed Delay is selected, insert delay (0.1 ... 1000) followed by (S) sec. or (M) min.

Example P/N: KRDB421 Fixed - KRDB4110M

## Technical Data

<b>Time Delay</b>	
Type	Microcontroller with watchdog circuitry
Range	0.1 s ... 1000 m in 6 adjustable ranges or fixed
Repeat Accuracy	+/-1% or 16 ms @ 60 Hz, 20 ms @ 50 Hz, whichever is greater
Tolerance (Factory Calibration)	≤ +/-10%
Recycle Time	≤ 250 ms
Initiate Time	AC: ≈ 40 ms; DC: ≈ 10 ms
Time Delay vs. Temperature & Voltage	≤ +/-5%
<b>Input</b>	
Voltage	12, 24 or 110 V DC; 120 V AC; 24 V AC/DC
Tolerance	12 V DC & 24 V DC/AC: -15% ... +20%
	110 V DC & 120 V AC: -20% ... +10%
Line Frequency	50 ... 60 Hz
Power Consumption	12, 24 V DC: ≤ 1 W; 24 V AC: ≤ 1 VA; 110 V DC: ≤ 2 W; 120 V AC: ≤ 2 VA
<b>Output</b>	
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 30 V DC; 1/4 hp at 125 V AC
Life	Mechanical -- 1 x 10 <sup>7</sup> Electrical -- 1 x 10 <sup>5</sup> for 10 A at 120 V AC
<b>Protection</b>	
Circuitry	Encapsulated
Isolation Voltage	≥ 1500 V RMS input to output
Insulation Resistance	≥ 100 MΩ
Polarity	DC units are reverse polarity protected
<b>Mechanical</b>	
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
<b>Environmental</b>	
Operating Temperature	-40°C ... +60°C
Storage Temperature	-40°C ... +85°C
Humidity	95% relative, non-condensing
Weight	≈ 2.6 oz (74 g)

Output Current/Ambient Temp.



## Accessories

Female quick connect  
P/N: P1015-64 (AWG 14/16)

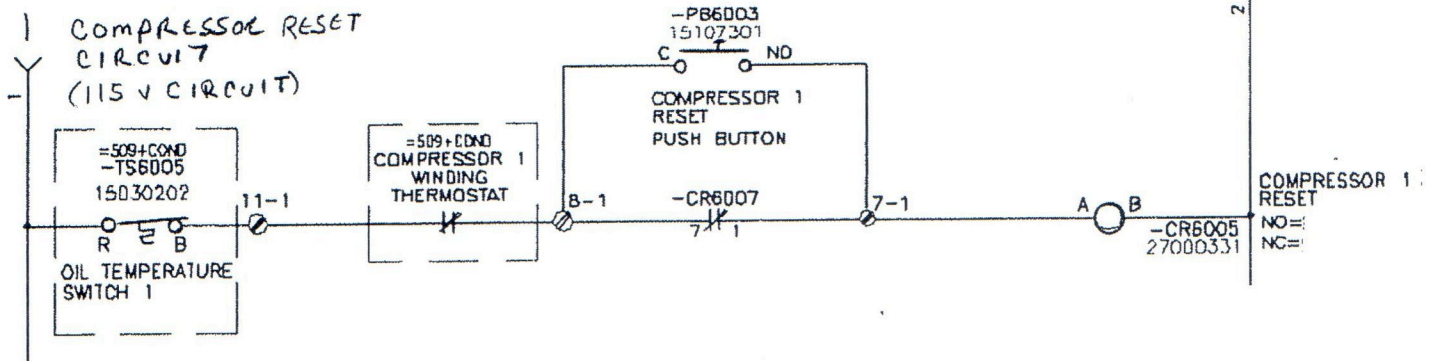
Quick connect to screw adaptor  
P/N: P1015-18

Mounting bracket  
P/N: P1023-6

DIN rail P/Ns:  
17322005 (Steel)  
C103PM (Al)  
DIN rail adaptor  
P/N: P1023-20

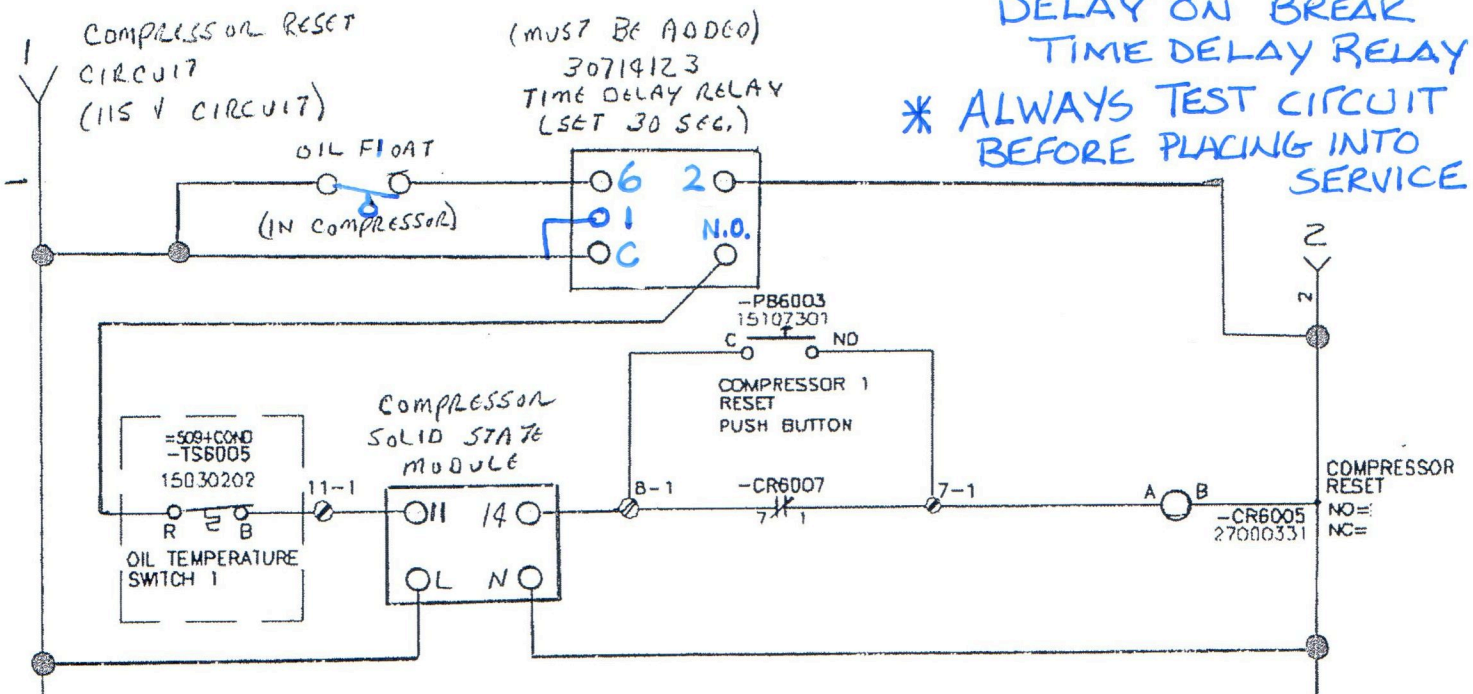
See accessory pages at the end of this section.

IF ORIGINAL COMPRESSOR DID NOT HAVE A  
 COMPRESSOR SOLID STATE MODULE - MUST REWIRE  
 THE COMPRESSOR RESET CIRCUIT (115V CIRCUIT)  
 (ORIGINAL CIRCUIT)



REVISED COMPRESSOR RESET CIRCUIT (COMPRESSOR WITH  
 SOLID STATE COMPRESSOR MODULE)

USING SSAC # KRDB  
 DELAY ON BREAK  
 TIME DELAY RELAY  
 \* ALWAYS TEST CIRCUIT  
 BEFORE PLACING INTO  
 SERVICE



A - OIL FLOAT TERMINALS LOCATED ON BACK SIDE OF  
 COMPRESSOR ON OIL SUMP COVER

B - MUST ADD TIME DELAY RELAY (30714123) TO UNIT  
 CONTROL