

# Motion Detector HRD9 Power-Time Time Delay Relay



- 15 A (UL)/30 A (CSA) Isolated Output Contacts
- 12 ... 230 V Operation in 5 Ranges
- Delays from 200 ms ... 100 m
- Digital Timing Accuracy
- Fixed, Remote or Onboard Adjustment

## Description

The HRD9 Series combines an electromechanical relay output with digital timing circuitry. The isolated output contact rating allows for direct operation of heavy loads such as compressors, pumps, blower motors, heaters, etc. The HRD9 is ideal for OEM applications where cost is a factor.

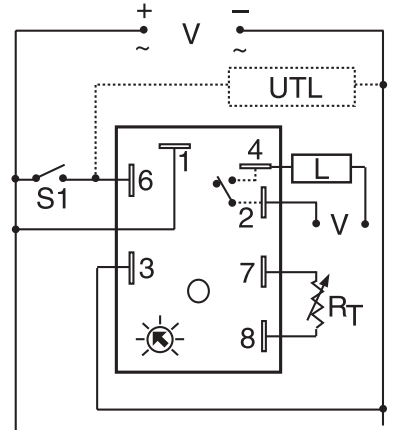
## Operation Retriggerable Single Shot

Input voltage must be applied prior to and during timing. The output is de-energized. Upon closure of the initiate switch (momentary or maintained) the output is energized and the time delay is started. On completion of the delay period, the output is de-energized.

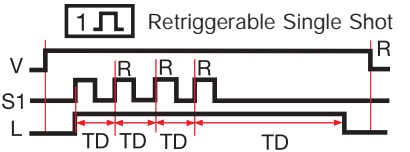
**Reset:** Reclosing the initiate switch during or after timing will reset the time delay and restart timing. Reset is also accomplished by removing and reapplying input voltage.

**Note:** Powering up unit with initiate closed will not cause the output relay to energize.

■ Approvals:



NOTE: A knob, or terminals 7 & 8 are only included on adjustable units. Relay contacts are isolated.



V = Voltage UTL = Untimed Load L = Load  
S1 = Initiate Switch R = Reset TD = Time Delay

## Ordering Table

HRD9 Series	X Input	X Adjustment	X Time Tolerance	X Time Delay *
	-1 - 12 V DC	-1 - Fixed	-A - +/-1%	-0 - 0.2 ... 10 s
	-2 - 24 V AC	-2 - Onboard Knob	Blank - +/-10%	-1 - 1 ... 100 s
	-3 - 24 V DC	-3 - External Adjust		-2 - 10 ... 1000 s
	-4 - 120 V AC			-3 - 0.1 ... 10 m
	-6 - 230 V AC			-4 - 1 ... 100 m

Example P/N: **HRD9421** Fixed - **HRD94130S**

\* If Fixed Delay is selected, insert delay [0.2 ... 1000] followed by (S) sec. or [0.1 ... 100] (M) min.

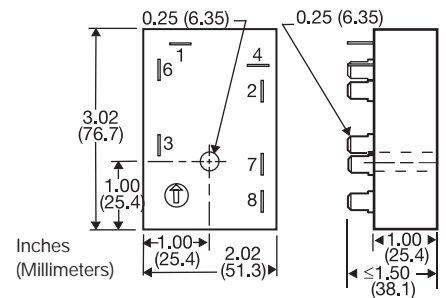
## R<sub>T</sub> Selection Chart

Desired Time Delay*						R <sub>T</sub> Megohm
Seconds			Minutes			
0	1	2	3	4		
0.2	1	10	0.1	1	0.0	
1	10	100	1	10	0.1	
2	20	200	2	20	0.2	
3	30	300	3	30	0.3	
4	40	400	4	40	0.4	
5	50	500	5	50	0.5	
6	60	600	6	60	0.6	
7	70	700	7	70	0.7	
8	80	800	8	80	0.8	
9	90	900	9	90	0.9	
10	100	1000	10	100	1.0	

\* When selecting an external R<sub>T</sub> add at least 20% for tolerance of unit and the R<sub>T</sub>.

## Technical Data

<b>Time Delay</b>		Digital integrated circuitry		
Type		200 ms ... 100 m in 5 adjustable ranges or fixed		
Range		+/-0.5 %		
Repeat Accuracy		+/-1%, +/-10%		
Tolerance (Factory Calibration)		≤500 ms		
Recycle Time		+/-2%		
Time Delay vs. Temperature & Voltage		≤25 ms		
Initiate Time		≤75 ms (≤600 operations per min.)		
Reset Time				
<b>Input</b>				
Voltage		12, or 24 V DC; 24, 120, or 230 V AC		
Tolerance	12 V DC & 24 V DC/AC	-15% ... +20%		
	120 & 230 V AC	-20% ... +10%		
Line Frequency		50 ... 60 Hz		
Power Consumption		AC units: ≤4 VA; DC units: ≤2 W		
<b>Output</b>				
Type		Electromechanical relay		
Form		Single pole, normally open, isolated		
Contact Ratings	General Purpose	125 V AC	UL: 15 A	CSA: 30 A
Contact Ratings	General Purpose	240 V AC	UL: 10 A	CSA: 10 A
Contact Ratings	Resistive	30 V DC	UL: 20 A	CSA: 20 A
Contact Ratings	Motor Load	125 V AC	UL: 1 Hp	CSA: 1 Hp
Contact Ratings	Motor Load	240 V AC	UL: 1 Hp	CSA: 1 Hp
Contact Ratings	Definite Purpose	125 V AC	UL: 90 LRA, 15 FLA	
Contact Ratings	Definite Purpose	240 V AC	UL: 60 LRA, 10 FLA	
Life		Mechanical -- 1 x 10 <sup>6</sup> Electrical -- 1 x 10 <sup>5</sup>		
<b>Protection</b>	Surge	IEEE C62.41-1991 Level A		
Circuitry		Encapsulated		
Dielectric Breakdown		≥ 2000 V RMS terminals to mounting surface		
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		3 x 2 x 1.5 in. (76.7 x 51.3 x 38.1mm)		
Termination		0.25 in. (6.35 mm) male quick connect terminals		
<b>Environmental</b>				
Operating Temperature		-20°C ... +60°C		
Storage Temperature		-40°C ... +85°C		
Humidity		95% relative, non-condensing		
Weight		≈ 3.9 oz (111 g)		



## Accessories

Mounting bracket  
P/N: P1023-6

External adjust potentiometer  
P/Ns:  
P1004-16 (fig A)  
P1004-16 X (fig B)

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

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

Versa-knob  
P/N: P0700-7

DIN rail adaptor  
P/N: P1023-20

DIN rail P/Ns:  
C103PM (Al)  
17322005 (Steel)

See accessory pages at the end of this section.