

Dedicated
timers

Motion Detector - Retriggerable Single Shot HRD9 Power-Time Time Delay Relay

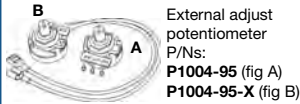


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- 30 A SPDT N.O. Isolated Output Contacts
- 12 ... 230 V Operation in 5 Ranges
- Delays from 100 ms ... 100 m in 5 ranges
- 0.5% Repeat Timing Accuracy
- Fixed, External or Onboard Adjustment
- Encapsulated Circuitry

Approvals:

Accessories



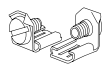
External adjust potentiometer
P/Ns:
P1004-95 (fig A)
P1004-95-X (fig B)



Mounting bracket
P/N: P1023-6



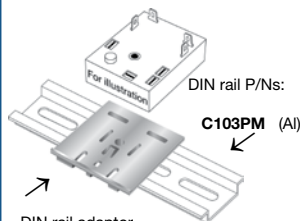
Female quick connect P/Ns:
P1015-64 (AWG 14/16)
P1015-13 (AWG 10/12)



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



Versa-knob
P/N: P0700-7



DIN rail P/Ns:

C103PM (A1)

DIN rail adaptor
P/N: P1023-20

See accessory pages for specifications.

Description

The HRD9 Series combines an electromechanical relay output with microcontroller timing circuitry. It offers 12 to 230 V operation in five ranges and factory fixed, external, or onboard adjustable time delays with a repeat accuracy of +/-0.5%. 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.

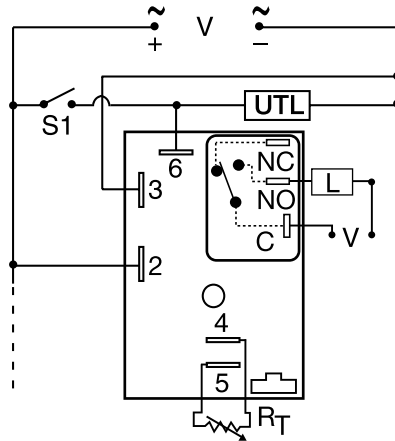
Operation

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 energizes and the time delay starts. On completion of the delay period, the output de-energizes.

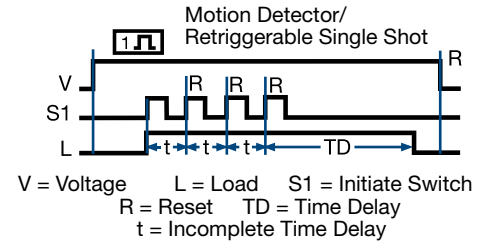
Reset: Reclosing the initiate switch during or after timing will reset the time delay and restart timing. Reset is also accomplished by removing and reapplying input voltage.

Note: Powering up the unit with the initiate switch closed will not energize the output relay or start timing.

Connection



Function



S1 = Initiate Switch L = Timed Load
UTL = Untimed Load NO = Normally Open
C = Common, Transfer Contact

NOTE: A knob, or terminals 4 & 5 are only included on adjustable units. R_T is used when external adjustment is ordered. Relay contacts are isolated. Dashed lines are internal connections. The untimed load is optional.

Available Models-

HRD9112S

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Ordering Table

HRD9 Series	X Input	X Adjustment	X Time Tolerance	X Time Delay *
	-1 - 12 V DC	-1 - Fixed	-A - +/-1%	-0 - 0.1 ... 10 s
	-2 - 24 V AC	-2 - Onboard Knob	Blank - +/-5%	-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 - HRD941A0.5S

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

HRD9Gen 09.10

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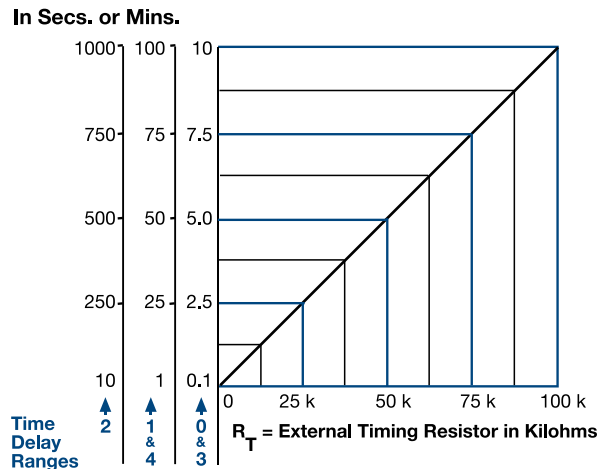
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Technical Data

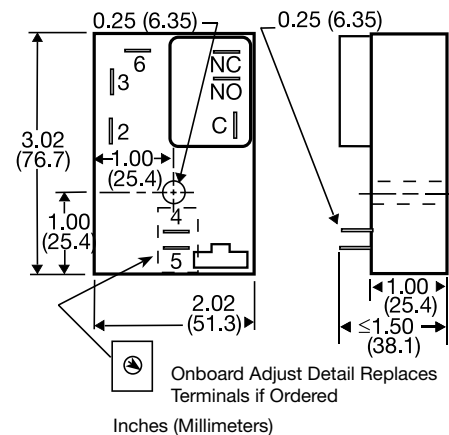
Time Delay		Microcontroller circuitry	
Type		100 ms ... 100 m in 5 adjustable ranges or fixed	
Range		+/-0.5 % or 20 ms, whichever is greater	
Repeat Accuracy		+/-1%, +/-5%	
Tolerance (Factory Calibration)		≤ 150 ms	
Reset Time		+/-2%	
Time Delay vs. Temperature & Voltage		≤ 20 ms (≤ 1500 operations per min.)	
Initiate Time			
Input			
Voltage		12 or 24 V DC; 24, 120, or 230 V AC	
Tolerance	12 V DC & 24 V DC	-15% ... +20%	
	24 ... 230 V AC	-20% ... +10%	
Line Frequency		50 ... 60 Hz	
Power Consumption		AC ≤ 4 VA; DC ≤ 2 W	
Output		Electromechanical relay	
Type		SPDT, isolated	
Form			
Ratings:		SPDT-N.O.	SPDT-N.C.
General Purpose	125/240 V AC	30 A	15 A
Resistive	125/240 V AC	30 A	15 A
	28 V DC	20 A	10 A
Motor Load	125 V AC	1 hp*	1/4 hp**
	240 V AC	2 hp**	1 hp**
Life		Mechanical -- 1 x 10 ⁶ ; Electrical -- 1 x 10 ⁶ , *3 x 10 ⁴ , **6,000	
Protection		IEEE C62.41-1991 Level A	
Surge		Encapsulated	
Circuitry		≥ 2000 V RMS terminals to mounting surface	
Dielectric Breakdown		≥ 100 MΩ	
Insulation Resistance		DC units are reverse polarity protected	
Polarity			
Mechanical		Surface mount with one #10 (M5 x 0.8) screw	
Mounting		3 x 2 x 1.5 in. (76.7 x 51.3 x 38.1mm)	
Package		0.25 in. (6.35 mm) male quick connect terminals	
Termination			
Environmental		-40°C ... +60°C/-40°C ... +85°C	
Operating/Storage Temperature		95% relative, non-condensing	
Humidity		≅ 3.9 oz (111 g)	
Weight			

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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 .