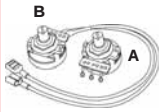
Interval (Single Pulse On Operate)
HRDI Power-Time
Time Delay Relay

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

Approvals:

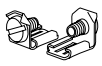
Accessories



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

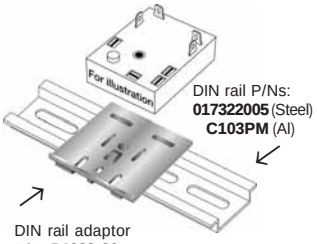
Mounting bracket P/N: **P1023-6**

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:
017322005 (Steel)
C103PM (Al)

DIN rail adaptor P/N: **P1023-20**

See accessory pages for specifications.

Description

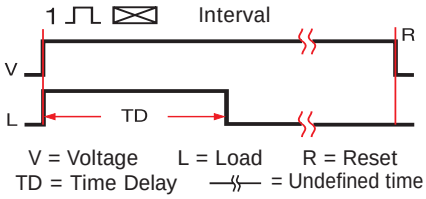
The HRDI Series combines an electromechanical relay output with microcontroller timing circuitry. It offers 12 to 230 V operation in five ranges and factory fixed, external, or onboard adjustable time delays with a repeat accuracy of +/-0.5%. The output contact rating allows for direct operation of heavy loads such as compressors, pumps, blower motors, heaters, etc. This series is ideal for OEM applications where cost is a factor.

Operation

Upon application of input voltage, the time delay begins. The output relay is energized during the time delay. At the end of the time delay, the output de-energizes and remains de-energized until input voltage is removed.

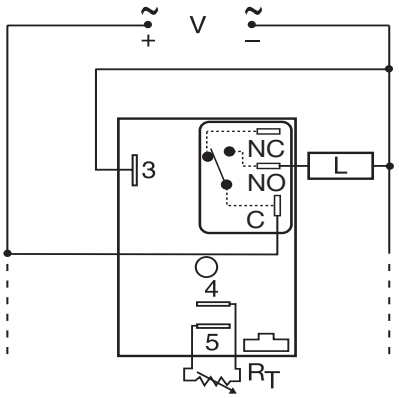
Reset: Removing input voltage resets the time delay and the output.

Function



V = Voltage L = Load R = Reset
TD = Time Delay —⫽— = Undefined time

Connection



C = Common, Transfer Contact
NO = Normally Open L = Load

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 not isolated. Dashed lines are internal connections.

Ordering Table

HRDI 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: **HRDI421** Fixed – **HRDI41A0.5S**

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

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Interval (Single Pulse On Operate)
HRDI Power-Time
Time Delay Relay

Technical Data

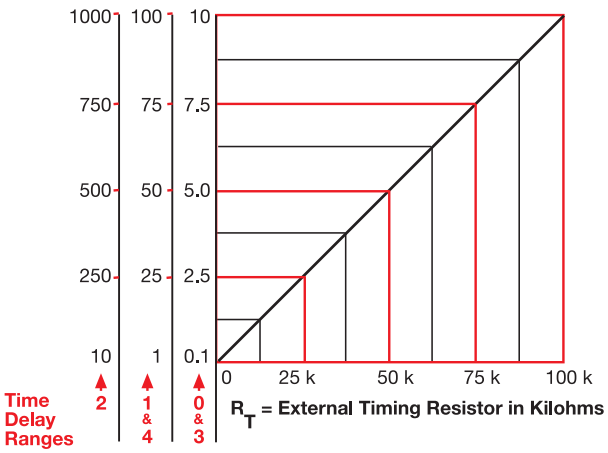
Time Delay		
Type		Microcontroller circuitry
Range		100 ms ... 100 m in 5 adjustable ranges or fixed
Repeat Accuracy		+/-0.5 % or 20 ms, whichever is greater
Tolerance (Factory Calibration)		+/-1%, +/-5%
Recycle Time		≤ 150 ms
Time Delay vs. Temperature & Voltage		+/-2%
Input		
Voltage		12 or 24 V DC; 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		
Type		Electromechanical relay
Form		SPDT, non-isolated

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 10^5, *3 x 10^4, **6,000
Protection	
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
Mechanical	
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
Environmental	
Operating / Storage Temperature	-40°C ... +60°C / -40°C ... +85°C
Humidity	95% relative, non-condensing
Weight	≅ 3.9 oz (111 g)

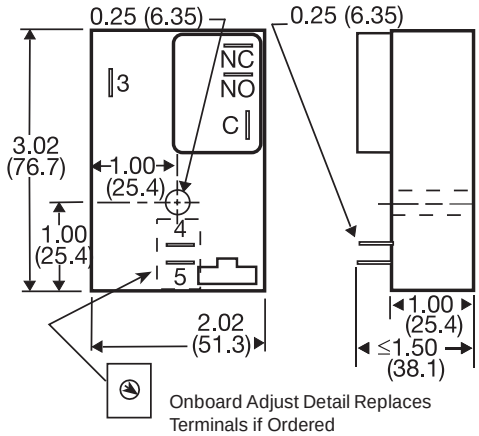
External Resistance vs Time Delay

In Secs. or Mins.



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 RT terminals; as the resistance increases the time delay increases.
When selecting an external RT, add the tolerances of the timer and the RT for the full time range adjustment.
Examples: 1 to 50 S adjustable time delay, select time delay range 1 and a 50 K ohm RT. For 1 to 100 S use a 100 K ohm RT.

Mechanical View



Onboard Adjust Detail Replaces Terminals if Ordered

Inches (Millimeters)

5

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