

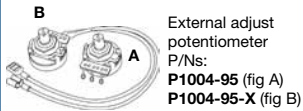
Interval HRDI Power-Time Time Delay Relay



- 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



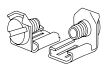
External adjust potentiometer
P/Ns:
P1004-95 (fig A)
P1004-95-X (fig B)



Mounting bracket
P/N: P1023-6



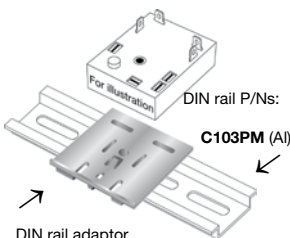
Female quick connect P/Ns:
P1015-64 (AWG 14/16)
P1015-13 (AWG 10/12)



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



Versa-knob
P/N: P0700-7



DIN rail adaptor
P/N: P1023-20

See accessory pages for specifications.

Description

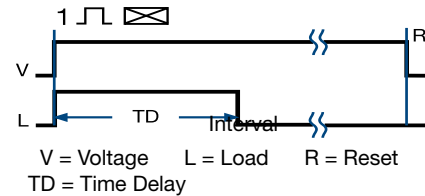
The HRDI Series combines an electromechanical relay output with microcontroller timing circuitry. It offers 12 to 230 V operation in five ranges and factory fixed, external, or onboard adjustable time delays with a repeat accuracy of +/-0.5%. The output contact rating allows for direct operation of heavy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

Operation

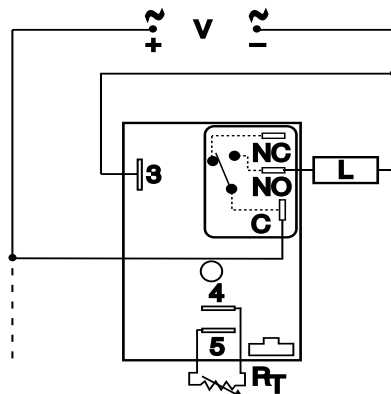
Upon application of input voltage, the time delay begins. The output relay is energized during the time delay. At the end of the time delay, the output de-energizes and remains de-energized until input voltage is removed.

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

Function



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.

= Undefined time

Available Models-

HRDI117S
HRDI420

HRDI124
•HRDI421

HRDI312S
HRDI431

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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.

Interval HRDI Power-Time Time Delay Relay

Dedicated
timers

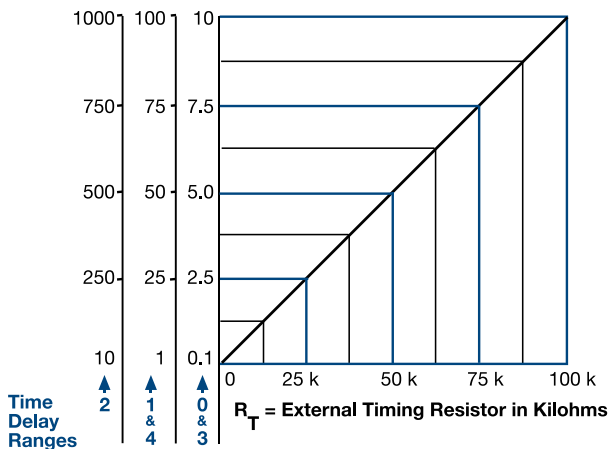
Technical Data

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	
Recycle Time		+/-2%	
Time Delay vs. Temperature & Voltage			
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, non-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 ⁵ , *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			

5

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 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.

Mechanical View

