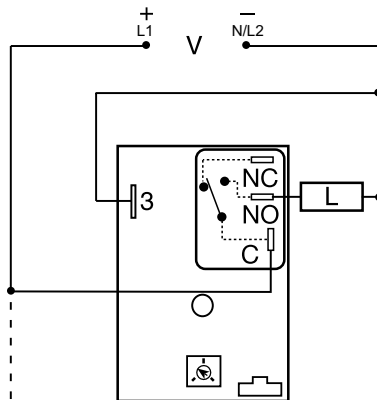


## HRDI SERIES

### Interval Timer



### Wiring Diagram



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

NOTE: A knob, or terminals 4 & 5 are only included on adjustable units. R<sub>T</sub> is used when external adjustment is ordered. Relay contacts are not isolated.

### Description

The HRDI Series combines an electromechanical relay output with microcontroller timing circuitry. It offers 12 to 230V operation in five ranges and factory fixed, external, or onboard adjustable time delays with a repeat accuracy of  $\pm 0.5\%$ . 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 (Interval)

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.

### Features & Benefits

FEATURES	BENEFITS
<b>Microcontroller based</b>	Repeat Accuracy +/- 0.5%
<b>Compact, low cost design</b>	Allows flexibility for OEM applications
<b>Isolated, 30A, SPDT, NO output contacts</b>	Allows direct operation of heavy loads: compressors, pumps, blower motors, heaters.
<b>Encapsulated</b>	Protects against shock, vibration, and humidity.

### Accessories



**P1004-95, P1004-95-X Versa-Pot**  
Panel mountable, industrial potentiometer recommended for remote time delay adjustment.



**P1023-6 Mounting bracket**  
The 90° orientation of mounting slots makes installation/removal of modules quick and easy.



**P0700-7 Versa-Knob**  
Designed for 0.25 in. (6.35 mm) shaft of Versa-Pot. Semi-gloss industrial black finish.



**P1015-13 (AWG 10/12), P1015-64 (AWG 14/16) Female Quick Connect**  
These 0.25 in. (6.35 mm) female terminals are constructed with an insulator barrel to provide strain relief.



**P1015-18 Quick Connect to Screw Adapter**  
Screw adapter terminal designed for use with all modules with 0.25 in. (6.35 mm) male quick connect terminals.



**C103PM (AL) DIN Rail**  
35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.



**P1023-20 DIN Rail Adapter**  
Allows module to be mounted on a 35 mm DIN type rail with two #10 screws.

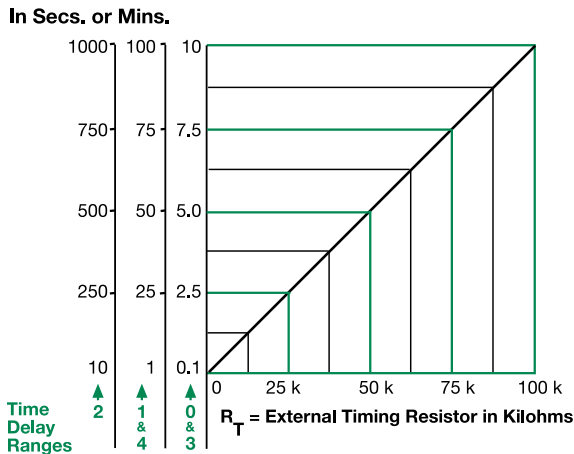
### Ordering Information

MODEL	INPUT VOLTAGE	ADJUSTMENT	TIME DELAY
HRDI117S	12VDC	Fixed	7s
HRDI421	120VAC	Onboard	1 - 100s
HRDI422	120VAC	Onboard	10 - 1000s

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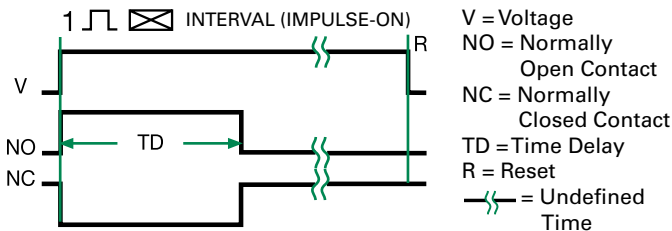
# HRDI SERIES

## External Resistance vs. Time Delay



**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<sub>T</sub> terminals; as the resistance increases the time delay increases.  
When selecting an external R<sub>T</sub>, add the tolerances of the timer and the R<sub>T</sub> 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<sub>T</sub>. For 1 to 100 S use a 100 K ohm R<sub>T</sub>.

## Function Diagram



## Specifications

<b>Time Delay Type</b>	Microcontroller circuitry	
<b>Range</b>	0.1s - 100m in 5 adjustable ranges or fixed	
<b>Repeat Accuracy</b>	±0.5 % or 20ms, whichever is greater	
<b>Tolerance (Factory Calibration)</b>	±1%, ±5%	
<b>Recycle Time</b>	≤ 150ms	
<b>Time Delay vs Temp. &amp; Voltage</b>	±2%	
<b>Input Voltage</b>	12 or 24VDC; 24, 120, or 230VAC	
<b>Tolerance 12VDC &amp; 24VDC</b>	-15% - 20%	
<b>24 to 230VAC</b>	-20% - 10%	
<b>AC Line Frequency</b>	50/60 Hz	
<b>Power Consumption</b>	AC ≤ 4VA; DC ≤ 2W	
<b>Output Type</b>	Electromechanical relay	
<b>Form</b>	SPDT, non-isolated	
<b>Ratings</b>	<b>SPDT-NO</b>	<b>SPDT-NC</b>
<b>General Purpose</b>	125/240VAC	30A
<b>Resistive</b>	125/240VAC	30A
	28VDC	20A
<b>Motor Load</b>	125VAC	1 hp*
	240VAC	2 hp**
<b>Life</b>	Mechanical - 1 x 10 <sup>6</sup> ; Electrical - 1 x 10 <sup>5</sup> , *3 x 10 <sup>4</sup> , **6,000	
<b>Protection</b>	IEEE C62.41-1991 Level A	
<b>Surge Circuitry</b>	Encapsulated	
<b>Dielectric Breakdown</b>	≥ 2000V RMS terminals to mounting surface	
<b>Insulation Resistance</b>	≥ 100 MΩ	
<b>Polarity</b>	DC units are reverse polarity protected	
<b>Mechanical Mounting</b>	Surface mount with one #10 (M5 x 0.8) screw	
<b>Dimensions</b>	<b>H</b> 76.7 mm (3"); <b>W</b> 51.3 mm (2"); <b>D</b> 38.1 mm (1.5")	
<b>Termination</b>	0.25 in. (6.35 mm) male quick connect terminals	
<b>Environmental</b>		
<b>Operating/Storage Temperature</b>	-40° to 60°C / -40° to 85°C	
<b>Humidity</b>	95% relative, non-condensing	
<b>Weight</b>	≈ 3.9 oz (111 g)	

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