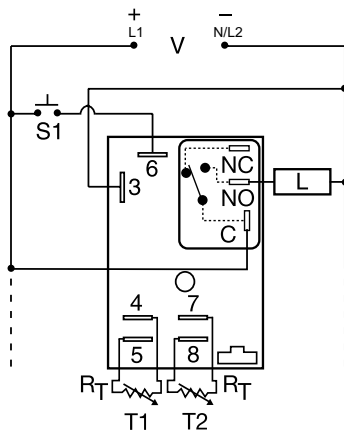


# HRDR SERIES

## Recycling Timer



### Wiring Diagram



NO = Normally Open  
S1 = Reset Switch  
C = Common, Transfer Contact  
L = Load

Terminals 4 & 5 and/or 7 & 8 are only included on externally adjustable units. Relay contacts are non-isolated. RT is included when external adjustment is ordered. Terminal 6 is included when Bypass/Reset is selected.

### Description

The HRDR Series combines an electromechanical relay and microcontroller timing circuitry. It offers 12 to 230V operation in five ranges and factory fixed, onboard or externally adjustable time delays with a repeat accuracy of  $\pm 0.5\%$ . The high switching capacity of the output contacts allow for direct control of heavy loads like compressors, pumps, motors, heaters and lighting. A bypass/reset switch option allows operator to interrupt normal recycling sequence and energize output relay. An excellent choice for OEM applications.

#### Operation (Recycling with Reset Switch)

Upon application of input voltage, the ON time T1 begins and output relay energizes. At the end of the ON time, the output relay de-energizes and the OFF time T2 begins. At the end of the OFF time, the output relay energizes and the cycle repeats as long as input voltage is applied. Some recycling timers have the OFF time as the first delay.

**Reset:** Removing input voltage resets output and time delays, and returns sequence to the first delay.

**Bypass/Reset Switch:** Closing the normally open bypass/reset switch energizes the output relay and resets the time delays. Opening the switch restarts recycling operation with the first delay.

### 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
<b>Independent adjustment of On and Off delays</b>	Provides greater flexibility of timing options
<b>Bypass/Reset switch option</b>	Allows operator to interrupt the timing sequence and energize the output relay

### Ordering Information

MODEL	INPUT VOLTAGE	EXTERNAL ADJUSTMENT	T1 ON TIME	OPERATING SEQUENCE	T2 OFF TIME	BYPASS / RESET OPTION
HRDR121A4R	12VDC	Both time onboard adj	1 - 100s	On time first	1 - 100m	Yes
HRDR321A4R	24VDC	Both time onboard adj	1 - 100s	On time first	1 - 100m	Yes
HRDR322B2R	24VDC	Both time onboard adj	10 - 1000S	Off time first	10 - 1000S	Yes
HRDR330A0R	24VDC	Both time external adj	0.1 - 10s	On time first	0.1 - 10s	Yes
HRDR331A1	24VDC	Both time external adj	1 - 100s	On time first	1 - 100s	No
HRDR411SB30MR	120VAC	Both times fixed	1s	Off time first	30m	Yes
HRDR431A1R	120VAC	Both times external adj	0.1 - 100s	On time first	0.1 - 100s	Yes

If you don't find the part you need, call us for a custom product 800-843-8848

## HRDR SERIES

### 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.

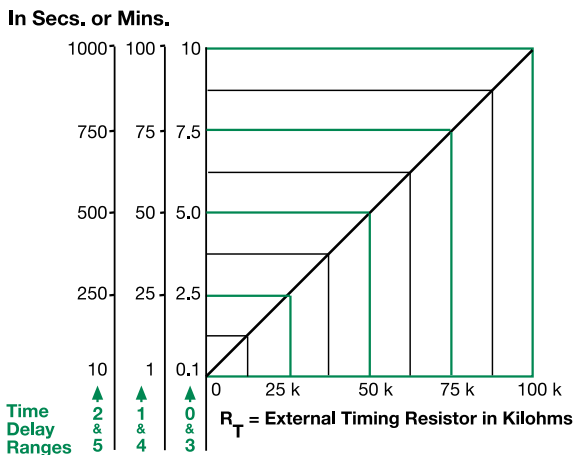


**C103PM (AL) DIN Rail**  
35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.



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

### 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>.

### Specifications

<b>Time Delay Range</b>	100ms - 1000m in 6 adjustable ranges or fixed	
<b>Repeat Accuracy Tolerance (Factory Calibration)</b>	±0.5% or 20ms, whichever is greater	
<b>Reset Time</b>	≤ 150ms	
<b>Time Delay vs Temp. &amp; Voltage</b>	≤ ±2%	
<b>Input Voltage Tolerance</b>	12 or 24VDC; 24, 120, or 230VAC	
<b>12VDC &amp; 24VDC 24 to 230VAC</b>	-15% - 20%	
<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 Surge</b>	IEEE C62.41-1991 Level A	
<b>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 Dimensions</b>	Surface mount with one #10 (M5 x 0.8) screw <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 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)	

### Function Diagram

