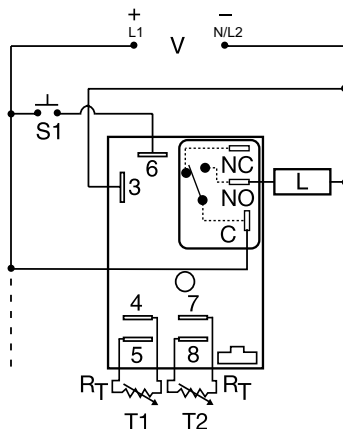


## HRDR SERIES

### 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.

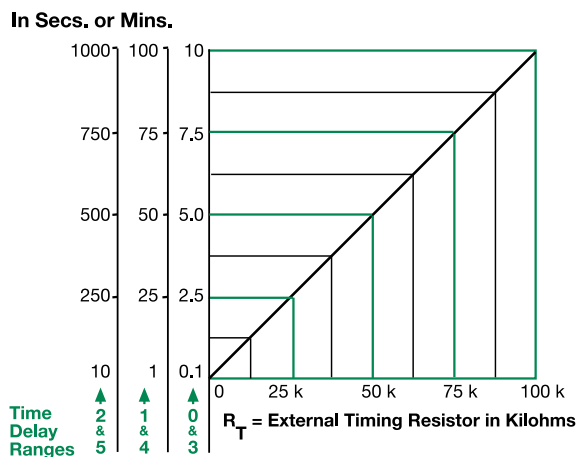


**C103PM (AL) DIN Rail**  
35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.



**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  $R_T$  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  $R_T$ .

### Specifications

#### Time Delay

**Range** 100ms - 1000m in 6 adjustable ranges or fixed  
**Repeat Accuracy**  $\pm 0.5\%$  or 20ms, whichever is greater

**Tolerance**  $\pm 5\%$   
**(Factory Calibration)**  
**Reset Time**  $\leq 150\text{ms}$   
**Time Delay vs Temp. & Voltage**  $\leq \pm 2\%$

#### Input

**Voltage** 12 or 24VDC; 24, 120, or 230VAC

**Tolerance**  
**12VDC & 24VDC** -15% - 20%  
**24 to 230VAC** -20% - 10%

**AC Line Frequency** 50/60 Hz  
**Power Consumption** AC  $\leq 4\text{VA}$ ; DC  $\leq 2\text{W}$

#### Output

**Type** Electromechanical relay  
**Form** SPDT, non-isolated

| Ratings                           | SPDT-NO | SPDT-NC  |
|-----------------------------------|---------|----------|
| <b>General Purpose</b> 125/240VAC | 30A     | 15A      |
| <b>Resistive</b> 125/240VAC       | 30A     | 15A      |
| 28VDC                             | 20A     | 10A      |
| <b>Motor Load</b> 125VAC          | 1 hp*   | 1/4 hp** |
| 240VAC                            | 2 hp**  | 1 hp**   |

**Life** Mechanical -  $1 \times 10^6$ ;  
Electrical -  $1 \times 10^5$ , \* $3 \times 10^4$ , \*\*6,000

#### Protection

**Surge** IEEE C62.41-1991 Level A  
**Circuitry** Encapsulated  
**Dielectric Breakdown**  $\geq 2000\text{V RMS}$  terminals to mounting surface  
**Insulation Resistance**  $\geq 100\text{ M}\Omega$   
**Polarity** DC units are reverse polarity protected

#### Mechanical

**Mounting** Surface mount with one #10 (M5 x 0.8) screw  
**Dimensions** **H** 76.7 mm (3"); **W** 51.3 mm (2");  
**D** 38.1 mm (1.5")  
**Termination** 0.25 in. (6.35 mm) male quick connect terminals

#### Environmental

**Operating/Storage**  
**Temperature** -40° to 60°C / -40° to 85°C  
**Humidity** 95% relative non-condensing  
**Weight**  $\approx 3.9\text{ oz}$  (111 g)

### Function Diagram

