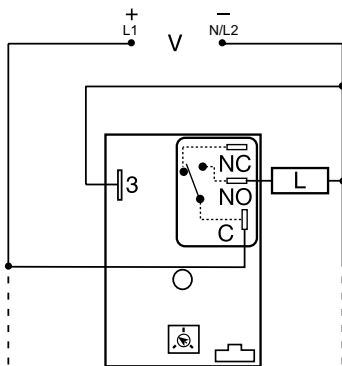


## HRDM SERIES

### Delay-on-Make Timer



### Wiring Diagram



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

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.

### Ordering Information

MODEL	INPUT VOLTAGE	ADJUSTMENT	TIME DELAY
HRDM120	12VDC	Onboard	0.1 - 10s
HRDM3112S	24VDC	Fixed	12s
HRDM413M	120VAC	Fixed	3m
HRDM415M	120VAC	Fixed	5m

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

### Description

The HRDM Series combines an electromechanical relay output with microcontroller timing circuitry. It offers 12 to 230V operation in five ranges and factory fixed, onboard, or external 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 (Delay-on-Make)

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

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



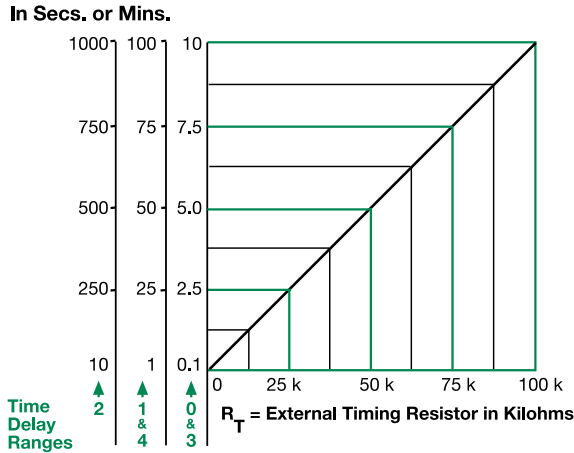
**C103PM (AL) DIN Rail**  
35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.



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

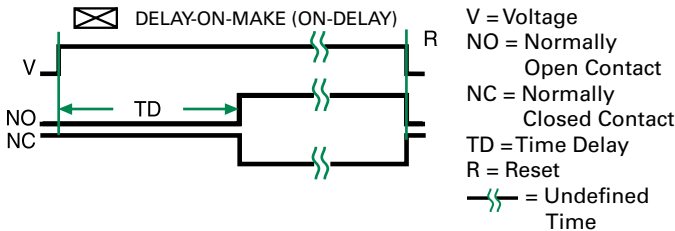
# HRDM SERIES

## 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

### Time Delay

**Type** Microcontroller circuitry  
**Range** 0.1s - 100m in 5 adjustable ranges or fixed  
**Repeat Accuracy** ±0.5% or 20 ms, whichever is greater

**Tolerance (Factory Calibration)** ±1%, ±5%  
**Reset Time** ≤ 150ms

**Time Delay vs Temp. & Voltage** ±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 ≤ 4VA; DC ≤ 2W

### Output

**Type** Electromechanical relay

**Form** Non-isolated, SPDT

### Ratings

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

### Life

Mechanical - 1 x 10<sup>6</sup>;  
Electrical - 1 x 10<sup>5</sup>, \*3 x 10<sup>4</sup>, \*\*6,000

### Protection

#### Surge

IEEE C62.41-1991 Level A

#### Circuitry

Encapsulated

#### Dielectric Breakdown

≥ 2000V 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

#### Dimensions

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° to 60°C / -40° to 85°C

##### Humidity

95% relative, non-condensing

##### Weight

≈ 3.9 oz (111 g)