

HRDS SERIES

Single Shot Timer



Wiring Diagram



Ordering Information

| MODEL | INPUT VOLTAGE | ADJUSTMENT | TIME DELAY |
|----------|---------------|------------|------------|
| HRDS120 | 12VDC | Onboard | 0.1 - 10s |
| HRDS313M | 24VDC | Fixed | 3m |
| HRDS321 | 24VDC | Onboard | 1 - 100s |
| HRDS421 | 120VAC | Onboard | 1 - 100s |
| HRDS430 | 120VAC | External | 0.1 - 10s |

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

Description

The HRDS Series combines an electromechanical relay output with microcontroller timing circuitry. It offers 12 to 230V operation in five options 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 (Single Shot)

Input voltage must be applied before and during timing. Upon momentary or maintained closure of the initiate switch, the output relay energizes for a measured interval of time. At the end of the delay, the output de-energizes. Opening or reclosing the initiate switch during timing has no effect on the time delay. The output will energize if the initiate switch is closed when input voltage is applied.

Reset: Reset occurs when the time delay is complete and the initiate switch is opened. Loss of input voltage resets the time delay and output.

Features & Benefits

| FEATURES | BENEFITS |
|--|---|
| Microcontroller based | Repeat Accuracy $\pm 0.5\%$ |
| Compact, low cost design | Allows flexibility for OEM applications |
| Isolated, 30A, SPDT, NO output contacts | Allows direct operation of heavy loads: compressors, pumps, blower motors, heaters. |
| Encapsulated | 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.

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Accessories



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.

*8-pin models UL listed when used in combination with P1011-6 socket only.

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 .

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 ±1%, ±5%
Reset Time ≤ 150ms
Initiate Time ≤ 20ms

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 SPDT, non-isolated

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

Life Mechanical - 1 x 10⁶;
Electrical - 1 x 10⁵, *3 x 10⁴, **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 **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 ≈ 3.9 oz (111 g)