Time Delay Relays
Dedicated - Single Shot

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HRDS SERIES

Single Shot Timer

CE UL CSA

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 ±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 affect 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.

Wiring Diagram

NO = Normally Open
S1 = Initiate Switch
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.

Features & Benefits

FEATURES	BENEFITS
Microcontroller based	Repeat Accuracy + / - 0.5%
Compact, low cost design	Allows flexiblility for OEM applications
Isolated, 30A, SPDT, NO output contacts	Allows direct operation of heavy loads: compressors, pumps, blower moters, 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.

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

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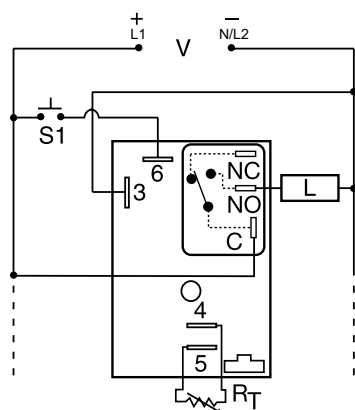
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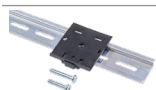Expertise Applied | Answers Delivered

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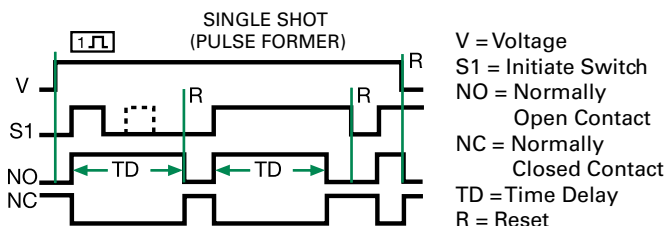
*8-pin models UL listed when used in combination with P1011-6 socket only.

External Resistance vs. Time Delay

In Secs. or Mins.

R_T = External Timing Resistor in Kilohms
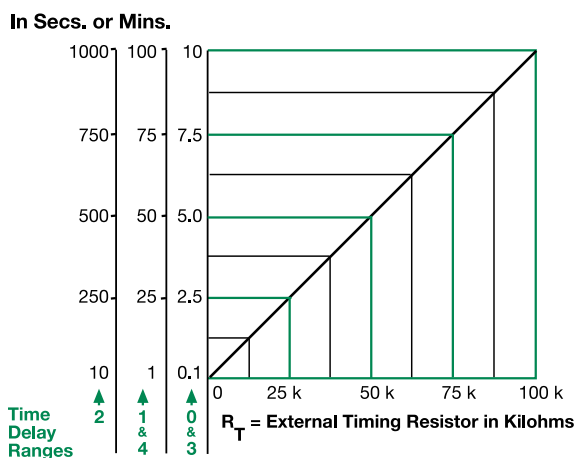
This chart applies to externally adjustable part numbers.
The time delay is adjustable over the time delay range selected by varying the resistance across the R_T terminals; as the resistance increases the time delay increases.
When selecting an external R_T, add the tolerances of the timer and the R_T 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

SINGLE SHOT (PULSE FORMER)

V = Voltage
S1 = Initiate Switch
NO = Normally Open Contact
NC = Normally Closed Contact
TD = Time Delay
R = Reset

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
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 10^6;
Electrical - 1 x 10^5, *3 x 10^4, **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)

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