HRPS/HRIS Power-Time
Time Delay Relay

3

US Patent 6708135

- 30 A SPDT N.O. Output Contacts
- Factory Programmed
- 12 ... 240 V Operation in 2 Ranges
- Special Time Ranges and Functions Available
- Encapsulated Circuitry
- Delays from 100 ms...1000 h in 9 ranges
- +/-0.5% Repeat Accuracy
- +/-2% Factory Calibration
- Fixed, External, or Onboard Adjustment

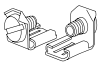
Approvals:

Accessories

External adjust potentiometer P/Ns:
P1004-95 (fig A)
P1004-95-X (fig B)

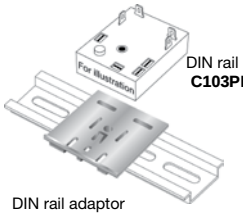
Mounting bracket P/N: **P1023-6**

Female quick connect P/Ns:
P1015-64 (AWG 14/16)
P1015-13 (AWG 10/12)



Quick connect to screw adaptor P/N: **P1015-18**

Versa-knob P/N: **P0700-7**



DIN rail P/Ns: **C103PM** (Al)

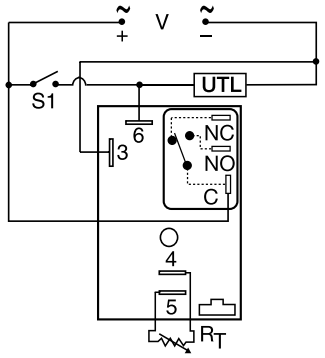
DIN rail adaptor P/N: **P1023-20**

See accessory pages for specifications.

Description

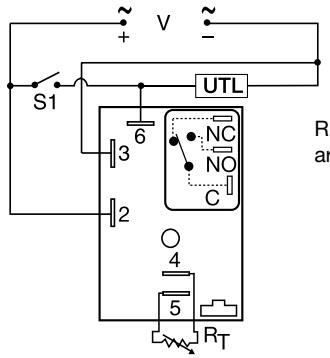
The HRPS/HRIS Series combines an electromechanical relay output with microcontroller timing circuitry. It is a factory programmed module available in any 1 of 13 standard functions. Modules are manufactured without the function assigned. When an order is received, the function software is added. It offers 12 to 240 V operation in two universal ranges and factory fixed, external, or onboard 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. HRPS has non-isolated SPDT relay contacts, and HRIS has isolated SPDT relay contacts. Both offer the most popular timer functions in the industry.

Connection



HRPS

Relay contacts are not isolated.



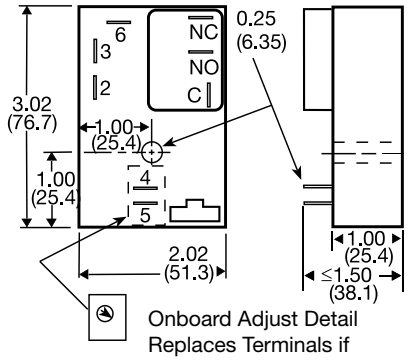
HRIS

Relay contacts are isolated.

S1 = Initiate Switch C = Common
UTL = Optional Untimed Load
NO = Normally Open NC = Normally Closed

NOTE: A knob, or terminals 4 & 5 are only included on adjustable units. R_T is used when external adjustment is ordered. Dashed lines are internal connections.

Mechanical View



Onboard Adjust Detail
Replaces Terminals if Ordered

Inches (Millimeters)

External Resistance vs Time Delay

For details on external R_T see the external resistance vs. time delay chart at the beginning of this section.

**Function Chart	Code
Delay On Make	**M**
Delay On Break	**B**
Recycle (ON Time First, Equal Times)	**RE**
Recycle (OFF Time First, Equal Times)	**RD**
Single Shot	**S, SD**
Interval	**I**
Trailing Edge Single Shot	**TS**
Inverted Single Shot	**US**
Inverted Delay On Break	**UB**
Accumulative Delay on Make	**AM**
Motion Detector/Retriggerable Single Shot	**PSD**
Alternating Relay	**FT**

For a Complete List of Functions with Descriptions, see Timer Function Section.

Available Models-

HRPSD22TS
HRISW21FT
HRISW27I
HRPSD27B
HRISW22M
HRISW10.3SS
HRISW25B

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Ordering Table

HRPS/ HRIS Series

Input
- **W** - 24 ... 240 V AC, 24 ... 110 V DC
- **D** - 12 ... 48 V DC

Adjustment
- **1** - Fixed
- **2** - Onboard Adjust
- **3** - External Adjust

Time Delay *
- **1** - 0.1 ... 10 s
- **2** - 1 ... 100 s
- **3** - 10 ... 1000 s
- **4** - 0.1 ... 10 m
- **5** - 1 ... 100 m
- **6** - 10 ... 1000 m
- **7** - 0.1 ... 10 h
- **8** - 1 ... 100 h
- **9** - 10 ... 1000 h

X

Function**
Specify Function (Refer to Function Chart for Code)

*If Fixed Delay is selected, insert delay [**0.1** ... **1000**] followed by (**S**) secs., (**M**) mins., or (**H**) hrs.

Example P/N: **HRPSW23S** Fixed – **HRISD10.5SB**

HRPSGen 09.10

HRPS/HRIS Power-Time
Time Delay Relay

Technical Data

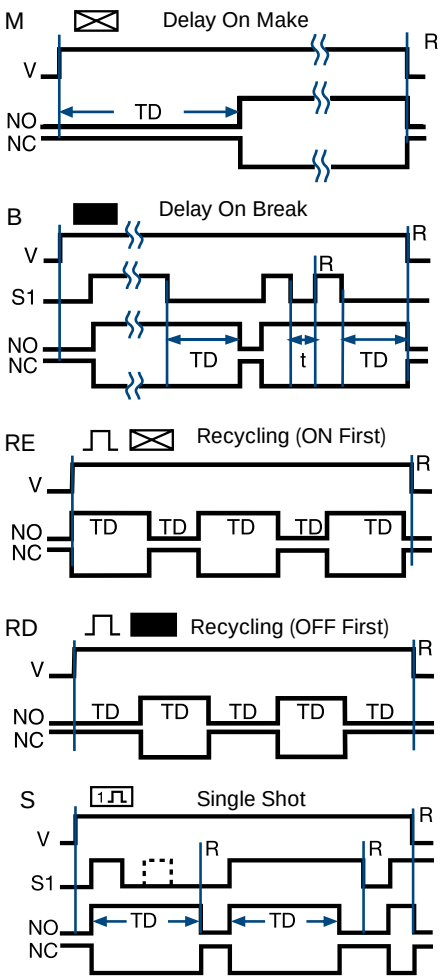
Time Delay		**Protection**	
Type	Microcontroller circuitry	Surge	IEEE C62.41-1991 Level A
Range	100 ms ... 1000 h in 9 adjustable ranges or □xed	Circuitry	Encapsulated
Repeat Accuracy	+/-0.5% or 20 ms, whichever is greater	Isolation Voltage	≥ 1500 V RMS input to output; isolated units
Tolerance (Factory Calibration)	+/-2%	Insulation Resistance	≥ 100 MΩ
Reset Time	≤ 150 ms	Polarity	DC units are reverse polarity protected
Initiate Time	≤ 20 ms		
Time Delay vs. Temp. & Voltage	+/-2%		
Input		**Mechanical**	
Voltage	24 ... 240 V AC/24 ... 110 V DC; 12 ... 48 V DC	Mounting	Surface mt. with one #10 (M5 x 0.8) screw
Tolerance 12 ... 48 V DC	-15% ... +20%	Package	3 x 2 x 1.5 in (76.7 x 51.3 x 38.1 mm)
24 ... 110 V DC/240 V AC	-20% ... +10%	Termination	0.25 in. (6.35 mm) male quick connects
Line Frequency	50 ... 60 Hz		
Power Consumption	AC ≤ 4 VA; DC ≤ 2 W		
Output		**Environmental**	
Type/Form	Electromechanical relay/SPDT	Operating Temp.	-40°C ... +60°C
		Storage Temp.	-40°C ... +85°C
		Humidity	95% relative, non-condensing
		Weight	≅ 3.9 oz (111 g)

Ratings:		SPDT-N.O.	SPDT-N.C.
General Purpose	125/240 V AC	30 A	15 A
Resistive	125/240 V AC	30 A	15 A
	28 V DC	20 A	10 A
Motor Load	125 V AC	1 hp*	1/4 hp**
	240 V AC	2 hp**	1 hp**

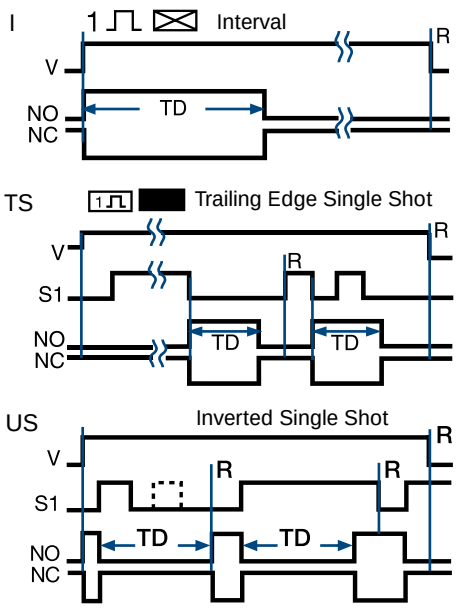
Life: Mechanical -- 1 x 10^6
Electrical -- 1 x 10^5, *3 x 10^4, **6,000

Function Diagrams

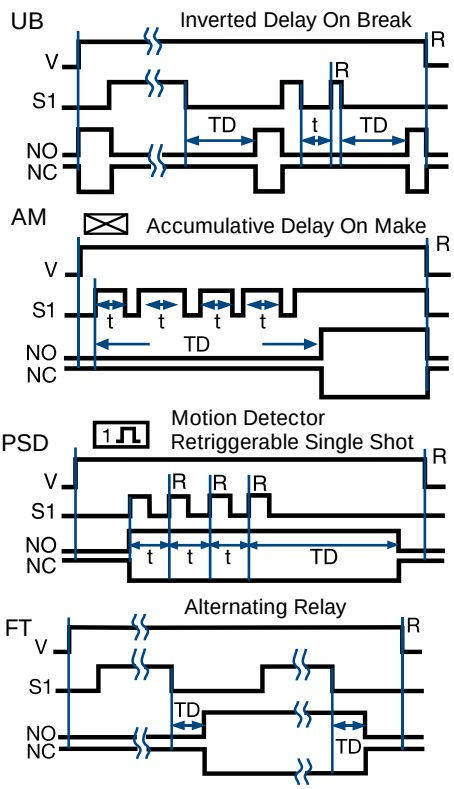
For a Complete List of Functions with Descriptions, see Timer Function Section.



SD Operates same as S except will not energize and start timing if initiate switch is closed when input voltage is applied.



Note: If S1 is closed when input voltage is applied, the function starts and the time delay begins. (B, S, TS, US, UB, AM, PSD, FT)



Legend

V	Voltage	t	Incomplete Time Delay
R	Reset	NO	Normally Open
S1	Initiate Switch	NC	Normally Closed
TD1, TD2	Time Delay	—⫽—	Unde□ned time