

HRPD/HRID Power-Time Time Delay Relay

3



US Patent 6708135

- Special Time Ranges and Functions Available
- Factory Programmed
- 30 A SPDT N.O. Output Contacts
- 12 ... 240 V Operation in 2 Ranges
- Delays from 100 ms ... 1000 h in 9 Ranges
- +/-0.5% Repeat Accuracy

Approvals:

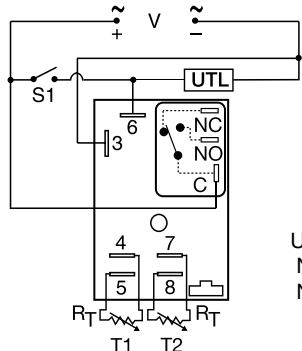
Accessories

- A** External adjust potentiometer
P/Ns: P1004-95 (fig A) P1004-95-X (fig B)
 - Versa-knob
P/N: P0700-7
 - Quick connect to screw adaptor
P/N: P1015-18
 - Female quick connect P/Ns:
P1015-64 (AWG 14/16) P1015-13 (AWG 10/12)
 - Mounting bracket
P/N: P1023-6
 - DIN rail P/Ns:
C103PM (Al)
 - DIN rail adaptor
P/N: P1023-20
- See accessory pages for specifications.

Description

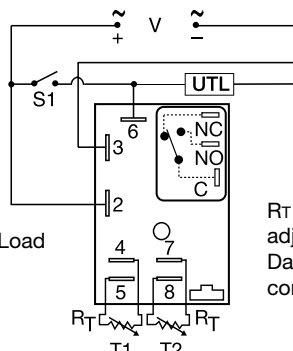
The HRPD/HRID Series combines an electromechanical relay with microcontroller timing circuitry. It is a factory programmed module available in any 1 of 12 standard functions. Modules are manufactured without the function assigned. When an order is received, the function software is added. It offers 12 to 240 V operation in two universal ranges and factory fixed, onboard knob or externally adjustable time delays with a repeat accuracy of +/-0.5%. The high switching capacity of the output contacts allow for direct control of heavy loads like compressors, pumps, motors, heaters, and lighting. HRPD has non-isolated SPDT relay contacts, and the HRID has isolated SPDT relay contacts. An excellent choice for OEM applications where cost is a factor. Both offer dual functions in one convenient package.

Connection



HRPD
Relay contacts are non-isolated.

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



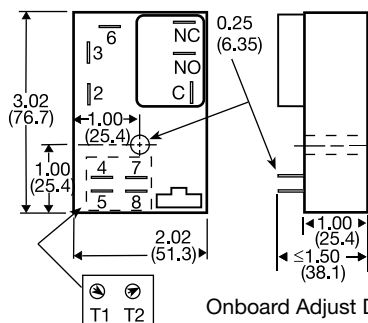
HRID
Relay contacts are isolated.

R_T is used when external adjustment is ordered. Dashed lines are internal connections.

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.

Mechanical View



Onboard Adjust Detail
Replaces Terminals if Ordered

Inches (Millimeters)

**Function Chart

Delay On Make/Delay on Break Delay On Make/Recycle (ON Time First, Equal Times)	Code
Delay On Make/Interval	MB
Delay On Make/Single Shot Interval/Recycle (ON Time First, Equal Times)	MRE
Delay On Break/Recycle (ON Time First, Equal Times)	MI
Single Shot/Recycle (ON Time First, Equal Times)	MS
Recycle (Both Times Adjustable, ON Time First)	IRE
Recycle (Both Times Adjustable, OFF Time First)	BRE
Interval/Delay On Make	SRE
Accumulative Delay On Make/Interval	RXE
Single Shot Lockout	Recycle
	Recycle
	(Both Times Adjustable, OFF Time First)
	Interval/Delay On Make
	Accumulative Delay On Make/Interval
	Single Shot Lockout

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

Available Models-

- HRIDD3434RXE
- HRIDD3434RXE
- HRIDW2122MB

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HRPD/HRID Series	X Input	X First Adjustment (T1 or R _{T1})	X First Time Delay*	X Second Adjustment (T2 or R _{T2})	X Second Time Delay*	X Function**
	-W - 24...240 V AC 24...110 V DC	-1 - Fixed	-1 - 0.1 ... 10 s	-1 - Fixed	-1 - 0.1 ... 10 s	Specify Function (Refer to Function Chart for Code)
	-D - 12 ... 48 V DC	-2 - Onboard Adjust	-2 - 1 ... 100 s	-2 - Onboard Adjust	-2 - 1 ... 100 s	
		-3 - External Adjust	-3 - 10 ... 1000 s	-3 - External Adjust	-3 - 10 ... 1000 s	
			-4 - 0.1 ... 10 m		-4 - 0.1 ... 10 m	
			-5 - 1 ... 100 m		-5 - 1 ... 100 m	
			-6 - 10 ... 1000 m		-6 - 10 ... 1000 m	
			-7 - 0.1 ... 10 h		-7 - 0.1 ... 10 h	
			-8 - 1 ... 100 h		-8 - 1 ... 100 h	
			-9 - 10 ... 1000 h		-9 - 10 ... 1000 h	

*If Fixed Delay is selected, insert delay [0.1 ... 999] followed by (S) secs., (M) mins., or (H) hrs.

Example P/N: **HRPDW2221MB** Fixed – **HRIDD10.5S21RXE**

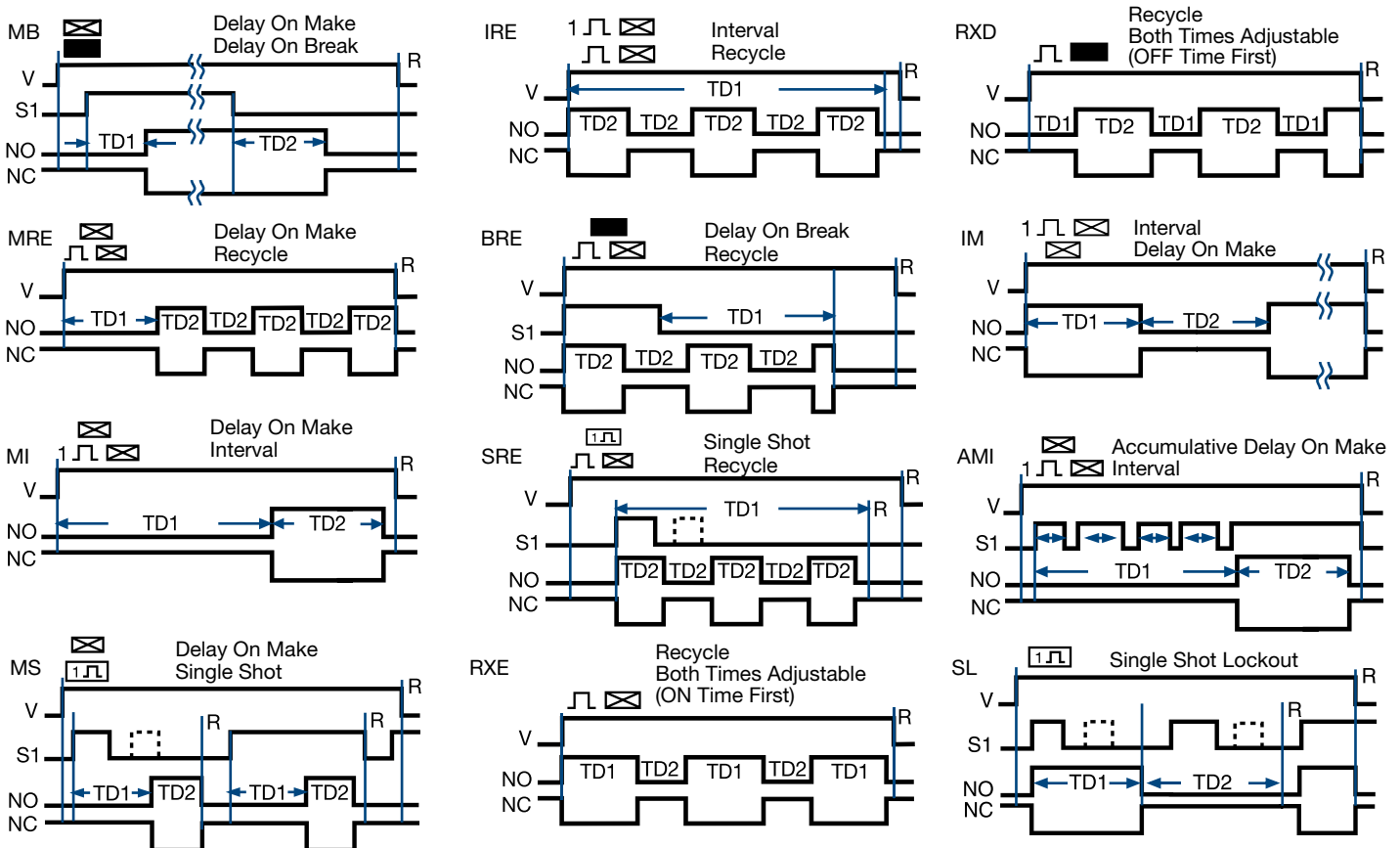
HRPD/HRID Power-Time Time Delay Relay

Technical Data

Time Delay		Protection	
Range	100 ms ... 1000 h in 9 adjustable ranges or fixed	Surge Circuitry	IEEE C62.41-1991 Level A 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, ≤ 1500 operations per minute	Mechanical	
Time Delay vs. Temp. & Voltage	± +/-2%	Mounting	Surface mt. with one #10 (M5 x 0.8) screw
Input		Package	3 x 2 x 1.5 in. (76.7 x 51.3 x 38.1 mm)
Voltage	12 ... 48 V DC; 24 ... 240 V AC / 24 ... 110 V DC	Termination	0.25 in. (6.35 mm) male quick connects
Tolerance	12 ... 48 V DC -15% ... +20%	Environmental	
24 ... 110 V DC/24 ... 240 V AC	-20% ... +10%	Operating Temp.	-40°C ... +60°C
Line Frequency	50 ... 60 Hz	Storage Temp.	-40°C ... +85°C
Power Consumption	AC ≤ 4 VA; DC ≤ 2 W	Humidity	95% relative, non-condensing
Output		Weight	≈ 3.9 oz (111 g)
Type/Form	Electromechanical relay/SPDT		
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		

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

Function Diagrams



Legend

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

Note: If S1 is closed when input voltage is applied, the function starts and the time delay begins. (MB, MS, BRE, SRE, AMI, SL)