

Delay-on-Break Timer



(€¶1∰



Wiring Diagram



V = Voltage
S1 = Initiate Switch
L =Timed Load
UTL = Untimed Load (optional)
NO = Normally Open

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 isolated. Dashed lines are internal connections. The untimed load is optional.

Description

The HRDB Series combines an electromechanical, relay output with microcontroller timing circuitry. The HRDB offers 12 to 230V operation in five options and factory fixed, external, or onboard adjustable time delays with a repeat accuracy of $\pm 0.5\%$. The isolated output contact rating allows for direct operation of heavy loads, such as compressors, pumps, blower motors, heaters, etc. The HRDB is ideal for OEM applications where cost is a factor.

Operation (Delay-on-Break)

Input voltage must be applied before and during timing. Upon closure of the initiate switch, the output relay energizes. The time delay begins when the initiate switch is opened. The output remains energized during timing. At the end of the time delay, the output de-energizes. The output will energize if the initiate switch is closed when input voltage is applied.

Reset: Reclosing the initiate switch during timing resets the time delay. Loss of input voltage resets the time delay and output.

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.					

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.

Ordering Information

MODEL	INPUT VOLTAGE	ADJUSTMENT	TIME TOLERANCE	TIME DELAY	MODEL	INPUT VOLTAGE	ADJUSTMENT	TIME TOLERANCE	TIME DELAY
HRDB1110M	12VDC	Fixed	+/-5%	10m	HRDB223	24VAC	Onboard	+/-5%	0.1 - 10m
HRDB117S	12VDC	Fixed	+/-5%	7s	HRDB321	24VDC	Onboard	+/-5%	1 - 100s
HRDB120	12VDC	Onboard	+/-5%	0.1 - 10s	HRDB324	24VDC	Onboard	+/-5%	1 - 100m
HRDB121	12VDC	Onboard	+/-5%	1 - 100s	HRDB423	120VAC	Onboard	+/-5%	0.1 - 10m
HRDB124	12VDC	Onboard	+/-5%	1 - 100m	HRDB623	230VAC	Onboard	+/-5%	0.1 - 10m
HRDB21A65M	24VAC	Fixed	+/-1%	65m					

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



Accessories

HRDB SERIES



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.

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 RT terminals; as the resistance increases the time delav increases

When selecting an external RT, add the tolerances of the timer and the RT

Examples: 1 to 50 S adjustable time delay, select time delay range 1 and a 50 K ohm RT. For 1 to 100 S use a 100 K ohm RT.

Function Diagram



V = Voltage S1 = Initiate Switch NO = Normally **Open Contact** NC = Normally **Closed Contact** TD = Time Delav t = Incomplete Time Delay R = Reset = Undefined Time

Specifications

Time Delay Type Range **Repeat Accuracy** Tolerance (Factory Calibration) **Reset Time Initiate Time** Time Delay vs Temp. & Voltage Input Voltage Tolerance **12VDC & 24VDC** 24 to 230VAC **AC Line Frequency Power Consumption** Output Type Form Ratings **General Purpose** Resistive

Life

Motor Load

Protection Surge Circuitry **Dielectric Breakdown Insulation Resistance** Polarity **Mechanical** Mounting Dimensions

Termination **Environmental**

Operating/Storage Temperature Humidity Weight

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

±1%, ±5%

≤ 150ms

 $\leq 20 ms$

±2% 12 or 24VDC; 24, 120, or 230VAC -15% - 20% -20% - 10% 50/60 Hz $AC \le 4VA; DC \le 2W$ Electromechanical relay Isolated, SPDT SPDT-NO 125/240VAC 30A 125/240VAC 30A 28VDC 20A

SPDT-NC 15A 15A 10A 125VAC 1 hp* 1/4 hp** 240VAC 2 hp** 1 hp** Mechanical - 1 x 106: Electrical - 1 x 105, *3 x 104, **6,000

IEEE C62.41-1991 Level A Encapsulated ≥ 2000V RMS terminals to mounting surface $\geq 100 \text{ M}\Omega$ DC units are reverse polarity protected

Surface mount with one #10 (M5 x 0.8) screw **H** 50.8 mm (2"); **W** 50.8 mm (2"); **D** 38.1 mm (1.51") 0.25 in. (6.35 mm) male guick connect terminals

-40° to 60°C / -40° to 85°C 95% relative, non-condensing ≅ 3.9 oz (111 g)