

HRDB SERIES

Delay-on-Break Timer



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)

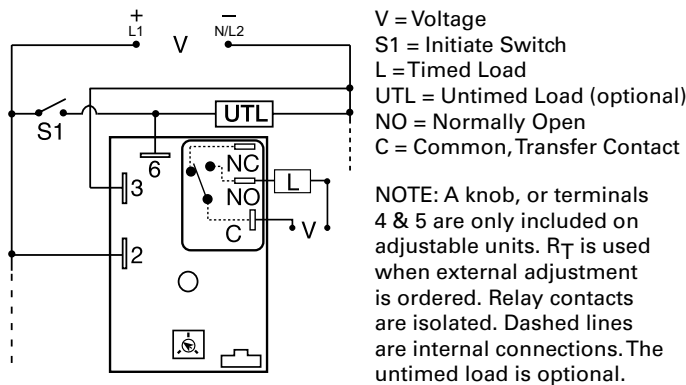
Input voltage must be applied before and during timing. Upon closure of the initiate switch, the output relay energizes. The time delay begins when the initiate switch is opened. The output remains energized during timing. At the end of the time delay, the output de-energizes. The output will energize 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 $\pm 0.5\%$
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.

Wiring Diagram



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

Time Delay Relays

Dedicated - Delay-on-Break

HRDB SERIES

Accessories



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 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 $\pm 0.5\%$ or 20ms, whichever is greater

Tolerance

(Factory Calibration) $\pm 1\%$, $\pm 5\%$
Reset Time $\leq 150\text{ms}$
Initiate Time $\leq 20\text{ms}$

Time Delay vs Temp. & Voltage

$\pm 2\%$

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 $\leq 4\text{VA}$; DC $\leq 2\text{W}$

Output

Type Electromechanical relay
Form Isolated, SPDT

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 - 1×10^6 ;
 Electrical - 1×10^5 , $*3 \times 10^4$, $**6,000$

Protection

Surge IEEE C62.41-1991 Level A
Circuitry Encapsulated
Dielectric Breakdown $\geq 2000\text{V RMS}$ terminals to mounting surface
Insulation Resistance $\geq 100\text{ M}\Omega$
Polarity DC units are reverse polarity protected

Mechanical

Mounting 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")
Dimensions 0.25 in. (6.35 mm) male quick connect terminals

Termination

Environmental

Operating/Storage

Temperature -40° to 60°C / -40° to 85°C
Humidity 95% relative, non-condensing
Weight $\approx 3.9\text{ oz}$ (111 g)