

HRDB SERIES

Delay-on-Break Timer



Wiring Diagram



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.

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

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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.

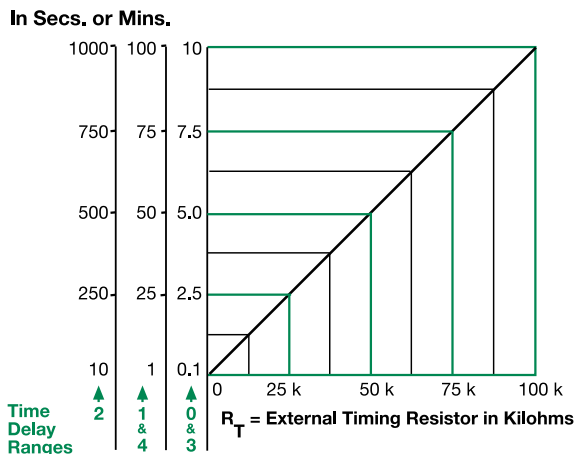


C103PM (AL) DIN Rail
 35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.



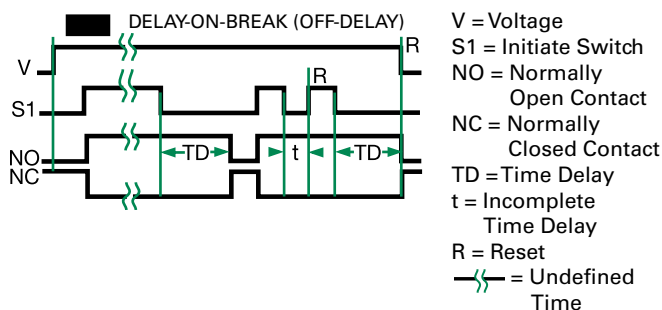
P1023-20 DIN Rail Adapter
 Allows module to be mounted on a 35 mm DIN type rail with two #10 screws.

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 RT terminals; as the resistance increases the time delay increases. When selecting an external RT, add the tolerances of the timer and the RT for the full time range adjustment.
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



Specifications

Time Delay	Microcontroller circuitry									
Type	0.1s - 100m in 5 adjustable ranges or fixed									
Range	±0.5 % or 20ms, whichever is greater									
Repeat Accuracy										
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	Isolated, SPDT									
Ratings										
General Purpose Resistive	<table border="0"> <tr> <td></td> <td>SPDT-NO</td> <td>SPDT-NC</td> </tr> <tr> <td>125/240VAC</td> <td>30A</td> <td>15A</td> </tr> <tr> <td>28VDC</td> <td>20A</td> <td>10A</td> </tr> </table>		SPDT-NO	SPDT-NC	125/240VAC	30A	15A	28VDC	20A	10A
	SPDT-NO	SPDT-NC								
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Motor Load	<table border="0"> <tr> <td>125VAC</td> <td>1 hp*</td> <td>1/4 hp**</td> </tr> <tr> <td>240VAC</td> <td>2 hp**</td> <td>1 hp**</td> </tr> </table>	125VAC	1 hp*	1/4 hp**	240VAC	2 hp**	1 hp**			
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 50.8 mm (2"); W 50.8 mm (2"); D 38.1 mm (1.51")									
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)									