

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)

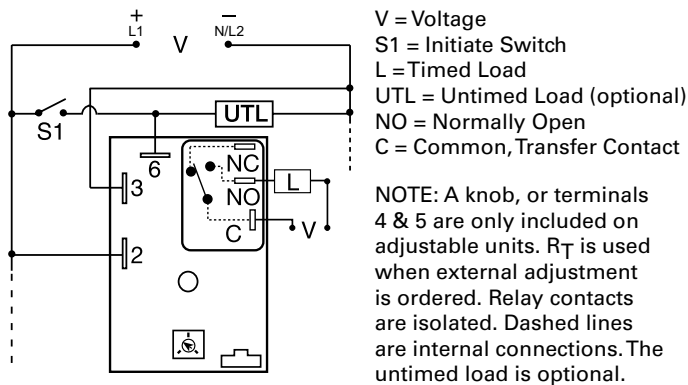
Input voltage must be applied before and during timing. Upon closure of the initiate switch, the output relay energizes. The time delay begins when the initiate switch is opened. The output remains energized during timing. At the end of the time delay, the output de-energizes. The output will energize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

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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.

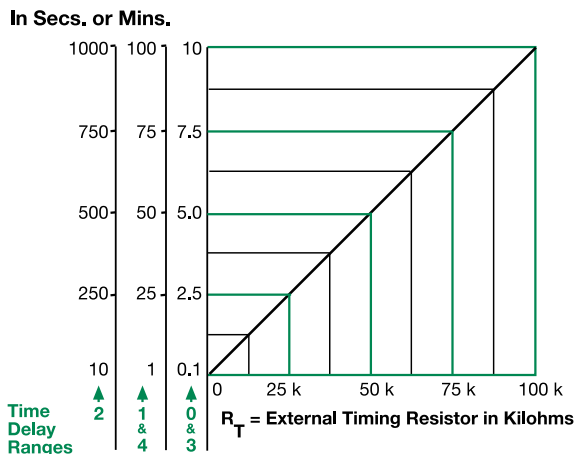


C103PM (AL) DIN Rail
 35 mm aluminum DIN rail available in a 36 in. (91.4 cm) length.



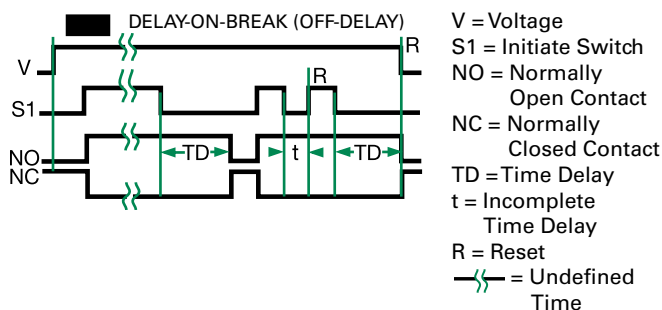
P1023-20 DIN Rail Adapter
 Allows module to be mounted on a 35 mm DIN type rail with two #10 screws.

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

Type

Microcontroller circuitry

Range

0.1s - 100m in 5 adjustable ranges or fixed

Repeat Accuracy

±0.5 % or 20ms, whichever is greater

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

| | SPDT-NO | SPDT-NC |
|------------|---------|---------|
| 125/240VAC | 30A | 15A |
| 28VDC | 20A | 10A |

Motor Load

| | | |
|--------|--------|----------|
| 125VAC | 1 hp* | 1/4 hp** |
| 240VAC | 2 hp** | 1 hp** |

Life

Mechanical - 1 x 10⁶;
 Electrical - 1 x 10⁵, *3 x 10⁴, **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")

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

≈ 3.9 oz (111 g)