

KSDB SERIES



Wiring Diagram



Description

The KSDB Series is designed for general purpose commercial and industrial applications where a small, cost effective, reliable solid-state timer is required. The factory calibration for fixed time delays is within 5% of the target time delay. The repeat accuracy, under stable conditions, is 0.5% of the selected time delay. This series is designed for popular AC and DC voltages. Time delays of 0.1 seconds to 1000 minutes are available in 6 ranges. The output is rated 1A steady and 10A inrush. The modules are totally solid state and encapsulated to protect the electronic circuitry.

Operation (Delay-on-Break)

Input voltage must be applied before and during timing. Upon closure of the initiate switch, the output 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 energizes 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%, Factory calibration +/- 5% |
| 1A Steady, 10A inrush solid-state output | Provides 100 million operations in typical conditions. |
| Totally solid state and encapsulated | No moving parts to arc and wear out over time and encapsulated to protect against shock, vibration, and humidity |
| Compact, low cost design | Allows flexibility for OEM applications |

Ordering Information

| MODEL | INPUT VOLTAGE | ADJUSTMENT | TIME DELAY | SWITCHING MODE | MODEL | INPUT VOLTAGE | ADJUSTMENT | TIME DELAY | SWITCHING MODE |
|------------|---------------|------------|------------|----------------|------------|---------------|------------|------------|----------------|
| KSDB1110MP | 12VDC | Fixed | 10m | Positive | KSDB314SP | 24VDC | Fixed | 4s | Positive |
| KSDB1115SP | 12VDC | Fixed | 15s | Positive | KSDB315SP | 24VDC | Fixed | 5s | Positive |
| KSDB1120SP | 12VDC | Fixed | 20s | Positive | KSDB324N | 24VDC | External | 1 - 100m | Negative |
| KSDB113MP | 12VDC | Fixed | 3m | Positive | KSDB330N | 24VDC | Onboard | 0.1 - 10s | Negative |
| KSDB113SP | 12VDC | Fixed | 3s | Positive | KSDB4120M | 120VAC | Fixed | 20m | n/a |
| KSDB120P | 12VDC | External | 0.1 - 10s | Positive | KSDB4160S | 120VAC | Fixed | 60s | n/a |
| KSDB134P | 12VDC | Onboard | 1 - 100m | Positive | KSDB4190M | 120VAC | Fixed | 90m | n/a |
| KSDB2115S | 24VAC | Fixed | 15s | n/a | KSDB431 | 120VAC | Onboard | 1 - 100s | n/a |
| KSDB220 | 24VAC | External | 0.1 - 10s | n/a | KSDB61150S | 230VAC | Fixed | 150s | n/a |
| KSDB231 | 24VAC | Onboard | 1 - 100s | n/a | KSDB631 | 230VAC | Onboard | 1 - 100s | n/a |

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

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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.



P1015-64 (AWG 14/16), P1015-14 (AWG 18/22) 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

In Secs. or Mins.



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 tie 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 .

Specifications

| | |
|--|---|
| Time Delay Range | 0.1s - 1000m in 6 adjustable ranges or fixed |
| Repeat Accuracy Tolerance (Factory Calibration) | $\pm 0.5\%$ or 20ms, whichever is greater |
| Reset Time | $\leq 150\text{ms}$ |
| Initiate Time | $\leq 20\text{ms}$ |
| Time Delay vs Temp. & Voltage | $\leq \pm 10\%$ |
| Input Voltage | 12, 24, or 120VDC; 24, 120, or 230VAC |
| Tolerance | $\pm 20\%$ |
| Power Consumption | AC $\leq 2\text{VA}$; DC $\leq 2\text{W}$ |
| AC Line Frequency/DC Ripple | 50/60 Hz / $\leq 10\%$ |
| Output Type | Solid state |
| Form | NO, closed before & during timing |
| Maximum Load Current | 1A steady state, 10A inrush at 60°C |
| OFF State Leakage Current | AC $\approx 5\text{mA}$ @ 230VAC; DC $\approx 1\text{mA}$ |
| Voltage Drop | AC $\approx 2.5\text{V}$ @ 1A; DC $\approx 1\text{V}$ @ 1A |
| DC Operation | Positive or negative switching |
| Protection | Encapsulated |
| Circuitry | $\geq 2000\text{V RMS}$ terminals to mounting surface |
| Dielectric Breakdown | $\geq 100\text{M}\Omega$ |
| Insulation Resistance | DC units are reverse polarity protected |
| Polarity | |
| Mechanical Mounting | Surface mount with one #10 (M5 x 0.8) screw |
| Dimensions | H 50.8 mm (2.0"); W 50.8 mm (2.0"); D 30.7 mm (1.21") |
| Termination | 0.25 in. (6.35 mm) male quick connect terminals |
| Environmental Operating/Storage Temperature | -40° to 60°C / -40° to 80°C |
| Humidity | 95% relative, non-condensing |
| Weight | $\approx 2.4\text{ oz}$ (68 g) |

Function Diagram

