

## 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   |
|---|--|
| <b>Microcontroller based</b>                    | Repeat accuracy +/- 0.5%,<br>Factory calibration +/- 5%  |
| <b>1A Steady, 10A inrush solid-state output</b> | Provides 100 million operations in typical conditions.   |
| <b>Totally solid state and encapsulated</b>     | No moving parts to arc and wear out over time and encapsulated to protect against shock, vibration, and humidity |
| <b>Compact, low cost design</b>                 | 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 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  $R_T$ .

## Specifications

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

## Function Diagram



Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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