Single Shot (Pulse Former)
KSDS Digi-Timer
Timing Module

- Fixed or Adjustable Delays 0.1 s ... 1000 min in 6 Ranges
- +/-0.5% Repeat Accuracy
- +/- 5% Factory Calibration
- 12 ... 230 V in 5 Ranges
- 1 A Solid State Output
- Encapsulated

Approvals:

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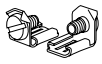
Accessories

External adjust potentiometer
P/Ns:
P1004-95 (fig A)
P1004-95-X (fig B)

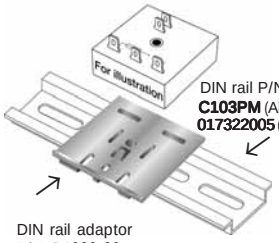
Mounting bracket
P/N: **P1023-6**

Female quick connect
P/N:
P1015-64 (AWG 14/16)



Quick connect to screw adaptor
P/N: **P1015-18**

Versa-knob
P/N: **P0700-7**



DIN rail P/Ns:
C103PM (Al)
017322005 (Steel)

DIN rail adaptor
P/N: **P1023-20**

See accessory pages for specifications.

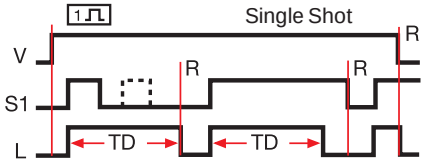
Description

The KSDS Series is ideal for applications that require momentary start interval timing including dispensing, exposure timing, or pulse shaping. This series is available for both AC and DC voltages. This 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. Time delays of 0.1 seconds to 1000 minutes are available in 6 ranges. The output is rated 1 A steady and 10 A inrush. The modules are totally solid state and encapsulated to protect the electronic circuitry.

Operation

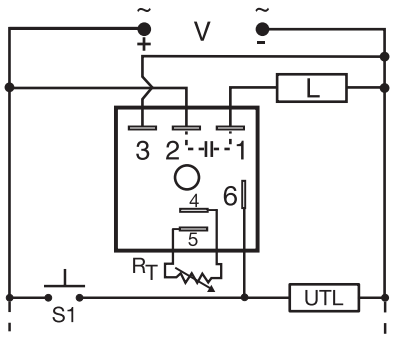
Input voltage must be applied before and during timing. Upon momentary or maintained closure of the initiate switch (leading edge triggered), the output energizes for a measured interval of time. At the end of the delay, the output de-energizes. Opening or reclosing the initiate switch during timing has no affect on the time delay. The output will not energize if the initiate switch is closed when input voltage is applied.
Reset: Reset occurs when the time delay is complete and the initiate switch is opened. Loss of input voltage resets the time delay and output.

Function

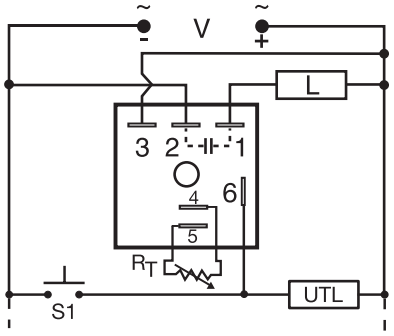


V = Voltage L = Load S1 = Initiate Switch
TD = Time Delay R = Reset

Connection



Positive Switching



Negative Switching

R_T is used when external adjustment is ordered.
Dashed lines are internal connections.
UTL = Optional Untimed Load L = Timed Load S1 = Initiate Switch

Ordering Table

KSDS Series	X Input	X Adjustment	X Time Delay*	X Switching Mode V DC Only
	1 - 12 V DC	**1** - Fixed	**0** - 0.1 ... 10 s	**P** - Positive
	2 - 24 V AC	**2** - External Adjust	**1** - 1 ... 100 s	**N** - Negative
	3 - 24 V DC	**3** - Onboard Adjust	**2** - 10 ...1000 s	
	4 - 120 V AC		**3** - 0.1 ... 10 m	
	6 - 230 V AC		**4** - 1 ... 100 m	
			5 - 10 ...1000 m	

Example P/N: KSDS421 Fixed – KSDS410.1S

* If Fixed Delay is selected, insert delay [**0.1** ... **1000**] followed by (**S**) secs. or (**M**) mins.

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Technical Data

Time Delay	
Range	0.1 s ... 1000 m in 6 adjustable ranges or fixed
Repeat Accuracy	+/-0.5 % or 20 ms, whichever is greater
Tolerance (Factory Calibration)	≤ +/-5%
Reset Time	≤ 150 ms
Initiate Time	≤ 20 ms
Time Delay vs. Temperature & Voltage	≤ +/-10%
Input	
Voltage	12 or 24 V DC; 24, 120, or 230 V AC
Tolerance	+/-20%
Line Frequency	50 ... 60 Hz
DC Ripple	≤ 10 %
Power Consumption	AC ≤ 2 VA; DC ≤ 1 W
Output	
Type	Solid state
Form	Normally Open, closed during timing
Maximum Load Current	1 A steady state, 10 A inrush at 60°C
OFF State Leakage Current	AC ≅ 5 mA at 230 VAC; DC ≅ 1 mA
Voltage Drop	AC ≅ 2.5 V at 1 A; DC ≅ 1 V at 1 A
DC Operation	Positive or negative switching
Protection	
Circuitry	Encapsulated
Dielectric Breakdown	≥ 2000 V 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
Package	2 x 2 x 1.21 in. (50.8 x 50.8 x 30.7 mm)
Termination	0.25 in. (6.35 mm) male quick connect terminals
Environmental	
Operating/Storage Temperature	-40°C ... +60°C / -40°C ... +85°C
Humidity	95% relative, non-condensing
Weight	≅ 2.4 oz (68 g)

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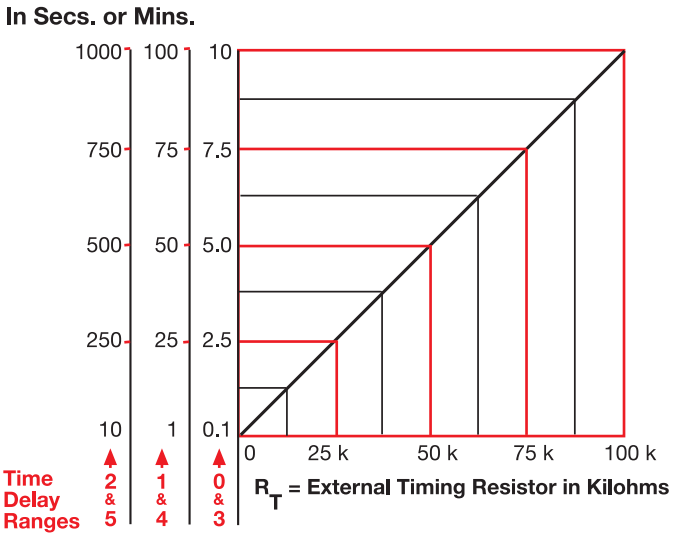
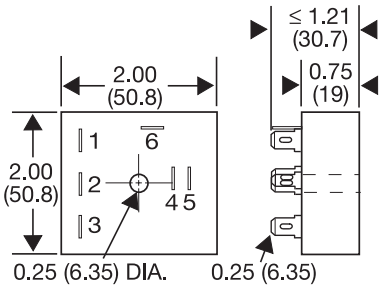
External Resistance vs Time Delay



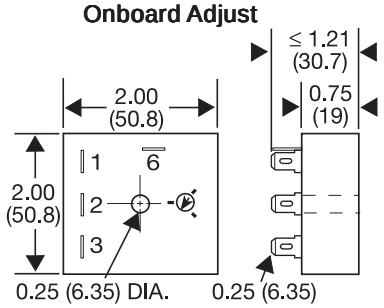
This chart applies to externally adjustable part numbers.
The time delay is adjustable over the time delay range selected by varying the resistance across the RT terminals; as the resistance increases the time delay increases.
When selecting an external RT, add the tolerances of the timer and the RT 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.

Mechanical View

Fixed and External Adjust



Onboard Adjust



Inches (Millimeters)

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