1800/1900 Series Delay On Operate Digital Timing Modules

Product Facts

- **DC input delay on operate timer offered in fixed (1800) and adjustable (1900) types**
- **300mA output**
- **CMOS digital design**
- **Reverse polarity protection**
- **Hermetic package**
- **Built to MIL-R-83726 environmentals**
- **Customizing options include**
  - **Tighter timing tolerances**
  - **Header and mounting**

Electrical Specifications

Timing Range —
1800 series (fixed) — 50 ms to 600 s
1900 series (adjustable) — 50 ms to 240 s

Tolerance — ±10% or 10 ms, whichever is greater

Repeatability — ±0.1%

Recycle Time — 10 ms

Recovery Time — 20 ms

Input Data —

Input Voltage — 18 to 31Vdc

Current Drain (at 25°C, 28Vdc) — 10mA, plus load current

Output Data —

Output Form — 1 Form A (SPST-NO) solid state switch closure to ground

Output Rating — 300mA @ 25°C, 100mA @ 125°C

Minimum Load — 10mA

Saturation Voltage — 2.5Vdc, max.

Leakage — 1µA @ 25°C, 10µA @ 125°C

Environmental Specifications

Temperature Range —
-55°C to +85°C or -55°C to +125°C

Vibration — 20 G's, 10 - 2,000 Hz

Shock — 50 G's, 11 ± 1ms duration

Insulation Resistance — 1,000 megohms, min., at 500Vdc, all terminals to case

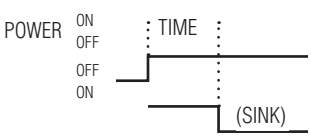
Dielectric Strength — 500Vrms, 60 Hz., at sea level, all terminals to case

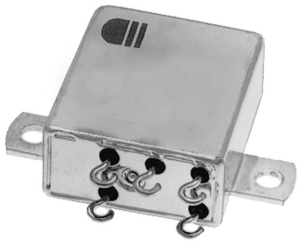
Sealing — Hermetic, 1.3 in. (33.0mm) of mercury

Life — 100,000 operations, min.

Weight — 1 oz (28.3g) max

Timing Diagram





KILOVAC 1800/1900 series delay on operate timer modules combine solid state timing circuits with solid state switch outputs in robust hermetically sealed enclosures. The 1800 types are fixed timers, while the 1900 models are adjustable via an external resistor. The 1 Form A (SPST-NO) switch is rated 300mA.

Adjustable Timing Formula (1900 types)

The resistance required to obtain timing within this range is determined by using the formula:

Rx = 400K (T/Tmax.) – 40K, where

Rx = External Resistance in Ohms,
T - Desired Time in Seconds, and
Tmax. = Maximum Time (Code).

A high quality deposited carbon ±1%, 0.1W (min.) resistor is recommended for external resistance.

Part Numbering System

Typical Part Number	1811	–1	A	– 1002

Model Number:
1811 = Fixed timer, -55°C to +85°C
1821 = Fixed timer, -55°C to +125°C
1911 = Adjustable timer, -55°C to +85°C
1921 = Adjustable timer, -55°C to +125°C

Header Style (see Header Options drawings):
1 = Hook terminals 2 = Straight terminals

Mounting (see outline dimension drawings):
A = Plain case B = Bracket B C = Studs on side E = Bracket E

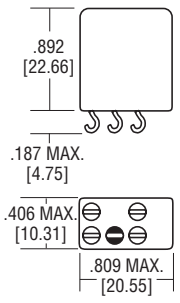
Timing Code:
Four-digit code for any value between 50ms and 600s for fixed (1800) timers, and 50ms and 240s for adjustable (1900) timers.

The timing code consists of four digits and gives the time in ms. The first three digits are the significant figures and the last digit is the number of zeros following the significant figures; thus 50 ms would be coded 0500, 1.1 s would read 1101, and 1 m (60 s) would be 6002.

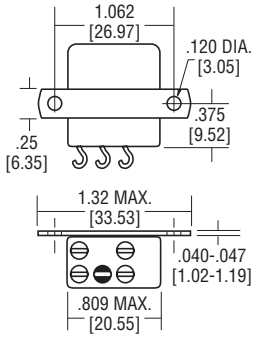
Adjustable timers cover one decade, e.g., 62 ms to 620 ms. The upper decade limit is Tmax. in the timing formula and is the the value defined by the timing code in the part number.

A typical part number would be 1811–1A–1002. This fixed timing module operates at -55°C to +85°C, has hook terminals, style "A" mounting, and a time delay of 10s.

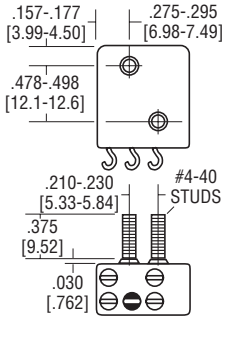
Outline Dimensions



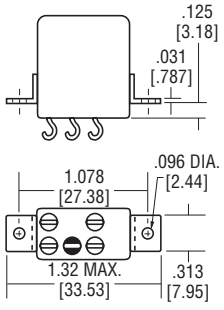
Mounting Option A



Mounting Option B

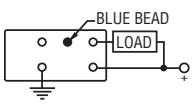


Mounting Option D

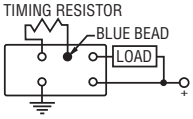


Mounting Option E

Wiring Diagrams



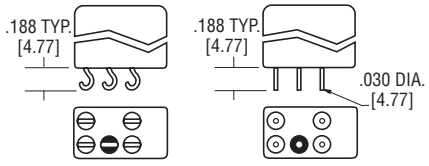
1800 Series (Fixed)



1900 Series (Adjustable)

Note: The blank pin on 1800 series types is active and must not be connected.

Header Options



TERMINAL SPACING IS 0.2 in [5.08]

Header Option 1 **Header Option 2**