

APPLICATION NOTE:
101

FEATURES

- Small size and weight
- High-reliability design
- Hermetically sealed
- High transient immunity
- Qualified to MIL-PRF-83726/21

PRINCIPLE TECHNICAL CHARACTERISTICS

| | |
|---|---|
| Seal: Hermetic Tested per MIL- STD-883, Method 1014 | 1x10 ⁻⁶ atm, cm ³ /s max leakage |
| Finish: | Tin/lead Plate |
| Terminals: | A (Tin Plate) Solder-lug W (Tin Plate) Plug-in PCB mountable |
| Weight | 0.5 Ounce max. |

DESCRIPTION

The TD-1436 is packaged in a hermetically sealed military style enclosure. The timing circuits are designed with thick film hybrid microelectronics. The TD-1436 is qualified to MIL-PRF-83726/21 and designed to withstand severe environmental conditions encountered in military/aerospace applications. Our reliable circuit design with state-of-the-art packaging processing and sealing techniques, allow for a very reliable operation over a wide temperature range.

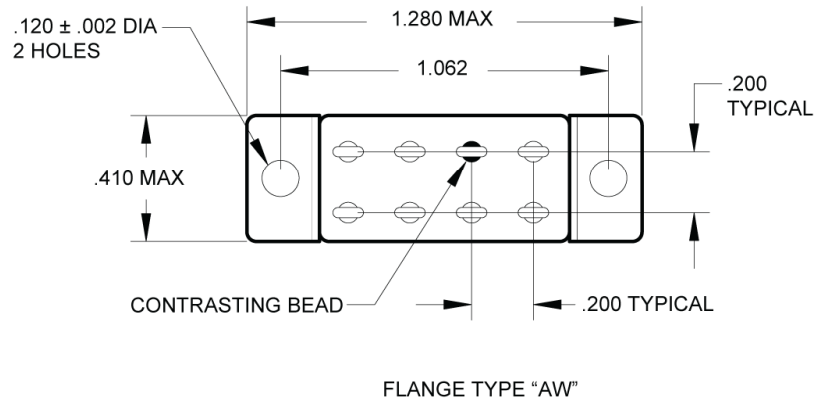
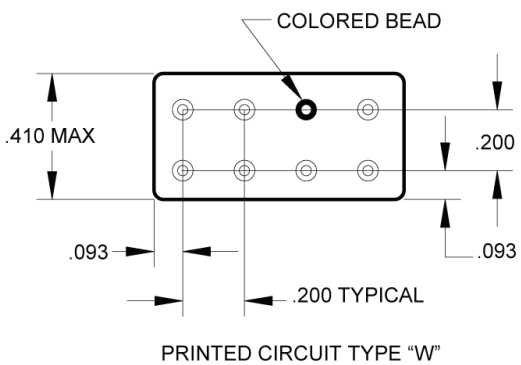
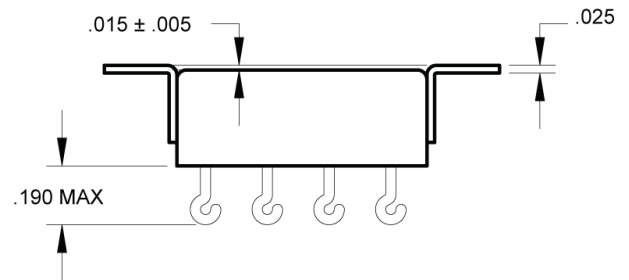
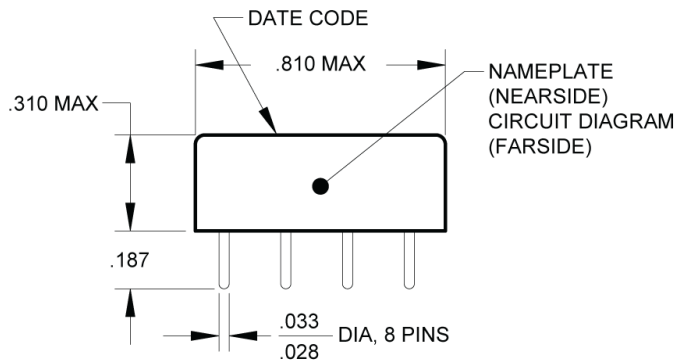
ELECTRICAL SPECIFICATION

| Input (Control) Parameters | |
|--|---------------------------------|
| Timing: | |
| a. Operation, Time Delay on | Operate |
| b. Method | Adjustable Period |
| c. Range | 0.05 to 500 Seconds |
| d. Accuracy | ±10% [1] |
| Recycle Time | 10 ms, Max [5] |
| Operations: (X1-X2) | |
| a. Input & Control Voltage | 18-32 Vdc |
| b. Operating Current | 5 mA, Max @ +25° C |
| Transients: MIL-STD-704A, Limit 1 | |
| a. Spike Susceptibility | +80 Volts Max -600 Volts Max |
| b. Self-Generated Spikes | None |
| Electromagnetic Interference Per MIL-STD-461 | Class 1D [3] |
| Power Interrupt | 1 Millisecond [2] |
| Output (Load) Parameters | |
| Contact Form | SPST |
| Contact Rating: | 250 mA |
| Voltage Drop | 2 Vdc |
| Dielectric Strength: | |
| a. @ Sea Level, 60 Hz | 1,000 Vrms [4] |
| b. @ 80,000 ft., 60 Hz | 350 Vrms |
| Insulation Resistance @ 500 Vdc | 1,000 M Ω [4] |

GENERAL CHARACTERISTICS

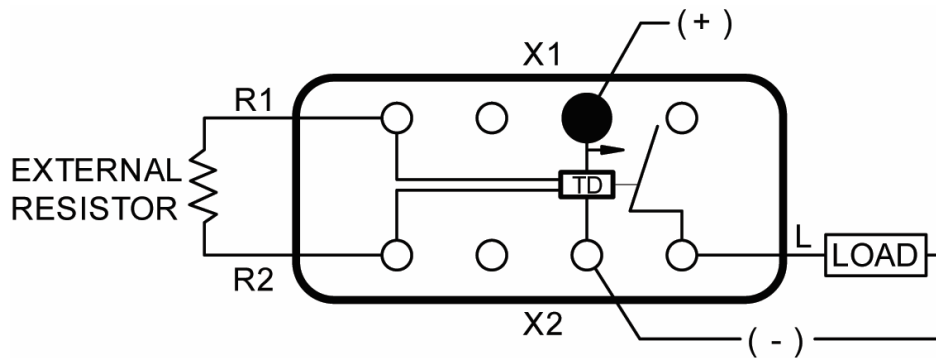
| | |
|---------------------------------------|------------------------|
| Ambient Temperatures Range: | |
| a. Operation | -55 to +125° C |
| b. Non-Operating | -55 to +125° C |
| Vibration: | |
| a. Sinusoidal | |
| 10-80 Hz | 0.06" DA |
| 80-3000 Hz | 30 G |
| b. Random: 50-2000 Hz, MIL-STD-810 | 0.4 G ² /Hz |
| Shock, 0.5 MS, 1/2 Sine, 3 Axis | 1,100 G |
| Acceleration, in any Axis | 100 G |
| Life at Rated Resistive Load; Minimum | 1,000,000 operations |

MECHANICAL SPECIFICATIONS



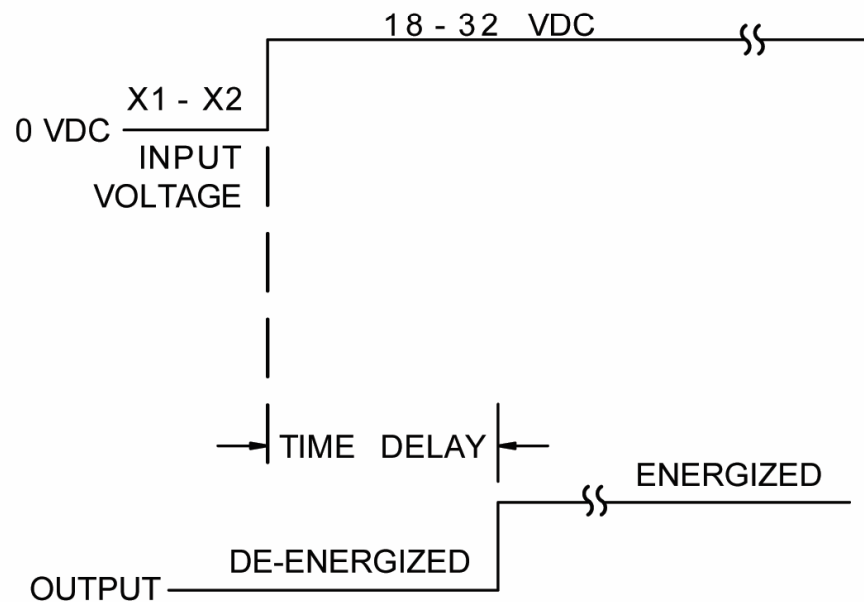
DIMENSIONS ARE SHOWN IN INCHES.

DIAGRAMS



SCHEMATIC DIAGRAM

FIXED TIME DELAY



TIME DELAY ON OPERATE

NUMBERING SYSTEM

PCB Mount
TD-1436 - 5001
 | |
 1 3

Flange Mount
TD-1436 - 5001
 | |
 1 3

M83726/21 - 002
 | | |
 1 2 3

M83726/21 - 006
 | | |
 1 2 3

1. Model Number or Basic "MIL-PRF" Series number.
2. Military "Slash" number.
3. Timing Range.
4. Mounting Style

| PCB MOUNT | | FLANGE MOUNT | | TIME DELAY |
|-----------|----------|--------------|----------|----------------|
| Military | Leach | Military | Leach | Range |
| Dash No. | Dash No. | Dash No. | Dash No. | (seconds) ±10% |
| 001 W | 5000W | 005 W | 5000AW | 0.05-0.5 |
| 002 W | 5001W | 006 W | 5001AW | 0.5-5 |
| 003 W | 5002W | 007 W | 5002AW | 5-50 |
| 004 W | 5003W | 008 W | 5003AW | 50-500 |

NOTES

1. The accuracy specification applies for any combination of operating temperature and voltage.
2. The accuracy will not be affected by power interruptions up to 1 millisecond, spaced at least 10 milliseconds apart. Transient and power loss specifications are based on a maximum duty cycle of 1/50.
3. EMI test limits will not be exceeded during the timing interval or when continuously energized under steady state conditions, per paragraph 3.26, MIL-PRF-83726.
4. Terminals X1, X2, R1, R2 and L must be connected together during the test. Dielectric withstanding voltage and insulation resistance are measured at sea level between all mutually insulated terminals and between all terminals and case.
5. Recycle time is defined as the maximum time power must be removed from terminal X1 to assure that a new cycle can be completed within the specified timing tolerance.
6. A four digit number defines the time delay in seconds (or milliseconds). The first three digits are significant figures, used to define the specific time delay. The fourth digit represents the number of zeros to follow the first three digits.

| SPECIFY | STANDARD DECADE RANGE |
|---------|---|
| - 5000 | = 0.05 to 0.5 second (50 to 500 milliseconds) |
| - 5001 | = 0.5 to 5 seconds (500 to 5000 milliseconds) |
| - 5002 | = 5 to 50 seconds |
| - 5003 | = 50 to 500 seconds |

An external resistor is used to obtain a specific time delay within the specified decade range. The formula below provides the proper resistance value to achieve the desired time delay:

$$R_{\text{ext}} = \left(\frac{T_1}{T_0} - 1 \right) 100,000 \text{ Ohms}$$

Where: R_{ext} = External resistance value (Ohms)
 T_1 = Desired time in seconds
 T_0 = Minimum time (low end of the decade range)

in seconds.

As an example, if using a 5 to 50 second adjustable timer and a 30 second delay is desired, the calculation is:

$$R_{\text{ext}} = \left(\frac{30}{5} - 1 \right) 100,000 \text{ Ohms or } R_{\text{ext}} = 500 \text{ K Ohms}$$

Recommended resistors IAW MIL-R-55182 1/8 Watt, 1% (RNC60HXXXXFS).
External resistor not supplied.