INCH-POUND

MIL-PRF-83726/29D
15 June 1999

SUPERSEDING
MIL-R-83726/29C(USAF)
9 August 1991

PERFORMANCE SPECIFICATION SHEET

RELAY, HYBRID, TIME DELAY (ON RELEASE), CLASS B, TYPE IIA, HERMETICALLY SEALED, DPDT, 10 AMPERES, FIXED TIME, 0.1 TO 500 SECONDS

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the relay described herein shall consist of this specification and MIL-PRF-83726.

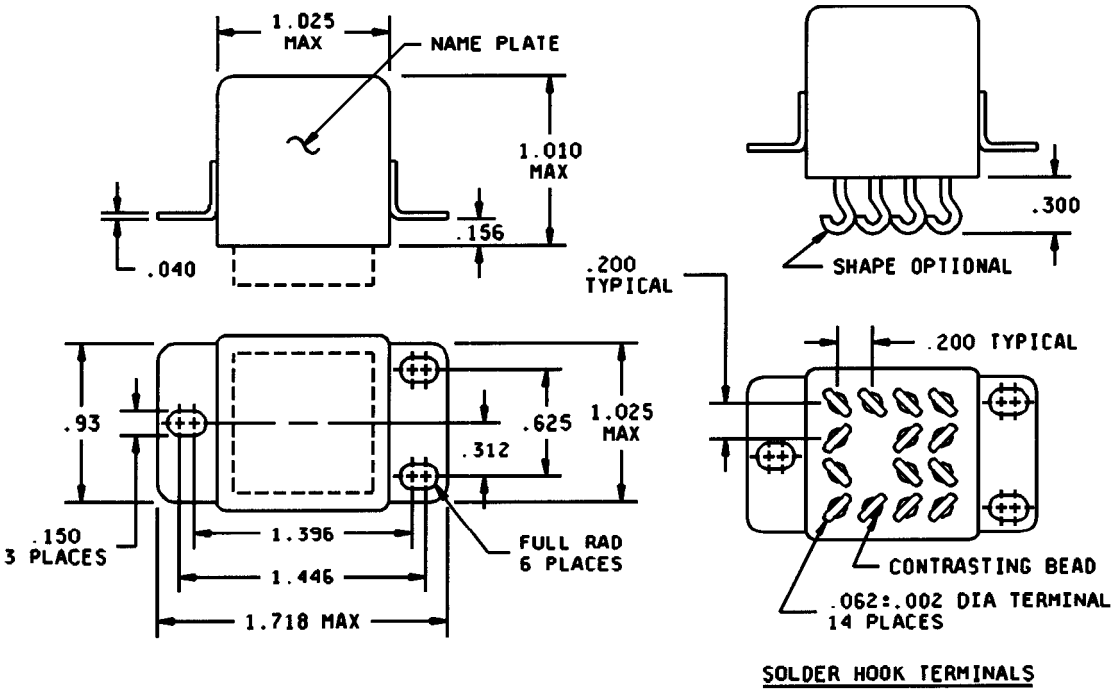
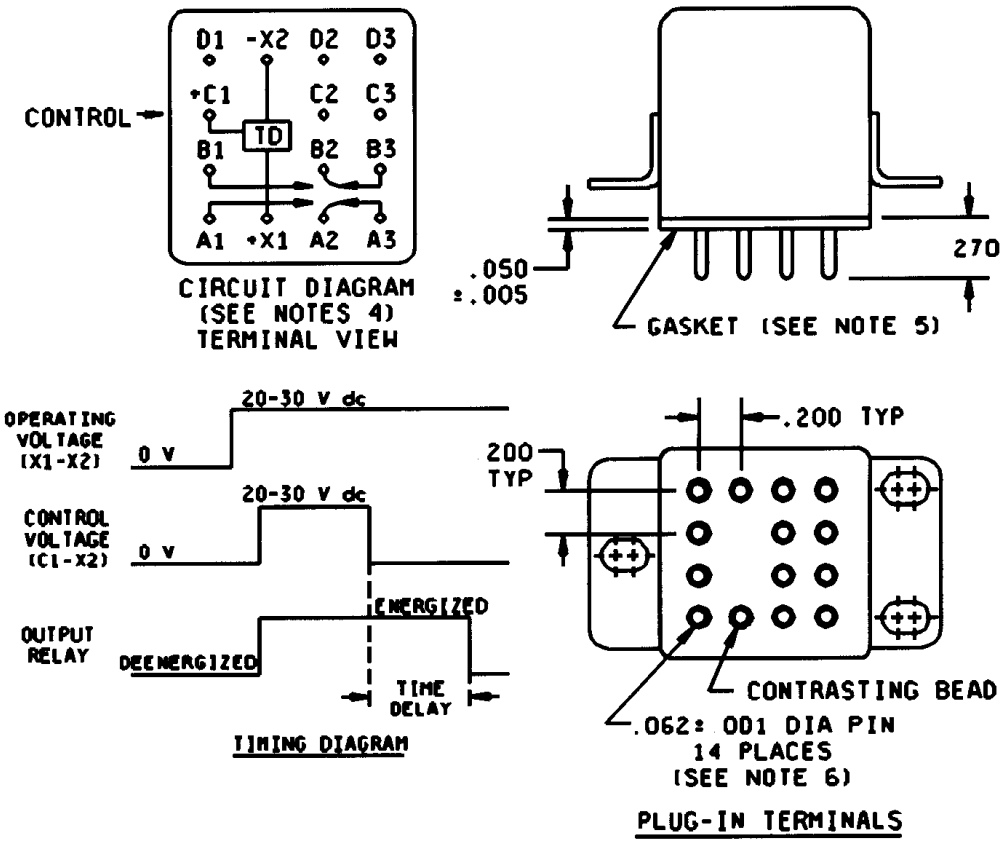


FIGURE 1. Outline dimensions and configuration of relay.



Inches	mm	Inches	mm
.001	0.03	.300	7.62
.002	0.05	.312	7.92
.005	0.13	.625	15.88
.040	1.02	.930	23.60
.050	1.27	1.010	25.65
.062	1.57	1.025	26.04
.150	3.81	1.396	35.46
.156	3.96	1.446	33.73
.200	5.08	1.718	43.64

FIGURE 1. Outline dimensions and configuration of relay – Continued.

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ±.010 (0.25 mm) for three place decimals and ±.03 (0.76 mm) for two place decimals.
4. Terminal numbers shall not appear on the relay header and there shall be a legible circuit diagram on relay which identifies each terminal location specified.
5. Gasket material: The gasket material shall be of such quality to ensure the relay meets all the performance requirements of this specification. Silicone rubber gasket AMS 3332, shore hardness 20 ±5 has been considered acceptable.
6. Terminal composition: The terminal composition shall be of such quality to ensure the relay meets all the performance requirements of this specification. Gold in accordance with AMS 2422 or ASTM B488, Type 3; underplating: nickel, 50 microinches to 150 microinches thick; has been considered acceptable.
7. Terminal C2 is optional.

FIGURE 1. Outline dimensions and configuration of relay – Continued.

REQUIREMENTS:

OPERATING REQUIREMENTS:

Timing action: Delay-on-release.

Time delay: Fixed; select from 0.1 second to 500 seconds.

Timing accuracy: ±10 percent of nominal value. (The accuracy requirement applies for any combination of operating temperature and voltage. Add ±10 ms for timing less than 1 second.)

Recycle time: 50 milliseconds maximum. (Recycle time is defined as the minimum time that power must be applied from the input terminals to assure that the next timing cycle will be completed within the specified timing tolerance. (Units can be recycled during timing or after time-out.))

Power interrupt: 500 microseconds. (Transient and power loss specifications are based on a maximum duty cycle of 1/50.)

Extraneous voltage: 7 V dc minimum.

Control voltage: 20 V dc to 30 V dc.

Control current: 15 milliamperes maximum at 25°C.

Operating current: (X1-X2) 150 mA maximum at 25°C.

INPUT REQUIREMENTS:

Input voltage range: 20 V dc to 30 V dc. (EMI test limits will not be exceeded during the timing interval or when continuously energized under steady-state conditions in accordance with the EMI test of MIL-PRF-83726.)

Duty rating: Continuous.

Current drain: (quiescent): 10 milliamperes maximum at 25°C.

Polarity protection: The timer shall be inoperative during, and undamaged by, reversal of the polarity of the operating voltage, or control voltage.

OUTPUT REQUIREMENTS:

Configuration: DPDT.

Life: See table I.

TABLE I. Life load ratings (relay case grounded).

Type of load	Life (cycles)	Amperes 28 V dc	Amperes 115/200 V ac 400 Hz
Resistive	100,000	10	10
Inductive	20,000	8	8
Motor	100,000	4	4
Lamp	100,000	2	2
Low level 1/	100,000		---

1/ Contact load 10 μA to 50 μA at 10 mV to 50 mV (dc or peak ac).

ELECTRICAL REQUIREMENTS:

Transients: +80 volts in accordance with MIL-STD-704, figure 9, limit 1.

Spike:

Self-generated: ±50 volts maximum.

Spike transients: ±600V, 10 microseconds maximum.

Susceptibility: + 80 V maximum; -600 V maximum.

Electromagnetic interference: In accordance with MIL-STD-461, class 1D. (EMI test limits will not be exceeded during the timing interval or when continuously energized under steady-state conditions in accordance with the EMI test of MIL-PRF-83726.)

Insulation resistance: 1,000 megohms at 500 V dc at sea level, and 100 V dc at 80,000 feet between each pin and case. (Terminals X1 and X2 must be connected together during this test. Insulation resistance is measured between all mutually insulated terminals and between all terminals and case.)

Dielelectric withstanding voltage: 1,000 V rms at 60 Hz at sea level, and 350 V rms at 80,000 feet between case and pins connected together. (Terminals X1 and X2 must be connected together during this test. Dielectric withstanding voltage is measured between all mutually insulated terminals and between all terminals and case.)

ENVIRONMENTAL REQUIREMENTS:

Ambient temperature (operating or nonoperating): -55°C to +125°C.

Vibration (sinusoidal): 30 g's, 10 Hz to 3,000 Hz.

Vibration (random): 0.4 g^2/Hz power spectral density, 50 Hz to 2,000 Hz in accordance with MIL-STD-202, method 214, test condition 1B. Duration of 15 minutes each plane.

Shock (specified pulse): 100 g's, 6 ms ±1 ms, ½ sine, 3 axes.

Acceleration: 15 g's in any axis.

Seal: Hermetic.

Maximum altitude rating: 80,000 feet.

PHYSICAL REQUIREMENTS:

Dimensions and configuration: See figure 1.

Mating socket: MIL-PRF-12883/40-01, MIL-PRF-12883/40-05, MIL-PRF-12883/40-07, MIL-PRF-12883/40-11, MIL-PRF-12883/40-13, MIL-PRF-12883/40-17, MIL-PRF-12883/40-19, or MIL-PRF-12883/40-23. (CAUTION: Consideration should be given to ambient temperature and current requirements when using wire barrels size 20.)

Terminations: See figure 1.

Terminal strength: 3 pounds pull.

Weight: 2.5 ounces maximum.

Marking: See MIL-PRF-83726. In addition, relays shall be marked with the ESDS identifier as specified in MIL-STD-1285.

Part or Identifying Number (PIN): Consists of the prefix M83726/29-, a four digit dash number (time delay expressed in milliseconds), and a suffix letter (P for plug-in; S for solder lug):

M	83726/29-	1001	P
Military designation	Specification sheet number	The first three digits are significant; the fourth is the number of zeros to follow the first three digits. The time is expressed in milliseconds and converted to seconds. (See examples.)	Suffix letter. (Any relay numbered prior to the date of this specification shall be considered interchangeable with same mounting type, store and issue.)

Examples:

M83726/29-1001P – 0.1 to 1 second time delay, plug-in.
M83726/29-9002S – 9 to 90 second time delay, solder lug.

NOTE: Time delay relays within the 0.1 second to 500 second delay range are available within a one-decade range. The PIN represents the upper timing limit of each range.

Marginal notations are not used in this revision to identify changes with respect to the previous issue due to the extensiveness of the changes.

Custodians:
Navy - EC
Air Force - 11

Review activities:
Navy - OS
Air Force - 19

Preparing activity:
DLA - CC

(Project 5945-F800)