

[INCH-POUND]

MIL-R-83726/23C(USAF)
22 December 1994
SUPERSEDING
MIL-R-83726/23B(USAF)
9 August 1991

MILITARY SPECIFICATION SHEET

RELAYS, HYBRID, TIME DELAY (ON RELEASE), TYPE II B,
CLASS B, 10 AMPERES, 4PDT, HERMETICALLY SEALED

Inactive for new design after 10 Nov 93.
No superseding standard.

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

The requirements for acquiring the product described herein shall consist of this specification sheet and the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-R-83726.

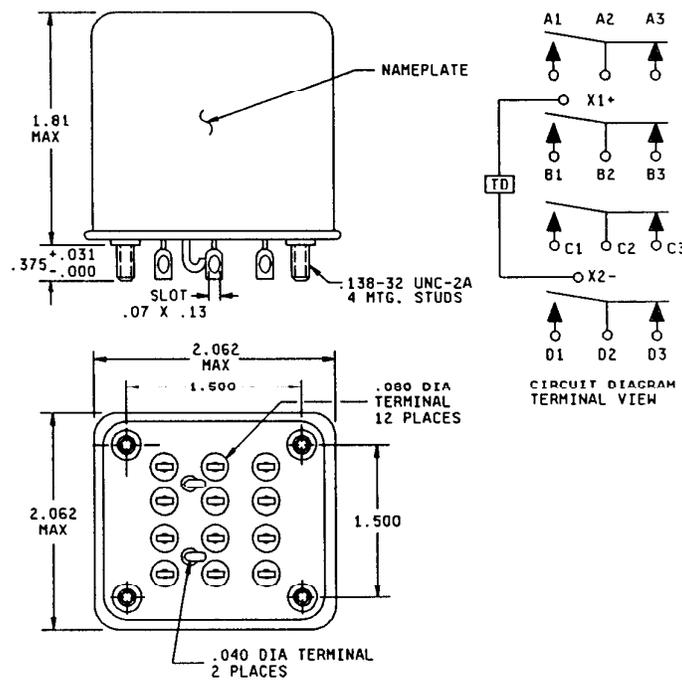
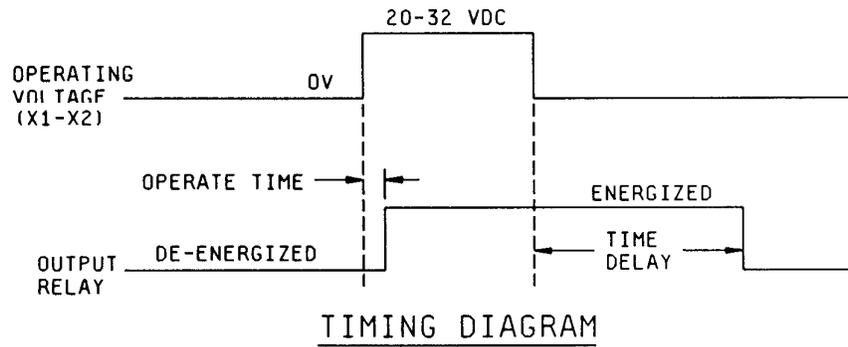


FIGURE 1. Dimensions and configuration.

(C) denotes changes



NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerances are ± 0.010 (0.25 mm) for three place decimals and ± 0.03 (0.8 mm) for two place decimals.
4. Terminal numbers shall not appear on the relay header. There shall be affixed to the relay a permanent, legible circuit diagram that identifies each terminal location specified.

FIGURE 1. Dimensions and configuration - Continued.

TABLE I. Dash numbers and time delay characteristics. 1/

Dash number 2/	Release time delay (seconds) $\pm 10\%$	Maximum operating time (ms)	Dash number 2/	Release time delay (seconds) $\pm 10\%$	Maximum operating time (ms)
1000	<u>3</u> / .100	50	1602	16	100
5000	<u>3</u> / .500	50	1802	18	100
7500	<u>3</u> / .750	50	2002	20	100
1001	1	50	2202	22	100
2001	2	50	2502	25	100
3001	3	50	3002	30	100
4001	4	50	3502	35	100
5001	5	50	4002	40	100
6001	6	50	4502	45	100
7001	7	50	5002	50	100
8001	8	50	5502	55	100
9001	9	50	6002	60	100
1002	10	50	6502	65	100
1202	12	100	7002	70	100
1402	14	100	7502	75	100

- 1/ Additional time delay relays within the 0.1 to 75 seconds delay range are available. To establish Part or Identifying Numbers (PIN's) not listed in table I, see "PIN" paragraph herein. Time delay accuracy applies to all combinations of operating temperature and voltage.
- 2/ A suffix letter (W, X, or Y) to designate quality level shall be added to the dash number (see "PIN" herein).
- 3/ Add ± 10 milliseconds to ± 10 percent tolerance.

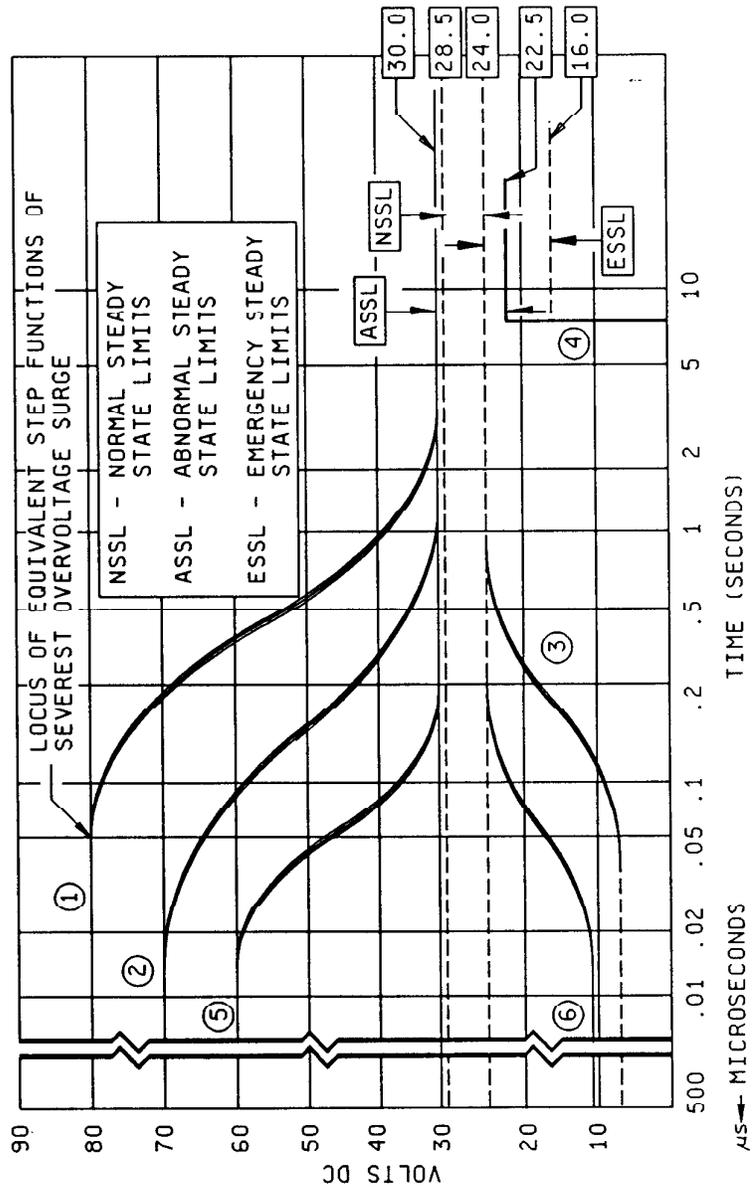


FIGURE 2. Transient surge dc voltage step function loci limits for category B equipment.

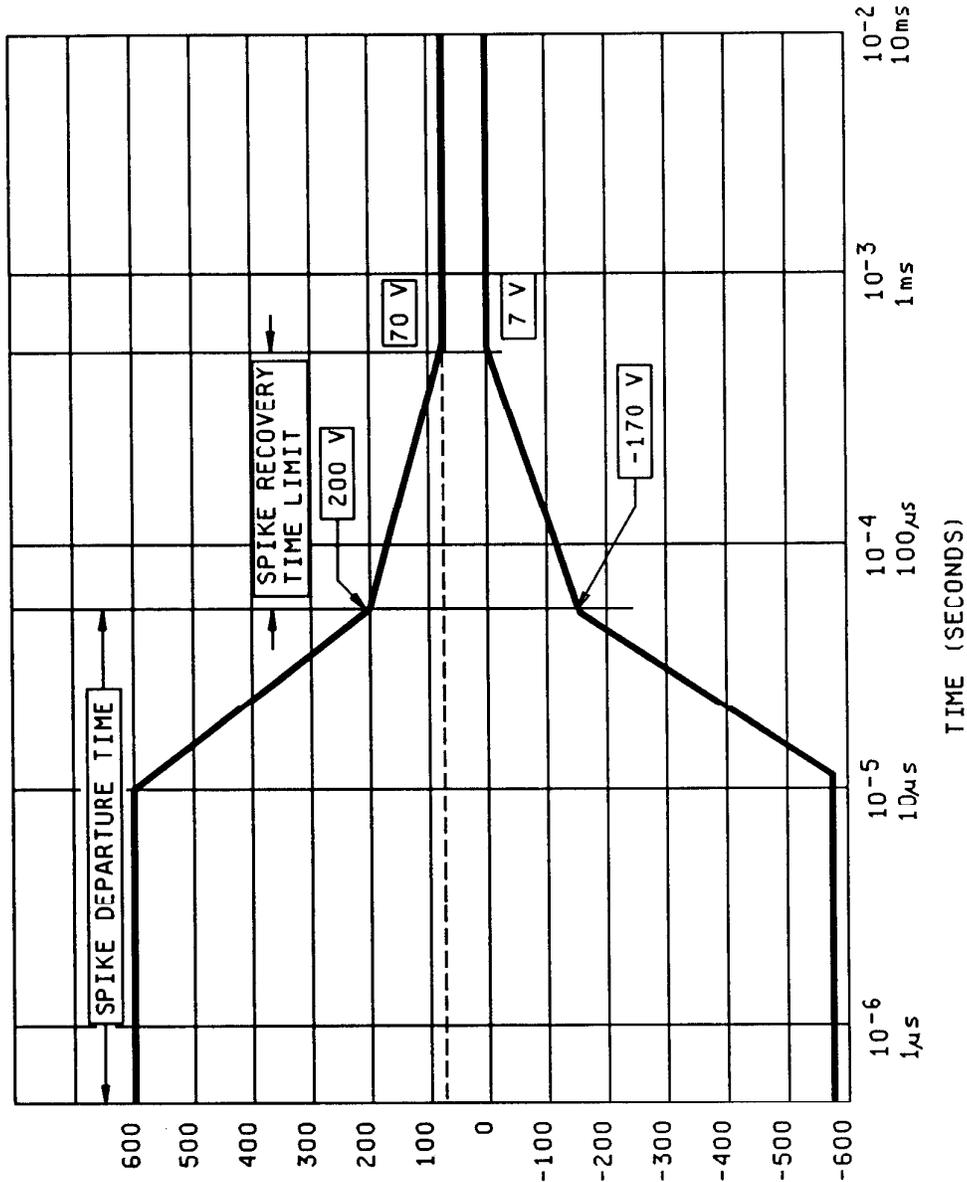


FIGURE 3. Envelope of spike voltages for dc equipment.

REQUIREMENTS:

Contact data:

Configuration: 4PDT.

Life/load ratings (relay case grounded) (see table II).

TABLE II. Life/load ratings.

Type of load	Life (cycles)	Load current (amperes)	
		28 V ac	115/200 V rms 1 and 3 phase 400 Hz
Resistive	100,000	10	10
Inductive	20,000	8	8
Motor	100,000	4	4
Lamp	100,000	2	2
Reduced current (resistive)	400,000	2.5	2.5

Contact voltage drop:

Initial: 0.150 volt.

After life tests: 0.175 volt.

Minimum current: Applicable in accordance with MIL-R-6106.

Contact bounce: 1 millisecond (maximum).

Overload:

DC: 40 amperes.

AC: 60 amperes.

Rupture:

DC: 50 amperes.

AC: 80 amperes.

Input data:

Duty rating: Continuous.

Maximum voltage: 32 V dc.

Ⓒ Rated voltage (over temperature range): 28 V dc.

Minimum voltage: 20 V dc.

Minimum voltage (high temperature test): 20 V dc.

Minimum voltage (continuous current test): 20 V dc.

Peak current (-55°C to +100°C): 2.5 amperes for 100 milliseconds (maximum).

Steady-state dc current: 0.060 ampere (maximum).

Release time delay: See table I.

Recycle time: 1/

Maximum operate time: See table I.

Electrical data:

Insulation resistance at 500 V dc: 2/

Initial: 1,000 megohms (minimum).

After life or environmental tests: 500 megohms (minimum).

Dielectric withstanding voltage (sea level):

	Initial	After life tests
Input (X1 - X2) <u>2/</u>	1,000 V rms	1,000 V rms
All other points	1,250 V rms	1,000 V rms

Dielectric withstanding voltage (altitude): 80,000 feet. 2/

Input (X1 - X2): 350 V rms. 2/

All other points: 350 V rms.

Ⓒ Transients (see figures 2 and 3):

Transient voltage limits (input):

Surge positive: 80 V dc (maximum). 3/

Power loss: 500 microseconds (maximum).

Spike:

Self generated: ±50 V maximum.

Susceptibility: ±600 V maximum. 4/

1/ Recycle time is the same as operate time in table I. It is defined as the minimum time that operate voltage must be applied to the input terminals to assure that a new release timing cycle can be completed within the specified timing tolerance.

2/ Input terminals X1 and X2 shall be connected together during this test.

3/ In accordance with MIL-STD-704 and figure 2 (limit 1, duty cycle 2 percent).

4/ In accordance with MIL-STD-704 and figure 3 (0 to 500 microseconds, single event transients).

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Environmental data:

Temperature range (operating): -55°C to +100°C.

Maximum altitude rating: 80,000 feet.

Shock g-level: 50 g's, 1/2 sine, 3 axes.

Duration: 11 ±1 milliseconds.

Maximum duration contact opening: 10 microseconds.

Vibration (sinusoidal):

G-level: 20 g's.

Frequency range: 10 Hz to 3,000 Hz.

Vibration (random): Applicable in accordance with MIL-STD-202, method 214, test condition IG.

Power spectral density: 0.4 g²/Hz.

Frequency range: 50 Hz to 2,000 Hz.

Duration: 15 minutes each plane.

Acceleration: 20 g's in any axis.

Seal: MIL-STD-202, method 112, condition B.

Humidity: 95 percent relative humidity.

Physical data:

Dimensions and configuration: See figure 1.

Terminations: Solder hook.

Terminal strength: 3 ±0.5 pounds pull.

Weight: 0.75 pound (maximum).

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

ESDS protection program: An ESDS protection program shall be implemented within 6 months of the date of revision B to this document. The manufacturer shall establish and maintain an ESD control program in accordance with MIL-STD-1686 for mission critical equipment. Evidence of such compliance shall be verified by the qualifying activity of this specification as a prerequisite for qualification and continued qualification. This program shall be documented by an ESD control plan which must be under document control. As a minimum, this plan must address the identification of ESDS sub-components and end items, facilities, training, design protection, handling procedures, marking, cleaning, preservation, packaging, and quality assurance. A model ESD control program is available from the qualifying activity and may be used as a guideline. Further guidance for ESD control is available from the EOS/ESD Association and the Electronics Industry Association (EIA). This requirement is applicable to all manufacturers who handle ESDS component parts and materials in the relay manufacturing or testing process. This requirement is not limited to manufacturers qualifying ESDS end items.

