

INCH-POUND

MIL-R-83725/3E
w/AMENDMENT 2
24 January 2006
SUPERSEDING
MIL-R-83725/3E
w/AMENDMENT 1
22 November 2000

MILITARY SPECIFICATION SHEET

RELAYS, VACUUM, SPDT, DC, 8 AMPERES

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

The requirements for acquiring the relays described herein shall consist of this specification and the latest issue of MIL-R-83725.

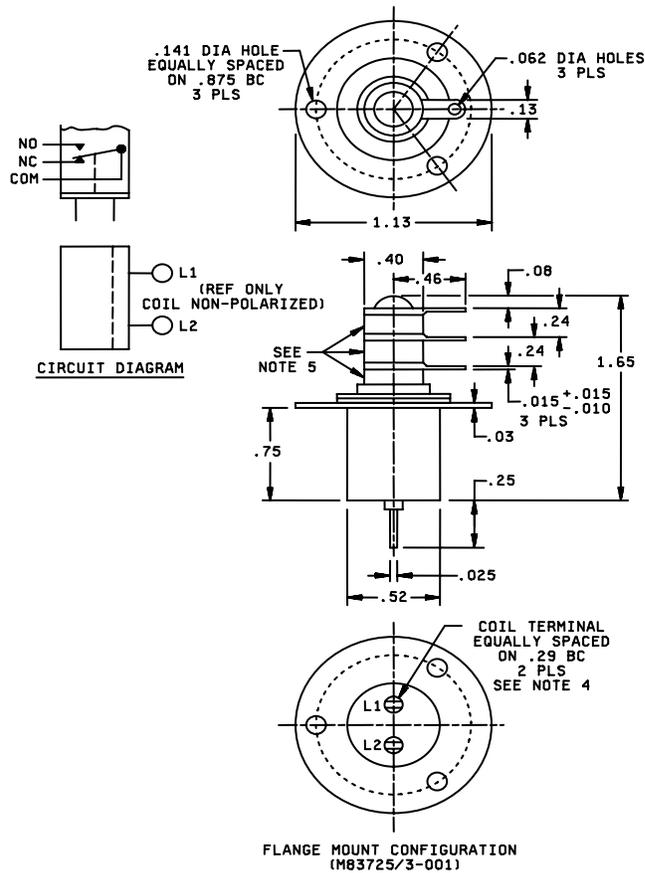
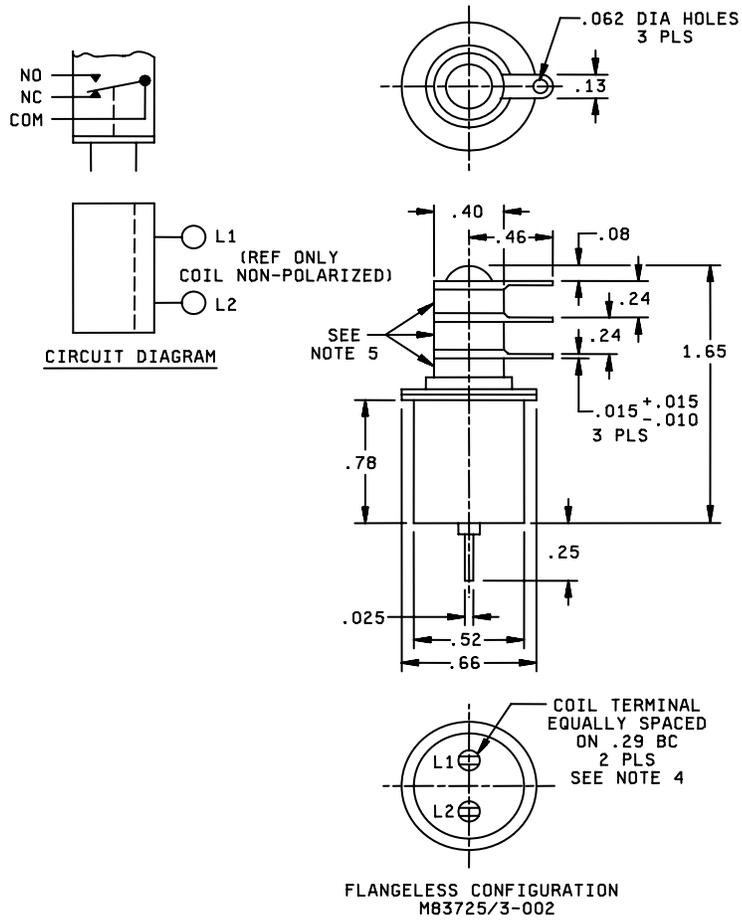


FIGURE 1. Relay configurations.

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NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerances are $\pm .010$ (0.25mm) for three-place decimals and $\pm .03$ (0.8 mm) for two-place decimals.
4. Shape of coil lug (solder) terminals optional; however, they must accommodate two no. 22 AWG wires.
5. Glaze finish on ceramic insulators is optional.
6. M83725/3-002 mounted by 0.52 (13.2 mm) diameter of body of coil housing or by 0.65 inch (16.5mm) diameter lip in center of relay.

FIGURE 1. Relay configurations - Continued.

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REQUIREMENTS:

Contact data:

Configurations: SPDT.

Arrangement: One form C.

Load ratings:

Nonswitching (carry):

8 amperes rms, dc or 60 Hz.

6 amperes rms, 2.5 MHz.

4 amperes rms, 16 MHz.

Switching:

1.0 ampere at 1 kV dc, resistive.

0.5 ampere at 2kV dc, resistive.

2.0 amperes rms at 1 kV (peak) from 1 kHz to 60 MHz.

Voltage rating: 2 kV (dc or peak ac), operating.

Relay case grounded: Applicable.

Contact resistance:

Rated life:

Before: .05 ohm, maximum.

During: .100 ohm, maximum.

After: .100 ohm, maximum.

Contact bounce: 5.0 milliseconds, maximum.

Capacitance:

1.6 picofarads, maximum across open contacts.

2.0 picofarads, maximum from open contact to ground.

Coil data:

Duty rating: Continuous.

Maximum voltage: 32 V dc.

Rate voltage: 26.5 V dc.

Pickup voltage: 23 V dc maximum over temperature range.

Dropout voltage: 10 V dc, maximum; 1.0 V dc, minimum over temperature range.

Coil resistance: 800 ohms, minimum to 1,300 ohms, maximum but within ± 10 percent of design value.

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Operate time: 10 milliseconds, maximum, at 26.5 V dc at +25 °C.

Release time: 10 milliseconds, maximum, at +25 °C.

Electrical data:

Insulation resistance: 1,000 megohms, minimum, except the resistance between coil and housing at high temperature shall be 500 megohms or greater.

Dielectric withstanding voltage:

At atmospheric pressure:

Between all mated contacts in the open position: 4 kV peak, 60 Hz.

Between high voltage terminals and housing: 3 kV peak, 60 Hz.

Between coil and housing: 500 V rms, 60 Hz.

Environmental data:

Temperature range: -55 °C to +125 °C.

Vibration: MIL-STD-202, method 204, test condition B, except 10 g from 10 to 2,000 Hz.

Shock: MIL-STD-202, method 213, test condition J.

Physical:

Terminal strength: 5 ± 0.5 pounds pull.

Dimensions and configuration: see figure 1.

Terminations: See figure 1.

Marking: Applicable (circuit diagram need not to be marked on relay).

Weight: 0.75 ounce, maximum.

Life test requirements:

Mechanical cycling: 500,000 operations, two units (maximum rate 36,000 per hour; contact current shall not exceed 10 milliamperes) .

Shelf life: (accelerated): Applicable.

Load life:

Non- switching (carry):

4 amperes rms, 16 MHz: Duration 1/2-hour continuous each contact pair.

6 amperes rms, 2.5 MHz: Duration 1/2-hour continuous each contact pair.

8 amperes rms, dc or 60 Hz: Duration 1/2-hour continuous each contact pair.

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Switching: Eight additional sample units required for switching test; requirements are the same as for Non - switching (carry) and for mechanical cycling.

0.5 ampere at 2,000 V dc, resistive: 100,000 operations, two sample units.

1.0 ampere at 1,000 V dc, resistive: 50,000 operations, two sample units.

2.0 ampere at 1,000 V ac, 1 kHz: 25,000 operations, two sample units.

2.0 ampere at 1,000 V ac, 60 MHz: 25,000 operations, two sample units.

Quality assurance:

Dielectric withstanding voltage: Tests to be conducted at atmospheric pressure rating only.

Duration of application: In accordance with MIL-STD-202, method 301.

Part number: M83725/3- (dash number from figure 1).

Referenced documents. In addition to MIL-R-83725, this document references the following:

MIL-STD-202

Changes from previous issue: Marginal notations are mark with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Custodian:

Army-CR
Navy-AS
Air-Force-11
DLA-CC

Preparing activity:
DLA - CC

(Project 5945-2006-005)

Review Activities:

Navy-OS

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