

INCH-POUND

MIL-R-83725/4F(USAF)
 15 April 1994
 SUPERSEDING
 MIL-R-83725/4E(USAF)
 17 January 1992

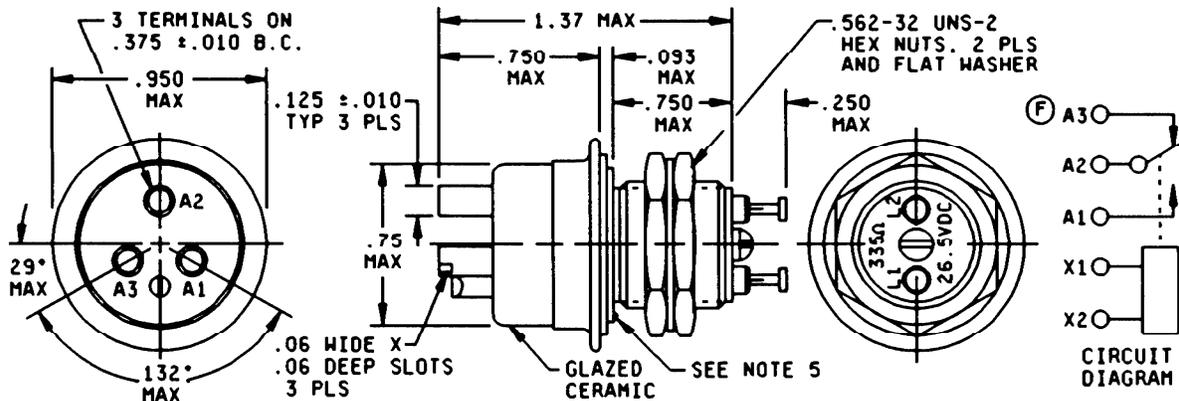
MILITARY SPECIFICATION SHEET

RELAYS, VACUUM, SPDT, 0.25 AMPERES, DC LOAD SWITCHING
 2.5 KILOVOLTS DC

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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-83725.



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).
4. Part or Identifying Number (PIN) shall be permanently marked on the relay envelop.
5. A .030 X .060 X .020 maximum rectangular index slot shall be used to accommodate the index pin.

Inches	mm
.020	0.51
.030	0.76
.060	1.52
.083	1.65
.125	2.36
.250	6.35
.520	13.21
.750	19.05
.950	24.13
1.37	34.8

F FIGURE 1. Relay outline and dimensions.

F denotes changes

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REQUIREMENTS:

CONTACT DATA:

Configuration: SPDT.

Arrangement: One form C.

Load ratings:

Resistive load switching:

- ⓕ 2.5 kV dc, 0.25 amperes.

Relay should be placed on ground side of load to prevent damage.

Contact resistance:

Rated life:

Before: .030 ohm, maximum.

During: .100 ohm, maximum.

After: .100 ohm, maximum.

Contact bounce: Not applicable.

- ⓕ Capacitance:

2 picofarads, maximum across open contacts.

2.5 picofarads, maximum between open contacts and ground.

COIL DATA: At +25°C.

Duty rating: Continuous.

Maximum voltage: See table I.

Nominal voltage: See table I.

Pickup voltage: See table I.

Dropout voltage: See table I.

Coil resistance: See table I.

- ⓕ Operate time: 8 milliseconds, maximum over the temperature range (or measured using 18.8 V dc coil voltage at 25°C).

- ⓕ Release time: 8 milliseconds, maximum over the temperature range (or measured using 18.8 V dc coil voltage at 25°C).

ELECTRICAL DATA:

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

Dielectric withstanding voltage:

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At atmospheric pressure:

Between all mated contacts in the open position: 5 kV dc.
 Between high voltage terminals and housing: 5 kV dc.
 Between coil and housing: 500 V rms, 60 Hz.

At reduced barometric pressure:

In accordance with MIL-STD-202, method 105, test condition C. Relays shall be mounted by normal mounting means. Points of application: Same as "at atmospheric pressure" except test voltage applied shall be 350 volts rms with all terminals grounded. Following the test, relays shall be examined for evidence of arcing, flashover, insulation breakdown, and damage.

ENVIRONMENTAL DATA:

Temperature range: -55°C to +125°C.

Vibration: MIL-STD-202, method 204, test condition C, 10 g's, 55 to 2,000 Hz.

Shock: MIL-STD-202, method 213, test condition A, 50 g's, 11 milliseconds half sine.

PHYSICAL:

Terminal strength: 5 pounds pull.

Dimensions and configuration: See figure 1.

Termination: Solder terminal.

Weight: 1 ounce, maximum.

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

ⓕ TABLE I. Operating characteristics. 1/

Dash number	Maximum voltage	Nominal voltage	Pickup voltage	Dropout voltage	Coil resistance	Pickup voltage over temperature range	Dropout voltage over temperature range
-001	32 V dc	26.5 V dc	14 V dc max	1.5 - 7 V dc	335 ohms ±10%	22 V dc	1 - 10 V dc
-002	18 V dc	15 V dc	8 V dc max	0.7 - 4.5 V dc	110 ohms ±10%	12.5 V dc	0.5 - 6 V dc

1/ At +25°C.

LIFE TEST REQUIREMENTS: Resistive load switching life.

	Voltage (kV dc)	Current (amperes)	Life (operations)
ⓕ	2.5	0.25	10 ⁵

NOTE: Load life switching is not accumulative, and each load life rating is to be considered a complete load life specification.

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QUALITY ASSURANCE:

Reliability:

Units are to be run 50,000 cycles mechanical, loads shall be 40 milliamperes at 12 V dc. No miss allowed.

ⓕ Seal:

Parts shall be stored for 20 days and retested for breakdown at 5 kV dc (for qualification only).

ⓕ Dielectric withstanding voltage (for group A testing):

Tests to be conducted at atmospheric pressure rating only.

Duration of application: 5 to 10 seconds at a 10 percent increase in the dielectric withstanding voltage.

PIN: M83725/4 (and a dash number from table I).

CONCLUDING MATERIAL

Review activity:
Air Force - 99

Preparing activity:
Air Force - 85

Agent:
DLA - ES

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