MILITARY SPECIFICATION SHEET

RELAYS, VACUUM, SPDT, LATCHING, 12 AMPERES DC OR 60 Hz RMS, 9 KILOVOLTS DC OR 60 Hz PEAK

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

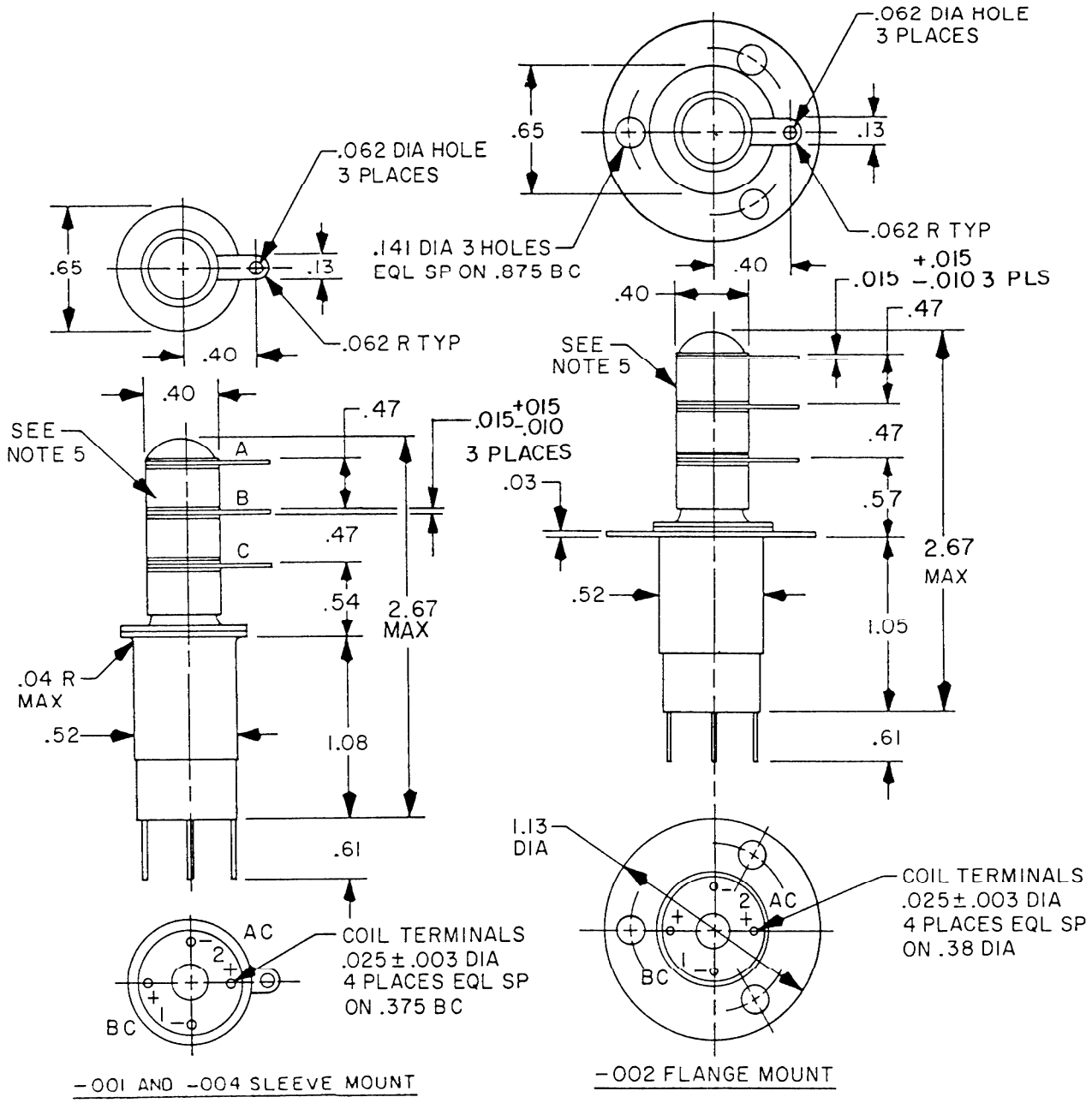
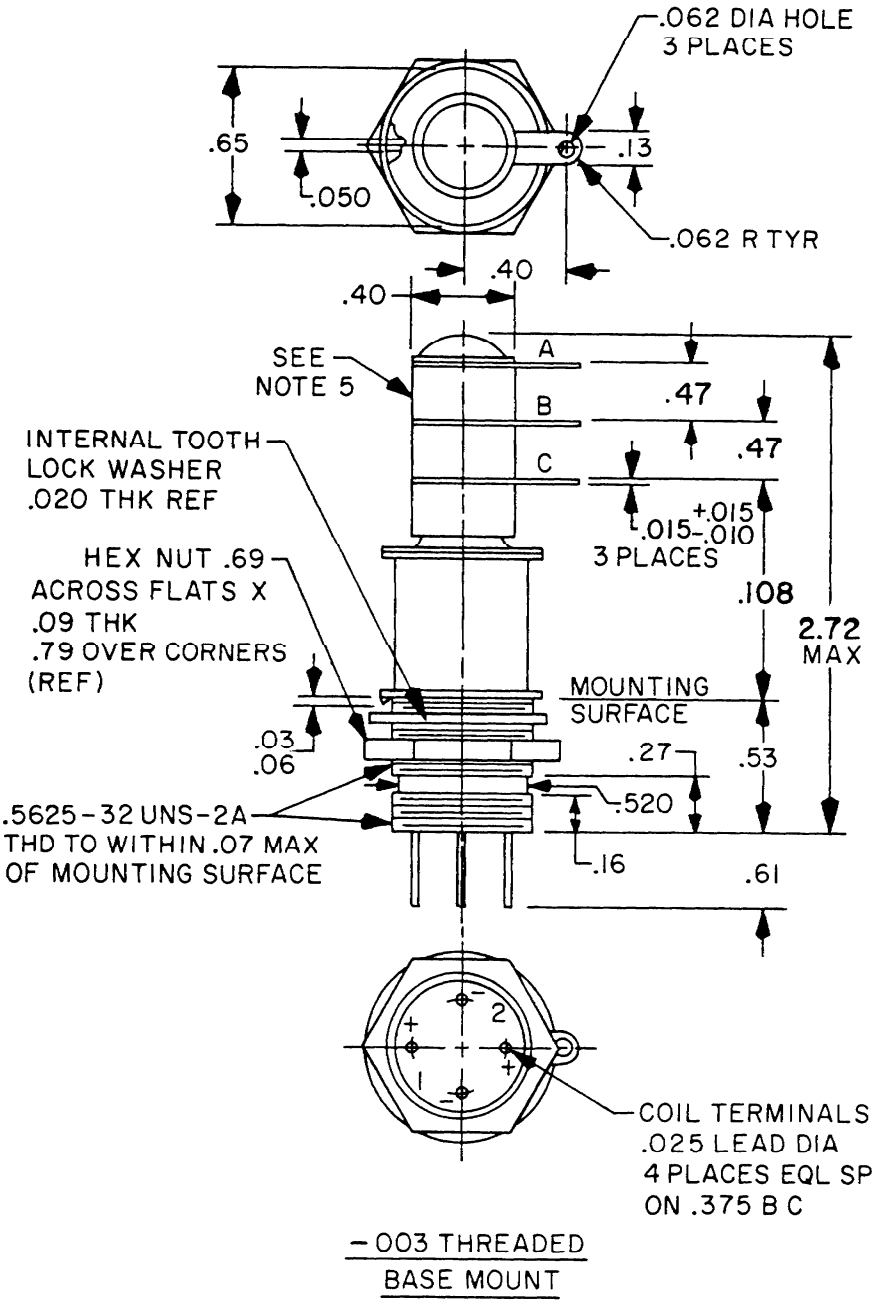


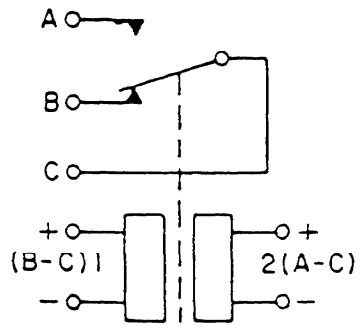
FIGURE 1. Relay, dimensions and configurations.

Ⓑ denotes changes

AMSC N/A
FSC 5945



-003 THREADED
BASE MOUNT



CIRCUIT DIAGRAM

Inches	mm
.003	0.08
.015	0.38
.024	0.61
.025	0.64
.03	0.76
.04	1.02
.050	1.27
.06	1.52
.062	1.57
.09	2.29
.13	3.30
.141	3.58
.16	4.06
.27	6.86
.375	9.53
.38	9.65
.40	10.2
.47	11.9
.520	13.2
.53	13.5
.54	13.7
.5625	14.29
.57	14.5
.61	15.5
.65	16.5
.69	17.5
.79	20.0
.875	22.2
1.05	26.7
1.08	27.4
1.13	28.7
2.63	66.8
2.67	67.8
2.72	69.1

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerances are ±.010 (0.25 mm) for three-place decimals and ±.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. (B)
5. Glazed finish on ceramic insulators is optional.
6. M83725/13-001 and -004 mounted by 0.52 inch (13.2 mm) diameter of body of coil housing or by 0.65 inch (16.5 mm) diameter lip in center of relay.

FIGURE 1. Relay, dimensions and configurations - Continued.

REQUIREMENTS:

Contact data:

Configuration: SPDT, latching, ground isolated.

Load ratings:

Resistive (carry only):
12 amperes dc or 60 Hz rms.
10 amperes rms, 2.5 MHz.
6 amperes rms, 16 MHz (-001, -002, and -003).
8 amperes rms, 16 MHz (-004).

Rated operating voltage:
9 kilovolts peak, 60 Hz or dc.
7 kilovolts peak, 2.5 MHz (-001, -002, and -003).
6 kilovolts peak, 16 MHz.
9 kilovolts peak, 2.5 MHz (-004).

Contact resistance:

Rated life:

Before: .020 ohm, maximum.

During: .100 ohm, maximum.

After: .100 ohm, maximum.

Capacitance:
1.7 picofarads, maximum across open contacts.
1.7 picofarads, maximum between open contacts and ground.

Coil data:

Duty rating: Intermittent duty.

Maximum voltage: 32 V dc.

Nominal voltage: 26.5 V dc. Minimum pulse length, 5 ms; maximum pulse length, 50 ms.

Transfer voltage:
22 V dc, maximum over temperature range (-001, -002, and -003).
16 V dc, maximum at 25°C.
19 V dc, maximum over 40°C to 71°C temperature range (-004).

Coil resistance: 47 ohms ±10 percent, each coil.

Operate time:
10 milliseconds, maximum over temperature range (-001, -002, and -003) (includes contact bounce time).
6 milliseconds, maximum over temperature range (-004) (includes contact bounce time).

Coil power: 1 watt average, each coil.

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: 60 Hz.

Between all mated contacts in the open position: 9 kV peak.

Between high voltage terminals and housing: 9 kV peak.

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

Ground isolated: Ground isolated relays have operating elements insulated from the ground plane to provide absolute voltage isolation between the frame and the high voltage contacts.

Environmental data:

Temperature range: -55°C to +125°C.

Vibration: MIL-STD-202, method 204, test condition C (10-55 Hz, .06 inch DA/55-2000 Hz, 10 g).

Shock: MIL-STD-202, method 213, test condition J, 30 g, 11 milliseconds, half sine.

Physical:

Terminal strength: 5 pounds pull.

Dimensions and configuration: See figure 1.

Termination: Solder terminal.

Weight: 1 ounce, maximum.

Life test requirements:

Mechanical cycling: 1,000,000 cycles. Two sample units (cycling rate, 36,000 per hour maximum; contact current shall not exceed 10 milliamperes).

Quality assurance:

Dielectric withstanding voltage:

Tests to be conducted at atmospheric pressure rating only.

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

Part number: See table I.

TABLE I. Part number and characteristics.

Military part number	Mount
M83725/13-001	Sleeve
M83725/13-002	Flange
M83725/13-003	Threaded base
M83725/13-004	Sleeve

Custodian:
Air Force - 85

Review activities:
Air Force - 99
DLA - ES

Preparing activity:
Air Force - 85

Agent:
DLA - ES

(Project 5945-F644-7)