

MILITARY SPECIFICATION SHEET

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

This specification is approved for use within 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.

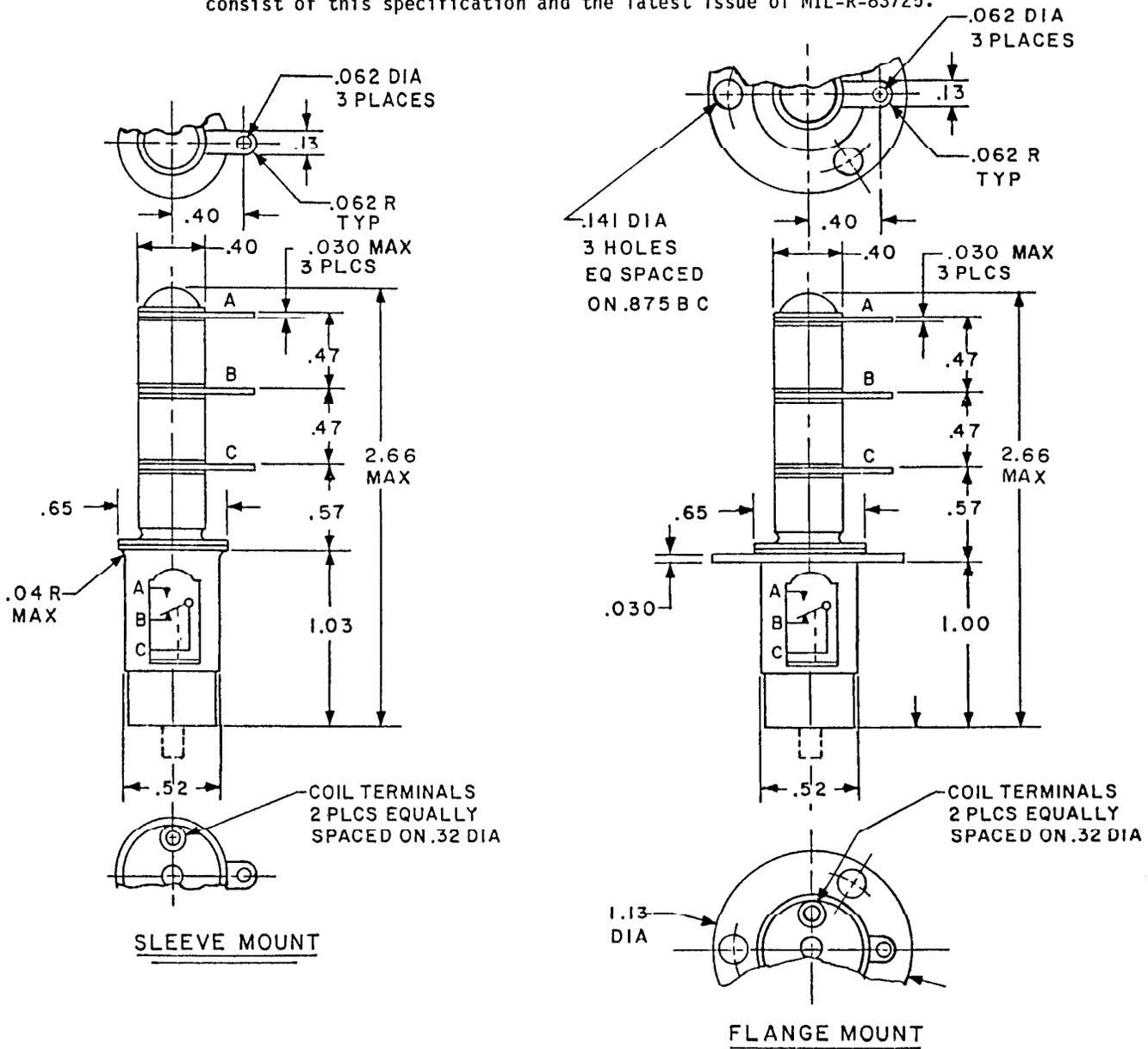
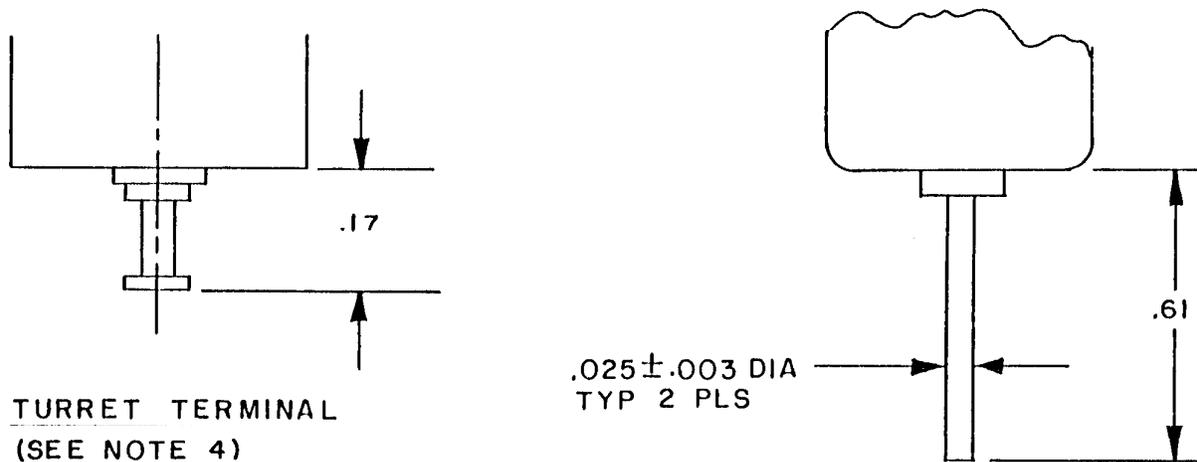


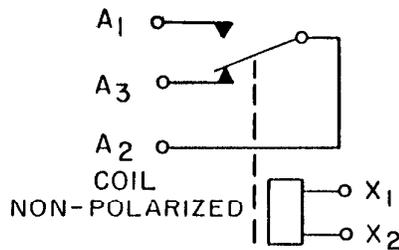
FIGURE 1. Relay, dimensions and configurations.

(R) denotes changes



TURRET TERMINAL
(SEE NOTE 4)

WIRE LEAD



CIRCUIT DIAGRAM

| Inches | mm | Inches | mm | Inches | mm |
|--------|------|--------|------|--------|-------|
| .003 | 0.08 | .17 | 4.3 | .57 | 14.5 |
| .015 | 0.38 | .32 | 8.1 | .61 | 15.5 |
| .025 | 0.64 | .40 | 10.2 | .65 | 16.5 |
| .030 | 0.76 | .47 | 11.9 | .875 | 22.22 |
| .04 | 1.0 | .52 | 13.2 | 1.00 | 25.4 |
| .062 | 1.57 | .54 | 13.7 | 1.03 | 26.2 |
| .13 | 3.3 | | | 1.13 | 28.7 |
| .141 | 3.58 | | | 2.59 | 65.8 |
| | | | | 2.66 | 67.6 |

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 (0.5 mm) for two place decimals.
4. Shape of coil lug (solder) terminals optional, however they must accommodate two no. 22 AWG wires.
5. Glazing of ceramic insulator is option.
6. MS3725/16-001, -002, -005, and -006 mounted by .52 inch (13.2 mm) diameter of body of coil housing or by .65 inch (16.5 mm) diameter lip in center of relay.

FIGURE 1. Relay, dimensions and configurations - Continued.

REQUIREMENTS:

CONTACT DATA:

Configuration: SPDT, 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.

Rated operating voltage:

9 kilovolts peak, 60 Hz or dc.

7 kilovolts peak, 2.5 MHz.

6 kilovolts peak, 16 MHz.

Contact resistance:

Rated life:

Before: .020 ohm, maximum.

During: .100 ohm, maximum.

After: .100 ohm, maximum.

Contact bounce: Not applicable.

Capacitance:

1.6 picofarads, maximum across open contacts.

1.6 picofarads, maximum between open contacts and ground.

COIL DATA: (See table I.)

Duty rating: Continuous.

Operate time: 10 milliseconds with nominal coil voltage.

Release time: 10 milliseconds from nominal coil voltage.

(B) TABLE I. Operating characteristics and dash numbers.

| Dash number | Coil data | | Coil resis- tance ohms | At 25°C | | | Over temp. range | | | Mounting | Terminal type |
|-------------|-------------------------|-------------------|---------------------------------|-----------------------------|---------------------------|------------------------------|-----------------------------|---------------------------|------------------------------|----------|------------------|
| | Nominal (V dc) 1/ | Maximum (V dc) | | Pickup voltage (V dc) | Hold voltage (V dc) | Dropout voltage (V dc) | Pickup voltage (V dc) | Hold voltage (V dc) | Dropout voltage (V dc) | | |
| 001 | 12 | 16 | 43 to 77 | 8.0 | 5.0 | 0.5 | 11 | 7.0 | 0.3 | Sleeve | Turret |
| 002 | 26.5 | 32 | 290 ±10% | 16 | 10 | 1.0 | 22 | 14 | 0.7 | " | " |
| 003 | 12 | 16 | 43 to 77 | 8.0 | 5.0 | 0.5 | 11 | 7.0 | 0.3 | Flange | " |
| 004 | 26.5 | 32 | 290 ±10% | 16 | 10 | 1.0 | 22 | 14 | 0.7 | " | " |
| 005 | 12 | 16 | 43 to 77 | 8.0 | 5.0 | 0.5 | 11 | 7.0 | 0.3 | Sleeve | Wirelead |
| 006 | 26.5 | 32 | 290 ±10% | 16 | 10 | 1.0 | 22 | 14 | 0.7 | " | " |
| 007 | 12 | 16 | 43 to 77 | 8.0 | 5.0 | 0.5 | 11 | 7.0 | 0.3 | Flange | " |
| 008 | 26.5 | 32 | 290 ±10% | 16 | 10 | 1.0 | 22 | 14 | 0.7 | " | " |

1/ CAUTION: Use of any coil voltage less than nominal voltage will compromise the operation of the relay.

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 to 55 Hz, .06 inch DA/55-2000 Hz, 10 g's).

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

PHYSICAL DATA:

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 to 10 seconds at a 10-percent increase in the dielectric withstanding voltage.

PART NUMBER: M83725/16- (dash number from table I).

Review activities:
Air Force - 99
DLA - ES

Preparing activity:
Air Force - 85

Agent:
DLA - ES

(Project 5945-F657)