

INCH-POUND

MIL-R-5757/103E
1 February 2002
SUPERSEDING
MIL-R-5757/103D
14 December 1984

DETAIL SPECIFICATION SHEET

RELAYS, ELECTRICAL, HERMETICALLY SEALED
SPDT, LOW LEVEL TO 0.25 AMPERE

Inactive for new design after 14 December 1984.
No superseding specification.

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

The requirements for acquiring the relay described herein shall
consist of this specification and the latest issue of MIL-R-5757.

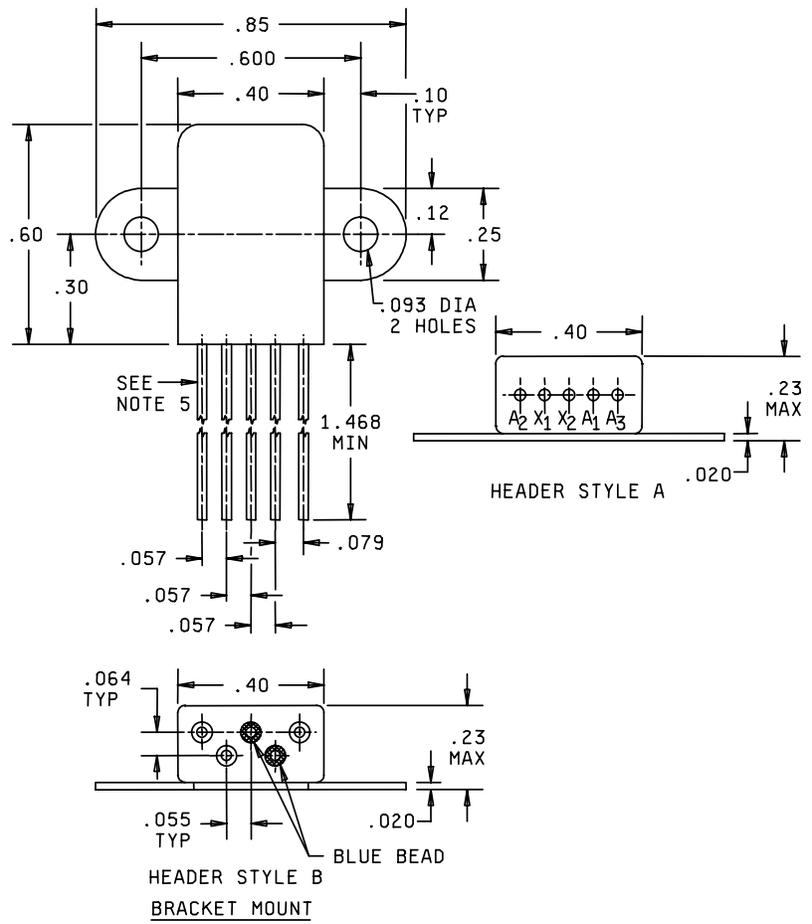
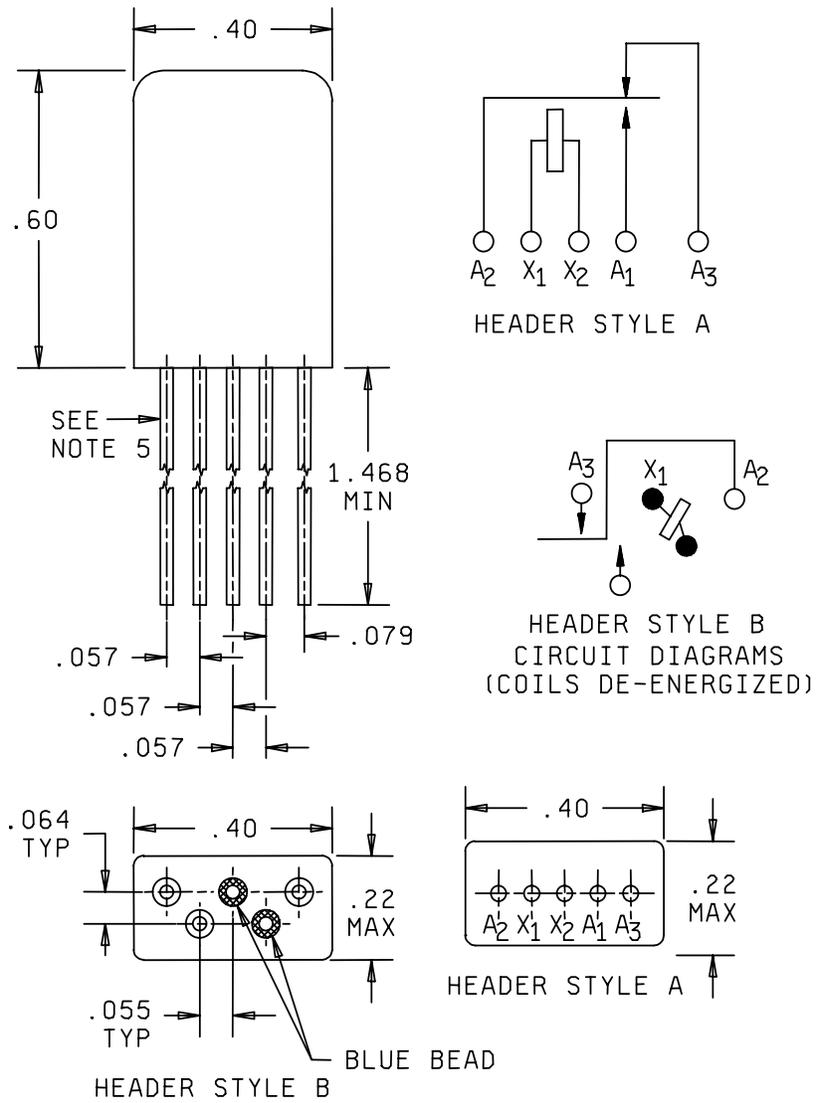


FIGURE 1. Dimensions and configuration.



NOTES:

1. Dimensions are in inches.
2. Unless otherwise specified, tolerances are $\pm .015$ (0.38 mm) for two place decimals and $\pm .010$ (0.25 mm) for three place decimals.
3. Metric equivalents are given for general information only.
4. Terminal numbers need not appear on the relay header provided there is affixed to the relay a suitable legible circuit diagram that identifies each terminal location specified.
5. Diameter of header style A leads is $.020 \pm .001$ (0.51 ± 0.03 mm). Diameter of header style B leads is $.025 \pm .002$ (0.64 ± 0.05 mm).

FIGURE 1. Dimensions and configuration - Continued.

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REQUIREMENTS:

CONTACT DATA:

Configuration: SPDT.

Arrangement: 1 form C.

Load ratings:

High level:

Resistive: 0.25 ampere at 28 volts (ac or dc).

Low level: 10 microamperes at 10 millivolts.

Intermediate current: Not applicable.

Contact resistance (Measurement shall be made 1.0 inch from header.):

Initial: 75 milliohms at 5.0 milliamperes - 6 volts maximum.

High level:

During life: 1.0 ohm maximum at .25 ampere - 28 volts.

After life: 1.0 ohm maximum at .25 ampere - 28 volts maximum.

Low level:

During life: 100 ohms maximum at 10 microamperes - 10 millivolts.

After life: 1 ohm maximum at 5 milliamperes - 6 volts maximum.

Contact bounce: Included in operate and release time measurement.

Overload: Two times rated current.

COIL DATA:

Duty rating: Continuous.

Maximum voltage: See table I.

Rated voltage: See table I.

Pick-up-voltage: See table I.

Drop-out voltage: See table I.

Operate and release time: 4 milliseconds maximum (including bounce) at 25°C and rated voltage.

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ELECTRICAL DATA:

Insulation resistance: 1,000 megohms at 25°C, 500 V dc.
100 megohms at 125°C, 500 V dc.

Dielectric withstanding voltage:

Sea level: 500 ±10 V rms (60 Hz) between all mutually insulated points,
except 350 ±10 V rms across open contacts.

Altitude: 350 ±10 V rms between terminals.

ENVIRONMENTAL DATA:

Temperature range: Symbol B (-65°C to 125°C).

Vibration: Symbol 3 (15G, 10 to 2,000 Hz).

Shock: 30G, 11 ±1 milliseconds, (test condition J, method 213, MIL-STD-202). 100 microseconds maximum chatter.

Resistance to soldering heat: Applicable.

Acceleration: Applicable, except at the 10G level.

Salt spray: In accordance with method 101 of MIL-STD-202.

Internal moisture: Applicable.

PHYSICAL:

Terminal strength: 3 ± 0.3 pounds pull.

Seal (Sealing process may be by soldering, brazing, or welding.): 1×10^{-8} atm cm³/s maximum leakage rate.

Dimensions and configuration: See figure 1.

Termination: Wire lead.

Weight: See table I.

LIFE TEST REQUIREMENTS:

Contact life:

High level: 1 million cycles at .25 ampere, 28 volts (ac or dc).

Low level: 1 million cycles at 10 microamperes, 10 millivolts (ac or dc), with no misses.

Coil life: Not applicable.

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Part number: M5757/103- (dash number from table I).

TABLE I. Dash number and characteristics. 1/

Dash number 2/	Coil voltage V dc		Mounting configuration	Pick-up voltage (max V dc at 25°C)	Drop-out voltage (V dc at 25°C)	Coil resistance (Ohms ±10 at 25°C)	Weight (max ounces)
	Rated	Max					
001	12	15	No mount	7	5.5 to 0.8	500	0.15
002	12	15	Bracket mount	7	5.5 to 0.8	500	0.18
003	16	21	No mount	10	8.2 to 1.0	1,000	0.15
004	16	21	Bracket mount	10	8.2 to 1.0	1,000	0.18
005	26.5	32	No mount	14	10 to 1.5	2,000	0.15
006	26.5	32	Bracket mount	14	10 to 1.5	2,000	0.18

- 1/ Each relay possesses high-level and low-level capabilities. Relays tested to high-level characteristics are not recommended for subsequent use in low-level applications.
- 2/ Original equipment manufacturers should be aware that these dash numbers are produced in either header style, depending upon suppliers, indicated in figure one.

TABLE II. Qualification inspection and sample size.

Single submission	Dash no.	Group submission
12 units plus 1 open unit qualification inspection as applicable	005	12 units plus 1 open unit qualification inspection as applicable
	004	2 units qualification, group 1, also shock, vibration, acceleration, terminal strength, seal and resistance to soldering heat
	001	Qualification inspection group 1

Conformance inspection, Periodic inspection: Group C tests not applicable.

Custodians:
 Army - CR
 Navy - EC
 Air Force - 11
 DLA - CC

Preparing activity:
 DLA - CC
 (Project 5945-1333)

Review activities:
 Air Force - 99
 Navy - AS, MC, OS, SH