

INCH-POUND

MIL-R-5757/7F
30 June 2003
SUPERSEDING
MIL-R-5757/7E
6 March 1992

MILITARY SPECIFICATION SHEET

RELAYS, ELECTROMAGNETIC, HERMETICALLY SEALED,
4PDT, LOW LEVEL TO 2 AMPERES

INACTIVE FOR NEW DESIGN AFTER 18 FEBRUARY
1986. FOR NEW DESIGNS USE MIL-PRF-39016/14.

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

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

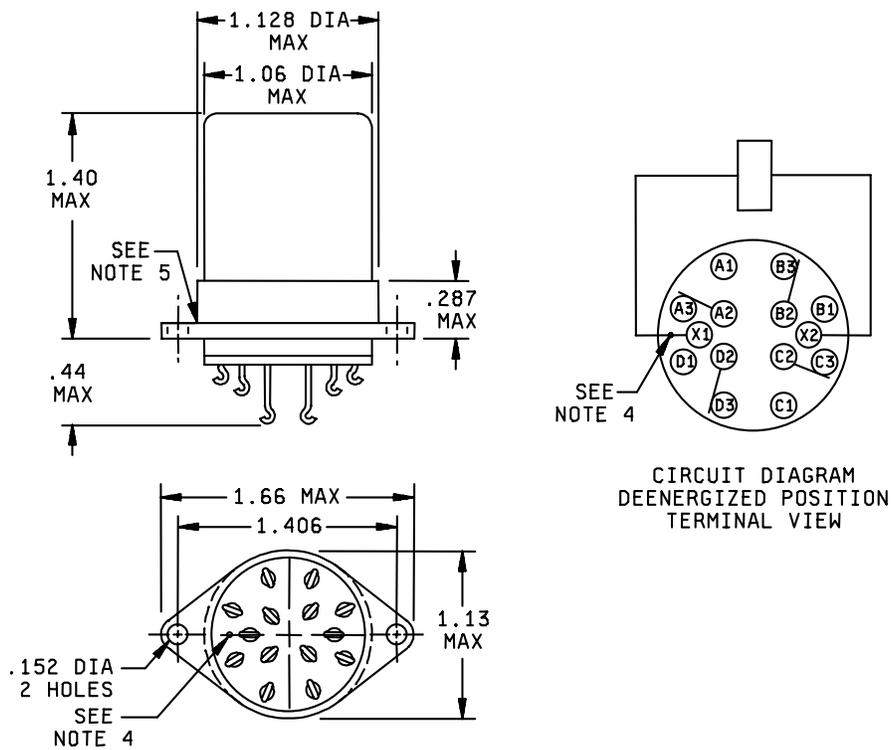


FIGURE 1. Relay - solder lug configuration (M5757/7-001).

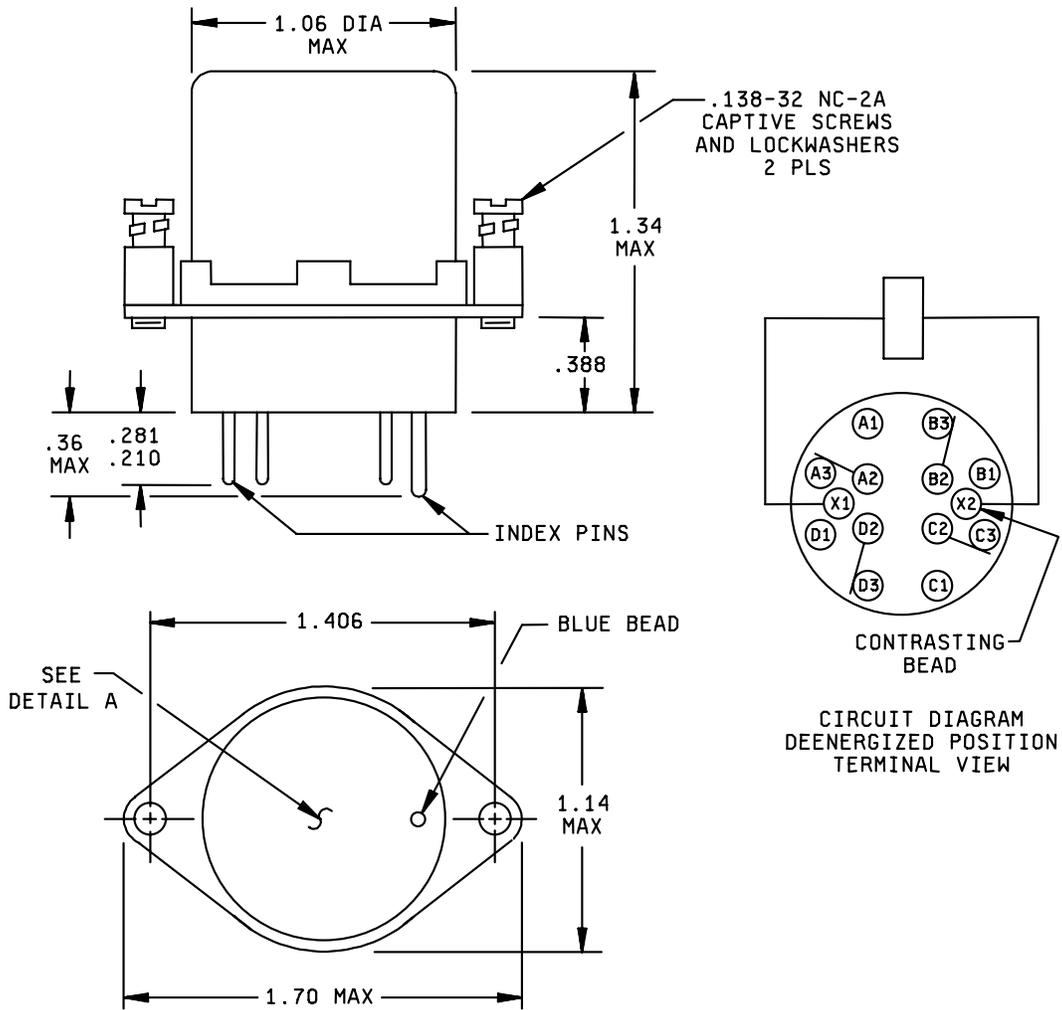
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Inches	mm
.152	3.86
.287	7.29
.44	11.2
1.06	26.9
1.128	28.65
1.13	28.7
1.40	35.6
1.406	35.71
1.66	42.16

NOTES:

1. Dimensions are in inches.
2. Unless otherwise specified, tolerance is ± 0.010 (0.25 mm).
3. Metric equivalents are given for general information only.
4. A colored line or dot shall be placed in the position shown, or optionally, the adjacent terminal in a clockwise direction around the outermost terminal circle, terminal number A3, shall have a contrasting bead.
5. Mounting screw head clearance shall be provided so that the relay may be mounted using a round head machine screw having .250 (6.35 mm) nominal head diameter. The mounting surface shall be flat with a minimum .276 (7.01 mm) diameter, and concentric with the mounting hole.

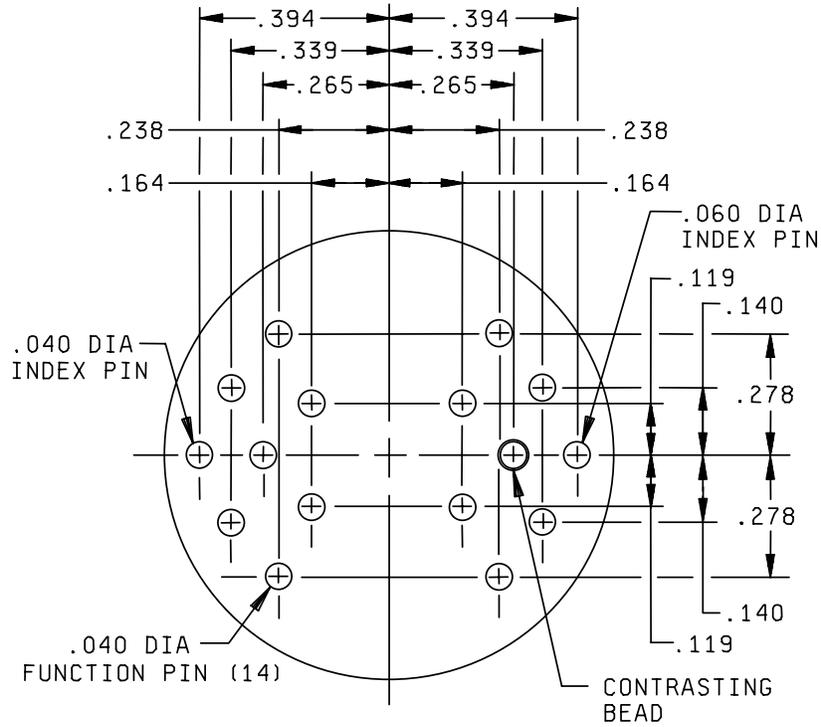
FIGURE 1. Relay - solder lug configuration (M5757/7-001) - Continued.



Inches	mm	Inches	mm
.152	3.86	1.14	28.96
.287	7.29	1.40	35.6
.44	11.2	1.406	35.71
1.06	26.9	1.66	41.2
1.128	28.65	1.70	43.18

FIGURE 2. Relay - socket pin configuration (M5757/7-003).

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DETAIL A

Inches	mm	Inches	mm	Inches	mm	Inches	mm
.040	1.02	.164	4.17	.281	7.14	1.06	26.9
.060	1.52	.203	5.16	.339	8.61	1.14	29.0
.085	2.16	.210	5.33	.357	9.07	1.34	34.0
.119	3.02	.238	6.05	.36	9.1	1.406	35.71
.138	3.51	.265	6.73	.388	9.86	1.69	42.9
.140	3.56	.278	7.06	.394	10.01		

NOTES:

1. Dimensions are in inches
2. Unless otherwise specified, tolerance is ± 0.010 (0.25 mm).
3. Metric equivalents are given for general information only.
4. All active electrical terminals shall be gold plated 0.00005 (50 microinches) minimum. One system for gold plating that may be used is ASTM B488, type 3, class 1.25 with a nickel underplate of 50 to 150 microinches thick. Gold plating of index pins is optional. The gold plating system shall enable the product to meet the performance requirements of this specification and shall be approved by the qualifying activity.

FIGURE 2. Relay - socket pin configuration (M5757/7-003) - Continued.

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REQUIREMENTS:

Contact data:

	High level characteristics (M5757/7-001)	Low level characteristics (M5757/7-003)
Configuration:	4PDT	4PDT
Arrangement:	4 form C	4 form C
Load ratings (relay case grounded):		
Resistive:	2 amperes at 28 V dc	30 microamperes at 30 millivolts, 1000 Hz
Minimum current (resistive loads only):	2 amperes at 28 V dc 0.100 ampere at 28 V dc 0.500 ampere at 28 V dc	Not applicable

Contact resistance or voltage drop:

Rated life:		
Before:	.05 ohm maximum	.05 ohm maximum
During:	10 percent of open circuit voltage maximum	100 ohms maximum
After:	.10 ohm maximum	.15 ohm maximum
Minimum current:		
Before:	.05 ohm maximum	Not applicable
During:	3 ohms maximum	
After:	3 ohms maximum	
Contact bounce:	1 millisecond (ms) maximum	5 ms maximum
Overload:		
Resistive:	Two times rated current	Not applicable

Coil data:

Duty rating: continuous.

Maximum voltage: 32 V dc.

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Nominal voltage: 26.5 V dc.

Pickup voltage: 18 V dc maximum over temperature range.

Dropout voltage: 14 V dc maximum over temperature range, 1.5 V dc minimum.

Coil resistance:

-001: 225 ohms minimum, 385 ohms maximum at +25°C.

-003: 225 ohms minimum, 385 ohms maximum at +25°C.

Operate time: 15 ms maximum.

Release time: 10 ms maximum.

Electrical data:

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

Dielectric withstanding voltage:

	Sea level V rms (60 Hz)	Altitude V rms (60 Hz)
Between case, frame or enclosure, and all contacts in the energized and deenergized positions: -----	1,000	350 All terminals to case
Between case, frame or enclosure, and coil: -----	1,000	
Between all contacts and coil: -----	1,000	
Between open contacts in the energized and deenergized positions: -----	500	
Between contact poles: -----	1,000	

Environmental data:

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

Vibration: Symbol 3 (15 g's, 10 to 2,000 Hz).

Acceleration: Applicable.

Shock: Symbol 3 (100 g's).

Physical:

Terminal strength: 5 ±0.5 pounds pull.

Sealed by welding: Optional.

Dimensions and configuration: See figures 1 and 2.

Terminations: See figures 1 and 2.

Weight: 0.2 pound maximum.

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Life test requirements:

High level (applicable to M5757/7-001): 100,000 cycles at rated load.

Low level: (applicable to M5757/7-003): 100,000 cycles at rated load.

Minimum current: Level II, 50,000 cycles.

Verification:

Periodic inspection: Groups B and C inspections are not applicable.

Group A.

a. Subgroup 1: Run-in (applicable to -003 low level relays only). This subgroup may be waived at the discretion of the qualifying activity if fully tested MIL-PRF-39016/6 relays are used internally.

b. Subgroup 2: 100 percent.

c. Dielectric withstanding voltage:

(1) Tests to be conducted at sea level rating only.

(2) Duration of application: 5-10 seconds at a 10 percent increase in the dielectric strength voltage.

Qualification: See table I or II as applicable.

TABLE I. Qualification inspection and sample size.

Part or Identifying Number (PIN) M5757/7	Number of sample units
-001	16 units plus 1 open unit. Qualification inspection as applicable.
-003	12 units plus 1 open unit. Qualification inspection as applicable.

TABLE II. Extension of qualification and sample size.

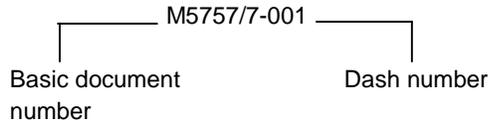
PIN M5757/7		Test	Number of sample units
Qualified	Extension to		
-001	-003	Low level life	4
-001	-003	High level life	4
-003	-001	Minimum current	4
-003	-001	Visual and mechanical	1

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Qualification by similarity: If the relay case, frame, or enclosure contains integral electromagnetic relays (mounting means excepted) currently listed on the qualified products list of MIL-PRF-39016, reduced testing shall consist of subjecting four sample units to the shock and vibration requirements of this specification sheet. Post tests shall include insulation resistance, dielectric withstanding voltage and electrical characteristics, and seal. One unsealed unit shall be submitted to the qualifying activity.

PIN: Consists of the basic number of this specification sheet and a dash number.

Example:



Supersession data: See table III.

PIN ^{1/} M5757/7	Supersedes	
	FSCM	PIN
-001	81349	RY4LB1A3L01
	81349	RY4LB1B3L01
	81349	RY4LB2A3L01
	81349	RY4LB2B3L01
	81349	RY4LB3A3L01
	81349	RY4LB3B3L01
-003	80063	SM-C-415281

^{1/} PIN M5757/7-002, type designations RY4LB1C3L01, RY4LB2C3L01, and RY4LB3C3L01 are canceled without replacement.

Custodians:

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

Preparing activity:

DLA - CC

Review activities:

- Army - AT, AV, CR4, MI
- Navy - SH
- Air Force - 99

(Project 5945-1191-01)