

RELAYS, ELECTROMAGNETIC,  
3 AMPERES, 4 PDT, TYPE I

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

IDENTIFICATION OF PRODUCT

1.750 MAX

.250<sup>+</sup>.062<sub>-</sub>.000

SOLDER POTS TO ACCOMMODATE NO. 20 STRANDED WIRE

.112-40 NC 2A 3 STUDS

3 EACH REQ'D NUTS: .187 X .062 SPRING LOCKWASHER, NO.4 CORROSION RESIST FLAT WASHER, NO.4, .250 OD X .031 MATERIAL: STEEL FINISH: CORROSION RESISTANT PLATE

2.187 MAX

.625 ±.125

.250<sup>+</sup>.062<sub>-</sub>.000

24" MIN

POTTING COMPOUND TO CONFORM TO MIL-PRF-8516 EXCEPT 120°C

.112-40 NC 2A (3 STUDS)

LEAD WIRE 22 GA MIL-DTL-8777 PRINTED AT 6" INTERVALS PER CIRCUIT

1.500 MAX

1.000 ±.010

1.130 MAX

.500 ±.010

RED DOT FOR LOCATING TERMINALS

-1(SOLDER TERMINALS)

1.500 MAX

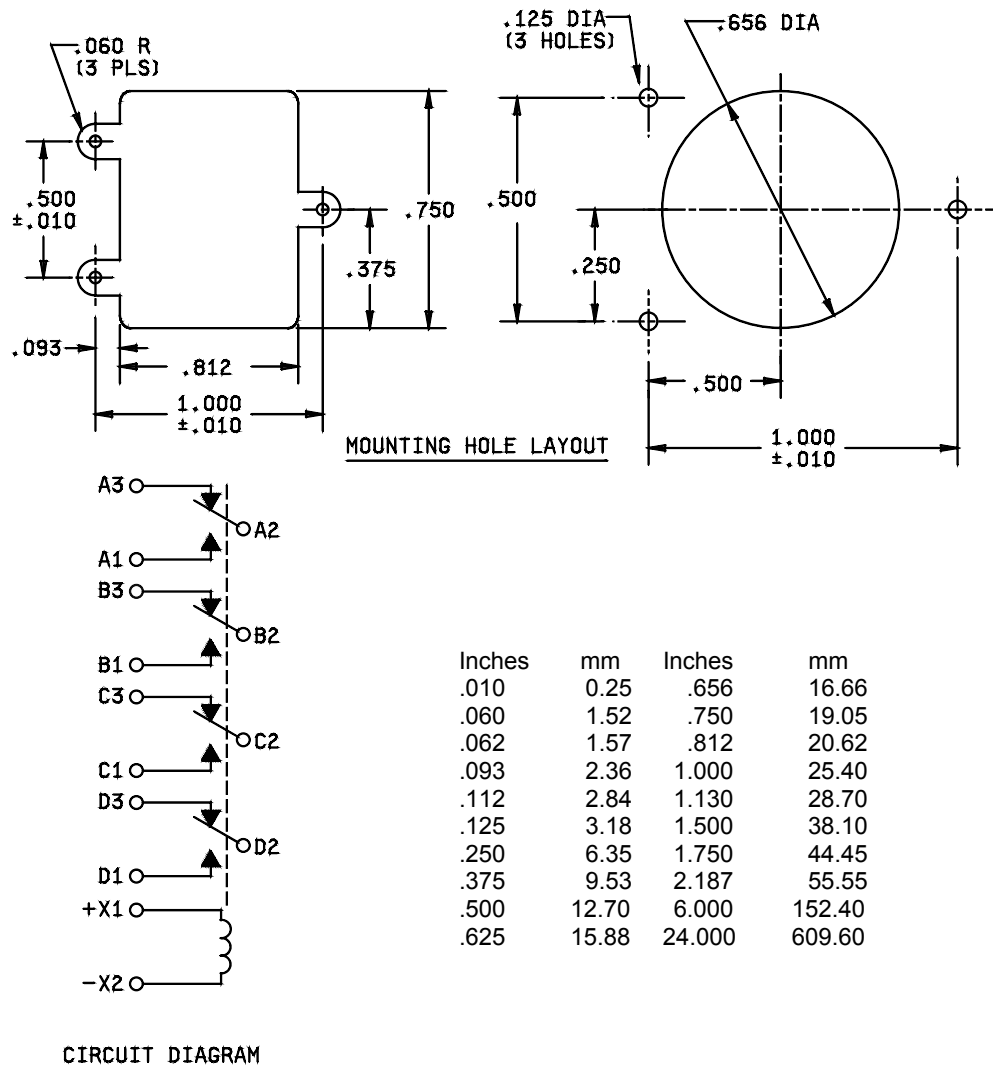
1.000 ±.010

1.130 MAX

.500 ±.010

-2(POTTED LEADS)

FSC 5945

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## NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Terminal numbers do not appear on the relay header. There shall be affixed to the relay a suitable legible circuit diagram that identifies each terminal location specified. Circuit diagram shown above is the terminal view.
4. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.
5. Referenced Government documents of the issue listed in that issue of the Department of Defense Index of Specifications and Standard (DoDISS) specified in the solicitation form a part of this specification to the extent specified herein.
6. For details see table I.
7. Unless otherwise specified, tolerance is  $\pm .010$  (0.25 mm).

FIGURE 1. Dimensions and configurations - Continued.

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REQUIREMENTS:

Dimensions and configuration: See figure 1.

Weight: -1 .25 pounds (113 grams).

-2 .50 pounds (227 grams).

Contact requirements:

Load ratings:

High level (relay case grounded).

Resistive: 3 amperes at 28 V dc, 115 V ac (400 Hz).

Inductive: 1.5 amperes at 28 V dc, 115 V ac (400 Hz).

Motor: 1.5 amperes at 28 V dc, 115 V ac (400 Hz).

Mixed loads: Applicable.

Coil requirements:

Nominal coil voltage: 28 V dc.

Pick up voltage: 18 V dc (over the temperature range).

Hold voltage: 7.0 V dc (over the temperature range).

Dropout voltage: 1.5 V dc (over the temperature range).

Coil current: 0.15 ampere maximum.

Electrical requirements:

Insulation resistance (minimum):

Initial: 100 megohms.

After life or environmental test: 50 megohms.

Dielectric strength:

	Sea level (V rms)		Altitude (V rms)	
	Initial	After life	80,000 feet	
			-1	-2
Coil to case:	1,000	1,000	250	500
All of the points:	1,250	1,000	250	500

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Environmental requirements:

Temperature range: -65°C to +120°C.

Shock (specified pulse): Applicable, MIL-STD-202, method 213, test condition A, 25 g's, 6 - 9 milliseconds. Contact chatter shall not exceed 10 microseconds maximum opening for closed contacts and 1 microsecond maximum closure for open contacts.

Vibration (sinusoidal): Applicable, MIL-STD-202, method 204, test condition A,  $\pm 10$  g's or .036 DA whichever is less from 5 to 500 Hz. Contact chatter shall not exceed 10 microseconds maximum opening for closed contacts and 1 microsecond maximum closure for open contacts.

Vibration (random): Applicable to qualification and group C inspection. Test in accordance with MIL-STD-202, method 214, test condition IG ( $0.4 \text{ g}^2/\text{Hz}$ , 50 to 2,000 Hz). Contact chatter shall not exceed 10 microseconds maximum for closed contacts and 1 microsecond maximum closure for open contacts.

Hermetically-sealed (potted) relay: Relays shall be tested as follows:

- a. Prior to installing a gasket on the relay header (if a gasket is used), the relay shall be totally immersed in a container of "tap" water. (The "tap" water as used here means ordinary drinking water that has not been altered in any way, such as by the addition of any other substance, distilling, etc.) The part of the relay closest to the surface of the water shall be a minimum of 1 inch (25.4 mm) below this surface.
- b. The container and water-covered relay shall then be placed in a vacuum chamber. The chamber shall be sealed. The chamber pressure shall be reduced from room ambient to 0.82 inch (80,000 feet)  $\pm 0.0$  inch - 0.2 inch of mercury within 5 minutes, and shall be maintained at this level for 30 minutes minimum. The chamber pressure shall be increased to room ambient within 1 minute, and shall be maintained at room ambient pressure for 30 minutes, minimum. The foregoing shall constitute one cycle. The relay shall remain fully immersed in the water during the cycle.
- c. Within a maximum of one-half hour after the cycle, each relay shall be removed from the water and dried by shaking, wiping, or blowing with contaminant-free air or gas, but not by any form of heating or baking.
- d. Within a maximum of one-half hour after drying, each relay shall be subjected to the DWV and IR tests.

Life test requirements 50, 000 cycles minimum.

Qualification by similarity: If the relay case, frame, or enclosure contains integral sealed electromagnetic relays (mounting means excepted) currently listed on the qualified products list of MIL-PRF-83536/5, 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 unpotted unit shall be submitted to the qualifying activity.

VERIFICATION:

Group A.

- a. Group A1: Run-in. This subgroup may be waived by the qualifying activity if fully tested sealed MIL-PRF-83536/5 relays are used internally.
- b. Group A2: 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.

Group A acceptance reports shall be submitted to the qualifying activity on a yearly basis in order to retain qualification for this detail specification sheet.

Group B and group C testing are not required. The manufacturer shall notify the qualifying activity in the event of any design or construction changes, and the qualifying activity may impose additional testing requirements as necessary.

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Part or identifying number: (PIN): MS25917-1 for solder terminals or MS25917-2 for potted leads.

NOTES

Referenced documents. In addition to MIL-PRF-6106, this document references the following:

MIL-DTL-8777  
MIL-PRF-83536/5  
MIL-PRF-8516  
MIL-STD-202

Changes from previous issue. Marginal notations are marked with vertical lines to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Custodian:  
Navy - AS  
Air Force - 11  
DLA - CC

Preparing activity:  
DLA - CC  
(Project 5945-1324)

NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using ASSIST Online database at <http://assist.daps.dla.mil>.