

REVISIONS			
LTR	DESCRIPTION	DATE	APPROVED
A	Changed manufacturer's eligibility	23 Mar 87	S. Searcy
B	Changes in accordance with NOR 5945-R007-00.	14 Mar 00	K. Cottongim
C	Validation and update.	17 Sep 03	K. Cottongim
D	Incorporate boilerplate updates. Remove Suggested Source of Supply. Inactivate document.	13 Jul 09	Michael A. Radecki

Notice of Inactivation for New Design

DSCC Drawing 84192 is inactivate for new design and is no longer used, except for replacement purposes.

CURRENT DESIGN ACTIVITY CAGE CODE 037Z3
 DEFENSE LOGISTICS AGENCY
 DEFENSE SUPPLY CENTER COLUMBUS
 COLUMBUS, OHIO 43218-3990

Prepared in accordance with ASME Y14.100

Suggested source drawing

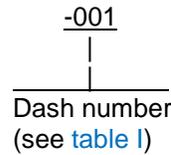
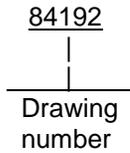
REV STATUS OF PAGES	REV	D	D	D	D	D	D	D	D	D	D	D						
	PAGES	1	2	3	4	5	6	7	8	9	10	11						

PMIC N/A	PREPARED BY Richard A. Yannitti	DESIGN ACTIVITY DEFENSE ELECTRONICS SUPPLY CENTER DAYTON, OH 45444-5000
Original date of drawing 19 August 1985	CHECKED BY James R. Martin	TITLE RELAYS, POWER, 100 AMPERES
	APPROVED BY Steven B. Searcy	
	SIZE A	CODE IDENT. NO. 14933
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1. SCOPE

1.1 Scope. This drawing describes the requirements for a hermetically sealed electromechanical relay supplied to type I requirements of MIL-PRF-6106, except as specified herein.

1.2 Part or Identifying Number (PIN). The complete PIN shall be as follows:



2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3 and 4 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents in sections 3 and 4 of this specification, whether or not they are listed.

2.2 Government documents.

2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-PRF-6106 - Relays, Electromagnetic, General Specification For.

DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-202 - Test Method Standard, Electronic and Electrical Component Parts.

(Copies of these documents are available online at <http://assist.daps.dla.mil/quicksearch/> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

3. REQUIREMENTS

3.1 Item requirements. The individual item requirements shall be in accordance with MIL-PRF-6106, and as specified herein.

3.2 Interface and physical dimensions. The interface and physical dimensions shall be as specified in MIL-PRF-6106, and herein (see [figure 1](#)).

3.3 Coil data and operational data. See [table II](#) and [table III](#).

3.3.1 Operate time. The operate time shall be 30 milliseconds maximum with rated coil voltage.

3.3.2 Release time. The release time shall be 30 milliseconds maximum from rated coil voltage (dc); 50 milliseconds maximum from rated coil voltage (ac).

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3.3.3 Contact bounce. The contact bounce shall be 5 milliseconds maximum.

3.3.3.1 Break bounce, normally open contacts only. Break bounce shall be .2 millisecond maximum.

3.3.4 Contact rating (amperes per pole).

3.3.4.1 Main contacts. See [table III](#).

3.3.4.2 Auxiliary contacts. Auxiliary contacts shall be 25 amperes at 28 V dc, or 115 V ac, 60/400 Hz, except configuration D, which is 10 amperes.

3.4 Physical requirements. Physical requirements of the relay shall be as specified herein (see [table I](#) and [figure 1](#)).

3.4.1 Dimensions and configuration. See [figure 1](#).

TABLE I. Mechanical and physical characteristics.

Dash number 84192-	Configuration	Weights (pounds, maximum)
001	A	1.60
002	A	1.60
003	B	1.60
004	B	1.60
005	C	1.75
006	D	1.50
007	A	1.60
008	C	1.75
009	B	1.60
010	D	1.50
011	A	1.60
012	B	1.60
013	B	1.60
014	C	1.75
015	D	1.50

TABLE II. Operating characteristics.

Dash number	Coil data									
	Rated				Max	Pickup voltage			Dropout voltage <u>1/</u>	Hold voltage <u>1/</u>
	Volts	Frequency (Hz)	Res. ±10% at 25°C	Amperes	Volts	Normal <u>1/</u>	High temp test	Cont current test		
-001 -003 -006	28 V dc	N/A	44.5	N/A	29 V dc	18.0 V dc	19.3 V dc	22.5 V dc	1.5 V dc	7.0 V dc
-002 -004 -005 -012	115 V ac	50	N/A	.200	124 V ac	95 V ac	100 V ac	105 V ac	5.0 V ac	30 V ac
-007 -008 -009 -010	28 V dc	N/A	44.5	N/A	30 V dc	18.0 V dc	19.3 V dc	22.5 V dc	1.5 V dc	7.0 V dc
-011 -013 -014 -015	115 V ac	400	N/A	.200	124 V ac	95 V ac	100 V ac	105 V ac	5.0 V ac	30 V ac

1/ Over the temperature range.

TABLE III. Rated contact load (amperes per pole) case grounded.

Type of load	Life operating cycles x 10 ³	28 V dc	115 V ac		115/200 V ac, wye or delta		440 V ac, 60 Hz, wye or delta
			400 Hz	60 Hz	400 Hz	60 Hz	
Resistive	50	100	100	50	100	50	50
Inductive	50	100	100	50	100	50	N/A
Motor	50	100	100 <u>1/</u>	50	100 <u>1/</u>	50	N/A

1/ Motor load inrush limited to 400 amperes.

3.5 Electrical characteristics.

3.5.1 Insulation resistance. Insulation resistance shall be 100 megohms at 500 V dc minimum.

3.5.2 Dielectric withstanding voltage.

Coil to case and across open contacts: 1,250 V rms.
All other points: 1,500 V rms.

3.5.3 Contact voltage drop. Contact voltage drop shall be 0.150 ohm maximum at rated voltage and current.

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3.6 Environmental characteristics.

3.6.1 Shock. In accordance with [MIL-STD-202](#), method 213, test condition C, except maximum g level shall be 50 g's.

3.6.2 Vibration. In accordance with [MIL-STD-202](#), method 204, test condition A.

3.6.3 Temperature range. See [table IV](#).

TABLE IV. Temperature range.

Dash number	Temperature Range	Dash number	Temperature range
-001	-55°C to +120°C	-009	-55°C to +100°C
-002	-55°C to +120°C	-010	-55°C to +100°C
-003	-55°C to +120°C	-011	-55°C to +85°C
-004	-55°C to +120°C	-012	-55°C to +100°C
-005	-55°C to +120°C	-013	-55°C to +85°C
-006	-55°C to +120°C	-014	-55°C to +85°C
-007	-55°C to +100°C	-015	-55°C to +85°C
-008	-55°C to +100°C		

3.7 Recycled, recovered, or environmentally preferable materials. Recycled, recovered, or environmentally preferable materials should be used to the maximum extent possible provided that the material meets or exceeds the operational and maintenance requirements, and promotes economically advantageous life cycle costs.

3.8 Certificate of compliance. A certificate of compliance shall be required from manufacturers requesting to be a suggested source of supply.

3.9 Conformance requirements. Relays furnished under this drawing shall have been subjected to, and passed all the requirements, tests, and inspections detailed herein.

3.9.1 Conformance inspection. Conformance inspection shall be in accordance with [MIL-PRF-6106](#) and [4.2](#) herein.

3.10 Marking. Marking shall be in accordance with [MIL-PRF-6106](#), except the PIN shall be in accordance with [1.2](#) herein. The "M6106" PIN shall not be used.

3.11 Workmanship. The relays shall be uniform in quality and free from any defects that will affect life, serviceability, or appearance.

4. VERIFICATION

4.1 Sampling and inspection. Sampling and inspection shall be in accordance with [MIL-PRF-6106](#).

4.2 Conformance inspection. Conformance inspection shall be in accordance with group A listing of [MIL-PRF-6106](#). Group A testing shall be performed on each inspection lot and manufacturers shall keep lot records for 3 years (minimum), monitor for compliance to the prescribed procedures, and observe that satisfactory manufacturing conditions and records on lots are maintained for these relays.

4.2.1 Group A inspection. Group A inspection shall consist of all tests specified in [MIL-PRF-6106](#) for type I relays.

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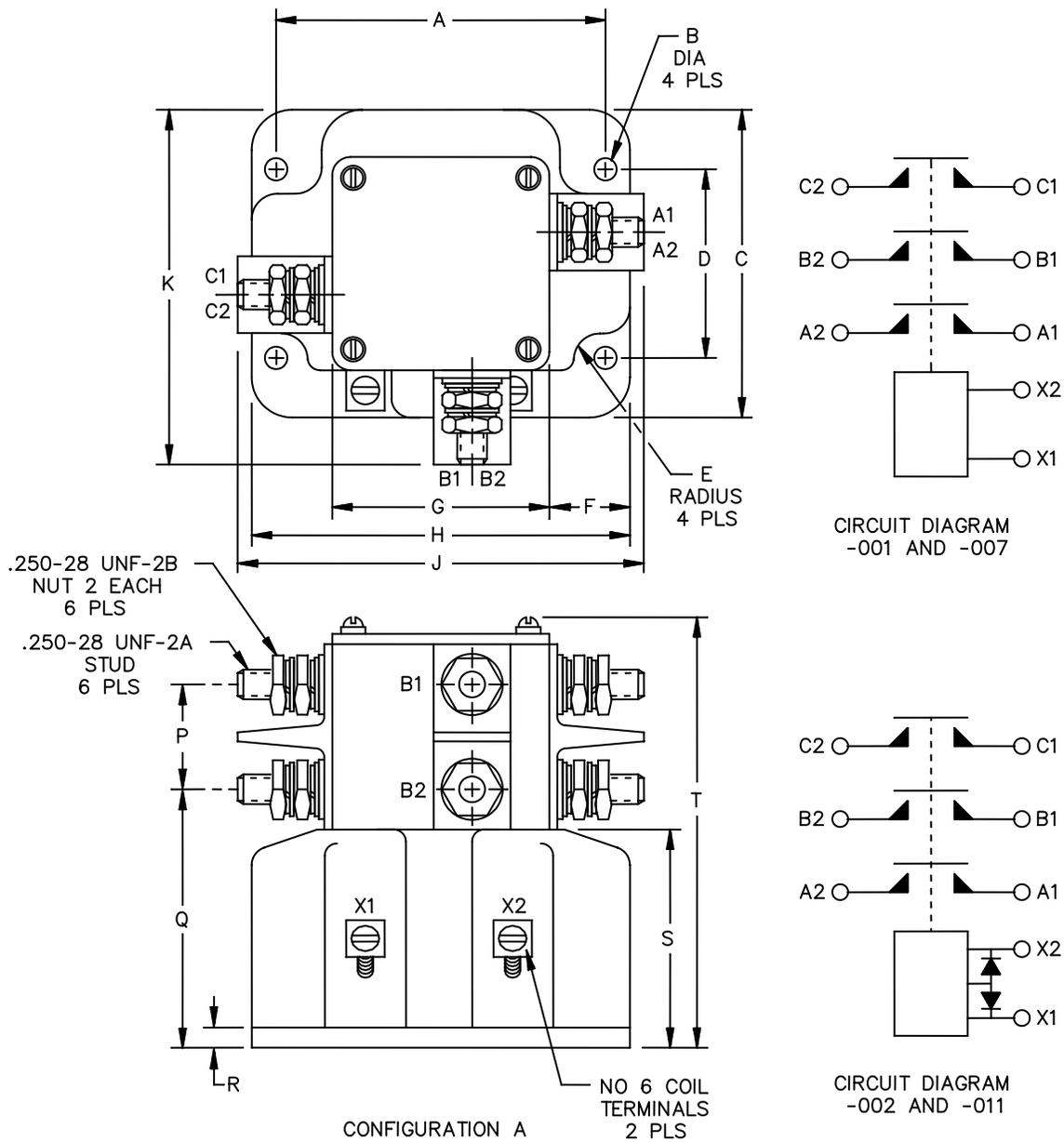
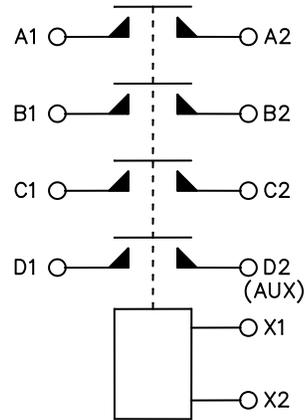
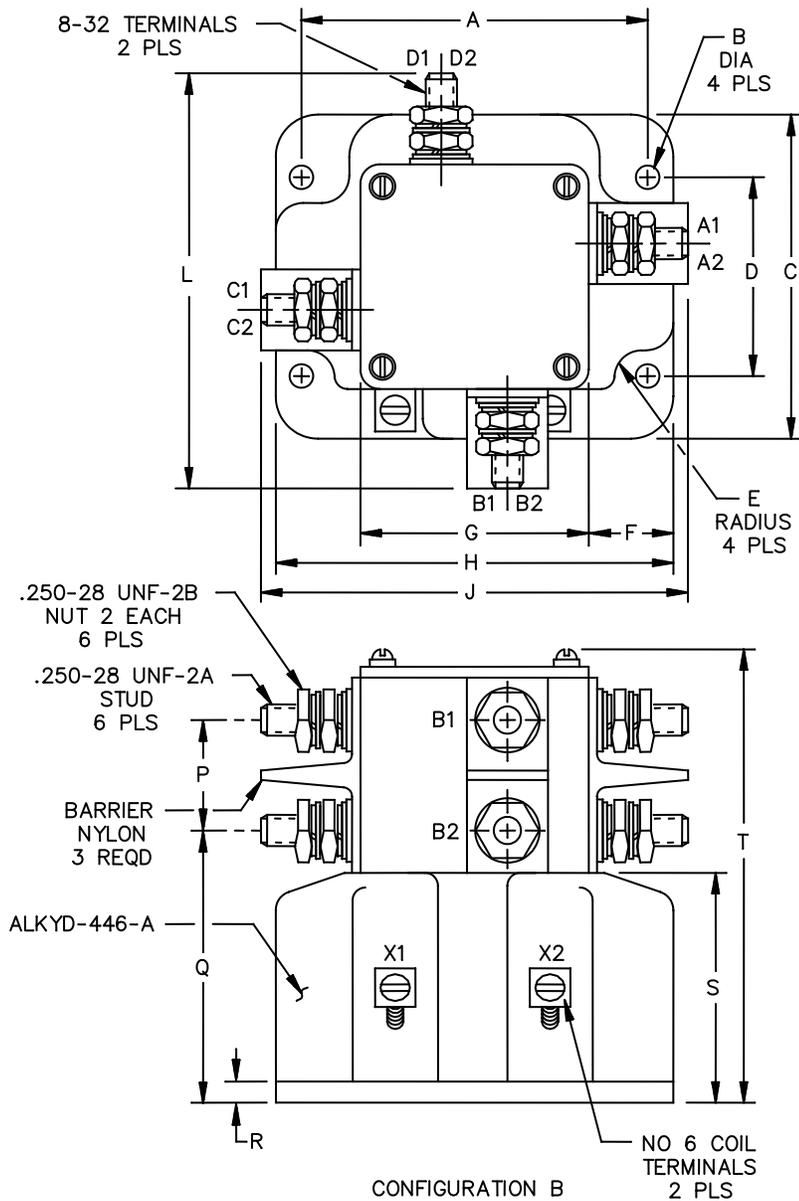
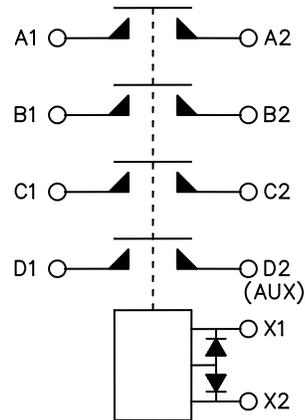


FIGURE 1. Dimensions and configuration.

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CIRCUIT DIAGRAM
-003 AND -009



CIRCUIT DIAGRAM
-004, -012, AND -013

FIGURE 1. Dimensions and configuration - Continued.

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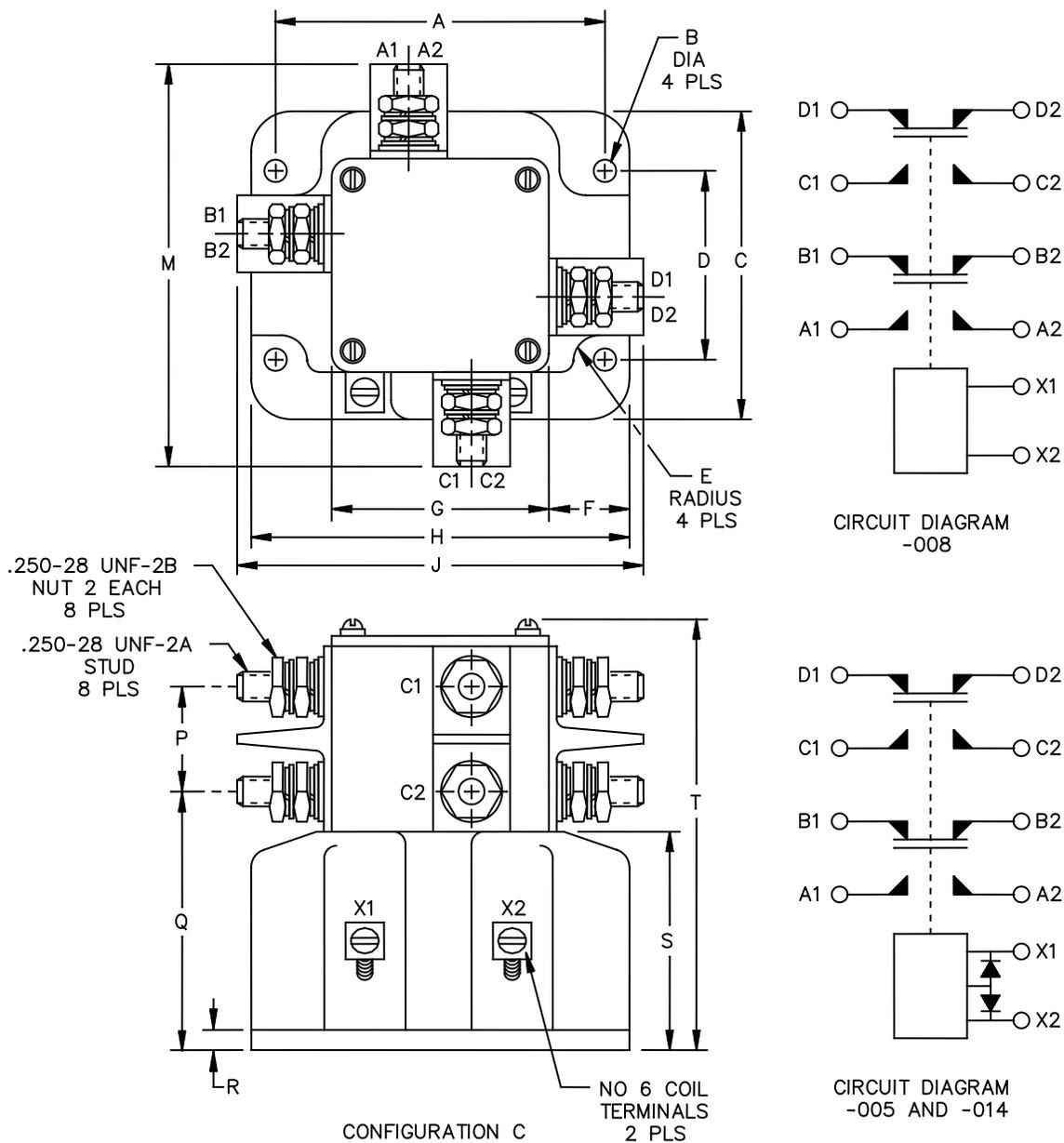


FIGURE 1. Dimensions and configuration - Continued.

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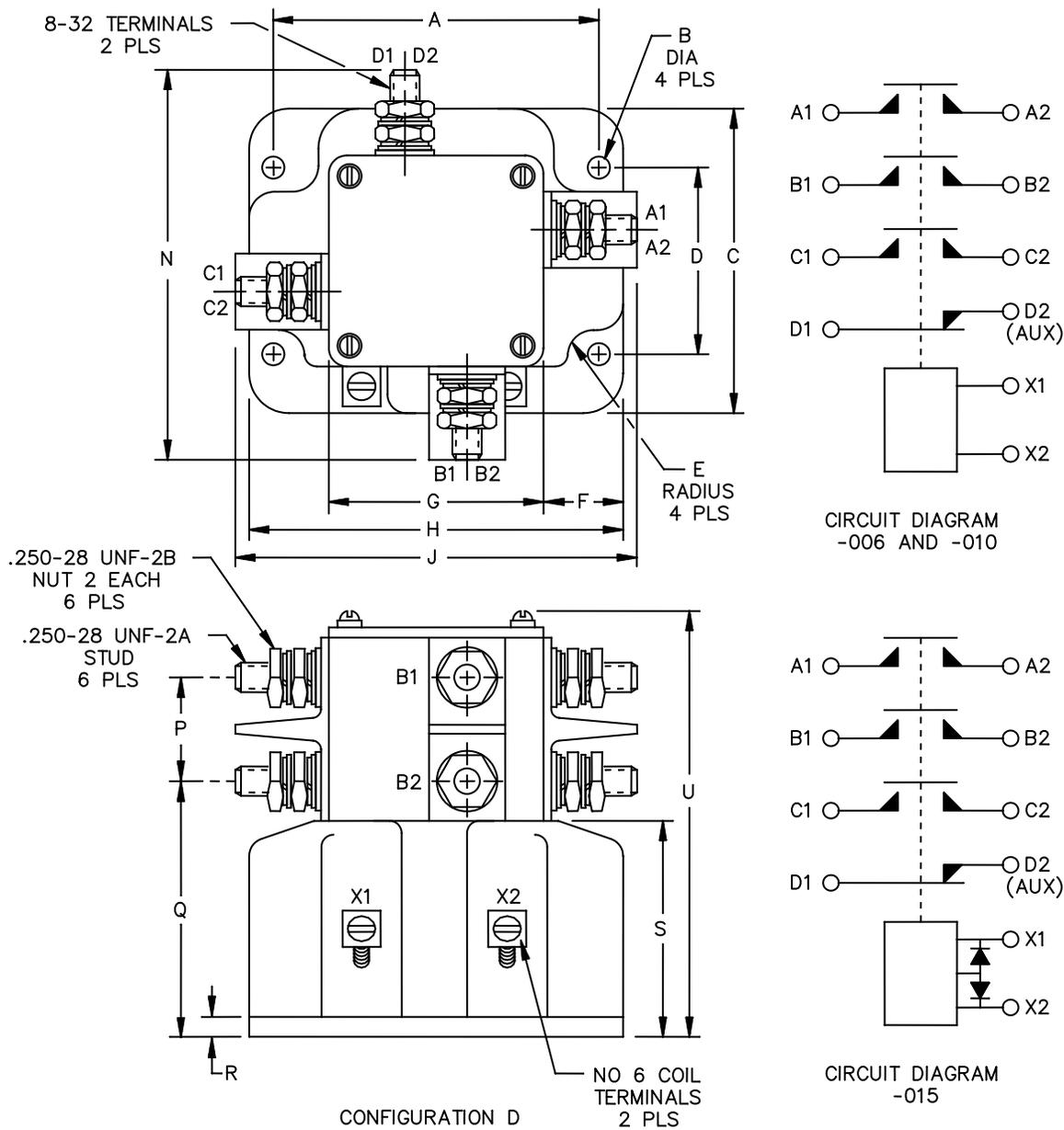


FIGURE 1. Dimensions and configuration - Continued.

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Ltr	Inches		mm	
	Min	Max	Min	Max
A	2.740	2.760	69.60	70.10
B	.208	.228	5.28	5.79
C	2.719	2.781	69.06	70.64
D	1.865	1.885	47.37	47.88
E	.296 R	---	7.52 R	---
F	.594	.656	15.09	16.71
G	1.969 SQ	2.031 SQ	50.01	51.59
H	3.219	3.281	81.76 SQ	83.34 SQ
J	---	3.625	---	92.07
K	---	3.300	---	83.82
L	---	3.500	---	88.90
M	---	3.625	---	92.07
N	---	3.280	---	83.31
P	.657	.719	16.69	18.26
Q	1.750	1.812	44.45	46.02
R	.094	.156	2.39	3.96
S	1.469	1.531	37.31	38.89
T	2.781	2.843	70.64	72.21
U	---	2.875	---	73.02

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is $\pm .031$ (0.79 mm).

FIGURE 1. Dimensions and configuration - Continued.

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5. PACKAGING

5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.3). When packaging of materiel is to be performed by DoD personnel, these personnel need to contact the responsible packaging activity to ascertain requisite packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activity within the Military Department or Defense Agency, or within the military service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

(This section contains information of a general or explanatory nature which may be helpful, but is not mandatory.)

6.1 Notes. Only definitions of the notes specified in MIL-PRF-6106 will apply to this drawing.

6.2 Intended use. Relays conforming to this drawing are intended for use when military specifications do not exist and qualified military devices that will perform the required function are not available for OEM application. This drawing is intended exclusively to prevent the proliferation of unnecessary duplicate specifications, drawings, and stock listings. When a military specification exists and the product covered by this drawing has been qualified for listing on QPL-6106, this drawing will become inactive for new design. The QPL-6106 product shall be the preferred item for all applications.

6.3 Ordering data. The contract or purchase order should specify the following:

- a. Complete PIN (see 1.2).
- b. Requirements for delivery of one copy of the conformance inspection data or certificate of compliance that parts have passed conformance inspection with each shipment of parts by the manufacturer.
- c. Requirements for packaging and packing.

6.4 Replaceability. Relays covered by this drawing will replace the same generic device covered by a contractor prepared specification or drawing.

6.5 Tin whisker growth. The use of alloys with tin content greater than 97 percent, by mass, may exhibit tin whisker growth problems after manufacture. Tin whiskers may occur anytime from a day to years after manufacture and can develop under typical operating conditions, on products that use such materials. Conformal coatings applied over top of a whisker-prone surface will not prevent the formation of tin whiskers. Alloys of 3 percent lead, by mass, have shown to inhibit the growth of tin whiskers. For additional information on this matter, refer to ASTM-B545 (Standard Specification for Electrodeposited Coatings of Tin).

6.6 Users of record. Coordination of this document for future revisions is coordinated only with the suggested source(s) of supply and the users of record of this document. Requests to be added as a recorded user of this drawing may be achieved online at <mailto:relay@dla.mil> or in writing to: Defense Supply Center, Columbus, ATTN: DSCC/VAT, Post Office Box 3990, Columbus, OH 43218-3990 or by telephone (614) 692-4481 or DSN 850-4481.

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