

3.4 Physical. Physical requirements of the relay shall be as specified in MS27401 and herein (see table I).

3.4.1 Dimensions and configuration. See figure 1.

TABLE I. Mechanical and physical characteristics.

Dash numbers 84102-	Terminal type	Mounting configuration	Superseding part numbers MS27401-
001	Solderpin	A	51M
002	Solder Hook	B	5M
003	Socketpin	"	6M
004	Solderpin	C	38M
005	Solder Hook	"	21M
006	90° Solder pin	"	58M
007	Solderpin	D	No superseding part numbers
008	Solder Hook	"	"
009	90° Solder pin	"	"

TABLE II. Operating characteristics.

Rated		Coil data					Dropout voltage 2/	Hold voltage 2/
Volts (V dc)	Res. ±10% @25°C	Amperes	Max 1/ Volts (V dc)	Pickup voltage				
				Normal 2/	High temp test	Cont current test		
28	320	0.11	32	18.0	19.3	22.5	1.5	7.0

1/ Maximum temperature of +85°C.

2/ Over temperature range.

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TABLE III. Rated contact load (amperes per pole) case grounded. 1/

Type of load	Life operating cycle x 10	28 V dc		115 V ac, 1 Phase				115/200 V ac, 3 Phase 2/				See appropriate meters		
		Main		Aux		Main		Aux		Main			Aux	
		NO	NC	NO	NC	400 Hz	50/60 Hz	400 Hz	50/60 Hz	400 Hz	50/60 Hz		400 Hz	50/60 Hz
Resistive	100	10	10	---	---	10	2.5 3/	---	---	10	2.5 3/	---	---	
Inductive	10	---	---	---	---	2.5 3/	---	---	---	2.5 3/	---	---	---	
Inductive	20	8	8	---	---	8	---	---	---	8	---	---	---	
Motor	100	4	4	---	---	4	2.5 3/	---	---	4	2.5 3/	---	---	
Lamp	100	2	2	---	---	2	1.5 3/	---	---	2	1.5 3/	---	---	
Transfer load													4/	
Mechanical life reduced current	400	2.5	2.5	---	---	2.5	---	---	---	2.5	---	---	---	

Inter-mediate current

APPLICABLE PER SPECIFICATION

- 1/ Time-current relay characteristics @ 25°C. Relays shall sustain five applications (make and carry only) of power concurrently on adjacent poles at each of five different current levels for the time durations in table IV. Separate relays shall be tested at 28 V dc and 115/200 V dc 400 Hz, 3 phase. Cooling time between successive applications shall be 30 minutes. The test shall be performed on both normally open and normally closed contacts of each relay. There shall be no failures or evidence of welding or sticking and relays shall pass contact voltage drop at conclusion.
- 2/ Absence of value indicates relay is not rated for 3 phase applications.
- 3/ For 50/60 Hz rating, rupture and overload not applicable and life shall be 10,000 cycles.
- 4/ Transfer load indicates relay suitable for transfer between unsynchronized ac power supplied at rating indicated.

TABLE IV. Time-current relay characteristics @ 25°C.

1	15A	- 1 Hour
2	50 A	- 5.0 SECONDS
3	100 A	- 1.2 SECONDS
4	250 A	- 0.2 SECOND
5	350 A	- 0.1 SECOND

Caution: Compare with time current characteristics of the associated circuit protective device.

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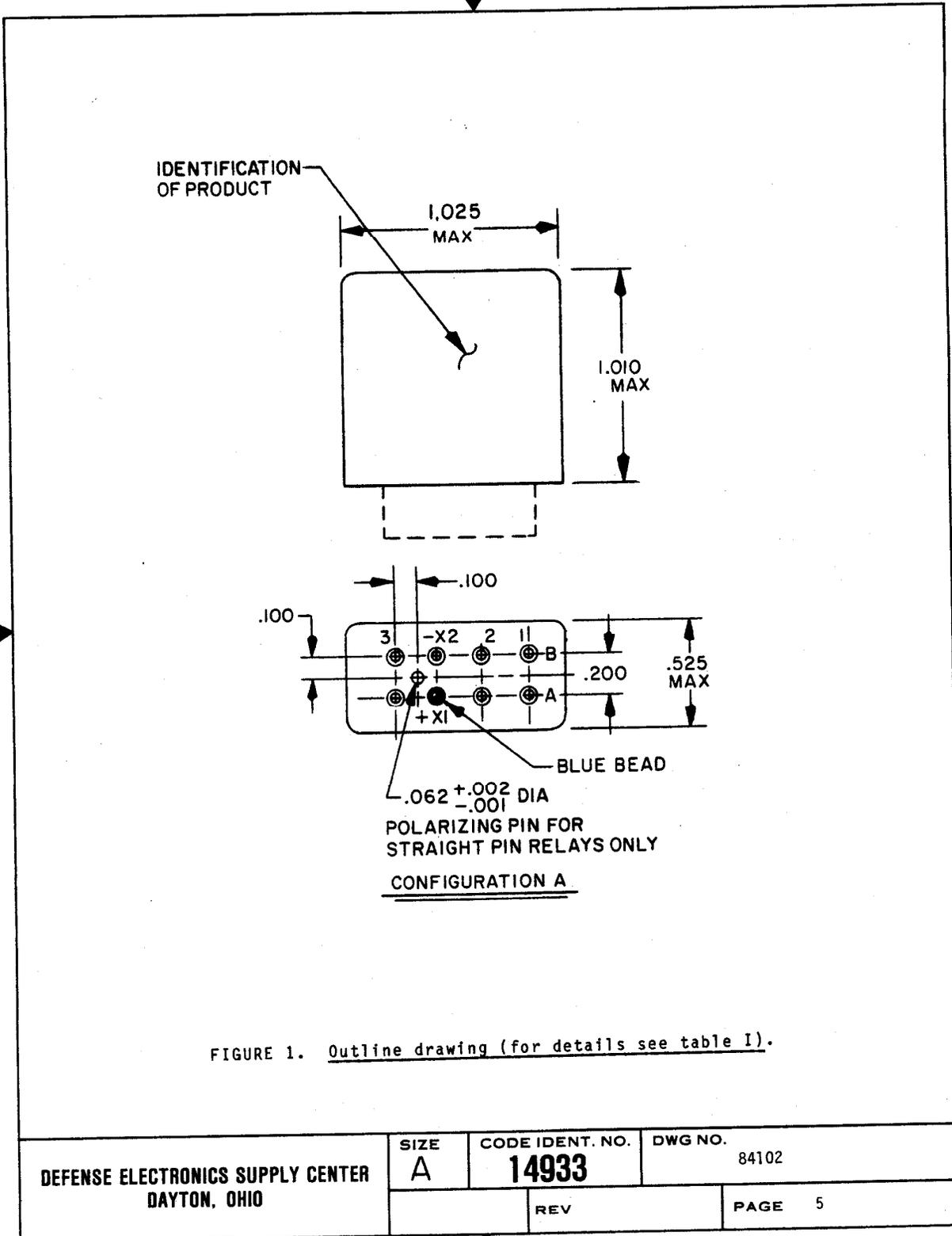
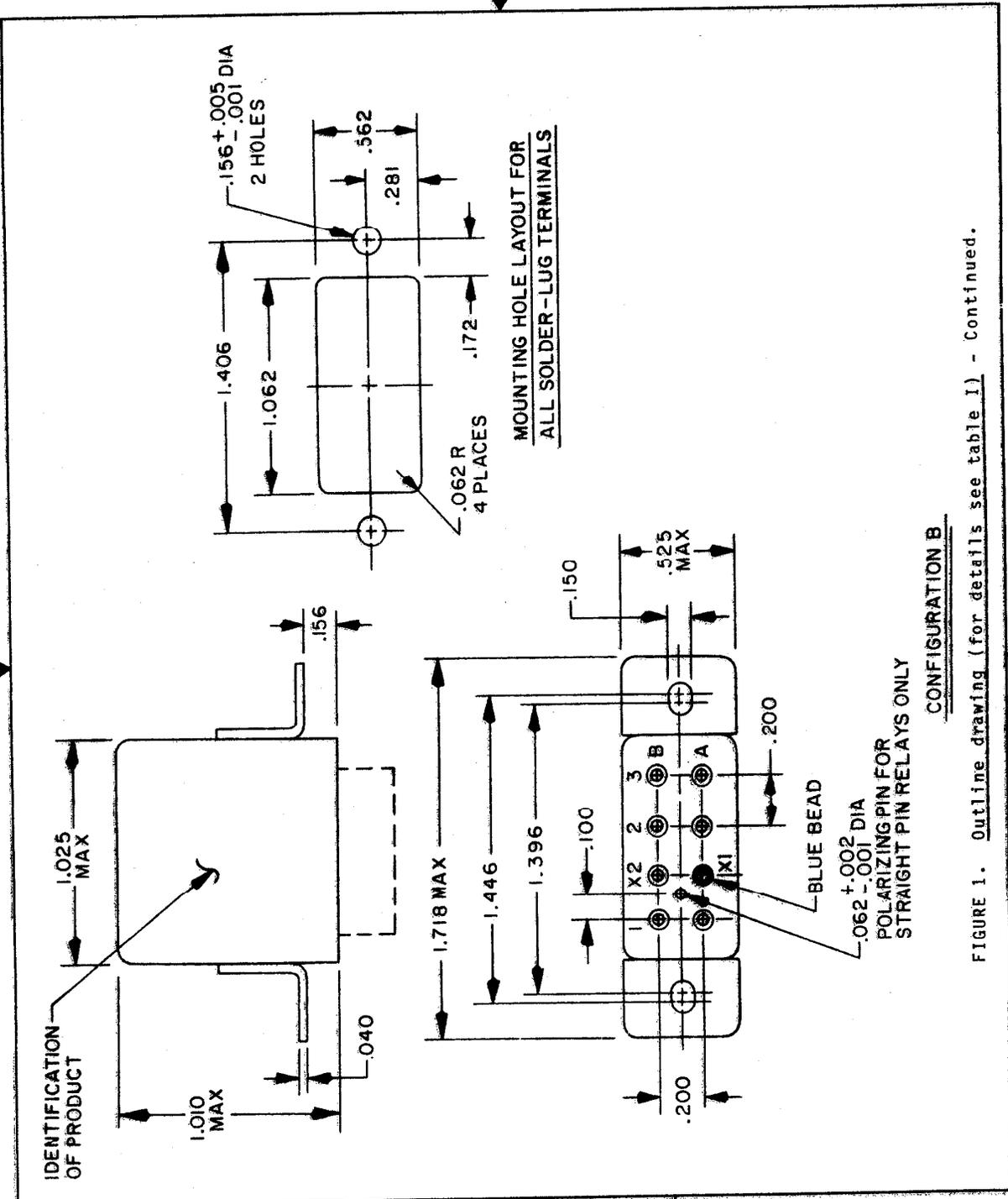


FIGURE 1. Outline drawing (for details see table I).

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FIGURE 1. Outline drawing (for details see table I) - Continued.

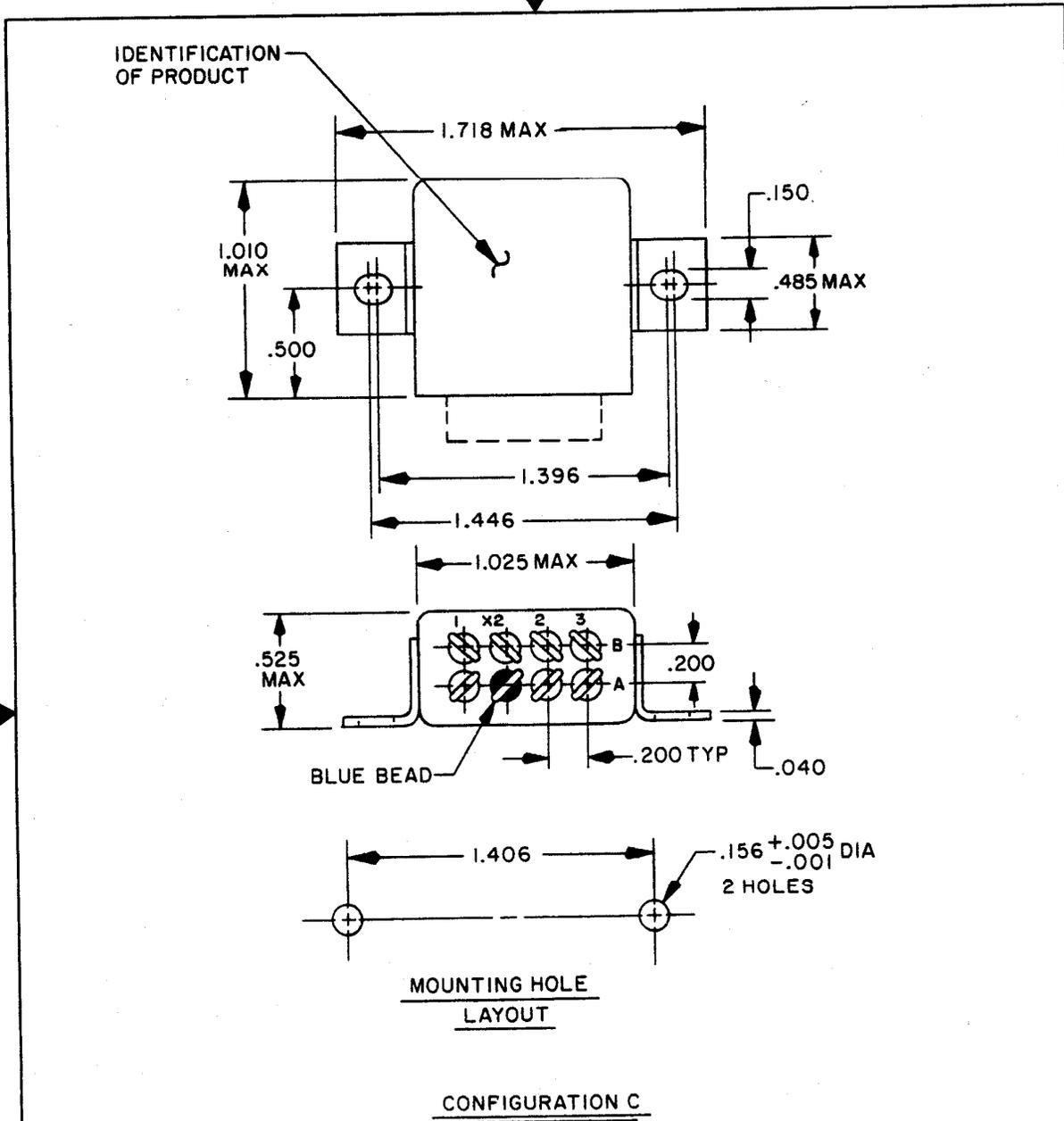


FIGURE 1. Outline drawing (for details see table I) - Continued.

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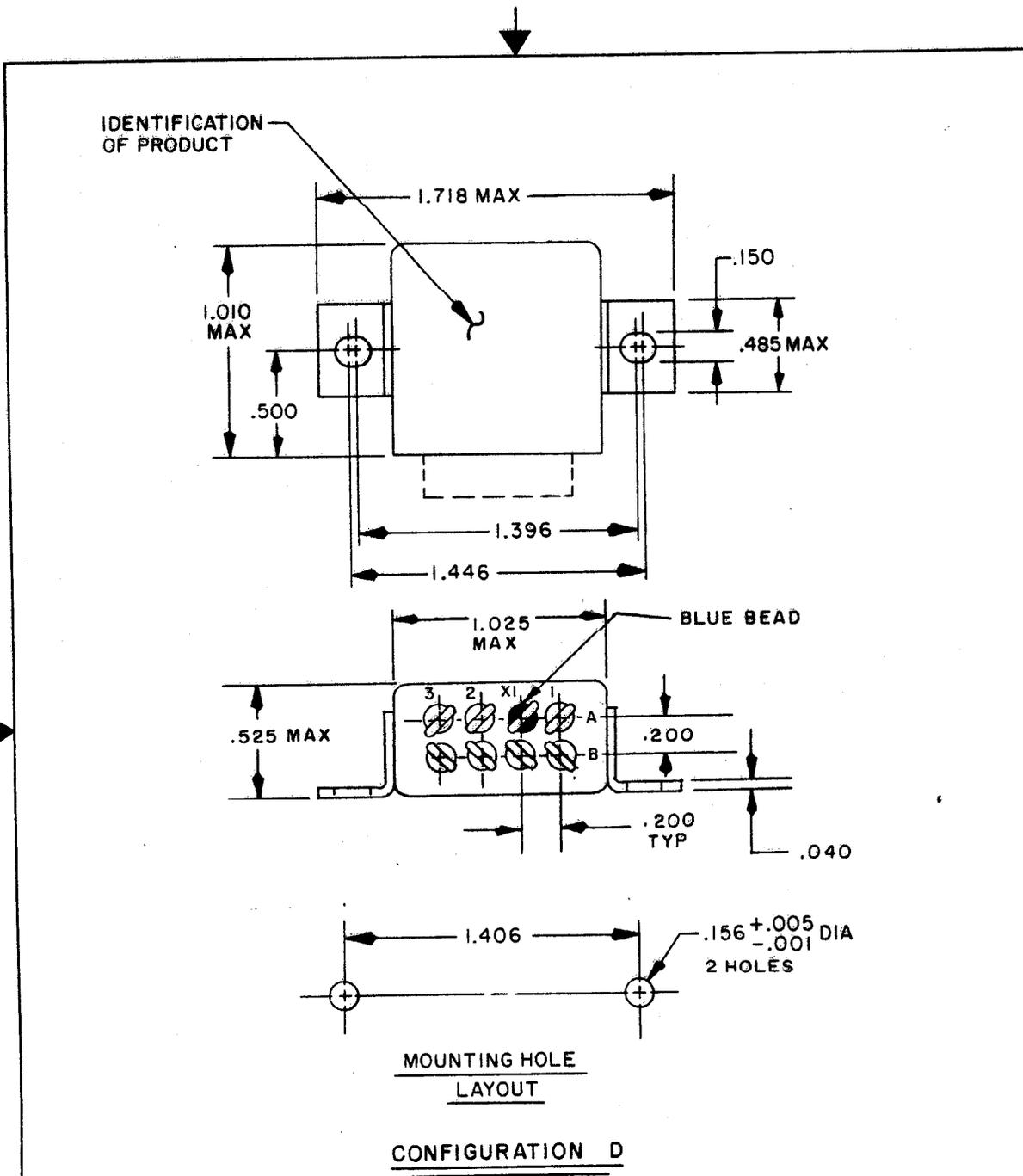


FIGURE 1. Outline drawing (for details see table I) - Continued.

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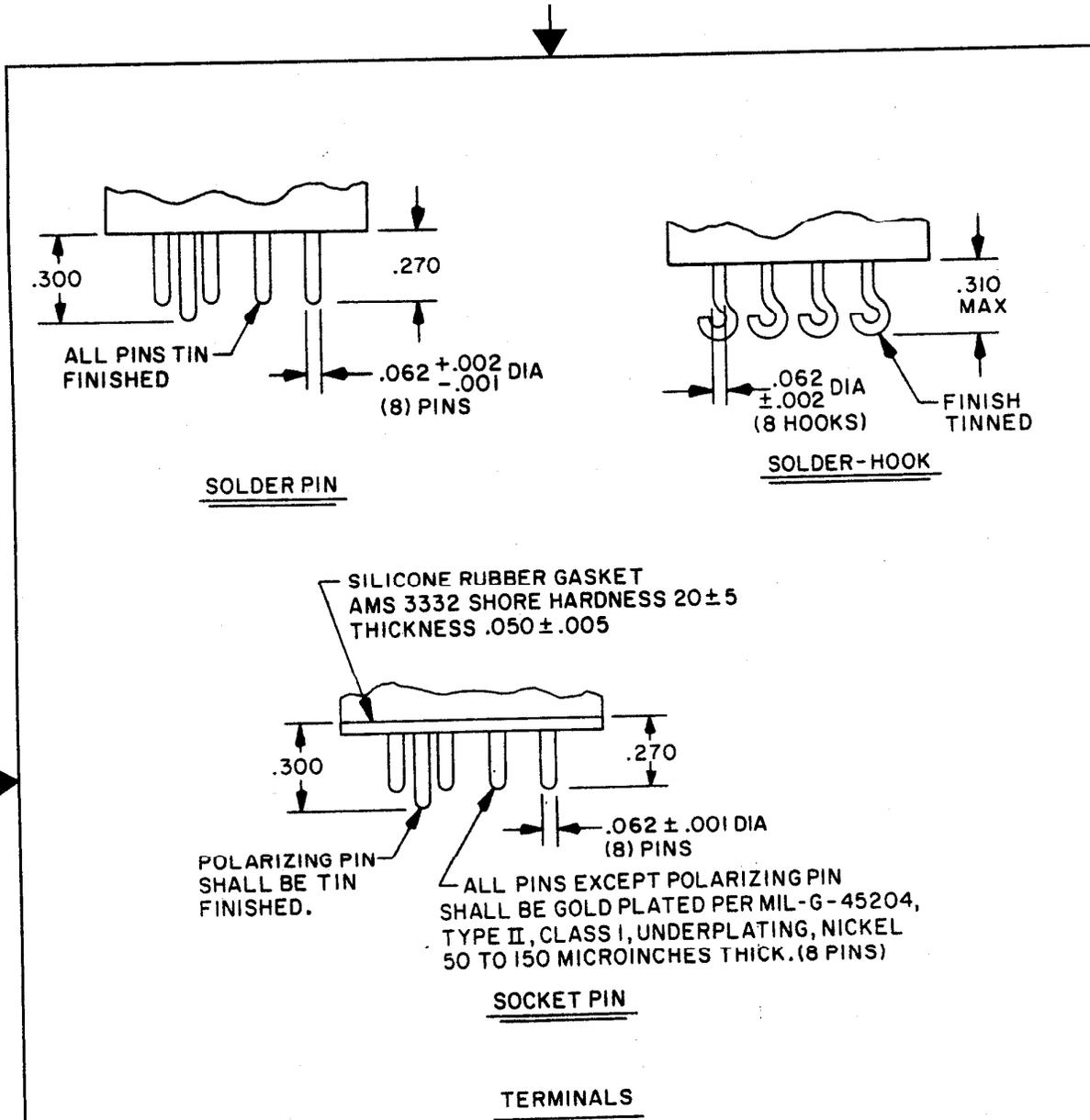


FIGURE 1. Outline drawing (for details see table I) - Continued.

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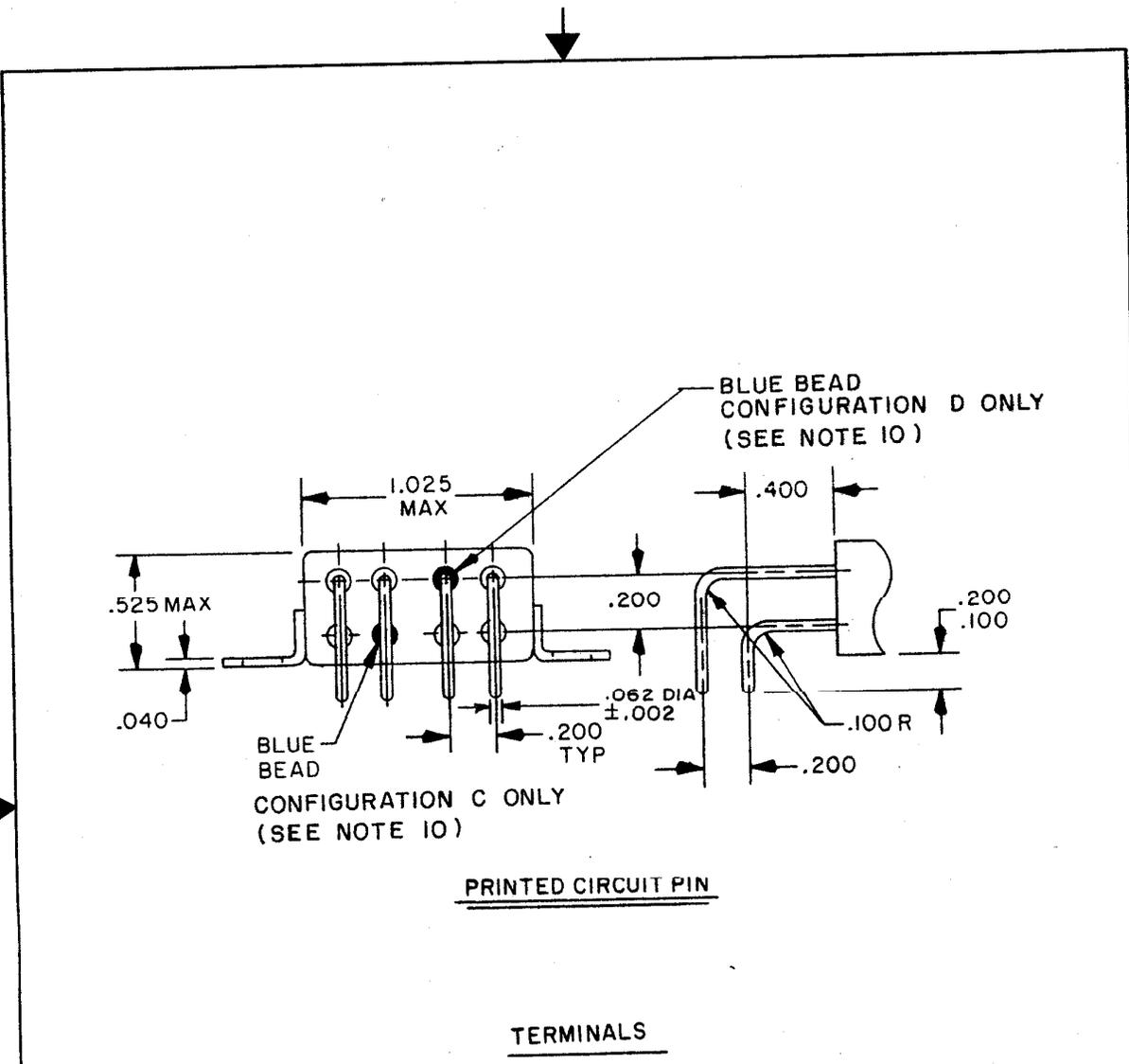
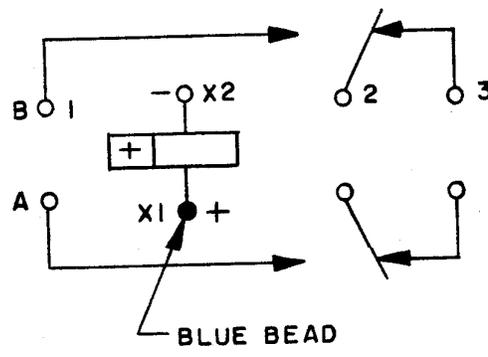


FIGURE 1. Outline drawing (for details see table I) - Continued.

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CIRCUIT DIAGRAM

FIGURE 1. Outline drawing (for details see table I) - Continued.

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Inches	mm	Inches	mm	Inches	mm	Inches	mm
.001	0.03	.040	1.02	.172	4.37	.525	13.34
.002	0.05	.050	1.27	.200	5.08	.550	13.97
.003	0.08	.062	1.57	.270	6.86	.562	14.27
.005	0.13	.070	1.78	.281	7.14	1.025	26.04
.006	0.15	.100	2.54	.300	7.62	1.062	26.97
.010	0.25	.115	2.92	.310	7.87	1.396	35.46
.027	0.69	.150	3.81	.330	8.38	1.406	35.71
.030	0.76	.156	3.96	.485	12.32	1.446	36.73
				.500	12.70	1.718	43.64

NOTES:

1. There shall be affixed to the relay a suitable legible circuit diagram that identifies each terminal location specified.
2. Metric equivalents are given for general information only.
3. Dimensions are in inches.
4. Unless otherwise specified, tolerance is ± 0.010 (0.25 mm).
5. These relays are polarized monostable.
6. This relay shall not operate or be damaged by reverse polarity. Semiconductors shall not be used for this purpose.
7. Applicable to configuration C and D only. The circuit diagram, manufacturer's part number, and the DESC drawing number shall be marked on the near side. The remaining portion of the nameplate data shall be marked on the far side.
8. Applicable to configuration C and D only. Relays shall be marked with the manufacturers' name or source code and data code. Marking shall be with the bottom of the print adjacent to the near side.
9. Permanent magnet drive consists of a permanent magnet with its flux path switched and combined with the electro-magnet flux.
10. Location of blue bead is dependent upon which configuration (C or D) is used.

FIGURE 1. Outline drawing (for details see table I) - Continued.

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3.5 Environmental characteristics. Relays shall meet all environmental requirements as specified in MS27401 and herein.

3.5.1 Electrical characteristics. Relays shall meet all electrical characteristics as specified in MS27401 and herein.

3.6 Identification of product. Marking shall be in accordance with MIL-R-6106 except the part number shall be in accordance with 1.2 herein. The "MS27401-XXX" part number shall not be used.

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

3.7.1 Quality conformance inspection. Quality conformance inspection shall be in accordance with MIL-R-6106 and 4.2 herein.

3.8 Certification as an approved source of supply. In order to be listed as an approved source of supply for relays manufactured to this drawing, a manufacturer shall:

a. Agree to make available to DESC, upon request, all pertinent test data on its production of the subject part, including, but not limited to, test data in accordance with the qualification inspection table of MIL-R-6106, type I ER; and

b. Provide to DESC-EMD or its designated agent, upon request, free of charge and without obligation, a current production sample from its production of the subject part; and

c. Meet one of the following criteria:

(1) Currently possess listing on qualified products list QPL-6106 for at least one part; or

(2) Be in current production of the subject part.

3.9 Certificate of compliance. A certificate of compliance shall be required from a manufacturer in order to be listed as an approved source of supply (see 6.6 and 6.7).

3.10 Supersession data. See table I.

4. QUALITY ASSURANCE PROVISIONS

4.1 Sampling and inspection. Sampling and inspection shall be in accordance with MIL-R-6106.

4.2 Quality conformance inspection. Quality conformance inspection shall be in accordance with Group A listing of MIL-R-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-R-6106 for type I ER relays. For seal test, the radioisotope procedure shall be performed.

5. PACKAGING.

5.1 Packaging requirements. The requirements for packaging shall be in accordance with MIL-R-6106.

6. NOTES

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

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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 catalog 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 acquisition document should specify the following:

- a. Complete part number (see 1.2).
- b. One copy of the quality conformance inspection data as required in 4.2 to be shipped with each lot.
- 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 Comments. Comments on this drawing should be directed to DESC-EMD, Dayton, Ohio 45444, or telephone 513-296-6184.

6.6 Submission of certificate of compliance. The certificate of compliance submitted to DESC-EMD, prior to listing as an approved source, shall state the manufacturer's product meets the requirements herein.

6.7 Approved sources of supply. Approved sources of supply are listed herein. Additional sources will be added as they become available. The vendors listed herein have agreed to this drawing and a certificate of compliance (see 3.9) has been submitted to DESC-EMD.

DESC drawing part number	Vendor CAGE number	Vendor similar part number
84102-		
001	99699	E210-1550
002	"	E210-1551
003	"	E210-1552
004	"	E210-1553
005	"	E210-1554
006	"	E210-1555
007	"	E210-1556
008	"	E210-1557
009	"	E210-1558
001	35344	J-A1A-109
002	"	J-D2A-109
003	"	J-D4A-107
004	"	J-J1A-109
005	"	J-J2A-109
006	"	J-J9A-109
007	"	J-J1A-110
008	"	J-J2A-110
009	"	J-J9A-110

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DESC drawing part number 84102-	Vendor CAGE number	Vendor similar part number
001	78290	FCA-210-312
002	"	FCA-210-313
003	"	FCA-210-314
004	"	FCA-210-315
005	"	FCA-210-316
006	"	FCA-210-317
007	"	FCA-210-318
008	"	FCA-210-319
009	"	FCA-210-320

Vendor CAGE number

Vendor name and address

99699

Deutsch Relays, Inc.
65 Daly Road
East Northport, NY 11731

35344

Leach Corporation, Relay Division
5915 Avalon Boulevard
Los Angeles, CA 90003

78290

Struthers-Dunn, Inc.
Pitman, New Jersey 08071

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