INCH-POUND

MIL-PRF-6106/12E
23 April 2001
SUPERSEDING
MIL-PRF-6106/12D
10 November 2000

PERFORMANCE SPECIFICATION SHEET

RELAY, ELECTROMAGNETIC (TYPE I), MAGNETIC LATCH, 25 AMPERES, 3PNO MAIN CONTACTS, WITH 2 AMPERE 1PDT AUXILIARY CONTACTS, HERMETICALLY SEALED

This specification is approved for use by all Departments and 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-PRF-6106.

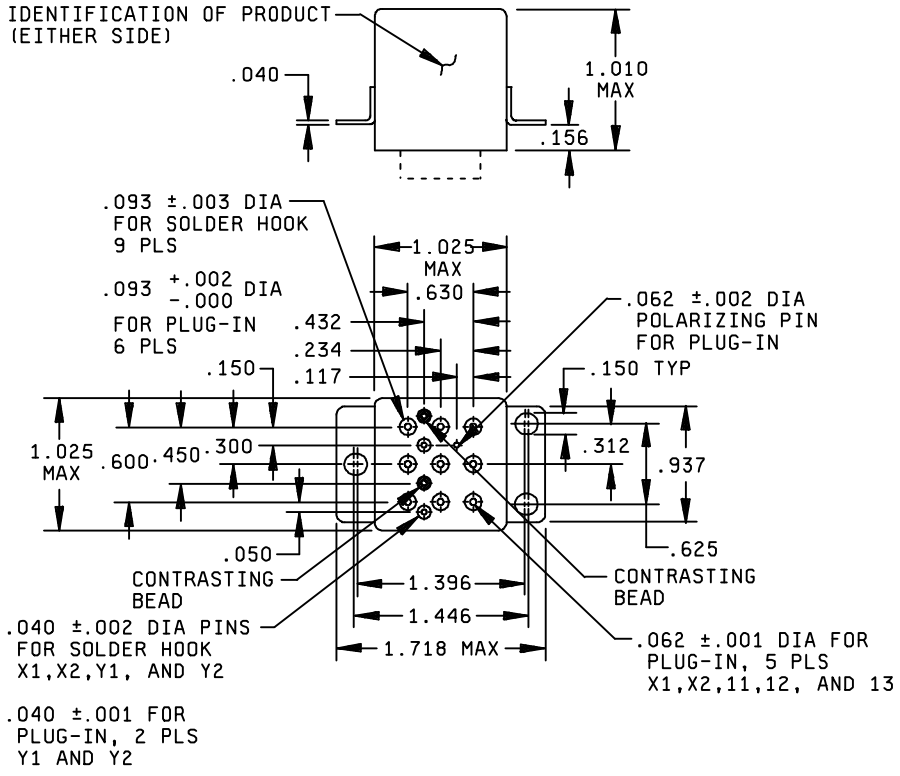

FIGURE 1. Relay, outline drawing.

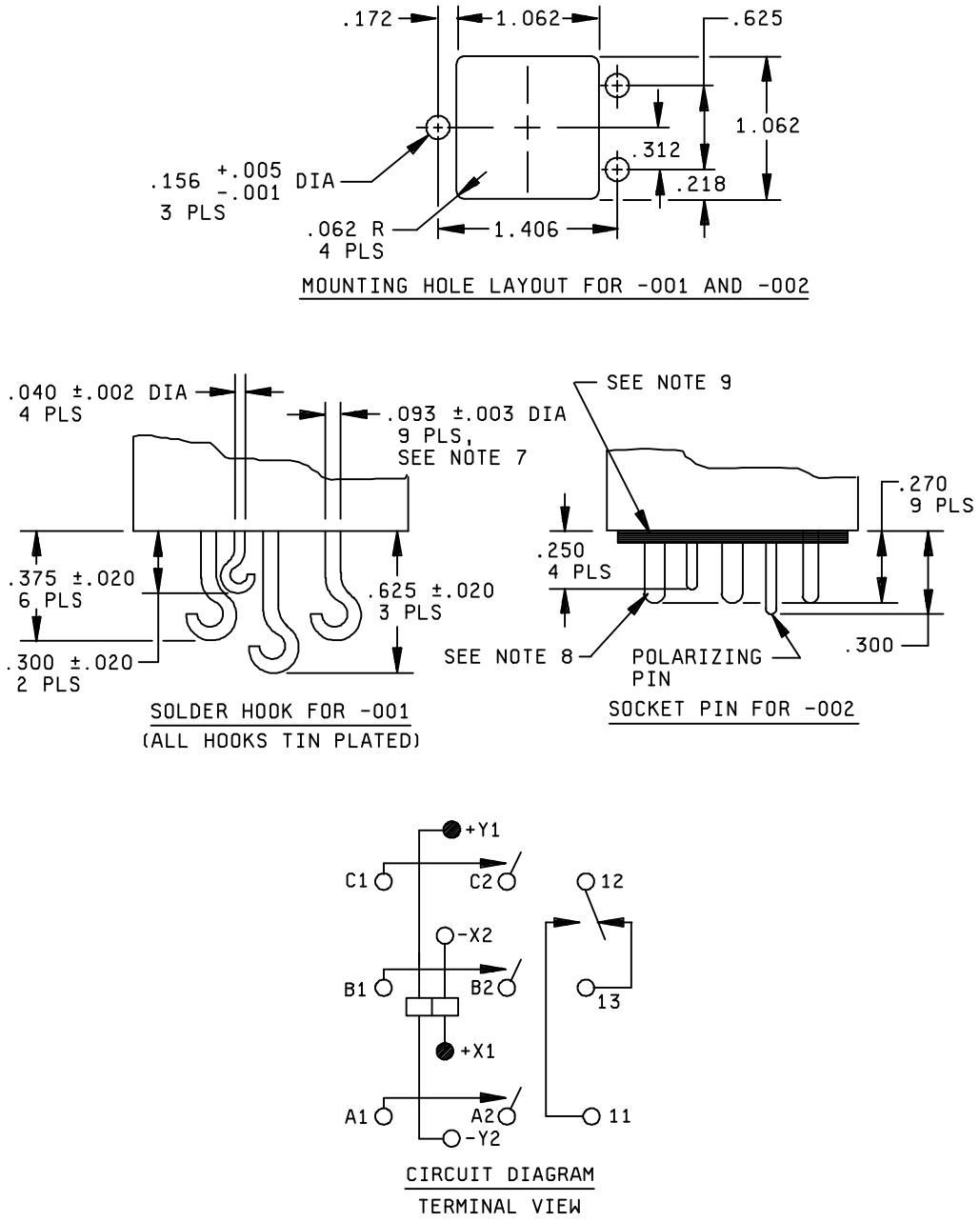

FIGURE 1. Relay, outline drawing - Continued.

Inches	mm	Inches	mm	Inches	mm
.001	0.03	.156	3.96	.600	15.24
.002	0.05	.172	4.37	.625	15.88
.003	0.08	.234	5.94	.630	16.00
.005	0.13	.250	6.35	.937	23.80
.020	0.51	.270	6.86	1.010	25.65
.040	1.02	.300	7.62	1.025	26.04
.050	1.27	.312	7.92	1.062	26.97
.062	1.57	.385	9.78	1.396	35.46
.093	2.36	.395	10.03	1.406	35.71
.117	2.97	.432	10.97	1.446	36.73
.150	3.81	.450	11.43	1.718	43.64

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ±.010 (0.25 mm).
4. There shall be affixed to the relay a legible circuit diagram that identifies each terminal location specified.
5. Notes to observe polarity must appear on relays.
6. To close main contact, (operate) energize X1 and X2. To open main contacts, (reset) energize Y1 and Y2.
7. Hook terminals will accept one no. 12 AWG stranded wire.
8. Socket pin terminals shall provide the operational, environmental, and interface characteristics to provide a reliable interconnect to gold-plated contacts. Terminals shall be gold plated. Gold plating of the polarizing pin is optional. 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. The gold plating system shall enable the product to meet the performance requirements of this specification and shall be approved by the qualifying activity.
9. Gasket shall provide a reliable seal between the relay and mating socket that will meet the environmental, operational, and interface requirements of the relay with the mating socket. The gasket shall have shore hardness 20 ±5, thickness .050 ±.005. Gasket material according to AMS 3332 has been considered acceptable.

FIGURE 1. Relay, outline drawing - Continued.

REQUIREMENTS:

Coil data: See table I.

Rated contact load: See table II.

Dimensions and configuration: See figure 1.

Weight: 0.18 pound (81.64 grams) maximum.

Temperature range 1/: -70°C to +125°C.

Maximum altitude rating: 300,000 feet.

Shock G-level: 200 g.

Duration: 6 ms.

Maximum duration contact opening: 10 µs.

Vibration-sinusoidal:

0.12 inch DA, 10 Hz - 70 Hz.

30 g, 70 Hz - 3,000 Hz.

Vibration (random):

Applicable specification: MIL-STD-202, method 214, test condition IG.

Duration: 15 minutes, each plane.

Acceleration: 15 g's

Strength of terminals and mounting studs: Applicable.

Terminal solderability: Applicable to solder pin and solder hook terminals only.

Insulation resistance, initial: 100 megohms.

After life or environmental tests: 50 megohms.

1/ For full rated load at maximum temperature and altitude, use no. 12 wire or larger. Solder hook relays are to be mounted to limit mounting bracket temperature to +135°C.

TABLE I. Operating characteristics.

PIN M6106 /12	Type	Coil data								Time (milliseconds, maximum)						Term-inals
		Coils	Rated		Maximum		Maximum pickup voltage			Ope-rate 3/	Rel-ease 3/	Bounce				
												Main		Aux		
			V dc 1/	Res ±10% at +25°C	V dc	A	Norm 2/	High temp test	Cont current test			NO	NC	NO	NC	
-001	1	X1,X2 Y1,Y2	28	450	29	.075	18	19.8	22.5	15	15	1.0		4	4	Solder hook
-002	1	X1,X2 Y1,Y2	28	450	29	.075	18	19.8	22.5	15	15	1.0		4	4	Socket pin

1/ Caution: Use of any coil voltage less than the rated coil voltage will compromise the operation of the relay.
2/ Over the temperature range.
3/ With rated coil voltage.

TABLE II. Rated contact load (amperes per pole) (case grounded). 1/ 2/ 3/

Type of load	Life operating cycles $x10^3$	28 V dc				115 V ac, 1 phase				115/200 V ac, 3 phase 1/			
		Main		Aux		Main		Aux		Main		Aux	
		NO	NC	NO	NC	400 Hz	60 Hz	400 Hz	60 Hz	400 Hz	60 Hz	400 Hz 2/	60 Hz
4/ Resistive	50	25		2	2	25		2		25			
Inductive	10	12											
Inductive	10			1	1	15		1		15			
Motor	50	10				10				10			
Lamp	50	5		.5	.5	5		.5		5			
5/ Transfer load													
Mechanical life reduced current	200	6				6				6			
Intermediate current	Applicable in accordance with MIL-PRF-6106 (main contacts only)												
Mixed loads	Applicable in accordance with MIL-PRF-6106												

1/ Absence of value indicates relay is not rated for 3 phase application.
2/ Single phase load shall be run during the 3 phase test on auxiliary contacts.
3/ Absence of value indicates parameter is not applicable to this specification sheet.
4/ For full rated load at maximum temperature and altitude, use no. 12 wire or larger. Solder hook relays shall be mounted to limit mounting bracket temperature to +135°C.
5/ Transfer load indicates relay is suitable for transfer between unsynchronized ac power supplies at the rating indicated.

Dielectric withstanding voltage (sea level): 2 to 5 seconds.

	Initial	After life tests
Coil to case and coil to coil	1000 V rms	1000 V rms
Auxiliary contacts	1000 V rms	750 V rms
All other points	1250 V rms	1000 V rms

Dielectric withstanding voltage (altitude): 2/: 1 minute.

	80,000 feet	300,000 feet
Coil to case and coil to coil	350 V rms	500 V rms
Auxiliary contacts	350 V rms	500 V rms
All other points	350 V rms	500 V rms

Maximum contact drop, initial 0.150 volt.

After life tests: 0.175 volt.

Overload current: 50 amperes dc, 80 amperes ac.

Rupture current: 60 amperes dc, 100 amperes ac.

Duty rating: Continuous.

Part or identifying Number (PIN): M6106/12-(plus dash number from table I).

Qualification by similarity: See MIL-PRF-6106.

Custodian:
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

Review activities:
Air Force - 99

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2/ Dielectric rating may be improved by suitable insulation of terminals and wiring after installation.