

INCH-POUND

MIL-PRF-6106/41C  
22 March 2012  
SUPERSEDING  
MIL-PRF-6106/41B  
10 November 2000

PERFORMANCE SPECIFICATION SHEET

RELAY, ELECTROMAGNETIC, 25 AMPERES, 3PNO, WITH 2 AMPERE  
1PDT AUXILIARY CONTACTS, HERMETICALLY SEALED, TYPE I

Inactive for new design after 15 November 2002. No superseding

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

The requirements for acquiring the relays described herein shall  
consist of this specification and the latest issue of MIL-PRF-6106.

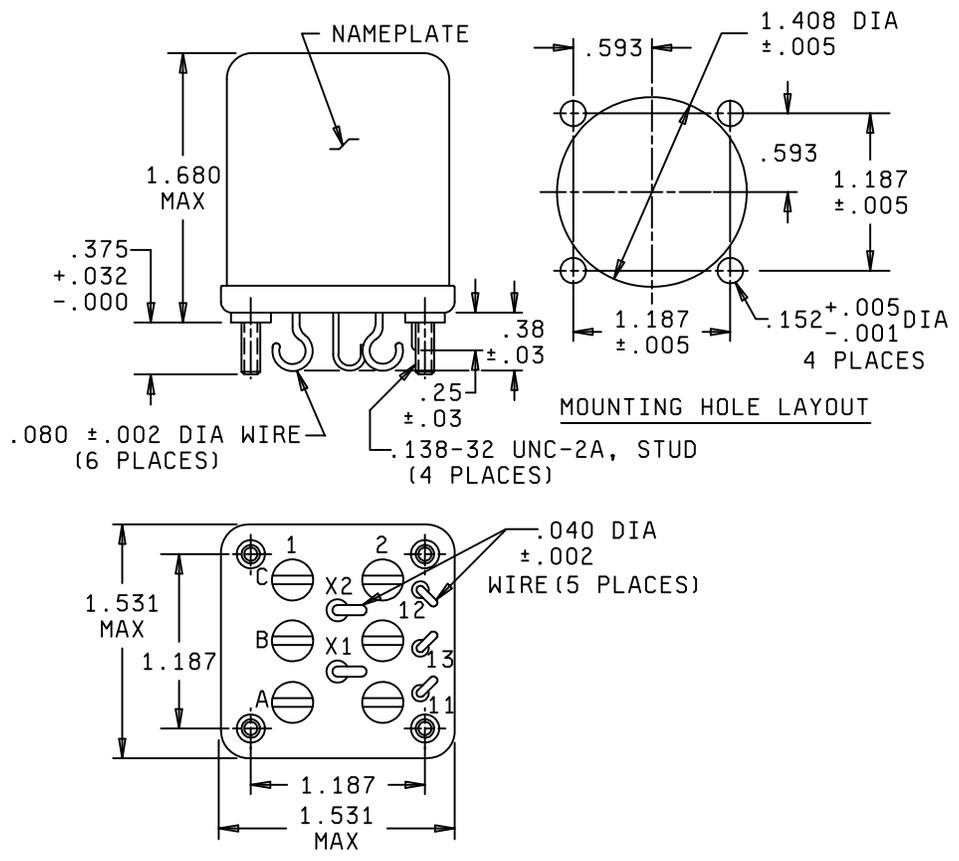
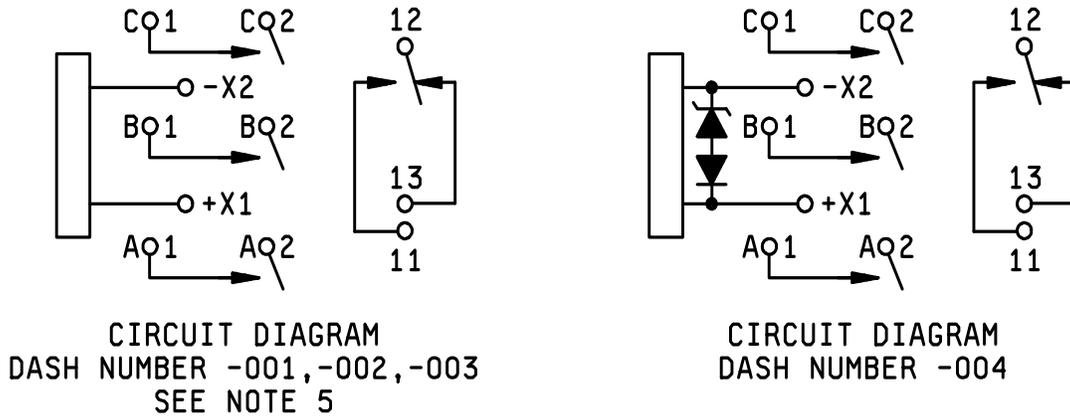


FIGURE 1. Dimensions and configurations.



Inches	mm	Inches	mm
.001	0.03	.25	6.4
.002	0.05	.375	9.53
.005	0.13	.38	9.7
.03	0.8	.593	15.06
.032	0.81	1.187	30.15
.040	1.02	1.406	35.71
.080	2.03	1.531	38.89
.152	3.86	1.680	42.67

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. Terminal numbers need not appear on the relay header provided there is affixed to the relay a suitable legible circuit diagram that identifies each terminal location specified.
5. The use of diodes on ac relays is optional. Actual application must be shown on label.

FIGURE 1. Relay, outline drawing - Continued.

REQUIREMENTS:

Coil data:

Coil data: See [table I](#).

Duty rating: Continuous.

Operational data:

Rated contact load: See [table II](#).

Operate time: See [table I](#).

Release time: See [table I](#).

Maximum induced transient voltage (when specified): 42 V.

Physical:

Dimensions and configurations: See [figure 1](#).

Weight (maximum): 0.44 pound (200 grams).

Terminal type: See [figure 1](#) and [table I](#).

Strength of terminals and mounting studs: Applicable.

Terminal solderability:

Finish: Flat black.

ENVIRONMENTAL CHARACTERISTICS:

Temperature rating: -70°C to +125°C.

Maximum altitude rating: 80,000 feet.

Shock, g-level: 50 g.

Duration: 11 ms.

Maximum duration contact opening: 2 ms.

Vibration - sinusoidal:

Operating:

G-level: 10 g.

Frequency range: 5 to 1,500 Hz.

Nonoperating:

G-level: 15 g.

Frequency range: 20 to 2,000 Hz.

Acceleration: 10 g.

TABLE I. Mounting, termination, and operating characteristics.

Dash no.	Coil terminal X1, X2	Coil data										Time (milliseconds-maximum)				Terminals	Mounting		
		Nominal			Maximum		Max pickup voltage 1/			Hold voltage 2/	Drop out voltage 2/	Oper-ate 3/	Re-lease 4/	Contact bounce					
		Volts 1/	Freq	Res ±10%	Volts	Amp	Nominal 2/	High temp test	Cont current test					Main				Aux	
														NO	NC			NO	NC
-001	DC	28	DC	---	29	0.25	18	19.5	22.5	7.0	1.5	20	10	2.0	---	4.0	4.0	Solder hook	4 Studs
-002	AC	115	400	---	122	.055	96	100	108	40	5.0	25	50	2.0	---	4.0	4.0	Solder hook	4 Studs
-003	AC	115	50/60	---	122	.06	96	100	108	40	5.0	25	50	2.0	---	4.0	4.0	Solder hook	4 Studs
-004	DC 5/	28	DC	160	29	0.25	18	19.5	22.5	7.0	1.5	20	10	2.0	---	4.0	4.0	Solder hook	4 Studs

1/ CAUTION: Use of any coil voltage less than nominal coil voltage will compromise the operation of the relay.

2/ Over the temperature range.

3/ With nominal coil voltage.

4/ From nominal coil voltage.

5/ Suppressed dc coil: Back EMF 42 volts maximum.

4

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

Type of load	Life operating cycles x 10 <sup>3</sup>	28 V dc				115 V ac, 1 phase				115/200 V ac, 3 phase 1/				See appropriate footnote
		Main		Aux		Main		Aux		Main		Aux		
		NO	NC	NO	NC	400 Hz	50/60 Hz	400 Hz	60 Hz	400 Hz	50/60 Hz	400 Hz	60 HZ	
Resistive	50	25	---	2	2	25	25	2	---	25	25	---	---	---
Inductive	10	15	---	1	1	25	25	1	1	25	25	---	---	2/
Motor	50	20	---	---	---	20	12	---	---	20	12	---	---	---
Lamp	50	10	---	.5	.5	10	10	.5	---	10	10	---	---	---
Transfer load		---	---	---	---	---	---	---	---	---	---	---	---	3/
Mechanical life reduced current	100	6.3	---	.5	.5	6.3	6.3	.5	---	6.3	6.3	---	---	---
Mixed loads		Applicable per specification												

1/ Absence of value indicates relay is not rated for 3 phase applications.

2/ .7 pF, inductive.

3/ Transfer load indicates relay suitable for transfer between unsynchronized ac power supplies at rating indicated.

MIL-PRF-6106/41C

ELECTRICAL CHARACTERISTICS:

Insulation resistance:

Initial: 100 megohms.

After life or environmental tests: 50 megohms.

Dielectric withstanding voltage (sea level):

	Initial	After life tests
Coil to case	1,250 V rms	1,000 V rms
Auxiliary contacts	1,000 V rms	750 V rms
All other points	1,500 V rms	1,125 V rms

Dielectric withstanding voltage (altitude):

	80,000 feet
Coil to case	500 V rms
Auxiliary contacts	250 V rms
All other points	500 V rms

Maximum contact drop:

Initial: 0.150 volt.

After life test: 0.175 volt.

Overload current: 80 amperes dc, 120 amperes ac.

Rupture current: 100 amperes dc, 150 amperes ac.

RFI specification (applicable to coil currents of ac operated relays):

[MIL-STD-461](#).

PART NUMBER: M6106/41 (plus dash number from [table I](#)).

Qualification by similarity: See [MIL-PRF-6106](#).

Changes from previous issue. The margins of this specification 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.

MIL-PRF-6106/41C

Referenced documents. In addition to [MIL-PRF-6106](#), this document references the following:

[MIL-STD-461](#)

Custodian:  
Air Force - 85  
DLA-CC

Preparing activity:  
DLA-CC

Review activities:  
Air Force – 99

(Project 5945-2012-005)

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 the ASSIST Online database at <https://assist.daps.dla.mil/>.