

INCH-POUND

MIL-PRF-6106/56A
10 June 2013
MIL-PRF-6106/56
15 August 2002

PERFORMANCE SPECIFICATION SHEET

RELAYS, ELECTROMAGNETIC, 400 AMPERES, 1 PST (N.O.), TYPE II,
NON-HERMETICALLY SEALED, TRANSIENT SUPPRESSED DC COILS

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

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

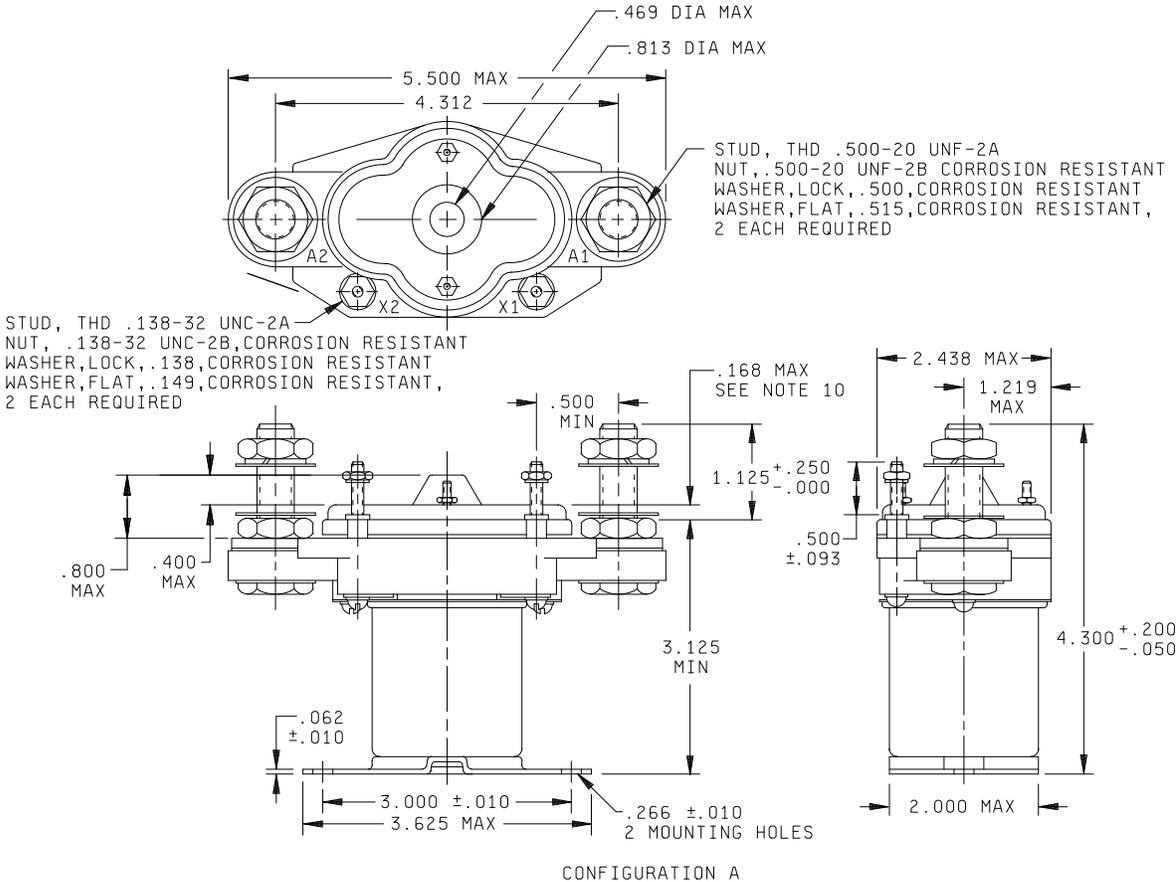


FIGURE 1. Dimensions and configurations.

MIL-PRF-6106/56A

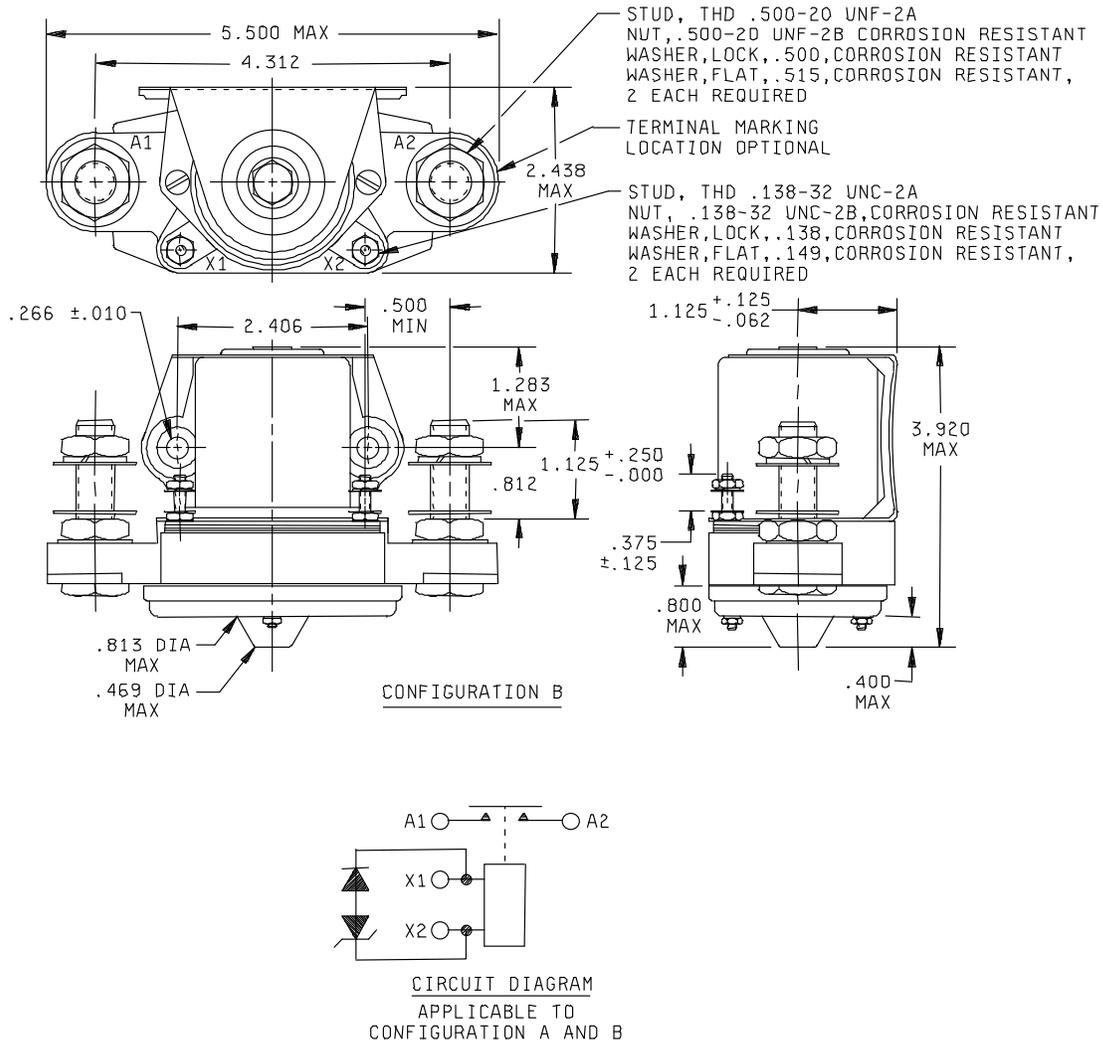


FIGURE 1. Dimensions and configurations - Continued.

MIL-PRF-6106/56A

Inches	mm	Inches	mm	Inches	mm
.010	0.25	.400	10.16	1.281	32.54
.050	1.27	.469	11.91	2.000	50.80
.062	1.57	.475	12.06	2.406	61.11
.090	2.29	.500	12.70	2.438	61.93
.125	3.18	.505	12.83	3.000	76.20
.138	3.51	.515	13.08	3.125	99.57
.149	3.78	.800	20.32	3.625	109.52
.168	4.26	.812	20.62	3.920	99.57
.200	5.08	.813	20.65	4.300	109.22
.220	5.59	1.000	25.40	4.312	109.52
.250	6.35	1.125	28.53	4.500	114.30
.266	6.76	1.219	30.96	5.500	139.70
.375	9.52	1.273	32.33		

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ± 0.062 (1.57 mm).
4. Additional flat washer may be used for terminal seat.
5. Terminal temperature rise under continuous current condition: $+95^{\circ}\text{C}$. Mixed loads to be conducted at $+71^{\circ}\text{C}$.
6. 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.
7. Shape of relay is optional within the envelope dimensions shown.
8. Back EMF (transient voltage): 38 V dc maximum.
9. The dimension 0.168 inches refers to the vertical difference between the top of the nut and the top of the stud.

FIGURE 1. Dimensions and configurations - Continued.

REQUIREMENTS:

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

Dash number and general characteristics: See [table I](#).

Contact data:

Load ratings: See [table II](#).

Maximum contact drop, initial: 0.150 V.

After life test: 0.175 V.

Overload current (NO): 3,200 amperes.

Rupture current (NO): 4,000 amperes.

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

Duty rating: Continuous.

RFI specification: [MIL-STD-461](#) (applicable to coil circuits of ac operated relays).

Electrical data:

Minimum insulation resistance:

Initial: 100 megohms.

After life or environmental test: 50 megohms.

Dielectric strength:

Sea level, 2-5 seconds:

	<u>Initial</u>		<u>After life tests</u>	
	<u>28 V dc</u>	<u>115 V ac</u>	<u>28 V dc</u>	<u>115 V ac</u>
Coil to case	1,250 V rms	N/A	1,000 V rms	N/A
Aux contacts	1,250 V rms	N/A	1,000 V rms	N/A
All other points	1,250 V rms	N/A	1,000 V rms	N/A

Dielectric strength (altitude): 1 minute.

	<u>Initial</u>	
	<u>28 V dc</u>	<u>115 V ac</u>
Coil to case	500 V rms	N/A
Aux contacts	500 V rms	N/A
All other points	500 V rms	N/A

Environmental characteristics:

Temperature range: -55°C to +105°C operating and storage temperature. The relays shall be capable of operating at +105°C ambient for 10,000 cycles.

Maximum altitude rating: 50,000 feet.

MIL-PRF-6106/56A

Shock g-level: 50 g's, ½ sine.

Duration: 11 ms.

Maximum duration contact opening: 2 ms.

Vibration - sinusoidal: See [table IV](#).

Vibration - random: N/A.

High shock: N/A.

Acceleration: 10 g's.

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

Part or Identifying Number (PIN): M6106/56- (plus applicable dash number from [table I](#)).

For government logistical purposes use M6106/56-D1 in lieu of the part described in Army drawing 13211665.

TABLE I. PIN and general characteristics.

Part number M6106/56-	Type	Coil type	Terminal type	Mounting or mating socket	Maximum weight in pounds
D1	II	dc	Stud	Bracket - bottom	2.6
D2	II	dc	Stud	Bracket - side	2.6

TABLE II. Rated contact load (amperes per pole) case grounded. [1/](#)

Type of load	Life operating cycles x 10 ³	28 V dc				115 V ac, 1 phase				115/200 V ac, 3 phase				See appro- priate notes
		Main		Aux		Main		Aux		Main		Aux		
		NO	NC	NO	NC	400 Hz	60 Hz	400 Hz	60 Hz	400 Hz	60 Hz	400 Hz	60 Hz	
Resistive	50	400												
Inductive	10	100												
Motor	50	400												
Lamp														
Transfer load														2/
Mechanical life reduced current	100	100												
Mixed loads	50	40												

[1/](#) Absence of value indicates parameter is not applicable to this specification sheet.

[2/](#) Transfer load indicates relay is suitable for transfer between unsynchronized ac power supplies at the rating indicated.

MIL-PRF-6106/56A

TABLE III. Operating characteristics.

PIN M6106 /56-	Coil data									Time - milliseconds maximum							
	Coil	Rated			Max		Max pick-up voltage			Hold vol- tage <u>2/</u>	Drop out vol- tage <u>2/</u>	Oper- ate <u>3/</u>	Rel- ease <u>4/</u>	Bounce <u>3/</u>			
		Volts <u>1/</u>	Freq Hz	Ω Res +15% -10	Volts	Amp	Nor- mal <u>2/</u>	High Temp test	Cont cur- rent test					Main		Aux	
														NO	NC	NO	NC
D1	X1,X2	28	dc	66	29	.60	18	21	22.5	7.0	1.5	40	25	5.0	---	---	---
D2	X1,X2	28	dc	66	29	.60	18	21	22.5	7.0	1.5	40	25	5.0	---	---	---

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

2/ Over the temperature range.

3/ With rated coil voltage.

4/ From rated coil voltage.

TABLE IV. Vibration levels (sinusoidal).

5-10 Hz	10-55 Hz	55-250 Hz	250-500 Hz	500-1,500 Hz
.08 DA	.06 DA	2 g's	2 g's	N/A

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.

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

[MIL-STD-461](#)

MIL-PRF-6106/56A

Custodians:

Army - MI
Navy - AS
Air Force - 85
DLA - CC

Preparing activity:

DLA - CC

(Project 5945-2013-027)

Review activities:

Army - AT
Navy - EC

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.dla.mil/>.