

INCH-POUND

MIL-PRF-6106/10F
07 November 2011
SUPERSEDING
MIL-PRF-6106/10E
10 November 2000

PERFORMANCE SPECIFICATION SHEET

RELAY, ELECTROMAGNETIC, NORMALLY OPEN, CONTINUOUS DUTY,
(INCLUDING UNSUPPRESSED and SUPPRESSED COILS) 60 AMP,
3PST, ENVIRONMENTALLY 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 sheet and [MIL-PRF-6106](#).

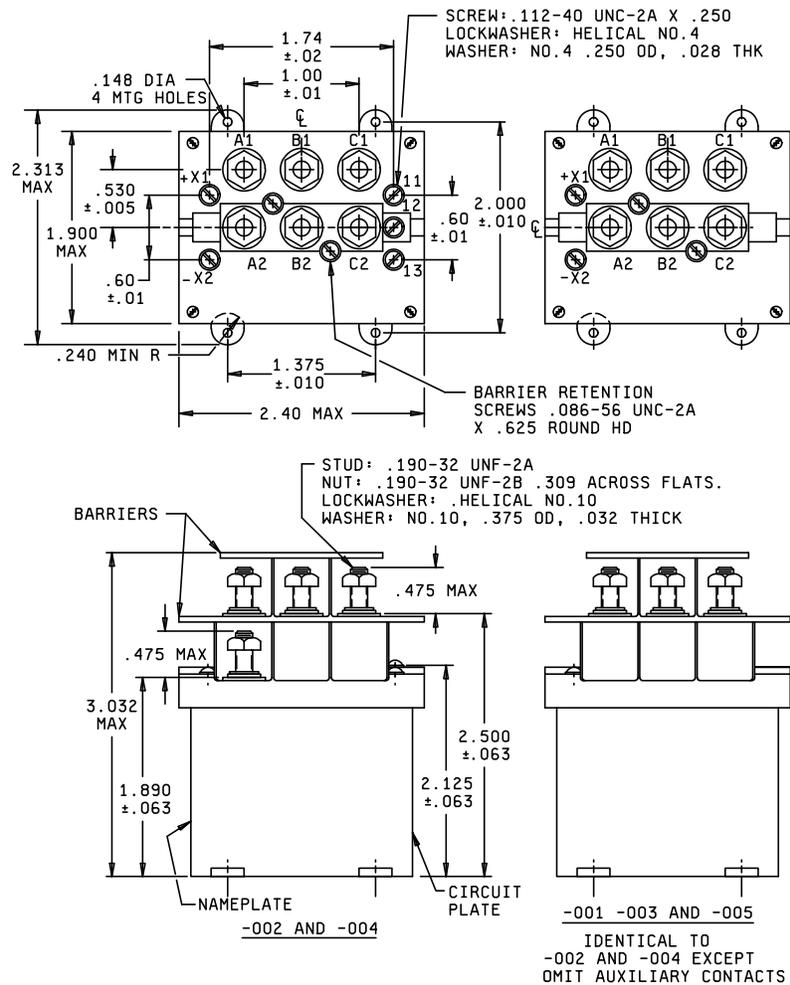
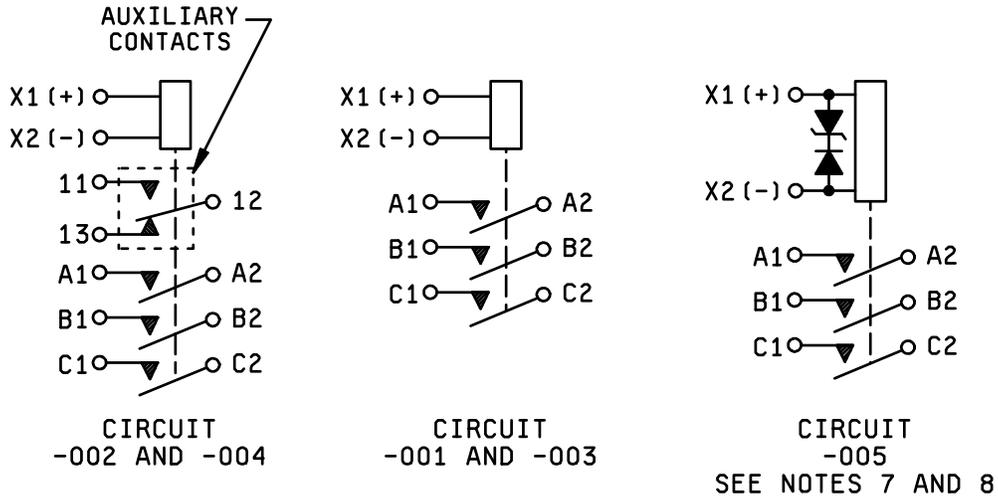


FIGURE 1. Relay, outline drawing.



Inches	mm	Inches	mm	Inches	mm
.005	0.13	.250	6.35	1.375	34.92
.010	0.25	.309	7.85	1.74	44.2
.02	0.5	.375	9.52	1.890	48.00
.028	0.71	.440	11.18	1.900	48.26
.032	0.81	.530	13.46	2.000	50.80
.063	1.60	.600	15.24	2.115	53.72
.148	3.76	.625	15.88	2.313	58.75
.186	4.72	1.000	25.4	2.40	61.0
.240	6.10	1.060	26.92	2.500	63.50
				3.032	77.01

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ± 0.031 (0.79 mm).
4. Weights include cover, barriers, and terminal hardware.
5. When using relay at rated 60 amps, the use of lugs per Burndy part number YAEV6C-G8 or equal is recommended.
6. Terminal temperature rise under continuous current conditions is 95°C maximum.
7. Semiconductor devices shall be JANTX or equivalent. Diodes shall have a peak inverse voltage of 800 V dc minimum.
8. -005 relays shall not operate or be damaged by reversed polarity.

FIGURE 1. Relay, outline drawing - Continued.

TABLE I. Dash number and operating characteristics.

Dash no.	Type	Coil data											Time milliseconds-maximum							
		Coil	Nominal			Maximum		Max pickup voltage <u>1/</u>			Hold voltage <u>1/</u>	Drop out voltage <u>1/</u>	Operate <u>2/</u>	Release <u>3/</u>	Bounce					
			Volts	Freq	Res	Volts	Ampere		Normal <u>1/</u>	High Temp Test					Cont Current Test	Main		Auxiliary		
							Inrush	Steady state								NO	NC	NO	NC	
-001	1	X1, X2	28	DC	-	29	1.25	.25	17	20	21.5	7.0	1.5	25	25	2	-	-	-	
-002	1	X1, X2	28	DC	-	29	1.25	.25	17	20	21.5	7.0	1.5	25	25	2	-	2	2	
-003	1	X1, X2	115	400	-	124	.71	.1	85	95	100	40	10	25	55	2	-	-	-	
-004	1	X1, X2	115	400	-	124	.71	.1	85	95	100	40	10	25	55	2	-	2	2	
-005 <u>4/</u>	1	X1, X2	28	DC	-	29	1.25	.25	17	20	21.5	7.0	1.5	25	25	-	-	-	-	

1/ Over the temperature range 2/ With nominal coil voltage 3/ From nominal coil voltage
4/ -005 is same as -001 except for transient suppressed coil.

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

Type of load	Life operating cycles x10 ³	28 V dc <u>1/</u>				115 V ac, 1 phase <u>1/</u>				115/200 V ac, 3 phase <u>1/</u>			
		Main		Auxiliary		Main		Auxiliary		Main		Auxiliary	
		NO	NC	NO	NC	400 Hz	60 Hz	400 Hz	60 Hz	400 Hz	60 Hz	400 Hz	60 Hz
Resistive	100	-	-	3	3	60	-	3	-	60	-	-	-
Inductive	100	-	-	1.5	1.5	60	-	1.5	-	60	-	-	-
Motor	50	-	-	-	-	40	-	-	-	40	-	-	-
Lamp		-	-	.5	.5		-	.5	-		-	-	-
Transfer load <u>2/</u>		-	-				-		-		-	-	-
Mechanical life reduced current	200	-	-	.75	.75	15	-	.75	-	15	-	-	-
Mixed loads <u>3/</u>	50	-	-	Per spec		4	-	-	-	4	-	-	-

1/ Absence of value indicates relay is not rated for that application.
2/ Transfer load indicates relay suitable for transfer between unsynchronized ac power supplies at rating.
3/ Mixed loads to be conducted at +71°C. Number of mixed loads cycles following continuous current test - 5000.

MIL-PRF-6106/10F

REQUIREMENTS

Weight: 001 and 002 and -005: 10 ounces maximum.
 003 and 004: 11 ounces maximum.

Temperature range: -55°C to +71°C.

Maximum altitude rating: 50,000 feet. [1/](#)

Shock g-level: .5 sine, 25 g's.

Duration: 6 to 9 ms.

Maximum duration contact opening: 1 ms.

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

TABLE III. Vibration-sinusoidal.

Dash No.	Vibration level					
	5-10 Hz	10-55 Hz	55-400 Hz	400-800 Hz	800 - 2000 Hz	
					-55°C and 25°C	+71°C
-001			10 g's	10 g's	10 g's	7 g's
-002			10 g's	8 g's	8 g's	7 g's
-003	.08 DA	.06 DA	10 g's	10 g's	10 g's	7 g's
-004			10 g's	8 g's	8 g's	7 g's
-005			10 g's	10 g's	10 g's	7 g's

Vibration (random): Not applicable.

Acceleration: 15 g's.

Seal:

Applicable specification: [MIL-STD-202](#), method 112, test condition C, procedure IV.

Leak rate: 6×10^{-4} std cc/s.

Strength of terminals and mounting studs:

Torque:

Main terminals: 24 inch-pounds maximum, 18 inch-pounds recommended installation torque.

Auxiliary terminals: 4.4 inch-pounds maximum, 3.3 inch-pounds recommended installation torque.

Insulation resistance, initial. 200 megohms minimum.

After life or environmental tests. 100 megohms minimum.

[1/](#) Application range can be extended to 80,000 feet by suitably encapsulating the terminals.

MIL-PRF-6106/10F

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

	Initial		After life tests	
	28 V dc	115 V ac	28 V dc	115 V ac
Coil to case -----	1,250	1,500	1,000	1,125
Auxiliary contacts -----	1,250	1,250	1,000	1,000
Across open power contacts -----	1,250	1,250	625	625
All other points -----	1,800	1,800	1,350	1,350

Dielectric withstanding voltage (altitude): 1 minute.

	28 V dc	115 V ac
Coil to case -----	500	500
Auxiliary contacts -----	500	500
All other points -----	700	700

Maximum contact drop, initial: .150 volt

After life test: .200 volt.

Overload current: 320 amperes (ac). [1/](#)

Rupture current: 400 amperes (ac).

Coil suppression (transient voltage, back emf): 45 V dc maximum.

Duty rating: Continuous.

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

Part number. M6106/10- (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.

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

[MIL-STD-202](#)

[MIL-STD-461](#)

MIL-PRF-6106/10F

Custodian:
Air Force - 85
DLA - CC

Preparing activity:
DLA - CC

(Project 5945-2011-060)

Review activities:
Air Force - 99

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