

INCH-POUND

MS24141J

13 July 1992

SUPERSEDING

MS24141H

20 February 1990

## MILITARY SPECIFICATION SHEET

RELAYS, ELECTROMAGNETIC, 100 AMPERES,  
1PST (NO), TYPE I, HERMETICALLY SEALED

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 issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-R-6106.

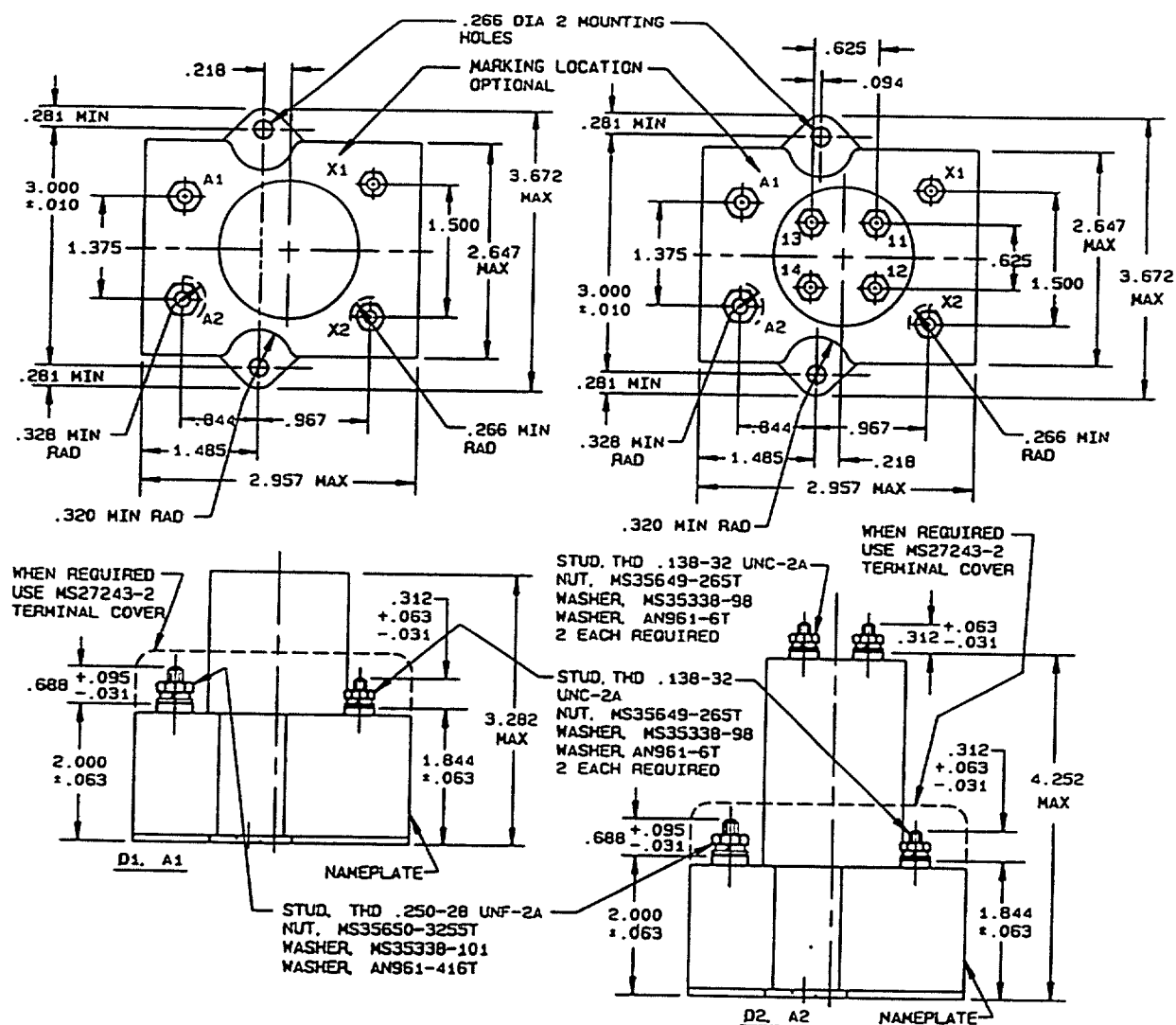


FIGURE 1. Dimensions and configurations.

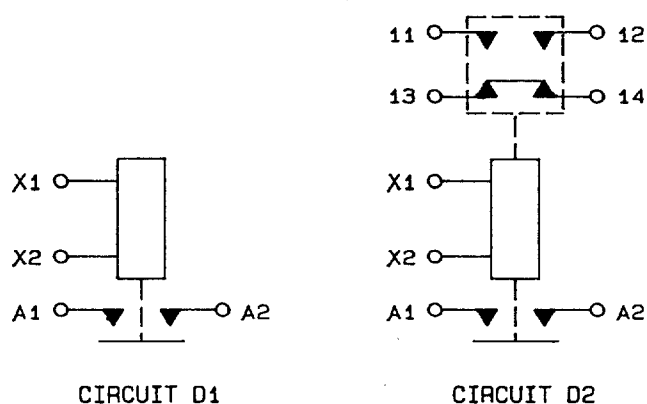
AMSC N/A

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DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

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Inches	mm	Inches	mm	Inches	mm
.010	0.25	.281	7.14	1.500	38.10
.031	0.79	.312	7.92	1.844	46.84
.063	1.60	.320	8.13	2.000	50.80
.094	2.39	.328	8.33	2.467	67.23
.095	2.41	.625	15.88	2.957	75.11
.138	3.51	.688	17.48	3.000	76.20
.218	5.54	.844	21.44	3.282	83.26
.250	6.35	.967	24.56	3.672	93.27
.266	6.76	1.375	34.93	4.252	108.00

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerances are  $\pm .031$ .
4. This specification sheet takes precedence over documents referenced herein.
5. Referenced documents shall be of the issue in effect on date of invitation for bid.
6. Coil and auxiliary terminals may use additional flat washer for terminal seat.

FIGURE 1. Dimensions and configurations - Continued.

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## REQUIREMENTS:

Dimensions and configurations: See figure 1.

## ENVIRONMENTAL CHARACTERISTICS:

Temperature range 1/: -70° to +125°C.

Maximum altitude rating: 80,000 ft.

Shock G-level: 25 g's.

Duration: 6-9 ms.

Max duration contact opening: 2 ms.

Vibration - sinusoidal: See table I.

Vibration - random: Not applicable.

High shock: Not applicable.

Acceleration: 15 g's.

## ELECTRICAL CHARACTERISTICS (see tables II, III, and IV):

Insulation resistance, initial: 100 megohms.

After life or environmental tests: 50 megohms.

Dielectric strength (sea level): 2-5 seconds.

	Initial		After Life tests	
	28 V dc	115 V ac	28 V dc	115 V ac
Coil to case	1,250 V rms	1,500	1,000 V rms	1,125
Aux contacts	1,250 V rms	1,500	1,000 V rms	1,125
All other points	1,250 V rms	1,500	1,000 V rms	1,125

Dielectric strength (altitude): 1 minute.

	28 V dc	115 V ac
Coil to case	500 V rms	500
Aux contacts	500 V rms	500
All other points	500 V rms	500

Max contact drop initial: .150 volt.

After life test: .175 volt.

Overload current (NO): 800 amperes.

Rupture current (NO): 1000 amperes.

Duty rating: Continuous.

RFI specification: MIL-STD-461.

(Applicable to coil circuits of ac operated relays).

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TABLE I. Vibration levels.

Dash number	5-10 Hz	10-55 Hz	55-250 Hz	250-500 Hz	500-1,500 Hz
D1	.08 DA	.06 DA	10 g's	10 g's	7 g's
D2				5 g's	5 g's

TABLE II. Operating characteristics.

Dash number MS24141-	Coil data										Time - milliseconds max			
	Rated		Max		Max pick-up voltage			Hold		Drop out voltage 2/	Operate 3/	Release 4/	Contact bounce	
	Coil	Volts 1/	Frequency Hz	Res +15% -10	Volts	Ampere	Normal 2/	High test temp	Cont current test	voltage 2/			Main	Aux
D1	X1,X2	28	dc	64.5	29	0.5	18	21	22.5	7	1.5	10	2.5	
D2	X1,X2	28	dc	64.5	29	0.5	18	21	22.5	7	1.5	10	2.5	4

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.

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TABLE III. 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/ Aux
		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	100		5	5	100		5						
Inductive	10	100		5	5			5						
Inductive														
Motor	50	100				75								
Lamp	50	50		.75	.75	50		.75						
Transfer load														
Mechanical life reduced current	100	25		1.25	1.25			1.25						
Intermediate current	50	10		Applicable per spec		10								

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

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

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Part or Identifying Number (PIN): MS24141 (plus dash number from table V).

General Characteristics: See table V.

Qualification by similarity: See table VI.

TABLE V. Dash numbers and general characteristics. 1/

Part number MS24141 -	Type	Coil type	Terminal type	Mounting or mating socket	Auxiliary contacts	Maximum weight in pounds 2/
D1	I	dc	Stud	Flange	None	1.4
D2		dc			Yes	1.6

1/ A1 and A2 have been canceled without replacement.

2/ Weights include covers and barriers.

TABLE VI. Qualification by similarity.

Part number MS24141-	Loads						Dynamics 1/ 3/			Environmental 2/		
	Type I			Type I ER								
	A	B	C	D	E	F	A	B	C	A	B	C
D1	4						2			4		
D2	4						2			4		
	2/									2/		

1/ For group C testing, each dash number shall be tested to meet vibration requirements.

2/ Testing of relays with auxiliary contacts: Reference to MIL-R-6106, appendix I.

3/ All relays must be tested. Reference MIL-R-6106, appendix I.

Revision letters are not used due to extensiveness of the changes.

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CONCLUDING MATERIAL

Custodians:

Air Force - 85  
NAVY - AS

Review activities:

Air Force - 99  
Navy - AS, EC

Preparing activity:

Air Force - 85

Agent:

DLA - ES

(Project 5945-0884-01)