INCH-POUND

MS24142L
15 Mar 93
SUPERSEDING
MS24142K
13 July 1992

MILITARY SPECIFICATION SHEET

RELAYS, ELECTROMAGNETIC, 200 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.

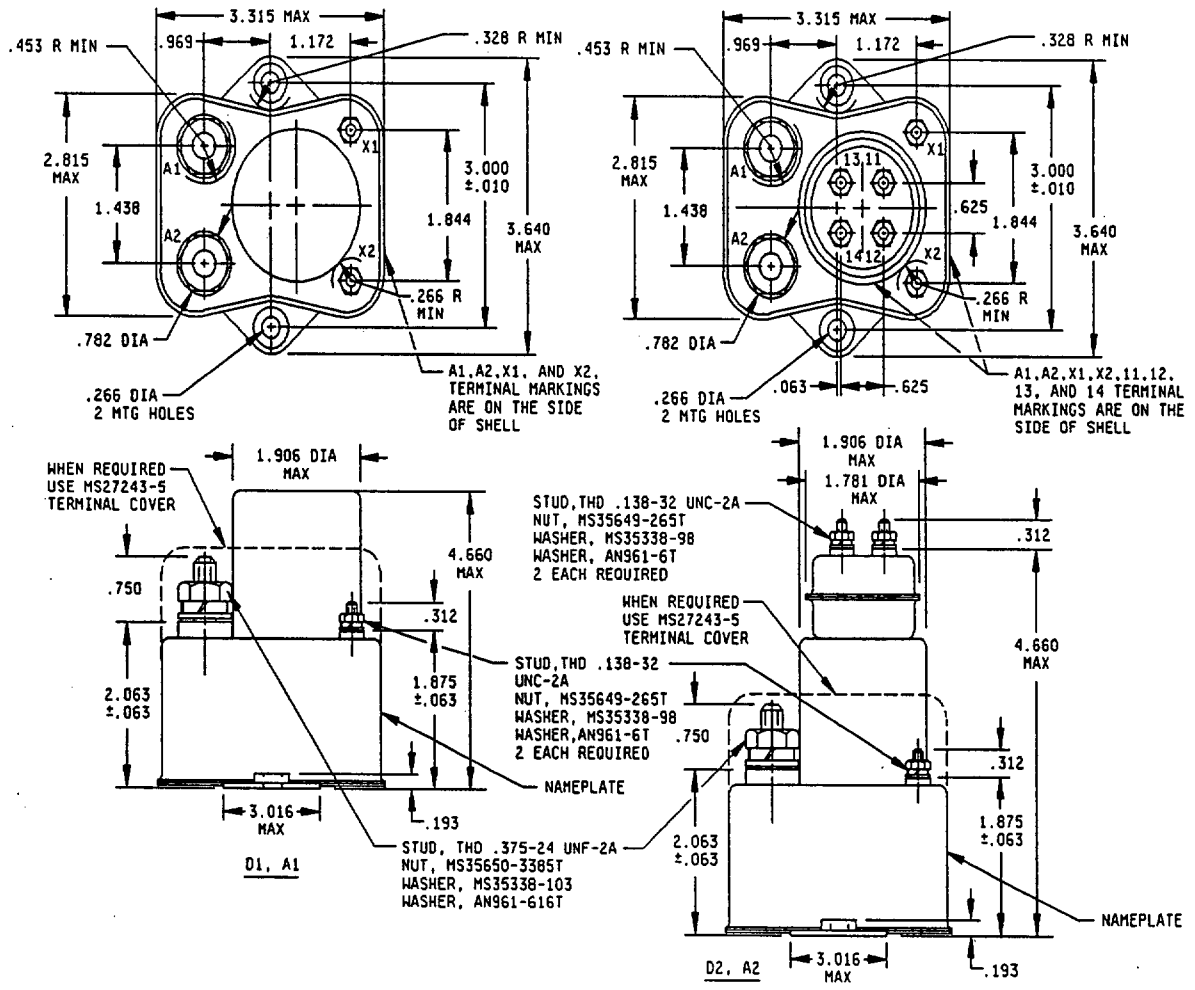
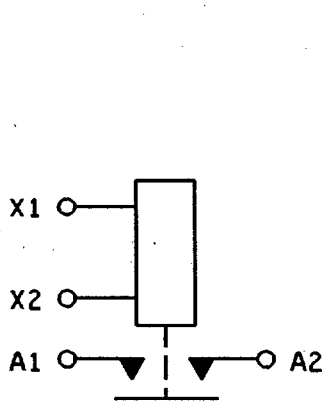
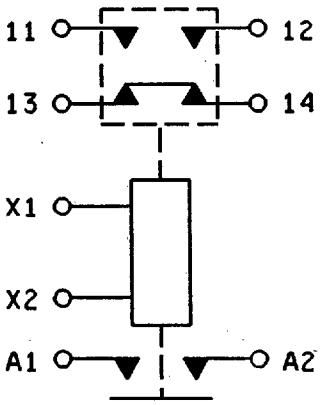


FIGURE 1. Dimensions and configurations.



CIRCUIT D1



CIRCUIT D2

Inches	mm	Inches	mm	Inches	mm
.010	0.25	.375	9.53	1.875	47.63
.031	0.79	.453	11.51	2.063	52.40
.063	1.60	.625	15.88	2.847	72.31
.095	2.41	.750	19.05	3.000	76.20
.138	3.51	.969	24.61	3.347	85.01
.240	6.10	1.172	29.77	3.672	93.27
.266	6.76	1.438	36.53	3.732	94.79
.312	7.92	1.844	46.84	4.692	119.18
.328	8.33				

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerances are ±.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.

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): 1600 amperes.

Rupture current (NO): 2000 amperes.

Duty rating: Continuous.

RFI specification: MIL-STD-461.
(Applicable to coil circuits of ac operated relays).

TABLE I. Vibration levels.

Part or Identifying Number (PIN)	5-10 Hz	10-55 Hz	55-250 Hz	250-500 Hz	500-1,500 Hz
D1	.08 DA	.06DA	10 g's	5 g's	4 g's
D2				3 g's	3 g's

TABLE II. Operating characteristics.

PIN MS24142-	Coil data											Time - (milliseconds maximum) 2/					
	Coil	Rated			Max		Max pick-up voltage			Hold voltage 2/	Drop out voltage 2/	Operate 3/	Release 4/	Contact bounce 4/			
		Volts 1/	Freq. Hz	Res +15% -10	Volts	Amps.	Normal 2/	High test temp	Cont current test					Main		Aux	
														NO	NC	NO	NC
D1	X1,X2	28	dc	52	29	0.6	18	21	22.5	7.0	1.5	40	15	2			
D2	X1,X2	28	dc	52	29	0.6	18	21	22.5	7.0	1.5	40	15	2		4	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.

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

Type of load	Life operating cycles x 10^3	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	60 Hz
Resistive	50	200		5	5	200		5					
Inductive	10	100		5	5								
Inductive													
Motor	50	200				150							
Lamp				.75	.75			.75					
Transfer load 2/													
Mechanical life reduced current	100	50		1.25	1.25	50		1.25					
Inter-mediate current	50	20	Applicable per spec			20							

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.

Part or Identifying Number (PIN): MS24142 (plus dash number from table IV).

General characteristics: See table IV.

Qualification by similarity: See table V.

TABLE IV. Dash numbers and general characteristics. 1/

Part number MS24142-	Type	Coil type	Terminal type	Mounting or mating socket	Auxiliary contacts	Maximum weight in pounds 2/
D1	I	dc	Stud	Flange	None	2.3
D2		dc			Yes	2.5

1/ A1 and A2 have been canceled without replacement.
2/ Weights include covers and barriers.

TABLE V. Qualification by similarity.

Part number MS24142-	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.

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-F742-02)