

INCH-POUND

MS27242K  
 27 November 2003  
 SUPERSEDING  
 MS27242J  
 9 October 1990

## DETAIL SPECIFICATION SHEET

RELAYS, ELECTROMAGNETIC, 100 AMPERES, 1 PST  
 N. O. TYPE I, HERMETICALLY SEALED

INACTIVE FOR NEW DESIGN AFTER 1 FEBRUARY  
 2000. NO SUPERSEDING SPECIFICATION.

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 and the latest issue of MIL-PRF-6106.

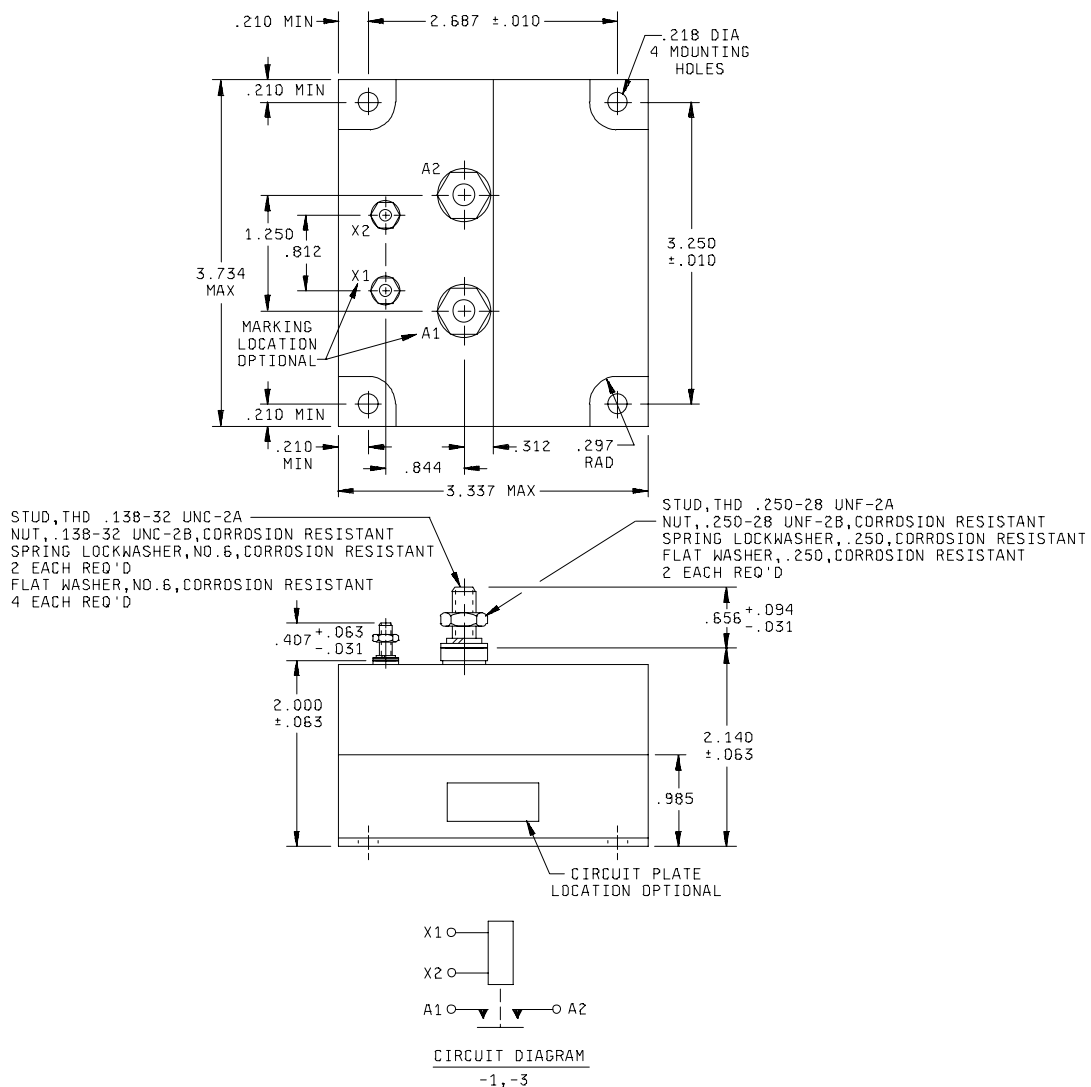


FIGURE 1. Dimensions and configuration.



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Inches	mm	Inches	mm	Inches	mm
.010	0.25	.407	10.34	2.063	52.40
.031	0.79	.625	15.88	2.140	54.36
.063	1.60	.656	16.66	2.687	68.25
.094	2.39	.812	20.62	3.250	82.55
.138	3.51	.844	21.44	3.337	84.76
.210	5.33	.985	25.01	3.734	94.84
.218	5.54	1.250	31.75		
.250	6.35	1.469	37.31		
.297	7.54	2.000	50.80		
.312	7.92	2.016	51.21		

## NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is  $\pm .031$  (0.79 mm).
4. Coil and auxiliary terminals may use additional washer for terminal seat.
5. Terminal covers and barriers may be required at power or auxiliary terminals.
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. Referenced Government documents of the issue listed in that issue of the Department of Defense Index of Specifications and Standards (DoDISS) specified in the solicitation forms a part of this standard to the extent specified herein.
8. For detail information, see tables I through IV.

FIGURE 1. Dimensions and configurations - Continued.TABLE I. Relay characteristics.

PIN number MS27242-	Type	Coil type	Terminal type	Mounting or mating socket	Auxiliary contacts	Max weight wt. lbs. <u>1/</u>
1	I	dc	Stud	Flange	None	1.20
2	I	dc	Stud	Flange	Yes	1.25
3	I	ac	Stud	Flange	None	1.25
4	I	ac	Stud	Flange	Yes	1.30

1/ Weights include terminal barriers and covers.

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TABLE II. Operating characteristics.

PIN MS 27242-	Coil data											Time - (milliseconds maximum)						
	Coil	Rated			Max		Max pick-up voltage			Hold voltage 3/	Drop out voltage 3/	Oper-ate 1/	Rel-ease 4/	Contact Bounce 1/				
		Volts 2/	Freq Hz	Res Ω ±10%	Volts	Amp	Nor-mal 3/	High temp test	Cont- current test					Main		Aux		
														NO	NC	NO	NC	
1	X1,X2	28	dc	51	29	.6	18	21	22.5	7.0	1.5	25	10	2	---	---	---	
2	X1,X2	28	dc	51	29	.6	18	21	22.5	7.0	1.5	25	10	2	---	2	2	
3	X1,X2	115	60/ 400	N/A	124	.2	90	100	104	40	10	25	50	2	---	---	---	
4	X1,X2	115	60/ 400	N/A	124	.2	90	100	104	40	10	25	50	2	---	2	2	

1/ With rated coil voltage

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

3/ Over the temperature range.

4/ From rated coil voltage.

Qualification by similarity: See MIL-PRF-6106.

Part or Identifying Number (PIN): MS27242- (plus dash number from table I).

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

Type of load	Life operat ing cycles x 10 <sup>3</sup>	28 V dc				115 V ac, 1 phase				115/200 V ac, 3 phase 1/				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	100	---	5	5	100	---	5	---	---	---	---	---	
Inductive	10	100	---	5	5	100	---	5	---	---	---	---	---	
Inductive														
Motor	50	100	---	---	---	---	---	---	---	---	---	---	---	
Lamp	---	---	---	1	1	---	---	1	---	---	---	---	---	
Transfer load														2/
Mechanical life reduced current	100	25	---	1.25	1.25	25	---	1.25	---	---	---	---	---	
Mixed loads	50	Applicable in accordance with MIL-PRF-6106												

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.

TABLE IV. Vibration level.

PIN MS27742-	5 - 10 Hz	10 - 55 Hz	55 - 250 Hz	250-500 Hz	500-1500 Hz
1	.08 DA	.06 DA	15 g	15 g	12 g
2	.08 DA	.06 DA	10 g	10 g	10 g
3	.08 DA	.06 DA	15 g	15 g	15 g
4	.08 DA	.06 DA	10 g	10 g	10 g

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## Environmental characteristics:

Temperature range	-70°C to +125°C
Maximum altitude rating	80,000 ft
Shock G-level	50 g's
Duration	6-9 ms
Maximum duration contact opening	2 ms
Vibration - sinusoidal	(See table IV)
Vibration - random	N/A
Acceleration	15 g's

## Electrical characteristics:

Minimum insulation resistance, initial	100 megohms
After life or environmental tests	50 megohms
Dielectric strength (sea level) (see table V)	2-5 seconds

Group B and Group C inspections are not required.

Table V. Dielectric strength (sea level).

Dielectric strength	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
Aux contacts	1,250		1,000	
All other points	1,800		1,350	

Dielectric strength (altitude) (see table VI) 1 minute.

TABLE V. Dielectric strength (altitude).

Dielectric strength	<u>28 V dc</u>	<u>115 V ac</u>
Coil to case	500	500
Aux contacts	500	500
All other points	700	700

Qualification by similarity: See MIL-PRF-6106.

Maximum contact drop initial	0.150 volts
After life test	0.175 volts
Overload current (NO)	800 amperes

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Rupture current (NO)	1,000 amperes
Duty rating	Continuous
RFI specification	MIL-STD-461
(Applicable to coil circuits of ac operated relays.)	

## NOTES

Referenced documents. In addition to MIL-PRF-6106, this specification sheet references the following documents. (Government documents are available on line at <http://assist.daps.dla.mil/quicksearch> or [www.dodssp.daps.mil](http://www.dodssp.daps.mil) or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094).

## STANDARDS

Department of Defense

MIL-STD-461 - Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment

## Custodians:

NAVY - AS  
Air Force - 11  
DLA - CC

## Preparing activity:

DLA - CC

(Project 5945-1221-16)

## Review activities:

Air Force - 99  
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 ASSIST Online database at [www.dodssp.daps.mil](http://www.dodssp.daps.mil).