

INCH-POUND

MS25270K  
 27 November 2003  
 SUPERSEDING  
 MS25270J  
 20 Jan 1989

DETAIL SPECIFICATION SHEET

RELAYS, ELECTROMAGNETIC, 5 AMPERES,  
 6 PDT, TYPE I, POTTED LEAD,  
 HERMETICALLY SEALED

INACTIVE FOR NEW DESIGN AFTER 5 JUN  
 1987. 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.

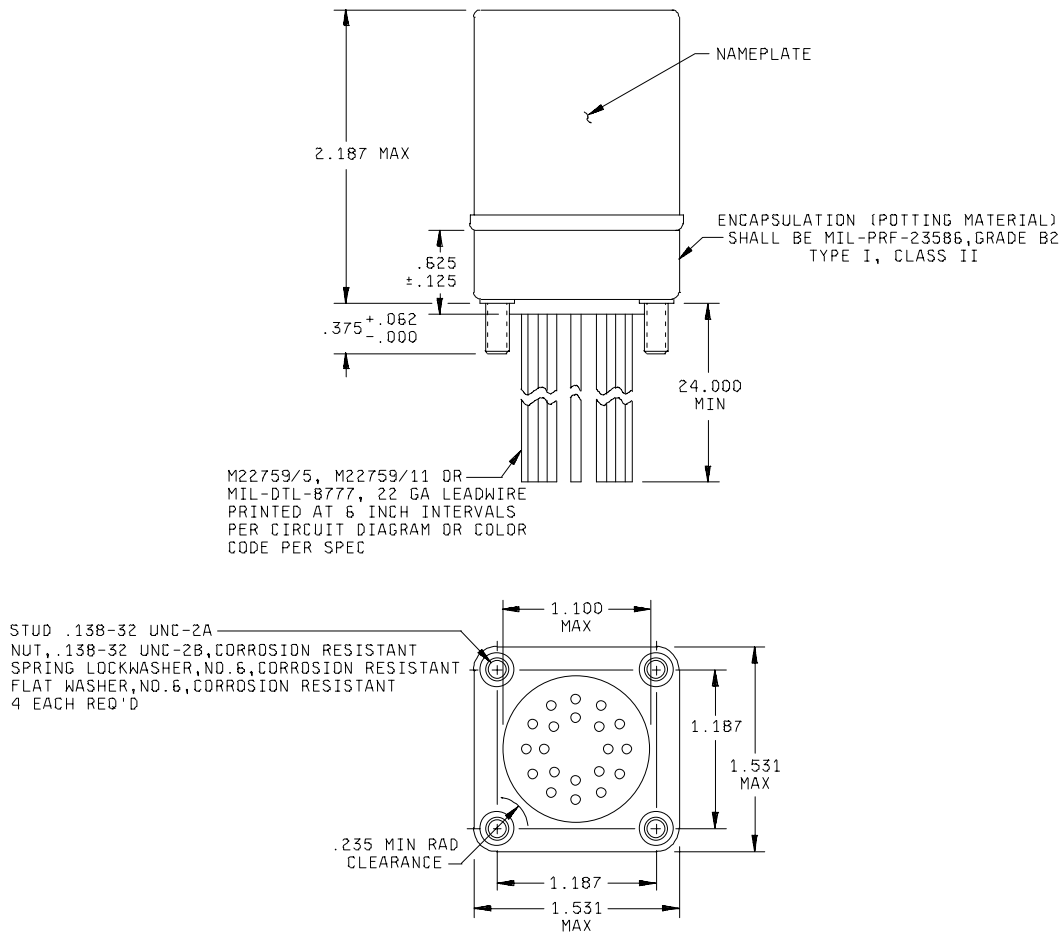
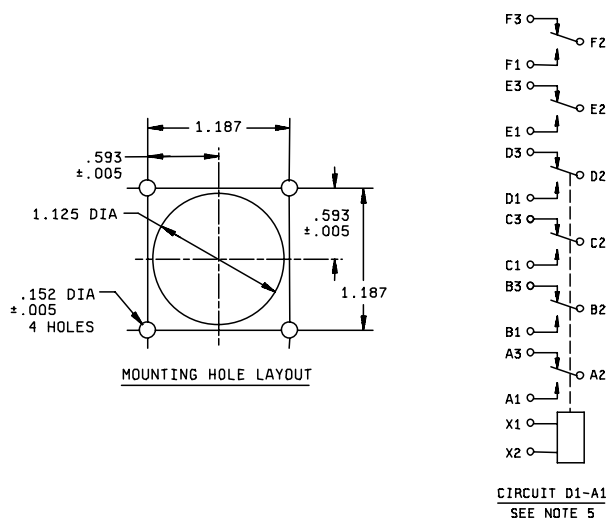


FIGURE 1. Dimensions and configurations.

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NOTES:

- 1/ Dimensions are in inches.
- 2/ Metric equivalents are given for general information only.
- 3/ Unless otherwise specified, tolerance is  $\pm 0.010$  (0.25 mm).
- 4/ Terminal numbers need not appear on relay header provided there is affixed to the relay a suitable legible circuit diagram that permanently and positively identifies each terminal location specified hereon.
- 5/ The use of diodes on ac relays is optional. Actual application must be shown on label.
- 6/ In the event of 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 specification to the extent specified herein.

Inches	mm
.005	0.13
.062	1.57
.125	3.18
.152	3.86
.235	5.97
.375	9.53
.025	15.88
1.100	27.94
1.187	30.15
1.531	38.89
2.187	55.55
24.00	609.60

FIGURE 1. Dimensions and configurations – Continued.

TABLE I. Dash numbers and characteristics.

Dash number MS25270-	Type	Coil	Terminal type	Mounting or mating socket	Max weight in pounds
D1	I	dc	Lead	Stud	.67
A1	I	ac	Lead	Stud	.67

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TABLE II. Operating characteristics.

PIN MS25270-	Coil data										Time - milliseconds max						
	Coil	Rated			Max		1/ Max pick-up voltage			Hold voltage 2/	Drop out vol- tage 2/	Oper- ate 3/	Rel- ease 4/	Contact Bounce			
		Volts 1/	Freq Hz	$\Omega$ Res	Volts	Amp	Nor- mal 2/	High temp test	Cont cur- rent test					Main		Aux	
														NO	NC	NO	NC
D1	X1, X2	28	dc	N/A	29	0.18	18	19.8	22.5	7.0	1.5	20	20	2	2	N/A	N/A
A1	X1, X2	115	400 5/	N/A	122	0.04	90	95	103	30	5.0	25	50	2	2	N/A	N/A

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 nominal coil voltage.

4/ From nominal coil voltage.

5/ MS25270-A1 may be used on 60 Hz if maximum ambient temperature is +85°C (maximum coil current shall be 0.044 ampere).

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

Type of load	Life operat- ing cycles $\times 10^3$	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	100	5	5			5	4							
Inductive	100													
Inductive	20	3	3			3	2							
Motor	100	1.5	1.5			1.5	1							
Lamp	100	0.8	0.8			0.8	0.6							
Transfer load														2/
Mechanical life reduced current	400	1.25	1.25			1.25	1							
Mixed loads		Applicable per specification												

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.

Environmental characteristics.

Temperature range	-70°C to +125°C
Max altitude rating	80,000 ft
Shock G-level	25 g's
Duration	11 ms
Max duration contact opening	10 $\mu$ s
Vibration - sinusoidal (see chart below)	
G-level	10 g's
Frequency range	5-1,500 Hz

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Vibration - random	
Applicable spec	N/A
Power spectral density	N/A
RMS G min	N/A
Frequency range	N/A
Curve	N/A
High shock	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).

	<u>Initial</u>	<u>After life tests</u>
Coil to case	1,050 V rms	1,000 V rms
Aux contacts		
All other points	1,050 V rms	1,000 V rms

## Dielectric strength (altitude).

	<u>80,000 ft</u>
Coil to case	1,000 V rms
Aux contacts	
All other points	1,000 V rms

Max contact drop initial	0.150 volt.
After life test	0.175 volt.
Overload current	20 amperes.
Rupture current	25 amperes.
Duty rating	Continuous.
RFI specification	MIL-STD-461
	(Applicable to coil circuits of ac operated relays).

Conformance inspection.

Performance of groups B and C tests are not applicable.

Group A acceptance reports shall be submitted to the preparing activity on a yearly basis in order to retain qualification for this military standard sheet.

Qualification by similarity: See MIL-PRF-6106.

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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).

SPECIFICATIONS

Department of Defense

- MIL-DTL-8777 - Wire, Electrical, Silicone-Insulated, Copper, 600-Volt, 200 Deg. C
- MIL-PRF-23586 - Sealing Compound (with Accelerator), Silicone Rubber, Electrical
- MIL-W-22759/5 - Wire, Electrical, Fluoropolymer-Insulated, Abrasion Resistant Extruded PTFE, Silver-Coated Copper Conductor, 600 Volt
- MIL-W-22759/11- Wire, Electric, Fluoropolymer-Insulated, Extruded TFE, Silver-Coated Copper Conductor, 600-Volt

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 5945-1214-07)

Review activities:

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).