INCH-POUND

MS25321M
31 Aug 1993
SUPERSEDING
MS25321L
5 June 1987

MILITARY SPECIFICATION SHEET

RELAYS, ELECTROMAGNETIC, 5 AMPERES, 2 PDT, TYPE I, SOCKET MOUNTED, HERMETICALLY SEALED

INACTIVE FOR NEW DESIGN AFTER 5 JUN 87
NO SUPERSEDING STANDARD
(FOR NEW DESIGN USE MIL-R-6106/27).

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.

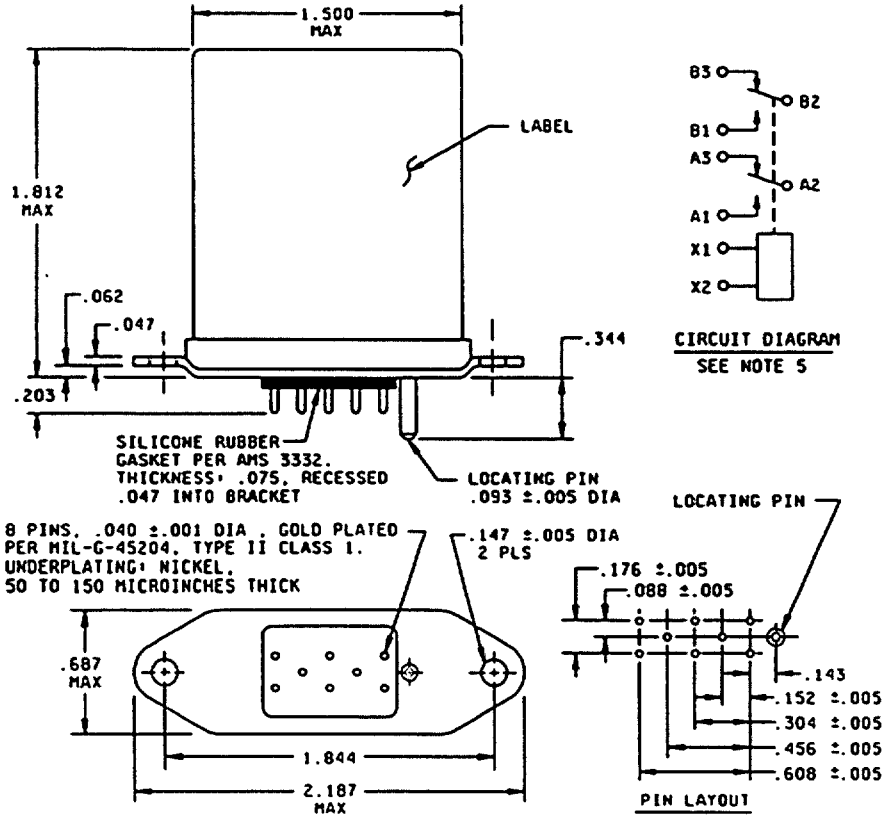

FIGURE 1. Design, dimensions, and circuit diagram.

(M) denotes Changes

Inches	mm	Inches	mm
.001	0.03	.176	4.47
.005	0.13	.203	5.16
.010	0.25	.304	7.72
.040	1.02	.344	8.74
.047	1.19	.456	11.58
.062	1.57	.608	15.44
.075	1.91	.687	17.45
.088	2.24	1.500	38.10
.093	2.36	1.812	46.02
.143	3.63	1.844	46.84
.147	3.73	2.187	55.55
.152	3.86		

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ±.010 inch (0.25 mm).
4. Terminal numbers shall not appear on relay headers. There shall be affixed to the relay a legible circuit diagram that permanently and positively identifies each terminal location specified herein.
5. The use of diodes on ac relays is optional. Actual application shall be shown on label.
6. Pins shall be perpendicular to header surface within one degree.
7. In the event of conflict between the text of this standard and the references cited herein, the text of this standard shall take precedence.
8. Referenced Government documents of the issue listed in that issue of the Department of Defense Index of Specification and Standards (DODISS) specified in the solicitation form a part of this standard to the extent specified herein.

FIGURE 1. Design, dimensions, and circuit diagram - Continued.

REQUIREMENTS:

Design, dimensions, and circuit diagram: See figure 1.

Part or Identifying Numbers (PIN's) and general characteristics: See table I.

Contact data:

Load ratings: See table II.

Maximum contact drop:

Initial: 0.150 volt.

After life test: 0.175 volt.

Overload current: 20 amperes.

Rupture current: 25 amperes.

Coil data: See table III.

Duty rating: Continuous.

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

Electrical data:

Minimum insulation resistance:

Initial: 100 megohms.

After life or environmental test: 50 megohms.

Dielectric strength (sea level):

	Initial	After life tests
Coil to case	1,000 V rms	750 V rms
Aux contacts	N/A	N/A
All other points	1,000 V rms	1,000 V rms

Dielectric strength (80,000 ft):

	Initial	After life tests
Coil to case	250 V rms	N/A
Aux contacts	N/A	N/A
All other points	250 V rms	N/A

ENVIRONMENTAL CHARACTERISTICS:

Temperature range : -70°C to +125°C.

Maximum altitude rating: 80,000 ft.

Shock G-level: 50 g's.

Duration: 6 ms.

Max duration contact opening: 100 μs.

Vibration (sinusoidal):

G-level: 10 g's.

Frequency range: 5 - 1,500 Hz.

Acceleration: 15 g's.

QUALITY CONFORMANCE INSPECTION

Performance of groups B and C tests is not applicable.

Part or Identifying Number (PIN): MS25321- (plus dash number from table I).

TABLE I. Dash numbers and general characteristics.

Dash number MS25321-	Type	Coil	Terminal type	Max weight (pounds)
D2	I	dc	Plug in	0.18
A2	I	ac	Plug in	0.20
A3	I	ac	Plug in	0.20

(M) TABLE II. Rated contact load (amperes per pole) (case grounded). 1/

Type of load	Life operating cycles x 10^3	28 V dc				115 V ac, 1 phase				115/200 V ac, 3 phase				See appropriate 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							
Inter-mediate current	Applicable per MIL-R-6106													

1/ Absence of value indicates parameter is not applicable to this specification.
2/ Transfer load indicates relay is suitable for transfer between unsynchronized ac power supplies at the rating indicated.

(M) TABLE III. Operating characteristics.

Dash number	Coil data											Time - (milliseconds maximum) 2/					
		Rated			Max		Max pick-up voltage							Contact bounce 5/			
														Main		Aux	
MS25321-	Coil	Volts 1/	Freq. Hz	Res. Ω	Volts	Am-peres	Normal 2/	High temp test	Cont current test	Hold volt-age 2/	Drop out volt-age 2/	Operate 3/	Release 4/	NO	NC	NO	NC
D2	X1,X2	28	dc	N/A	29	0.15	18	19.8	22.5	7.0	1.5	20	20	2	2		
A2	X1,X2	115	400	N/A	122	0.06	90	95	103	35	5.0	25	50	2	2		
A3	X1,X2	115	50/60	N/A	122	0.07	90	95	103	35	5.0	25	50	2	2		

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.
5/ Absence of value indicates parameter is not applicable to this specification.

CONCLUDING MATERIAL

Custodians:
Navy - AS
Air Force - 85

Review activities:
Navy - EC
Air Force - 99
DLA - ES

Preparing activity:
Air Force - 85

Agent:
DLA - ES

(Project 5945-0902-01)