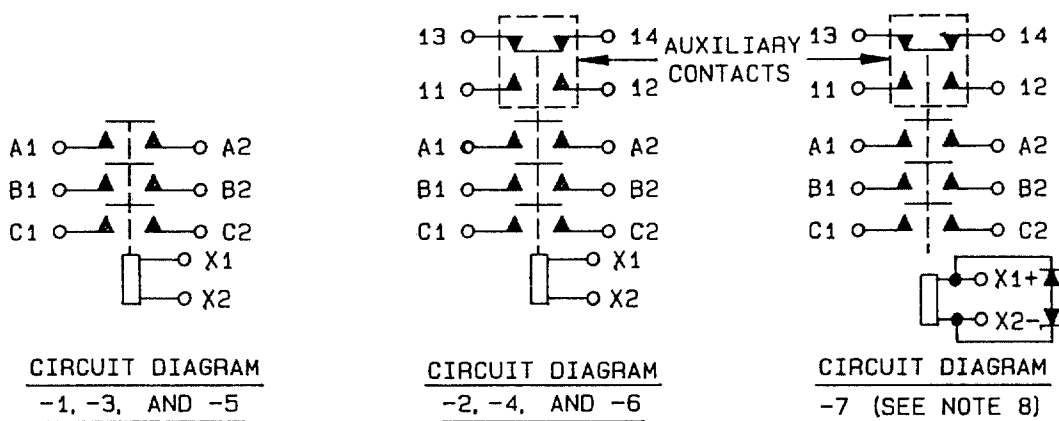




MS27222L



Inches	mm	Inches	mm	Inches	mm
.010	0.25	.218	5.54	.812	20.62
.031	0.79	.250	6.35	1.156	29.36
.047	1.19	.254	6.45	1.812	46.02
.063	1.60	.297	7.54	2.170	55.12
.079	2.01	.328	8.33	2.190	55.63
.138	3.51	.391	9.93	2.687	68.25
.140	3.56	.438	11.13	3.250	82.55
.190	4.83	.625	15.88	3.337	84.76
.210	5.33	.656	16.66	3.734	94.84
.215	5.46	.750	19.05		

## NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is  $\pm 0.031$  (0.79 mm).
4. Coil and auxiliary terminals may use additional washer for terminal seat.
5. In the event of a conflict between the text of this specification sheet and the references cited herein, the text of this specification sheet shall take precedence.
6. 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 form a part of this specification sheet to the extent specified herein.
7. Terminal strength: High temperature pull and torque test not applicable.
8. When semiconductors are required, JANTX or equivalent screened semiconductors shall be used. Relays using suppression devices shall continue to operate should the suppression circuit be in a failure mode. Diodes shall have a peak inverse voltage of 600 V dc minimum.
9. For detail information, see tables I through V.

Ⓛ FIGURE 1. Dimensions and configuration - Continued.

MS27222L

REQUIREMENTS:

Dimensions and configuration: See figure 1.

Dash numbers and general characteristics: See table I.

Contact data:

Load ratings: See table II.

Maximum contact drop:

Initial: 0.150 volts.

After life test: 0.175 volts.

Overload current (NO): 400 amperes.

Rupture current (NO): 500 amperes (only 5 operations rupture after minimum current test).

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): 2 - 5 seconds (see table IV).

Dielectric strength (altitude): 1 minute (see table V).

Environmental characteristics:

Temperature range: -70°C to +125°C.

Maximum altitude rating: 80,000 ft.

Shock G-level: 59 g's.

Duration: 6 - 9 ms.

Maximum duration contact opening: 2 ms.

Vibration (sinusoidal): See table VI.

Nonoperate:

G-level: 15 g's.

Frequency range curve: 20 to 2,000 Hz.

Acceleration: 15 g's.

## MS27222L

Qualification by similarity: See table VII.

Part or Identifying Number (PIN): MS27222- (plus dash number from table I).

TABLE I. General characteristics.

PIN MS27222-	Type	Coil type	Terminal type	Mounting or mating socket	Auxiliary terminals	Maximum wt. lbs. <u>1/</u>
1	I	dc	Lug	N/A	None	1.25
2	I	dc	Lug	N/A	With	1.30
3	I	ac	Lug	N/A	None	1.30
4	I	ac	Lug	N/A	With	1.35
5	I	ac	Lug	N/A	None	1.30
6	I	ac	Lug	N/A	With	1.35
7	I	dc	Lug	N/A	With	1.30

1/ Weights include terminal barriers and covers.

MS27222L

TABLE II. 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/						See appropriate notes
		Main		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	400 Hz	60 Hz	400 Hz	60 Hz			
Resistive	50	50	---	5	5	50	---	5	5	50	---	5	5	50	---	---	---			
Inductive	10	50	---	5	5	50	---	5	5	50	---	5	5	50	---	---	---			
Inductive																				
Motor	50	50	---	---	---	50	---	---	---	---	50	---	---	50	---	---	---			
Lamp	---	---	---	1	1	---	---	---	1	1	---	---	---	---	---	---	---			
Transfer load																		2/		
Mechanical life reduced current	100	12.5	---	1.25	1.25	12.5	---	---	1.25	1.25	12.5	---	---	12.5	---	---	---			
Intermediate current	50																			

Applicable in accordance with MIL-R-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.

MS27222L

TABLE III. Operating characteristics.

PIN MS27222-	Coil data										Time - (milliseconds max.)						
	Coil	Rated		Max.		Max. pick-up voltage			Hold voltage 2/	Drop- out voltage 2/	Operate 3/ _	Release 4/ _	Bounce				
		Volts 1/ _	Freq. Hz	Res. Ω	Volts	A	Normal 2/ _	High temp. test					Cont. current test	Main		Aux.	
														NO	NC		NO
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	---	4	4
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	---	4	4
5	-X1,X2	115	400	N/A	124	.2	90	100	104	40	10	25	50	2	---		
6	X1,X2	115	400	N/A	124	.2	90	100	104	40	10	25	50	2	---	4	4
7 5/	X1,X2	28	dc	51	29	.6	18	21	22.5	7.0	1.5	25	10	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.

5/ Coil suppression (transient voltage back EMF) 43 V dc maximum.

## MS27222L

TABLE IV. 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
Auxiliary contacts	1,250	1,500	1,000	1,125
All other points	1,250	1,800	1,000	1,350

TABLE V. Dielectric strength (altitude).

Dielectric strength	28 V dc	115 V ac
Coil to case	500	500
Auxiliary contacts	500	500
All other points	700	700

TABLE VI. Vibration level (sinusoidal).

PIN MS27222-	5 - 10 Hz	10 - 55 Hz	55 - 750 Hz	750 - 1500 Hz
1, 3, and 5	.06 DA	.06 DA	15 g's	12 g's
2, 4, and 6	.06 DA	.06 DA	10 g's	10 g's

MS27222L

TABLE VII. Qualification by similarity.

PIN MS27222-	Loads						Dynamics 1/				Environmental 2/		
	Type 1			Type 1 ER			A	B	C	D	A	B	C
	A	B	C	D	E	F							
1	4						2				4		
2	4 2/						2				4		
3			2, 3							1			2, 3
4			2, 3 2/							1			2, 3
5		2, 3							1			2, 3	
6		2, 3 2/							1			2, 3	
7	2, 3 2/						1				2, 3		

1/ All units must be tested. Reference the appendix of MIL-R-6106 (construction, internal).

2/ Test unit with auxiliaries. Reference appendix of MIL-R-6106 (construction, internal).

## 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 5945-0876)





DEPARTMENT OF THE AIR FORCE  
2750 LOG/ES  
STANDARDIZATION  
CUSTOMER SATISFACTION INQUIRY

TELEPHONE - COM 513-296-5517 DSN 986-5517  
FAX - COM 513-296-8783 DSN 986-8783



VERY DISSATISFIED	DISSATISFIED	SOMEWHAT DISSATISFIED	SOMEWHAT SATISFIED	SATISFIED	VERY SATISFIED	NOT APPLICABLE
----------------------	--------------	--------------------------	-----------------------	-----------	-------------------	-------------------

1                      2                      3                      4                      5                      6                      7

(PLEASE ENTER THE VALUE THAT YOU FEEL IS APPROPRIATE)

## I. STAFF

1. PROVIDERS QUALIFICATIONS/COMPETENCE----- ☐

2. PROVIDERS PROFESSIONALISM----- ☐

3. PROVIDERS RESPONSE TO YOUR INITIAL REQUEST ----- ☐ TIMELINESS ☐ QUALITY

## II. PRODUCT

1. INITIAL DRAFT ----- ☐ TIMELINESS ☐ QUALITY

2. REVISION/AMENDMENT SATISFIED YOUR REQUIREMENT ----- ☐ TIMELINESS ☐ QUALITY

## III. COMMENTS/SUGGESTIONS

(CONSTRUCTIVE COMMENTS OR SUGGESTIONS APPRECIATED)

MS27222L

---



---



---



---



---



---



---