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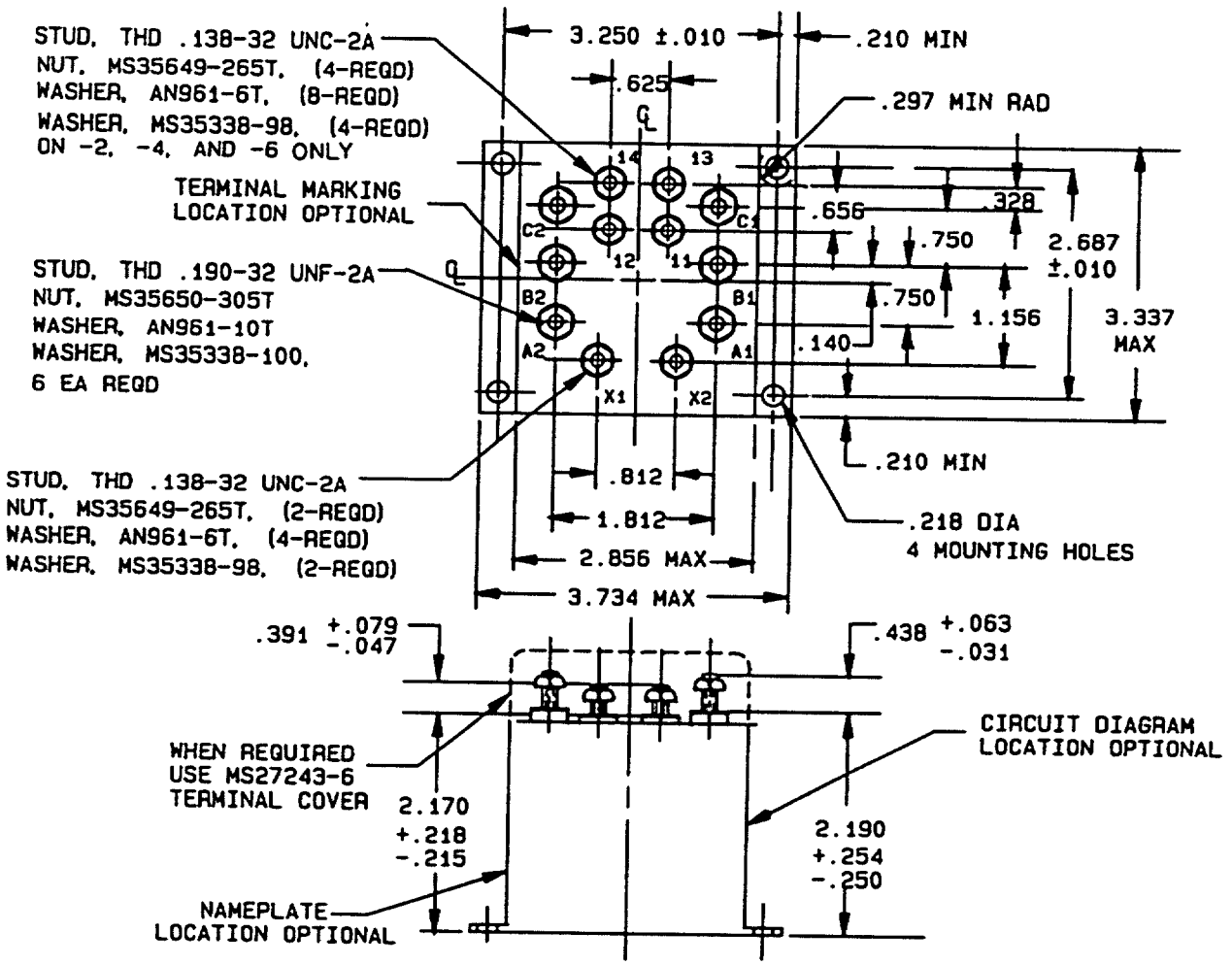

CIRCUIT -1 -3 AND -5

CIRCUIT -2 -4 AND -6

CIRCUIT -7 (SEE NOTE 8)

Ⓚ ENTIRE STANDARD REVISED

PREPARING ACTIVITY: Air Force-85 CUSTODIANS: ARMY - NAVY - AS AIR FORCE - 85 DLA - Agent: DLA-ES REVIEW: USER: PROJECT NUMBER 5945-0852-01	MILITARY SPECIFICATION SHEET TITLE RELAYS, ELECTROMAGNETIC, 50 AMPERES, 3PST, N.O. TYPE I, HERMETICALLY SEALED	SPECIFICATION SHEET NUMBER MS27222K 18 April 1991 SUPERSEDING MS27222J 9 OCT 1990 AMSC N/A FSC 5945

DISTRIBUTION STATEMENT
A: Approved for public release; distribution is unlimited.

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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, tolerances are ±.031 inch (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.

TABLE I. Relay characteristics.

MS Part or Identifying Number MS27222-	Type	Coil type	Terminal type	Mounting or mating socket	Auxiliary terminals	Maximum wt lbs 1/
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.

TABLE II. Operating characteristics.

MS PIN MS27222-	Coil data												Time - (milliseconds - maximum)					
	Coil	Nominal			Maximum		Max pick-up voltage			Hold voltage 3/	Drop-out voltage 3/		Operate 1/	Release 4/	Bounce 1/			
		Volts 2/	Freq. Hz	Res Ω ±10%	Volts	Amperes	Normal 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	---	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	X1,X2	28	dc	51	29	.6	18	21	22.5	7.0	1.5	5/	25	10	2	---	4	4

1/ With nominal coil voltage.
2/ Caution. Use of any coil voltage less than nominal coil voltage will compromise the operation of the relay.
3/ Over the temperature range.
4/ From nominal coil voltage.
5/ Coil suppression (transient voltage back EMF) 42 V dc maximum.

PREPARING ACTIVITY: Air Force-85
CUSTODIANS: ARMY - AIR FORCE - 85 NAVY - AS DLA -
REVIEW: Agent: DLA-ES
USER:
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DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

TITLE MILITARY SPECIFICATION SHEET
RELAYS, ELECTROMAGNETIC, 50 AMPERES, 3PST, N.O. TYPE I, HERMETICALLY SEALED

SPECIFICATION SHEET NUMBER MS27222K
SUPERSEDING MS27222J 9 OCT 1990
AMSC N/A FSC 5945

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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/				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	50	50	---	5	5	50	---	5	5	50	---	---	---	
Inductive	10	50	---	5	5	50	---	5	5	50	---	---	---	
Inductive														
Motor	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	---	---	---	
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 suitable for transfer between unsynchronized ac power supplies at rating indicated.

PREPARING ACTIVITY: Air Force-85
CUSTODIANS: ARMY - NAVY - AS
AIR FORCE - 85 DLA -
Agent: DLA-ES
REVIEW:
USER:
PROJECT NUMBER: 5945-0852-01
DISTRIBUTION STATEMENT A: Approved for public release; distribution is unlimited.

MILITARY SPECIFICATION SHEET
TITLE: RELAYS, ELECTROMAGNETIC, 50 AMPERES, 3PST, N.O. TYPE I, HERMETICALLY SEALED

SPECIFICATION SHEET NUMBER
MS27222K
SUPERSEDING MS27222J 9 OCT 1990
AMSC N/A FSC 5945

DD Form 672, MAY 88 Previous editions are obsolete.
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TABLE IV. Vibration level.

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

TABLE V. Qualification by similarity.

MS PIN PIN MS27222-	Loads						Dynamics 1/				Environmental 2/		
	Type 1			Type 1 ER									
	A	B	C	D	E	F	A	B	C	D	A	B	C
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.

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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 IV)
G-level	
Frequency range	
Nonoperate:	
G-level	15 g's
Frequency range curve	20 to 2,000 Hz
Acceleration	15 g's

Electrical characteristics

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

TABLE VI. Dielectric strength (sea level).

	Initial		After life tests	
Dielectric strength	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

Dielectric strength (altitude) (see table VII) 1 minute

TABLE VII. 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

Maximum contact drop initial	0.150 volts
After life test	0.175 volts
Overload current	(NO) 400 amperes
Rupture current 1/	(NO) 500 amperes
Duty rating	Continuous
RFI specification	MIL-STD-461
(Applicable to coil circuits of ac operated relays)	

1/ Only 5 operations rupture after minimum current test.