INCH-POUND

MS24184L
4 March 1994
SUPERSEDING
MS24184K
26 July 1990

MILITARY SPECIFICATION SHEET

Ⓛ RELAYS, ELECTROMAGNETIC, 300 AMPERES, 1 PST, N.O. TYPE I, WITH AUXILIARY CONTACTS, HERMETICALLY SEALED

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.

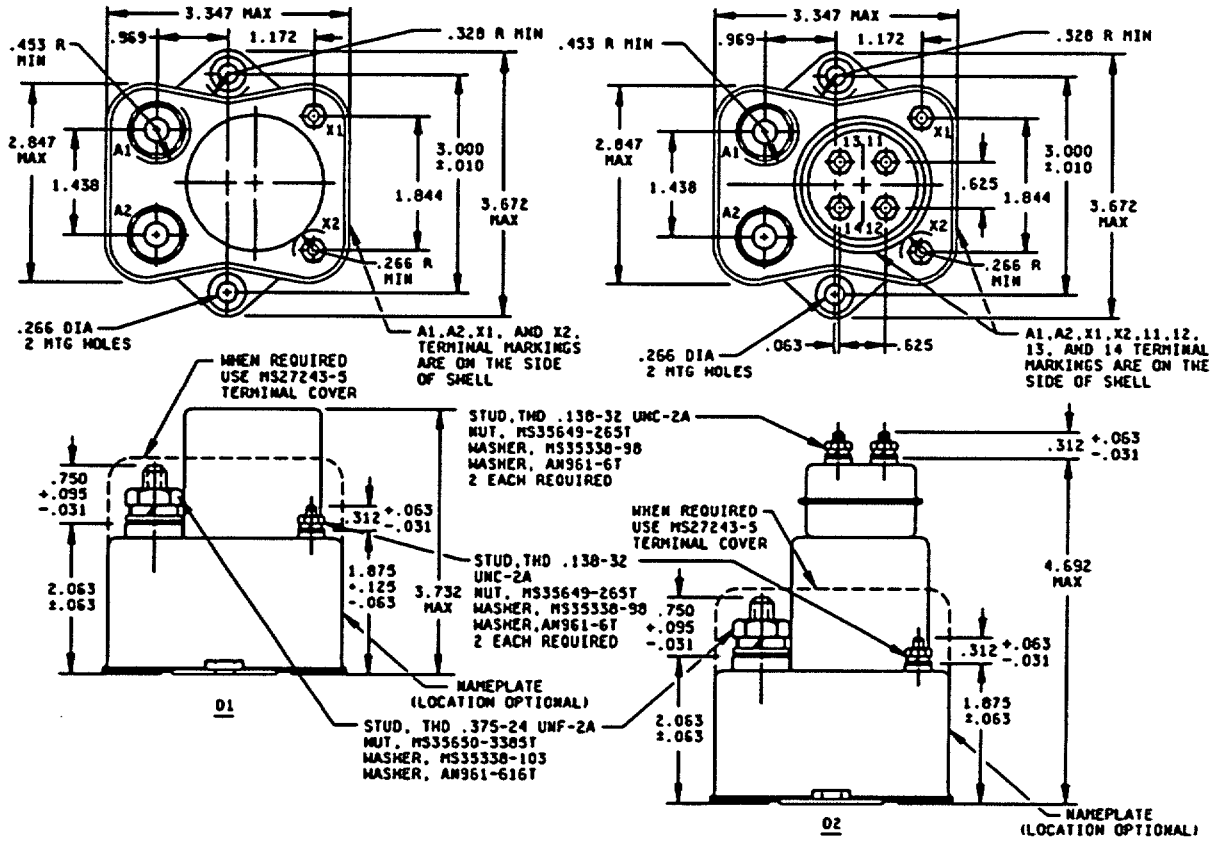
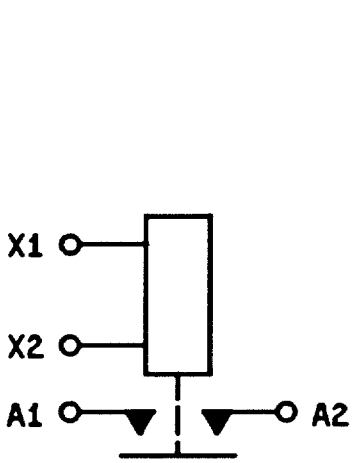
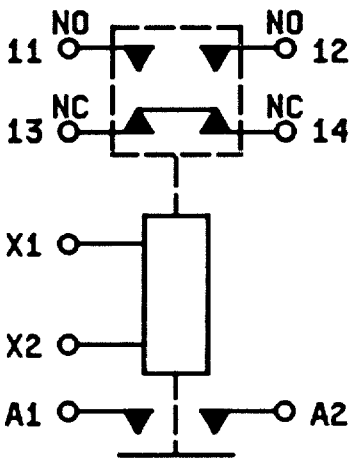


FIGURE 1. Dimensions and configurations.

Ⓛ denotes changes



CIRCUIT D1



CIRCUIT D2

Inches	mm	Inches	mm	Inches	mm
.010	0.25	.453	11.51	2.063	52.40
.031	0.79	.625	15.88	2.847	72.31
.063	1.60	.750	19.05	3.000	76.2
.095	2.41	.969	24.61	3.347	85.01
.125	3.18	1.172	29.77	3.672	93.27
.266	6.76	1.438	36.53	3.732	94.79
.312	7.92	1.844	46.83	4.692	119.18
.328	8.33	1.875	47.63		

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ±.031.
4. Coil and auxiliary terminals may use additional washer for terminal seat.
5. Weight includes covers and barriers.
6. All test requirements of specification MIL-R-6106 apply except that off time for motor load shall be six seconds minimum and average contact voltage drop reading before tests shall not exceed .15 volt.
7. PIN MS24184-1 is inactive for new design after 10 December 1957. PIN MS24184-D1 replaces MS24184-1.
8. Referenced documents shall be of the issue in effect on the date of invitation for bids.

FIGURE 1. Dimensions and configurations - Continued.

REQUIREMENTS:

Dimensions and configurations: See figure 1.

Dash numbers and general characteristics: See table I.

Contact data:

Load ratings: See table II.

Maximum contact drop, initial: 0.150 V.

After life test: 0.175 V.

Overload current (NO): 2,400 amperes.

Rupture current (NO): 3,000 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, 2-5 seconds:

	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	1,500	1,000	1,125
All other points:	1,250	1,500	1,000	1,125

Altitude, 1 minute:

	28 V dc	115 V ac
Coil to case:	500	500
Aux. contacts:	500	500
All other points:	500	500

Environmental characteristics:

Temperature range: -70°C to +71°C.

Maximum altitude rating: 80,000 feet.

Shock, g-level: 25 g's.

Duration: 6-9 ms.

Maximum duration contact opening: 2 ms.

Vibration, sinusoidal: See table IV.

Acceleration: 15 g's.

Part or Identifying Number (PIN): MS24184- (plus applicable dash number from table I).

Qualification by similarity: See table V.

(L) TABLE I. PIN and general characteristics.

1/ 2/ PIN MS24184-	Type	Coil type	Terminal type	Mounting or mating socket	Auxiliary contacts	Max weight (pounds)
D1	I	dc	Stud	Flange	No	2.4
D2	I	dc	Stud	Flange	Yes	2.5

1/ MS24184-A1 has been canceled without replacement.
2/ The term Part or Identifying Number (PIN) is equivalent to the former term MS dash number.

(L) 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				See appropriate notes
		Main		Aux		Main		Aux		
		NO	NC	NO	NC	400 Hz	60 Hz	400 Hz	60 Hz	
Resistive	50	300		5	5	300		5		
Inductive	50	100		5	5			5		
Motor 2/	50	250				150				
Lamp				.75	.75			.75		
Transfer load										3/
Mechanical life reduced current	100	75		1.25	1.25	75		1.25		
Intermediate current	50	Applicable per MIL-R-6106								

1/ Absence of value means parameter is not applicable to this specification sheet.
2/ Off time for motor load shall be 6 seconds minimum.
3/ Transfer load indicates relay is suitable for transfer between unsynchronized ac power supplies at the rating indicated.

(L) TABLE III. Operating characteristics.

PIN MS24184-	Coil data											Time (milliseconds maximum)					
	Coil	Rated			Max		Max pick-up voltage			Hold voltage 2/	Drop-out voltage 2/	Operate 3/	Release 4/	Contact bounce 3/			
		Volts 1/	Freq. Hz	Res +15% -10%	Volts	Amperes	Normal 2/	High temp test	Cont current test					Main		Aux	
														NO	NC	NO	NC
D1	X1,X2	28	dc	52	29	.6	18	21	22.5	7.0	1.0	35	15	4.0	---	---	---
D2	X1,X2	28	dc	52	29	.6	18	21	22.5	7.0	1.0	35	15	4.0	---	5.0	5.0

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.

Ⓛ TABLE IV. Vibration levels (sinusoidal).

PIN MS24184-	Vibration levels				
	5-10 Hz	10-55 Hz	55-250 Hz	250-500 Hz	500-1500 Hz
D1	.08 DA	.06 DA	8 g's	4 g's	3 g's
D2	.08 DA	.06 DA	8 g's	4 g's	3 g's

TABLE V. Qualification by similarity.

PIN MS24184-	Loads						Dynamics 1/			Environmental 1/		
	Type I			Type I ER								
	A	B	C	D	E	F	A	X	Y	A	B	C
D1	4						2			4		
D2	4 2/						2			4 2/		

1/ All relays must be tested. Reference MIL-R-6106, appendix I.
2/ Testing of relay with auxiliary contacts. Reference MIL-R-6106, appendix I.

CONCLUDING MATERIAL

Custodians:
Army - ER
Navy - AS
Air Force - 85

Preparing activity:
Air Force - 85

Agent:
DLA - ES

(Project 5945-0924)