

INCH-POUND

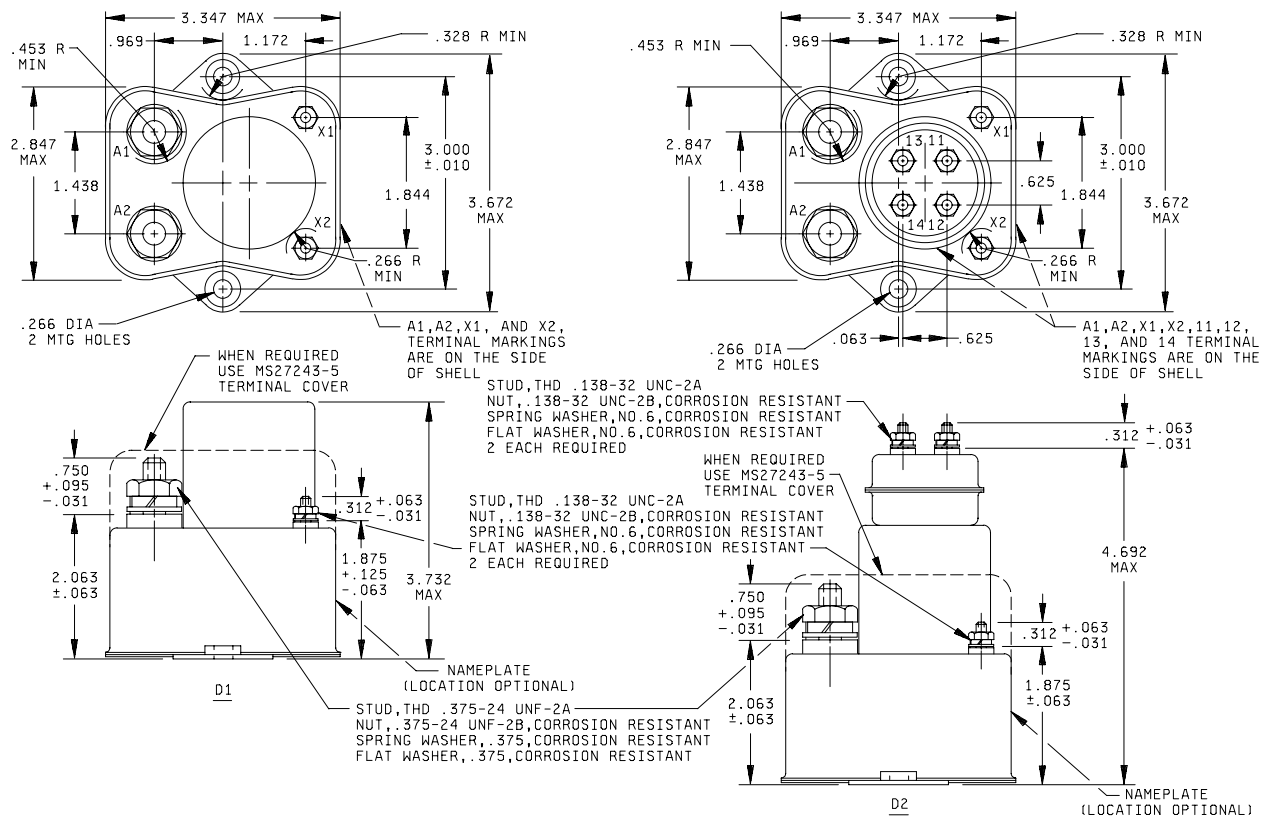
MS24184M  
w/AMENDMENT 1  
24 June 2004  
SUPERSEDING  
MS24184M  
15 April 2003

## DETAIL SPECIFICATION SHEET

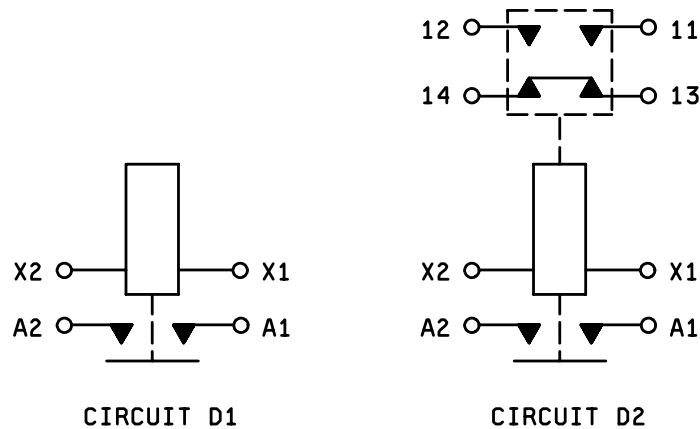
RELAYS, ELECTROMAGNETIC, 300 AMPERES, 1 PST (N.O.),  
TYPE I, WITH AUXILIARY CONTACTS,  
HERMETICALLY SEALED

This specification is approved for use by all Departments  
and Agencies of the Department of Defense.

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

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is  $\pm .031$  inch (0.79 mm).
4. Coil and auxiliary terminals may use additional flat washer for terminal seat.
5. Weight includes covers and barriers.
6. All test requirements of specification MIL-PRF-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 Government documents of the issue listed in Assist Online (<http://assist.daps.dla.mil>) or Assist Quick Search (<http://assist.daps.dla.mil/quicksearch>) specified in the solicitation form a part of this specification to the extent specified herein.
9. Cadmium or cadmium compounds are prohibited on external hardware.
10. Spring washer on drawing is a spring lock washer.

FIGURE 1. Dimensions and configurations - Continued.

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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

Dielectric strength (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 ft.

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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 MIL-PRF-6106.

TABLE I. PIN and general characteristics.

<u>1/</u> <u>2/</u> Part number MS24184-	Type	Coil type	Terminal type	Mounting or mating socket	Auxiliary contacts	Maximum weight in 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.

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

Type of load	Life operating cycles x 10 <sup>3</sup>	28 V dc				115 V ac, 1 phase				See appro- priate 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 <u>2/</u>	50	250				150				
Lamp				.75	.75			.75		
Transfer load										<u>3/</u>
Mechanical life reduced current	100	75		1.25	1.25	75		1.25		
Mixed loads	50	Applicable per MIL-PRF-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.

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TABLE III. Operating characteristics.

PIN MS 24184-	Coil data										Time - milliseconds maximum						
	Coil	Rated			Max		Max pick-up voltage			Hold voltage 2/	Drop out voltage 2/	Operate 4/	Release 5/	Bounce 4/			
		Volts 1/	Freq Hz	Ω Res +15% -10	Volts	Amp	Normal 2/	High temp test	Cont current test 3/					Main		Aux	
														NO	NC	NO	NC
D1	X1,X2	28	dc	52	29	0.6	18	21	22.5	7.0	1.0	40	15	4.0	---	---	---
D2	X1,X2	28	dc	52	29	0.6	18	21	22.5	7.0	1.0	40	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/ The terminal temperature rise shall not exceed 95°C.

4/ With rated coil voltage.

5/ From rated coil voltage.

TABLE IV. Vibration levels (sinusoidal).

PIN MS24184-	5-10 Hz	10-55 Hz	55-250 Hz	250-500 Hz	500-1,500 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

Referenced documents. In addition to MIL-PRF-6106, this document references the following:

MIL-STD-461  
MS27243

The margins of this specification are marked with vertical lines to indicate modifications generated by this amendment. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations.

Custodians:  
Army - CR  
Navy - AS  
Air Force - 11  
DLA - CC

Preparing activity:  
DLA - CC

(Project 5945-1276)

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).