INCH-POUND

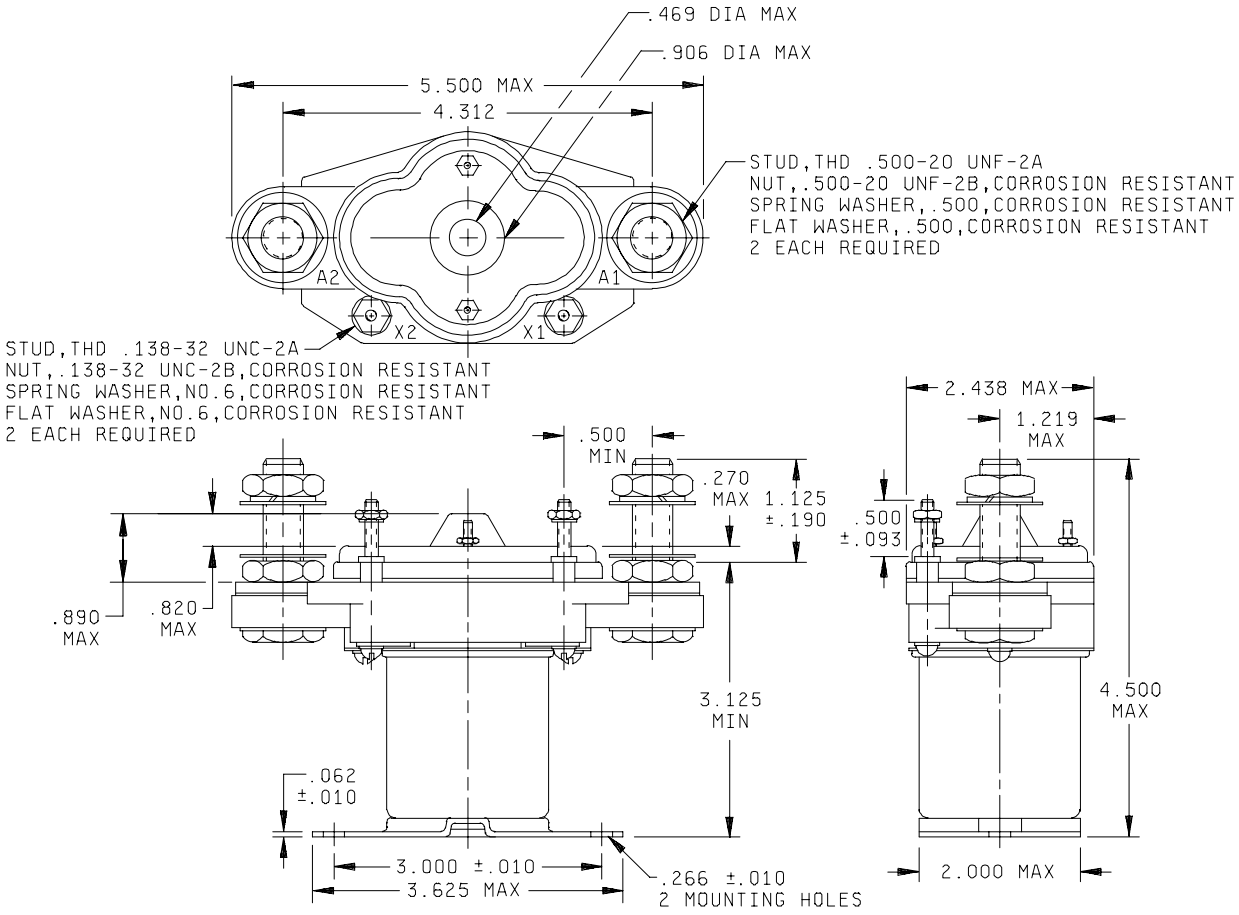
MS24185M
15 April 2003
SUPERSEDING
MS24185L
10 Jan 1994

DETAIL SPECIFICATION SHEET

RELAYS, ELECTROMAGNETIC, 400 AMPERES, 1 PST (N.O.), TYPE II, NONHERMETICALLY 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.



CONFIGURATION A

FIGURE 1. Dimensions and configurations.

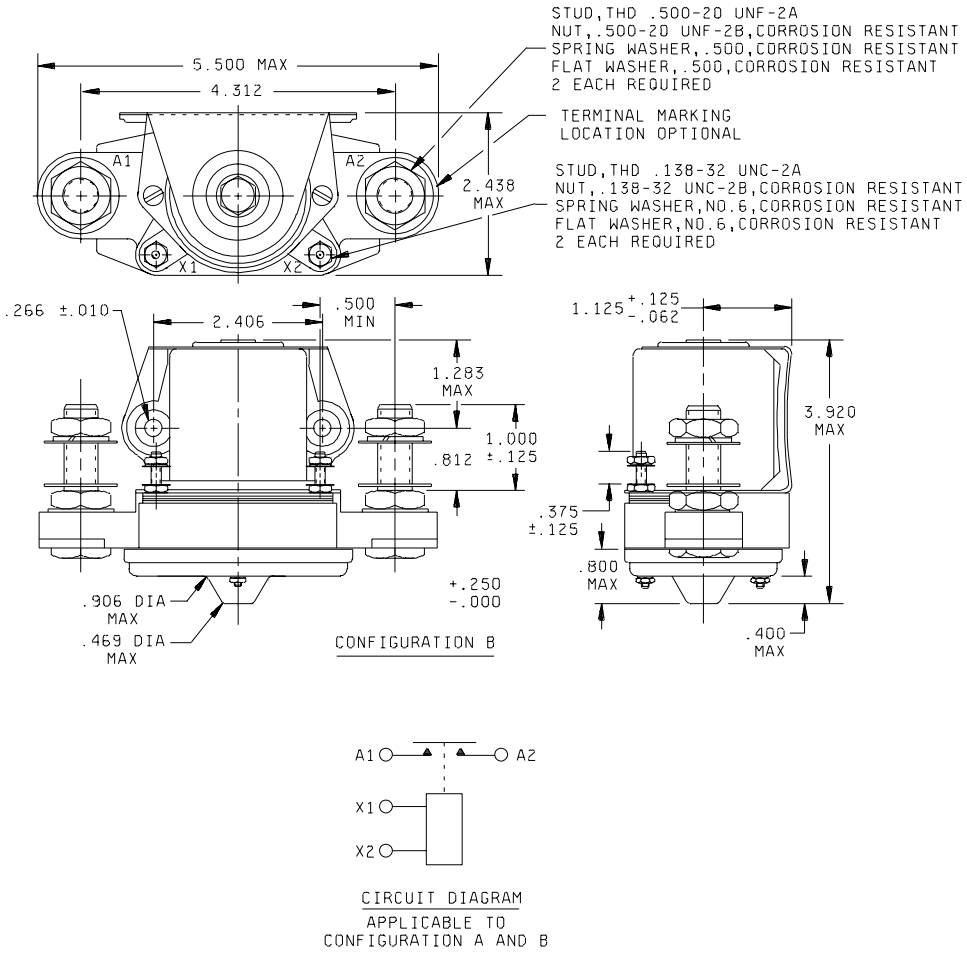


FIGURE 1. Dimensions and configurations - Continued.

Inches	mm	Inches	mm	Inches	mm
.010	0.25	.500	12.70	2.406	61.11
.062	1.57	.505	12.83	2.438	61.93
.090	2.29	.812	20.62	3.000	76.20
.125	3.18	1.000	25.40	3.125	79.38
.138	3.51	1.125	28.53	3.625	92.08
.220	5.59	1.219	30.96	3.920	99.57
.266	6.76	1.273	32.33	4.312	109.52
.375	9.52	1.281	32.54	4.500	114.30
.475	12.06	2.000	50.80	5.500	139.70

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ±.062 (1.57 mm).
4. Additional flat washer may be used for terminal seat.
5. Terminal temperature rise under continuous current condition: +95°C. Mixed loads to be conducted at +71°C.
6. In the event of a conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.
7. 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 standard to the extent specified herein.
8. Shape of relay is optional within the envelope dimensions shown.
9. Cadmium or cadmium compounds are prohibited on external hardware. A transition period to non-cadmium hardware is authorized for up to 1 year from the date of this revision.
10. Spring washer on drawing is a spring lock washer.

FIGURE 1. Dimensions and configurations - Continued.

REQUIREMENTS:

Dimensions and configurations: See figure 1.

Dash number 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): 3,200 amperes.

Rupture current (NO): 4,000 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 V rms	N/A	1,000 V rms	N/A
Aux contacts	1,250 V rms	N/A	1,000 V rms	N/A
All other points	1,250 V rms	N/A	1,000 V rms	N/A

Dielectric strength (altitude): 1 minute.

	28 V dc	115 V ac
Coil to case	500 V rms	N/A
Aux contacts	500 V rms	N/A
All other points	500 V rms	N/A

Environmental characteristics:

Temperature range: -55°C to + 71°C.

Maximum altitude rating: 50,000 feet.

Shock g-level: 25 g's.

Duration: 6-9 ms.

Maximum duration contact opening: 2 ms.

Vibration - sinusoidal: See table IV.

Vibration - random: N/A.

High shock: N/A.

Acceleration: 10 g's.

Qualification by similarity: See MIL-PRF-6106.

Part or Identifying Number (PIN): MS24185- (plus applicable dash number from table I).

TABLE I. PIN and general characteristics.

Part number MS24185-	Type	Coil type	Terminal type	Mounting or mating socket	Maximum weight in pounds
D1 1/ 3/	II	dc	Stud	Bracket - bottom	2.6
D2 2/ 3/	II	dc	Stud	Bracket - side	2.6

1/ For Government logistics support, MS24185-D1 shall be used in lieu of AN3380-2.
2/ For Government logistics support, MS24185-D2 shall be used in lieu of AN3380-1.
3/ For similar relays with transient suppressed coils see MIL-PRF-6106/56.

TABLE II. 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	400												
Inductive	10	100												
Motor	50	400												
Lamp														
Transfer load														2/
Mechanical life reduced current	100	100												
Mixed loads	50	40												

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

TABLE III. Operating characteristics.

PIN MS 24185-	Coil data											Time - milliseconds maximum					
	Coil	Rated			Max		Max pick-up voltage			Hold voltage 2/	Drop out voltage 2/	Operate 3/	Release 4/	Bounce 3/			
														Main		Aux	
		Volts 1/	Freq Hz	Ω Res +15% -10	Volts	Amp	Normal 2/	High temp test	Cont current test					NO	NC	NO	NC
D1	X1,X2	28	dc	66	29	.60	18	21	22.5	7.0	1.5	40	15	5.0	---	---	---
D2	X1,X2	28	dc	66	29	.60	18	21	22.5	7.0	1.5	40	15	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).

5-10 Hz	10-55 Hz	55-250 Hz	250-500 Hz	500-1,500 Hz
.08 DA	.06 DA	2 g's	2 g's	N/A

Custodians:
NAVY - AS
Air Force - 11
DLA - CC

Review activities:
Navy - EC

Preparing activity:
DLA - CC

(Project 5945-1206-13)