

INCH-POUND

MS24178H
w/AMENDMENT 2
22 October 2004
SUPERSEDING
MS24178H
w/AMENDMENT 1
21 July 2003

DETAIL SPECIFICATION SHEET

RELAYS, ELECTROMAGNETIC, 55 AMPERES, 2PST, (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.

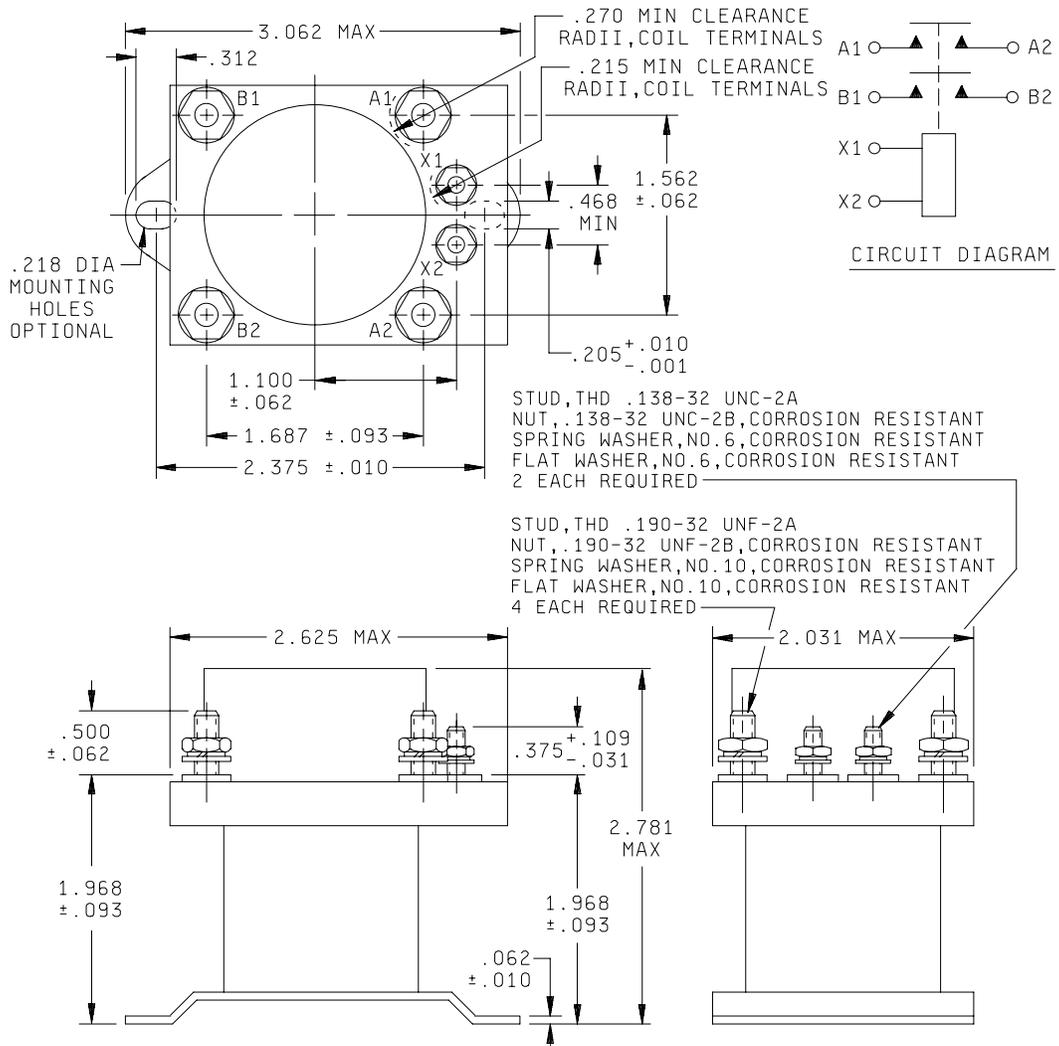


FIGURE I. Outline drawing (for details see tables I and II).

MS24178H
w/AMENDMENT 2

Inches	mm	Inches	mm	Inches	mm	Inches	mm
.001	.03	.138	3.51	.312	7.92	1.968	49.99
.010	.25	.190	4.83	.375	9.53	2.031	51.59
.031	.79	.205	5.21	.468	11.89	2.375	60.33
.062	1.57	.215	5.46	.500	12.70	2.625	66.68
.093	2.36	.218	5.54	1.100	27.94	2.781	70.64
.109	2.77	.270	6.86	1.687	42.85	3.062	77.77

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information.
3. Unless otherwise specified, tolerances are ± 0.031 inch (0.79 mm).
4. Additional flat washer may be used for terminal seat.
5. Part No. MS24178-D1 replaces part No. MS24178-1.
6. For design feature purposes, this specification takes precedence over procurement documents referenced herein.
7. 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.
8. Cadmium or cadmium compounds are prohibited on external hardware.
9. Spring washer on drawing is a spring lock washer.

FIGURE I. Outline drawing (for details see tables I and II) - Continued.TABLE I. Dash numbers and characteristics.

MS part number	Type	Coil	Terminal type	Mounting or mating socket	Auxiliary contacts	Max weight in pounds
MS24178-D1	II	dc	Stud	Bracket	N/A	.75

TABLE II. Operating characteristics.

PIN MS 24178-	Coil data											Time - (milliseconds maximum) ^{2/}					
	Coil	Nominal			Max		Max pick-up voltage			Drop out voltage ^{1/}	Hold voltage ^{1/}	Operate ^{3/}	Release ^{4/}	Bounce			
		Volts ^{1/}	Freq Hz	Ω Res minimum 25°C	Volts	Amp	Normal ^{1/}	High temp	Cont current test					Main		Aux	
														NO	NC	NO	NC
D1	X1,X2	28	dc	59	29	.50	18	21	22.5	1.5	7	30	10	3.5	---	---	---

MS24178H
w/AMENDMENT 2

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 <u>3/</u>			
		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	55				55							
Inductive	10	40											
Motor	50	40				35							
Lamp													
Transfer load													
Mechanical life reduced current	100	14											
Mixed loads	50	5											

NOTES:

- 1/ Over temperature range.
 2/ With nominal coil voltage.
 3/ Absence of value indicates relay is not rated for 3 phase applications.

Environmental characteristics:

Temperature range: -55°C to +71°C.

Maximum altitude rating: 50,000 ft.

Shock G-level: 25 g's.

Duration: 6-9 ms.

Max duration contact opening: 2 ms.

Vibration - sinusoidal: (see table IV).

TABLE IV. Vibration levels.

Dash number	5-10 Hz	10-55 Hz	55-250 Hz	250-500 Hz	500-1,500 Hz
D1	.08 DA	.06 DA	2 g's	2 g's	

Vibration - random: N/A.

Applicable specification: N/A.

Power spectral density: N/A.

Rms g min: N/A.

Frequency range: N/A.

MS24178H
w/AMENDMENT 2

Curve: N/A.
 High shock: N/A.
 Acceleration: 10 g's.

Electrical characteristics:

Min insulation resistance, initial: 100 megohms.
 After life or environmental tests: 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	1,500	1,000 V rms	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

Max contact drop initial: 0.150 volt.
 After life test: 0.175 volt.
 Overload current (NO) 440 amperes.
 Rupture current (NO) 550 amperes.
 Duty rating Continuous
 RFI specification MIL-STD-461 (Applicable to coil circuits of ac operated relays).

Qualification by similarity: See MIL-PRF-6106.

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

MIL-STD-461

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.

Custodian:
 Navy - AS
 Air Force - 11
 DLA - CC

Preparing Activity
 DLA - CC
 (Project 5945-1277)

MS24178H
w/AMENDMENT 2

Review activity:
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.