

INCH-POUND

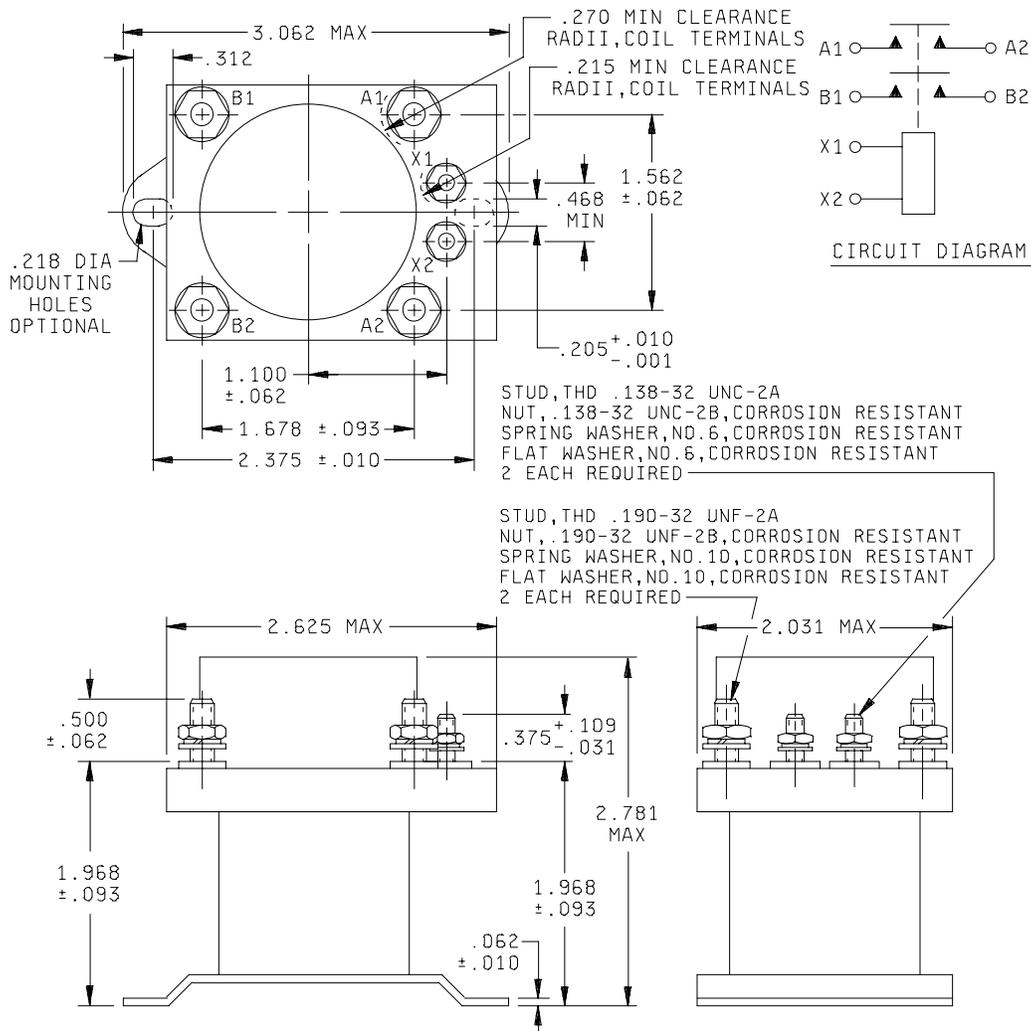
MS24178H
 15 April 2003
SUPERSEDING
 MS24178G
 24 Sept 1982

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.



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

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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:

- Dimensions are in inches.
- Metric equivalents are given for general information.
- Unless otherwise specified, tolerances are $\pm .031$.
- Additional flat washer may be used for terminal seat.
- Part No. MS24178-D1 replaces part No. MS24178-1.
- For design feature purposes, this specification takes precedence over procurement documents referenced herein.
- 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 to the extent specified herein.
- 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.
- Spring washer on drawing is a spring lock washer.

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	III	dc	Stud	Bracket	N/A	.75

TABLE II. Operating characteristics.

PIN MS 24178-	Coil data										Time - (milliseconds maximum) <u>2/</u>						
	Coil	Nominal			Max		Max pick-up voltage			Drop out voltage <u>1/</u>	Hold voltage <u>1/</u>	Oper-ate <u>3/</u>	Rel-ease <u>4/</u>	Bounce			
		Volts <u>1/</u>	Freq Hz	Ω Res +15% -10	Volts	Amp	Normal <u>1/</u>	High temp test	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	---	---	---

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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 <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											
Inductive													
Motor	50	40				35							
Lamp													
Transfer load													2/
Mechanical life reduced current	100	14											
Mixed loads	50	5											

NOTES, APPLICATION

1/ Over temperature range.

2/ With nominal coil voltage.

3/ Absence of value indicates relay is not rated for 3 phase applications.

Electrical 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 spec N/A

Power spectral density N/A

Rms g min N/A

Frequency range N/A

Curve N/A

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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 spec MIL-STD-461

(Applicable to coil circuits of ac operated relays)

Qualification by similarity: See MIL-PRF-6106.

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

Preparing Activity
 DLA - CC

(Project 5945-1206-10)

Review activity:
 Navy - EC