

MS24193H  
 27 November 2003  
 SUPERSEDING  
 MS24193G  
 17 June 1988

DETAIL SPECIFICATION SHEET

RELAYS, ELECTROMAGNETIC, 50 AMPERES,  
 3PST TYPE II, NON-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.

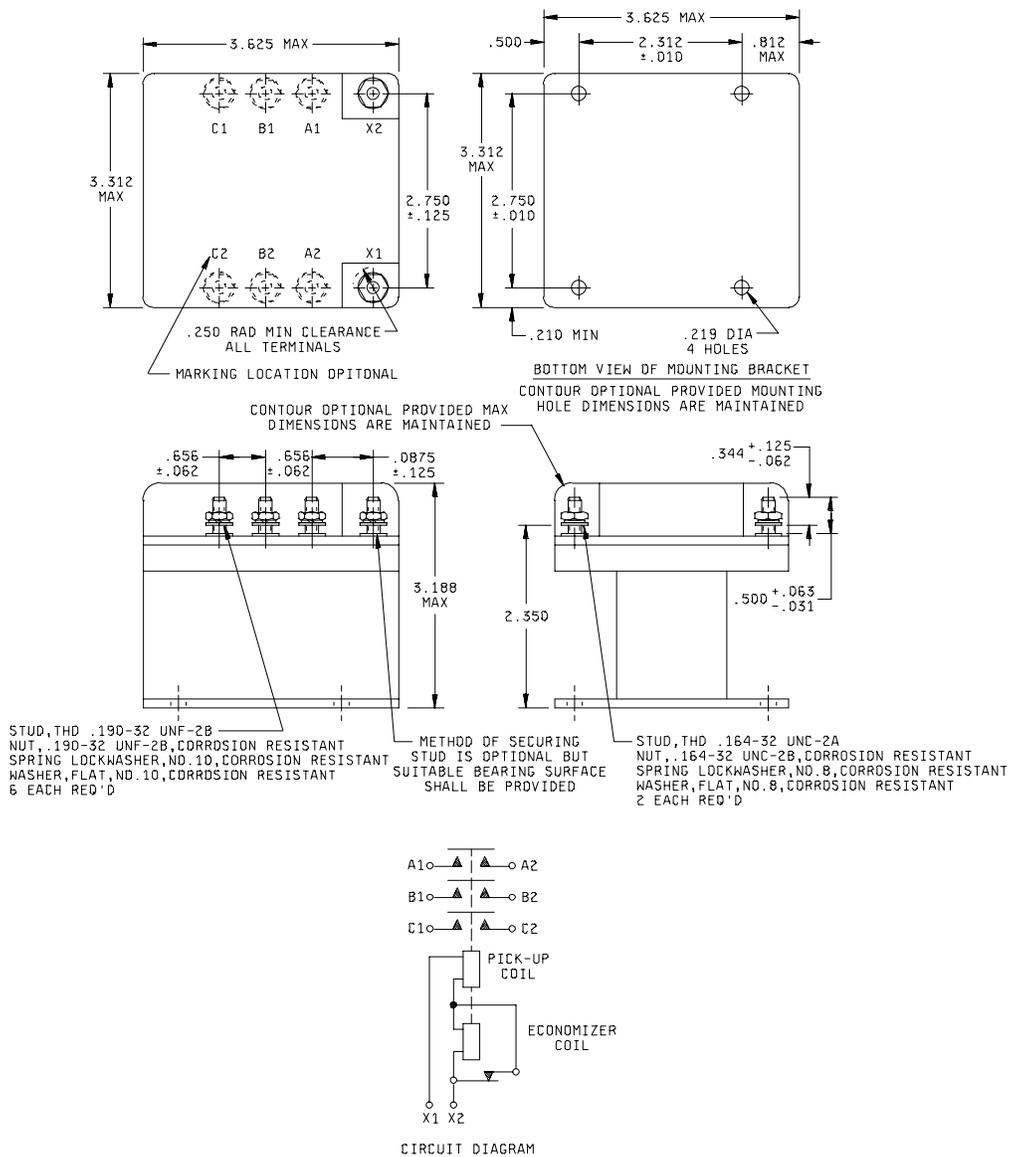


FIGURE 1. Dimensions and configuration.

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Inches	mm	Inches	mm	Inches	mm
.010	.25	.210	5.33	.875	22.23
.031	.79	.219	5.56	2.350	59.69
.062	1.57	.250	6.35	2.750	69.85
.063	1.60	.344	8.74	3.188	80.98
.125	3.18	.500	12.70	3.312	84.12
.164	4.17	.656	16.66	3.625	92.08
.190	4.83	.812	20.62		

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerances are  $\pm 0.031$  (0.79 mm).
4. Additional flat washer may be used for terminal seat.
5. Terminal covers and barriers required at power terminals.
6. Part number MS24193-D1 replaces number AN3341-1.
7. 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.
8. 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 forms a part of this standard to the extent specified herein.

TABLE I. Dash numbers and characteristics.

Dash number	Type	Coil	Terminal type	Mounting or mating socket	Max weight in pounds
MS24193-D1	II	dc	Stud	Plate	1.6

FIGURE 1. Dimensions and configurations - Continued.

TABLE II. Operating characteristics.

PIN MS 24193-	Coil data												Time (milliseconds-maximum)						
	Coil	Rated				Max		Max pick-up voltage			Hold voltage <u>2/</u>	Drop out vol- tage <u>2/</u>	Oper- ate <u>3/</u>	Rel- ease <u>4/</u>	Bounce <u>5/</u>				
		Volts <u>1/</u>	Freq Hz	Res $\Omega$ +10% 25°C		Volts	Amperes	Nor- mal <u>2/</u>	High temp test	Cont cur- rent test					Main		Aux		
				NO	NC										NO	NC			
				In- rush	Steady state		In- rush	Steady state											
D1	X1, X2	28	dc	13.5	71.5	29	2.4	.45	18	21	22.5	7.0	1.5	20	15	4	---	---	---

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.

5/ Bounce time after life test 8 ms.

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TABLE III. Rated contact load (amperes per pole) (case grounded).

Type of load	Life operat- ing cycles $\times 10^3$	28 V dc				115 V ac, 1 phase				115/200 V ac, 3 phase <u>1/</u>				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	50			50				50					
Inductive	10	50			50				50					
Inductive														
Motor	50	50			50				50					
Lamp														
Transfer load														<u>2/</u>
Mechanical life reduced current	100	12.5			12.5				12.5					
Mixed loads	50	5			5				5					

1/ Absence of value indicates relay is not rated for 3-phase application.

2/ Transfer load indicates relay is suitable for transfer between unsynchronized ac power supplies at rating indicated.

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Environmental characteristics.

Temperature range -55°C to +71°C  
 Max altitude rating 50,000 ft  
 Shock G-level 25 g's  
     Duration 6 - 9 ms  
     Max duration contact opening 2 ms

Vibration - sinusoidal

5-10 Hz	10-55 Hz	55-250 Hz	250-500 Hz	500-1500 Hz
.08 DA	.06 DA	2 g's	2 g's	

Vibration - Random

Applicable specification N/A  
 Power spectral density N/A  
 RMS G-min N/A  
 Frequency range N/A  
 Curve N/A  
 High shock N/A  
 Acceleration 10 g's

Electrical characteristics.

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 V rms	1,000 V rms	1,125 V rms

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	500 V rms

Max contact drop initial: 0.150 volt.  
 After life test: 0.175 volt.  
 Overload current (N.O.): 400 amperes  
 Rupture current (N.O.): 500 amperes  
 Duty rating: Continuous.  
 RFI specification: MIL-STD-461.  
 (Applicable to coil circuits of ac operated relays).

Qualification by similarity: See MIL-PRF-6106.

NOTES

Referenced documents. In addition to MIL-PRF-6106, this specification sheet references the following documents. (Government documents are available on line at <http://assist.daps.dla.mil/quicksearch> or [www.dodssp.daps.mil](http://www.dodssp.daps.mil) or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094).

STANDARDS

Department of Defense

MIL-STD-461 - Requirements for the Control of Electromagnetic Interference Characteristics of Subsystems and Equipment

Custodians:

NAVY - AS  
Air Force - 11  
DLA - CC

Preparing activity:

DLA - CC

(Project 5945-1221-04)

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).