

INCH-POUND

MS24152J  
15 April 2003  
SUPERSEDING  
MS24152H  
27 May 1994

DETAIL SPECIFICATION SHEET

RELAYS, ELECTROMAGNETIC, 3 PDT, 25 AMPERES, TYPE II,  
NONHERMETICALLY SEALED (MECHANICALLY INTERLOCKED)

INACTIVE FOR NEW DESIGN AFTER 27 MAY  
1994. NO SUPERSEDING SPECIFICATION.

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.

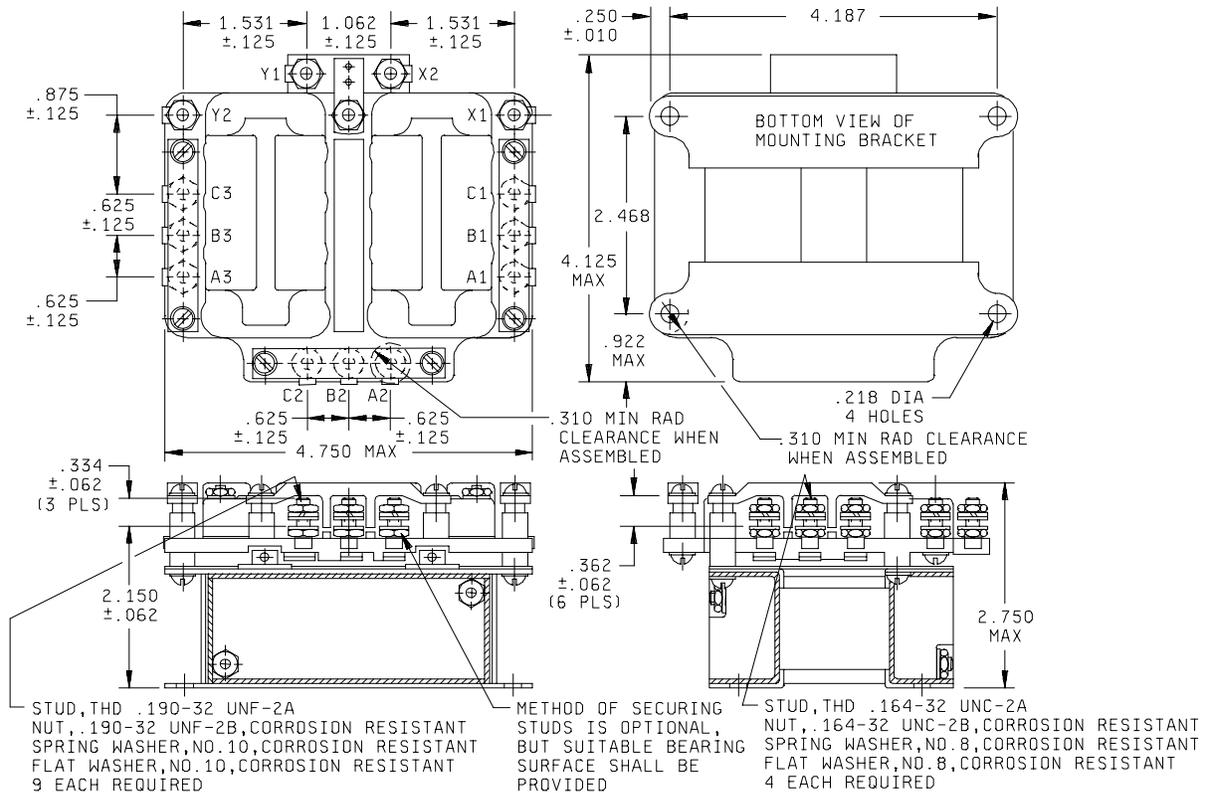
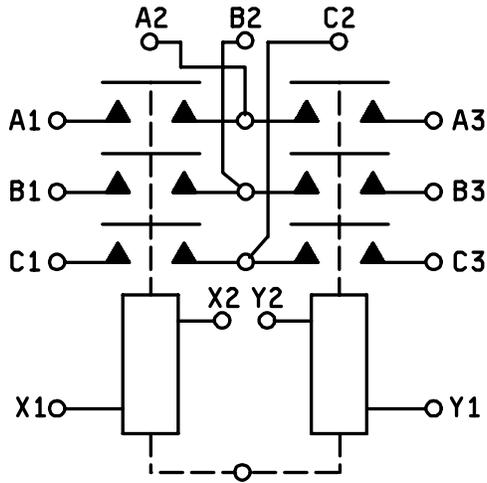


FIGURE 1. Dimensions and configurations.

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**CIRCUIT DIAGRAM**  
**DE-ENERGIZED POSITION**

Inches	mm	Inches	mm	Inches	mm
.062	1.57	.625	15.88	2.468	62.69
.125	3.18	.922	23.42	2.750	69.85
.218	5.54	1.062	26.97	4.094	103.99
.250	6.35	1.531	38.89	4.187	106.35
.310	7.87	2.062	52.37	4.750	120.65
.344	8.74	2.141	54.38		

**NOTES:**

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is  $\pm 0.031$  inch (0.79 mm).
4. Additional washer may be used for terminal seat.
5. Terminal covers and barriers are required at power terminals.
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 forms a part of this standard to the extent specified herein.
8. 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.
9. Spring washer on drawing is a spring lock washer.

FIGURE 1. Dimensions and configuration - Continued.

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REQUIREMENTS:

Dimensions and configuration: See figure 1.

Dash number and general characteristics: See table I.

TABLE I. Dash number and general characteristics.

PIN MS24152-	Type	Coil type	Terminal type	Mounting or mating socket	Auxiliary terminals	Max weight (pounds)
D1	II	dc	Stud	Flange	None	2.3

Contact data:

Load ratings: See table II.

Maximum contact drop, initial: 0.150 V.

After life test: 0.175 V.

Overload current (NO): 200 amperes.

Rupture current (NO): 250 amperes.

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

Type of load	Life oper- ating cycles x 10 <sup>3</sup>	28 V dc				115 V ac, 1 phase				115/200 V ac, 3 phase 2/			
		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	25				25				25			
Inductive	10	25				25				25			
Motor	50	25				25				25			
Lamp													
Transfer load 3/													
Mechanical life reduced current	100	6.3				6.3			6.3				
Mixed loads	50	2.5				2.5				2.5			

1/ Absence of value indicates parameter is not applicable to this specification.

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

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

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Coil data: See table III.

Duty rating: Continuous.

RFI specification: MIL-STD-461 (applicable to coil circuits of ac operated relays).

TABLE III. Operating characteristics.

PIN MS 24152-	Coil data												Time - (milliseconds maximum)							
	Coil	Rated				Max		Max pick-up voltage			Drop out voltage <u>2/</u>	Hold voltage <u>2/</u>	Operate <u>3/</u>	Release <u>4/</u>	Contact bounce <u>3/</u>					
		Volts <u>1/</u>	Freq Hz	$\Omega$ Res $\pm 10\%$		Volts	Amp		Normal <u>2/</u>	High Temp test					Cont current test	Main		Aux		
				In-rush	Steady state		1.46	0.45								NO	NC	NO	NC	
D1	X1,X2 Y1,Y2	28	dc	22	92	29	0.25		18	21	22.5	1.5	7.0	20	15	3.0 <u>5/</u>	2			

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/ 6.0 milliseconds after electrical life.

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.

Terminal strength (high temperature pull and torque test): Not applicable.

TABLE IV. Vibration levels (sinusoidal).

PIN	Frequency			
	5-10 Hz	10-55 Hz	55-250 Hz	250-500 Hz
MS24152- D1	.08 DA	.06 DA	2 g's	2 g's

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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	N/A	1,000	N/A
Aux. contacts	1,250	N/A	1,000	N/A
All other points	1,250	1,500	1,000	1,125

Altitude, 1 minute:

	28 V dc	115 V ac
Coil to case	500	N/A
Aux. contacts	500	N/A
All other points	700	700

Part or Identifying Number (PIN): MS24152-D1.

Qualification by similarity: See MIL-PRF-6106.

Supersession data: MS24152-D1 replaces AN3340-2.

Performance of group B and group C tests is not applicable. Group A acceptance reports shall be submitted to the preparing activity on a yearly basis to retain qualification.

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

Preparing activity:  
DLA - CC  
(Project 5945-1206-06)