

INCH-POUND

MS25271J
 27 November 2003
 SUPERSEDING
 MS25271H
 24 Jan 1990

DETAIL SPECIFICATION SHEET

RELAYS, ELECTROMAGNETIC, 10 AMPERES,
 4 PDT, TYPE I, SOLDER HOOK,
 HERMETICALLY SEALED

INACTIVE FOR NEW DESIGN AFTER 15 NOVEMBER
 2002. 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.

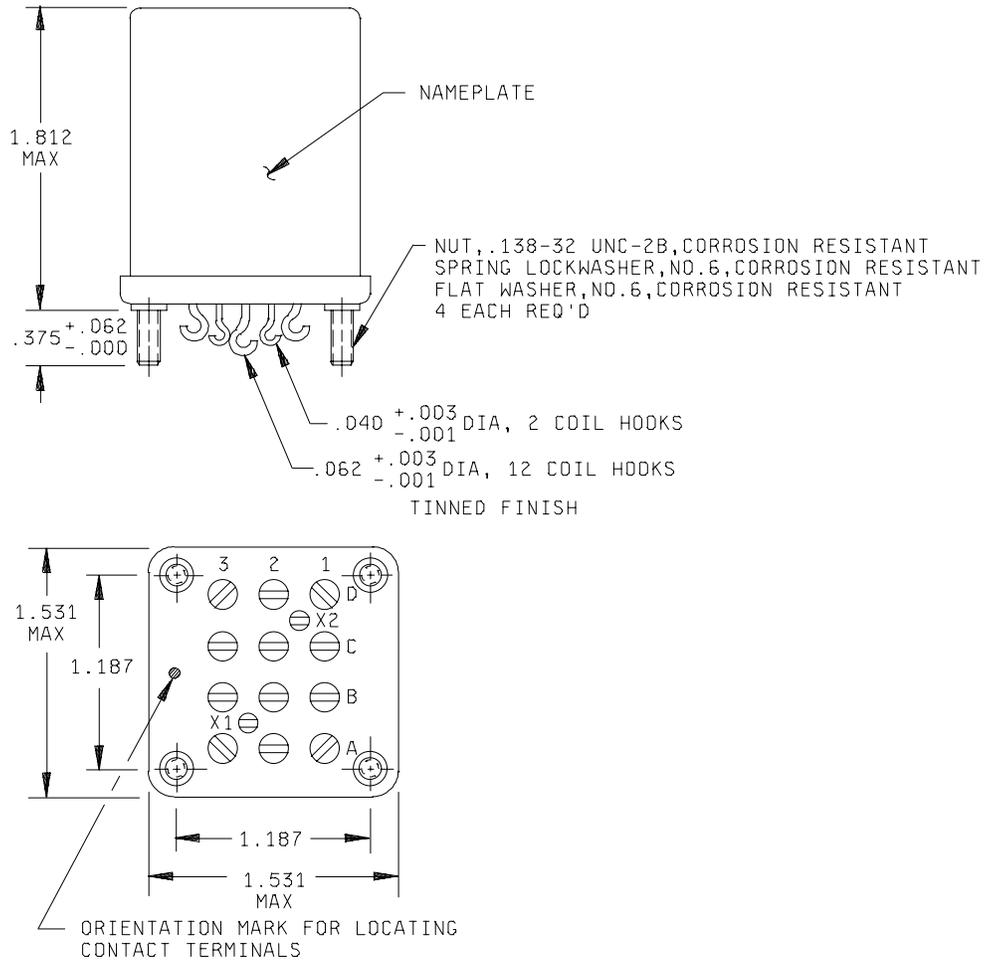
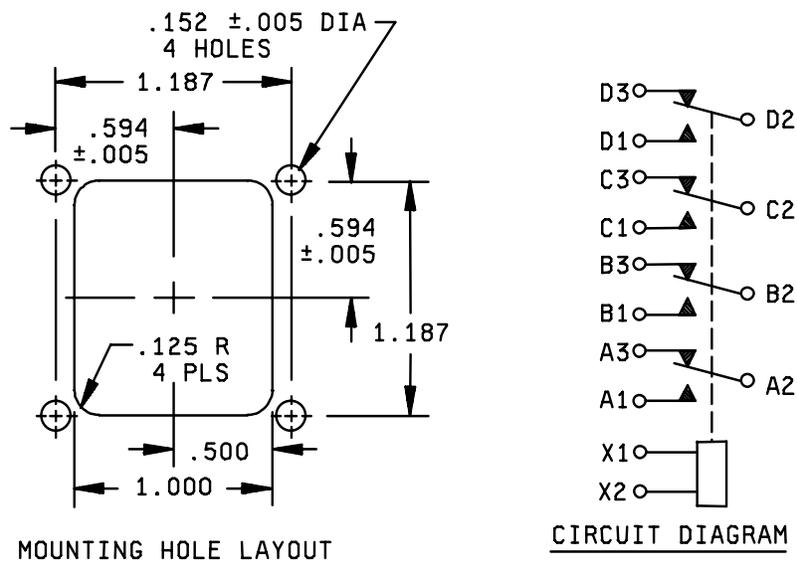


FIGURE 1. Dimensions and configurations.

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| Inches | mm | Inches | mm |
|--------|------|--------|-------|
| .001 | 0.03 | .152 | 3.86 |
| .003 | 0.08 | .375 | 9.53 |
| .005 | 0.13 | .500 | 12.70 |
| .010 | 0.25 | .594 | 15.09 |
| .040 | 1.02 | .040 | 25.40 |
| .062 | 1.57 | .062 | 30.15 |
| .125 | 3.18 | .125 | 38.89 |
| .138 | 3.51 | .138 | 45.02 |

NOTES:

- 1/ Dimensions are in inches.
- 2/ Metric equivalents are given for general information only.
- 3/ Unless otherwise specified, tolerance is $\pm .010$ (0.25 mm).
- 4/ Terminal numbers need not appear on relay header provided there is affixed to the relay a suitable legible circuit diagram that permanently and positively identifies each terminal location specified hereon.
- 5/ In the event of conflict between the text of this specification and the references cited herein, the text of this specification shall take precedence.
- 6/ 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 specification to the extent specified herein.

TABLE I. Dash numbers and characteristics.

| Dash number MS25271- | Type | Coil | Terminal type | Mounting | Max weight in pounds |
|-------------------------|------|------|---------------|----------|-------------------------|
| D1 | I | dc | Solder hook | Stud | .45 |
| A1 | I | ac | Solder hook | Stud | .45 |

FIGURE 1. Dimensions and configurations - Continued.

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TABLE II. Operating characteristics.

| PIN MS25270- | Coil data | | | | | | | | | | Time - milliseconds max | | | | | | |
|-----------------|-----------|-------------|------------|-------------------------------|-------|-------|---------------------------|----------------------|------------------------------|-----------------------------------|----------------------------|--------------------|--------------------|----------------|----|-----|-----|
| | Coil | Rated | | | Max | | 1/ Max pick-up voltage | | | Drop out vol- tage 2/ | Hold vol- tage 2/ | Oper- ate 3/ | Rel- ease 4/ | Contact Bounce | | | |
| | | Volts 1/ | Freq Hz | Ω Res $\pm 10\%$ | Volts | Amp | Nor- mal 2/ | High temp test | Cont cur- rent test | | | | | Main | | Aux | |
| | | | | | | | | | | | | | | NO | NC | NO | NC |
| D1 | X1, X2 | 28 | dc | 110 | 29 | 0.350 | 18 | 19.5 | 22.5 | 1.5 | 7.0 | 20 | 20 | 2 | 2 | N/A | N/A |
| A1 | X1, X2 | 115 | 400 5/ | N/A | 122 | 0.073 | 90 | 95 | 103 | 5.0 | 30 | 25 | 50 | 2 | 2 | N/A | N/A |

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 nominal coil voltage.

4/ From nominal coil voltage.

5/ MS25271-A1 may be used on 60 Hz if maximum ambient temperature is +85°C (coil current shall be 0.077 ampere maximum).

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 1/ | | | | See appro- priate 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 | 100 | 10 | 10 | | | 10 | 6 | | | 10 | 6 | | | |
| Inductive | 100 | | | | | | | | | | | | | |
| Inductive | 20 | 6 | 6 | | | 6 | 4 | | | 6 | 4 | | | |
| Motor | 100 | 4 | 4 | | | 4 | 3 | | | 4 | 3 | | | |
| Lamp | 100 | 2 | 2 | | | 2 | 1.5 | | | 2 | 1.5 | | | |
| Transfer load | | | | | | | | | | | | | | 2/ |
| Mechanical life reduced current | 400 | 2.5 | 2.5 | | | 1.25 | 2 | | | 1.25 | 2 | | | |
| Mixed loads | | Applicable per specification | | | | | | | | | | | | |

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

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

Environmental characteristics.

Temperature range -70°C to +125°C

Max altitude rating 80,000 ft

Shock G-level 50 g's

Duration 11 ms

Max duration contact opening 10 μ s

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Vibration - sinusoidal (see chart below)

| | |
|--------------------------|------------|
| G-level | 10 g's |
| Frequency range | 5-1,500 Hz |
| 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 | 15 g's |

Electrical characteristics.

| | |
|-----------------------------------|--------------|
| Insulation resistance, initial | 100 megohms. |
| After life or environmental tests | 50 megohms. |

Dielectric strength (sea level).

| | <u>Initial</u> | <u>After life tests</u> |
|------------------|----------------|-------------------------|
| Coil to case | 1,000 V rms | 1,000 V rms |
| Aux contacts | | |
| All other points | 1,500 V rms | 1,125 V rms |

Dielectric strength (altitude).

| | |
|------------------|------------------|
| Coil to case | <u>80,000 ft</u> |
| Aux contacts | 250 V rms |
| All other points | 350 V rms |

| | |
|--|-------------|
| Max contact drop initial | 0.150 volt. |
| After life test | 0.175 volt. |
| Overload current | 20 amperes. |
| Rupture current | 25 amperes. |
| Duty rating | Continuous. |
| RFI specification | MIL-STD-461 |
| (Applicable to coil circuits of ac operated relays). | |

Qualification by similarity: See MIL-PRF-6106.

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Conformance inspection.

Performance of groups B and C tests may be suspended at the discretion of the qualifying activity.

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 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 5945-1214-08)

Review activities:

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.