

INCH-POUND

MS25271J  
w/AMENDMENT 1  
15 December 2004  
SUPERSEDING  
MS25271J  
27 November 2003

## 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.

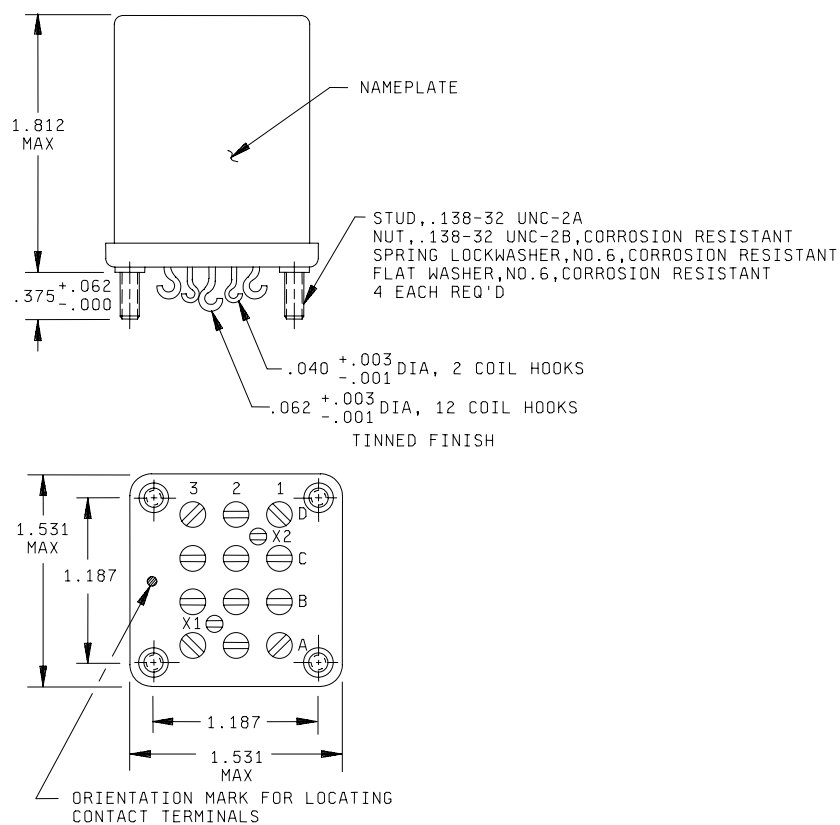
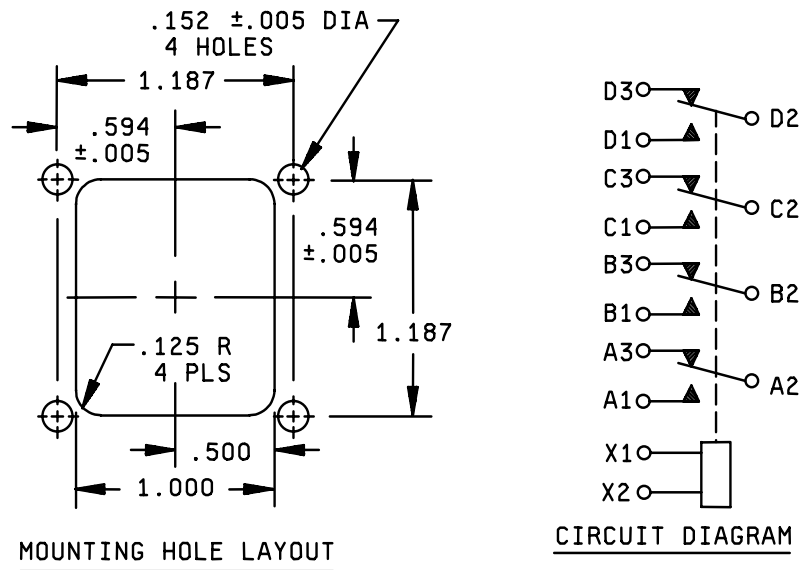


FIGURE 1. Dimensions and configurations.

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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 | 1.000  | 25.40 |
| .062   | 1.57 | 1.187  | 30.15 |
| .125   | 3.18 | 1.531  | 38.89 |
| .138   | 3.51 | 1.812  | 46.02 |

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 herein.
- 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<br>MS25271- | Type | Coil | Terminal type | Mounting | Max weight<br>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<br>MS25271- | Coil data |             |            |                  |       |       |                     |                    |                      |                        |                    | Time - milliseconds max |               |                |    |     |     |
|-----------------|-----------|-------------|------------|------------------|-------|-------|---------------------|--------------------|----------------------|------------------------|--------------------|-------------------------|---------------|----------------|----|-----|-----|
|                 | Coil      | Rated       |            |                  | Max   |       | Max pick-up voltage |                    |                      | Drop out voltage<br>2/ | Hold voltage<br>2/ | Operate<br>3/           | Release<br>4/ | Contact Bounce |    |     |     |
|                 |           | Volts<br>1/ | Freq<br>Hz | Res<br>Ω<br>±10% | Volts | Amp   | Normal<br>2/        | High temp.<br>test | Cont current<br>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<br>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<br>ing<br>cycles<br>x 10 <sup>3</sup> | 28 V dc                      |     |     |    | 115 V ac, 1 phase |          |           |          | 115/200 V ac, 3 phase 1/ |          |           |          | See appro<br>priate<br>notes |
|---------------------------------------|---|------------------------------|-----|-----|----|-------------------|----------|-----------|----------|--------------------------|----------|-----------|----------|------------------------------|
|                                       |   | Main                         |     | Aux |    | Main              |          | Aux       |          | Main                     |          | Aux       |          |                              |
|                                       |   | NO                           | NC  | NO  | NC | 400<br>Hz         | 60<br>Hz | 400<br>Hz | 60<br>Hz | 400<br>Hz                | 60<br>Hz | 400<br>Hz | 60<br>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<br>reduced<br>current | 400   | 2.5                          | 2.5 |     |    | 2.5               | 2        |           |          | 2.5                      | 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  $\mu$ 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).

|                  |                  |
|------------------|------------------|
|                  | <u>80,000 ft</u> |
| Coil to case     | 250 V rms        |
| Aux contacts     |                  |
| 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.

Group B and group C testing are not required. The manufacturer shall notify the qualifying activity in the event of any design or construction changes, and shall impose additional testing requirements as necessary.

NOTES

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.

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

Preparing activity:  
DLA - CC

(Project 5945-1273)

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 <http://assist.daps.dla.mil>.