

INCH-POUND

MS24568K
w/AMENDMENT 1
29 March 2006
SUPERSEDING
MS24568K
27 November 2003

DETAIL SPECIFICATION SHEET

RELAYS, ELECTROMAGNETIC, 10 AMPERES,
4 PDT, TYPE I, 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.

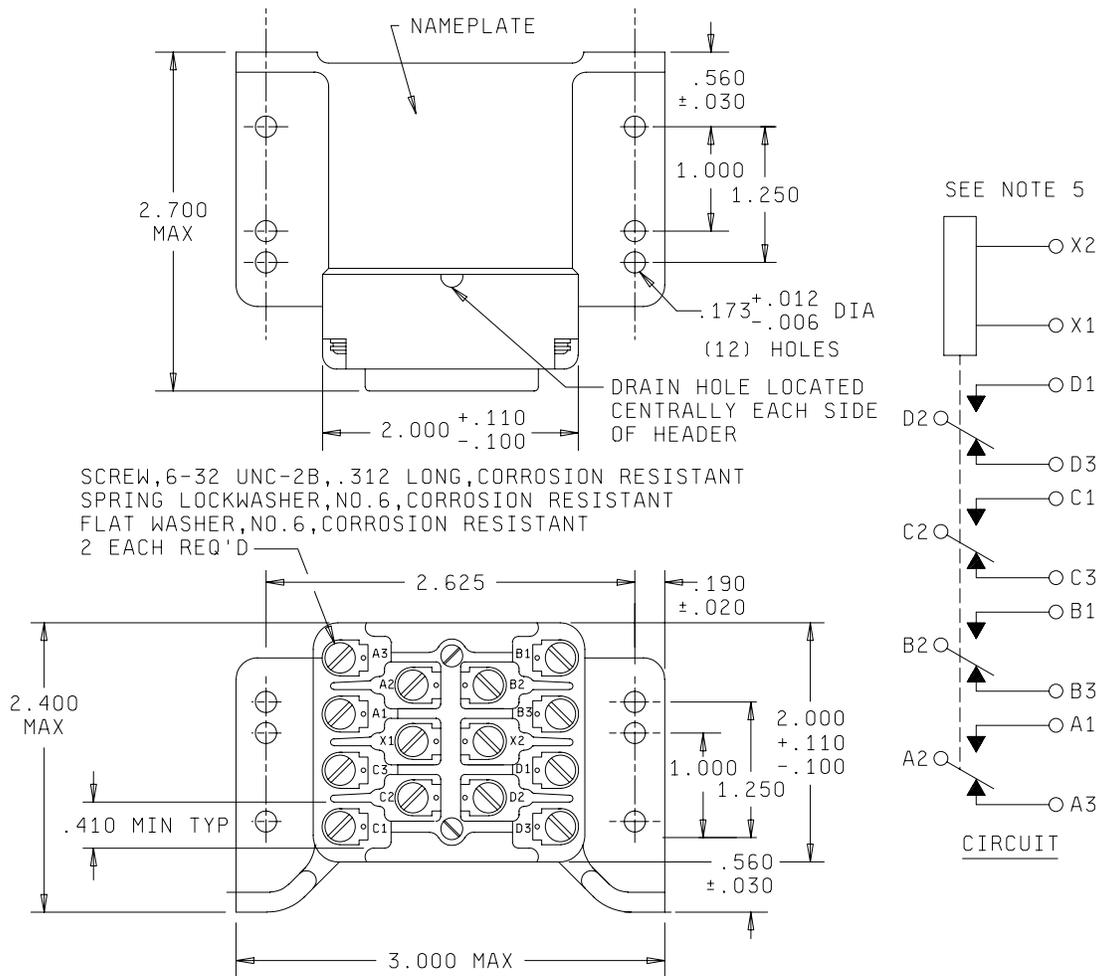


FIGURE 1. Dimensions and configurations.

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| Inches | mm | Inches | mm |
|--------|------|--------|-------|
| .006 | 0.15 | .410 | 10.41 |
| .012 | 0.30 | .560 | 14.22 |
| .020 | 0.51 | 1.000 | 25.40 |
| .030 | 0.76 | 1.250 | 31.75 |
| .100 | 2.54 | 2.000 | 50.80 |
| .110 | 2.79 | 2.300 | 58.42 |
| .173 | 4.39 | 2.685 | 68.20 |
| .190 | 4.83 | 2.700 | 68.58 |
| | | 3.000 | 76.20 |

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ± 0.010 (0.25 mm).
4. Terminal numbers need not appear on relay headers provided there is affixed to the relay a suitable legible circuit diagram that permanently and positively identifies each terminal location specified herein.
5. The use of diodes on ac relays is optional. Actual application must be shown on label (dash numbers -A1 and -A2 are inactive for new design).
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.

TABLE I. Dash numbers and characteristics.

| Dash number MS24568- | Type | Coil | Terminal type | Mounting or mating socket | Auxiliary contacts | Max weight in pounds |
|-------------------------|------|------|---------------|------------------------------|-----------------------|-------------------------|
| D1 | I | dc | Screw | Bracket | N/A | 0.73 |
| A1 <u>1/</u> | I | ac | Screw | Bracket | N/A | 0.75 |
| A2 <u>1/</u> | I | ac | Screw | Bracket | N/A | 0.75 |

1/ Dash number -A1 AND A2 are inactive for new design and shall be used for support of existing equipment designs only.

FIGURE 1. Dimensions and configurations - Continued.

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TABLE II. Operating characteristics.

| PIN MS 24568- | Coil data | | | | | | | | | | Time - (milliseconds maximum) | | | | | | |
|---------------------|-----------|-------------|------------|-------------------------------|-------|-----|---------------------|-------------------|-------------------------|------------------------|-------------------------------|---------------|---------------|----------------|----|-----|-----|
| | Coil | Nominal | | | Max | | Max pick-up voltage | | | Drop out voltage 2/ | Hold voltage 2/ | Operate 3/ | Release 4/ | Contact Bounce | | | |
| | | Volts 1/ | Freq Hz | Ω Res $\pm 10\%$ | Volts | Amp | Normal 2/ | High temp test | Cont current test | | | | | Main | | Aux | |
| | | | | | | | | | | | | | | NO | NC | NO | NC |
| D1 | X1, X2 | 28 | dc | 92 | 30 | 0.5 | 18 | 19.5 | 22.5 | 1.5 | 7.0 | 20 | 20 | 3 | 5 | --- | --- |
| A1 5/ | X1, X2 | 115 | 400 | N/A | 120 | 0.1 | 90 | 95 | 103 | 5.0 | 30 | 25 | 50 | 3 | 5 | --- | --- |
| A2 5/ | X1, X2 | 115 | 50/60 | N/A | 120 | 0.1 | 90 | 95 | 103 | 10 | 35 | 95 | 30 | 3 | 3 | | |

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/ Inactive for new design.

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

| Type of load | Life operating cycles $\times 10^3$ | 28 V dc | | | | 115 V ac, 1 phase | | | | 115/200 V ac, 3 phase 1/ | | | | 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 | 100 | 10 | 10 | | | 15 | 10 | | | 15 | 10 | | | |
| Inductive | 100 | | | | | | | | | | | | | |
| Inductive | 20 | 10 | 10 | | | 10 | 6 | | | 10 | 6 | | | 2/ |
| Motor | 50 | 6 | 6 | | | 6 | 4 | | | 6 | 4 | | | |
| Lamp | 100 | 3 | 3 | | | 3 | 2 | | | 3 | 2 | | | |
| Transfer load | | | | | | | | | | | | | | 3/ |
| Mechanical life reduced current | 400 | 2.5 | 2.5 | | | 4 | | | | 4 | | | | |
| Mixed loads | | Applicable per specification | | | | | | | | | | | | |

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

2/ Life ac inductive 50,000 operations minimum at rating indicated.

3/ 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 |
| Duration | 11 ms |
| Max duration contact opening | 10 μ s |

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Vibration - sinusoidal

| | | |
|-------------------------------|------|-------------------|
| Sinusoidal 3 inches excursion | | 5 to 36 Hz |
| G-level | | Frequency range |
| | 20 G | 36 to 500 Hz |
| | 15 G | 500 to 1,000 Hz |
| | 10 G | 1,000 to 2,000 Hz |
| Non-operate | 15 G | 20 to 2,000 Hz |
| Acceleration | 15 G | |

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 | 2,000 V rms | 1,500 V rms |

Dielectric strength (altitude).

| | |
|------------------|-----------|
| | 80,000 ft |
| Coil to case | 500 V rms |
| Aux contacts | |
| All other points | 700 V rms |

| | |
|---------------------------|--|
| Max contact drop initial: | 0.150 volt. |
| After life test: | 0.175 volt. |
| Overload current (NO): | 40 amperes dc, 60 amperes ac |
| Rupture current | 60 amperes dc, 80 amperes ac. |
| Duty rating: | Continuous. |
| RFI specification: | MIL-STD-461. (Applicable to coil circuits of ac operated relays). |

Conformance inspection.

Performance of groups B and C tests not applicable to dash numbers-A1 and A2.

Qualification by similarity: See MIL-PRF-6106.

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Referenced documents. In addition to MIL-PRF-6106, this specification sheet references the following:

MIL-STD-461

Changes from previous issue. The margins of this specification are marked with vertical lines to indicate where changes from the previous issue were made. 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 and relationship to the last previous issue.

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

Preparing activity:
DLA - CC

(Project 5945-2006-017)

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>.