

INCH-POUND

MIL-PRF-28750/10D

7 July 2015

SUPERSEDING

MIL-PRF-28750/10C

w/AMENDMENT 4

2 November 2005

PERFORMANCE SPECIFICATION SHEET

RELAY, SOLID-STATE, SEALED, CLASS I, OPTICALLY ISOLATED, ZERO VOLTAGE TURN-ON,
25 AMPERES, 250 V MAXIMUM, 400 HZ, POWER SWITCHING, SPST (N.O.)

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 [MIL-PRF-28750](#).

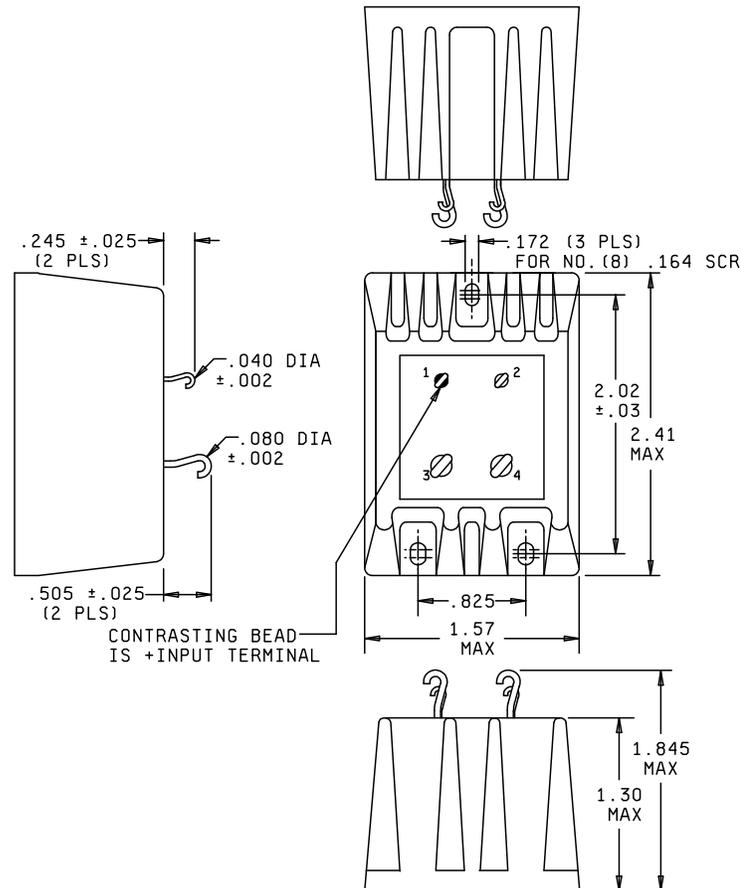
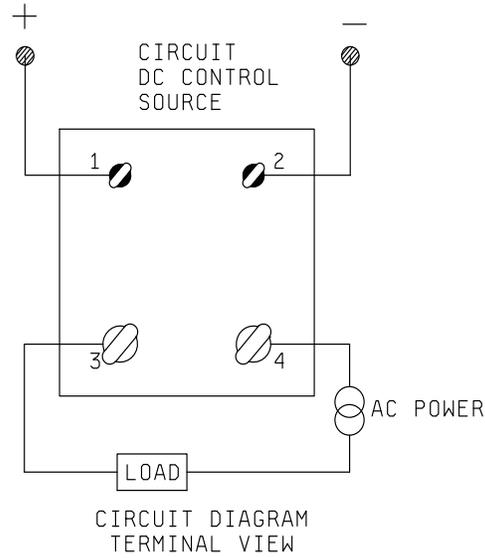


FIGURE 1. Outline drawing and dimensions.



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Inches	Millimeters
.002	.051
.025	.635
.030	.762
.040	1.016
.080	2.032
.172	4.369
.245	6.223
.505	12.827
.550	13.970
.825	20.955
1.300	33.020
1.570	39.878
1.845	46.863
1.990	50.546
2.050	52.070
2.410	61.214

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ± 0.010 (.25mm)
4. Terminal numbers shown above are for reference only, and do not appear on the header.

FIGURE 1. Outline drawing and dimensions - Continued.

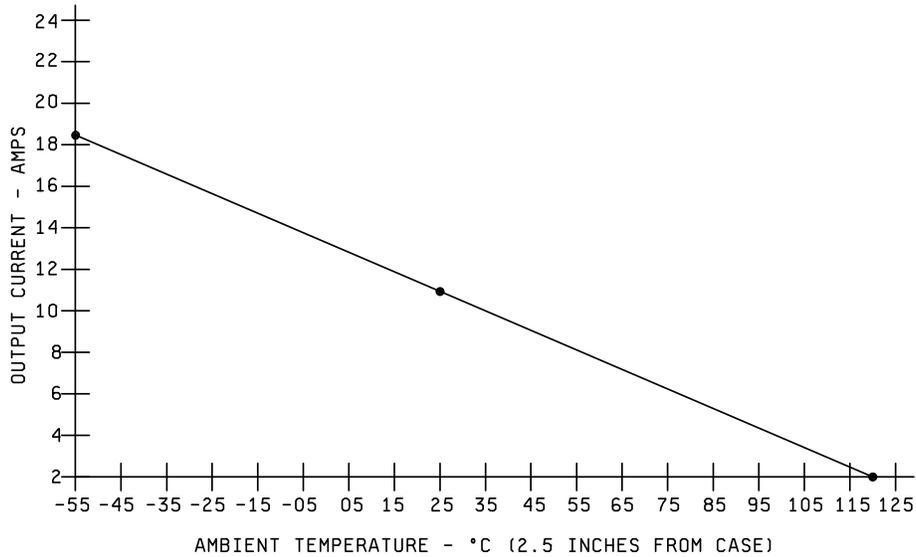


FIGURE 2. Output current versus ambient temperature.

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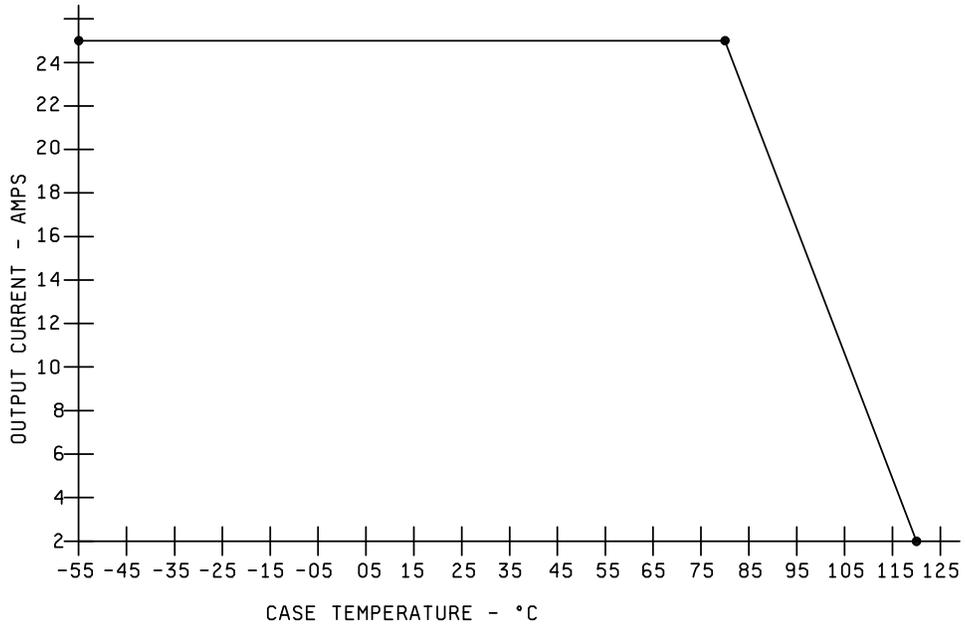


FIGURE 3. Output current versus case temperature.

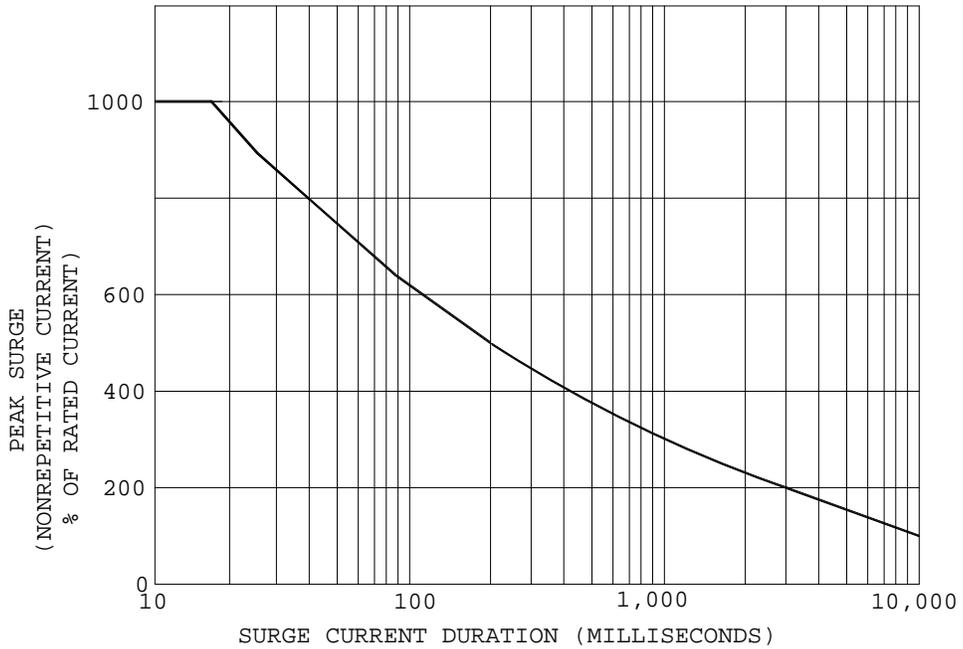


FIGURE 4. Peak surge current vs. surge current duration.

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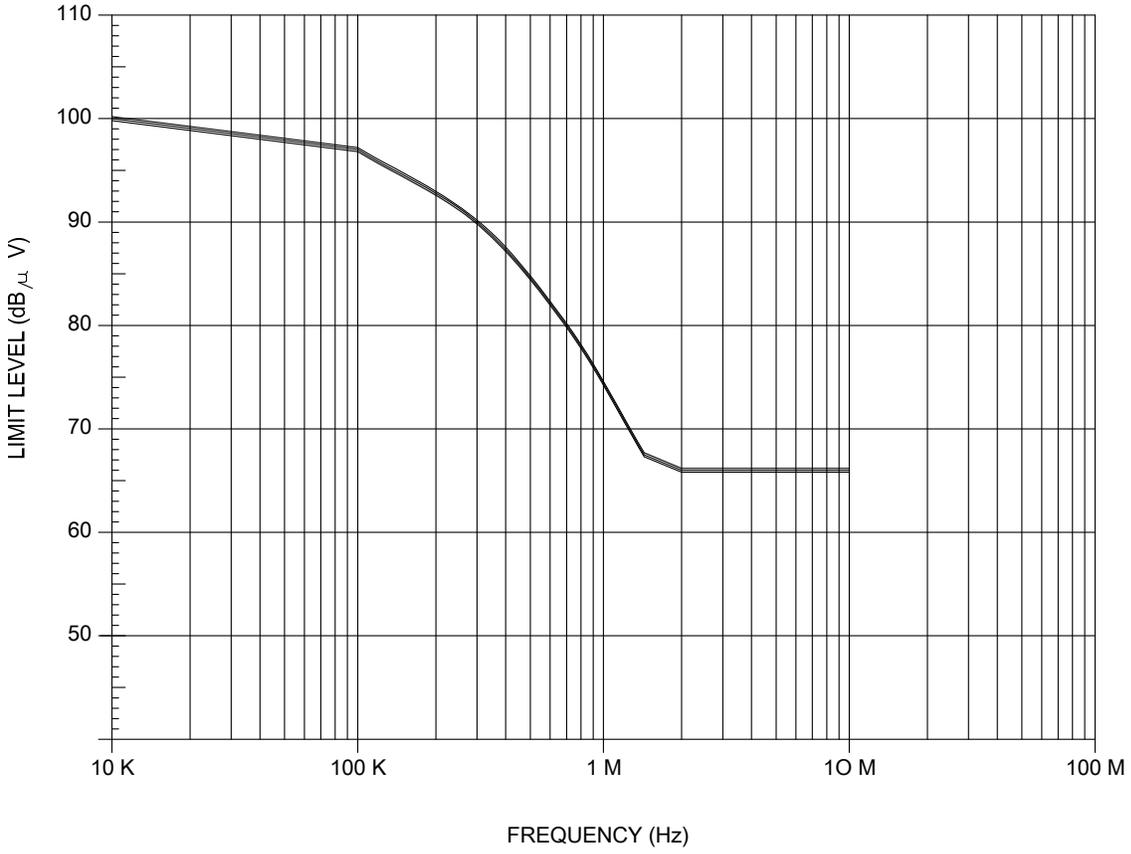


FIGURE 5. Conducted emissions.

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REQUIREMENTS:

SCREENING: Mechanical shock or constant acceleration shall be in accordance with [MIL-PRF-28750](#), except the constant acceleration shall be performed at 100 g's.

MECHANICAL REQUIREMENTS:

Weight: 6 ounces maximum.

Seal: (Solder or weld) [MIL-STD-202](#), method 112, test condition A, except temperature +125°C +0°C, -5°C.

Dimensions and configuration: See [figure 1](#).

Terminals:

Terminal strength: 5 pounds pull.

Terminal solderability: Applicable.

Terminal finish: Corrosion resistant material. Corrosion resistant material such as gold plating are considered acceptable.

INPUT REQUIREMENTS:

Input voltage range: 4.0 V dc to 32.0 V dc.

Assured turn-on voltage: ≤ 4.0 V dc.

Assured turn-off voltage: ≥ 1.0 V dc.

Input current: 16 mA maximum at 32 V dc.

Turn-on time: $\frac{1}{2(\text{line frequency})}$ maximum.

Turn-off time: $\frac{1}{(\text{line frequency})}$ maximum.

Bias current: Not applicable.

OUTPUT REQUIREMENTS:

Output voltage range: 25 V ac to 250 V ac, 45 Hz to 440 Hz.

Rated output current: 25 A, ac maximum (see [figure 2](#) and [figure 3](#)).

Rated output voltage: 220 V maximum, 400 Hz.

Output voltage drop: 1.5 V rms maximum.

Output leakage current: 10 mA, ac maximum at 220 V ac, 400 Hz.

Crosstalk: Not applicable.

Transient voltage: Step line voltage from 230 Volts AC, 400 Hz to 360 Volts AC, 400 Hz. For 5 seconds minimum.

Electric system spike: Not applicable.

Overload: 80 amperes.

DC offset voltage: ± 150 mV maximum.

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Waveform distortion: 4 V rms maximum from 10 percent to 100 percent rated output current.

Minimum current: Not applicable.

Zero crossover voltage (at +25°C):

M28750/10-001 = 0.0 ± 15 volts peak maximum.

M28750/10-002 = 0.0 ± 40 volts peak maximum.

ELECTRICAL REQUIREMENTS:

Dielectric withstanding voltage: 1,500 V ac rms at 60 Hz.

Insulation resistance: 100 megohms minimum.

Isolation: 10 picofarads maximum.

Power dissipation: 38 watts maximum.

Exponential rate of voltage rise (dv/dt): 100 volts/ μ second.

Electromagnetic interference: Maximum broadband conducted emission on power lines with 115 V ac, 400 Hz, 10 amperes resistive load during steady state and switching conditions (see [Figure 5](#)).

ENVIRONMENTAL REQUIREMENTS:

Temperature:

Operation: -55°C to +110°C.

Storage: -55°C to +125°C.

Shock (specified pulse): [MIL-STD-202](#), method 213, test condition F (1500 g's).

Vibration: 30 g's, 10 Hz to 3,000 Hz.

Moisture resistance: Not applicable.

Resistance to soldering heat: [MIL-STD-202](#), test method 2210, test condition A.

Salt atmosphere (corrosion): Shall be in accordance with [MIL-PRF-28750](#), except examination after test shall be in accordance with method 1041 of [MIL-STD-750](#).

Qualification: To qualify either M28750/10-001 or M28750/10-002 all qualification inspections of [MIL-PRF-28750](#) shall be performed. In order to qualify M28750/10-001 and M28750/10-002 submit M28750/10-001 to qualification inspection of [MIL-PRF-28750](#) as applicable and submit M28750/10-002 (2 units) to group A inspection of [MIL-PRF-28750](#).

Referenced documents. In addition to [MIL-PRF-28750](#), this document references the following:

[MIL-STD-202](#) [MIL-STD-750](#)

MIL-PRF-28750/10D

Changes from previous issue: The margins of this specification are mark 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 on 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 - EC
Air Force - 85

Preparing activity:
DLA - CC
(Project 5945-2015-028)

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