INCH-POUND

MS27247M
27 November 2003
SUPERSEDING
MS27247L
22 Jul 1992

DETAIL SPECIFICATION SHEET

RELAYS, ELECTROMAGNETIC, 10 AMPERES, 2 PDT TYPE I, HERMETICALLY SEALED

INACTIVE FOR NEW DESIGN AFTER 5 JUNE 1987. NO SUPERSEDING SPECIFICATION. FOR NEW DESIGN, USE MIL-PRF-83536/9, 10, 11.

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.

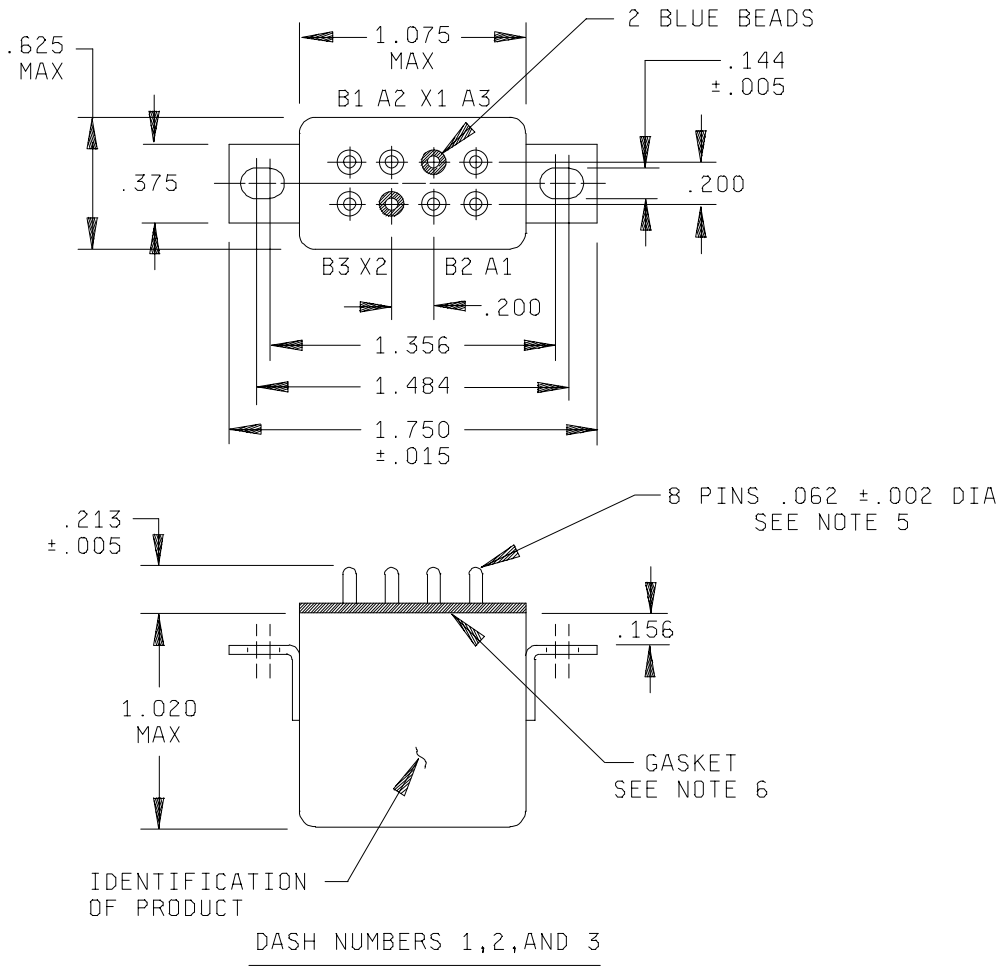
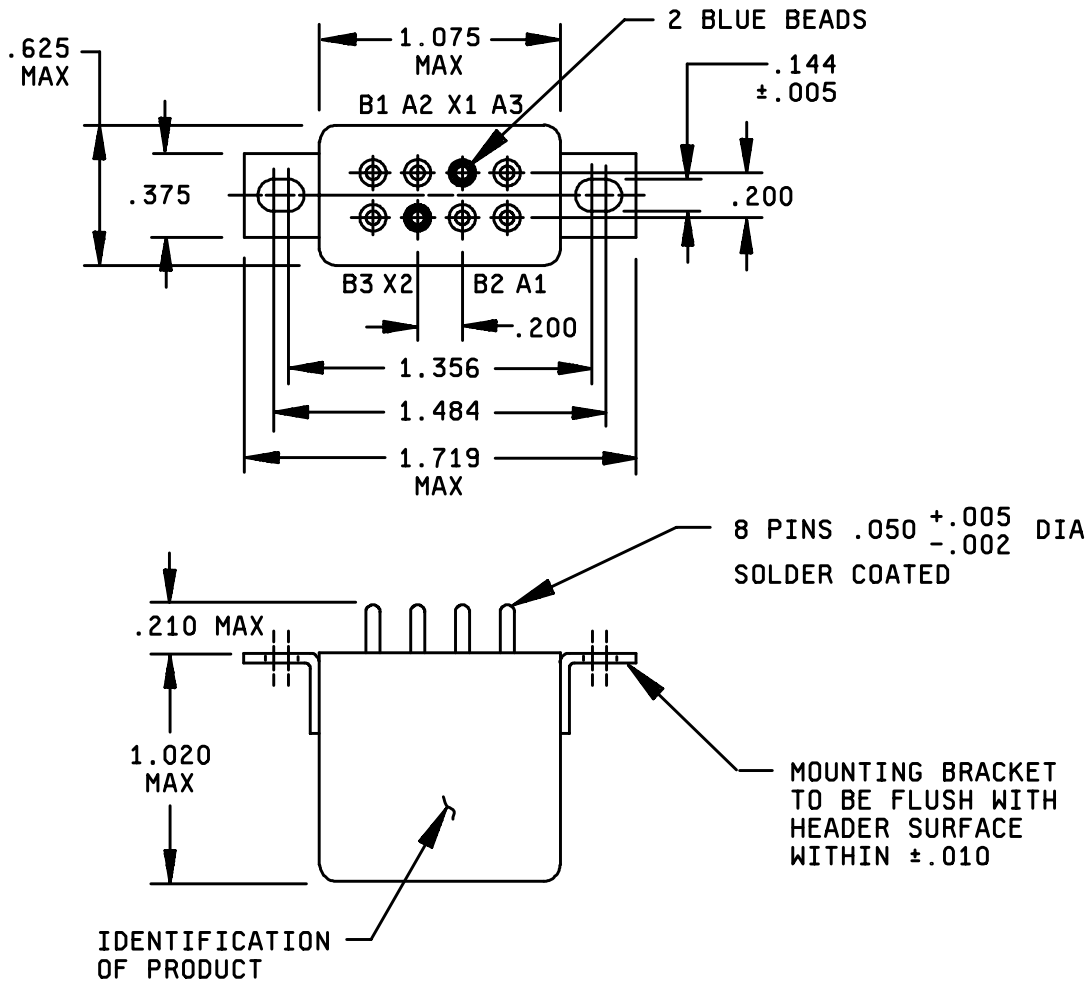
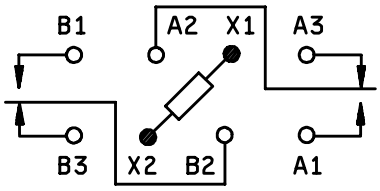


FIGURE 1. Dimensions and configuration.



DASH NUMBERS 4 AND 5

FIGURE 1. Dimensions and configurations - Continued.



CIRCUIT DIAGRAM

Inches	mm	Inches	mm	Inches	mm
.0001	0.025	.144	3.66	1.000	25.40
.002	0.05	.156	3.96	1.015	25.78
.005	0.13	.200	5.08	1.356	34.44
.010	0.25	.210	5.33	1.484	37.69
.015	0.38	.213	5.41	1.719	43.66
.050	1.27	.375	9.52	1.750	44.45
.062	1.57	.515	13.08		

NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ±.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 identifies each terminal location specified.
5. Socket pin terminals shall provide the operational, environmental, and interface characteristics to provide a reliable interconnect to gold-plated contacts. Terminals shall be gold plated. One system for gold plating that may be used is ASTM B488, type 3, class 1.25 with a nickel underplate of 50 to 150 microinches thick. The gold plating system shall enable the product to meet the performance requirements of this specification and shall be approved by the qualifying activity.
6. Gasket shall provide a reliable seal between the relay and mating socket that will meet the environmental, operational, and interface requirements of the relay with the mating socket. The gasket shall have shore hardeness 20 ±5, thickness .050 ±.05. Gasket material according to AMS 3332 has been considered acceptable.

FIGURE 1. Dimensions and configurations - Continued.

REQUIREMENTS:

Dimensions, and configurations: See figure 1.

ENVIRONMENTAL CHARACTERISTICS:

Temperature range: -70°C and +125°C.

Maximum altitude rating: 80,000 feet.

Shock g-level: 50 g's.

Duration: 11 ms.

Max duration contact opening: 10 µs.

Vibration - sinusoidal:

G-level: 20 g's.

Frequency range: 10 - 2,000 Hz.

Acceleration: 15 g's.

ELECTRICAL CHARACTERISTICS (see tables I, II, III, AND IV).

Insulation resistance, initial: 100 megohms.

After life or environmental tests: 50 megohms.

Dielectric strength (sea level):

	Initial	After life tests
Coil to case	1,000 V rms	1,000 V rms
Aux contacts	N/A	N/A
All other points	1,250 V rms	1,000 V rms

Dielectric strength (altitude): 80,000 feet.

	Initial	After life tests
Coil to case	N/A	350 V rms
Aux contacts	N/A	
All other points	N/A	350 V rms

Maximum contact drop initial: 0.150 volt.

After life test: 0.175 volt.

Overload current: 20 amperes, 28 V dc.

Rupture current: 40 amperes, 115 V ac, 400 Hz.

Duty rating: Continuous.

CONFORMANCE INSPECTION:

Performance of groups B and C tests are not applicable.

Group A acceptance reports shall be submitted to the qualifying activity on a yearly basis in order to retain qualification for this military specification sheet.

Qualification by similarity: See MIL-PRF-6106.

TABLE I. Dash numbers and characteristics.

PIN number MS27247-	Type	Coil	Terminal type	115/200 V ac 3 phase contact rating	Mounting or mating sockets	Max weight in pounds
1	I	dc	Plug-in	N/A	N/A	.08
2	I	dc	Plug-in	Applicable	N/A	.08
3	IER	dc	Plug-in	Applicable	N/A	.08
4	I	dc	Printed wire (PW)	N/A	N/A	.08
5	I	dc	Printed wire (PW)	Applicable	N/A	.08

TABLE II. Operating characteristics.

PIN MS 27247-	Coil data											Time - (milliseconds maximum)					
	Coil	Nominal			Max		Max pick-up voltage			Hold voltage 2/	Drop out voltage 2/	Operate 3/	Release 4/	Contact Bounce			
														Main		Aux	
		Volts 1/	Freq Hz	Ω Res ±10%	Volts	Amp	Normal 2/	High temp test	Cont current test					NO	NC	NO	NC
MS27247-1	dc	28	dc	300	29	.120	18	18	19.8	7	1	10	10	2	5	---	---
MS27247-2	dc	28	dc	300	29	.120	18	18	19.8	7	1	10	10	2	5	---	---
MS27247-3	dc	28	dc	300	29	.120	18	18	19.8	7	1	10	10	2	5	---	---
MS27247-4	dc	28	dc	300	29	.120	18	18	19.8	7	1	10	10	2	5	4	4
MS27247-5	dc	28	dc	300	29	.120	18	18	19.8	7	1	10	10	2	5	---	---

1/ Caution: Use of any coil voltage less than nominal coil voltage will compromise the operation of the relay.
2/ Over the temperature range.
3/ With rated coil voltage.
4/ From rated coil voltage.

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

Type of load	Life operating cycles x 10^3 1/	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			10				10				
Inductive	100	4	4			4				4				
Inductive														
Motor	100	3	3			3				3				
Lamp	100	2	2			2				2				
Transfer load														3/
Mechanical life reduced current	400	2.5	2.5											
Mixed loads														4/

1/ 115/200 V ac for 60 Hz ratings, absence of value indicates relay is not rated for 3-phase applications.
2/ Additional rating for -5 only: 2 ampere inductive at 460 V ac, 400 Hz.
3/ Transfer load indicates relay is suitable for transfer between unsynchronized ac power supplies at rating indicated.
4/ Minimum current ratings 0.1 ampere resistive, 0.3 ampere inductive, and 0.5 ampere resistive are applicable in accordance with acquisition specifications except monitored to a 3 ohm contact resistance.

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). Society of Automotive Engineers documents are available from the Society of Automotive Engineers 400 Commonwealth Drive Warrendale, Pennsylvania, United States, 15096-0001. http://www.sae.org American Society for Testing and Materials documents are available from the American Society for Testing and Materials 100 Barr Harbor Drive , West Conshohocken, Pennsylvania, United States 19428-2959. http://www.astm.org/

American Society for Testing and Materials (ASTM)

ASTM-E8 - Materials, Metallic, Tension Testing of

Society of Automotive Engineers (SAE)

SAE-AMS3332 - Silicone Rubber Extreme Low-Temperature Resistant, 15-30

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

Preparing activity:
DLA - CC

(Project 5945-1221-01)

Review activities:
Navy - AS

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.