

INCH-POUND

MS27245N

22 July 1992

SUPERSEDING

MS27245M

10 February 1989

MILITARY SPECIFICATION SHEET

RELAYS, ELECTROMAGNETIC, 10 AMPERES, 2PDT, TYPE 1, HERMETICALLY SEALED

Inactive for new design after 5 June 1987.
No superseding standard. For new design,
use MS27401.

This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of this specification sheet and the issue of the following specification listed in that issue of the Department of Defense Index of Specifications and Standards (DODISS) specified in the solicitation: MIL-R-6106.

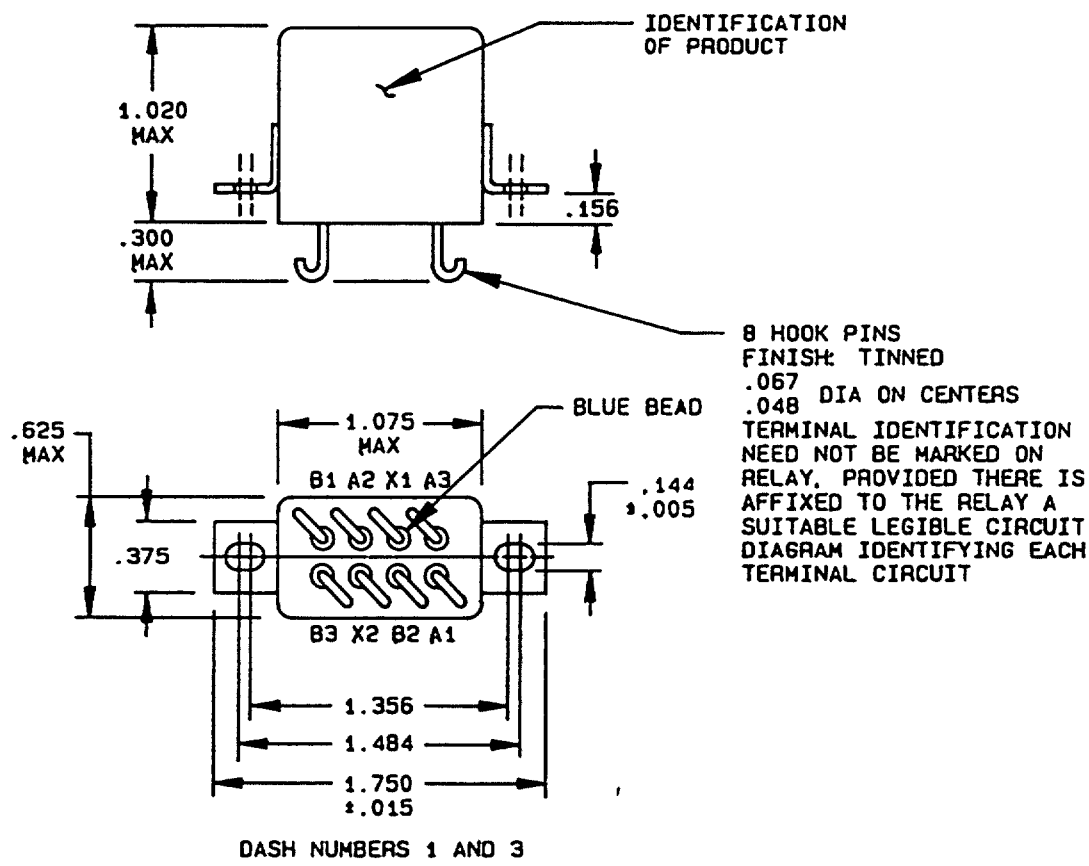


FIGURE 1. Dimensions and configurations.

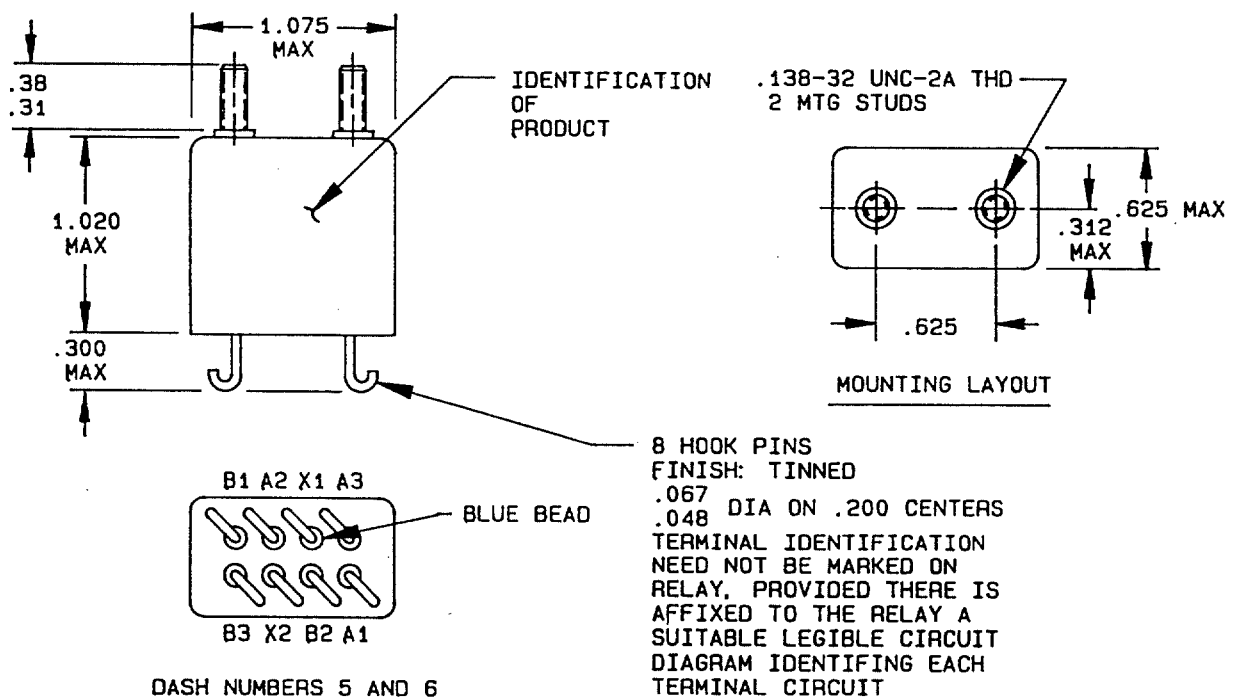
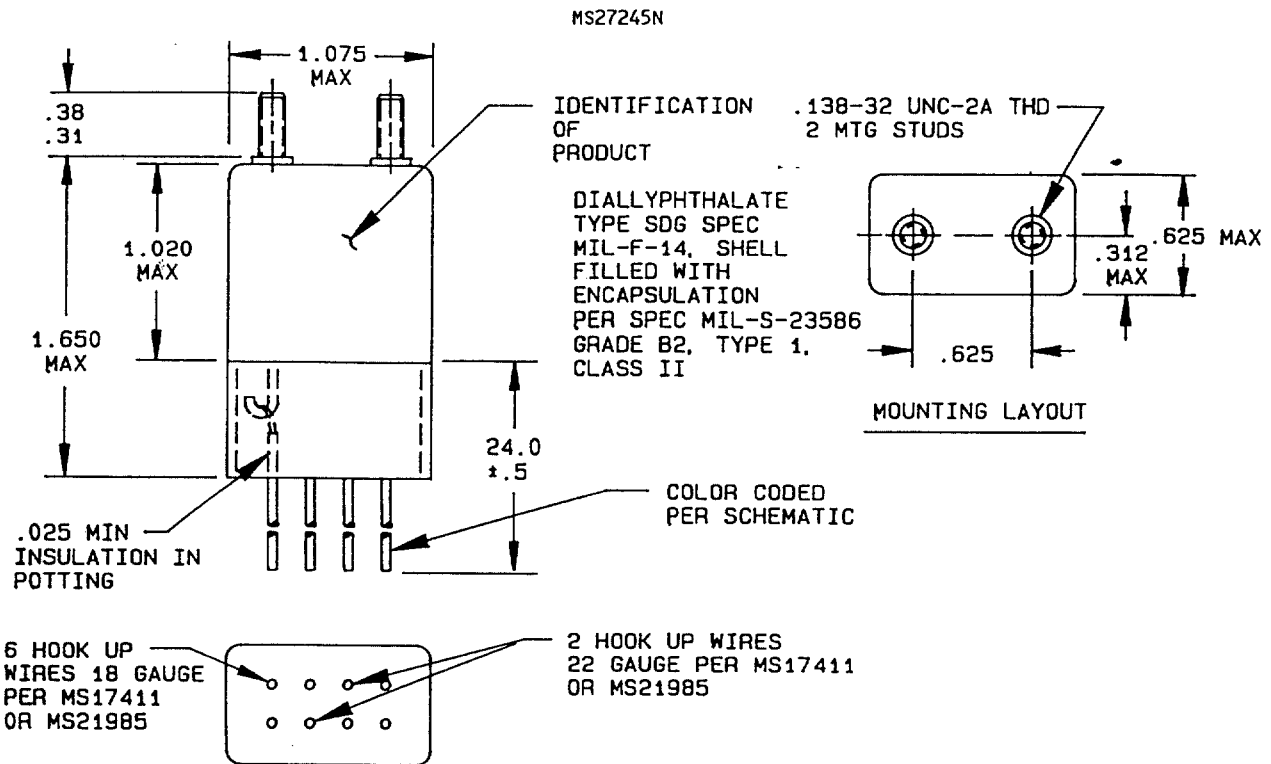
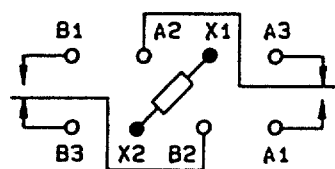


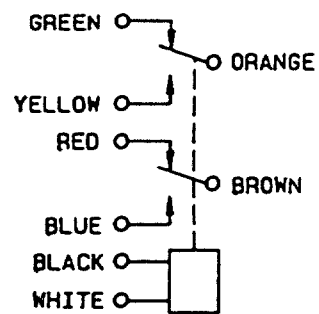
FIGURE 1. Dimensions and configurations - Continued.

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CIRCUIT DIAGRAM

(DASH NUMBERS 1, 3, 5 AND 6)



CIRCUIT DIAGRAM

(DASH NUMBERS 2 AND 4)

Inches	mm	Inches	mm	Inches	mm	Inches	mm
.005	0.13	.156	3.96	.38	9.7	1.020	25.91
.015	0.38	.25	6.4	.5	13.	1.356	34.44
.048	1.22	.257	6.53	.515	13.08	1.485	37.69
.067	1.70	.300	7.62	.625	15.88	1.650	41.91
.138	3.51	.31	7.9	1.000	25.40	1.750	44.45
.144	3.66	.375	9.52	1.015	25.78	24.0	610.

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerances are ± 0.010 (0.25 mm).

FIGURE 1. Dimensions and configurations - Continued.

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REQUIREMENTS:

Dimensions and configurations: See figure 1.

ENVIRONMENTAL CHARACTERISTICS:

Temperature range: -70°C and $+125^{\circ}\text{C}$.

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):

	<u>Initial</u>	<u>After life tests</u>
Coil to case	1,000 V rms	1,000 V rms
Aux contacts		
All other points	1,250 V rms	1,000 V rms

Dielectric strength (altitude): 80,000 feet.

	<u>Initial</u>	<u>After life tests</u>
Coil to case		350 V rms
Aux contacts		
All other points		350 V rms

Max contact drop initial: 0.150 volt (dash numbers 1 and 3), 0.350 volt (dash numbers 2, 4, 5, and 6).

After life test: 0.175 volt (dash numbers 1 and 3), 0.375 volt (dash numbers 2, 4, 5, and 6).

Overload current: 20 amperes, 28 V dc.

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

Duty rating: Continuous.

QUALITY 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.

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TABLE I. Dash numbers and characteristics.

Dash number	Type	Coil	Terminal type	Mounting socket	Auxiliary contacts	Max weight in pounds
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1	I	dc	Solder hook	Flange	N/A	0.08
2	I	dc	Wire lead	Stud	N/A	0.23
3	IER	dc	Solder hook	Flange	N/A	0.08
4	I	dc	Wire lead	Stud	N/A	0.23
5	I	dc	Solder hook	Stud	N/A	0.23
6	I	dc	Solder hook	Stud	N/A	0.23

TABLE II. Operating characteristics.

MS part number	Coil data										Time - milliseconds max			
	Coil	Rated		Max		Max pick-up voltage			Hold voltage age 2/	Drop out voltage age 2/	Operate 3/	Release 4/	Contact bounce	
		Volts 1/	Freq. Hz	Res Ω $\pm 10\%$	Volts	Ampere	Normal 2/	High test temp					Main	Aux
MS27245-1	X1, X2	28	dc	300	29	.12	18	18	7.0	1.0	10	10	2	5
MS27245-2	X1, X2	28	dc	300	29	.12	18	18	7.0	1.0	10	10	2	5
MS27245-3	X1, X2	28	dc	300	29	.12	18	18	7.0	1.0	10	10	2	5
MS27245-4	X1, X2	28	dc	300	29	.12	18	18	7.0	1.0	10	10	2	5
MS27245-5	X1, X2	28	dc	300	29	.12	18	18	7.0	1.0	10	10	2	5
MS27245-6	X1, X2	28	dc	300	29	.12	18	18	7.0	1.0	10	10	2	5

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 rated coil voltage.

4/ From rated coil voltage.

TABLE III. Rated contact load (amperes per pole) (case grounded) (-1 and -3).

Type of load	Life operating cycles x 10 ³	28 V dc				115 V ac, 1 phase				115/200 V ac, 3 phase 1/ (Not applicable to -1)				See appropriate footnotes
		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				
Inductive	100	4	4			4				4				
Inductive														
Motor	100	3	3			3				3				
Lamp	100	2	2			2				2				
Transfer load	-													2/
Mechanical life reduced current	400	2.5	2.5											
Intermediate current	50													3/

1/ 115/200 V ac for 60 Hz ratings, 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.

3/ 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.

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TABLE IV. Rated contact load (amperes per pole) (case grounded) (-2, -4, -5, and -6).

Type of load	Life operating cycles x 10 ³	28 V dc				115 V ac, 1 phase				115/200 V ac, 3 phase 1/ (Not applicable to -2 and -6)				See appropriate footnotes
		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	50	10	10			10				10				
Inductive	50	6	6			6				4				
Inductive														
Motor	50	4	4			4				4				
Lamp	50	2	2			2				2				
Transfer load														2/
Mechanical life reduced current	400	2.5	2.5											
Intermediate current	50													3/

1/ 115/200 V ac for 60 Hz ratings, 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 supplied at rating indicated.

3/ 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.

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Revision letters are not used to denote changes due to the extensiveness of the changes.

CONCLUDING MATERIAL

Custodians:

Navy - EC
Air Force - 85

Review activities:

Navy - AS
Air Force - 99

Preparing activity:
Air Force - 85

Agent:
DLA - ES

(Project 5945-0885)



DEPARTMENT OF THE AIR FORCE
2750 LOG/ES
STANDARDIZATION
CUSTOMER SATISFACTION INQUIRY

TELEPHONE - COM 513-296-5517 DSN 986-5517
FAX - COM 513-296-8783 DSN 986-8783



VERY DISSATISFIED	DISSATISFIED	SOMEWHAT DISSATISFIED	SOMEWHAT SATISFIED	SATISFIED	VERY SATISFIED	NOT APPLICABLE
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1 2 3 4 5 6 7

(PLEASE ENTER THE VALUE THAT YOU FEEL IS APPROPRIATE)

I. STAFF

1. PROVIDERS QUALIFICATIONS/COMPETENCE----- ☐

2. PROVIDERS PROFESSIONALISM----- ☐

3. PROVIDERS RESPONSE TO YOUR INITIAL REQUEST ----- ☐ TIMELINESS ☐ QUALITY

II. PRODUCT

1. INITIAL DRAFT ----- ☐ TIMELINESS ☐ QUALITY

2. REVISION/AMENDMENT SATISFIED YOUR REQUIREMENT ----- ☐ TIMELINESS ☐ QUALITY

III. COMMENTS/SUGGESTIONS

(CONSTRUCTIVE COMMENTS OR SUGGESTIONS APPRECIATED)

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