



DEFENSE LOGISTICS AGENCY

DLA Land and Maritime
POST OFFICE BOX 3990
COLUMBUS, OH 43218-3990

16 July 2020

MEMORANDUM FOR MILITARY/INDUSTRY DISTRIBUTION

SUBJECT: Initial Draft of MS25031N.
Project number 5945-2020-047.

The draft of the above subject document is being sent to you for review and comments. The draft consists of the following changes: input QR Code, update Figure 1 Note 6, update Figure 1 metric conversions, add changes from previous revision paragraph, insert reference document paragraph, correct Air Force 11 to 85, and update advisory note.

If the document is of interest to you, please provide your comments electronically. This can be in the form of a return e-mail, with or without an attached text file. A 30-day coordination cycle from the date of this letter has been allotted. Please provide your comments within that time period. If no comments are received in the allotted 30 day coordination cycle, concurrence is assumed and all comments received after will be held to the first amendment. Since Navy-EC is a custodian for this document; all Navy review activities should forward their comments directly to this Center. If an electronic response is not possible we will still accept comments via letter, facsimile or phone call but only after you have contacted the project officer listed below. The draft document can be found at the following DLA LAND AND MARITIME-VA web page:

<https://landandmaritimeapps.dla.mil/programs/MilSpec/initialdrafts.aspx>

This process still requires military departments to identify their comments as "Essential" or "Suggested". Essential comments must be justified with supporting data. Military review activities should forward comments to their custodians or this office, as applicable, in sufficient time to allow for consolidating the department reply.

If there are any questions, please contact Erika Baker by the preferred method of E-Mail at Erika.Baker@dlam.mil or by telephone at commercial 614-692-4481, DSN 850-4481; or by facsimile at 614-692-6939. Our mailing address as a last resort is DLA Land and Maritime-VAT, P.O. Box 3990, Columbus, OH 43218-3990. If you have further questions or concerns you may contact me at Michael.Radecki@dlam.mil by telephone at 614-692-0561 or by DSN 850-0561.

RADECKI.MICHAEL
ELA.1230152051

Digitally signed by
RADECKI.MICHAEL.A.1230152051
Date: 2020.07.16 07:10:09 -04'00'

MICHAEL A. RADECKI
Chief
Electronic Components Branch



MS25031N
DRAFT DATED 16 July 2020

Inches	mm	Inches	mm
.010	0.25	.500	12.70
.020	0.51	.531	13.49
.040	1.02	.810	20.57
.062	1.57	.875	22.23
.083	2.11	1.750	44.45
.093	2.36	2.052	52.12
.138	3.51	2.215	63.88
.201	5.11	2.593	65.86
.250	6.35	2.623	66.62
.266	6.76	3.000	76.20
.343	8.71	3.750	95.25
.350	8.89	6.000	152.40
.463	11.76	6.688	169.88

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is $\pm .032$ (0.81 mm).
4. Additional flat washer may be used for terminal seat.
5. In the event of a conflict between the text of this standard and the references cited herein, the text of this standard shall take precedence.
6. Referenced Government documents of the issue listed in Assist Online (<https://assist.dla.mil/>) or Assist Quick Search (<https://quicksearch.dla.mil/>) specified in the solicitation form a part of this specification to the extent specified herein.
7. Terminal numbers shall not appear on relay header. There shall be affixed to the relay, a suitable legible circuit diagram that identifies each terminal location.
8. Mechanical linkage shall be provided to prevent both relays being closed at the same time.

FIGURE 1. Dimensions and configurations - Continued.

TABLE I. Dash numbers and characteristics.

Dash number	Type	Coil	Terminal type	Mounting or mating socket	Max weight in pounds
MS25031-D1B	II	dc	Stud	Plate	3.5

MS25031N
DRAFT DATED 16 July 2020
TABLE II. Operating characteristics.

PIN MS25030-	Coil data										Time - milliseconds max						
	Coil	Rated			Max		1/ Max pick-up voltage			Hold voltage 2/	Drop out voltage 2/	Operate 3/	Release 4/	Bounce			
		Volts 1/	Freq Hz	Ω Res	Volts	Amp	Normal 2/	High temp test	Cont current test					Main		Aux	
														NO	NC	NO	NC
D1B	X1, X2 Y1, Y2	28	dc	47.5	29	.70	18	21	22.5	7.0	1.5	35	15	3.5	N/A	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.

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/			
		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	100				75							
Inductive	10	80											
Inductive													
Motor	50	80				65							
Lamp													
Transfer load 2/													
Mechanical life reduced current	100	25				25							
Mixed loads	50	Applicable in accordance with MIL-PRF-6106											

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

2/ Transfer load indicates relay is suitable for transfer between unsynchronized ac power supplies at rating indicated.

Environmental characteristics.

Temperature range	-55°C to +71°C
Max altitude rating	50,000 ft
Shock G-level	25 g's
Duration	6-9 ms
Max duration contact opening	2 ms
Vibration - sinusoidal (see chart below)	
G-level	g
Frequency range	Hz
Vibration - random	
Applicable spec	N/A
Power spectral density	N/A
RMS G min	
Frequency range	N/A
Curve	
High shock	N/A
Acceleration	10 g's

MS25031N
DRAFT DATED 16 July 2020

Electrical characteristics.

Minimum insulation resistance, initial	100 megohms.
After life or environmental tests	50 megohms.
Dielectric strength (sea level).	2-5 seconds.

	Initial		After life tests	
	<u>28 V dc</u>	<u>115 V ac</u>	<u>28 v dc</u>	<u>115 V ac</u>
Coil to case	1,250 V rms	N/A	1,000	N/A
Aux contacts	1,250 V rms	N/A	1,000	N/A
All other points	1,250 V rms	1,500	1,000	1,125

Dielectric strength (altitude) 1 minute.

	<u>Initial</u>	<u>After life tests</u>
Coil to case	500	N/A
Aux contacts	500	N/A
All other points	500	500

Max contact drop initial	0.150 volt.
After life test	0.175 volt.
Overload current (NO)	800 amperes.
Rupture current	1,000 amperes.
Duty rating	Continuous.
RFI specification	
(Applicable to coil circuits of ac operated relays).	

Conformance inspection.

Performance of groups B and C tests are not applicable.

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

Qualification by similarity: See [MIL-PRF-6106](#).

Dash number	Vibration level				
	5-10 Hz	10-55 Hz	55-250 Hz	250-500 Hz	500-1500 Hz
MS25031-D1B	.08 DA	.06 DA	2 g's	2 g's	

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 previous issue.

Referenced documents. This document references [MIL-PRF-6106](#).

Custodians:
Navy - AS
Air Force - 85
DLA - CC

Preparing activity:
DLA - CC

(Project 5945-2020-047)

Review activities:
Navy - EC

MS25031N
DRAFT DATED 16 July 2020

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 the ASSIST Online database at <https://assist.dla.mil/>.