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REFER TO

DSCC-VAT (Mr. Arps/DSN 850-0506/(614)692-0506, david.arps@dla.mil)

20 April 2004

MEMORANDUM FOR MILITARY/INDUSTRY DISTRIBUTION

SUBJECT: Proposed Revisions and New Specification Sheets (*)

In addition to being provided with this memorandum, initial drafts for the subject documents are now available for viewing and downloading from the DSCC-VA Web site:

<http://www.dsccols.com/Programs/MilSpec>
 or
<http://www.dscc.dla.mil/Programs/MilSpec/DocSearch.asp>

| Document Number | Project Number | Document Number | Project Number |
|------------------|----------------|----------------------------|----------------|
| MIL-DTL-3928/16C | 5985-1296 | MIL-DTL-3928F Supplement 1 | 5985-1299 |
| MIL-DTL-3928/17C | 5985-1297 | MIL-DTL-3928/26 | 5985-1300 * |
| MIL-DTL-3928/18D | 5985-1298 | MIL-DTL-3928/27 | 5985-1301 * |
| MIL-DTL-3928/10F | 5985-1294 | MIL-DTL-3928/28 | 5985-1302 * |
| MIL-DTL-3928/15F | 5985-1295 | | |

The scope and intent of the changes is to establish requirements for new switches for which QPL qualification listing is sought. An attached table is provided identifying which documents are revision and which are new specification sheets. In each case new drawings have been provided for each new dash number established, one new dash number for each new switch. Electrical characteristics tables have also been amended to accommodate the new dash numbers. Changes from previous issues are denoted by vertical lines in the margins.

If these documents are of interest to you, please submit typed comments concurrence using e-mail or by letter. Comments or suggested changes that are not editorial in nature should include justification. Industrial activities should indicate whether commenting from the standpoint of a "User" or "Manufacturer." Military review activities should forward comments to custodians in sufficient time to allow consolidating the departmental reply. Navy review activities are requested to send comments to this center in lieu of Navy - EC custodian. All agencies, industry, and coordinated custodian comments should be sent to this center. Comments from military departments must be identified as "Essential" or "Suggested." Essential comments, which must be accepted or withdrawn, should be supported by test data unless they obviously require no data.

Return comments to this Center no later than 45 days from date of this letter. Further coordination concerning these documents will be circulated only to organizations that furnish comments or reply that they have an interest.

Direct questions to Mr. David Arps, by e-mail at david.arps@dla.mil (preferred); by telephone at 614-692-0506, DSN 850-0506; by facsimile 614-692-6939; or by mail at Defense Supply Center, Columbus, Electronic Components Team DSCC-VAT, P.O. Box 3990, Columbus, OH 43216-5000.

/SIGNED/

Attachments

KENDALL A. COTTONGIM
 Chief
 Electronic Components Team

_____ CONCUR _____ NO INTEREST _____ WILL REPLY BY DEADLINE

COMPANY NAME _____ POINT OF CONTACT _____

PHONE _____ E-MAIL _____

MIL-DTL-3928

Projects to incorporate New Switches (new dash nos.) for QPL qualification

| Project | Scope | New Figures |
|--|---|-------------------|
| 5985-1294 Rev MIL-DTL-3928/10F | Incorporate three new dash nos. -013 -014 -015 | Figures 8, 9, 10 |
| 5985-1295 Rev MIL-DTL-3928/15F | Incorporate three new dash nos. -017 -018 -019 | Figures 12, 13 14 |
| 5985-1296 Rev MIL-DTL-3928/16C | Incorporate new dash no. -03 | Figure 2 |
| 5985-1297 Rev MIL-DTL-3928/17C | Incorporate new dash nos. -04 -05 -06 | Figures 4, 5, 6 |
| 5985-1298 Rev MIL-DTL-3928/18D | Incorporate new dash no. -09. | Figure 9 |
| 5985-1300 New MIL-DTL-3928/26 | New specification sheet w/ dash nos. -01 -02 | Figures 1, 2 |
| 5985-1301 New MIL-DTL-3928/27 | New specification sheet w/ dash nos. -01 -02 | Figures 1, 2 |
| 5985-1302 New MIL-DTL-3928/28 | New specification sheet w/ dash no. -01. | Figure 1 |
| 5985-1299 Rev MIL-DTL-3928F Supplement 1 | Incorporate new specification sheets /26, /27, /28; is new supplement for revised basic specification. | N/A |

NOTE: Any numbers used within this table are tentative pending coordination, review and approval and should not be used for acquisition purposes.

This draft, dated 20 April 2004 prepared by DLA-CC, has not been approved and is subject to modification. DO NOT USE PRIOR TO APPROVAL. (Project 5985-1300)

1 INCH-POUND

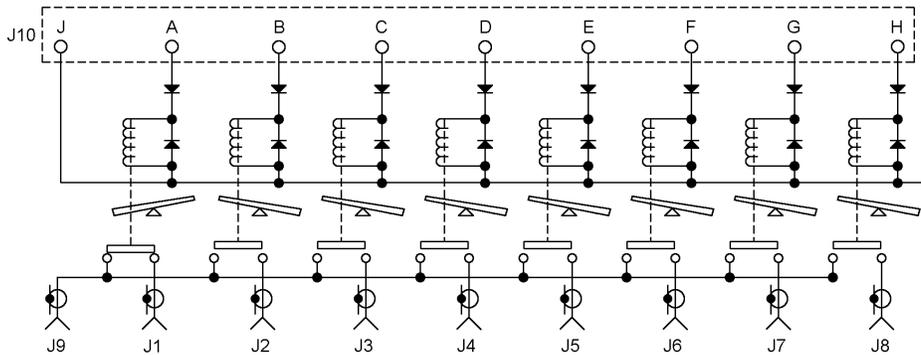
MIL-DTL-3928/26
DRAFT

DETAIL SPECIFICATION SHEET

SWITCHES, RADIO-FREQUENCY
TRANSMISSION LINE (COAXIAL) (ELECTRICALLY OPERATED)
TYPE SMA, LATCHING, 1P8T

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

Requirements for acquiring the product described herein shall consist of this specification sheet and MIL-DTL-3928.



SCHEMATIC SHOWN IN POSITION 1

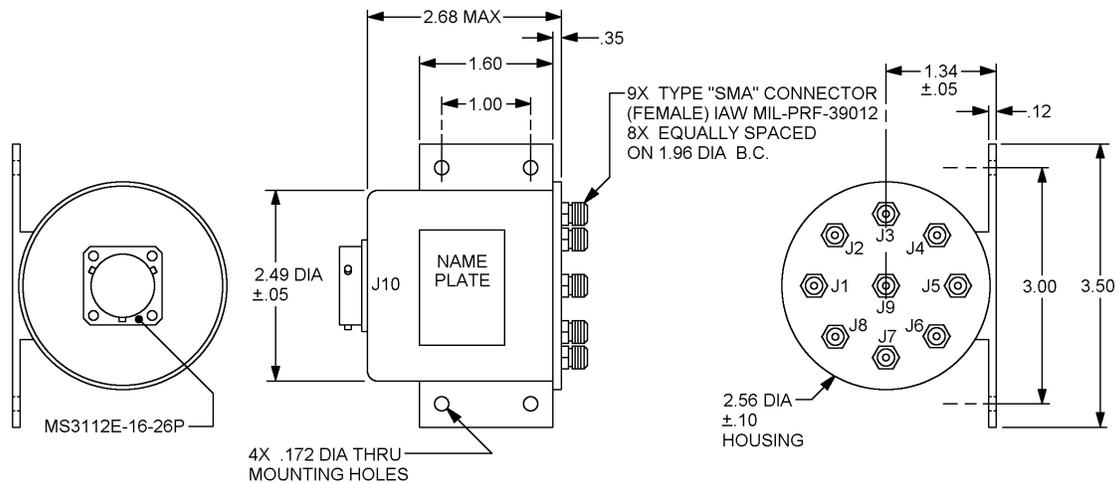


FIGURE 1. Switch configuration, specifications and schematic, PIN M3928/26-01.

Specifications:

Electrical:

Frequency range: 0.05 to 8.4 GHz.

VSWR: 1.3:1 maximum, referenced to 50 ohms.

Insertion loss: 0.3 dB maximum.

Isolation: 70 dB minimum.

RF power: 50 watts cw maximum.

Voltage: 20 to 30 V dc.

Current: 0.3 ampere maximum at 20°C.

Switching pulse: 50 ms minimum.

Switching time: 50 ms maximum.

Mechanical:

Material: Aluminum (RF assembly).

RF contacts: Break before make.

Finish:

Body: Nickel plated in accordance with MIL-C-26074.

Cover: Black anodize in accordance with MIL-A-8625, type 2, class 2.

Drive: Latching.

Life: 1,000,000 cycles minimum.

Environmental:

Temperature:

Operating: 0°C to +71°C.

Non-operating: -40°C to +71°C.

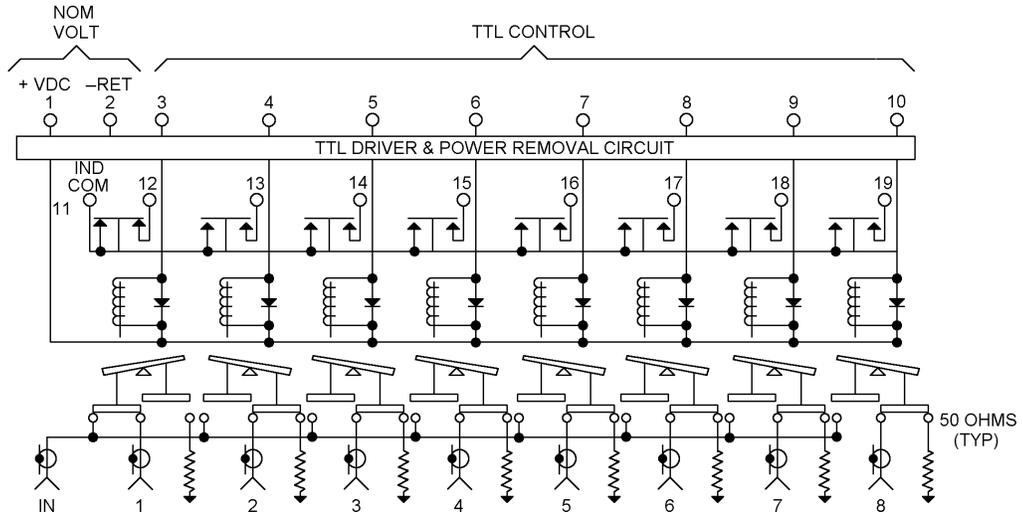
Humidity: Fully weatherized.

NOTES:

1. Dimensions are in inches.
2. Metric equivalents may be obtained using 1.00 inch = 25.4 mm.
3. Unless otherwise specified, tolerances are $\pm .010$ (± 0.25 mm) for three place decimals and $\pm .03$ (± 0.8 mm) for two place decimals.
4. Round corners of case may be squared.

FIGURE 1. Switch configuration and schematic, PIN M3928/26-01 - Continued.

MIL-DTL-3928/26



SCHEMATIC SHOWN IN POSITION 1

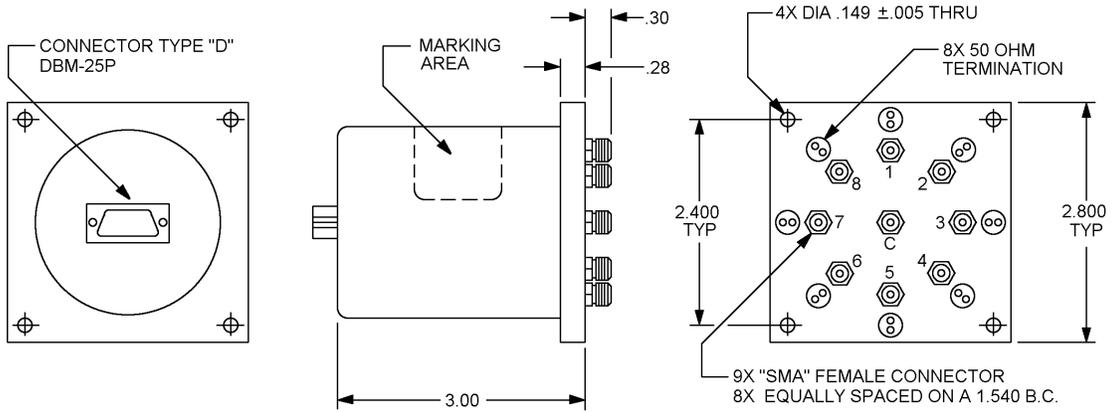


FIGURE 2. Switch configuration, specifications and schematic, PIN M3928/26-02.

MIL-DTL-3928/26

Specifications (through path):

| Frequency range GHz | DC to 4 | 4 to 8 | 8 to 12 | 12 to 16 | 16 to 18 |
|---------------------------|---------|--------|---------|----------|----------|
| VSWR maximum | 1.25:1 | 1.35:1 | 1.4:1 | 1.5:1 | 1.6:1 |
| Insertion loss dB maximum | 0.2 | 0.3 | 0.4 | 0.5 | 0.6 |
| Isolation loss dB minimum | 70 | 65 | 60 | 60 | 60 |

Power maximum term: 2 watts.

RF impedance: 50 ohms.

Electrical:

Voltage: 11 to 14 V dc.

Current: 436 mA maximum at 12 V dc at 20°C.

Switching time: 15 ms maximum.

Mechanical:

RF contacts: Break before make.

Life: 1,000,000 cycles minimum.

Environmental:

Temperature (Operating): -55°C to +85°C.

NOTES:

1. Dimensions are in inches.
2. Metric equivalents may be found using 1.00 inch = 25.4 mm.
3. Unless otherwise specified, tolerances are $\pm .010$ (± 0.25 mm) for three place decimals and $\pm .03$ (± 0.8 mm) for two place decimals.
4. Round corners of case may be squared.

FIGURE 2. Switch configuration, specifications and schematic, PIN M3928/26-02.

TABLE I. Electrical and performance characteristics.

| PIN M3928/26- | Fig. No. | Hous- ing | Frequency range (GHz) | VSWR | Insertion loss (dB) | Isolation (dB) | Switch time (ms) | Position indication circuit and rating | Life cycles x 1000 | Fail-safe or latching | Operating current (A) <u>1/</u> | Holding current (A) <u>1/</u> | Nominal operating voltage | Pickup voltage (less than) | Dropout voltage (less than) | Power and indicator connector | Weight (oz) |
|------------------|-------------|--------------|-----------------------------|---------------------------------|-------------------------------|-----------------------------|------------------------|---|--------------------------|-----------------------------|---------------------------------------|-------------------------------------|---------------------------------|-------------------------------------|--------------------------------------|-------------------------------------|----------------|
| 01N, S | 1 | | .05 to 8.4 | <u>Max</u> 1.3:1 ref 50Ω | <u>Max</u> 0.3 | <u>Min</u> 70 | <u>Max</u> 50 | None | <u>Min</u> 1000 | L | <u>Max</u> 0.3 | <u>Max</u> | 20-30 V dc | | | | <u>Max</u> |
| 02N, S | 2 | | DC to 18 | 1.6:1 16-18 GHz <u>2/</u> | 0.6 16-18 GHz <u>3/</u> | 60 8-18 GHz <u>4/</u> | 15 | None | 1000 | L | .436 @ 12 V dc | | 11-14 V dc | | | | |

1/ At 20°C.

2/ VSWR max for 12 to 16 GHz is 1.5:1, for 8 to 12 GHz is 1.4:1, for 4 to 8 GHz is 1.35:1, for DC to 4 GHz is 1.25:1.

3/ Insertion loss max for 12 to 16 GHz is 0.5 dB, for 8 to 12 GHz is 0.4 dB, for 4 to 8 GHz is 0.3 dB, for DC to 4 GHz is 0.2 dB.

4/ Isolation min for 4 to 8 GHz is 65 dB, for DC to 4 GHz is 70 dB.

REQUIREMENTS:

Dimensions and configurations: See figures 1 and 2.

Termination: Open, except for dash number -02, which is terminated in 50 ohms.

Nominal impedance: 50 ohms.

RF connectors: Female connectors (9 places) shall meet the requirements of MIL-PRF-39012 and shall mate with SMA type male connectors in accordance with MIL-PRF-39012/55.

Electrical and performance characteristics: See table I and figures 1 and 2.

RF contacts: Break-before make.

RF power handling capability: for dash -01 is 50 watts cw max, for dash -02 is 2 watts.

Humidity: (dash -01) is fully weatherized.

Operating temperature: dash -01 (0°C to 71°C), dash -02 (-55°C to +85°C).

Part or Identifying Number (PIN): M3928/26- (and dash number from table I).

Material (dash -01): aluminum (RF assembly).

Switching pulse (dash -01): 50 millisecond min.

NOTES

Referenced documents. In addition to MIL-DTL-3928, this specification sheet references MIL-PRF-39012, MIL-PRF-39012/55, MIL-C-26074, MIL-A-8625 and MS3112.

Changes from previous issue. The margins of this specification are not marked with vertical lines to indicate where changes from the previous issue were made, because this is a new document. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content.

Custodians:
Army - CR
Navy - EC
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

(Project 5985-1300)

Review activities:
Army - MI
Navy - AS, CG, MC, OS
Air Force - 19, 99

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 data base at www.dodssp.daps.mil.