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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 Essential comments, which must be accepted or withdrawn, should be supported by test data unless they obviously require no data.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 5985-1297)

INCH-POUND

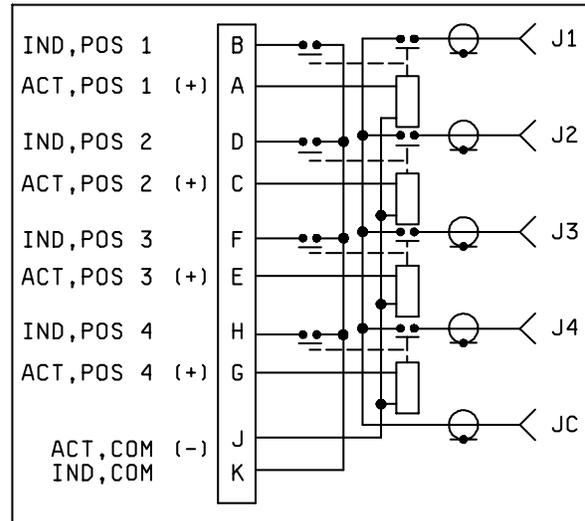
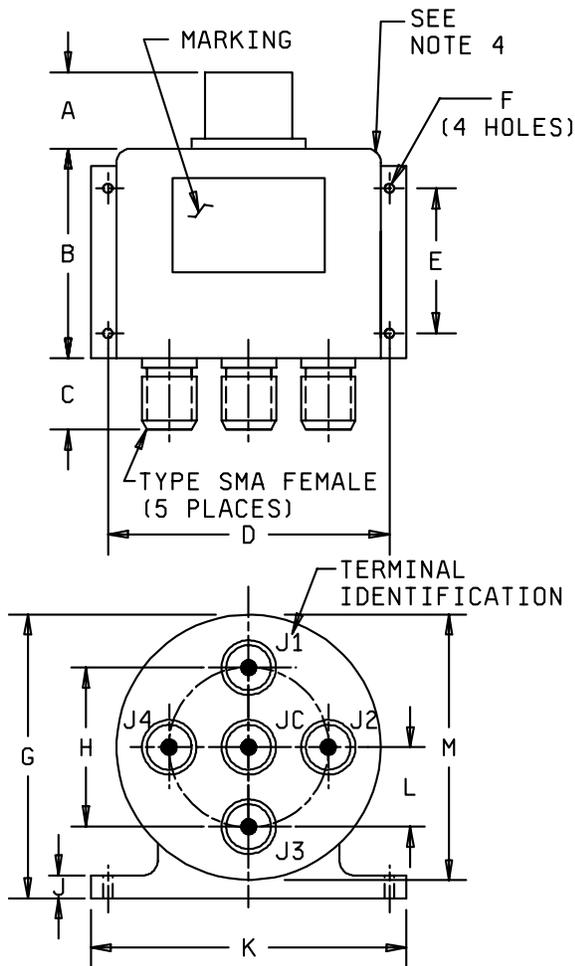
MIL-DTL-3928/17C
 DRAFT
 SUPERSEDING
 MIL-DTL-3928/17B
 15 August 2001

DETAIL SPECIFICATION SHEET

SWITCHES, RADIO-FREQUENCY
 TRANSMISSION LINE (COAXIAL) (ELECTRICALLY OPERATED)
 CLASS 5, 1P4T

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 DEENERGIZED POSITION)

FIGURE 1. Switch configuration and schematic, PIN M3928/17-01.

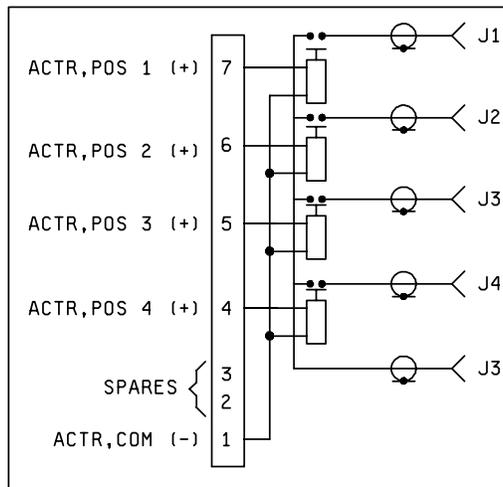
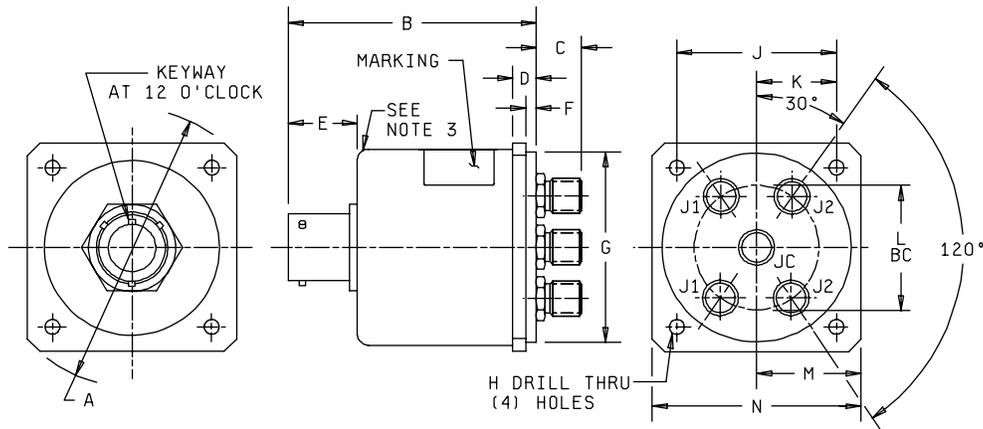
Dimensions									
Letter	Inches		Millimeters		Letter	Inches		Millimeters	
	Max	Min	Max	Min		Max	Min	Max	Min
A	.48	---	12.2	---	G	2.25	---	57.2	---
B	2.60	---	66.0	---	H	1.28 dia	1.22 dia	32.5 dia	31.0 dia
C	.37	---	9.4	---	J	.15	---	3.81	---
D	2.135	2.115	54.23	53.72	K	2.82	---	71.6	---
E	1.128	1.108	28.65	28.14	L	.635	.615	16.13	15.62
F	.228	.208	5.79	5.28	M	2.03 dia	1.97 dia	51.6 dia	50.0 dia

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only (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 M3928/17-01 - Continued.

MIL-DTL-3928/17C



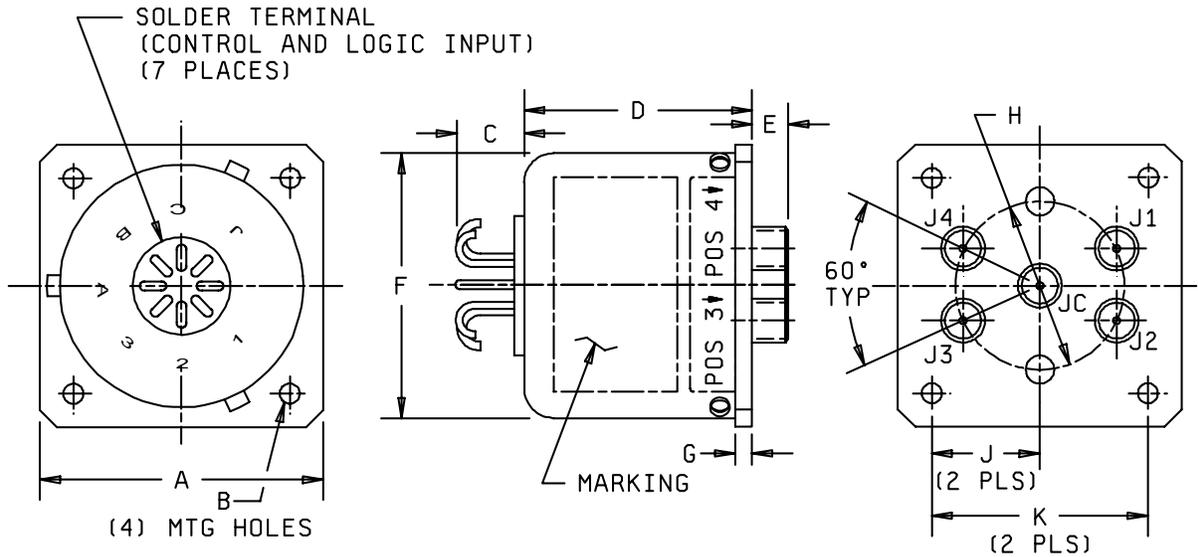
SCHEMATIC (SHOWN IN DEENERGIZED POSITION)

Dimensions									
Letter	Inches		Millimeters		Letter	Inches		Millimeters	
	Max	Min	Max	Min		Max	Min	Max	Min
A	2.34	2.28	59.4	57.9	H	.154 dia	.139 dia	3.91 dia	3.53 dia
B	1.60	---	40.6	---	J	1.380	1.370	35.05	34.80
C	.34	.28	8.6	7.1	K	.697	.677	17.70	17.20
D	.260	.240	6.60	6.10	L	1.072	1.052	27.23	26.72
E	.62	.56	15.7	14.2	M	.885	.865	22.48	21.97
F	.130	.120	3.30	3.05	N	1.78	1.72	45.21	43.69
G	1.560 dia	1.556 dia	39.62 dia	39.52 dia					

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only (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 and schematic, PIN M3928/17-02.

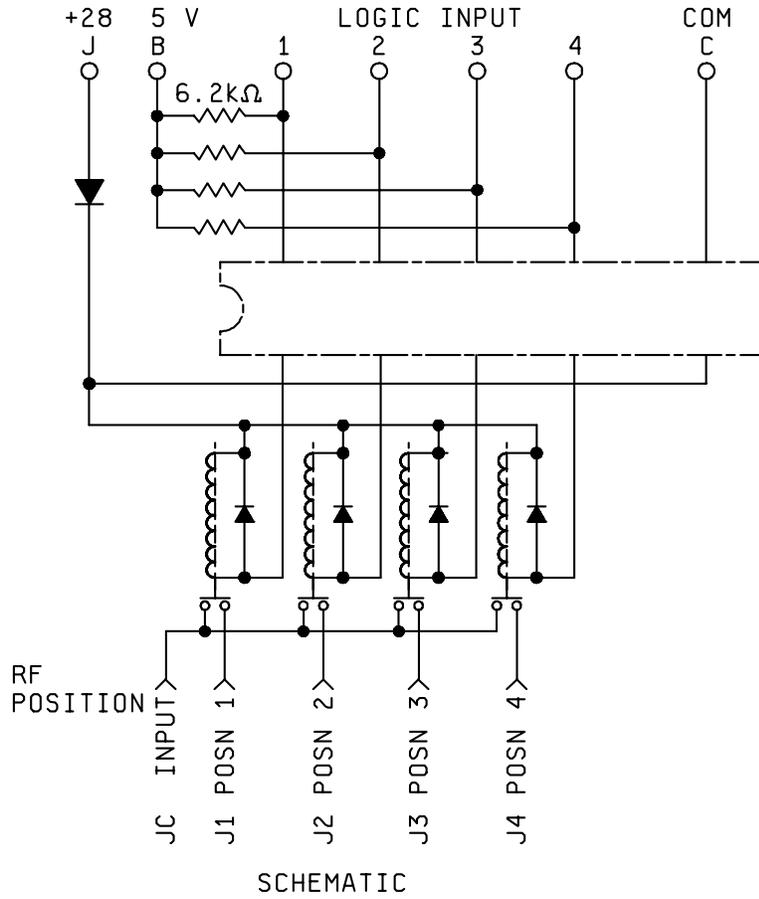


Dimensions									
Letter	Inches		Millimeters		Letter	Inches		Millimeters	
	Max	Min	Max	Min		Max	Min	Max	Min
A	1.78	1.72	45.2	43.7	F	1.53	1.47	38.9	37.3
B	.135 dia	.115 dia	3.43 dia	2.92 dia	G	.135	.115	3.43	2.92
C	.25	---	6.3	---	H	8.83 dia	8.77 dia	224.3 dia	222.8 dia
D	2.50	---	63.5	---	J	6.90	6.84	175.3	173.7
E	.27	---	6.9	---	K	1.384	1.364	35.15	34.65

NOTES:

1. Dimensions are in inches.
2. Metric equivalents are given for general information only (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.

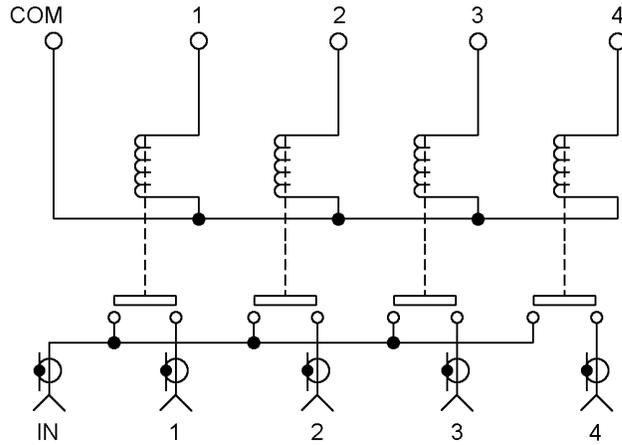
FIGURE 3. Switch configuration and schematic, PIN M3928/17-03.



Truth table/pin assignment:

Logic input terminals				RF positions			
1	2	3	4	1	2	3	4
1	0	0	0	On	---	---	---
0	1	0	0	---	On	---	---
0	0	1	0	---	---	On	---
0	0	0	1	---	---	---	On

FIGURE 3. Switch configuration and schematic, PIN M3928/17-03 - Continued.



SCHEMATIC SHOWN IN NORMALLY OPEN POSITION (DE-ENERGIZED)

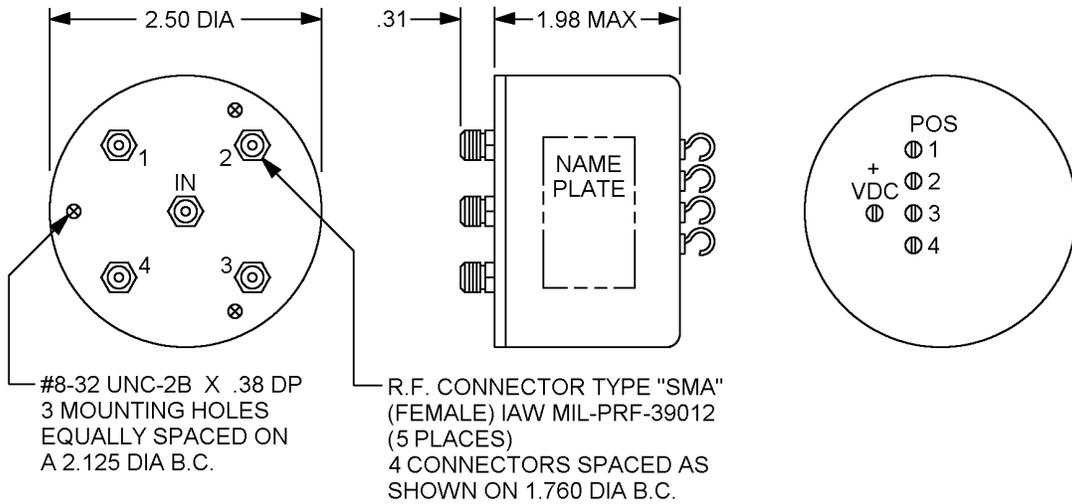


FIGURE 4. Switch configuration and schematic, PIN M3928/17-04.

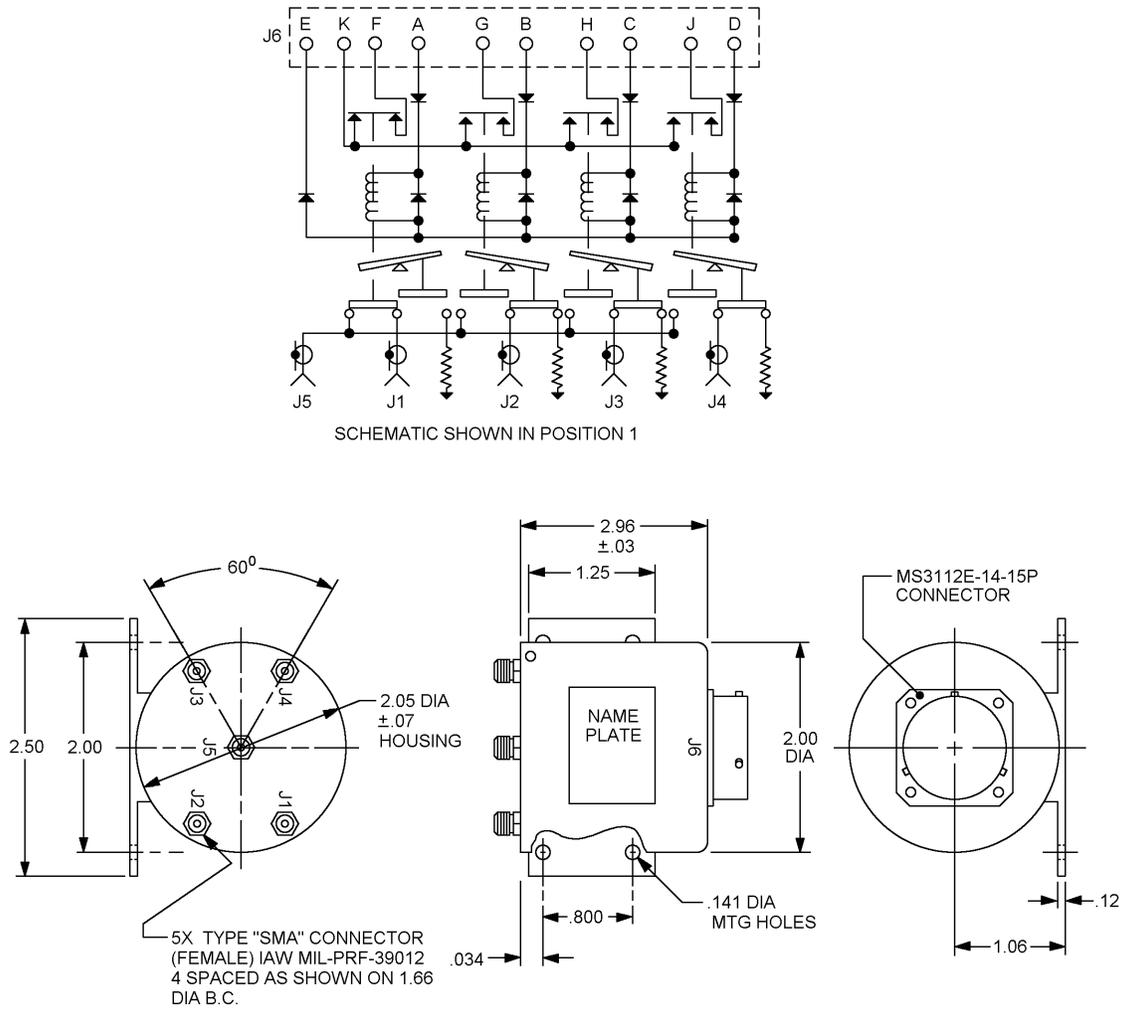


FIGURE 5. Switch configuration and schematic, PIN M3928/17-05.

MIL-DTL-3928/17C

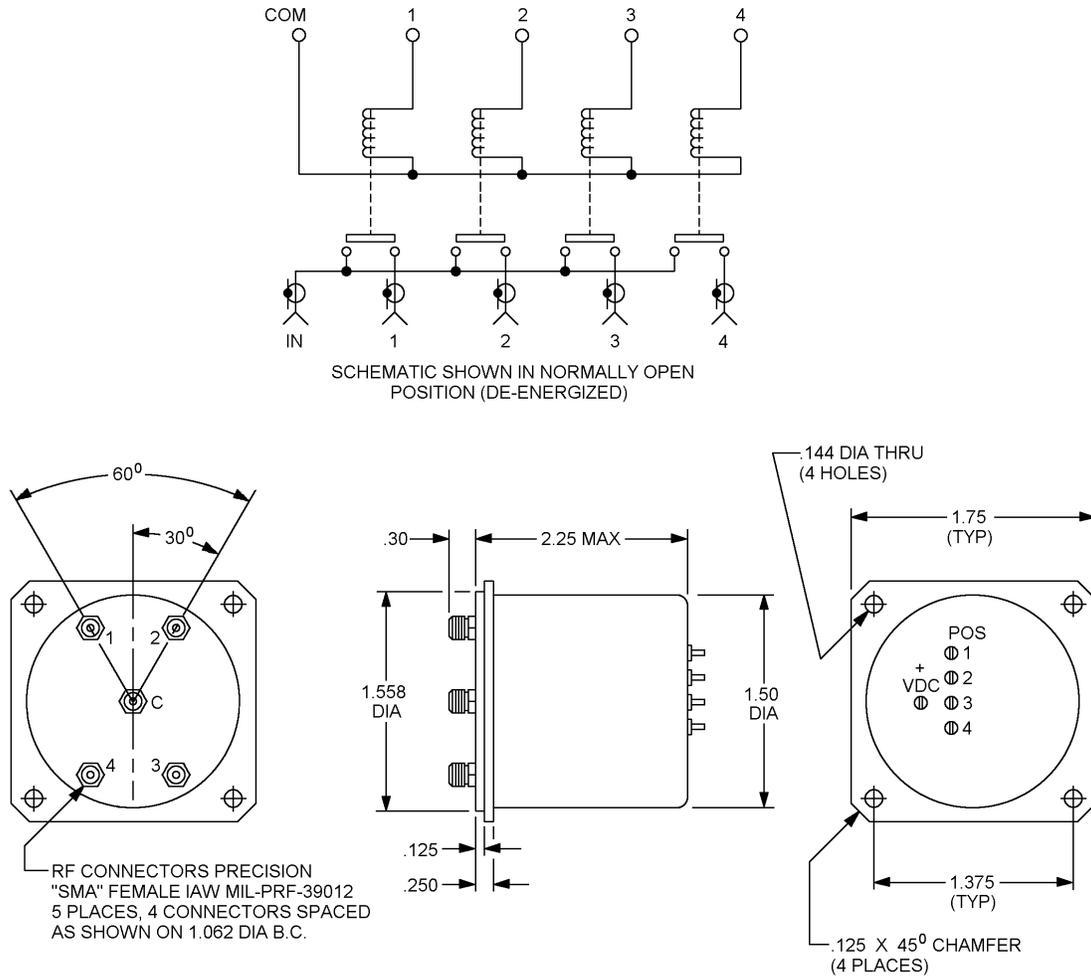


FIGURE 6. Switch configuration and schematic, PIN M3928/17-06.

TABLE I. Electrical and performance characteristics.

PIN M3928/17-	Fig. No.	Housing	Frequency range dc to GHz	VSWR	Insertion loss (dB)	Isolation (dB)	Switching time (ms)	Position indication circuit and rating	Life cycles x 1000	Fail-safe or latching	Operating current (A) ^{1/}	Holding current (A) ^{1/}	Nominal operating voltage	Pickup voltage (less than)	Dropout voltage (less than)	Power and indicator connector	Weight (oz)
01N, S <u>2/</u>	1	I	18	Max 1.5:1	Max 0.5	Min 40	Max 20	.2A at 40 V dc	Min 100	---	Max .13	Max .13	28 V dc	20 V dc	16 V dc	M8372311 H1210N	Max 16
02N, S	2	I	18	1.5:1	0.5	60	20	None	1000	---	.17	.17	28 V dc	20 V dc	16 V dc	RTK07-87P (Deutsch or equal)	16
03N, S <u>3/</u>	3	I	18	1.25:1 at DC-6 GHz 1.50:1 at 12-18 GHz	0.2 at DC-6 GHz 0.5 at 12-18 GHz	70 at DC-6 GHz 60 at 12-18 GHz	20	None	100	---	.16	.16	28 V dc +5 V dc ^{4/}	20 V dc	16 V dc		5
04N, S	4		12	1.5:1 at 4-12 GHz ^{5/} 1.3:1	0.5 at 4-12 GHz ^{7/} 0.3	60 at 1-12 GHz ^{9/} 70	20	None	1000	F	.260		28 V dc				
05N, S	5		8.4				50	Yes	1000	L	.3						
06N, S	6		26.5	1.65:1 at 18-26.5 GHz ^{6/}	0.65 at 18-26.5 GHz ^{8/}	50 at 18-26.5 GHz ^{10/}	20	None	1000	F	.160 @ 24 Vdc		24 V dc				

^{1/} At 28 V dc and 20°C.

^{2/} Transient interference (RFI).

^{3/} Logic voltage

Logic 0: 0 to 0.8 V dc.

Logic 1: 2.4 V dc to 5 V dc.

^{4/} +5 voltage deviation: ± 5 V dc.

^{5/} VSWR max for 1 to 4 GHz is 1.4:1, for DC to 1 GHz is 1.25:1.

^{6/} VSWR max for 12.4 to 18 GHz is 1.5:1, for 8 to 12.4 GHz is 1.4:1, for 3 to 8 GHz is 1.3:1, for DC to 3 GHz is 1.2:1.

^{7/} Insertion loss max for 1 to 4 GHz is 0.4 dB, for DC to 1 GHz is 0.3 dB.

^{8/} Insertion loss max for 12.4 to 18 GHz is 0.5 dB, for 8 to 12.4 GHz is 0.4 dB, for 3 to 8 GHz is 0.3 dB, for DC to 3 GHz is 0.2 dB.

^{9/} Isolation min for DC to 1 GHz is 70 dB.

^{10/} Isolation min for 8 to 18 GHz is 60 dB, for 3 to 8 GHz is 70 dB, for DC to 3 GHz is 80 dB.

REQUIREMENTS:

Dimensions and configurations: See figures 1 through 6.

RF connectors: Female connectors (5 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.

RF power handling capability (average): 25 watts (minimum) except dash number 03 is 15 watts (minimum).
For dash -04 max power is 100 watts cw, for dash -05 max power is 50 watts cw, for dash -06 RF power for 18 to 26.5 GHz is 35 watts cw, for 12.4 to 18 GHz is 45 watts cw, for 8 to 12.4 GHz is 60 watts cw, for 3 to 8 GHz is 75 watts cw, for DC to 3 GHz is 100 watts cw.

Nominal impedance: 50 ohms.

Termination: Open.

Vibration: Method I.

Operating temperature: -55°C to +85°C.

Part or Identifying Number (PIN): M3928/17- (and dash number from table I).

NOTES:

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

Changes from previous issue. 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 last previous issue.

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

Preparing activity:
DLA - CC

(Project 5985-1297)

Review activities:
Army - MI
Navy - AS, MC, OS, SH
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.