

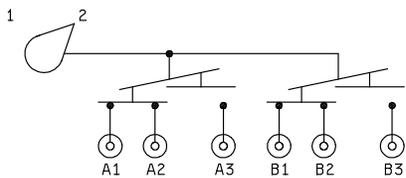
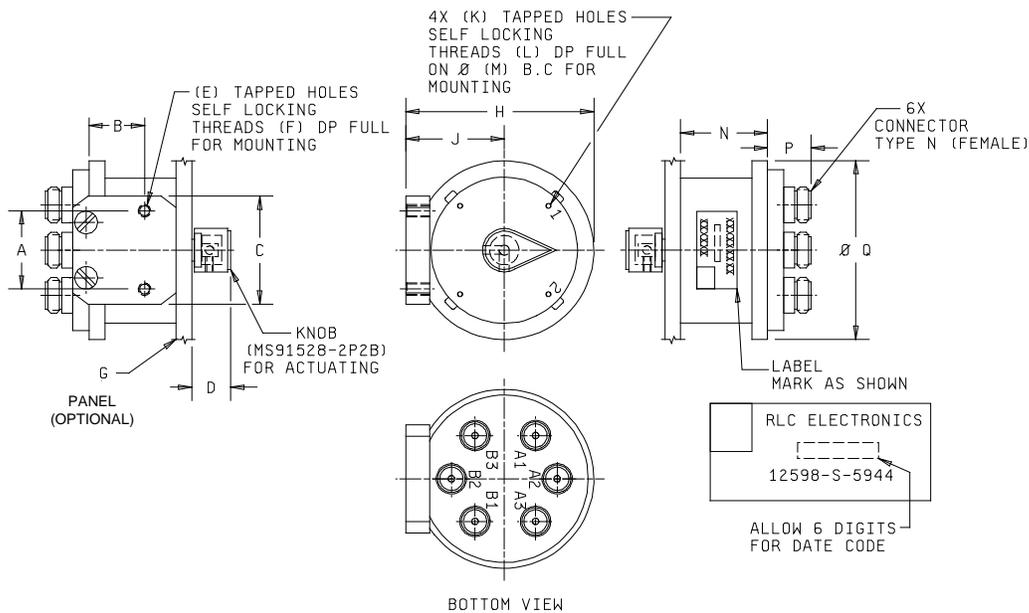
INCH-POUND

MIL-DTL-3928/9E  
15 February 2011  
SUPERSEDING  
MIL-DTL-3928/9D  
5 July 2001

DETAIL SPECIFICATION SHEET  
SWITCHES, RADIO-FREQUENCY  
TRANSMISSION LINE (COAXIAL) (MANUALLY AND MOTOR OPERATED)  
CLASS 1 (TYPE N CONNECTORS)

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

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



POSITION 1 CONNECTS A2 TO A3 | B2 TO B3  
POSITION 2 CONNECTS A1 TO A2 | B1 TO B2

FIGURE 1. Dimensions and configuration for PIN M3928/9-04.

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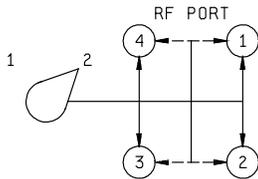
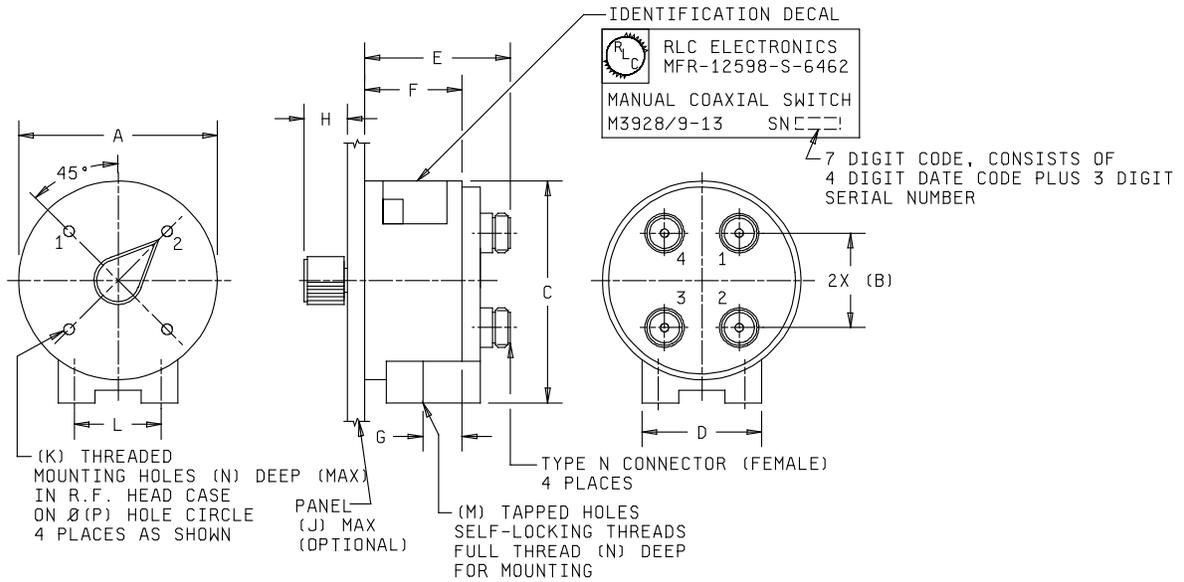
Letter	Dimensions			
	Inches		Millimeters	
	Max	Min	Max	Min
A	1.197	1.177	30.40	29.90
B	1.135	1.115	28.83	28.32
C	1.84	1.78	46.7	45.2
D	.807	.787	20.5	20.0
E	.190-32 UNF-2B		4.8-32 UNF-2B	
F	.322	.302	8.18	7.67
G	.250	---	6.35	---
H	3.260	3.240	82.80	82.30
J	1.78	1.72	45.2	43.7
K	.112-40 UNC-2B		2.84-40 UNC-2B	
L	.25	.19	6.4	4.8
M	2.232	2.212	56.69	56.18
N	1.822	1.802	46.28	45.77
P	.822	.802	20.88	20.37
Q	3.010	2.990	76.45	75.95

NOTES:

1. Dimension are in inches.
2. Metric equivalentents are given for general information only (1.00 inch = 25.4 mm).
3. Unless otherwise specified, tolerances are  $\pm .010$  inch ( $\pm 0.25$  mm) for three place decimals and  $\pm .03$  inch ( $\pm 0.8$  mm) for two place decimals.

FIGURE 1. Dimensions and configuration for PIN M3928/9-04 - Continued.

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POSITION 1 CONNECTS 1 TO 4 | 2 TO 3  
POSITION 2 CONNECTS 1 TO 2 | 3 TO 4

SCHEMATIC

(Outline and schematic for M3928/9-13)

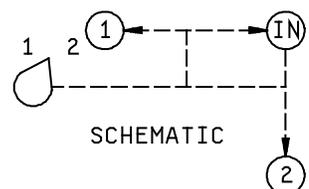
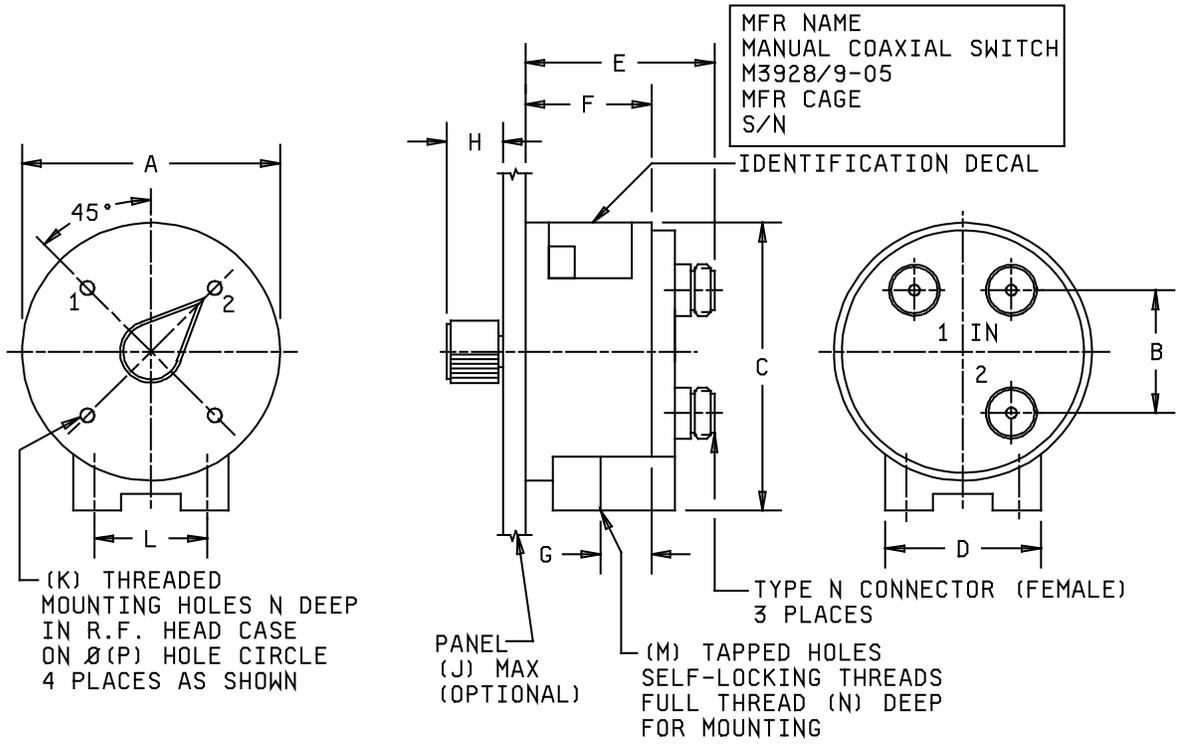
FIGURE 2. Dimensions and configurations for PINs M3928/9-05 and M3928/9-13.

Letter	Dimensions			
	Inches		Millimeters	
	Max	Min	Max	Min
A	2.760 dia	2.740 dia	70.10 dia	69.60 dia
B	1.072	1.052	27.23	26.72
C	2.970	2.950	75.44	74.93
D	1.822	1.802	46.28	45.77
E	2.300	2.280	58.42	57.91
F	1.463	1.443	37.16	36.65
G	.572	.552	14.53	14.02
H	.854	.834	21.69	21.18
J	.250	---	6.35	---
K	.112-40 UNC-2B		2.84-40 UNC-2B	
L	1.187 Nom		30.15 Nom	
M	.190-32 UNF-2B		4.83-32 UNF-2B	
N	.312	---	7.92	---
P	2.232 dia	2.212 dia	56.69 dia	56.18 dia

## NOTES:

1. Dimension are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Unless otherwise specified, tolerances are  $\pm .010$  inch ( $\pm 0.25$  mm) for three place decimals and  $\pm .02$  inch ( $\pm 0.5$  mm) for two place decimals.
4. Remove all burrs and sharp edges .005 max. Finish to be .03 microinch or better.

FIGURE 2. Dimensions and configurations for PINs M3928/9-05 and M3928/9-13 - Continued.

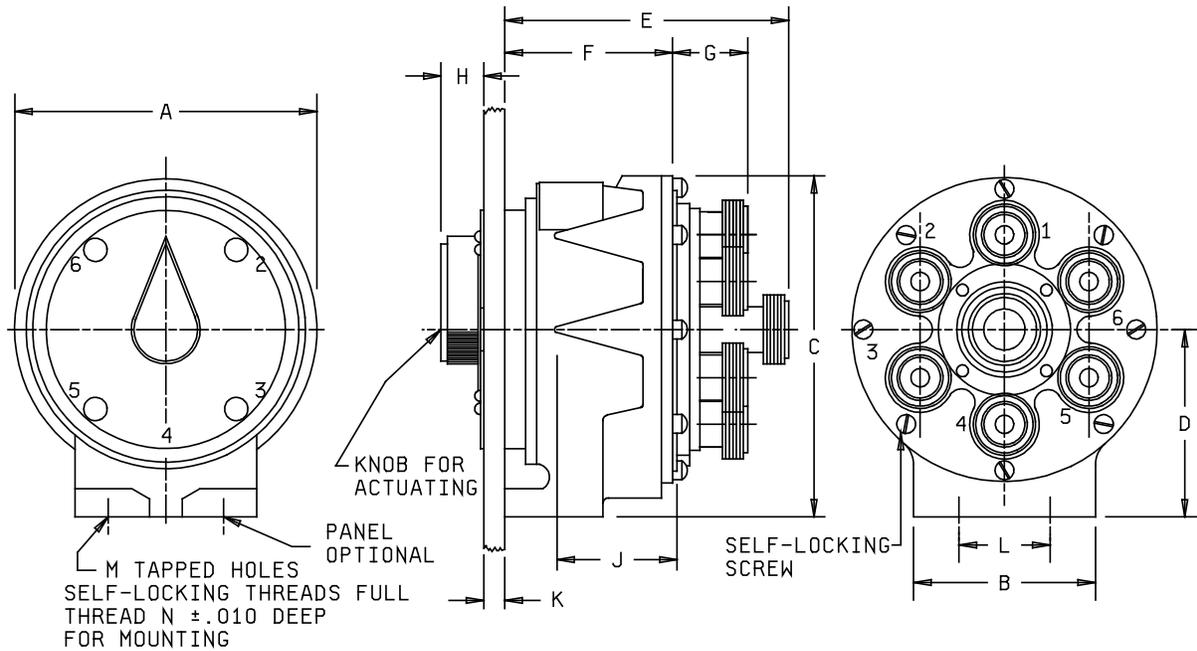


POSITION 1 CONNECTS "IN" TO 1  
POSITION 2 CONNECTS "IN" TO 2

(Outline and schematic for M2928/9-05)

FIGURE 2. Dimensions and configurations for PINs M3928/9-05 and M3928/9-13 - Continued.

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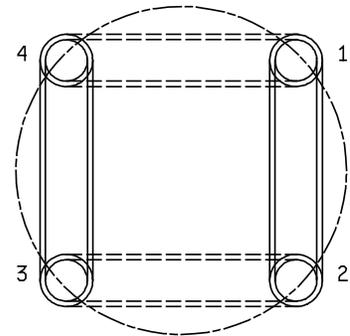
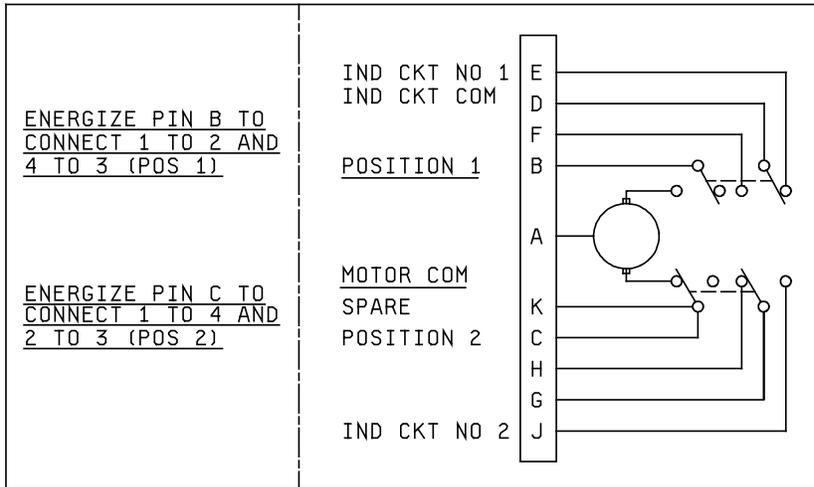
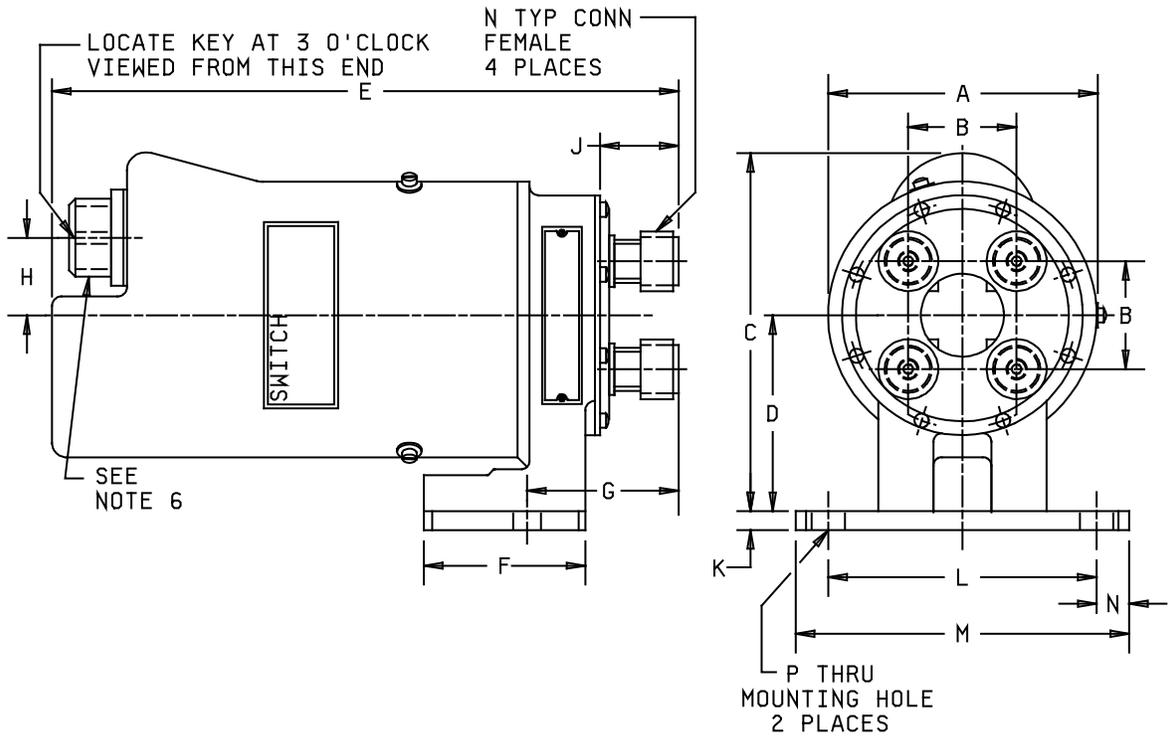
Dimensions									
Letter	Inches		Millimeters		Letter	Inches		Millimeters	
	Max	Min	Max	Min		Max	Min	Max	Min
A	3.010 dia	2.990 dia	76.45 dia	75.95 dia	G	.822	.802	20.88	20.37
B	1.84	1.78	46.7	45.2	H	.807	.787	20.50	19.99
C	3.260	3.240	82.80	82.30	J	1.135	1.115	28.83	28.32
D	1.78	1.72	45.2	43.7	K	.250	---	6.35	---
E	3.104	3.084	78.84	78.33	L	1.197	1.177	30.40	29.90
F	1.822	1.802	46.28	45.77					

NOTES:

1. Dimension are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Unless otherwise specified, tolerances are ± .010 inch (± 0.25 mm) for three place decimals and ± .03 inch (± 0.8 mm) for two place decimals.

FIGURE 3. Dimensions and configuration for PINs M3928/9-14, and M3928/9-15.

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PIN B POS 1  
PIN C POS 2

RF CIRCUIT

SCHEMATIC

FIGURE 4. Dimensions and configuration for PIN M3928/9-17.

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Dimensions									
Letter	Inches		Millimeters		Letter	Inches		Millimeters	
	Max	Min	Max	Min		Max	Min	Max	Min
A	2.838 dia	2.818 dia	72.09 dia	71.58 dia	H	.979	.959	24.87	24.36
B	1.072	1.052	27.23	26.72	J	.94	.88	23.9	22.4
C	3.557	3.537	90.35	89.84	K	.260	.240	6.60	6.10
D	1.885	1.865	47.88	47.37	L	2.760	2.740	70.10	69.60
E	6.65	---	168.9	---	M	3.53	3.47	89.7	88.1
F	1.635	1.615	41.53	41.02	N	.385	.365	9.78	9.27
G	1.948	1.928	49.48	48.97	P	.287 dia	.280 dia	7.29 dia	7.11 dia

NOTES:

1. Dimension are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Unless otherwise specified, tolerances are  $\pm .010$  inch ( $\pm 0.25$  mm) for three place decimals and  $\pm .03$  inch ( $\pm 0.76$  mm) for two place decimals.
4. Remove all burrs and sharp edges .015 inch (0.38 mm) maximum.
5. All machined surfaces shall be in accordance with ASME B46.1.
6. Mates with MS3452 W-12-10S.
7. For PIN M3928/9-04, the center connector shall be deleted.

FIGURE 4. Dimensions and configuration for PIN M3928/9-17 - Continued.

TABLE I. Electrical and performance characteristics.

PIN M3928/9- 1/	Figure No.	Housing	Manual or remote	Solenoid or motor	Frequency range dc to GHz	VSWR	Insertion loss (dB)	Isolation (dB)	Configur- ation	Position indicating circuit (and current rating)	Life cycles x 1000	Nominal operating voltage	Operating current (A)	Switch time (ms)	Power connector	Weight (lbs)
						max	max	min					max			max
04N, S	1	I	M	---	10	1.3	0.31	50	2P2T	None	200	---	---	---	---	1.75
05N, S	2	I	M	---	10	1.3	0.31	50	1P2T	None	200	---	---	---	---	1.75
13N, S	2	I	M	---	10	1.3	0.31	50	TR	None	200	---	---	---	---	1.75
14N, S	3	I	M	---	10	1.3	0.31	50	1P3T	None	200	---	---	---	---	1.75
15N, S	3	I	M	---	10	1.3	0.31	50	1P6T	None	200	---	---	---	---	1.75
17N, S	4	I	R	M	12.4	1.5	0.5	60	TR	Yes	60	28 V dc	3.0	200	See fig 3	3

1/ M3928/9-01, M3928/9-02, M3928/9-03, M3928/9-06, M3928/9-07, M3928/9-08, M3928/9-09, M3928/9-10, M3928/9-11, M3928/9-12, and M3928/9-16 have been deleted.

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REQUIREMENTS:

Dimensions and configurations: See figures 1 through 4.

Electrical and performance characteristics: See table I.

RF power handling capability (average): 100 watts (min).

RF connectors: Series N female connectors shall mate with series N male connectors in accordance with MIL-PRF-39012/1.

Nominal impedance: 50 ohms.

Termination: Open.

Vibration: Method I.

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

Part or Identifying Number (PIN): M3928/9- (dash number from table I).

TABLE II. PIN to type cross-reference. 1/

PIN M3928/9-	Type SA- /U
04	1336
05	1337
13	1345
14	1346
15	1347
17	---

1/ PINs M3928/9-01, M3928/9-02, M3928/9-03, M3928/9-06, M3928/9-07, M3928/9-08, M3928/9-09, M3928/9-10, M3928/9-11, M3928/9-12, and M3928/9-16 have been deleted.

Referenced documents: In addition to MIL-DTL-3928, this document references the following:

MIL-PRF-39012/1  
ASME-B46.1

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:

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Navy - EC  
Air Force - 85  
DLA - CC

Preparing activity:

DLA - CC

(Project 5985-2011-005)

Review activities:

Army - AR, AT, AV, CR4, MI  
Navy - MC, OS  
Air Force - 19, 99

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