

INCH-POUND

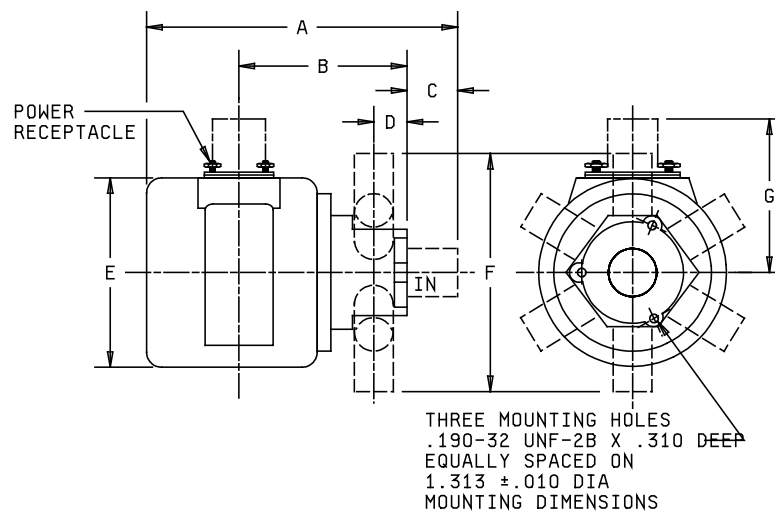
MIL-DTL-3928/7E
w/AMENDMENT 1
16 July 2020
SUPERSEDING
MIL-DTL-3928/7E
15 February 2011

DETAIL SPECIFICATION SHEET

SWITCHES, RADIO-FREQUENCY TRANSMISSION LINE (COAXIAL) (MANUALLY AND SOLENOID OPERATED) CLASSES 1 (TYPE N CONNECTORS) AND 7 (TYPE BNC CONNECTORS)

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

The requirements for acquiring the switch described herein
shall consist of this specification sheet and [MIL-DTL-3928](#).

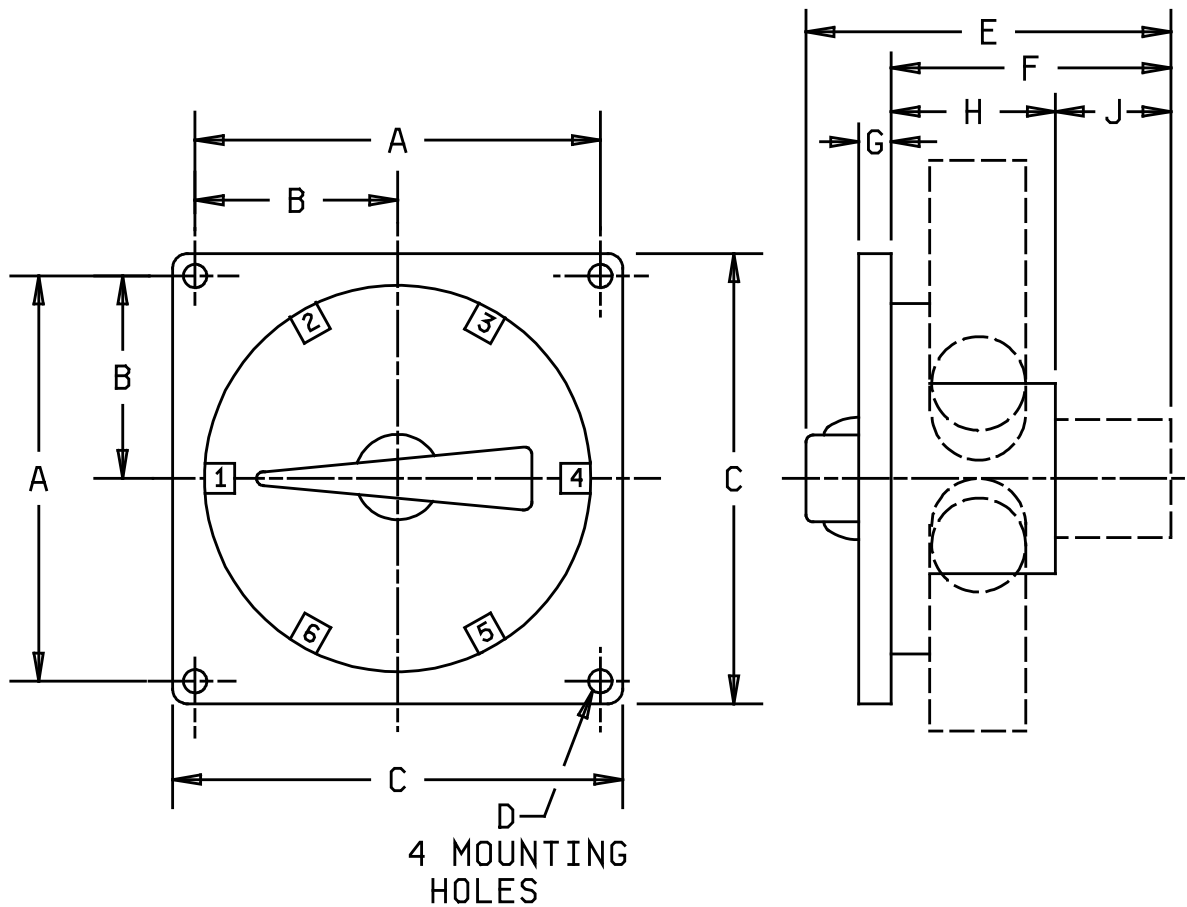


Dimensions				
Letter	Inches		Millimeters	
	Max	Min	Max	Min
A	4.520	4.500	114.81	114.30
B	2.260	2.210	57.40	56.13
C	.760	.680	19.30	17.27
D	.700	.600	17.78	15.24
E	2.210	2.190	56.13	55.63
F	3.010	2.990	76.45	75.95
G	2.260	2.240	57.40	56.90

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.

FIGURE 1. Dimensions and configuration for PIN M3928/7-11.



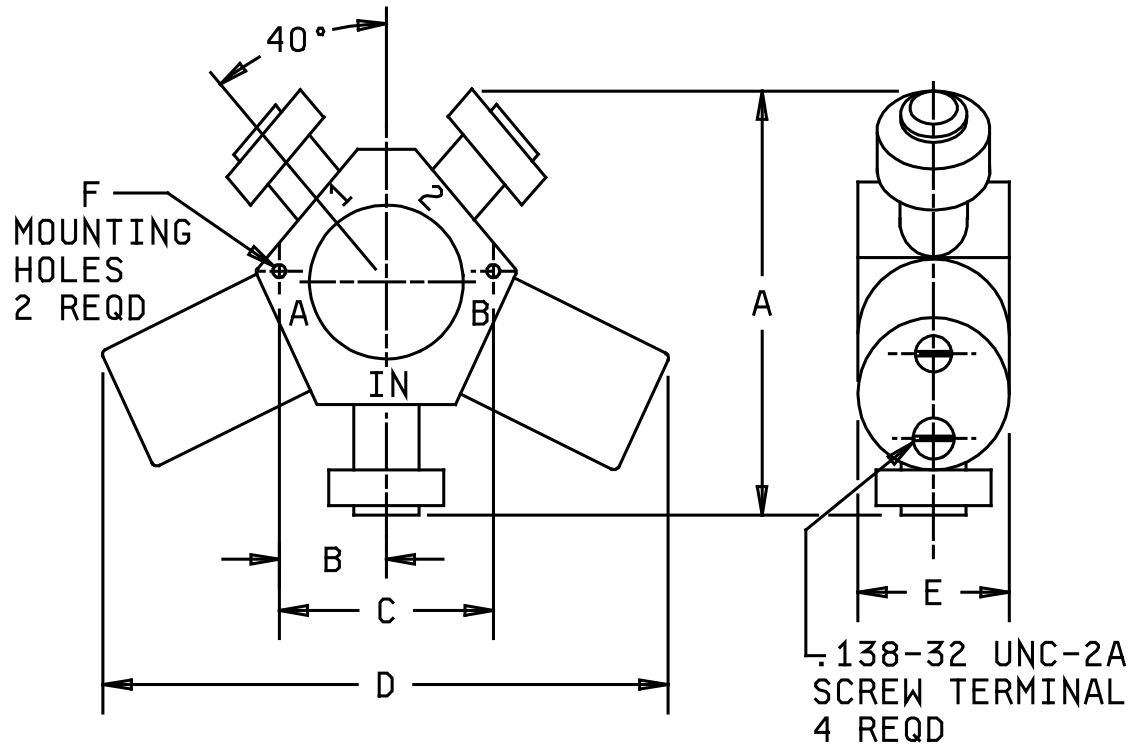
Letter	Dimensions			
	Inches		Millimeters	
	Max	Min	Max	Min
A	2.510	2.490	63.75	63.25
B	1.260	1.240	32.00	31.50
C	3.135	3.115	79.63	79.12
D	.228 dia	.208 dia	5.79 dia	5.28 dia
E	3.510	3.490	89.15	88.65
F	2.59	2.53	65.79	64.26
G	.170	.150	4.32	3.81
H	1.84	1.78	46.74	45.21
J	.760	.740	19.30	18.80

NOTES:

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3. Unless otherwise specified, tolerances are $\pm .010$ (± 0.25 mm) for three place decimals and $\pm .03$ (± 0.76 mm) for two place decimals.

FIGURE 2. Dimensions and configuration for PINs M3928/7-02, M3928/7-06, M3928/7-12, M3928/7-13, and M3928/7-22.

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POSITION 1 - NORMALLY OPEN
POSITION 2 - NORMALLY CLOSED
POSITION IN - COMMON

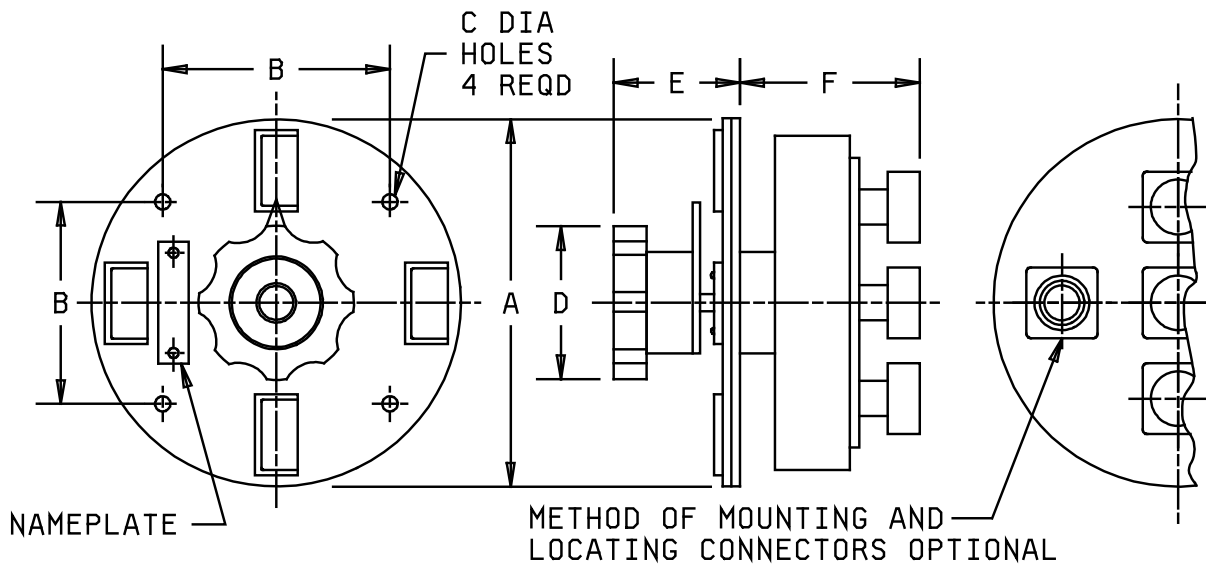
Dimensions				
Letter	Inches		Millimeters	
	Max	Min	Max	Min
A	2.410	2.390	61.20	60.70
B	.558	.538	14.17	13.67
C	1.106	1.086	28.09	27.58
D	4.260	4.240	108.20	107.70
E	.875	.855	22.22	21.72
F	.150 dia	.130 dia	3.81 dia	3.30 dia

NOTES:

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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 $\pm .03$ (± 0.76 mm) for two place decimals.

FIGURE 3. Dimensions and configuration for PINs M3928/7-09, M3928/7-10, M3928/7-17, M3928/7-18, M3928/7-19, and M3928/7-20.

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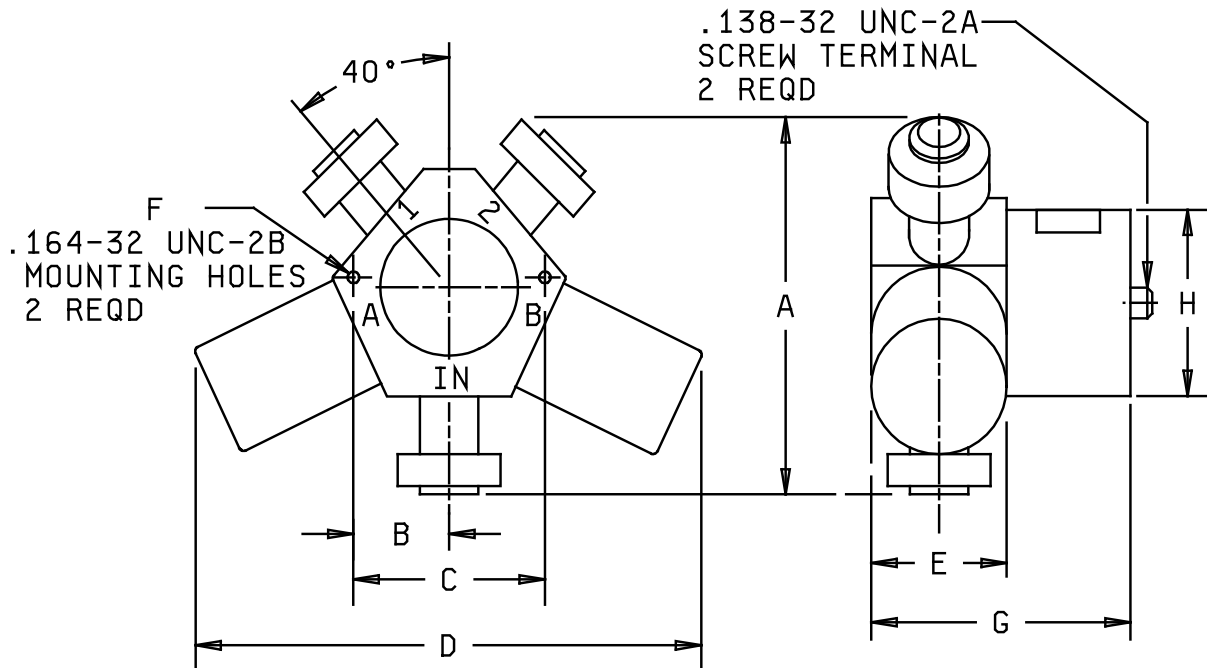
Letter	Dimensions			
	Inches		Millimeters	
	Max	Min	Max	Min
A	5.010	4.990	127.25	126.75
B	2.510	2.490	63.75	63.25
C	.198	.178	5.03	4.52
D	2.410	2.390	61.21	60.71
E	1.300	1.280	33.02	32.51
F	3.010	2.990	76.45	75.95

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.

FIGURE 4. Dimensions and configuration for PINs M3928/7-14, M3928/7-15, and M3928/7-16.

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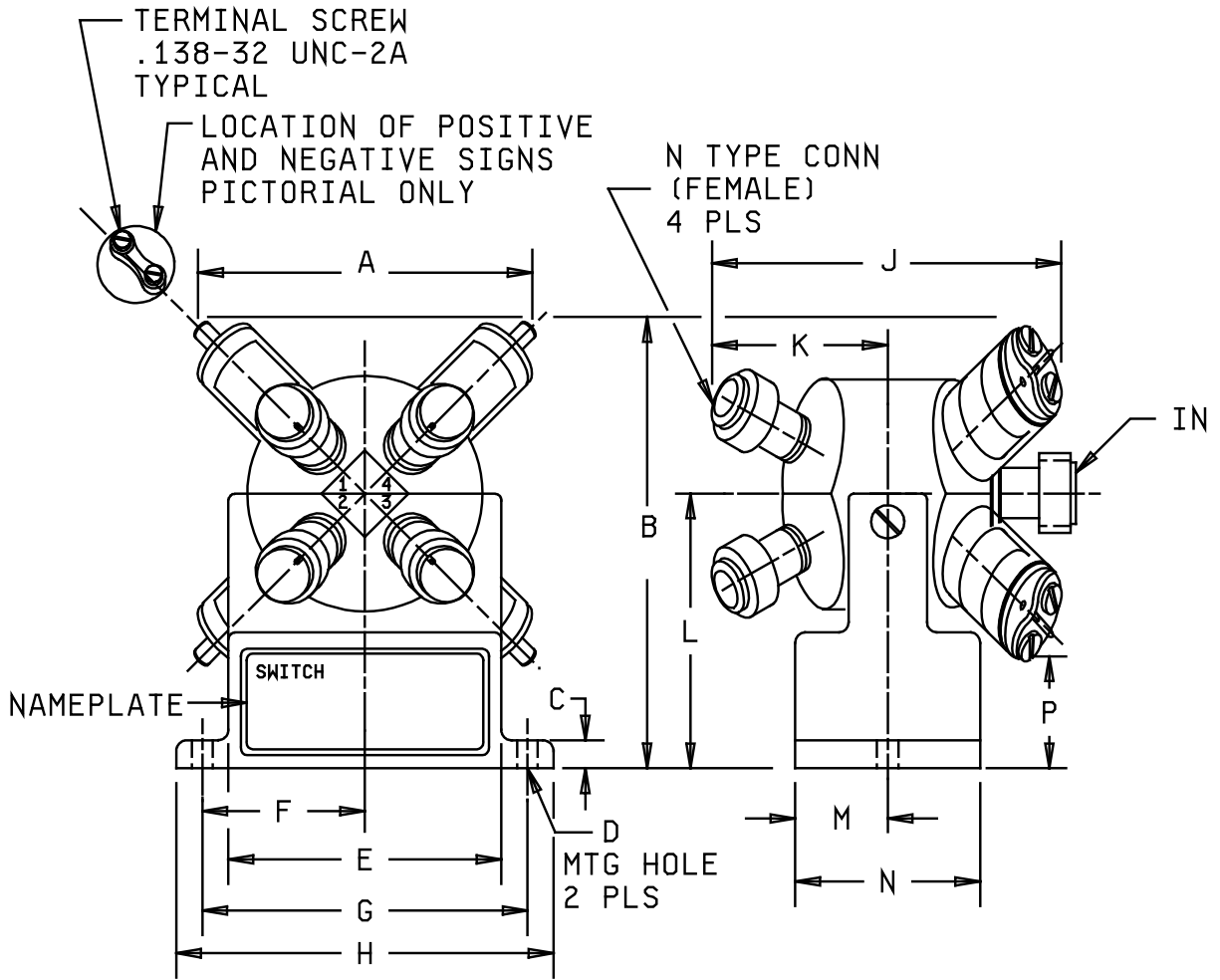
POSITION 1 - NORMALLY OPEN
POSITION 2 - NORMALLY CLOSED
POSITION IN - COMMON

Dimensions				
Letter	Inches		Millimeters	
	Max	Min	Max	Min
A	2.410	2.390	61.21	60.71
B	.558	.538	14.17	13.67
C	1.106	1.086	28.09	27.58
D	3.62	3.56	91.9	90.4
E	.875	.855	22.22	21.72
F	.260 deep	.240 deep	6.60 deep	6.10 deep
G	1.69	1.63	42.9	41.4
H	1.31	1.25	33.3	31.8

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 $\pm .03$ (± 0.76 mm) for two place decimals.

FIGURE 5. Dimensions and configuration for PIN M3928/7-23.



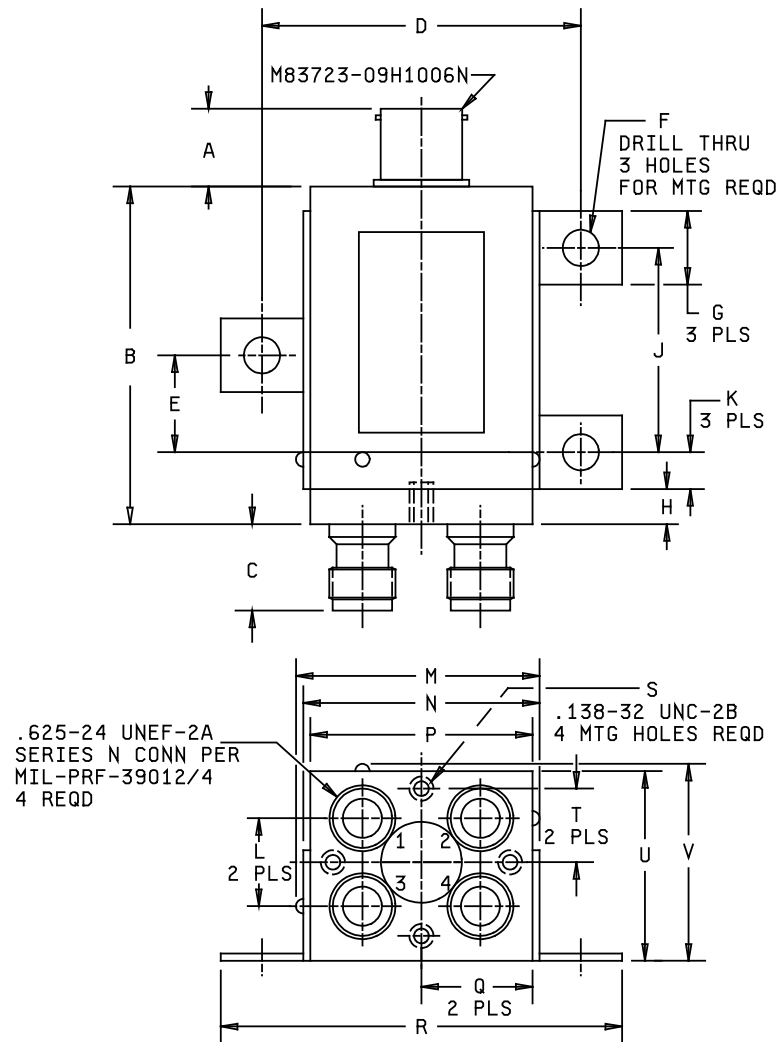
Dimensions									
Letter	Inches		Millimeters		Letter	Inches		Millimeters	
	Max	Min	Max	Min		Max	Min	Max	Min
A	2.87	---	72.9	---	H	3.06	3.00	77.7	76.2
B	3.43	---	87.1	---	J	2.81	---	71.4	---
C	.28	.22	7.1	5.6	K	1.09	1.03	27.7	26.2
D	.213dia	.193 dia	5.41 dia	4.90 dia	L	2.02	1.96	51.3	49.8
E	1.87	1.81	47.5	46.0	M	.56	.50	14.2	12.7
F	1.260	1.240	32.00	31.50	N	1.06	1.00	26.9	25.4
G	2.510	2.490	63.75	63.25	P	---	.50	---	12.7

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 $\pm .03$ (± 0.76 mm) for two place decimals.

FIGURE 6. Dimensions and configuration for PIN M3928/7-24.

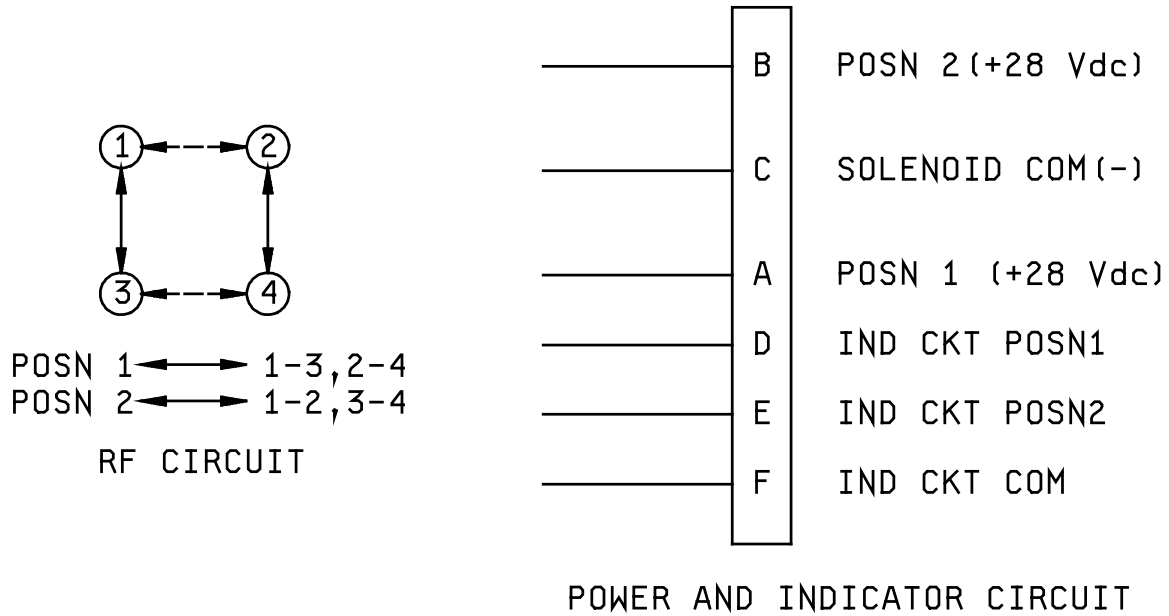
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NOTES:

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 $\pm .03$ (± 0.76 mm) for two place decimals.

FIGURE 7. Dimensions and configuration for PINs M3928/7-25 and M3928/7-26.



Dimensions									
Letter	Inches		Millimeters		Letter	Inches		Millimeters	
	Max	Min	Max	Min		Max	Min	Max	Min
A	.49	---	12.4	---	L	.895	.875	22.73	22.23
B	2.60	---	66.0	---	M	2.04	---	51.8	---
C	.65	---	16.5	---	N	1.95	---	49.5	---
D	2.610	2.590	66.29	65.79	P	1.78	---	45.2	---
E	.760	.740	19.30	18.80	Q	.885	.865	22.48	21.97
F	.198 dia	.192 dia	5.03 dia	4.88 dia	R	3.28	3.22	83.3	81.8
G	.63	.57	16.0	14.5	S	.28 deep	.22 deep	7.1 deep	5.6 deep
H	.28	.22	7.1	5.6	T	.730	.710	18.54	18.03
J	1.510	1.490	38.35	37.85	U	1.78	---	45.2	---
K	.33	.27	8.4	6.9	V	1.87	---	45.7	---

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 $\pm .03$ (± 0.76 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](#).

FIGURE 7. Dimensions and configuration for PINs M3928/7-25 and M3928/7-26 - Continued.

TABLE I. Electrical and performance characteristics.

PIN M3928/7	Figure No.	Hous- ing	Manual or remote	Solenoid or motor	Fail safe or latch- ing	RF conn type	Freq- uency range dc to GHz	VSWR	Insert- ion loss (dB)	Isola- tion (dB)	Config.	Position indicating circuit (and current rating)	Life cycles x 1000	Nominal oper voltage	Oper current (A)	Pick- up volt- age	Drop- out volt- age	Switch time (ms)	Power connector	Weight (lbs)
								max	max	min					max					max
02N, S	2	I	M	---	---	N	10	1.5	0.52	25	1P2T	None	25	---	---	---	---	---	---	1
06N, S	2	I	M	---	---	N	10	1.5	0.52	25	1P6T	None	25	---	---	---	---	---	---	1.25
09N, S	3	I	R	S	F	N	10	1.5	0.52	20	1P2T	None	1000	110 dc	2	60	2	20	Screw 6-32NC-2A	.5
10N, S	3	I	R	S	F	BNC	10	1.5	0.52	25	1P2T	None	1000	26 dc	3	18	0.5	20	Screw 6-32NC-2A	.5
11N, S	1	I	R	S	---	N	10	1.5	0.52	25	1P3T	None	100	110 dc	3	60	2	250	MS3456- 14S-2S	2
12N, S	2	I	M	---	---	N	10	1.5	0.52	25	1P3T	None	25	---	---	---	---	---	---	1
13N, S	2	I	M	---	---	BNC	10	1.5	0.52	25	1P6T	None	25	---	---	---	---	---	---	1.25
14N, S	4	I	M	---	---	N	10	1.5	0.52	25	1P2T	None	25	---	---	---	---	---	---	1.32
15N, S	4	I	M	---	---	N	10	1.5	0.52	25	1P6T	None	25	---	---	---	---	---	---	1.5
16N, S	4	I	M	---	---	N	10	1.5	0.52	25	1P4T	None	25	---	---	---	---	---	---	1.5
17N, S	3	I	R	S	F	N	10	1.5	0.52	20	1P2T	None	1000	26 dc	2	18	0.5	20	Screw 6-32NC-2A	.5
18N, S	3 1/	I	R	S	F	N	10	1.5	0.52	25	1P2T	None	1000	26 dc	2	18	0.5	20	Screw 6-32NC-2A	.5
19N, S	3 1/	I	R	S	F	N	10	1.5	0.52	25	1P2T	None	1000	110 dc	2	60	2	20	Screw 6-32NC-2A	.5
20N, S	3 2/	I	R	S	F	N	10	1.5	0.52	25	1P2T	None	1000	28 dc	2	18	0.5	20	Screw 6-32NC-2A	.5
22N, S	2	I	M	---	---	N	10	1.5	0.52	25	1P4T	None	25	---	---	---	---	---	---	1
23N, S	5	I	R	S	F	BNC	10	1.5	0.52	25	1P2T	None	1000	115 V ac 3/	2	93	5	20	Screw 6-32NC-2A	.5
24N, S	6	I	R	S	---	N	10	1.5	0.52	25	1P4T	None	1000	28 V dc	2	18	0.5	20	Screw 6-32NC-2A	.75
25N, S	7	I	R	S	L	N	12.4	1.5	0.5	60	TR	None	100	28 V dc	0.64	20	---	20	MS83723- 13R1006N	.75
26N, S	7	I	R	S	L	N	12.4	1.5	0.5	60	TR	Yes ^{4 A res} _{2 A ind}	100	28 V dc	0.64	20	---	20	MS83723- 13R1006N	.75

1/ Both positions normally open.

2/ Both positions normally closed.

3/ Frequency 400 Hz.

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REQUIREMENTS:

Dimensions and configurations: See [figure 1](#) through [figure 7](#).

Electrical and performance characteristics: See [table I](#).

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

RF connectors: Series N connectors shall mate with Series N male connectors in accordance with MIL-PRF-39012/1. BNC connectors shall mate with BNC male connectors in accordance with MIL-PRF-39012/16.

Nominal impedance: 50 ohms.

Termination: Open.

Vibration: [MIL-STD-202-204](#) Method I.

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

Part or Identifying Number (PIN): M3928/7- (and dash number from [table I](#)).

TABLE II. PIN to type cross-reference. ^{1/}

PIN M3828/7	Type SA- /U	PIN M3828/7	Type SA- /U
02	1321	17	---
06	1325	18	---
09	1328	19	---
10	1329	20	---
11	1330	22	---
12	1331	23	---
13	1332	24	---
14	273	25	---
15	275	26	---
16	274		

^{1/} PINs M3928/7-01, M3928/7-03, M3928/7-04, M3928/7-05, M3928/7-07, M3928/7-08, and M3928/7-21 have been deleted.

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Referenced documents: In addition to [MIL-DTL-3928](#), this document references the following

[MIL-STD-202-204](#)
[MIL-PRF-39012/1](#)
[MIL-PRF-39012/4](#)
[MIL-PRF-39012/16](#)
[ASME-B46.1](#)

Amendment notations. The margins of this specification sheet are marked with vertical lines to indicate modifications generated by this amendment. 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.

Custodians:

Army - CR
Navy - EC
Air Force - 85
DLA - CC

Preparing activity:
DLA - CC

(Project 5985-2020-003)

Review activities:

Army - AV, MI
Navy - MC

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>.