

INCH-POUND

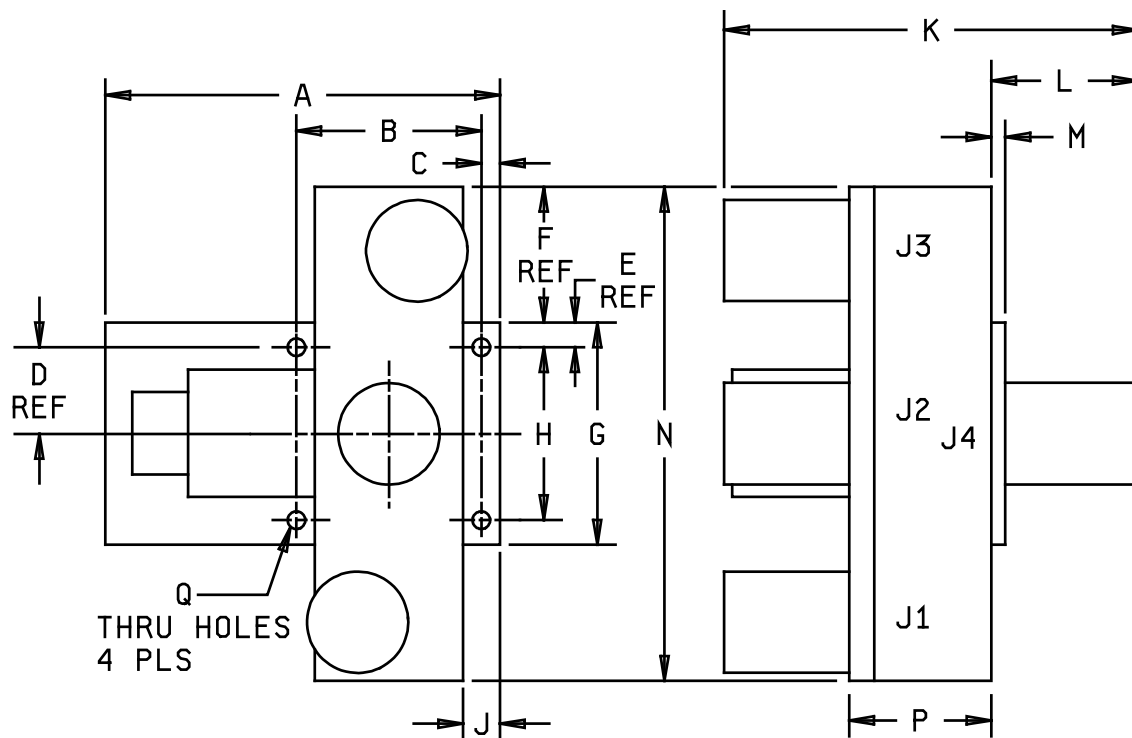
MIL-DTL-3928/8E
w/AMENDMENT 1
16 July 2020
SUPERSEDING
MIL-DTL-3928/8E
15 February 2011

DETAIL SPECIFICATION SHEET

SWITCHES, RADIO-FREQUENCY TRANSMISSION LINE (COAXIAL) (ELECTRICALLY AND MANUALLY OPERATED) CLASS 7

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](#).



Position 1 (de-energized or fail-safe position), J1 connects
to J4, and J3 connects to J2.
Position 2 (energized position), J1 connects to J2, and J3
connects to J4.

FIGURE 1. [PIN M3928/8-01](#).



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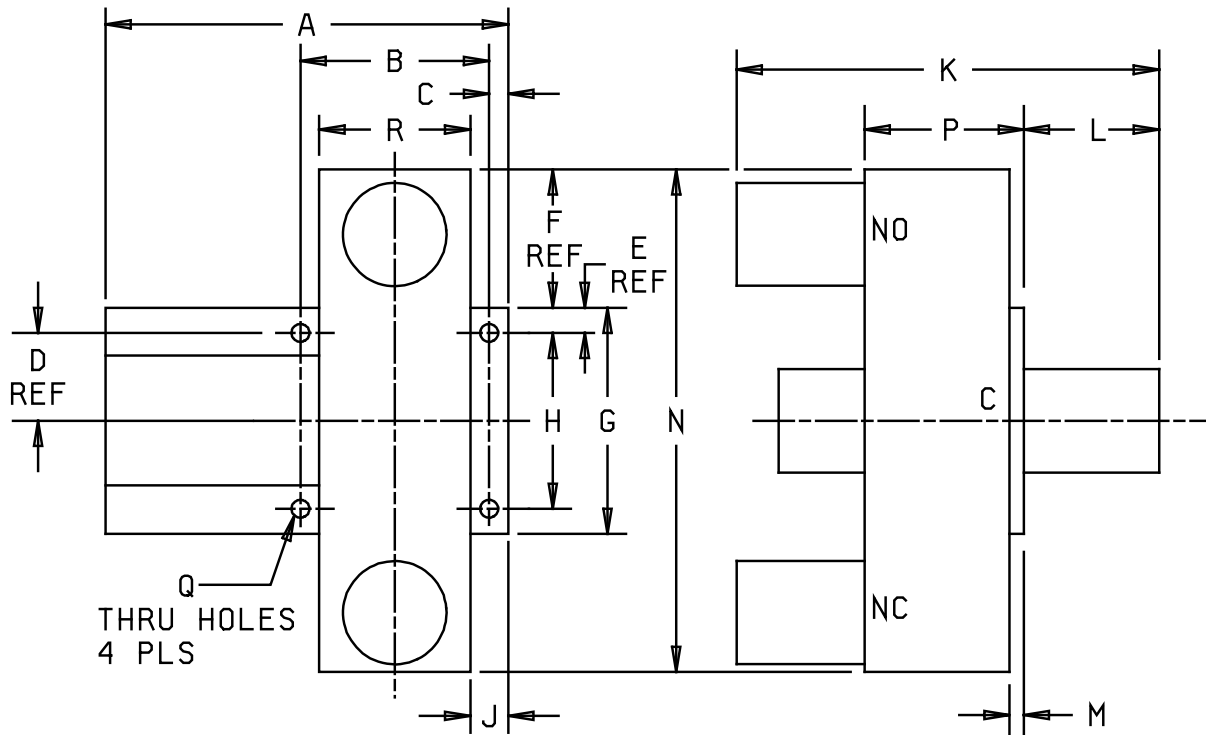
Dimensions									
Letter	Inches		Millimeters		Letter	Inches		Millimeters	
	Max	Min	Max	Min		Max	Min	Max	Min
A	2.03	1.97	51.6	50.0	J	.198	.178	5.03	4.52
B	.947	.927	24.1	23.5	K	2.03	1.97	51.6	50.0
C	.104	.084	2.64	2.13	L	.635	.615	16.13	15.62
D	.447 ref	.427 ref	11.4 ref	10.8 ref	M	.104	.084	2.64	2.13
E	.135 ref	.115 ref	3.43 ref	2.92 ref	N	2.53	2.47	64.3	62.7
F	.697 ref	.677 ref	17.70 ref	17.20 ref	P	.729	.709	18.52	18.01
G	1.135	1.115	28.83	28.32	Q	.112-40 UNC-2B dia		2.84-40 UNC-2B dia	
H	.885	.865	22.48	21.97					

NOTES:

1. Dimension are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Metric equivalents are in parentheses.
4. Corners of case may be round or square.
5. Unless otherwise specified, tolerances are $\pm .010$ inch (± 0.25 mm) for three place decimals and $\pm .03$ inch (± 0.76 mm) for two place decimals.

FIGURE 1. PIN M3928/8-01 - Continued.

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Position 1 (de-energized or fail-safe position),
C connects to NC connector.
Position 2 (energized position),
C connects to NO connector

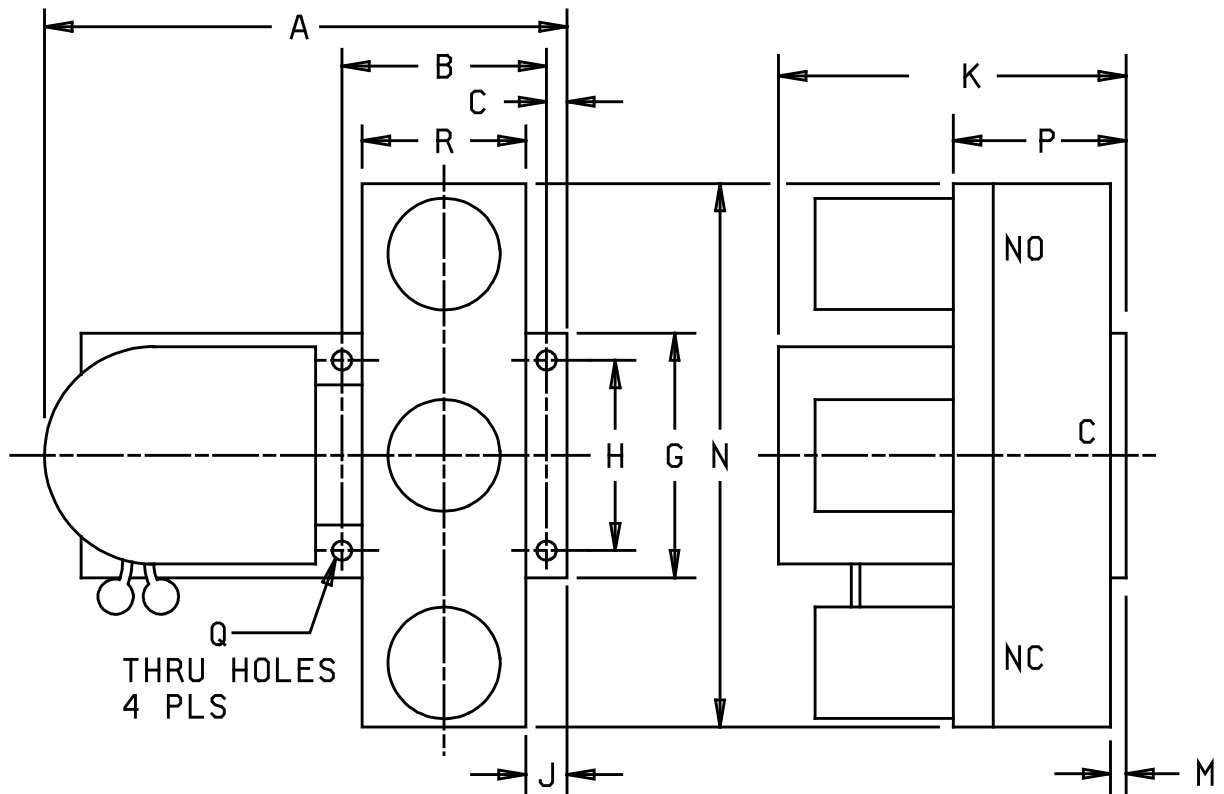
Dimensions									
Letter	Inches		Millimeters		Letter	Inches		Millimeters	
	Max	Min	Max	Min		Max	Min	Max	Min
A	1.61	1.55	40.9	39.4	J	.198	.178	5.03	4.52
B	.697	.677	17.70	17.20	K	2.13	2.07	54.10	52.58
C	.104	.084	2.64	2.13	L	.635	.615	16.13	15.62
D	.447 ref	.427 ref	11.35 ref	10.85 ref	M	.104	.084	2.64	2.13
E	.135 ref	.115 ref	3.43 ref	2.92 ref	N	2.03	1.97	51.6	50.0
F	.447 ref	.427 ref	11.35 ref	10.85 ref	P	.604	.584	15.34	14.83
G	1.135	1.115	28.83	28.32	Q	.112-40 UNC-2B dia		2.84-40 UNC-2B dia	
H	.885	.865	22.48	21.97	R	.53	.47	13.5	11.9

NOTES:

1. Dimension are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Metric equivalents are in parentheses.
4. Corners of case may be round or square.
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FIGURE 2. PIN M3928/8-03.

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Position 1 (de-energized or fail-safe position),
C connects to NC connector.
Position 2 (energized position),
C connects to NO connector

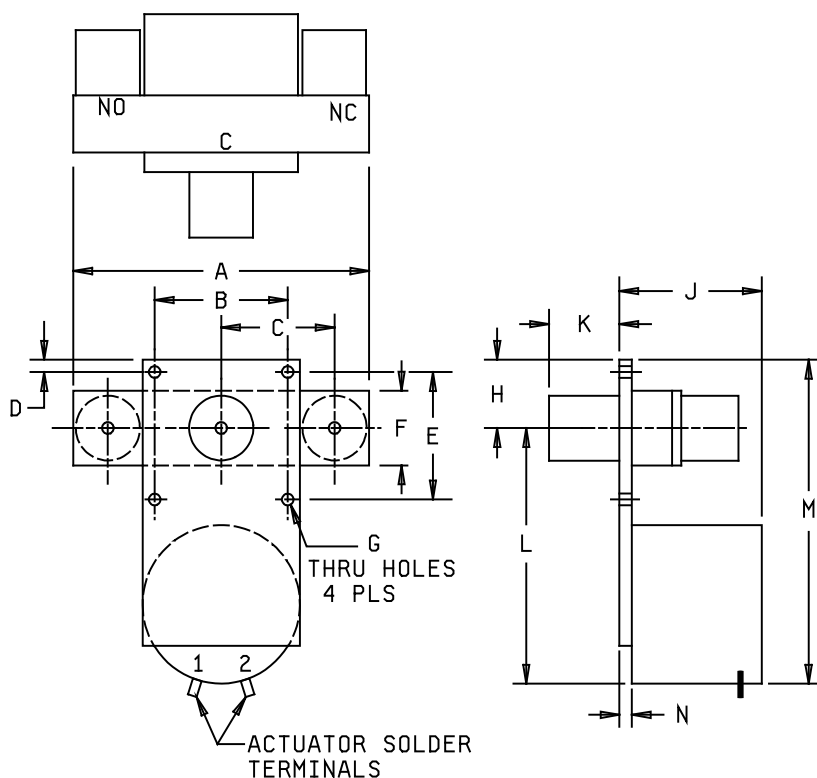
Dimensions									
Letter	Inches		Millimeters		Letter	Inches		Millimeters	
	Max	Min	Max	Min		Max	Min	Max	Min
A	2.53	2.47	64.3	62.7	K	1.33	1.27	33.8	32.3
B	.697	.677	17.70	17.20	M	.104	.084	2.64	2.13
C	.104	.084	2.64	2.13	N	2.03	1.97	51.6	50.0
G	1.135	1.115	28.83	28.32	P	.604	.584	15.34	14.83
H	.885	.865	22.48	21.97	Q	.112-40 UNC-2B dia		2.84-40 UNC-2B dia	
J	.198	.178	5.03	4.52	R	.53	.47	13.5	11.9

NOTES:

1. Dimension are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Metric equivalents are in parentheses.
4. Corners of case may be round or square.
5. Unless otherwise specified, tolerances are $\pm .010$ inch (± 0.25 mm) for three place decimals and $\pm .03$ inch (± 0.76 mm) for two place decimals.

FIGURE 3. PINs M3928/8-05 and M3928/7-07.

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Dimensions									
Letter	Inches		Millimeters		Letter	Inches		Millimeters	
	Max	Min	Max	Min		Max	Min	Max	Min
A	2.41	2.35	61.2	59.7	H	.47	.41	11.9	10.4
B	.885	.865	22.48	21.97	J	1.31	---	33.3	---
C	.81	.75	20.6	19.1	K	.62	---	15.7	---
D	.12	.06	3.0	1.5	L	1.36	---	34.5	---
E	.697	.677	17.70	17.20	M	1.82	---	46.2	---
F	.53	.47	13.5	11.9	N	.104	.084	2.64	2.13
G	.112-40 UNC-2B dia		2.84-40 UNC-2B dia						

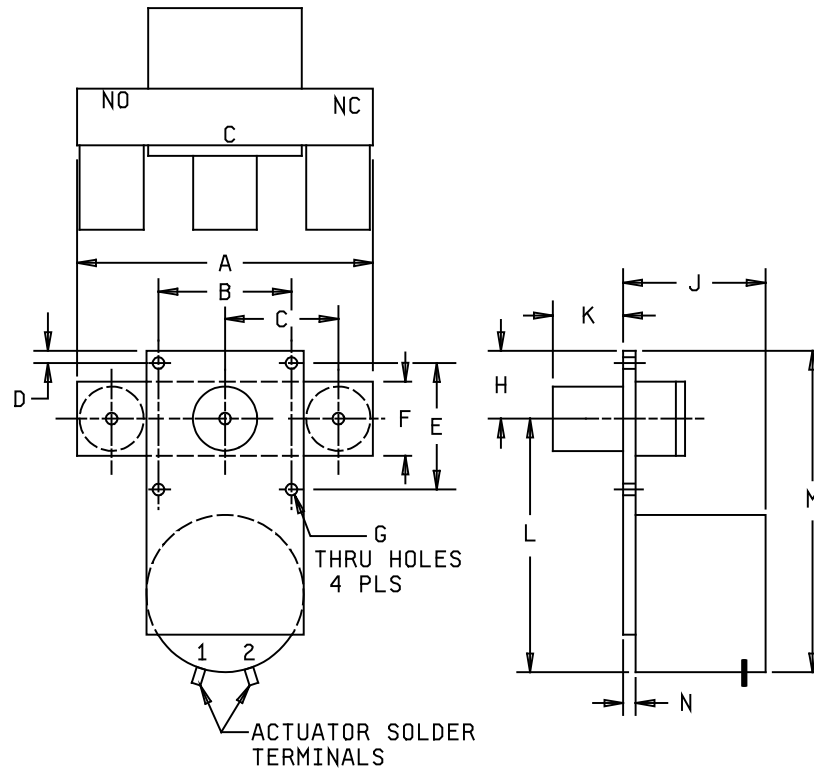
Position 1 (de-energized or fail-safe position),
C connects to NC connector.
Position 2 (energized position),
C connects to NO connector

NOTES:

1. Dimension are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Metric equivalents are in parentheses.
4. Corners of case may be round or square.
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FIGURE 4. PIN M3928/8-18.

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Dimensions									
Letter	Inches		Millimeters		Letter	Inches		Millimeters	
	Max	Min	Max	Min		Max	Min	Max	Min
A	2.41	2.35	61.2	59.7	H	.47	.41	11.9	10.4
B	.885	.865	22.48	21.97	J	1.31	---	33.3	---
C	.81	.75	20.6	19.1	K	.62	---	15.7	---
D	.104	.084	2.64	2.13	L	1.36	---	34.5	---
E	.697	.677	17.70	17.20	M	1.82	---	46.2	---
F	.53	.47	13.5	11.9	N	.104	.084	2.64	2.13
G	.112-40 UNC-2B dia		2.84-40 UNC-2B dia						

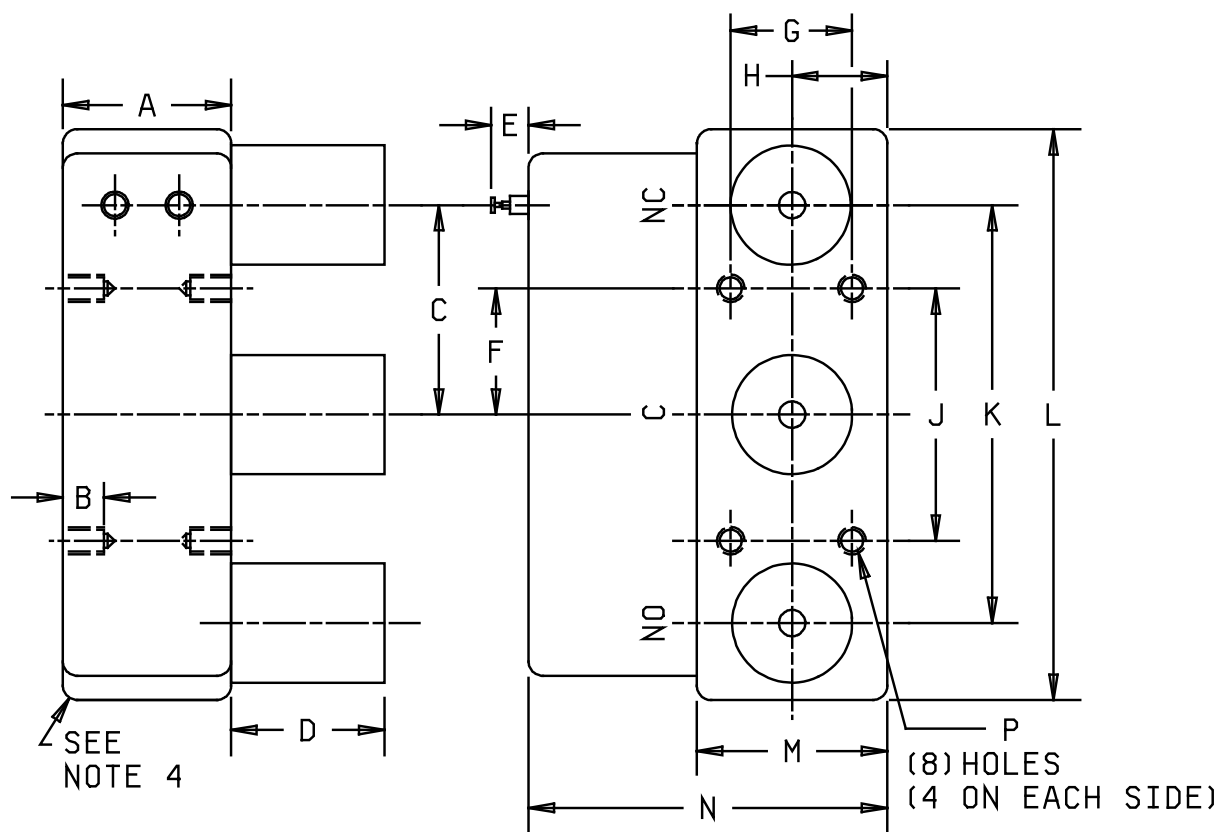
Position 1 (de-energized or fail-safe position),
C connects to NC connector.
Position 2 (energized position),
C connects to NO connector

NOTES:

1. Dimension are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Metric equivalents are in parentheses.
4. Corners of case may be round or square.
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FIGURE 5. PIN M3928/8-19.

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Position 1 (de-energized or fail-safe position),
C connects to NC connector.
Position 2 (energized position),
C connects to NO connector

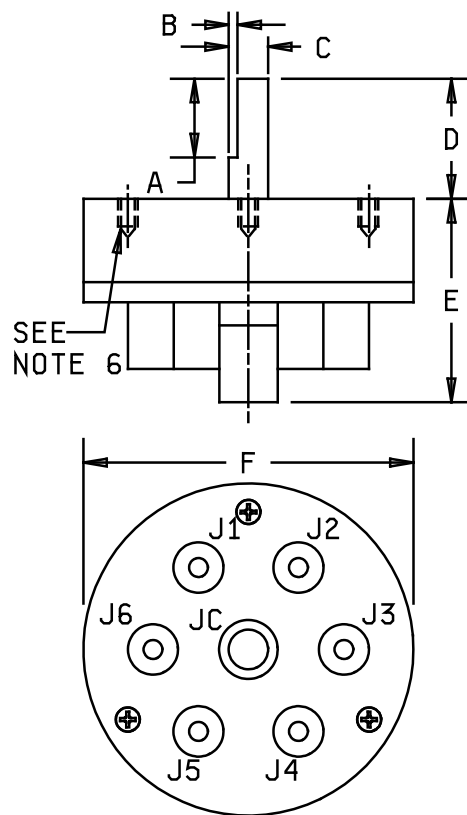
Dimensions									
Letter	Inches		Millimeters		Letter	Inches		Millimeters	
	Max	Min	Max	Min		Max	Min	Max	Min
A	.78	.72	19.8	18.3	H	.385	.365	9.78	9.27
B	.191	.185	4.85	4.70	J	1.042	1.022	26.47	25.96
C	.885	.865	22.48	21.97	K	1.78	1.72	45.2	43.7
D	.65	.59	16.5	15.0	L	2.41	2.35	61.2	59.7
E	.28	.22	7.1	5.6	M	.78	.72	19.8	18.3
F	.526	.506	13.36	12.85	N	1.72	1.66	43.7	42.2
G	.572	.552	14.53	14.02	P	.112-40 UNC-2B dia		2.84-40 UNC-2B dia	

NOTES:

1. Dimension are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Metric equivalents are in parentheses.
4. Corners of case may be round or square.
5. Unless otherwise specified, tolerances are $\pm .010$ inch (± 0.25 mm) for three place decimals and $\pm .03$ inch (± 0.76 mm) for two place decimals.

FIGURE 6. PIN M3928/8-20.

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Position JC = common.
Position J1 through J6 - normally open.

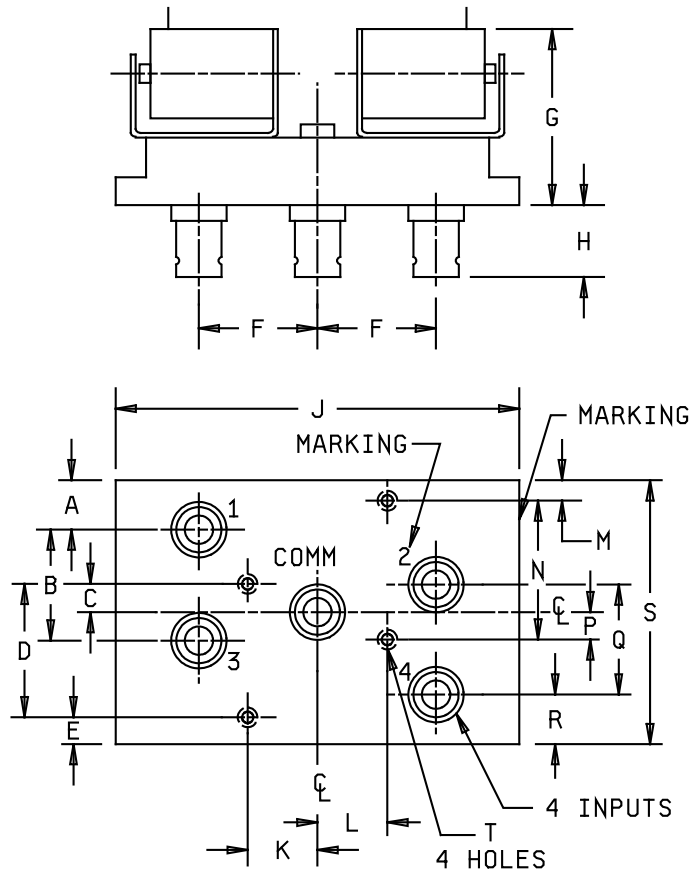
Dimensions				
Letter	Inches		Millimeters	
	Max	Min	Max	Min
A	.65	.59	16.5	15.0
B	.041	.021	1.04	.53
C	.260 dia	.240 dia	6.60 dia	6.10 dia
D	.78	.72	19.8	18.3
E	1.50	1.44	38.1	36.6
F	2.03	1.97	51.6	50.0

NOTES:

1. Dimension are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Metric equivalents are in parentheses.
4. Corners of case may be round or square.
5. Unless otherwise specified, tolerances are $\pm .010$ inch (± 0.25 mm) for three place decimals and $\pm .03$ inch (± 0.76 mm) for two place decimals.
6. Three mounting holes .138 inch (3.51 mm) -32 UNC-2B, 120 degrees apart on a .906 inch (23.01 mm) radius.

FIGURE 7. PIN M3928/8-21.

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Dimensions									
Letter	Inches		Millimeters		Letter	Inches		Millimeters	
	Max	Min	Max	Min		Max	Min	Max	Min
A	.354	.334	8.99	8.48	K	.635	.615	16.13	15.62
B	.791	.771	20.09	19.58	L	.635	.615	16.13	15.62
C	.198	.178	5.03	4.52	M	.198	.178	5.03	4.52
D	.947	.927	24.05	23.55	N	.947	.927	24.05	23.55
E	.198	.178	5.03	4.52	P	.198	.178	5.03	4.52
F	1.026	1.006	26.06	25.55	Q	.791	.771	20.09	19.58
G	1.135	1.115	28.83	28.32	R	.354	.334	8.99	8.48
H	.635	.615	16.13	15.62	S	1.89	1.83	48.0	46.5
J	3.03	2.97	77.0	75.4	T	.138-32 UNC-2B No. 6		3.51-32 UNC-2B No. 6	

NOTES:

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

FIGURE 8. PIN M3928/8-22.

TABLE I. Electrical and performance characteristics.

PIN M3928/8- 1/	Fig. No.	Housing	Config- uration	Manual or remote	Sole- noid or motor	Fail- safe or latch- ing	Fre- quency range DC to GHz	VSWR (max)	Insert- ion loss (max)	Isola- tion (min)	Switch- ing time (max)	Posi- tion indica- ting circuit	Life cycles x 1000	Oper- ating voltage nominal	Pickup voltage (max)	Dropout voltage (min)	Operating current (max) 2/	Holding current fail-safe type 2/ (max)	Power and indicator connector	Weight (max) (oz) 3/
01N, S	1	O	TR	R	S	F	1.55	1.3:1	0.42	30	20	None	1000	28 V dc	18 V dc	3 V dc	0.2	0.2	Solder terminals	12 (341)
03N, S	2	O	1P2T	R	S	F	1.55	1.3:1	0.42	30	20	None	1000	28 V dc	18 V dc	3 V dc	0.2	0.2	Solder terminals	12 (341)
05N, S	3	O	1P2T	R	S	F	1.55	1.3:1	0.42	30	20	None	1000	115 V ac	93 V ac	5 V ac	0.3	0.3	Solder terminals	12 (341)
07N, S	3	O	1P2T	R	S	F	1.55	1.3:1	0.42	30	20	None	1000	110 V dc	84 V dc	10 V dc	0.2	0.2	Solder terminals	12 (341)
18N, S 4/	4	O	1P2T	R	S	F	4	1.4:1	0.3	30	15	None	1000	28 V dc	18 V dc	5 V dc	0.1	0.1	Solder terminals	7 (199)
19N, S 4/	5	O	1P2T	R	S	F	4	1.4:1	0.3	30	15	None	1000	28 V dc	18 V dc	5 V dc	0.1	0.1	Solder terminals	7 (199)
20N, S	6	E	1P2T	R	S	F	6	1.5:1	0.3	20	25	None	1000	28 Vdc	18 Vdc	10 Vdc	0.125	0.125	Solder terminals	6 (170)
21N, S	7	E	1P6T	M	---	---	3	1.25:1	0.2	50	---	None	25	---	---	---	---	---	---	14 (397)
22N, S	8	E	1P4T	R	S	F	1.5	1.5:1	0.1 5/	41	12	None	1000	28 V dc	---	---	---	---	---	15 (425)

1/ Dash numbers 02, 04, 06, and 08 through 17 have been deleted.

2/ At nominal operating voltage and 20°C.

3/ Mass in grams in parentheses.

4/ Termination is grounded.

5/ DC to .7 GHz.

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REQUIREMENTS:

Dimensions and configurations: See figures 1 through 8.

Nominal impedance: 50 ohms.

Termination: Open.

RF power handling capability (average): 100 watts.

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

RF connectors: BNC connectors shall mate with BNC male connectors in accordance with [MIL-PRF-39012/16](#).

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

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

Part or Identifying Number (PIN): M3928/8- (dash number from [table I](#)).

TABLE II. PIN to type cross-reference.

PIN M3928/8-	Type SA- /U
01	1348
03	1350
05	1352
07	1354

Referenced documents: In addition to [MIL-DTL-3928](#), this document references the following
[MIL-PRF-39012/16](#)
[MIL-STD-202-204](#)

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 5985-2020-004)

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

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