

INCH-POUND

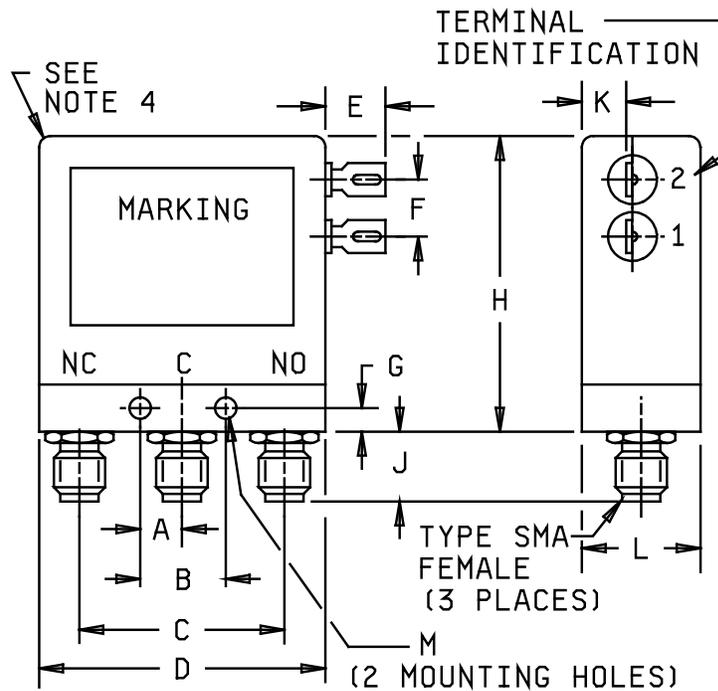
MIL-DTL-3928/15G
 4 April 2011
 SUPERSEDING
 MIL-DTL-3928/15F
 12 August 2005

DETAIL SPECIFICATION SHEET

SWITCHES, RADIO FREQUENCY TRANSMISSION LINE
 (COAXIAL) (ELECTRICALLY OPERATED)
 (OPTIONAL VENTING FOR SPACE APPLICATIONS) CLASS 5, 1P2T

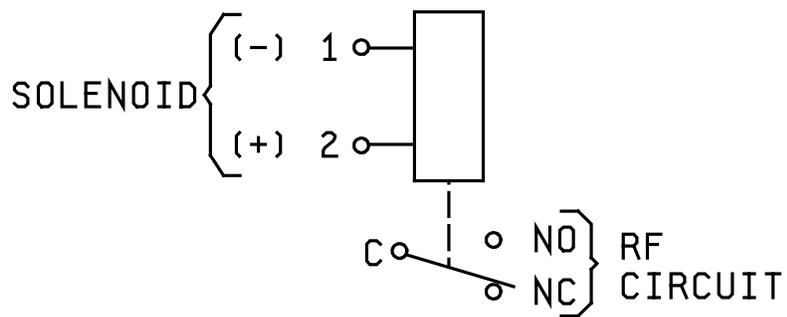
This specification is approved for use by all Departments and
 Agencies of the Department of Defense.

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



| Dimensions | | | | | | | | | |
|------------|--------|------|-------------|-------|--------|----------|----------|-------------|----------|
| Letter | Inches | | Millimeters | | Letter | Inches | | Millimeters | |
| | Max | Min | Max | Min | | Max | Min | Max | Min |
| A | .230 | .210 | 5.84 | 5.33 | G | .103 | .083 | 2.62 | 2.11 |
| B | .450 | .430 | 11.43 | 10.92 | H | 1.2 | --- | 30 | --- |
| C | .890 | .870 | 22.61 | 22.10 | J | .35 | --- | 8.9 | --- |
| D | 1.5 | --- | 38 | --- | K | .23 | .17 | 5.8 | 4.3 |
| E | .35 | --- | 8.9 | --- | L | .570 | --- | 14.50 | --- |
| F | .28 | .22 | 7.1 | 5.6 | M | .130 dia | .110 dia | 3.30 dia | 2.79 dia |

FIGURE 1. Switch configuration and schematic, PINs M3928/15-01,
 M3928/15-02, and M3928/15-12.

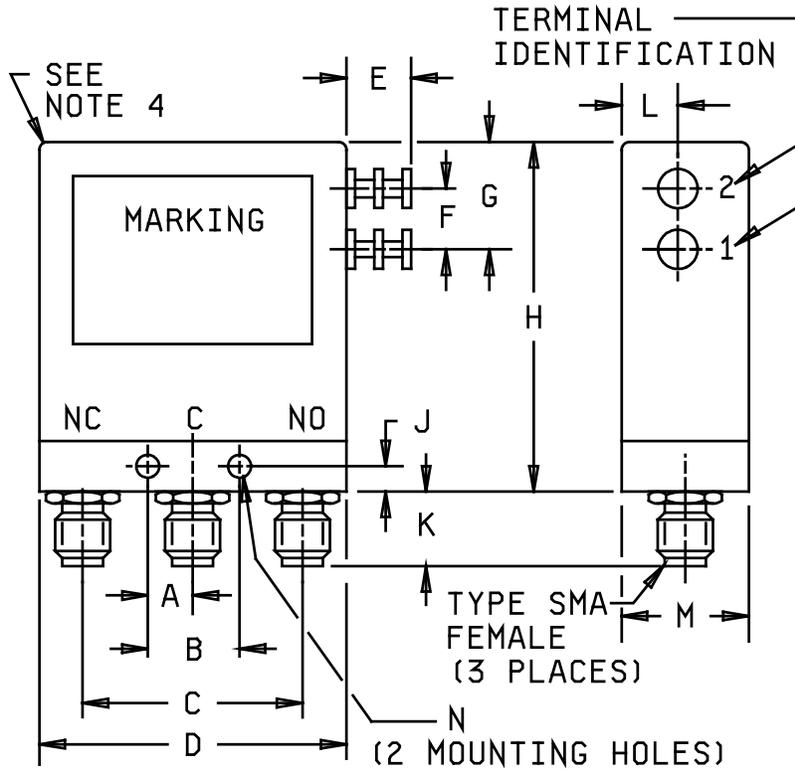


- Position 1. (Deenergized or failsafe position),
C connects to NC connector.
NO is open circuit.
- Position 2. (Energized position),
C connects to NO connector,
NC is open circuit.

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, PINs M3928/15-01, M3928/15-02, and M3928/15-12 - Continued.



| Dimensions | | | | | | | | | |
|------------|--------|------|-------------|-------|--------|----------|----------|-------------|----------|
| Lette | Inches | | Millimeters | | Letter | Inches | | Millimeters | |
| | Max | Min | Max | Min | | Max | Min | Max | Min |
| A | .230 | .210 | 5.84 | 5.33 | H | 1.2 | --- | 30 | --- |
| B | .450 | .430 | 11.43 | 10.92 | J | .103 | .083 | 2.62 | 2.11 |
| C | .890 | .870 | 22.61 | 22.10 | K | .35 | --- | 8.9 | --- |
| D | 1.5 | --- | 38 | --- | L | .160 | .140 | 4.06 | 3.56 |
| E | .35 | --- | 8.9 | --- | M | .570 | --- | 14.5 | --- |
| F | .23 | .17 | 5.8 | 4.3 | N | .126 dia | .106 dia | 3.20 dia | 2.69 dia |
| G | .56 | --- | 14.2 | --- | | | | | |

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 1A. Alternate construction for PINs M3928/15-01, M3928/15-02, and M3928/15-12.

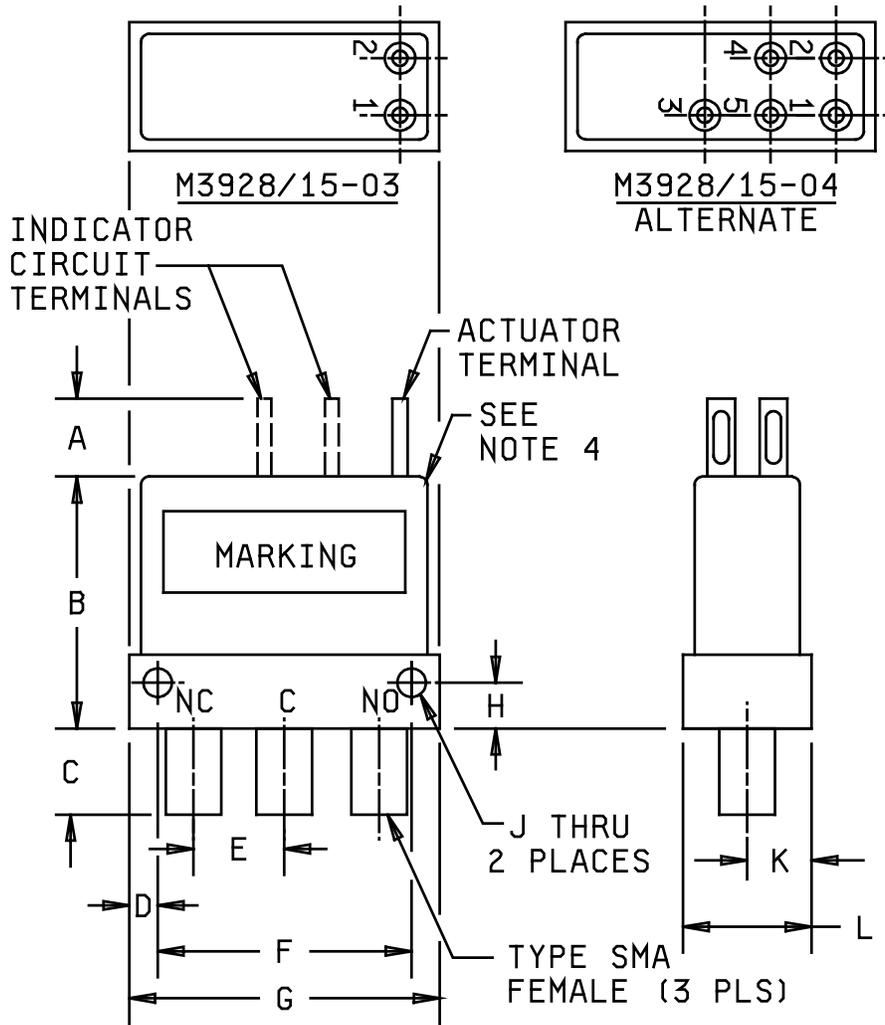
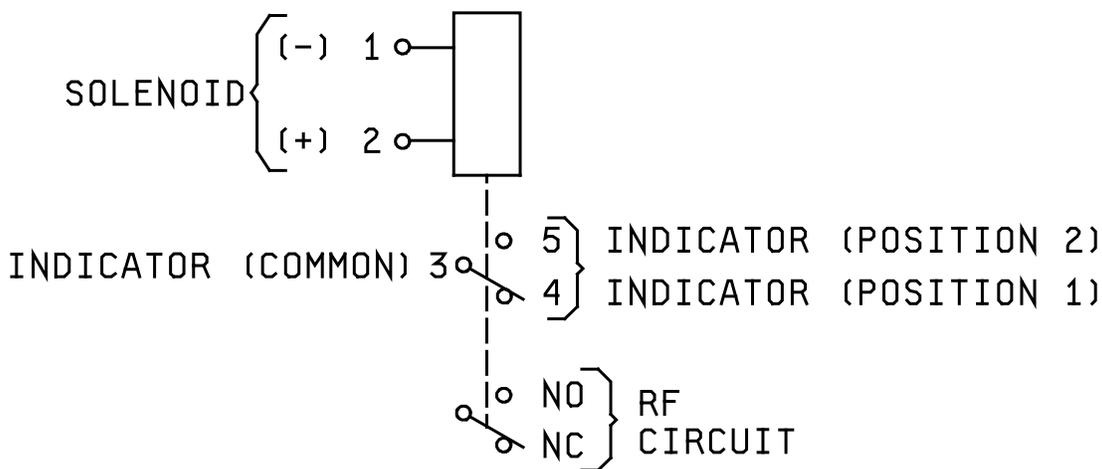


FIGURE 2. Switch configuration and schematic, PINs M3928/15-03 and M3928/15-04.



(PIN M3928/15-03 does not have indicator circuit provisions and, therefore, does not have terminals 2, 4 and 5.)

Position 1. (De-energized or failsafe position),
 C connects to NC connector,
 NO is open circuit

Position 2. (Energized position),
 C connects to NO connector,
 NC is open circuit

| Dimensions | | | | | | | | | |
|------------|--------|------|-------------|------|--------|----------|----------|-------------|----------|
| Lette | Inches | | Millimeters | | Letter | Inches | | Millimeters | |
| | Max | Min | Max | Min | | Max | Min | Max | Min |
| A | .35 | --- | 8.9 | --- | G | 1.37 | 1.31 | 34.8 | 33.3 |
| B | 1.18 | --- | 30.0 | --- | H | .20 | .14 | 5.1 | 3.6 |
| C | .34 | .28 | 8.6 | 7.1 | J | .103 dia | .083 dia | 2.62 dia | 2.11 dia |
| D | .11 | .05 | 2.8 | 1.3 | K | .28 | .22 | 7.1 | 5.6 |
| E | .47 | .41 | 11.9 | 10.4 | L | .53 | .47 | 13.5 | 11.9 |
| F | 1.22 | 1.16 | 31.0 | 29.5 | | | | | |

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. PINs M3928/15-03 and M3928/15-04 - Continued.

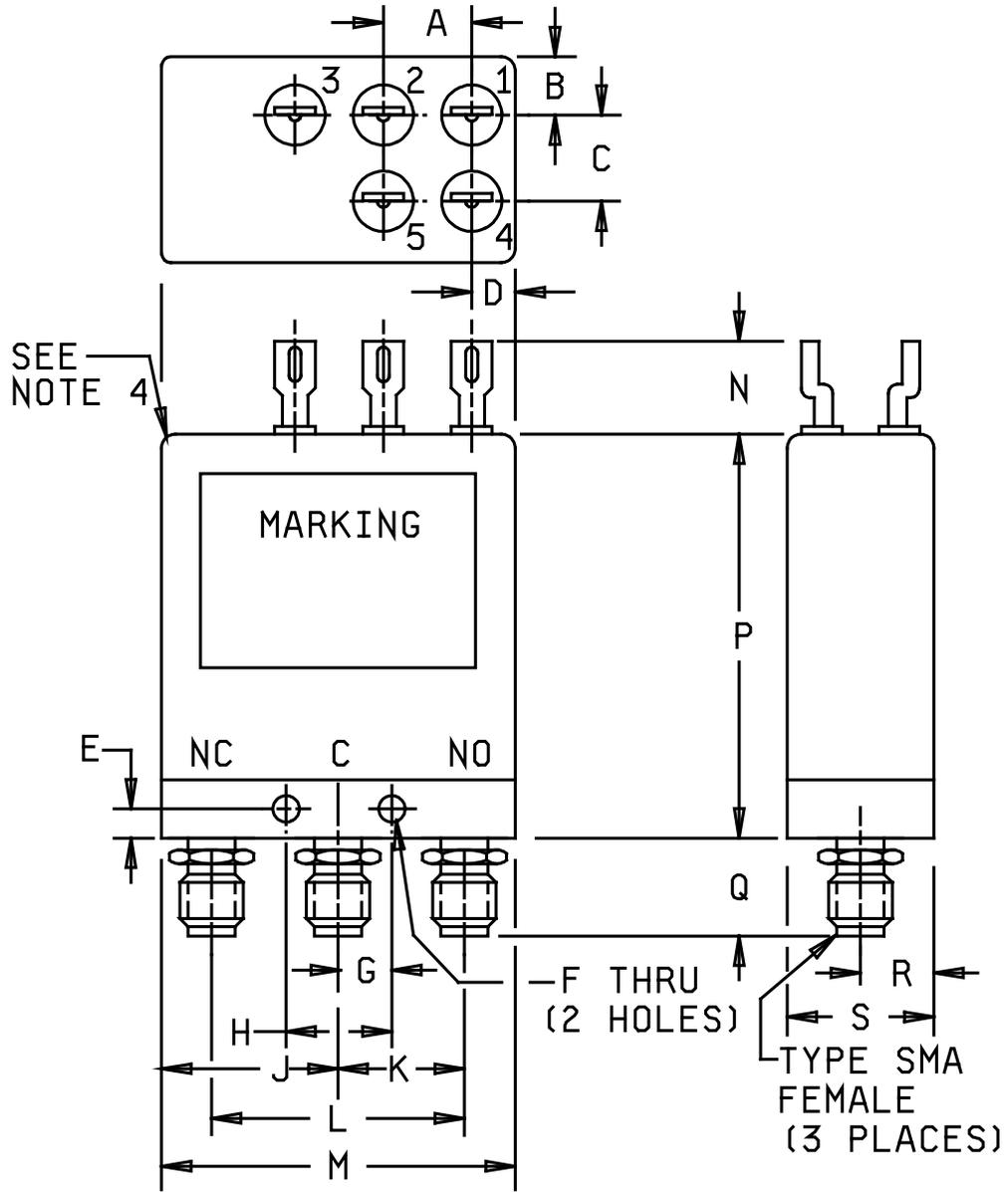
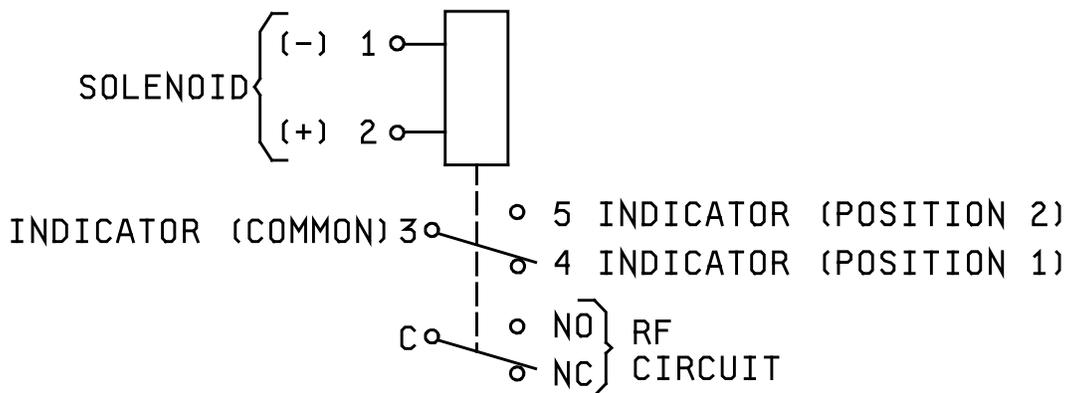


FIGURE 3. Switch configuration and schematic, PIN M3928/15-05.



Position 1. (De-energized or failsafe position),
C connects to NC connector.
NO is open circuit

Position 2. (Energized position).
C connects to NO connector.
NC is open circuit

SCHEMATIC (SHOWN IN POSITION 1)

| Dimensions | | | | | | | | | |
|------------|----------|----------|-------------|----------|--------|--------|------|-------------|------|
| Letter | Inches | | Millimeters | | Letter | Inches | | Millimeters | |
| | Max | Min | Max | Min | | Max | Min | Max | Min |
| A | .28 | .22 | 7.1 | 5.6 | K | .450 | .430 | 11.4 | 10.9 |
| B | .20 | .14 | 5.1 | 3.6 | L | .890 | .870 | 22.6 | 22.1 |
| C | .20 | .14 | 5.1 | 3.6 | M | 1.43 | 1.37 | 36.3 | 34.8 |
| D | .29 | .23 | 7.4 | 5.8 | N | .35 | --- | 8.9 | --- |
| E | .095 | --- | 2.41 | --- | P | 1.67 | 1.61 | 42.4 | 40.9 |
| F | .130 dia | .110 dia | 3.30 dia | 2.79 dia | Q | .31 | --- | 7.9 | --- |
| G | .230 | .210 | 5.84 | 5.33 | R | .31 | .25 | 7.9 | 6.4 |
| H | .450 | .430 | 11.4 | 10.9 | S | .59 | .53 | 15.0 | 13.5 |
| J | .73 | .67 | 18.5 | 17.0 | | | | | |

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 M3928/15-05 - Continued.

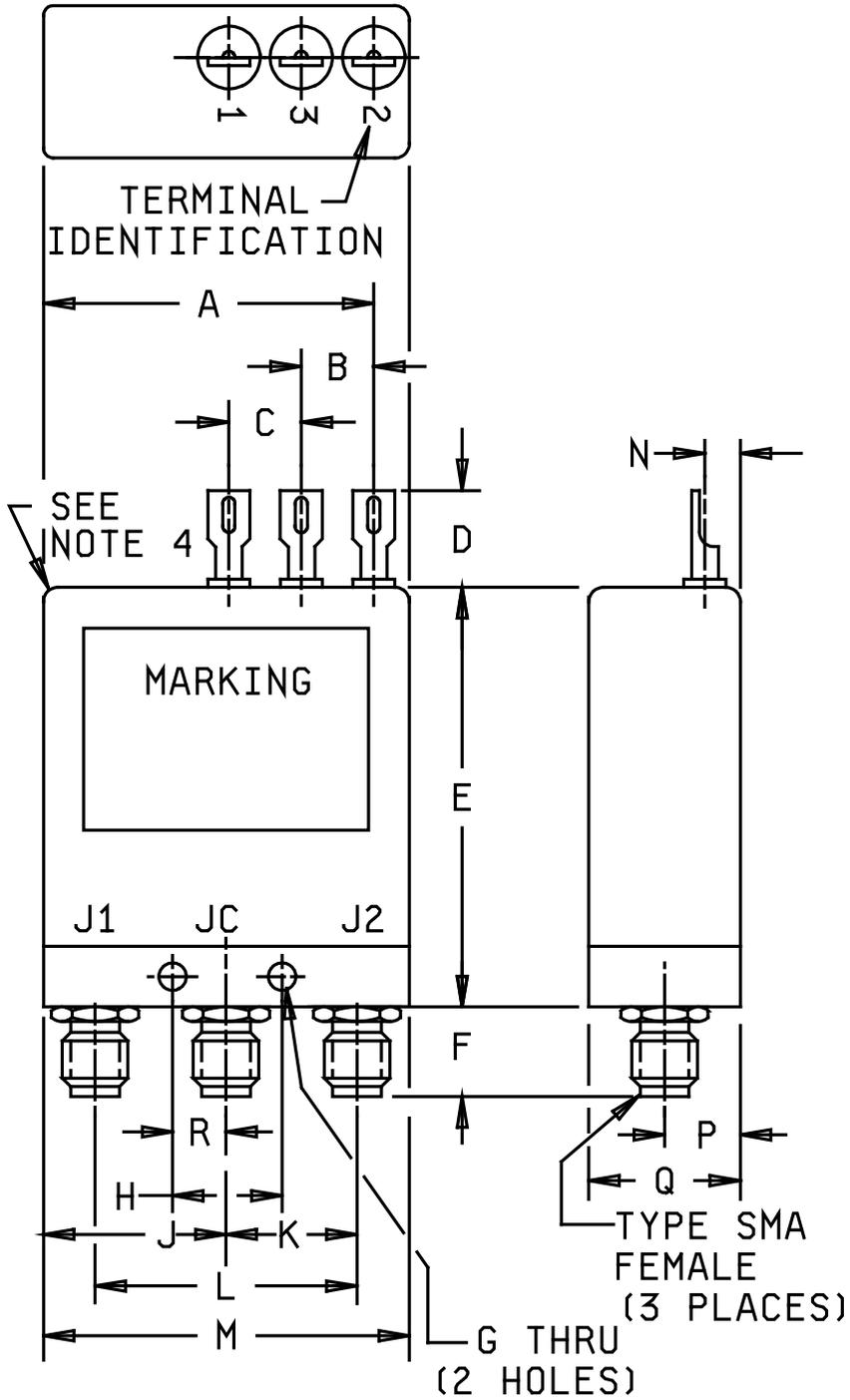
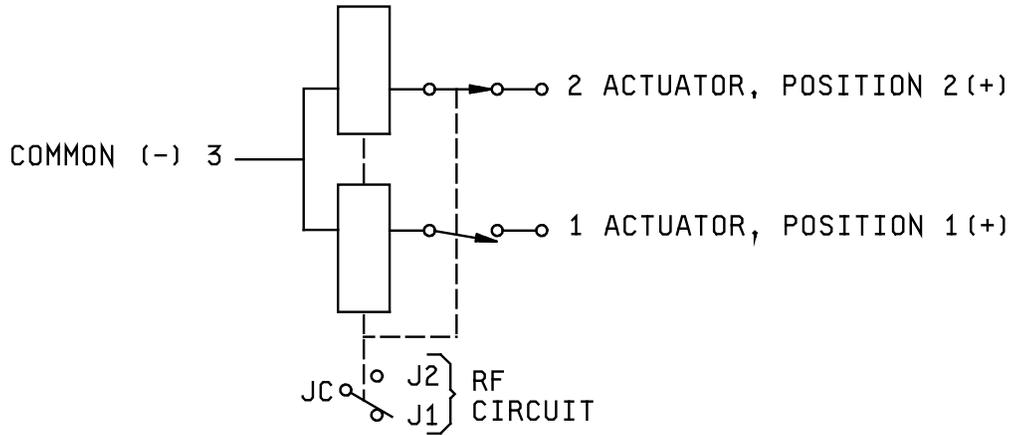


FIGURE 4. Switch configuration and schematic, PIN M3928/15-07.



POSITION 1. Energize terminal 1. JC connects to J1, J2 is open circuit.

POSITION 2. Energize terminal 2. JC connects to J2, J1 is open circuit.

SCHEMATIC (shown in position 1)

| Dimensions | | | | | | | | | |
|------------|----------|----------|-------------|----------|--------|--------|------|-------------|-------|
| Lette | Inches | | Millimeters | | Letter | Inches | | Millimeters | |
| | Max | Min | Max | Min | | Max | Min | Max | Min |
| A | 1.15 | 1.09 | 29.2 | 27.7 | J | .680 | .660 | 17.27 | 16.76 |
| B | .28 | .22 | 7.1 | 5.6 | K | .450 | .430 | 11.43 | 10.92 |
| C | .28 | .22 | 7.1 | 5.6 | L | .890 | .870 | 22.61 | 22.10 |
| D | .35 | --- | 8.9 | --- | M | 1.37 | 1.31 | 34.8 | 33.3 |
| E | 1.50 | --- | 38.1 | --- | N | .19 | .13 | 4.8 | 3.3 |
| F | .31 | ---- | 7.9 | --- | P | .28 | .22 | 7.1 | 5.6 |
| G | .130 dia | .110 dia | 3.30 dia | 2.79 dia | Q | .53 | .47 | 13.5 | 11.9 |
| H | .450 | .430 | 11.43 | 10.92 | R | .230 | .210 | 5.84 | 5.33 |

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 4. Switch configuration and schematic, PIN M3928/15-07 - Continued.

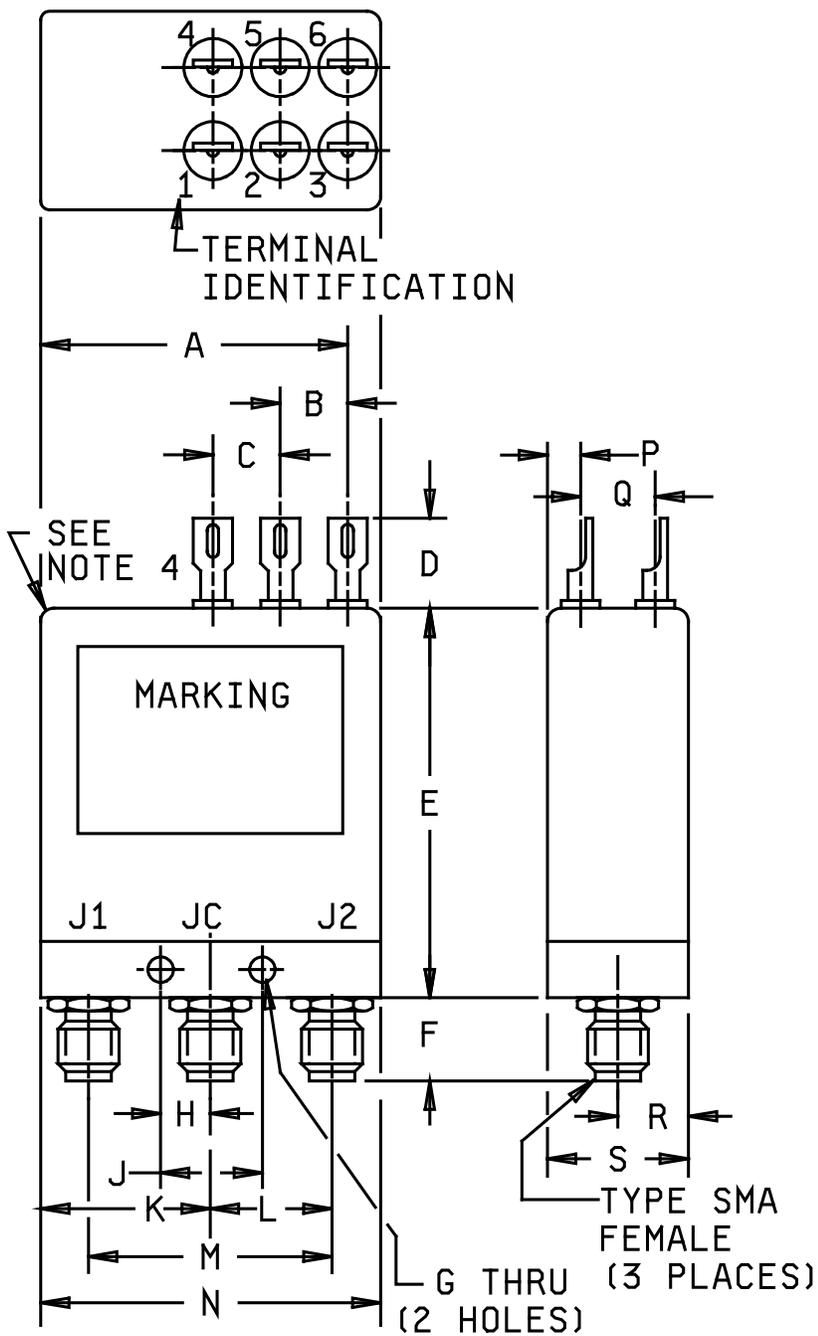
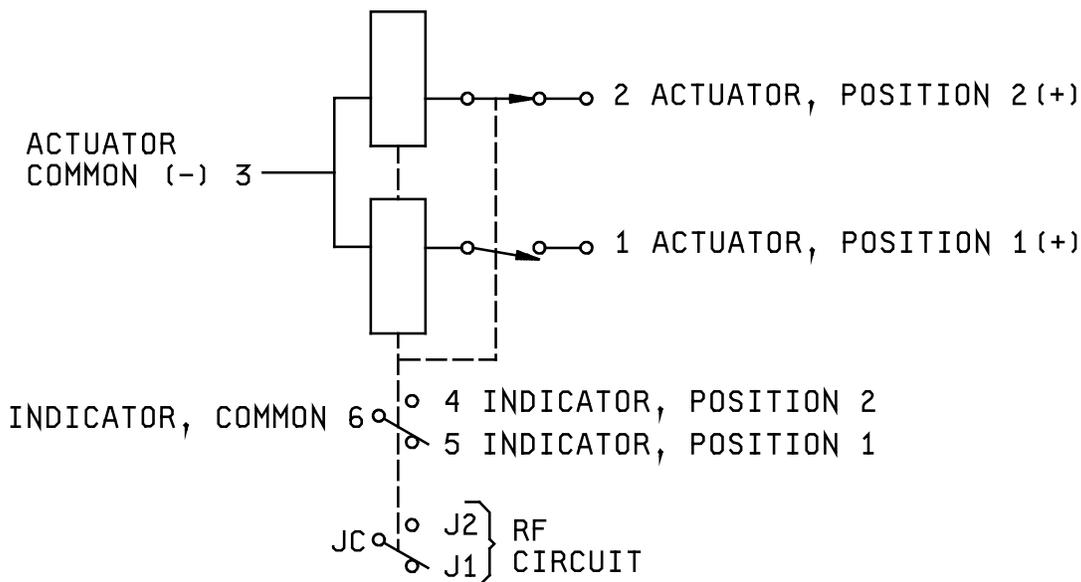


FIGURE 5. Switch configuration and schematic, PIN M3928/15-08.



POSITION 1. Energize terminal 1. JC connects to J1, J2 is open circuit.

POSITION 2. Energize terminal 2. JC connects to J2, J1 is open circuit.

SCHEMATIC (shown in position 1)

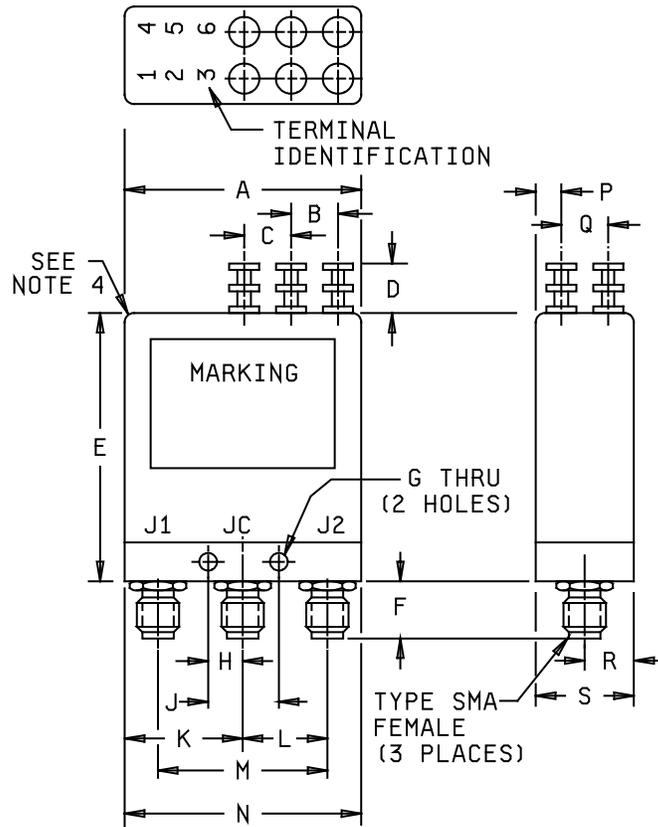
| Dimensions | | | | | | | | | |
|------------|----------|----------|-------------|----------|--------|--------|------|-------------|-------|
| Lette | Inches | | Millimeters | | Letter | Inches | | Millimeters | |
| | Max | Min | Max | Min | | Max | Min | Max | Min |
| A | 1.15 | 1.09 | 29.2 | 27.7 | K | .680 | .660 | 17.27 | 16.76 |
| B | .28 | .22 | 7.1 | 5.6 | L | .450 | .430 | 11.43 | 10.92 |
| C | .28 | .22 | 7.1 | 5.6 | M | .890 | .870 | 22.6 1 | 22.10 |
| D | .35 | --- | 8.9 | --- | N | 1.37 | 1.31 | 34.8 | 33.3 |
| E | 1.50 | --- | 38.1 | --- | P | .19 | .13 | 4.8 | 3.3 |
| F | .31 | --- | 7.9 | --- | Q | .20 | .14 | 5.1 | 3.6 |
| G | .130 dia | .110 dia | 3.30 dia | 2.79 dia | R | .28 | .22 | 7.1 | 5.6 |
| H | .230 | .210 | 5.84 | 5.33 | S | .53 | .47 | 13.5 | 11.9 |
| J | .450 | .430 | 11.43 | 10.92 | | | | | |

NOTES:

1. Dimensions are in inches.
2. Metric equivalentents are given for general information only (1.00 inch = 25.4 mm).
3. Unless otherwise specified, tolerances are $\pm .010$ (± 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 5. Switch configuration and schematic, PIN M3928/15-08 - Continued.

MIL-DTL-3928/15G



| Dimensions | | | | | | | | | |
|------------|----------|----------|-------------|----------|--------|--------|------|-------------|-------|
| Letter | Inches | | Millimeters | | Letter | Inches | | Millimeters | |
| | Max | Min | Max | Min | | Max | Min | Max | Min |
| A | 1.06 | 1.00 | 26.9 | 25.4 | K | .630 | .610 | 16.00 | 15.49 |
| B | .28 | .22 | 7.1 | 5.6 | L | .450 | .430 | 11.43 | 10.92 |
| C | .28 | .22 | 7.1 | 5.6 | M | .890 | .870 | 22.61 | 22.10 |
| D | .35 | --- | 8.9 | --- | N | 1.28 | 1.22 | 32.5 | 31.0 |
| E | 1.50 | --- | 38.1 | --- | P | .19 | .13 | 4.8 | 3.3 |
| F | .31 | --- | 7.9 | --- | Q | .20 | .14 | 5.1 | 3.6 |
| G | .126 dia | .106 dia | 3.20 dia | 2.69 dia | R | .28 | .22 | 7.1 | 5.6 |
| H | .230 | .210 | 5.84 | 5.33 | S | .53 | .47 | 13.5 | 11.9 |
| J | .450 | .430 | 11.43 | 10.92 | | | | | |

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 5A. Alternate construction for PIN M3928/15-08.

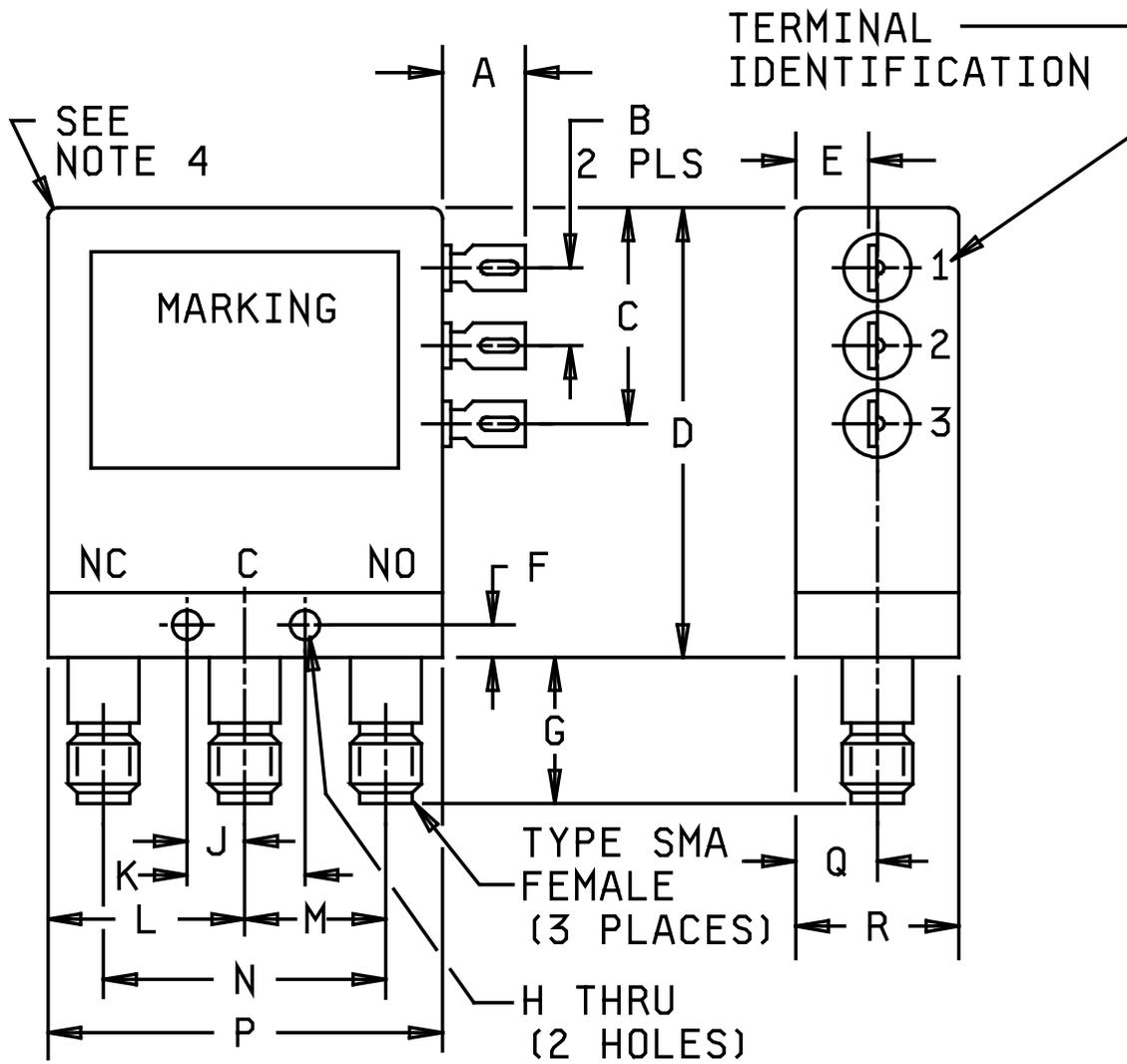
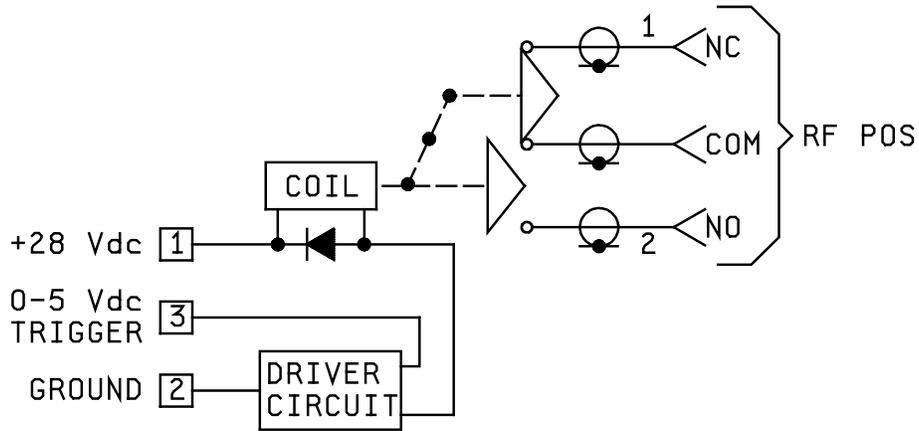


FIGURE 6. Switch configuration and schematic, PIN M3928/15-09.



Shown in failsafe position (Position 1).

Energize to connect COM to NO (Position 2).

SCHEMATIC

| Dimensions | | | | | | | | | |
|------------|----------|----------|-------------|----------|--------|--------|------|-------------|-------|
| Letter | Inches | | Millimeters | | Letter | Inches | | Millimeters | |
| | Max | Min | Max | Min | | Max | Min | Max | Min |
| A | .23 | .17 | 5.8 | 4.3 | J | .230 | .210 | 5.84 | 5.33 |
| B | .22 | .16 | 5.6 | 4.1 | K | .450 | .430 | 11.43 | 10.92 |
| C | .66 | .60 | 16.8 | 15.2 | L | .680 | .660 | 17.27 | 16.76 |
| D | 1.38 | 1.32 | 35.1 | 33.5 | M | .450 | .430 | 11.43 | 10.92 |
| E | .19 | .13 | 4.8 | 3.3 | N | .890 | .870 | 22.61 | 22.10 |
| F | .103 | .083 | 2.62 | 2.11 | P | 1.37 | 1.31 | 34.8 | 33.3 |
| G | .50 | --- | 12.7 | --- | Q | .28 | .22 | 7.1 | 5.6 |
| H | .130 dia | .110 dia | 3.30 dia | 2.79 dia | R | .53 | .47 | 13.5 | 11.9 |

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 6. Switch configuration and schematic, PIN M3928/15-09 - Continued.

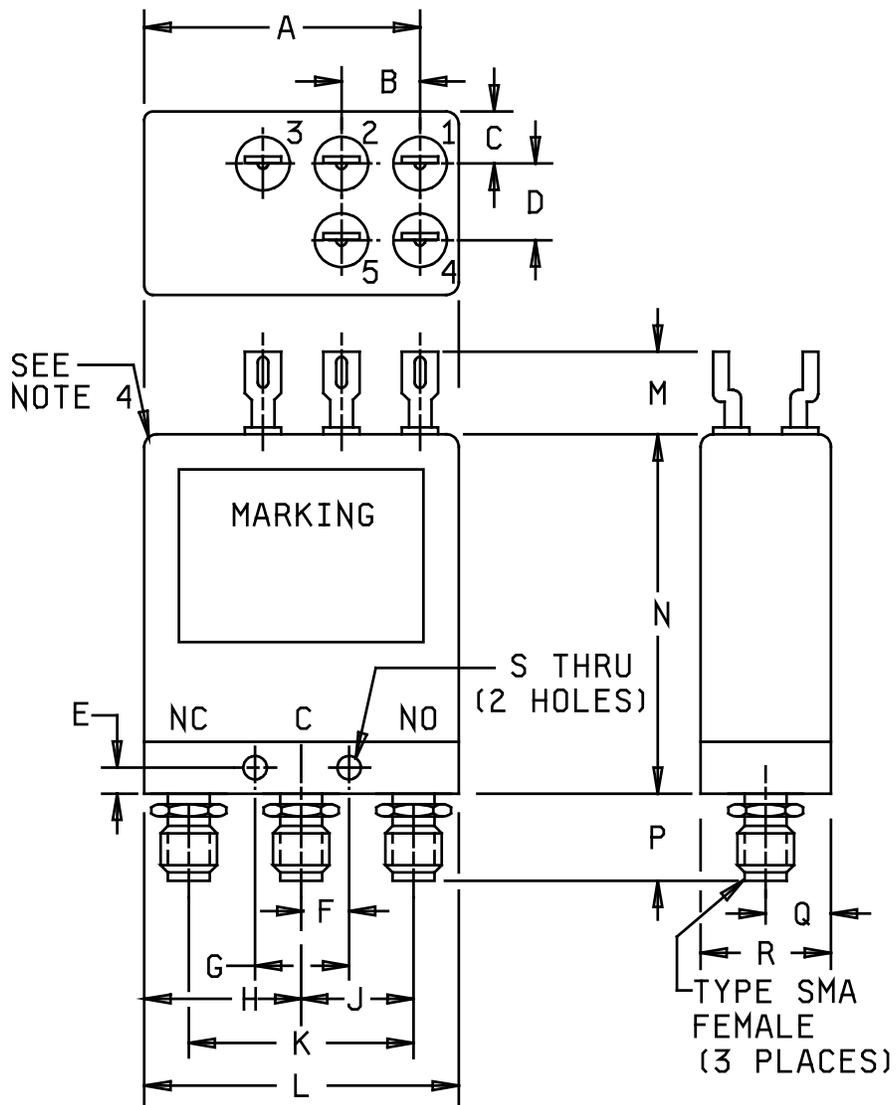
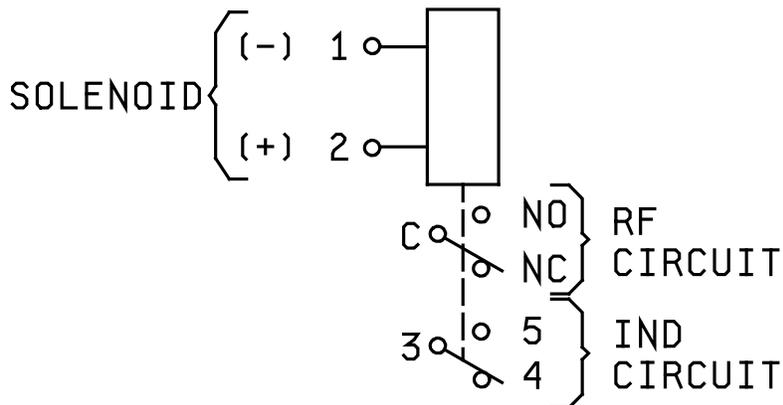


FIGURE 7. Switch configuration and schematic, PINs M3928/15-10 and M3928/15-13.



Position 1. (De-energized or failsafe position),
C connects to NC connector.
NO is open circuit

Position 2. (Energized position).
C connects to NO connector.
NC is open circuit

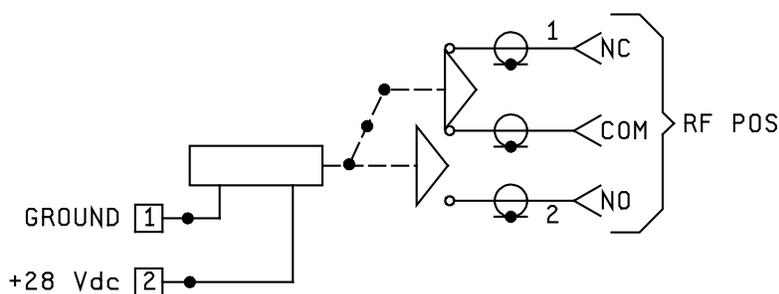
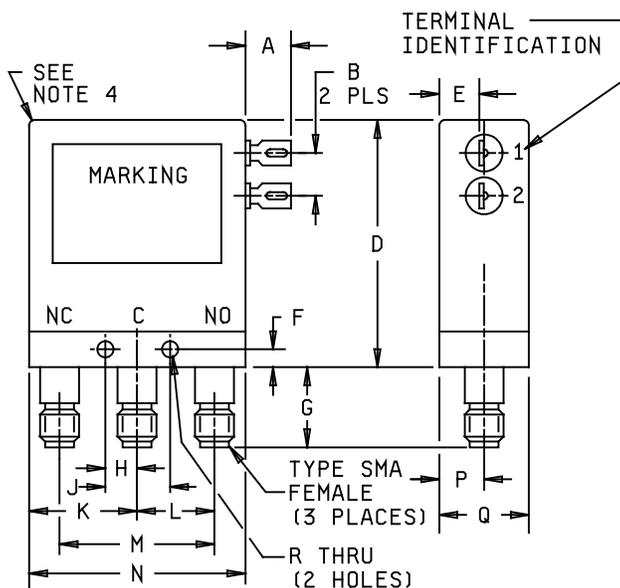
| Dimensions | | | | | | | | | |
|------------|--------|------|-------------|-------|--------|--------|------|-------------|-------|
| Letter | Inches | | Millimeters | | Letter | Inches | | Millimeters | |
| | Max | Min | Max | Min | | Max | Min | Max | Min |
| A | 1.15 | 1.09 | 29.2 | 27.7 | J | .450 | .430 | 11.43 | 10.92 |
| B | .28 | .22 | 7.1 | 5.6 | K | .890 | .870 | 22.61 | 22.10 |
| C | .19 | .13 | 4.8 | 3.3 | L | 1.37 | 1.31 | 34.8 | 33.3 |
| D | .20 | .14 | 5.1 | 3.6 | M | .35 | --- | 8.9 | --- |
| E | .103 | .083 | 2.62 | 2.11 | N | 1.43 | 1.37 | 36.3 | 34.8 |
| F | .230 | .210 | 5.84 | 5.33 | P | .31 | --- | 7.9 | --- |
| G | .450 | .430 | 11.43 | 10.92 | Q | .28 | .22 | 7.1 | 5.6 |
| H | .680 | .660 | 17.27 | 16.76 | R | .53 | .47 | 13.5 | 11.9 |

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 7. Switch configuration and schematic, PINs M3928/15-10 and M3928/15-13 - Continued.

MIL-DTL-3928/15G



Shown in fail-safe position (position 1). Energize to connect COM to NO (position 2).

SCHEMATIC

| Dimensions | | | | | | | | | |
|------------|--------|------|-------------|------|--------|--------|------|-------------|-------|
| Letter | Inches | | Millimeters | | Letter | Inches | | Millimeters | |
| | Max | Min | Max | Min | | Max | Min | Max | Min |
| A | .35 | --- | 8.9 | --- | J | .450 | .430 | 11.43 | 10.92 |
| B | .28 | .22 | 7.1 | 5.6 | K | .680 | .660 | 17.27 | 16.76 |
| C | .53 | .47 | 13.5 | 11.9 | L | .450 | .430 | 11.43 | 10.92 |
| D | 1.18 | 1.12 | 30.0 | 28.4 | M | .890 | .870 | 22.61 | 22.10 |
| E | .23 | .17 | 5.8 | 5.3 | N | 1.37 | 1.31 | 34.8 | 33.3 |
| F | .103 | .083 | 2.62 | 2.11 | P | .28 | .22 | 7.1 | 5.6 |
| G | .50 | --- | 12.7 | --- | Q | .57 | --- | 14.5 | --- |
| H | .230 | .210 | 5.84 | 5.33 | | | | | |

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 8. Switch configuration and schematic, PIN M3928/15-11.

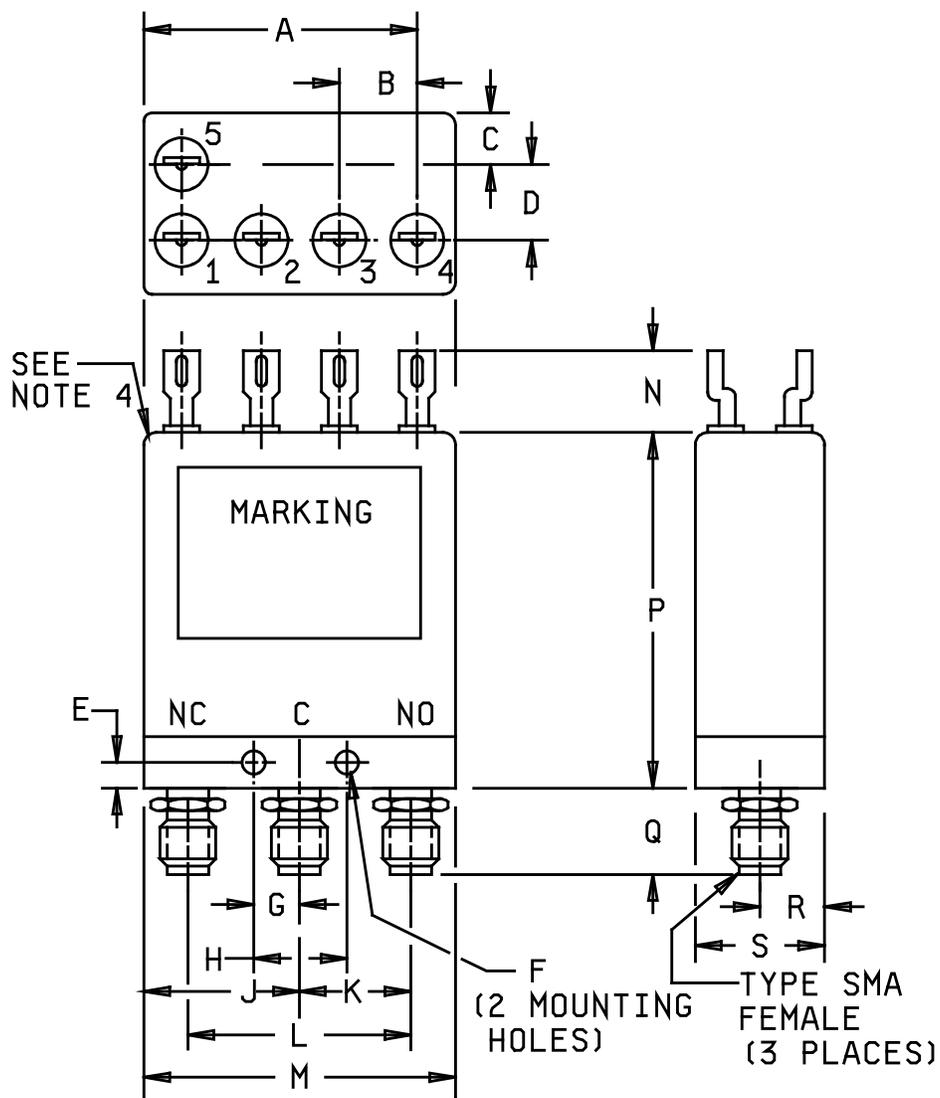
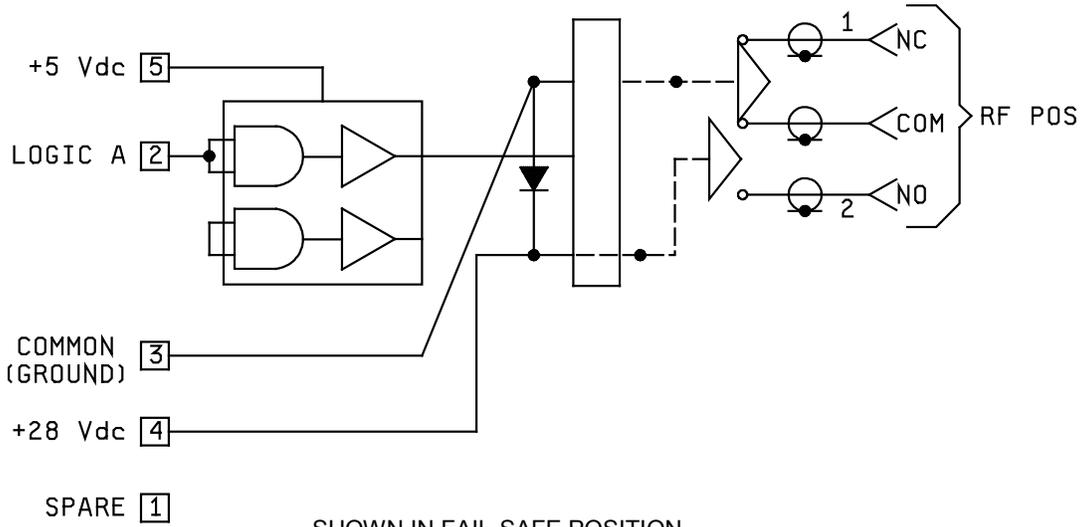


FIGURE 9. Switch configuration and schematic, PIN M3928/15-14.

MIL-DTL-3928/15G



SHOWN IN FAIL-SAFE POSITION
ENERGIZE TO CONNECT COMMON TO NO

SCHEMATIC

| Logic truth table | |
|-------------------|--------------|
| RF path | Logic signal |
| | A |
| C-NC | 0 |
| C-NO | 1 |

| Dimensions | | | | | | | | | |
|------------|----------|----------|-------------|----------|--------|--------|------|-------------|-------|
| Letter | Inches | | Millimeters | | Letter | Inches | | Millimeters | |
| | Max | Min | Max | Min | | Max | Min | Max | Min |
| A | 1.15 | 1.09 | 29.2 | 27.7 | K | .450 | .430 | 11.43 | 10.92 |
| B | .28 | .22 | 7.1 | 5.6 | L | .890 | .870 | 22.61 | 22.10 |
| C | .19 | .13 | 4.8 | 3.3 | M | 1.37 | 1.31 | 34.8 | 33.3 |
| D | .20 | .14 | 5.1 | 3.6 | N | .35 | --- | 8.9 | --- |
| E | .12 | .06 | 3.0 | 1.5 | P | 1.80 | --- | 45.7 | --- |
| F | .130 dia | .110 dia | 3.30 dia | 2.79 dia | Q | .34 | .28 | 8.6 | 7.1 |
| G | .230 | .210 | 5.84 | 5.33 | R | .28 | .22 | 7.1 | 5.6 |
| H | .450 | .430 | 11.43 | 10.92 | S | .53 | .47 | 13.5 | 11.9 |
| J | .680 | .660 | 17.27 | 16.76 | | | | | |

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 9. Switch configuration and schematic, PIN M3928/15-14 - Continued.

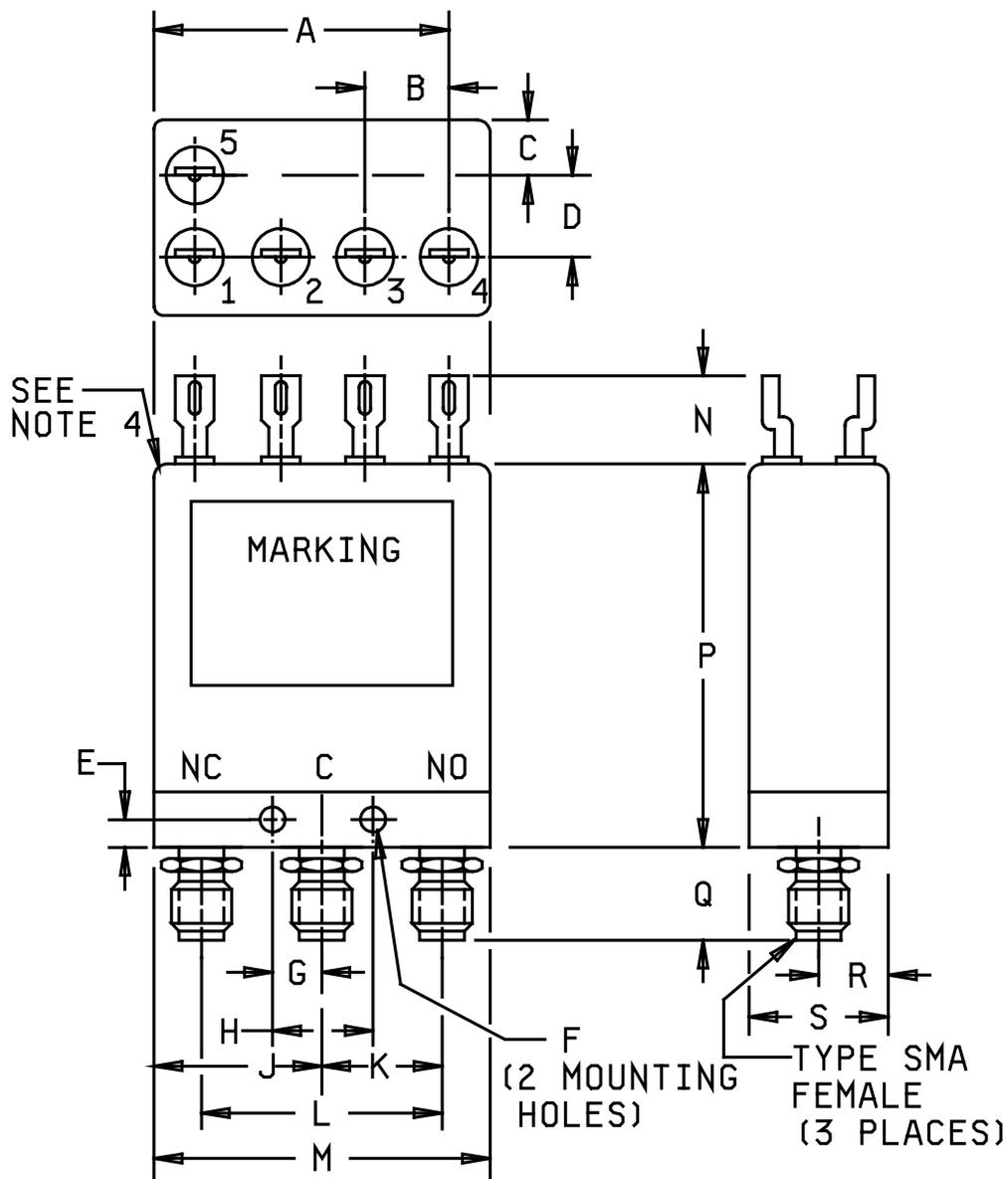
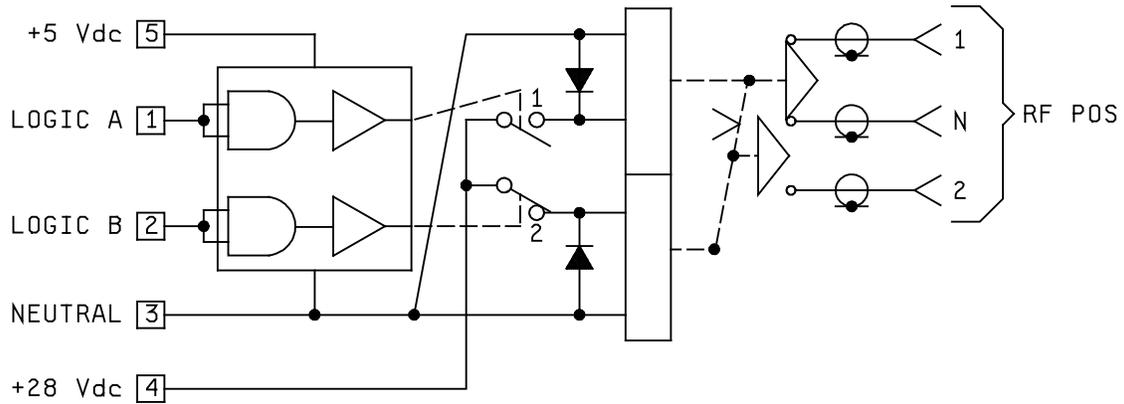


FIGURE 10. Switch configuration and schematic, PIN M3928/15-15.

MIL-DTL-3928/15G



POSITION 1. ENERGIZE TERMINAL 1. N CONNECT TO 1,
2 IS OPEN CIRCUIT
POSITION 2. ENERGIZE TERMINAL 2. N CONNECT TO 2,
1 IS OPEN CIRCUIT

SCHEMATIC

| Logic truth table | | |
|-------------------|--------------|---|
| RF path | Logic signal | |
| | A | B |
| N-1 | 1 | 0 |
| N-2 | 0 | 1 |

| Dimensions | | | | | | | | | |
|------------|----------|----------|-------------|----------|--------|--------|------|-------------|-------|
| Letter | Inches | | Millimeters | | Letter | Inches | | Millimeters | |
| | Max | Min | Max | Min | | Max | Min | Max | Min |
| A | 1.15 | 1.09 | 29.2 | 27.7 | K | .450 | .430 | 11.43 | 10.92 |
| B | .28 | .22 | 7.1 | 5.6 | L | .890 | .870 | 22.61 | 22.10 |
| C | .19 | .13 | 4.8 | 3.3 | M | 1.37 | 1.31 | 34.8 | 33.3 |
| D | .20 | .14 | 5.1 | 3.6 | N | .35 | --- | 8.9 | --- |
| E | .12 | .06 | 3.0 | 1.5 | P | 1.80 | --- | 45.7 | --- |
| F | .130 dia | .110 dia | 3.30 dia | 2.79 dia | Q | .34 | .28 | 8.6 | 7.1 |
| G | .230 | .210 | 5.84 | 5.33 | R | .28 | .22 | 7.1 | 5.6 |
| H | .450 | .430 | 11.43 | 10.92 | S | .53 | .47 | 13.5 | 11.9 |
| J | .680 | .660 | 17.27 | 16.76 | | | | | |

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 10. Switch configuration and schematic. PIN M3928/15-15 - Continued.

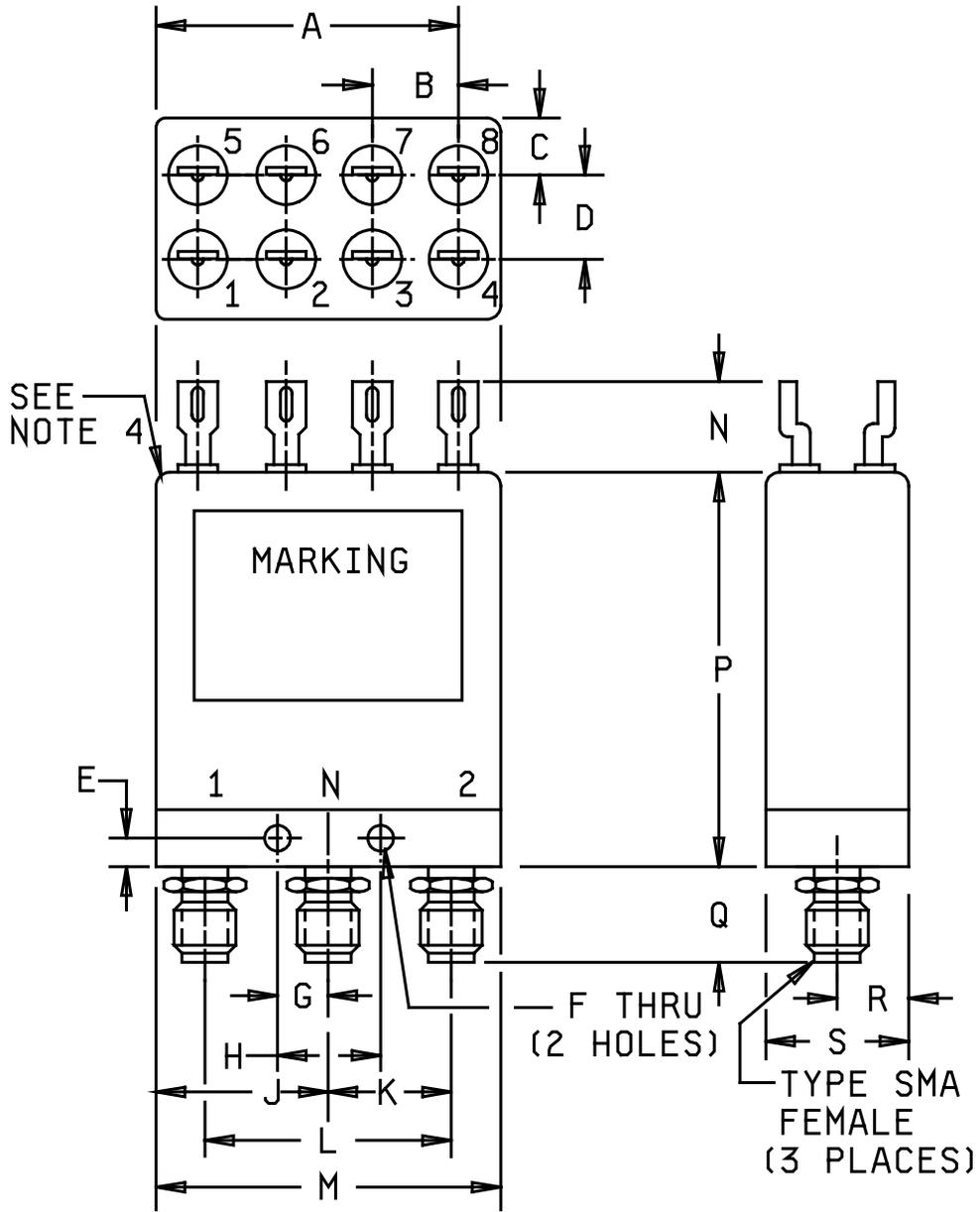
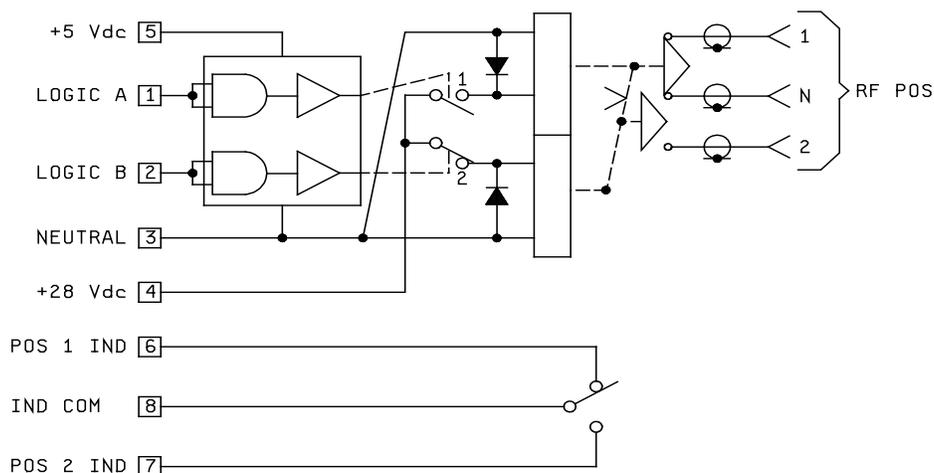


FIGURE 11. Switch configuration and schematic, PIN M3928/15-16.

MIL-DTL-3928/15G



POSITION 1. ENERGIZE TERMINAL 1. N CONNECT TO 1,
2 IS OPEN CIRCUIT

POSITION 2. ENERGIZE TERMINAL 2. N CONNECT TO 2,
1 IS OPEN CIRCUIT

SCHEMATIC

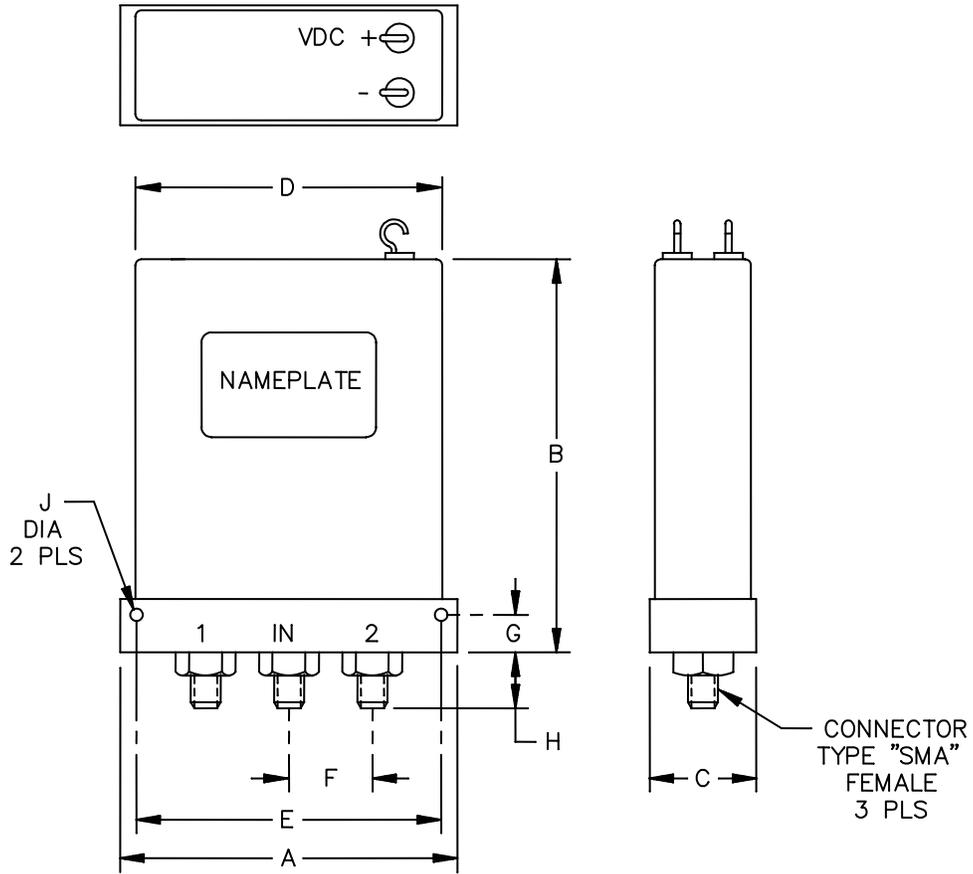
| Logic truth table | | |
|-------------------|--------------|---|
| RF path | Logic signal | |
| | A | B |
| N-1 | 1 | 0 |
| N-2 | 0 | 1 |

| Dimensions | | | | | | | | | |
|------------|----------|----------|-------------|----------|--------|--------|------|-------------|-------|
| Letter | Inches | | Millimeters | | Letter | Inches | | Millimeters | |
| | Max | Min | Max | Min | | Max | Min | Max | Min |
| A | 1.15 | 1.09 | 29.2 | 27.7 | K | .450 | .430 | 11.43 | 10.92 |
| B | .28 | .22 | 7.1 | 5.6 | L | .890 | .870 | 22.61 | 22.10 |
| C | .19 | .13 | 4.8 | 3.3 | M | 1.37 | 1.31 | 34.8 | 33.3 |
| D | .20 | .14 | 5.1 | 3.6 | N | .35 | --- | 8.9 | --- |
| E | .12 | .06 | 3.0 | 1.5 | P | 1.80 | --- | 45.7 | --- |
| F | .130 dia | .110 dia | 3.30 dia | 2.79 dia | Q | .34 | .28 | 8.6 | 7.1 |
| G | .230 | .210 | 5.84 | 5.33 | R | .28 | .22 | 7.1 | 5.6 |
| H | .450 | .430 | 11.43 | 10.92 | S | .53 | .47 | 13.5 | 11.9 |
| J | .680 | .660 | 17.27 | 16.76 | | | | | |

NOTES:

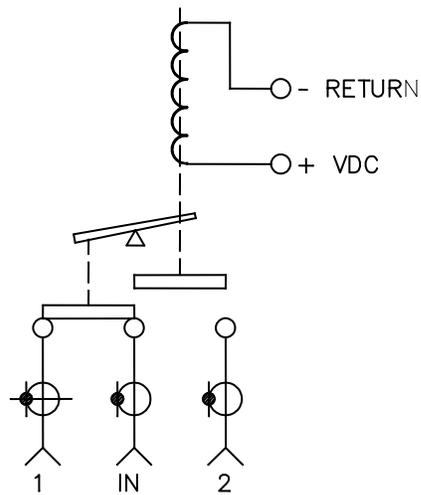
1. Dimensions are in inches.
2. Metric equivalents are given for general information only (1.00 inch = 25.4 mm).
3. Unless otherwise specified, tolerances are $\pm .010$ (± 0.25 mm) for three place decimals and $\pm .03$ (± 0.8 mm) for two place decimals.
4. Round corners of case may be squared.

FIGURE 11. Switch configuration and schematic, PIN M3928/15-16 - Continued.



| Letter | Inches | | Millimeters | | Letter | Inches | | Millimeters | |
|--------|--------|-------|-------------|-----|--------|----------|------|-------------|--------|
| | Max | Min | Max | Min | | Max | Min | Max | Min |
| A | 2.78 | ----- | 70.61 | --- | F | .890 | .870 | 22.606 | 22.098 |
| B | 2.40 | ----- | 60.96 | --- | G | .41 | .35 | 10.41 | 8.89 |
| C | 1.02 | ----- | 25.91 | --- | H | .63 | ---- | 16.00 | ----- |
| D | 2.51 | ----- | 63.75 | --- | J | .181 dia | ---- | 4.597 dia | ----- |
| E | 2.510 | ----- | 63.754 | | | | | | |

FIGURE 12. Switch configuration and schematic, PIN M3928/15-17.



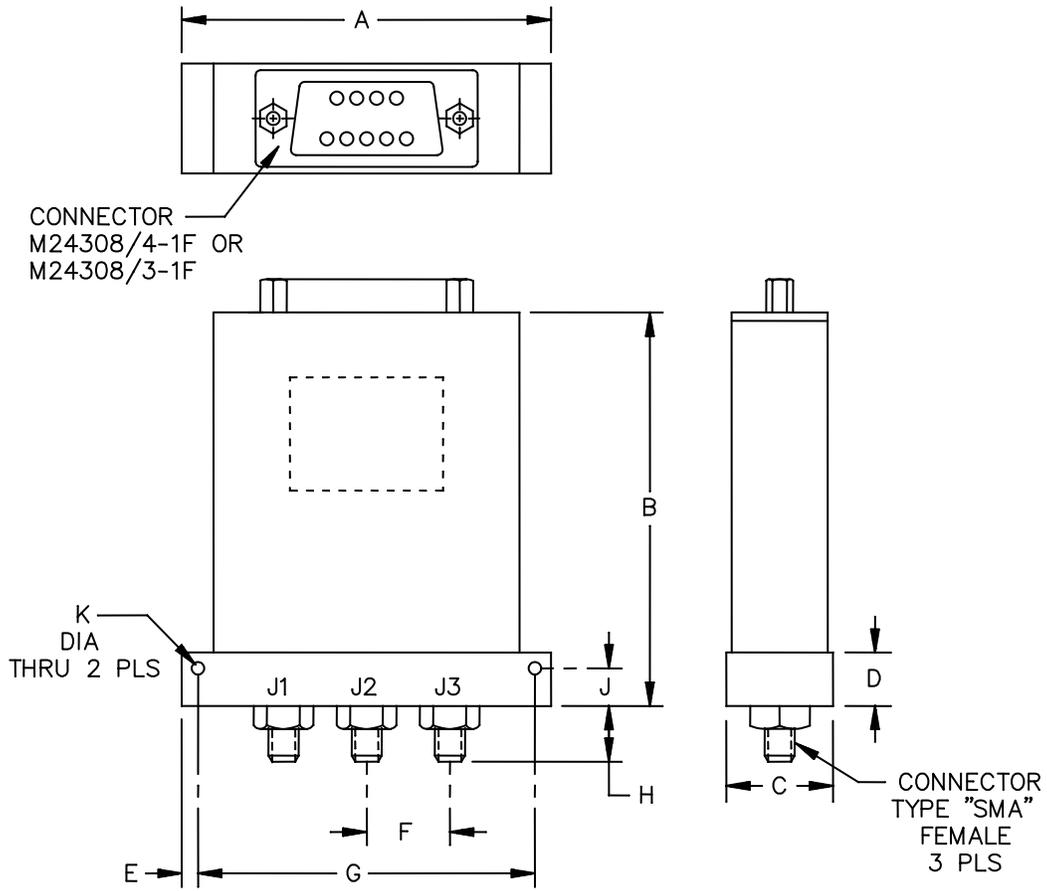
SCHEMATIC DIAGRAM SHOWN IN
FAILSAFE POSITION 1

NOTES:

1. Dimensions are in inches. Metric equivalents may be determined using 1.00 inch = 25.4 mm.
2. Unless otherwise specified, tolerances are $\pm .010$ for three place decimals; $\pm .030$ for two place decimals.

FIGURE 12. Switch configuration and schematic, PIN M3928/15-17- Continued.

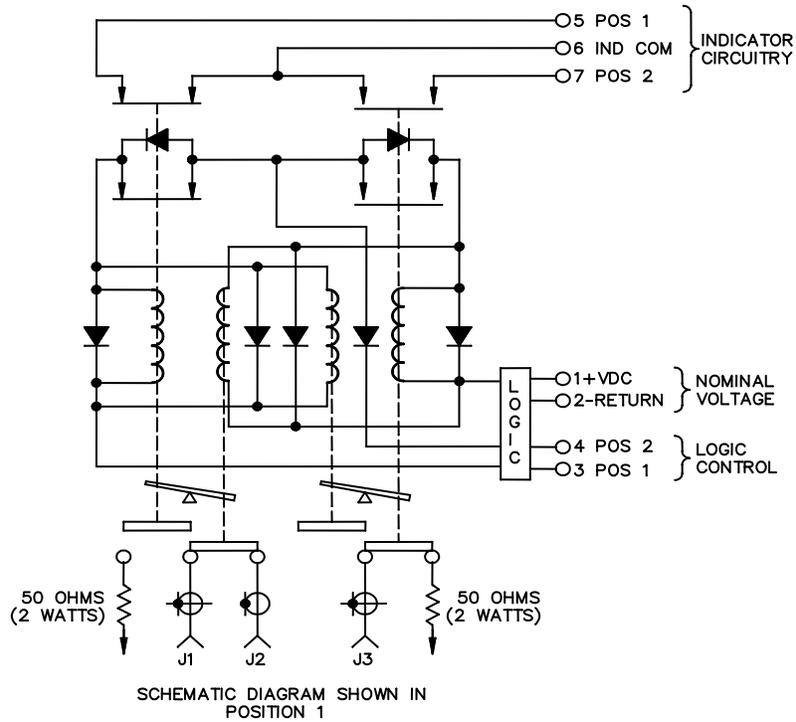
MIL-DTL-3928/15G



| Letter | Inches | | Millimeters | | Letter | Inches | | Millimeters | |
|--------|--------|------|-------------|-----|--------|----------|------|-------------|--------|
| | Max | Min | Max | Min | | Max | Min | Max | Min |
| A | 2.44 | --- | 61.98 | --- | F | .450 | .430 | 11.430 | 10.922 |
| B | 2.45 | --- | 62.23 | --- | G | 2.198 | ---- | 55.829 | --- |
| C | .59 | --- | 14.99 | --- | H | .33 | .27 | 8.38 | 6.86 |
| D | .25 | ---- | 6.35 | --- | J | .181 | --- | 4.597 | --- |
| E | .123 | ---- | 3.124 | --- | K | .130 dia | ---- | 3.302 dia | --- |

FIGURE 13. Switch configuration and schematic PIN M3828/15-18.

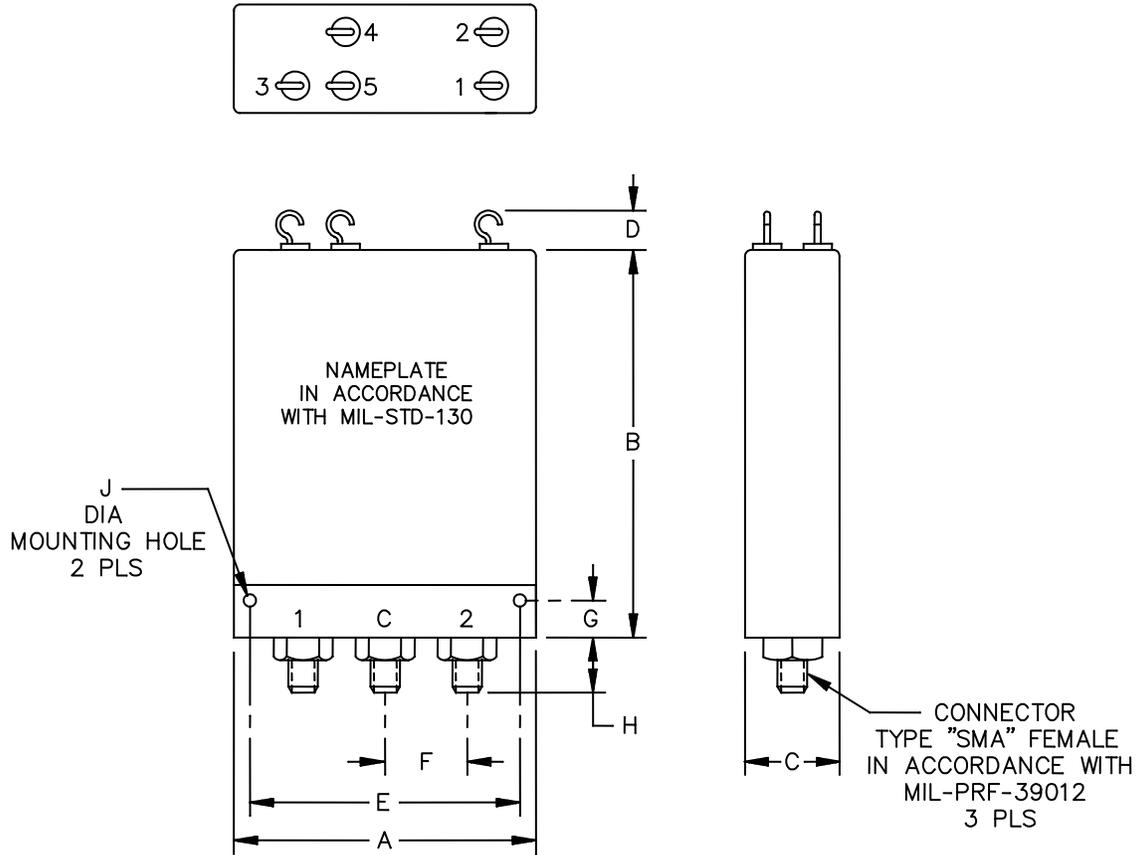
MIL-DTL-3928/15G



NOTES:

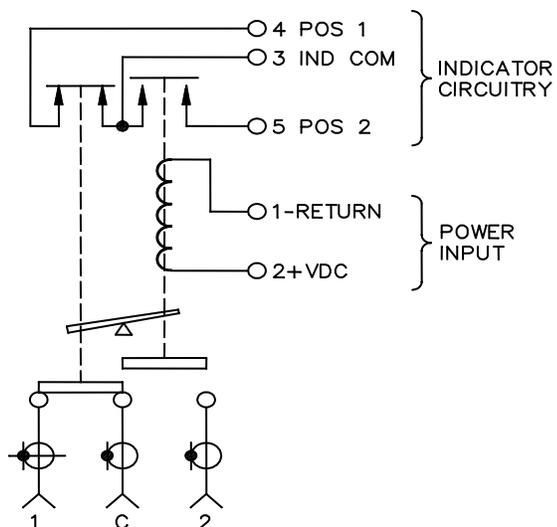
1. Dimensions are in inches. Metric equivalents may be determined using 1.00 inch = 25.4 mm.
2. Unless otherwise specified, tolerances are $\pm .010$ for three place decimals; $\pm .030$ for two place decimals.

FIGURE 13. Switch configuration and schematic PIN M3828/15/-18- Continued.



| Letter | Inches | | Millimeters | | Letter | Inches | | Millimeters | |
|--------|--------|------|-------------|--------|--------|--------|------|-------------|--------|
| | Max | Min | Max | Min | | Max | Min | Max | Min |
| A | 1.37 | 1.31 | 34.79 | 33.27 | F | .450 | .430 | 11.430 | 10.922 |
| B | 1.43 | ---- | 36.32 | ---- | G | .20 | .14 | 5.08 | 3.56 |
| C | .510 | .490 | 12.954 | 12.446 | H | .34 | .28 | 8.64 | 7.11 |
| D | .35 | ---- | 8.89 | ---- | J | .103 | .083 | 2.616 | 2.108 |
| E | 1.22 | 1.16 | 30.99 | 29.46 | | | | | |

FIGURE 14. Switch configuration and schematic, PIN M3928/15-19.

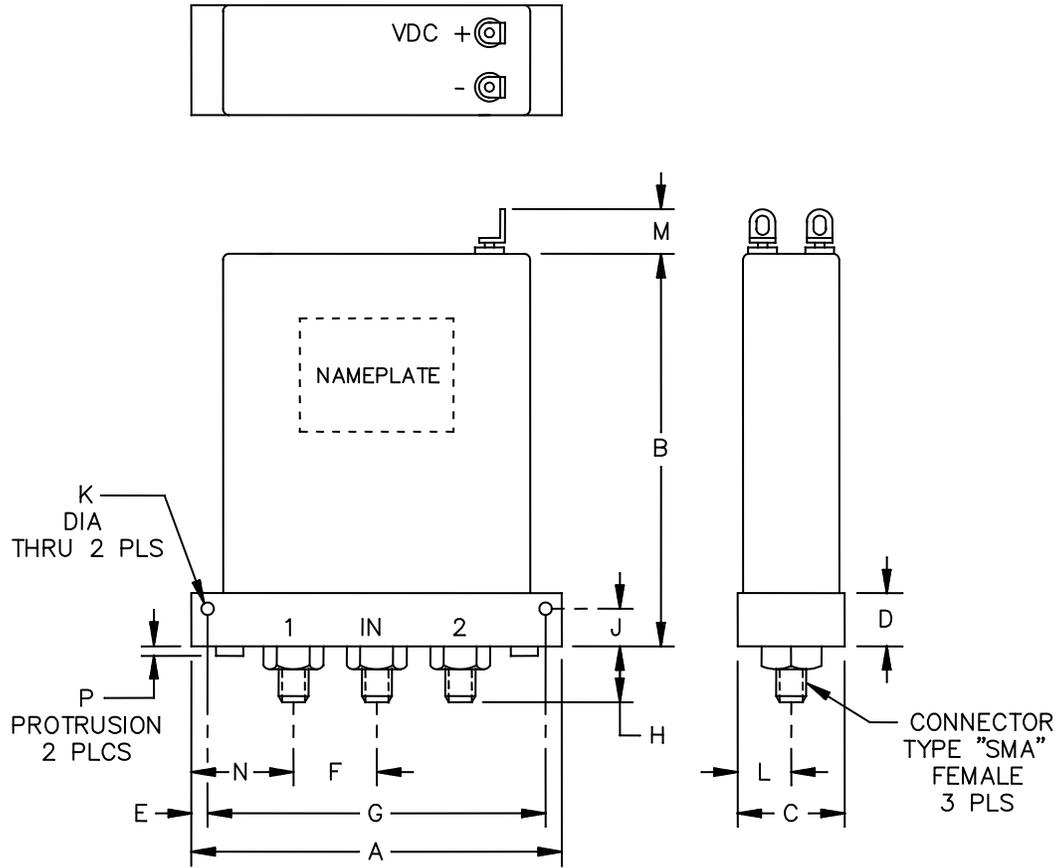


SCHEMATIC DIAGRAM SHOWN IN
FAILSAFE POSITION 1

NOTES:

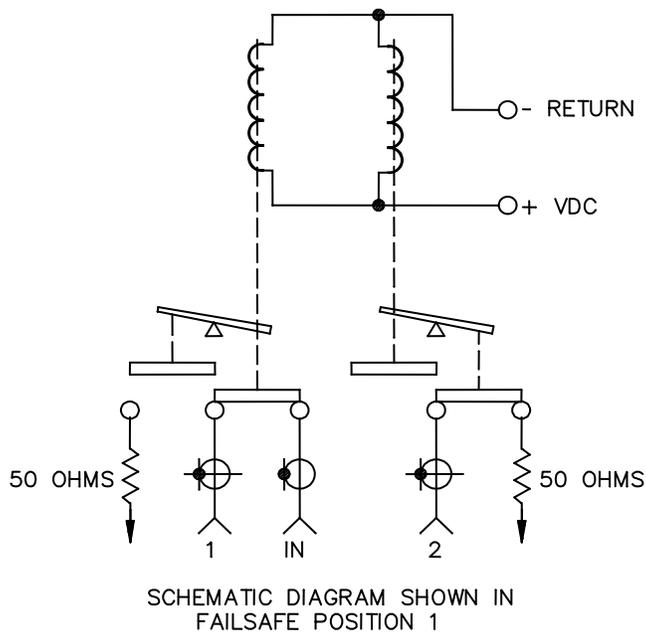
1. Dimensions are in inches. Metric equivalents may be determined using 1.00 inch = 25.4 mm.
2. Unless otherwise specified, tolerances are $\pm .010$ for three place decimals; $\pm .030$ for two place decimals.

FIGURE 14. Switch configuration and schematic, PIN M3928/15-19 – Continued.



| Letter | Inches | | Millimeters | | Letter | Inches | | Millimeters | |
|--------|--------|-------|-------------|--------|--------|----------------|------|------------------|-------|
| | Max | Min | Max | Min | | Max | Min | Max | Min |
| A | 2.27 | 2.23 | 57.66 | 56.64 | H | .32 | .28 | 8.13 | 7.11 |
| B | 2.12 | 2.08 | 53.85 | 52.83 | J | .181 | .161 | 4.597 | 4.089 |
| C | .54 | .50 | 13.72 | 12.70 | K | .090 thru .096 | | 2.286 thru 2.438 | |
| D | .250 | .230 | 6.350 | 5.842 | L | .28 | .24 | 7.11 | 6.09 |
| E | .10 | .06 | 2.54 | 1.52 | M | .35 | --- | 8.89 | --- |
| F | .46 | .42 | 11.68 | 10.67 | N | .71 | .67 | 18.03 | 17.02 |
| G | 2.100 | 2.080 | 53.340 | 52.832 | P | .060 | -- | 1.524 | ---- |

FIGURE 15. Switch configuration and schematic, PIN M3928/15-20.



NOTES:

1. Dimensions are in inches. Metric equivalents may be determined using 1.00 inch = 25.4 mm.
2. Unless otherwise specified, tolerances are $\pm .010$ for three place decimals; $\pm .020$ for two place decimals.

FIGURE 15. Switch configuration and schematic, PIN M3928/15-20 - Continued.

TABLE I. Electrical and performance characteristics. 1/

| PIN M3928/15- | Fig. No. | Hous- ing | Frequenc y range dc to GHz | VSWR | Insertion loss (dB) Max | Isolation (dB) Min | Switch time (ms) Max | Position indication circuit and rating | Life cycles x 1000 Min. | Fail-safe or latching | Operating current (A) 2/ Max | Holding current (A) 2/ Max | Nominal operating voltage | Pickup voltage | Dropout voltage | Power and indicator connector | Weight (oz) Max |
|------------------|-------------|--------------|-------------------------------------|-----------------|----------------------------------|--------------------------|-------------------------------|---|----------------------------------|-----------------------------|---------------------------------------|-------------------------------------|---------------------------------|-------------------|--------------------|-------------------------------------|-----------------------|
| | | | | Max | | | | | | | | | | | | | |
| 01N, S 3/ | 1 | I | 18 | 1.5:1 | 0.5 | 60 | 20 | None | 1000 | F | 0.12 | 0.12 | 28 V dc | <20 V dc | <16 V dc | Solder terminal | 2 |
| 02N, S 4/ | 1 | E | 18 | 1.5:1 | 0.5 | 60 | 20 | None | 1000 | F | 0.15 | 0.15 | 28 V dc | <20 V dc | <16 V dc | Solder terminal | 2.5 |
| 03N, S 5/ | 2 | E | 18 | 1.5:1 | 0.5 6/ | 60 | 15 | None | 1000 | F | 0.12 | 0.12 | 28 V dc | <20 V dc | < 8 V dc 7/ | Solder terminal | 2.5 |
| 04N, S | 2 | E | 18 | 1.5:1 | 0.5 | 60 | 15 | .5 A at 10 W | 1000 | F | 0.12 | 0.12 | 28 V dc | <20 V dc | <16 V dc | Solder terminal | 2.5 |
| 05N, S 8/ | 3 | E | 18 | 1.5:1 | 0.5 | 60 | 20 | .2 A at 40 V ac | 1000 | F | 0.13 | 0.13 | 28 V dc | <24 V dc | <16 V dc | Solder terminal | 2 |
| 07N, S 4/ | 4 | E | 18 | 1.5:1 | 0.5 | 60 | 20 | None | 1000 | L | 0.35 | 0 | 28 V dc | <20 V dc | --- | Solder terminal | 2 |
| 08N, S 4/ | 5, 5A | E | 18 | 1.5:1 | 0.5 | 60 | 20 | 1A at 115 V ac | 1000 | L | 0.35 | 0 | 28 V dc | <20 V dc | --- | Solder terminal | 2 |
| 09N, S | 6 | I | 1.27-1.37 | 1.5:1 1.3:1 | 0.3 | 60 | 25 | None | 1000 | F | 0.13 | 0 | 28 V dc | 9/ | 9/ | Solder terminal | 1.5 |
| 10N, S | 7 | I | 18 | 1.5:1 | 0.5 | 60 | 20 | 1A at 115 V ac | 1000 | F | 0.12 | 0.12 | 28 V dc | <20 V dc | <16 V dc | Solder terminal | 2 |
| 11N, S | 8 | E | 18 | 1.5:1 | 0.5 | 60 | 20 | None | 1000 | F | 0.06 | 0.06 | 48 V dc | <38 V dc | <30 V dc | Solder terminal | 2 |
| 12N, S | 1 | I | 20 6 | 1.8:1 1.25:1 | 0.7 0.2 | 40 70 | 20 | None | 1000 | F | 0.12 | 0.12 | 28 V dc | <20 V dc | <16 V dc | Solder terminal | 2 |
| 13N, S | 7 | I | 20 | 1.8:1 | 0.7 | 40 | 20 | 1A at 115 V ac | 1000 | F | 0.12 | 0.12 | 28 V dc | <20 V dc | <16 V dc | Solder terminal | 2 |
| 14N, S 10/ | 9 | E | 18 | 1.5:1 | 0.5 | 60 | 20 | None | 1000 | F | 0.21 | 0.12 | 28 V dc +5 V dc 11/ | <20 V dc | <16 V dc | Solder terminal | 3 |
| 15N, S 10/ | 10 | E | 18 | 1.5:1 | 0.5 | 60 | 20 | None | 1000 | L | 0.35 | 0 | 28 V dc +5 V dc 11/ | <20 V dc | <16 V dc | Solder terminal | 3 |
| 16N, S 10/ | 11 | E | 18 | 1.5:1 | 0.5 | 60 | 20 | 1A at 115 V ac | 1000 | L | 0.35 | 0 | 28 V dc +5 V dc 11/ | | <16 V dc | Solder terminal | 3 |
| 17N, S | 12 | I | 12 | 1.5:1 12/ | 0.5 13/ | 60 | 20 | None | 1000 | F | .23 | .23 | 28 V dc | < 20 Vdc | <16 Vdc | Solder term. | 10 |
| 18N, S | 13 | I | 18 | 1.5:1 14/ | 0.5 15/ | 70 16/ | 20 | .2 A at 3 W | 1000 | L | .60 | 0 | 12 V dc | < 9 Vdc | --- | 9 pin D-sub | 5 |
| 19N, S | 14 | I | 18 | 1.5:1 17/ | 0.5 18/ | 60 19/ | 20 | .2 A at 3 W | 1000 | F | .12 | .12 | 28 V dc | < 20 Vdc | < 16 Vdc | Solder term. | 2 |
| 20N, S | 15 | I | 18 | 1.5:1 | 0.5 | 60 | 20 | None | 1000 | F | .35 | .35 | 28 V dc | <20 Vdc | < 16 Vdc | Solder term. | 3.5 |

See footnote end of table I

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- 1/ M3928/15-06 has been deleted.
- 2/ At nominal V dc and 20 deg C.
- 3/ Enclosure shall be explosion proof.
- 4/ Transient interface (RFI).
- 5/ The VSWR from dc to 7 GHz is 1.25:1 maximum.
- 6/ The insertion loss from dc to 7 GHz is 0.3 dB maximum.
- 7/ Switch must return to de-energized position at no less than 2 volts.
- 8/ Make before break sequence.
- 9/ Pulse operation: Switch shall change from open to closed position when +4 V dc min is applied Switch shall change from closed to open when voltage falls below +1.5 V dc.
- 10/ Logic voltage: Logic 0 - 0 to 0.4 V dc and Logic 1 - 2.4 to 5.5 V dc.
- 11/ +5 voltage deviation: ± 0.5 V dc.
- 12/ VSWR max for 1 to 4 GHz is 1.4:1, for dc to 1 GHz is 1.3:1.
- 13/ Insertion loss max for 1 to 4 GHz is 0.4 dB, for dc to 1 GHz is 0.3 dB.
- 14/ VSWR max for 8 to 12 GHz is 1.4:1, 4 to 8 GHz is 1.3:1, 1 to 4 GHz is 1.2:1, dc to 1 GHz is 1.1:1.
- 15/ Insertion loss max for 8 to 12 GHz is 0.4 dB, 4 to 8 GHz is 0.3 dB, 1 to 4 GHz is 0.2 dB, dc to 1 GHz is 0.1 dB.
- 16/ Isolation min for 8 to 12 GHz is 80 dB, 1 to 8 GHz is 90 dB, dc to 1 GHz is 95 dB.
- 17/ VSWR max for 8 to 12.4 GHz is 1.4:1, 4 to 8 GHz is 1.25:1, dc to 4 GHz is 1.2:1.
- 18/ Insertion loss max for 8 to 12.4 GHz is 0.4 dB, 4 to 8 GHz is 0.3 dB, dc to 4 GHz is 0.2 dB.
- 19/ Isolation min for 8 to 12.4 GHz is 65 dB, 4 to 8 GHz is 70 dB, dc to 4 GHz is 75 dB.

TABLE I. Electrical and performance characteristics - Continued.

MIL-DTL-3928/15G

REQUIREMENTS:

Dimensions and configurations: See figures 1 through 15.

Housing: These switches shall be optionally available with venting (for space applications). See MIL-DTL-3928, and see the acquisition document for space application unique design and test requirements.

RF connectors: Female connectors (3 places) shall meet the requirements of MIL-PRF-39012 and shall mate with SMA type male connectors in accordance with MIL-PRF-39012/55.

Termination: Open, except for -18 and -20.

Nominal impedance: 50 ohms.

Electrical and performance characteristics: See table I.

RF power handling capability (average): 25 watts (minimum), except -18 and -20, (2 watts minimum) for the terminations.

Operating temperature: -55°C to +85°C, except for dash number 03 which is -55°C to +110°C, dash number 17 which is 0°C to +70°C, dash number 19 which is 0°C to +50°.

Vibration: MIL-DTL-3928, Method I, except dash number 19 which is MIL-STD-167-1, Type 1 (5 to 25 Hz).

Part or Identifying Number (PIN): M3928/15- (and dash number from table I).

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

MIL-DTL-24308/3
MIL-DTL-24308/4
MIL-PRF-39012
MIL-PRF-39012/55
MIL-STD-130
MIL-STD-167-1

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