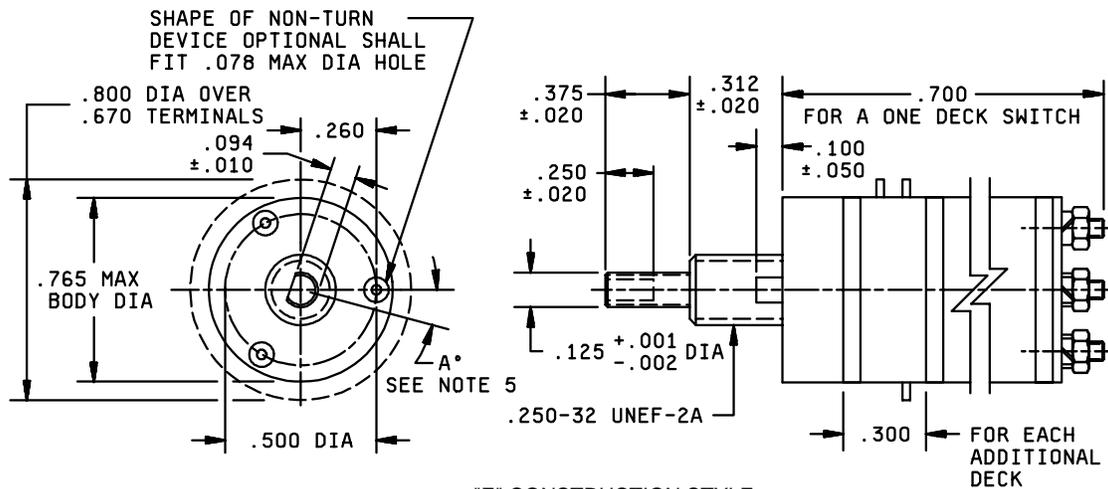


DETAIL SPECIFICATION SHEET

SWITCHES, ROTARY, CLOSED CONSTRUCTION,
 0.5 AMPERE, STYLE SR41

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

The complete requirements for procuring the switches described herein shall consist
 of this document and the latest issue of Specification MIL-S-3786.



"E" CONSTRUCTION STYLE
 (EXPLOSION-PROOF, CLOSED CONSTRUCTION
 WITHOUT SEALED SHAFT AND BUSHING)

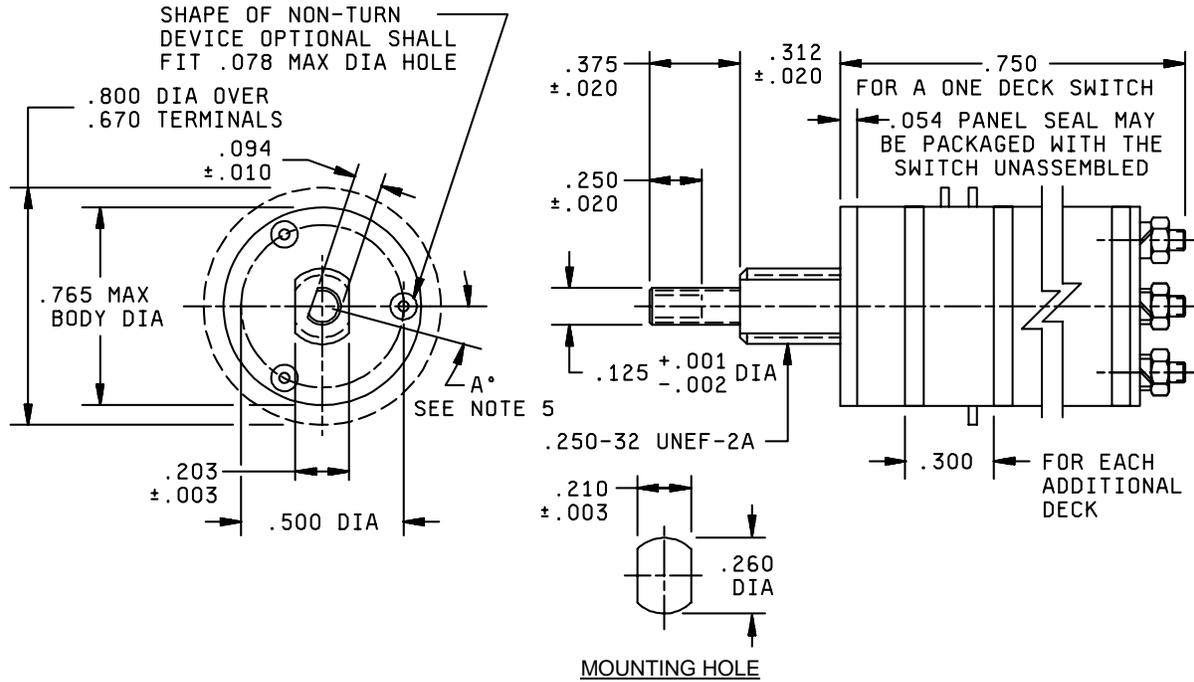
INCHES	MM	INCHES	MM	INCHES	MM
.001	.03	.094	2.39	.312	7.92
.002	.05	.100	2.54	.375	9.53
.010	.25	.125	3.18	.500	12.70
.020	.51	.250	6.35	.670	17.02
.050	1.27	.260	6.60	.700	17.78
.078	1.98	.300	7.62	.765	19.43
				.800	20.32

NOTES:

- Dimensions are in inches.
- Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.
- Unless otherwise specified, tolerances are ± 0.015 (.38 mm) and 3° on angles (non-accumulative).
- Maximum weight: one deck switch is 16 grams. Add 2.5 max grams for each additional deck and based upon 1 oz. = 28.35 grams.
- Shaft flat angle A° is the angle between a line through the center of the shaft, and center of the nonturn device and another line through the center of the shaft and perpendicular to the shaft flat, with switch in position number 1. This refers to panel position; see figure 2 for terminal location.

FIGURE 1. Style SR41 switch.

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"F" CONSTRUCTION STYLE

(EXPLOSION-PROOF, CLOSED CONSTRUCTION WITH (SEALED SHAFT AND BUSHING))

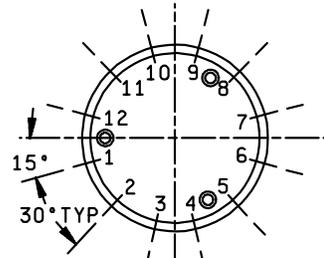
INCHES	MM	INCHES	MM	INCHES	MM
.001	.03	.125	3.18	.312	7.92
.002	.05	.203	5.16	.375	9.53
.003	.08	.210	5.33	.500	12.70
.010	.25	.250	6.35	.670	17.02
.020	.51	.260	6.60	.700	17.78
.094	2.39	.300	7.62	.765	19.43

NOTES:

1. Dimensions are in inches.
2. Metric equivalents (to the nearest .01 mm) are given for general information only and are based upon 1 inch = 25.4 mm.
3. Unless otherwise specified, tolerances are ±.015 (.38 mm) and ±3° on angles (non-accumulative).
4. Maximum weight: one deck switch is 16 grams. Add 2.5 max grams for each additional deck and based upon 1 oz = 28.35 grams.
5. Shaft flat angle A° is the angle between a line through the center of the shaft, perpendicular to the mounting bushing flats and another line through the center of the shaft and perpendicular to the shaft flat, with switch in position number 1. This refers to panel position; see figure 2 for terminal location.

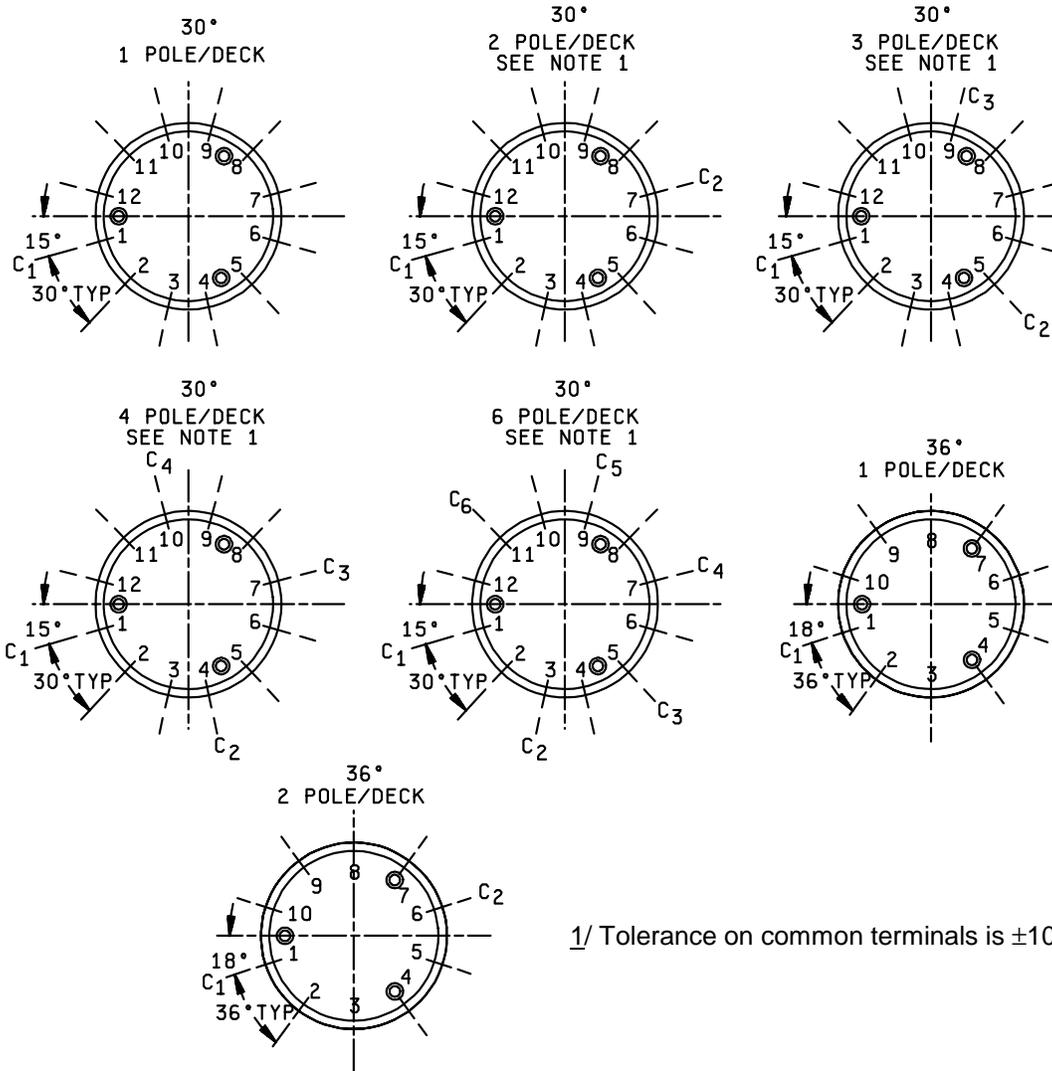
FIGURE 1. Style SR41 switch - Continued.

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EXAMPLE

SWITCH VIEWED FROM REAR WITH NON-TURN DEVICE AT NINE O'CLOCK ("C" REPRESENTS COMMON TERMINAL)



1/ Tolerance on common terminals is $\pm 10^\circ$.

FIGURE 2. Rear view of terminal configurations.

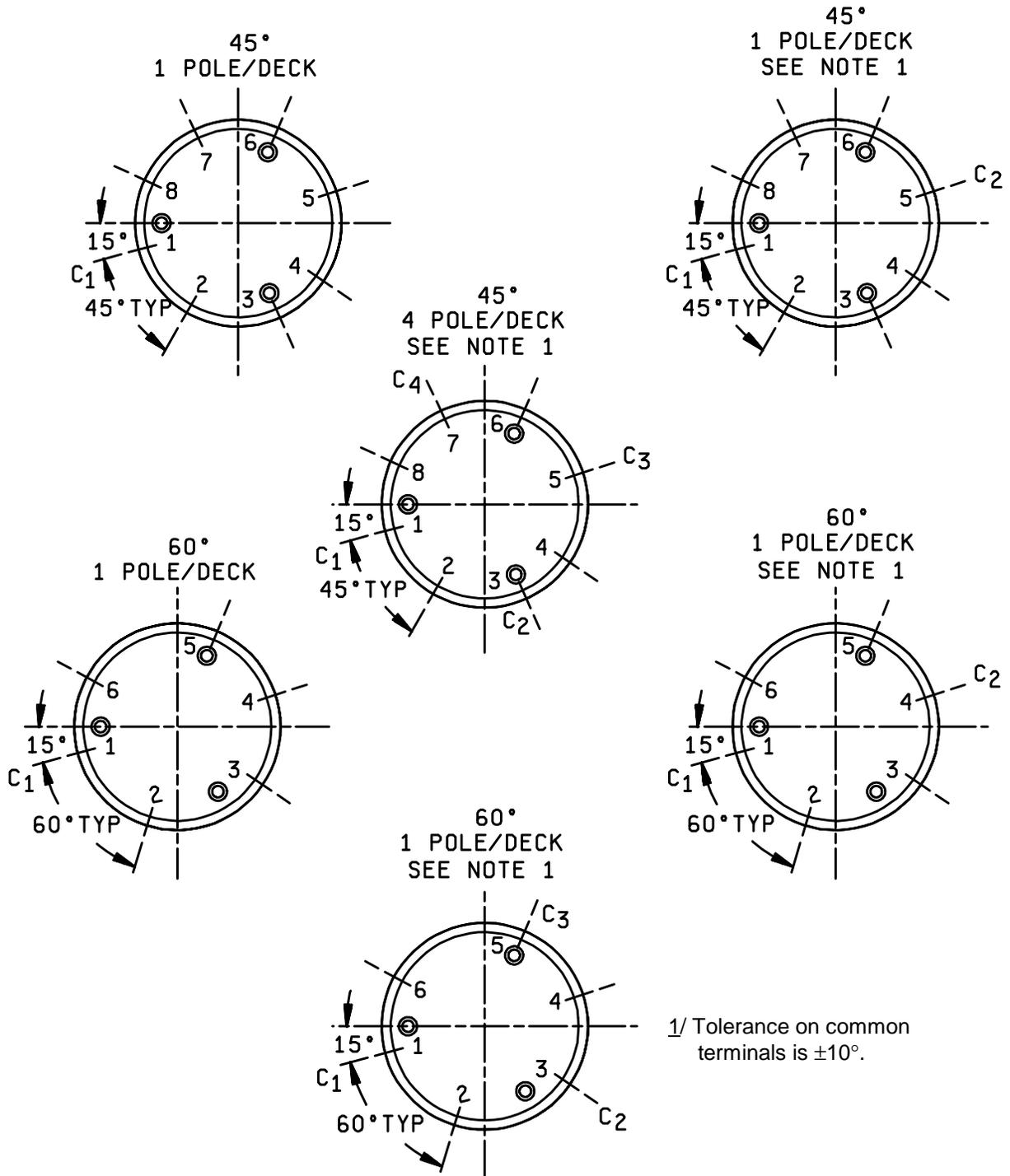


FIGURE 2. Rear view of terminal configurations - Continued.

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REQUIREMENTS:

Dimensions and configurations: See figures 1 and 2. Angle "A" is 15° for switches of 30°, 45°, and 60° angle of throw; 18° for switches of 36° angle of throw.

Angle of throw and number of poles per deck: See table IV.

Insulation material: Symbol P.

Construction style: See table IV.

Temperature-life characteristics: See table V.

Number of positions: See table V.

Vibration grade: Symbol 3 (10 to 2,000 Hz).

Shock type: Symbol H (high impact) and Symbol M (medium impact).

Altitude: Symbol C (70,000 ft).

Number of decks: See tables VI and VII.

Mounting hardware: Each switch shall be provided with two hexagon nuts, unless otherwise specified, 0.312 ± 0.010 inch across flats and 0.078 ± 0.010-inch thick; one internal tooth lockwasher .415 maximum OD.

Terminals: Terminals shall be designed so that the terminals can accommodate a wire having a diameter of 0.030 inch. The terminals shall project in a direction parallel to the place of the switch section.

Moisture resistance: After conclusion of test, insulation resistance shall be:
While switches are in humidity chamber - greater than 0.5 megohm. At the end of drying period - Not less than 10 megohms.

Stop strength: 10 pound-inches maximum.

Rotational torque: The minimum and maximum values of torque determined for shaft rotation shall be within the limits specified in table I.

Terminal strength (pull): A force of 2 pounds minimum shall be applied to the terminals.

TABLE I. Rotation-torque limits.

Total number of switch poles	Temperature	Torque (lb.-in)	
		Minimum	Maximum
Less than 4	Room	.32	1.7
	Minimum	.32	2.2
4 thru 8	Room	.4	2.7
	Minimum	.4	3.2
More than 8	Room	.5	3.5
	Minimum	.5	4.0

REQUIREMENTS: -Continued

Dielectric withstanding voltage: See table II.

TABLE II. Dielectric-test voltages.

Altitude	Test voltages
	<u>(Volts, rms) (60 Hz)</u>
At atmospheric pressure	500
At reduced barometric pressure	350

Extent of qualification: "F" construction style qualifies "E" construction style for the same switches provided two sample units of "E" construction switches are tested to explosion requirement to verify explosion proof capability.

Life (rotational): The test loads for the applicable circuit conditions shall be as specified in table III. Each of the loads specified for the applicable environmental condition shall be switches by at least one rotor contact of the switch.

TABLE III. Circuit values for life (rotational) test.

Environmental condition	Inductive load (2.8 henries)		Resistive load	
	Milliamperes	Volts, dc	Amperes	Volts
At atmospheric pressure and elevated temperature (85°C or 125°C) (25,000 cycles)	50	28	.125	28 dc
			.075	115 V rms 60 Hz
At reduced barometric pressure (approximately 25°C). 25,000 cycles	10	28	.050	28 dc
			.020	115 V rms 60 Hz
At atmospheric pressure and room temperature (approx. 25°C) (10,000 cycles) <u>1/</u>	250	28	.500	28 dc
			.500	115 V rms 60 Hz

1/ The contact resistance (applicable to ac and dc), after life tests shall not exceed 50 milliohms.

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PART NUMBER: The part number shall consist of the prefix :M3786/41-" and dash number consisting of four characters, one each from tables IV, V, VI, and VII as appropriate.

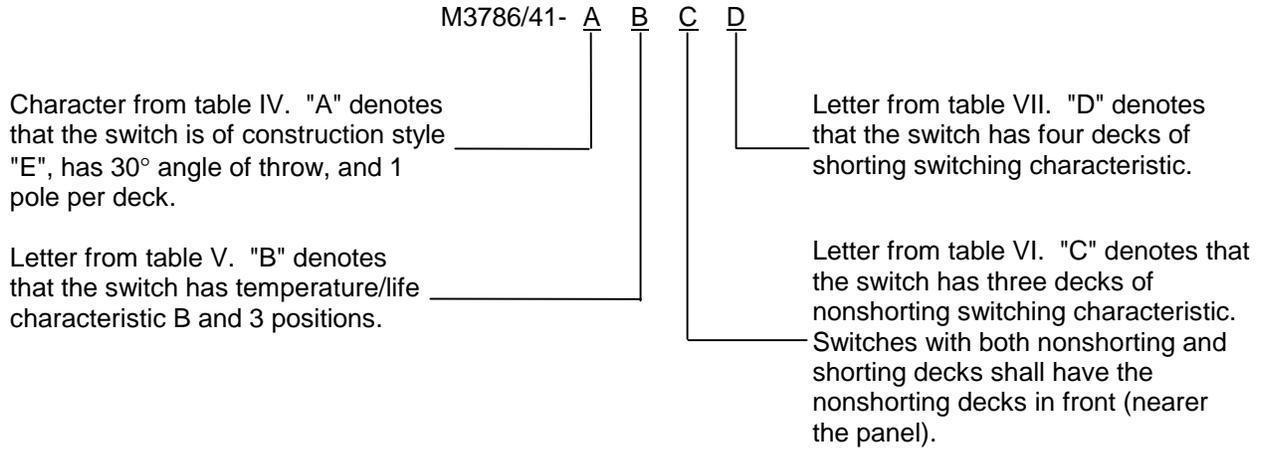


TABLE IV.

Code character for combination of construction style, angle of throw, and number of poles per deck.

Code letter	Construction style	Angle of throw	Poles per deck
A	E	30	1
B	E	30	2
C	E	30	3
D	E	30	4
E	E	30	6
F	E	36	1
G	E	36	2
H	E	45	1
J	E	45	2
K	E	45	4
L	E	60	1
M	E	60	2
N	E	60	3
P	F	30	1
Q	F	30	2
R	F	30	3
S	F	30	4
T	F	30	6
U	F	36	1
V	F	36	2
W	F	45	1
X	F	45	2
Y	F	45	4
Z	F	60	1
8	F	60	2
9	F	60	3

TABLE V.

Code letter for combination of temperature-life characteristic and number of switch positions.

Code letter	Temperature-life characteristic	Number of positions
A	B	2
B	B	3
C	B	4
D	B	5
E	B	6
F	B	7
G	B	8
H	B	9
J	B	10
K	B	11
L	B	12
M	B	C ^{1/}
N	C	2
P	C	3
Q	C	4
R	C	5
S	C	6
T	C	7
U	C	8
V	C	9
W	C	10
X	C	11
Y	C	12
Z	C	C ^{1/}

^{1/} Switch is continuous rotation type (no stops), and number of positions is dependent on angle of throw; 30° - 12 positions; 36° - 10 positions; 45° - 8 positions; and 60° - 6 positions.

TABLE VI.

Code letter for number of decks with
Nonshorting switching characteristics

Code letter	Number of decks with nonshorting switching
A	0
B	1
C	2
D	3
E	4
F	5
G	6
H	7
J	8
K	9
L	10

TABLE VII.

Code letter for number of decks with
shorting switching characteristics

Code letter	Number of decks with shorting switching
A	0
B	1
C	2
D	3
E	4
F	5
G	6
H	7
J	8
K	9
L	10

Custodian:
Air Force - 11
DLA - CC

Preparing activity:
DLA - CC

(Project No. 5930-1729-04)