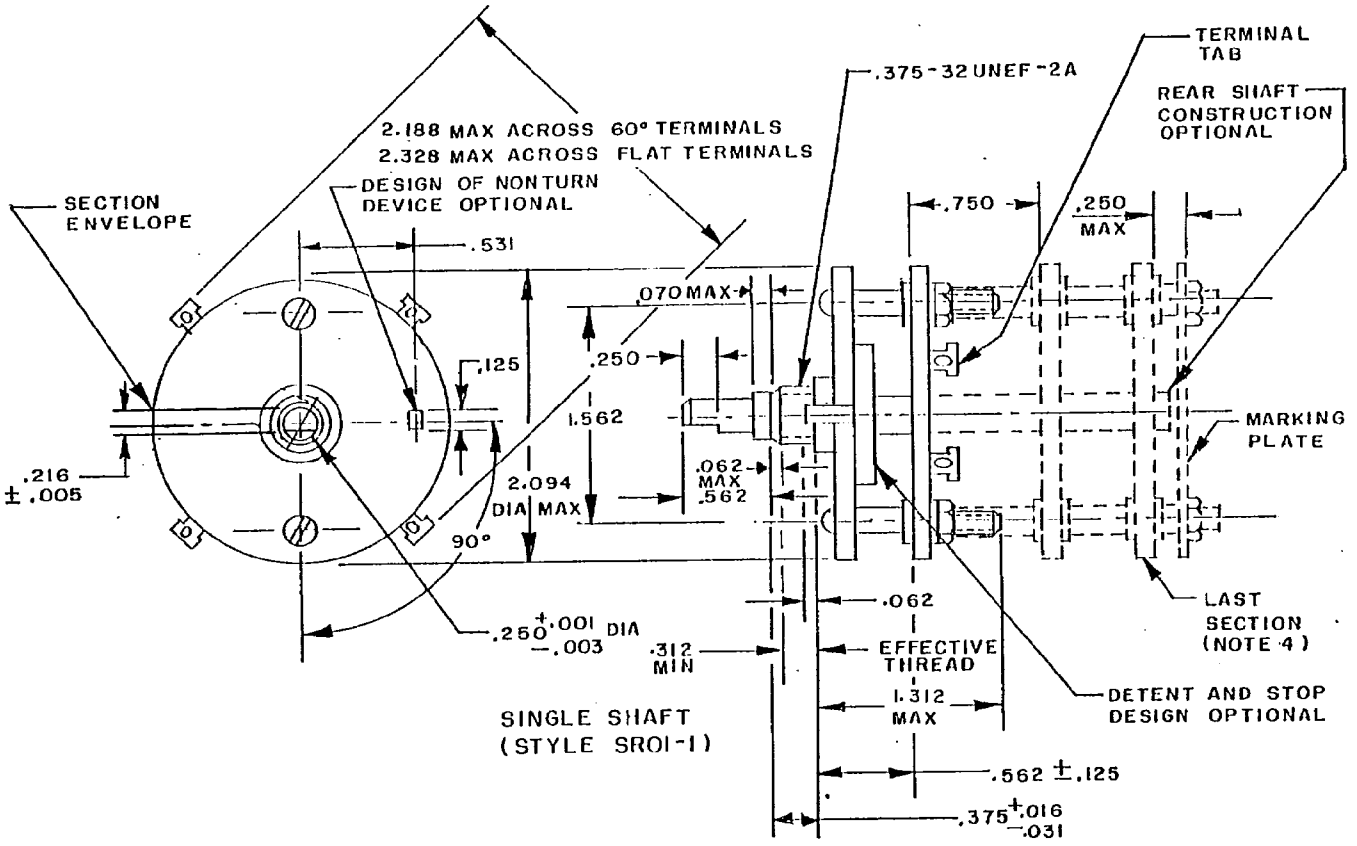
MILITARY SPECIFICATION SHEET

SWITCH, ROTARY, OPEN CONSTRUCTION, 1/2 AMPERE, STYLE SR01

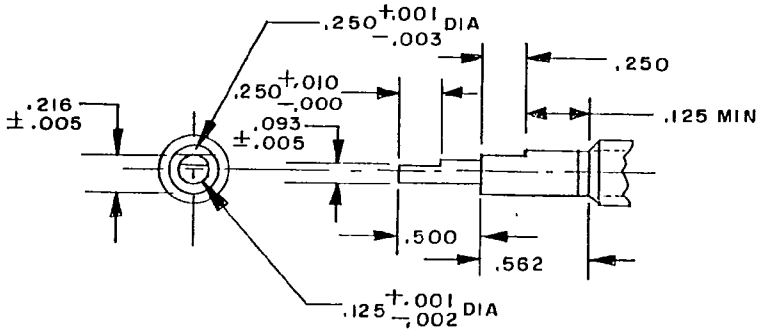
This specification is approved for use by all Departments and Agencies of the Department of Defense.

The requirements for acquiring the switch described herein shall consist of this specification sheet and the latest issue of MIL-S-3786.

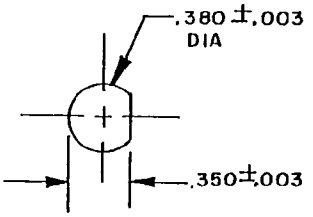


Ⓔ FIGURE 1. Style SR01 switch.

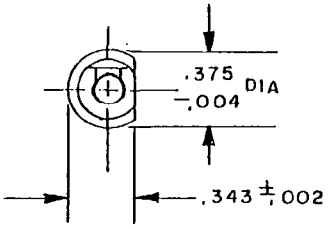
Ⓔ denotes change



CONCENTRIC SHAFT
(STYLE SR01-2)



PANEL PIERCING FOR
S CONSTRUCTION



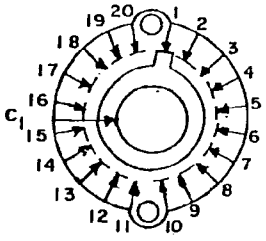
BUSHING FLAT FOR
S CONSTRUCTION

Inches	mm	Inches	mm	Inches	mm
.001	0.03	.093	2.36	.380	9.65
.002	0.05	.125	3.18	.562	14.27
.003	0.08	.216	5.49	.750	19.05
.005	0.13	.250	6.35	1.312	33.32
.010	0.25	.312	7.92	1.562	39.67
.016	0.41	.343	8.71	2.031	51.59
.031	0.79	.350	8.89	2.094	53.19
.062	1.57	.355	9.02	2.188	55.58
.070	1.78	.375	9.53	2.328	59.13

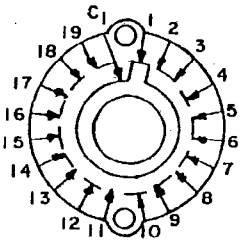
NOTES:
1. Dimensions are in inches.
2. Metric equivalents are given for general information only.
3. Unless otherwise specified, tolerance is ±.015 (0.38 mm)
4. The number of sections is optional.
5. Nonturn device as shown is not applicable to S construction switches.
(E) 6. Shaft-flat angle 90° is 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.
7. Shaft shown in maximum counterclockwise position for switches with stop and with switch in position number 1 for switches without stop.
8. For allowable variations, see MIL-S-3786 ordering data.
9. Front plate design optional provided it falls within the maximum O.D. of the section dimension referenced.

(E) FIGURE 1. Style SR01 switch - Continued.

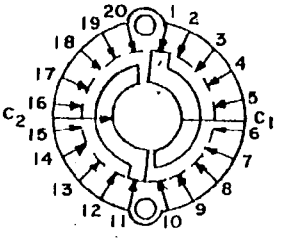
18° ANGLE OF THROW



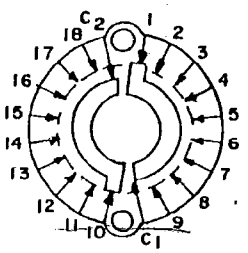
1 POLE
20 POSITIONS AND CONTINUOUS ROTATION



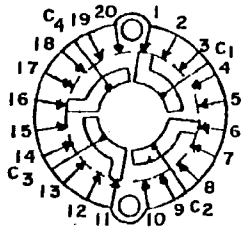
1 POLE
2,3,4,5,6,7,8,9,10, 11,12,13,14,15,16,17 18, AND 19 POSITIONS



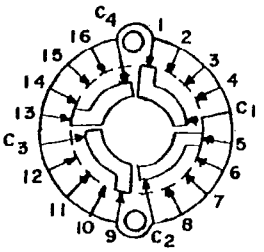
2 POLE
10 POSITIONS



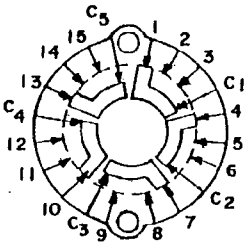
2 POLE
2,3,4,5,6,7,8 AND 9 POSITIONS



4 POLE
5 POSITIONS



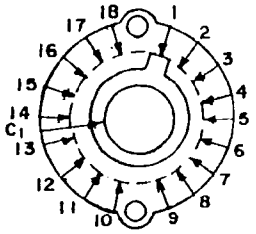
4 POLE
2,3 AND 4 POSITIONS



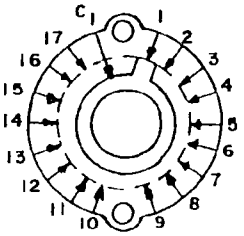
5 POLE
3 POSITIONS

FIGURE 2. Circuit diagrams - viewed from front or knob end with switch in extreme counterclockwise position.

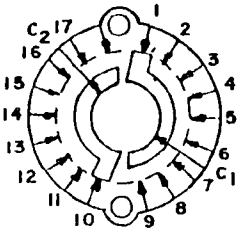
20° ANGLE OF THROW



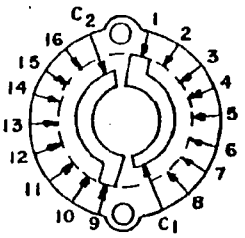
1 POLE
18 POSITIONS AND CONTINUOUS ROTATION



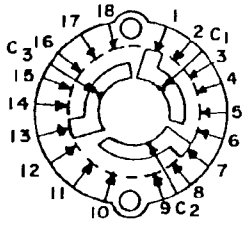
1 POLE
2,3,4,5,6,7,8,9,10,11,12 13,14,15,16 AND 17 POSITIONS



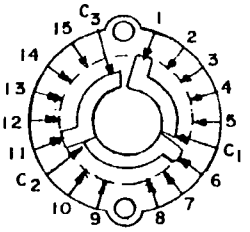
2 POLE
9 POSITIONS



2 POLE
2,3,4,5,6,7 AND 8 POSITIONS



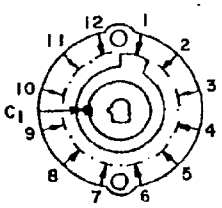
3 POLE
6 POSITIONS



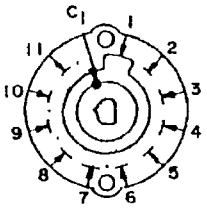
3 POLE
2,3,4 AND 5 POSITIONS

FIGURE 2. Circuit diagrams - viewed from front or knob end with switch in extreme counterclockwise position - Continued.

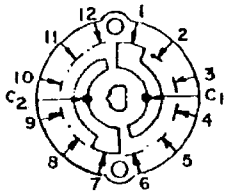
30° ANGLE OF THROW



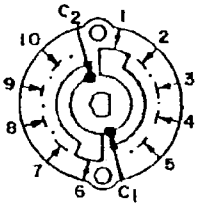
1 POLE
12 POSITIONS
AND CONTINUOUS
ROTATION



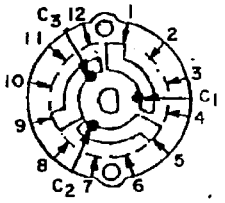
1 POLE
2,3,4,5,6,7,8,9
10 & 11 POSITIONS



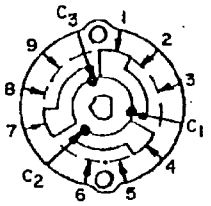
2 POLE
6 POSITIONS



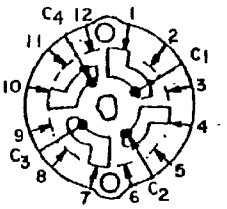
2 POLE
2,3,4 & 5 POSITIONS



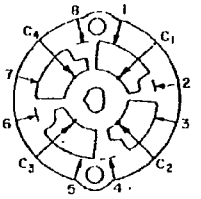
3 POLE
4 POSITIONS



3 POLE
2 & 3 POSITIONS

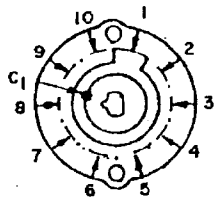


4 POLE
3 POSITIONS

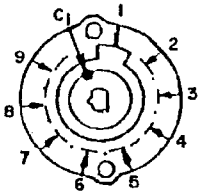


4 POLE
2 POSITIONS

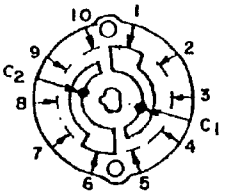
36° ANGLE OF THROW



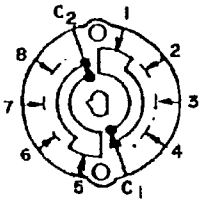
1 POLE
10 POSITIONS
AND CONTINUOUS
ROTATION



1 POLE
2,3,4,5,6,7,8
AND 9 POSITIONS



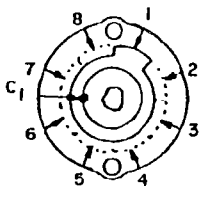
2 POLE
5 POSITIONS



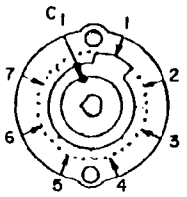
2 POLE
2,3 & 4 POSITIONS

FIGURE 2. Circuit diagrams - viewed from front or knob end with switch in extreme counterclockwise position - Continued.

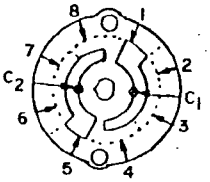
45° ANGLE OF THROW



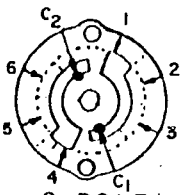
1 POLE
8 POSITIONS
AND CONTINUOUS
ROTATION



1 POLE
2,3,4,5,6 & 7
POSITIONS

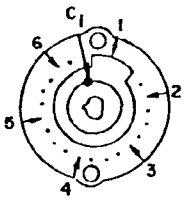


2 POLE
4 POSITIONS

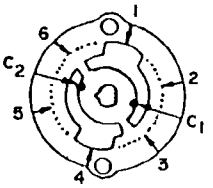


2 POLE
2 & 3 POSITIONS

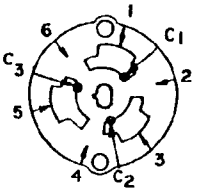
60° ANGLE OF THROW



1 POLE
2 THRU 6 POSITIONS
AND CONTINUOUS
ROTATION

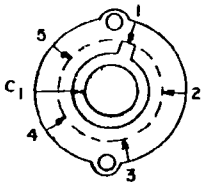


2 POLE
2 & 3 POSITIONS

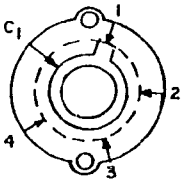


3 POLE
2 POSITIONS

72° ANGLE OF THROW



1 POLE
5 POSITION AND
CONTINUOUS ROTATION



1 POLE
2, 3 AND 4
POSITIONS

NOTE: For switch with fewer than maximum number of positions, short clips will be omitted from clockwise end of rotation.

FIGURE 2. Circuit diagrams - viewed from front or knob end with switch in extreme counterclockwise position - Continued.

REQUIREMENTS:

Dimensions and configurations: See figures 1 and 2.

Angle of throw: 18°, 20°, 30°, 36°, 45°, 60°, and 72°. See table V.

Terminals: The terminal tabs shall be bent at an angle of 60 ±15 degrees from the plane of the section. When flat terminals are required, the dimensions shall be as shown on figure 1.

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

TABLE I. Rotational-torque limits.

Temperature	Torque (pound-inch)	
	Minimum	Maximum
Room	1.75	6
Minimum	1.75	8

Construction type: See table IV.

Number of poles per deck: See table VI.

Number of positions: See table VI.

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

TABLE II. Electrical loads.

Environmental condition	Inductive load (Per MIL-I-81023)		Resistive load	
	Milliamperes	Volts, dc	Milliamperes	Volts
At atmospheric pressure	50	28	500 225 50	28 V dc 115 V rms 300 V rms
At reduced barometric pressure	---	---	350 100	28 V dc 115 V rms

Dielectric withstanding voltage: The applicable test voltage specified in table III shall be applied between the general switch elements.

TABLE III. Dielectric-test voltages.

Altitude	Test voltage
	Volts, rms
At atmospheric pressure	1,000
At reduced barometric pressure	400

Mounting hardware: Each switch shall be supplied with 1 each hexagon nut in accordance with MS25082-20 or equivalent, and one internal-tooth lockwasher in accordance with MS35333-42 or equivalent.

Contact resistance: For switches of life-temperature characteristics A, C, and E, the contact resistance at room temperature shall not exceed the following values:

Initial and after vibration and shock - - - - - - - 20 milliohms.

After moisture-resistance and salt spray- - - - - - 30 milliohms.

After initial soak and completion of life test- - - 40 milliohms.

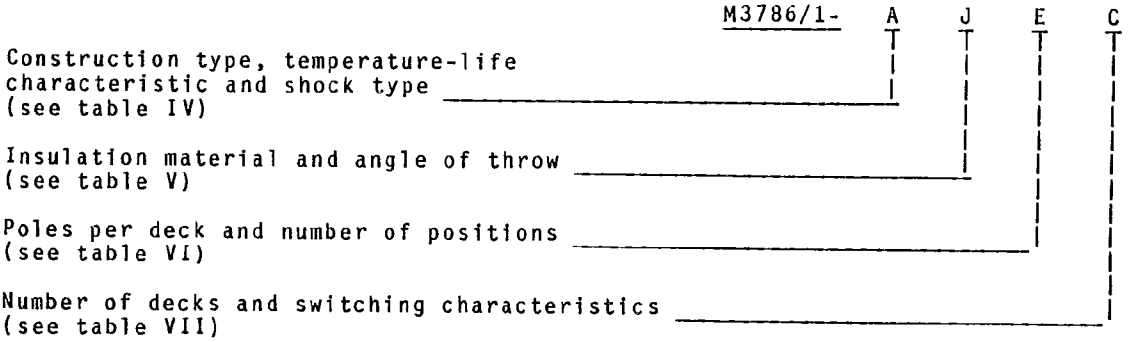
Ⓔ Vibration grade: Symbol 1 (10 to 55 Hz).

Shock type: See table IV.

Ⓔ Altitude: Symbol C (70,000 feet).

Part number: The military part number shall consist of M3786/1- (four letters selected from tables IV through VII) as shown in the following example:

(AJEC identifies a rotary switch of construction type N, temperature-life characteristic B, shock type H and M, ceramic or glass bonded mica insulation material, 36 degree angle of throw, 1 pole per deck, 5 positions, 2 decks, and nonshorting switching characteristics.)



NOTE: Part numbers shall be generated only to identify switches shown on figure 2. Acquisition of switches not identified by military part numbers shall be in accordance with the ordering data of MIL-S-3786.

TABLE IV. Code letter for combination of construction type, temperature-life characteristic, and shock type.

Code letter	Construction type	Temperature-life characteristic	Shock type
A	N	B	H and M
B	S	B	"
C	N	C	"
D	S	C	"
E	N	D	"
F	S	D	"
G	N	B	M
H	S	B	"
J	N	C	"
K	S	C	"
L	N	D	"
M	S	D	"

TABLE V. Code letter for combinations of insulation material and angle of throw.

Code letter	Insulation material	Angle of throw	Code letter	Insulation material	Angle of throw
A	C	18	K	G	36
B	G	18	L	P	36
C	P	18	M	C	45
D	C	20	N	G	45
E	G	20	P	P	45
F	P	20	Q	C	60
G	C	30	R	G	60
H	G	30	S	P	60
I	P	30	T	C	72
J	C	36	U	G	72
			V	P	72

TABLE VI. Code letters for combinations of poles per deck and number of positions.

Code letter	Poles per deck	Number of positions	Code letter	Poles per deck	Number of positions
A	1	C 1/	X	2	3
B	"	2	Y	"	4
C	"	3	Z	"	5
D	"	4	1	"	6
E	"	5	2	"	7
F	"	6	3	"	8
G	"	7	4	"	9
H	"	8	5	"	10
J	"	9	6	3	2
K	"	10	7	"	3
L	"	11	8	"	4
M	"	12	9	"	5
N	"	13	10	"	6
P	"	14	11	4	2
Q	"	15	12	"	3
R	"	16	13	"	4
S	"	17	14	"	5
T	"	18	15	5	2
U	"	19	16	5	3
V	"	20	17	6	2
W	2	2			

1/ Switch is continuous rotation type (no stops), and number of positions is dependent on angle of throw as follows:

Angle of throw	Positions
18°	20
20°	18
30°	12
36°	10
45°	8
60°	6
72°	5

TABLE VII. Code letter for combinations of number of decks and switching characteristics.

Code letter	Number of decks	Switching characteristics					
		First deck	Second deck	Third deck	Fourth deck	Fifth deck	Sixth deck
A	1	NS					
B	1	S					
C	2	NS	NS				
D	2	S	S				
E	2	NS	S				
F	3	NS	NS	NS			
G	3	S	S	S			
H	3	NS	NS	S			
J	3	NS	S	S			
K	4	NS	NS	NS	NS		
L	4	S	S	S	S		
M	4	NS	NS	NS	S		
N	4	NS	S	S	S		
P	5	NS	NS	NS	NS	NS	
Q	5	S	S	S	S	S	
R	5	NS	NS	NS	NS	S	
S	5	NS	S	S	S	S	
T	4	NS	NS	S	S		
U	5	NS	NS	NS	S	S	
V	5	NS	NS	S	S	S	
W	6	NS	NS	NS	NS	NS	NS
X	6	S	S	S	S	S	S
Y	6	NS	NS	NS	NS	NS	S
Z	6	NS	NS	NS	NS	S	S
1	6	NS	NS	NS	S	S	S
2	6	NS	NS	S	S	S	S
3	6	NS	S	S	S	S	S

Custodians:
Army - ER
Navy - EC
Air Force - 85

Review activities:
Army - MI
Navy - AS, OS
Air Force - 11, 17, 99
DLA - ES

User activities:
Army - AT, AV, ME, SM
Navy - CG, MC
Air Force - 19

Preparing activity:
Air Force - 85

Agent:
DLA - ES

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