

Compact, positive acting switches for control and transfer service on panels and switchboards.



SB-1 switch



SB-9 Switch



SB-10 switch



SBM Switch

ORDERING DIRECTIONS

There are two general classes of Type SB switches:

- I. the listed Model-Numbered Switches which include only the type SBM and SB-1 switches listed in this catalog
- II. the Unlisted Catalog-Numbered Switches which include all other type SBM and SB-1 switches not listed in this catalog, plus the type SB-9 and SB-10 switches described further on in this section.

Listed Model-numbered Switches

When ordering this class of switch, refer to: page 410 through 414 for type SBM switches, page 401 through 405 for type SB-1 switches

A. Basic Switch Number

Type SBM:	(Example)
10AA004	Voltmeter switch
10AA010	Ammeter switch
10AA106	Circuit breaker control switch
Type SB-1:	(Example)
SB1CF11X*	Voltmeter switch
SB1CA7X*	Ammeter switch
SB1B9X*	Circuit breaker control switch

(*panel mounting thickness in 1/16")

B. Suffix Number for Panel Thickness

The Type SB switches are designed for panel mounting; When Type SB switches are ordered panel thickness must be specified on all requisitions.

The Type SBM switches are adaptable for mounting on panels up to and including 1/4". There is no coding necessary to indicate panel thickness on this type of switch.

The Type SB-1 switches are adaptable for mounting on panels from 1/8" to 2" thick. When Type SB-1 switches are ordered, the panel thickness in increments of 1/16" must be specified on the requisition. This is done by adding the suffix X2 to the basic switch number when the switch is used on 1/8" panels. Use suffix X32 when used on 2" panel.

Example: SB1CF11X2
or SB1CF11X32

NOTE: If the panel thickness is not specified on the requisition, the factory will furnish the Type SB-1 switch for 1/8" panel.

C. Special Switches

For applications where the listed model switch is not exactly what is required, then it will be necessary to specify: "Similar to . . . except."

Example: "Similar to SB1CF11X2 except with pistol-grip handle."

SB

Control and Transfer Switches

Applications

- Voltmeter and ammeter transfer
- Circuit breaker control
- Switchboard applications

Features

- Compact design
- Rotary operation
- Lateral push/pull operation available
- Panel thickness selectable
- Selectable number of stages
- Assorted knobs, handles and escutcheons
- Locks available
- 600 VAC, 20A (250 A for 3.5 sec)



ORDERING DIRECTIONS

The factory will modify the model switch so that it will have a pistol-grip handle instead of a knurled handle. The model switch loses its Catalog listed identity and is now given an unlisted catalog number such as:

16SB1BB438SSM2P.

If other changes, such as adding a Yale lock or making a tandem switch are involved, then an unlisted catalog number will be assigned, such as:

117A800G1X2.

NOTE: Any change in the characteristics of the model switch will require the assigning of an unlisted catalog number. Typical changes involve:

1. handle (pistol grip to oval or knurled, etc)
2. operation (maintaining or spring return)
3. contacts (electrically separate to common connecting)
4. contact arrangement
5. escutcheon engraving
6. special mechanism (Yale lock, tandem, etc.)

Unlisted Catalog-numbered Switches

This class of switches includes all the Type SBM and SB-1 switches which are not Catalog listed, plus all the Type SB-9 and SB-10 switches which are described on pages 406 and 408.

These switches are designed to meet the customer's specifications in regard to contact arrangement, type of handle, operation, escutcheon engraving, housing, and other special features that are available within the limits of the Type SB switch design.

A. Unlisted Catalog Number

(Example)

10AB300	type SBM Switch
16SBMB3A02T1S2P1	type SBM switch
116A250G1X2	type SB-1 switch
367A900G1X2	type SB-1 switch
104A7045G1X2	type SB-9 switch
395A717G1X2	type SB-10 switch

It will be necessary for an engineer at the factory to check the original drawing to determine exactly what was furnished.

B. Unlisted Switches (Coded)

Example: 16SB1BB300SSM2P
 engrave front view, "1-OFF-2"; refer to pages 399 and 400 for coding information

16SB1 = SB-1 switch

BB = 2 stages, electrically separate contacts

300 = 3 positions (number assigned at the factory, also indicates contact arrangement)

S = standard textolite cover

S = standard escutcheon

M = maintaining contact

2 = 2/16" or 1/8" panel

P = pistol handle

C. Ordering Check List

For convenience, check the following list of requirements that the factory must be furnished when a Type SB switch is ordered. Refer to pages 399 through 409, for descriptive information. Use ordering instructions and forms which are contained in GET-6169.

Furnish the following information on each form and send to the factory with the requisition:

1. type of switch (SBM, SB-1, etc.)
2. type of handle (oval, pistol, etc.)

NOTE: fixed black handles are furnished with the switch; removable handles must be ordered as a separate item by the purchaser

3. type of operation
 - a. Maintained
 - b. Spring return

4. panel thickness

SBM

1/4" (standard) 1 and 1-1/2" (special order)

SB-1, 9, 10

1/8" to 2" must be specified on order or switch will be supplied for 1/8"

5. escutcheon engraving
6. circuit designation plate engraving
7. jumpers (refer to fig. 1a or 1b)
8. locks (refer to fig. 1c)

JUMPERS

Greater switch flexibility can be achieved by use of jumpers (Figs. 1a & 1b). When jumpers are ordered with the switch, they are supplied unassembled without additional cost. Jumpers may also be purchased separately and assembled on existing switches.

Fig. 1a. SBM jumpers

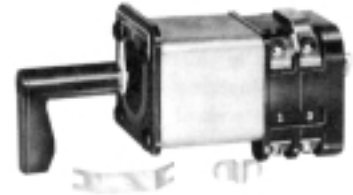


Fig. 1b. SB-1, 9, 10 jumpers



LOCKS

Two different types of locks are available. Each allows the switch to be locked in one or more positions. One lock is built into the operating handle. The other lock is separately mounted on the panel above the switch, and when necessary, can be coordinated with a Kirk Key-interlock scheme.

When it is necessary to lock switches in more than one position, a 45-degree space must be provided between adjacent locking positions. Therefore, eight is the maximum number of lock positions that can be furnished.

Fig. 1c. Locks for SB-1, SB-9, and SB-10



Kirk Yale key lock



Carbon lock

DIMENSIONS (For estimating only)

Fig. 2. SB-1 switch with fixed handles

Fig. 3. Panel mounted type SB-9 switch

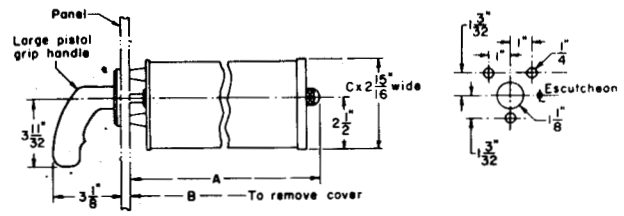
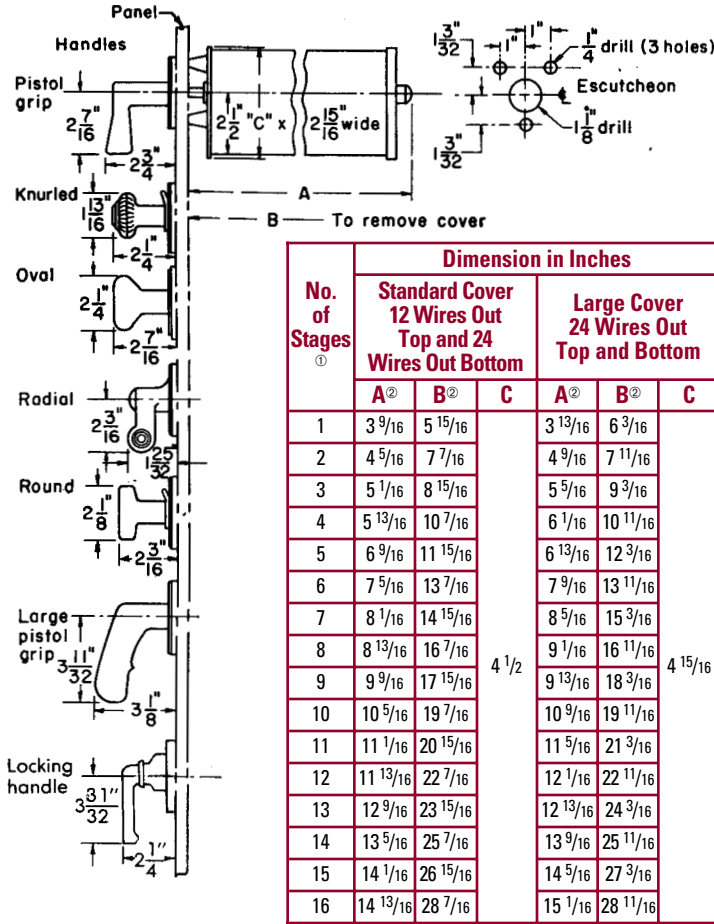
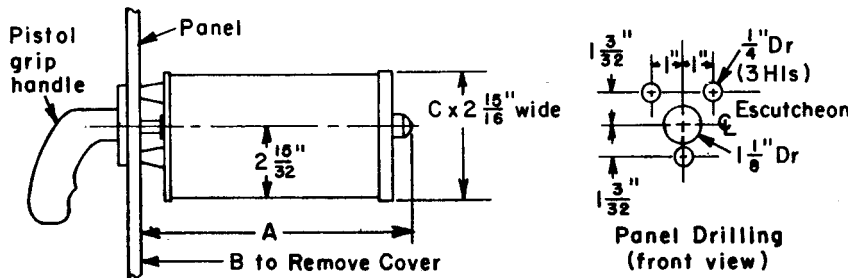


Fig. 4. Panel-mounted type SB-10 switch



- ① For spring-return switches when more than three and less than seven contacts close in the normal handle position, add 3/4" to "A" and 1-1/2" to "B". When seven or more contacts close in the normal handle position, add 1-1/2" to "A" and 3" to "B".
- ② For pull-to-lock or pull-to-turn add 3/4" to "A" dimension and 1-1/2" to "B" dimension.
- ③ Includes both lateral and rotary stages.

Note: Removable handles are similar to fixed handles and available in all types except radial and the locking handle. They do not alter switch dimensions or panel drilling.

SHIPPING WEIGHTS

Type SB-1 (1 stage) 2 lbs

Type SB-9 (1 stage) 3 lbs Add 6 oz for each additional stage.

Type SB-10 (1 stage) 3-1/2 lbs Add 6 oz for each additional stage.

SB-1 AND SB-9 UNLISTED SWITCHES ORDERING

The guide below is for unlisted switches which are numbered at the factory. Use it only as a guide to identify catalog numbers assigned by the factory.

Basic switch ^①		Code letters ^②				Special features only ^③	
*	*	*	****	*	*	*	****
16SB1							Design type common to all SB-1 switches
16SB9							Design type common to all SB-9 switches
A							1 stage
B							2 stages
C							3 stages
D							4 stages
E							5 stages
F							6 stages
G							7 stages
H							8 stages
K							9 stages
L							10 stages
M							11 stages
N							12 stages
P							13 stages
R							14 stages
T							15 stages
U							16 stages
A							All fixed contacts thus: 0-I-I-O-I-I-O
B							All fixed contacts thus: 0-I-I-O 0-I-I-O
C							All fixed contacts thus: 0-I-I-I-I-O
D							Misc. combinations of A, B, C, E, F & G and single contacts (see example -)
E							All fixed contacts thus: 0-I-I-O-I-I-O
F							All fixed contacts thus: 0-I-I-O 0-I-I-O
G							All fixed contacts thus: 0-I-I-I-I-O
H							Misc. combinations of A, B, C, E, F & G and single contacts (see example -)
K							All fixed contacts thus: 0-I-I-O 0-I-I-O
M							Misc. combinations of A, B, C, E, F & G and single contacts (see example -)
			****				Cont. development, factory assigned; first digit 1-8 shows number of positions rest of number is a sequential number (3 or 4 digit number)
				S			Standard cover
				L			Large cover
				*			For obsolete cover features see √
					*		Escutcheon (see table 1)
					*		Spring return or maintaining contacts (see table 2 for SB-1; see table 3 for SB-9)
					*		Panel thickness: indicate number of 1/16"; example: 2 = 1/8" f, 3 = 3/16" f, 4 = 1/4" etc.; 99 = no panel thickness involved
						D	Round handle V-6047044-1
						K	Knurled handle K-6079120-1
						L	Large pistol grip handle K-6208137-1
						P	Small pistol grip handle K-6046074-1
						R	Radial handle V-6047043-1
						V	Oval handle K-6046075-1
						Y	Omit handle
						E	Lever V-6248034-1
						C**	Locking handle (carbon lock)
					*		For obsolete handle see ≈
					**	P1 - P12	pull to lock
					**	H1 - H16	Palladium contacts: H1 = 1 stage, H2 = 2 stage, H3 = 3 stage... H16 = 16 stage
					**		For obsolete features see Δ

Notes:

- ① Basic number assigned by factory engineers only to identify a special contact arrangement
- ② Suffix added by factory engineers to complete switch to customer's specifications
- ③ Misc. combinations example:
 - 0-I-I-O-I-I-O
 - 0-I-I-I-I-O
 - 0-I-I-O 0-I-I-O
 - 0-I-I-I-I-O
 - 0-I-I-O
 - 0-I-I-O
- ④ A = explosion proof; W = watertight & dusttight; P = oil-filled; M = large fabricated metal; D = slotted end cover; V1 = std. vert. split; V2 = lg. vert. split; H1 = std. horiz. split; H2 = lg. horiz. split
- ⑤ Switches ordered for 1/16" to 3/16" will be supplied for 1/8" panel mounting which will accommodate this range
- ⑥ W = watertight handle
- ⑦ **Sequential latch:** S1 = latching in CW & CCW positions; S2 = will prevent repeated CCW throw; S3 = will prevent repeated CW throw
Right angle drive: A1 = switch mounted to the left; A2 = switch mounted to the right; A3 = switch mounted up; A4 = switch mounted down
Palladium contacts: X1 = 1 - 4 stages; X2 = 5 - 8 stages; X3 = 9 - 12 stages; X4 = 13 - 16 stages (see H1, H2, etc. for up-to-date nomenclature usage)
Ratchet mechanism: R1 = CW; R2 = CCW

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SB-1 AND SB-9 UNLISTED SWITCHES ORDERING

Table 1: SB-1 or SB-9 Escutcheon

Code	Escutcheon Number	Typical Model Handle No.	Throw
Handle Removable in Vertical Position			
A	6016164-3	16SB1CC1	135° CW
A	-3	CC18	360°
B	-4	CC2	135° CW
B	-4	CC19	360°
C	-5	CC3	135° CW
C	-5	CC15	360°
D	-6	CC4	135° CW
D	-6	CC11	45° CW & CCW
D	-6	CC22	45° CCW
D	-6	CC27	360°
E	-7	CC5	45° CW
E	-7	CC12	75° CW
E	-7	CC13	45° CW & CCW
E	-7	CC20	360°
E	-7	CC25	75° CCW
F	-8	CC6	45° CW
F	-8	CC14	45° CW & CCW
F	-8	CC24	360°
G	-9	CC7	45° CW "I" Eng.
G	-9	CC8	45° CCW "R" Eng.
G	-9	CC17	45° CCW
G	-9	CC26	135° CCW
G	-9	CC29	45° CW
G	-9	CC21	360°
H	-10	CC23	360°
H	-10	CC9	45° CW "I" Eng.
H	-10	CC10	45° CCW "R" Eng.
H	-10	CC31	45° CW
H	-10	CC32	45° CCW
J	-23	CC18	360°
Y	-24	CC19	360°
Z	-25	CC21	360°
Handle Removable — 90° CCW			
K	6016164-11	16SB1CC1	135° CW
K	-11	CC18	360°
L	-12	CC2	135° CW,
L	-12	CC19	360°
M	-13	CC3	135° CW
M	-13	CC15	360°
N	-14	CC11	45° CW & CCW
N	-14	CC27	360°
N	-14	CC4	135° CW
N	-14	CC22	45° CCW
Fixed Handle			
P	6016164-60	Pull to Lock (Target)	
R	6016164-15	Round	
S	6016164-1	Standard	
T	6402670G*	Target	
U	Omit Escutcheon		
V	Special Escutcheon		
Removable Handle			
W	Omit Escutcheon		
X(00)	Special Escutcheon		

* Number to be assigned

Table 2: SB-1 Spring Return and Maintaining

Code	Description
Combination of Spring Return and Maintaining Contact	
A	S.R. from 45° CW to normal
B	S.R. from 45° CCW to normal
C	S.R. from 45° CW to normal (one extra stage) 
D	S.R. from 45° CCW to normal (one extra stage) 
E	S.R. from 90° CW to normal
F	S.R. from 90° CCW to normal
G	S.R. from 90° CW to normal (one extra stage) 
H	S.R. from 90° CCW to normal (one extra stage) 
K	S.R. from 45° CW to normal (two extra stages) 
L	S.R. from 45° CCW to normal (two extra stages) 
M	Maintaining contacts
Pull To Lock	
P	S.R. from 45° CW & CCW to normal, pull to lock in 45° CCW, then turn to 75° CCW & pull to lock
R	S.R. all positions except when locked, pull to lock at 75° CCW
Spring Return Only	
S	S.R. from all positions to normal
T	S.R. from all positions to normal (one extra stage) 
U	S.R. from all positions to normal (two extra stages) 

Abbreviations
 S.R. = Spring Return
 CW = Clockwise
 CCW = Counterclockwise

Symbols



-  = one extra stage for torsion spring
-  = two extra stages for additional torsion springs

Table 3: SB-9 Spring Return and Maintaining

Code	Description
Maintaining Except	
A	S.R. from 45° CW to Normal
B	S.R. from 45° CCW to Normal
C	Same as A but has 1 extra stage for extra spring
D	Same as B but has 1 extra stage for extra spring
J	S.R. from 75° CW to 45° CW & from 75° CCW to 45° CCW
Maintaining	
M	Maintaining Contact for all 45° Positions
N	Maintaining Contact for all 30° Positions
K	Maintaining Contact for 60° Positions
V	Maintaining Contact for all 37-1/2° Positions
L	Maintaining Contact for all 75° Positions
E	V 90°
F	+ 90°
X	Special
Spring Return	
S	S.R. for all Combinations of 30, 37-1/2°, 45°, 60°, 75°, 90° CW & CCW
T	Same as S but has 1 extra stage for extra spring
Spring Return with Provision for Intermediate Temporary Contact Position at the Half Way Point	
U	S.R. - 90° CW & CCW temp. feel 30° & 60°
W	S.R. from 90° CW or CCW or both
Y	S.R. from 60° CW or CCW or both
Z	S.R. from 75° CW or CCW or both

Abbreviations
 S.R. = Spring Return
 CW = Clockwise
 CCW = Counterclockwise