Specification Form GED-3933 has been designed for data-processing equipment and also to make it easier to fill out. Refer to page 64 and proceed as follows to fill out the form

# 1 FOR FACTORY USE ONLY (BLOCKS 9 THROUGH 18)

These blocks are for factory use only, and should be left blank.

### 2 CATALOG NUMBER (BLOCKS 19 THROUGH 25

This number is assigned at the factory and these blocks should be left blank.

# 3 ACTION

This part of the form is broken into five sections, detailed under the five following points (4-8).

# **MAINTAINED ALL POSITIONS**

Put an "X" in this block if all the positions are maintained, and put in a dash (-) if they are not maintained.

## 5 SPRING RETURN FROM COUNTER-CLOCKWISE POSITIONS (BLOCKS 27 AND 28)

Put the number of the position the spring return action is from in Block 27 and the position the spring return is to in Block 28. Put in a dash when this action does not apply.

#### SPRING RETURN FROM **CLOCKWISE POSITIONS** (BLOCKS 29 AND 30)

Put the number of the position the spring return action is *from* in Block 29 and the position the spring return is to in Block 30. Put in a dash when this action does not apply.

# **MAINTAINED POSITION**

WITH SPRING RETURN
(BLOCKS 31 THROUGH 34)
When you have the combination of maintained spring return action, the maintained positions are put in these blocks, starting with Block 31 and the lowest position number. Put a dash in the blocks that remain.

NOTE: With maintained and spring-return action, if Position 3 is being used, Position 3 is always a maintained

### 8 PULL-TO-LOCK (BLOCKS 35 AND 36)

When Pull-to-Lock is desired,the positions in which the handle is to be pulled and locked are indicated in these blocks. A dash is indicated in both blocks when Pull-to-Lock is not desired.

## 9 HANDLES (BLOCK 37)

Select the proper code letter (K, V, P, L

# "ORDERING GUIDE" for Specification Form - GED-3933

or N) to identify the type of handle desired. Indicate the appropriate letter in this block. The code letters A, B, C & D are used when a matching Type SB-1 handle is requested.

NOTE: For removable-type-handle switches, the code "N" for none is used, since removable handle are furnished as a separate item and are not furnished with the switch. See "Removable- Handles" Section

# ESCUTCHEONS (BLOCK 38)

Select the proper code letter (S, T, N, P or R) for the desired escutcheon, and put it in this block. When a keyed escutcheon is required for a removable handle, use the letter "R" and refer to Point 11, "Escutcheon Keyways". It should be noted that code "P" is a special escutcheon. This code is used when Lamicoid escutcheons are required. The description "Lamicoid" must also be specified in "Special Instructions" on the form as described in Point 17.

# 11 ESCUTCHEON KEYWAYS

(BLOCKS 39 THROUGH 43)

These blocks are used only when a keyed escutcheon (Code R) is specified. Three keyways are normally used, and information in these blocks is generally assigned at the factory. See "Removable Handles" Section

### 1/2 Intermediate Positions (BLOCKS 44 THROUGH 51)

The SBM switch has eight position locations, with 45 degrees between positions. When 90 degree positioning is required, the 45-degree position location becomes an intermediate (nonfeel) position. An "X" in one of the eight blocks above the positions indicates this position to be an intermediate position. See the section on "Overlapping (make-before-break) Contacts".

### *13 Operating requirement*

See the Table - The vertical numbers 1 to 20 are the contact numbers. The horizontal numbers, 1 through 8, are the position locations.

Put an "X" in the block under the position in which you want that contact to close. If that contact is to be open, leave the block blank. To the right of the table is a sketch of the standard escutcheon to aid in identifying the position locations on the switch.

When slip contacts are required, use the table on the right showing Position locations 1 through 5 only (as indicated). Under Position 3, there are two columns (2 and 4) to show if a contact is to be closed in Position 3 only when coming

from Position 2 or when coming from Position 4. Whatever contact action occurs in only Position 3 from 2 will also occur in Position 2 and 1 (when used), and whatever contact action occurs in only 3 from 4 will also occur in Position 4 and 5 (when used). Refer to "Slip Limitations" and how to overcome them before completing this part of the form. If a contact is not a slip contact and needs to close in Position 3, put an "X" in both columns under Position 3.

# 14 STOP LOCATIONS

At the bottom of the switch operating tables are Blocks number 1 through 8 and 1 through 6 which identify the stop locations. The stop locations are under the vertical lines between the positions.

Example: When using Positions 2, 3 and 4, circle stop location Number 2 to show that the handle is not to go to Position 1 from Position 2, and circle stop location Number 5 to show that the handle is not to go to Position 5 from Position 4. For 360 degree rotation, do not circle any

### 15 CIRCUIT DESIGNATION **ENGRAVING:**

Specify the circuit designation desired in the 22 blocks following the blocks marked 108. A maximum of 22 characters can be specified.

### **ESCUTCHEON ENGRAVING**

There are two lines of engraving available for each position (1 through 8), and a maximum of eight characters per line. If only one line is required, use the top

If a Position is to be blank, write ("BLANK") for that Position. When a target escutcheon is specified, leave Position 3 blank.

If the entire escutcheon is to be blank write "BLANK ESCUTCHEON" under "Special Instructions" (Point 17) at the bottom of the form.

# 17 SPECIAL INSTRUCTIONS

There are four rows of blocks to be used for any special instructions, such as the handle painted red, Lamicoid escutcheon for thick panel, blank escutcheon, jumpers, etc.

There are two types of Jumpers available for the SBM switch: Jumper 307V515 for contacts on the same stage, and Jumper 307V512 for jumpering contacts on adjacent stages.

NOTE: Jumpers are only furnished assembled, where required, on all standard listed switches. For unlisted switches, separate jumpers can be ordered

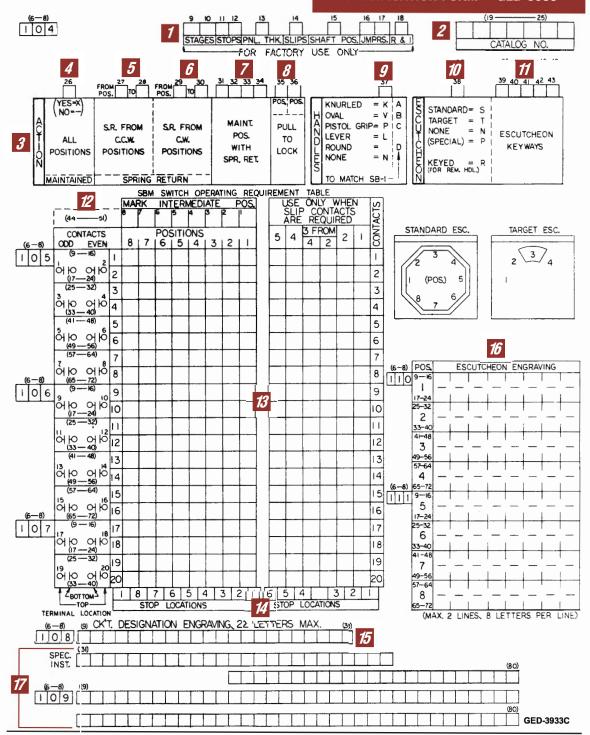
Examples of Filled-Out Forms on Pages 57& 58



# SBM

This form may be photocopied for your convenience

## "SPECIFICATION FORM" · GED-3933



GE Multilin • 215 Anderson Avenue • Markham, Ontario • L6E 1B3 Canada • Phone: (905) 294-6222



# *SB-1/SB-9/SB-10*

"ORDERING GUIDE" for Specification Form - GED-3934 - Part 1

# Select either the SB-1/SB-9/SB-10 at the top of the order form and then follow the steps below.

#### HANDLE POSITION

The handle position location areas are shown front view, facing the handle. Select the desired degrees between positions and mark the position numbers. Going in a clockwise direction, Position 1 starts in the extreme counter-clockwise (CCW) position. When 360-degree rotation is required, Position 1 starts at 12 o'clock. Examples of notations see pgs. 63-64.

#### CONTACT ARRANGEMENT

The vertical columns on the left (numbers 1 to 32) are the contacts. The position numbers should be marked in the top column under "Handle Positions (Back View)". The term "Back View" means that the positions are read from right-to-left for the contact arrangement only.

An asterisk between the position number is used to indicate intermediate position to show the special contact action desired between the designated positions. Intermediate positions can be supplied on switches with 45° or more between positions (some types: 37-1/2°).

For information on Lateral Contacts see Section 9 & 10 on Specification Form - Part 1. For information on SLIP-CAMS see examples on Specification Ordering Guide - Part 2 Examples of notations see Fig. 61A, 63-A and 65A. Examples of Filled-Out Forms on Page 66

#### **3** CONTACT CONNECTIONS

Mark the contact connections desired for each stage in the manner shown.

**ELECTRICALLY SEPARATE** (Supplied if connection type not specified)

**ELECTRICALLY SEPARATE** WITH COMMON TERMINAL

**ELECTRICALLY COMMON** WITHOUT COMMON **TERMINAL FOR** DOUBLE-BREAK ACTION

Examples of notations see pg. 63.

#### 4 ENGRAVING

Under "Position", indicate the position numbers which are marked in the handle-position portion of the form. Indicate the desired engraving for the position next to it under "Escutcheon Engraving". Maximum of 8 character spaces. The circuit designation, if desired, is marked in the circuit plate engraving block above the escutcheon engraving. Maximum of 22 character spaces.

Check the appropriate block to indicate the design of the handles desired. Available handle types are shown on page 3. Examples of notations see **pg. 63.** 

#### **ESCUTCHEONS**

Check the block next to the desired escutcheon. For information and illustrations on the available escutcheons, refer to the Special Features Section in this publication. Target escutcheon is available only with spring return actions of 45° CW, 45° CCW, 75° CCW.

When a keyed escutcheon is checked, the position in which the handle is to be removable must be given, along with any other necessary information.

**PATTING ACTION**1. Maintaining All Positions - When the handle is maintained in all positions, check this block.

Spring Return Action - Can be provided from both directions to NORMAL, or from one direction to NORMAL

Maintaining Position - When spring-return and maintained action is desired, both the spring-return positions, as per above, and the maintained positions should be marked.

3. Pull-to-Lock In Position - When a pull-to-lock action is desired fill-in the position number in which the handle is to be pulled and latched. Examples of notations see Fig. 63D-63K.

## PANEL THICKNESS

Give the panel thickness in inches. This information is very important in selecting the proper shaft and spacers, however, it is frequently not specified. If the panel thickness is not given, the switch will be furnished for mounting on panels up to 3/16-inch thick. Most switches can be furnished for mounting in panels up to two-inches (32/16") thick.

# LATERAL CONTACT SECTION for SB-10 SWITCHES Only:

#### LATERAL CONTACT STAGES

Complete this section only when ordering a Type SB-10 Switch which has both lateral and rotary contacts. Examples of Filled-Out Forms on Page 60

To identify the lateral stages, mark a dot(s) to the far left outside of the contact connection diagram (Maximum: four lateral stages, two contacts per stage). Add "X" for each desired stage . For each lateral stage used, avoid that stage in Contact Arrangement Table (in .).

Note: Do not put an "X" under the handle positions for these contacts. An "X" is used only for the rotary contacts.

#### **TO LATERAL CONTACT ACTION**

If you want to prevent rotary action in one of the lateral positions (either IN or OUT), cross out the other position. If you want rotary action in both the IN and OUT positions, cross out the word "NO" and add the designation "&" on the line between the words "IN" and "OUT".

If the handle is to be maintained in both the IN and OUT positions, cross out "Spring Return to IN/OUT"

If the handle is to spring return to either the IN or OUT position, cross out the undesired position and Maintaining "IN" "OUT".

When rotary action is spring return, you can only have lateral spring return action when the lateral action is in the "NORMAL" (rotary spring released) position. The maximum number of lateral contacts that can be provided to open with the lateral spring action is four.

First select the proper action ("Pull" or "Push") and write in the position in which this action is to take place, then, write in the contact numbers for the contact action desired. Refer to Table 2 - page 7 for the lateral action available. Refer to Fig. 65A for examples of notations.

For Options - See GED-3934 Form - Part 2



### This form may be photocopied for your convenience

# SB-1/SB-9/SB-10

#### Select the Type of Switch Required: "SPECIFICATION FORM" GED-3934 - Part 1 □ SB-1 □ SB-9 □ SB-10 ENGRAVING HANDLE POSITIONS (Front View) Mark Position Numbers Circuit Plate Engraving: Escutcheon Engraving 90° 90° 37-1/2° SPECIAL 75° ON SB-10 SWITCHES MARK LAT. STAGES WITH A DOT. ( • ) CONTACT ARRANGEMENT CONTACT Mark "X" for Closed Contact CONNECTIONS HandlePositions (Back View) (HANDLE END) ODD EVEN HANDLES **6** ESCUTCHEON H٢ Standard or Round Knurled H٢ +Oval Target Pistol Grip Lever Removable Handle П H٢ +Round Radial Keyed for +10 L. Pistol grip Removable None in Position ( H٢ ΗF 12 +**F** ROTATING ACTION +14 Maintaining All Positions H٢ H16 Spring Return Action A +18 S.R. from CCW Position From Pos (\_\_) To (\_\_ 19 20 H٢ +S.R. from CW Position From Pos (\_\_) To (\_\_) Maintaining Position ( 11 11 Pull to Lock in Position ( ▲ No Spring Return Below Horizontal Center Line. PANEL THICKNESS (\_\_\_\_)/16" Specify Only in increments of 16th of an Inch <del>1</del>F **SPECIAL REMARKS:** +30 ++32] Bottom Top Bottom = Terminal Location LATERAL CONTACTS FOR SB-10 SWITCHES ONLY LATERAL CONTACT ACTION\* Cross Out the Action which does not apply LATERAL CONTACT STAGES Add "X" for Each Desired No Rotation when OUT IN Lateral Stage. Maintaining IN OUT For Each Lateral Stage 4 IN OUT Spring return to marked here, leave that stage blank in the Contact PUSH PULL In Position ( 6 Arrangement Table.

See 2.

To Close Contacts (

To Open Contacts (



# SB-1/SB-9/SB-10

"ORDERING GUIDE" for Specification Form - GED-3934 - Part 2

#### Fig. 61A: Examples of "SLIP-CAM" Contacts

|  | 2 | 2N  | 1N    | 1 | П |   | 2 | 2N  | 1N    | 1 |
|--|---|-----|-------|---|---|---|---|-----|-------|---|
| 1                                      |   |     | Х     | Х | П | 1 | Х | Х   |       |   |
| 2                                      |   |     | Х     | Х | П | 2 | Х | Х   |       |   |
|  |   | 231 | 1 N T | 1 | [ |   | 2 | 2N  | 1 N T | 1 |
|  | 2 | 2N  | 1N    |   | П |   | 2 | ZIN | 1N    | 1 |
| 1                                      | Х | Х   |       |   | Ш | 1 |   |     | Х     | Х |
| 2                                      |   |     | Х     | X |   | 2 | Х | Х   |       |   |
| 1 45°                                  |   |     |       |   |   |   |   |     |       |   |
|  |   |     |       |   |   |   |   |     |       |   |
| 2N=NORMAL AFTER 2<br>1N=NORMAL AFTER 1 |   |     |       |   |   |   |   |     |       |   |

### **■ SPECIFYING OPTIONAL FEATURES**

Certain optional features are available with the SB-1, -9 and -10 switches, but not necessarily to all of them. Determine whether the option you required is available with the type of switch you are specifying, and check the appropriate block as described below.

#### LOCK-IN HANDLE

Specify the position or positions in which the handle is to lock. All locks will be furnished with two keys, unless otherwise specified. (Not available with "Push or Pull to Lock"; nor "Push or Pull to Ťurn")

SEPARATELY MOUNTED LOCK
SE switches are available with a standard lock and key, or with a Kirk Key-Interlock System. Only one key "cut" is available with the standard lock. Two keys are furnished with each lock. Check the proper block. If Kirk Key-Interlock is checked, fill out the coordination information. Be sure the panel thickness is given.

The switch is furnished with the lock for mounting above the switch, as shown under standard mountings, and identified as Lock No. 1. Complete the description "Lock No. 1; locks and the key is removable in Pos.( )." If mounting the lock above the switch is not feasible, or when two locks (each locking in a different position) are required, the locks can be mounted to the right, to the left, or below the switch.

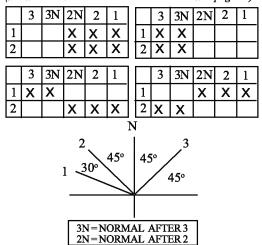
To identify the location, the locks are numbers 2, 3 and 4 under "Special Mounting". Fill in the lock number in the description below and the position in which each lock is to lock.

The following Coordination Information is required for utilizing the Kirk Key-Interlock Scheme

To ensure a designated key change is furnished only to the customer and equipment assigned, the following information is required:

1. Fill-in the "Ultimate Customer's Name and Address", plus the name of the substation or building if applicable.

(See Section CAM Action and Limitations • See page 12)



- 2. Provide the "Initial Purchase Order Number" of the coordinated Kirk locks presently installed to match the present key / lock scheme. If this is a new placement and a new key change is required, state it on your purchase order and we will document the new designated key change.
- 3. Provide the "Drawings of any Kirk Scheme Already Submitted" or a copy of the drawing. If the key change has already been assigned, as on reorders, specify the key change number.

Be sure this information is complete and correct when placing the order.

#### **TANDEM SWITCHES**

When a switch with more than 16 stages is required, two or more switches can be assembled in tandem, operating with one handle. The switches are normally mounted horizontally, but can also be furnished vertically mounted. Show the location of the switches and handle on the sketch provided for up to four switches in tandem. The corresponding switch numbers on the sketch should also be on the contact arrangement specification form. Draw in the handle to show its location, or specify the switch number on which the handle will be mounted. When more than four switches, or a different arrangement is required, use a separate sheet showing the proper switch arrangement

Only the switch with handle can be provided as a "Pull to Lock"

### **15** PULL-TO-TURN/PUSH-TO-TURN

If the handle is to rotate in the "IN" position, indicate what position or positions; if it is not to rotate in the "IN" position, write "none". Fill in the position number in which the handle is to be pulled and state to what position, or positions, you will be rotating. Cross-out unwanted selections. For Push-to-Turn action fill-in a similar manner.

## **16 PALLADIUM CONTACTS**

Check this block if required. Palladium contacts are available for temperature-meter switches (see "Temperature-meter Switches" - Page 17). If for a special application where some of the contacts are palladium, but not all, specify requirement in this block or on the contact arrangement.



# SB-1/SB-9/SB-10

This form may be photocopied for your convenience

"SPECIFICATION FORM" GED-3934 - Part 2

Continued from Part 1

To be used with GED-3934 Form - Part 1

| Corbin Lock Replacement Handle Locks and Key Removable in Position (                                  | TANDEM SWITCH (Geared) - [SB-1, SB-9 or SB-10]  Vertically Mounted   |
|---|--|
| 2. Purchase Order of Coordinating Locks P.O. No.  3. Coordinating Information (KNOWN KEY No. & PRINT) | A LARGE PISTOL GRIP HANDLE IS RECOMMENDED TO EASE IN TURNING TO VARIOUS POSITIONS  15  PULL-TO-TURN/PUSH-TO-TURN - [SB-1 or SB-9]  Rotates in Positions () when Handle is "IN"/"OUT  PULL "OUT"/PUSH "IN" in Position ()  to Rotate to Position ()  Check  PALLADIUM CONTACTS - [SB-1, SB-9 or SB-10]this block  if Required |

# CHECK PROPER BLOCKS AND COMPLETE REQUIRED INFORMATION.

See Separate "Ordering Guide" for this "Specification Form" on Page 59