



*Think Automation and beyond...*



## ***IDEC LB Series***

***Flush Mount & 16mm Miniature Switches and Pilot Lights***

# Design & Function

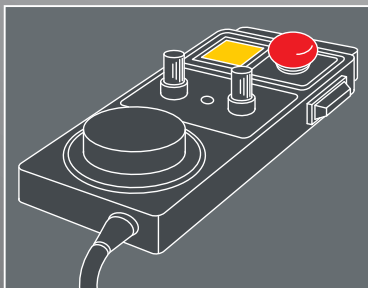
Flush mount switches provide a sleek and stylish appearance. 16mm miniature switches and pilot lights with a depth of only 27.9mm accommodate smaller machines and panels.



## Compact

### Short body

The LB series is the shortest in the industry, only 27.9mm deep behind the panel. Reduces the size of machines and control panels.



## Simple

### Single board mounting & removable contact blocks

Removable contacts enable easy wiring. Single board mounting reduces installation time and prevents incorrect wiring.





## Watertight

Degree of protection: IP65

Perfect for environments where water is sprayed under pressure such as food and beverage processing.



## Flush Mount

Stylish

Flush bezels project only 2mm from the panel surface. The slim and stylish panel design enhances the appearance of any application.



# Flush Mount Switches & Pilot Lights



- Projects only 2mm from the panel surface.
- Removable contact blocks ideal for single board mounting.
- Protection degree: IP65 (IEC 60529)

## Illuminated Pushbuttons Pg. 7

Illuminated Pushbuttons with Switchguard available



Round



Square



Rectangular



## Pushbuttons Pg. 11

Pushbuttons with Switchguard available



Lens with marking plate can also be used as a pushbutton.

## Pilot Lights Pg. 9



## Dome Pilot Lights Pg. 9



## Selector Switches Non-illuminated Pg. 13

### Illuminated Pg. 15

2-position and 3-position selector switches. Maintained and spring return available.



Illuminated shown



Knob shown



Lever shown

## Key Selectors Pg. 17

Wave key  
Seven different keys available.



## Lever Switches Pg. 20



## Buzzers Pg. 21



Illuminated Pushbutton  
Color Options



A (amber)



G (green)



PW (white)



R (red)



S (blue)



Y (yellow)

Pushbutton  
Color Options



B (black)



G (green)

# 16mm Miniature Switches & Pilot lights



Short

Actual Size  
27.9mm

- Panel depth of only 27.9mm.
- Removable contact blocks are ideal for single board mounting.
- Protection degree: IP65 (IEC 60529)

## Illuminated Pushbuttons Pg. 7

## Pushbuttons Pg. 11

Lens with marking plate can also be used as a pushbutton.

Round

Square

Rectangular



## Pilot Lights Pg. 9

## Dome Pilot Lights Pg. 9



## Selector Switches Pg. 13

### Non-illuminated Pg. 13

### Illuminated Pg. 15

2-position and 3-position selector switches. Maintained and spring return available.



Illuminated shown



Knob shown



Lever shown

## Key Selectors Pg. 17

Wave key  
Seven different keys available.



## Lever Switches Pg. 20



## Buzzers Pg. 21



IP54



Terminal side



IP40



Terminal side

Bezel Options



R (red)

S (blue)

W (white)

Y (yellow)

Metallic

Black

# Flush Mount & 16mm Miniature Switches & Pilot Lights

Flush bezel projects only 2mm from front of panel. Standard bezel has a panel depth of only 27.9mm! Removable contact blocks are ideal for single board mounting.

- Pushbuttons, lever switches, selector switches, and key selector switches with up to 3PDT contacts.
- Key selectors with keys that are difficult to duplicate. Seven different key numbers to choose from.
- Pilot lights with flat or dome lenses.
- Buzzers with 80dB steady sound.
- Black or metallic flush bezels available.
- Bright and clear LED illuminated face.
- Choice of either gold-clad or silver contacts.
- Degree of protection: IP65 (from the front of the panel).



| Applicable Standards | Mark | File No. or Organization |
|----------------------|------|--------------------------|
| UL508                |      | UL Recognition No.E55996 |
| CSA 22.2 No.14       |      | CSA File No. LR 21451    |
| EN60947-5-1          |      | TÜV Rheinland            |
|                      |      | EU Low Voltage Directive |
| GB14048.5            |      |                          |

## Specifications

|                                      |                                                                                                                                                                                                                       |                                                                                                                                                                      |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Temperature                | -25 to +60°C (no freezing)<br>Illuminated units: -25 to +55°C                                                                                                                                                         |                                                                                                                                                                      |
| Storage Temperature                  | -30 to +80°C (no freezing)                                                                                                                                                                                            |                                                                                                                                                                      |
| Operating Humidity                   | 45 to 85% RH (no condensation)                                                                                                                                                                                        |                                                                                                                                                                      |
| Contact Resistance                   | 50 mW maximum (initial value)                                                                                                                                                                                         |                                                                                                                                                                      |
| Insulation Resistance                | 100 MW minimum (500V DC megger)                                                                                                                                                                                       |                                                                                                                                                                      |
| Dielectric Strength                  | Switch                                                                                                                                                                                                                | Between live part and ground: 2,000V AC, 1 min.<br>Between terminals of different poles: 2,000V AC, 1 min.<br>Between terminals of the same poles: 1,000V AC, 1 min. |
|                                      | Illumination                                                                                                                                                                                                          | Between live part and ground: 2,000V AC, 1 min.                                                                                                                      |
| Vibration Resistance                 | Operating extremes/Damage limits:<br>5 to 55 Hz, amplitude 0.5mm                                                                                                                                                      |                                                                                                                                                                      |
| Shock Resistance                     | Operating extremes: 100 m/s <sup>2</sup><br>Damage limits: 1,000 m/s <sup>2</sup>                                                                                                                                     |                                                                                                                                                                      |
| Mechanical Life (minimum operations) | Momentary: 2,000,000<br>Maintained: 250,000<br>Selector switches: 250,000<br>Key selector switches: 250,000                                                                                                           |                                                                                                                                                                      |
| Electrical Life (minimum operations) | Momentary: 50,000 / 100,000 <sup>Note 1</sup><br>Maintained: 50,000 / 100,000 <sup>Note 2</sup><br>Selector switches: 50,000 / 100,000 <sup>Note 2</sup><br>Key selector switches: 50,000 / 100,000 <sup>Note 2</sup> |                                                                                                                                                                      |
| Degree of Protection                 | IP65 (IEC 60529)                                                                                                                                                                                                      |                                                                                                                                                                      |
| Terminal Style                       | Solder/tab terminal #110<br>PC board terminal                                                                                                                                                                         |                                                                                                                                                                      |
| Bezel                                | Black plastic or metallic                                                                                                                                                                                             |                                                                                                                                                                      |
| Weight (approx.)                     | 11g (lever switch)<br>13g (pilot light, pushbutton)<br>14g (illuminated pushbutton, pushbutton with guard, buzzer)<br>15g (selector switch, illuminated pushbutton with guard)<br>27g (key selector switch)           |                                                                                                                                                                      |

1. Switching frequency 1,800 operations/h.
2. Switching frequency 1,200 operations/h.

## Contact Ratings

Gold Contact (switch base color: blue)

|                                          |                  |         |
|------------------------------------------|------------------|---------|
| Rated Insulation Voltage                 | 250V             |         |
| Rated Thermal Current                    | 3A               |         |
| Rated Operating Voltage                  | 30V DC           | 125V AC |
| Rated Operating Current (resistive load) | 0.1A             | 0.1A    |
| Contact Material                         | Gold-clad silver |         |

Minimum applicable load (reference value): 5V AC/DC, 1 mA

Silver Contact (switch base color: gray)

|                          |                                          |               |                |        |       |      |
|--------------------------|------------------------------------------|---------------|----------------|--------|-------|------|
| Rated Insulation Voltage |                                          |               |                | 250V   |       |      |
| Rated Operating Voltage  |                                          |               |                | 30V    | 125V  | 250V |
| Rated Operating Current  | Electrical Life<br>50,000<br>Operations  | AC<br>50/60Hz | Resistive load | —      | 5A    | 5A   |
|                          |                                          |               | Inductive load | —      | 3A    | 1.5A |
|                          |                                          | DC            | Resistive load | 5A     | 1.1A  | —    |
|                          |                                          |               | Inductive load | 2.5A   | 0.55A | —    |
|                          | Electrical Life<br>100,000<br>Operations | AC<br>50/60Hz | Resistive load | —      | 5A    | 3A   |
|                          |                                          |               | Inductive load | —      | 3A    | 1.5A |
|                          |                                          | DC            | Resistive load | 3A     | 0.6A  | —    |
|                          |                                          |               | Inductive load | 1A     | 0.22A | —    |
| Rated Thermal Current    |                                          |               |                | 5A     |       |      |
| Contact Material         |                                          |               |                | Silver |       |      |

AC inductive load: PF=0.6 to 0.7 DC inductive load: L/R=7 ms max.

## LED Ratings

|                               |                                                                                    |               |                                                                                                                                         |
|-------------------------------|------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| Rated Voltage                 | 5V DC                                                                              | 12V AC/DC     | 24V AC/DC                                                                                                                               |
| Voltage Range                 | 5V DC±5%                                                                           | 12V AC/DC±10% | 24V AC/DC ±10%                                                                                                                          |
| LED Part No.                  | LB9Z-LED5②                                                                         | LB9Z-LED1②    | LB9Z-LED2②                                                                                                                              |
| Rated Current                 | A, R: 22 mA    G, PW, S: 16 mA                                                     |               |                                                                                                                                         |
| Voltage Rating                | Marked on the side of the LED unit                                                 |               |                                                                                                                                         |
| LED Life<br>(reference value) | Approx. 30,000 hours<br>(until the brightness reduces to 50% of the initial value) |               |                                                                                                                                         |
| Internal Circuit              | A, PW, R                                                                           | A, PW, R      |                                                                                                                                         |
|                               |                                                                                    |               |                                                                                                                                         |
|                               | G, S                                                                               | G, S          |                                                                                                                                         |
|                               |                                                                                    |               | <ul style="list-style-type: none"><li>LED Chip</li><li>Protection Diode</li><li>Zener Diode</li><li>Resistor</li><li>Varistor</li></ul> |

1. For ② (color code): A (amber), G (green), PW (white), R (red), S (blue)
2. Use the white LED for yellow illumination.
3. LED lamp contains a current-limiting resistor.

## Illuminated Pushbuttons (Assembled)

| Style                                                                                                                                                                                                                                                                                                    | Operation  | Operating Voltage | Contact | Standard Bezel                           |                                      | Flush Bezel                              |                                      | ②<br>Color Code                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------------|---------|------------------------------------------|--------------------------------------|------------------------------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                          |            |                   |         | Solder/Tab Terminal<br>(silver contacts) | PC Board Terminal<br>(gold contacts) | Solder/Tab Terminal<br>(silver contacts) | PC Board Terminal<br>(gold contacts) |                                                                                                                                     |
| <b>Standard Bezel (black)</b><br><br><br>             | Momentary  | 5V DC             | SPDT    | LB①L-M1T51②                              | LB①L-M1T11V②                         | LB③④L-M1T51②                             | LB③④L-M1T11V②                        | Specify the color code in place of ② in the Part Number:<br><br>A: amber<br>G: green<br>R: red<br>S: blue<br>PW: white<br>Y: yellow |
|                                                                                                                                                                                                                                                                                                          |            |                   | DPDT    | LB①L-M1T61②                              | LB①L-M1T21V②                         | LB③④L-M1T61②                             | LB③④L-M1T21V②                        |                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                          |            | 12V AC/DC         | SPDT    | LB①L-M1T53②                              | LB①L-M1T13V②                         | LB③④L-M1T53②                             | LB③④L-M1T13V②                        |                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                          |            |                   | DPDT    | LB①L-M1T63②                              | LB①L-M1T23V②                         | LB③④L-M1T63②                             | LB③④L-M1T23V②                        |                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                          |            | 24V AC/DC         | SPDT    | LB①L-M1T54②                              | LB①L-M1T14V②                         | LB③④L-M1T54②                             | LB③④L-M1T14V②                        |                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                          |            |                   | DPDT    | LB①L-M1T64②                              | LB①L-M1T24V②                         | LB③④L-M1T64②                             | LB③④L-M1T24V②                        |                                                                                                                                     |
| <b>Flush Bezel (metallic or black)</b><br><br><br> | Maintained | 5V DC             | SPDT    | LB①L-A1T51②                              | LB①L-A1T11V②                         | LB③④L-A1T51②                             | LB③④L-A1T11V②                        |                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                          |            |                   | DPDT    | LB①L-A1T61②                              | LB①L-A1T21V②                         | LB③④L-A1T61②                             | LB③④L-A1T21V②                        |                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                          |            | 12V AC/DC         | SPDT    | LB①L-A1T53②                              | LB①L-A1T13V②                         | LB③④L-A1T53②                             | LB③④L-A1T13V②                        |                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                          |            |                   | DPDT    | LB①L-A1T63②                              | LB①L-A1T23V②                         | LB③④L-A1T63②                             | LB③④L-A1T23V②                        |                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                          |            | 24V AC/DC         | SPDT    | LB①L-A1T54②                              | LB①L-A1T14V②                         | LB③④L-A1T54②                             | LB③④L-A1T14V②                        |                                                                                                                                     |
|                                                                                                                                                                                                                                                                                                          |            |                   | DPDT    | LB①L-A1T64②                              | LB①L-A1T24V②                         | LB③④L-A1T64②                             | LB③④L-A1T24V②                        |                                                                                                                                     |
| <b>Black Bezel with Guard</b><br>                                                                                                                                                                                     |            |                   |         |                                          |                                      |                                          |                                      |                                                                                                                                     |

- For Standard Bezel part numbers specify:
  - Bezel shape in place of ①. 1 (round), 2 (square), 3 (rectangular)
  - Lens/LED color in place of ②. A (amber), G (green), PW (white), R (red), S (blue), Y (yellow)
- For Flush Bezel part numbers specify:
  - Lens/LED in place of ②. A (amber), G (green), PW (white), R (red), S (blue), Y (yellow)
  - Bezel shape in place of ③. 6 (round), 7 (square), 8 (rectangular)
  - Bezel material in place of ④. M (metallic), Blank (black), G (black with guard)
- Solder/Tab terminals have silver contacts and PC Board Terminals have gold contacts.
- Illuminated pushbuttons contain an LED unit.
- See page 24 for dimensions.
- See page 39 for replacement LED units.
- Illuminated pushbuttons can be used with legend markings. Engraving can be done on a marking plate which is placed in the lens, or a clear film can be printed and placed in the lens. See page 41 for details on the marking plate and film.

800.262.4332

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# Illuminated Pushbuttons

## Illuminated Pushbuttons (Sub-assembled)



### Contact Block

| Terminal Style                                                                    | Material | Contact | Part Number |
|-----------------------------------------------------------------------------------|----------|---------|-------------|
|  | Silver   | SPDT    | LB-T50      |
|                                                                                   |          | DPDT    | LB-T60      |
|  | Gold     | SPDT    | LB-T10V     |
|                                                                                   |          | DPDT    | LB-T20V     |

### LED Module

| Style                                                                               | Color  | Voltage | Part Number |
|-------------------------------------------------------------------------------------|--------|---------|-------------|
|  | Amber  | 5V      | LB9Z-LED5A  |
|                                                                                     |        | 12V     | LB9Z-LED1A  |
|                                                                                     |        | 24V     | LB9Z-LED2A  |
|                                                                                     | Green  | 5V      | LB9Z-LED5G  |
|                                                                                     |        | 12V     | LB9Z-LED1G  |
|                                                                                     |        | 24V     | LB9Z-LED2G  |
|                                                                                     | Red    | 5V      | LB9Z-LED5R  |
|                                                                                     |        | 12V     | LB9Z-LED1R  |
|                                                                                     |        | 24V     | LB9Z-LED2R  |
|                                                                                     | Blue   | 5V      | LB9Z-LED5S  |
|                                                                                     |        | 12V     | LB9Z-LED1S  |
|                                                                                     |        | 24V     | LB9Z-LED2S  |
|                                                                                     | White  | 5V      | LB9Z-LED5PW |
|                                                                                     |        | 12V     | LB9Z-LED1PW |
|                                                                                     |        | 24V     | LB9Z-LED2PW |
|                                                                                     | Yellow | 5V      | LB9Z-LED5PW |
|                                                                                     |        | 12V     | LB9Z-LED1PW |
|                                                                                     |        | 24V     | LB9Z-LED2PW |

### Operator

| Style                                                                               | Mounting Style                      | Shape       | Momentary | Maintained |
|-------------------------------------------------------------------------------------|-------------------------------------|-------------|-----------|------------|
|    | Standard (Plastic)                  | Round       | LB1L-M0   | LB1L-A0    |
|                                                                                     |                                     | Square      | LB2L-M0   | LB2L-A0    |
|                                                                                     |                                     | Rectangular | LB3L-M0   | LB3L-A0    |
|    | Flush Mount (Plastic)               | Round       | LB6L-M0   | LB6L-A0    |
|                                                                                     |                                     | Square      | LB7L-M0   | LB7L-A0    |
|                                                                                     |                                     | Rectangular | LB8L-M0   | LB8L-A0    |
|   | Flush Mount (Metallic)              | Round       | LB6ML-M0  | LB6ML-A0   |
|                                                                                     |                                     | Square      | LB7ML-M0  | LB7ML-A0   |
|                                                                                     |                                     | Rectangular | LB8ML-M0  | LB8ML-A0   |
|  | Flush Mount (Built-in switch guard) | Round       | LB6GL-M0  | LB6GL-A0   |
|                                                                                     |                                     | Square      | LB7GL-M0  | LB7GL-A0   |
|                                                                                     |                                     | Rectangular | LB8GL-M0  | LB8GL-A0   |

### Lens

| Shape                                                                               | Color  | Part Number |
|-------------------------------------------------------------------------------------|--------|-------------|
|  | Amber  | LB1A-L1A    |
|                                                                                     | Green  | LB1A-L1G    |
|                                                                                     | Red    | LB1A-L1R    |
|                                                                                     | Blue   | LB1A-L1S    |
|                                                                                     | White  | LB1A-L1W    |
|                                                                                     | Yellow | LB1A-L1Y    |
|  | Amber  | LB2A-L1A    |
|                                                                                     | Green  | LB2A-L1G    |
|                                                                                     | Red    | LB2A-L1R    |
|                                                                                     | Blue   | LB2A-L1S    |
|                                                                                     | White  | LB2A-L1W    |
|                                                                                     | Yellow | LB2A-L1Y    |
|  | Amber  | LB3A-L1A    |
|                                                                                     | Green  | LB3A-L1G    |
|                                                                                     | Red    | LB3A-L1R    |
|                                                                                     | Blue   | LB3A-L1S    |
|                                                                                     | White  | LB3A-L1W    |
|                                                                                     | Yellow | LB3A-L1Y    |

## Pilot Lights (Assembled)

| Style                                                                                                                                                                                                                                                                                                                                                                                             | Operating Voltage | Standard Bezel                           |                                      | Flush Bezel                              |                                      | ②<br>Color Code                                                                                                                            |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------------------------------|--------------------------------------|------------------------------------------|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                   |                   | Solder/Tab Terminal<br>(silver contacts) | PC Board Terminal<br>(gold contacts) | Solder/Tab Terminal<br>(silver contacts) | PC Board Terminal<br>(gold contacts) |                                                                                                                                            |
| <b>Standard Bezel (black)</b><br><br><br><br>                 | 5V DC             | LB①P-②T01②                               | LB①P-②T01V②                          | LB③④P-②T01②                              | LB③④P-②T01V②                         | Specify the color code<br>in place of ② in the Part<br>Number.:<br><br>A: amber<br>G: green<br>PW: white<br>R: red<br>S: blue<br>Y: yellow |
|                                                                                                                                                                                                                                                                                                                                                                                                   | 12V AC/DC         | LB①P-②T03②                               | LB①P-②T03V②                          | LB③④P-②T03②                              | LB③④P-②T03V②                         |                                                                                                                                            |
| <b>Flush Bezel (metallic or black)</b><br><br><br><br> | 24V AC/DC         | LB①P-②T04②                               | LB①P-②T04V②                          | LB③④P-②T04②                              | LB③④P-②T04V②                         |                                                                                                                                            |

- For Standard Bezel part numbers specify:
  - bezel shape in place of ①. 1 (round), 2 (square), 3 (rectangular)
  - lens/LED color in place of ②. A (amber), G (green), PW (white), R (red), S (blue), Y (yellow)
  - lens type code in place of ③. 1 (flat), 2 (dome with round lens)
- For Flush Bezel part numbers specify:
  - lens/LED in place of ②. A (amber), G (green), PW (white), R (red), S (blue), Y (yellow)
  - bezel shape in place of ③. 6 (round), 7 (square), 8 (rectangular)
  - bezel material in place of ④. M (metallic), Blank (black)
  - lens type code in place of ⑤. 1 (flat), 2 (dome with round lens)
- Pilot lights contain an LED unit.
- See page 25 for dimensions.
- See page 39 for replacement LED unit.

800.262.4332

[www.IDEC.com/switches](http://www.IDEC.com/switches)

# Pilot Lights

## Pilot Lights (Sub-assembled)



### Contact Block

| Terminal Style                                                                               | Part Number |
|----------------------------------------------------------------------------------------------|-------------|
|  Solder Tab | LB-T00      |
|  PCB        | LB-T00V     |

### LED Module

| Style                                                                               | Color  | Voltage | Part Number |
|-------------------------------------------------------------------------------------|--------|---------|-------------|
|  | Amber  | 5V      | LB9Z-LED5A  |
|                                                                                     |        | 12V     | LB9Z-LED1A  |
|                                                                                     |        | 24V     | LB9Z-LED2A  |
|                                                                                     | Green  | 5V      | LB9Z-LED5G  |
|                                                                                     |        | 12V     | LB9Z-LED1G  |
|                                                                                     |        | 24V     | LB9Z-LED2G  |
|                                                                                     | Red    | 5V      | LB9Z-LED5R  |
|                                                                                     |        | 12V     | LB9Z-LED1R  |
|                                                                                     |        | 24V     | LB9Z-LED2R  |
|                                                                                     | Blue   | 5V      | LB9Z-LED5S  |
|                                                                                     |        | 12V     | LB9Z-LED1S  |
|                                                                                     |        | 24V     | LB9Z-LED2S  |
|                                                                                     | White  | 5V      | LB9Z-LED5PW |
|                                                                                     |        | 12V     | LB9Z-LED1PW |
|                                                                                     |        | 24V     | LB9Z-LED2PW |
|                                                                                     | Yellow | 5V      | LB9Z-LED5PW |
|                                                                                     |        | 12V     | LB9Z-LED1PW |
|                                                                                     |        | 24V     | LB9Z-LED2PW |

### Operator

| Style                                                                             | Mounting Style         | Shape       | Part Number |
|-----------------------------------------------------------------------------------|------------------------|-------------|-------------|
|  | Standard (Plastic)     | Round       | LB1P-0      |
|                                                                                   |                        | Square      | LB2P-0      |
|                                                                                   |                        | Rectangular | LB3P-0      |
|  | Flush Mount (Plastic)  | Round       | LB6P-0      |
|                                                                                   |                        | Square      | LB7P-0      |
|                                                                                   |                        | Rectangular | LB8P-0      |
|  | Flush Mount (Metallic) | Round       | LB6MP-0     |
|                                                                                   |                        | Square      | LB7MP-0     |
|                                                                                   |                        | Rectangular | LB8MP-0     |

### Lens

| Shape                                                                               | Color  | Part Number |
|-------------------------------------------------------------------------------------|--------|-------------|
|  | Amber  | LB1A-P1A    |
|                                                                                     | Green  | LB1A-P1G    |
|                                                                                     | Red    | LB1A-P1R    |
|                                                                                     | Blue   | LB1A-P1S    |
|                                                                                     | White  | LB1A-P1W    |
|                                                                                     | Yellow | LB1A-P1Y    |
|  | Amber  | LB1A-P2A    |
|                                                                                     | Green  | LB1A-P2G    |
|                                                                                     | Red    | LB1A-P2R    |
|                                                                                     | Blue   | LB1A-P2S    |
|                                                                                     | White  | LB1A-P2W    |
|                                                                                     | Yellow | LB1A-P2Y    |
|  | Amber  | LB2A-P1A    |
|                                                                                     | Green  | LB2A-P1G    |
|                                                                                     | Red    | LB2A-P1R    |
|                                                                                     | Blue   | LB2A-P1S    |
|                                                                                     | White  | LB2A-P1W    |
|                                                                                     | Yellow | LB2A-P1Y    |
|  | Amber  | LB3A-P1A    |
|                                                                                     | Green  | LB3A-P1G    |
|                                                                                     | Red    | LB3A-P1R    |
|                                                                                     | Blue   | LB3A-P1S    |
|                                                                                     | White  | LB3A-P1W    |
|                                                                                     | Yellow | LB3A-P1Y    |

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## Non-Illuminated Pushbuttons (Assembled)

| Style                                                                                                                                                                                                                                                                                                    | Operation  | Contact | Standard Bezel                           |                                      | Flush Bezel                              |                                      | ②<br>Color Code                                                                                                                    |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------|------------------------------------------|--------------------------------------|------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                          |            |         | Solder/Tab Terminal<br>(silver contacts) | PC Board Terminal<br>(gold contacts) | Solder/Tab Terminal<br>(silver contacts) | PC Board Terminal<br>(gold contacts) |                                                                                                                                    |
| <b>Standard Bezel (black)</b><br><br><br>             | Momentary  | SPDT    | LB①B-M1T5②                               | LB①B-M1T1V②                          | LB③④B-M1T5②                              | LB③④B-M1T1V②                         | Specify the color code in place of ② in the Part Number:<br><br>B: black<br>G: green<br>R: red<br>S: blue<br>W: white<br>Y: yellow |
|                                                                                                                                                                                                                                                                                                          |            | DPDT    | LB①B-M1T6②                               | LB①B-M1T2V②                          | LB③④B-M1T6②                              | LB③④B-M1T2V②                         |                                                                                                                                    |
|                                                                                                                                                                                                                                                                                                          |            | 3PDT    | LB①B-M1T7②                               | LB①B-M1T3V②                          | LB③④B-M1T7②                              | LB③④B-M1T3V②                         |                                                                                                                                    |
| <b>Flush Bezel (metallic or black)</b><br><br><br> | Maintained | SPDT    | LB①B-A1T5②                               | LB①B-A1T1V②                          | LB③④B-A1T5②                              | LB③④B-A1T1V②                         |                                                                                                                                    |
|                                                                                                                                                                                                                                                                                                          |            | DPDT    | LB①B-A1T6②                               | LB①B-A1T2V②                          | LB③④B-A1T6②                              | LB③④B-A1T2V②                         |                                                                                                                                    |
|                                                                                                                                                                                                                                                                                                          |            | 3PDT    | LB①B-A1T7②                               | LB①B-A1T3V②                          | LB③④B-A1T7②                              | LB③④B-A1T3V②                         |                                                                                                                                    |
| <b>Black Bezel with Guard</b><br>                                                                                                                                                                                     |            |         |                                          |                                      |                                          |                                      |                                                                                                                                    |

1. For Standard Bezel part numbers specify:

- bezel shape in place of ①. 1 (round), 2 (square), 3 (rectangular)
- lens/LED in place of ②. B (black), G (green), R (red), S (blue), W (white), Y (yellow)

For Flush Bezel part numbers specify:

- lens/LED in place of ②. B (black), G (green), R (red), S (blue), W (white), Y (yellow)
- bezel shape in place of ③. 6 (round), 7 (square), 8 (rectangular)
- bezel material in place of ④. M (metallic), Blank (black), G (black with guard)

2. See page 26 for dimensions.

3. Lens can be used with legend markings. Engraving can be done on a marking plate which is placed into the lens, or a clear film can be printed and placed under the lens. For details on the marking plate and film, see page 41.

# Non-Illuminated Pushbuttons

## Non-Illuminated Pushbuttons (Sub-assembled)



### Contact Block

| Terminal Style                                                                    | Material | Contact | Part Number |
|-----------------------------------------------------------------------------------|----------|---------|-------------|
|  | Silver   | SPDT    | LB-T5       |
|                                                                                   |          | DPDT    | LB-T6       |
|                                                                                   |          | 3PDT    | LB-T7       |
|  | Gold     | SPDT    | LB-T1V      |
|                                                                                   |          | DPDT    | LB-T2V      |
|                                                                                   |          | 3PDT    | LB-T3V      |

### Button

| Style                                                                               | Color  | Part Number |
|-------------------------------------------------------------------------------------|--------|-------------|
|   | Black  | LB1A-B1B    |
|                                                                                     | Green  | LB1A-B1G    |
|                                                                                     | Red    | LB1A-B1R    |
|                                                                                     | Blue   | LB1A-B1S    |
|                                                                                     | White  | LB1A-B1W    |
|                                                                                     | Yellow | LB1A-B1Y    |
|  | Black  | LB2A-B1B    |
|                                                                                     | Green  | LB2A-B1G    |
|                                                                                     | Red    | LB2A-B1R    |
|                                                                                     | Blue   | LB2A-B1S    |
|                                                                                     | White  | LB2A-B1W    |
|                                                                                     | Yellow | LB2A-B1Y    |
|  | Black  | LB3A-B1B    |
|                                                                                     | Green  | LB3A-B1G    |
|                                                                                     | Red    | LB3A-B1R    |
|                                                                                     | Blue   | LB3A-B1S    |
|                                                                                     | White  | LB3A-B1W    |
|                                                                                     | Yellow | LB3A-B1Y    |

### Operator

| Style                                                                               | Mounting style                      | Shape       | Momentary | Maintained |
|-------------------------------------------------------------------------------------|-------------------------------------|-------------|-----------|------------|
|    | Standard (Plastic)                  | Round       | LB1L-M0   | LB1L-A0    |
|                                                                                     |                                     | Square      | LB2L-M0   | LB2L-A0    |
|                                                                                     |                                     | Rectangular | LB3L-M0   | LB3L-A0    |
|    | Flush Mount (Plastic)               | Round       | LB6L-M0   | LB6L-A0    |
|                                                                                     |                                     | Square      | LB7L-M0   | LB7L-A0    |
|                                                                                     |                                     | Rectangular | LB8L-M0   | LB8L-A0    |
|   | Flush Mount (Metallic)              | Round       | LB6ML-M0  | LB6ML-A0   |
|                                                                                     |                                     | Square      | LB7ML-M0  | LB7ML-A0   |
|                                                                                     |                                     | Rectangular | LB8ML-M0  | LB8ML-A0   |
|  | Flush Mount (Built-in switch guard) | Round       | LB6GL-M0  | LB6GL-A0   |
|                                                                                     |                                     | Square      | LB7GL-M0  | LB7GL-A0   |
|                                                                                     |                                     | Rectangular | LB8GL-M0  | LB8GL-A0   |

## Selector Switches (Assembled)

| Style                                                                                                                                       | Operator Position |                                                                                                                | Contact | Standard Bezel                           |                                      | Flush Bezel                              |                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------|---------|------------------------------------------|--------------------------------------|------------------------------------------|--------------------------------------|
|                                                                                                                                             |                   |                                                                                                                |         | Solder/Tab Terminal<br>(silver contacts) | PC Board Terminal<br>(gold contacts) | Solder/Tab Terminal<br>(silver contacts) | PC Board Terminal<br>(gold contacts) |
| <b>Standard Bezel (black)</b><br><br>lever shown           | 90°<br>2-position | Maintained<br>                | SPDT    | LB①S-2⑤T5                                | LB①S-2⑤T1V                           | LB③④S-2⑤T5                               | LB③④S-2⑤T1V                          |
|                                                                                                                                             |                   |                                                                                                                | DPDT    | LB①S-2⑤T6                                | LB①S-2⑤T2V                           | LB③④S-2⑤T6                               | LB③④S-2⑤T2V                          |
|                                                                                                                                             |                   |                                                                                                                | 3PDT    | LB①S-2⑤T7                                | LB①S-2⑤T3V                           | LB③④S-2⑤T7                               | LB③④S-2⑤T3V                          |
|                                                                                                                                             |                   | Spring return from right<br>  | SPDT    | LB①S-21⑤T5                               | LB①S-21⑤T1V                          | LB③④S-21⑤T5                              | LB③④S-21⑤T1V                         |
|                                                                                                                                             |                   |                                                                                                                | DPDT    | LB①S-21⑤T6                               | LB①S-21⑤T2V                          | LB③④S-21⑤T6                              | LB③④S-21⑤T2V                         |
|                                                                                                                                             |                   |                                                                                                                | 3PDT    | LB①S-21⑤T7                               | LB①S-21⑤T3V                          | LB③④S-21⑤T7                              | LB③④S-21⑤T3V                         |
| <b>Flush Bezel (metallic or black)</b><br><br>lever shown | 45°<br>3-position | Maintained<br>                | DPDT    | LB①S-3⑤T6                                | LB①S-3⑤T2V                           | LB③④S-3⑤T6                               | LB③④S-3⑤T2V                          |
|                                                                                                                                             |                   |                                                                                                                | 3PDT    | LB①S-3⑤T7                                | LB①S-3⑤T3V                           | LB③④S-3⑤T7                               | LB③④S-3⑤T3V                          |
|                                                                                                                                             |                   | Spring return from right<br> | DPDT    | LB①S-31⑤T6                               | LB①S-31⑤T2V                          | LB③④S-31⑤T6                              | LB③④S-31⑤T2V                         |
|                                                                                                                                             |                   |                                                                                                                | 3PDT    | LB①S-31⑤T7                               | LB①S-31⑤T3V                          | LB③④S-31⑤T7                              | LB③④S-31⑤T3V                         |
|                                                                                                                                             |                   | Spring return from left<br> | DPDT    | LB①S-32⑤T6                               | LB①S-32⑤T2V                          | LB③④S-32⑤T6                              | LB③④S-32⑤T2V                         |
|                                                                                                                                             |                   |                                                                                                                | 3PDT    | LB①S-32⑤T7                               | LB①S-32⑤T3V                          | LB③④S-32⑤T7                              | LB③④S-32⑤T3V                         |
|                                                                                                                                             |                   | Spring return two-way<br>   | DPDT    | LB①S-33⑤T6                               | LB①S-33⑤T2V                          | LB③④S-33⑤T6                              | LB③④S-33⑤T2V                         |
|                                                                                                                                             |                   |                                                                                                                | 3PDT    | LB①S-33⑤T7                               | LB①S-33⑤T3V                          | LB③④S-33⑤T7                              | LB③④S-33⑤T3V                         |

Knob models shown above unless otherwise indicated.

- For Standard Bezel part numbers specify:
  - bezel shape in place of ①: 1 (round), 2 (square), 3 (rectangular)
  - operator shape in place of ⑤: blank (knob), L (lever).
- For Flush Bezel part numbers specify:
  - bezel shape in place of ③: 6 (round), 7 (square), 8 (rectangular)
  - bezel material in place of ④: M (metallic), Blank (black)
  - operator shape in place of ⑤: blank (knob), L (lever).
- See page 22 for contact operation.
- See page 28 for dimensions.

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# Selector Switches

## Selector Switches (Sub-assembled)



### Contact Block

| Terminal Style                                                                    | Material   | Contact | Part Number |
|-----------------------------------------------------------------------------------|------------|---------|-------------|
|  | Solder/Tab | Silver  | SPDT LB-T5  |
|                                                                                   |            |         | DPDT LB-T6  |
|                                                                                   |            |         | 3PDT LB-T7  |
|  | PCB        | Gold    | SPDT LB-T1V |
|                                                                                   |            |         | DPDT LB-T2V |
|                                                                                   |            |         | 3PDT LB-T3V |

SPDT contacts applicable for 2-position switches only.

### Operator

| Style                                                                                                                                                                                              | Shape       | Position | Function          | Part Number |          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|----------|-------------------|-------------|----------|
|                                                                                                                                                                                                    |             |          |                   | Knob        | Lever    |
| <br>Round<br><br>Rectangular | Round       | 2        | Maintained        | LB1S-2Y     | LB1S-2L  |
|                                                                                                                                                                                                    |             |          | Spring from right | LB1S-21Y    | LB1S-21L |
|                                                                                                                                                                                                    |             | 3        | Maintained        | LB1S-3Y     | LB1S-3L  |
|                                                                                                                                                                                                    |             |          | Spring from right | LB1S-31Y    | LB1S-31L |
|                                                                                                                                                                                                    |             |          | Spring from left  | LB1S-32Y    | LB1S-32L |
|                                                                                                                                                                                                    |             |          | Spring from both  | LB1S-33Y    | LB1S-33L |
|                                                                                                                                                                                                    | Square      | 2        | Maintained        | LB2S-2Y     | LB2S-2L  |
|                                                                                                                                                                                                    |             |          | Spring from right | LB2S-21Y    | LB2S-21L |
|                                                                                                                                                                                                    |             | 3        | Maintained        | LB2S-3Y     | LB2S-3L  |
|                                                                                                                                                                                                    |             |          | Spring from right | LB2S-31Y    | LB2S-31L |
|                                                                                                                                                                                                    |             |          | Spring from left  | LB2S-32Y    | LB2S-32L |
|                                                                                                                                                                                                    |             |          | Spring from both  | LB2S-33Y    | LB2S-33L |
|                                                                                                                                                                                                    | Rectangular | 2        | Maintained        | LB3S-2Y     | LB3S-2L  |
|                                                                                                                                                                                                    |             |          | Spring from right | LB3S-21Y    | LB3S-21L |
|                                                                                                                                                                                                    |             | 3        | Maintained        | LB3S-3Y     | LB3S-3L  |
|                                                                                                                                                                                                    |             |          | Spring from right | LB3S-31Y    | LB3S-31L |
|                                                                                                                                                                                                    |             |          | Spring from left  | LB3S-32Y    | LB3S-32L |
|                                                                                                                                                                                                    |             |          | Spring from both  | LB3S-33Y    | LB3S-33L |

| Style                                                                                                                                                                                                                                                                  | Shape            | Position | Function          | Part Number       |           |           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|----------|-------------------|-------------------|-----------|-----------|
|                                                                                                                                                                                                                                                                        |                  |          |                   | Knob              | Lever     |           |
| <div>Flush Mount<br/>(Plastic)</div> <div></div> <div>Round</div> <div></div> <div>Square</div>      | Round            | 2        | Maintained        | LB6S-2Y           | LB6S-2L   |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from right | LB6S-21Y          | LB6S-21L  |           |
|                                                                                                                                                                                                                                                                        |                  | 3        | Maintained        | LB6S-3Y           | LB6S-3L   |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from right | LB6S-31Y          | LB6S-31L  |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from left  | LB6S-32Y          | LB6S-32L  |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from both  | LB6S-33Y          | LB6S-33L  |           |
|                                                                                                                                                                                                                                                                        | Square           | 2        | Maintained        | LB7S-2Y           | LB7S-2L   |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from right | LB7S-21Y          | LB7S-21L  |           |
|                                                                                                                                                                                                                                                                        |                  | 3        | Maintained        | LB7S-3Y           | LB7S-3L   |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from right | LB7S-31Y          | LB7S-31L  |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from left  | LB7S-32Y          | LB7S-32L  |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from both  | LB7S-33Y          | LB7S-33L  |           |
|                                                                                                                                                                                                                                                                        | Rectangular      | 2        | Maintained        | LB8S-2Y           | LB8S-2L   |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from right | LB8S-21Y          | LB8S-21L  |           |
|                                                                                                                                                                                                                                                                        |                  | 3        | Maintained        | LB8S-3Y           | LB8S-3L   |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from right | LB8S-31Y          | LB8S-31L  |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from left  | LB8S-32Y          | LB8S-32L  |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from both  | LB8S-33Y          | LB8S-33L  |           |
| <div>Flush Mount<br/>(Metallic)</div> <div></div> <div>Round</div> <div></div> <div>Square</div> |                  | Round    | 2                 | Maintained        | LB6MS-2Y  | LB6MS-2L  |
|                                                                                                                                                                                                                                                                        |                  |          |                   | Spring from right | LB6MS-21Y | LB6MS-21L |
|                                                                                                                                                                                                                                                                        |                  |          | 3                 | Maintained        | LB6MS-3Y  | LB6MS-3L  |
|                                                                                                                                                                                                                                                                        |                  |          |                   | Spring from right | LB6MS-31Y | LB6MS-31L |
|                                                                                                                                                                                                                                                                        | Spring from left |          |                   | LB6MS-32Y         | LB6MS-32L |           |
|                                                                                                                                                                                                                                                                        | Spring from both |          |                   | LB6MS-33Y         | LB6MS-33L |           |
|                                                                                                                                                                                                                                                                        | Square           | 2        | Maintained        | LB7MS-2Y          | LB7MS-2L  |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from right | LB7MS-21Y         | LB7MS-21L |           |
|                                                                                                                                                                                                                                                                        |                  | 3        | Maintained        | LB7MS-3Y          | LB7MS-3L  |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from right | LB7MS-31Y         | LB7MS-31L |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from left  | LB7MS-32Y         | LB7MS-32L |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from both  | LB7MS-33Y         | LB7MS-33L |           |
|                                                                                                                                                                                                                                                                        | Rectangular      | 2        | Maintained        | LB8MS-2Y          | LB8MS-2L  |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from right | LB8MS-21Y         | LB8MS-21L |           |
|                                                                                                                                                                                                                                                                        |                  | 3        | Maintained        | LB8MS-3Y          | LB8MS-3L  |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from right | LB8MS-31Y         | LB8MS-31L |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from left  | LB8MS-32Y         | LB8MS-32L |           |
|                                                                                                                                                                                                                                                                        |                  |          | Spring from both  | LB8MS-33Y         | LB8MS-33L |           |

## Illuminated Selector Switches (Assembled)

| Style                                                                                                                                                                                                                                                                                                                    | Operating Voltage | Operator Position                                                                               |                                                                                                   | Contact           | Standard Bezel                                                                                    |                                   | Flush Bezel                           |                                   |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|-------------------|---------------------------------------------------------------------------------------------------|-----------------------------------|---------------------------------------|-----------------------------------|
|                                                                                                                                                                                                                                                                                                                          |                   |                                                                                                 |                                                                                                   |                   | Solder/Tab Terminal (silver contacts)                                                             | PC Board Terminal (gold contacts) | Solder/Tab Terminal (silver contacts) | PC Board Terminal (gold contacts) |
| <div>Standard Bezel (black)</div> <div></div> <div></div> <div></div> | 5V DC             | 90°<br>2-position                                                                               | Maintained<br>   | SPDT              | LB①F-2T51②                                                                                        | LB①F-2T11V②                       | LB6③F-2T51②                           | LB6③F-2T11V②                      |
|                                                                                                                                                                                                                                                                                                                          |                   |                                                                                                 | DPDT                                                                                              | LB①F-2T61②        | LB①F-2T21V②                                                                                       | LB6③F-2T61②                       | LB6③F-2T21V②                          |                                   |
|                                                                                                                                                                                                                                                                                                                          |                   | 45°<br>3-position                                                                               | Maintained<br>   | DPDT              | LB①F-3T61②                                                                                        | LB①F-3T21V②                       | LB6③F-3T61②                           | LB6③F-3T21V②                      |
|                                                                                                                                                                                                                                                                                                                          |                   |                                                                                                 | 12V AC/DC                                                                                         | 90°<br>2-position | Maintained<br>   | SPDT                              | LB①F-2T53②                            | LB①F-2T13V②                       |
|                                                                                                                                                                                                                                                                                                                          | DPDT              | LB①F-2T63②                                                                                      |                                                                                                   |                   | LB①F-2T23V②                                                                                       | LB6③F-2T63②                       | LB6③F-2T23V②                          |                                   |
|                                                                                                                                                                                                                                                                                                                          | 45°<br>3-position | Maintained<br> |                                                                                                   | DPDT              | LB①F-3T63②                                                                                        | LB①F-3T23V②                       | LB6③F-3T63②                           | LB6③F-3T23V②                      |
| <div>Flush Bezel (metallic or black)</div> <div></div> <div></div>                                                                                  |                   | 24V AC/DC                                                                                       |                                                                                                   | 90°<br>2-position | Maintained<br> | SPDT                              | LB①F-2T54②                            | LB①F-2T14V②                       |
|                                                                                                                                                                                                                                                                                                                          | DPDT              |                                                                                                 | LB①F-2T64②                                                                                        |                   | LB①F-2T24V②                                                                                       | LB6③F-2T64②                       | LB6③F-2T24V②                          |                                   |
|                                                                                                                                                                                                                                                                                                                          | 45°<br>3-position |                                                                                                 | Maintained<br> | DPDT              | LB①F-3T64②                                                                                        | LB①F-3T24V②                       | LB6③F-3T64②                           | LB6③F-3T24V②                      |
|                                                                                                                                                                                                                                                                                                                          |                   |                                                                                                 |                                                                                                   |                   |                                                                                                   |                                   |                                       |                                   |
|                                                                                                                                                                                                                                                                                                                          |                   |                                                                                                 |                                                                                                   |                   |                                                                                                   |                                   |                                       |                                   |
|                                                                                                                                                                                                                                                                                                                          |                   |                                                                                                 |                                                                                                   |                   |                                                                                                   |                                   |                                       |                                   |

Flush bezel only available with round operator.

- For Standard Bezel part numbers specify:
  - bezel shape in place of ①. 1 (round), 2 (square), 3 (rectangular)
  - color code in place of ②. A (amber), G (green), R (red), S (blue), PW (white), Y (yellow)
- For Flush Bezel part numbers specify:
  - color code in place of ②. A (amber), G (green), R (red), S (blue), PW (white), Y (yellow)
  - bezel material in place of ③. M (metallic), Blank (black)
- See page 22 for contact operation.
- See page 30 for dimensions.

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# Illuminated Selector Switches

## Illuminated Selector Switches (Sub-assembled)



### Contact Block

| Terminal Style                                                                    | Material | Contact | Part Number |
|-----------------------------------------------------------------------------------|----------|---------|-------------|
|  | Silver   | SPDT    | LB-T50      |
|                                                                                   |          | DPDT    | LB-T60      |
|                                                                                   | Gold     | SPDT    | LB-T10      |
|                                                                                   |          | DPDT    | LB-T20      |
|  | Gold     | SPDT    | LB-T10V     |
|                                                                                   |          | DPDT    | LB-T20V     |

SPDT contacts applicable for 2-position switches only.

### Operator

| Style                                                                                                         | Shape       | Position | Function   | Part Number |
|---------------------------------------------------------------------------------------------------------------|-------------|----------|------------|-------------|
|                            | Round       | 2        | Maintained | LB1F-2      |
|                                                                                                               |             | 3        | Maintained | LB1F-3      |
|                                                                                                               | Square      | 2        | Maintained | LB2F-2      |
|                                                                                                               |             | 3        | Maintained | LB2F-3      |
|                                                                                                               | Rectangular | 2        | Maintained | LB3F-2      |
|                                                                                                               |             | 3        | Maintained | LB3F-3      |
| Flush Mount (Plastic)<br>  | Round       | 2        | Maintained | LB6F-2      |
|                                                                                                               |             | 3        | Maintained | LB6F-3      |
| Flush Mount (Metallic)<br> | Round       | 2        | Maintained | LB6MF-2     |
|                                                                                                               |             | 3        | Maintained | LB6MF-3     |

### LED Module

| Style                                                                             | Color  | Voltage | Part Number |
|-----------------------------------------------------------------------------------|--------|---------|-------------|
|  | Amber  | 5V      | LB9Z-LED5A  |
|                                                                                   |        | 12V     | LB9Z-LED1A  |
|                                                                                   |        | 24V     | LB9Z-LED2A  |
|                                                                                   | Green  | 5V      | LB9Z-LED5G  |
|                                                                                   |        | 12V     | LB9Z-LED1G  |
|                                                                                   |        | 24V     | LB9Z-LED2G  |
|                                                                                   | Red    | 5V      | LB9Z-LED5R  |
|                                                                                   |        | 12V     | LB9Z-LED1R  |
|                                                                                   |        | 24V     | LB9Z-LED2R  |
|                                                                                   | Blue   | 5V      | LB9Z-LED5S  |
|                                                                                   |        | 12V     | LB9Z-LED1S  |
|                                                                                   |        | 24V     | LB9Z-LED2S  |
|                                                                                   | White  | 5V      | LB9Z-LED5PW |
|                                                                                   |        | 12V     | LB9Z-LED1PW |
|                                                                                   |        | 24V     | LB9Z-LED2PW |
|                                                                                   | Yellow | 5V      | LB9Z-LED5PW |
|                                                                                   |        | 12V     | LB9Z-LED1PW |
|                                                                                   |        | 24V     | LB9Z-LED2PW |

### Lens Handle

| Style                                                                               | Color  | Part Number |
|-------------------------------------------------------------------------------------|--------|-------------|
|  | Amber  | LA1A-FA     |
|                                                                                     | Green  | LA1A-FG     |
|                                                                                     | Red    | LA1A-FR     |
|                                                                                     | Blue   | LA1A-FS     |
|                                                                                     | White  | LA1A-FW     |
|                                                                                     | Yellow | LA1A-FY     |

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## Key Selector Switches (Assembled)

| Style                                                                                                                                                                                                                                                                                                  | Operator Position        |            | Key retained at  | Contact                                                                             | Standard Bezel                        |                                   | Flush Bezel                           |                                   |             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------|-----------------------------------|---------------------------------------|-----------------------------------|-------------|
|                                                                                                                                                                                                                                                                                                        |                          |            |                                                                                                   |                                                                                     | Solder/Tab Terminal (silver contacts) | PC Board Terminal (gold contacts) | Solder/Tab Terminal (silver contacts) | PC Board Terminal (gold contacts) |             |
| <div>Standard Bezel (black)</div>                   | 90° 2-position           | Maintained | A                                                                                                 |    | SPDT                                  | LB⓪K-2T5A                         | LB⓪K-2T1VA                            | LB⓪⓪K-2T5A                        | LB⓪⓪K-2T1VA |
|                                                                                                                                                                                                                                                                                                        |                          |            |                                                                                                   |                                                                                     | DPDT                                  | LB⓪K-2T6A                         | LB⓪K-2T2VA                            | LB⓪⓪K-2T6A                        | LB⓪⓪K-2T2VA |
|                                                                                                                                                                                                                                                                                                        |                          |            |                                                                                                   |                                                                                     | 3PDT                                  | LB⓪K-2T7A                         | LB⓪K-2T3VA                            | LB⓪⓪K-2T7A                        | LB⓪⓪K-2T3VA |
|                                                                                                                                                                                                                                                                                                        |                          |            | B                                                                                                 |    | SPDT                                  | LB⓪K-2T5B                         | LB⓪K-2T1VB                            | LB⓪⓪K-2T5B                        | LB⓪⓪K-2T1VB |
|                                                                                                                                                                                                                                                                                                        |                          |            |                                                                                                   |                                                                                     | DPDT                                  | LB⓪K-2T6B                         | LB⓪K-2T2VB                            | LB⓪⓪K-2T6B                        | LB⓪⓪K-2T2VB |
|                                                                                                                                                                                                                                                                                                        |                          |            |                                                                                                   |                                                                                     | 3PDT                                  | LB⓪K-2T7B                         | LB⓪K-2T3VB                            | LB⓪⓪K-2T7B                        | LB⓪⓪K-2T3VB |
|                                                                                                                                                                                                                                                                                                        |                          |            | C                                                                                                 |    | SPDT                                  | LB⓪K-2T5C                         | LB⓪K-2T1VC                            | LB⓪⓪K-2T5C                        | LB⓪⓪K-2T1VC |
|                                                                                                                                                                                                                                                                                                        |                          |            |                                                                                                   |                                                                                     | DPDT                                  | LB⓪K-2T6C                         | LB⓪K-2T2VC                            | LB⓪⓪K-2T6C                        | LB⓪⓪K-2T2VC |
|                                                                                                                                                                                                                                                                                                        |                          |            |                                                                                                   |                                                                                     | 3PDT                                  | LB⓪K-2T7C                         | LB⓪K-2T3VC                            | LB⓪⓪K-2T7C                        | LB⓪⓪K-2T3VC |
|                                                                                                                                                                                                                                                                                                        | Spring return from right | B          |                  | SPDT                                                                                | LB⓪K-21T5B                            | LB⓪K-21T1VB                       | LB⓪⓪K-21T5B                           | LB⓪⓪K-21T1VB                      |             |
|                                                                                                                                                                                                                                                                                                        |                          |            |                                                                                                   | DPDT                                                                                | LB⓪K-21T6B                            | LB⓪K-21T2VB                       | LB⓪⓪K-21T6B                           | LB⓪⓪K-21T2VB                      |             |
|                                                                                                                                                                                                                                                                                                        |                          |            |                                                                                                   | 3PDT                                                                                | LB⓪K-21T7B                            | LB⓪K-21T3VB                       | LB⓪⓪K-21T7B                           | LB⓪⓪K-21T3VB                      |             |
| <div>Flush Bezel (metallic or black)</div>    | 45° 3-position           | Maintained | A                                                                                                 |   | DPDT                                  | LB⓪K-3T6A                         | LB⓪K-3T2VA                            | LB⓪⓪K-3T6A                        | LB⓪⓪K-3T2VA |
|                                                                                                                                                                                                                                                                                                        |                          |            |                                                                                                   |                                                                                     | 3PDT                                  | LB⓪K-3T7A                         | LB⓪K-3T3VA                            | LB⓪⓪K-3T7A                        | LB⓪⓪K-3T3VA |
|                                                                                                                                                                                                                                                                                                        |                          |            | B                                                                                                 |  | DPDT                                  | LB⓪K-3T6B                         | LB⓪K-3T2VB                            | LB⓪⓪K-3T6B                        | LB⓪⓪K-3T2VB |
|                                                                                                                                                                                                                                                                                                        |                          |            |                                                                                                   |                                                                                     | 3PDT                                  | LB⓪K-3T7B                         | LB⓪K-3T3VB                            | LB⓪⓪K-3T7B                        | LB⓪⓪K-3T3VB |
|                                                                                                                                                                                                                                                                                                        |                          |            | C                                                                                                 |  | DPDT                                  | LB⓪K-3T6C                         | LB⓪K-3T2VC                            | LB⓪⓪K-3T6C                        | LB⓪⓪K-3T2VC |
|                                                                                                                                                                                                                                                                                                        |                          |            |                                                                                                   |                                                                                     | 3PDT                                  | LB⓪K-3T7C                         | LB⓪K-3T3VC                            | LB⓪⓪K-3T7C                        | LB⓪⓪K-3T3VC |
|                                                                                                                                                                                                                                                                                                        |                          |            | D                                                                                                 |  | DPDT                                  | LB⓪K-3T6D                         | LB⓪K-3T2VD                            | LB⓪⓪K-3T6D                        | LB⓪⓪K-3T2VD |
|                                                                                                                                                                                                                                                                                                        |                          |            |                                                                                                   |                                                                                     | 3PDT                                  | LB⓪K-3T7D                         | LB⓪K-3T3VD                            | LB⓪⓪K-3T7D                        | LB⓪⓪K-3T3VD |
|                                                                                                                                                                                                                                                                                                        |                          |            | E                                                                                                 |  | DPDT                                  | LB⓪K-3T6E                         | LB⓪K-3T2VE                            | LB⓪⓪K-3T6E                        | LB⓪⓪K-3T2VE |
|                                                                                                                                                                                                                                                                                                        |                          |            |                                                                                                   |                                                                                     | 3PDT                                  | LB⓪K-3T7E                         | LB⓪K-3T3VE                            | LB⓪⓪K-3T7E                        | LB⓪⓪K-3T3VE |
|                                                                                                                                                                                                                                                                                                        |                          |            | G                                                                                                 |  | DPDT                                  | LB⓪K-3T6G                         | LB⓪K-3T2VG                            | LB⓪⓪K-3T6G                        | LB⓪⓪K-3T2VG |
|                                                                                                                                                                                                                                                                                                        |                          |            |                                                                                                   |                                                                                     | 3PDT                                  | LB⓪K-3T7G                         | LB⓪K-3T3VG                            | LB⓪⓪K-3T7G                        | LB⓪⓪K-3T3VG |
|                                                                                                                                                                                                                                                                                                        |                          |            | H                                                                                                 |  | DPDT                                  | LB⓪K-3T6H                         | LB⓪K-3T2VH                            | LB⓪⓪K-3T6H                        | LB⓪⓪K-3T2VH |
|                                                                                                                                                                                                                                                                                                        |                          |            |                                                                                                   |                                                                                     | 3PDT                                  | LB⓪K-3T7H                         | LB⓪K-3T3VH                            | LB⓪⓪K-3T7H                        | LB⓪⓪K-3T3VH |

Assembled Key Selector Switches con't on next page.

# Key Selector Switches

## Key Selector Switches con't

| Style                                                                                                                 | Operator Position | Key retained at ●                                                                   | Contact | Standard Bezel                                                                      |                                   | Flush Bezel                           |                                   |              |              |
|-----------------------------------------------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------|-----------------------------------|---------------------------------------|-----------------------------------|--------------|--------------|
|                                                                                                                       |                   |                                                                                     |         | Solder/Tab Terminal (silver contacts)                                               | PC Board Terminal (gold contacts) | Solder/Tab Terminal (silver contacts) | PC Board Terminal (gold contacts) |              |              |
| Standard Bezel (black)<br>           | 45° 3-position    | Spring return from right                                                            | B       |    | DPDT                              | LB⓪K-31T6B                            | LB⓪K-31T2VB                       | LB⓪⓪K-31T6B  | LB⓪⓪K-31T2VB |
|                                                                                                                       |                   |                                                                                     |         | 3PDT                                                                                | LB⓪K-31T7B                        | LB⓪K-31T3VB                           | LB⓪⓪K-31T7B                       | LB⓪⓪K-31T3VB |              |
|                                                                                                                       |                   |                                                                                     | D       |    | DPDT                              | LB⓪K-31T6D                            | LB⓪K-31T2VD                       | LB⓪⓪K-31T6D  | LB⓪⓪K-31T2VD |
|                                                                                                                       |                   |                                                                                     |         | 3PDT                                                                                | LB⓪K-31T7D                        | LB⓪K-31T3VD                           | LB⓪⓪K-31T7D                       | LB⓪⓪K-31T3VD |              |
|                                                                                                                       |                   |                                                                                     | G       |    | DPDT                              | LB⓪K-31T6G                            | LB⓪K-31T2VG                       | LB⓪⓪K-31T6G  | LB⓪⓪K-31T2VG |
|                                                                                                                       |                   |                                                                                     |         | 3PDT                                                                                | LB⓪K-31T7G                        | LB⓪K-31T3VG                           | LB⓪⓪K-31T7G                       | LB⓪⓪K-31T3VG |              |
| Flush Bezel (metallic or black)<br> |                   | Spring return from left                                                             | C       |    | DPDT                              | LB⓪K-32T6C                            | LB⓪K-32T2VC                       | LB⓪⓪K-32T6C  | LB⓪⓪K-32T2VC |
|                                                                                                                       |                   |                                                                                     |         | 3PDT                                                                                | LB⓪K-32T7C                        | LB⓪K-32T3VC                           | LB⓪⓪K-32T7C                       | LB⓪⓪K-32T3VC |              |
|                                                                                                                       |                   |                                                                                     | D       |   | DPDT                              | LB⓪K-32T6D                            | LB⓪K-32T2VD                       | LB⓪⓪K-32T6D  | LB⓪⓪K-32T2VD |
|                                                                                                                       |                   |                                                                                     |         | 3PDT                                                                                | LB⓪K-32T7D                        | LB⓪K-32T3VD                           | LB⓪⓪K-32T7D                       | LB⓪⓪K-32T3VD |              |
|                                                                                                                       |                   |                                                                                     | H       |  | DPDT                              | LB⓪K-32T6H                            | LB⓪K-32T2VH                       | LB⓪⓪K-32T6H  | LB⓪⓪K-32T2VH |
|                                                                                                                       |                   |                                                                                     |         | 3PDT                                                                                | LB⓪K-32T7H                        | LB⓪K-32T3VH                           | LB⓪⓪K-32T7H                       | LB⓪⓪K-32T3VH |              |
| Spring return two-way                                                                                                 | D                 |  | DPDT    | LB⓪K-33T6D                                                                          | LB⓪K-33T2VD                       | LB⓪⓪K-33T6D                           | LB⓪⓪K-33T2VD                      |              |              |
|                                                                                                                       |                   |                                                                                     | 3PDT    | LB⓪K-33T7D                                                                          | LB⓪K-33T3VD                       | LB⓪⓪K-33T7D                           | LB⓪⓪K-33T3VD                      |              |              |

- Key is retained at ● and removable at ○ positions.
- Two keys are supplied.
- For Standard Bezel part numbers specify bezel shape in place of ⓪. 1 (round), 2 (square), 3 (rectangular)
- For Flush Bezel part numbers specify:
  - bezel shape in place of ⓪. 6 (round), 7 (square), 8 (rectangular)
  - bezel material in place of ⓪. M (metallic), Blank (black)
- See page 22 for contact operation.
- See page 31 for dimensions.
- For additional security, wave keys also available.  
 Add the letter "S" before the "T" in the part no. Example: LB1K-31ST1A  
 Besides the standard wave key (key number 0H), six other keys are available.  
 To order other keys, specify the key number as shown below:  
 Example: LB1K-31ST2B-1H (Key number is indicated on the key cylinder. Standard keys do not have a key number indication.)
 

↗ (blank): Standard wave key (0H)  
 1H to 2H: Reversible wave key  
 3H to 6H: Non-reversible wave key
- If ordering standard wave key (0H), subcomponents are available, see next page.
- If ordering other than standard wave key (for example, key number 6H), only completed switches are available.

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## Key Selector Switches (Sub-assembled)

Contact Block      Operator      Completed Unit



### Contact Block

| Terminal Style                                                                    | Material   | Contact | Part Number |
|-----------------------------------------------------------------------------------|------------|---------|-------------|
|  | Solder/Tab | Silver  | SPDT LB-T5  |
|                                                                                   |            |         | DPDT LB-T6  |
|                                                                                   |            |         | 3PDT LB-T7  |
|  | PCB        | Gold    | SPDT LB-T1V |
|                                                                                   |            |         | DPDT LB-T2V |
|                                                                                   |            |         | 3PDT LB-T3V |

### Operator

| Style                                                                               | Shape       | Position | Function          | Part number |
|-------------------------------------------------------------------------------------|-------------|----------|-------------------|-------------|
|  | Round       | 2        | Maintained        | LB1K-2Ⓢ     |
|                                                                                     |             |          | Spring from right | LB1K-21B    |
|                                                                                     |             | 3        | Maintained        | LB1K-3Ⓢ     |
|                                                                                     |             |          | Spring from right | LB1K-31Ⓢ    |
|                                                                                     |             |          | Spring from left  | LB1K-32Ⓢ    |
|                                                                                     |             |          | Spring from both  | LB1K-33D    |
|                                                                                     | Square      | 2        | Maintained        | LB2K-2Ⓢ     |
|                                                                                     |             |          | Spring from right | LB2K-21B    |
|                                                                                     |             | 3        | Maintained        | LB2K-3Ⓢ     |
|                                                                                     |             |          | Spring from right | LB2K-31Ⓢ    |
|                                                                                     |             |          | Spring from left  | LB2K-32Ⓢ    |
|                                                                                     |             |          | Spring from both  | LB2K-33D    |
|                                                                                     | Rectangular | 2        | Maintained        | LB3K-2Ⓢ     |
|                                                                                     |             |          | Spring from right | LB3K-21B    |
|                                                                                     |             | 3        | Maintained        | LB3K-3Ⓢ     |
|                                                                                     |             |          | Spring from right | LB3K-31Ⓢ    |
|                                                                                     |             |          | Spring from left  | LB3K-32Ⓢ    |
|                                                                                     |             |          | Spring from both  | LB3K-33D    |

| Style                                                                                | Shape       | Position | Function          | Part number |
|--------------------------------------------------------------------------------------|-------------|----------|-------------------|-------------|
|    | Round       | 2        | Maintained        | LB6K-2Ⓢ     |
|                                                                                      |             |          | Spring from right | LB6K-21B    |
|                                                                                      |             | 3        | Maintained        | LB6K-3Ⓢ     |
|                                                                                      |             |          | Spring from right | LB6K-31Ⓢ    |
|                                                                                      |             |          | Spring from left  | LB6K-32Ⓢ    |
|                                                                                      |             |          | Spring from both  | LB6K-33D    |
|                                                                                      | Square      | 2        | Maintained        | LB7K-2Ⓢ     |
|                                                                                      |             |          | Spring from right | LB7K-21B    |
|                                                                                      |             | 3        | Maintained        | LB7K-3Ⓢ     |
|                                                                                      |             |          | Spring from right | LB7K-31Ⓢ    |
|                                                                                      |             |          | Spring from left  | LB7K-32Ⓢ    |
|                                                                                      |             |          | Spring from both  | LB7K-33D    |
|                                                                                      | Rectangular | 2        | Maintained        | LB8K-2Ⓢ     |
|                                                                                      |             |          | Spring from right | LB8K-21B    |
|                                                                                      |             | 3        | Maintained        | LB8K-3Ⓢ     |
|                                                                                      |             |          | Spring from right | LB8K-31Ⓢ    |
|                                                                                      |             |          | Spring from left  | LB8K-32Ⓢ    |
|                                                                                      |             |          | Spring from both  | LB8K-33D    |
|  | Round       | 2        | Maintained        | LB6MK-2Ⓢ    |
|                                                                                      |             |          | Spring from right | LB6MK-21B   |
|                                                                                      |             | 3        | Maintained        | LB6MK-3Ⓢ    |
|                                                                                      |             |          | Spring from right | LB6MK-31Ⓢ   |
|                                                                                      |             |          | Spring from left  | LB6MK-32Ⓢ   |
|                                                                                      |             |          | Spring from both  | LB6MK-33D   |
|                                                                                      | Square      | 2        | Maintained        | LB7MK-2Ⓢ    |
|                                                                                      |             |          | Spring from right | LB7MK-21B   |
|                                                                                      |             | 3        | Maintained        | LB7MK-3Ⓢ    |
|                                                                                      |             |          | Spring from right | LB7MK-31Ⓢ   |
|                                                                                      |             |          | Spring from left  | LB7MK-32Ⓢ   |
|                                                                                      |             |          | Spring from both  | LB7MK-33D   |
|                                                                                      | Rectangular | 2        | Maintained        | LB8MK-2Ⓢ    |
|                                                                                      |             |          | Spring from right | LB8MK-21B   |
|                                                                                      |             | 3        | Maintained        | LB8MK-3Ⓢ    |
|                                                                                      |             |          | Spring from right | LB8MK-31Ⓢ   |
|                                                                                      |             |          | Spring from left  | LB8MK-32Ⓢ   |
|                                                                                      |             |          | Spring from both  | LB8MK-33D   |

1. In place of Ⓢ specify retention option code from table below.
2. For standard wave key operators, add "S" to part number before the key retention code from table below. (For example, LB6K-2B with wave key would be LB6K-2SB.)

### Ⓢ Retention Option Code

| Code | Description                                                   |
|------|---------------------------------------------------------------|
| A    | Key not retained in any position (removable in all positions) |
| B    | Key retained in right position only                           |
| C    | Key retained in left position only                            |
| D    | Key retained in left and right (3-position only)              |

| Code | Description                                        |
|------|----------------------------------------------------|
| E    | Key retained in center only (3-position only)      |
| G    | Key retained in right and center (3-position only) |
| H    | Key retained in left and center (3-position only)  |

# Lever Switches

## Lever Switches (Assembled)

| Style                                                                                                              | Operator Position |                                                                                                                       | Contact | Solder/Tab Terminal<br>(silver contacts) | PC Board Terminal<br>(gold contacts) |
|--------------------------------------------------------------------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------------------------------------------|---------|------------------------------------------|--------------------------------------|
| <b>Standard Bezel (black)</b><br> | 2-position        | Maintained<br>                       | SPDT    | LB⊙T-2T5                                 | LB⊙T-2T1V                            |
|                                                                                                                    |                   |                                                                                                                       | DPDT    | LB⊙T-2T6                                 | LB⊙T-2T2V                            |
|                                                                                                                    |                   |                                                                                                                       | 3PDT    | LB⊙T-2T7                                 | LB⊙T-2T3V                            |
| <b>Flush Bezel (black)</b><br>    | 3-position        | Maintained<br>                       | DPDT    | LB⊙T-3T2                                 | LB⊙T-3T6V                            |
|                                                                                                                    |                   |                                                                                                                       | 3PDT    | LB⊙T-3T3                                 | LB⊙T-3T7V                            |
|                                                                                                                    |                   | Spring return from<br>top/bottom<br> | DPDT    | LB⊙T-33T2                                | LB⊙T-33T6V                           |
|                                                                                                                    |                   |                                                                                                                       | 3PDT    | LB⊙T-33T3                                | LB⊙T-33T7V                           |

- For all part numbers, specify bezel in place of ⊙. 1 (standard bezel), 6 (flush bezel).
- See page 22 for contact operation,.
- See page 33 for dimensions.

## Lever Switches (Sub-assembled)

| Contact Block                                                                        | Operator | Completed Unit                                                                      |
|--------------------------------------------------------------------------------------|----------|-------------------------------------------------------------------------------------|
|   | +        |  |
|                                                                                      |          | =                                                                                   |
|  |          |                                                                                     |

### Contact Block

| Terminal Style                                                                                 | Material | Contact | Part Number |
|------------------------------------------------------------------------------------------------|----------|---------|-------------|
|  Solder/Tab | Silver   | SPDT    | LB-T5       |
|                                                                                                |          | DPDT    | LB-T6       |
|                                                                                                |          | 3PDT    | LB-T7       |
|                                                                                                | Gold     | SPDT    | LB-T1       |
|                                                                                                |          | DPDT    | LB-T2       |
|                                                                                                |          | 3PDT    | LB-T3       |
|  PCB        | Gold     | SPDT    | LB-T1V      |
|                                                                                                |          | DPDT    | LB-T2V      |
|                                                                                                |          | 3PDT    | LB-T3V      |

### Operator

| Style                                                                                                                 | Position | Function                | Part Number |
|-----------------------------------------------------------------------------------------------------------------------|----------|-------------------------|-------------|
| Round Standard<br>(Plastic)<br>    | 2        | Maintained              | LB1T-2      |
|                                                                                                                       | 3        | Maintained              | LB1T-3      |
|                                                                                                                       |          | Spring return from both | LB1T-33     |
| Round Flush Mount<br>(Plastic)<br> | 2        | Maintained              | LB6T-2      |
|                                                                                                                       | 3        | Maintained              | LB6T-3      |
|                                                                                                                       |          | Spring return from both | LB6T-33     |

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## Buzzers (Assembled)

| Style                                                                                                                                                                                                                                                                             | Shape       | Voltage | Standard Bezel      |                   | Flush Bezel         |                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|---------|---------------------|-------------------|---------------------|-------------------|
|                                                                                                                                                                                                                                                                                   |             |         | Solder/Tab Terminal | PC Board Terminal | Solder/Tab Terminal | PC Board Terminal |
| <b>Black Bezel</b><br><br><br> | Round       | 12V DC  | —                   | —                 | LB6Z-1T03           | LB6Z-1T03V        |
|                                                                                                                                                                                                                                                                                   |             | 24V DC  | —                   | —                 | LB6Z-1T04           | LB6Z-1T04V        |
|                                                                                                                                                                                                                                                                                   | Rectangular | 12V DC  | LB3Z-1T03           | LB3Z-1T03V        | LB8Z-1T03           | LB8Z-1T03V        |
|                                                                                                                                                                                                                                                                                   |             | 24V DC  | LB3Z-1T04           | LB3Z-1T04V        | LB8Z-1T04           | LB8Z-1T04V        |
| <b>Metallic Bezel</b><br><br>                                                                                  | Round       | 12V DC  | —                   | —                 | LB6MZ-1T03          | LB6MZ-1T03V       |
|                                                                                                                                                                                                                                                                                   |             | 24V DC  | —                   | —                 | LB6MZ-1T04          | LB6MZ-1T04V       |
|                                                                                                                                                                                                                                                                                   | Rectangular | 12V DC  | —                   | —                 | LB8MZ-1T03          | LB8MZ-1T03V       |
|                                                                                                                                                                                                                                                                                   |             | 24V DC  | —                   | —                 | LB8MZ-1T04          | LB8MZ-1T04V       |

1. IP54 Rated.
2. For IP40 rating, use part number LB3Z-104K.
3. See page 34 for dimensions.

## Buzzers (Sub-assembled)



### Contact Block

| Terminal Style                                                                                 | Part Number |
|------------------------------------------------------------------------------------------------|-------------|
|  Solder/Tab | LB-T00      |
|  PCB        | LB-T00V     |

### Operator

| Style                                                                               | Mounting Style         | Shape       | Voltage   |           |
|-------------------------------------------------------------------------------------|------------------------|-------------|-----------|-----------|
|                                                                                     |                        |             | 12V DC    | 24V DC    |
|  | Standard (Plastic)     | Rectangular | LB3Z-103  | LB3Z-104  |
|  | Flush Mount (Plastic)  | Round       | LB6Z-103  | LB6Z-104  |
|                                                                                     |                        | Rectangular | LB8Z-103  | LB8Z-104  |
|  | Flush Mount (Metallic) | Round       | LB6MZ-103 | LB6MZ-104 |
|                                                                                     |                        | Rectangular | LB8MZ-103 | LB8MZ-104 |

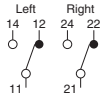
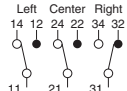
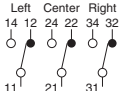
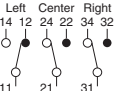
# Contact Operations & Dimensions (mm)

## Contact Operation

### Selector Switch, Illuminated Selector Switch, Key Selector Switch

| Operator Position & Contact Operation (Top View) |                |                              |                              |                           |        |          |         |  |
|--------------------------------------------------|----------------|------------------------------|------------------------------|---------------------------|--------|----------|---------|--|
| Position                                         |                |                              |                              | Contact                   | ↙ Left | ↑ Center | ↘ Right |  |
| 90°<br>2-position                                | <br>Maintained |                              | <br>Spring return from right | SPDT                      |        |          |         |  |
|                                                  |                |                              |                              | DPDT                      |        |          |         |  |
|                                                  |                |                              |                              | 3PDT                      |        |          |         |  |
| 45°<br>3-position                                | <br>Maintained | <br>Spring return from right | <br>Spring return from left  | <br>Spring return two-way | DPDT   |          |         |  |
|                                                  |                |                              |                              |                           | 3PDT   |          |         |  |

## Lever Switch

| Lever Position & Contact Operation (Top View) |                                                                                     |                                                                                     |         |                                                                                      |                                                                                       |                                                                                       |
|-----------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Position                                      |                                                                                     |                                                                                     | Contact | Down                                                                                 | Center                                                                                | Up                                                                                    |
| 90°<br>2-position                             |  |                                                                                     | SPDT    |  |  |  |
|                                               |                                                                                     |                                                                                     | DPDT    |  |  |  |
|                                               |                                                                                     |                                                                                     | 3PDT    |  |  |  |
| 45°<br>3-position                             |  |  | DPDT    |  |  |  |
|                                               |                                                                                     |                                                                                     | 3PDT    |  |  |  |

## Mounting Hole Layout (mm)



\*1. Rectangular: 24mm  
3PDT: 23.2mm  
\*2. 3PDT: 21mm



\*1. 3PDT: 23.2mm  
\*2. Switches with Guard: 45mm

## PC Board Drilling Layout (mm)

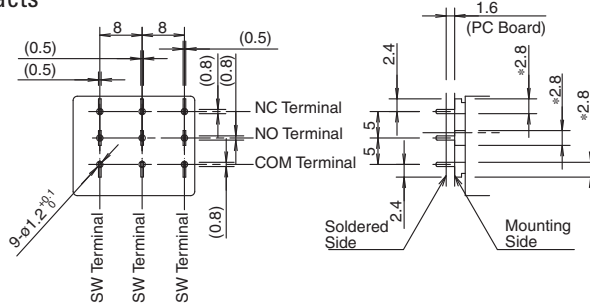
### Notes for Designing PC Board and Circuit

1. Use 1.6mm-thick glass epoxy PC board with drilled holes.
2. Design a circuit so that the LB series can operate within the rated voltage and current range. Make sure that inrush current and voltage do not exceed the rating.
3. Minimum applicable load is 5V AC/DC, 1mA on gold contacts.
4. Since the \*2.8mm-wide terminal touches the PC board as shown below, short circuit may occur with pattern lines. Design a circuit that prevents short circuits.

### SPDT/DPDT Contacts



### 3PDT Contacts



## PC Board Drilling Layout (Bottom View)

### SPDT/DPDT Contacts



### 3PDT Contacts



1. When designing, note the alignment of the center lines of the contact blocks and operators.
2. The diameter of the terminal hole is ø1.2.
3. Hole diameter may vary to meet installation requirements. Determine the location and the size of the hole so that the locking lever can be operated.

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# Dimensions (mm)

## Illuminated Pushbutton

### Standard Bezels



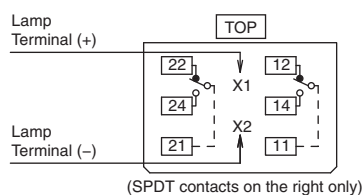
### Flush Bezels

#### SPDT/DPDT Contacts

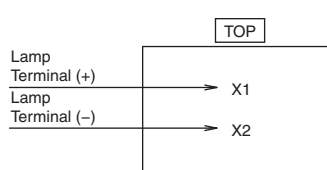


## Terminal Arrangement (Bottom View)

### Illuminated Pushbuttons



### Pilot Lights

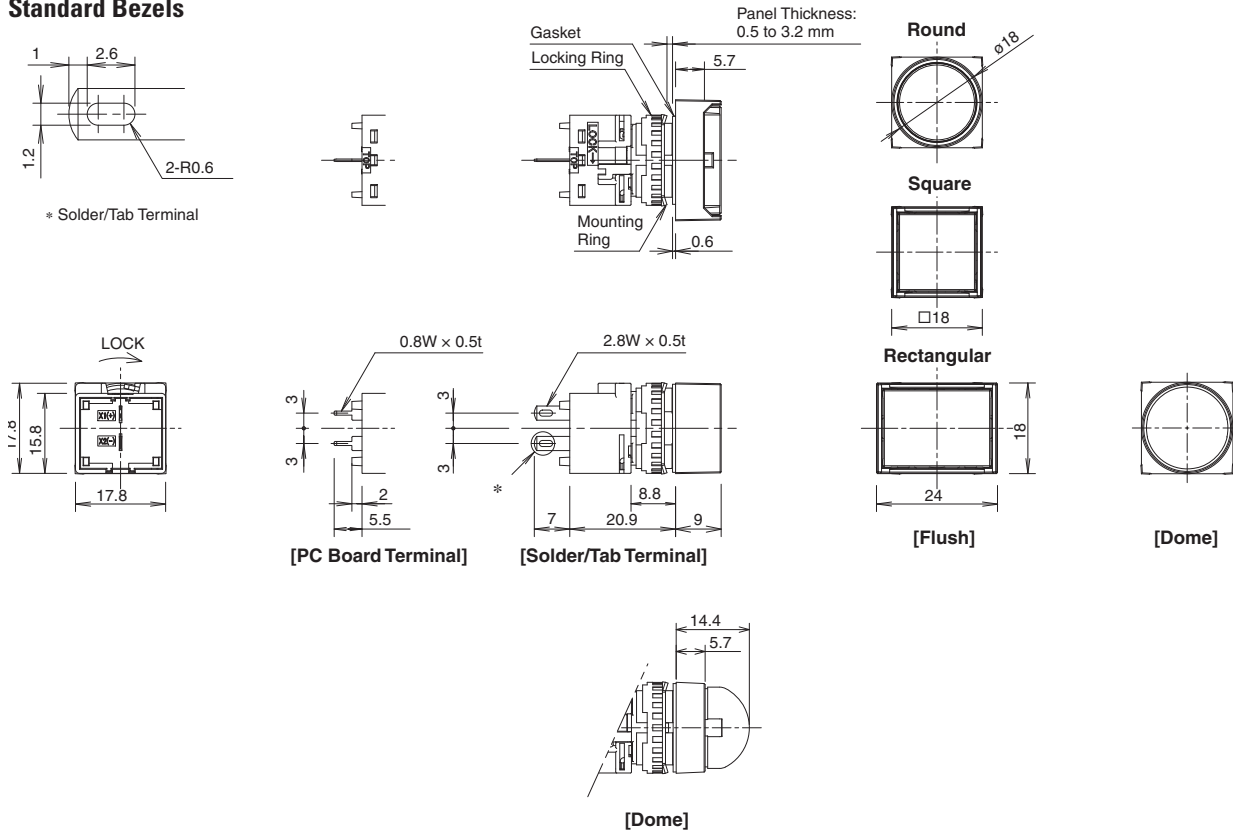


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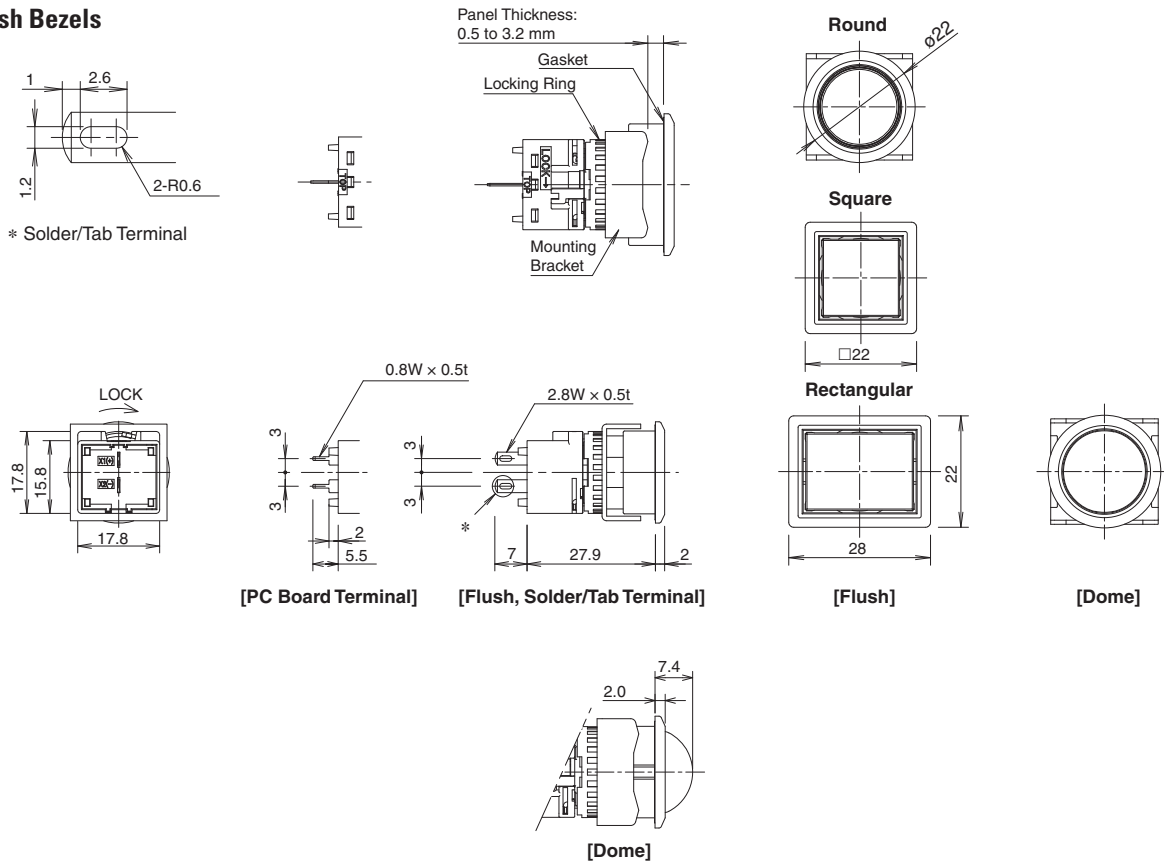
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## Pilot Lights

### Standard Bezels



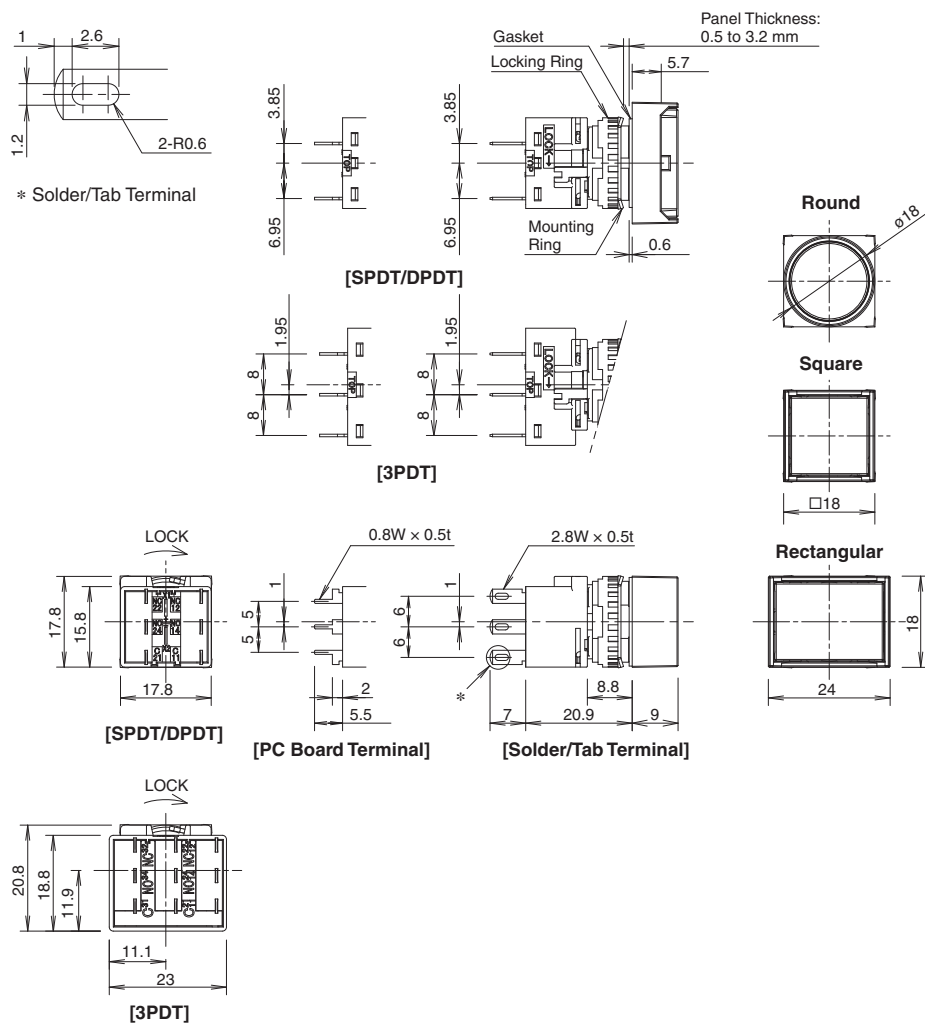
### Flush Bezels



# Dimensions (mm)

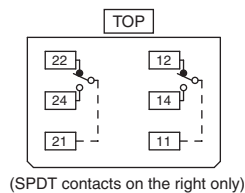
## Non-Illuminated Pushbuttons

### Standard Bezels

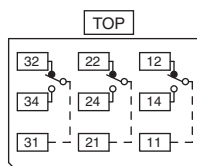


## Terminal Arrangement (Bottom View)

### SPDT/DPDT Contacts



### 3PDT Contacts



## Non-Illuminated Pushbuttons

### Flush Bezels



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## Selector Switches

### Standard Bezels



\* Solder/Tab Terminal



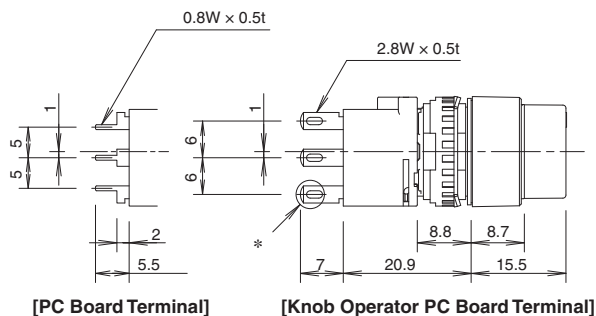
[SPDT/DPDT]



[3PDT]



[SPDT/DPDT]



[PC Board Terminal]

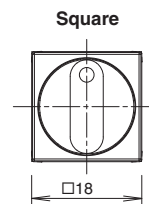
[Knob Operator PC Board Terminal]



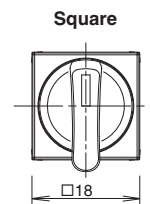
Round



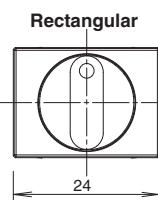
Round



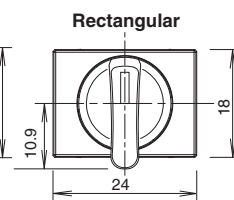
Square



Square



Rectangular



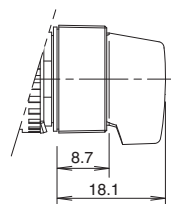
Rectangular

[Knob Operator]

[Lever Operator]



[3PDT]



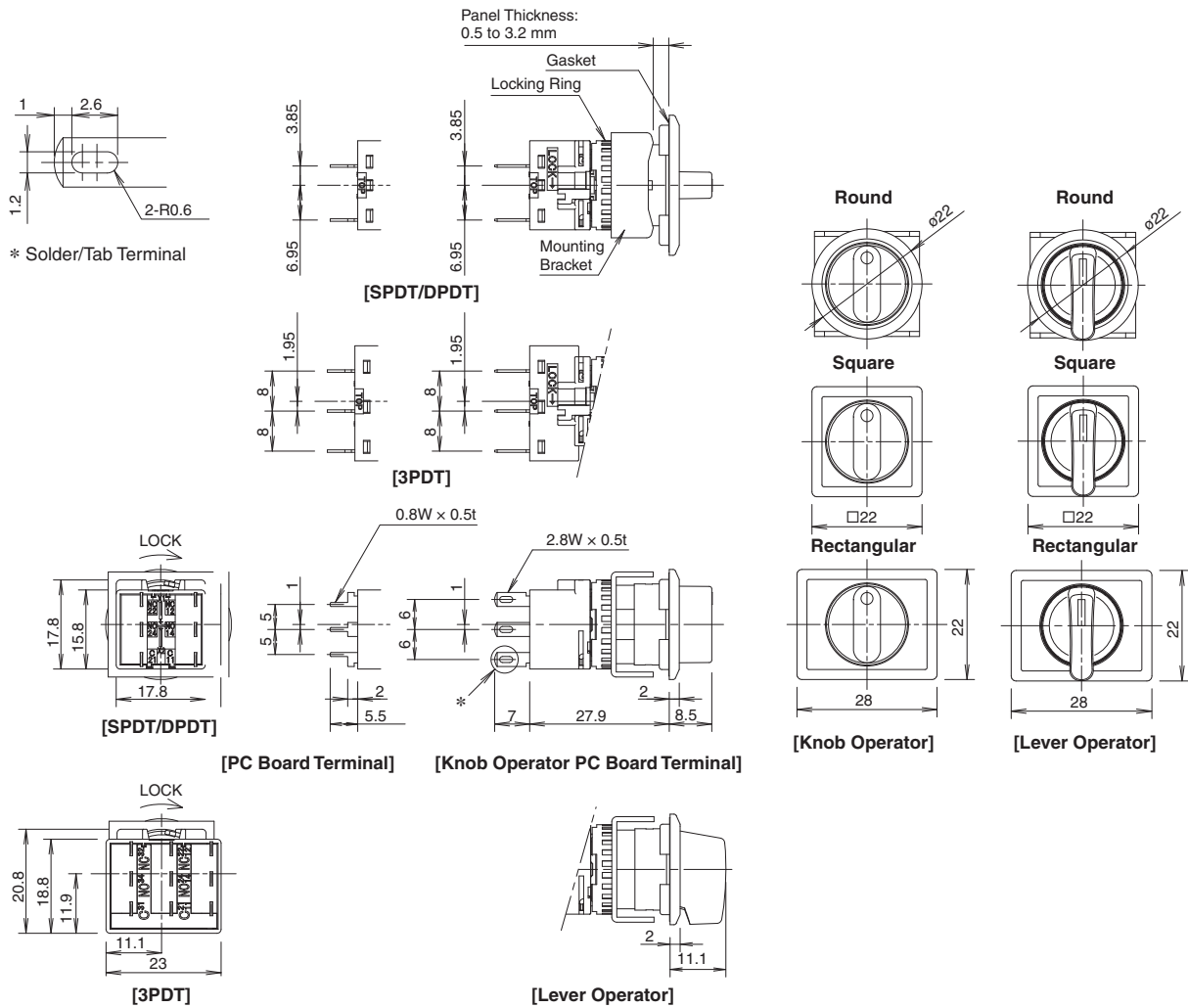
[Lever Operator]

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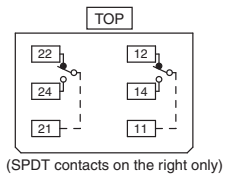
## Selector Switches

### Flush Bezels

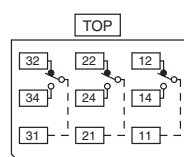


## Terminal Arrangement (Bottom View)

### SPDT/DPDT Contacts

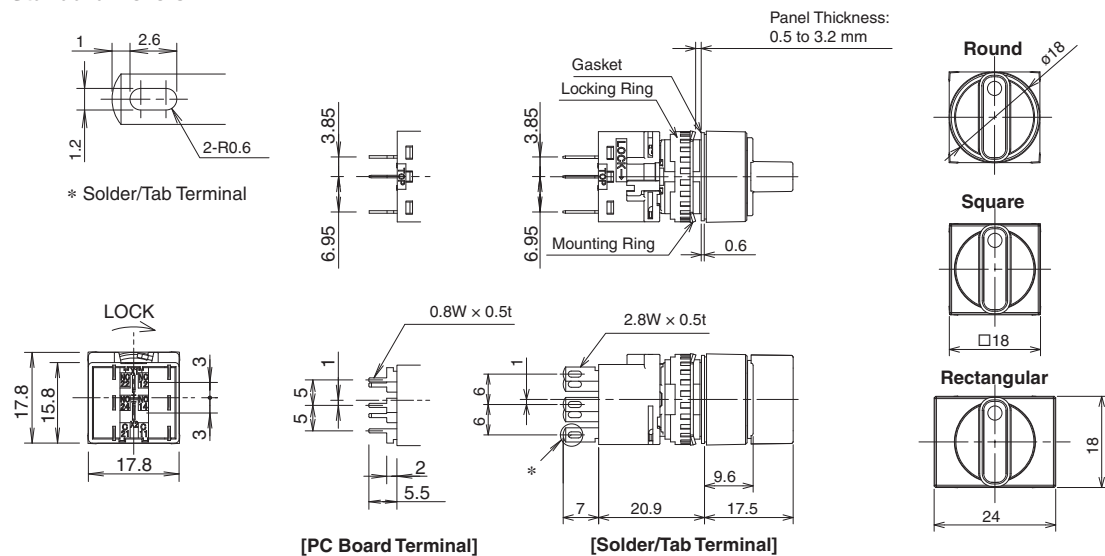


### 3PDT Contacts

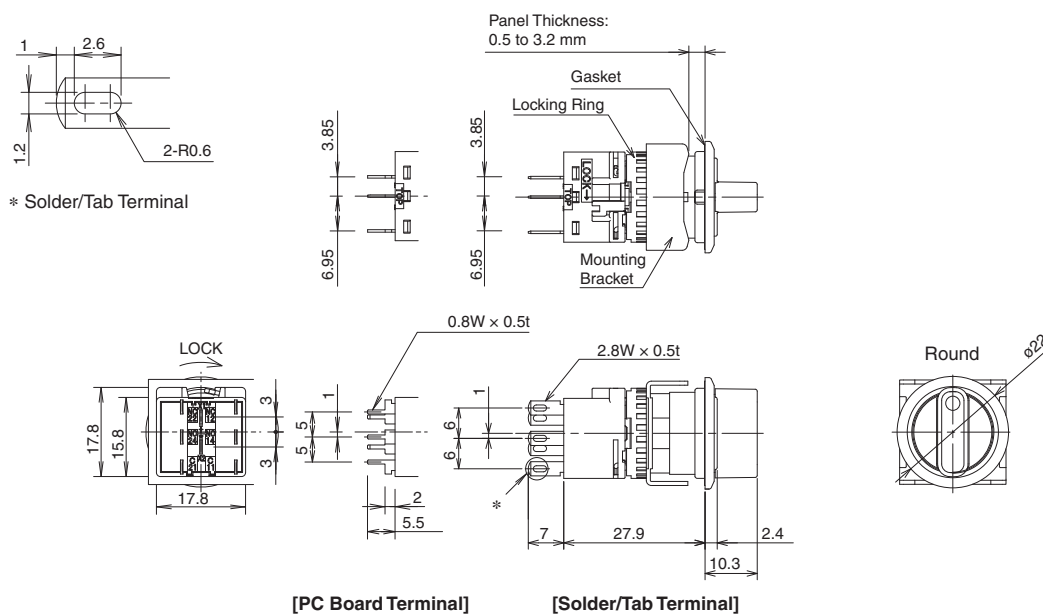


## Illuminated Selector Switches

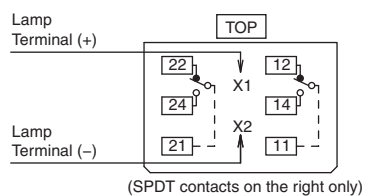
### Standard Bezels



### Flush Bezels



### Terminal Arrangement (Bottom View)



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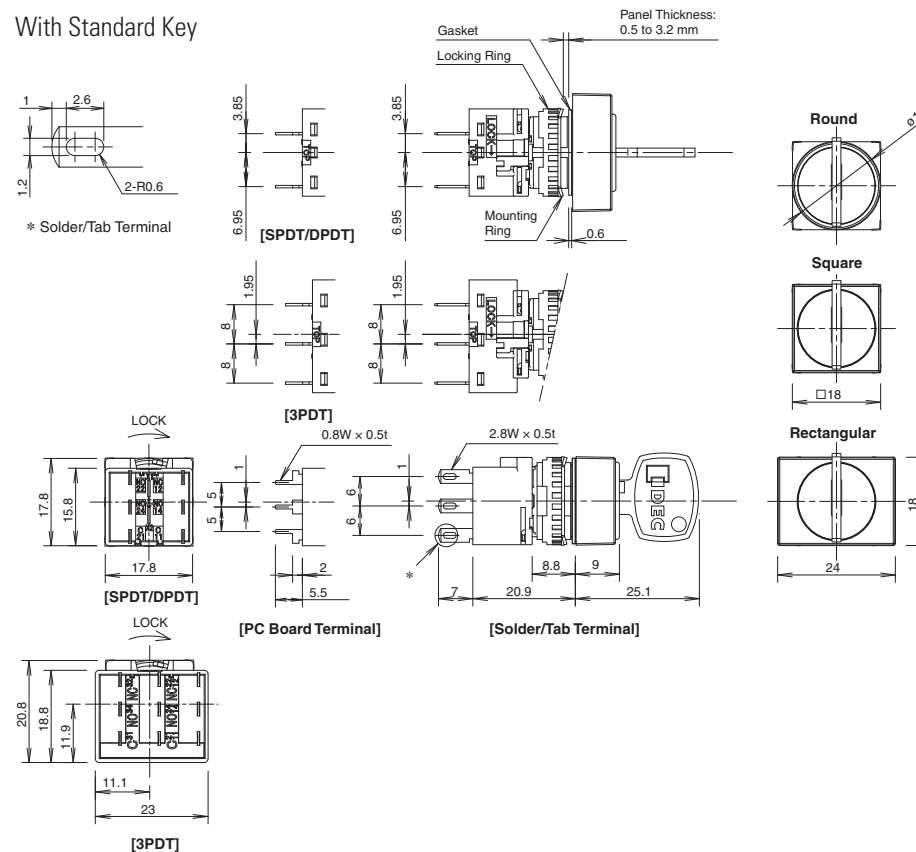
## Key Selector Switches

### Standard Bezels

With Wave Key



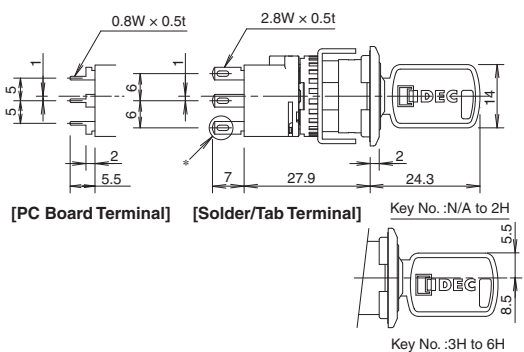
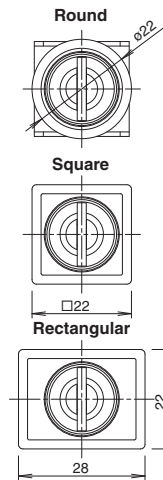
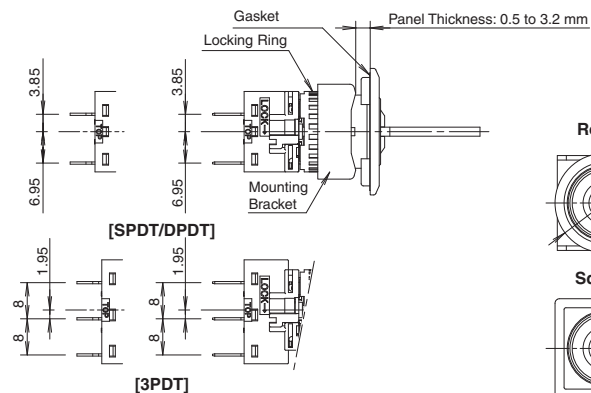
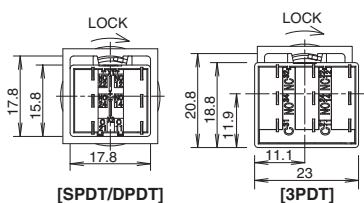
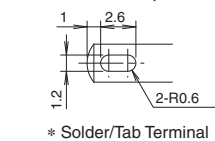
### With Standard Key



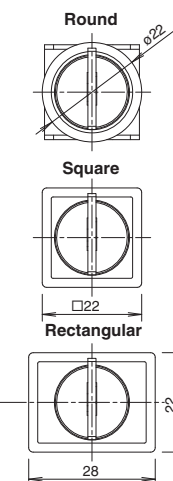
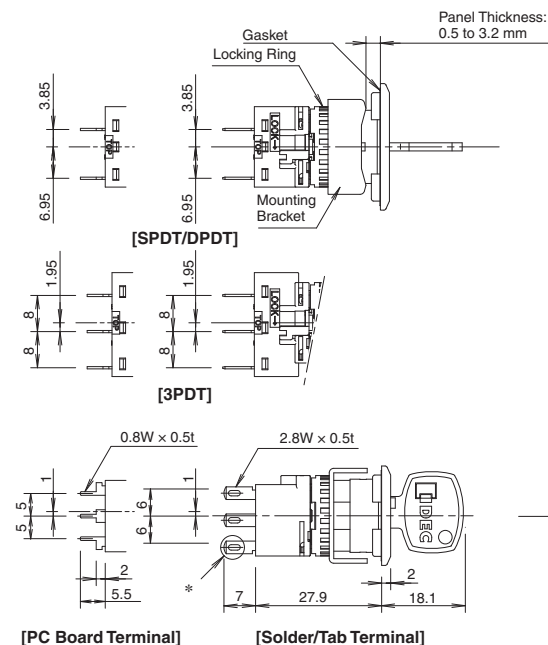
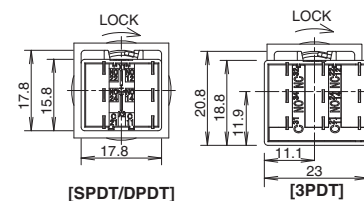
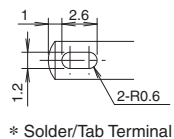
## Key Selector Switches

### Flush Bezels

With Wave Key

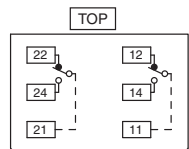


With Standard Key



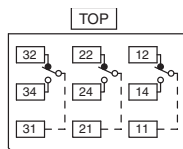
## Terminal Arrangement (Bottom View)

### SPDT/DPDT Contacts



(SPDT contacts on the right only)

### 3PDT Contacts

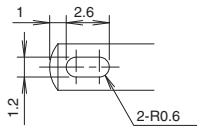


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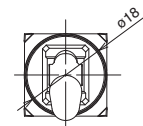
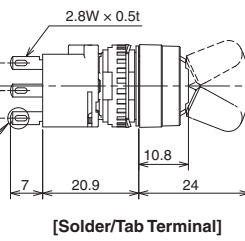
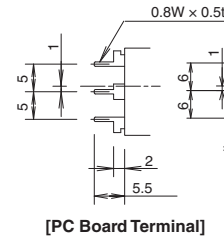
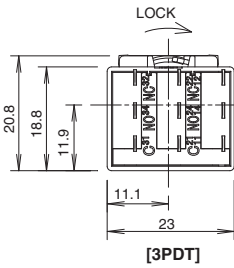
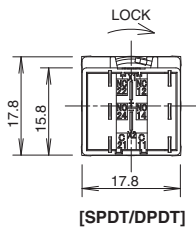
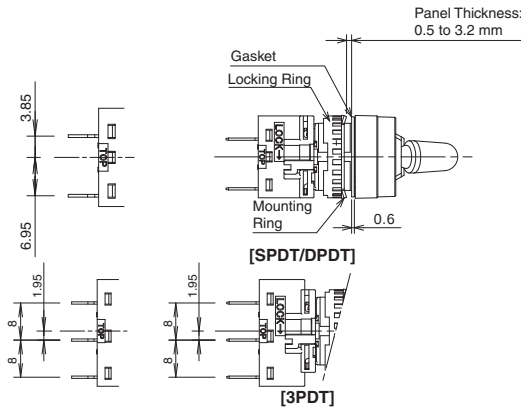
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## Lever Switches

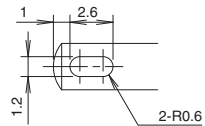
### Standard Bezels



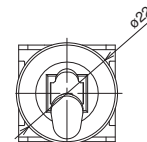
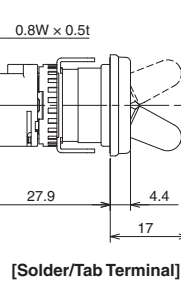
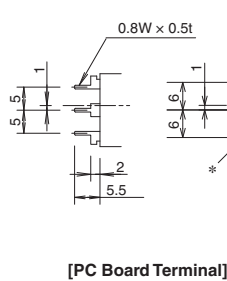
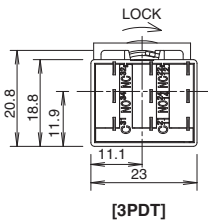
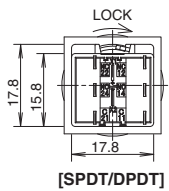
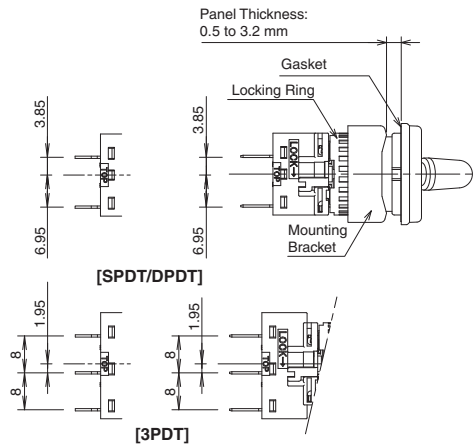
\* Solder/Tab Terminal



### Flush Bezels

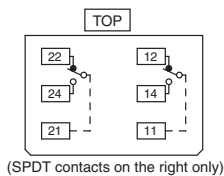


\* Solder/Tab Terminal

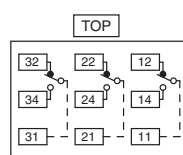


## Terminal Arrangement (Bottom View)

### SPDT/DPDT Contacts



### 3PDT Contacts



## Buzzers

### Standard Bezels

IP54



IP40



### Terminal Arrangement (Bottom View)

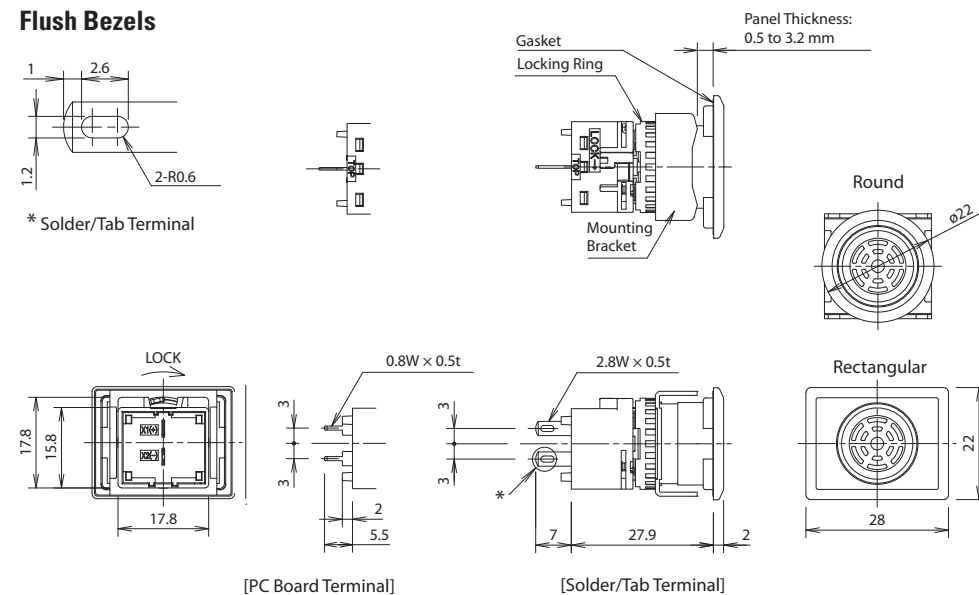
Flush & Standard IP54



IP40



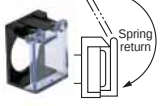
### Flush Bezels



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## Accessories

| Item                                                                                                      | Material                                                                                                                     | Part Number                                                                 | Remarks                                                                                                                                                                                                                                                        |
|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Locking Ring Wrench<br>  | Metal: Nickel-plated brass                                                                                                   | MT-001                                                                      | Used to tighten the locking ring when installing the units on to the panel.                                                                                                                                                                                    |
| Lens Removal Tool<br>    | Stainless Steel                                                                                                              | MT-101                                                                      | Used to remove the lens or button.                                                                                                                                                                                                                             |
| For Standard Bezels                                                                                       | Switch Guard (180° Spring return)<br>       | For round / square standard units<br>Guard: Polyacetal<br>Base: Polyarylate | AL-K6SP<br>Degree of protection: IP65<br>Used to protect standard pushbuttons and illuminated pushbuttons from inadvertent operation.<br>See page 38 for dimensions.<br>With the gasket mounted on the switch, attach the switch guard and mount on the panel. |
|                                                                                                           | For rectangular standard units<br>Guard: Polyacetal<br>Base: Polyarylate                                                     | AL-KH6SP                                                                    | Note: not applicable for flush mounted units. Select operator with built-in switch guard.                                                                                                                                                                      |
|                                                                                                           | Switch Guard for Single Board Mounting<br> | For rectangular units<br>Guard: Polyacetal<br>Base: Polyarylate             | LA9Z-K3<br>Degree of protection: IP65<br>With the gasket mounted on the switch, attach the switch guard and mount on the panel.<br>See page 38 for dimensions.                                                                                                 |
|                                                                                                           | Rubber Boot for Standard Bezels<br>1<br>  | 1. For round units<br>Silicon Rubber                                        | LB9Z-D1<br>Degree of protection: IP65<br>See page 37 for dimensions.<br>See page 42 for mounting.                                                                                                                                                              |
|                                                                                                           | 2<br>                                     | 2. For square units<br>Silicon Rubber                                       | LB9Z-D2                                                                                                                                                                                                                                                        |
|                                                                                                           | 3<br>                                     | 3. For rectangular units<br>Silicon Rubber                                  | LB9Z-D3                                                                                                                                                                                                                                                        |
| Mounting Hole Plug<br> | Metal<br>Plug: Metal (Zinc diecast)<br>Locking nut: Polyacetal<br>Gasket: Nitrile rubber                                     | AL-BM6                                                                      | Degree of protection: IP65<br>Tightening torque: 0.1 to 0.29 N•m<br>See page 37 for dimensions.                                                                                                                                                                |
| Mounting Hole Plug<br> | Rubber<br>Nitrile rubber (black)                                                                                             | AL-B6                                                                       | Degree of protection: IP65<br>See page 37 for dimensions.                                                                                                                                                                                                      |

| Item             |                                                                                                                                                                             | Material                  | Part Number | Remarks                                                                                    |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------|-------------|--------------------------------------------------------------------------------------------|
| For Flush Bezels | Rubber Boot for Flush Bezels                                                                                                                                                |                           |             |                                                                                            |
|                  | 1                                                                                          | 1. For round units        | LB9Z-D6     | Degree of protection: IP65<br>See page 37 for dimensions.<br>See page 42 for mounting.     |
|                  | 2                                                                                          | 2. For square units       | LB9Z-D7     |                                                                                            |
|                  | 3                                                                                          | 3. For rectangular units  | LB9Z-D8     |                                                                                            |
|                  | Mounting Hole Plug                                                                                                                                                          |                           |             |                                                                                            |
|                  | 1                                                                                          | 1. For round units        | LB9Z-BS6    | Degree of protection: IP65<br>Panel thickness: 0.5 to 3.2mm<br>See page 37 for dimensions. |
|                  | 2                                                                                         | 2. For square units       | LB9Z-BS7    |                                                                                            |
|                  | 3                                                                                        | 3. For rectangular units  | LB9Z-BS8    |                                                                                            |
|                  | Terminal Cover                                                                                                                                                              |                           |             |                                                                                            |
|                  | 1  2  | 1. For SPDT/DPDT contacts | LB9Z-VL2    | See page 38 for dimensions.                                                                |
|                  |                                                                                                                                                                             | 2. For 3PDT contacts      | LB9Z-VL3    |                                                                                            |

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## Accessory Dimensions (mm)

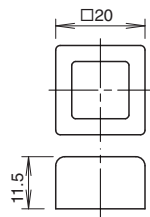
### Rubber Boot

#### Standard Bezel

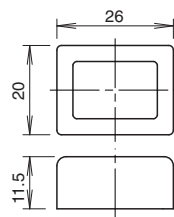
For round units (LB9Z-D1)



For square units (LB9Z-D2)

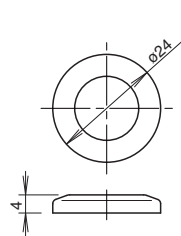


For rectangular units (LB9Z-D3)

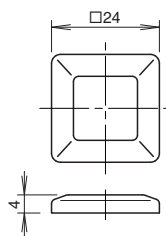


### Flush Bezel

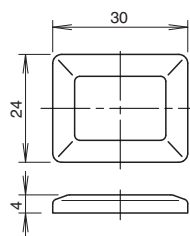
For round units (LB9Z-D6)



For square units (LB9Z-D7)



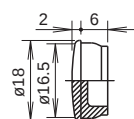
For rectangular units (LB9Z-D8)



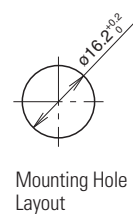
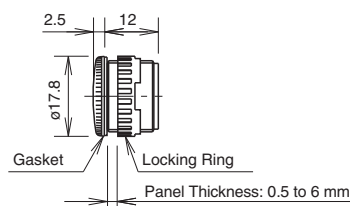
### Mounting Hole Plug

#### Standard Bezels

AL-B6

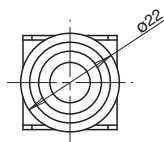


AL-BM6

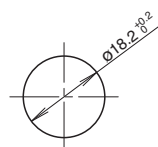


### Flush Bezels

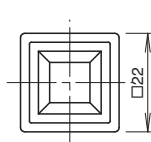
For round units (LB9Z-BS6)



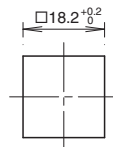
Mounting Hole Layout



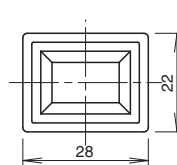
For square units (LB9Z-BS7)



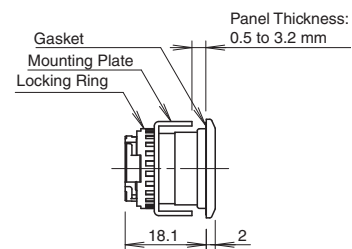
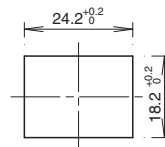
Mounting Hole Layout



For rectangular units (LB9Z-BS8)



Mounting Hole Layout



## Accessory Dimensions (mm) con't

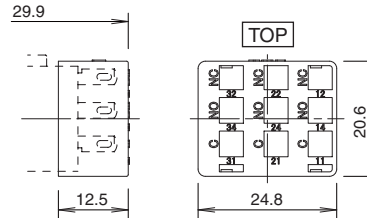
### Terminal Cover

#### Standard Bezel

For SPDT/DPDT contacts (LB9Z-VL2)



For 3PDT contacts (LB9Z-VL3)

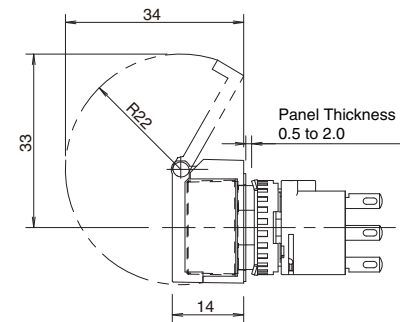
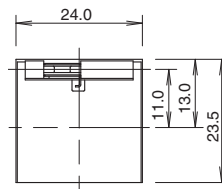


### Switch Guard for Standard Bezel Models

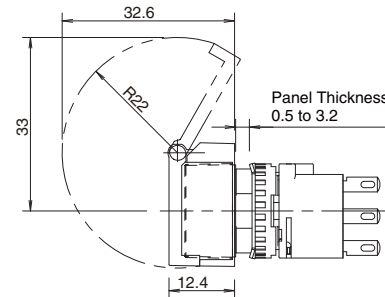
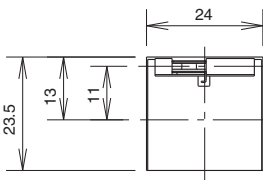
For round / square units (AL-K6SP)



For rectangular units (AL-KH6SP)



For Single Board Mounting (LA9Z-K3)



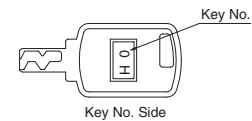
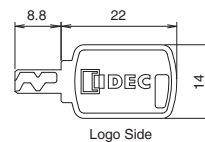
Note: The panel depth is the same for switches with or without switch guards. Both models can be installed on the same PC board.

### Standard Key

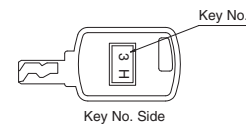
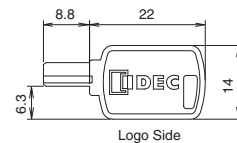


### Wave Key

Reversible Wave Key



Non-reversible Wave Key



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## Replacement Parts

| Item                                                                                                                                                                       |                                | Material                                                   | Part Number | Remarks                                                                                                                                                                                              |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------------------------------------------------|-------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                           | For round units                | Polyarylate<br>ø15.4 H4mm                                  | AL6M-L②     | Specify the color code in place of ② in the part number.<br>A: Amber, C: Clear, G: Green, R: Red, S: Blue, Y: Yellow<br><br>Note: Use a clear lens for or white (PW) illumination.                   |
|                                                                                                                                                                            | For square units               | Polyarylate<br>□15.4, H4mm                                 | AL6Q-L②     |                                                                                                                                                                                                      |
|                                                                                                                                                                            | For rectangular units          | Polyarylate<br>W21.4 x H4 x D15.4mm                        | AL6H-L②     |                                                                                                                                                                                                      |
|                                                                                           | For round units                | Polyarylate<br>□15.4, H4mm                                 | AB6M-B②     | Specify the color code in place of ② in the part number.<br>B: Black, G: Green, R: Red, S: Blue W: White, Y: Yellow                                                                                  |
|                                                                                                                                                                            | For square units               | Polyarylate<br>□15.4, H4mm                                 | AB6Q-B②     |                                                                                                                                                                                                      |
|                                                                                                                                                                            | For rectangular units          | Polyarylate<br>W21.4 x H4 x D15.4                          | AB6H-B②     |                                                                                                                                                                                                      |
|                                                                                           | For round units                | Acrylic<br>ø13.7 H0.8                                      | AL6M-②      | Specify the color code in place of ② in the part number.<br>B: Black, W: White<br><br>See page 41 for dimensions and engraving area.                                                                 |
|                                                                                                                                                                            | For square units               | Acrylic<br>□13.7, H0.8mm                                   | AL6Q-②      |                                                                                                                                                                                                      |
|                                                                                                                                                                            | For rectangular units          | Acrylic<br>W19.7 x H0.8 (0.4) x D13.7mm                    | AL6H-②      |                                                                                                                                                                                                      |
|                                                                                           | For all units                  | Polyamide<br>ø17.9, H3.9mm                                 | LB9Z-LNP    |                                                                                                                                                                                                      |
|                                                                                         | For standard bezel             | Metal<br>(Stainless steel)<br>□17.9, t0.6mm                | LB9Z-LP1    |                                                                                                                                                                                                      |
|                                                                                         | For flush bezel                | Metal<br>(Stainless steel)<br>W21 x H8.2 x D20.6<br>t0.8mm | LB9Z-LP6    |                                                                                                                                                                                                      |
|                                                                                         | For key selector switches      | Nickel-plated Brass                                        | AS6-SK      | See page 38 for dimensions.                                                                                                                                                                          |
| <br> | For Wave key selector switches | Diecast zinc alloy (nickel plated)<br>W14 x H2 x D30.8mm   | LA9Z-SK-⑤   | Specify Wave key number in place of ⑤ in the part number.<br>0H: Standard wave key (reversible)<br>1H to 2H: Reversible wave key<br>3H to 6H: Non-reversible wave key<br>See page 38 for dimensions. |

## LB Series Replacement LED Unit

| Item                                                                                | Rated Operating Voltage | Part Number | ②Color Code            |                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------------|-------------------------|-------------|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | DC5V                    | LB9Z-LED5②  | A<br>G<br>PW<br>R<br>S | 1. Specify color code in place of the ② in the part number. R: Red, G: Green, A: Amber, S: Blue, PW: White<br>2. All illuminated LB series contain an LED unit.<br>3. Use a white (PW) LED unit for yellow (Y) illumination. |
|                                                                                     | AC/DC12V                | LB9Z-LED1②  |                        |                                                                                                                                                                                                                              |
|                                                                                     | AC/DC24V                | LB9Z-LED2②  |                        |                                                                                                                                                                                                                              |

# Precautions & Instructions

## ! Safety Precautions

- Turn off the power to the LB series control units before installation, removal, wiring, maintenance, and inspection. Failure to turn power off may cause electrical shocks or fire hazard.
- To avoid burning your hand, use the lamp holder tool when replacing the lamps.
- For wiring, use wires of a proper size to meet voltage and current requirements. Solder correctly according to the instructions in "Wiring" and "Notes on Terminal Cover." Improper soldering may cause overheating and create a fire hazard. Also, when using tab terminals, use receptacles of appropriate size.

## Instructions

### Wiring

1. Solder the terminals at 350°C within 3 seconds using a 60W soldering iron. Sn-Ag-Cu type is recommended. When soldering, do not touch the LB series with the soldering iron. Also ensure that no tensile force is applied to the terminals. Do not bend the terminal or apply excessive force to the terminal.
2. Use non-corrosive liquid flux.

### Terminal Cover

#### Solder/tab terminal

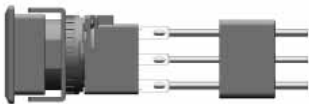
Insert the terminal cover into the contact block with the TOP markings on the contact block and the terminal cover in the same direction.

Note: When wiring, insert the lead wires into the terminal cover holes before soldering. After wiring, terminal covers cannot be installed.

#### Standard Bezel



#### Flush Bezel



### Operating Environment

- Do not use the LB series where corrosive gases exist or under an environment exceeding the operating temperature and humidity ranges. Otherwise, damage such as contact failure or change of the surface color may occur.
- Major parts of the switch are plastic. Scratches or damage may occur when scraped with a sharp object or if excessive load or shock is applied. Note that this may cause operation and appearance failure of the operator and bezel.
- Application of detergent, cutting oil, or special chemicals to the switch may result in operation and/or appearance failure such as a change in surface color.

### Handling

#### Contacts (micro switch)

When using NC (normally closed) and NO (normally open) contacts of the same microswitch, avoid connections of different voltages, or connections of different types of power supplies. Failure to observe this instruction may cause a short-circuit.

### Removing and Installing the Contact Block

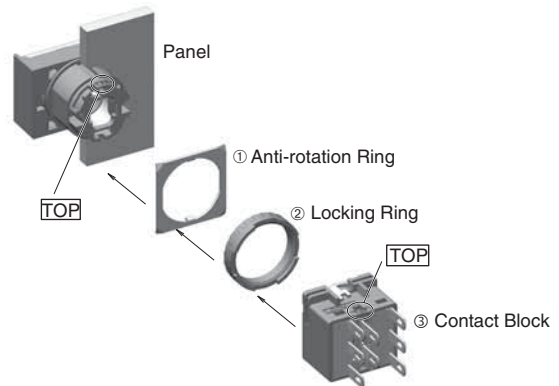
1. Turn the locking lever on the contact block in the direction opposite to the arrow on the housing. Then the contact block can be removed.
2. Insert the contact block with the TOP markings on the contact block and the operator placed in the same direction. Then lock the units, turning the locking lever in the direction of the arrow.



### Panel Mounting

Remove the contact block from the operator. Insert the operator into the panel cut-out from the front, then install the contact block to the operator.

#### Standard Bezel



#### Flush Bezel



### Notes on Mounting

Use the optional ring wrench (MT-001) to mount the operator onto the panel. Tightening torque should not exceed 0.7 N·m. Do not use pliers. Excessive tightening will damage the locking ring.

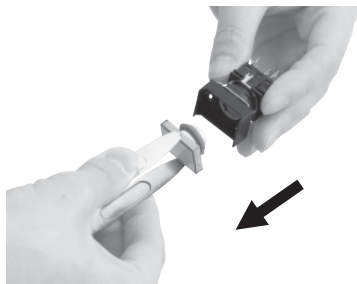
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## Replacing the Lens

### Standard Bezel

From the opposite side of the TOP marking, remove the operator (lens, marking plate, and lens holder) using the optional lens removal tool (MT-101) by gripping the recesses of the color lens. Removing from the TOP side may damage the metallic bezel.



Removing the Operator (standard bezel)

### Flush Bezel

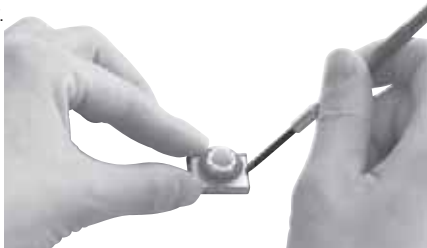
From the opposite side of the TOP marking, push the tip of a flat screwdriver to the groove of the color lens and pull out the operator (lens, marking plate, lens holder). Removing from the TOP side may damage the metallic bezel.



Removing the Operator (flush bezel)

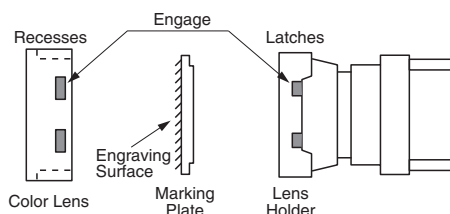
## Replacing the Marking Plate

1. Remove the marking plate by pushing the lens from the back to disengage the latches between the lens and holder, using the screwdriver as shown below.



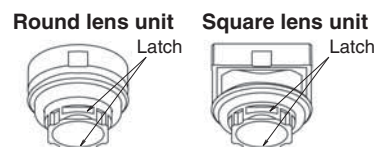
Note: A transparent film inside the lens holder is attached to the unit to make it waterproof and cannot be removed.

2. Insert a marking plate into the color lens, and press the lens onto the lens holder to engage the latches. Pay attention to the orientation of the marking plate.

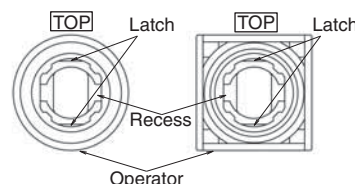


## Lens Unit and Contact Block Installation

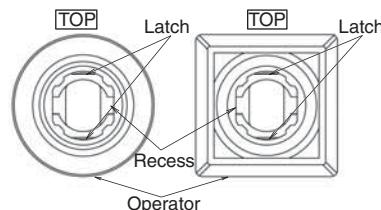
To insert the lens unit into the operator, press in the lens unit by aligning the latch on the operator with the latch on the lens unit.



### Standard Bezel



### Flush Bezel



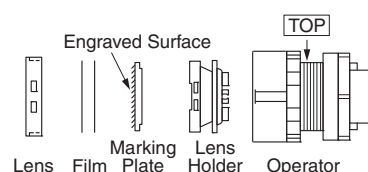
## Marking Plates and Films

Illuminated pushbuttons and pushbuttons with illuminated lens can have legends and symbols engraved on the marking plates, or printed film can be inserted under the lens for labelling purposes.

### Marking Plate and Marking Film Size

| Lens                    | Round                                                                                                                                                                                | Square | Rectangular |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-------------|
| Built-in Marking Plate  |                                                                                                                                                                                      |        |             |
|                         | <ul style="list-style-type: none"> <li>• Engraving must be made within the engraving area (0.5mm from edge).</li> <li>• The marking plate is made of white acrylic resin.</li> </ul> |        |             |
| Applicable Marking Film |                                                                                                                                                                                      |        |             |
|                         | <ul style="list-style-type: none"> <li>• Film thickness: 0.1mm per film</li> <li>• Marking film is not included.</li> <li>• Recommended marking film: Polyester film</li> </ul>      |        |             |

## Marking Plate and Film Insertion Order

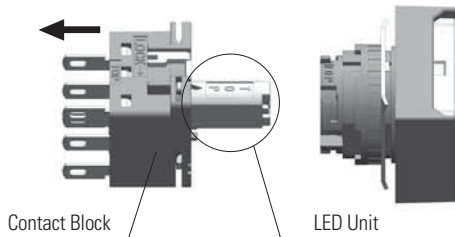


The marking plate must be engraved on the side specified above. Pay attention to the orientation of the marking plate.

# Instructions

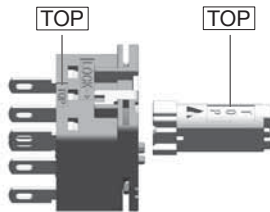
## Replacing the LED Unit

The LED unit can be replaced by pulling the lens unit out of the contact block.



### Orientation of the LED unit

Insert the LED unit into the contact block with the TOP markings on the contact block and LED unit in the same orientation.

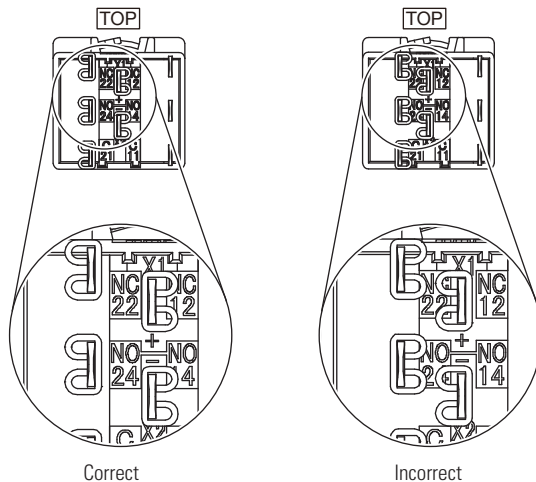


### Notes on replacing the LED Unit

- When replacing the LED unit, make sure that static electricity is not applied.
- Make sure that the LB series has cooled down before replacing the LED unit.
- To avoid getting burned, be careful not to touch the unit while it is still hot.

## Notes on Using Quick Connect Terminals

1. Use #110 tab quick connects, 0.5mm-thick.
2. When connecting the terminals on the left and center, make sure that surfaces of the quick connects face each other. Otherwise, a short-circuit may occur.



3. Apply only horizontal force against the panel to the tab. The switch may be damaged if a force other than a horizontal force is applied.

## Installing Rubber Boots

When using the switches in environments subject to splashing water or an excessive amount of dust, make sure to use an optional rubber boot. As shown in the drawing on the right, ① remove the gasket from the operator, and ② attach the rubber boot from the front (button side).

## Standard Bezels

For rectangular and square units, pull the seals out of the rubber boot and place them around the operator sleeve as shown below. Make sure that the seals are not twisted or tucked inside and that the gasket is removed, otherwise waterproof and dustproof characteristics are not ensured.

### How to Install the Rubber Boot

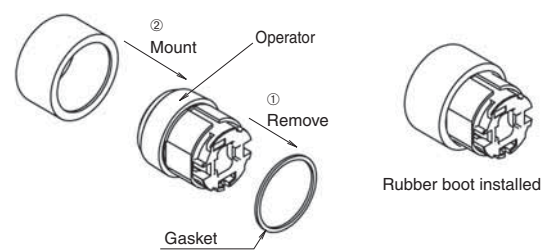
#### Rectangular



#### Square



#### Round



## Flush Bezels

Mount the rubber boot so that the protrusion at the bottom surface of the operator fits with the recess on the operator, placing the rubber boot all around the operator sleeve. Make sure that the protrusion on the rubber boot and the recess on the operator fit correctly, otherwise, the waterproof and dustproof characteristics are not ensured.

### How to Install the Rubber Boot



Note: Install the rubber boot before mounting the unit to the panel.

## Maintained Pushbuttons

Do not replace the buttons when the pushbutton is in the maintained position as it may damage the internal mechanism. Also, do not remove the contact block with the button in the maintained position. The contact may not operate properly when the contact block is remounted.

## Pushbuttons and Illuminated Pushbuttons with Switch Guard

Do not apply force to the switch guard when the switch guard is not attached to a panel. When opening the switch guard, do not open more than 180°. The hinge may break.

## Selector Switches

When turning the operator or key, make sure that they are turned to the correct position.

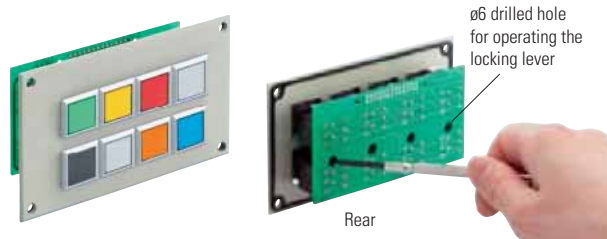
## Selector Switches with Key

Observe the following instructions to prevent malfunction or damage.

- Do not remove the key from any key retained position.
- In addition to the standard key (key number 0H), six other key numbers are available. Use a key matching the number of the key cylinder. The standard key does not have a key number indication.
- Keys are available in two types.  
Key numbers 0H (standard), 1H, and 2H are reversible keys which can be inserted in two ways.  
Key numbers 3H, 4H, 5H, and 6H are non-reversible keys. Make sure of correct insertion direction.

## Single Board Mounting

The LB series can be used for single board mounting.



## Installing and Removing Contact Blocks

Turn the locking lever to install and remove contact blocks on a PC board using a screwdriver from a hole in the PC board. Determine the location of the switches so that the locking lever can be operated.

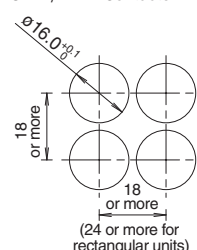
## Mounting Holes and Assembly Procedure

Drill mounting holes in the panel as shown on the right. When the units are mounted together, provide adequate clearance.

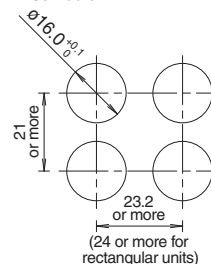
## Panel Cut-out

Standard Bezels (LB1/LB2/LB3/LB4)

SPDT/DPDT Contacts



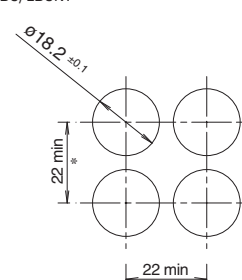
3PDT Contacts



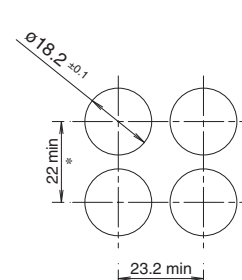
## Flush Bezels

SPDT/DPDT Contacts

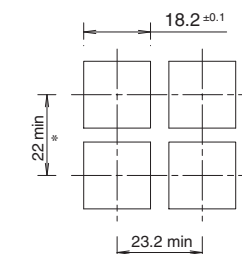
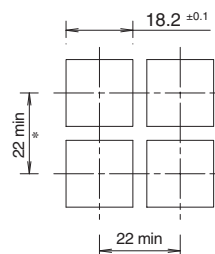
LB6/LB6M



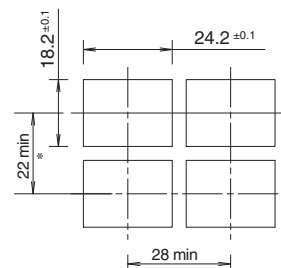
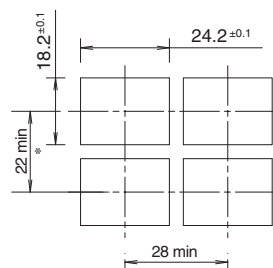
3PDT Contacts



LB7/LB7M



LB8/LB8M



\* 45mm minimum for switches with guard

All dimensions in mm.

## Assembly Procedure

1. Install the operator to the panel.
2. Mount the contact block to the operator from the back of the panel.
3. Turn the locking lever to lock the contact block.
4. Insert a PC board and solder.

Notes:

1. Make sure that each terminal is inserted into the PC board correctly.
2. Do not apply tensile force to the connector cable for an extended period of time.
3. Do not expose the contact block to water.
4. Ensure that the contact blocks are locked when installed on the operators.

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## 16mm LB Miniature Switches

With both flush and standard mount options, LB switches offer sleek lines and vivid colors to enhance the look of your application while also increasing its marketable value. The flush mount switches are perfect for applications requiring a smooth, hygienic surface, and this essential component will add style and an updated look to any application. Take a closer look and see which LB switch is for you!



*Think Automation and beyond...*

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