

LB Flush Mount & 16mm Miniature Switches & Pilot Lights

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

Key Features

- 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), 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 mΩ maximum (initial value) |
| Insulation Resistance | 100 MΩ minimum (500V DC megger) |
| Dielectric Strength | Switch: Between live part and ground: 2,000V AC, 1 min. Between terminals of different poles: 2,000V AC, 1 min. 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: 5 to 55 Hz, amplitude 0.5mm |
| Shock Resistance | Operating extremes: 100 m/s ² Damage limits: 1,000 m/s ² |
| Mechanical Life (minimum operations) | Momentary: 2,000,000 Maintained: 250,000 Selector switches: 250,000 Key selector switches: 250,000 |
| Electrical Life (minimum operations) | Momentary: 50,000 / 100,000 ¹ Maintained: 50,000 / 100,000 ² Selector switches: 50,000 / 100,000 ² Key selector switches: 50,000 / 100,000 ² |
| Degree of Protection | IP65 (IEC 60529) |
| Terminal Style | Solder/tab terminal #110, PC board terminal |
| Bezel | Black plastic or metallic |
| Weight (approx.) | 11g (lever switch) |
| | 13g (pilot light, pushbutton) |
| | 14g (illuminated pushbutton, pushbutton with guard, buzzer) |
| | 15g (selector switch, illuminated pushbutton with guard) |
| 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

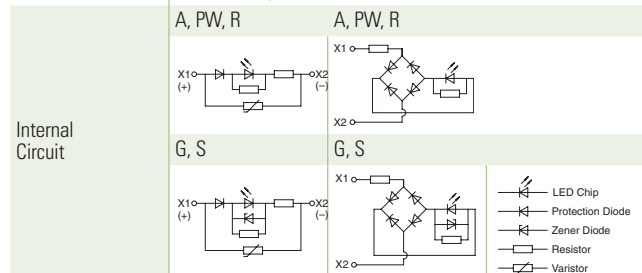
| Silver Contact (switch base color: gray) | | | | | |
|--|----------------|----------------|-------|-------|------|
| Rated Insulation Voltage | 250V | | | | |
| Rated Operating Voltage | 30V | 125V | 250V | | |
| | AC 50/60Hz | Resistive load | — | 5A | 5A |
| Rated Operating Current | AC 50/60Hz | Inductive load | — | 3A | 1.5A |
| | | Resistive load | 5A | 1.1A | — |
| | DC | Inductive load | 2.5A | 0.55A | — |
| | | Resistive load | — | 5A | 3A |
| DC | Inductive load | — | 3A | 1.5A | |
| | Resistive load | 3A | 0.6A | — | |
| DC | 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 (reference value) | Approx. 30,000 hours (until the brightness reduces to 50% of the initial value) |



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 Color Code |
|---|------------|-------------------|---------|---------------------------------------|-----------------------------------|---------------------------------------|-----------------------------------|---|
| | | | | Solder/Tab Terminal (silver contacts) | PC Board Terminal (gold contacts) | Solder/Tab Terminal (silver contacts) | PC Board Terminal (gold contacts) | |
| Standard Bezel (black)    | Momentary | 5V DC | SPDT | LB⓪L-M1T51⓪ | LB⓪L-M1T11V⓪ | LB⓪⓪L-M1T51⓪ | LB⓪⓪L-M1T11V⓪ | Specify the color code in place of ② in the Part Number: A: amber G: green R: red S: blue PW: white Y: yellow |
| | | | DPDT | LB⓪L-M1T61⓪ | LB⓪L-M1T21V⓪ | LB⓪⓪L-M1T61⓪ | LB⓪⓪L-M1T21V⓪ | |
| | | 12V AC/DC | SPDT | LB⓪L-M1T53⓪ | LB⓪L-M1T13V⓪ | LB⓪⓪L-M1T53⓪ | LB⓪⓪L-M1T13V⓪ | |
| | | | DPDT | LB⓪L-M1T63⓪ | LB⓪L-M1T23V⓪ | LB⓪⓪L-M1T63⓪ | LB⓪⓪L-M1T23V⓪ | |
| | | 24V AC/DC | SPDT | LB⓪L-M1T54⓪ | LB⓪L-M1T14V⓪ | LB⓪⓪L-M1T54⓪ | LB⓪⓪L-M1T14V⓪ | |
| | | | DPDT | LB⓪L-M1T64⓪ | LB⓪L-M1T24V⓪ | LB⓪⓪L-M1T64⓪ | LB⓪⓪L-M1T24V⓪ | |
| Flush Bezel (metallic or black)    | Maintained | 5V DC | SPDT | LB⓪L-A1T51⓪ | LB⓪L-A1T11V⓪ | LB⓪⓪L-A1T51⓪ | LB⓪⓪L-A1T11V⓪ | |
| | | | DPDT | LB⓪L-A1T61⓪ | LB⓪L-A1T21V⓪ | LB⓪⓪L-A1T61⓪ | LB⓪⓪L-A1T21V⓪ | |
| | | 12V AC/DC | SPDT | LB⓪L-A1T53⓪ | LB⓪L-A1T13V⓪ | LB⓪⓪L-A1T53⓪ | LB⓪⓪L-A1T13V⓪ | |
| | | | DPDT | LB⓪L-A1T63⓪ | LB⓪L-A1T23V⓪ | LB⓪⓪L-A1T63⓪ | LB⓪⓪L-A1T23V⓪ | |
| | | 24V AC/DC | SPDT | LB⓪L-A1T54⓪ | LB⓪L-A1T14V⓪ | LB⓪⓪L-A1T54⓪ | LB⓪⓪L-A1T14V⓪ | |
| | | | DPDT | LB⓪L-A1T64⓪ | LB⓪L-A1T24V⓪ | LB⓪⓪L-A1T64⓪ | LB⓪⓪L-A1T24V⓪ | |
| Black Bezel with Guard  | | 24V AC/DC | SPDT | LB⓪L-A1T54⓪ | LB⓪L-A1T14V⓪ | LB⓪⓪L-A1T54⓪ | LB⓪⓪L-A1T14V⓪ | |
| | | 24V AC/DC | DPDT | LB⓪L-A1T64⓪ | LB⓪L-A1T24V⓪ | LB⓪⓪L-A1T64⓪ | LB⓪⓪L-A1T24V⓪ | |

- For Standard Bezel part numbers specify:
 - Bezel shape in place of ⓪. 1 (round), 2 (square), 3 (rectangular)
 - Lens/LED color in place of ⓪. A (amber), G (green), PW (white), R (red), S (blue), Y (yellow)
- For Flush Bezel part numbers specify:
 - Lens/LED in place of ⓪. A (amber), G (green), PW (white), R (red), S (blue), Y (yellow)
 - Bezel shape in place of ⓪. 6 (round), 7 (square), 8 (rectangular)
 - Bezel material in place of ⓪. 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 524 for dimensions.
- See page 539 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 539 for details on the marking plate and film.

Switches & Pilot Devices

Signaling Lights

Relays & Sockets

Timers

Contactors

Terminal Blocks

Circuit Breakers

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 | Monmontary | 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

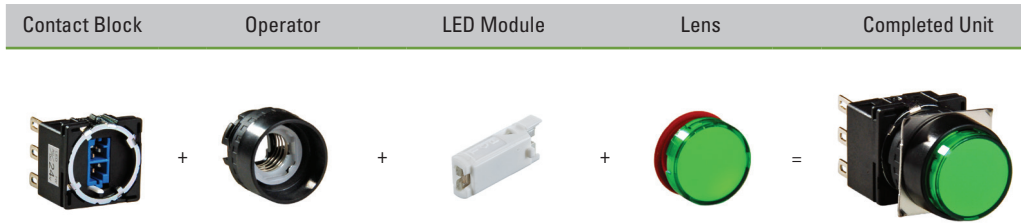
| Shape | Color | Part Number |
|--------|----------|-------------|
| | Amber | LB1A-L1A |
| | Green | LB1A-L1G |
| | Red | LB1A-L1R |
| | Blue | LB1A-L1S |
| | White | LB1A-L1W |
| | Yellow | LB1A-L1Y |
| | Amber | LB2A-L1A |
| | Green | LB2A-L1G |
| | Red | LB2A-L1R |
| | Blue | LB2A-L1S |
| | White | 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 Color Code |
|---|-------------------|---------------------------------------|-----------------------------------|---------------------------------------|-----------------------------------|---|
| | | Solder/Tab Terminal (silver contacts) | PC Board Terminal (gold contacts) | Solder/Tab Terminal (silver contacts) | PC Board Terminal (gold contacts) | |
| Standard Bezel (black)  | 5V DC | LB⓪P-⓪T01⓪ | LB⓪P-⓪T01V⓪ | LB⓪⓪P-⓪T01⓪ | LB⓪⓪P-⓪T01V⓪ | Specify the color code in place of ② in the Part Number: A: amber G: green PW: white R: red S: blue Y: yellow |
| Flush Bezel (metallic or black)  | | | | | | |
| | 24V AC/DC | LB⓪P-⓪T04⓪ | LB⓪P-⓪T04V⓪ | LB⓪⓪P-⓪T04⓪ | LB⓪⓪P-⓪T04V⓪ | |

- For Standard Bezel part numbers specify:
 - bezel shape in place of ⓪. 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 ⓪. 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 ⓪. 6 (round), 7 (square), 8 (rectangular)
 - bezel material in place of ⓪. M (metallic), Blank (black)
 - lens type code in place of ⓪. 1 (flat), 2 (dome with round lens)
- Pilot lights contain an LED unit.
- See page page 524 for dimensions.
- See page page 539 for replacement LED unit.

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 |

Non-Illuminated Pushbuttons (Assembled)

| Style | Operation | Contact | Standard Bezel | | Flush Bezel | | Ⓢ Color Code |
|---|------------|---------|--|--------------------------------------|--|--------------------------------------|--|
| | | | Solder/Tab Terminal (silver contacts) | PC Board Terminal (gold contacts) | Solder/Tab Terminal (silver contacts) | PC Board Terminal (gold contacts) | |
| Standard Bezel (black)    | Momentary | SPDT | LBⓈB-M1T5Ⓢ | LBⓈB-M1T1VⓈ | LBⓈⓈB-M1T5Ⓢ | LBⓈⓈB-M1T1VⓈ | Specify the color code in place of Ⓢ in the Part Number: B: black G: green R: red S: blue W: white Y: yellow |
| | | DPDT | LBⓈB-M1T6Ⓢ | LBⓈB-M1T2VⓈ | LBⓈⓈB-M1T6Ⓢ | LBⓈⓈB-M1T2VⓈ | |
| | | 3PDT | LBⓈB-M1T7Ⓢ | LBⓈB-M1T3VⓈ | LBⓈⓈB-M1T7Ⓢ | LBⓈⓈB-M1T3VⓈ | |
| Flush Bezel (metallic or black)    | Maintained | SPDT | LBⓈB-A1T5Ⓢ | LBⓈB-A1T1VⓈ | LBⓈⓈB-A1T5Ⓢ | LBⓈⓈB-A1T1VⓈ | |
| | | DPDT | LBⓈB-A1T6Ⓢ | LBⓈB-A1T2VⓈ | LBⓈⓈB-A1T6Ⓢ | LBⓈⓈB-A1T2VⓈ | |
| | | 3PDT | LBⓈB-A1T7Ⓢ | LBⓈB-A1T3VⓈ | LBⓈⓈB-A1T7Ⓢ | LBⓈⓈB-A1T3VⓈ | |
| Black Bezel with Guard  | | 3PDT | LBⓈB-A1T7Ⓢ | LBⓈB-A1T3VⓈ | LBⓈⓈB-A1T7Ⓢ | LBⓈⓈB-A1T3VⓈ | |

- For Standard Bezel part numbers specify:
 - bezel shape in place of Ⓢ. 1 (round), 2 (square), 3 (rectangular)
 - lens/LED in place of Ⓢ. B (black), G (green), R (red), S (blue), W (white), Y (yellow)
- For Flush Bezel part numbers specify:
 - lens/LED in place of Ⓢ. B (black), G (green), R (red), S (blue), W (white), Y (yellow)
 - bezel shape in place of Ⓢ. 6 (round), 7 (square), 8 (rectangular)
 - bezel material in place of Ⓢ. M (metallic), Blank (black)
- See page page 526 for dimensions.
- 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 page 539.

Switches & Pilot Devices

Signaling Lights

Relays & Sockets

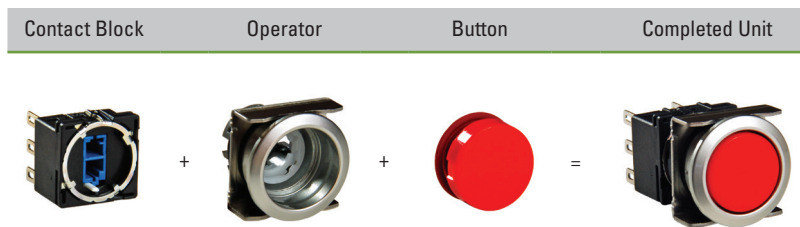
Timers

Contactors

Terminal Blocks

Circuit Breakers

Non-Illuminated Pushbuttons (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 |









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 |

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 |

Selector Switches (Assembled)

| Style | 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) | | |
| Standard Bezel (black)  | 90° 2-position | Maintained  | SPDT | LB⓪S-2⓪T5 | LB⓪S-2⓪T1V | LB⓪S-2⓪T5 | LB⓪S-2⓪T1V | |
| | | | DPDT | LB⓪S-2⓪T6 | LB⓪S-2⓪T2V | LB⓪S-2⓪T6 | LB⓪S-2⓪T2V | |
| | | | 3PDT | LB⓪S-2⓪T7 | LB⓪S-2⓪T3V | LB⓪S-2⓪T7 | LB⓪S-2⓪T3V | |
| | | Spring return from right  | SPDT | LB⓪S-21⓪T5 | LB⓪S-21⓪T1V | LB⓪S-21⓪T5 | LB⓪S-21⓪T1V | |
| | | | DPDT | LB⓪S-21⓪T6 | LB⓪S-21⓪T2V | LB⓪S-21⓪T6 | LB⓪S-21⓪T2V | |
| | | | 3PDT | LB⓪S-21⓪T7 | LB⓪S-21⓪T3V | LB⓪S-21⓪T7 | LB⓪S-21⓪T3V | |
| | Flush Bezel (metallic or black)  | 45° 3-position | Maintained  | DPDT | LB⓪S-3⓪T6 | LB⓪S-3⓪T2V | LB⓪S-3⓪T6 | LB⓪S-3⓪T2V |
| | | | | 3PDT | LB⓪S-3⓪T7 | LB⓪S-3⓪T3V | LB⓪S-3⓪T7 | LB⓪S-3⓪T3V |
| | | | | Spring return from right  | DPDT | LB⓪S-31⓪T6 | LB⓪S-31⓪T2V | LB⓪S-31⓪T6 |
| 3PDT | | | LB⓪S-31⓪T7 | | LB⓪S-31⓪T3V | LB⓪S-31⓪T7 | LB⓪S-31⓪T3V | |
| Spring return from left  | | | DPDT | | LB⓪S-32⓪T6 | LB⓪S-32⓪T2V | LB⓪S-32⓪T6 | LB⓪S-32⓪T2V |
| | | | 3PDT | LB⓪S-32⓪T7 | LB⓪S-32⓪T3V | LB⓪S-32⓪T7 | LB⓪S-32⓪T3V | |
| | | | Spring return two-way  | DPDT | LB⓪S-33⓪T6 | LB⓪S-33⓪T2V | LB⓪S-33⓪T6 | LB⓪S-33⓪T2V |
| 3PDT | | | | LB⓪S-33⓪T7 | LB⓪S-33⓪T3V | LB⓪S-33⓪T7 | LB⓪S-33⓪T3V | |

Knob models shown above unless otherwise indicated.

- For Standard Bezel part numbers specify:
 - bezel shape in place of ⓪. 1 (round), 2 (square), 3 (rectangular)
 - operator shape in place of ⓪. blank (knob), L (lever).
- 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)
 - operator shape in place of ⓪. blank (knob), L (lever).
- See page 522 for contact operation.
- See page 528 for dimensions.

Switches & Pilot Devices

Signaling Lights

Relays & Sockets

Timers

Contactors

Terminal Blocks

Circuit Breakers

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 | |
| Standard (Plastic) | 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 | |
| | Rectangular | 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 | |
| | | Rectangular | 2 | Maintained | LB3S-2Y | LB3S-2L |
| | | | | Spring from right | LB3S-21Y | LB3S-21L |
| | | | | 3 | Maintained | LB3S-3Y |
| | | | 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 |
| Flush Mount (Plastic) | 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 |
| Round | 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 | Round | 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 |
| | Square | 2 | Maintained | LB6MS-2Y | LB6MS-2L |
| | | | Spring from right | LB6MS-21Y | LB6MS-21L |
| | | | 3 | Maintained | LB6MS-3Y |
| | | Spring from right | | LB6MS-31Y | LB6MS-31L |
| | | Spring from left | | LB6MS-32Y | LB6MS-32L |
| | | Rectangular | 2 | Maintained | LB7MS-2Y |
| 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 | | |
| Square | 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 | | |

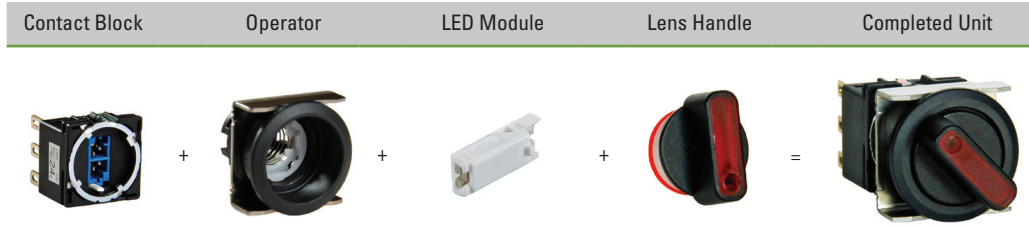
Illuminated Selector Switches (Assembled)

| 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) |
| Standard Bezel (black)    | 5V DC | 90° 2-position Maintained L R | SPDT | LB⓪F-2T51⓪ | LB⓪F-2T11V⓪ | LB6⓪F-2T51⓪ | LB6⓪F-2T11V⓪ |
| | | | DPDT | LB⓪F-2T61⓪ | LB⓪F-2T21V⓪ | LB6⓪F-2T61⓪ | LB6⓪F-2T21V⓪ |
| | 12V AC/DC | 90° 2-position Maintained L R | DPDT | LB⓪F-3T61⓪ | LB⓪F-3T21V⓪ | LB6⓪F-3T61⓪ | LB6⓪F-3T21V⓪ |
| | | | SPDT | LB⓪F-2T53⓪ | LB⓪F-2T13V⓪ | LB6⓪F-2T53⓪ | LB6⓪F-2T13V⓪ |
| | Flush Bezel (metallic or black)   | 45° 3-position Maintained L C R | DPDT | LB⓪F-3T63⓪ | LB⓪F-3T23V⓪ | LB6⓪F-3T63⓪ | LB6⓪F-3T23V⓪ |
| | | 24V AC/DC | 90° 2-position Maintained L R | SPDT | LB⓪F-2T54⓪ | LB⓪F-2T14V⓪ | LB6⓪F-2T54⓪ |
| DPDT | | | | LB⓪F-2T64⓪ | LB⓪F-2T24V⓪ | LB6⓪F-2T64⓪ | LB6⓪F-2T24V⓪ |
| 45° 3-position Maintained L C R | DPDT | LB⓪F-3T64⓪ | LB⓪F-3T24V⓪ | LB6⓪F-3T64⓪ | LB6⓪F-3T24V⓪ | | |

Flush bezel only available with round operator.

9. For Standard Bezel part numbers specify:
 - bezel shape in place of ⓪. 1 (round), 2 (square), 3 (rectangular)
 - color code in place of ⓪. A (amber), G (green), R (red), S (blue), PW (white), Y (yellow)
10. For Flush Bezel part numbers specify:
 - color code in place of ⓪. A (amber), G (green), R (red), S (blue), PW (white), Y (yellow)
 - bezel material in place of ⓪. M (metallic), Blank (black)
11. See page page 522 for contact operation.
12. See page page 530 for dimensions.

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 |
| | Round | 2 | Maintained | LB6F-2 |
| | | 3 | Maintained | LB6F-3 |
| | 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-LED5PY | |
| | 12V | LB9Z-LED1PY | |
| | 24V | LB9Z-LED2PY | |

Lens Handle

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

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) | | |
| Standard Bezel (black)  | 90° Z-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 | |
| | Spring return from right | C  | B  | 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 | |
| | | | 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 | |
| Flush Bezel (metallic or black)  | 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 can't on next page.

Switches & Pilot Devices

Signaling Lights

Relays & Sockets

Timers

Contactors

Terminal Blocks

Circuit Breakers

Assembled Key Selector Switches con't on next page.

| 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)  Flush Bezel (metallic or black)  | 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 | |
| | | 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 | | | |

13. Key is retained at ● and removable at ○ positions.

14. Two keys are supplied.

15. For Standard Bezel part numbers specify bezel shape in place of ⓪. 1 (round), 2 (square), 3 (rectangular)

16. 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)

17. See page page 522 for contact operation.

18. See page page 531 for dimensions.

19. 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

20. If ordering standard wave key (0H), subcomponents are available, see next page.

21. If ordering other than standard wave key (for example, key number 6H), only completed switches are available.

Switches & Pilot Devices

Signaling Lights

Relays & Sockets

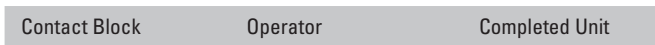
Timers

Contactors

Terminal Blocks

Circuit Breakers

Key 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 |

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 | |

22. In place of [Ⓢ] specify retention option code from table below.
 23. 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) |

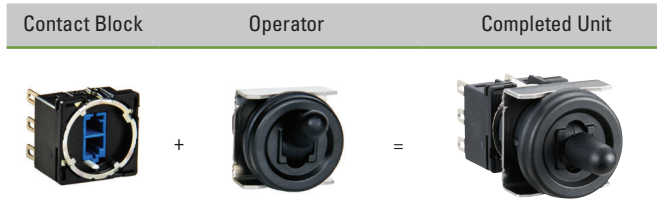
| Code | Description |
|------|--|
| E | Key retained in center only (3-position only) |
| G | Key retained in right and center (3-position only) |
| H | Key retained in left and center (3-position only) |

Lever Switches (Assembled)


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

24. For all part numbers, specify bezel in place of ⊙. 1 (standard bezel), 6 (flush bezel).
 25. See page page 522 for contact operation.
 26. See page page 533 for dimensions.



Lever Switches (Sub-assembled)



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 (Plastic) | 2 | Maintained | LB1T-2 |
| | | Maintained | LB1T-3 |
| | 3 | Spring return from both | LB1T-33 |
|  Round Flush Mount (Plastic) | 2 | Maintained | LB6T-2 |
| | | Maintained | LB6T-3 |
| | 3 | Spring return from both | LB6T-33 |

Buzzers (Assembled)

| Style | Shape | Voltage | Standard Bezel | | Flush Bezel | |
|--|-------------|---------|---------------------|-------------------|---------------------|-------------------|
| | | | Solder/Tab Terminal | PC Board Terminal | Solder/Tab Terminal | PC Board Terminal |
| Black Bezel    | 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 |
| Metallic Bezel   | 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 |

27. IP54 Rated.
 28. For IP40 rating, use part number LB3Z-104K.
 29. See page 534 for dimensions.

Buzzers (Sub-assembled)



Contact Block

| Terminal Style | Part Number |
|---|-------------|
|  | LB-T00 |
|  | LB-T00V |

Operator

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

Contact Operation

Selector Switch, Illuminated Selector Switch, Key Selector Switch

Operator Position & Contact Operation (Top View)

| Position | | Contact | Left | Center | Right |
|-------------------|---------------------------------|--------------------------------|------------------------------|--------|-------|
| 90° 2-position | <p>Maintained</p> | SPDT | | | |
| | | DPDT | | | |
| | | 3PDT | | | |
| 45° 3-position | <p>Maintained</p> | DPDT | | | |
| | | 3PDT | | | |
| 45° 3-position | <p>Spring return from right</p> | <p>Spring return from left</p> | <p>Spring return two-way</p> | DPDT | |
| | | | | DPDT | |
| | | | | DPDT | |
| | | | | 3PDT | |
| 3PDT | | | | | |
| 3PDT | | | | | |

Lever Switch

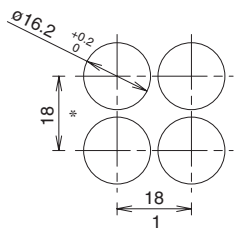
Lever Position & Contact Operation (Top View)

| Position | | Contact | Down | Center | Up |
|-------------------|-------------------|------------------------------|------|--------|----|
| 90° 2-position | <p>Maintained</p> | SPDT | | | |
| | | DPDT | | | |
| | | 3PDT | | | |
| 45° 3-position | <p>Maintained</p> | <p>Spring return two-way</p> | DPDT | | |
| | | | 3PDT | | |

Mounting Hole Layout (mm)

Standard Bezels

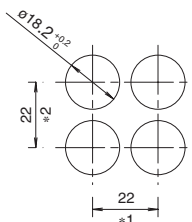
LB1/LB2/LB3



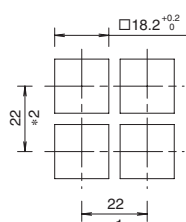
*1. Rectangular: 24mm
3PDT: 23.2mm
*2. 3PDT: 21mm

Flush Bezels

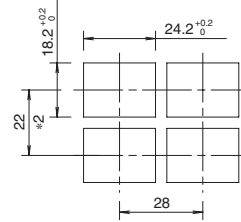
Round



Square



Rectangular



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

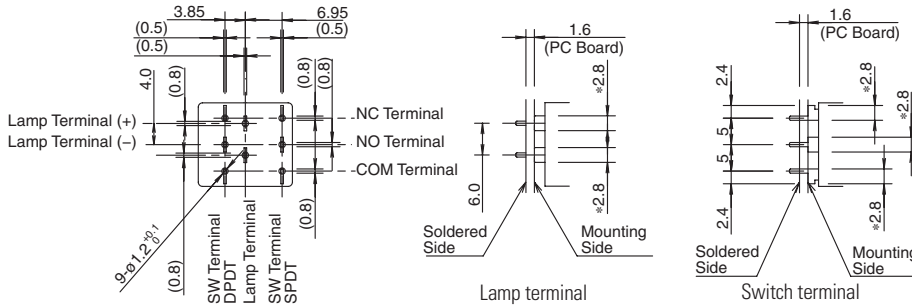
When using the LB series with a rubber boot or terminal cover, make sure to note the dimensions on pages page 537 and page 538.

PC Board Drilling Layout (mm)

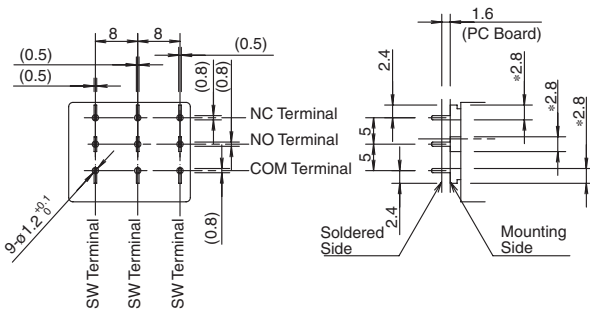
Notes for Designing PC Board and Circuit

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

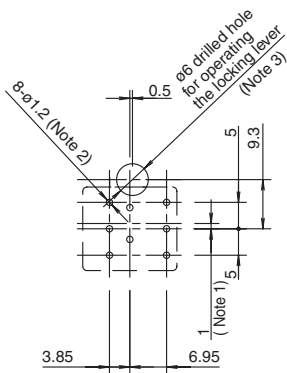


3PDT Contacts

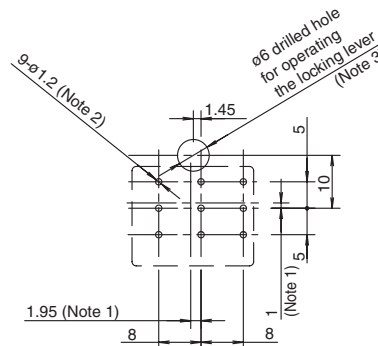


PC Board Drilling Layout (Bottom View)

SPDT/DPDT Contacts

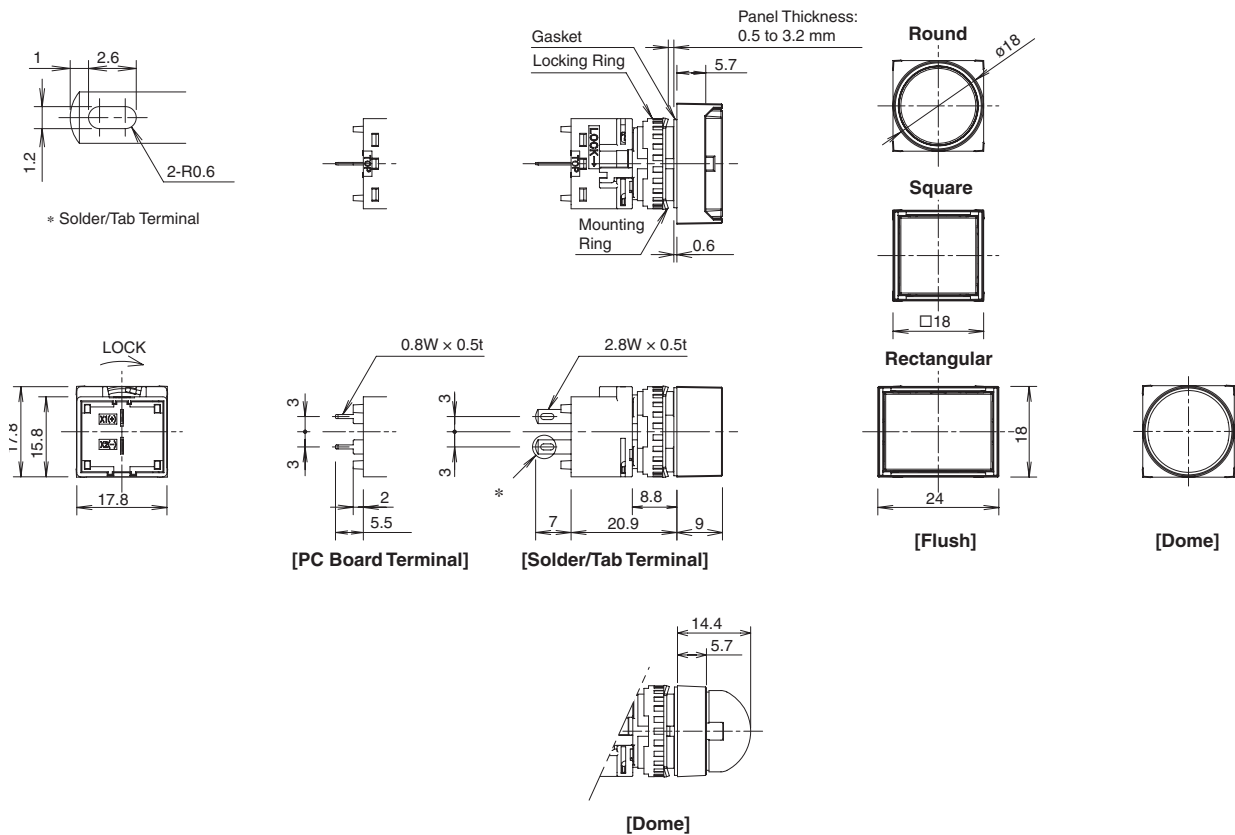


3PDT Contacts

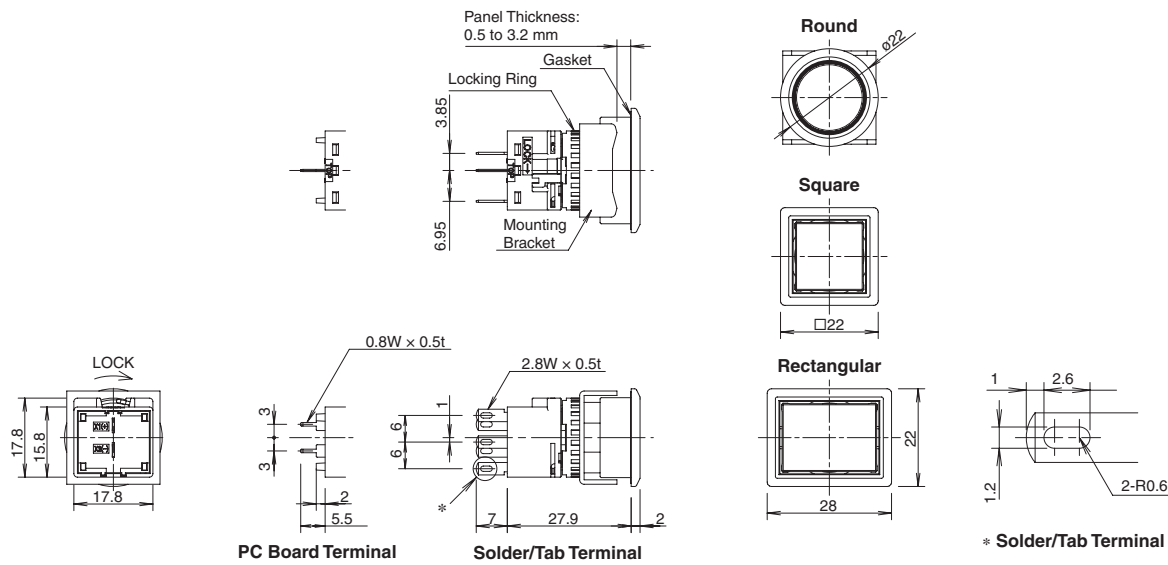


5. When designing, note the alignment of the center lines of the contact blocks and operators.
6. The diameter of the terminal hole is ø1.2.
7. Hole diameter may vary to meet installation requirements. Determine the location and the size of the hole so that the locking lever can be operated.

Standard Bezels

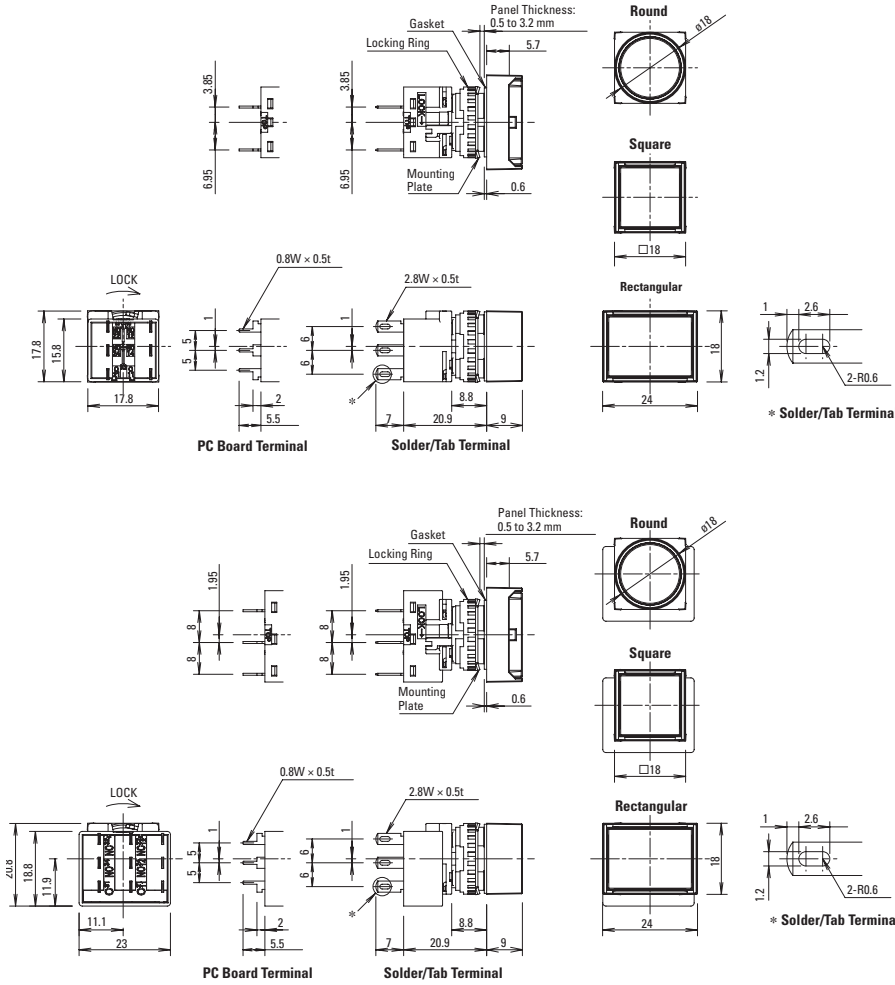


Flush Bezels



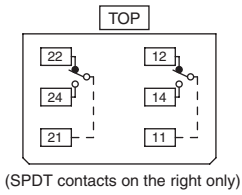
Non-Illuminated Pushbuttons

Standard Bezels

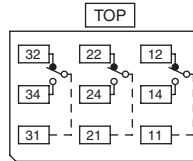


Terminal Arrangement (Bottom View)

SPDT/DPDT Contacts

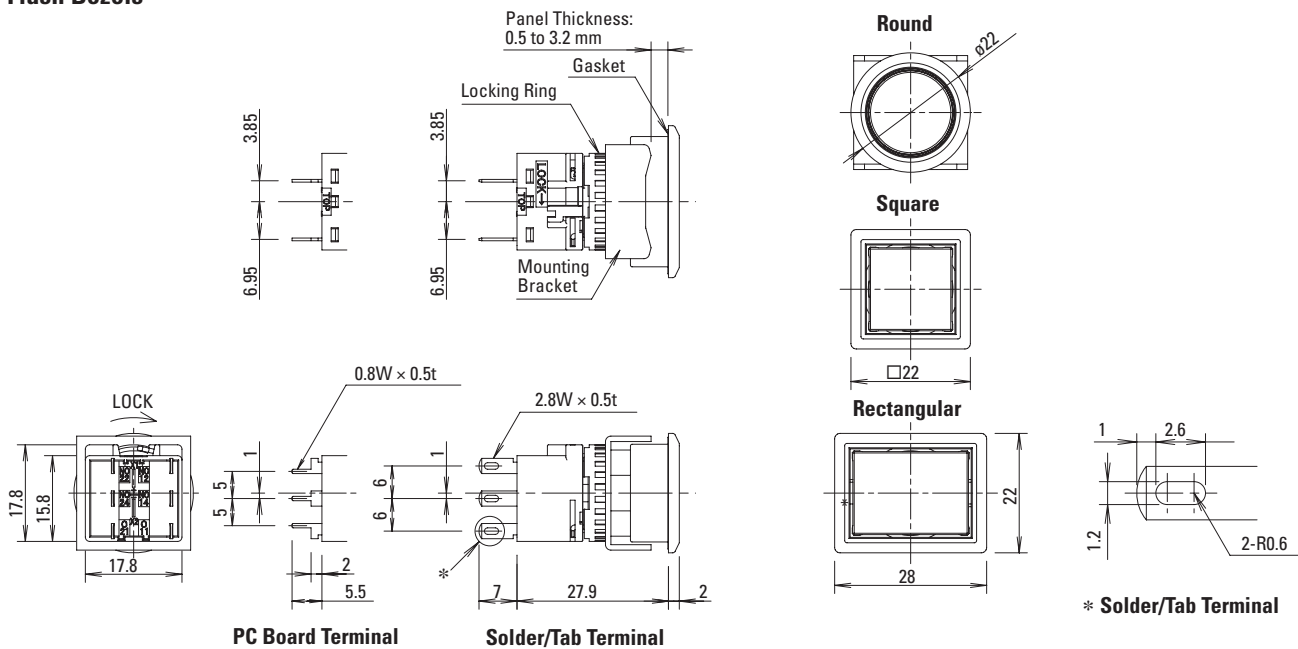


3PDT Contacts



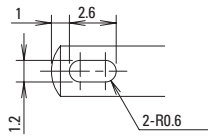
Non-Illuminated Pushbuttons

Flush Bezels

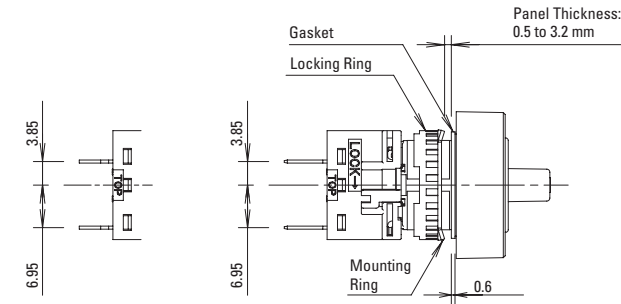


Selector Switches

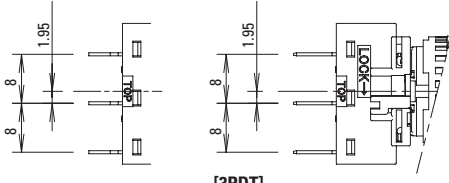
Standard Bezels



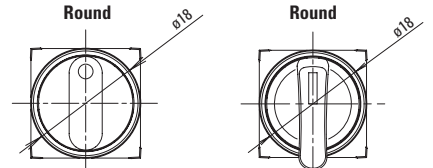
* Solder/Tab Terminal



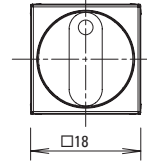
[SPDT/DPDT]



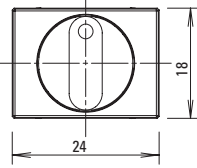
[3PDT]



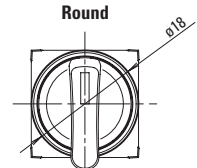
Round



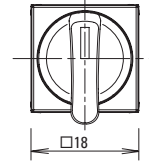
Square



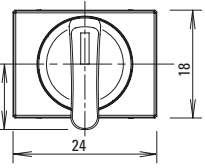
[Knob Operator]



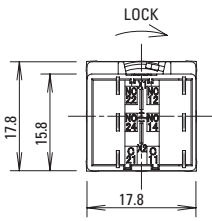
Square



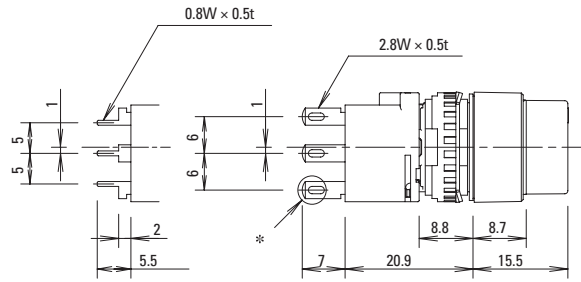
Rectangular



[Lever Operator]

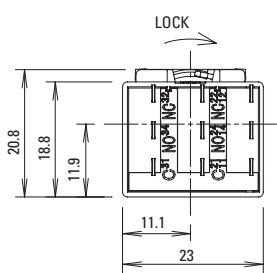


[SPDT/DPDT]

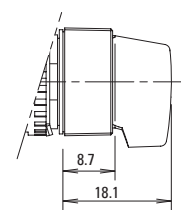


[PC Board Terminal]

[Knob Operator PC Board Terminal]



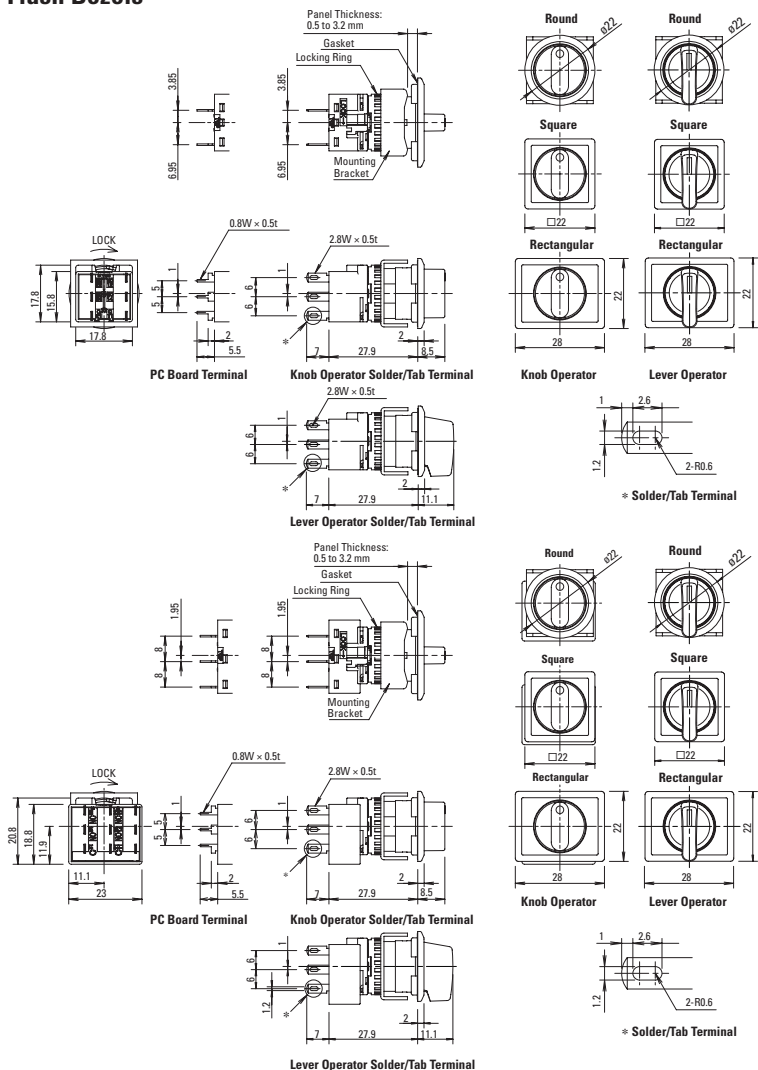
[3PDT]



[Lever Operator]

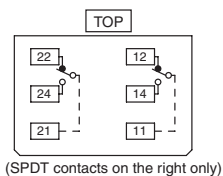
Selector Switches

Flush Bezels

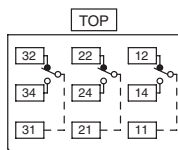


Terminal Arrangement (Bottom View)

SPDT/DPDT Contacts

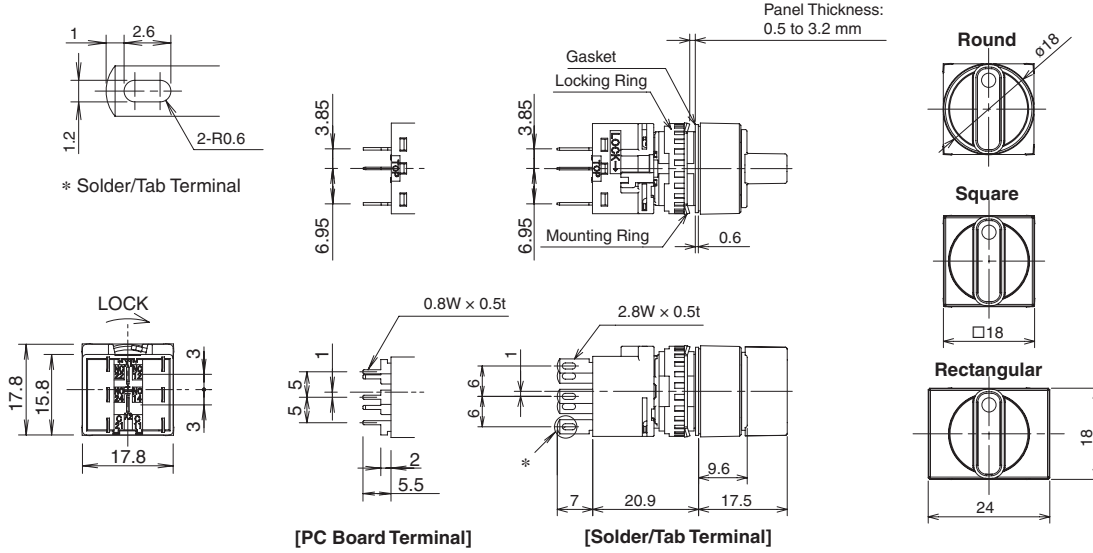


3PDT Contacts

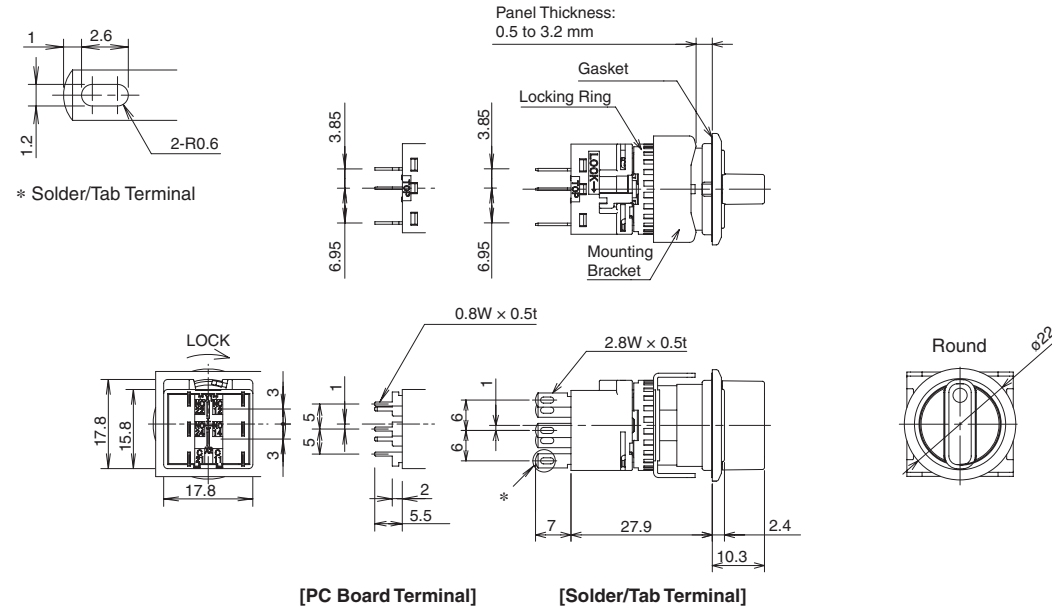


Illuminated Selector Switches

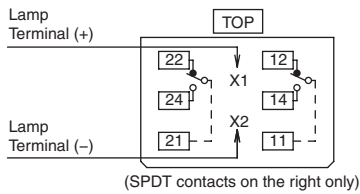
Standard Bezels



Flush Bezels

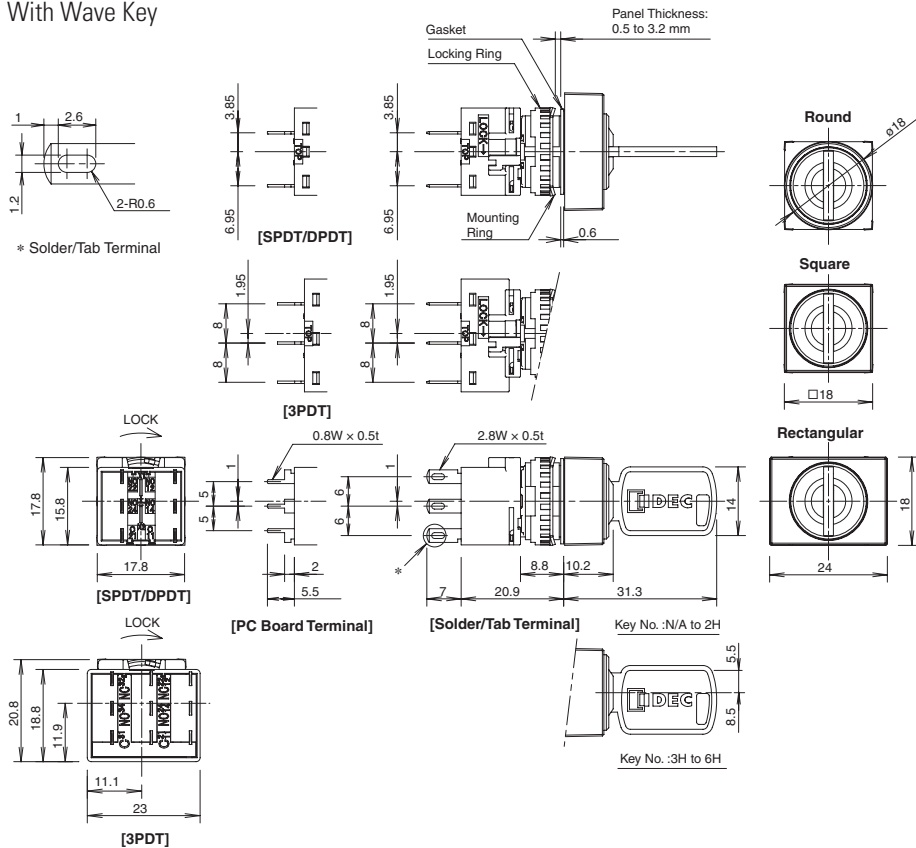


Terminal Arrangement (Bottom View)

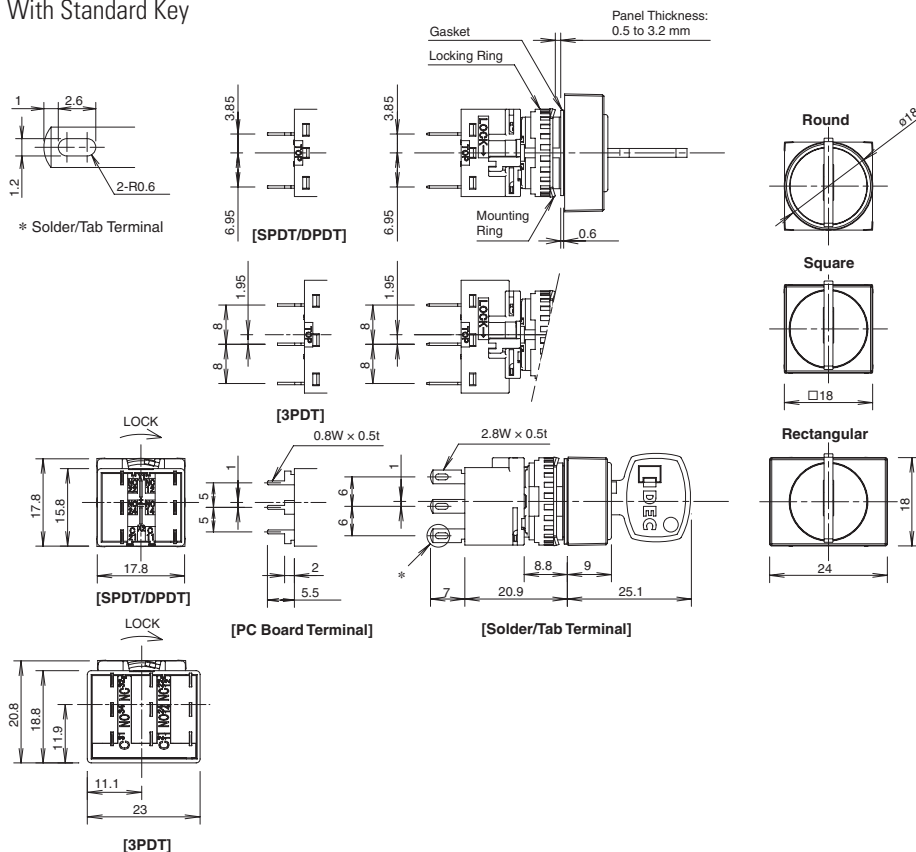


Key Selector Switches

Standard Bezels With Wave Key



With Standard Key

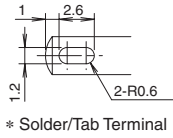


Key Selector Switches

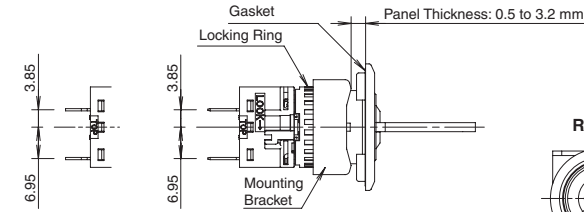
800-262-IDEC (4332) • USA & Canada



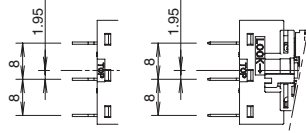
Flush Bezels
With Wave Key



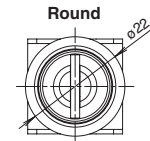
* Solder/Tab Terminal



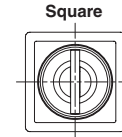
[SPDT/DPDT]



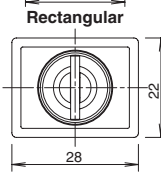
[3PDT]



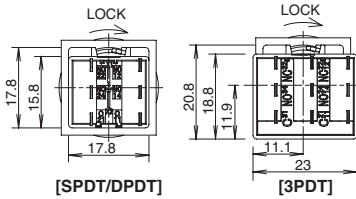
Round



Square

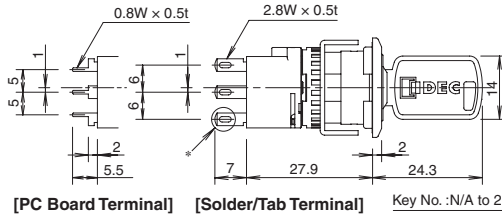


Rectangular



[SPDT/DPDT]

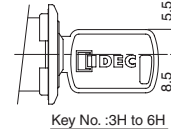
[3PDT]



[PC Board Terminal]

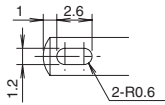
[Solder/Tab Terminal]

Key No. :N/A to 2H

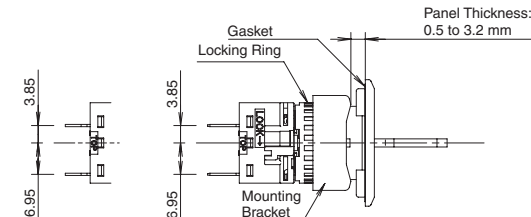


Key No. :3H to 6H

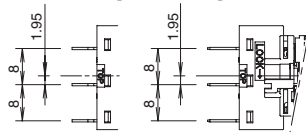
With Standard Key



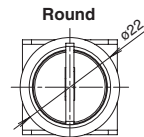
* Solder/Tab Terminal



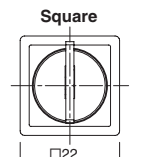
[SPDT/DPDT]



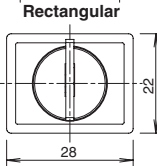
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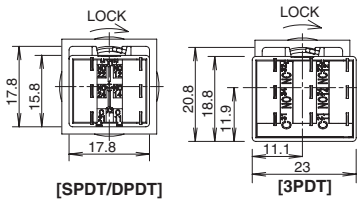
Round



Square

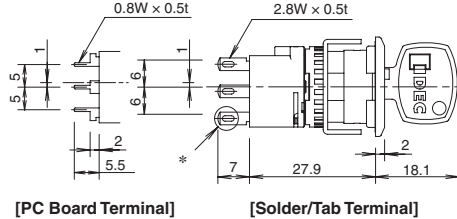


Rectangular



[SPDT/DPDT]

[3PDT]

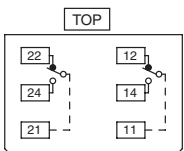


[PC Board Terminal]

[Solder/Tab Terminal]

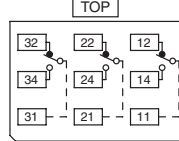
Terminal Arrangement (Bottom View)

SPDT/DPDT Contacts



(SPDT contacts on the right only)

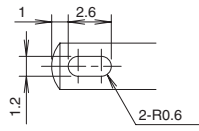
3PDT Contacts



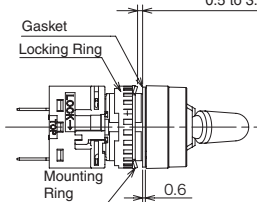
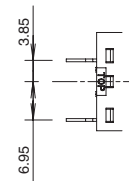
Lever Switches

Panel Thickness: 0.5 to 3.2 mm

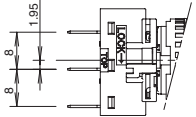
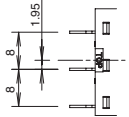
Standard Bezels



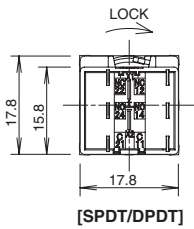
* Solder/Tab Terminal



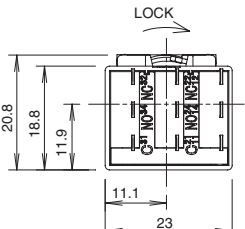
[SPDT/DPDT]



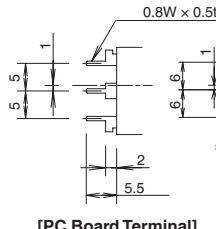
[3PDT]



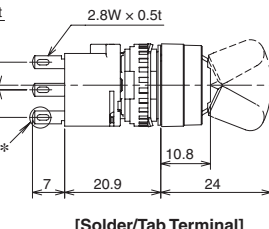
[SPDT/DPDT]



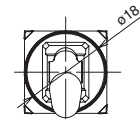
[3PDT]



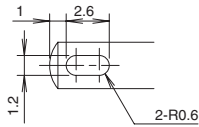
[PC Board Terminal]



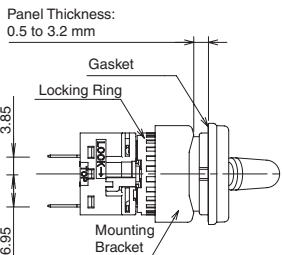
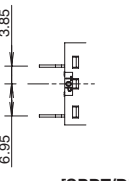
[Solder/Tab Terminal]



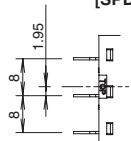
Flush Bezels



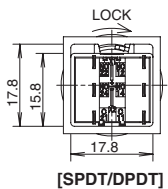
* Solder/Tab Terminal



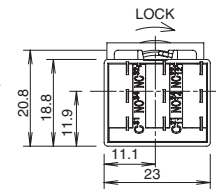
[SPDT/DPDT]



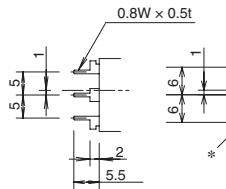
[3PDT]



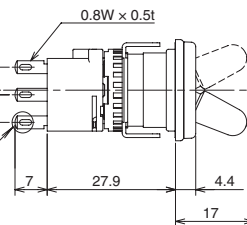
[SPDT/DPDT]



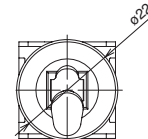
[3PDT]



[PC Board Terminal]

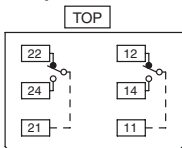


[Solder/Tab Terminal]



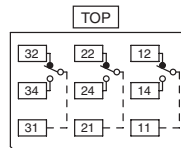
Terminal Arrangement (Bottom View)

SPDT/DPDT Contacts



(SPDT contacts on the right only)

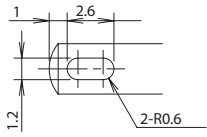
3PDT Contacts



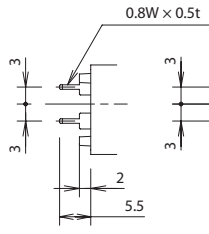
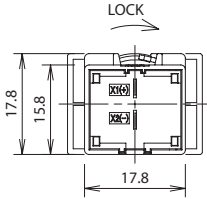
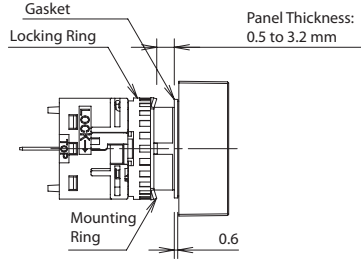
Buzzers

Standard Bezels

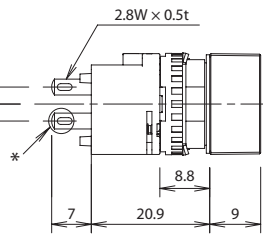
IP54



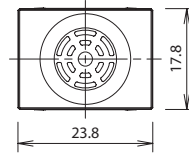
* Solder/Tab Terminal



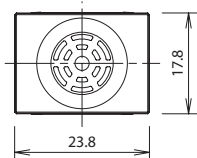
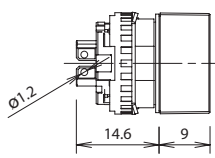
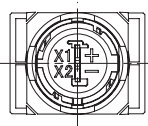
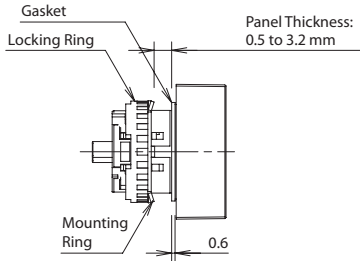
[PC Board Terminal]



[Solder/Tab Terminal]

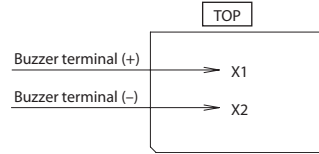


IP40

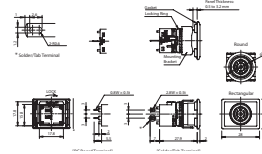


Terminal Arrangement (Bottom View)

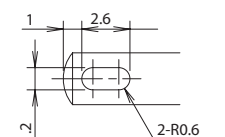
Flush & Standard IP54



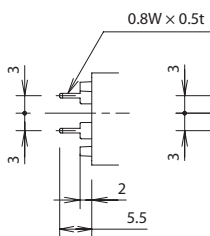
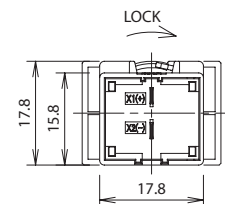
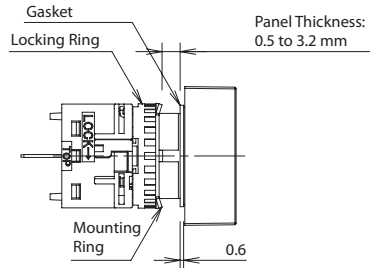
IP40



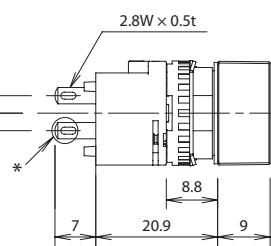
Flush Bezels



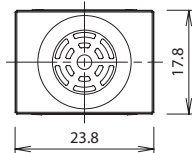
* Solder/Tab Terminal



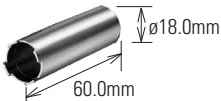
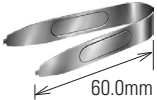
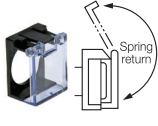


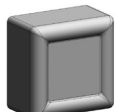
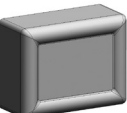


[PC Board Terminal]



[Solder/Tab Terminal]


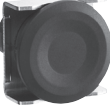

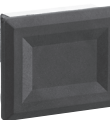


Accessories

| Item | Material | Part Number | Remarks | |
|---|-----------------------------------|---|---|---------|
| Locking Ring Wrench  | Metal: Nickel-plated brass | MT-001 | Used to tighten the locking ring when installing the units on to the panel. | |
| Lens Removal Tool  | Stainless Steel | MT-101 | Used to remove the lens or button. | |
| Switch Guard (180° Spring return)  | For round / square standard units | Guard: Polyacetal Base: Polyarylate | Degree of protection: IP65 Used to protect standard pushbuttons and illuminated pushbuttons from inadvertent operation. See page page 538 for dimensions. With the gasket mounted on the switch, attach the switch guard and mount on the panel. Note: not applicable for flush mounted units. Select operator with built-in switch guard. | |
| | For rectangular standard units | AL-KH6SP | | |
| Switch Guard for Single Board Mounting  | For rectangular units | Guard: Polyacetal Base: Polyarylate | Degree of protection: IP65 With the gasket mounted on the switch, attach the switch guard and mount on the panel. See page page 538 for dimensions. | |
| Rubber Boot for Standard Bezels 1  2  3  | 1. For round units | Silicon Rubber | Degree of protection: IP65 See page page 537 for dimensions. See page page 540 for mounting. | |
| | 2. For square units | | | LB9Z-D2 |
| | 3. For rectangular units | | | LB9Z-D3 |
| Mounting Hole Plug  | Metal | Plug: Metal (Zinc diecast) Locking nut: Polyacetal Gasket: Nitrile rubber | Degree of protection: IP65 Tightening torque: 0.1 to 0.29 N•m See page page 537 for dimensions. | |
| Mounting Hole Plug  | Rubber | Nitrile rubber (black) | Degree of protection: IP65 See page page 537 for dimensions. | |

For Standard Bezels

Accessories con't

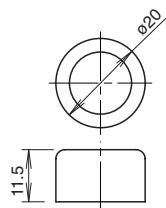
| Item | Material | Part Number | Remarks |
|---|--|---------------------------|--|
| Rubber Boot for Flush Bezels | | | |
| 1  | Silicon Rubber | 1. For round units | Degree of protection: IP65 See page page 537 for dimensions. See page page 540 for mounting. |
| 2  | | 2. For square units | |
| 3  | | 3. For rectangular units | |
| For Flush Bezels | | | |
| Mounting Hole Plug | | | |
| 1  | Plug: Polyamide (Black) Gasket: Nitrile rubber Mounting Plate: Stainless Steel | 1. For round units | Degree of protection: IP65 Panel thickness: 0.5 to 3.2mm See page page 537 for dimensions. |
| 2  | | 2. For square units | |
| 3  | | 3. For rectangular units | |
| Terminal Cover | | | |
| 1  2  | | 1. For SPDT/DPDT contacts | See page page 538 for dimensions. |
| | | 2. For 3PDT contacts | |

Accessory Dimensions (mm)

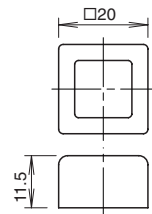
Rubber Boot

Standard Bezel

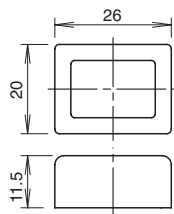
For round units (LB9Z-D1)



For square units (LB9Z-D2)

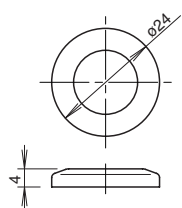


For rectangular units (LB9Z-D3)

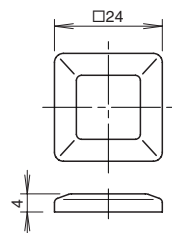


Flush Bezel

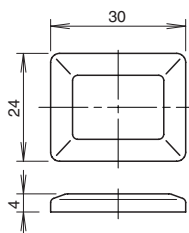
For round units (LB9Z-D6)



For square units (LB9Z-D7)



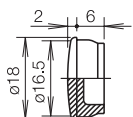
For rectangular units (LB9Z-D8)



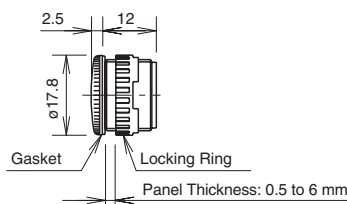
Mounting Hole Plug

Standard Bezels

AL-B6

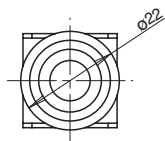


AL-BM6

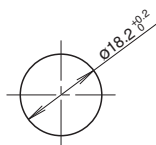


Flush Bezels

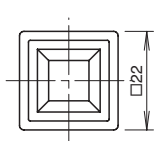
For round units (LB9Z-BS6)



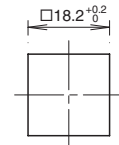
Mounting Hole Layout



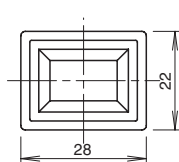
For square units (LB9Z-BS7)



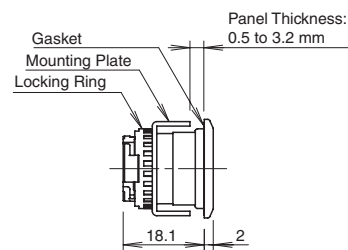
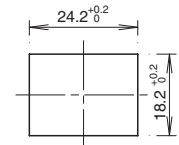
Mounting Hole Layout



For rectangular units (LB9Z-BS8)



Mounting Hole Layout



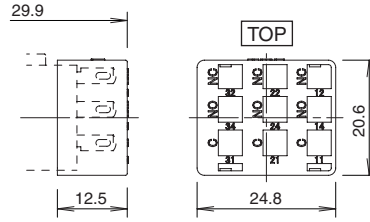
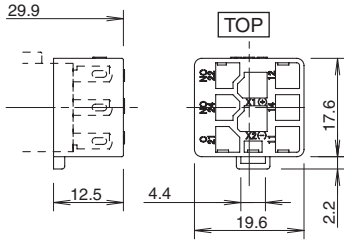
Accessory Dimensions (mm) con't

Terminal Cover

Standard Bezel

For SPDT/DPDT contacts (LB9Z-VL2)

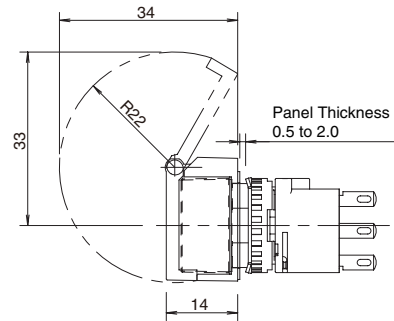
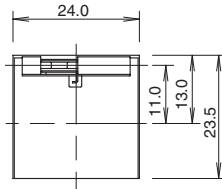
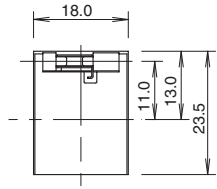
For 3PDT contacts (LB9Z-VL3)



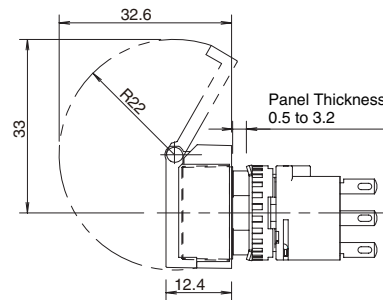
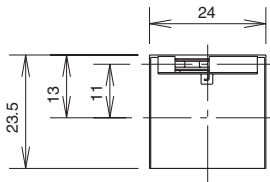
Switch Guard for Standard Bezel Models

For round / square units (AL-K6SP)

For rectangular units (AL-KH6SP)

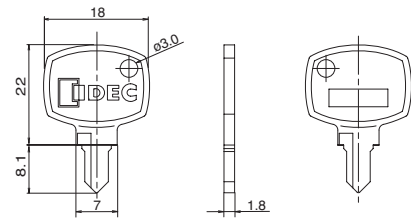


For Single Board Mounting (LA9Z-K3)



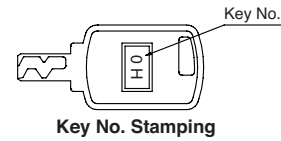
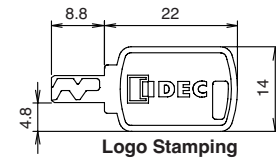
Note: The panel depth is the same for switches with or without switch guards. Both models can be installed on the same PC board.

Standard Key

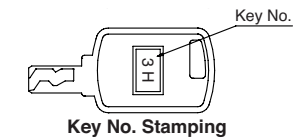
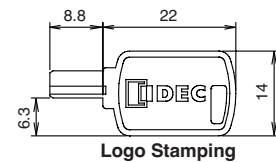


Wave Key

Reversible Wave Key




Non-reversible Wave Key



Replacement Parts

| Item | Material | Part Number | Remarks |
|--|--------------------------------|--|-----------------------|
| Lens  | For round units | Polyarylate ø15.4 H4mm | AL6M-L ^② |
| | For square units | Polyarylate □15.4, H4mm | AL6Q-L ^② |
| | For rectangular units | Polyarylate W21.4 x H4 x D15.4mm | AL6H-L ^② |
| Button  | For round units | Polyarylate □15.4, H4mm | AB6M-B ^② |
| | For square units | Polyarylate □15.4, H4mm | AB6Q-B ^② |
| | For rectangular units | Polyarylate W21.4 x H4 x D15.4 | AB6H-B ^② |
| Marking Plate  | For round units | Acrylic ø13.7 H0.8 | AL6M- ^② |
| | For square units | Acrylic □13.7, H0.8mm | AL6Q- ^② |
| | For rectangular units | Acrylic W19.7 x H0.8 (0.4) x D13.7mm | AL6H- ^② |
| Locking Ring  | For all units | Polyamide ø17.9, H3.9mm | LB9Z-LNP |
| Anti-rotation Ring  | For standard bezel | Metal (Stainless steel) □17.9, t0.6mm | LB9Z-LP1 |
| Anti-rotation Ring  | For flush bezel | Metal (Stainless steel) W21 x H8.2 x D20.6 t0.8mm | LB9Z-LP6 |
| Spare Standard Key  | For key selector switches | Nickel-plated Brass | AS6-SK |
| Spare Wave key Non-reversible Wave Key  Reversible Wave Key  | For Wave key selector switches | Diecast zinc alloy (nickel plated) W14 x H2 x D30.8mm | LA9Z-SK- ^⑤ |

LB Series Replacement LED Unit

| Item | Rated Operating Voltage | Part Number | ②Color Code | Remarks |
|---|-------------------------|------------------------|------------------------|---|
| LED Unit  | DC5V | LB9Z-LED5 ^② | A G PW R S | 8. Specify color code in place of the ② in the part number. R: Red, G: Green, A: Amber, S: Blue, PW: White 9. All illuminated LB series contain an LED unit. 10. Use a white (PW) LED unit for yellow (Y) illumination. |
| | AC/DC12V | LB9Z-LED1 ^② | | |
| | AC/DC24V | LB9Z-LED2 ^② | | |

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

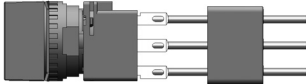
1. Solder the terminals at 350°C within 3 seconds using a 60W soldering iron. Sn-Ag-Cu type is recommended. When soldering, do not touch the LB series with the soldering iron. Also ensure that no tensile force is applied to the terminals. Do not bend the terminal or apply excessive force to the terminal.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

Terminal Cover

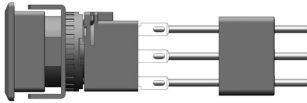
Solder/tab terminal
Insert the terminal cover into the contact block with the TOP markings on the contact block and the terminal cover in the same direction.

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

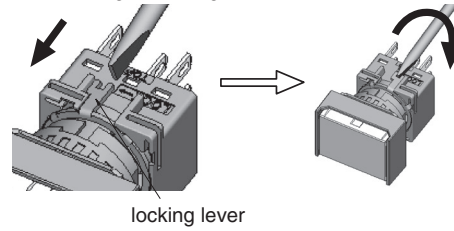
- Do not use the LB series where corrosive gases exist or under an environment exceeding the operating temperature and humidity ranges. Otherwise, damage such as contact failure or change of the surface color may occur.
- Major parts of the switch are plastic. Scratches or damage may occur when scraped 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

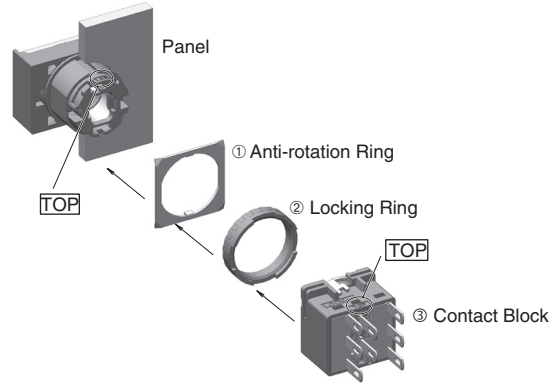
3. Turn the locking lever on the contact block in the direction opposite to the arrow on the housing. Then the contact block can be removed.
4. Insert the contact block with the TOP markings on the contact block and the operator placed in the same direction. Then lock the units, turning the locking lever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



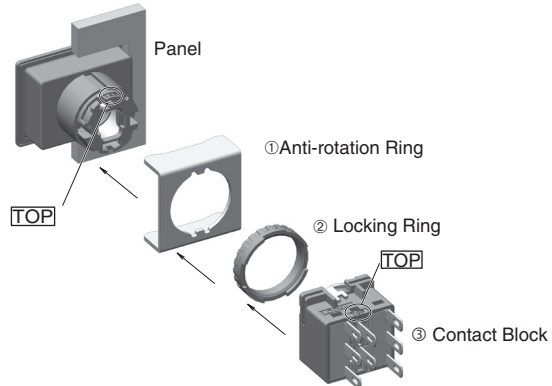
Panel Mounting

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.