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 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. 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

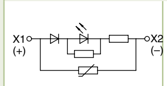
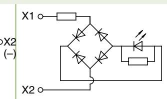
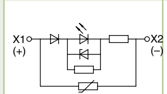
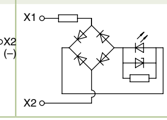
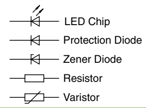
Gold Contact (switch base color: blue)		
Rated Insulation Voltage	250V	
Rated Thermal Current	3A	
Rated Operating Voltage	30V DC	125V AC
Rated Operating Current (resistive load)	0.1A	0.1A
Contact Material	Gold-clad silver	

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
Rated Operating Current	AC 50/60Hz	Resistive load	—	5A	5A
		Inductive load	—	3A	1.5A
	DC	Resistive load	5A	1.1A	—
		Inductive load	2.5A	0.55A	—
	AC 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 (reference value)	Approx. 30,000 hours (until the brightness reduces to 50% of the initial value)		
Internal Circuit	A, PW, R	A, PW, R	
			
	G, S	G, S	
			

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.
4.

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	LB①L-M1T51②	LB①L-M1T11V②	LB③④L-M1T51②	LB③④L-M1T11V②	
			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	
Flush Bezel (metallic or black)			DPDT	LB①L-M1T64②	LB①L-M1T24V②	LB③④L-M1T64②	LB③④L-M1T24V②	Specify the color code in place of ② in the Part Number: A: amber G: green R: red S: blue PW: white Y: yellow
	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	
Black Bezel with Guard		24V AC/DC	SPDT	LB①L-A1T54②	LB①L-A1T14V②	LB③④L-A1T54②	LB③④L-A1T14V②	
			DPDT	LB①L-A1T64②	LB①L-A1T24V②	LB③④L-A1T64②	LB③④L-A1T24V②	

1. 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)
2. 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)
3. Solder/Tab terminals have silver contacts and PC Board Terminals have gold contacts.
4. Illuminated pushbuttons contain an LED unit.
5. See page page 510 for dimensions.
6. See page page 525 for replacement LED units.
7. 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 page 527 for details on the marking plate and film.

Illuminated Pushbuttons (Sub-assembled)

Contact Block	Operator	LED Module	Lens	Completed Unit

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Contact Block

Terminal Style		Material	Contact	Part Number
	Solder/Tab	Silver	SPDT	LB-T50
			DPDT	LB-T60
	PCB	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

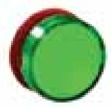
Shape	Color	Part Number
Round	Amber	LB1A-L1A
	Green	LB1A-L1G
	Red	LB1A-L1R
	Blue	LB1A-L1S
	White	LB1A-L1W
	Yellow	LB1A-L1Y
Square	Amber	LB2A-L1A
	Green	LB2A-L1G
	Red	LB2A-L1R
	Blue	LB2A-L1S
	White	LB2A-L1W
	Yellow	LB2A-L1Y
Rectangular 	Amber	LB3A-L1A
	Green	LB3A-L1G
	Red	LB3A-L1R
	Blue	LB3A-L1S
	White	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	LB①P-⑤T01②	LB①P-⑤T01V②	LB③④P-⑤T01②	LB③④P-⑤T01V②	
 Flush Bezel (metallic or black)	12V AC/DC	LB①P-⑤T03②	LB①P-⑤T03V②	LB③④P-⑤T03②	LB③④P-⑤T03V②	Specify the color code in place of ② in the Part Number.: A: amber G: green PW: white R: red S: blue Y: yellow
 	24V AC/DC	LB①P-⑤T04②	LB①P-⑤T04V②	LB③④P-⑤T04②	LB③④P-⑤T04V②	

1. 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 ⑤. 1 (flat), 2 (dome with round lens)
2. 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)
3. Pilot lights contain an LED unit.
4. See page page 511 for dimensions.
5. See page page 525 for replacement LED unit.

Pilot Lights (Sub-assembled)

Contact Block	Operator	LED Module	Lens	Completed Unit
+	 +	+	 =	

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
Round	Amber	LB1A-P1A
	Green	LB1A-P1G
	Red	LB1A-P1R
	Blue	LB1A-P1S
	White	LB1A-P1W
	Yellow	LB1A-P1Y
Dome 	Amber	LB1A-P2A
	Green	LB1A-P2G
	Red	LB1A-P2R
	Blue	LB1A-P2S
	White	LB1A-P2W
	Yellow	LB1A-P2Y
Square	Amber	LB2A-P1A
	Green	LB2A-P1G
	Red	LB2A-P1R
	Blue	LB2A-P1S
	White	LB2A-P1W
	Yellow	LB2A-P1Y
Rectangular 	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		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	SPDT	LB①B-M1T5②	LB①B-M1T1V②	LB③④B-M1T5②	LB③④B-M1T1V②	
	Momentary	DPDT	LB①B-M1T6②	LB①B-M1T2V②	LB③④B-M1T6②	LB③④B-M1T2V②	
Flush Bezel (metallic or black)	Momentary	3PDT	LB①B-M1T7②	LB①B-M1T3V②	LB③④B-M1T7②	LB③④B-M1T3V②	Specify the color code in place of ② in the Part Number: B: black G: green R: red S: blue W: white Y: yellow
	Maintained	SPDT	LB①B-A1T5②	LB①B-A1T1V②	LB③④B-A1T5②	LB③④B-A1T1V②	
	Maintained	DPDT	LB①B-A1T6②	LB①B-A1T2V②	LB③④B-A1T6②	LB③④B-A1T2V②	
Black Bezel with Guard 	Maintained	3PDT	LB①B-A1T7②	LB①B-A1T3V②	LB③④B-A1T7②	LB③④B-A1T3V②	

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)
2. 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)
3. See page page 512 for dimensions.
4. 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 527.

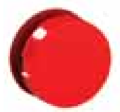
Non-Illuminated Pushbuttons (Sub-assembled)

Contact Block	Operator	Button	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

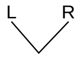
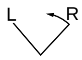
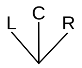
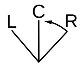
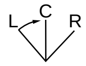
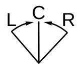
Button

Style		Color	Part Number
	Round	Black	LB1A-B1B
		Green	LB1A-B1G
		Red	LB1A-B1R
		Blue	LB1A-B1S
		White	LB1A-B1W
		Yellow	LB1A-B1Y
	Square	Black	LB2A-B1B
		Green	LB2A-B1G
		Red	LB2A-B1R
		Blue	LB2A-B1S
		White	LB2A-B1W
		Yellow	LB2A-B1Y
	Rectangular	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 (silver contacts)	PC Board Terminal (gold contacts)	Solder/Tab Terminal (silver contacts)	PC Board Terminal (gold contacts)
Standard Bezel (black)    lever shown	90° 2-position	Maintained  L R	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  L R	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
Flush Bezel (metallic or black)   lever shown 	45° 3-position	Maintained  L C R	DPDT	LB①S-3⑤T6	LB①S-3⑤T2V	LB③④S-3⑤T6	LB③④S-3⑤T2V
			3PDT	LB①S-3⑤T7	LB①S-3⑤T3V	LB③④S-3⑤T7	LB③④S-3⑤T3V
		Spring return from right  L C R	DPDT	LB①S-31⑤T6	LB①S-31⑤T2V	LB③④S-31⑤T6	LB③④S-31⑤T2V
			3PDT	LB①S-31⑤T7	LB①S-31⑤T3V	LB③④S-31⑤T7	LB③④S-31⑤T3V
		Spring return from left  L C R	DPDT	LB①S-32⑤T6	LB①S-32⑤T2V	LB③④S-32⑤T6	LB③④S-32⑤T2V
			3PDT	LB①S-32⑤T7	LB①S-32⑤T3V	LB③④S-32⑤T7	LB③④S-32⑤T3V
		Spring return two-way  L C R	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.

5. 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).
6. 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).
7. See page page 508 for contact operation .
8. See page page 514 for dimensions.

Selector Switches (Sub-assembled)

Contact Block	Operator	Completed Unit
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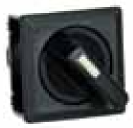
Contact Block

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	Part Number: Lever
Standard (Plastic)  Round	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
			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	Part Number: Lever
Flush Mount (Plastic)  Round	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	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
Flush Mount (Metallic)  Round	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	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)
Standard Bezel (black) 	5V DC	90° 2-position	Maintained L R	SPDT	LB①F-2T51②	LB①F-2T11V②	LB6③F-2T51②	LB6③F-2T11V②
				DPDT	LB①F-2T61②	LB①F-2T21V②	LB6③F-2T61②	LB6③F-2T21V②
		45° 3-position	Maintained L C R	DPDT	LB①F-3T61②	LB①F-3T21V②	LB6③F-3T61②	LB6③F-3T21V②
	12V AC/DC	90° 2-position	Maintained L R	SPDT	LB①F-2T53②	LB①F-2T13V②	LB6③F-2T53②	LB6③F-2T13V②
				DPDT	LB①F-2T63②	LB①F-2T23V②	LB6③F-2T63②	LB6③F-2T23V②
Flush Bezel (metallic or black) 		45° 3-position	Maintained L C R	DPDT	LB①F-3T63②	LB①F-3T23V②	LB6③F-3T63②	LB6③F-3T23V②
	24V AC/DC	90° 2-position	Maintained L R	SPDT	LB①F-2T54②	LB①F-2T14V②	LB6③F-2T54②	LB6③F-2T14V②
				DPDT	LB①F-2T64②	LB①F-2T24V②	LB6③F-2T64②	LB6③F-2T24V②
		45° 3-position	Maintained L C R	DPDT	LB①F-3T64②	LB①F-3T24V②	LB6③F-3T64②	LB6③F-3T24V②

Flush bezel only available with round operator.

9. 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)
10. 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)
11. See page page 508 for contact operation.
12. See page page 516 for dimensions.

Illuminated Selector Switches (Sub-assembled)

Contact Block	Operator	LED Module	Lens Handle	Completed Unit

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Contact Block

Terminal Style	Material	Contact	Part Number
Solder/Tab	Silver	SPDT	LB-T50
		DPDT	LB-T60
	Gold	SPDT	LB-T10
		DPDT	LB-T20
PCB	Gold	SPDT	LB-T10V
		DPDT	LB-T20V

SPDT contacts applicable for 2-position switches only.

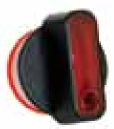
Operator

Style	Shape	Position	Function	Part Number
Standard (Plastic)	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) 	Round	2	Maintained	LB6F-2
		3	Maintained	LB6F-3
Flush Mount (Metallic)	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

Key Selector Switches (Assembled)

Style	Operator Position		Key retained at ●	Contact	Standard Bezel Solder/Tab Terminal (silver contacts)	Standard Bezel PC Board Terminal (gold contacts)	Flush Bezel Solder/Tab Terminal (silver contacts)	Flush Bezel PC Board Terminal (gold contacts)
Standard Bezel (black)	90° 2-position	Maintained	A	SPDT	LB①K-2T5A	LB①K-2T1VA	LB③④K-2T5A	LB③④K-2T1VA
				DPDT	LB①K-2T6A	LB①K-2T2VA	LB③④K-2T6A	LB③④K-2T2VA
				3PDT	LB①K-2T7A	LB①K-2T3VA	LB③④K-2T7A	LB③④K-2T3VA
			B	SPDT	LB①K-2T5B	LB①K-2T1VB	LB③④K-2T5B	LB③④K-2T1VB
				DPDT	LB①K-2T6B	LB①K-2T2VB	LB③④K-2T6B	LB③④K-2T2VB
				3PDT	LB①K-2T7B	LB①K-2T3VB	LB③④K-2T7B	LB③④K-2T3VB
			C	SPDT	LB①K-2T5C	LB①K-2T1VC	LB③④K-2T5C	LB③④K-2T1VC
				DPDT	LB①K-2T6C	LB①K-2T2VC	LB③④K-2T6C	LB③④K-2T2VC
				3PDT	LB①K-2T7C	LB①K-2T3VC	LB③④K-2T7C	LB③④K-2T3VC
		Spring return from right	B	SPDT	LB①K-21T5B	LB①K-21T1VB	LB③④K-21T5B	LB③④K-21T1VB
				DPDT	LB①K-21T6B	LB①K-21T2VB	LB③④K-21T6B	LB③④K-21T2VB
				3PDT	LB①K-21T7B	LB①K-21T3VB	LB③④K-21T7B	LB③④K-21T3VB
Flush Bezel (metallic or black)	45° 3-position	Maintained	A	DPDT	LB①K-3T6A	LB①K-3T2VA	LB③④K-3T6A	LB③④K-3T2VA
				3PDT	LB①K-3T7A	LB①K-3T3VA	LB③④K-3T7A	LB③④K-3T3VA
			B	DPDT	LB①K-3T6B	LB①K-3T2VB	LB③④K-3T6B	LB③④K-3T2VB
				3PDT	LB①K-3T7B	LB①K-3T3VB	LB③④K-3T7B	LB③④K-3T3VB
			C	DPDT	LB①K-3T6C	LB①K-3T2VC	LB③④K-3T6C	LB③④K-3T2VC
				3PDT	LB①K-3T7C	LB①K-3T3VC	LB③④K-3T7C	LB③④K-3T3VC
			D	DPDT	LB①K-3T6D	LB①K-3T2VD	LB③④K-3T6D	LB③④K-3T2VD
				3PDT	LB①K-3T7D	LB①K-3T3VD	LB③④K-3T7D	LB③④K-3T3VD
			E	DPDT	LB①K-3T6E	LB①K-3T2VE	LB③④K-3T6E	LB③④K-3T2VE
				3PDT	LB①K-3T7E	LB①K-3T3VE	LB③④K-3T7E	LB③④K-3T3VE
			G	DPDT	LB①K-3T6G	LB①K-3T2VG	LB③④K-3T6G	LB③④K-3T2VG
				3PDT	LB①K-3T7G	LB①K-3T3VG	LB③④K-3T7G	LB③④K-3T3VG
			H	DPDT	LB①K-3T6H	LB①K-3T2VH	LB③④K-3T6H	LB③④K-3T2VH
				3PDT	LB①K-3T7H	LB①K-3T3VH	LB③④K-3T7H	LB③④K-3T3VH

Assembled Key Selector Switches con't on next page.

Assembled Key Selector Switches con't on next page.

Style	Operator Position		Key retained at●	Contact	Standard Bezel: Solder/Tab Terminal (silver contacts)	Standard Bezel: PC Board Terminal (gold contacts)	Flush Bezel: Solder/Tab Terminal (silver contacts)	Flush Bezel: PC Board Terminal (gold contacts)
Standard Bezel (black)	45° 3-position	Spring return from right	B	DPDT	LB①K-31T6B	LB①K-31T2VB	LB③④K-31T6B	LB③④K-31T2VB
				3PDT	LB①K-31T7B	LB①K-31T3VB	LB③④K-31T7B	LB③④K-31T3VB
			D	DPDT	LB①K-31T6D	LB①K-31T2VD	LB③④K-31T6D	LB③④K-31T2VD
				3PDT	LB①K-31T7D	LB①K-31T3VD	LB③④K-31T7D	LB③④K-31T3VD
			G	DPDT	LB①K-31T6G	LB①K-31T2VG	LB③④K-31T6G	LB③④K-31T2VG
				3PDT	LB①K-31T7G	LB①K-31T3VG	LB③④K-31T7G	LB③④K-31T3VG
Flush Bezel (metallic or black)		Spring return from left	C	DPDT	LB①K-32T6C	LB①K-32T2VC	LB③④K-32T6C	LB③④K-32T2VC
				3PDT	LB①K-32T7C	LB①K-32T3VC	LB③④K-32T7C	LB③④K-32T3VC
			D	DPDT	LB①K-32T6D	LB①K-32T2VD	LB③④K-32T6D	LB③④K-32T2VD
				3PDT	LB①K-32T7D	LB①K-32T3VD	LB③④K-32T7D	LB③④K-32T3VD
			H	DPDT	LB①K-32T6H	LB①K-32T2VH	LB③④K-32T6H	LB③④K-32T2VH
				3PDT	LB①K-32T7H	LB①K-32T3VH	LB③④K-32T7H	LB③④K-32T3VH
		Spring return two-way	D	DPDT	LB①K-33T6D	LB①K-33T2VD	LB③④K-33T6D	LB③④K-33T2VD
				3PDT	LB①K-33T7D	LB①K-33T3VD	LB③④K-33T7D	LB③④K-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 ①. 1 (round), 2 (square), 3 (rectangular)
16. 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)
17. See page page 508 for contact operation.
18. See page page 517 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.

Key Selector Switches (Sub-assembled)

Contact Block	Operator	Completed Unit

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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
Standard (plastic) 	Round	2	Maintained	LB1K-2⑤
			Spring from right	LB1K-21B
		3	Maintained	LB1K-3⑤
			Spring from right	LB1K-31⑤
			Spring from left	LB1K-32⑤
			Spring from both	LB1K-33D
	Square	2	Maintained	LB2K-2⑤
			Spring from right	LB2K-21B
		3	Maintained	LB2K-3⑤
			Spring from right	LB2K-31⑤
			Spring from left	LB2K-32⑤
			Spring from both	LB2K-33D
	Rectangular	2	Maintained	LB3K-2⑤
			Spring from right	LB3K-21B
		3	Maintained	LB3K-3⑤
			Spring from right	LB3K-31⑤
			Spring from left	LB3K-32⑤
			Spring from both	LB3K-33D

Style	Shape	Position	Function	Part number
Flush Mount (plastic) 	Round	2	Maintained	LB6K-2⑤
			Spring from right	LB6K-21B
		3	Maintained	LB6K-3⑤
			Spring from right	LB6K-31⑤
			Spring from left	LB6K-32⑤
			Spring from both	LB6K-33D
	Square	2	Maintained	LB7K-2⑤
			Spring from right	LB7K-21B
		3	Maintained	LB7K-3⑤
			Spring from right	LB7K-31⑤
			Spring from left	LB7K-32⑤
			Spring from both	LB7K-33D
	Rectangular	2	Maintained	LB8K-2⑤
			Spring from right	LB8K-21B
		3	Maintained	LB8K-3⑤
			Spring from right	LB8K-31⑤
			Spring from left	LB8K-32⑤
			Spring from both	LB8K-33D
Flush Mount (metallic) 	Round	2	Maintained	LB6MK-2⑤
			Spring from right	LB6MK-21B
		3	Maintained	LB6MK-3⑤
			Spring from right	LB6MK-31⑤
			Spring from left	LB6MK-32⑤
			Spring from both	LB6MK-33D
	Square	2	Maintained	LB7MK-2⑤
			Spring from right	LB7MK-21B
		3	Maintained	LB7MK-3⑤
			Spring from right	LB7MK-31⑤
			Spring from left	LB7MK-32⑤
			Spring from both	LB7MK-33D
	Rectangular	2	Maintained	LB8MK-2⑤
			Spring from right	LB8MK-21B
		3	Maintained	LB8MK-3⑤
			Spring from right	LB8MK-31⑤
			Spring from left	LB8MK-32⑤
			Spring from both	LB8MK-33D

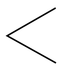
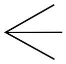
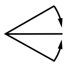
22. In place of ⑤ specify retention option code from table below.
23. For standard wave key operators, add "S" to part number before the key retention code from table below. (For example, LB6K-2B with wave key would be LB6K-2SB.)

⑤ 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 	SPDT	LB①T-2T5	LB①T-2T1V
			DPDT	LB①T-2T6	LB①T-2T2V
			3PDT	LB①T-2T7	LB①T-2T3V
Flush Bezel (black) 	3-position	Maintained 	DPDT	LB①T-3T2	LB①T-3T6V
			3PDT	LB①T-3T3	LB①T-3T7V
		Spring return from top/bottom 	DPDT	LB①T-33T2	LB①T-33T6V
			3PDT	LB①T-33T3	LB①T-33T7V

24. For all part numbers, specify bezel in place of ①. 1 (standard bezel), 6 (flush bezel).
25. See page page 508 for contact operation,.
26. See page page 519 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 (Plastic) 	2	Maintained	LB1T-2
	3	Maintained	LB1T-3
		Spring rerturn from both	LB1T-33
Round Flush Mount (Plastic) 	2	Maintained	LB6T-2
	3	Maintained	LB6T-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 page 520 for dimensions.

Buzzers (Sub-assembled)

Contact Block		Operator		Completed Unit
	+		=	

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 Operation

Selector Switch, Illuminated Selector Switch, Key Selector Switch

Operator Position & Contact Operation (Top View)					
Position		Contact	Left	Center	Right
90° 2-position	L R Maintained; L R Spring return from right	SPDT	NO1 NC1 C1		NO1 NC1 C1
		DPDT	Left Right NO1 NC1 NO2 NC2 C1 C2		Left Right NO1 NC1 NO2 NC2 C1 C2
		3PDT	Left Center Right NO1NC1NO2NC2NO3NC3 C1 C2 C3		Left Center Right NO1 NC1 NO2NC2 NO3 NC3 C1 C2 C3
45° 3-position	L C R Maintained; L C R Spring return from right; L C R Spring return from left; L C R Spring return two-way	DPDT	Left Right NO1 NC1 NO2 NC2 C1 C2	Left Right NO1 NC1 NO2 NC2 C1 C2	Left Right NO1 NC1 NO2 NC2 C1 C2
		3PDT	Left Center Right NO1NC1 NO2NC2 NO3NC3 C1 C2 C3	Left Center Right NO1NC1 NO2NC2 NO3NC3 C1 C2 C3	Left Center Right NO1NC1 NO2NC2 NO3NC3 C1 C2 C3

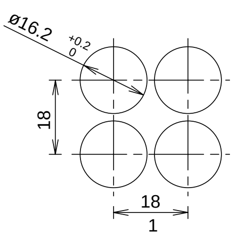
Lever Switch

Lever Position & Contact Operation (Top View)					
Position		Contact	Down	Center	Up
90° 2-position	U D Maintained	SPDT	NO1 NC1 C1		NO1 NC1 C1
		DPDT	Left Right NO1 NC1 NO2 NC2 C1 C2		Left Right NO1 NC1 NO2 NC2 C1 C2
		3PDT	Left Center Right NO1NC1NO2NC2NO3NC3 C1 C2 C3		Left Center Right NO1 NC1 NO2NC2 NO3 NC3 C1 C2 C3
45° 3-position	U C D Maintained; U C D Spring return two-way	DPDT	Left Right NO1 NC1 NO2 NC2 C1 C2	Left Right NO1 NC1 NO2 NC2 C1 C2	Left Right NO1 NC1 NO2 NC2 C1 C2
		3PDT	Left Center Right NO1NC1 NO2NC2 NO3NC3 C1 C2 C3	Left Center Right NO1NC1 NO2NC2 NO3NC3 C1 C2 C3	Left Center Right NO1NC1 NO2NC2 NO3NC3 C1 C2 C3

Mounting Hole Layout (mm)

Standard Bezels

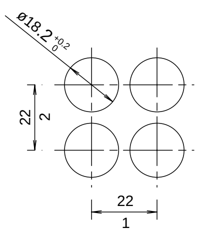
LB1/LB2/LB3



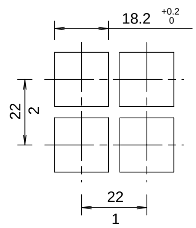
*1. Rectangular: 24mm
3PDT: 23.2mm
*2. 3PDT: 21mm

Flush Bezels

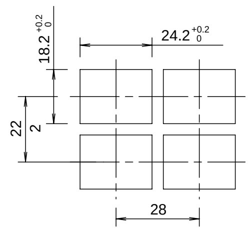
Round



Square



Rectangular



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

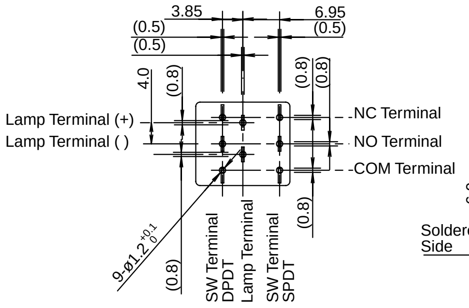
When using the LB series with a rubber boot or terminal cover, make sure to note the dimensions on pages page 523 and page 524.

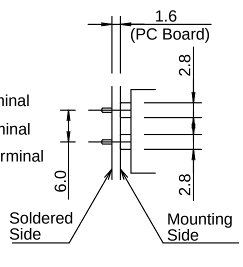
PC Board Drilling Layout (mm)

Notes for Designing PC Board and Circuit

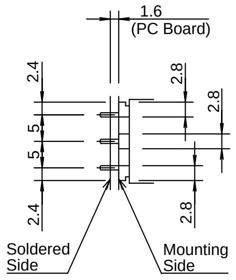
1. Use 1.6mm-thick glass epoxy PC board with drilled holes.
2. Design a circuit so that the LB series can operate within the rated voltage and current range. Make sure that inrush current and voltage do not exceed the rating.
3. Minimum applicable load is 5V AC/DC, 1mA on gold contacts.
4. Since the *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



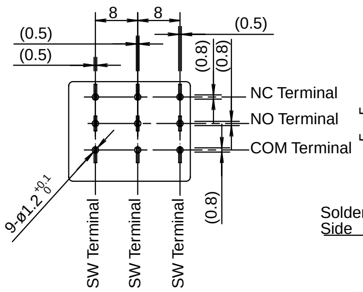


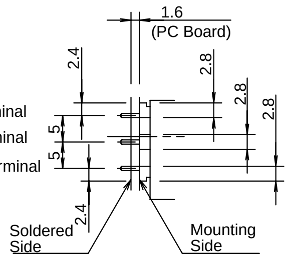
Lamp terminal



Switch terminal

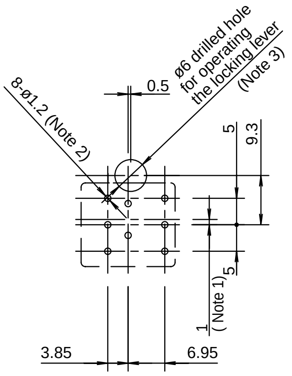
3PDT Contacts



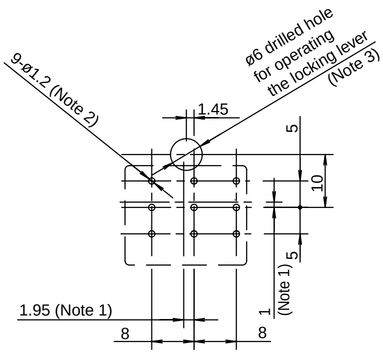


PC Board Drilling Layout (Bottom View)

SPDT/DPDT Contacts



3PDT Contacts

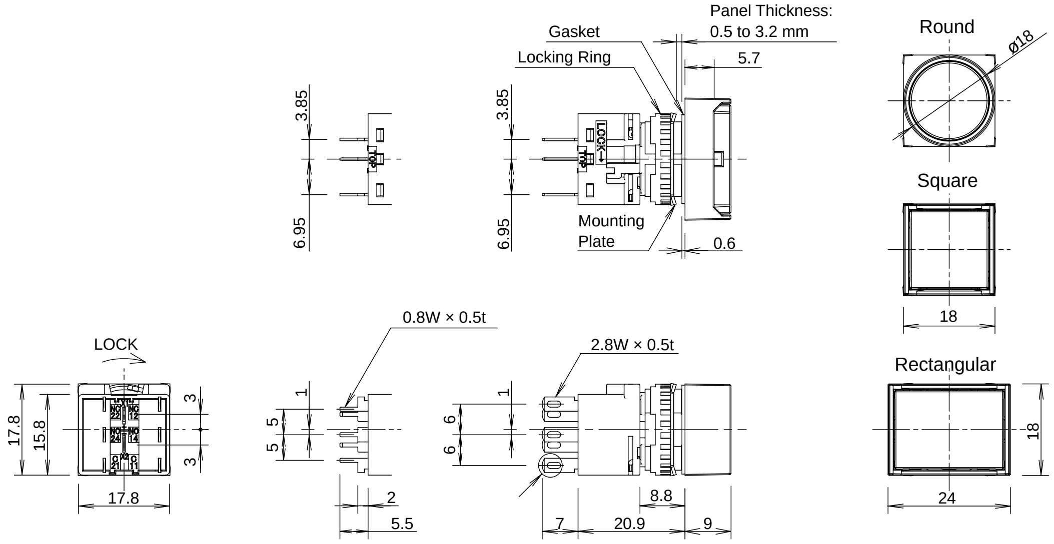


5. When designing, note the alignment of the center lines of the contact blocks and operators.
6. The diameter of the terminal hole is ø1.2.
7. Hole diameter may vary to meet installation requirements. Determine the location and the size of the hole so that the locking lever can be operated.

Dimensions (mm)

Illuminated Pushbuttons

Standard Bezels

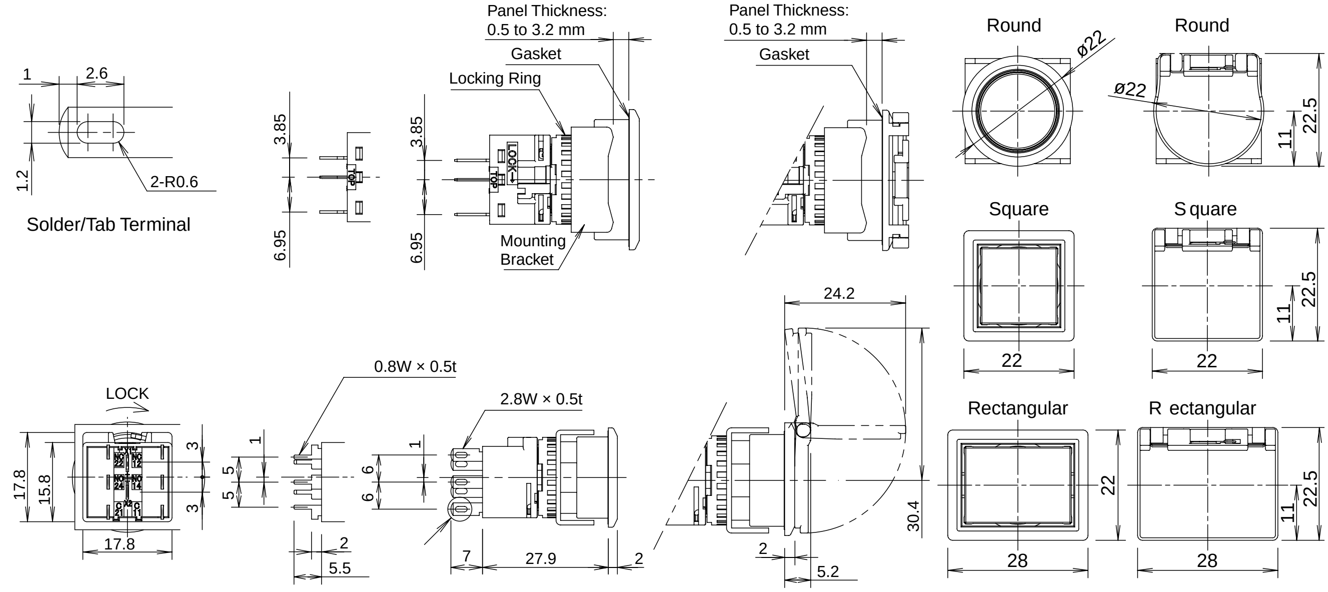


PC Board Terminal

Solder/Tab Terminal

Flush Bezels

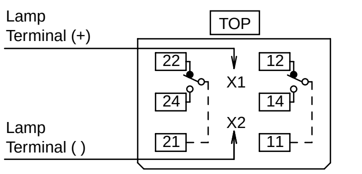
SPDT/DPDT Contacts



[PC Board Terminal] [Solder/Tab Terminal] [With Guard] [With Guard]

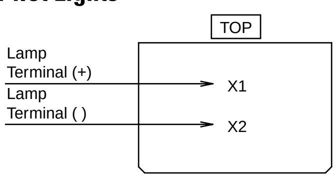
Terminal Arrangement (Bottom View)

Illuminated Pushbuttons



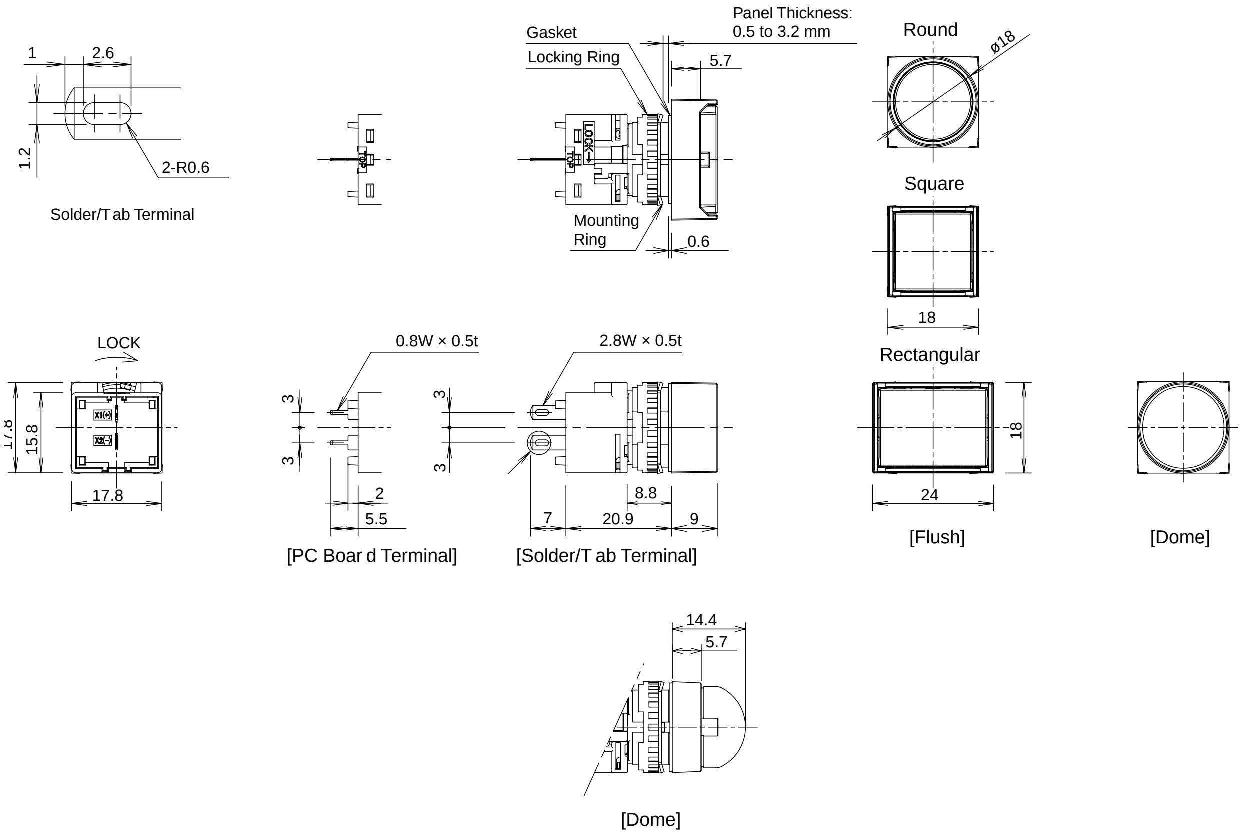
(SPDT contacts on the right only)

Pilot Lights

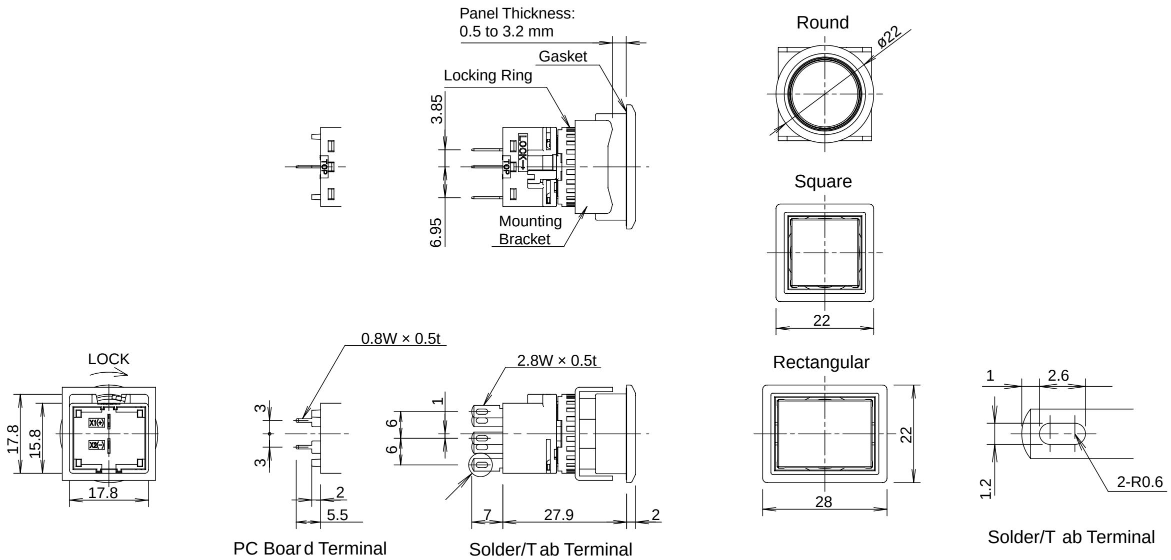


Pilot Lights

Standard Bezels

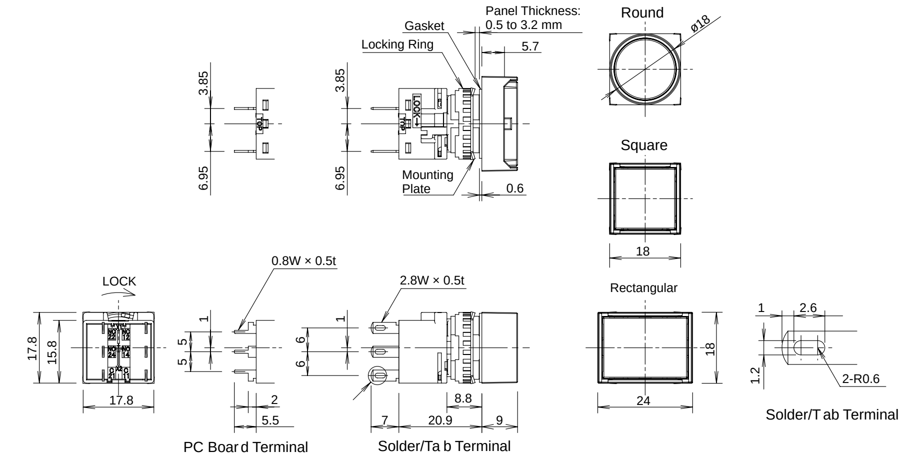


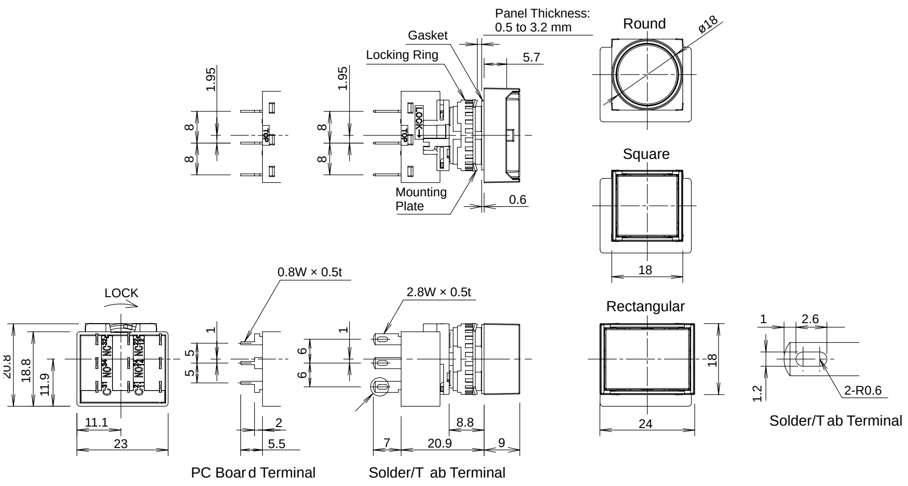
Flush Bezels



Non-Illuminated Pushbuttons

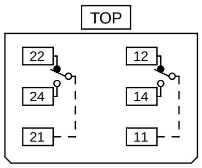
Standard Bezels





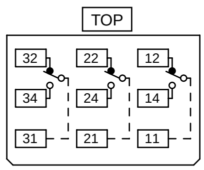
Terminal Arrangement (Bottom View)

SPDT/DPDT Contacts



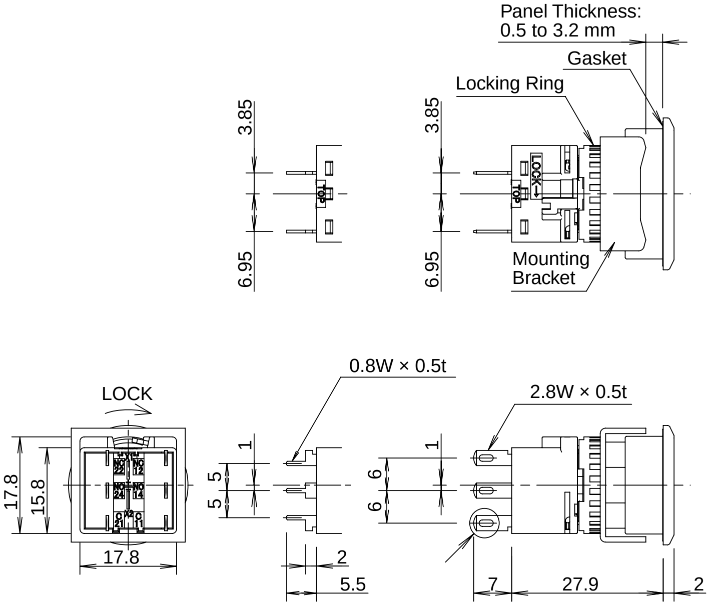
(SPDT contacts on the right only)

3PDT Contacts



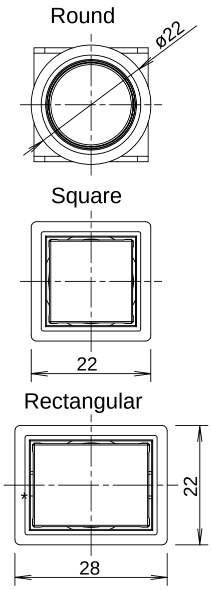
Non-Illuminated Pushbuttons

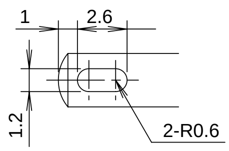
Flush Bezels



PC Board Terminal

Solder/Tab Terminal

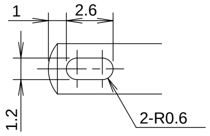




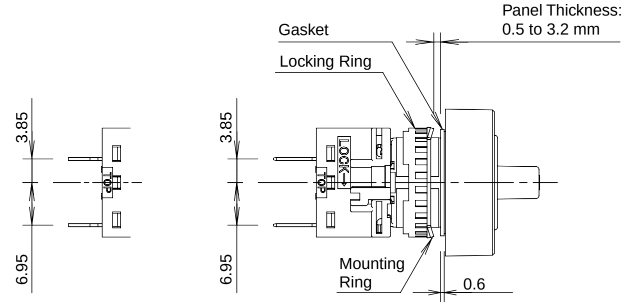
Solder/Tab Terminal

Selector Switches

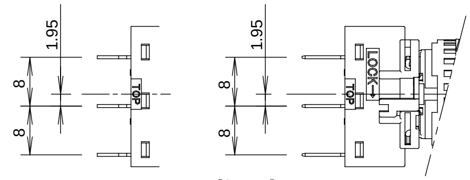
Standard Bezels



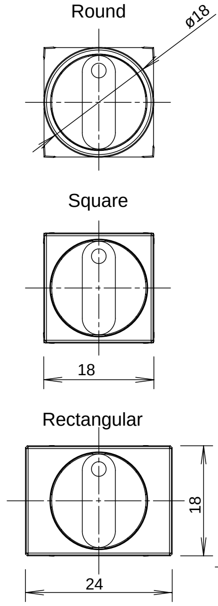
Solder/Tab Terminal



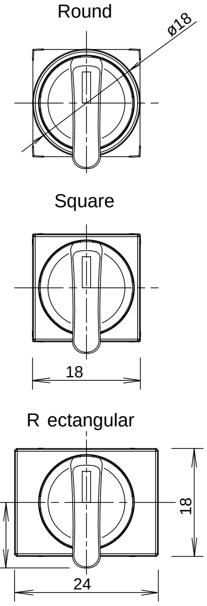
[SPDT/DPDT]



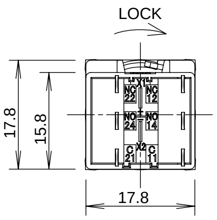
[3PDT]



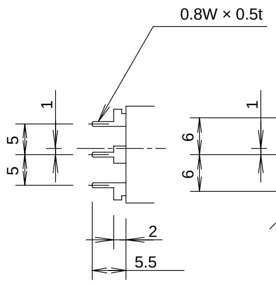
[Knob Operator]



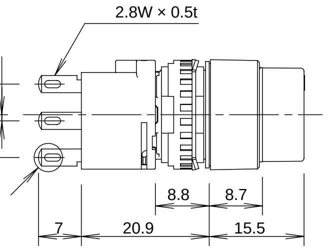
[Lever Operator]



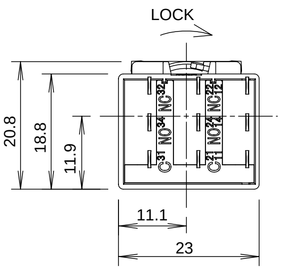
[SPDT/DPDT]



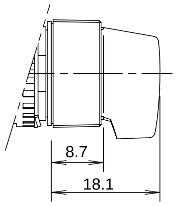
[PC Boar d Terminal]



[Knob Operator PC Boar d Terminal]



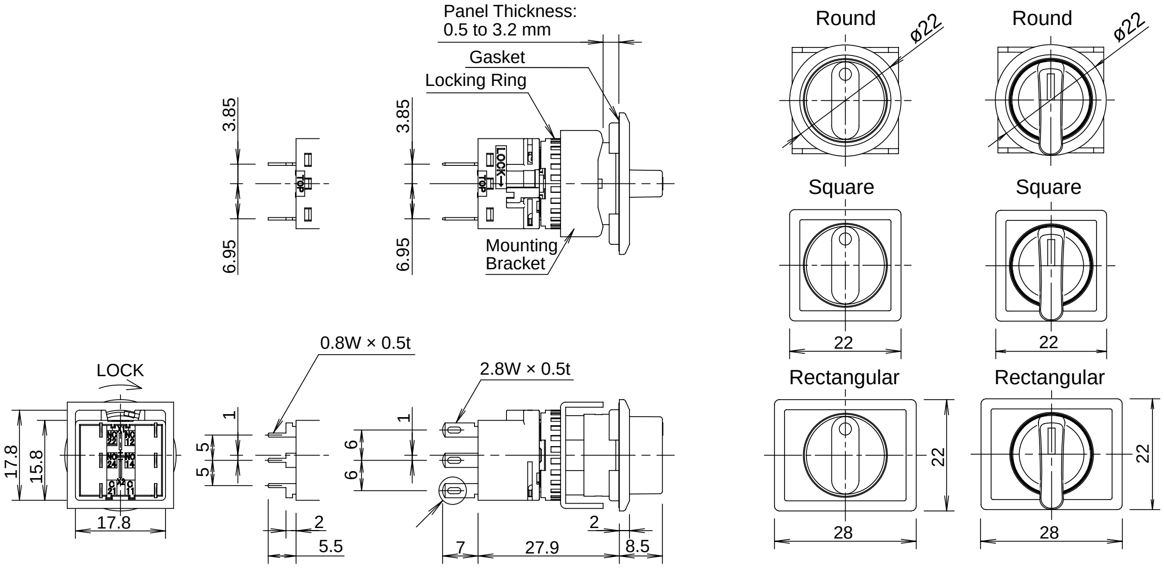
[3PDT]



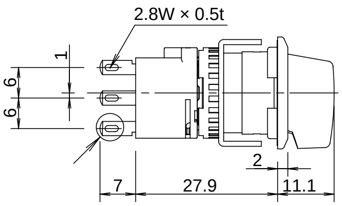
[Lever Operator]

Selector Switches

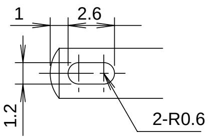
Flush Bezels



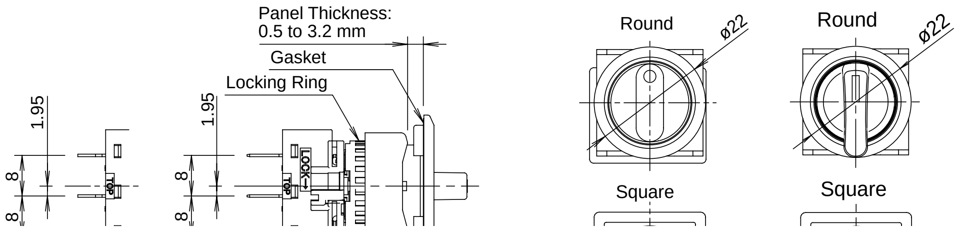
PC Board Terminal | Knob Operator Solder/Tab Terminal | Knob Operator | Lever Operator



Lever Operator Solder/Tab Terminal

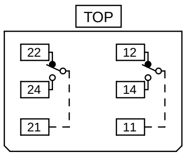


Solder/Tab Terminal



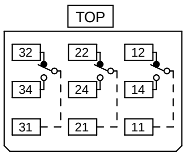
Terminal Arrangement (Bottom View)

SPDT/DPDT Contacts



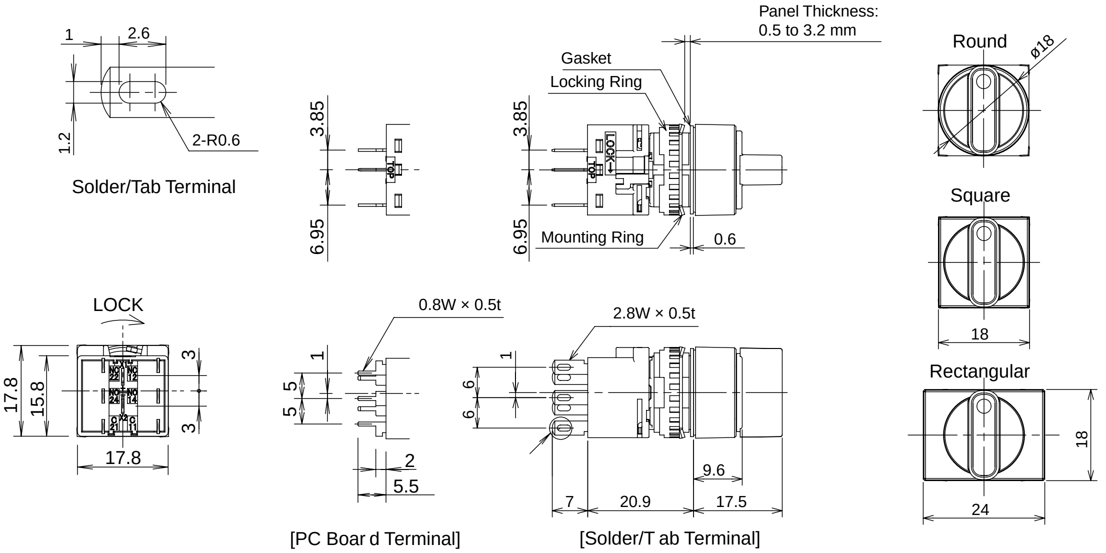
(SPDT contacts on the right only)

3PDT Contacts

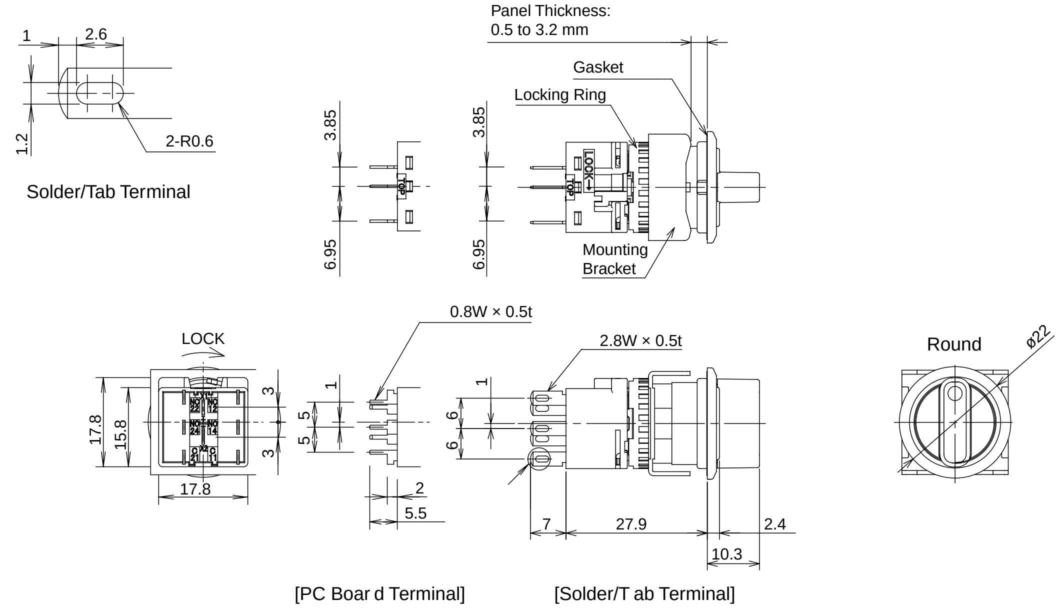


Illuminated Selector Switches

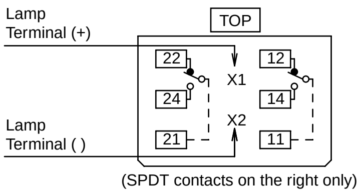
Standard Bezels



Flush Bezels



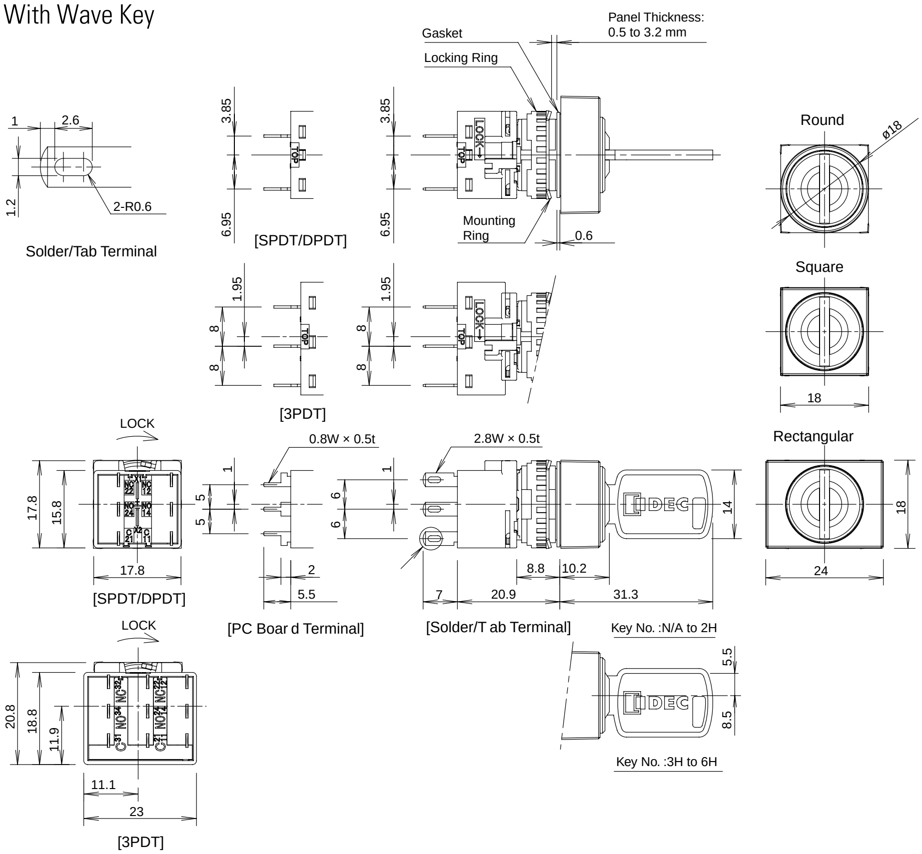
Terminal Arrangement (Bottom View)



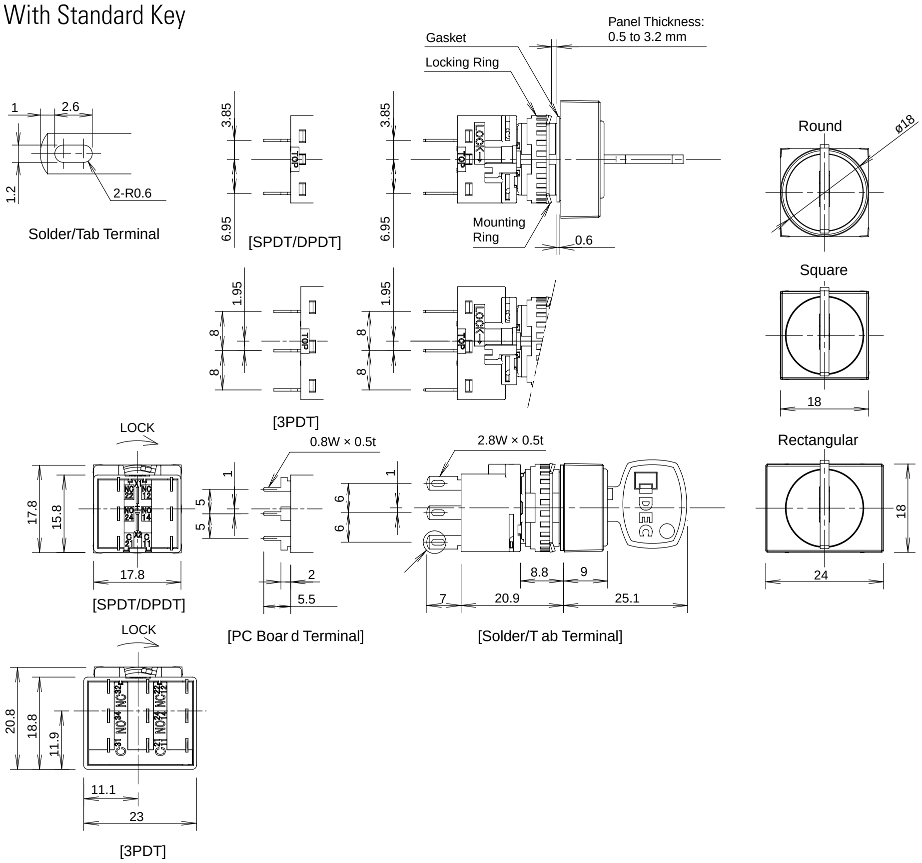
Key Selector Switches

Standard Bezels

With Wave Key



With Standard Key

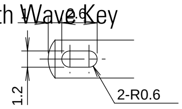


Switches & Pilot Devices
Signaling Lights
Relays & Sockets
Timers
Contactors
Terminal Blocks
Circuit Breakers

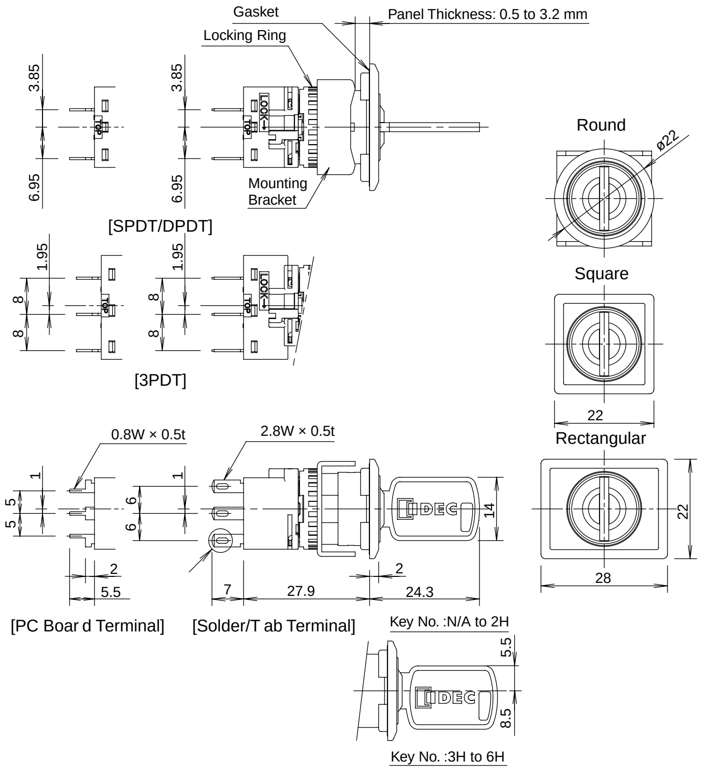
Key Selector Switches

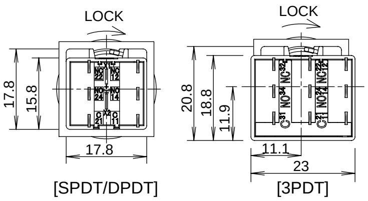
Flush Bezels

With Wave Key

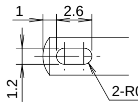


Solder/Tab Terminal

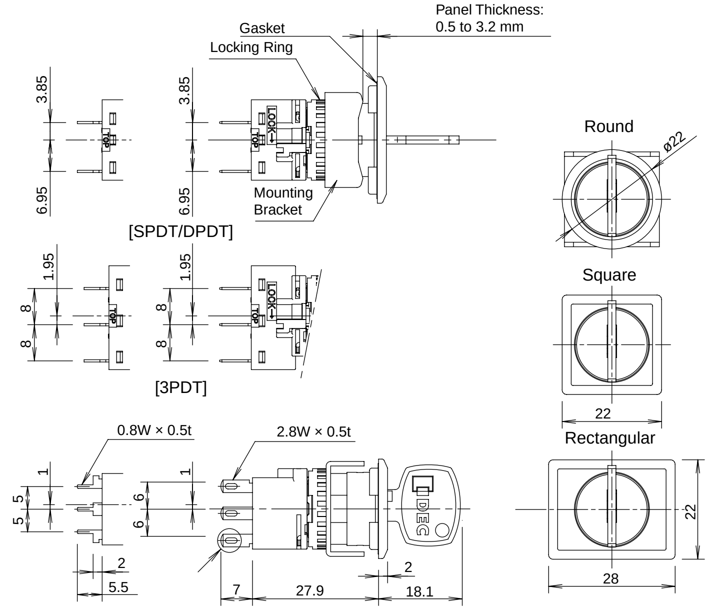


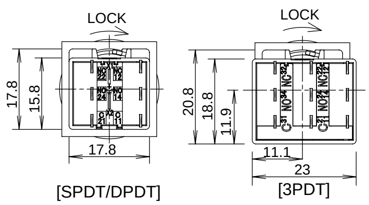


With Standard Key



Solder/Tab Terminal





Terminal Arrangement (Bottom View)

SPDT/DPDT Contacts