
















LW Series Switches & Pilot Lights








ø22 LW Series Selection Guide

Function	Pushbutton				
Category	Round Flush	Square Flush	Round Flush with Square Bezel	Round Extended	Square Extended
	Momentary/Maintained				
Shape	 UL SP Δ CE	 UL SP Δ CE	 UL SP Δ CE	 UL SP Δ CE	 UL SP Δ CE
Model	LW1B-*1	LW2B-*1	LW3B-*1	LW1B-*2	LW2B-*2
Page	5	6	7	8	9

Function	Pushbutton		Pilot Light (Unibody/Removable Contact Block)		
Category	Round Extended with Square Bezel	ø30mm Mushroom	Round Flush	Square Flush	Round Flush with Square Bezel
	Momentary/Maintained				
Shape	 UL SP Δ CE	 UL SP Δ CE	 UL SP Δ CE	 UL SP Δ CE	 UL SP Δ CE
Model	LW3B-*2	LW1B-*3	LW1P	LW2P	LW3P
Page	9	10	12	12	12

Function	Illuminated Pushbutton				Selector Switch
Category	Round	Square Flush	Round Flush with Square Bezel	ø30mm Mushroom	Round
	Momentary/Maintained				
Shape	 UL SP Δ CE	 UL SP Δ CE	 UL SP Δ CE	 UL SP Δ CE	 UL SP Δ CE
Model	LW1L-*1/ LW1L-*2	LW2L-*1	LW3L-*1	LW1L-*3	LW1S
Page	14	14	15	15	17






Function	Selector Switch	Key Selector Switch		Illuminated Selector Switch	
Category	Round with Square Bezel	Round	Round with Square Bezel	Round	Round with Square Bezel
Shape	 UL SP Δ CE	 UL SP Δ CE	 UL SP Δ CE	 UL SP Δ CE	 UL SP Δ CE
Model	LW3S	LW1K	LW3K	LW1F	LW3F
Page	17	18, 19	18, 20	22	22

Function	Buzzer
Category	Round/Square Continuous/Intermittent
Shape	
Model	LW1Z/LW2Z
Page	23

ø22 LW Series Switches & Pilot Lights

Light touch mechanism designed to reduce strain injuries
Endures repetitive operation suitable for food processing and packaging industries

- Light touch
- Collective mounting is possible.
- Locking lever removable contact blocks enables easy installation even when mounted collectively.
- Gold or silver contacts.
- Degree of protection: IP65 (IEC 60529)
(Buzzer: IP40)
- UL recognized and CSA certified. EN compliant.
(except buzzers)

Applicable Standards	Mark	File No. or Organization
UL 508		UL Recognition File No. E55996
CSA C22.2 No.14		CSA File No.LR21451
EN60947-5-1		TÜV Rheinland
		EU Low Voltage Directive
GB14048.5		



Specifications and Ratings

Contact Ratings

Gold Contact

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

Minimum applicable load (reference value): 5V AC/DC, 1mA
 (Applicable range is subject to the operating condition and load.)

Silver Contact (switch base: gray)

Rated Insulation Voltage		250V				
Rated Operating Voltage		30V	125V	250V		
Rated Operating Current	Specification 1*	AC 50/60Hz	Resistive load	—	5A	5A
		DC	Inductive load	—	3A	1.5A
			Resistive load	5A	1.1A	—
	Specification 2*	AC 50/60Hz	Resistive load	—	5A	3A
		DC	Inductive load	—	3A	1.5A
			Resistive load	3A	0.6A	—
Rated Thermal Current		5A				
Contact Material		Silver				

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

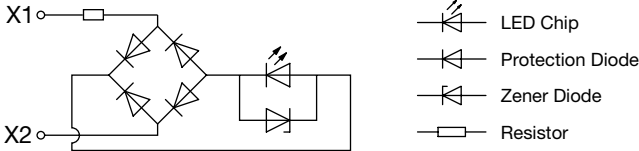




*See Specifications for electrical life.

Specifications

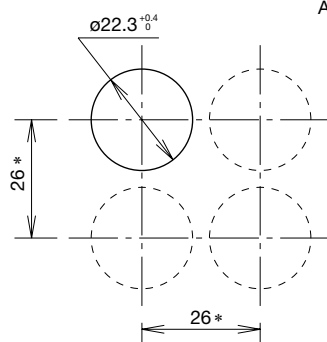
Operating Temperature	-25 to +60°C (no freezing) Illuminated units: -25 to +50°C	
Storage Temperature	-40 to +80°C (no freezing)	
Operating Humidity	45 to 85% RH (no condensation)	
Contact Resistance	50 mΩ maximum (initial value)	
Insulation Resistance	100 MΩ minimum (500V DC megger)	
Dielectric Strength	Switch Unit	Between live part and ground: 2,500V AC, 1 minute Between terminals of different poles: 2,500V AC, 1 minute Between terminals of the same pole: 1,000V AC, 1 minute
	Illumination Unit	Between live part and ground: 2,500V AC, 1 minute
Vibration Resistance	Damage Limits, Operating extremes: 5 to 55 Hz, amplitude 0.5 mm	
Shock Resistance	Damage limits: 1,000 m/s ² Operating extremes: 100 m/s ²	
Mechanical Life (minimum operations)	Momentary: 1,000,000 Maintained: 500,000 Selector switches: 250,000 Key selector switches: 250,000 Illuminated selector switches: 250,000	
Electrical Life (minimum operations)	50,000 operations minimum (Rated Operating Current: Specification 1) 100,000 operations minimum (Rated Operating Current: Specification 2) *50,000 operations minimum when using silver contacts at 125V/5A resistance load (UL rating)	
Degree of Protection	IP65 (IEC 60529) (Buzzer: IP40)	
Terminal Style	Solder/tab terminal no. 110 PC board terminal Screw terminal	
Weight (approx.)	10g (LW1B-M1C3) 15g (LW1P-14) 24g (LW1L-M1C34) 24g (LW1S-2C3) 39g (LW1K-2C3A) 27g (LW1F-2C34)	

ø22 LW Series Switches & Pilot Lights

LED Lamp Ratings (LSTD)

Part No.	LSTD-6②		LSTD-1②	LSTD-2②
Lamp Base	BA9S/13			
Rated Voltage	6V AC/DC		12V AC/DC	24V AC/DC
Voltage Range	6V AC/DC ±10%		12V AC/DC ±10%	24V AC/DC ±10%
Current Draw	AC	8 mA	11 mA	11 mA
	DC	A, R, W: 7 mA G, PW, S: 5.5 mA	10 mA	10 mA
Color Code ②	A (amber), G (green), PW (pure white), R (red), S (blue), W (white)			
Lamp Base Color	Same as illumination color			
Voltage Marking	Die stamped on the base			
Life (reference value)	Approx. 50,000 hours (The luminance is reduced to 50% the initial intensity when used on complete DC.)			
Internal Circuit	 <p>  LED Chip  Protection Diode  Zener Diode  Resistor </p>			

Mounting Hole Layout



All dimensions in mm.

Ordering Information

Standard Units



- Specify a button or lens color code in the Part No.
- All illuminated units are supplied with an LED lamp.
- All standard units are UL recognized, CSA certified, and EN compliant (TÜV Rheinland).

Note: Determine the mounting centers to ensure easy operation.

- ø30mm Mushroom: Vertical: 32 mm minimum
Horizontal: 32 mm minimum
- Solder/Tab Terminal
Without terminal cover: Vertical: 26 mm minimum
Horizontal: 26 mm minimum
With terminal cover: Vertical: 26 mm minimum
Horizontal: 27 mm minimum
- Screw terminal: Vertical: 40 mm minimum
Horizontal: 26 mm minimum
- PC board terminal: Vertical: 26 mm minimum
Horizontal: 26 mm minimum

Round Flush Pushbuttons

Package Quantity: 1



Shape	Button Style	Operation	Contact Material	Contact	Part No.		
					Solder/Tab Terminal	PC Board Terminal	Screw Terminal
Round Flush LW1B-M1 LW1B-A1  	Button	Momentary	Gold	SPDT	LW1B-M1C1①	LW1B-M1C1V①	—
				DPDT	LW1B-M1C2①	LW1B-M1C2V①	LW1B-M1C2M①
				3PDT	LW1B-M1C3①	LW1B-M1C3V①	—
			Silver	SPDT	LW1B-M1C5①	—	—
				DPDT	LW1B-M1C6①	—	LW1B-M1C6M①
				3PDT	LW1B-M1C7①	—	—
		Maintained	Gold	SPDT	LW1B-A1C1①	LW1B-A1C1V①	—
				DPDT	LW1B-A1C2①	LW1B-A1C2V①	LW1B-A1C2M①
				3PDT	LW1B-A1C3①	LW1B-A1C3V①	—
			Silver	SPDT	LW1B-A1C5①	—	—
				DPDT	LW1B-A1C6①	—	LW1B-A1C6M①
				3PDT	LW1B-A1C7①	—	—
	Lens	Momentary	Gold	SPDT	LW1B-M1C1L②	LW1B-M1C1VL②	—
				DPDT	LW1B-M1C2L②	LW1B-M1C2VL②	LW1B-M1C2ML②
				3PDT	LW1B-M1C3L②	LW1B-M1C3VL②	—
			Silver	SPDT	LW1B-M1C5L②	—	—
				DPDT	LW1B-M1C6L②	—	LW1B-M1C6ML②
				3PDT	LW1B-M1C7L②	—	—
		Maintained	Gold	SPDT	LW1B-A1C1L②	LW1B-A1C1VL②	—
				DPDT	LW1B-A1C2L②	LW1B-A1C2VL②	LW1B-A1C2ML②
				3PDT	LW1B-A1C3L②	LW1B-A1C3VL②	—
			Silver	SPDT	LW1B-A1C5L②	—	—
				DPDT	LW1B-A1C6L②	—	LW1B-A1C6ML②
				3PDT	LW1B-A1C7L②	—	—

- Specify button color code in place of ①. B: black, G: green, R: red, S: blue, W: white, Y: yellow
- Specify lens color code in place of ②. A: amber, B: black, G: green, R: red, S: blue, W: white, Y: yellow
- Lens style buttons can be used with legend markings. For details on marking plate and film, see page 27.

ø22 LW Series Pushbuttons

Square Flush Pushbuttons



Package Quantity: 1

Shape	Button Style	Operation	Contact Material	Contact	Part No.		
					Solder/Tab Terminal	PC Board Terminal	Screw Terminal
Square Flush LW2B-M1 LW2B-A1  	Button	Momentary	Gold	SPDT	LW2B-M1C1①	LW2B-M1C1V①	—
				DPDT	LW2B-M1C2①	LW2B-M1C2V①	LW2B-M1C2M①
				3PDT	LW2B-M1C3①	LW2B-M1C3V①	—
			Silver	SPDT	LW2B-M1C5①	—	—
				DPDT	LW2B-M1C6①	—	LW2B-M1C6M①
				3PDT	LW2B-M1C7①	—	—
		Maintained	Gold	SPDT	LW2B-A1C1①	LW2B-A1C1V①	—
				DPDT	LW2B-A1C2①	LW2B-A1C2V①	LW2B-A1C2M①
				3PDT	LW2B-A1C3①	LW2B-A1C3V①	—
			Silver	SPDT	LW2B-A1C5①	—	—
				DPDT	LW2B-A1C6①	—	LW2B-A1C6M①
				3PDT	LW2B-A1C7①	—	—
	Lens	Momentary	Gold	SPDT	LW2B-M1C1L②	LW2B-M1C1VL②	—
				DPDT	LW2B-M1C2L②	LW2B-M1C2VL②	LW2B-M1C2ML②
				3PDT	LW2B-M1C3L②	LW2B-M1C3VL②	—
			Silver	SPDT	LW2B-M1C5L②	—	—
				DPDT	LW2B-M1C6L②	—	LW2B-M1C6ML②
				3PDT	LW2B-M1C7L②	—	—
		Maintained	Gold	SPDT	LW2B-A1C1L②	LW2B-A1C1VL②	—
				DPDT	LW2B-A1C2L②	LW2B-A1C2VL②	LW2B-A1C2ML②
				3PDT	LW2B-A1C3L②	LW2B-A1C3VL②	—
			Silver	SPDT	LW2B-A1C5L②	—	—
				DPDT	LW2B-A1C6L②	—	LW2B-A1C6ML②
				3PDT	LW2B-A1C7L②	—	—

- Specify button color code in place of ①. B: black, G: green, R: red, S: blue, W: white, Y: yellow
- Specify lens color code in place of ②. A: amber, B: black, G: green, R: red, S: blue, W: white, Y: yellow
- Lens style buttons can be used with legend markings. For details on marking plate and film, see page 27.

Round Flush with Square Bezel Pushbuttons

Package Quantity: 1


Shape	Button Style	Operation	Contact Material	Contact	Part No.		
					Solder/Tab Terminal	PC Board Terminal	Screw Terminal
Round Flush with Square Bezel LW3B-M1 LW3B-A1  	Button	Momentary	Gold	SPDT	LW3B-M1C1①	LW3B-M1C1V①	—
				DPDT	LW3B-M1C2①	LW3B-M1C2V①	LW3B-M1C2M①
				3PDT	LW3B-M1C3①	LW3B-M1C3V①	—
			Silver	SPDT	LW3B-M1C5①	—	—
				DPDT	LW3B-M1C6①	—	LW3B-M1C6M①
				3PDT	LW3B-M1C7①	—	—
		Maintained	Gold	SPDT	LW3B-A1C1①	LW3B-A1C1V①	—
				DPDT	LW3B-A1C2①	LW3B-A1C2V①	LW3B-A1C2M①
				3PDT	LW3B-A1C3①	LW3B-A1C3V①	—
			Silver	SPDT	LW3B-A1C5①	—	—
				DPDT	LW3B-A1C6①	—	LW3B-A1C6M①
				3PDT	LW3B-A1C7①	—	—
	Lens	Momentary	Gold	SPDT	LW3B-M1C1L②	LW3B-M1C1VL②	—
				DPDT	LW3B-M1C2L②	LW3B-M1C2VL②	LW3B-M1C2ML②
				3PDT	LW3B-M1C3L②	LW3B-M1C3VL②	—
			Silver	SPDT	LW3B-M1C5L②	—	—
				DPDT	LW3B-M1C6L②	—	LW3B-M1C6ML②
				3PDT	LW3B-M1C7L②	—	—
		Maintained	Gold	SPDT	LW3B-A1C1L②	LW3B-A1C1VL②	—
				DPDT	LW3B-A1C2L②	LW3B-A1C2VL②	LW3B-A1C2ML②
				3PDT	LW3B-A1C3L②	LW3B-A1C3VL②	—
			Silver	SPDT	LW3B-A1C5L②	—	—
				DPDT	LW3B-A1C6L②	—	LW3B-A1C6ML②
				3PDT	LW3B-A1C7L②	—	—

- Specify button color code in place of ①. B: black, G: green, R: red, S: blue, W: white, Y: yellow
- Specify lens color code in place of ②. A: amber, B: black, G: green, R: red, S: blue, W: white, Y: yellow
- Lens style buttons can be used with legend markings. For details on marking plate and film, see page 27.

ø22 LW Series Pushbuttons

Round Extended Pushbuttons

Package Quantity: 1





Shape	Button Style	Operation	Contact Material	Contact	Part No.		
					Solder/Tab Terminal	PC Board Terminal	Screw Terminal
Round Extended LW1B-M2 LW1B-A2 	Button	Momentary	Gold	SPDT	LW1B-M2C1①	LW1B-M2C1V①	—
				DPDT	LW1B-M2C2①	LW1B-M2C2V①	LW1B-M2C2M①
				3PDT	LW1B-M2C3①	LW1B-M2C3V①	—
			Silver	SPDT	LW1B-M2C5①	—	—
				DPDT	LW1B-M2C6①	—	LW1B-M2C6M①
				3PDT	LW1B-M2C7①	—	—
		Maintained	Gold	SPDT	LW1B-A2C1①	LW1B-A2C1V①	—
				DPDT	LW1B-A2C2①	LW1B-A2C2V①	LW1B-A2C2M①
				3PDT	LW1B-A2C3①	LW1B-A2C3V①	—
			Silver	SPDT	LW1B-A2C5①	—	—
				DPDT	LW1B-A2C6①	—	LW1B-A2C6M①
				3PDT	LW1B-A2C7①	—	—
	Lens	Momentary	Gold	SPDT	LW1B-M2C1L②	LW1B-M2C1VL②	—
				DPDT	LW1B-M2C2L②	LW1B-M2C2VL②	LW1B-M2C2ML②
				3PDT	LW1B-M2C3L②	LW1B-M2C3VL②	—
			Silver	SPDT	LW1B-M2C5L②	—	—
				DPDT	LW1B-M2C6L②	—	LW1B-M2C6ML②
				3PDT	LW1B-M2C7L②	—	—
		Maintained	Gold	SPDT	LW1B-A2C1L②	LW1B-A2C1VL②	—
				DPDT	LW1B-A2C2L②	LW1B-A2C2VL②	LW1B-A2C2ML②
				3PDT	LW1B-A2C3L②	LW1B-A2C3VL②	—
			Silver	SPDT	LW1B-A2C5L②	—	—
				DPDT	LW1B-A2C6L②	—	LW1B-A2C6ML②
				3PDT	LW1B-A2C7L②	—	—



- Specify button color code in place of ①. B: black, G: green, R: red, S: blue, W: white, Y: yellow
- Specify lens color code in place of ②. A: amber, B: black, G: green, R: red, S: blue, W: white, Y: yellow
- Lens style buttons can be used with legend markings. For details on marking plate and film, see page 27.

Square Extended / Round Extended with Square Bezel Pushbuttons

Package Quantity: 1



Shape	Button Style	Operation	Contact Material	Contact	Part No.				
					Solder/Tab Terminal	PC Board Terminal	Screw Terminal		
Square Extended LW2B-M2 LW2B-A2  	Button	Momentary	Gold	SPDT	LW2B-M2C1①	LW2B-M2C1V①	—		
				DPDT	LW2B-M2C2①	LW2B-M2C2V①	LW2B-M2C2M①		
				3PDT	LW2B-M2C3①	LW2B-M2C3V①	—		
			Silver	SPDT	LW2B-M2C5①	—	—		
				DPDT	LW2B-M2C6①	—	LW2B-M2C6M①		
				3PDT	LW2B-M2C7①	—	—		
		Maintained	Gold	SPDT	LW2B-A2C1①	LW2B-A2C1V①	—		
				DPDT	LW2B-A2C2①	LW2B-A2C2V①	LW2B-A2C2M①		
				3PDT	LW2B-A2C3①	LW2B-A2C3V①	—		
			Silver	SPDT	LW2B-A2C5①	—	—		
				DPDT	LW2B-A2C6①	—	LW2B-A2C6M①		
				3PDT	LW2B-A2C7①	—	—		
		Round Extended with Square Bezel LW3B-M2 LW3B-A2  	Button	Momentary	Gold	SPDT	LW3B-M2C1①	LW3B-M2C1V①	—
						DPDT	LW3B-M2C2①	LW3B-M2C2V①	LW3B-M2C2M①
3PDT	LW3B-M2C3①					LW3B-M2C3V①	—		
Silver	SPDT				LW3B-M2C5①	—	—		
	DPDT				LW3B-M2C6①	—	LW3B-M2C6M①		
	3PDT				LW3B-M2C7①	—	—		
Maintained	Gold			SPDT	LW3B-A2C1①	LW3B-A2C1V①	—		
				DPDT	LW3B-A2C2①	LW3B-A2C2V①	LW3B-A2C2M①		
				3PDT	LW3B-A2C3①	LW3B-A2C3V①	—		
	Silver			SPDT	LW3B-A2C5①	—	—		
				DPDT	LW3B-A2C6①	—	LW3B-A2C6M①		
				3PDT	LW3B-A2C7①	—	—		

• Specify button color code in place of ①. B: black, G: green, R: red, S: blue, W: white, Y: yellow

ø22 LW Series Pushbuttons

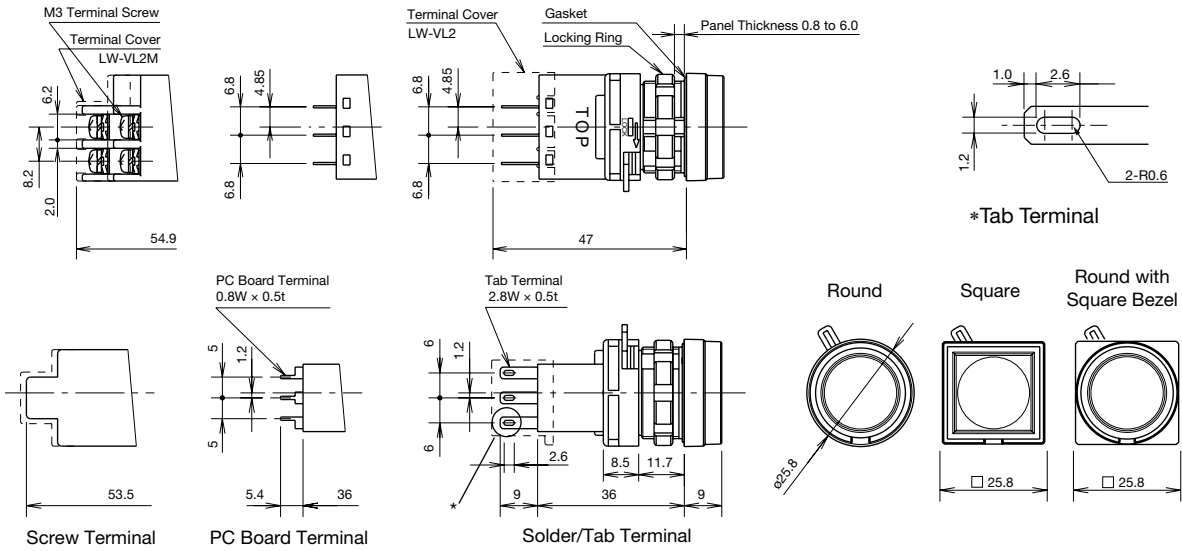
Mushroom Pushbuttons

Package Quantity: 1

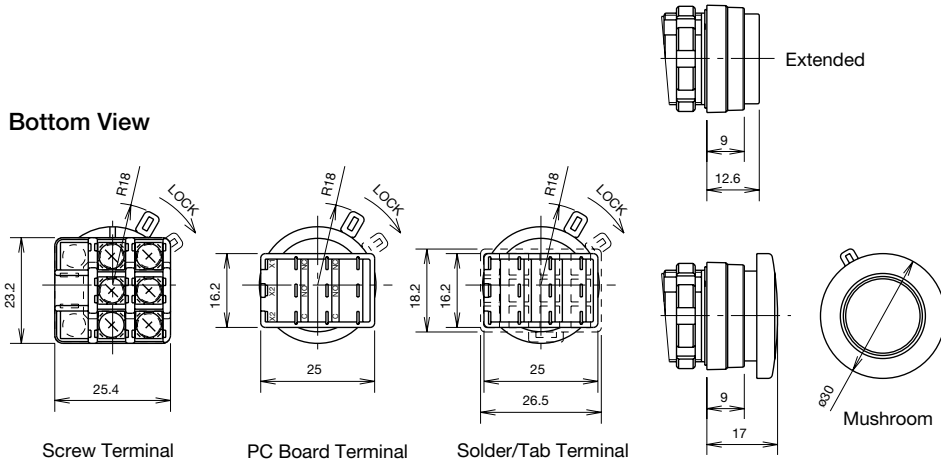
Shape	Button Style	Operation	Contact Material	Contact	Part No.		
					Solder/Tab Terminal	PC Board Terminal	Screw Terminal
ø30mm Mushroom LW1B-M3 LW1B-A3  	Button	Momentary	Gold	SPDT	LW1B-M3C1①	LW1B-M3C1V①	—
				DPDT	LW1B-M3C2①	LW1B-M3C2V①	LW1B-M3C2M①
				3PDT	LW1B-M3C3①	LW1B-M3C3V①	—
			Silver	SPDT	LW1B-M3C5①	—	—
				DPDT	LW1B-M3C6①	—	LW1B-M3C6M①
				3PDT	LW1B-M3C7①	—	—
		Maintained	Gold	SPDT	LW1B-A3C1①	LW1B-A3C1V①	—
				DPDT	LW1B-A3C2①	LW1B-A3C2V①	LW1B-A3C2M①
				3PDT	LW1B-A3C3①	LW1B-A3C3V①	—
			Silver	SPDT	LW1B-A3C5①	—	—
				DPDT	LW1B-A3C6①	—	LW1B-A3C6M①
				3PDT	LW1B-A3C7①	—	—
	Lens	Momentary	Gold	SPDT	LW1B-M3C1L②	LW1B-M3C1VL②	—
				DPDT	LW1B-M3C2L②	LW1B-M3C2VL②	LW1B-M3C2ML②
				3PDT	LW1B-M3C3L②	LW1B-M3C3VL②	—
			Silver	SPDT	LW1B-M3C5L②	—	—
				DPDT	LW1B-M3C6L②	—	LW1B-M3C6ML②
				3PDT	LW1B-M3C7L②	—	—
		Maintained	Gold	SPDT	LW1B-A3C1L②	LW1B-A3C1VL②	—
				DPDT	LW1B-A3C2L②	LW1B-A3C2VL②	LW1B-A3C2ML②
				3PDT	LW1B-A3C3L②	LW1B-A3C3VL②	—
			Silver	SPDT	LW1B-A3C5L②	—	—
				DPDT	LW1B-A3C6L②	—	LW1B-A3C6ML②
				3PDT	LW1B-A3C7L②	—	—

- Specify button color code in place of ①. B: black, G: green, R: red, S: blue, W: white, Y: yellow
- Specify lens color code in place of ②. A: amber, G: green, R: red, S: blue, W: white, Y: yellow
Black lens consists of a clear lens and a black marking plate. (Without CCC marking)
- Lens style buttons can be used with legend markings. For details on marking plate and film, see page 27.

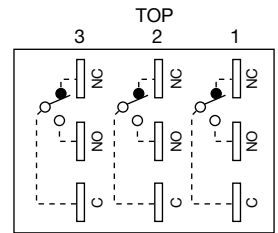
Dimensions



Bottom View

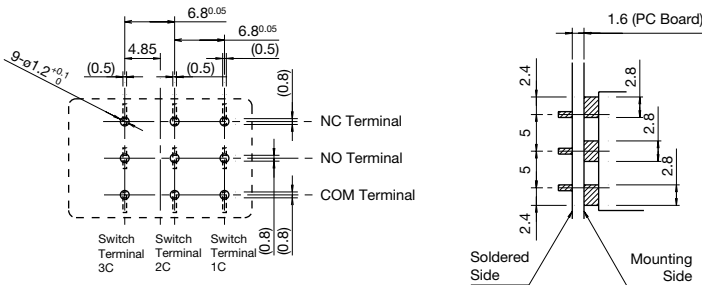


Terminal Arrangement (Bottom View)



Note: SPDT has C, NO, and NC only in the center.
DPDT has C, NO, and NC only on the right and left.
Screw terminal type is DPDT.

PC Board Drilling Layout (Bottom View)









Pay attention to the pattern of the PC board as the terminals on the mounting surface are 2.8 mm wide.

All dimensions in mm

ø22 LW Series Pilot Lights

Pilot Lights

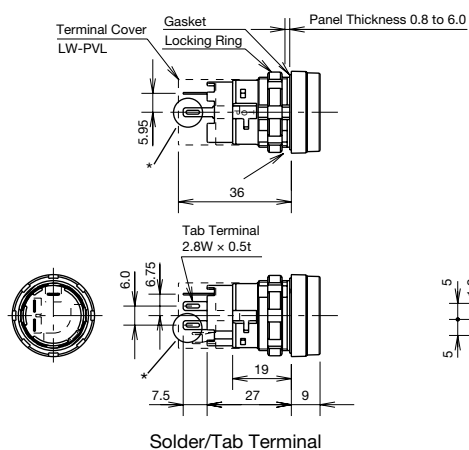
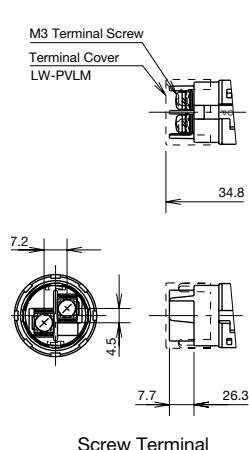
Package Quantity: 1

Shape	Operating Voltage	Part No			② Color Code
		Solder/Tab Terminal (Unibody)	PC Board Terminal (Removable Contact Block)	Screw Terminal (Unibody)	
Round Flush LW1P  	6V AC/DC±10%	LW1P-12②	LW1P-1C02V②	LW1P-12M②	Specify a color code in place of ② in the Part No. A: amber G: green PW: pure white R: red S: blue W: white Y: yellow
	12V AC/DC±10%	LW1P-13②	LW1P-1C03V②	LW1P-13M②	
	24V AC/DC±10%	LW1P-14②	LW1P-1C04V②	LW1P-14M②	
Square Flush LW2P  	6V AC/DC±10%	LW2P-12②	LW2P-1C02V②	LW2P-12M②	
	12V AC/DC±10%	LW2P-13②	LW2P-1C03V②	LW2P-13M②	
	24V AC/DC±10%	LW2P-14②	LW2P-1C04V②	LW2P-14M②	
Round Flush with Square Bezel LW3P  	6V AC/DC±10%	LW3P-12②	LW3P-1C02V②	LW3P-12M②	
	12V AC/DC±10%	LW3P-13②	LW3P-1C03V②	LW3P-13M②	
	24V AC/DC±10%	LW3P-14②	LW3P-1C04V②	LW3P-14M②	

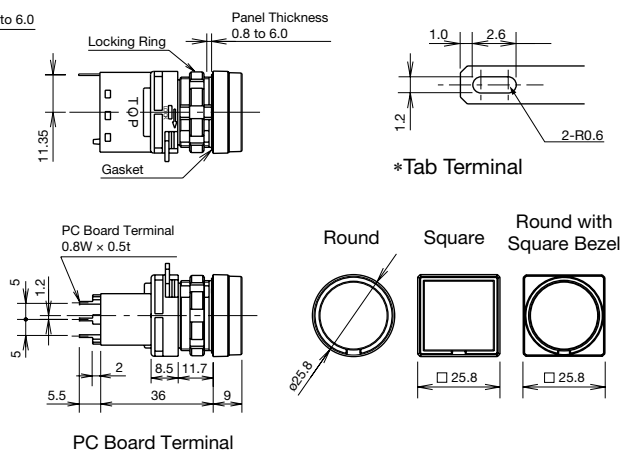
- Every pilot light is supplied with an LED lamp (LSTD) of the specified color and voltage.
- A pure white LED lamp is used for yellow illumination.
- For marking plate and film, see page 27.
- When using white lens unit (clear lens + white marking plate) with color codes A, G, R, or S, specify "W" before ② in the part no.
Example: LW1P-12W②

Dimensions

Unibody



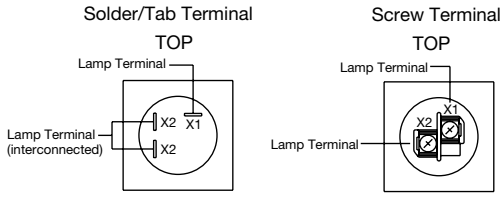
Removable Contact Block



All dimensions in mm.

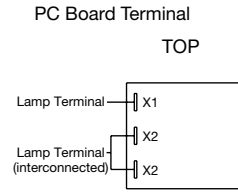
Terminal Arrangement

Unibody



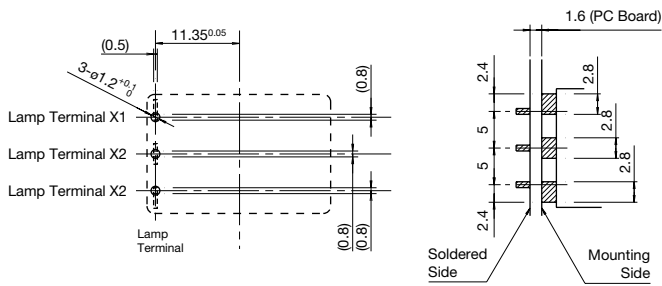
- Lamp terminals do not have any polarity.

Removable Contact Block



- Lamp terminals do not have any polarity.

PC Board Drilling Layout (Bottom View)



Pay attention to the pattern of the PC board as the terminals on the mounting surface are 2.8 mm wide.

All dimensions in mm.

ø22 LW Series Illuminated Pushbuttons

Flush / Extended Illuminated Pushbuttons

Package Quantity: 1

Shape	Lamp	Operation	Contact Material	Contact	Part No.		
					Solder/Tab Terminal	PC Board Terminal	Screw Terminal
Round Flush LW1L-M1 LW1L-A1  	LED	Momentary	Gold	SPDT	LW1L-M1C1 ^{③②}	LW1L-M1C1 ^{③V②}	—
				DPDT	LW1L-M1C2 ^{③②}	LW1L-M1C2 ^{③V②}	LW1L-M1C2 ^{③M②}
				3PDT	LW1L-M1C3 ^{③②}	LW1L-M1C3 ^{③V②}	—
			Silver	SPDT	LW1L-M1C5 ^{③②}	—	—
				DPDT	LW1L-M1C6 ^{③②}	—	LW1L-M1C6 ^{③M②}
				3PDT	LW1L-M1C7 ^{③②}	—	—
		Maintained	Gold	SPDT	LW1L-A1C1 ^{③②}	LW1L-A1C1 ^{③V②}	—
				DPDT	LW1L-A1C2 ^{③②}	LW1L-A1C2 ^{③V②}	LW1L-A1C2 ^{③M②}
				3PDT	LW1L-A1C3 ^{③②}	LW1L-A1C3 ^{③V②}	—
			Silver	SPDT	LW1L-A1C5 ^{③②}	—	—
				DPDT	LW1L-A1C6 ^{③②}	—	LW1L-A1C6 ^{③M②}
				3PDT	LW1L-A1C7 ^{③②}	—	—
Round Extended LW1L-M2 LW1L-A2  	LED	Momentary	Gold	SPDT	LW1L-M2C1 ^{③②}	LW1L-M2C1 ^{③V②}	—
				DPDT	LW1L-M2C2 ^{③②}	LW1L-M2C2 ^{③V②}	LW1L-M2C2 ^{③M②}
				3PDT	LW1L-M2C3 ^{③②}	LW1L-M2C3 ^{③V②}	—
			Silver	SPDT	LW1L-M2C5 ^{③②}	—	—
				DPDT	LW1L-M2C6 ^{③②}	—	LW1L-M2C6 ^{③M②}
				3PDT	LW1L-M2C7 ^{③②}	—	—
		Maintained	Gold	SPDT	LW1L-A2C1 ^{③②}	LW1L-A2C1 ^{③V②}	—
				DPDT	LW1L-A2C2 ^{③②}	LW1L-A2C2 ^{③V②}	LW1L-A2C2 ^{③M②}
				3PDT	LW1L-A2C3 ^{③②}	LW1L-A2C3 ^{③V②}	—
			Silver	SPDT	LW1L-A2C5 ^{③②}	—	—
				DPDT	LW1L-A2C6 ^{③②}	—	LW1L-A2C6 ^{③M②}
				3PDT	LW1L-A2C7 ^{③②}	—	—
Square Flush LW2L-M1 LW2L-A1  	LED	Momentary	Gold	SPDT	LW2L-M1C1 ^{③②}	LW2L-M1C1 ^{③V②}	—
				DPDT	LW2L-M1C2 ^{③②}	LW2L-M1C2 ^{③V②}	LW2L-M1C2 ^{③M②}
				3PDT	LW2L-M1C3 ^{③②}	LW2L-M1C3 ^{③V②}	—
			Silver	SPDT	LW2L-M1C5 ^{③②}	—	—
				DPDT	LW2L-M1C6 ^{③②}	—	LW2L-M1C6 ^{③M②}
				3PDT	LW2L-M1C7 ^{③②}	—	—
		Maintained	Gold	SPDT	LW2L-A1C1 ^{③②}	LW2L-A1C1 ^{③V②}	—
				DPDT	LW2L-A1C2 ^{③②}	LW2L-A1C2 ^{③V②}	LW2L-A1C2 ^{③M②}
				3PDT	LW2L-A1C3 ^{③②}	LW2L-A1C3 ^{③V②}	—
			Silver	SPDT	LW2L-A1C5 ^{③②}	—	—
				DPDT	LW2L-A1C6 ^{③②}	—	LW2L-A1C6 ^{③M②}
				3PDT	LW2L-A1C7 ^{③②}	—	—





Color Code and Operating Voltage Code

② Color Code	③ Operating Voltage Code
Specify a color code in place of ②.	Specify an operating voltage code in place of ③.
A: amber G: green PW: pure white R: red S: blue W: white Y: yellow	2: 6V AC/DC 3: 12V AC/DC 4: 24V AC/DC

- Every illuminated pushbutton contains an LED lamp (LSTD) of the specified color and voltage.
- A pure white LED lamp is used for yellow illumination.
- For marking plate and film, see page 27.
- When using white lens unit (clear lens + white marking plate) with color codes A, G, R, or S, specify "W" before ② in the Part No.
Example: LW1L-M1C22W^②

Flush / Mushroom Illuminated Pushbuttons

Package Quantity: 1

Shape	Lamp	Operation	Contact Material	Contact	Part No.		
					Solder/Tab Terminal	PC Board Terminal	Screw Terminal
Round Flush with Square Bezel LW3L-M1 LW3L-A1  	LED	Momentary	Gold	SPDT	LW3L-M1C1 ^{③②}	LW3L-M1C1 ^{③V②}	—
				DPDT	LW3L-M1C2 ^{③②}	LW3L-M1C2 ^{③V②}	LW3L-M1C2 ^{③M②}
				3PDT	LW3L-M1C3 ^{③②}	LW3L-M1C3 ^{③V②}	—
			Silver	SPDT	LW3L-M1C5 ^{③②}	—	—
				DPDT	LW3L-M1C6 ^{③②}	—	LW3L-M1C6 ^{③M②}
				3PDT	LW3L-M1C7 ^{③②}	—	—
		DPDT	LW3L-A1C2 ^{③②}	LW3L-A1C2 ^{③V②}	LW3L-A1C2 ^{③M②}		
		3PDT	LW3L-A1C3 ^{③②}	LW3L-A1C3 ^{③V②}	—		
		Silver	SPDT	LW3L-A1C5 ^{③②}	—	—	
			DPDT	LW3L-A1C6 ^{③②}	—	LW3L-A1C6 ^{③M②}	
			3PDT	LW3L-A1C7 ^{③②}	—	—	
		ø30mm Mushroom LW1L-M3 LW1L-A3  	LED	Momentary	Gold	SPDT	LW1L-M3C1 ^{③②}
DPDT	LW1L-M3C2 ^{③②}					LW1L-M3C2 ^{③V②}	LW1L-M3C2 ^{③M②}
3PDT	LW1L-M3C3 ^{③②}					LW1L-M3C3 ^{③V②}	—
Silver	SPDT				LW1L-M3C5 ^{③②}	—	—
	DPDT				LW1L-M3C6 ^{③②}	—	LW1L-M3C6 ^{③M②}
	3PDT				LW1L-M3C7 ^{③②}	—	—
DPDT	LW1L-A3C2 ^{③②}			LW1L-A3C2 ^{③V②}	LW1L-A3C2 ^{③M②}		
3PDT	LW1L-A3C3 ^{③②}			LW1L-A3C3 ^{③V②}	—		
Silver	SPDT			LW1L-A3C5 ^{③②}	—	—	
	DPDT			LW1L-A3C6 ^{③②}	—	LW1L-A3C6 ^{③M②}	
	3PDT			LW1L-A3C7 ^{③②}	—	—	

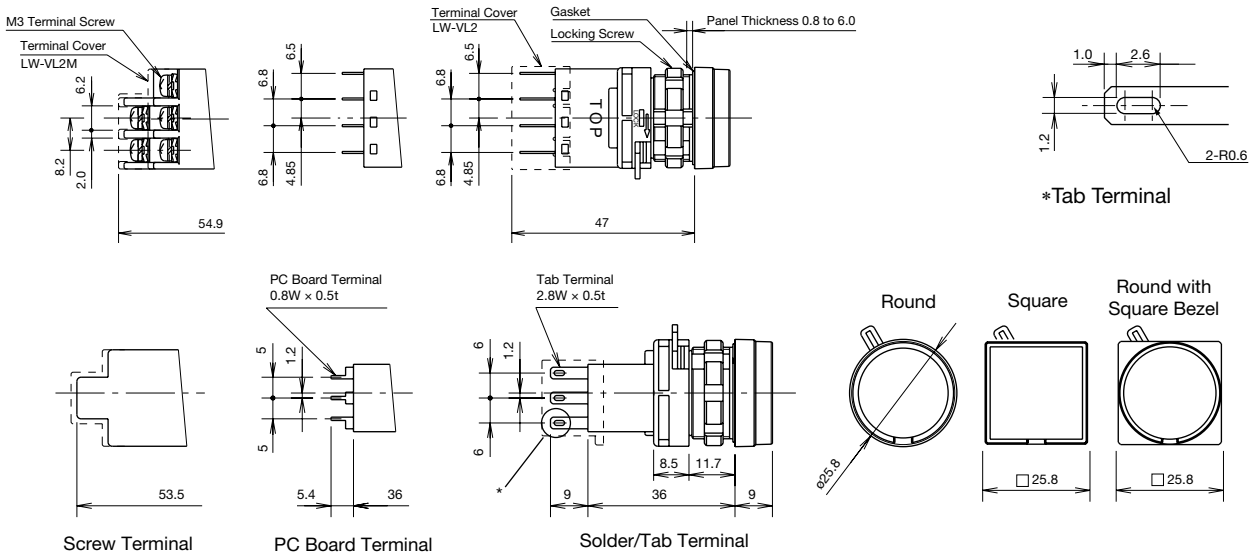
Color Code and Operating Voltage Code

② Color Code	③ Operating Voltage Code
Specify a color code in place of ②. A: amber G: green PW: pure white R: red S: blue W: white Y: yellow	Specify an operating voltage code in place of ③. 2: 6V AC/DC 3: 12V AC/DC 4: 24V AC/DC

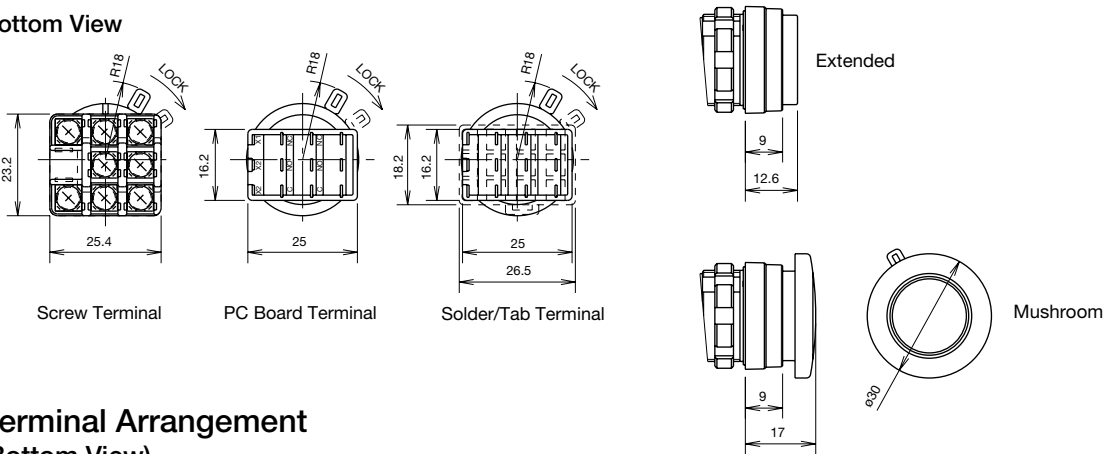
- Every illuminated pushbutton contains an LED lamp (LSTD) of the specified color and voltage.
- A pure white LED lamp is used for yellow illumination.
- For marking plate and film, see page 27.
- When using white lens unit (clear lens + white marking plate) with color codes A, G, R, or S, specify “W” before ② in the Part No.
 Example: **LW3L-M1C22W^②**

ø22 LW Series Illuminated Pushbuttons

Dimensions

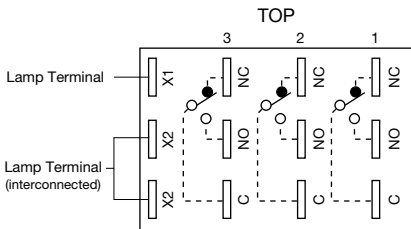


Bottom View

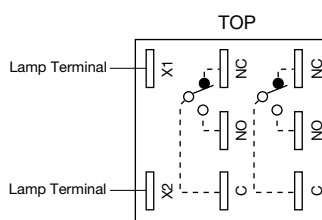


Terminal Arrangement (Bottom View)

Solder/Tab Terminal

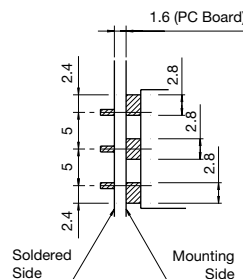
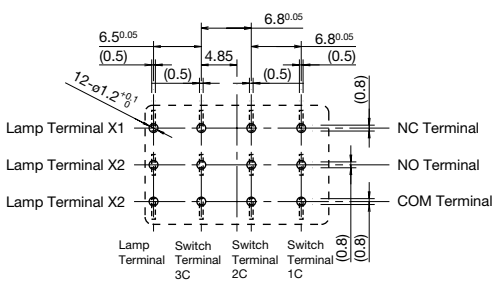


Screw Terminal



Note: SPDT has C, NO, and NC only in the center.
DPDT has C, NO, and NC only on the right and left.
Lamp terminals do not have any polarities.

PC Board Drilling Layout (Bottom View)











All dimensions in mm.


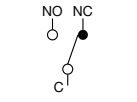
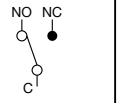
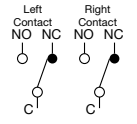
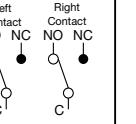
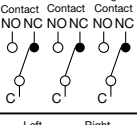
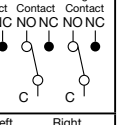

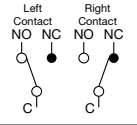
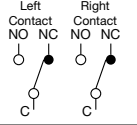
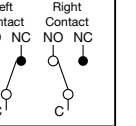
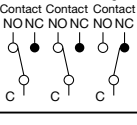
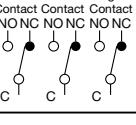
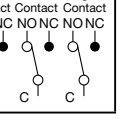
Pay attention to the pattern of the PC board as the terminals on the mounting surface are 2.8 mm wide.

Selector Switches

Package Quantity: 1

Shape	Operation	Position	Contact Material	Contact	Part No.				
					Solder/Tab Terminal	PC Board Terminal	Screw Terminal		
Round LW1S  	90° 2-position Maintained		Gold	SPDT	LW1S-2C1	LW1S-2C1V	—		
				DPDT	LW1S-2C2	LW1S-2C2V	LW1S-2C2M		
				3PDT	LW1S-2C3	LW1S-2C3V	—		
			Silver	SPDT	LW1S-2C5	—	—		
				DPDT	LW1S-2C6	—	LW1S-2C6M		
				3PDT	LW1S-2C7	—	—		
	45° 3-position Maintained		Gold	DPDT	LW1S-3C2	LW1S-3C2V	LW1S-3C2M		
				3PDT	LW1S-3C3	LW1S-3C3V	—		
			Silver	DPDT	LW1S-3C6	—	LW1S-3C6M		
				3PDT	LW1S-3C7	—	—		
Round with Square Bezel LW3S  			90° 2-position Maintained		Gold	SPDT	LW3S-2C1	LW3S-2C1V	—
						DPDT	LW3S-2C2	LW3S-2C2V	LW3S-2C2M
	3PDT	LW3S-2C3				LW3S-2C3V	—		
	Silver	SPDT			LW3S-2C5	—	—		
		DPDT			LW3S-2C6	—	LW3S-2C6M		
		3PDT			LW3S-2C7	—	—		
	45° 3-position Maintained		Gold	DPDT	LW3S-3C2	LW3S-3C2V	LW3S-3C2M		
				3PDT	LW3S-3C3	LW3S-3C3V	—		
			Silver	DPDT	LW3S-3C6	—	LW3S-3C6M		
				3PDT	LW3S-3C7	—	—		





Contact Operation

Operation	Contact	Operator Position and Contact Position (Top View)		
		Left	Center	Right
 90° 2-Position Maintained	SPDT		—	
	DPDT		—	
	3PDT		—	
 45° 3-position Maintained	DPDT			
	3PDT			

ø22 LW Series Selector Switches

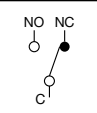
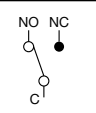
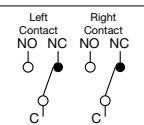
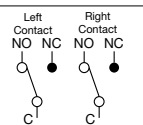
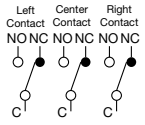
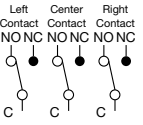
Key Selector Switches (2-Position)

Package Quantity: 1

Shape	Operation	Key Retained at ●	Contact Material	Contact	Part No.		
					Solder/Tab Terminal	PC Board Terminal	Screw Terminal
Round LW1K-2  	90° 2-position Maintained	A	Gold	SPDT	LW1K-2C1A	LW1K-2C1VA	—
				DPDT	LW1K-2C2A	LW1K-2C2VA	LW1K-2C2MA
				3PDT	LW1K-2C3A	LW1K-2C3VA	—
			Silver	SPDT	LW1K-2C5A	—	—
				DPDT	LW1K-2C6A	—	LW1K-2C6MA
				3PDT	LW1K-2C7A	—	—
		B	Gold	SPDT	LW1K-2C1B	LW1K-2C1VB	—
				DPDT	LW1K-2C2B	LW1K-2C2VB	LW1K-2C2MB
				3PDT	LW1K-2C3B	LW1K-2C3VB	—
			Silver	SPDT	LW1K-2C5B	—	—
				DPDT	LW1K-2C6B	—	LW1K-2C6MB
				3PDT	LW1K-2C7B	—	—
		C	Gold	SPDT	LW1K-2C1C	LW1K-2C1VC	—
				DPDT	LW1K-2C2C	LW1K-2C2VC	LW1K-2C2MC
				3PDT	LW1K-2C3C	LW1K-2C3VC	—
			Silver	SPDT	LW1K-2C5C	—	—
				DPDT	LW1K-2C6C	—	LW1K-2C6MC
				3PDT	LW1K-2C7C	—	—
Round with Square Bezel LW3K-2  	90° 2-position Maintained	A	Gold	SPDT	LW3K-2C1A	LW3K-2C1VA	—
				DPDT	LW3K-2C2A	LW3K-2C2VA	LW3K-2C2MA
				3PDT	LW3K-2C3A	LW3K-2C3VA	—
			Silver	SPDT	LW3K-2C5A	—	—
				DPDT	LW3K-2C6A	—	LW3K-2C6MA
				3PDT	LW3K-2C7A	—	—
		B	Gold	SPDT	LW3K-2C1B	LW3K-2C1VB	—
				DPDT	LW3K-2C2B	LW3K-2C2VB	LW3K-2C2MB
				3PDT	LW3K-2C3B	LW3K-2C3VB	—
			Silver	SPDT	LW3K-2C5B	—	—
				DPDT	LW3K-2C6B	—	LW3K-2C6MB
				3PDT	LW3K-2C7B	—	—
		C	Gold	SPDT	LW3K-2C1C	LW3K-2C1VC	—
				DPDT	LW3K-2C2C	LW3K-2C2VC	LW3K-2C2MC
				3PDT	LW3K-2C3C	LW3K-2C3VC	—
			Silver	SPDT	LW3K-2C5C	—	—
				DPDT	LW3K-2C6C	—	LW3K-2C6MC
				3PDT	LW3K-2C7C	—	—



- Key is retained in ● position and removable in ○ position.
- Two keys are supplied.
- Key cylinder face (plastic): Black
- 3 types of key numbers -2, -3, and -5 are available in addition to standard keys. (without CCC marking)
Example: LW3K-2C2A-2

Contact Operation

Operation	Contact	Operator Position and Contact Position (Top View)	
		Left	Right
L R 90° 2-Position Maintained	SPDT		
	DPDT		
	3PDT		


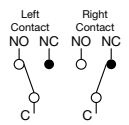
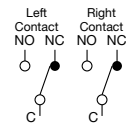
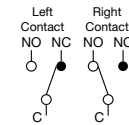
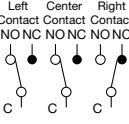
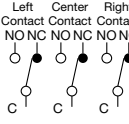
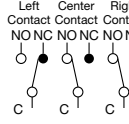
Key Selector Switches (3-Position)

Package Quantity: 1

Shape	Operation	Key Retained at ●	Contact Material	Contact	Part No.				
					Solder/Tab Terminal	PC Board Terminal	Screw Terminal		
Round LW1K-3  	45° 3-position Maintained	A	●	Gold	DPDT	LW1K-3C2A	LW1K-3C2VA	LW1K-3C2MA	
				3PDT	LW1K-3C3A	LW1K-3C3VA	—		
				Silver	DPDT	LW1K-3C6A	—	LW1K-3C6MA	
			3PDT	LW1K-3C7A	—	—			
			B	●	Gold	DPDT	LW1K-3C2B	LW1K-3C2VB	LW1K-3C2MB
					3PDT	LW1K-3C3B	LW1K-3C3VB	—	
		Silver			DPDT	LW1K-3C6B	—	LW1K-3C6MB	
		3PDT		LW1K-3C7B	—	—			
		C		●	Gold	DPDT	LW1K-3C2C	LW1K-3C2VC	LW1K-3C2MC
					3PDT	LW1K-3C3C	LW1K-3C3VC	—	
			Silver		DPDT	LW1K-3C6C	—	LW1K-3C6MC	
			3PDT	LW1K-3C7C	—	—			
			D	●	Gold	DPDT	LW1K-3C2D	LW1K-3C2VD	LW1K-3C2MD
					3PDT	LW1K-3C3D	LW1K-3C3VD	—	
		Silver			DPDT	LW1K-3C6D	—	LW1K-3C6MD	
		3PDT		LW1K-3C7D	—	—			
		E		●	Gold	DPDT	LW1K-3C2E	LW1K-3C2VE	LW1K-3C2ME
					3PDT	LW1K-3C3E	LW1K-3C3VE	—	
			Silver		DPDT	LW1K-3C6E	—	LW1K-3C6ME	
			3PDT	LW1K-3C7E	—	—			
			G	●	Gold	DPDT	LW1K-3C2G	LW1K-3C2VG	LW1K-3C2MG
					3PDT	LW1K-3C3G	LW1K-3C3VG	—	
		Silver			DPDT	LW1K-3C6G	—	LW1K-3C6MG	
		3PDT		LW1K-3C7G	—	—			
		H		●	Gold	DPDT	LW1K-3C2H	LW1K-3C2VH	LW1K-3C2MH
					3PDT	LW1K-3C3H	LW1K-3C3VH	—	
			Silver		DPDT	LW1K-3C6H	—	LW1K-3C6MH	
			3PDT	LW1K-3C7H	—	—			

- Key is retained in ● position and removable in ○ position.
- Two keys are supplied.
- Key cylinder face (plastic): Black
- 3 types of key numbers -2, -3, and -5 are available in addition to standard keys. (without CCC marking)
Example: LW1K-3C2A-2


Contact Operation

Operation	Contact	Operator Position and Contact Position (Top View)		
		Left	Center	Right
45° 3-position Maintained 	DPDT			
	3PDT			

ø22 LW Series Selector Switches

Key Selector Switches (3-Position)


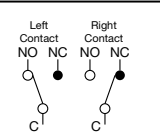
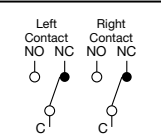
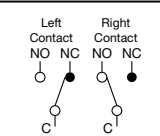
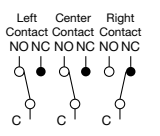
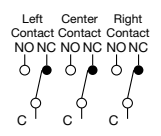
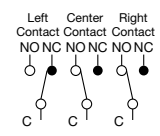
Package Quantity: 1

Shape	Operation	Key Retained at ●	Contact Material	Contact	Part No.			
					Solder/Tab Terminal	PC Board Terminal	Screw Terminal	
Round with Square Bezel LW3K-3 	45° 3-position Maintained	A	Gold	DPDT	LW3K-3C2A	LW3K-3C2VA	LW3K-3C2MA	
				3PDT	LW3K-3C3A	LW3K-3C3VA	—	
				Silver	DPDT	LW3K-3C6A	—	LW3K-3C6MA
			3PDT	LW3K-3C7A	—	—		
			B	Gold	DPDT	LW3K-3C2B	LW3K-3C2VB	LW3K-3C2MB
					3PDT	LW3K-3C3B	LW3K-3C3VB	—
		Silver			DPDT	LW3K-3C6B	—	LW3K-3C6MB
		3PDT		LW3K-3C7B	—	—		
		C		Gold	DPDT	LW3K-3C2C	LW3K-3C2VC	LW3K-3C2MC
					3PDT	LW3K-3C3C	LW3K-3C3VC	—
			Silver		DPDT	LW3K-3C6C	—	LW3K-3C6MC
			3PDT	LW3K-3C7C	—	—		
			D	Gold	DPDT	LW3K-3C2D	LW3K-3C2VD	LW3K-3C2MD
					3PDT	LW3K-3C3D	LW3K-3C3VD	—
		Silver			DPDT	LW3K-3C6D	—	LW3K-3C6MD
		3PDT		LW3K-3C7D	—	—		
		E		Gold	DPDT	LW3K-3C2E	LW3K-3C2VE	LW3K-3C2ME
					3PDT	LW3K-3C3E	LW3K-3C3VE	—
			Silver		DPDT	LW3K-3C6E	—	LW3K-3C6ME
			3PDT	LW3K-3C7E	—	—		
			G	Gold	DPDT	LW3K-3C2G	LW3K-3C2VG	LW3K-3C2MG
					3PDT	LW3K-3C3G	LW3K-3C3VG	—
		Silver			DPDT	LW3K-3C6G	—	LW3K-3C6MG
		3PDT		LW3K-3C7G	—	—		
H	Gold	DPDT		LW3K-3C2H	LW3K-3C2VH	LW3K-3C2MH		
		3PDT		LW3K-3C3H	LW3K-3C3VH	—		
		Silver	DPDT	LW3K-3C6H	—	LW3K-3C6MH		
	3PDT	LW3K-3C7H	—	—				



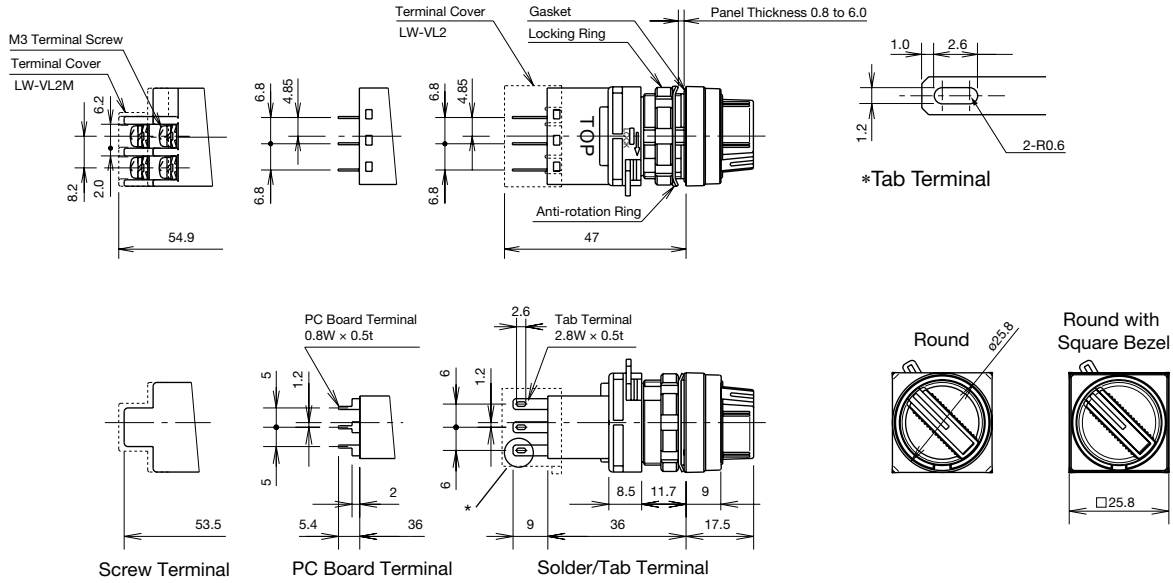
- Key is retained in ● position and removable in ○ position.
- Two keys are supplied.
- Key cylinder face (plastic): Black
- 3 types of key numbers -2, -3, and -5 are available in addition to standard keys. (without CCC marking)
Example: LW3K-3C2A-2

Contact Operation

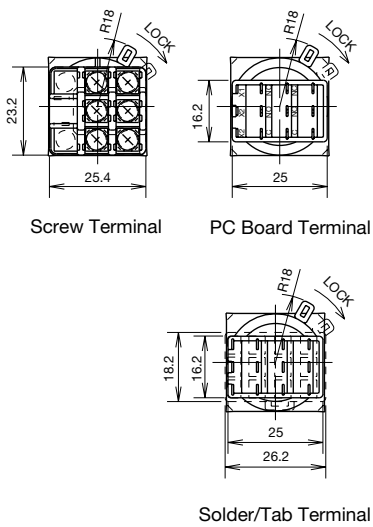
Operation	Contact	Operator Position and Contact Position (Top View)		
		Left	Center	Right
45° 3-position Maintained 	DPDT	Left Contact: NO NC Right Contact: NO NC 	Left Contact: NO NC Right Contact: NO NC 	Left Contact: NO NC Right Contact: NO NC 
	3PDT	Left Contact: NO NC Center Contact: NO NC Right Contact: NO NC 	Left Contact: NO NC Center Contact: NO NC Right Contact: NO NC 	Left Contact: NO NC Center Contact: NO NC Right Contact: NO NC 

Dimensions

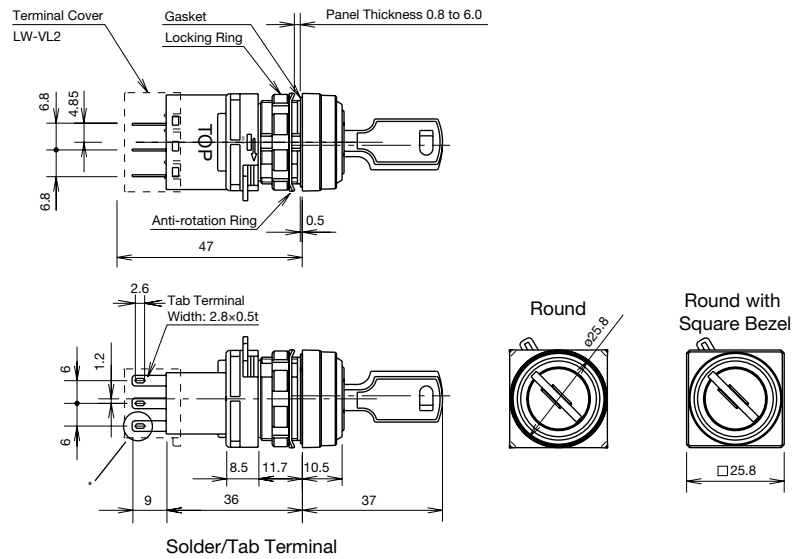
Selector Switch



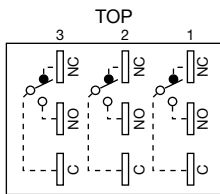
Bottom View



Key Selector Switch

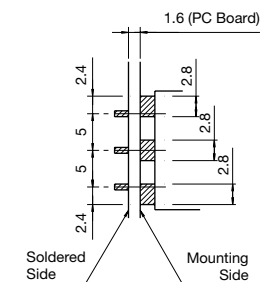
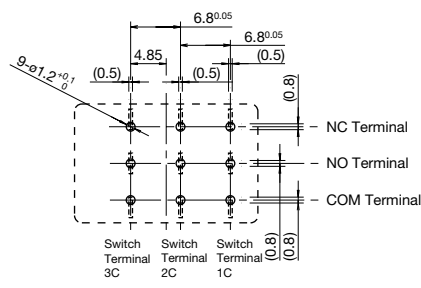


Terminal Arrangement (Bottom View)



Note: SPDT has C, NO, and NC only in the center.
DPDT has C, NO, and NC only on the right and left.

PC Board Drilling Layout (Bottom View)













Pay attention to the pattern of the PC board as the terminals on the mounting surface are 2.8 mm wide.

All dimensions in mm.

ø22 LW Series Illuminated Selector Switches

Illuminated Selector Switches

Package Quantity: 1

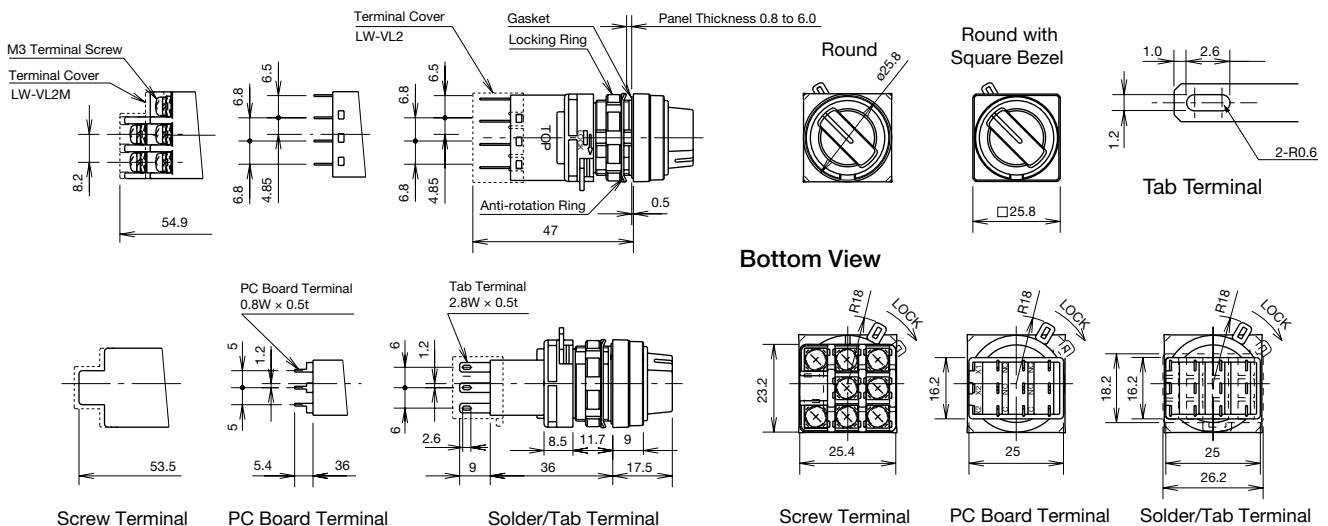
Shape	Lamp	Operation	Contact Material	Contact	Part No.		
					Solder/Tab Terminal	PC Board Terminal	Screw Terminal
Round LW1F-2C LW1F-3C  	LED	90° 2-position Maintained 	Gold	SPDT	LW1F-2C1③②	LW1F-2C1③V②	—
				DPDT	LW1F-2C2③②	LW1F-2C2③V②	LW1F-2C2③M②
				3PDT	LW1F-2C3③②	LW1F-2C3③V②	—
	LED	45° 3-position Maintained 	Gold	SPDT	LW1F-2C5③②	—	—
				DPDT	LW1F-2C6③②	—	LW1F-2C6③M②
				3PDT	LW1F-2C7③②	—	—
Round with Square Bezel LW3F-2C LW3F-3C  	LED	90° 2-position Maintained 	Gold	SPDT	LW3F-2C1③②	LW3F-2C1③V②	—
				DPDT	LW3F-2C2③②	LW3F-2C2③V②	LW3F-2C2③M②
				3PDT	LW3F-2C3③②	LW3F-2C3③V②	—
	LED	45° 3-position Maintained 	Silver	SPDT	LW3F-2C5③②	—	—
				DPDT	LW3F-2C6③②	—	LW3F-2C6③M②
				3PDT	LW3F-2C7③②	—	—
LED	90° 2-position Maintained 	Gold	DPDT	LW3F-3C2③②	LW3F-3C2③V②	LW3F-3C2③M②	
			3PDT	LW3F-3C3③②	LW3F-3C3③V②	—	
			Silver	DPDT	LW3F-3C6③②	—	LW3F-3C6③M②
LED	45° 3-position Maintained 	Silver	3PDT	LW3F-3C7③②	—	—	

Color Code and Operating Voltage Code

② Color Code	③ Operating Voltage Code
Specify a color code in place of ②. A: amber G: green PW: pure white R: red S: blue W: white Y: yellow	Specify an operating voltage code in place of ③. 2: 6V AC/DC 3: 12V AC/DC 4: 24V AC/DC

- Every illuminated selector switch contains an LED lamp (LSTD) of the specified color and voltage.
- A pure white LED lamp is used for yellow illumination.

Dimensions



- For terminal arrangement and PC board dimensions, see page 21.

Buzzers



Continuous / intermittent (long) / intermittent (short) sounds can be selected with a built-in slide switch

- Collective mounting possible.
- Separate type with locking lever, easy installation even when mounted collectively.
- Round and square types available.
- Solder/tab and PC board terminal types available.
- Single board mounting possible.
- Equipped with an LED indicator which lights (steady)/flashes with the buzzer sound.

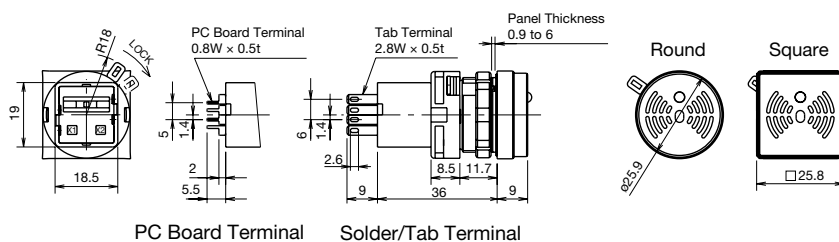
Specifications

Insulation Voltage	60V AC/DC
Operating Voltage	6V, 12 to 24V AC/DC ±10%
Current Draw	DC: 7 mA, AC: 20 mA
Sound Pressure (at 0.1m)	Steady sound: 80 dB minimum (at the rated voltage)
Sound Frequency	2 kHz ±500Hz
Flickering Cycle	Slow intermittent sound: 55 cycles per minute ±10% Quick intermittent sound: 600 cycles per minute ±10%
Operating Temperature	-20 to +55°C (no freezing)
Storage Temperature	-25 to +80°C (no freezing)
Operating Humidity	45 to 85% RH (no condensation)
Insulation Resistance	100 MΩ minimum (500V DC megger)
Dielectric Strength	Between live and metal parts: 1,000V AC, 1 minute
Vibration Resistance	Operating extremes, Damage limits: 5 to 55 Hz, amplitude 0.5 mm
Shock Resistance	Damage limits: 1,000 m/s ²
Life	1,000 hours minimum
Degree of Protection	IP40
Terminal Style	Solder/tab terminal no. 110 PC board terminal
Weight (approx.)	18g (LW1Z-1X4D)

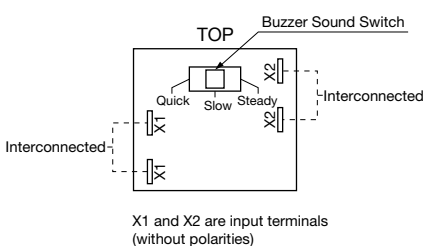
Package Quantity: 1

Shape	Operating Voltage	LED	Part No.	
			Solder/Tab Terminal	PC Board Terminal
Round LW1Z 	6V AC/DC ±10%	Without	LW1Z-1X2	LW1Z-1X2V
		With	LW1Z-1X2D	LW1Z-1X2DV
	12 to 24V AC/DC ±10%	Without	LW1Z-1X4	LW1Z-1X4V
		With	LW1Z-1X4D	LW1Z-1X4DV
Square LW2Z 	6V AC/DC ±10%	Without	LW2Z-1X2	LW2Z-1X2V
		With	LW2Z-1X2D	LW2Z-1X2DV
	12 to 24V AC/DC ±10%	Without	LW2Z-1X4	LW2Z-1X4V
		With	LW2Z-1X4D	LW2Z-1X4DV

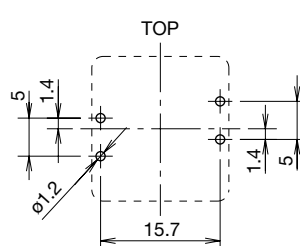
Dimensions



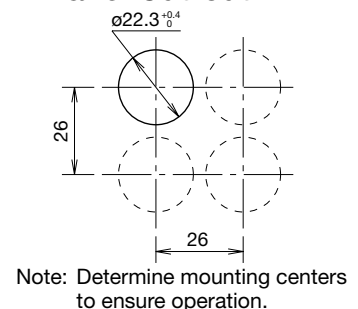
Terminal Arrangement (Bottom View)



PC Board Layout (Bottom View)




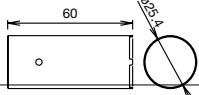

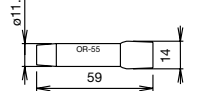

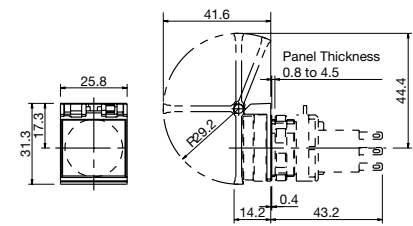

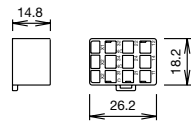

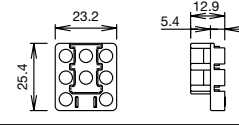

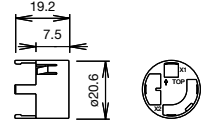

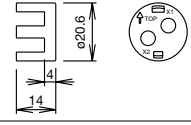

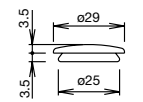

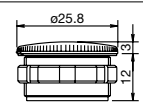
Panel Cut-out







All dimensions in mm.

ø22 LW Series Accessories and Replacement Parts

Accessories

Shape	Material	Part No.	Package Quantity	Dimensions (mm)
	Nickel-plated brass	LW9Z-T1	1	<ul style="list-style-type: none"> Used to tighten the locking ring when installing the LW switch onto a panel. Tightening torque: 1.2 N·m 
	Rubber	OR-55	1	<ul style="list-style-type: none"> Used to install and remove LED lamps. 
	Spring Return Maintained	LW9Z-K1 LW9Z-K11	1 1	<ul style="list-style-type: none"> Used to protect flush pushbuttons and illuminated pushbuttons from inadvertent operation. Degree of protection: IP65.  <p>Note: Determine mounting centers to ensure easy operation.</p>
	Plastic (translucent)	LW-VL2	1	<ul style="list-style-type: none"> For units with removable contacts only. 
	Plastic (black)	LW-VL2M	1	<ul style="list-style-type: none"> For units with removable contacts only. 
	Plastic (translucent)	LW-PVL	1	<ul style="list-style-type: none"> For unibody pilot lights only. 
	Plastic (translucent)	LW-PVLM	1	<ul style="list-style-type: none"> For unibody pilot lights only. 
	Nitril rubber (black)	OB-31PN05	5	<ul style="list-style-type: none"> Degree of protection: IP65 
	Metal (diecast) Locking nut (plastic)	LW9Z-BM	1	<ul style="list-style-type: none"> Degree of protection: IP66 Panel thickness: 0.8 to 6 mm 

Maintenance Parts

Shape	For Use On	Material	Part No.	Ordering No.	Package Quantity	Color Code
	Round Flush	Polyarylate	LW9Z-L1②	LW9Z-L1②PN05	5	Specify a lens color code in place of ② in the Ordering No.
	Round Flush with Square Bezel					
	Round Extended	Polyarylate	LW9Z-L12②	LW9Z-L12②PN05	5	A: amber C: clear G: green R: red S: blue Y: yellow
	Square Flush	Polyarylate	LW9Z-L2②	LW9Z-L2②PN05	5	
	ø30mm Mushroom	AS	LW9Z-L13②	LW9Z-L13②	1	• Use a clear (C) lens for pure white and white illumination.

Maintenance Parts


Shape	For Use On	Material	Part No.	Ordering No.	Package Quantity	Color Code	
Button 	Round Flush	Polyacetal	LW1A-B1①	LW1A-B1①PN05	5	Specify a button color code in place of ① in the Ordering No. B: black G: green R: red S: blue W: white Y: yellow	
	Round Flush with Square Bezel						
Button 	Extended	Polyacetal	LW1A-B2①	LW1A-B2①PN05	5		
	Round Extended with Square Bezel						
Button 	Square Flush	Polyacetal	LW2A-B1①	LW2A-B1①PN05	5		
Button 	Square Extended	Polyacetal	LW2A-B2①	LW2A-B2①PN05	5		
Button 	ø30mm Mushroom	AS	LW1A-B3①	LW1A-B3①	1		
Marking Plate 	Round	Acryl	LW9Z-P1W	LW9Z-P1WPN05	5		• White
	Round with Square Bezel						
Marking Plate 	Square	Acryl	LW9Z-P2W	LW9Z-P2WPN05	5		
Marking Plate 	Round Extended	Acryl	LW9Z-P12W	LW9Z-P12WPN05	5		
Marking Plate 	Mushroom	Acryl	ALW3B	ALW3BPN05	5		
Knob 	Illuminated Selector	Plastic	LW1A-F②	LW1A-F②	1	A (amber), G (green), R (red), S (blue), W (white), Y (yellow)	
Locking Ring 	All LW units	Plastic	LW9Z-LN	LW9Z-LNPN05	5	• Black	
Anti-rotation Ring 	Selector Switch	Stainless Steel	LW9Z-L	LW9Z-LPN10	10		
Spare Key 	Key Selector Switch	Metal	KG9Z-SK-231	KG9Z-SK-231PN02	2		

LED Lamps

Dimensions	Operating Voltage	Current Draw		Part No.	Ordering No.	Illumination Color Code	Package Quantity	Base
		AC	DC					
	6V AC/DC ±10%	8 mA	7 mA (A, R, W) 5.5 mA (G, PW, S)	LSTD-6②	LSTD-6②	Specify a color code in place of ② in the Ordering No. A: amber G: green PW: pure white R: red S: blue W: white	1	BA9S/13
					LSTD-6②PN10		10	
	12V AC/DC ±10%	11 mA	10 mA	LSTD-1②	LSTD-1②	Use a pure white (PW) LED lamp with (Y) lens.	1	
					LSTD-1②PN10		10	
	24V AC/DC ±10%	11 mA	10 mA	LSTD-2②	LSTD-2②	Use a pure white (PW) LED lamp with (Y) lens.	1	
					LSTD-2②PN10		10	

ø22 LW Series Accessories and Replacement Parts

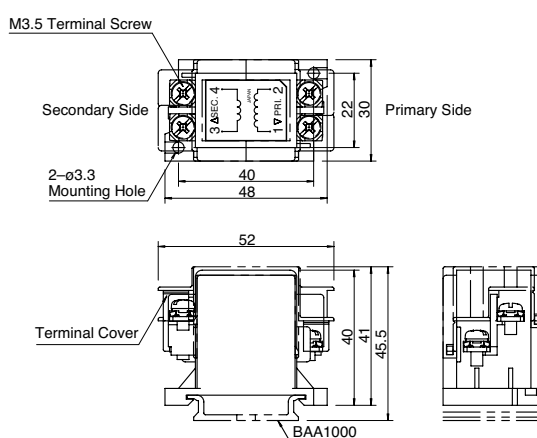
Transformer

Shape	Primary Voltage	Secondary Voltage	Part No.	Applicable Load
Din Rail Mount Transformer For 6V 	100/110V AC	5.5V AC, 1W	TWR516	LSTD-6 LED lamp (6V AC/DC) or LS-6 incandescent lamp (6V AC/DC, 1W)
	115/120V AC		TWR5126	
	200/220V AC		TWR526	
	230/240V AC		TWR5246	
	380V AC		TWR5386	
	400/440V AC		TWR546	
	480V AC		TWR5486	

Specifications

Operating Voltage	100/110V AC, 115/120V AC, 200/220V AC, 230/240V AC, 380V AC, 400/440V AC, 480V AC (50/60Hz)
Current Draw	2.4 VA
Rated Insulation Voltage	600V
Insulation Resistance	100 MΩ minimum (500V DC megger)
Operating Temperature	-30 to +60°C (no freezing)
Storage Temperature	-40 to +80°C (no freezing)
Operating Humidity	35 to 85% RH (no condensation)
Vibration Resistance	Damage Limits: 30 Hz, amplitude 1.5 mm Operating extremes: 5 to 55 Hz, amplitude 0.5 mm
Shock Resistance	Damage limits, Operating Extremes: 1,000 m/s ²
Dielectric Strength	2,500V AC, 1 minute
Terminal Screw	M3.5
Applicable Wire	2 mm ² maximum, 2 wires maximum
Weight (approx.)	87g

Dimensions

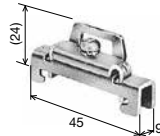


Accessories

DIN Rail

Part No.	Ordering No.	Length	Weight (approx.)	Material	Package Quantity
BAA1000	BAA1000PN10	1000 mm	200g	Aluminum	10
BAP1000	BAP1000PN10	1000 mm	320g	Steel	10

End Clip

Part No.	Ordering No.	Applicable DIN Rail	Weight (approx.)	Material	Package Quantity	Dimensions
BNL6	BNL6PN10	BAA1000 BAP1000	15g	Steel (Zinc-plated)	10	

Safety Precautions

- Turn off the power to the LW series before starting installation, removal, wiring, maintenance, and inspection of the products. Failure to turn power off may cause electrical shocks or fire hazard.
- To avoid burning your hand, use the lamp holder tool when replacing lamps.
- For wiring, use wires of a proper size to meet the voltage and current requirements. Solder correctly according to the instructions on “Wiring” and “Notes on Terminal Cover” on page 28. Tighten the M3 terminal screws to a torque of 0.6 to 1.0 N·m. Failure to tighten terminal screws may cause overheating and fire.

Instructions

Panel Mounting

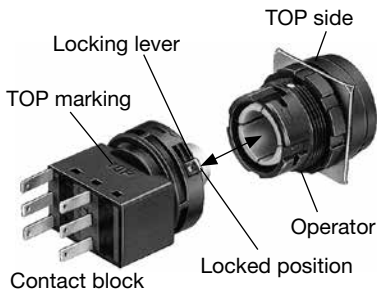
Remove the contact block from the operator. Insert the operator into the panel cut-out from the front, then install the contact block.

Removing the Contact Block

Turn the locking lever on the contact block in the direction opposite to the arrow on the housing. Then the contact can be removed.

Installing the Contact Block

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.

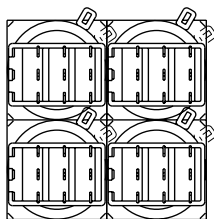


Notes on Mounting

Use the optional ring wrench (LW9Z-T1) to mount the operator onto the panel. Tightening torque should not exceed 1.2 N·m. Do not use pliers. Excessive tightening will damage the locking ring.

Collective Mounting

As the locking lever can be turned easily from the rear of the units using a screwdriver, the contact blocks can be removed even when mounted collectively.



Replacement of Lens and Marking Plate

Removing

1. Remove the operator (lens, marking plate, and lens holder) by inserting a screwdriver into the recess of the lens through the bezel.

[Removing the Operator]



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

[Removing the lens]



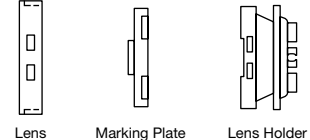
Note: The translucent filter in the lens holder cannot be removed because the filter is sealed to make the unit waterproof.

Installing

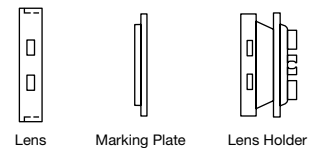
For round lens, place the marking plate on the lens holder with the anti-rotation projection engaged and press the lens onto the lens holder to engage the latches. For square lens, insert the marking plate into the lens, and press the lens onto the holder to engage the latches.

Note: Make sure of correct orientation of the marking plate.

[Round Lens]



[Square Lens]



Marking Plate and Films

For LW series illuminated pushbuttons and pilot lights, legends and symbols can be engraved on the marking plates, or printed marking film can be inserted under the lens for labelling purposes.

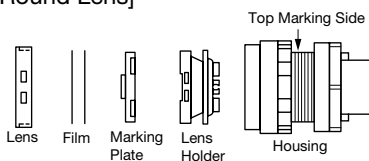
Marking Plate and Marking Film Size

Lens	Round Lens	Square Lens
Built-in Marking Plate		
	<ul style="list-style-type: none"> • Engraving must be made on the engraving area within 0.5mm deep. • The marking plate is made of white acrylic resin. 	
Applicable Marking Film		
	<ul style="list-style-type: none"> • Two 0.1mm-thick films or one 0.2mm-thick film can be installed in the lens. • Marking film is not included. • Recommended marking film: Polyester film 	

Instructions

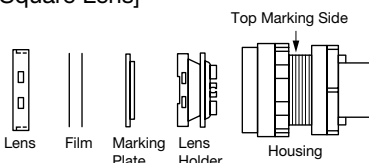
Insertion Order of Marking Plate and Film

[Round Lens]



Note: Film is not included

[Square Lens]



Note: Film is not included

Make sure of correct orientation of the marking plate.

Replacement of Lamps

Lamps can be replaced using the lamp holder tool (OR-55) from the front of the panel, or by removing the contact block from the operator.

How to Remove

To remove, slip the lamp holder tool onto the lamp head. Then push slightly, and turn the lamp holder tool counterclockwise.

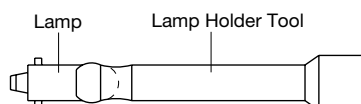


Lamp Holder Tool
OR-55

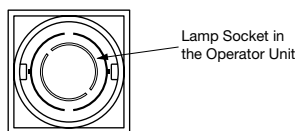


How to Install

1. To install, insert the lamp head into the lamp holder tool, and hold the lamp as shown in the figure below.



2. Insert the pins on the lamp base into the grooves in the lamp socket. Insert the lamp and turn it clockwise.



Wiring

1. Solder the terminals within 20W/5 sec or 260°C/3 sec without exerting external force to the terminals. While soldering, do not touch the soldering iron to the housing. While wiring, prevent tension from being applied to the terminals. Do not bend or raise the terminals, nor exert excessive force to terminals.
2. Use non-corrosive liquid flux.
3. For tab terminals, Positive Lock Connectors and Easy Lock Connectors can be used.
4. Tighten the terminal screw of the screw terminal type to a torque of 0.6 to 1.0 N·m.

Notes on Terminal Cover

[Solder/Tab Terminal]

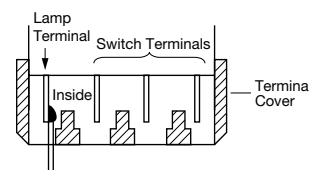
Insert the terminal cover into the contact block with the TOP markings on the contact block and the terminal cover in the same direction.

Note: When wiring, insert the lead wires into the terminal cover holes before soldering.



Notes on Wiring

When installing a terminal cover onto the solder/tab terminal contact block, solder the inside of lamp terminal (toward the switch terminals) and wire.



[Screw Terminal]

Terminal cover must be installed on the LW series before wiring.

Note 1: After wiring, terminal covers cannot be installed.

Note 2: When terminal covers are installed, do not use round crimping terminals.

(Wire the terminal by using fork terminals or lead wires directly.)

Single Board Mounting



Mounting the LW series unit on a single PC board offers the following features.

1. Reduced installation labor, easy wiring, space saving, and standardization.
2. Since the contact blocks on the PC board can be removed easily using a locking lever, LW series is easy to maintain.
3. Because the LW series requires no studs for fastening the unit to a PC board, special preparation of operation panel is not needed.
4. For details on single board mounting, contact IDEC.

Specifications and other descriptions in this brochure are subject to change without notice.



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