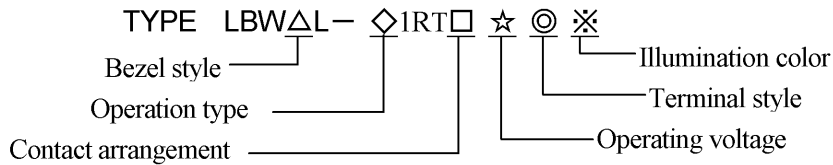


LBW SERIES ILLUMINATED PUSHBUTTONS



Approved by S.Takahashi
 Checked by H.Okamura
 Written by K.Tateishi

1. Applicable standard

JIS C8201-5-1
 IEC60947-5-1
 EN60947-5-1
 UL508 (UL Recognition)
 CSA C22.2 NO.14 (CSA Approval)

2. Operating conditions

- | | |
|-------------------------|-----------------------------|
| (1) Ambient temperature | -25 to +55°C (no freezing) |
| (2) Storage temperature | -30 to +80°C (no freezing) |
| (3) Relative humidity | 45 to 85% (no condensation) |
| (4) Altitude | 2000m maximum |
| (5) Pollution degree | 3 |

3. Contact ratings

3.1 Gold-clad cross-bar contact

- | | |
|--|--|
| (1) Rated insulation voltage | 250V |
| (2) Rated thermal current | 3A |
| (3) Rated operating voltage
and rated operating current | 30V DC·0.1A, 125V AC·0.1A (resistive load) |
| (4) Minimum applicable load | 5V AC/DC·1mA (reference value) |

3.2 Silver contact

- | | |
|---|------|
| (1) Rated insulation voltage | 250V |
| (2) Rated thermal current | 5A |
| (3) Rated operating voltage and rated operating current | |

<Specifications 1>

Rated operating voltage			30V	125V	250V
Rated operating current	AC	Resistive load	—	5A	5A
		Inductive load	—	3A	1.5A
	DC	Resistive load	5A	1.1A	—
		Inductive load	2A	0.4A	—

<Specifications 2>

Rated operating voltage			30V	125V	250V
Rated operating current	AC	Resistive load	—	5A	3A
		Inductive load	—	3A	1.5A
	DC	Resistive load	3A	0.6A	—
		Inductive load	1A	0.22A	—

Note 1) AC inductive load : PF=0.6 to 0.7, DC inductive load : L/R=7msec maximum

Note 2) The electrical life depends on specifications. For details, see 6 on page 3.

3.3 LED ratings

- (1) Rated insulation voltage 30V
- (2) Rated operating voltage — (☆) See the table bellow

Voltage code (☆)	(1)	(3)	(4)
Rated operating voltage	5V DC \pm 5%	12V AC/DC \pm 10%	24V AC/DC \pm 10%
Applicable LED unit	LB9Z-LED5※	LB9Z-LED1※	LB9Z-LED2※
Rated operating current	R, A, W: 18mA G, S: 6mA PW:5mA	R, A, W: 18mA G, S: 6mA PW:5mA	R, A, W: 18mA G, S: 6mA PW:5mA

Illumination color (※): Red (R), Green (G), Amber (A), White (W), Blue (S), Pure White (PW)

4. Constructions

- (1) Outside view See attached sheet
- (2) Operation type — (◇) Momentary (M), Alternate (A)
- (3) Degree of protection IP65
- (4) Illumination color — (※) White (W), Pure White (PW),
Red (WR), Green (WG), Amber (WA), Blue (WS)
▪ White lens unit type when light is off
- (5) Contact material
- (a) Gold contact Gold-clad silver (cross-bar contact)
- (b) Silver contact Silver
- (6) Contact arrangement — (□)
- (a) Gold contact 1C (1), 2C (2)
- (b) Silver contact 1C (5), 2C (6)
- (7) Bezel style — (△) Round/ black (6), Square/ black (7),
Round/metallic (6M), Square/metallic (7M)
- (8) Button style Flat
- (9) Terminal style — (◎) Solder/tab terminal (# 110) (blank)
PC board terminal (V) : Gold contact only
- (10) Applicable wire 1.25mm² maximum
- (11) Panel thickness 0.5 to 3.2 mm
- (12) Panel cut-out ϕ 22.3^{+0.2} mm
 \square 22.5^{+0.2} mm
- (13) Weight Approx. 15g (2C contact)

5. Characteristics

- (1) Temperature rise Contact : 30°C maximum, Terminal : 30°C maximum
Lens surface : 30°C maximum
- (2) Contact resistance 50m Ω maximum (initial value)
- (3) Insulation resistance 100M Ω minimum (measured with a 500V DC megger)
- (4) Dielectric strength
- (a) Between live part and ground 2000V AC, 1minute
- (b) Between terminals of different poles 2000V AC, 1minute
- (c) Between terminals of the same poles 1000V AC, 1minute
- (5) Vibration resistance
- (a) Operating extremes Frequency 5 to 55Hz, Amplitude 0.5mm
- (b) Damage limits Frequency 5 to 55Hz, Amplitude 0.5mm

- (6) Shock resistance
 - (a) Operating extremes 100 m/s²
 - (b) Damage limits 1000 m/s²
- (7) LED life (reference value) 30,000 hour
(When, under 25 degrees environment, brightness reduces to 50% of initial values by the rating voltage, a rating electric current)
- (8) Mounting nut torque tightening 0.6±0.1 N·m
- (9) Terminal tensile strength 40N minimum

6. Life

- (1) Mechanical life
 - (a) Momentary 2,000,000 operations minimum
 - (b) Alternate 250,000 operations minimum
- (2) Electrical life (rated load)
 - (a) Momentary <Specifications 1> 50,000 operations minimum
Switching frequency : 1,800 operations / hour
 - <Specifications 2> 100,000 operations minimum
Switching frequency : 1,800 operations / hour
 - (b) Alternate <Specifications 1> 50,000 operations minimum
Switching frequency : 1,200 operations / hour
 - <Specifications 2> 100,000 operations minimum
Switching frequency : 1,200 operations / hour