SPECIFICATION

No. : ISA3968 (1/3)
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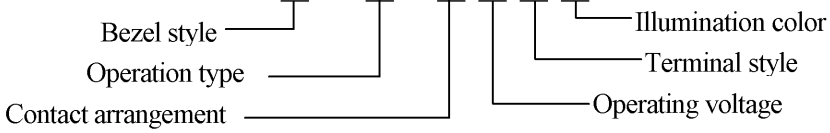
FLUSH SILHOUETTE SWITCHES

LBW SERIES ILLUMINATED PUSHBUTTONS

TYPE LBW△L－ ◇1T□ ☆ ◎ ※



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℃ (no freezing)
(2) Storage temperature	-30 to +80℃ (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±5%	12V AC/DC±10%	24V AC/DC±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– (※)

(a) Colored lens type Red(R), Green (G), Yellow (Y), Amber (A), White (W), Blue (S),Pure White (PW)
(A pure white LED unit shall be used for yellow illumination.)

(b) White lens type Red (WR), Green (WG), Amber (WA), Blue (WS)

(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 $1.25mm^2$ maximum

(11) Panel thickness 0.5 to 3.2 mm

(12) Panel cut-out $\phi 22.3^{+0.2}$ mm
$\square 22.5^{+0.2}$ mm

(13) Weight Approx. 16g (2C contact)

5. Characteristics

(1) Temperature rise Contact : 30℃ maximum, Terminal : 30℃ maximum
Lens surface : 30℃ maximum

(2) Contact resistance 50mΩ maximum (initial value)

(3) Insulation resistance 100MΩ 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/s^2
(b) Damage limits	1000 m/s^2
(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