

Roll ball Switch **PRB Series**

FEATURES

1. Small size & compact space.
2. Terminals and (or) balls and (or) housings gold plated to enhance the life
3. All plastic material subject to industrial purpose meets with UL94V-0 grade; high temperature and fireproof function.
4. Suitable to IC trigger signal.
5. Complete replacement of mercury tilt switch and meet with environmental protection
6. Sealed type available for heavy humidity environment, free from bad connection problem caused by contact oxidized.

SPECIFICATIONS

ELECTRICAL

1. Contact rating: 25mA, 24VDC
2. Contact resistance: Initial: 5Ω Max.
After life test: 10Ω Max.
3. Differential angle: Refer to the drawing
4. Insulation resistance: 1000 MΩ Min. at 100VDC
5. Dielectric strength: 500VDC Min. for 1 minute
6. Capacitance: 5pF Max.

MECHANICAL AND ENVIRONMENTAL

1. Temperature range
Operating: -25°C to +70°C
Storage: -40°C to +85°C
2. Pull force of terminals: 500 gf for 1 minute
3. Operation life: PRB-04 model: 1,000,000 cycles
PRB-05, 06, 07, 08 model: 100,000 cycles
4. Average conductive rate (switch-on rate): 90% on average
5. Humidity: 95%RH, 40°C for 96 Hrs.
6. Vibration: Per MIL-STD-202F, Method 204D
7. Solderability: After flux 230±5°C for 5±0.5 seconds, 95% coverage
8. Soldering heat resistance: 183°C soldering tin(63Sn/37Pb), 30W soldering iron 350±5°C, 3 seconds Max.

MATERIALS

PRB-04, 07 model

1. Body: Glass-fiber polyamide, UL 94V-0
2. Cover: Glass-fiber polyamide, UL 94V-0
3. Terminal: Copper alloy, gold plated over nickel
4. Cu-ball: Copper alloy, gold plated over nickel

PRB-05, 06 model

1. Body: ZINC alloy, tin plated over nickel.
2. Base: Glass-fiber polyamide, UL 94V-0
3. Terminal: Copper alloy, gold plated over nickel
4. Cu-ball: Copper alloy, gold plated over nickel

PRB-08 model

1. Body: Copper alloy, gold plated over nickel
 2. Cu-ball: Copper alloy, gold plated over nickel
- ※ P. C. B. not included

APPLICATIONS

PRB-04 model

Toys, sporting equipment (such as step counter, space walker), irons, electronic wind chimes, bicycle alarm, car alarm, home burglar device, etc., concerned about tilt or vibration detecting function.

PRB-07 model

All moveable & easily fall down home appliances that request for automatically power-off functions (such as floor lamp, stand fan, heater, humidifier, mosquito killer); signal change from horizontal to vertical (such as LCD monitor), etc., concerned about tilt or vibration detecting function

PRB-05 model

Occasions that require tilt or vibration detecting functions

PRB-06 model

Toys, sporting equipment (such as step counter, space walker), electronic wind chimes, bicycle alarm, car alarm, home burglar device, etc., concerned about vibration or tilt detecting function

PRB-08 model

Toys, etc., occasions that require tilt or vibration detecting functions

PART NUMBERING SYSTEM

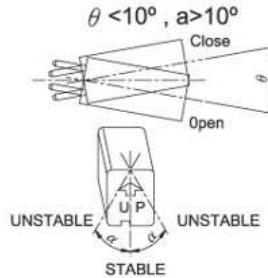
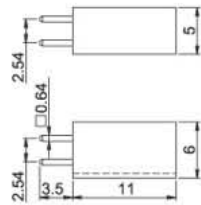
{1}	PRB	—	{2}	04	{3}	01	{4}	00
{1} Series name: PRB: Roll ball switch								
{2} Model no.: Contact type: 04, 05, 06, 07, 08								
{3} Terminal: 01, 02, 03, 04								
{4} Option: 00: Standard 01~99: Special								

Roll ball Switch PRB Series

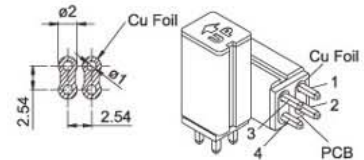
DIMENSIONS (Unit:mm)

- PRB-04 model ■ Housing made of high insulation plastic material, free from electric conduction and rust problem.
 ■ Four terminals for ball contact, making the output signal more stable; wide tip-over angle; high vibration stand.

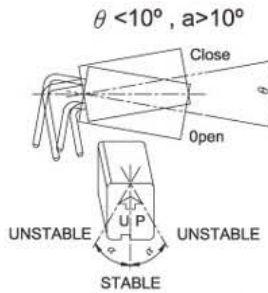
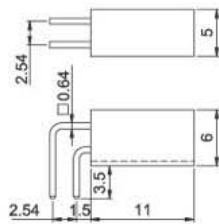
PRB-04 01 00
NORMAL TYPE



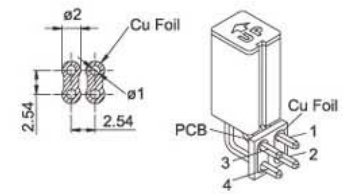
P.C.B. LAYOUT / INSTALLATION



PRB-04 02 00
RIGHT ANGLE TYPE

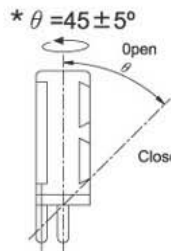
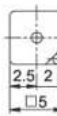
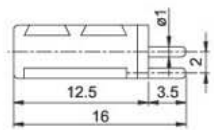


P.C.B. LAYOUT / INSTALLATION

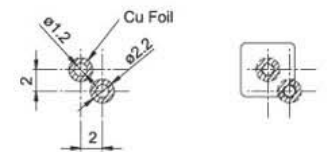


PRB-05 model ■ Tip-over switch; normal-open type.

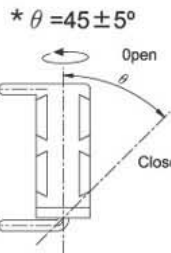
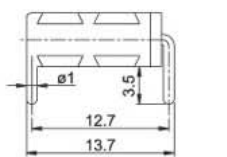
PRB-05 01 00
NORMAL TYPE



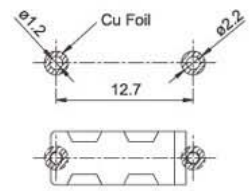
P. C. B. LAYOUT / TOP VIEW



PRB-05 02 00
RIGHT ANGLE TYPE



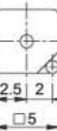
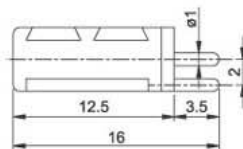
P. C. B. LAYOUT / TOP VIEW



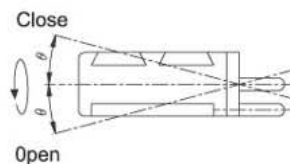
* $\theta > 45 \pm 5^\circ$, switch on is not necessary to be a continue state (on).

PRB-06 model ■ Special structure increased strength between body and base; perfect appearance.

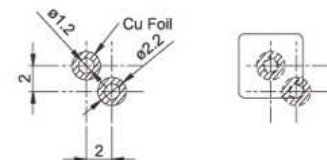
PRB-06 01 00
NORMAL TYPE



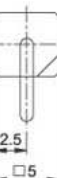
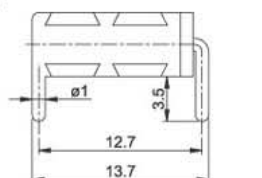
$\theta < 10^\circ$



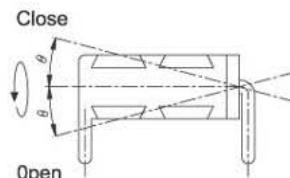
P. C. B. LAYOUT / TOP VIEW



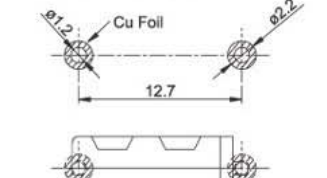
PRB-06 02 00
RIGHT ANGLE TYPE

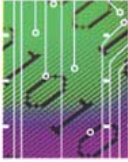


$\theta < 10^\circ$



P. C. B. LAYOUT / TOP VIEW



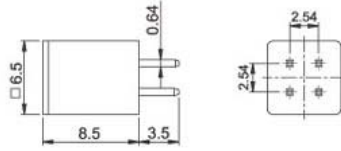


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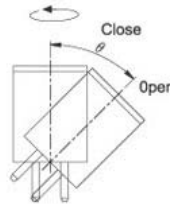
DIMENSIONS (Unit:mm)

- PRB-07 model**
- Housing made of high insulation plastic material, free from electric conduction and rust problem.
 - Tilt angle of 45° within a 360° radius.

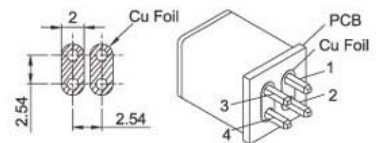
PRB-07 03 00 NORMAL TYPE



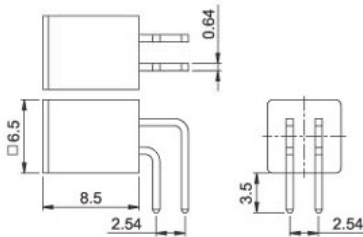
$\theta = 45^\circ \pm 15^\circ$



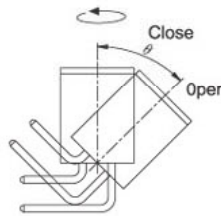
P.C.B. LAYOUT / INSTALLATION



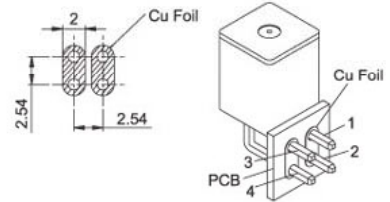
PRB-07 04 00 RIGHT ANGLE TYPE



$\theta = 45^\circ \pm 15^\circ$

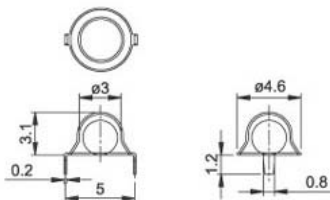


P.C.B. LAYOUT / INSTALLATION

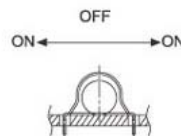


- PRB-08 model**
- Suggestion for usage: When design the circuit, it is recommended to capture a temporary signal for detecting. it is also suggested to plate gold on the surface of your PCB Cu foil. Please make sure that the gold plated copper ball and the PCB Cu foil are clean.
 - Simple style design and help to save costs.

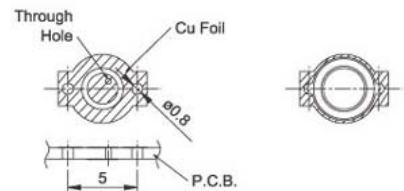
PRB-08 01 00 NORMAL TYPE



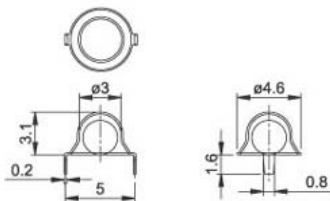
SHOCK



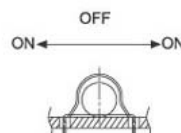
P. C. B. LAYOUT / TOP VIEW



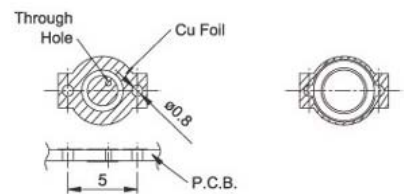
PRB-08 02 00 NORMAL TYPE



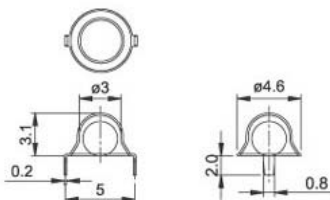
SHOCK



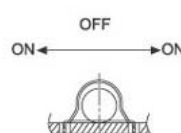
P. C. B. LAYOUT / TOP VIEW



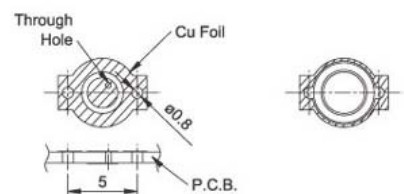
PRB-08 03 00 NORMAL TYPE



SHOCK



P. C. B. LAYOUT / TOP VIEW



PRB Series