

# PBA series

Piezo switches Ø 16 mm



## DISTINCTIVE FEATURES

Bushing diameter 16 (.630), 19 (.748), 22 (.866) or 30 mm (1.181)

Sealed to IP68 and IP69K (switches mounted on panel)

Easy to clean metal surface

Very long life expectancy

Ring illumination



## ENVIRONMENTAL SPECIFICATIONS

- Sealing : IP68 per IEC 60529, IP69K per DIN 40050-9 (switches mounted on panel)
- Vibration resistance : 10-500 Hz / 10 g per IEC 60068-2-6
- Operating temperature : -40 °C to +75 °C (-40 °F to + 167 °F)
- EMC compatibility according to EN 61058-1 for the whole range
- EMC compatibility according to EN 61000-4 & EN61000-6-2 for model 1A (code 002)



## ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :
  - Function A : standard 200 mA 24 VAC/DC - option 1 A 24 VAC/DC
  - Function B : standard 100 mA 24 VAC/DC
- Switch resistance ON : 10 Ω max.
- Switch resistance OFF : 5 MΩ min.
- Life expectancy : 50 million cycles
- LED consumption : Illuminated dot 10 mA - Illuminated ring 20 mA (functions A-B-C)
- Power consumption for function 1 :
  - non-illuminated 10 mA - illuminated 30 mA



## GENERAL SPECIFICATIONS

- Operating force : 2 to 6 N
- Torque : 2.5 Nm min. - 3 Nm max.

The company reserves the right to change specifications without notice.



# PBA series

Piezo switches Ø 16 mm



## MATERIALS

- Case : aluminum, anodized or stainless steel 316L
- Multi-wire leads section 0.22 mm<sup>2</sup> length 300 mm, twisted by pair
- Cable, length 300 mm, section depending on switch model
- PC terminals : bronze, tin plated

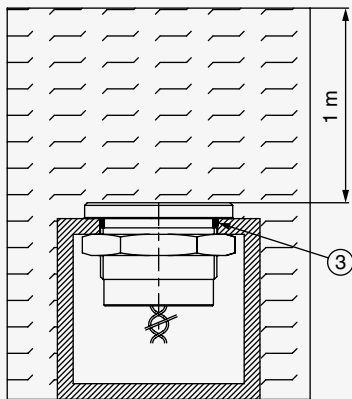
APEM products may be recycled at end-of-life for the re-claiming of valuable metal components.

**Note :** to maintain the ESD performance, always add a ground washer when the panel is made of non-conductive material (PVC, polycarbonate).  
For part numbers, see "Mounting accessories" on the following pages.



## SEALING

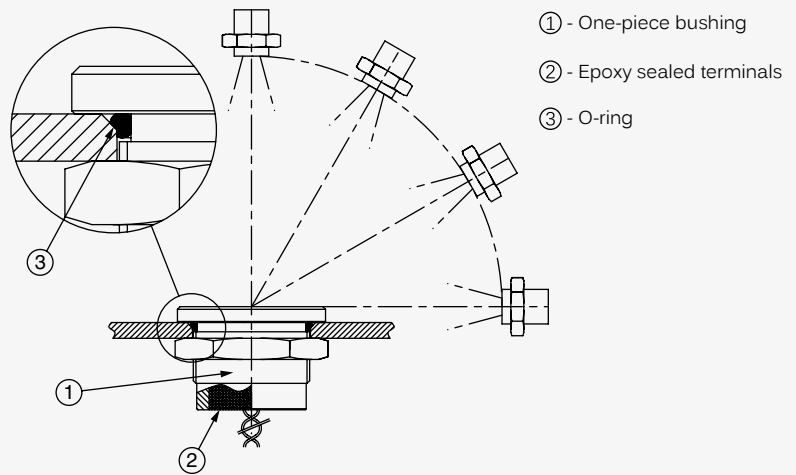
### SEALING IP68



#### Continuous immersion in water IP68 test conditions

Continuous immersion in water  
(1 m, 24 hours)

### SEALING IP69K



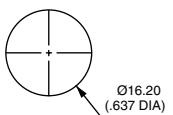
#### High pressure, high temperature wash down IP69K test conditions

- . Pressure : 80 - 120 bars
- . Distance : 15 cm
- . Temperature : 80 °C ± 5 °C (176 °F ± 41 °F)
- . Flow : 14 - 16 l/mn
- . Duration : 30 seconds per position



## PANEL CUT-OUT

MODELS Ø16 (.630)

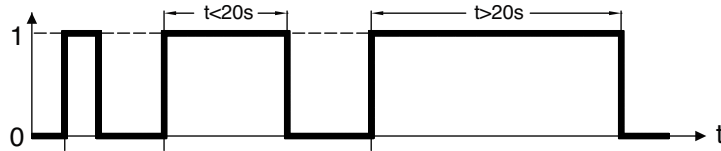




## ELECTRICAL FUNCTIONS

FINGER PRESSURE APPLIED TO SWITCH

1 : pressure / 0 : no pressure

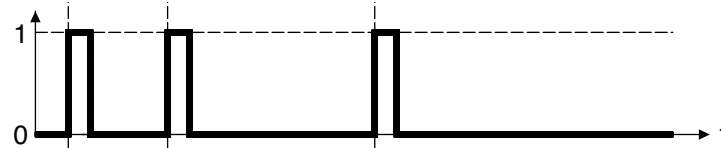


OUTPUT

1 : closed output / 0 : open output

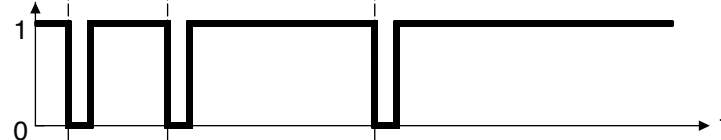
**Momentary NO (pulse)**

No external power supply required



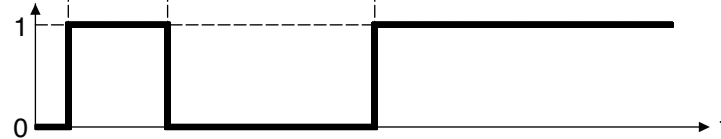
**Momentary NC (pulse)**

No external power supply required



**Latching (ON - OFF)**

Requires external power supply



## WIRING DIAGRAMS

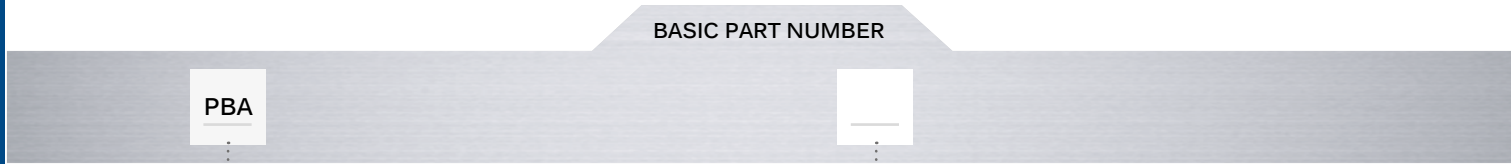
|                     | Non-illuminated | 1 LED * | 2 LEDs | 3 LEDs |
|---------------------|-----------------|---------|--------|--------|
| Momentary NO        |                 |         |        |        |
| Momentary NC        |                 |         |        |        |
| Latching (ON - OFF) |                 |         |        |        |

Legend : C : yellow, D : blue, B : black , A : same color as LED \* LED color is indicated by protective resin color on bottom of unit.

# PBA series

Piezo switches Ø 16 mm

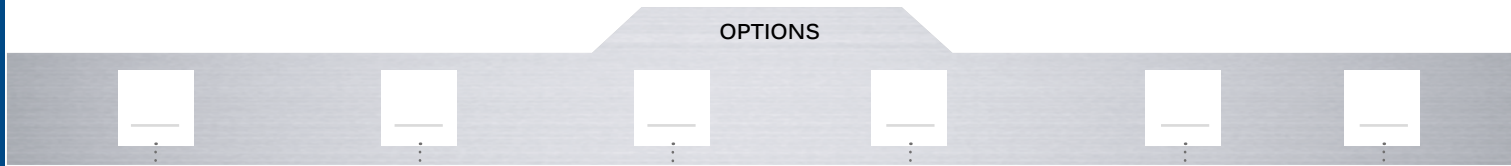
## BUILD YOUR PART NUMBER



SERIES

BUSHINGS / OPERATORS

|           |   |
|-----------|---|
| <b>R1</b> | Flat operator, height 4.50 (.177)                                   |
| <b>T5</b> | Flat operator, height 1 (.039) (non illuminated)                    |
| <b>R5</b> | Operator with finger location, height 4.50 (.177) (non-illuminated) |



ELECTRICAL FUNCTIONS

TERMINALS

COLORS / MATERIALS

RATINGS

TYPE OF ILLUMINATION/  
VOLTAGE

|          |  |
|----------|--|
| <b>A</b> | NO (pulse)   |
| <b>B</b> | NC (pulse)   |
| <b>1</b> | ON - OFF (requires external power supply - cannot be combined with T5 operator - illumination type W only) |

|          |   |
|----------|---|
| <b>F</b> | Flying leads  |
| <b>C</b> | Cable   |
| <b>P</b> | Straight PC (T5 model, non-illuminated, functions A & B only) |

|          |                             |
|----------|-----------------------------|
| <b>0</b> | <b>Natural anodized</b>     |
| <b>1</b> | Blue anodized               |
| <b>2</b> | <b>Black anodized</b>       |
| <b>3</b> | Green anodized              |
| <b>5</b> | Gold anodized               |
| <b>6</b> | Red anodized                |
| <b>B</b> | <b>Stainless steel 316L</b> |

|            |   |
|------------|---|
| <b>000</b> | Standard                                  |
| <b>002</b> | 1 A 24 VAC/DC (NO pulse only, function A) |

|              |                                       |
|--------------|---------------------------------------|
| <b>Blank</b> | Non-illuminated                       |
| <b>A</b>     | Standard ring - 5 VDC                 |
| <b>N</b>     | Standard ring - 12 VDC                |
| <b>K</b>     | Standard ring - 24 VDC                |
| <b>W</b>     | Standard ring, microcontroller driven |

Bold = standard

LED COLORS

LED COLORS (CONTINUED)

|              |            |
|--------------|------------|
| <b>Blank</b> | Non-illum. |
| <b>0B</b>    | Blue       |
| <b>0G</b>    | Green      |
| <b>0S</b>    | Red        |
| <b>0Y</b>    | Yellow     |
| <b>0W</b>    | White      |

|           |              |
|-----------|--------------|
| <b>2A</b> | Red/green    |
| <b>2B</b> | Red/yellow   |
| <b>2C</b> | Red/blue     |
| <b>2D</b> | Red/white    |
| <b>2E</b> | Green/blue   |
| <b>2F</b> | Green/yellow |

|           |              |
|-----------|--------------|
| <b>2G</b> | Green/white  |
| <b>2H</b> | Blue/yellow  |
| <b>2I</b> | Blue/white   |
| <b>2K</b> | Yellow/white |

|           |                  |
|-----------|------------------|
| <b>3A</b> | Red/green/blue   |
| <b>3B</b> | Red/green/yellow |
| <b>3D</b> | Red/green/white  |
| <b>3E</b> | Red/blue/yellow  |
| <b>3F</b> | Red/blue/white   |
| <b>3G</b> | Red/yellow/white |

|           |                    |
|-----------|--------------------|
| <b>3H</b> | Green/blue/yellow  |
| <b>3I</b> | Green/blue/white   |
| <b>3J</b> | Green/yellow/white |
| <b>3K</b> | Blue/yellow/white  |

For options not listed above, please contact APEM.

## ABOUT THIS SERIES

On the following pages, you will find successively basic part numbers of switches and options in the same order as in above chart.

**Notice** : please note that not all combinations of above numbers are available. Refer to the following pages for further information.

**Mounting accessories** : standard hardware supplied : 1 hex nut and 1 O-ring.  
Always add a ground washer U5735 (Ø16 mm) when the panel is non-conductive (PVC, polycarbonate).

# PBA series

Piezo switches Ø 16 mm

Ø16 (.630) - NON-ILLUMINATED  
OPERATOR HEIGHT 4.50 MM

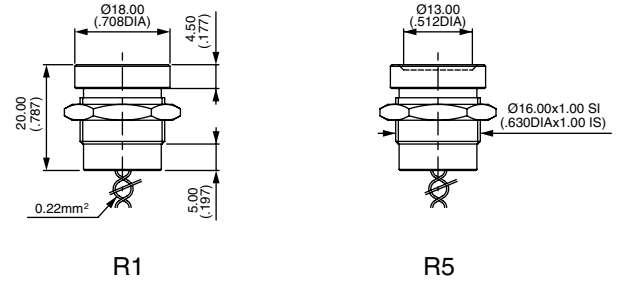


Flat

PBAR1

With finger location

PBAR5



R1

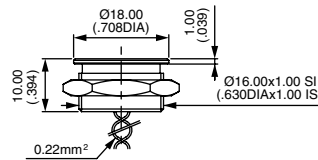
R5

Ø16 (.630) - NON-ILLUMINATED  
OPERATOR HEIGHT 1 MM



Flat

PBAT5

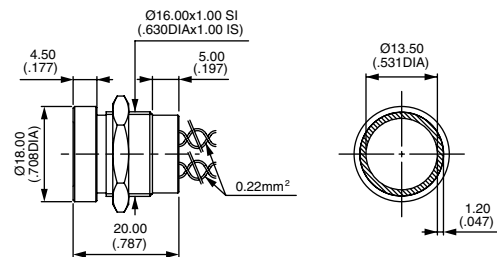


Ø16 (.630) - STANDARD ILLUMINATED RING  
OPERATOR HEIGHT 4.5 MM



Flat

PBAR1



# PBA series

Piezo switches Ø 16 mm

## ELECTRICAL FUNCTIONS

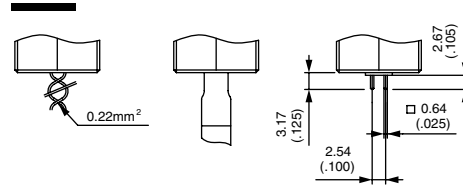


- A NO pulse
- B NC pulse
- 1 ON - OFF - Requires external power supply - Cannot be combined with T5 operator - Illumination type W only.

## TERMINALS



- F Flying leads
- C Cable
- P Straight PC (T5 model, non-illuminated, functions A and B only)



## CASE COLORS / MATERIALS



- 0 **Natural anodized aluminum**
- 1 Blue anodized aluminum
- 2 **Black anodised aluminum**
- 3 Green anodized aluminum
- 5 Gold anodized aluminum
- 6 Red anodised aluminum
- B **Stainless steel 316L**

Bold = standard



0 1 2 3 5 6 B

## RATINGS



- 000 Standard
- 002 1 A 24 VAC or DC (NO pulse only, function A)

# PBA series

Piezo switches Ø 16 mm

## TYPE OF ILLUMINATION / VOLTAGE

BASIC P/N



|       |                                     |
|-------|-------------------------------------|
| Blank | Non-illuminated                     |
| A     | Thin ring - 5 VDC                   |
| N     | Thin ring - 12 VDC                  |
| K     | Thin ring - 24 VDC                  |
| W     | Thin ring - $\mu$ controller driven |

## LED COLORS

BASIC P/N

Blank Non-illuminated

Integrated LED resistor

### Illuminated 1 LED \*

0B : blue - 0G : green - 0S : red - 0Y : yellow - 0W : white

### Illuminated 2 LEDs

2A : red/green - 2B : red/yellow - 2C : red/blue - 2D : red/white - 2E : green/blue - 2F : green/yellow - 2G : green/white  
2H : blue/yellow - 2I : blue/white - 2K : yellow/white

### Illuminated 3 LEDs

3A : red/green/blue - 3B : red/green/yellow - 3D : red/green/white - 3E : red/blue/yellow - 3F : red/blue/white  
3G : red/yellow/white - 3H : green/blue/yellow - 3I : green/blue/white - 3J : green/yellow/white - 3K : blue/yellow/white

\* LED color is indicated by protective resin color on bottom of unit.



0B



0G



0S



0Y



0W

# PBA series

Piezo switches Ø 19 mm



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Bushing diameter 16 (.630), 19 (.748), 22 (.866) or 30 mm (1.181)

Sealed to IP68 and IP69K (switches mounted on panel)

Easy to clean metal surface

Very long life expectancy

Ring illumination



## ENVIRONMENTAL SPECIFICATIONS

- Sealing : IP68 per IEC 60529, IP69K per DIN 40050-9 (switches mounted on panel)
- Vibration resistance : 10-500 Hz / 10 g per IEC 60068-2-6
- Operating temperature : -40 °C to +75 °C (-40 °F to + 167 °F)
- EMC compatibility according to EN 61058-1 for the whole range
- EMC compatibility according to EN 61000-4 & EN61000-6-2 for model 1A (code 002)



## ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :
  - Function A : standard 200 mA 24 VAC/DC - option 1 A 24 VAC/DC
  - Function B : standard 100 mA 24 VAC/DC
- Switch resistance ON : 10 Ω max.
- Switch resistance OFF : 5 MΩ min.
- Life expectancy : 50 million cycles
- LED consumption : Illuminated dot 10 mA - Illuminated ring 20 mA (functions A-B-C)
- Power consumption for function 1 :
  - non-illuminated 10 mA - illuminated 30 mA



## GENERAL SPECIFICATIONS

- Operating force : 2 to 6 N
- Torque : 2.5 Nm min. - 3 Nm max.

The company reserves the right to change specifications without notice.





# PBA series

Piezo switches Ø 19 mm



## MATERIALS

- Case : aluminum, anodized or stainless steel 316L
- Multi-wire leads section 0.22 mm<sup>2</sup> length 300 mm, twisted by pair
- Cable, length 300 mm, section depending on switch model
- PC terminals : bronze, tin plated

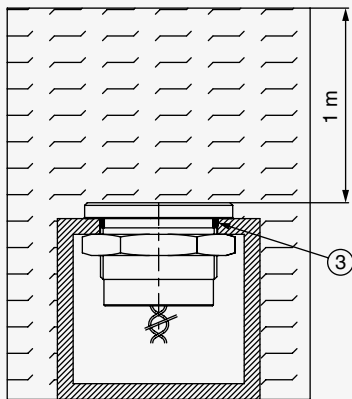
APEM products may be recycled at end-of-life for the re-claiming of valuable metal components.

**Note :** to maintain the ESD performance, always add a ground washer when the panel is made of non-conductive material (PVC, polycarbonate).  
For part numbers, see "Mounting accessories" on the following pages.



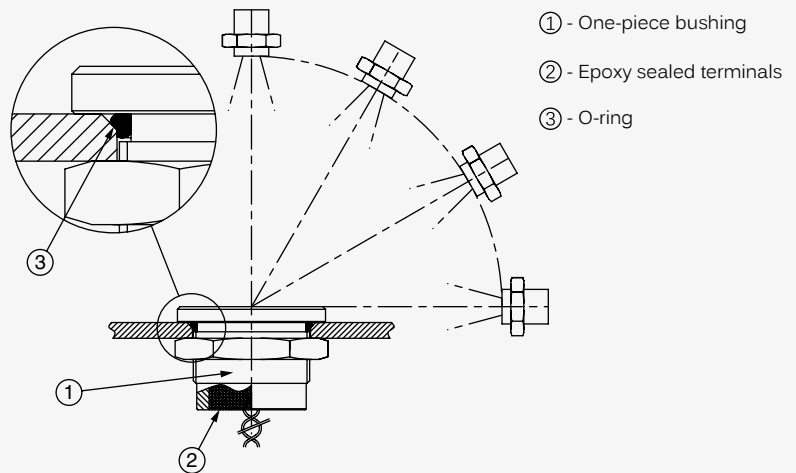
## SEALING

### SEALING IP68



**Continuous immersion in water  
IP68 test conditions**  
Continuous immersion in water  
(1 m, 24 hours)

### SEALING IP69K



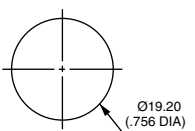
**High pressure, high temperature wash down  
IP69K test conditions**

- . Pressure : 80 - 120 bars
- . Distance : 15 cm
- . Temperature : 80 °C ± 5 °C (176 °F ± 41 °F)
- . Flow : 14 - 16 l/mn
- . Duration : 30 seconds per position



## PANEL CUT-OUT

MODELS Ø19 (.748)

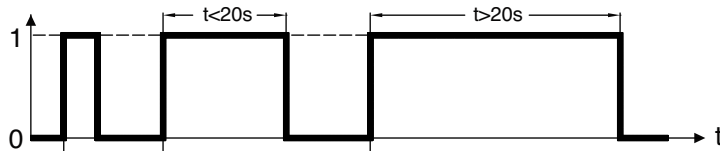




## ELECTRICAL FUNCTIONS

FINGER PRESSURE APPLIED TO SWITCH

1 : pressure / 0 : no pressure

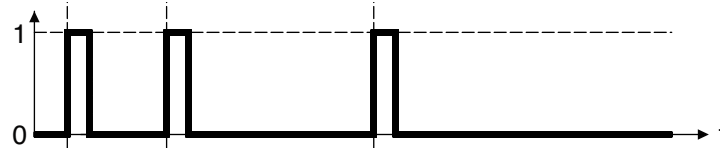


OUTPUT

1 : closed output / 0 : open output

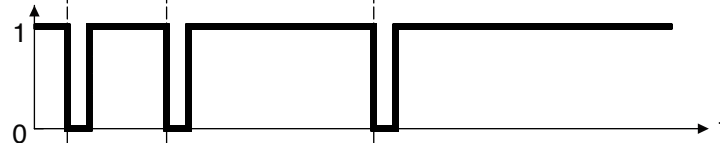
**Momentary NO (pulse)**

No external power supply required



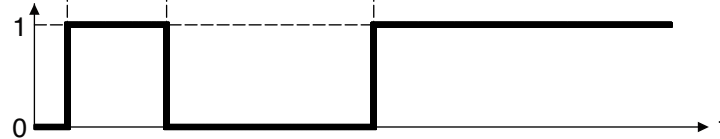
**Momentary NC (pulse)**

No external power supply required



**Latching (ON - OFF)**

Requires external power supply



## WIRING DIAGRAMS

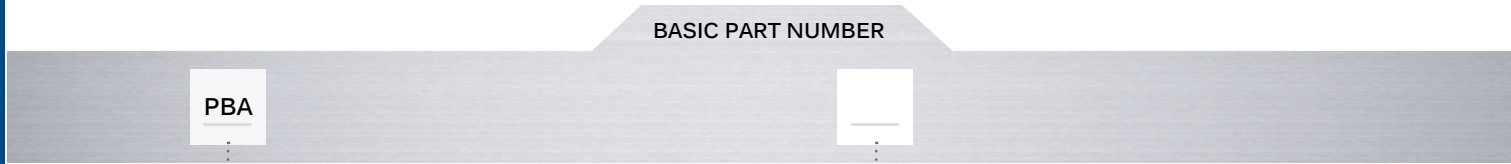
|                     | Non-illuminated | 1 LED * | 2 LEDs | 3 LEDs |
|---------------------|-----------------|---------|--------|--------|
| Momentary NO        |                 |         |        |        |
| Momentary NC        |                 |         |        |        |
| Latching (ON - OFF) |                 |         |        |        |

Legend : C : yellow, D : blue, B : black , A : same color as LED \* LED color is indicated by protective resin color on bottom of unit.

# PBA series

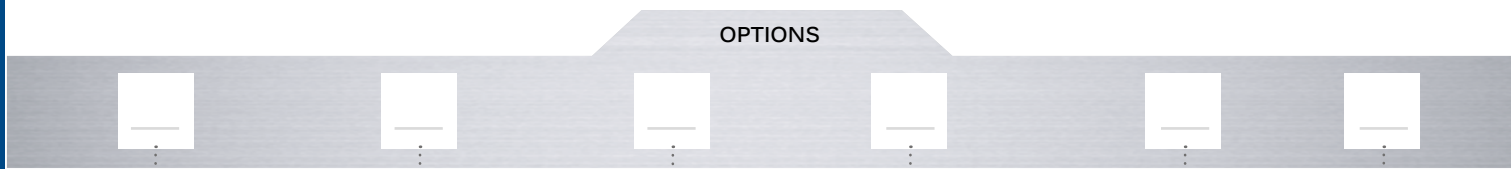
Piezo switches Ø 19 mm

## BUILD YOUR PART NUMBER



**BUSHINGS / OPERATORS**

|           |                                |
|-----------|--------------------------------|
| <b>R9</b> | Flat operator, height 3 (.118) |
| <b>RA</b> | With chamfer, height 3 (.118)  |



**ELECTRICAL FUNCTIONS**

|          |  |
|----------|--|
| <b>A</b> | NO (pulse)   |
| <b>B</b> | NC (pulse)   |
| <b>1</b> | ON - OFF (requires external power supply - cannot be combined with T5 operator - illumination type W only) |

**TERMINALS**

|          |   |
|----------|---|
| <b>F</b> | Flying leads  |
| <b>C</b> | Cable   |
| <b>P</b> | Straight PC (T5 model, non-illuminated, functions A & B only) |

**COLORS / MATERIALS**

|          |                      |
|----------|----------------------|
| <b>0</b> | Natural anodized     |
| <b>1</b> | Blue anodized        |
| <b>2</b> | Black anodized       |
| <b>3</b> | Green anodized       |
| <b>5</b> | Gold anodized        |
| <b>6</b> | Red anodized         |
| <b>B</b> | Stainless steel 316L |

Bold = standard

**RATINGS**

|            |   |
|------------|---|
| <b>000</b> | Standard                                  |
| <b>002</b> | 1 A 24 VAC/DC (NO pulse only, function A) |

**TYPE OF ILLUMINATION/ VOLTAGE**

|              |                                       |
|--------------|---------------------------------------|
| <b>Blank</b> | Non-illuminated                       |
| <b>A</b>     | Standard ring - 5 VDC                 |
| <b>N</b>     | Standard ring - 12 VDC                |
| <b>K</b>     | Standard ring - 24 VDC                |
| <b>W</b>     | Standard ring, microcontroller driven |

**LED COLORS**

|              |            |           |              |
|--------------|------------|-----------|--------------|
| <b>Blank</b> | Non-illum. | <b>2A</b> | Red/green    |
| <b>0B</b>    | Blue       | <b>2B</b> | Red/yellow   |
| <b>0G</b>    | Green      | <b>2C</b> | Red/blue     |
| <b>0S</b>    | Red        | <b>2D</b> | Red/white    |
| <b>0Y</b>    | Yellow     | <b>2E</b> | Green/blue   |
| <b>0W</b>    | White      | <b>2F</b> | Green/yellow |


**LED COLORS (CONTINUED)**


|           |              |           |                  |           |                    |
|-----------|--------------|-----------|------------------|-----------|--------------------|
| <b>2G</b> | Green/white  | <b>3A</b> | Red/green/blue   | <b>3H</b> | Green/blue/yellow  |
| <b>2H</b> | Blue/yellow  | <b>3B</b> | Red/green/yellow | <b>3I</b> | Green/blue/white   |
| <b>2I</b> | Blue/white   | <b>3D</b> | Red/green/white  | <b>3J</b> | Green/yellow/white |
| <b>2K</b> | Yellow/white | <b>3E</b> | Red/blue/yellow  | <b>3K</b> | Blue/yellow/white  |
|           |              | <b>3F</b> | Red/blue/white   |           |                    |
|           |              | <b>3G</b> | Red/yellow/white |           |                    |

For options not listed above, please contact APEM.

## ABOUT THIS SERIES

On the following pages, you will find successively basic part numbers of switches and options in the same order as in above chart.

 **Notice** : please note that not all combinations of above numbers are available. Refer to the following pages for further information.

 **Mounting accessories** : standard hardware supplied : 1 hex nut 10-621 (19 mm ac. flats) and 1 O-ring.  
Always add a ground washer U5736 (Ø19 mm) when the panel is non-conductive (PVC, polycarbonate).

# PBA series

Piezo switches Ø 19 mm

## Ø19 (.748) - NON-ILLUMINATED OPERATOR HEIGHT 3 MM



- Flat
  - PBAR9
- With chamfer
  - PBARA

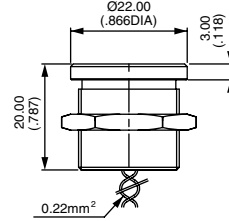
Wire colors : see "Wiring diagrams".

## Ø19 (.748) - ILLUMINATED RING OPERATOR HEIGHT 3 MM

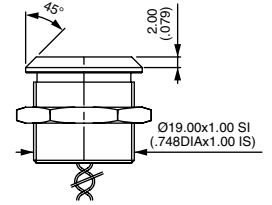


- Flat
  - PBAR9
- With chamfer
  - PBARA

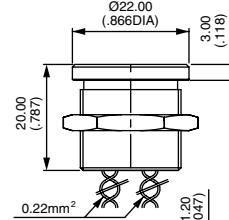
Wire colors : see "Wiring diagrams".



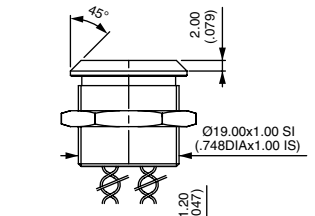
R9



RA



R9



RA

### ELECTRICAL FUNCTIONS

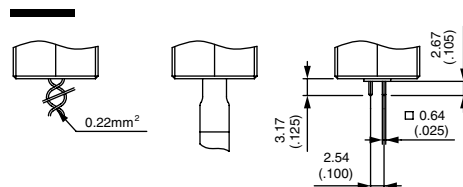


- A NO pulse
- B NC pulse
- 1 ON - OFF - Requires external power supply - Cannot be combined with T5 operator - Illumination type W only.

### TERMINALS



- F Flying leads
- C Cable
- P Straight PC (T5 model, non-illuminated, functions A and B only)



# PBA series

Piezo switches Ø 19 mm

## CASE COLORS / MATERIALS



- 0 **Natural anodized aluminum**
- 1 Blue anodized aluminum
- 2 **Black anodised aluminum**
- 3 Green anodized aluminum
- 5 Gold anodized aluminum
- 6 Red anodised aluminum
- B **Stainless steel 316L**

Bold = standard



## RATINGS



- 000 Standard
- 002 1 A 24 VAC or DC (NO pulse only, function A)

## TYPE OF ILLUMINATION / VOLTAGE



## I

- Blank Non-illuminated
- A Thin ring - 5 VDC
- N Thin ring - 12 VDC
- K Thin ring - 24 VDC
- W Thin ring - µcontroller driven

# PBA series

Piezo switches Ø 19 mm

## LED COLORS

BASIC P/N



**Blank** Non-illuminated

Integrated LED resistor

### Illuminated 1 LED \*

**0B** : blue - **0G** : green - **0S** : red - **0Y** : yellow - **0W** : white

### Illuminated 2 LEDs

**2A** : red/green - **2B** : red/yellow - **2C** : red/blue - **2D** : red/white - **2E** : green/blue - **2F** : green/yellow - **2G** : green/white

**2H** : blue/yellow - **2I** : blue/white - **2K** : yellow/white

### Illuminated 3 LEDs

**3A** : red/green/blue - **3B** : red/green/yellow - **3D** : red/green/white - **3E** : red/blue/yellow - **3F** : red/blue/white

**3G** : red/yellow/white - **3H** : green/blue/yellow - **3I** : green/blue/white - **3J** : green/yellow/white - **3K** : blue/yellow/white

\* LED color is indicated by protective resin color on bottom of unit.



0B



0G



0S



0Y



0W

# PBA series

Piezo switches Ø 22 mm



## DISTINCTIVE FEATURES

- Bushing diameter 16 (.630), 19 (.748), 22 (.866) or 30 mm (1.181)
- Sealed to IP68 and IP69K (switches mounted on panel)
- Easy to clean metal surface
- Very long life expectancy
- Ring or dot illumination



## ENVIRONMENTAL SPECIFICATIONS

- Sealing : IP68 per IEC 60529, IP69K per DIN 40050-9 (switches mounted on panel)
- Vibration resistance : 10-500 Hz / 10 g per IEC 60068-2-6
- Operating temperature : -40 °C to +75 °C (-40 °F to + 167 °F)
- EMC compatibility according to EN 61058-1 for the whole range
- EMC compatibility according to EN 61000-4 & EN61000-6-2 for model 1A (code 002)



## ELECTRICAL SPECIFICATIONS

- Max. current/voltage rating with resistive load :
  - Function A : standard 200 mA 24 VAC/DC - option 1 A 24 VAC/DC
  - Function B : standard 100 mA 24 VAC/DC
- Switch resistance ON : 10 Ω max.
- Switch resistance OFF : 5 MΩ min.
- Life expectancy : 50 million cycles
- LED consumption : Illuminated dot 10 mA - Illuminated ring 20 mA (functions A-B-C)
- Power consumption for function 1 :
  - non-illuminated 10 mA - illuminated 30 mA



## GENERAL SPECIFICATIONS

- Operating force : 2 to 6 N
- Torque : 2.5 Nm min. - 3 Nm max.

The company reserves the right to change specifications without notice.



# PBA series

Piezo switches Ø 22 mm



## MATERIALS

- Case : aluminum, anodized or stainless steel 316L
- Multi-wire leads section 0.22 mm<sup>2</sup> length 300 mm, twisted by pair
- Cable, length 300 mm, section depending on switch model
- PC terminals : bronze, tin plated

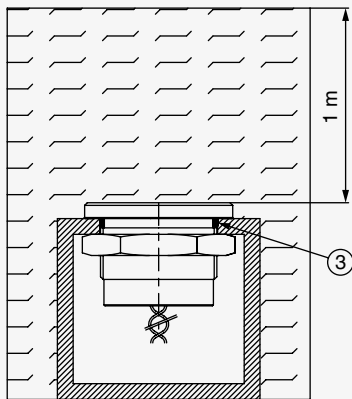
APEM products may be recycled at end-of-life for the re-claiming of valuable metal components.

**Note :** to maintain the ESD performance, always add a ground washer when the panel is made of non-conductive material (PVC, polycarbonate).  
For part numbers, see "Mounting accessories" on the following pages.



## SEALING

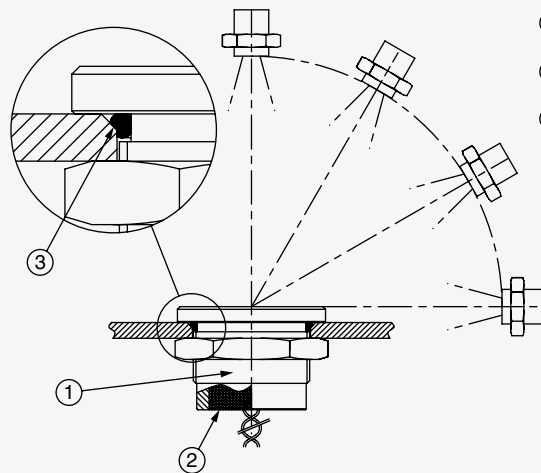
### SEALING IP68



#### Continuous immersion in water IP68 test conditions

Continuous immersion in water  
(1 m, 24 hours)

### SEALING IP69K



- ① - One-piece bushing
- ② - Epoxy sealed terminals
- ③ - O-ring

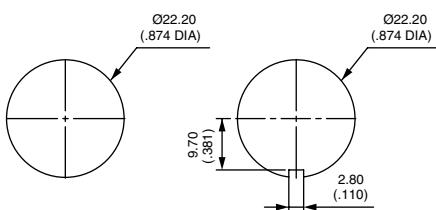
#### High pressure, high temperature wash down IP69K test conditions

- . Pressure : 80 - 120 bars
- . Distance : 15 cm
- . Temperature : 80 °C ± 5 °C (176 °F ± 41 °F)
- . Flow : 14 - 16 l/mn
- . Duration : 30 seconds per position



## PANEL CUT-OUT

MODELS Ø22 (.866)



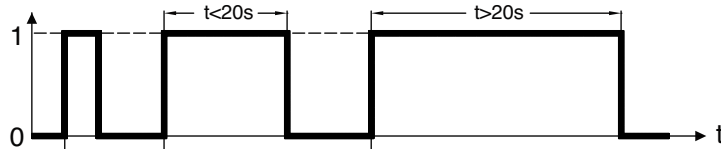




## ELECTRICAL FUNCTIONS

### FINGER PRESSURE APPLIED TO SWITCH

1 : pressure / 0 : no pressure

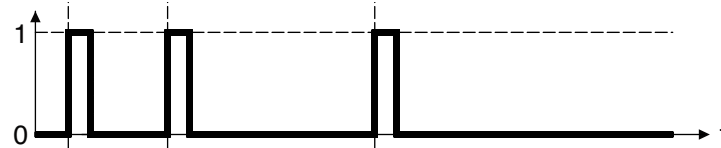


### OUTPUT

1 : closed output / 0 : open output

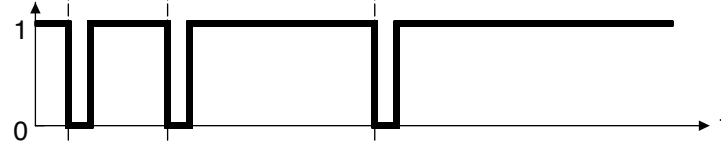
#### Momentary NO (pulse)

No external power supply required



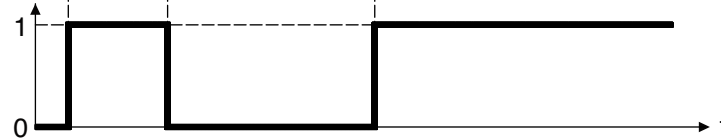
#### Momentary NC (pulse)

No external power supply required



#### Latching (ON - OFF)

Requires external power supply



## WIRING DIAGRAMS

|                     | Non-illuminated | 1 LED * | 2 LEDs | 3 LEDs |
|---------------------|-----------------|---------|--------|--------|
| Momentary NO        |                 |         |        |        |
| Momentary NC        |                 |         |        |        |
| Latching (ON - OFF) |                 |         |        |        |

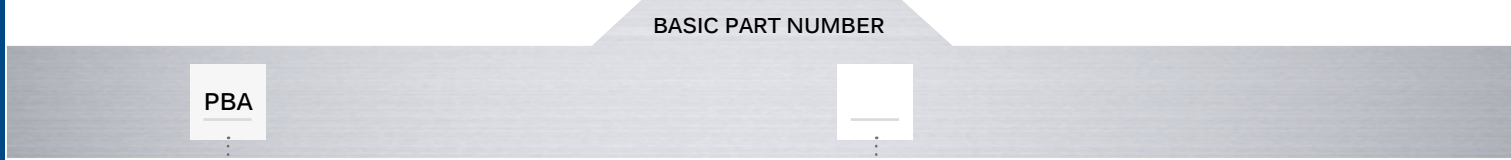
Legend : C : yellow, D : blue, B : black, A : same color as LED

\* LED color is indicated by protective resin color on bottom of unit.

# PBA series

Piezo switches Ø 22 mm

## BUILD YOUR PART NUMBER



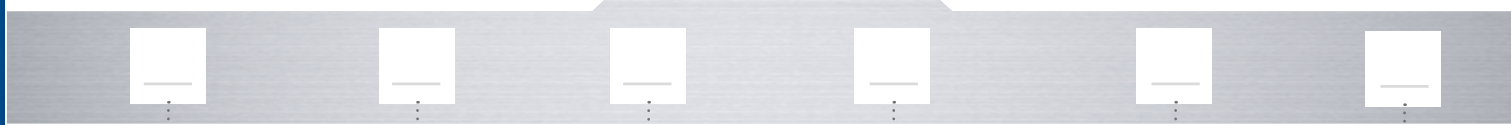
SERIES

BUSHINGS / OPERATORS

- R2** Flat, operator height 3 mm (.118) - Not available w. illuminated ring.
- R6** With finger location, operator height 3 mm (.118). Not available with illuminated ring.

- RY** With chamfer, operator height 4.5 mm (.177). Available with thin or large illuminated ring only.
- RZ** Flat, operator height 4.5 mm (.177). Available with thin or large illuminated ring only.

### OPTIONS



#### ELECTRICAL FUNCTIONS

- A** NO (pulse)
- B** NC (pulse)
- 1** ON - OFF (requires external power supply - Illumination types V, Y and Z only - only one LED color)

#### TERMINALS

- F** Flying leads
- C** Cable

#### COLORS / MATERIALS

- 0** Natural anodized
- 1** Blue anodized
- 2** Black anodized
- 3** Green anodized
- 5** Gold anodized
- 6** Red anodized
- B** Stainless steel 316L

Bold = standard

#### RATINGS

- 000** Standard
- 002** 1 A 24 VAC/DC (NO pulse only, function A)

#### TYPE OF ILLUMINATION/VOLTAGE

- Blank** Non-illuminated
- C** thin ring - 5 VDC
- D** thin ring - 12 VDC
- E** thin ring - 24 VDC
- F** large ring - 5 VDC
- G** large ring - 12 VDC
- H** large ring - 24 VDC
- L\*** dot - 5 VDC
- P\*** dot - 12 VDC
- J\*** dot - 24 VDC
- V\*** dot - µcontroller driven
- Y** thin ring - µcontroller driven
- Z** large ring - µcontroller driven

\*Dot illumination only available with LED colors 0B, 0G, 0S, 0Y, 0W and SG.

#### LED COLORS

- Blank** Non-illum.
- 0B** Blue
- 0G** Green
- 0S** Red
- 0Y** Yellow
- 0W** White
- SG** Red/green (dot only)
- 2A** Red/green
- 2B** Red/yellow
- 2C** Red/blue
- 2D** Red/white

#### LED COLORS (CONTINUED)

- 2E** Green/blue
- 2F** Green/yellow
- 2G** Green/white
- 2H** Blue/yellow
- 2I** Blue/white
- 2K** Yellow/white
- 3A** Red/green/blue
- 3B** Red/green/yellow
- 3D** Red/green/white
- 3E** Red/blue/yellow
- 3F** Red/blue/white
- 3G** Red/yellow/white
- 3H** Green/blue/yellow
- 3I** Green/blue/white
- 3J** Green/yellow/white
- 3K** Blue/yellow/white

## ABOUT THIS SERIES

- Notice** : please note that not all combinations of above numbers are available. Refer to the following pages for further information.
- Mounting accessories** : standard hardware supplied : 1 hex nut 10-856-0 (25 mm ac. flats) and 1 O-ring. Always add a ground washer U5737 when the panel is non-conductive (PVC, polycarbonate).

# PBA series

Piezo switches  $\varnothing$  22 mm

## NON-ILLUMINATED OPERATOR HEIGHT 3 MM



Flat

PBAR2

With finger location

PBAR6

## WITH ILLUMINATED DOT OPERATOR HEIGHT 3 MM



Flat

PBAR2

With finger location

PBAR6

## WITH THIN ILLUMINATED RING OPERATOR HEIGHT 4.50



Flat

PBARZ

With chamfer

PBARY

## WITH LARGE ILLUMINATED RING OPERATOR HEIGHT 4.50

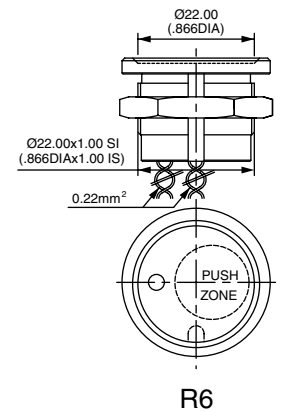
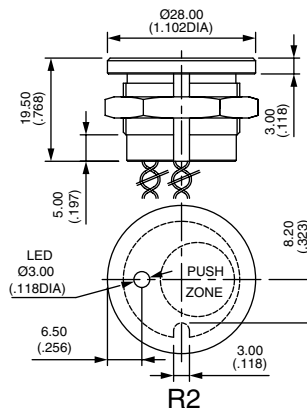
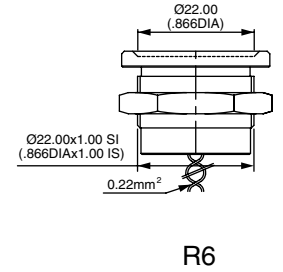
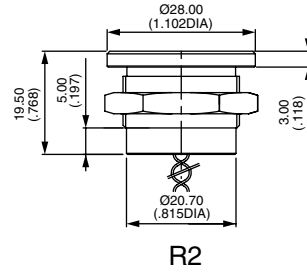


Flat

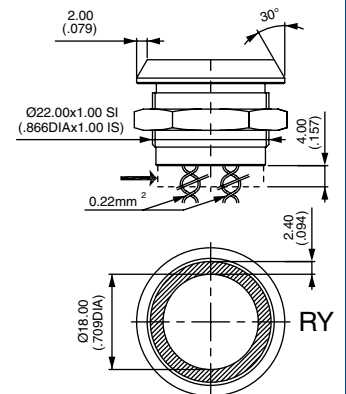
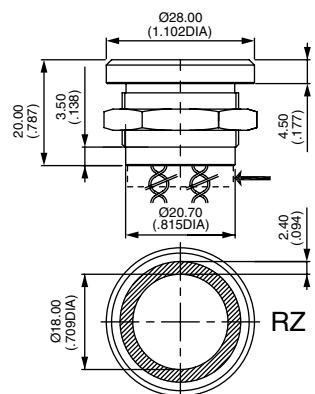
PBARZ

With chamfer

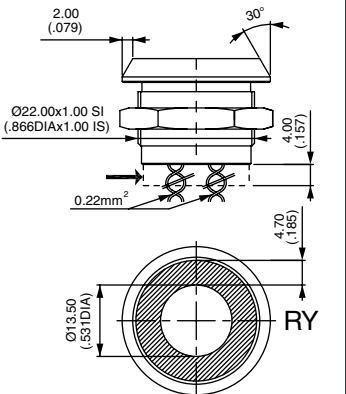
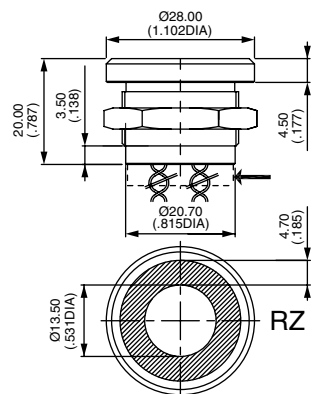
PBARY



### → DIMENSION OF ON-OFF MODELS



### → DIMENSION OF ON-OFF MODELS



# PBA series

Piezo switches Ø 22 mm

## ELECTRICAL FUNCTIONS

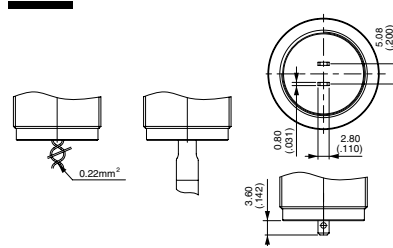


- A NO pulse
- B NC pulse
- 1 ON - OFF - Requires external power supply - Illumination types V, Y and Z only - one LED color only.

## TERMINALS



- F Flying leads
- C Cable



## CASE COLORS / MATERIALS



- 0 **Natural anodized aluminum**
- 1 Blue anodized aluminum
- 2 **Black anodised aluminum**
- 3 Green anodized aluminum
- 5 Gold anodized aluminum
- 6 Red anodised aluminum
- B **Stainless steel 316L**

Bold = standard



0

1

2

3

5

6

B

## RATINGS

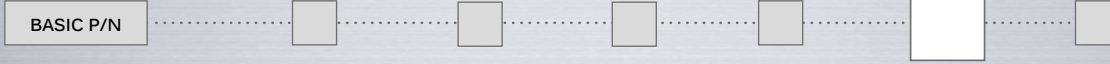


- 000 Standard
- 002 1 A 24 VAC or DC (NO pulse only, function A)

# PBA series

Piezo switches Ø 22 mm

## TYPE OF ILLUMINATION / VOLTAGE



**Blank** Non-illuminated



- C** Thin ring - 5 VDC
- D** Thin ring - 12 VDC
- E** Thin ring - 24 VDC
- Y** Thin ring -  $\mu$ controller driven



- F** Large ring - 5 VDC
- G** Large ring - 12 VDC
- H** Large ring - 24 VDC
- Z** Large ring -  $\mu$ controller driven



- L** Dot - 5 VDC
- P** Dot - 12 VDC
- J** Dot - 24 VDC
- V** Dot -  $\mu$ controller driven

⚠ Dot illumination only available with LED colors : 0B, 0G, 0S, 0Y, 0W and SG.

## LED COLORS



**Blank** Non-illuminated

Integrated LED resistor

### Illuminated 1 LED \*

- 0B** : blue - **0G** : green - **0S** : red - **0Y** : yellow - **0W** : white
- SG** : red/green (reversed polarity LED - for dot illumination only)

### Illuminated 2 LEDs

- 2A** : red/green - **2B** : red/yellow - **2C** : red/blue - **2D** : red/white - **2E** : green/blue - **2F** : green/yellow - **2G** : green/white
- 2H** : blue/yellow - **2I** : blue/white - **2K** : yellow/white

### Illuminated 3 LEDs

- 3A** : red/green/blue - **3B** : red/green/yellow - **3D** : red/green/white - **3E** : red/blue/yellow - **3F** : red/blue/white
- 3G** : red/yellow/white - **3H** : green/blue/yellow - **3I** : green/blue/white - **3J** : green/yellow/white - **3K** : blue/yellow/white

\* LED color is indicated by protective resin color on bottom of unit.



0B



0G



0S



0Y



0W