PBA series

Piezo switches Ø 30 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: flush or prominent ring

▣ ENVIRONMENTAL SPECIFICATIONS

• Sealing : IP68 per IEC 60529, IP69K per DIN 40050-9 (switches mounted on panel)

• Operating temperature : -40 °C to +75 °C (-40 °F to + 167 °F)

⚡ ELECTRICAL SPECIFICATIONS

• Max. current/voltage rating with resistive load : 1 A 24 VAC/DC

• Switch resistance ON : 10 Ω max.

• Switch resistance OFF : 5 MΩ min.

• Life expectancy : 50 million cycles

• LED consumption : 20 mA max.

⚙ GENERAL SPECIFICATIONS

• Operating force : 6 to 12 N

• Torque : 1.5 Nm min. - 10 Nm max.

▨ MATERIALS

• Case : aluminum, anodized or stainless steel 316L

• Multi-wire leads section 0.22 mm² length 300 mm, twisted by pair

• Cable, length 300 mm, section depending on switch model

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.

The company reserves the right to change specifications without notice.
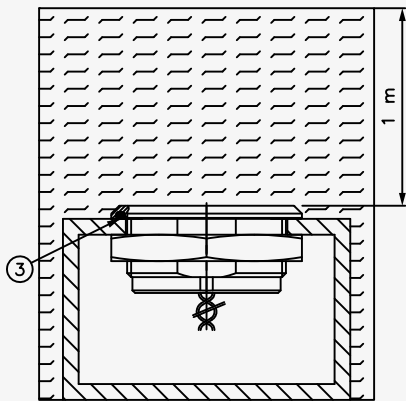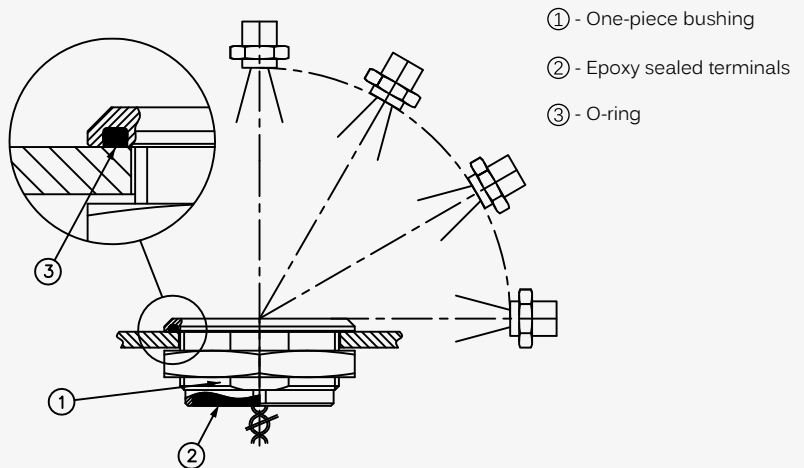
PBA series

Piezo switches Ø 30 mm

⬡ SEALING

SEALING IP68	SEALING IP69K

① - One-piece bushing

② - Epoxy sealed terminals

③ - O-ring
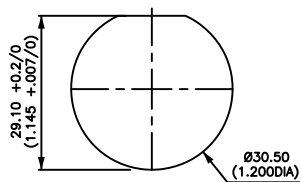
Continuous immersion in water IP68 test conditions
Continuous immersion in water (1 m, 24 hours)

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
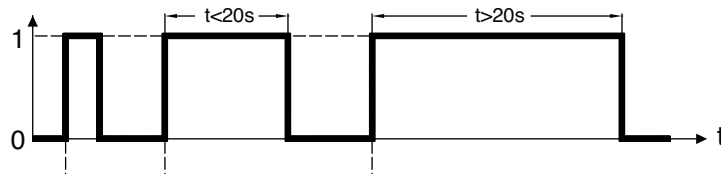
⬡ PANEL CUT-OUT

29.10 +0.2/0
(1.145 +.007/0)

Ø30.50
(1.200DIA)

PBA series

Piezo switches Ø 30 mm

⚡ ELECTRICAL FUNCTIONS

FINGER PRESSURE APPLIED TO SWITCH

1 : pressure / **0** : no pressure
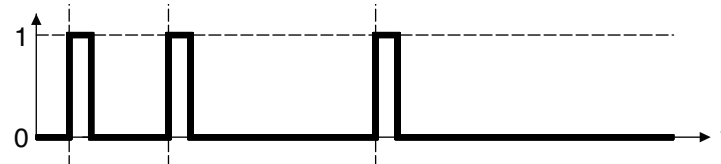

OUTPUT

1 : closed output / **0 :** open output

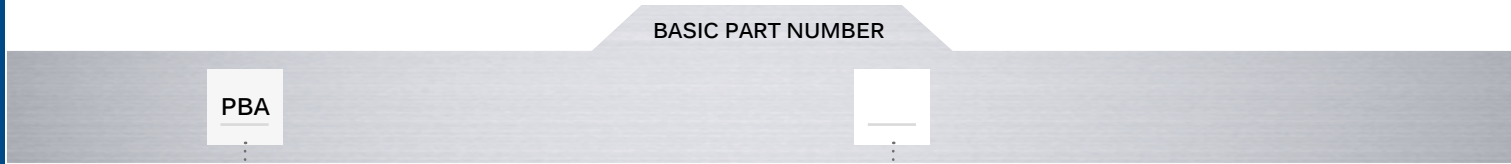**Momentary NO (pulse)**

No external power supply required

🔀 WIRING DIAGRAMS

	Non-illuminated	1 LED *	2 LEDs	3 LEDs
Momentary NO	RED RED	RED RED C D	RED RED A B A B	RED RED A B A B A B

Legend : **C** : yellow, **D** : blue, **B** : black , **A** : same color as LED	* LED color is indicated by the bottom of the product.

APEM

PBA series

Piezo switches Ø 30 mm

⚙ BUILD YOUR PART NUMBER

BASIC PART NUMBER

PBA

SERIES

BUSHING / OPERATOR

All models with Ø 30 mm (1.181) bushing and Ø 36 mm (1.417) operator

M1	Operator height 2.5 mm (.098) Non-illuminated		M4	Operator height 5.5 mm (.216) Illuminated, prominent translucent ring
M2	Operator height 2.5 mm (.098) Illuminated, flush translucent ring		M5	Operator height 5.5 mm (.216) Illuminated, prominent colored ring (same color as LED)
M3	Operator height 2.5 mm .098) Illuminated, flush colored ring (same color as LED)			

OPTIONS

ELECTRICAL FUNCTIONS

A	NO (pulse)

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

002	1 A 24 VAC/DC

LED VOLTAGE

Blank	Non-illuminated
C	5 VDC
D	12 VDC
E	24 VDC

LED COLORS

Blank	Non-illum.
0B	Blue
0G	Green
0S	Red
0Y	Yellow
0W	White

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

LED COLORS (CONTINUED)

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

Bicolor or tricolor, order with translucent ring (M2 or M4)

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 U6730 (36 mm ac. flats) and 1 O-ring. Always add a ground washer U7340 when the panel is non-conductive (PVC, polycarbonate).

PBA series

Piezo switches Ø 30 mm

NON-ILLUMINATED
OPERATOR HEIGHT 2.50 MM (.098)

PBAM1

→ O-RING

FLUSH ILLUMINATED RING
OPERATOR HEIGHT 2.50 MM (.098)

Translucent ring
PBAM2

Colored ring
PBAM3

→ O-RING

PROMINENT ILLUMINATED RING
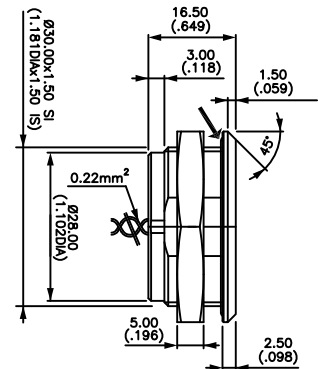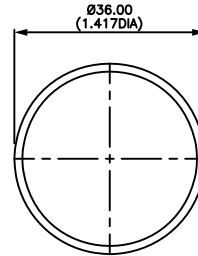### OPERATOR HEIGHT 5.50 MM (.216)
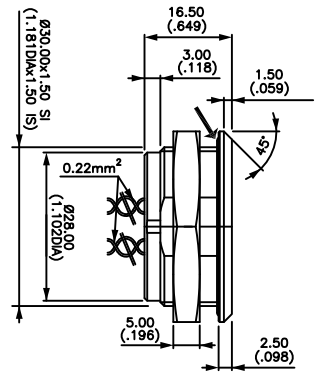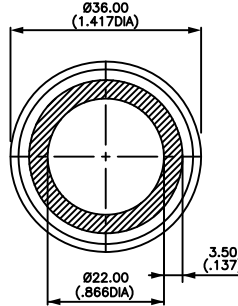

Translucent ring
PBAM4

Colored ring
PBAM5

→ O-RING

Wire colors : see "Wiring diagrams".
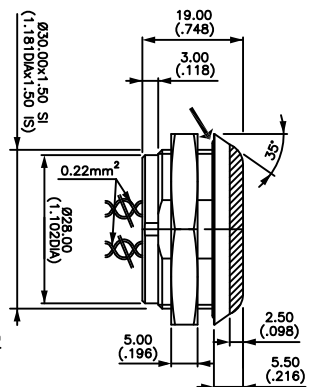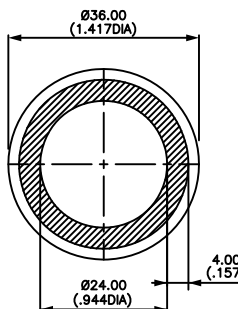
ELECTRICAL FUNCTION

BASIC P/N

A   NO pulse

PBA series

Piezo switches Ø 30 mm

TERMINALS

BASIC P/N

F Flying leads
C Cable

0.22mm²

CASE COLORS / MATERIALS

BASIC P/N

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

RATINGS

BASIC P/N

002 1 A 24 VAC or DC

LED VOLTAGE

BASIC P/N

Blank Non-illuminated
C 5 VDC
D 12 VDC
E 24 VDC

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 (with translucent ring)
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 (with translucent ring)
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.