

UG1006-A

- Sealed to IP 68 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 529, IP69K per DIN 40050-9 (switches mounted on panel or not)
- Vibration resistance : 10-500 Hz / 10 g per IEC 60068-2-6
- Operating temperature : -40°C to +75°C
- 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)

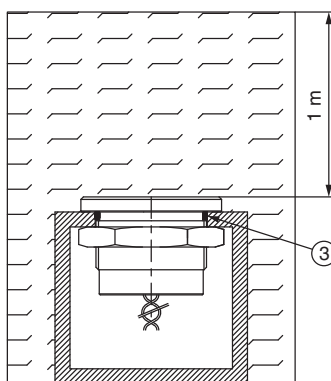
**MATERIALS**

- Case : aluminium, 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

**ELECTRICAL AND GENERAL SPECIFICATIONS**

- Max. current/voltage rating :
  - Function A : standard 200mA 24VAC/DC - option 1A 24VAC/DC
  - Function B : standard 100mA 24VAC/DC
- Switch resistance ON : 10Ω max.
- Switch resistance OFF : 5MΩ min.
- Operating force : 2 to 6N
- Life expectancy : 50 million cycles
- LED consumption : Illuminated dot : 10mA - Illuminated ring : 20mA

**SEALING IP68**

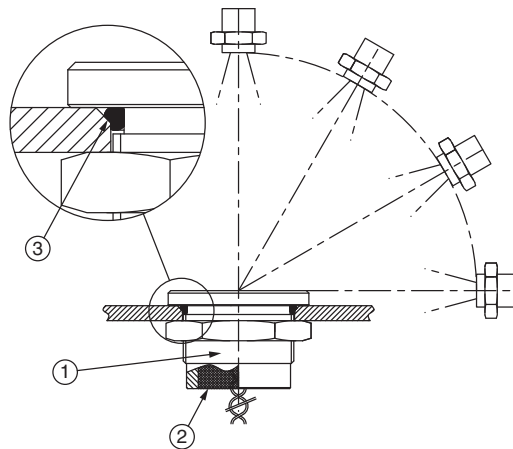


**Continuous immersion in water**

**IP68 test conditions**

Continuous immersion in water (1m, 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
- . Flow : 14 - 16 l/mn
- . Duration : 30 seconds per position

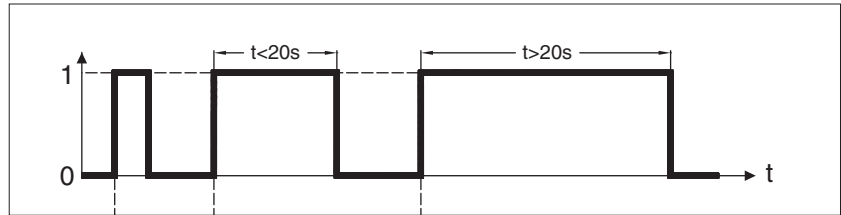
- ① One-piece bushing
- ② Epoxy sealed terminals
- ③ O-ring

## Piezo switches

### Electrical functions

#### FINGER PRESSURE applied to switch

1 = pressure  
0 = no pressure



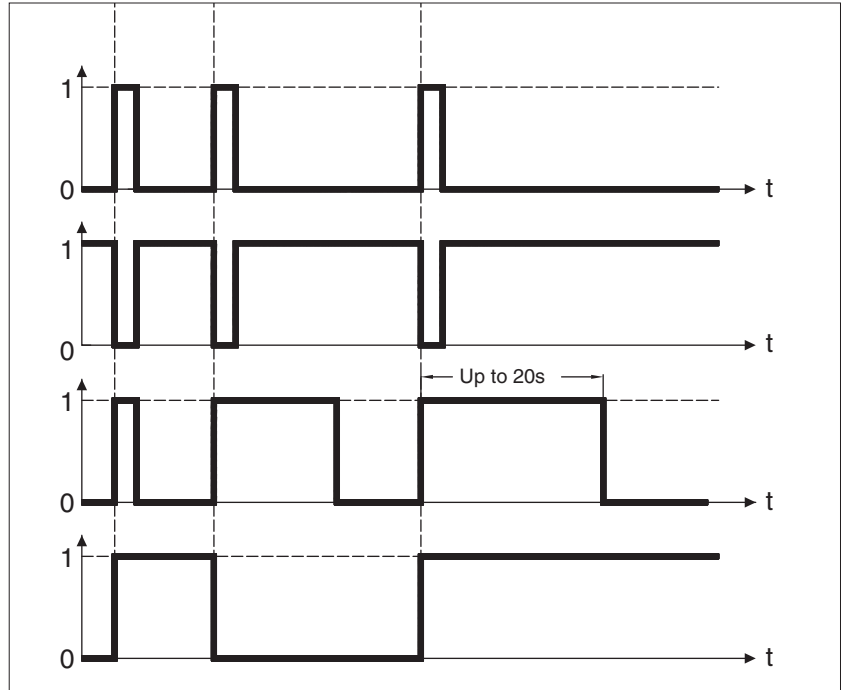
#### OUTPUT

- Momentary NO (pulse)  
No external power supply required

- Momentary NC (pulse)  
No external power supply required

- Momentary NO prolonged pulse  
No external power supply required

- Latching (ON - OFF)  
Requires external power supply



1 = closed output 0 = open output

#### Wiring diagrams

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

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

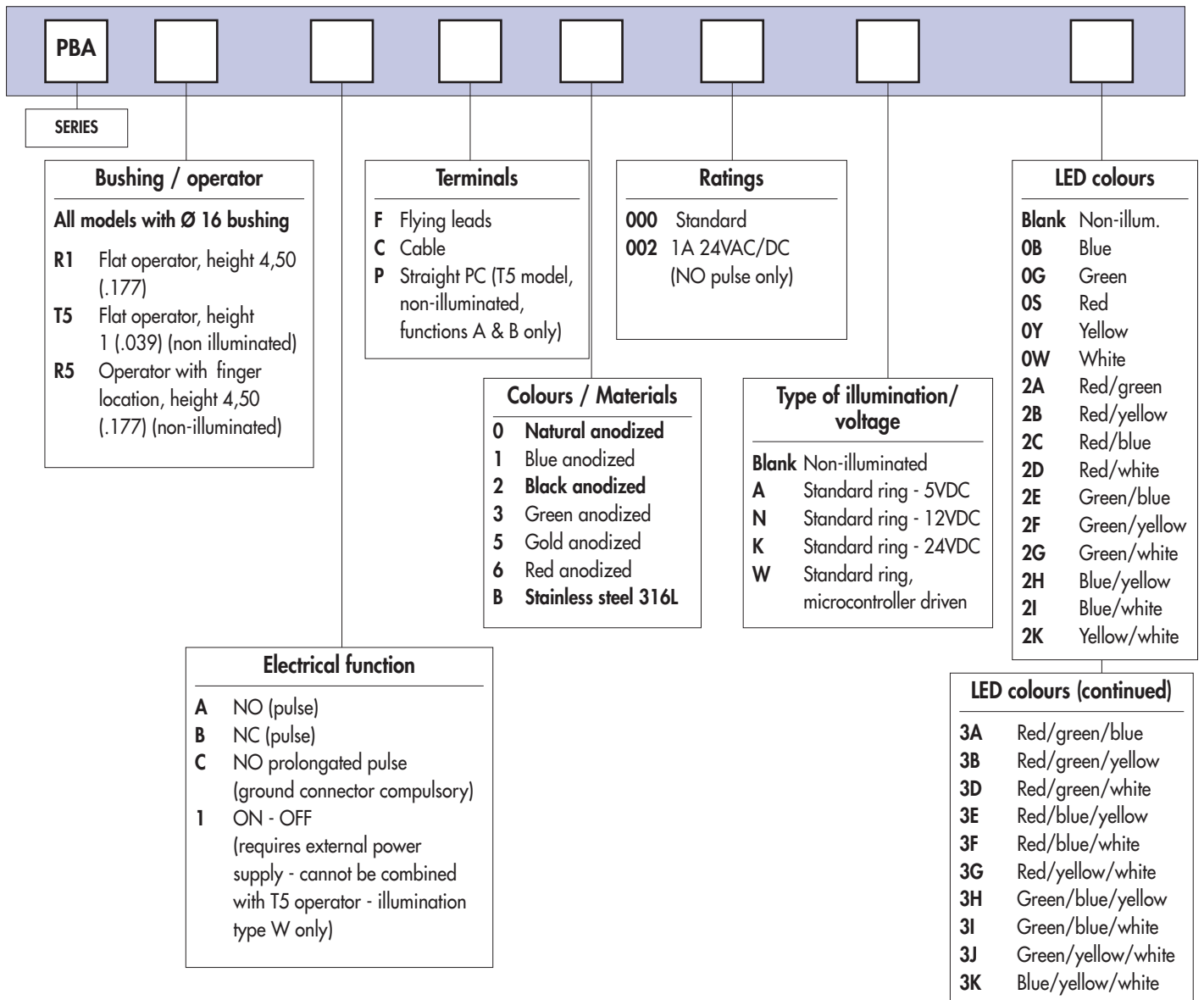
\* LED colour is indicated by the bottom of the product.

# New!

# PBA series

## Piezo switches Ø 16 (.630)

Overview



For options not listed above, please contact APEM.

**Dimensions** : first dimensions are in mm while inches are shown as bracketted numbers.



**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



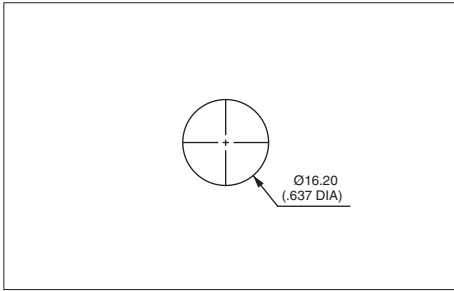
**Packaging unit** : 20 or 40 pieces

# PBA series

**New!**

## Piezo switches Ø 16 (.630)

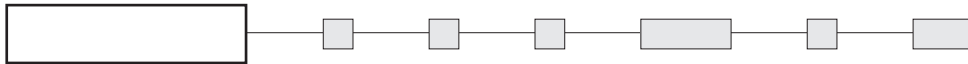
*Illuminated or non-illuminated*



- Operator Ø 18 mm (.708)

Shown with flying lead terminals.

**MODEL STRUCTURE**



**B**

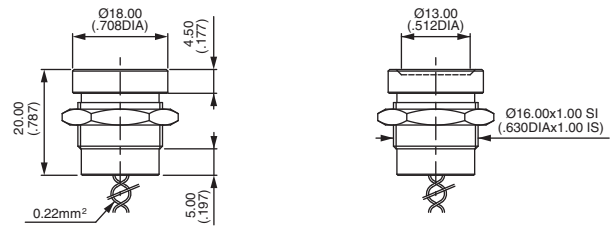
### Non-illuminated, operator height 4,50 mm (.177)



PBAR1AF2000

Flat  
PBAR1

With finger location  
PBAR5



R1

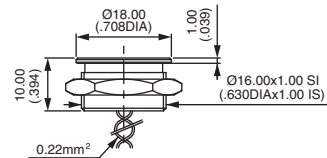
R5

### Non-illuminated, operator height 1 mm (.039)



PBAT5AF0000

Flat  
PBAT5

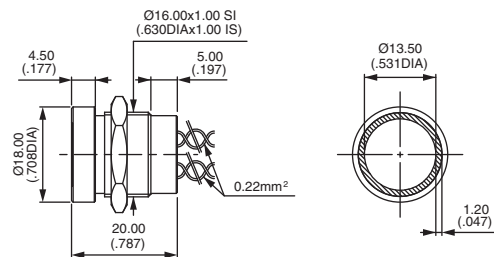


### With standard illuminated ring



PBAR1AF000A0B

Flat operator, height 4,50 (.177)  
PBAR1



Wire colours : see "Electrical functions" page.

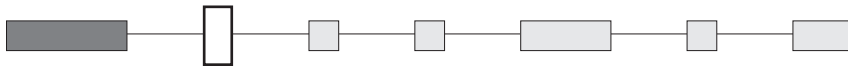
**New!**

# PBA series

Piezo switches Ø 16 (.630)

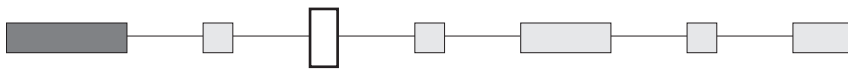
Options

## ELECTRICAL FUNCTION

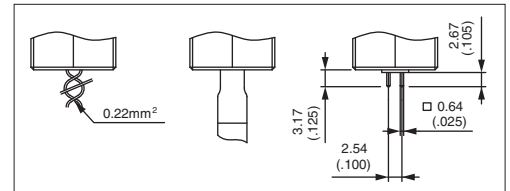


- A NO pulse
- B NC pulse
- C NO prolonged pulse - Ground connector U5735 compulsory, order separately.
- 1 ON - OFF - Requires external power supply - Cannot be combined with T5 operator.  
Illumination type W only.

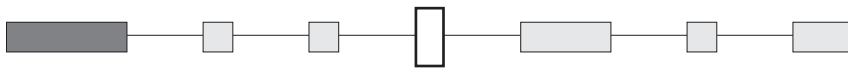
## TERMINALS



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



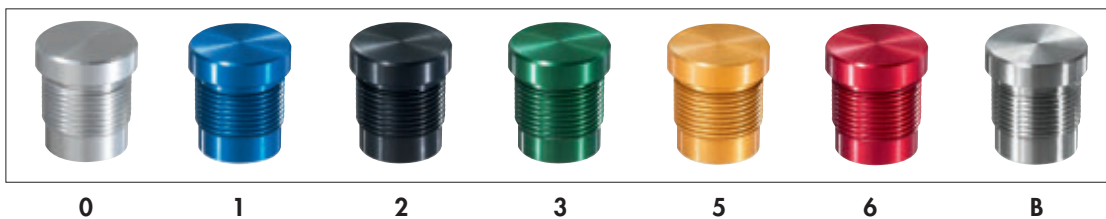
## CASE COLOURS / MATERIALS



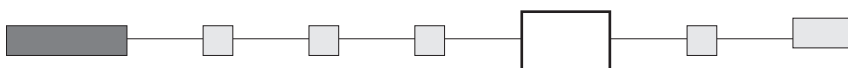
Code	Colour
0	Natural anodized aluminium
1	Blue anodized aluminium
2	Black anodised aluminium

Code	Colour
3	Green anodized aluminium
5	Gold anodized aluminium
6	Red anodised aluminium

Code	Colour
B	Stainless steel 316L



## RATINGS



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

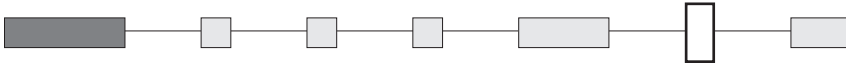
# PBA series

New!

## Piezo switches Ø 16 (.630)

### Options

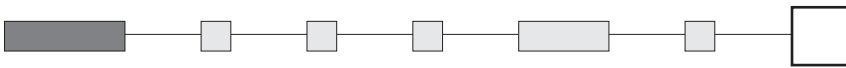
#### TYPE OF ILLUMINATION / VOLTAGE



Blank : non-illuminated

	5VDC	12VDC	24VDC	Microcontroller driven
○	A	N	K	W

#### LED COLOURS



Integrated LED resistor

Blank : non-illuminated



0B

0G

0S

0Y

0W

#### 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 colour is indicated by the bottom of the product.

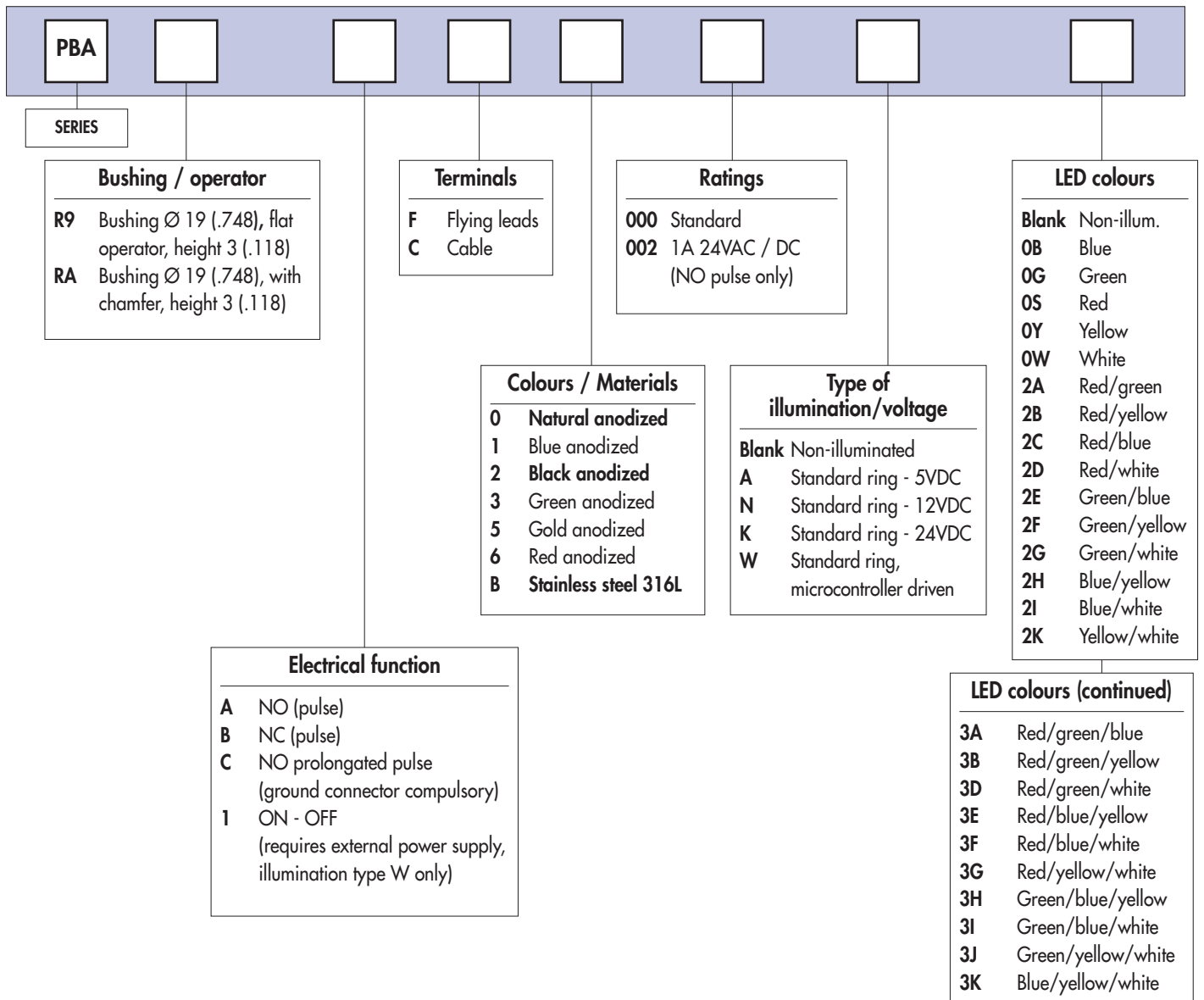
B

# New!

# PBA series

## Piezo switches Ø 19 (.748)

Overview



For options not listed above, please contact APEM.

**Dimensions** : first dimensions are in mm while inches are shown as bracketted numbers.



**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 10-855-0 (22 mm ac. flats) and 1 O-ring



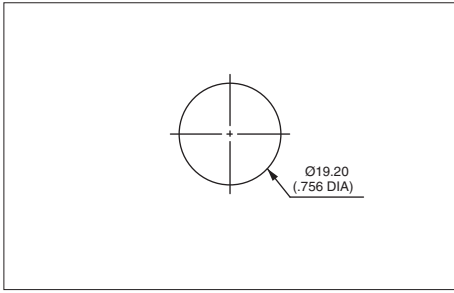
**Packaging unit** : 20 pieces

# PBA series

**New!**

## Piezo switches Ø 19 (.748)

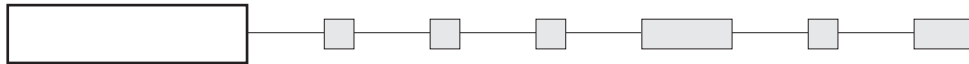
*Illuminated or non-illuminated*



- Operator Ø 22 mm (.866)

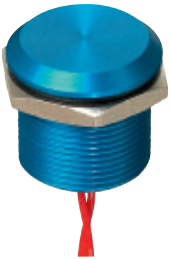
Shown with flying lead terminals.

**MODEL STRUCTURE**



**B**

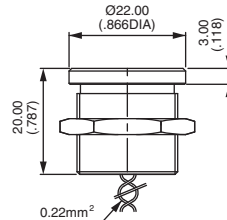
### Non-illuminated - operator height 3 mm (.118)



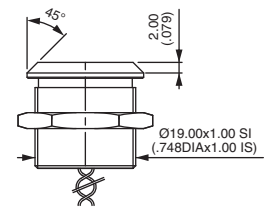
**PBARAAF1000**

Flat  
**PBAR9**

With chamfer  
**PBARA**



**R9**



**RA**

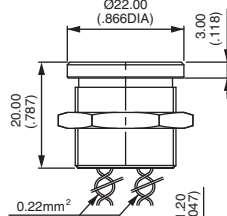
### With standard illuminated ring - operator height 3 mm



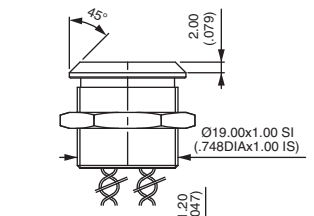
**PBAR9AF0000A0S**

Flat  
**PBAR9**

With chamfer  
**PBARA**



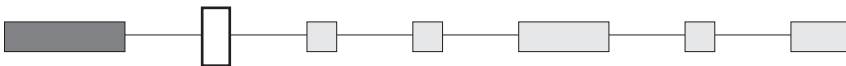
**R9**



**RA**

Wire colours : see "Electrical functions" page.

### ELECTRICAL FUNCTION



- A** NO pulse
- B** NC pulse
- C** NO prolonged pulse - Ground connector U5736 compulsory, order separately.
- 1** ON - OFF - Requires external power supply - Illumination type W only.



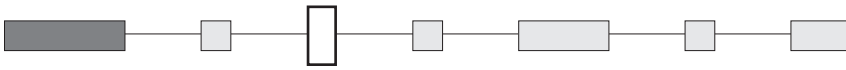
**New!**

# PBA series

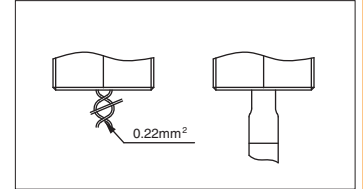
Piezo switches Ø 19 (.748)

*Options*

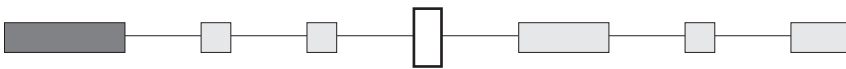
## TERMINALS



**F** Flying leads  
**C** Cable



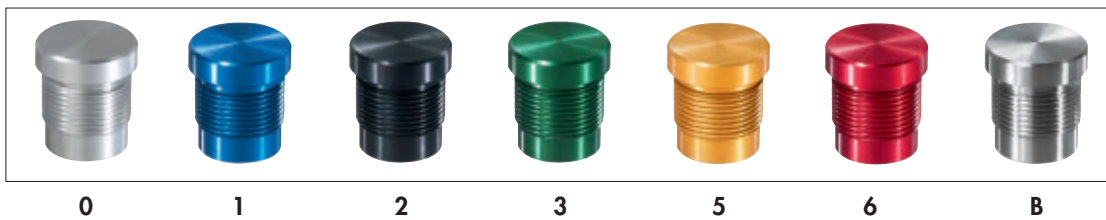
## CASE COLOURS / MATERIALS



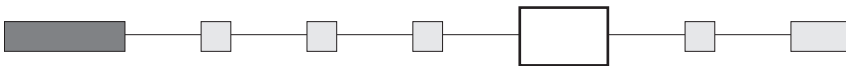
Code	Colour
<b>0</b>	<b>Natural anodized aluminium</b>
<b>1</b>	Blue anodized aluminium
<b>2</b>	<b>Black anodised aluminium</b>

Code	Colour
<b>3</b>	Green anodized aluminium
<b>5</b>	Gold anodized aluminium
<b>6</b>	Red anodised aluminium

Code	Colour
<b>B</b>	<b>Stainless steel 316L</b>

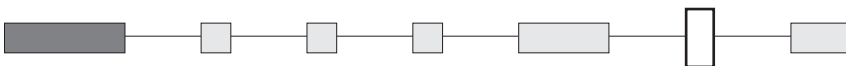


## RATINGS



**000** Standard  
**002** 1A 24VAC or DC (NO pulse only)

## TYPE OF ILLUMINATION / VOLTAGE



	5VDC	12VDC	24VDC	Microcontroller driven
○	<b>A</b>	<b>N</b>	<b>K</b>	<b>W</b>

# PBA series

New!

Piezo switches Ø 19 (.748)

Options

## LED COLOURS



Blank : non-illuminated



### 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

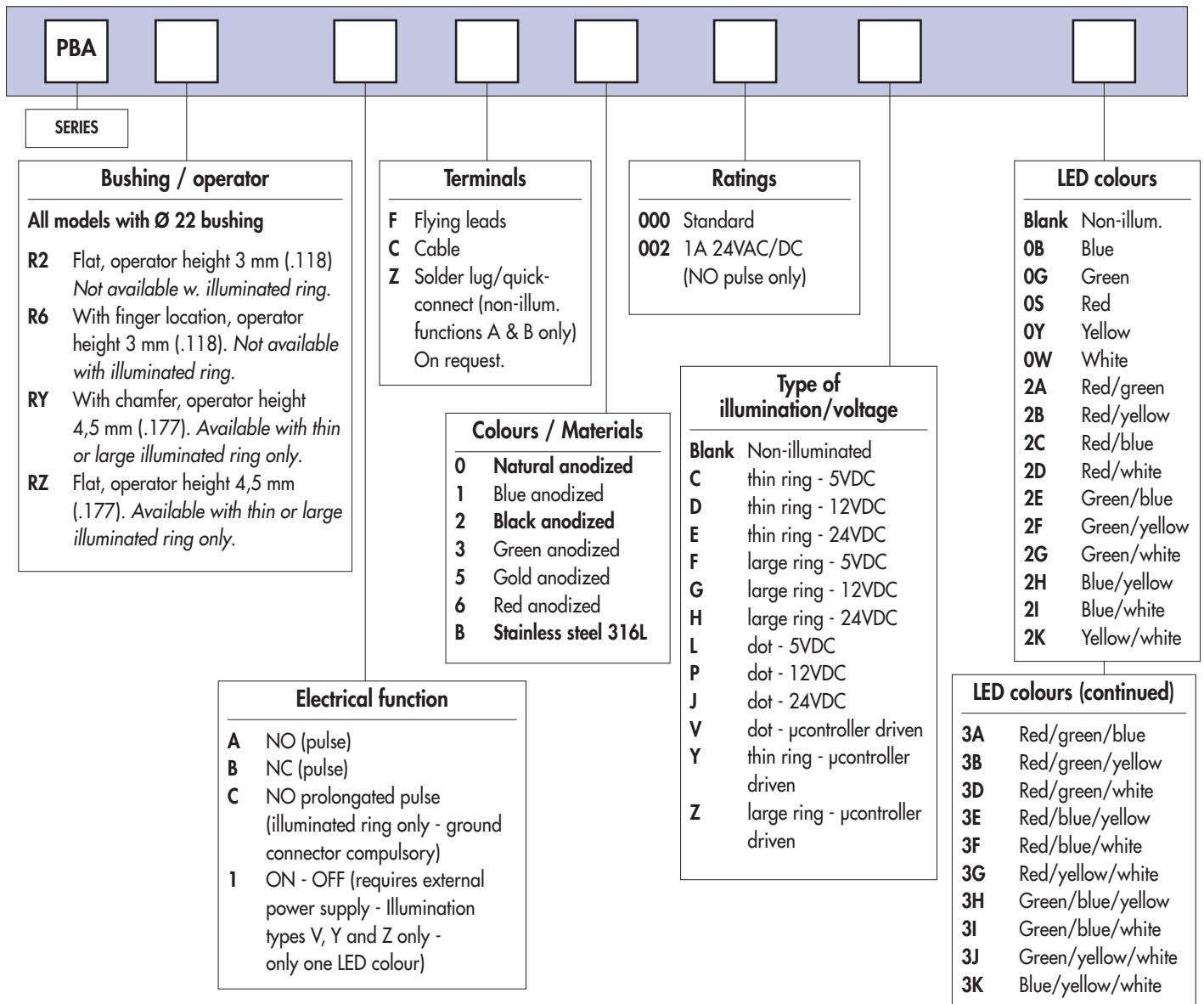
\* LED colour is indicated by the bottom of the product.

New!

# PBA series

Piezo switches Ø 22 (.866)

Overview



For options not listed above, please contact APEM.



**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



**Packaging unit** : 20 pieces

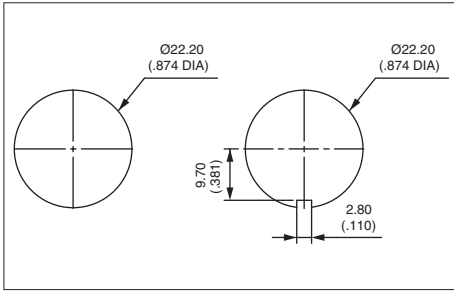
# PBA series

**New!**

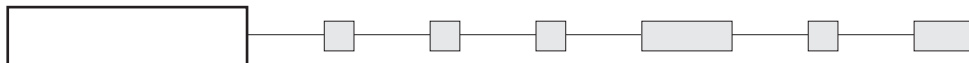
Piezo switches Ø 22 (.866)

*Illuminated or non-illuminated*

- Operator Ø 28 mm (1.102)



**MODEL STRUCTURE**



Wire colours : see "Electrical functions" page.

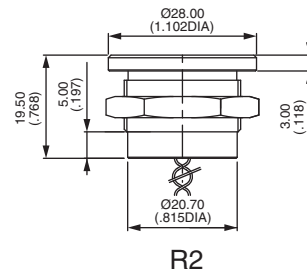
## Non-illuminated - operator height 3 mm (.118)



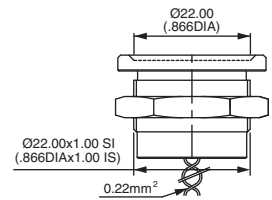
Flat  
**PBAR2**

With finger location  
**PBAR6**

**PBAR2AF6000**



**R2**



**R6**

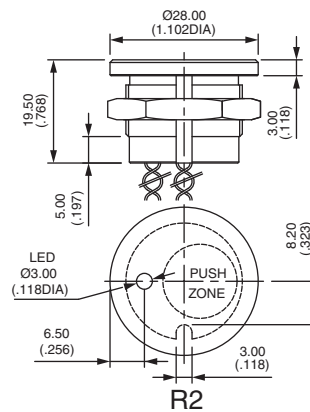
## With illuminated dot - operator height 3 mm (.118)



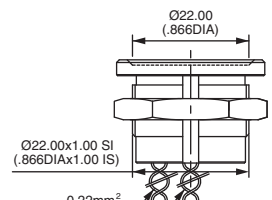
Flat  
**PBAR2**

With finger location  
**PBAR6**

**PBAR6AF6000LOG**



**R2**



**R6**

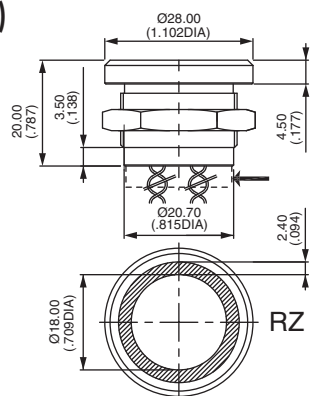
## With thin illuminated ring - operator height 4,50 (.177)



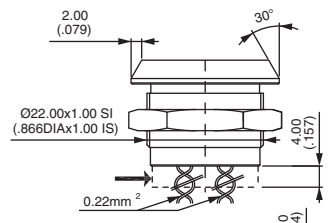
Flat  
**PBARZ**

With chamfer  
**PBARY**

**PBARYAF0000COB**



**RZ**



**RY**

→ Dimension of ON-OFF models

**New!**

# PBA series

Piezo switches Ø 22 (.866)

*Illuminated or non-illuminated*

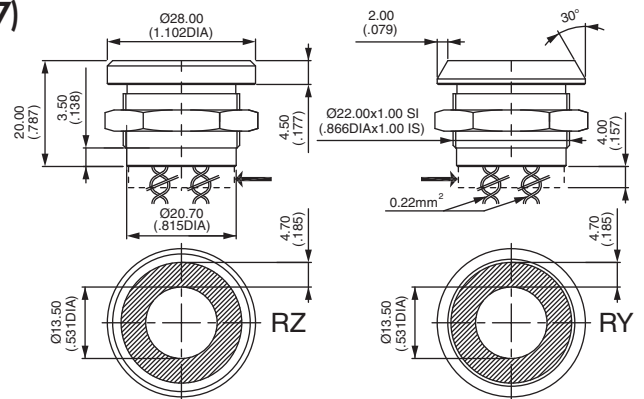
**With large illuminated ring - operator height 4,50 (.177)**



PBARYAF0000FOB

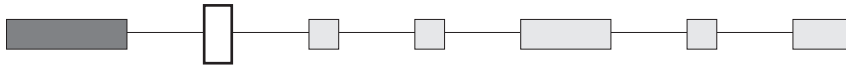
Flat  
PBARZ

With chamfer  
PBARY



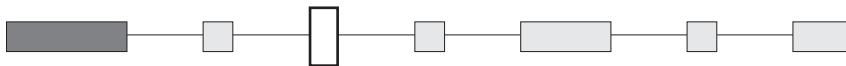
→ Dimension of ON-OFF models

## ELECTRICAL FUNCTION

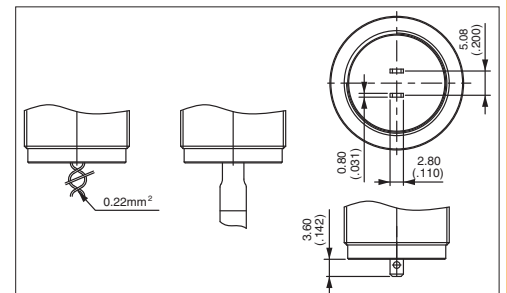


- A NO pulse
- B NC pulse
- C NO prolonged pulse (illuminated ring only) - Ground connector U5737 compulsory, order separately.
- I ON - OFF - Requires external power supply - Illumination types V, Y and Z only - one LED colour only.

## TERMINALS



- F Flying leads
- C Cable
- Z Solder lug / quick-connect (non-illuminated, functions A and B only)  
On request.



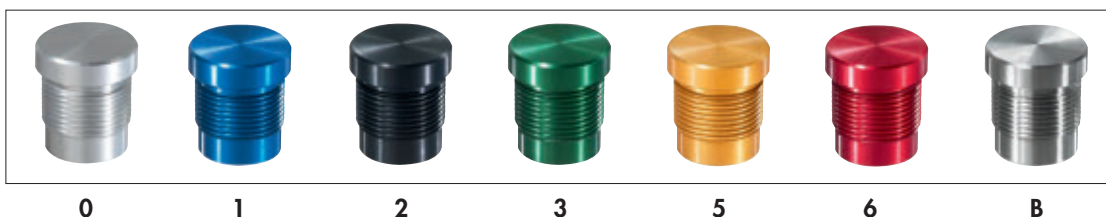
## CASE COLOURS / MATERIALS



Code	Colour
0	Natural anodized aluminium
1	Blue anodized aluminium
2	Black anodised aluminium

Code	Colour
3	Green anodized aluminium
5	Gold anodized aluminium
6	Red anodised aluminium

Code	Colour
B	Stainless steel 316L



0

1

2

3

5

6

B

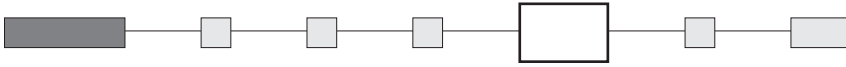
# PBA series

**New!**

Piezo switches Ø 22 (.866)

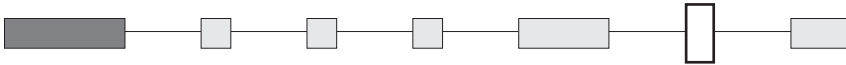
Options

## RATINGS



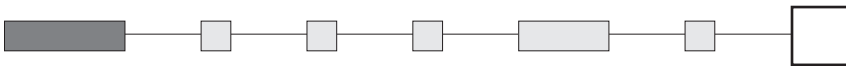
000 Standard  
002 1A 24VAC or DC (NO pulse only)

## TYPE OF ILLUMINATION / VOLTAGE



	5V	12V	24V	Microcontroller driven
○	C	D	E	Y
◉	F	G	H	Z
•	L	P	J	V

## LED COLOURS



Integrated LED resistor

Blank : non-illuminated



OB

OG

OS

OY

OW

### Illuminated 1 LED \*

OB : blue - OG : green - OS : red - OY : yellow - OW : 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 colour is indicated by the bottom of the product.



New!

# PBA series

## ATEX approved piezo switches

Distinctive features - Specifications - Overview

- Approved according to the ATEX 94/9/CE directive
- Sealed to IP66 (mounted on panel)
- Easy to clean metal surface
- Long life
- Illuminated models

### ELECTRICAL SPECIFICATIONS

- Rated voltage : 5V to 24 VAC/DC max.
- Rated current : 200mA max. at 6VAC/DC  
50mA max. at 24VAC/DC  
(power limited to 1,2W for user group II)
- Contact resistance (ON) : 10Ω max.
- Insulation resistance (OFF) : 5MΩ min.
- Make impulse time : depending on actuating force and speed
- LED : 5VDC, 10mA to 20mA depending on model

### MATERIALS

- Case : 316L stainless steel
- Terminals : multi-wire leads  
0,22 mm<sup>2</sup>, length 300 mm (11.81)

**Standard hardware supplied:** 1 hex nut 10-621 (19 mm ac. flats), 10-855-0 (22 mm ac. flats) or 10-856-0 (25 mm ac. flats), 1 O-Ring and 1 ground connector U5735, U5736 or U5737.

### GENERAL SPECIFICATIONS

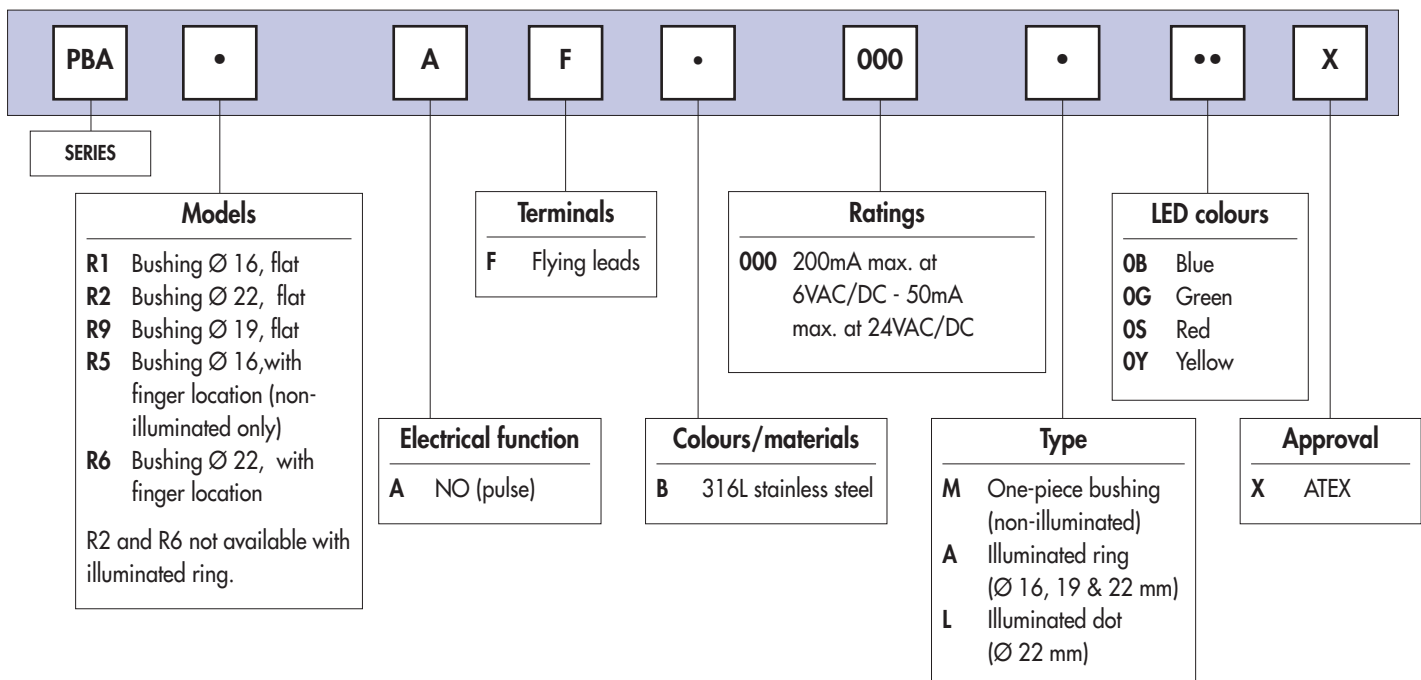
- Operating force : 2 to 6N
- Torque : 2,5 Nm max.
- Life expectancy : 50 million cycles
- Operating temperature : -40°C to +55°C
- EMC compatibility according to EN 61058-1
- In accordance with EN 60079-0, EN 60079-11, EN 61241-0, EN 61241-11, EN 60079-26 and EN 50303
- Sealing : IP66 per IEC 60529 (switches mounted on panel)

### Packaging units :

- bushing Ø 16 : 40 pieces
- illuminated bushing Ø 16 : 20 pieces
- bushing Ø 19 : 20 pieces
- bushing Ø 22 : 20 pieces

### Instructions for use :

see instruction notice NTPBA006.



# PBA series

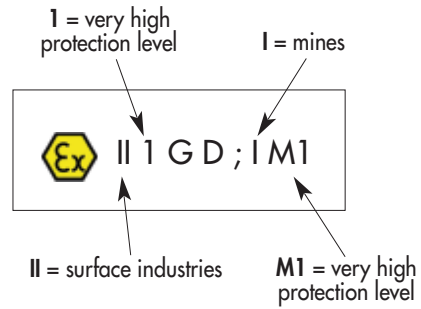
ATEX approved piezo switches

Illuminated or non-illuminated

New!



- Highest classifications
- Universal

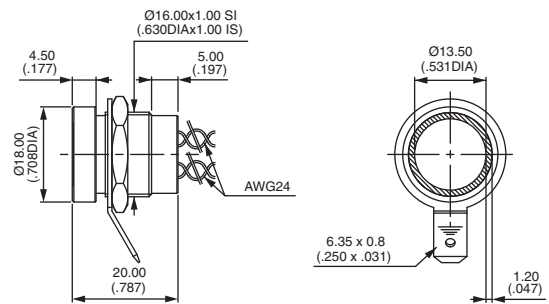


B

## Dia. 16 (.630) bushing - illuminated ring



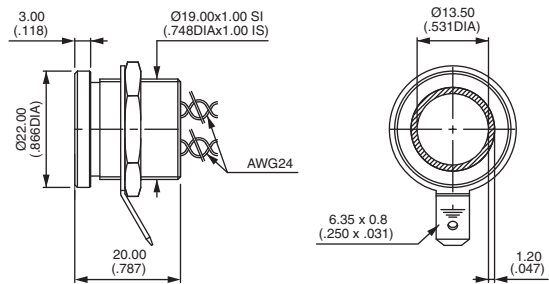
Stainless steel 316L, blue LED  
PBAR1AFB000A0BX



## Dia. 19 (.748) bushing - illuminated ring



Stainless steel 316L, blue LED  
PBAR9AFB000A0BX



## Dia. 22 (.866) bushing - non-illuminated



Stainless steel 316L  
PBAR2AFB000MX

