



- Bushing diameter 16 mm, 19 mm or 22 mm
- 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 529, 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
- 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 mm² length 300 mm, twisted by pair
- Cable, length 300 mm, section depending on switch model
- PC terminals : bronze, tin plated

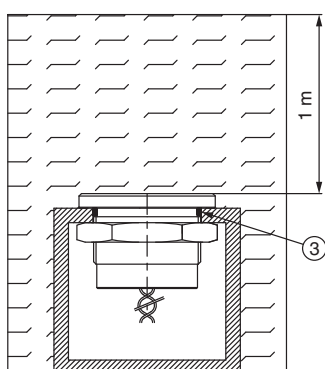
ELECTRICAL AND GENERAL SPECIFICATIONS

- 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 - Illum. ring 20mA (functions A-B-C)
- Power consumption for function 1 : non-illum.10mA - illuminated 30mA

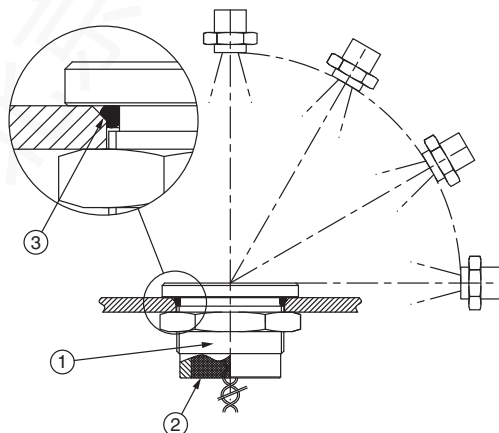
Note : to maintain the ESD performance, always add a ground washer when the panel is made of non-conductive material (PVC, polycarbonate).

For part numbers, see «Mounting accessories» on the following pages.

SEALING 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
(1m, 24 hours)

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

The company reserves the right to change specifications without notice.

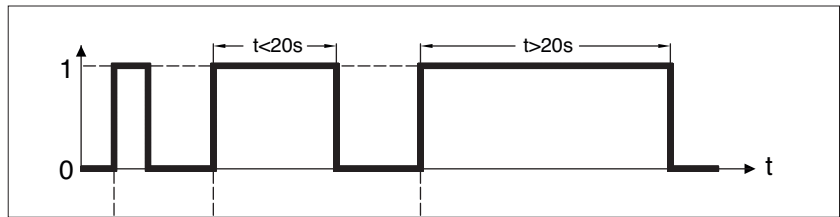
PBA series

Piezo switches

Electrical functions

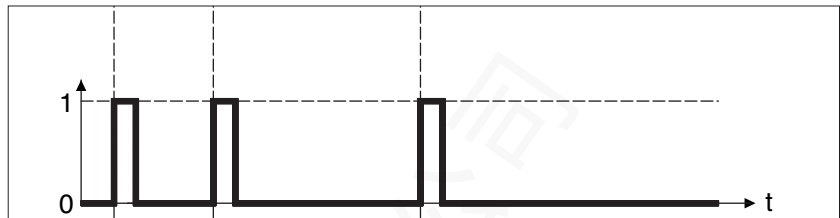
FINGER PRESSURE applied to switch

1 = pressure
0 = no pressure

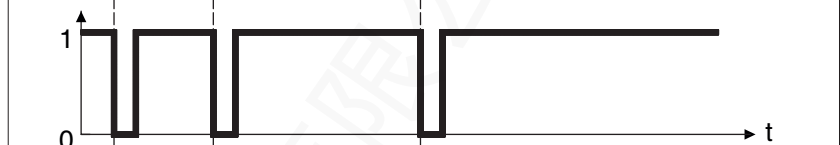


OUTPUT

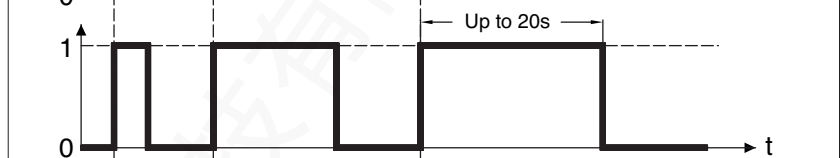
- Momentary NO (pulse)
No external power supply required



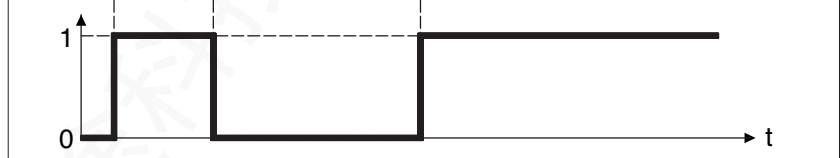
- Momentary NC (pulse)
No external power supply required



- Momentary NO prolonged pulse
No external power supply required



- Latching (ON - OFF)
Requires external power supply



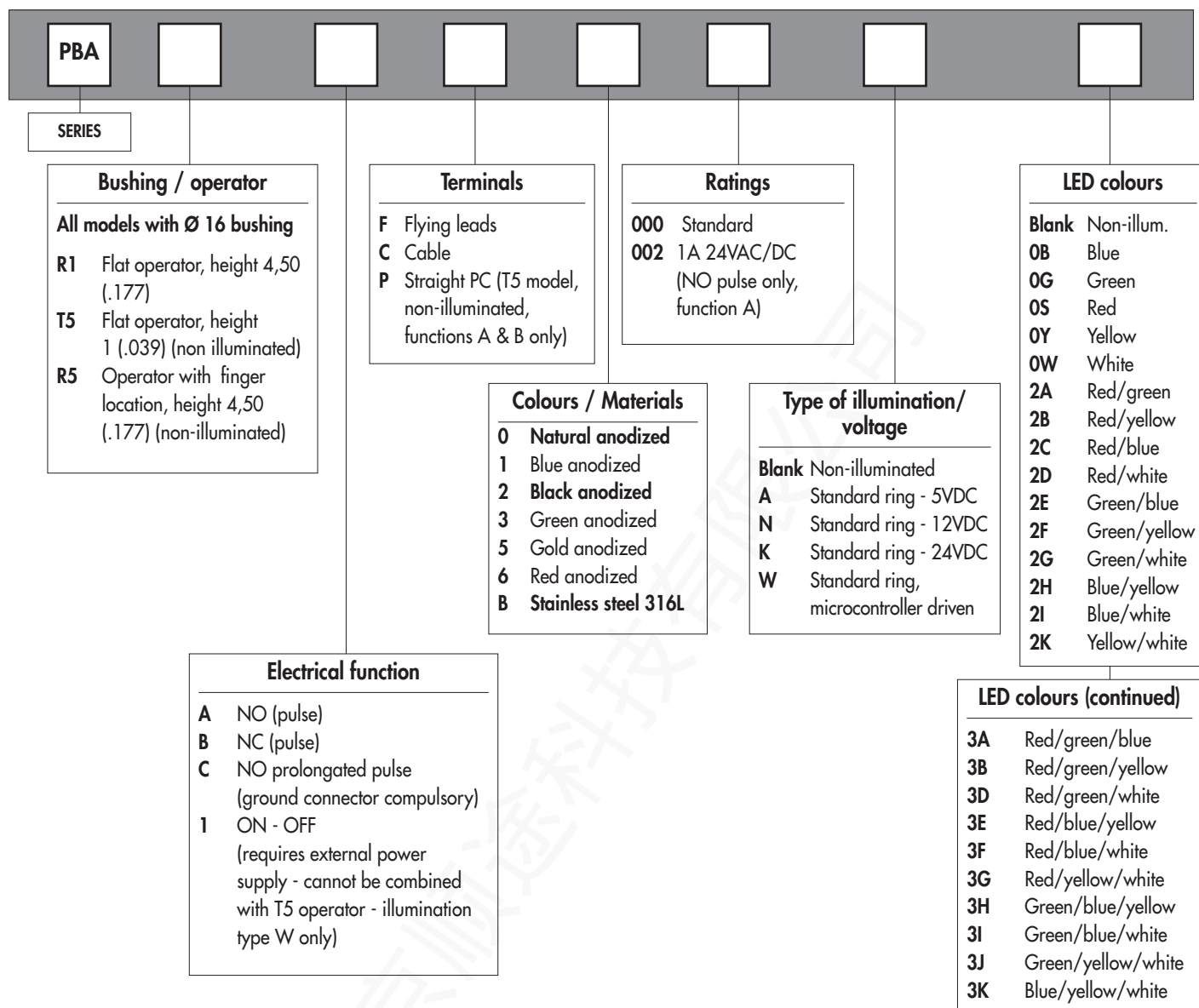
1 = closed output 0 = open output

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.

B2



For options not listed above, please contact APEM.

Dimensions : first dimensions are in mm while inches are shown as bracketed 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. Always add a ground washer U5735 when the panel is non-conductive (PVC, polycarbonate).

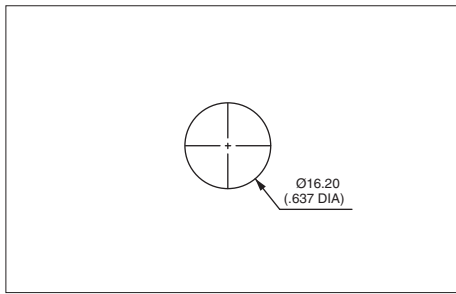


Packaging unit : 20 pieces (flying lead terminals) or 25 pieces (cable terminals)

PBA series

Piezo switches Ø 16 (.630)

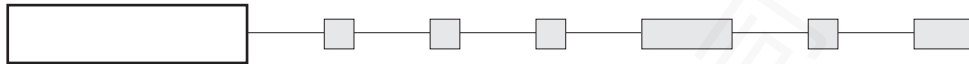
Illuminated or non-illuminated



- Operator Ø 18 mm (.708)

Shown with flying lead terminals.

MODEL STRUCTURE



B2

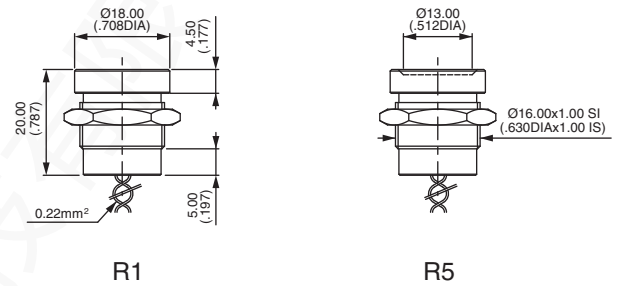
Non-illuminated, operator height 4,50 mm (.177)



PBAR1AF2000

Flat
PBAR1

With finger location
PBAR5

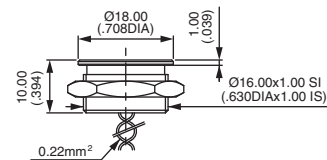


Non-illuminated, operator height 1 mm (.039)



PBAT5AF0000

Flat
PBAT5

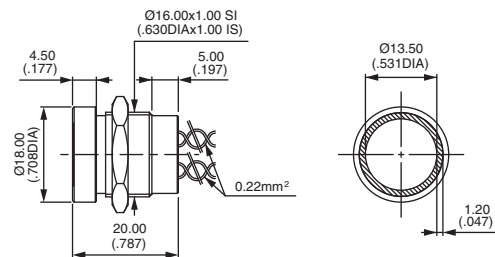


With standard illuminated ring



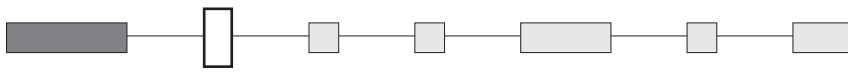
PBAR1AF000A0B

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



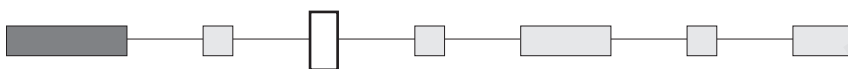
Wire colours : see "Electrical functions"

ELECTRICAL FUNCTION

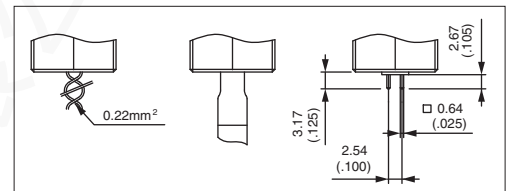


- A NO pulse
- B NC pulse
- C NO prolonged pulse - Ground connector U5735 compulsory, supplied with the switch.
- 1 ON - OFF - Requires external power supply - Cannot be combined with T5 operator.
Illumination type W only.

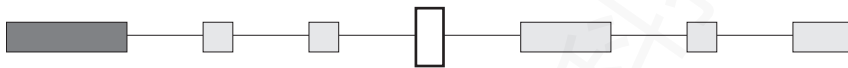
TERMINALS



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



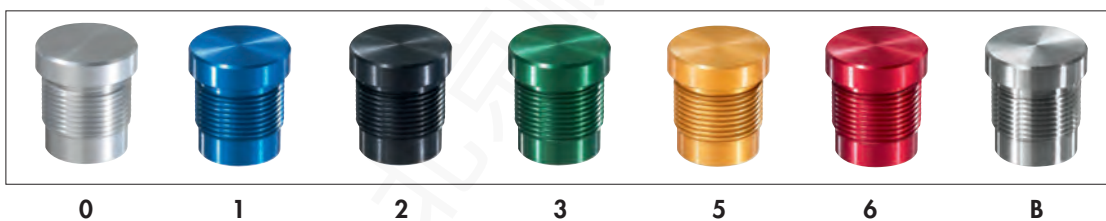
CASE COLOURS / MATERIALS



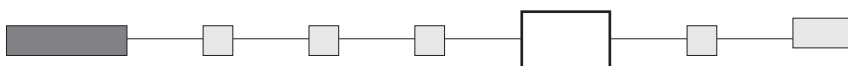
Code	Colour
0	Natural anodized aluminium
1	Blue anodized aluminium
2	Black anodised aluminium

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

Code	Colour
B	Stainless steel 316L



RATINGS



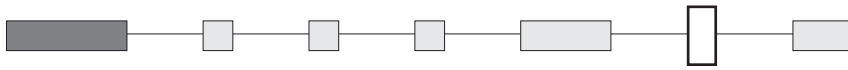
- 000 Standard
- 002 1A 24VAC or DC (NO pulse only, function A)

PBA series

Piezo switches Ø 16 (.630)

Options

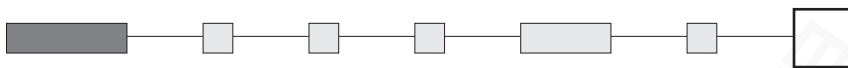
TYPE OF ILLUMINATION / VOLTAGE



Blank : non-illuminated

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

LED COLOURS



Integrated LED resistor

Blank : non-illuminated



Illuminated 1 LED *

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

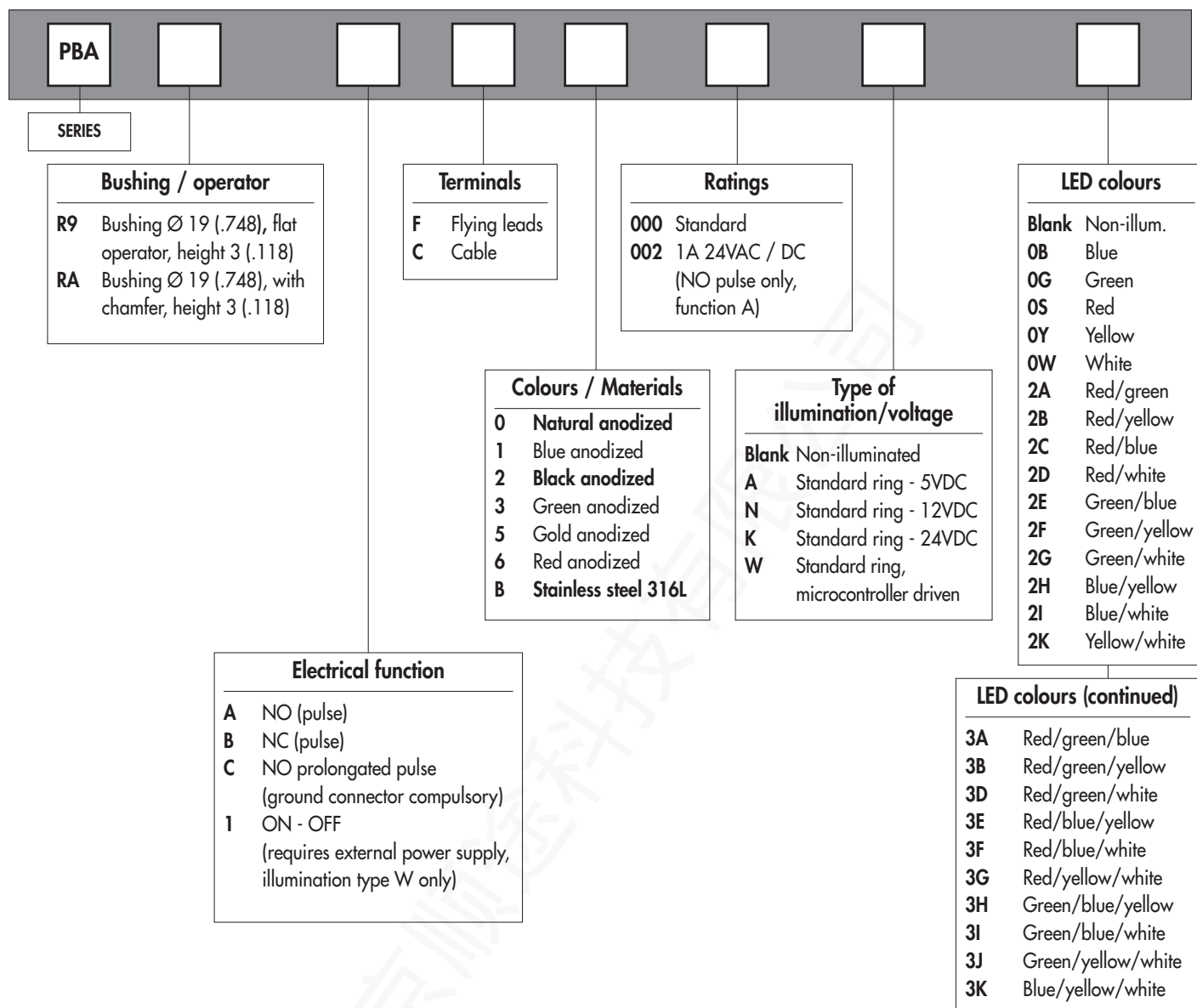
Illuminated 2 LEDs

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.



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 Always add a ground washer U5736 when the panel is non-conductive (PVC, polycarbonate).

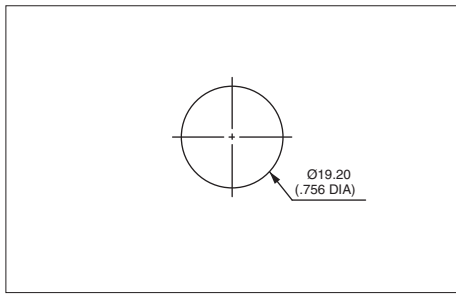


Packaging unit : 20 pieces (flying lead terminals) or 25 pieces (cable terminals)

PBA series

Piezo switches Ø 19 (.748)

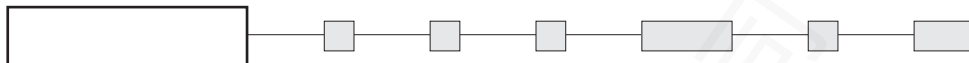
Illuminated or non-illuminated



- Operator Ø 22 mm (.866)

Shown with flying lead terminals.

MODEL STRUCTURE



B2

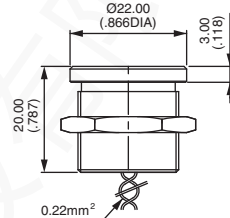
Non-illuminated - operator height 3 mm (.118)



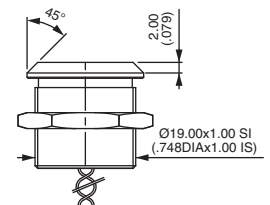
PBARAAF1000

Flat
PBAR9

With chamfer
PBARA



R9



RA

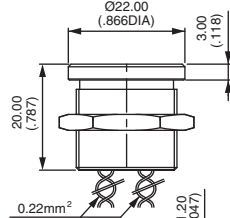
With standard illuminated ring - operator height 3 mm



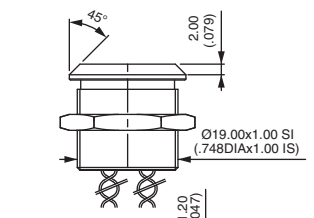
PBAR9AF0000A0S

Flat
PBAR9

With chamfer
PBARA



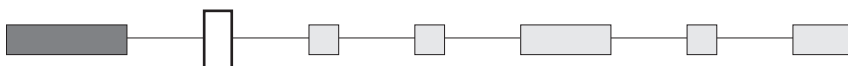
R9



RA

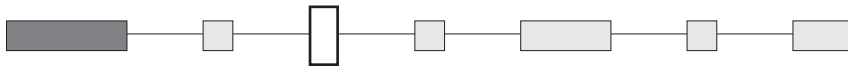
Wire colours : see "Electrical functions".

ELECTRICAL FUNCTIONS

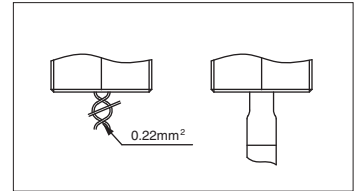


- A NO pulse
- B NC pulse
- C NO prolonged pulse - Ground connector U5736 compulsory, supplied with the switch.
- 1 ON - OFF - Requires external power supply - Illumination type W only.

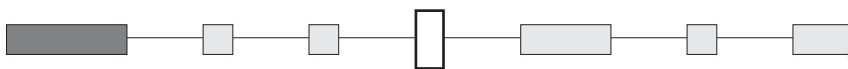
TERMINALS



F Flying leads
C Cable



CASE COLOURS / MATERIALS



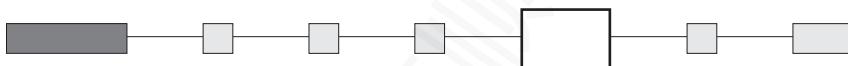
Code	Colour
0	Natural anodized aluminium
1	Blue anodized aluminium
2	Black anodised aluminium

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

Code	Colour
B	Stainless steel 316L

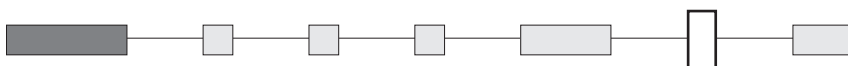


RATINGS



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

TYPE OF ILLUMINATION / VOLTAGE



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

PBA series

Piezo switches Ø 19 (.748)

Options

LED COLOURS



Blank : non-illuminated



Illuminated 1 LED *

OB : blue - **OG** : green - **OS** : red - **OY** : yellow - **OW** : white

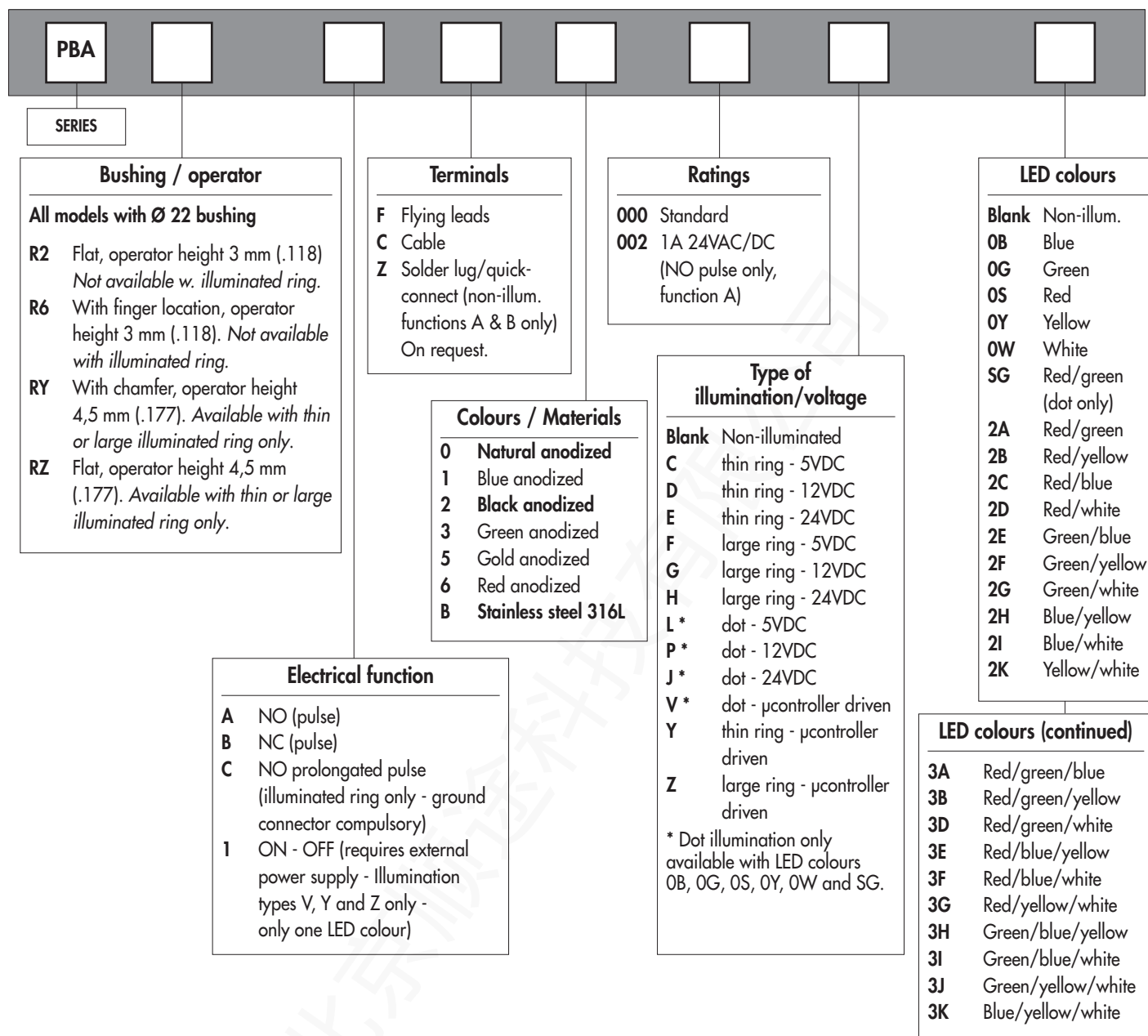
Illuminated 2 LEDs

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.



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
Always add a ground washer U5737 when the panel is non-conductive (PVC, polycarbonate).

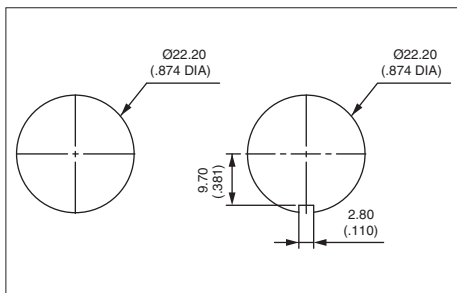


Packaging unit : 20 pieces (flying lead terminals) or 25 pieces (cable terminals)

PBA series

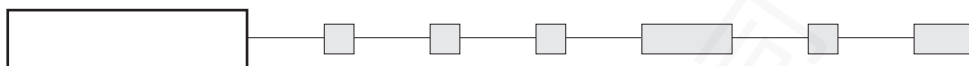
Piezo switches Ø 22 (.866)

Illuminated or non-illuminated



• Operator Ø 28 mm (1.102)

MODEL
STRUCTURE



Wire colours : see "Electrical functions".

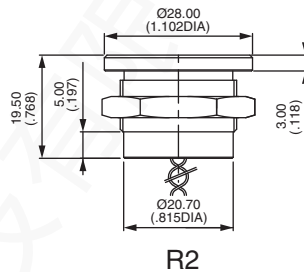
Non-illuminated - operator height 3 mm (.118)



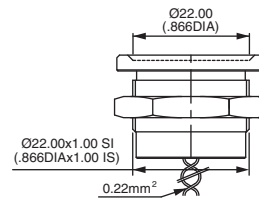
Flat
PBAR2

With finger location
PBAR6

PBAR2AF6000



R2



R6

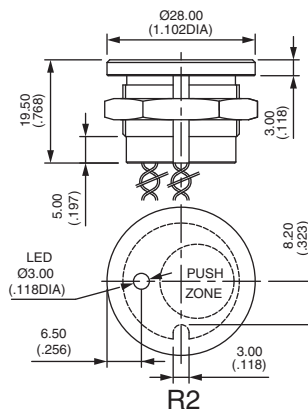
With illuminated dot - operator height 3 mm (.118)



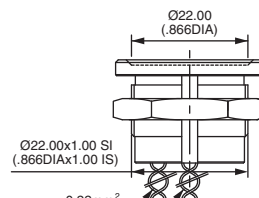
Flat
PBAR2

With finger location
PBAR6

PBAR6AF6000LOG



R2



R6

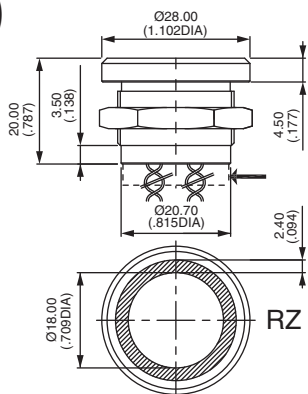
With thin illuminated ring - operator height 4,50 (.177)



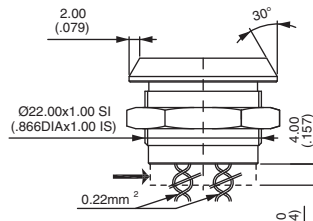
Flat
PBARZ

With chamfer
PBARY

PBARYAF0000COB



RZ



RY

→ Dimension of ON-OFF models

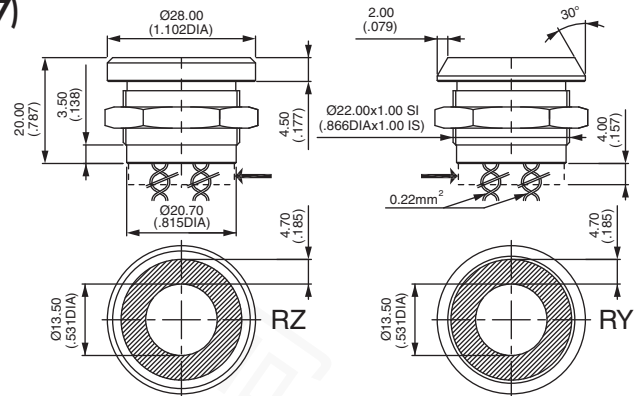
With large illuminated ring - operator height 4,50 (.177)



PBARYAF0000FOB

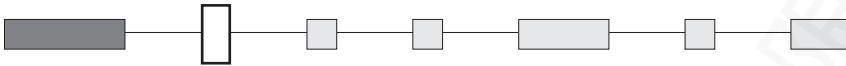
Flat
PBARZ

With chamfer
PBARY



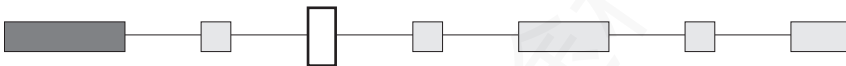
→ Dimension of ON-OFF models

ELECTRICAL FUNCTIONS

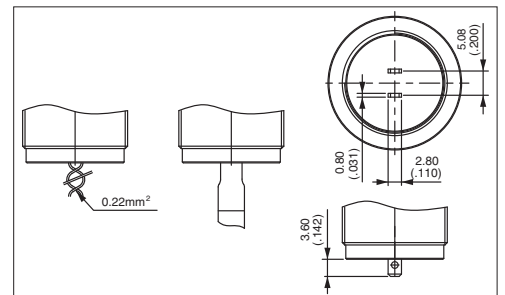


- A NO pulse
- B NC pulse
- C NO prolonged pulse (illuminated ring only) - Ground connector U5737 compulsory, supplied w. the switch.
- I ON - OFF - Requires external power supply - Illumination types V, Y and Z only - one LED colour only.

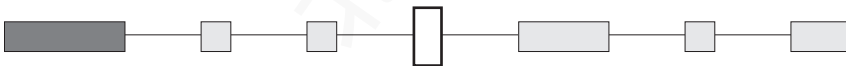
TERMINALS



- 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



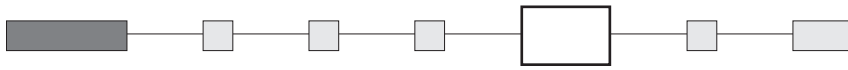
0 1 2 3 5 6 B

PBA series

Piezo switches Ø 22 (.866)

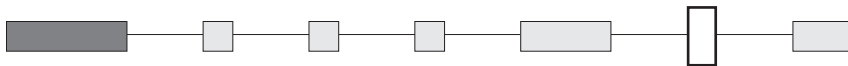
Options

RATINGS



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

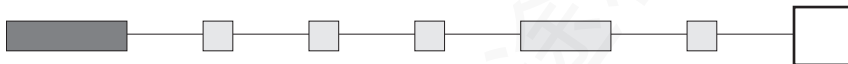
TYPE OF ILLUMINATION / VOLTAGE



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

Dot illumination only available with LED colours OB, OG, OS, OY, OW and SG.

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
 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 colour is indicated by the bottom of the product.



- 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 mm², length 300 mm (11.81)

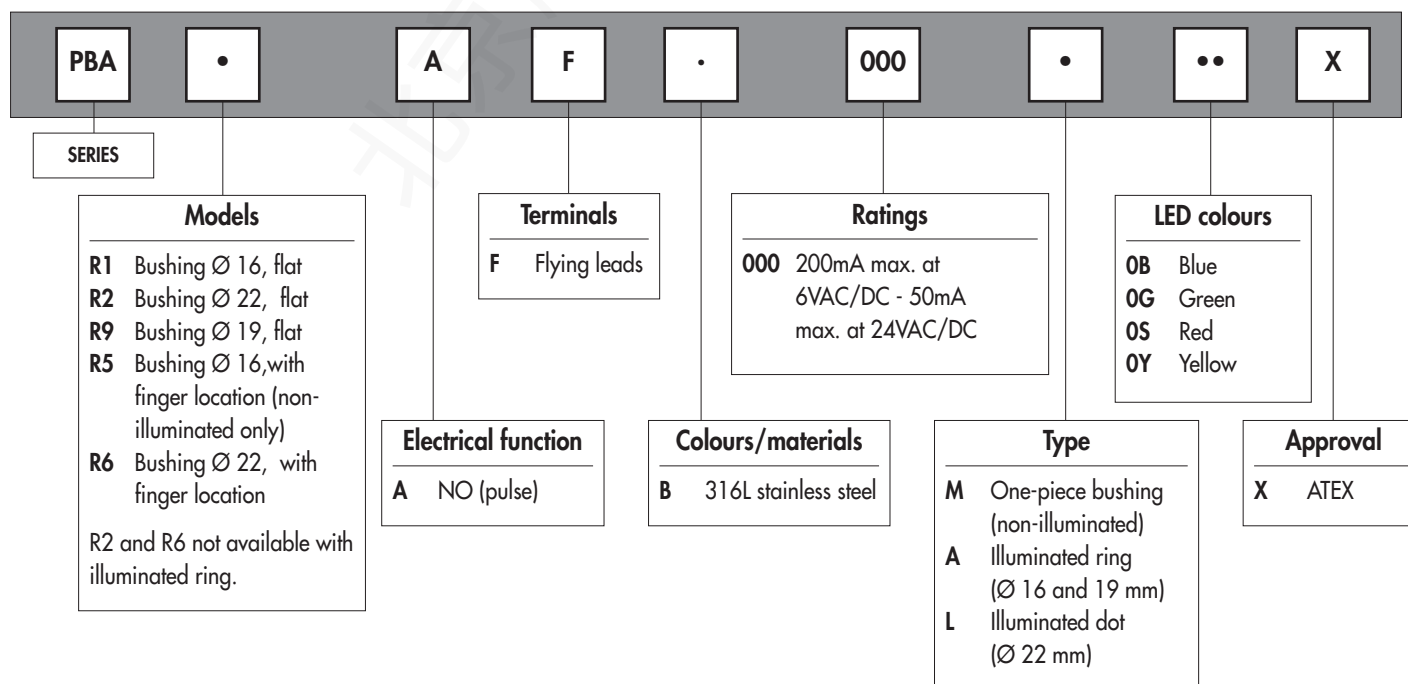
Standard hardware supplied: 1 hex nut 10-621 (19 mm ac. flats), 10-855-0 (22 mm ac. flats) or 10-856-0 (25 mm ac. flats), 1 O-Ring and 1 ground connector U5735, U5736 or U5737.

Packaging units : 20 pieces

Instructions for use :
see instruction notice NTPBA007.

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)



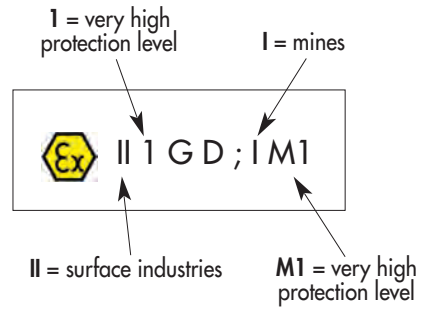
PBA series

ATEX approved piezo switches

Illuminated or non-illuminated



- Highest classifications
- Universal



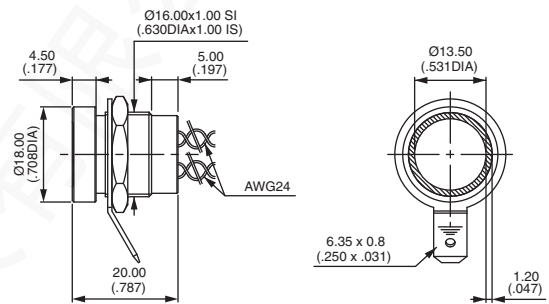
Usage : mines full of fire damp and potentially explosive atmospheres of groups IIC, IIB et IIA in T4 temperature class and/or in the presence of combustible dust (T1 35°C).

B2

Dia. 16 (.630) bushing - illuminated ring



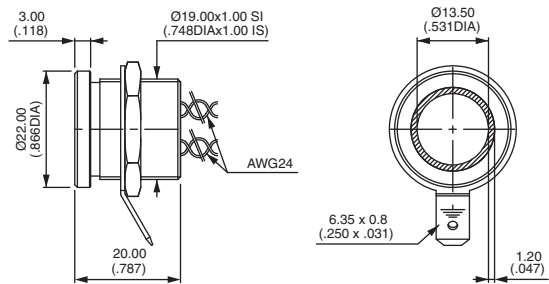
Stainless steel 316L, blue LED
PBAR1AFB000A0BX



Dia. 19 (.748) bushing - illuminated ring



Stainless steel 316L, blue LED
PBAR9AFB000A0BX



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



Stainless steel 316L
PBAR2AFB000MX

