



## Piezo Switches ++

ELECTRIC

### About Piezo Switches

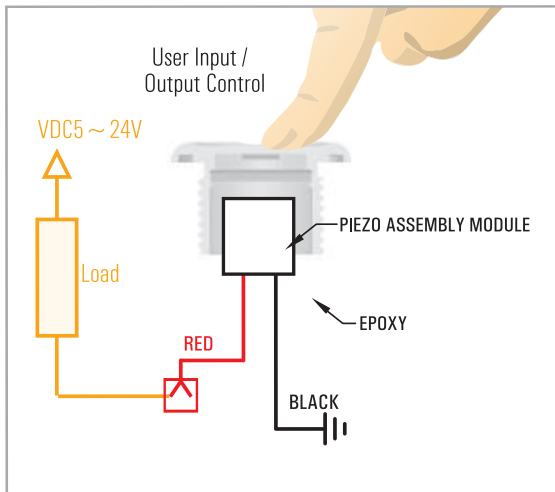
Conventional electromechanical Switch have moving parts that inevitably wear out.

The reliability of the electromechanical Switch can be reduced by contaminants such as moisture and dust that will foul contactpoints.

The solution is a Piezo Switch with no moving parts.

# Piezo Switch

## How a Piezo Switch works:



In a piezo Switch, a force applied to the Switch surface transfers to the piezo disk creating an electrical pulse. This electrical signal is converted to an expected electrical output through a customizable electronic circuit. The duration of the electrical signal depends on the speed, force and duration of actuation.

The output of the Switch is closed for a specified pulse duration depending on the electrical function chosen (see next page).

## Main Applications:



Shower  
(IP68 sealing)



Bath  
(IP68 sealing, customization)



Car wash  
(IP68 sealing, long life)



Marine  
(IP68 sealing, design)

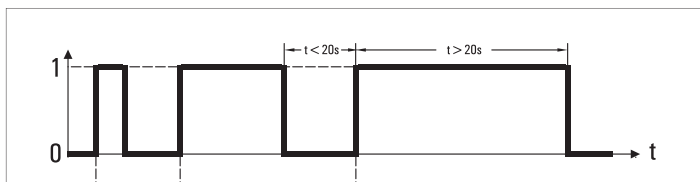


Medical  
(easy to clean surface, no retention area)

## FINGER PRESSURE

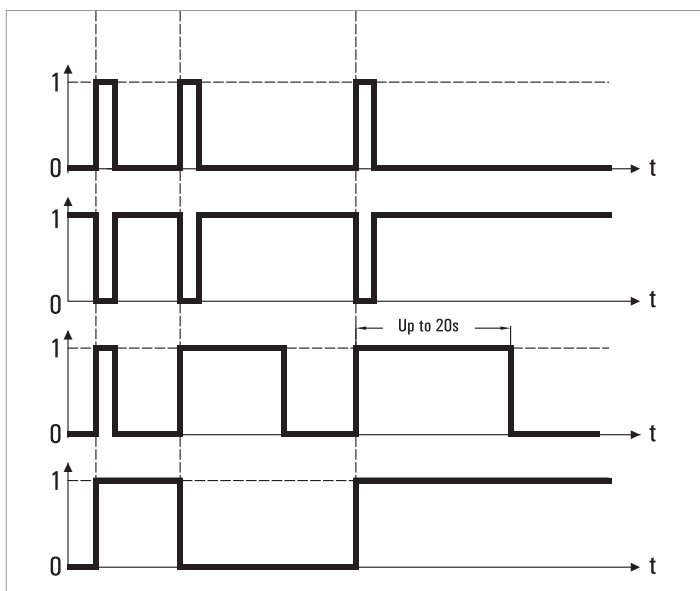
### Applied To Switch

1 = pressure  
0 = no pressure



## OUTPUT

Momentary NO (pulse)  
No external power supply required



Momentary NC (pulse)  
No external power supply required

Momentary NO  
prolongated 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: B = black, A = same colour as LED

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

# Piezo Switch

- Sealed to IP 68 and IP69K (Switch 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(Switch 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)

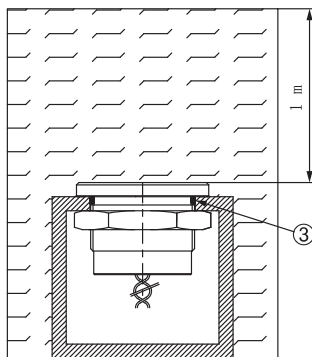
## MATERIALS

- Case : aluminium, anodized or stainless steel 316L or brass, chrome plated
- Multi-wire leads section AWG26 length 300 mm, twisted by pair
- Cable, length 300 mm, section depending on Switch model
- PC terminals : Gold or Tin plated

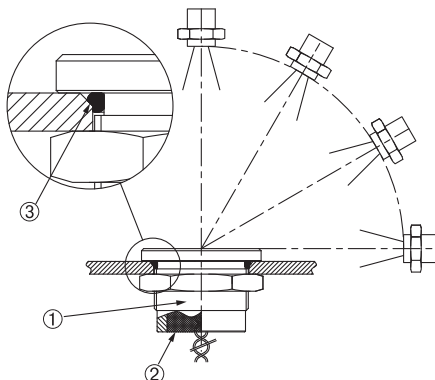
## ELECTRICAL AND GENERAL SPECIFICATIONS

- Max. current/voltage rating : 200mA 5 ~ 24VAC/DC
- Switch resistance ON : 10  $\Omega$  max.
- Switch resistance OFF : 5M  $\Omega$  min.
- Operating force : 6 to 15N
- Life expectancy : 50 million cycles
- LED consumption : Illuminated dot : 10mA - Illuminated ring : 20mA

### SEALING IP68



### SEALING IP69K



- One-piece bushing
- Epoxy sealed terminals
- 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  $\pm$  5 °C
- Flow : 14 - 16 l/mn
- Duration : 30 seconds per position

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

Tolerance : The general tolerance for dimensions in this brochure is  $\pm$  0,3 (.012).

Dimensions, specifications and data shown in this brochure are subject to change without notice.



# Piezo Switch

**Housing:**

A = Aluminum  
S = Stainless Steel 316L

**Switch Size:**

12 = 12mm  
16 = 16mm  
19 = 19mm  
22 = 22mm  
25 = 25mm  
30 = 30mm

**Colours / Materials:**

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

**Wire leads:**

Z = 2 Wire leads  
T = 3 Wire leads

**Marking:**

Custom Markings Available

**LED Colours:**

Blank Non-illum.  
B Blue  
G Green  
R Red  
Y Yellow  
W White  
RG Red/green  
RY Red/yellow  
RB Red/blue  
RW Red/white  
GB Green/blue  
GY Green/yellow  
GW Green/white  
BY Blue/yellow  
YW 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

**Type of illum./ voltage:**

**Switch Action:**

M = Momentary Action  
L = Latching Action

**Switch Status:**

NO = Normally Open  
NC = Normally Closed  
K = NO prodongated pulse

**Input/Output:**

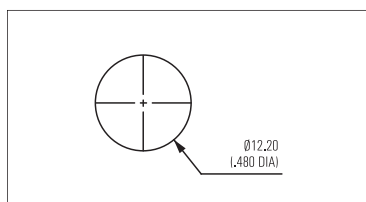
1 = 5VDC Input/Open Collector Output  
2 = 10-24VDC Input/Open Collector Output

**Illum. Options:**

Blank Non-illum.  
R = Ring  
D = Dot

**Bushing / Actuator:**

F = Flat



Shown with flying lead terminals.

KZA12

0

Z

F

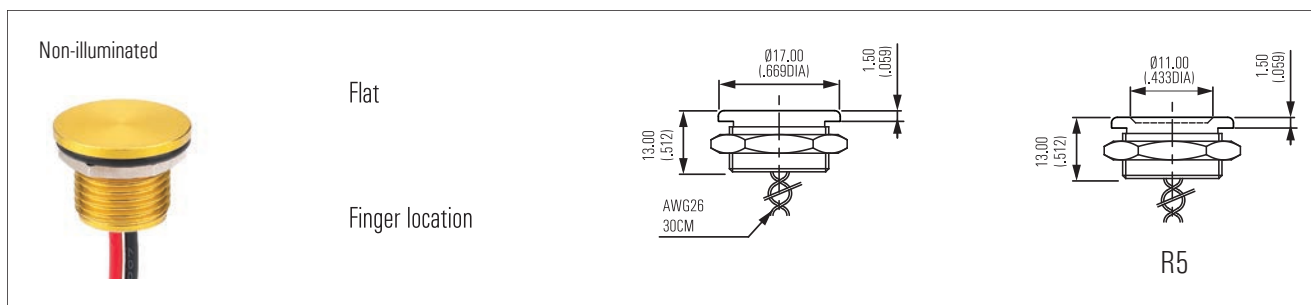
SERIES

Bushing / Actuator

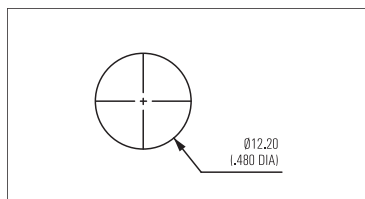
All models with Ø 12 bushing

R5 Actuator with finger location, height 1,5(.059) (non-illuminated)

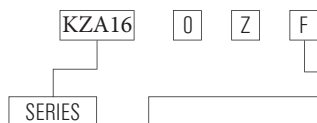
Blank Flat actuator, height 1,5(.059)



# Piezo Switch



Shown with flying lead terminals.



## Bushing / Actuator

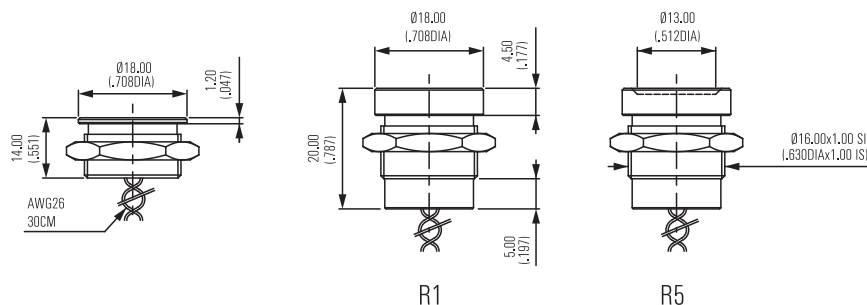
All models with Ø 16 bushing

R1 Flat actuator, height 4,50(.177)

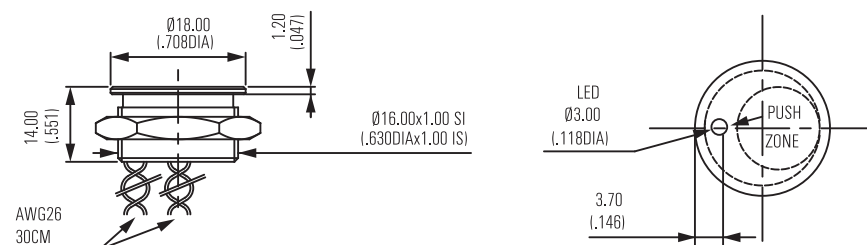
R5 Actuator with finger location, height 4,50(.177) (non-illuminated)

Blank Flat actuator, height 1,20(.047)

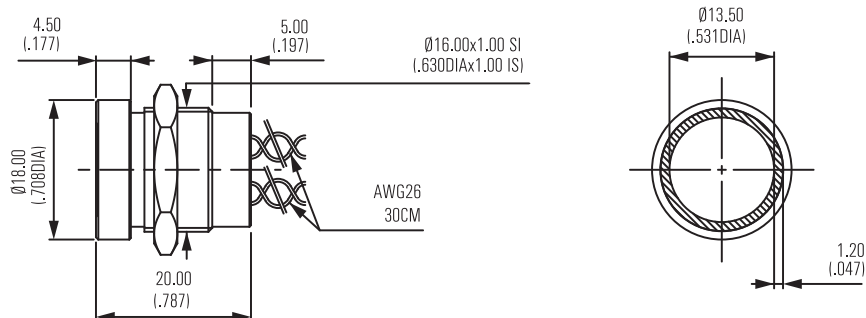
## Non-illuminated



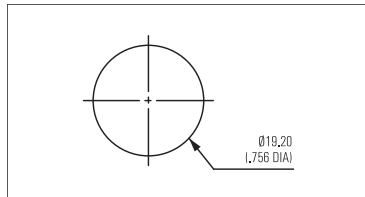
## Dot-illuminated



## Ring illuminated



## Piezo Switch



Shown with flying lead terminals.

KZA19

0

Z

F

SERIES

Bushing / Actuator

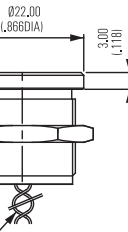
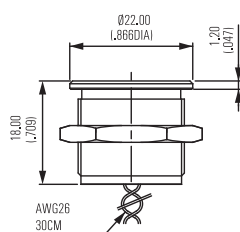
All models with Ø 19 bushing

R9 Flat actuator, height 3,00(.118)

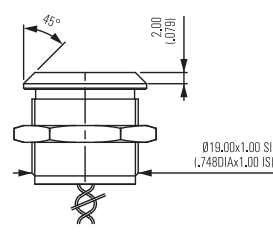
RA Actuator with chamfer, height 3,00(.118)

Blank Flat actuator, height 1,20(.047)

Non-illuminated

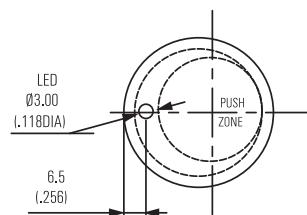
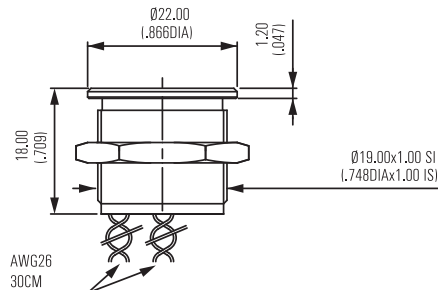


R9

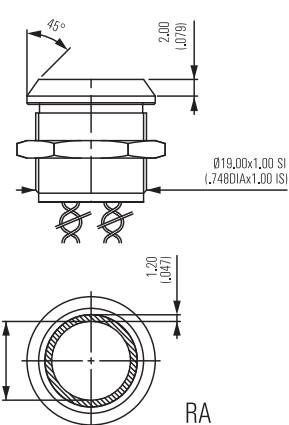
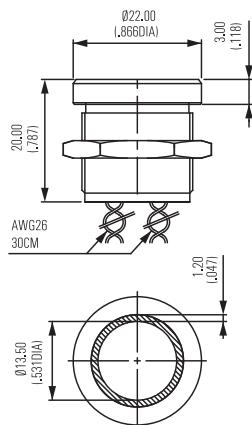


RA

Dot-illuminated

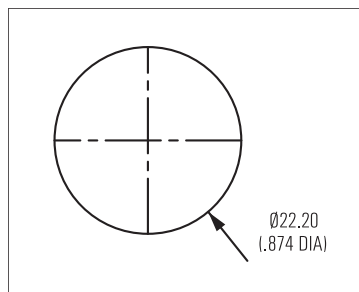


Ring illuminated



RA

# Piezo Switch



Shown with flying lead terminals.

KZA22

0

Z

F

SERIES

Bushing / Actuator

All models with Ø 22 bushing

R2 Flat actuator, height 3,00(.118) (non-illum.)

R6 Finger location, actuator height 3,00(.118) (non-illum.)

RY With chamfer, operator height 4,5 mm (.177) or large illuminated ring only

RZ Flat, operator height 4,5 mm (.177) or large illuminated ring only

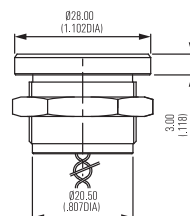
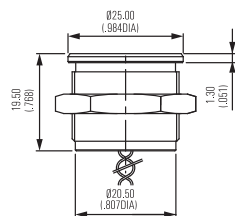
Blank Flat actuator, height 1,30(.051)

Non-illuminated

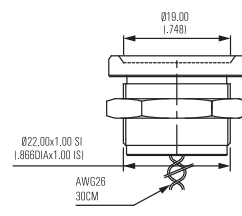


Flat

Finger location



R2



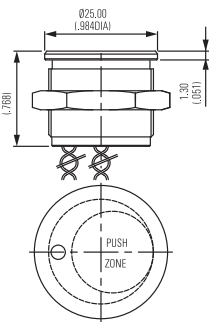
R6

Dot illuminated

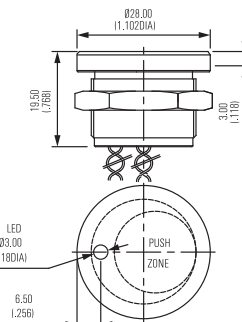


Flat

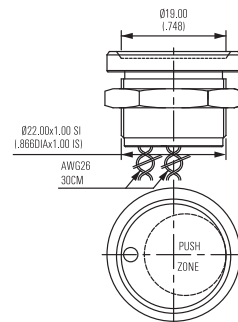
Finger location



R2



R6

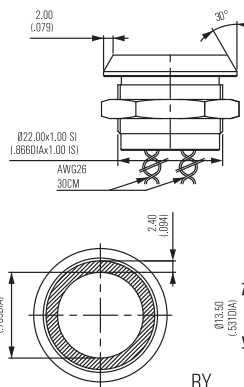
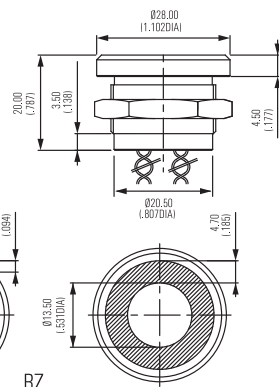


Ring illuminated

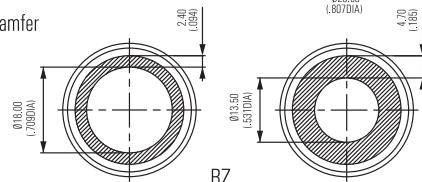


Flat

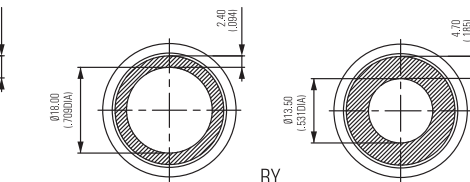
Chamfer



RY

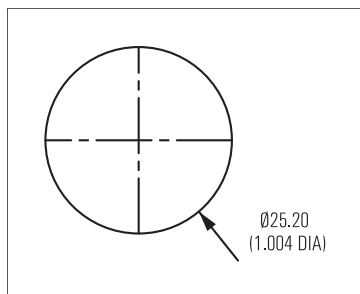


RZ





# Piezo Switch



Shown with flying lead terminals.

KZA25

0

Z

F

SERIES

Bushing / Actuator

All models with Ø 25 bushing

R2 Flat actuator, height 3,00(.118) (non-illum.)

R6 Finger location, actuator height 3,00(.118) (non-illum.)

RY With chamfer, operator height 4,5 mm (.177) or large illuminated ring only

RZ Flat, operator height 4,5 mm (.177) or large illuminated ring only

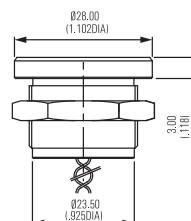
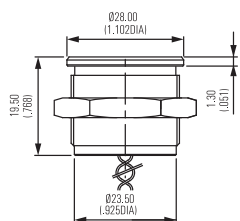
Blank Flat actuator, height 1,30(.051)

Non-illuminated

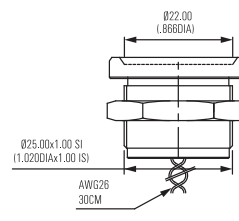


Flat

Finger location



R2



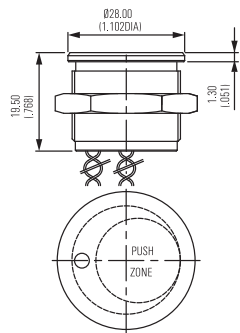
R6

Dot illuminated

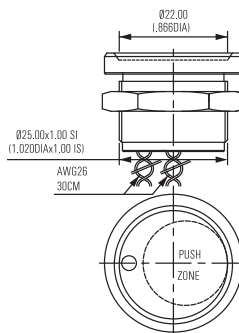
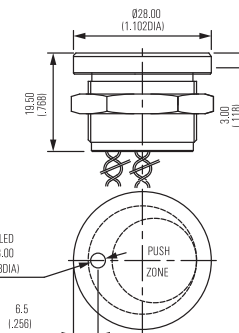


Flat

Finger location



R2



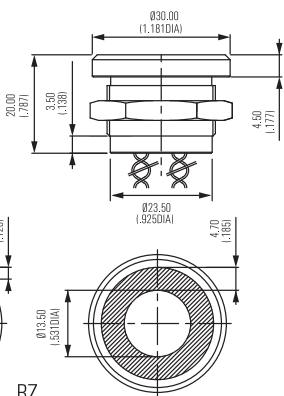
R6

Ring illuminated

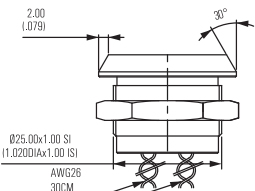


Flat

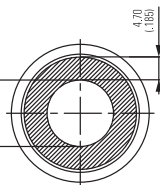
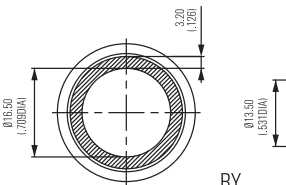
Chamfer



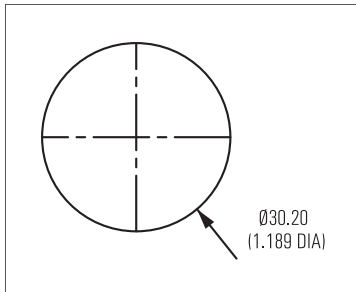
RZ



RY



# Piezo Switch



Shown with flying lead terminals.

KZA30

0

Z

F

SERIES

Bushing / actuator

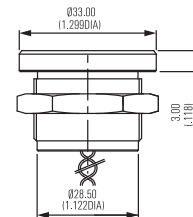
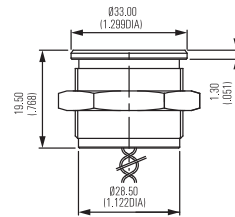
Flat actuator, height 3,00(.118) (non-illum.)

Non-illuminated

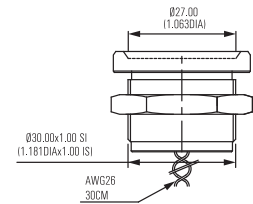


Flat

Finger location



R2



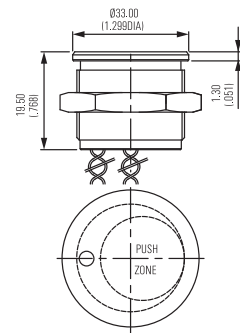
R6

Dot illuminated



Flat

Finger location



LED

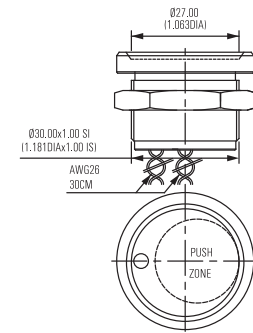
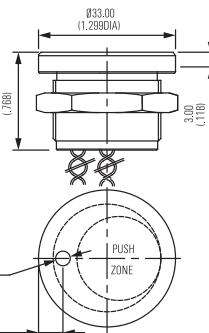
Ø3.00

(0.118DIA)

6.50

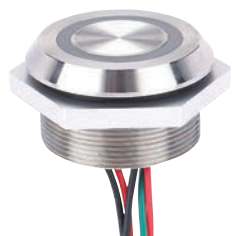
(0.256)

R2



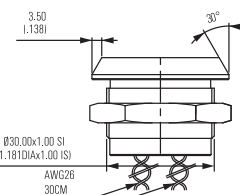
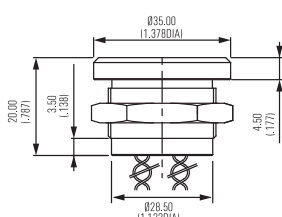
R6

Ring illuminated

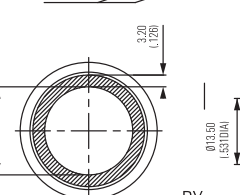


Flat

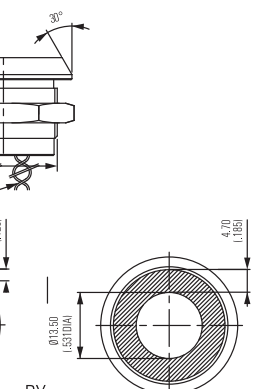
Chamfer



R2



R2



R6