Piezo Switches

PW1L-R6AFB002
22mm with LED dot & finger guide

PW1L-RYAFB002
22mm chamfer with LED ring

PN1L-M2AFB002
30mm flush with LED ring

PN1L-M4AFB002
30mm with side-viewable LED ring

PART NUMBERS

Part Number	Description	Panel cut size	LED voltage ①	LED color ②
PW1L-R6AFB002①②	22mm Piezo switch with LED dot & finger guide	Ø22mm	P: Dot / 12VDC J: Dot / 24VDC	0B: Blue 0G: Green 0S: Red 0Y: Yellow 0W: White SG: Red/Green[1]
PW1L-RYAFB002①②	22mm Piezo switch with LED ring	Ø22mm	D: Ring / 12VDC E: Ring / 24VDC	0B: Blue 0G: Green 0S: Red 0Y: Yellow 0W: White 2A: Red/Green[2]
PN1L-M2AFB002①②	30mm flush Piezo switch with LED ring	Ø30mm	D: Ring / 12VDC E: Ring / 24VDC	0B: Blue 0G: Green 0S: Red 0Y: Yellow 0W: White 2A: Red/Green[2]
PN1L-M4AFB002①②	30mm Piezo switch with side viewable LED ring	Ø30mm	D: Ring / 12VDC E: Ring / 24VDC	0B: Blue 0G: Green 0S: Red 0Y: Yellow 0W: White 2A: Red/Green[2]

SPARE PARTS

Part Number	Description	Size	Material
PW9Z-LNM	Spare 22mm Piezo Switch Hex Locking Nut	M22x1	Metal
PN9Z-LN	Spare 30mm Piezo Switch Hex Locking Nut	M30x1.5	Plastic

Note:
1. See Equivalent Circuit Diagram-2 on page 3 for details.
2. See Equivalent Circuit Diagram-2 on page 4, 5 & 6 for details.

PRODUCT DESCRIPTION

Designed for demanding applications where reliability is critical, Piezo switches are based on solid-state output allowing for an exceptionally long lifespan. The flat metal surface is completely closed, preventing ingress of liquids and other contaminants and is perfect for surface cleaning, required in medical and food processing industries. High performance sealing up to IP68 and IP69K is achieved with the single piece construction of the switch.

The Piezo switch series includes a 22mm or 30mm diameter housing with ring or dot illumination, various LED color options, including dual color.

KEY FEATURES

- 22 or 30mm diameter stainless steel 316L housing
- Sealing up to IP68 & IP69K (switches mounted on panel)
- Flush mount bezel
- Easy to clean metal surface
- Solid state switch, no moving parts
- Over 50 million lifecycles
- Dot or ring illumination options
- Side viewable illumination models

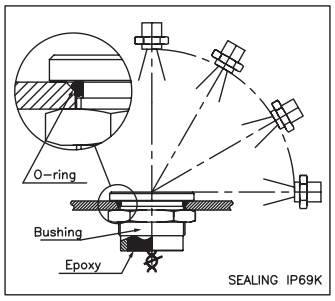
PIEZO SWITCH SPECIFICATIONS

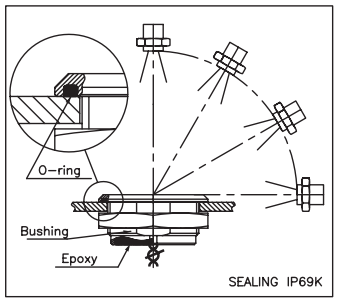
PART NUMBER		PW1L-R6AFB002 ①②	PW1L-RYAFB002 ①②	PN1L-M2AFB002 ①②	PN1L-M4AFB002 ①②
Construction		Momentary, solid state pushbutton, dot LED indicator, 3mm mount bezel with finger guide	Momentary, solid state pushbutton, LED ring illumination, 4.5mm chamfered bezel	Momentary, solid state pushbutton, LED ring illumination, 2.5mm flush mount bezel	Momentary, solid state pushbutton, LED side-viewable ring illumination, 5.5mm mount bezel
Housing diameter		22mm	22mm	30mm	30mm
MATERIALS	Housing	Stainless steel 316L	Stainless steel 316L	Stainless steel 316L	Stainless steel 316L
	Wire sealing	Epoxy	Epoxy	Epoxy	Epoxy
	Illuminated ring		Polycarbonate (translucent when off)	Polycarbonate (translucent when off)	Polycarbonate (translucent when off)
	Locking nut	Stainless steel	Stainless steel	PA6.6 nylon - black	PA6.6 nylon - black
ELECTRICAL	Switch effect	Pulse once activated (pulse duration depending on actuation force and speed)			
	Electrical function	1 Normally Open (NO) contact			
	Maximum ratings	1A 24V AC or DC			
	Electrical life	50 million cycles			
	Switch resistance ON / OFF	ON: 10 ohms max / OFF: 5 M ohms min			
	LED consumption	10mA @ 12VDC or 24VDC			20mA @ 12VDC or 24VDC
	Insulation resistance	1000 Mohms minimum at 500VDC			
	Dielectric strength	500 Vrms 50Hz min between outputs and housing			
MECHANICAL	Torque	2.5Nm (1.8lb-ft) min - 3.0Nm (2.2lb-ft) max applied to locking nut		1.5Nm (1.1lb-ft) min - 10.0Nm (7.4lb-ft) max applied to locking nut	
	Operating force	2.00N (0.45lb) - 6.00N (1.35lb)		6.00N (1.35lb) - 12.00N (2.70lb)	
	Panel thickness	1.5mm min to 6.5mm max		1.5mm min to 6mm max	
Temperature range		-40°C to +75°C (-40°F to +167°F)			
Sealing		IP68 according to IEC 60529; IP69K according to DIN 40050-9			
Vibration resistance		10-500Hz / 10g per IEC 60068-2-6			
EMC		EN61000-4 & EN61000-6-2			

IP69K SEALING

TEST CONDITIONS:

- Pressure: 80-120 bars
- Distance: 150mm
- Temperature: 80°C ± 5°
- Flow: 14-16 l/m
- Duration: 30 seconds per position

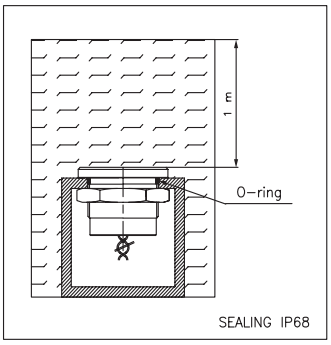


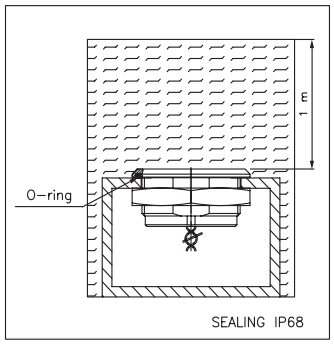


IP68 SEALING

TEST CONDITIONS:

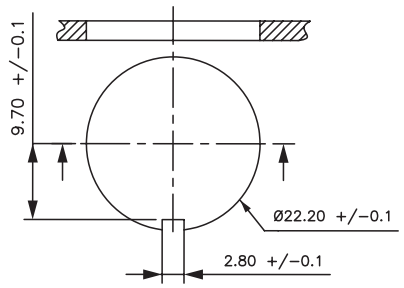
Continuous immersion in water



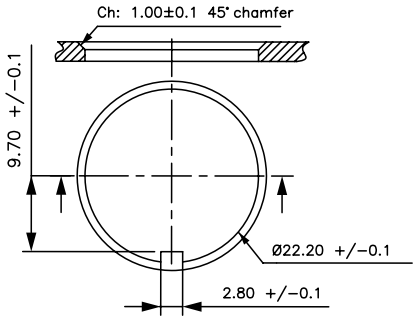


PIEZO SWITCH PW1L-R6AFB002___
PANEL CUT OUT

All dimensions in mm

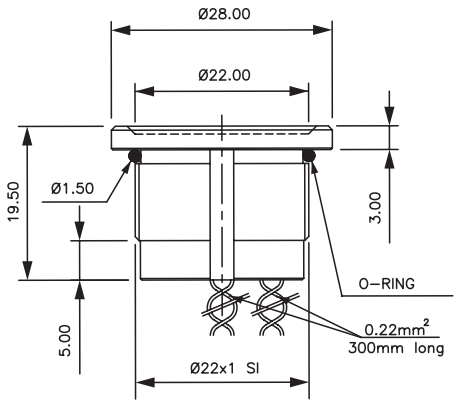


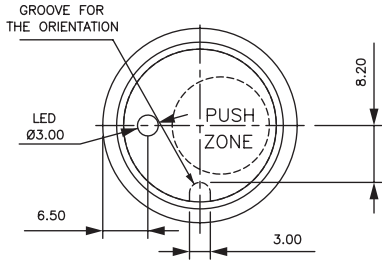
IP68 PANEL CUT OUT



IP69K PANEL CUT OUT

DIMENSIONS



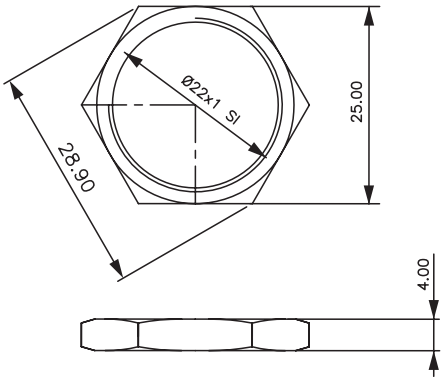


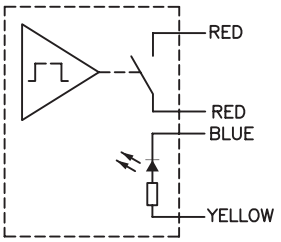
PW1L−R6AFB002___

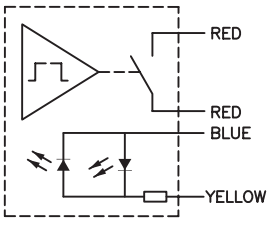
Type of Illumination−Voltage	
P	DOT − 12V
J	DOT − 24V

LED COLORS		DIAGRAM TYP.
OB	BLUE	1
OG	GREEN	1
OS	RED	1
OY	YELLOW	1
OW	WHITE	1
SG	RED/GREEN	2

PW9Z-LNM







EQUIVALENT CIRCUIT DIAGRAM−1

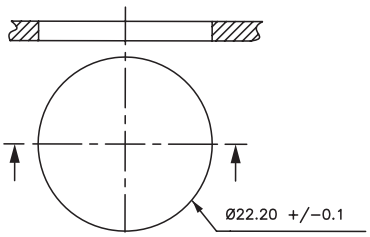
	RED WIRES	N.O. CONTACT Max.rating: 1A 24V AC/DC
LED COLOR	YELLOW WIRE	LED +12V DC or +24V DC
	BLUE WIRE	LED GND

EQUIVALENT CIRCUIT DIAGRAM−2

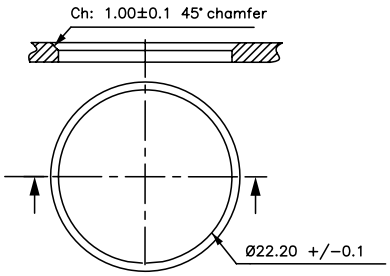
		RED WIRES	N.O. CONTACT Max.rating: 1A 24V AC/DC
LED COLOR	GREEN	YELLOW WIRE	LED +12V DC or +24V DC
		BLUE WIRE	LED GND
LED COLOR	RED	YELLOW WIRE	LED GND
		BLUE WIRE	LED +12V DC or +24V DC

PIEZO SWITCH PW1L-RYAFB002___
PANEL CUT OUT

All dimensions in mm

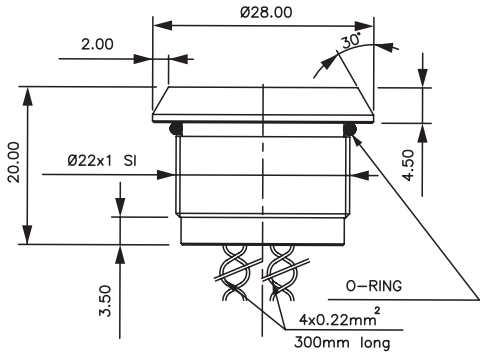


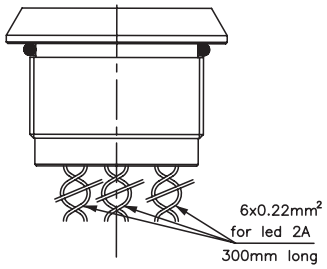
IP68 PANEL CUT OUT



IP69K PANEL CUT OUT

DIMENSIONS



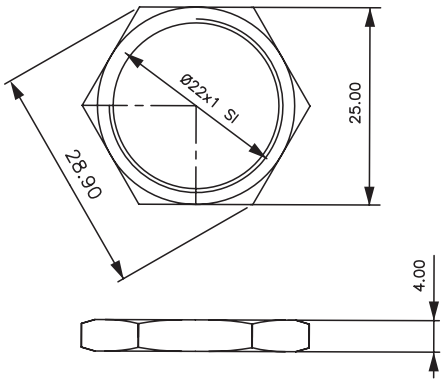


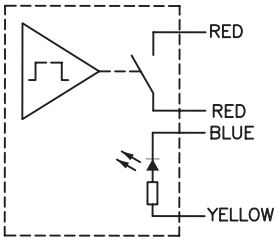
PW1L−RYAFB002___

Type of Illumination−Voltage	
D	Thin ring 12V
E	Thin ring 24V

LED COLORS		DIAGRAM TYP.
0B	BLUE	1
0G	GREEN	1
0S	RED	1
0Y	YELLOW	1
0W	WHITE	1
2A	RED/GREEN	2

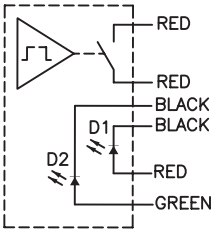
PW9Z-LNM





EQUIVALENT CIRCUIT DIAGRAM−1

	RED WIRES	N.O. CONTACT Max.rating: 1A 24V AC/DC
LED COLOR	YELLOW WIRE	LED +12V DC or +24V DC
	BLUE WIRE	LED GND

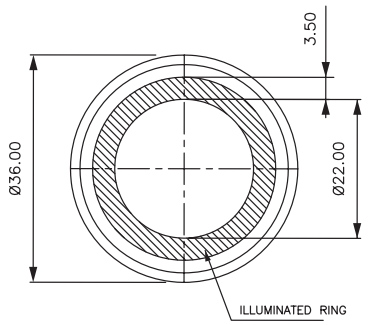


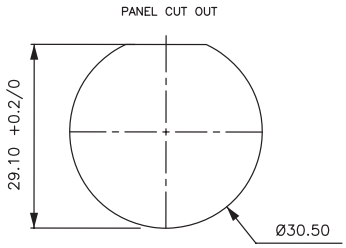
EQUIVALENT CIRCUIT DIAGRAM−2

		RED WIRES	N.O. CONTACT Max.rating: 1A 24V AC/DC
LED COLOR D2−GREEN		GREEN WIRE	LED +12V DC or +24V DC
		BLACK WIRE	LED GND
LED COLOR D1−RED		BLACK WIRE	LED GND
		RED WIRE	LED +12V DC or +24V DC

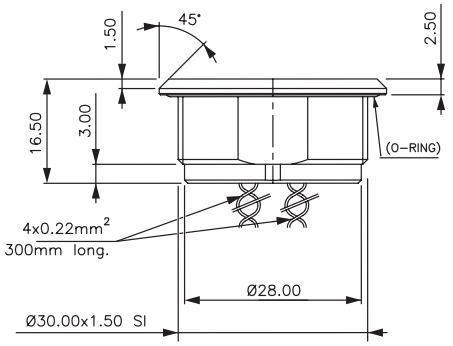
PIEZO SWITCH PN1L-M2AFB002___
PANEL CUT OUT

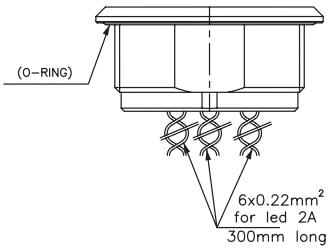
All dimensions in mm



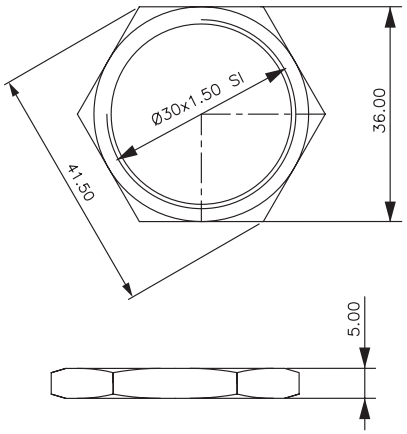


DIMENSIONS





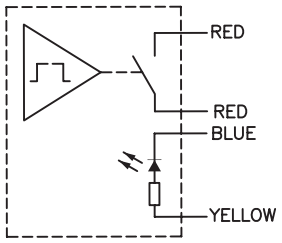
PN9Z-LN



PN1L-M2AFB002___

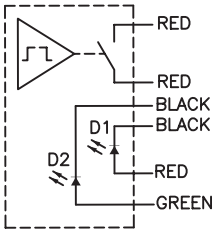
Type of Illumination-Voltage	
D	12V
E	24V

LED COLORS		DIAGRAM TYP.
0B	BLUE	1
0G	GREEN	1
0S	RED	1
0Y	YELLOW	1
0W	WHITE	1
2A	RED/GREEN	2



EQUIVALENT CIRCUIT DIAGRAM-1

	RED WIRES	N.O. CONTACT Max.rating: 1A 24V AC/DC
LED COLOR	YELLOW WIRE	LED +12V DC or +24V DC
	BLUE WIRE	LED GND

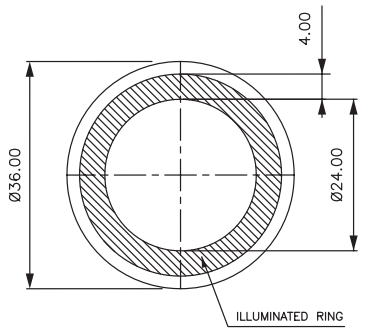


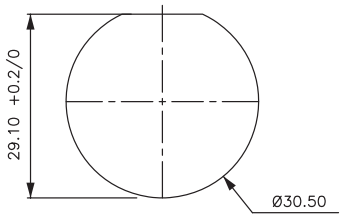
EQUIVALENT CIRCUIT DIAGRAM-2

		RED WIRES	N.O. CONTACT Max.rating: 1A 24V AC/DC
LED COLOR	D2-GREEN	GREEN WIRE	LED +12V DC or +24V DC
		BLACK WIRE	LED GND
LED COLOR	D1-RED	BLACK WIRE	LED GND
		RED WIRE	LED +12V DC or +24V DC

PIEZO SWITCH PN1L-M4AFB002___
PANEL CUT OUT

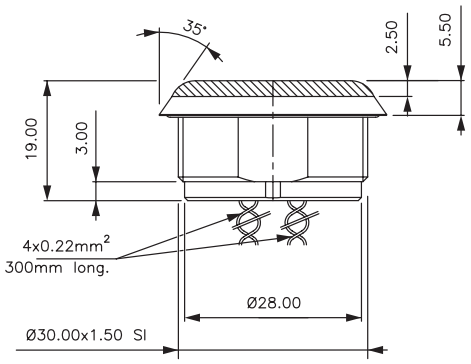
All dimensions in mm

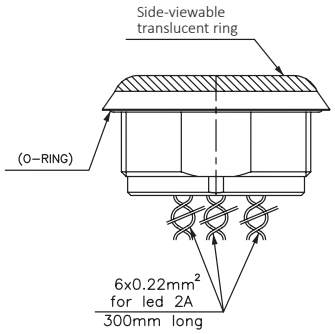




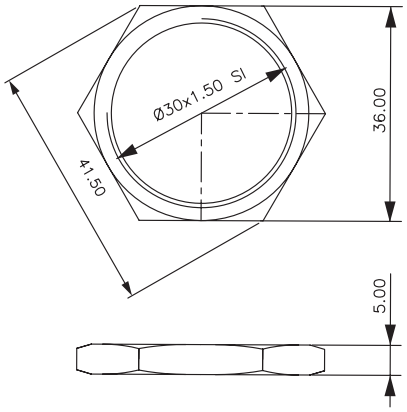
PANEL CUT OUT

DIMENSIONS





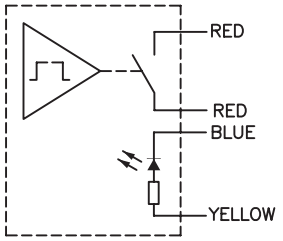
PN9Z-LN



PN1L-M4AFB002___

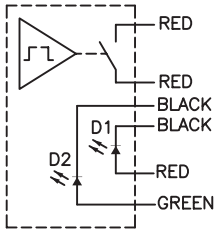
Type of Illumination-Voltage	
D	12V
E	24V

LED COLORS		DIAGRAM TYP.
0B	BLUE	1
0G	GREEN	1
0S	RED	1
0Y	YELLOW	1
0W	WHITE	1
2A	RED/GREEN	2



EQUIVALENT CIRCUIT DIAGRAM-1

	RED WIRES	N.O. CONTACT Max.rating: 1A 24V AC/DC
LED COLOR	YELLOW WIRE	LED +12V DC or +24V DC
	BLUE WIRE	LED GND



EQUIVALENT CIRCUIT DIAGRAM-2

		RED WIRES	N.O. CONTACT Max.rating: 1A 24V AC/DC
LED COLOR	D2-GREEN	GREEN WIRE	LED +12V DC or +24V DC
		BLACK WIRE	LED GND
LED COLOR	D1-RED	BLACK WIRE	LED GND
		RED WIRE	LED +12V DC or +24V DC

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