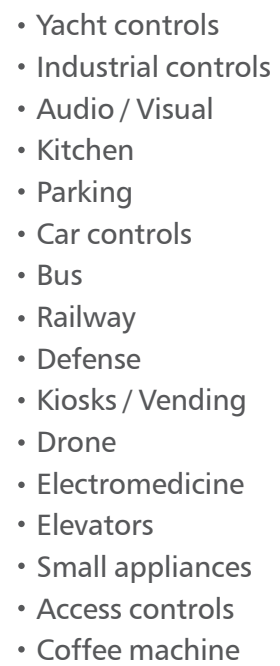

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Degrees of IP protection

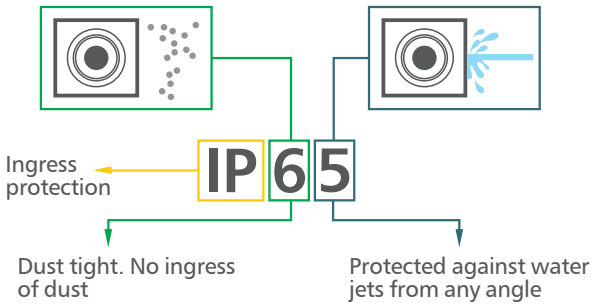
IP is an acronym "Ingress Protection". It is a measurement of the protection an item will have against solid objects (dust, sand, dirt, etc.) and liquids. An IP rating is comprised of 2 numbers. The first number refers to the protection against solid objects (dust, etc.) and the second number refers to protection against liquids.

What is an IP rating?

Each IP rating has two numbers, both of which give you information about the protection level.
A higher number means greater protection against solids and liquids.
- The first number (0-6) refers to the level of protection against solid objects and moving parts, such as dust, debris, or other solid matter.
- The second number (0-8) references the level of liquid and moisture protection.
Take a look at the chart below to better understand the protection offered with each number.

IP rating chart

IP ratings are represented by combining the first and second digits of the following columns.



Degrees of IK protection

The IK rating is an international code which measures the degree of protection against mechanical wear and tear as well as the amount of impact a specific fixture can take. Essentially it is a measure of a fixtures robustness and durability.

So why is a fixtures IK rating important and when do they become relevant when choosing a fixture?

If you are choosing a fixture which will be fitted within a high traffic area such as street, highway or other commercial environments, then it's important to choose a fixture with an appropriate IK rating.
If a fixture was to become damaged, it could result in the fixture failing to work efficiently, or worse still, failing completely.
You don't need a fixture which is highly resistant if there is little or no risk of impact. So, analyzing your risk of impact is the first step in deciding if you need a fixture with a high IK rating. It's not just high traffic areas which need IK rated fixtures, but if the area is prone to vandalism it's a good idea too.
For areas of low risk an IK rating of IK07 and below is ideal. IK08 is great for areas which provide a reasonable risk of impact, whereas for maximum protection in places such as parks, schools, prisons and subways IK10 is essential.

IK rating chart

The degree of mechanical protection is identified by a code that consists of the letters IK followed by two digits:

1 st DIGIT - SOLID	Degree of protection against solid objects
0	No protection
1	Protected against a solid object greater than 50mm, such as a hand
2	Protected against a solid object greater than 12.5mm, such as a finger
3	Protected against a solid object greater than 2.5mm, such as a small tool
4	Protected against a solid object greater than 1.0mm, such as a wire
5	Dust protected. Prevents ingress of dust sufficient to cause harm
6	Dust tight. No ingress of dust

2 nd DIGIT- WATER	Degree of protection against water
0	No protection
1	Protected against water drops
2	Protected against water drops at a 15-degree angle
3	Protected against water spray at a 60-degree angle
4	Protected against water splashing from any angle
5	Protected against water jets from any angle
6	Protected against powerful jets from and temporary flooding
7	Protected against the effects of temporary submersion in water(30 minutes at 0.15 to 1 meter)
8	Protected against the effects of permanent submersion in water(up to 3 meters). Depth specified by manufacturer

IK number	Energy	Equivalent impact
0	Non-protected	No protection
1	Protected against 0.14 joules impact	Equivalent to impact of 0.25 kg mass dropped from 56 mm above impacted surface
2	Protected against 0.2 joules impact	Equivalent to impact of 0.25 kg mass dropped from 80 mm above impacted surface
3	Protected against 0.35 joules impact	Equivalent to impact of 0.25 kg mass dropped from 140 mm above impacted surface
4	Protected against 0.5 joules impact	Equivalent to impact of 0.25 kg mass dropped from 200 mm above impacted surface
5	Protected against 0.7 joules impact	Equivalent to impact of 0.25 kg mass dropped from 280 mm above impacted surface
6	Protected against 1 joules impact	Equivalent to impact of 0.25 kg mass dropped from 400 mm above impacted surface
7	Protected against 2 joules impact	Equivalent to impact of 0.5 kg mass dropped from 400 mm above impacted surface
8	Protected against 5 joules impact	Equivalent to impact of 1.7 kg mass dropped from 300 mm above impacted surface
9	Protected against 10 joules impact	Equivalent to impact of 5 kg mass dropped from 200 mm above impacted surface
10	Protected against 20 joules impact	Equivalent to impact of 5 kg mass dropped from 400 mm above impacted surface

Non-illuminated



RoHS COMPLIANCE

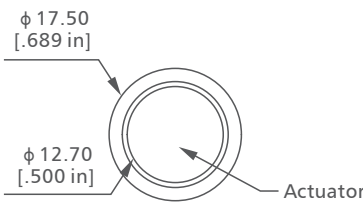


Anti Vandal Switch
Ø 12mm

Order Code

Series	Actuator Options	Terminal Options	Function Options	Material Options	Actuator Color Options
 V12	 B-Round	 P-Solder lug (2.0X0.5) NONE-Screw	 NONE-Momentary 1NO	 S-Stainless steel N-Nickel plated brass A-Zin-Al alloy black color	 W-White Y-Yellow B-Blue G-Green R-Red BK-Black

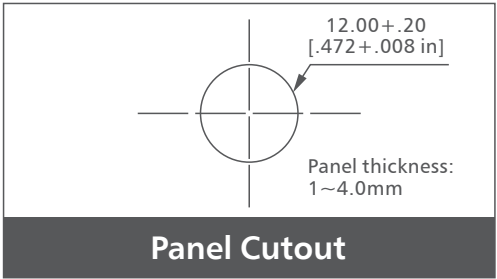
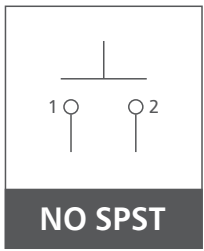
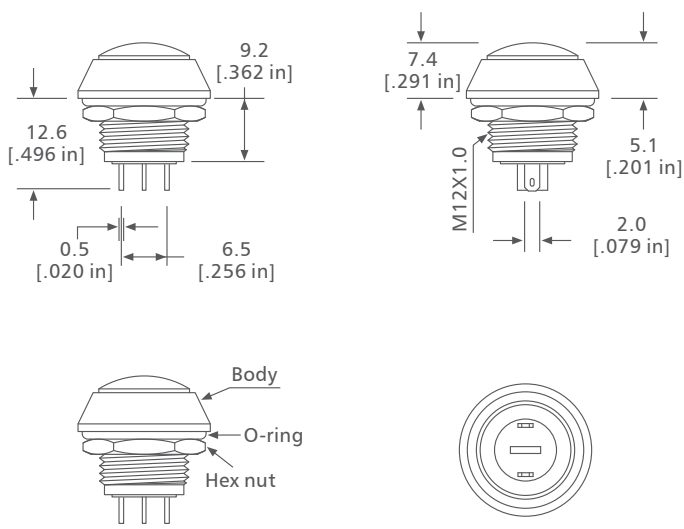
Description



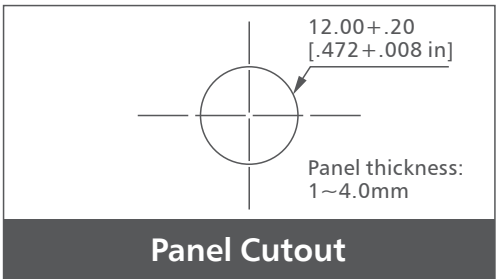
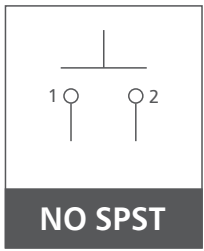
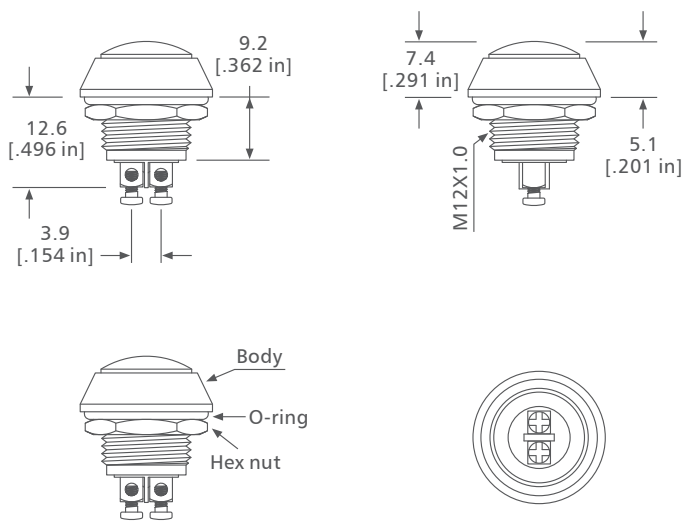
Technical Data

Type	V12-B-S	V12-B-N	V12-B-A
Illuminated options	Non-illuminated		
Front shape	Round		
Terminal	Screw / Solder lug (2.0X0.5)		
Max. switch rating	2A 48VDC		
Contact resistance	≤ 50m Ω		
Insulation resistance	≥ 1000m Ω		
Dielectric strength	2000VAC		
Operation temp.	-20°C ~ +55°C		
Mechanical life	1,000,000 Cycles		
Electrical life	200,000 Cycles		
Contact material	Silver alloy		
Torque	5~14Nm		
Operation pressure	Approx. 5N		
Protection	IP65 / IK08		
Material			
Actuator	Stainless steel / Brass / PBT		
Body	Stainless steel	Nickel plated brass	Zin-al alloy
Base	PBT		
Color	R/G/Y/O/B/W/BK		

Solder Terminal



Screw Terminal



RoHS COMPLIANCE

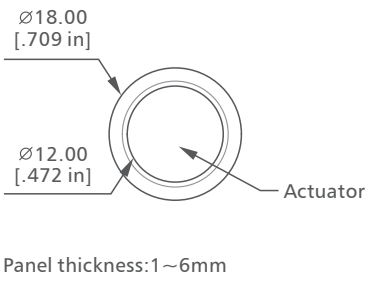


Anti Vandal Switch
Ø 16mm

Order Code

Series	Actuator Options	Terminal Options	Function Options	Material Options	Graphic Options
V16	F-Flat H-High B-Domed	P-Solder lug (2.8X0.5) NONE-Screw	Momentary 1-NO 2-NC	S-Stainless steel N-Nickel plated brass A-Anodized aluminum G-Gold plated brass	NONE-Non-marking LE-Laser etched

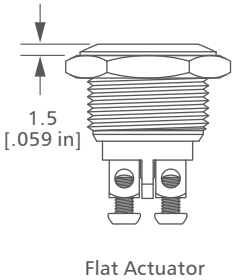
Description



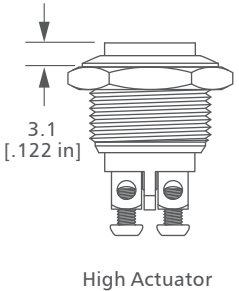
Technical Data

Type	V16-F	V16-B	V16-H
Actuator options	Flat	Domed	High
Terminal	Screw / Solder lug (2.8X0.5)		
Max. switch rating	2A 48VDC		
Contact resistance	≤ 50m Ω		
Insulation resistance	≥ 1000m Ω		
Dielectric strength	2000VAC		
Operation temp	-20°C ~ +55°C		
Mechanical life	1,000,000 cycles		
Electrical life	200,000 cycles		
Contact material	Silver alloy		
Torque	5~14Nm		
Operation pressure	Approx. 4N		
Protection	IP65 / IK08		
Material			
Actuator	Stainless steel / Gold or Nickel plated brass / Anodized aluminum		
Body	Stainless steel / Gold or Nickel plated brass / Anodized aluminum		
Base	PBT		

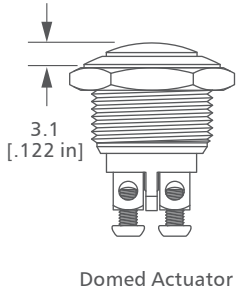
Actuator Options



Flat Actuator

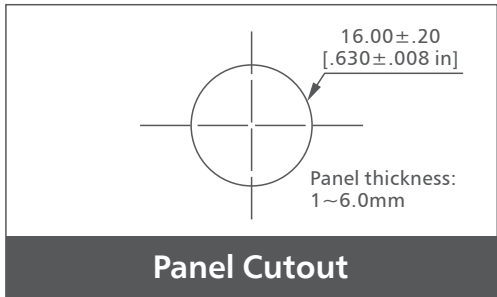
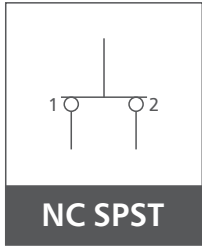
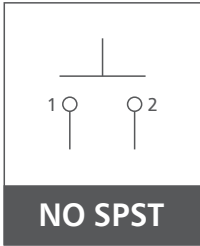
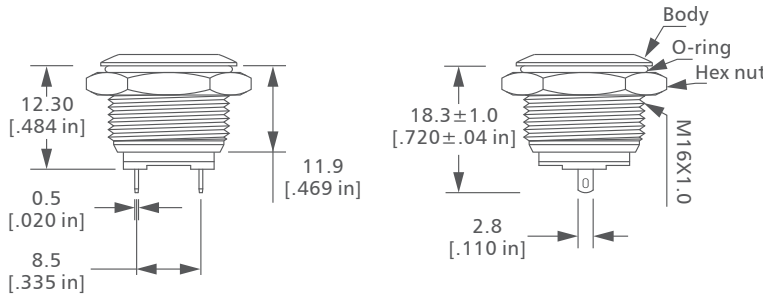


High Actuator

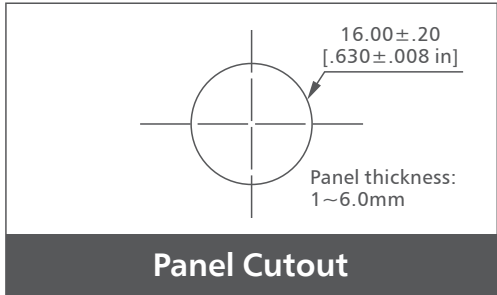
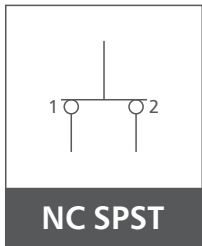
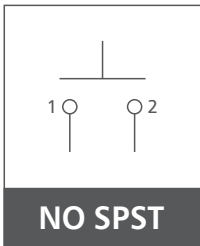
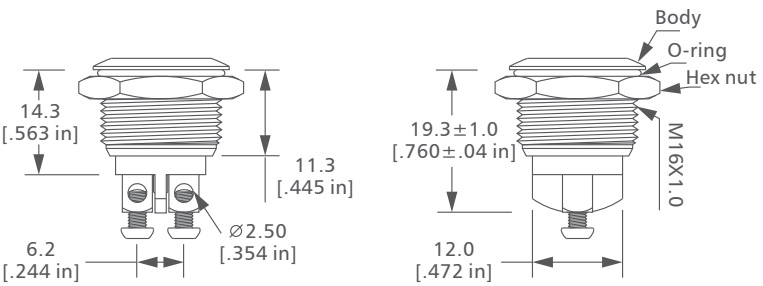


Domed Actuator

Solder Terminal



Screw Terminal



RoHS COMPLIANCE

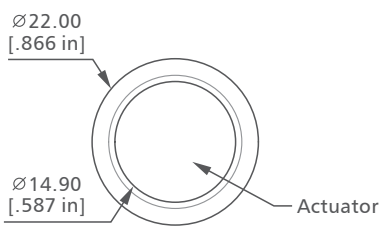


Anti Vandal Switch
Ø 19mm

Order Code

Series	Actuator Options	Terminal Options	Function Options	Material Options	Graphic Options
V19	F-Flat H-High B-Domed	P-Solder lug (2.8X0.5) NONE-Screw	Momentary 1-NO	S-Stainless steel N-Nickel plated brass A-Anodized aluminum G-Gold plated brass	NONE-Non-marking LE-Laser etched

Description

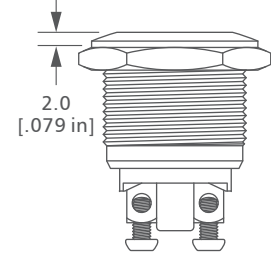


Panel thickness: 1~8mm

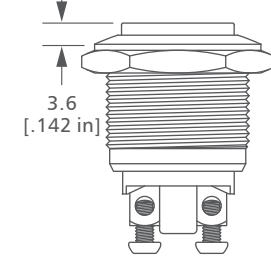
Technical Data

Type	V19-F	V19-B	V19-H
Actuator options	Flat	Domed	High
Terminal	Screw / Solder lug (2.8X0.5)		
Max. switch rating	2A 48VDC		
Contact resistance	≤50m Ω		
Insulation resistance	≥1000m Ω		
Dielectric strength	2000VAC		
Operation temp	-20°C ~ +55°C		
Mechanical life	1,000,000 cycles		
Electrical life	200,000 cycles		
Contact material	Silver alloy		
Torque	5~14Nm		
Operation pressure	Approx. 5N		
Protection	IP65 / IK09		
Material			
Actuator	Stainless steel / Gold or Nickel plated brass / Anodized aluminum		
Body	Stainless steel / Gold or Nickel plated brass / Anodized aluminum		
Base	PBT		

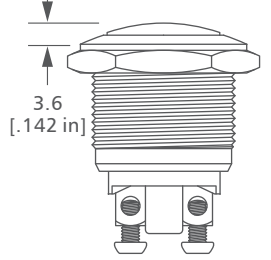
Actuator Options



Flat Actuator

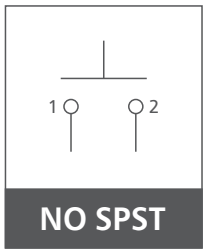
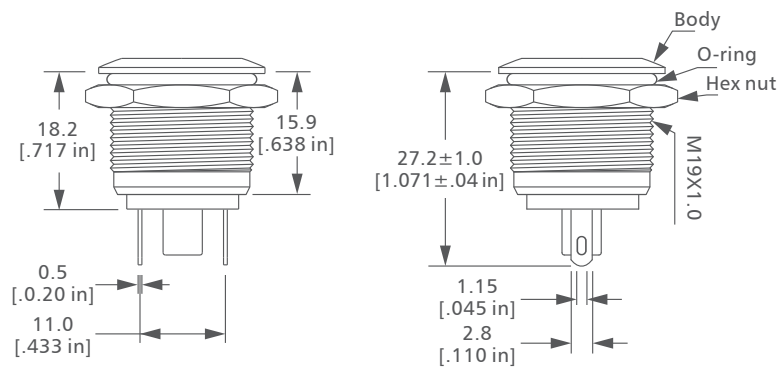


High Actuator



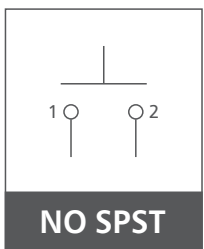
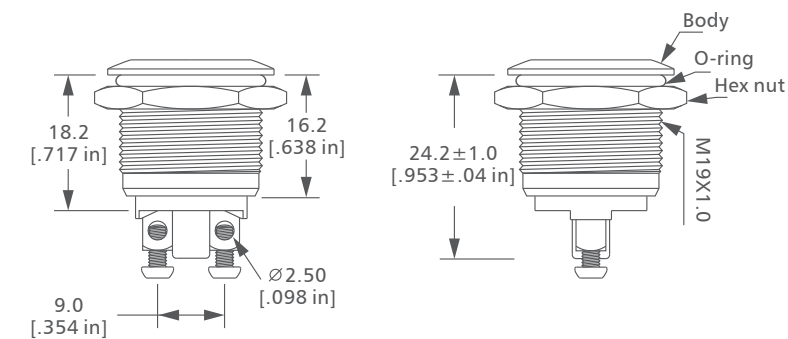
Domed Actuator

Solder Terminal



Panel Cutout

Screw Terminal



Panel Cutout

RoHS COMPLIANCE

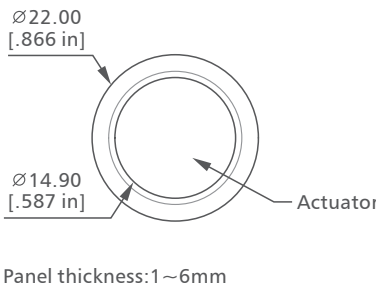


Anti Vandal Switch
Ø 19mm(Short Body)

Order Code

Series	Actuator Options	Terminal Options	Function Options	Material Options	Graphic Options
VS19	F-Flat H-High B-Domed	P-Solder lug (2.8X0.5) NONE-Screw	Momentary 1-NO 2-NC	S-Stainless steel N-Nickel plated brass A-Anodized aluminum	NONE-Non-marking LE-Laser etched

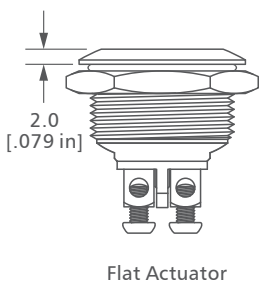
Description



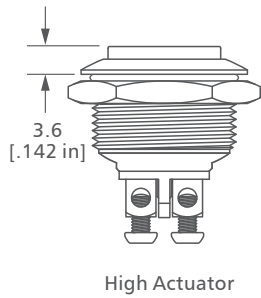
Technical Data

Type	VS19-F	VS19-B	VS19-H
Actuator options	Flat	Domed	High
Terminal	Screw / Solder lug (2.8X0.5)		
Max. switch rating	2A 48VDC		
Contact resistance	≤50m Ω		
Insulation resistance	≥1000m Ω		
Dielectric strength	2000VAC		
Operation temp	-20°C ~ +55°C		
Mechanical life	1,000,000 cycles		
Electrical life	200,000 cycles		
Contact material	Silver alloy		
Torque	5~14Nm		
Operation pressure	Approx. 5N		
Protection	IP65 / IK09		
Material			
Actuator	Stainless steel / Nickel plated brass / Anodized aluminum		
Body	Stainless steel / Nickel plated brass / Anodized aluminum		
Base	PBT		

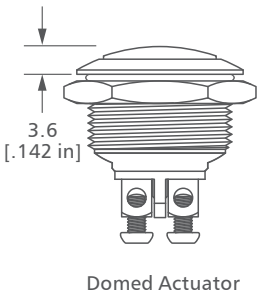
Actuator Options



Flat Actuator

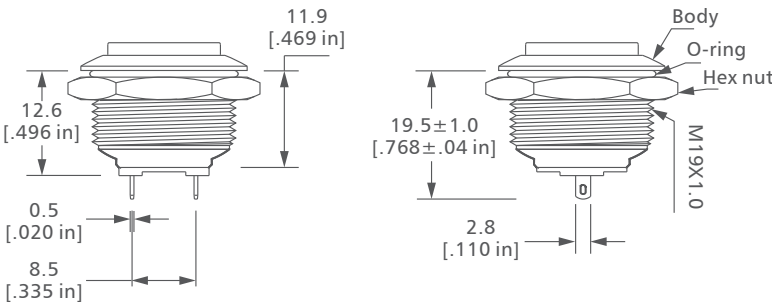


High Actuator



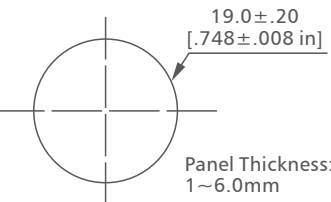
Domed Actuator

Solder Terminal



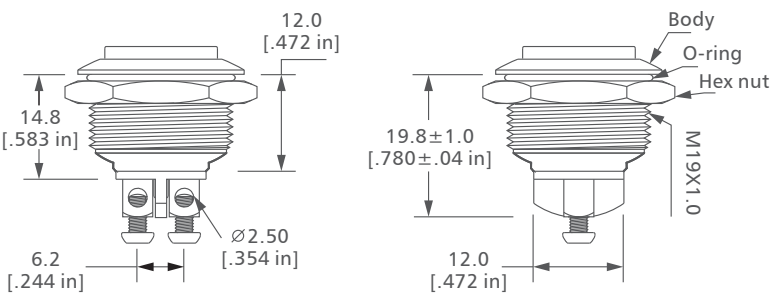
NO SPST

NC SPST



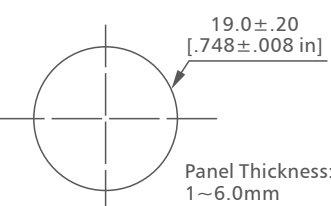
Panel Cutout

Screw Terminal



NO SPST

NC SPST



Panel Cutout

RoHS COMPLIANCE

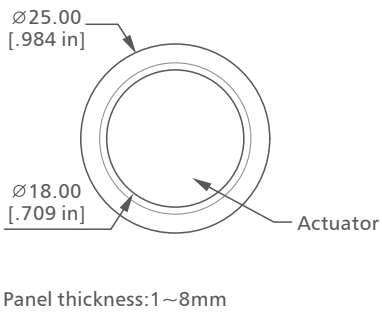


Anti Vandal Switch
Ø 22mm

Order Code

Series	Actuator Options	Terminal Options	Function Options	Material Options	Graphic Options
V22	F-Flat H-High B-Domed	P-Solder lug (2.8X0.5) NONE-Screw	Momentary 1-NO	S-Stainless steel	NONE-Non-marking LE-Laser etched

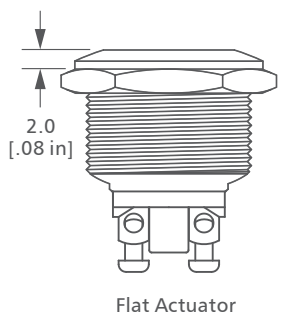
Description



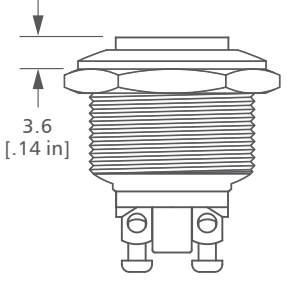
Technical Data

Type	V22-F	V22-B	V22-H
Front Shape	Flat	Domed	High flat
Terminal	Screw / Solder lug (2.8X0.5)		
Max. switch rating	2A 48VDC		
Contact resistance	≤ 50m Ω		
Insulation resistance	≥ 1000m Ω		
Dielectric strength	2000VAC		
Operation temp	-20°C ~ +55°C		
Mechanical life	1,000,000 cycles		
Electrical life	200,000 cycles		
Contact material	Silver alloy		
Torque	5~14Nm		
Operation pressure	Approx. 5.5N		
Protection	IP65 / IK09		
Material			
Actuator	Stainless steel		
Body	Stainless steel		
Base	PBT		

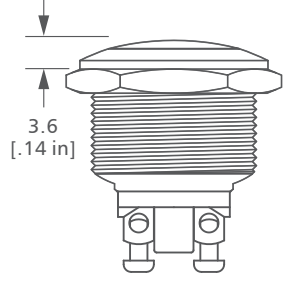
Actuator Options



Flat Actuator

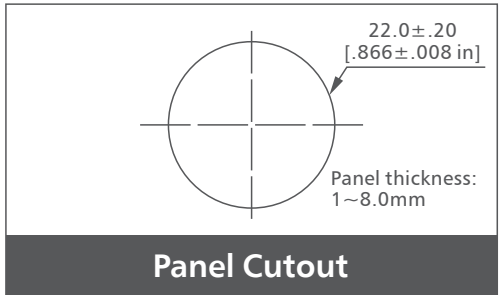
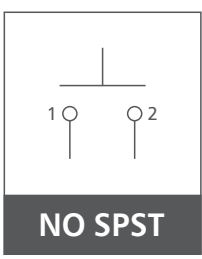
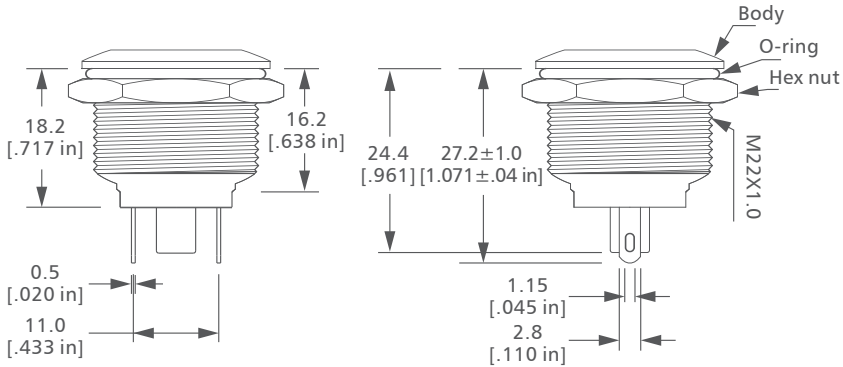


High Actuator

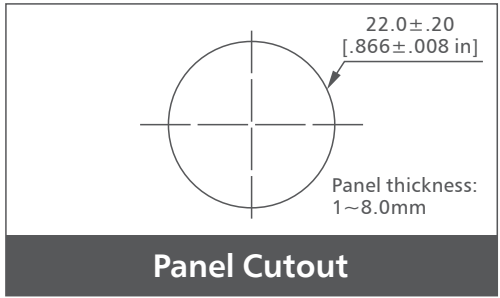
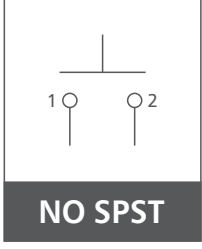
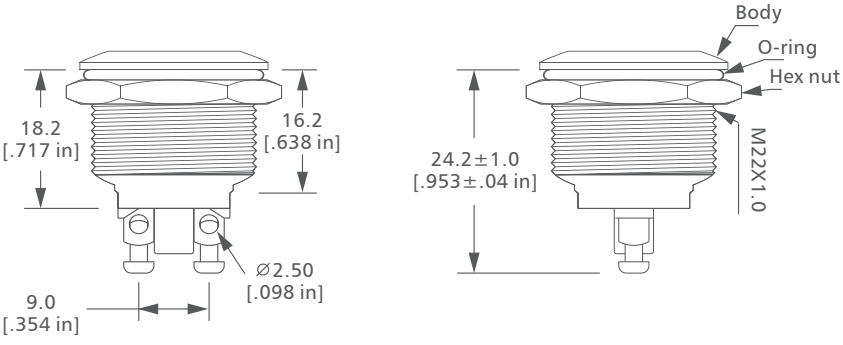


Domed Actuator

Solder Terminal



Screw Terminal



Illuminated



RoHS COMPLIANCE



Anti Vandal Switch Ø 12mm

Specifications

Electrical rating:2A 36VDC
Mechanical life:200,000 Cycles
Electrical life:50,000 Cycles
Contact resistance: 50mΩ Max
Insulation resistance: 1000mΩ Min
Dielectric strength: 2000VAC
Operating / Storage temperature: -20°C to 55°C
Travel: 1.50mm
Moisture protection:IP65
Actuation force:4N
Panel thickness:1-11mm
Mounting nut torque:5-14Nm

Features & Benefits

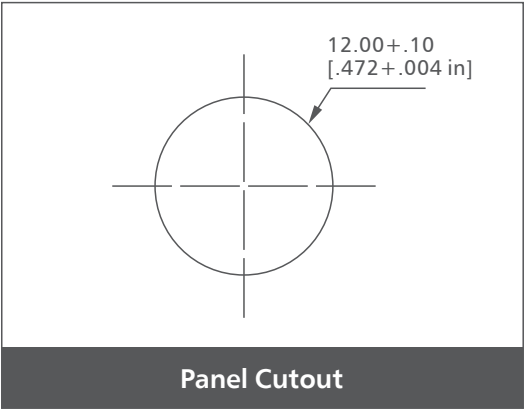
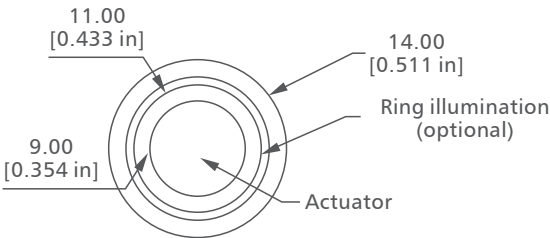
- 12mm diameter panel cutout
- Variety of LED option
- Dot, ring illumination available
- Multiple actuator options
- Pilot indicator option
- IP65 rated
- Momentary Off-(On), Latching Off-On
- Terminal option: Solder lug(2.0X0.5)

Order Code

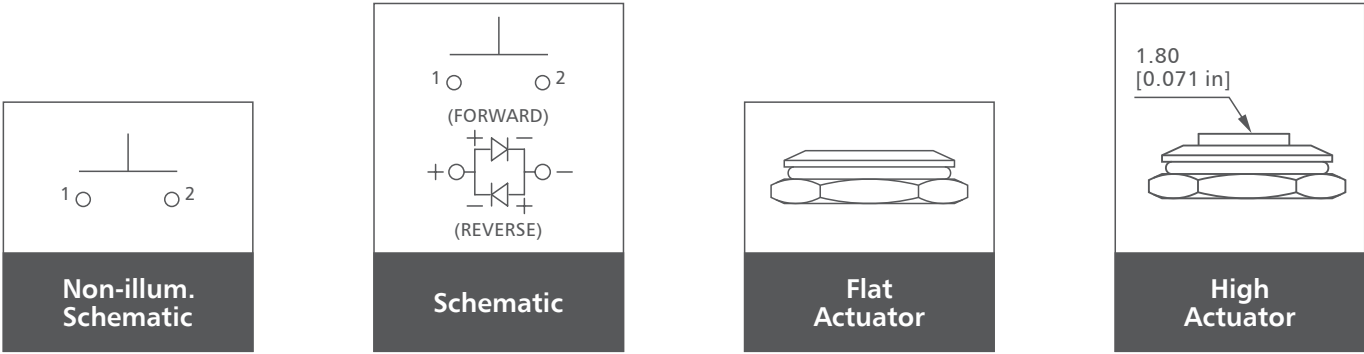
Series	Actuator Options	Function Options	Material Options	Illumination Style Options	Led-Color Options	Illumination Voltage Options
L12	F-Flat H-High	M-Momentary Off-(On) Z-Latching Off-On	S-Stainless Steel N-Nickel plated brass	NONE-Non-illum. D-Dot R-Ring	NONE-Non-illum. W-White R-Red O-Orange G-Green B-Blue Y-Yellow	NONE-Base voltage* 3.3V 6V 12V 24V

Notes:

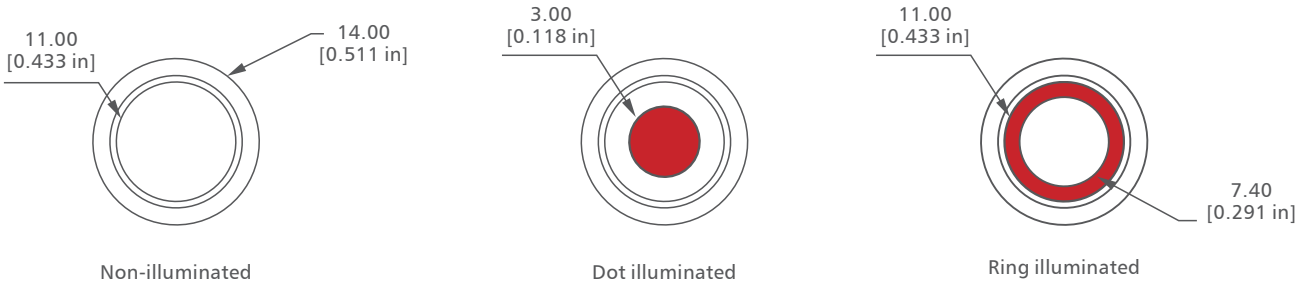
*Base voltage on LEDs:
1.8V @ 20mA for red, yellow and orange LED colors
2.8V @ 20mA for blue, green and white LED colors



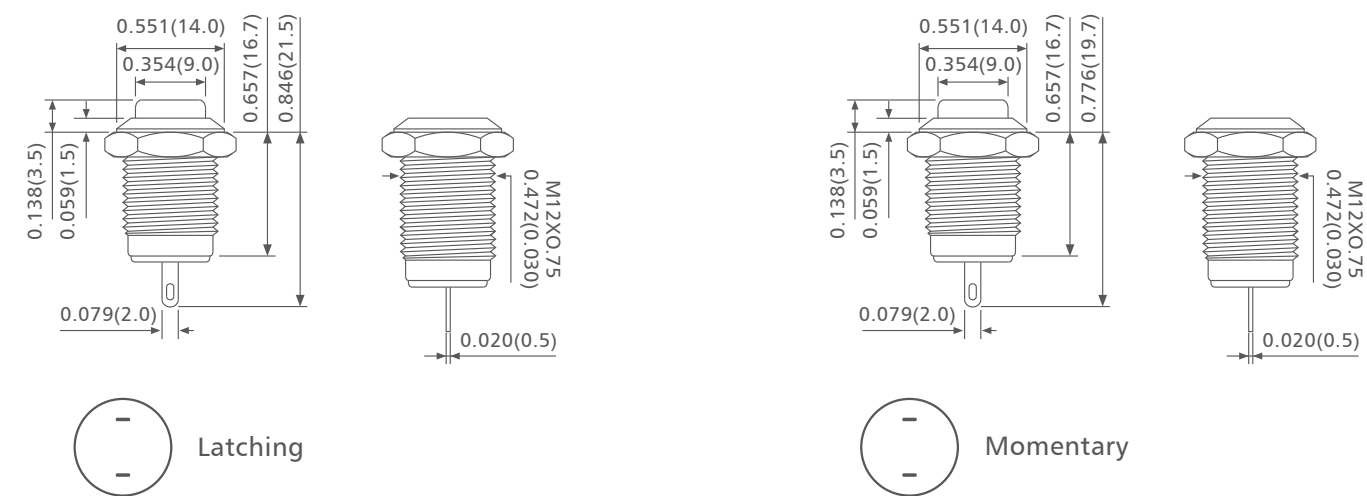
Schematic & Actuator



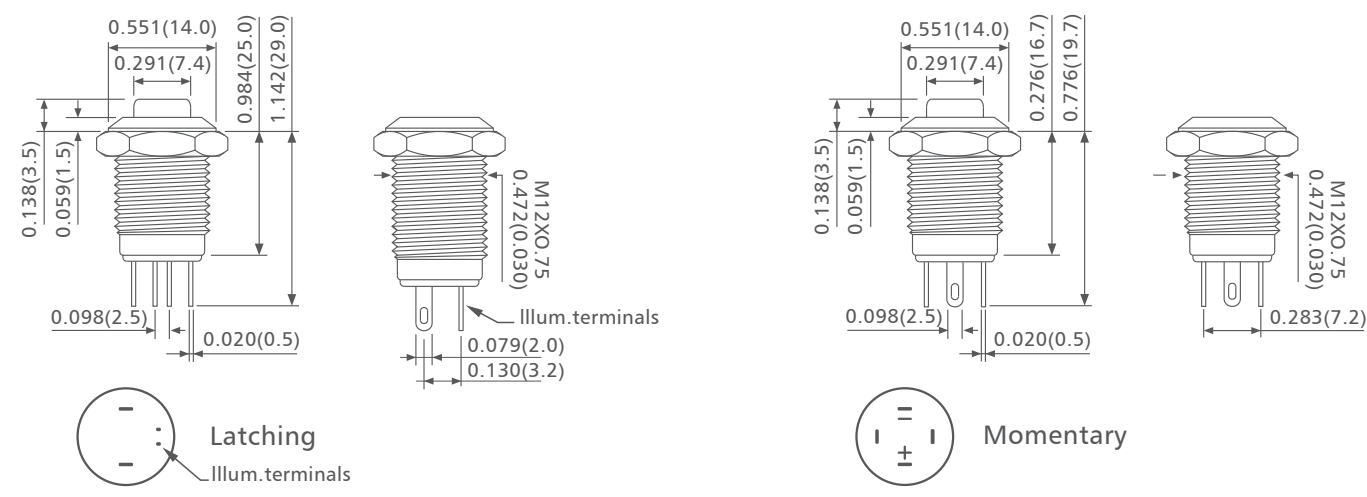
Illumination Options



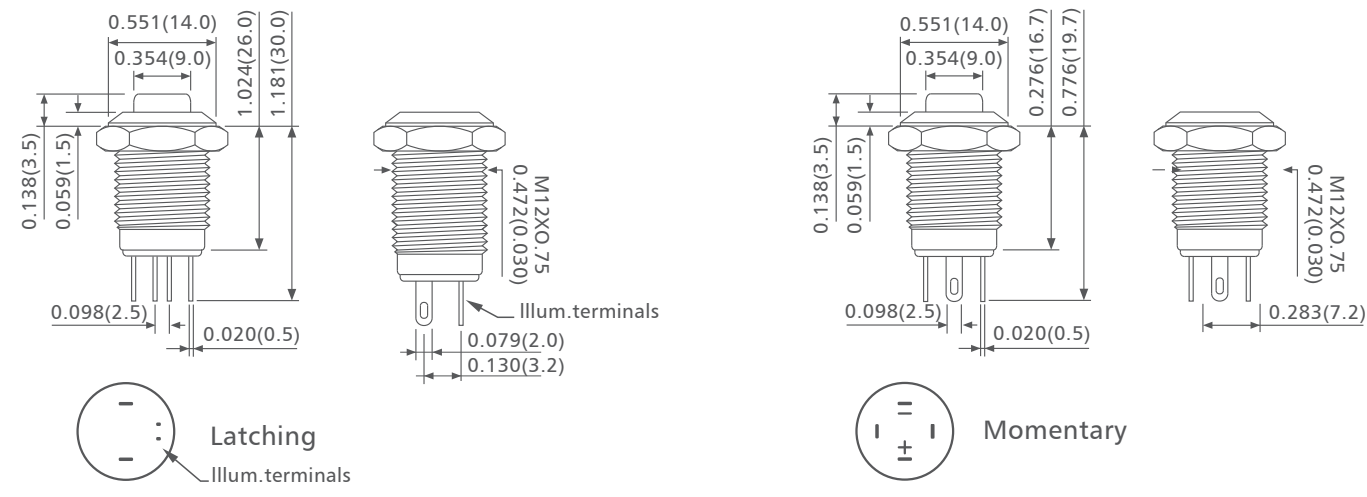
Non-illuminated



Ring illuminated



Dot illuminated



RoHS COMPLIANCE



Anti Vandal Switch Ø 16mm

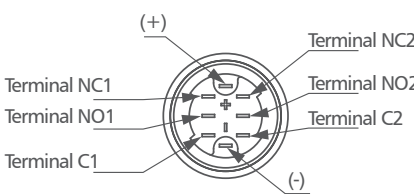


Order Code

Series	Actuator Options	Terminal Options	Function Options	Material Options	Illumination Style Options	Led- Color Options	Illumination Voltage Options	Protection	Graphic Options
L16	F-Flat H-Raised	NONE-Solder lug (1.8x0.4)	M-Momentary 1-1NO1NC 2-2NO2NC Z-Latching 1-1NO1NC 2-2NO2NC	S-Stainless steel N-Nickel plated brass A-Anodized aluminum	NONE-Non-illum. D-Dot R-Ring PS-Power backlit symbol PY-Ring illum.& Power backlit symbol	NONE-Non-illum. W-White Y-Yellow B-Blue G-Green R-Red O-Orange	NONE-Base voltage* 3.3V 6V 12V 24V 36V 110V 220V	NONE-IP65	NONE-Non-marking LE-Laser etched

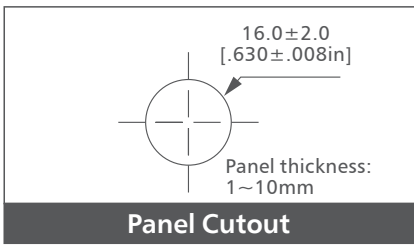
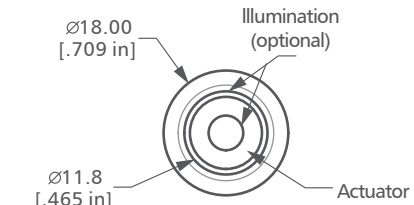
Notes:
* Base voltage on LEDs:
1.8V @20mA for red, yellow and orange LED colors
2.8V @20mA for blue, green and white LED colors

Description



C = Common
NO = Normally open
NC = Normally closed

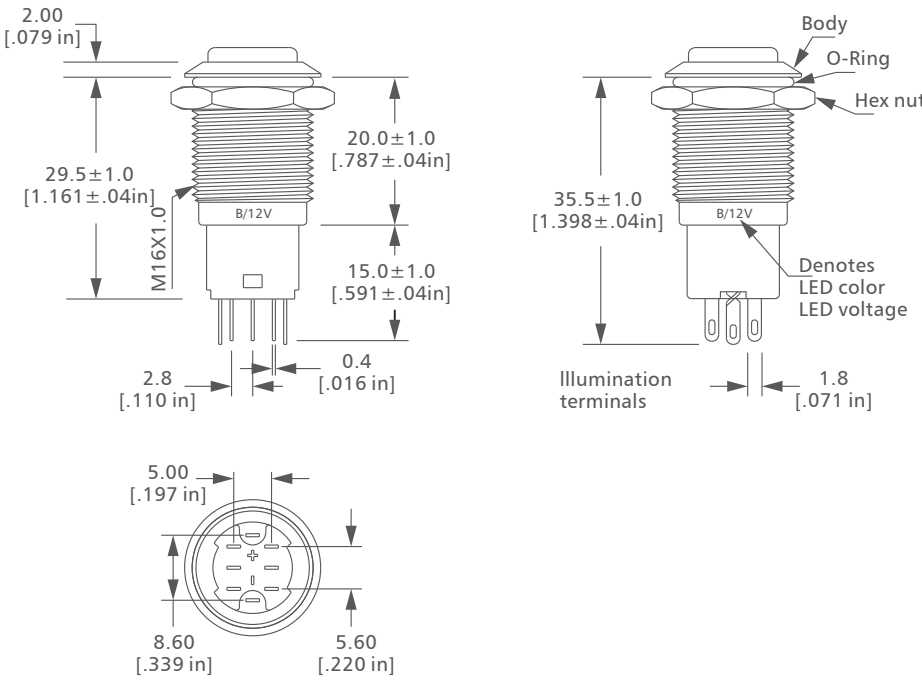
Terminals (-) and (+) used with illum. option only



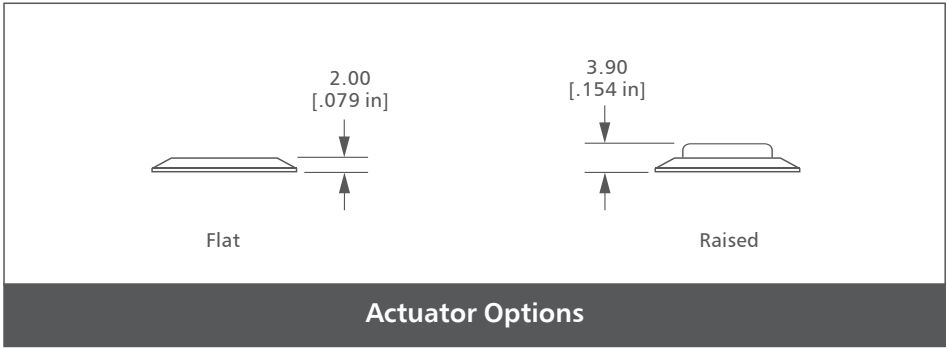
Technical Data

Type	L16-F / L16-H
Illuminated options	Non-illuminated / Ring illuminated / Dot illuminated
Terminal	Solder lug (1.8X0.4)
Max. switch rating	Ith: 3A Ui: 250VAC
Contact resistance	≤50m Ω
Insulation resistance	≥1000m
Dielectric strength	2000VAC
Operation temp.	-20°C ~ +55°C
Mechanical life	200,000 cycles
Electrical life	> 50,000 cycles
Contact material	Silver alloy
Torque	5~14Nm
Operation pressure	Approx. 3~5N
Protection	IP65/ IK09
Material	
Button	Stainless steel / Nickel plated brass / Anodized aluminum
Body	Stainless steel / Nickel plated brass / Anodized aluminum
Base	PBT
LED	
Color	3.3V / 6V / 12V / 24V / 36V / 110V / 220V R/G/Y/O/B/W Approx. 40,000 hours

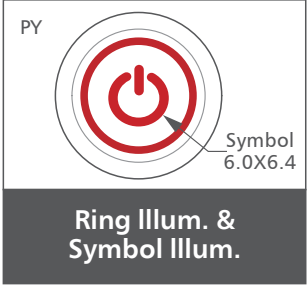
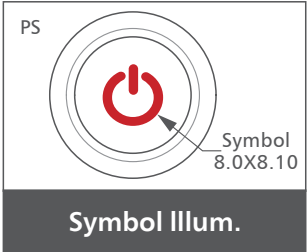
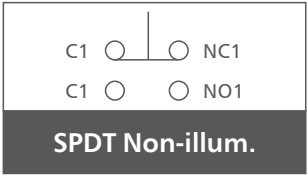
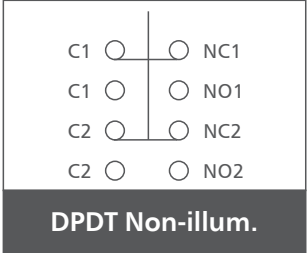
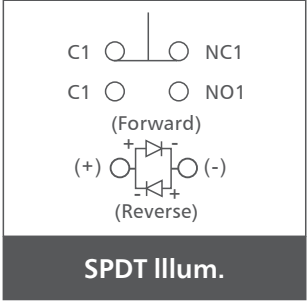
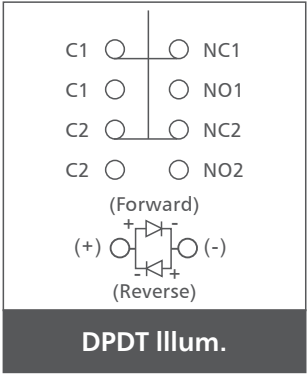
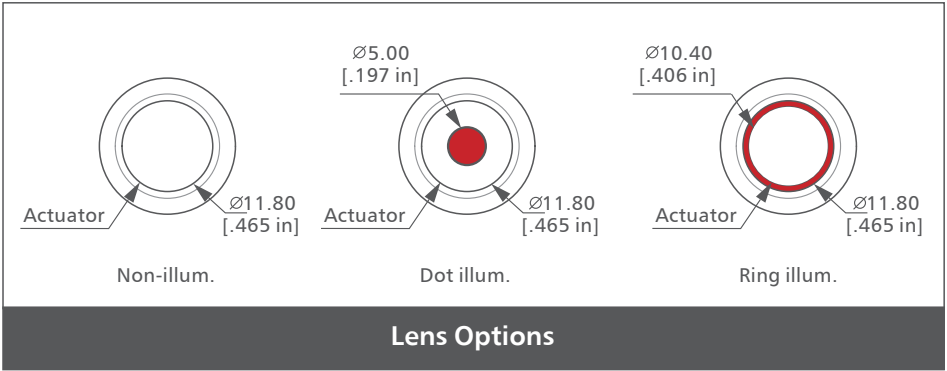
Dimensions



Actuator Options



Illum. Options



RoHS COMPLIANCE



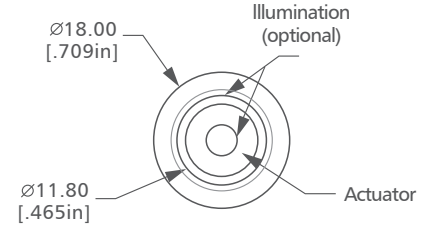
Anti Vandal
Switch Ø16mm

Order Code

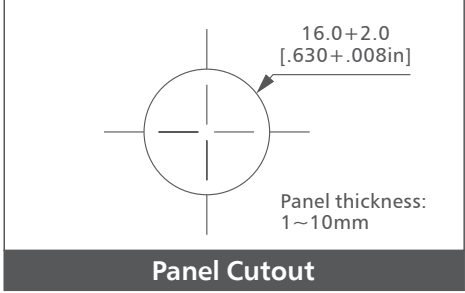
Series	Actuator Options	Terminal Options	Function Options	Material Options	Illumination Style Options	Led- Color Options	Illumination Voltage Options	Graphic Options
LS16	F-Flat	NONE-Solder lug (2.8X0.5)	M-Momentary 1-1NO	S-Stainless steel N-Nickel plated brass A-Anodized aluminum	D-Dot R-Ring	W-White Y-Yellow B-Blue G-Green R-Red O-Orange 3A-Red / Green / Blue	NONE-Base voltage* 3.3V 6V 12V 24V 36V	NONE-Non-marking LE-Laser etched

Notes:
* Base voltage on LEDs:
1.8V @20mA for red, yellow and orange LED colors
2.8V @20mA for blue, green and white LED colors

Description



Panel Cutout

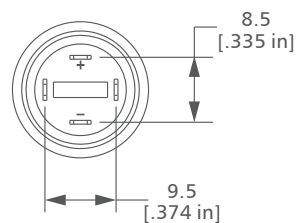
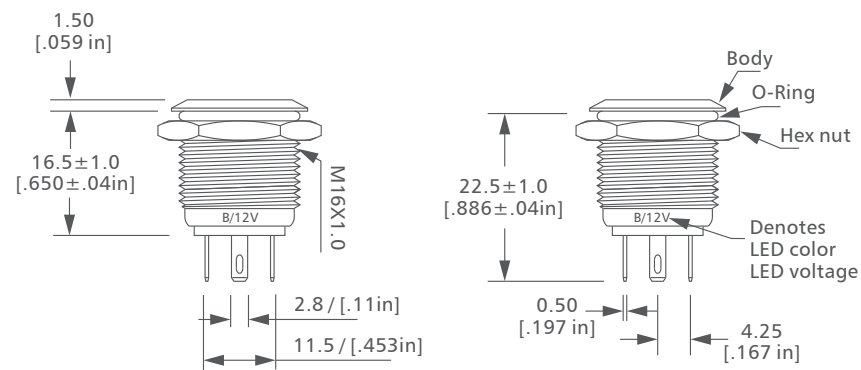


Technical Data

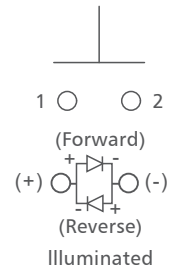
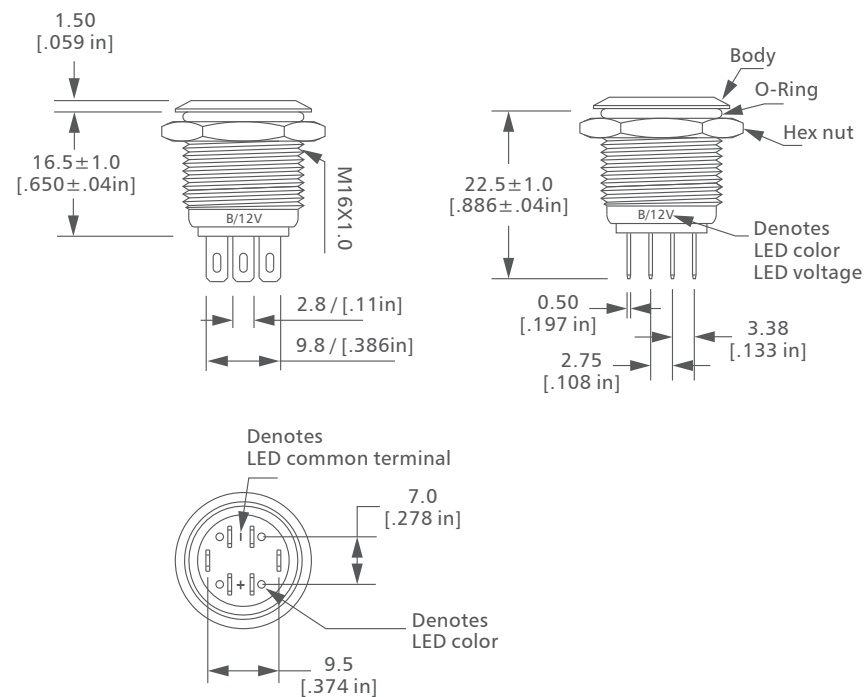
Type	LS16-F
Illuminated options	Non-illuminated / Ring illuminated / Dot illuminated
Terminal	Solder lug (2.8X0. 5)
Max. switch rating	2A 36VDC
Contact resistance	≤50m Ω
Insulation resistance	≥1000mΩ
Dielectric strength	2000VAC
Operation temp.	-20°C ~ +55°C
Mechanical life	1,000,000 cycles
Electrical life	200,000 cycles
Contact material	Silver alloy
Torque	5~14Nm
Operation pressure	Approx. 3~5N
Protection	IP65/ IK08
Material	
Actuator	Stainless steel / Nickel plated brass / Anodized aluminum
Body	Stainless steel / Nickel plated brass / Anodized aluminum
Base	PBT
LED	
Color	3.3V / 6V / 12V / 24V / 36V (The resistor is external) R/G/Y/O/B/W Approx, 40,000 hours

Current-limiting Resistance Configuration Table	Operating Voltage (U)	6V	12V	24V	36V	Formula $R=\frac{U-U_e}{I_e}$
	Current-limiting Resistance (R)	R/G/Y 160Ω, 1/4W	510Ω, 1/2W	1.2kΩ, 3/4W	2.2kΩ, 1W	
		O/B/W 460Ω, 1/2W	460Ω, 1/2W	1.2kΩ, 3/4W	2.2kΩ, 1W	

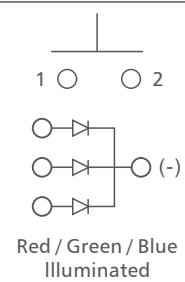
Standard Illum.



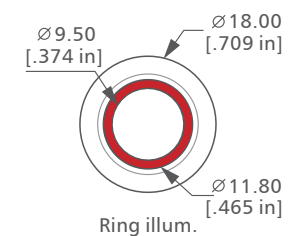
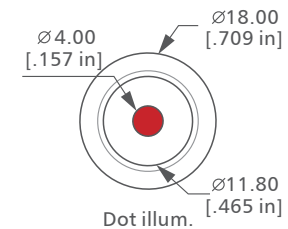
Tri-color



Functions



Functions



Lens Options



Anti Vandal Switch Ø 19mm

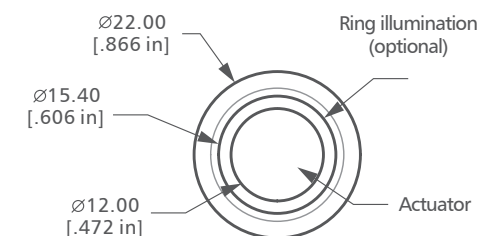
Order Code

Series	Actuator Options	Terminal Options	Function Options	Material Options	Illumination Style Options	LED-Color Options	Illumination Voltage Options	Graphic Options
L19	F-Flat	NONE-Solder lug (2.8X0.5) N-Screw	M-Momentary 1-1NO1NC Z-Latching 1-1NO1NC	S-Stainless steel A-Anodized aluminum	NONE-Non-illum. D-Dot R-Ring X-Backlit label kit**	NONE-Non-illum. W-White Y-Yellow B-Blue G-Green R-Red O-Orange	NONE-Base voltage* 3.3V 6V 12V 24V 36V 110V 220V	NONE-Non-marking LE-Laser etched

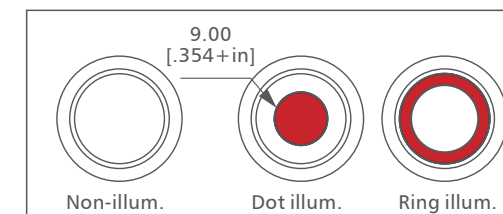
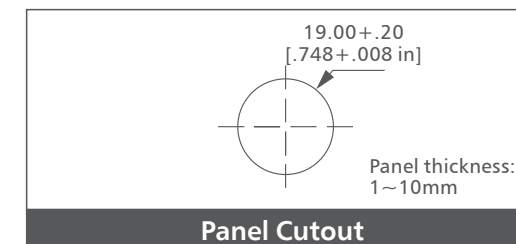
Notes

- * Base voltage on LEDs:
1.8V @20mA for red, yellow and orange LED colors
2.8V @20mA for blue, green and white LED colors
- **5 ICON labels included, flat actuator only

Description



Panel Cutout & Illuminated Options

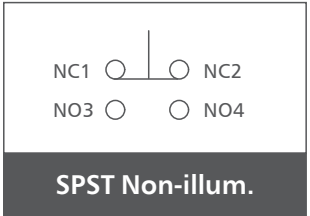
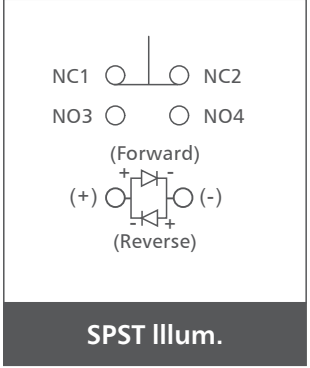
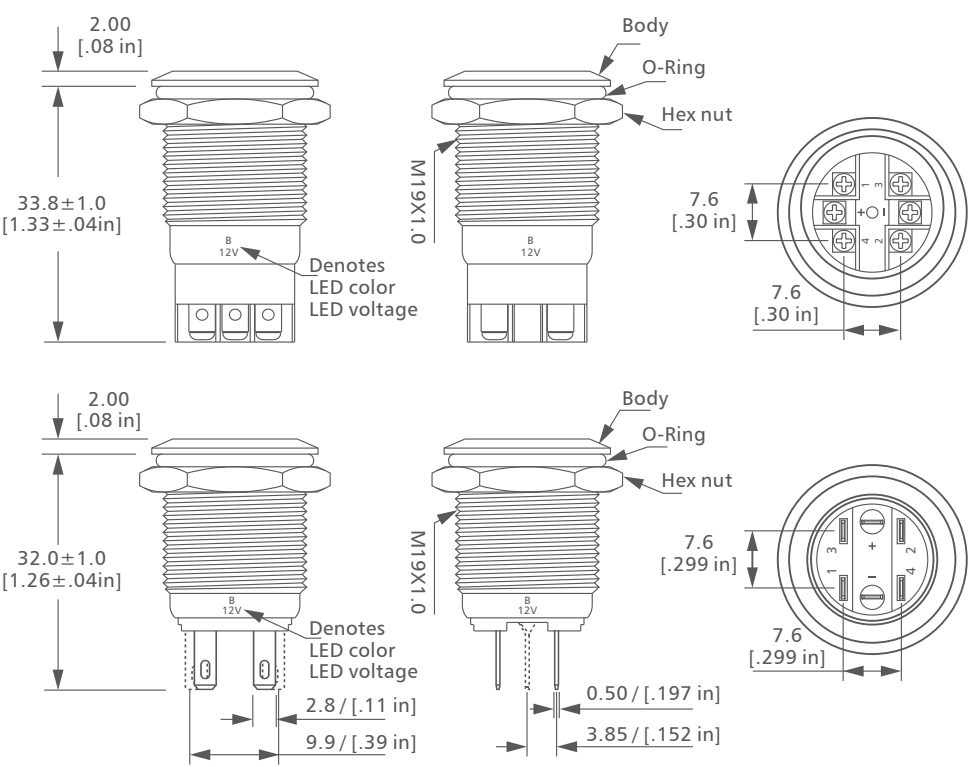


Lens Options

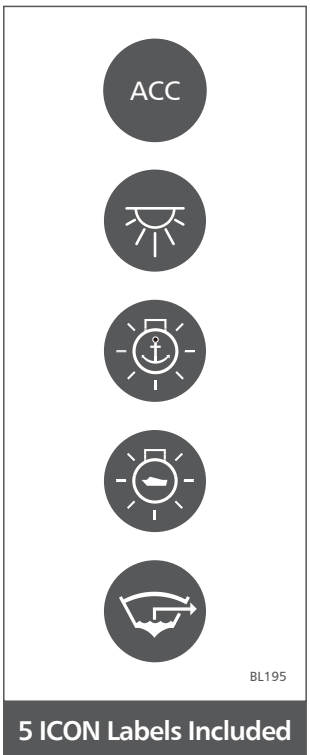
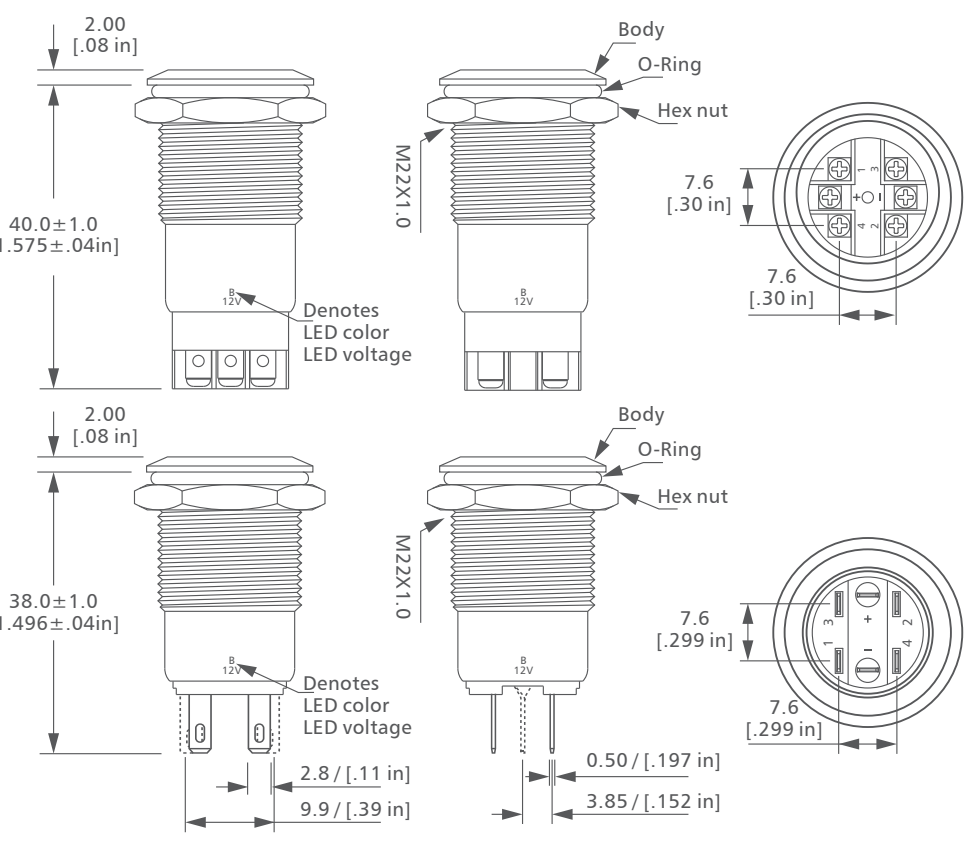
Technical Data

Type	L19-F
Illuminated options	Non-illuminated / Ring illuminated / Dot illuminated / Backlit label kit
Terminal	Screw / Solder lug (2.8X0.5)
Max. switch rating	Ith: 5A Ui: 250VAC
Contact resistance	≤50mΩ
Insulation resistance	≥1000m
Dielectric strength	2000VAC
Operation temp.	-20°C ~ +55°C
Mechanical life	1,000,000 cycles
Electrical life	50,000 cycles
Contact material	Silver alloy
Torque	5~14Nm
Operation pressure	Approx. 5N
Protection	IP65 or IP67 / IK09
Material	
Actuator	Stainless steel / Anodized aluminum
Body	Stainless steel / Anodized aluminum
Base	PA
Color	LED
	3.3V / 6V / 12V / 24V / 36V / 110V / 220V
	 Approx. 40,000 hours

Dimensions



Latching



RoHS COMPLIANCE



Anti Vandal Switch Ø19mm

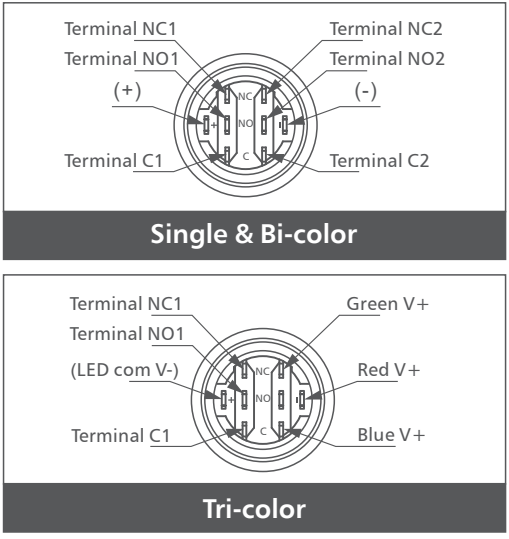


Order Code

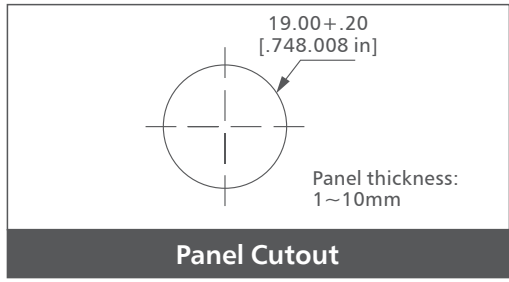
Series	Actuator Options	Terminal Options	Function Options	Material Options	Illumination Style Options	Led- Color Options	Illumination Voltage Options	Graphic Options
L19A	F-Flat	NONE-Solder lug (2.8X0.5)	M-Momentary 1-1NO1NC 2-2NO2NC Z-Latching 1-1NO1NC 2-2NO2NC	S-Stainless steel	NONE-Non-illum. D-Dot R-Ring PS-Power backlit symbol PY-Ring illum. & Power backlit symbol	NONE-Non-illum. W-White Y-Yellow B-Blue G-Green R-Red O-Orange 3A-Red/ Green/ Blue	NONE-Base voltage* 3.3V 6V 12V 24V 36V 110V 220V	NONE-Non-marking LE-Laser etched

Notes
* Base voltage on LEDs:
1.8V @20mA for red, yellow and orange LED colors
2.8V @20mA for blue, green and white LED colors

Description



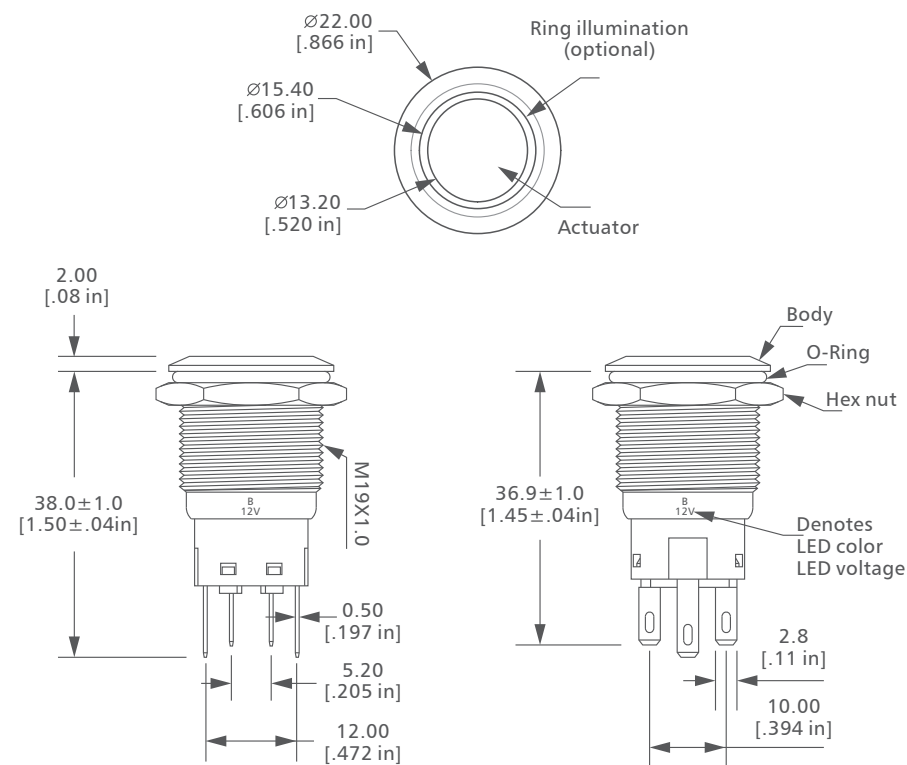
C = Common
NO = Normally open
NC = Normally closed
Terminals (-) and (+) used with illum. option only



Technical Data

Type	L19A-F
Illuminated options	Non-illuminated / Ring illuminated / Dot illuminated
Terminal	Solder lug (2.8X0.5)
Max. switch rating	Ith: 5A Ui: 250VAC
Contact resistance	≤ 50m Ω
Insulation resistance	≥ 1000m Ω
Dielectric strength	2000VAC
Operation temp.	-20°C ~ +55°C
Mechanical life	1,000,000 cycles
Electrical life	50,000 cycles
Contact material	Silver alloy
Torque	5~14Nm
Operation pressure	Approx. 5N
Protection	IP65/ IK09
Material	
Actuator	Stainless steel
Body	Stainless steel
Base	PBT
Color	LED 3.3V / 6V / 12V / 24V / 36V / 110V / 220V R/G/Y/O/B/W Approx. 40,000 hours

Dimensions



Illum. Options

PS

Symbol 9.20X9.20

Symbol Illum.

PY

Symbol 8.0X8.1

Ring Illum. & Symbol Illum.

Actuator $\varnothing 15.40$ [.606 in]

Non-illum.

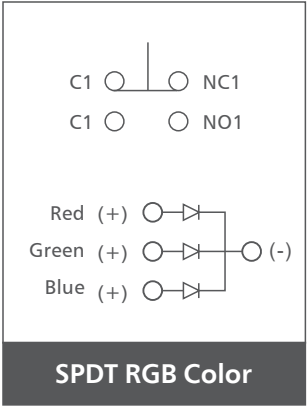
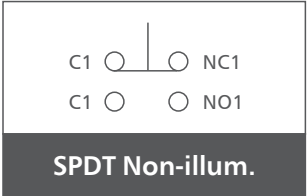
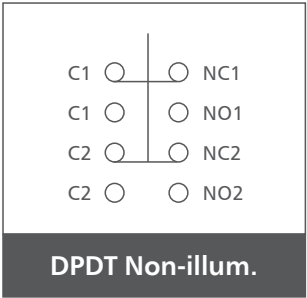
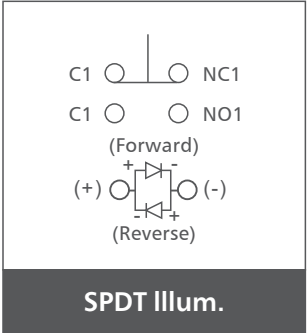
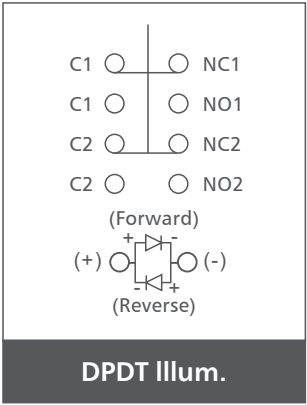
Actuator $\varnothing 9.00$ [.354 in]

Dot illum.

Actuator $\varnothing 13.20$ [.520 in]

Ring illum.

Lens Options



RoHS COMPLIANCE



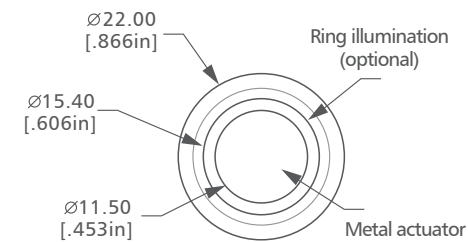
Anti Vandal Switch $\varnothing 19\text{mm}$

Order Code

Series	Actuator Options	Terminal Options	Function Options	Material Options	Illumination Style Options	Led- Color Options	Illumination Voltage Options	Graphic Options
LS19	F-Flat	NONE-Solder lug (2.8X0.5)	M-Momentary 1-1NO	S-Stainless steel	D-Dot R-Ring X-Backlit label kit**	W-White Y-Yellow B-Blue G-Green R-Red O-Orange	NONE-Base voltage* 3.3V 6V 12V 24V 36V	NONE-Non-marking LE-Laser etched

Notes:
* Base voltage on LEDs:
1.8V @20mA for red, yellow and orange LED colors
2.8V @20mA for blue, green and white LED colors
**5 ICON labels included, flat actuator only

Description



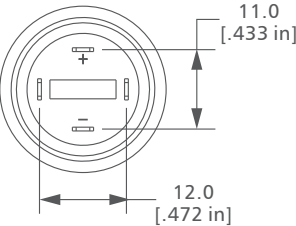
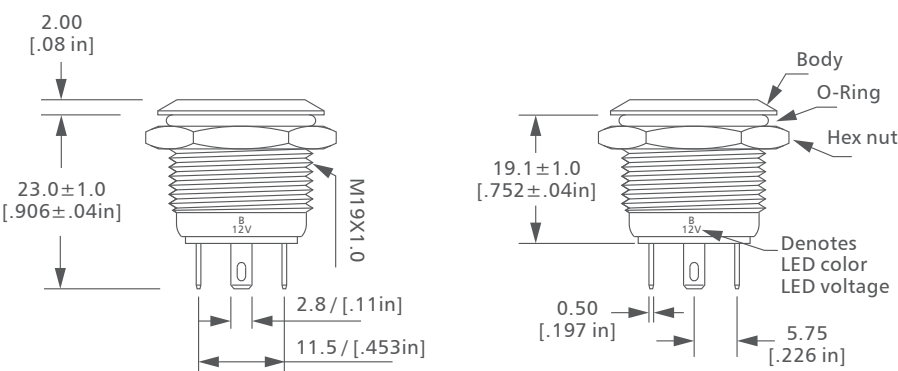
5 ICON Labels Included

Technical Data

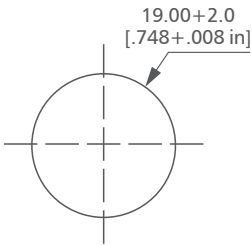
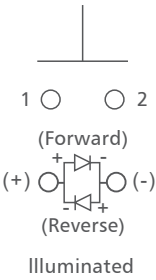
Type	LS19-F
Illuminated options	Non-illuminated / Ring illuminated / Dot illuminated
Terminal	Solder lug (2.8X0.5)
Max. switch rating	2A 36VDC
Contact resistance	$\leq 50\text{m}\Omega$
Insulation resistance	$\geq 1000\text{m}\Omega$
Dielectric strength	2000VAC
Operation temp.	-20°C ~ +55°C
Mechanical life	1,000,000 cycles
Electrical life	200,000 cycles
Contact material	Silver alloy
Torque	5~14Nm
Operation pressure	Approx. 3~5N
Protection	IP65/ IK08
Material	
Actuator	Stainless steel
Body	Stainless steel
Base	PBT
LED	
Color	3.3V / 6V / 12V / 24V / 36V (The resistor is external) R/G/Y/O/B/W Approx. 40,000 hours

Current-limiting Resistance Configuration Table	Operating Voltage (U)	6V	12V	24V	36V	Formula $R = \frac{U-U_e}{I_e}$
Current-limiting Resistance (R)	R/G/Y	210 Ω , 1/4W	510 Ω , 1/2W	1.2k Ω , 3/4W	2.2k Ω , 1W	
	O/B/W	160 Ω , 1/4W	460 Ω , 1/2W	1.2k Ω , 3/4W	2.2k Ω , 1W	

Dimensions

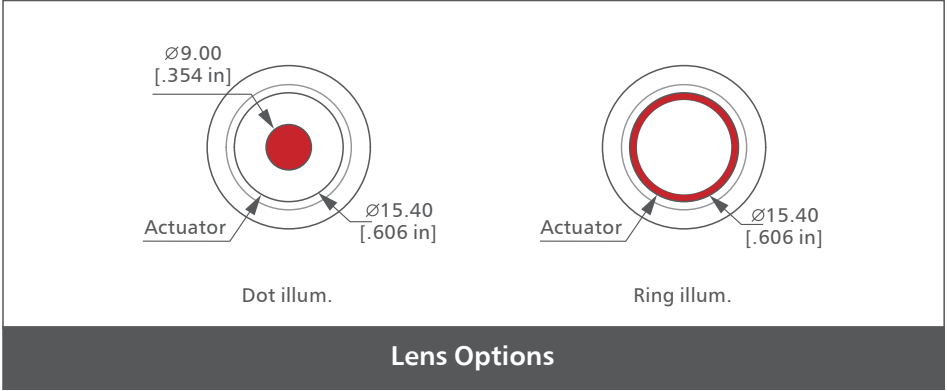


Functions



Panel Cutout

Illum. Options



Lens Options

RoHS COMPLIANCE



Micro-trip Anti Vandal Switch
Ø 19mm

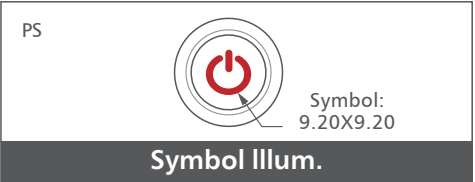
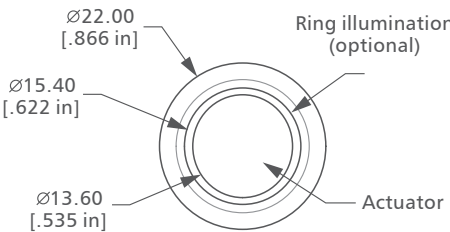
Order Code

Series	Actuator Options	Terminal Options	Function Options	Material Options	Illumination Style Options	Led- Color Options	Illumination Voltage Options	Graphic Options
L19M Micro-trip	F-Flat	NONE-Solder lug (2.8X0.8) N-Screw	M-Momentary 1-1NO	S-Stainless steel	NONE-Non-illum. D-Dot R-Ring PS-Power backlightsymbol PY-Ring illum.& Power backlit symbol X-Backlit label kit**	NONE-Non-illum. W-White Y-Yellow B-Blue G-Green R-Red O-Orange 3A-Red/ Green/ Blue	NONE-Base voltage* 3.3V 6V 12V 24V 36V	NONE-Non-marking LE-Laser etched

Notes:

- * Base voltage on LEDs:
1.8V @20mA for red and yellow and orange LED colors
2.8V @20mA for blue, green and white LED colors
- **5 ICON labels included, flat actuator only

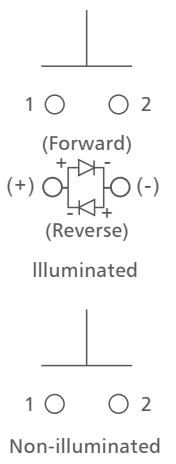
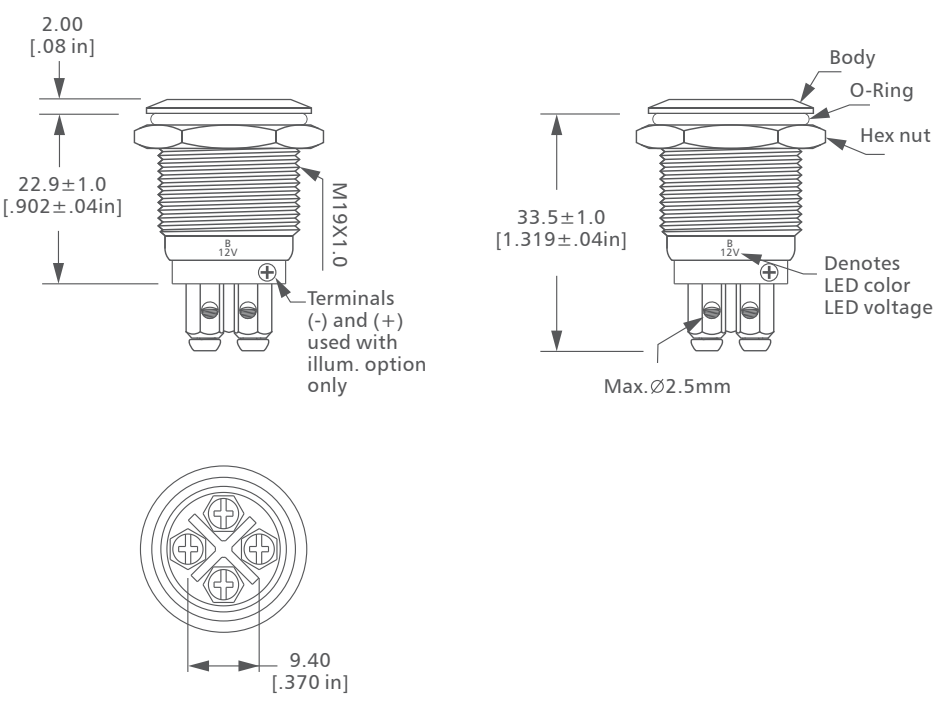
Description



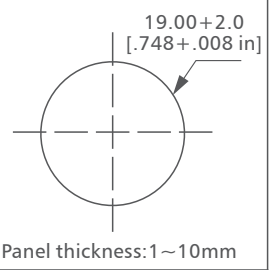
Technical Data

Type	L19M-F
Illuminated options	Non-illuminated / Ring illuminated / Dot illuminated
Terminal	Screw / Solder lug (2.8X0.8)
Max. switch rating	50mA 24VDC
Contact resistance	≤ 100m Ω
Insulation resistance	≥ 1000m Ω
Dielectric strength	2000VAC
Operation temp.	-20°C ~ +55°C
Mechanical life	1,000,000 cycles
Electrical life	50,000 cycles
Contact material	Silver alloy
Rear nut fixing torque	0.57Nm
Operation pressure	Approx. 8N
Protection	IP65/ IK09
Material	
Switch assembly	UL94V-0 rated polyamide (nylon)
Tags	Copper alloy
Terminals	Copper alloy
Switch body & button	Stainless steel / *Anodized aluminum
Lens and lens body	Polycarbonate
Internal seal	Silicone
O ring	Nitrile
LED	
Color	3.3V / 6V / 12V / 24V / 36V R/G/Y/B/W/ Approx. 40,000 hours

Screw Terminal

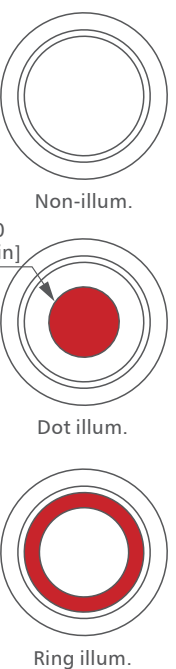
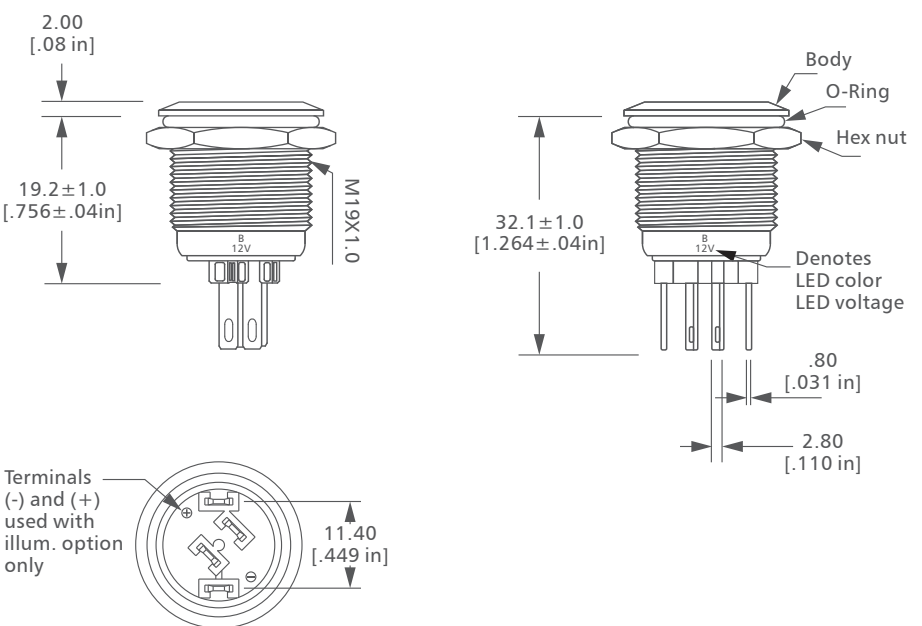


Functions



Panel Cutout

Solder Terminal



Lens Options

RoHS COMPLIANCE



High Current Anti Vandal Switch
Ø 19mm

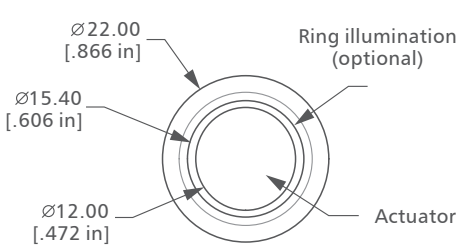


Order Code

Series	Actuator Options	Terminal Options	Function Options	Current Options	Material Options	Illumination Style Options	Led- Color Options	Illumination Voltage Options	Graphic Options
L19B	F-Flat	NONE-Quick connect terminal (6.35X0.8)	M-Momentary 1-1NO(SPST) 2-1NC(SPST) 3-1NO1NC(SPDT) Z-Latching 1-1NO(SPST) 2-1NC(SPST) 3-1NO1NC(SPDT)	02-2.5A 03-3A 05-5A 08-8A 10-10A 16-16A 21-21A 250VAC / 125VAC D6-0.6A / 125VDC D3-0.3A / 250VDC	S-Stainless steel	NONE-Non-illum. D-Dot R-Ring	NONE-Non-illum. W-White Y-Yellow B-Blue G-Green R-Red O-Orange	NONE-Base voltage* 3.3V 6V 12V 24V 36V 110V 220V	NONE-Non-marking LE-Laser etched

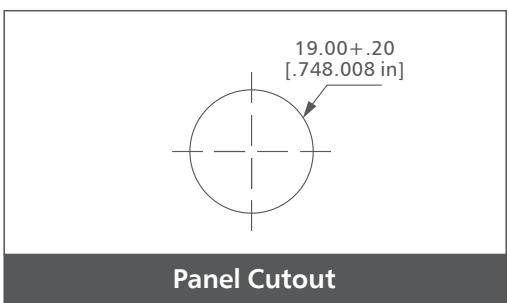
Notes
* Base voltage on LEDs:
1.8V @20mA for red, yellow and orange LED colors
2.8V @20mA for blue, green and white LED colors

Description



Panel thickness: 1~10mm

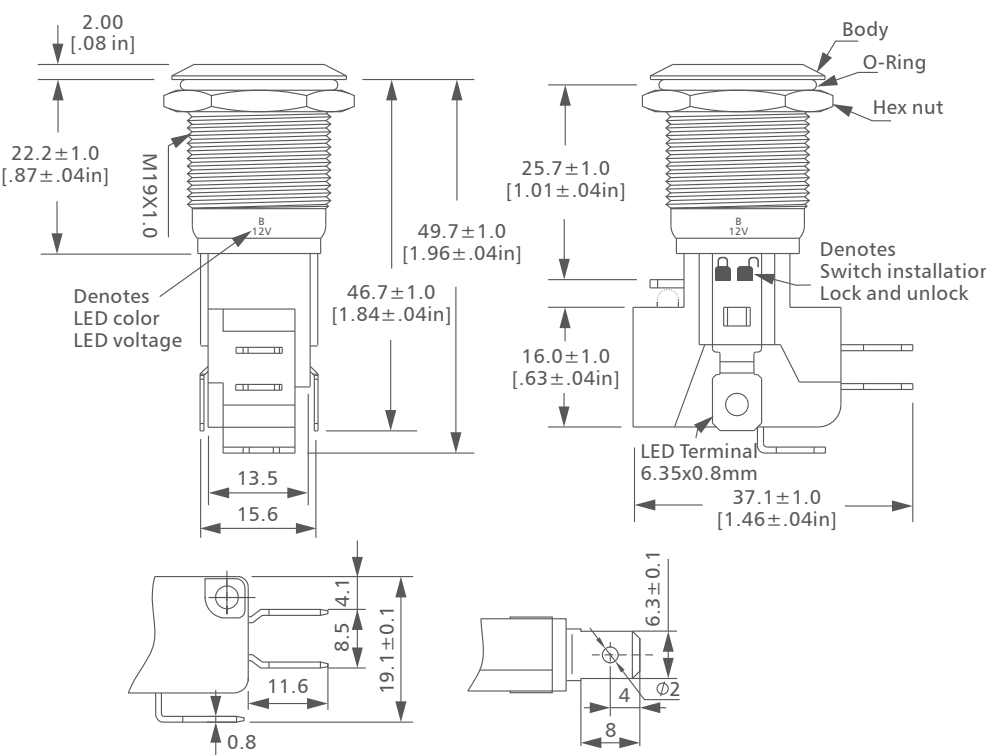
Panel Cutout



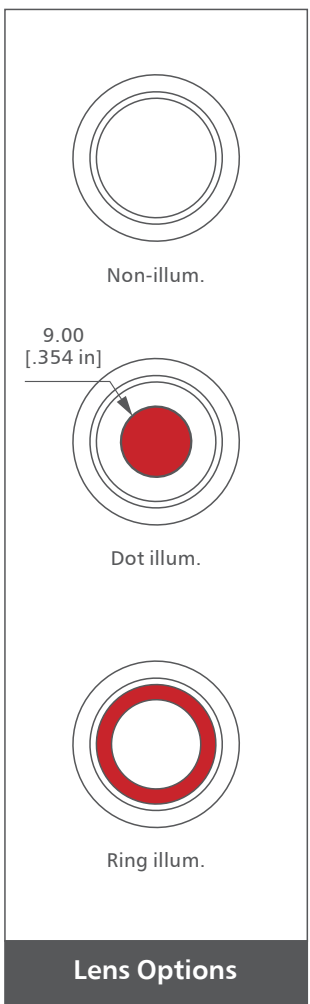
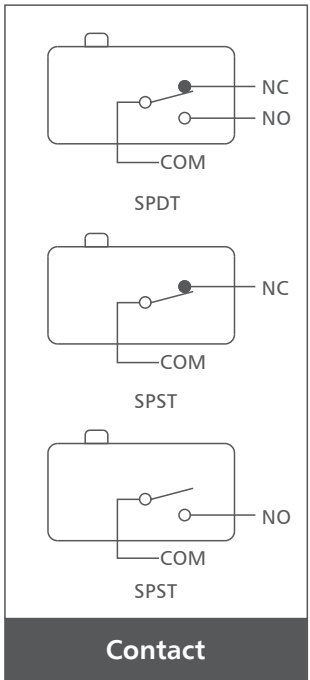
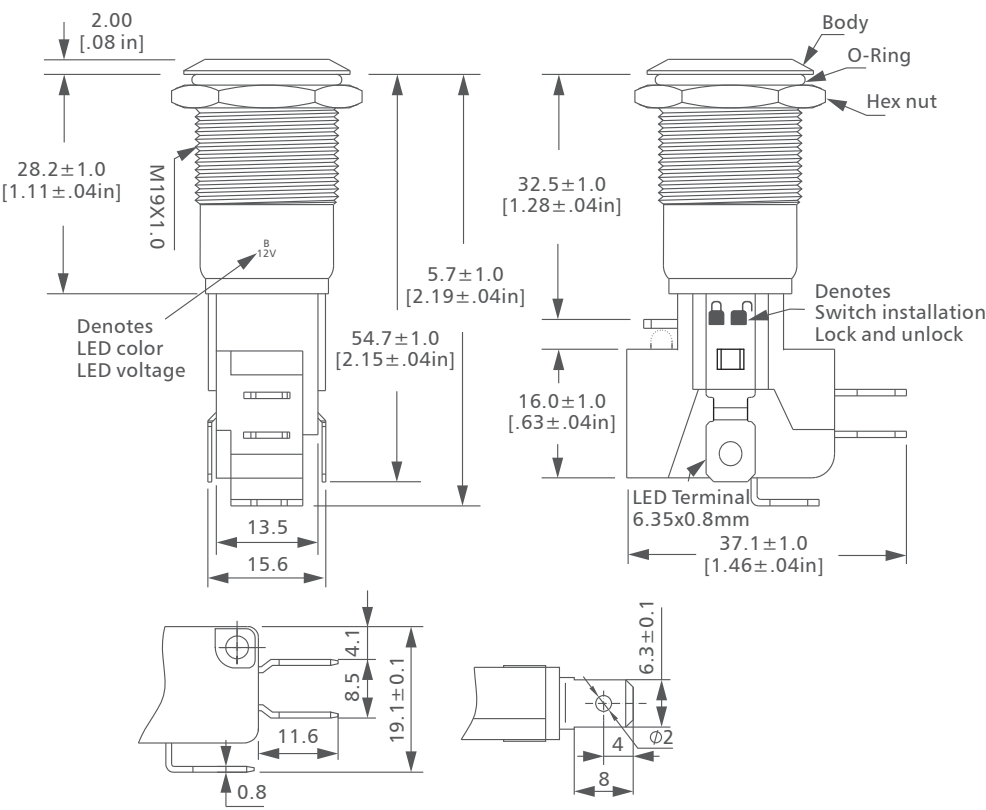
Technical Data

Type	L19B-F
Illuminated options	Non-illuminated / Ring illuminated / Dot illuminated
Terminal	Quick connect terminal (6.35x0.8)
Max. switch rating	3A 5A 8A 10A 15A(16A) 20A(21A) 250VAC, 125VAC 0.6A/ 125VDC 0.3A/ 250VDC
Contact resistance	≤25m Ω
Insulation resistance	≥100m Ω
Dielectric strength	Between non-consecutive terminals 1,000Vrms, 50/60Hz for 1min Between non-current carrying metal parts and each terminal 1,500Vrms, 50/60Hz for 1min Between ground and each terminal 1,500Vrms, 50/60Hz for 1min
Shock resistance	Detraction: O.F.>0.5N: 1000m/s2 (approx. 100g), O.F.≤0.5N: 400m/s2 (approx. 40g) Malfunction: O.F.>0.5N: 200m/s2 (approx. 20g), O.F.≤0.5N: 100m/s2 (approx. 10g)
Vibration resistance	10 - 50Hz, 1.5mm double amplitude
Ambient temp.	-25°C ~ +85°C
Mechanical life	2,000,000 cycles
Electrical life	50,000 cycles
Contact material	Silver alloy
Torque	5~14Nm
Operation pressure	10N
Protection	IP65/ IK09
Material	
Actuator	Stainless steel
Body	Stainless steel
LED	
Color	3.3V / 6V / 12V / 24V / 36V / 110V / 220V R/G/Y/O/B/W
	Approx, 40,000

Dimensions



Latching



RoHS COMPLIANCE



High Current Anti Vandal Switch
Ø 19mm



Specifications

Electrical rating: 21A, 24VDC
Mechanical life: 1,000,000 Cycles
Electrical life: 50,000 Cycles
Contact resistance: 50mΩ Max.
Insulation resistance: 1000MΩ Min.
Dielectric strength: 2,000VAC
Operating /Storage temperature: -20°C to 55°C
Travel: 1.50mm
Moisture protection: IP67
Actuation force: 4N
Panel thickness: 1-11mm
Mounting nut torque: 5-14Nm
LED state for output image option :
1 LED : the LED is ON when the output is closed.
2 LEDs : first color is ON when the output is open,
second color is ON when the output is closed.

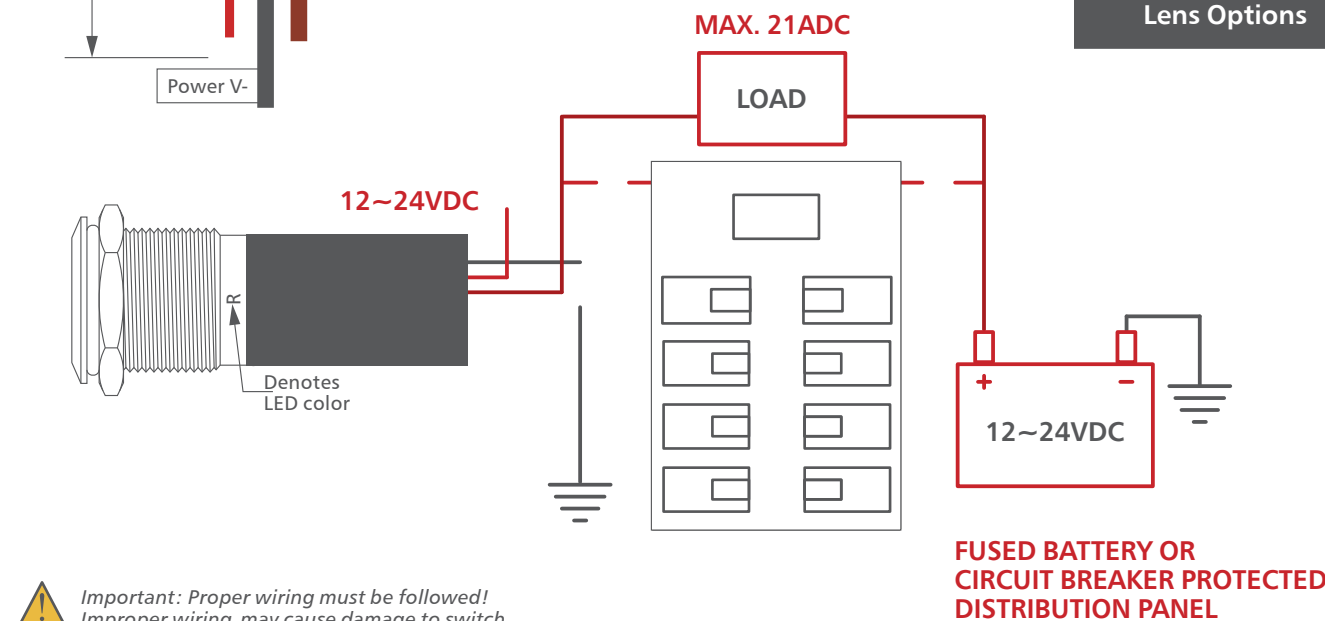
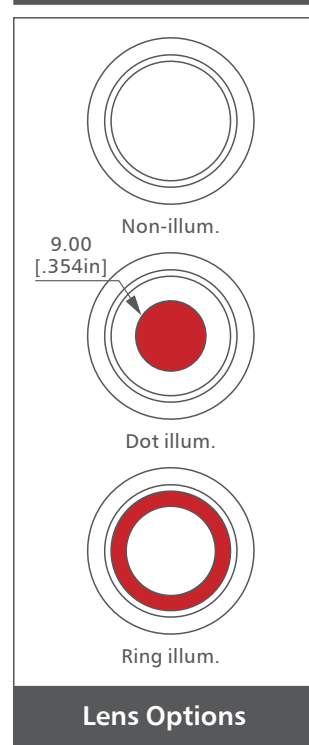
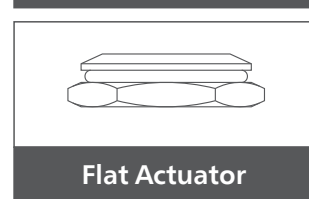
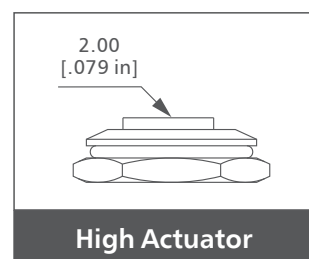
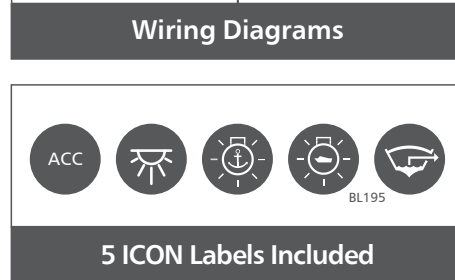
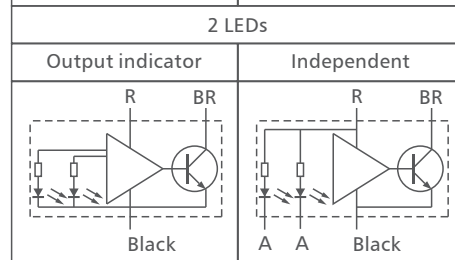
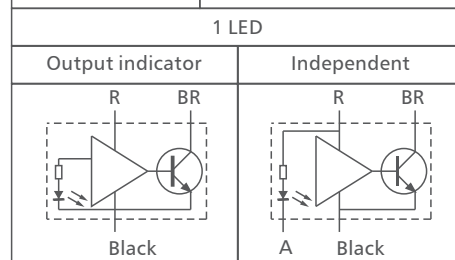
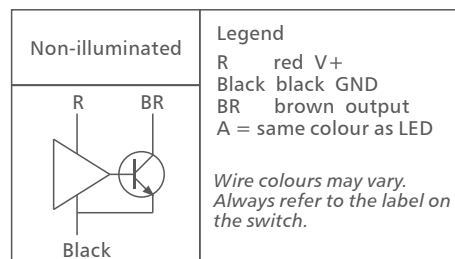
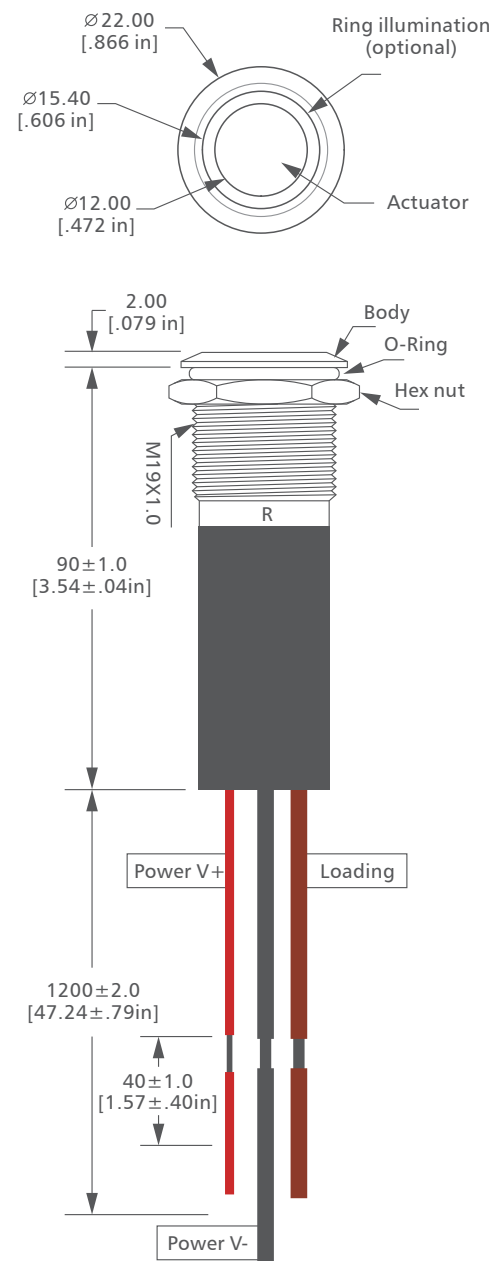
Features & Benefits

- 19mm diameter panel cutout
- Backlit label kit option
- Variety of LED option
- Dot, ring or power symbol illumination available
- Multiple actuator options
- Pilot indicator option
- IP65 rated,
- Momentary Off-(On), Latching Off-On

Part Number Configurator

Series	Actuator Options	Terminal Options	Function Options	Rating Options	Material Options	Illumination Style Options	LED-Color Options	Illumination Voltage Options	LED Functions	Graphic (Optional)
L19Y	☐ F- Flat ☐ H- High	☐ C- Cable*	☐ M- Momentary Off-(On) ☐ Z- Latching Off - On	☐ NONE- Max. 21A24V DC	☐ S- Stainless steel ☐ A- Black anodized	☐ NONE- Non-illum. ☐ D- Dot ☐ R- Ring ☐ X- Backlit label kit***	☐ NONE- Non-illum. ☐ W- White ☐ Y- Yellow ☐ B- Blue ☐ G- Green ☐ R- Red ☐ O- Orange ☐ RG- Red/Green ☐ RB- Red/Blue	☐ NONE- Non-illum. ☐ 1- Base voltage**	☐ S- Independent ☐ C- Output indicator	☐ LE- Laser etched

Notes:
() denotes function is momentary
*Cable length 1200mm
**The base voltage for rating
***5 ICON labels included, flat actuator only



Important: Proper wiring must be followed!
 Improper wiring may cause damage to switch

RoHS COMPLIANCE

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Anti Vandal Switch $\varnothing 22\text{mm}$

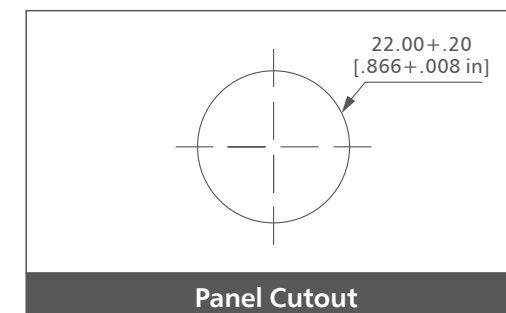
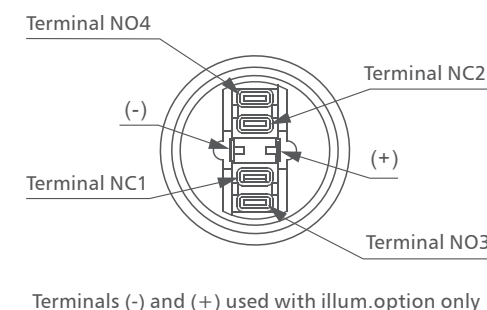
Order Code

Series	Actuator Options	Terminal Options	Function Options	Material Options	Illumination Style Options	Led- Color Options	Illumination Voltage Options	Graphic Options
L22	F-Flat	NONE-Solder lug (2.8X0.5)	M-Momentary 1-1NO1NC Z-Latching 1-1NO1NC	S-Stainless steel A-Anodized aluminum*	NONE-Non-illum. D-Dot R-Ring	NONE-Non-illum. W-White Y-Yellow B-Blue G-Green R-Red O-Orange	NONE-Base voltage** 3.3V 6V 12V 24V 36V 110V 220V	NONE-Non-marking LE-Laser etched

Notes:

* Anodized aluminum: variety of colors(MOQ 500pcs/color), standard for black anodized
 ** Base voltage on LEDs:
 1.8V @20mA for red, yellow and orange LED colors
 2.8V @20mA for blue, green and white LED colors

Description

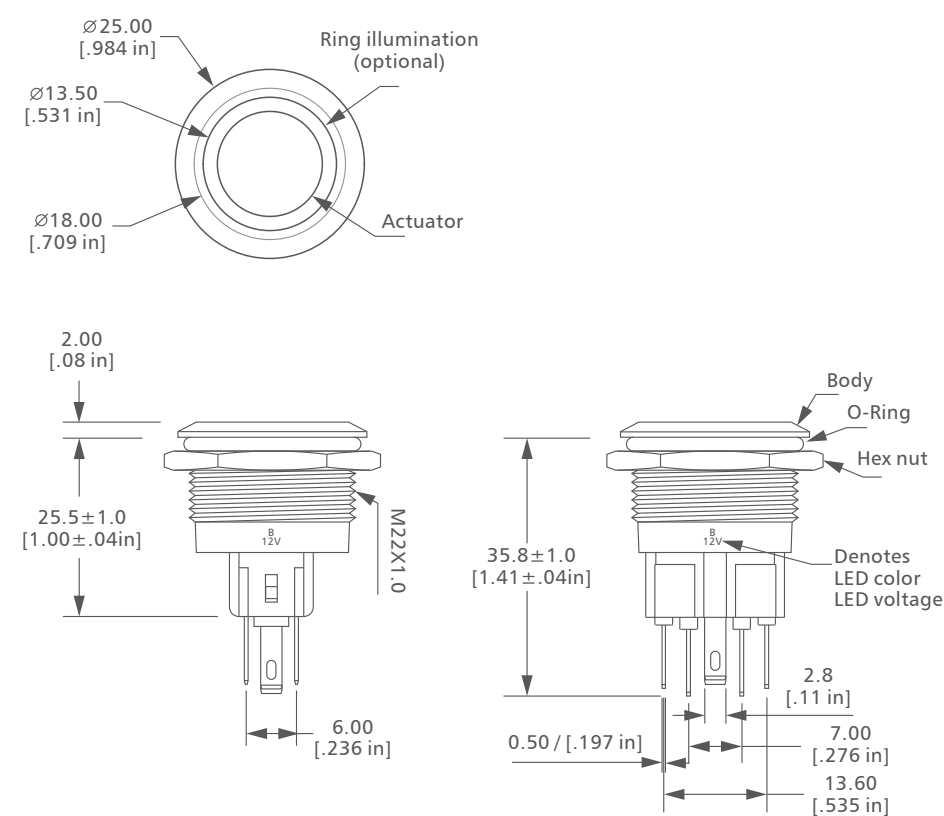


Panel thickness:
 1-12mm for latching
 1-10mm for momentary

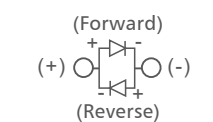
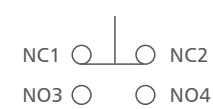
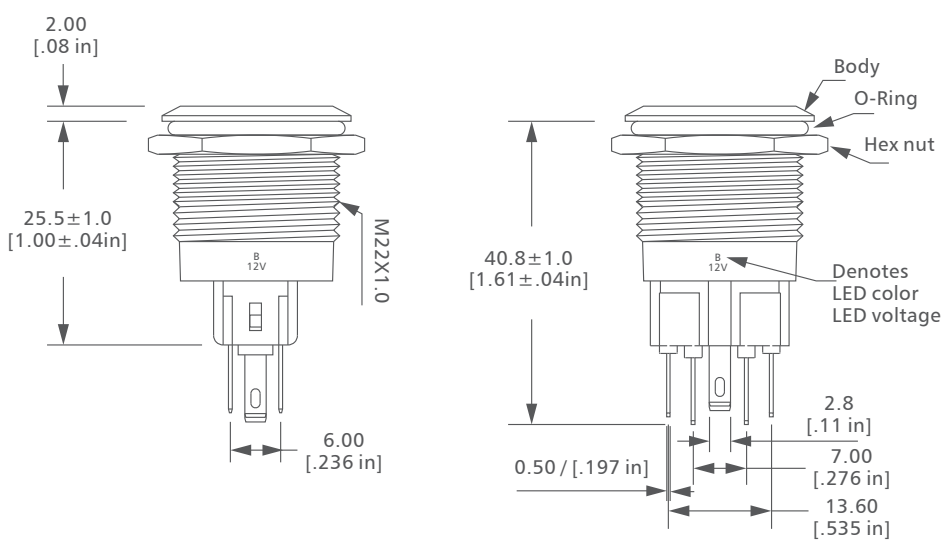
Technical Data

Type	L22-F
Illuminated options	Non-illuminated / Ring illuminated / Dot illuminated
Terminal	Solder lug (2.8X0.5)
Max. switch rating	Ith: 5A Ui: 250VAC
Contact resistance	$\leq 50\text{m}\Omega$
Insulation resistance	$\geq 1000\text{m}\Omega$
Dielectric strength	2000VAC
Operation temp.	-20°C ~ +55°C
Mechanical life	1,000,000 cycles
Electrical life	> 50,000 cycles
Contact material	Silver alloy
Torque	5~14Nm
Operation pressure	Approx. 8N
Protection	IP65/ IK10
Material	
Actuator	Stainless steel / *Anodized aluminum
Body	Stainless steel / *Anodized aluminum
Base	PA
LED	
Color	3.3V / 6V / 12V / 24V / 36V / 110V / 220V R/G/Y/O/B/W Approx. 40,000 hours

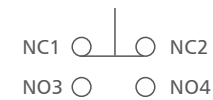
Momentary



Latching

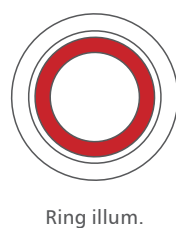
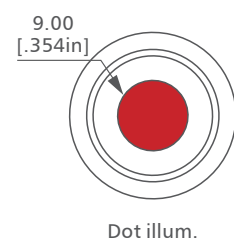
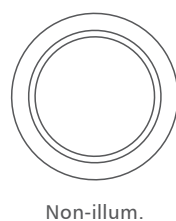


Contact configuration illuminated



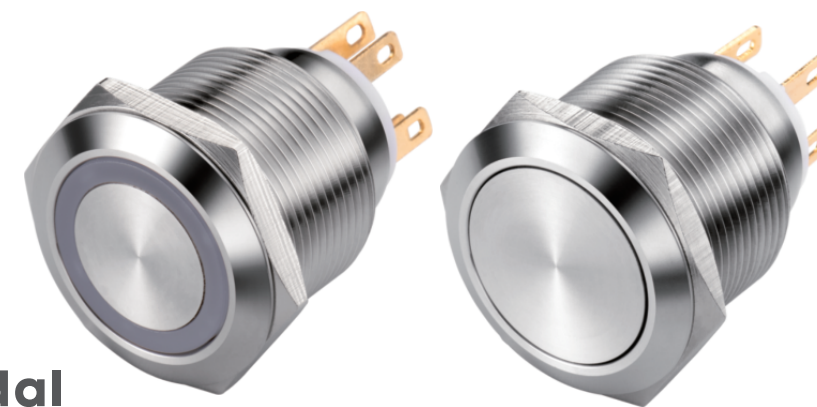
Contact configuration non-illuminated

Functions



Lens Options

RoHS COMPLIANCE



Anti Vandal Switch $\varnothing 22\text{mm}$

Order Code

Series
L22A

Actuator Options
F-Flat

Terminal Options
NONE-Solder lug (2.8X0.5)
N-Screw

Function Options
M-Momentary
1-1NO1NC
Z-Latching
1-1NO1NC

Material Options
S-Stainless steel

Illumination Style Options
NONE-Non-illum.
D-Dot
R-Ring
X-Backlit label kit**

Led- Color Options
None-Non-illum.
W-White
Y-Yellow
B-Blue
G-Green
R-Red
O-Orange

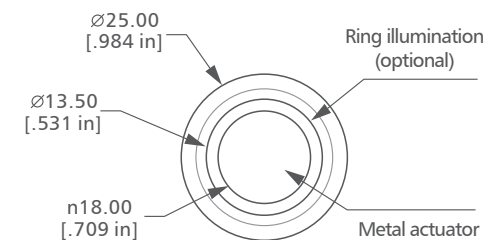
Illumination Voltage Options
NONE-Base voltage**
3.3V
6V
12V
24V
36V
110V
220V

Graphic Options
NONE-Non-marking
LE-Laser etched

Notes:

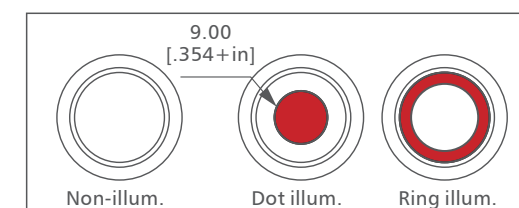
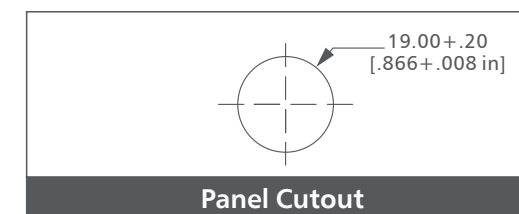
* Base voltage on LEDs:
1.8V @20mA for red, yellow and orange LED colors
2.8V @20mA for blue, green and white LED colors
**5 ICON labels included, flat actuator only

Description



Panel thickness:
1-10mm for momentary
1-12mm for latching

Panel Cutout & Illuminated Options

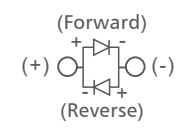
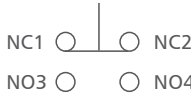
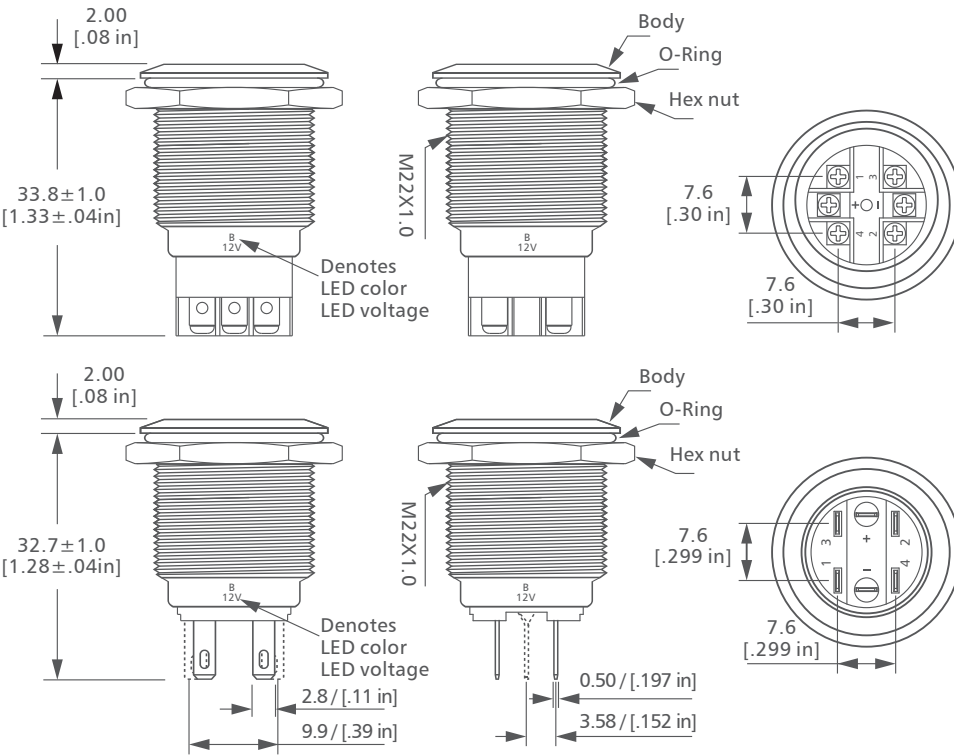


Lens Options

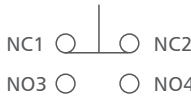
Technical Data

Type	L22A-F
Illuminated options	Non-illuminated / Ring illuminated / Dot illuminated / Backlit label kit
Terminal	Screw / Solder lug (2.8X0.5)
Max. switch rating	Ith: 5A Ui: 250VAC
Contact resistance	$\leq 50\text{m}\Omega$
Insulation resistance	$\geq 1000\text{m}\Omega$
Dielectric strength	2000VAC
Operation temp.	-20°C ~ +55°C
Mechanical life	1,000,000 cycles
Electrical life	> 50,000 cycles
Contact material	Silver alloy
Torque	5~14Nm
Operation pressure	Approx. 8N
Protection	IP65/ IK10
Material	
Actuator	Stainless steel
Body	Stainless steel
Base	PA
LED	
Color	3.3V / 6V / 12V / 24V / 36V / 110V / 220V R/G/Y/O/B/W Approx. 40,000 hours

Momentary



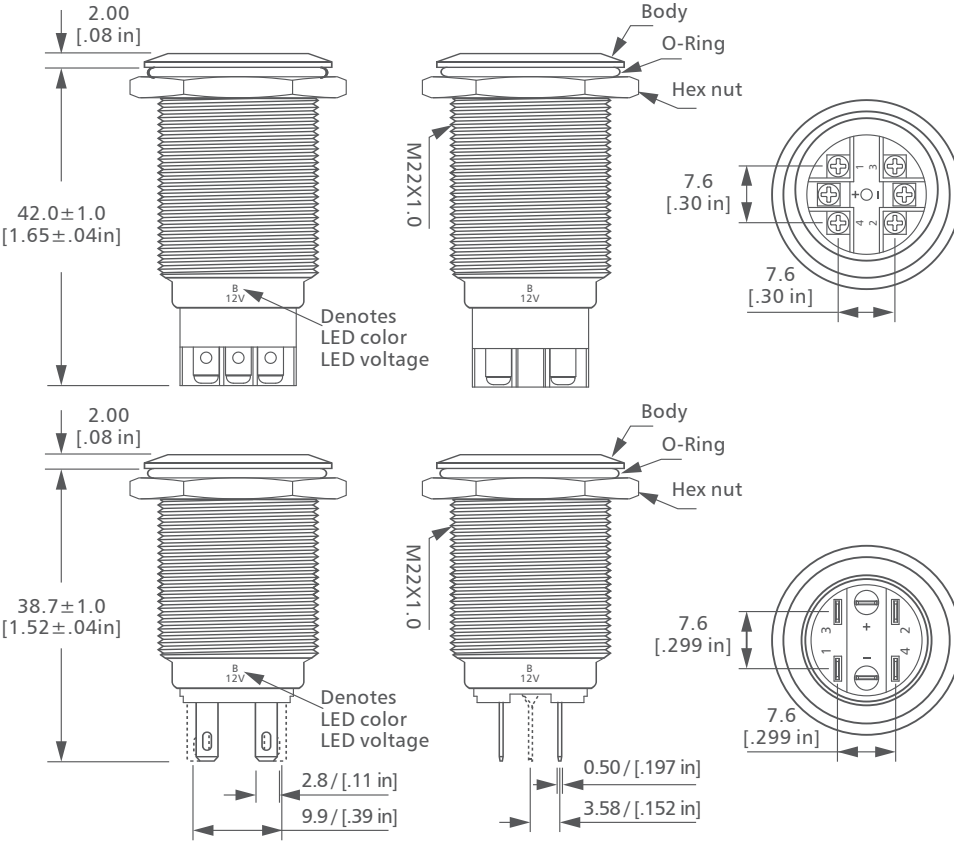
Contact configuration illuminated



Contact configuration Non-illuminated

Functions

Latching



ACC



BI225

5 ICON Labels Included

RoHS COMPLIANCE



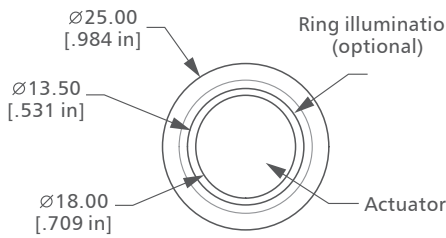
Micro-trip Anti Vandal Switch Ø 22mm

Order Code

Series	Actuator Options	Terminal Options	Function Options	Material Options	Illumination Style Options	Led- Color Options	Illumination Voltage Options	Graphic Options
L22M Micro-trip	F-Flat	NONE-Solder lug (2.8X0.8) N-Screw	M-Momentary 1-1NO	S-Stainless steel	NONE-Non-illum. D-Dot R-Ring	NONE-Non-illum. W-White Y-Yellow B-Blue G-Green R-Red O-Orange	NONE-Base voltage* 3.3V 6V 12V 24V 36V	NONE-Non-marking LE-Laser etched

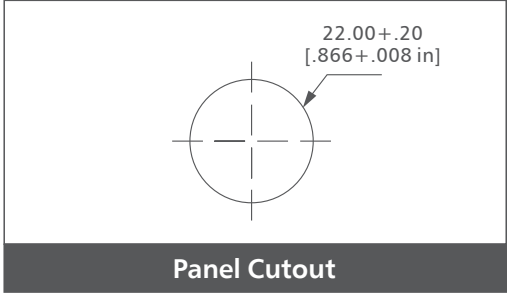
Notes:
* Base voltage on LEDs:
1.8V @20mA for red, yellow and orange LED colors
2.8V @20mA for blue, green and white LED colors

Description



Panel thickness: 1~10mm

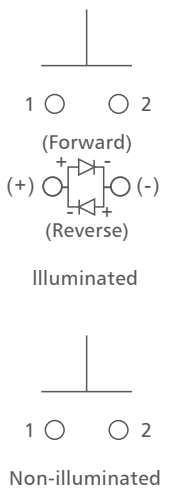
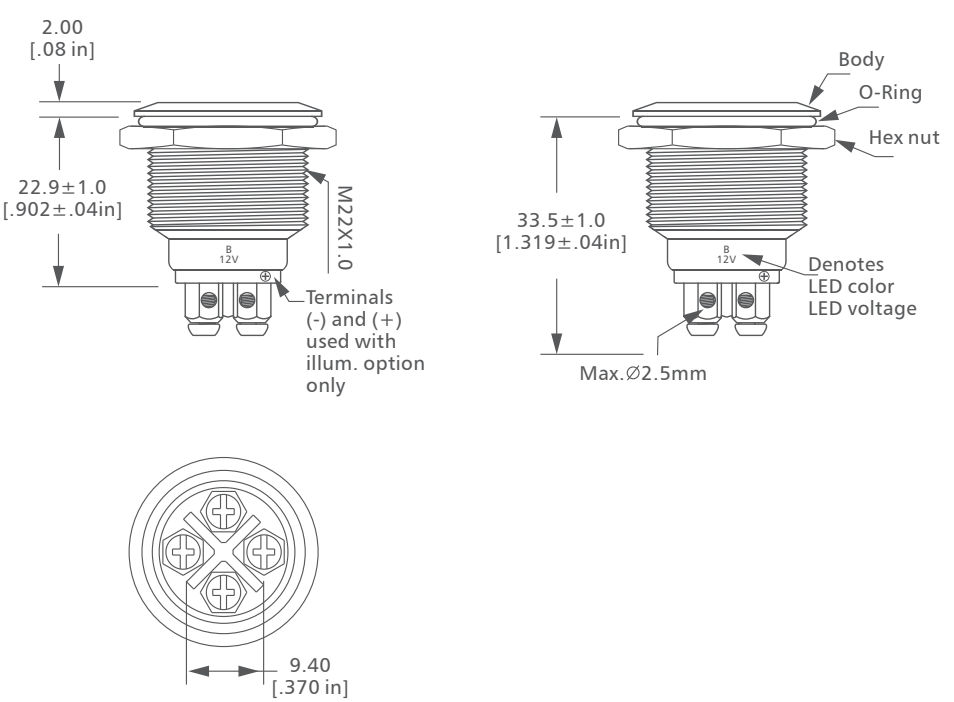
Panel Cutout



Technical Data

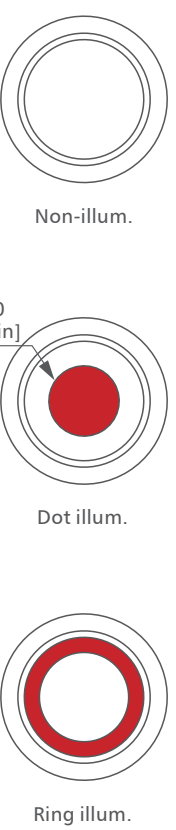
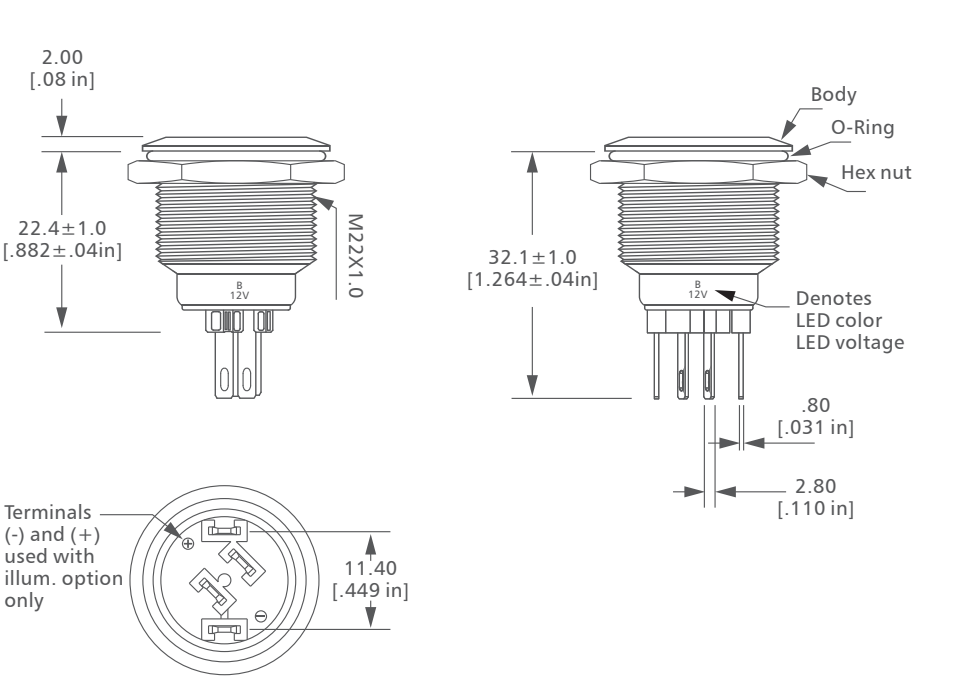
Type	L22M-F
Illuminated options	Non-illuminated / Ring illuminated / Dot illuminated
Terminal	Screw / Solder lug (2.8X0.8)
Max. switch rating	50mA 24VDC
Contact resistance	≤100m Ω
Insulation resistance	≥1000m Ω
Dielectric strength	2000VAC
Operation temp.	-20°C ~ +55°C
Mechanical life	1,000,000 cycles
Electrical life	50,000 cycles
Contact material	Silver alloy
Rear nut fixing torque	0.57Nm
Operation pressure	Approx. 8N
Protection	Ip65/ IK10
Material	
Switch assembly	UL94V-0 rated polyamide (nylon)
Tags	Copper alloy
Terminals	Copper alloy
Switch body & button	Stainless steel
Lens and lens body	Polycarbonate
Internal seal	Silicone
O ring	Nitrile
LED	
Color	3.3V / 6V / 12V / 24V / 36V R/G/Y/O/B/W Approx. 40,000 hours

Screw Terminal



Functions

Solder Terminal



Lens Options

RoHS COMPLIANCE



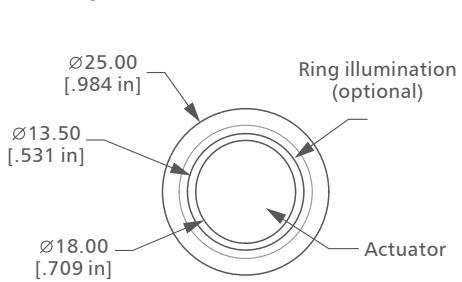
High Current Anti Vandal Switch
Ø22mm

Order Code

Series	Actuator Options	Terminal Options	Function Options	Current Options	Material Options	Illumination Style Options	Led- Color Options	Illumination Voltage Options	Graphic Options
L22B	F-Flat	NONE-Quick connect terminal (6.35X0.8)	M-Momentary 1-1NO(SPST) 2-1NC(SPST) 3-1NO1NC(SPDT) Z-Latching 1-1NO(SPST) 2-1NC(SPST) 3-1NO1NC(SPDT)	02-2.5A 03-3A 05-5A 08-8A 10-10A 16-16A 21-21A D6-0.6A / 125VDC D3-0.3A / 250VDC	S-Stainless steel	NONE-Non-illum. D-Dot R-Ring	NONE-Non-illum. W-White Y-Yellow B-Blue G-Green R-Red O-Orange	NONE-Base voltage* 3.3V 6V 12V 24V 36V 110V 220V	NONE-Non-marking LE-Laser etched

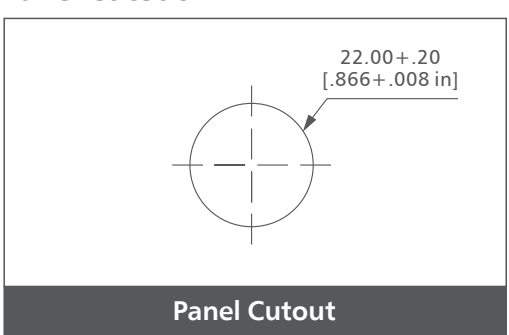
Notes:
* Base voltage on LEDs:
1.8V @20mA for red, yellow and orange LED colors
2.8V @20mA for blue, green and white LED colors

Description



Panel thickness: 1~12mm

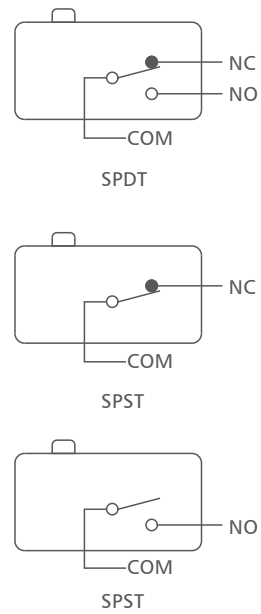
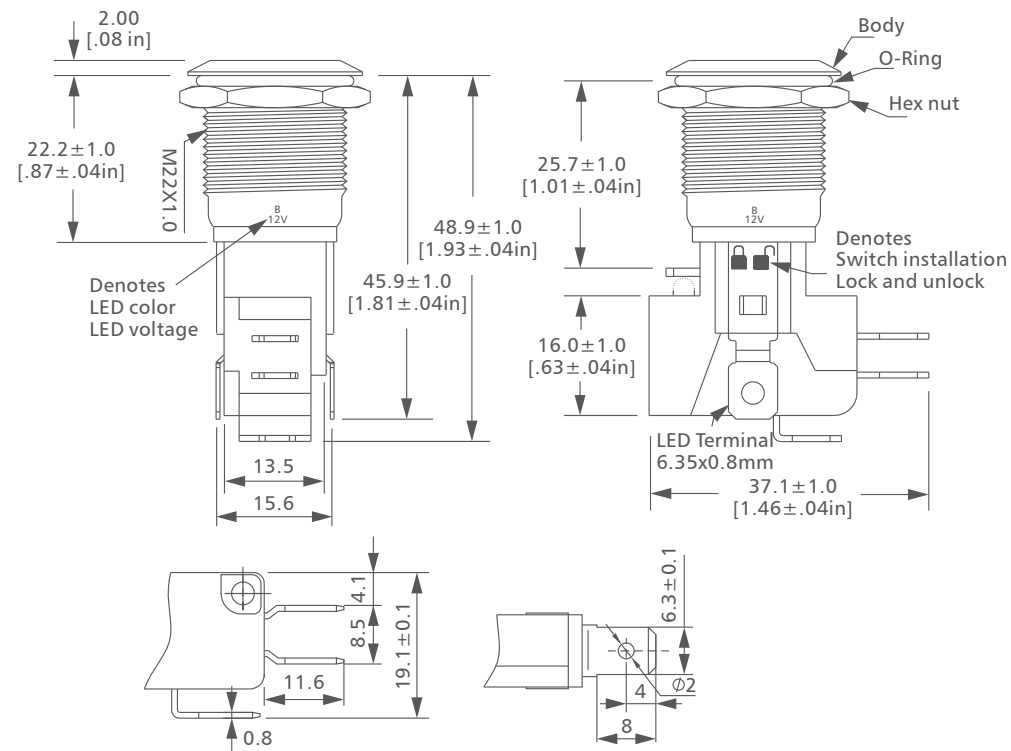
Panel Cutout



Technical Data

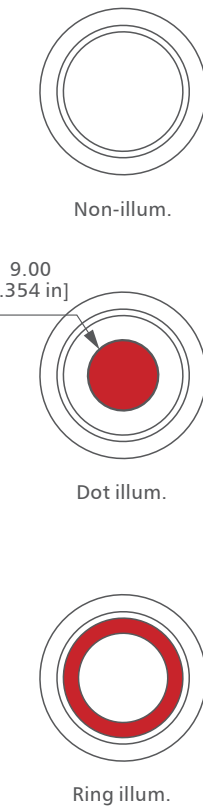
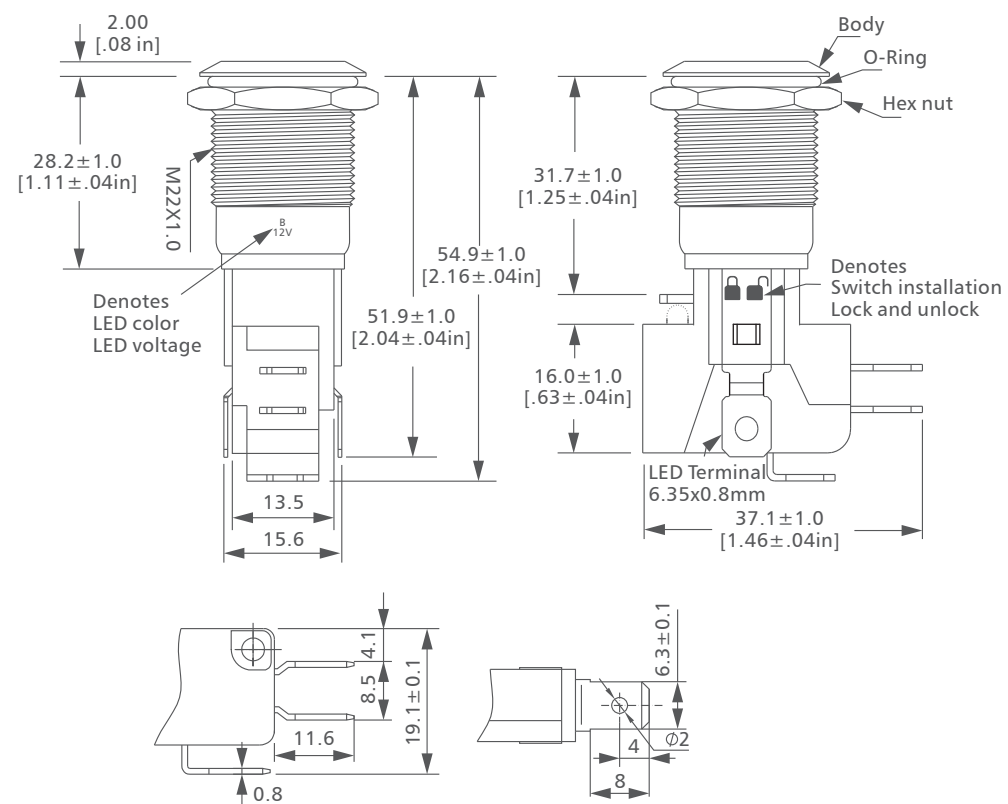
Type	L22B-F
Illuminated options	Non-illuminated / Ring illuminated / Dot illuminated
Terminal	Quick connect terminal (6.35x0.8)
Max. switch rating	3A 5A 8A 10A 15A(16A) 20A(21A) 250VAC, 125VAC 0.6A/ 125VDC 0.3A/ 250VDC
Contact resistance	≤25m Ω
Insulation resistance	≥100m Ω
Dielectric strength	Between non-consecutive terminals 1,000Vrms, 50/60Hz for 1min Between non-current carrying metal parts and each terminal 1,500Vrms, 50/60Hz for 1min Between ground and each terminal 1,500Vrms, 50/60Hz for 1min
Shock resistance	Detraction: O.F.>0.5N: 1000m/s2 (approx. 100g), O.F.≤0.5N: 400m/s2 (approx. 40g) Malfunction: O.F.>0.5N: 200m/s2 (approx. 20g), O.F.≤0.5N: 100m/s2 (approx. 10g)
Vibration resistance	10 - 50Hz, 1.5mm double amplitude
Ambient temp.	-25°C ~ +85°C
Mechanical life	2,000,000 cycles
Electrical life	50,000 cycles
Contact material	Silver alloy
Torque	5~14Nm
Operation pressure	10N
Protection	IP65/ IK09
Material	
Actuator	Stainless steel
Body	Stainless steel
LED	
Color	3.3V / 6V / 12V / 24V / 36V / 110V / 220V R/G/Y/O/B/W Approx, 40,000

Momentary



Contact

Latching



Lens Options



Anti Vandal Switch Ø25mm

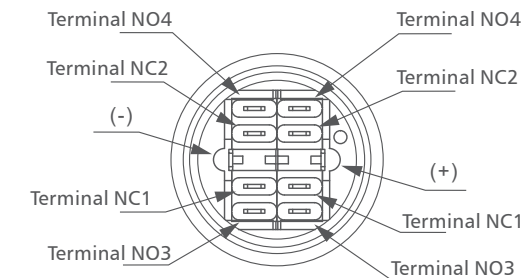
Order Code

Series	Actuator Options	Terminal Options	Function Options	Material Options	Illumination Style Options	Led- Color Options	Illumination Voltage Options	Graphic Options
								
L25	F-Flat	NONE-Solder lug (2.8X0.5)	M-Momentary 1-1NO1NC 2-2NO2NC Z-Latching 1-1NO1NC 2-2NO2NC	S-Stainless steel A-Anodized aluminum*	NONE-Non-illum. D-Dot R-Ring	NONE-Non-illum. W-White Y-Yellow B-Blue G-Green R-Red O-Orange	NONE-Base voltage** 3.3V 6V 12V 24V 36V 110V 220V	NONE-Non-marking LE-Laser etched

Notes:

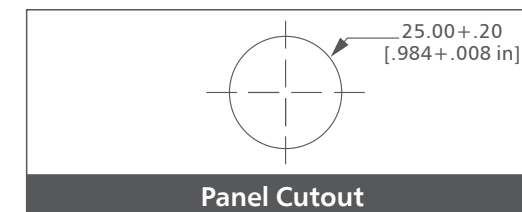
- * Base voltage on LEDs:
 - 1.8V @20mA for red, yellow and orange LED colors
 - 2.8V @20mA for blue, green and white LED colors

Description

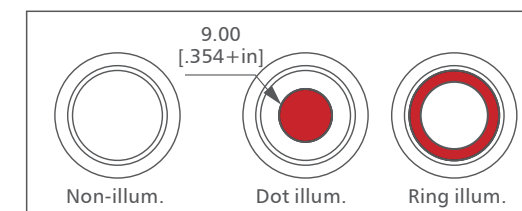


Terminals (-) and (+) used with illum.option only

Panel Cutout & Illuminated Options



Panel Cutout

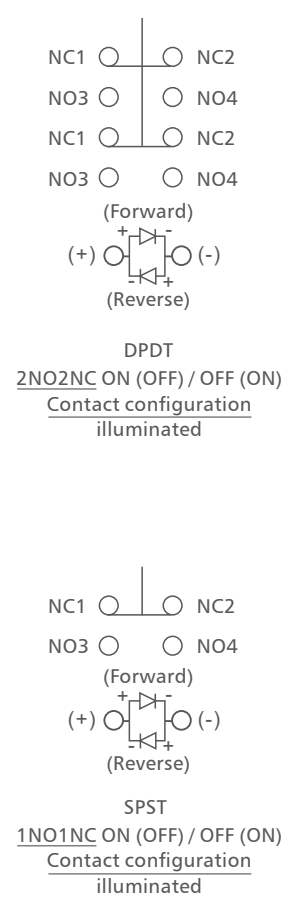
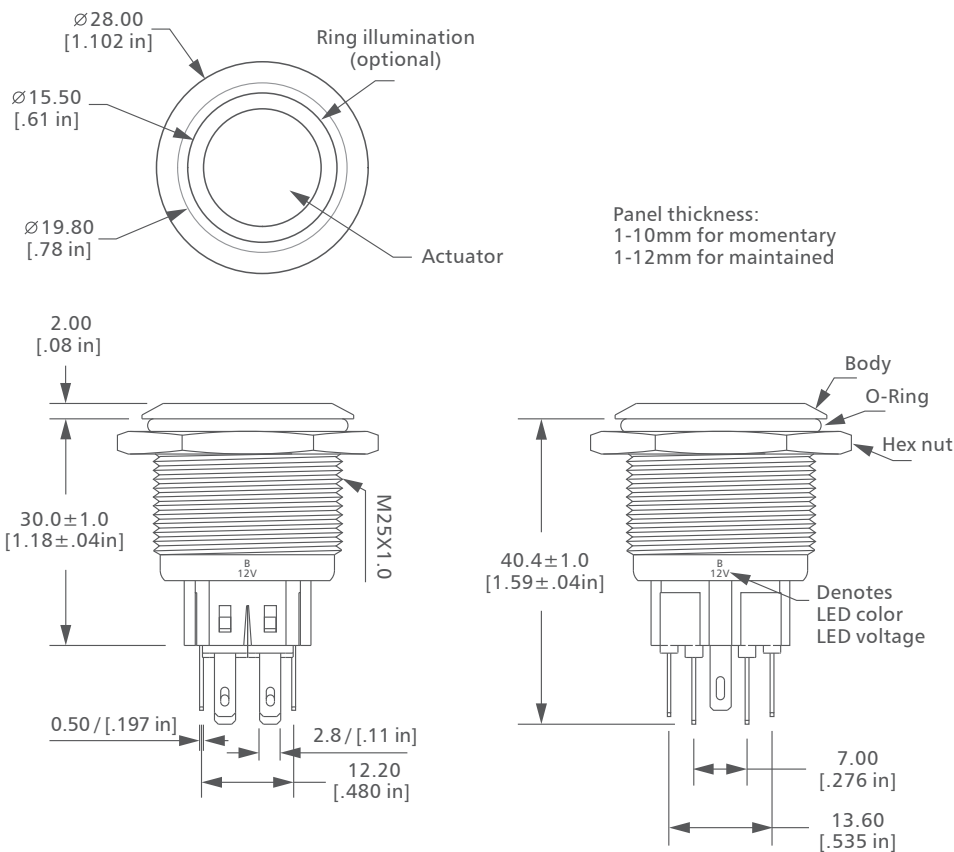


Lens Options

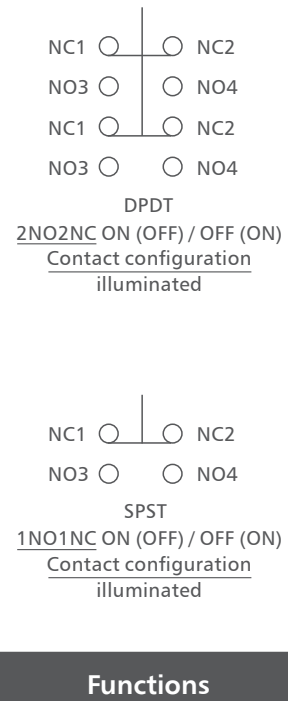
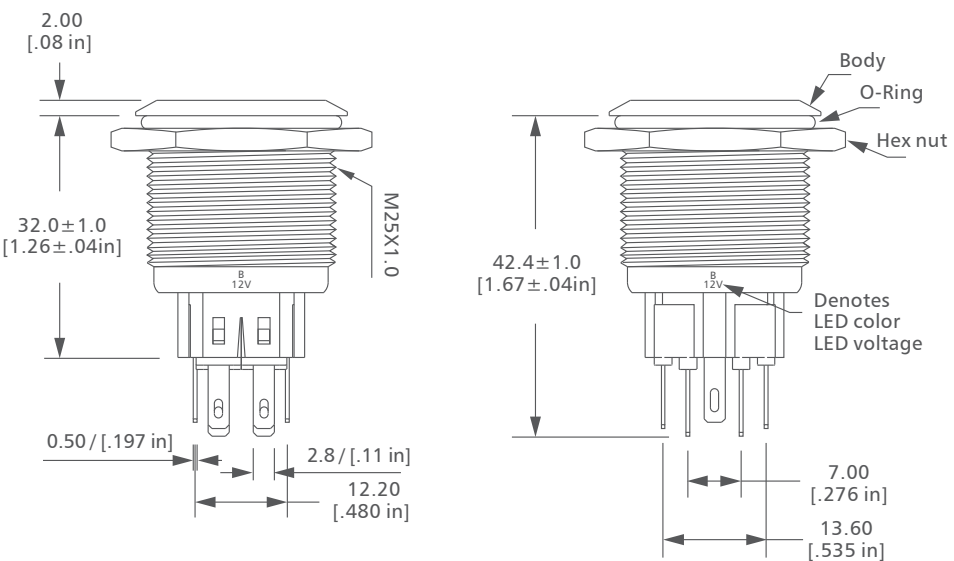
Technical Data

Type	L25-F
Illuminated options	Non-illuminated / Ring illuminated / Dot illuminated
Terminal	Solder lug (2.8X0.5)
Max. switch rating	Ith: 5A Ui: 250VAC
Contact resistance	≤50mΩ
Insulation resistance	≥1000mΩ
Dielectric strength	2000VAC
Operation temp.	-20°C ~ +55°C
Mechanical life	1,000,000 cycles
Electrical life	> 50,000 cycles
Contact material	Silver alloy
Torque	5~14Nm
Operation pressure	Approx. 8N
Protection	IP65 / IK10
Material	
Actuator	Stainless steel / *Anodized aluminum
Body	Stainless steel / *Anodized aluminum
Base	PA
Color	LED
	3.3V / 6V / 12V / 24V / 36V / 110V / 220V
	
	Approx. 40,000 hours

Momentary



Latching



Functions

Indicator Buzzer

Anti Vandal Pilot Lamp

Specifications

Contact arrangement: Indicator
Operating / Storage Temperature: -20°C to 55°C
Lamp life: 40,000 hours nominal
Ingress protection: IP67
Panel thickness: 1-6mm or 1-10mm, (depending on mounting diameter)
Mounting nut torque: 5-14Nm

Features & Benefits

- Pilot indicator light
- Multiple panel cutout sizes: 6mm to 19mm dia.
- Multiple illumination voltage options
- Multiple LED color options
- IP67 rated

Order Code

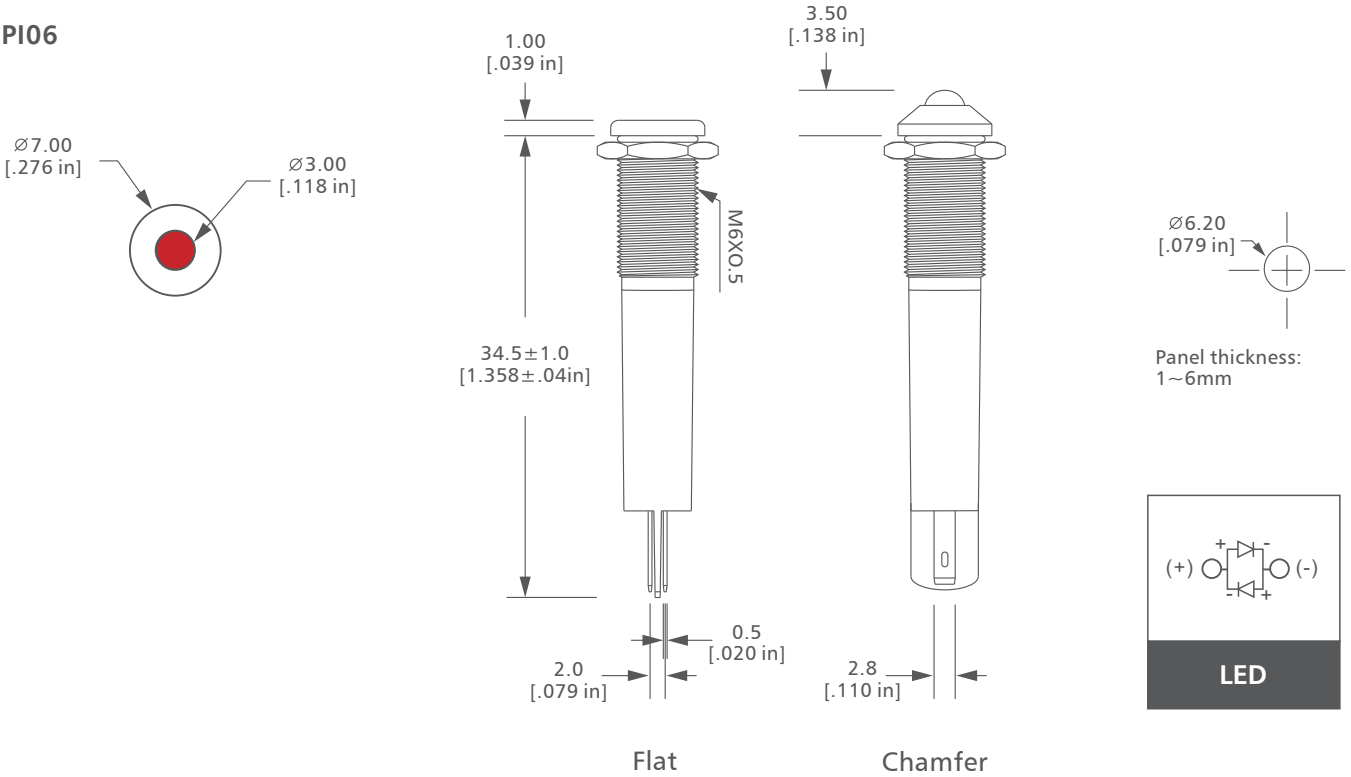
Series	Indicator Diameter	Terminal Options	Lens	Illumination Style Options	Material Options	Led-Color Options	Illumination Voltage Options
PI	06- 6mm Dia.	NONE Solder lug(2.8x0.5)	F- Flat	D- Dot illum.	S-Stainless steel	W- White	NONE-Base voltage***
PV*	08- 8mm Dia.	K-Wire-leads 150mm long or request	C- Chamfer	R- Ring illum.**	N-Nickel plated brass	Y- Yellow	3.3V
	10- 10mm Dia.					B- Blue	6V
	12- 12mm Dia.					G- Green	12V
	14- 14mm Dia.					R- Red	24V
	16- 16mm Dia.					O- Orange	36V
	19- 19mm Dia.						110V

Notes:

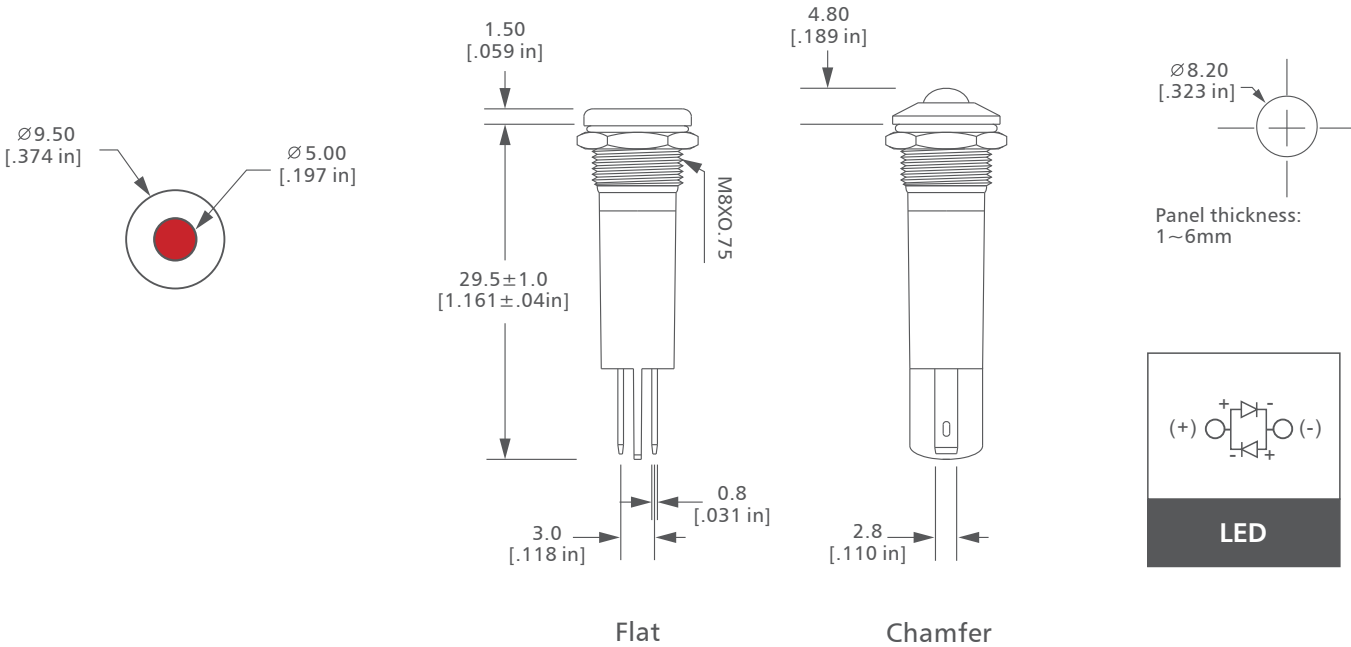
*PV: only 8mm and 12mm
**Ring illum. for 16~19mm, 6~12mm dot illum. only or request
***Base voltage on LEDs:
1.8V @ 20mA for red, yellow and orange LED colors
2.8V @ 20mA for blue, green and white LED colors

Dimensions

PI06

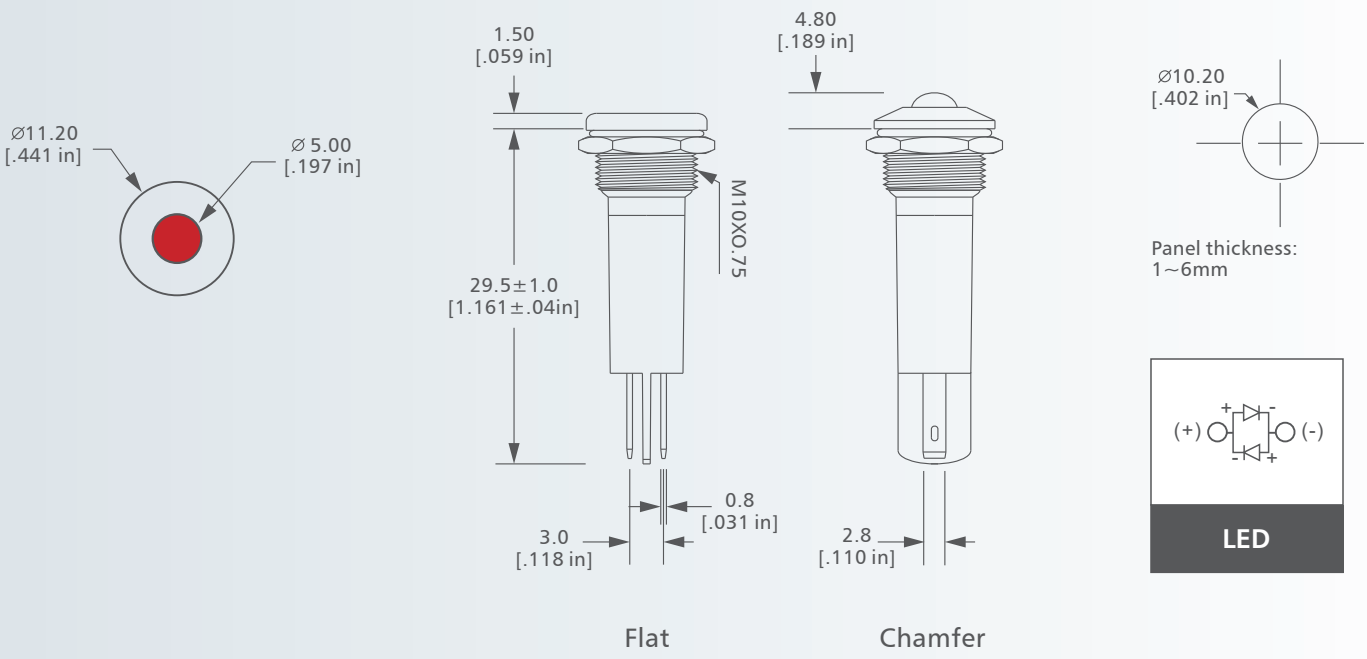


PI08



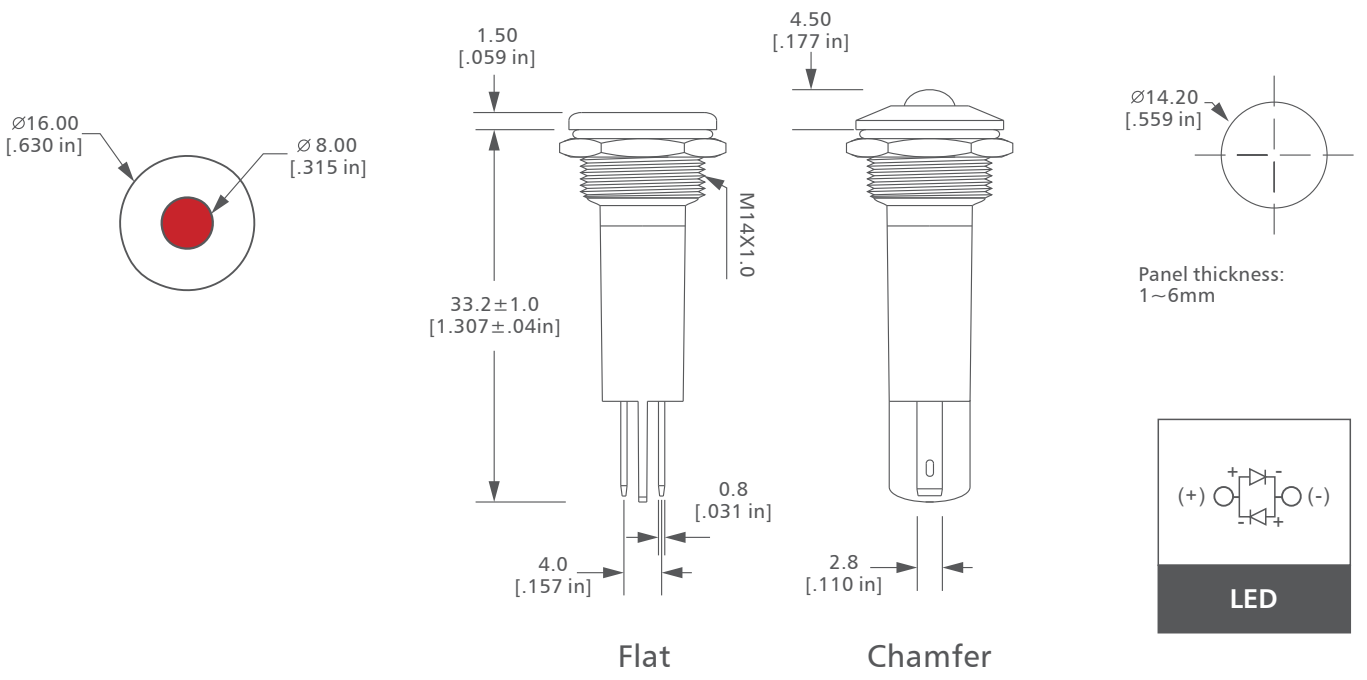
Dimensions

PI10

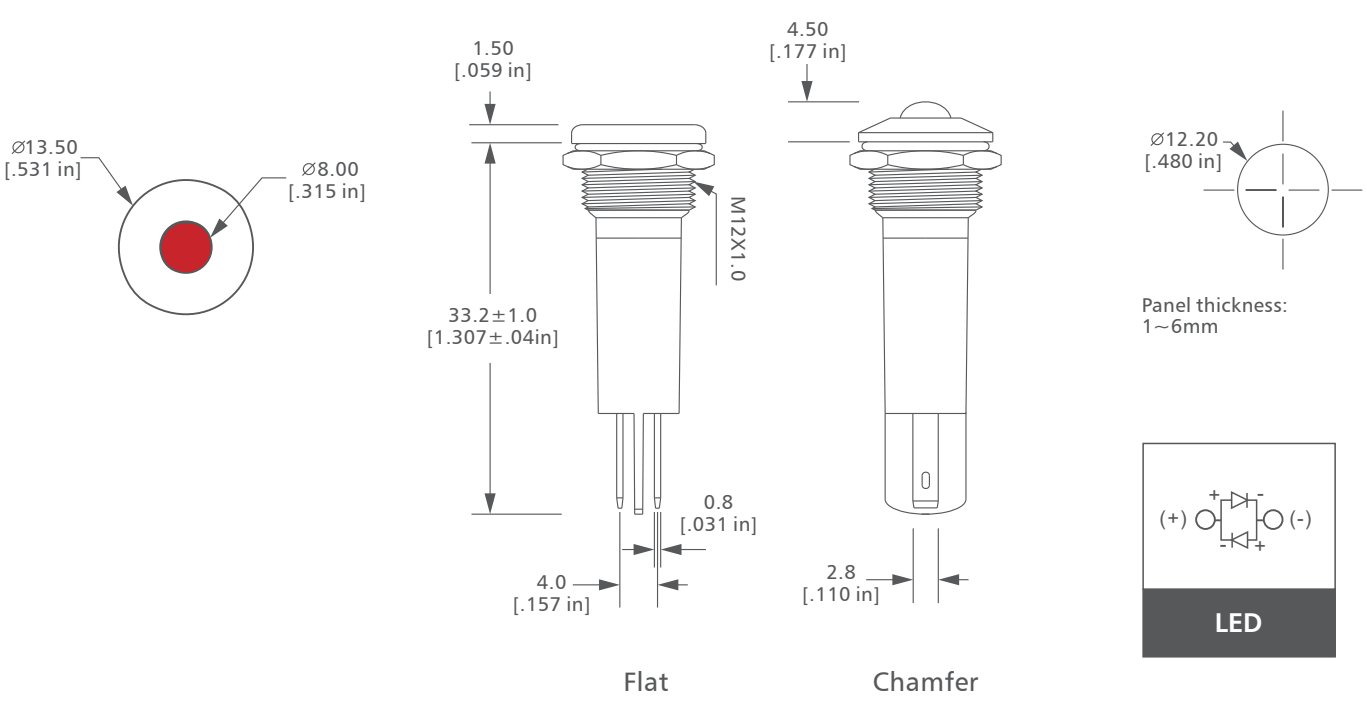


Dimensions

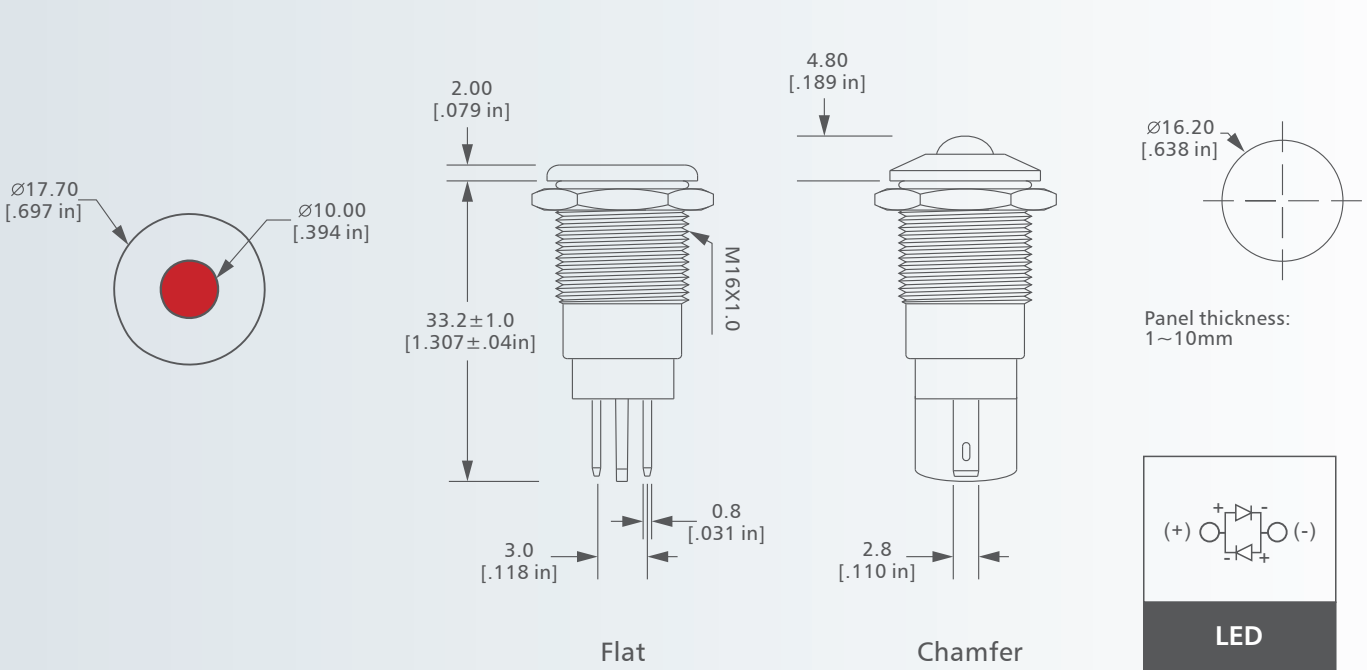
PI14



PI12

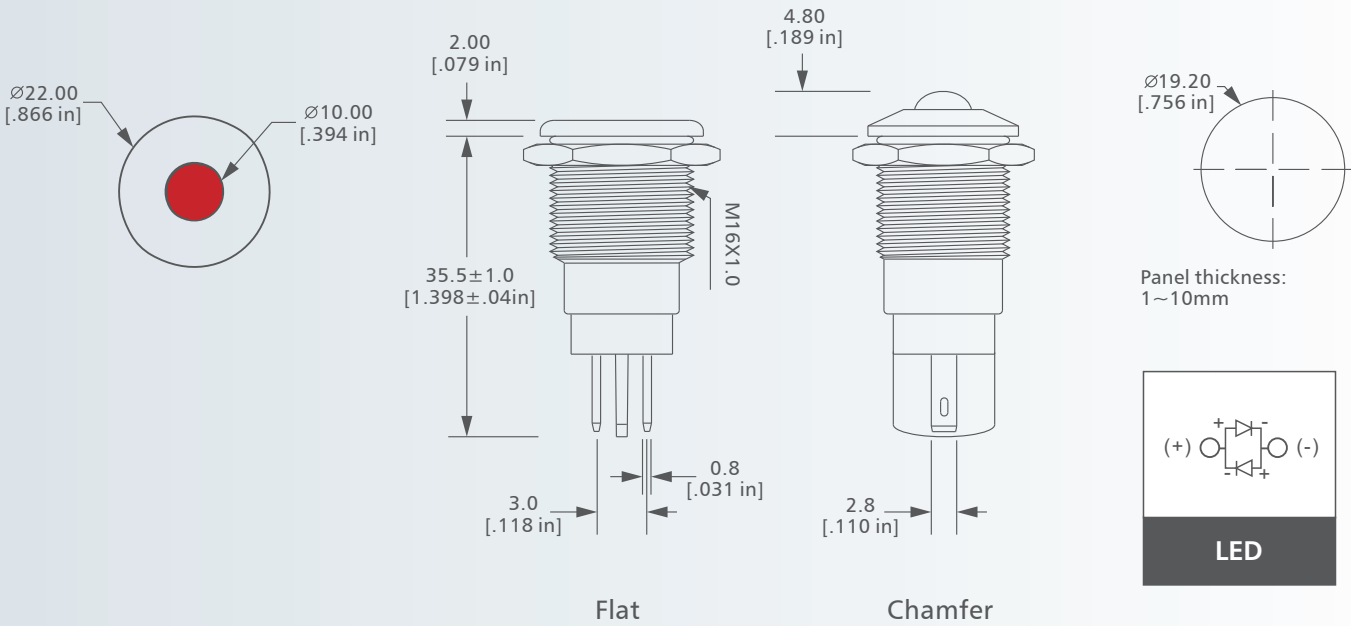


PI16

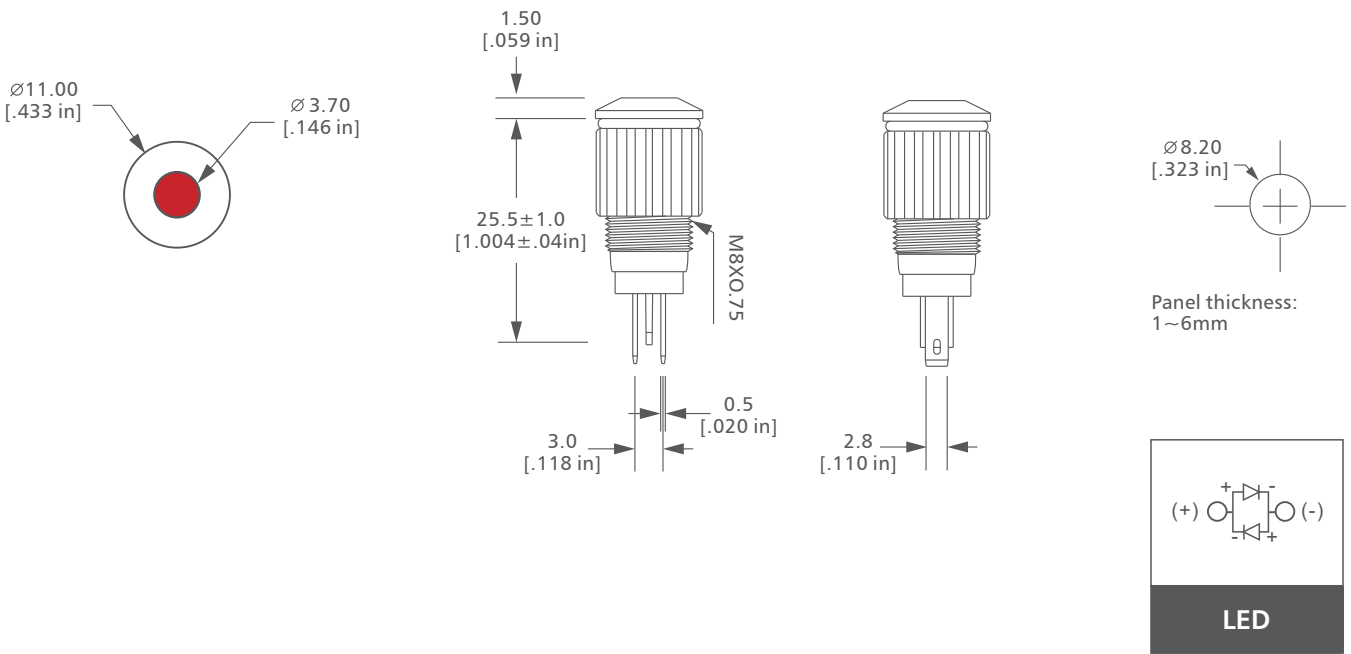


Dimensions

PI19

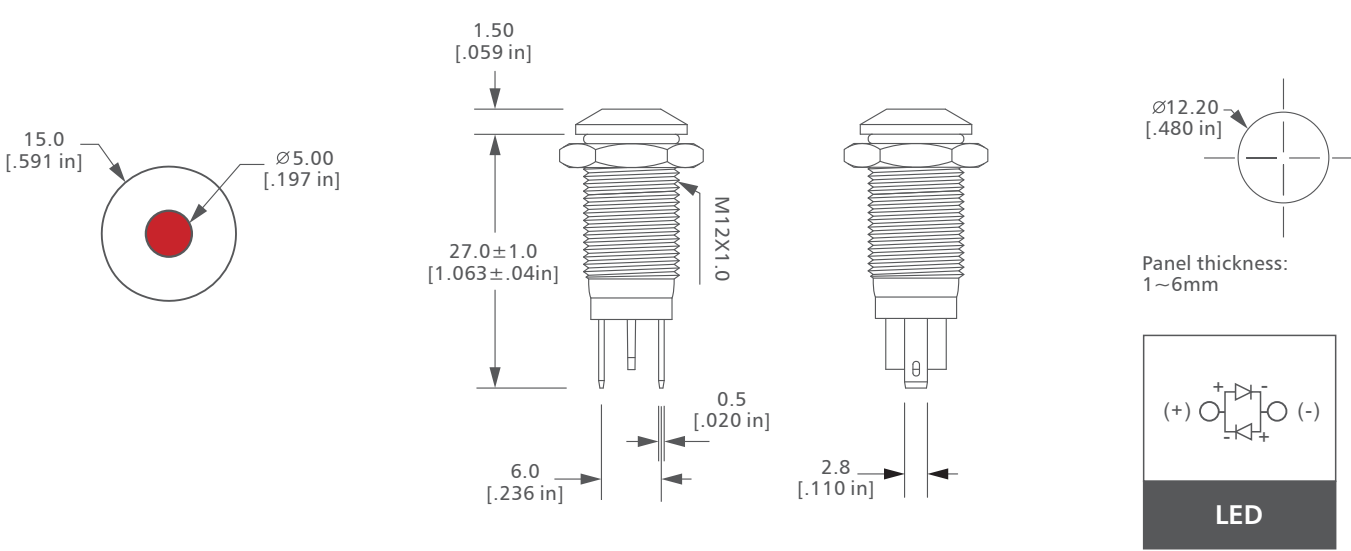


PV8



Dimensions

PV12





RoHS COMPLIANCE



Buzzer

Order Code

Series

LF19

Function Options

NONE-Buzzer flashing and non-illum.
F-Flicker buzzer
A-Alternately flashing color
C-LED close when buzzer pause
H-LED always lighting when buzzer pause
S-Bi-color LED strobe, the buzzer call in slow
The function can be customized

Remark:
'A' standard color for red and green
'C' standard color for red
'S' standard color for red and blue

Terminal Options

NONE-Screw

Material Options

S-Stainless steel

Illumination Style Options

NONE-Ring illum.

Led- Color Options

W-White
Y-Yellow
B-Blue
G-Green
R-Red

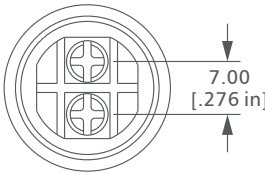
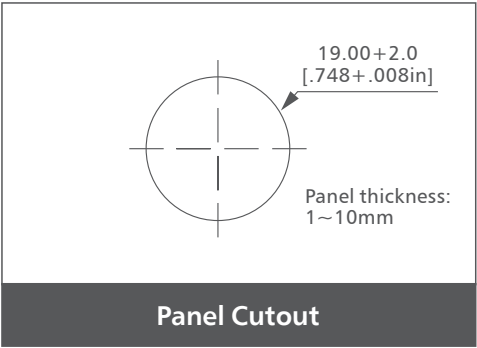
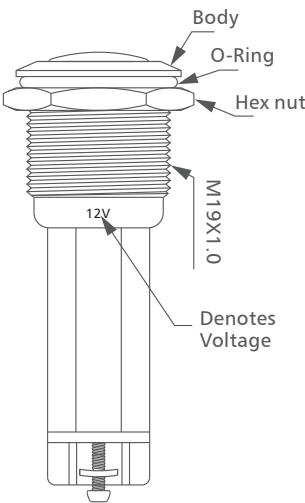
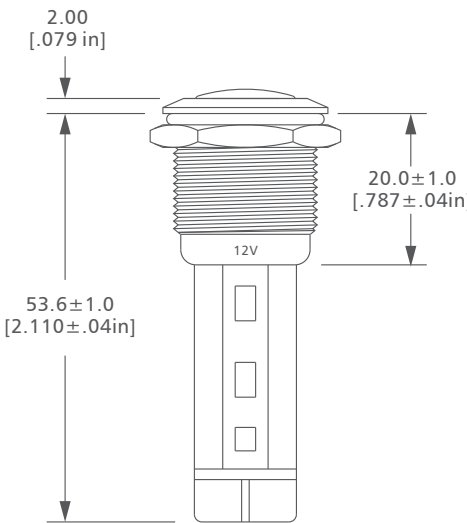
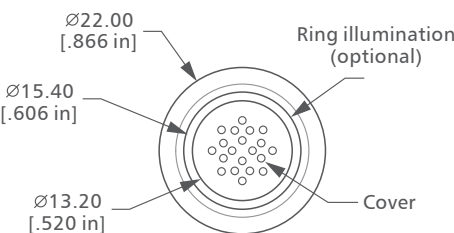
Illumination Voltage Options

12V
24V

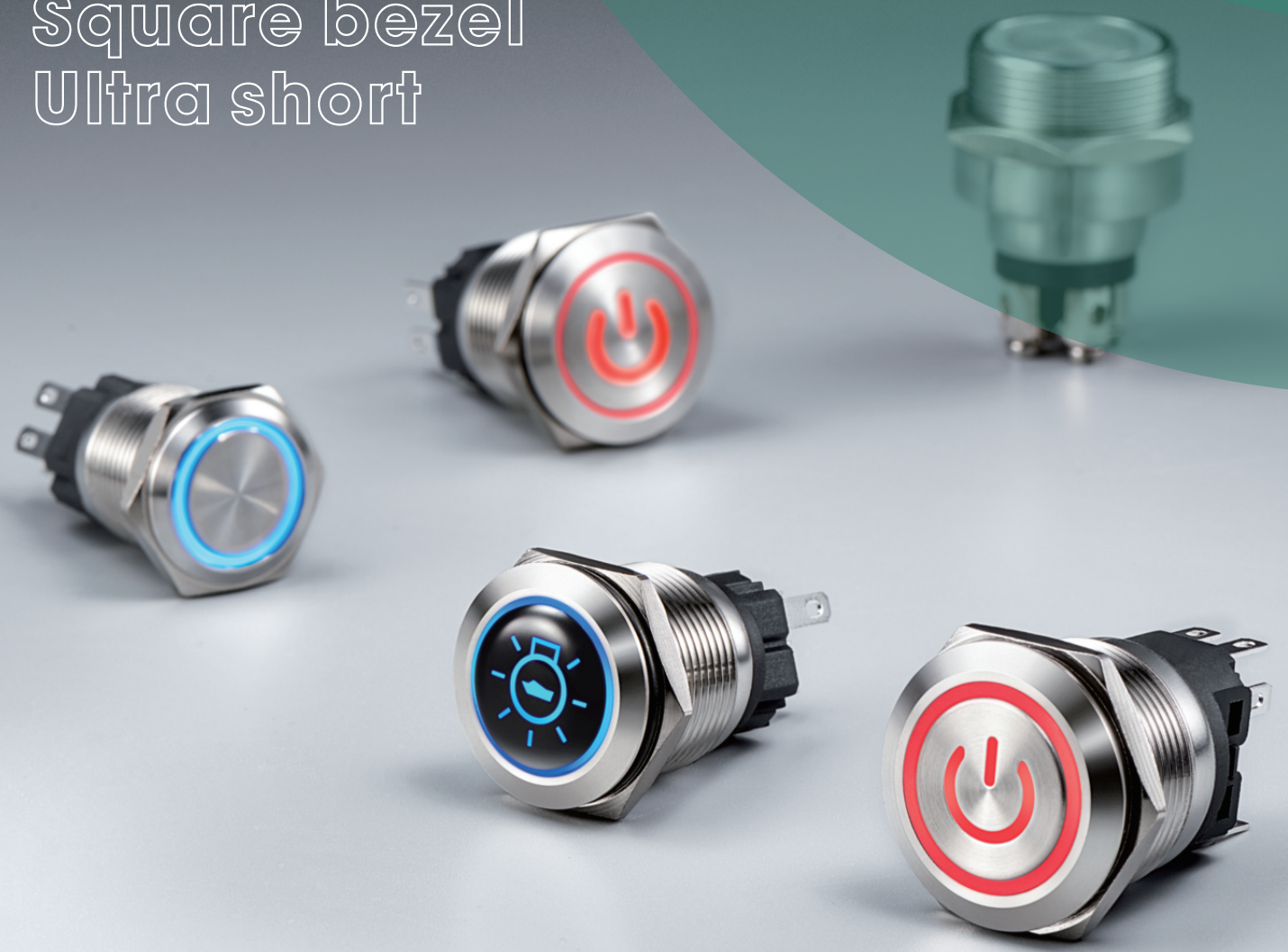
Technical Data

Type	LF19	LF19-F
Function	Buzzer	Flicker buzzer
Terminal	Screw	
Max. switch rating		
Contact resistance		
Insulation resistance		
Dielectric strength	2000VAC	
Operation temp	-20℃ ~ +55℃	
Mechanical life		
Electrical life		
Contact material		
Torque	5~14Nm	
Operation pressure		
Protection	IP40 / IK04	
Material		
Actuator	Stainless steel	
Body	Stainless steel	
Base	PA	
Buzzer Spec.		
Type	Buzzer	Flicker buzzer
Voltage	DC12V / DC24V	
Color	R G Y B W	
Sound Inten	≥80dB(0.1m)	

Dimensions



Backlit
Tri-color
Rear mounting
Square bezel
Ultra short



RoHS COMPLIANCE



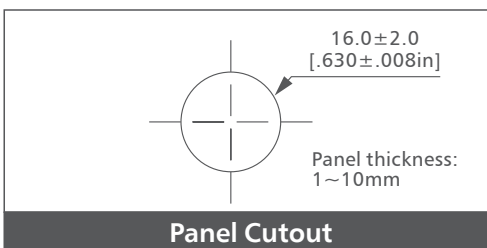
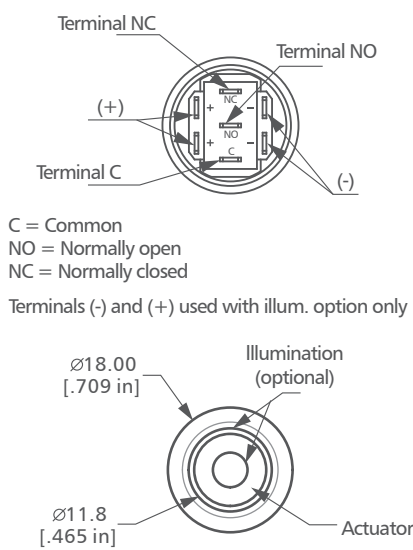
Anti Vandal Switch Ø16mm

Order Code

Series	Actuator Options	Terminal Options	Function Options	Material Options	Illumination Style Options	Led- Color Options	Illumination Voltage Options	Graphic Options
L16T	F-Flat H-Raised	NONE-Solder lug (2.8X0.5)	M-Momentary 1-1NO1NC Z-Latching 1-1NO1NC	S-Stainless steel N-Nickel plated brass A-Anodized aluminum	NONE-Non-illum. D-Dot R-Ring PS-Power backlit symbol PY-Ring illum.& Power backlit symbol	NONE-Non-illum. W-White Y-Yellow B-Blue G-Green R-Red 3A-Red/ Green/ Blue	NONE-Base voltage* 3.3V 6V 12V 24V 36V 110V 220V	NONE-Non-marking LE-Laser etched

Notes:
* Base voltage on LEDs:
1.8V @20mA for red and yellow LED colors
2.8V @20mA for blue, green and white LED colors

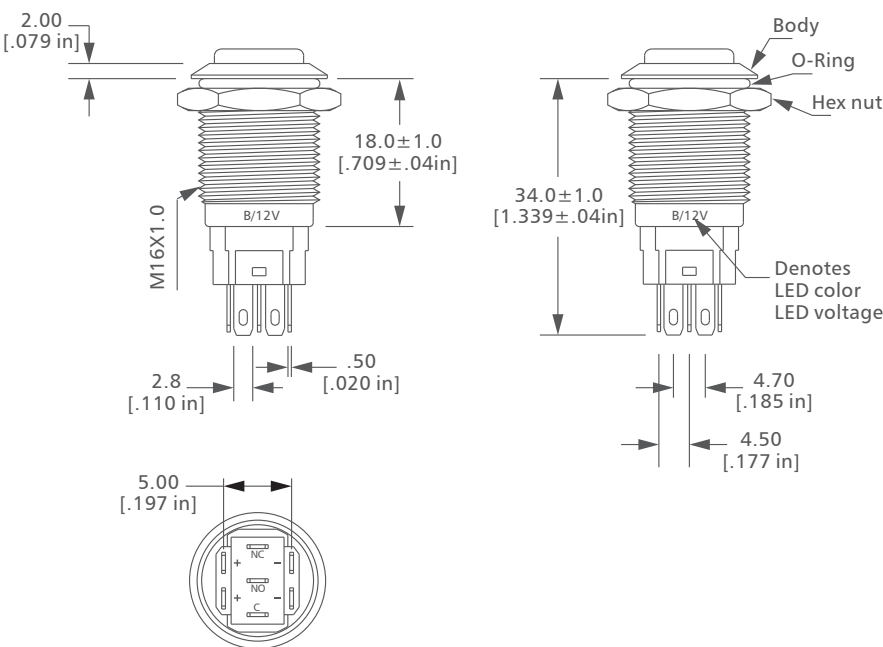
Description



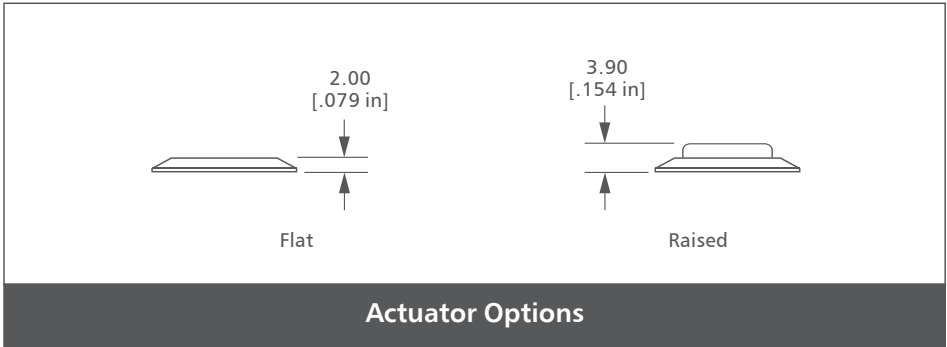
Technical Data

Type	L16T-F / L16T-H
Illuminated type	Non-illuminated / Ring illuminated / Dot illuminated
Terminal	Solder lug (2.8X0.5)
Max. switch rating	Ith: 3A Ui: 250VAC
Contact resistance	≤50mΩ
Insulation resistance	≥1000mΩ
Dielectric strength	2000VAC
Operation temp.	-20°C ~ +55°C
Mechanical life	2,000,000 cycles
Electrical life	100,000 cycles
Contact material	Silver alloy
Torque	5~14Nm
Operation pressure	Approx. 3~5N
Protection	IP65/ IK09
Material	Stainless steel / Nickel plated brass / Anodized aluminum
Button	Stainless steel / Nickel plated brass / Anodized aluminum
Base	PBT
LED	LED
Color	3.3V / 6V / 12V / 24V / 36V / 110V / 220V R/G/Y/B/W Approx, 40,000 hours

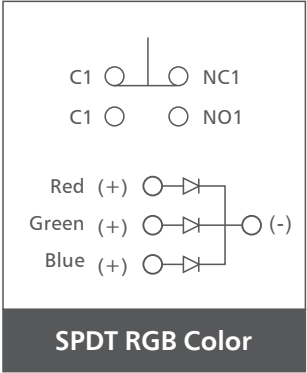
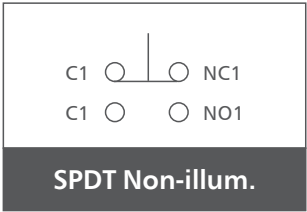
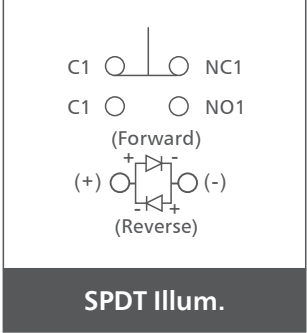
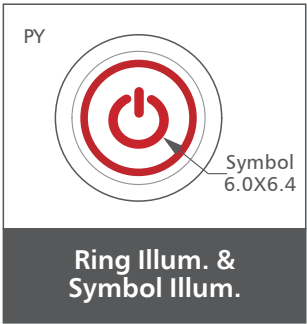
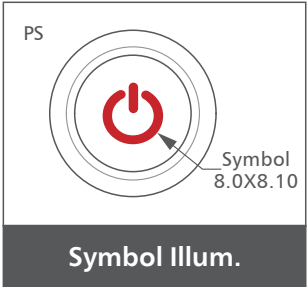
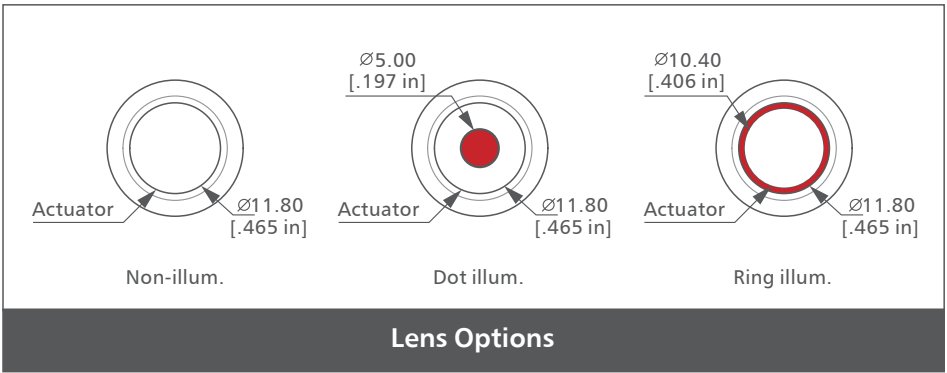
Dimensions



Actuator Options



Illum. Options



RoHS COMPLIANCE



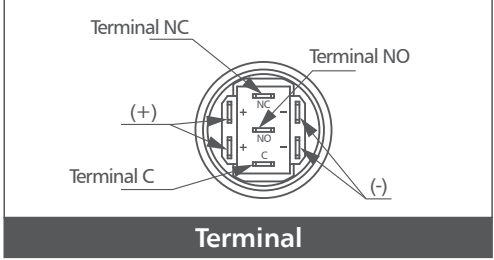
Anti Vandal Switch Ø19mm

Order Code

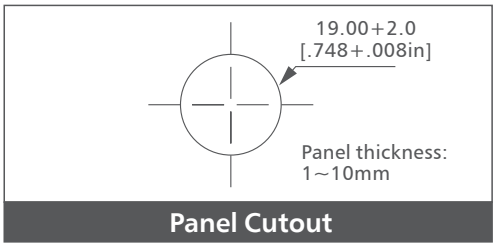
Series	Actuator Options	Terminal Options	Function Options	Material Options	Illumination Style Options	Led- Color Options	Illumination Voltage Options	Graphic Options
L19T	F-Flat	NONE-Solder lug (2.8X0.5)	M-Momentary 1-1NO1NC Z-Latching 1-1NO1NC	S-Stainless steel A-Anodized aluminum	NONE-Non-illum. D-Dot R-Ring PS-Power backlit symbol PY-Ring illum. & Power backlit symbol	NONE-Non-illum. W-White Y-Yellow B-Blue G-Green R-Red 3A-Red/ Green/ Blue	NONE-Base voltage* 3.3V 6V 12V 24V 36V 110V 220V	NONE-Non-marking LE-Laser etched

Notes:
* Base voltage on LEDs:
1.8V @20mA for red and yellow LED colors
2.8V @20mA for blue, green and white LED colors

Description



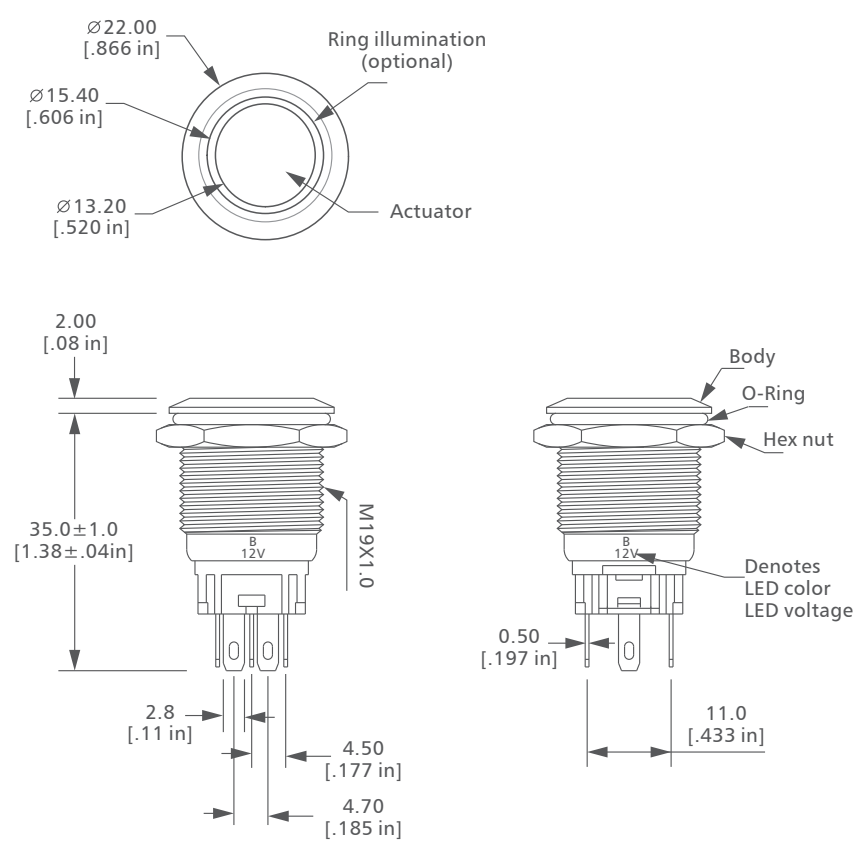
C = Common
NO = Normally open
NC = Normally closed
Terminals (-) and (+) used with illum. option only



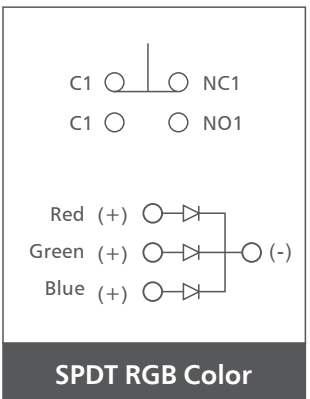
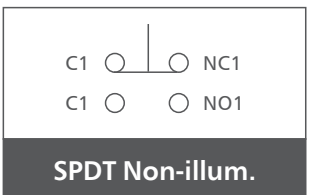
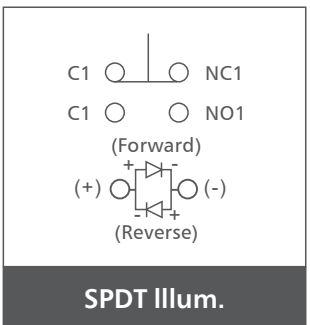
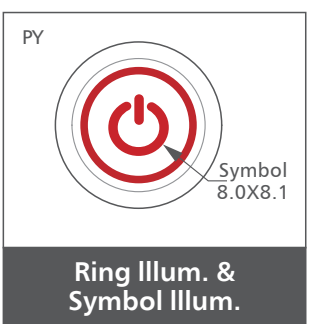
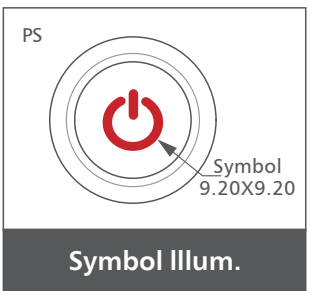
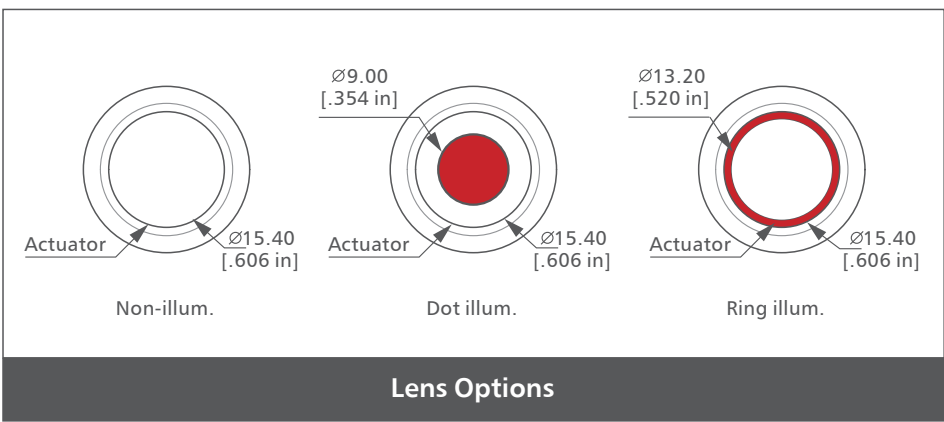
Technical Data

Type	L19T-F
Illuminated options	Non-illuminated / Ring illuminated / Dot illuminated
Terminal	Solder lug (2.8X0.5)
Max. switch rating	Ith: 3A Ui: 250VAC
Contact resistance	≤50mΩ
Insulation resistance	≥1000mΩ
Dielectric strength	2000VAC
Operation temp.	-20°C ~+ 55°C
Mechanical life	1,000,000 cycles
Electrical life	100,000 cycles
Contact material	Silver alloy
Torque	5~14Nm
Operation pressure	Approx. 5N
Protection	IP65/ IK09
Material	
Actuator	Stainless steel / Anodized aluminum
Body	Stainless steel / Anodized aluminum
Base	PBT
Color	LED 3.3V / 6V / 12V / 24V / 36V / 110V / 220V R/G/Y/B/W Approx. 40,000 hours

Dimensions



Illum. Options



RoHS COMPLIANCE



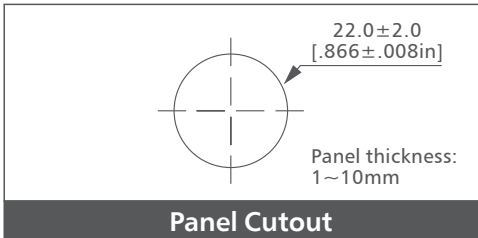
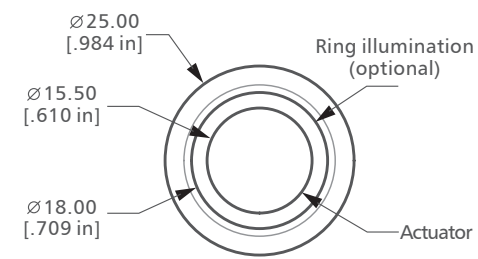
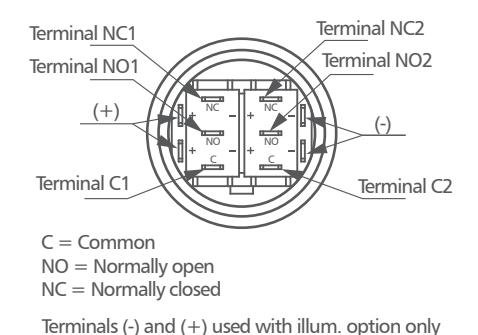
Anti Vandal Switch $\varnothing 22\text{mm}$

Order Code

Series	Actuator Options	Terminal Options	Function Options	Material Options	Illumination Style Options	Led- Color Options	Illumination Voltage Options	Graphic Options
L22T	F-Flat H-Raised	NONE-Solder lug (2.8X0.5)	M-Momentary 1-1NO1NC 2-2NO2NC Z-Latching 1-1NO1NC 2-2NO2NC	S-Stainless steel A-Anodized aluminum	NONE-Non-illum. D-Dot R-Ring PS-Power backlit symbol PY-Ring illum.& Power backlit symbol	NONE-Non-illum. W-White Y-Yellow B-Blue G-Green R-Red 3A-Red/ Green/ Blue	NONE-Base voltage* 3.3V 6V 12V 24V 36V 110V 220V	NONE-Non-marking LE-Laser etched

Notes:
* Base voltage on LEDs:
1.8V @20mA for red and yellow LED colors
2.8V @20mA for blue, green and white LED colors

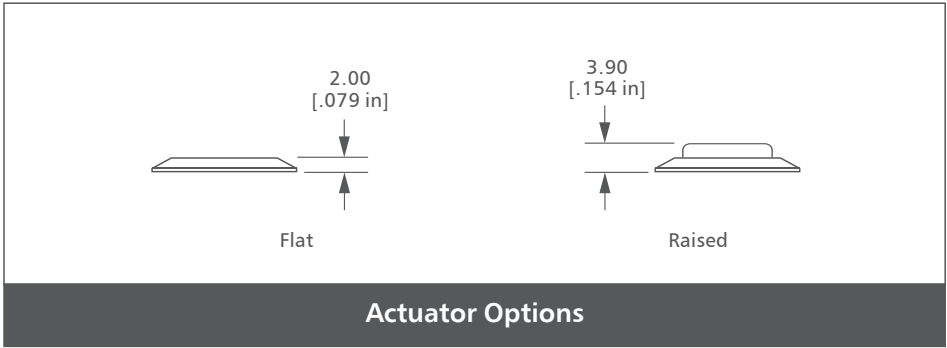
Description



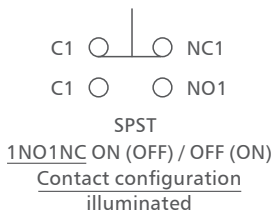
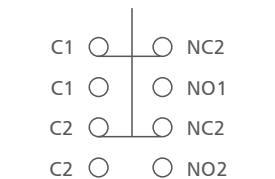
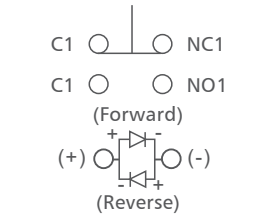
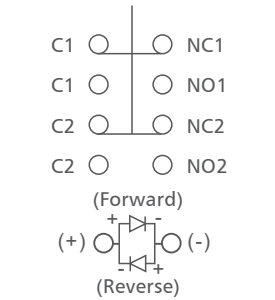
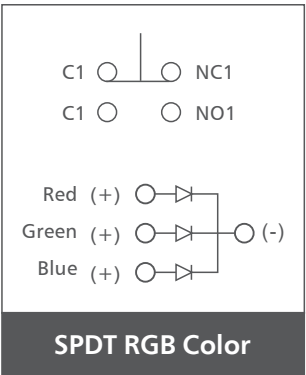
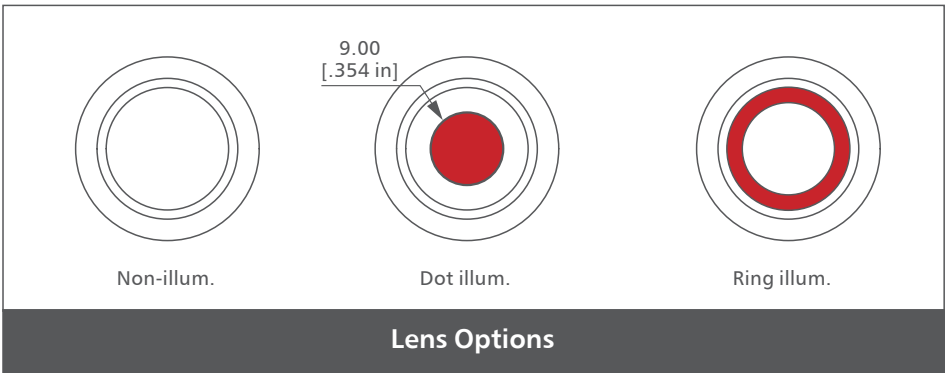
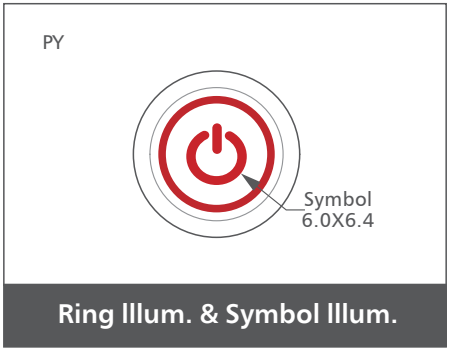
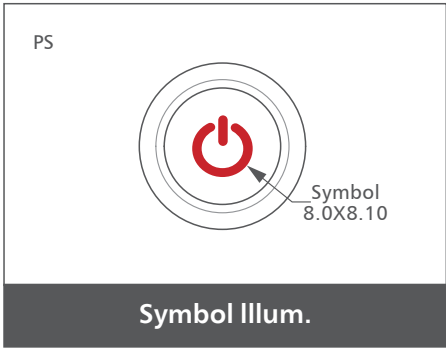
Technical Data

Type	L22T-F / L22T-H
Illuminated type	Non-illuminated / Ring illuminated / Dot illuminated
Terminal	Solder lug (2.8X0.5)
Max. switch rating	Ith: 3A Ui: 250VAC
Contact resistance	$\leq 50\text{m}\Omega$
Insulation resistance	$\geq 1000\text{m}\Omega$
Dielectric strength	2000VAC
Operation temp.	-20°C ~ +55°C
Mechanical life	2,000,000 cycles
Electrical life	100,000 cycles
Contact material	Silver alloy
Torque	5~14Nm
Operation pressure	Approx. 3~5N
Protection	IP65/ IK09
Material	
Button	Stainless steel / Anodized aluminum
Bodey	Stainless steel / Anodized aluminum
Base	PBT
LED	
Color	3.3V / 6V / 12V / 24V / 36V / 110V / 220V R/G/Y/B/W Approx, 40,000 hours

Actuator Options

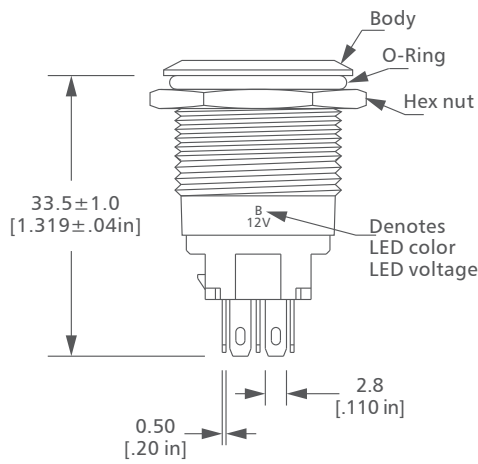
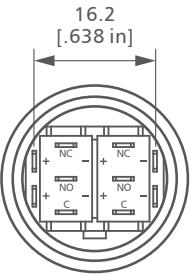
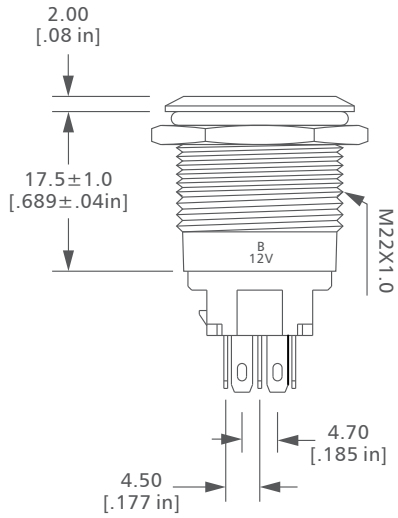


Illum. Options



Functions

Dimensions





RoHS COMPLIANCE

Rear Mounting Anti Vandal Switch Ø 22mm

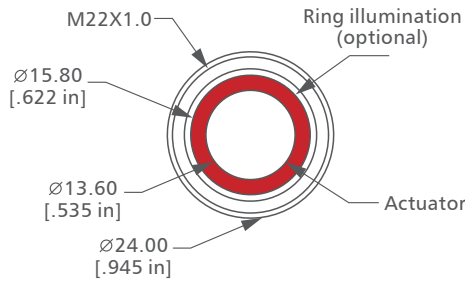


Order Code

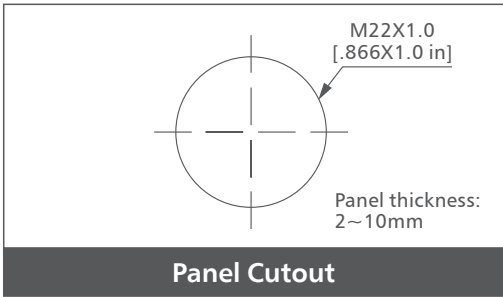
Series	Actuator Options	Terminal Options	Function Options	Material Options	Illumination Style Options	Led- Color Options	Illumination Voltage Options	Graphic Options
L220 Rear mounting for flush version	F-Flat	NONE-Solder lug (2.8X0.8) N-Screw	M-Momentary 1-1NO	S-Stainless steel	NONE-Non-illum. D-Dot R-Ring	NONE-Non-illum. W-White Y-Yellow B-Blue G-Green R-Red	NONE-Base voltage* 3.3V 6V 12V 24V 36V	NONE-Non-marking LE-Laser etched

Notes:
* Base voltage on LEDs:
1.8V @20mA for red, yellow and orange LED colors
2.8V @20mA for blue, green and white LED colors

Description



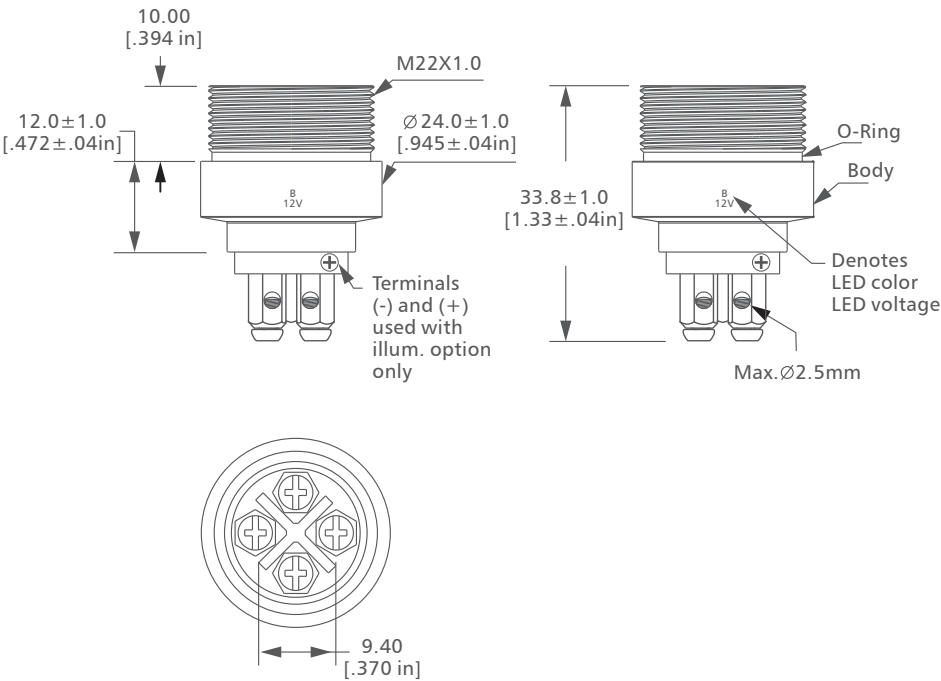
Panel Cutout



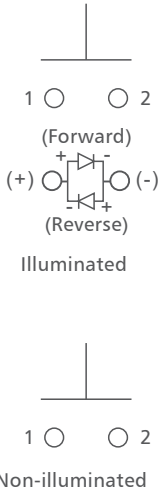
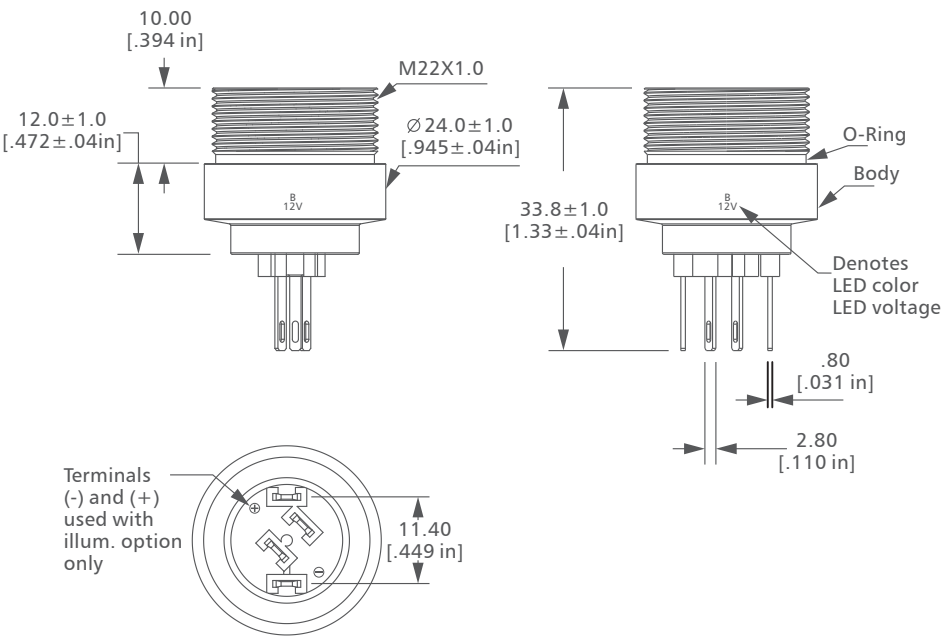
Technical Data

Type	L220-F
Illuminated options	Non-illuminated / Ring illuminated / Dot illuminated
Terminal	Screw / Solder lug (2.8X0.8)
Max. switch rating	50mA 24VDC
Contact resistance	≤100m Ω
Insulation resistance	≥1000m Ω
Dielectric strength	2000VAC
Operation temp.	-20°C ~ +55°C
Mechanical life	1,000,000 cycles
Electrical life	50,000 cycles
Contact material	Silver alloy
Rear nut fixing torque	0.57Nm
Operation pressure	Approx. 8N
Protection	IP65/ IK09
Material	
Switch assembly	UL94V-0 rated polyamide (nylon)
Tags	Copper alloy
Terminals	Copper alloy
Switch body & button	Stainless steel
Lens and lens body	Polycarbonate
Internal seal	Silicone
O ring	Nitrile
Color	LED 3.3V / 6V / 12V / 24V / 36V R/G/Y/B/W Approx. 40,000 hours

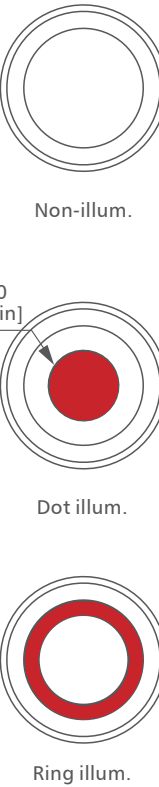
Screw Terminal



Solder Terminal



Functions



Lens Options



RoHS COMPLIANCE

Backlit LED Switch Label Kit

When the Dual color LED function switches are turned on, the Blue LED lights up through the actuator.
Activate a particular function by pressing one of the switches. This will change the Blue LED to Red, indicating that the chosen function is turned on.
The switch color can customization.

With a IP67 waterproof rating and Stainless Steel body our switch can be installed on your boat or other vehicle in wet and dusty environments, but not under water.
The first switch can be designated as the night time Blue LED On / Off switch.

Identifying the function of each push button switch is simple with our interchangeable 3M adhesive backed actuator Backlit Labels.

It's the only actuator that allows the LEDs in the switch body to pass light through the label.

The result is excellent visibility at night.

There are 53 Switch Function Icons to choose from!

Custom Icon Labels can be made to your design specifications.

Please check with the factory.



Backlit Label in *Daytime Mode*. LED light is off.



Backlit Label in *Nighttime Mode*. The Blue LED provides great visibility of all the function switches and lets you know that the switches are in the off position.



Backlit Label in *Nighttime Mode*. The Red LED lets you know that the switch is on.

*All specifications are subject to change without notice.

BACKLIT ANTI VANDAL SWITCH WITH LABELKIT

Mutiple labels
Easy to change
Save the cost



How to order

Series	Material Options	Switch Options	Icon Options
BL	NONE- PVC U- PU Dome UV- UV Print*	16-16mm switch 19-19mm switch 22-22mm switch 25-25mm switch	5-5 Icon labels included 50-50 Icon labels included L450-UV Print**

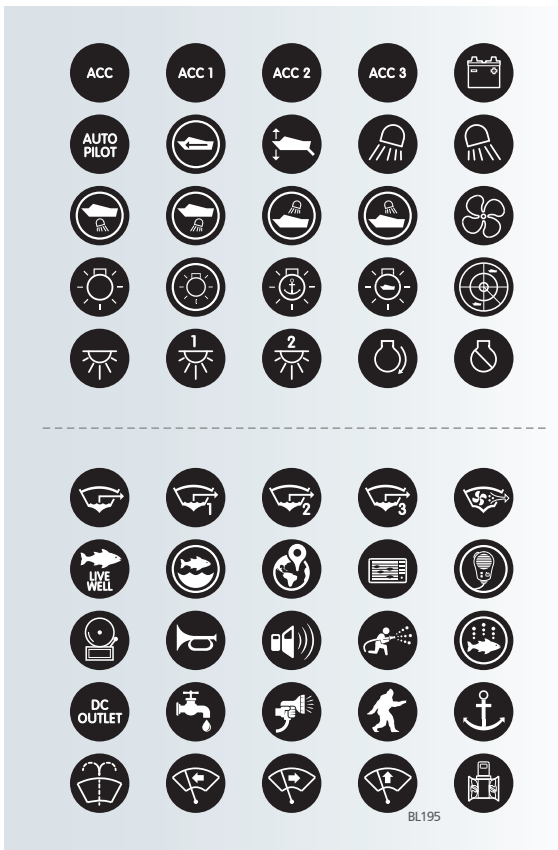
Features & Benefits

- Scratch resistant polycarbonate material
- Back printed for durability
- Waterproof adhesive for longevity in wet environments
- Custom Icon Labels can be made to your design specifications
Please check with the factory.

UV- UV Print*
ACCEPT ANY CUSTOM ICON
UV PRINT DIRECT IN SWITCH



5 ICON labels included



50 ICON labels included

Backlit Labels Icon & Part Number Legend

Icon Style	Part No.	Icon Style	Part No.	Icon Style	Part No.	Icon Style	Part No.
	L450-0001		L450-0015		L450-0029		L450-0043
	L450-0002		L450-0016		L450-0030		L450-0044
	L450-0003		L450-0017		L450-0031		L450-0045
	L450-0004		L450-0018		L450-0032		L450-0046
	L450-0005		L450-0019		L450-0033		L450-0047
	L450-0006		L450-0020		L450-0034		L450-0048
	L450-0007		L450-0021		L450-0035		L450-0049
	L450-0008		L450-0022		L450-0036		L450-0050
	L450-0009		L450-0023		L450-0037		L450-0051
	L450-0010		L450-0024		L450-0038		L450-0052
	L450-0011		L450-0025		L450-0039		L450-0053
	L450-0012		L450-0026		L450-0040		
	L450-0013		L450-0027		L450-0041		
	L450-0014		L450-0028		L450-0042		



Icons

Car dashboard DTC codes

 Dipped beam headlights	 Heated seat high	 Rear window wiper	 Brake lights	 Hazard light
 Brake fluid non-petroleum base	 Heated seat low	 Automatic gearbox	 Brake pad monitoring	 Key missing
 CHECK ENGINE	 Lock airbag	 Bonnet	 Brake System	 LANE ASSIST
 Heated seat high	 Main beam headlights	 FOG LAMP INDICATOR	 Bulb monitoring	 Press brake pedal
 Heated seat low	 Reverse gear indicator	 TIRE PRESSURE WARNING LIGHT	 Engine cooling system	 Rear window defrost
 Rear window intermittent wiper	 Turn signals	 TRACTION CONTROL	 EPC Engine management lamp	 Steering wheel lock
 Service key-wrench-OBD icon	 Windshield wipers intermittent	 ABS SYSTEM	 Engine management lamp	 Vehicle charging System
 Boot Lid	 Cruise control	 Adaptive Cruise control	 Engine oil pressure	
 Diesel particulate filter	 Airbag and seatbelt system	 Air suspension	 Fuel level	



Square Bezel Anti Vandal Switch
Ø 19mm / Ø 22mm

Specifications

Electrical rating: 5A, 250VDC
Mechanical life:1,000,000 cycles
Electrical life: 50,000 cycles
Contact resistance: 50mΩ Max.
Insulation resistance: 1000MΩ Min.
Dielectric strength: 2,000VAC
Operating /Storage temperature: -25°C to 55°C
Travel:1.50mm
Moisture protection: IP65
Actuation force: 4N
Panel thickness: 1-11mm
Mounting nut torque: 5-14Nm

Features & Benefits

- 19 or 22mm diameter panel cutout
- RGB option
- Multiple function options
- Dot, ring or power symbol illumination available
- Multiple actuator options
- IP65 rated,
- SPDT & DPDT
- Soldered wire leads (300mm long) optional

Order Code

Series	Actuator Options	Terminal Options	Function Options	Material Options	Illumination Style Options	LED-Color Options	Illumination Voltage Options	Graphic Options
L19S L22S	F- Flat	NONE-Solder lug (2.8X0.5) C-Wire leads 300mm long	M-Momentary 1-1NO1NC 2-2NO2NC Z-Latching 1-1NO1NC 2-2NO2NC	S-Stainless steel	NONE-Non-illum. D-Dot R-Ring PS-Power backlit symbol  PY-Ring illum.& Power backlit symbol 	NONE-Non-illum. W- White R- Red O- Orange G-Green B-Blue Y-Yellow RG-Red/Green RB-Red/Blue RY-Red/Yellow OB-Orange/Blue 3A-Red/Green/Blue LED*	NONE-Non-illum. 1-Base voltage** 3.3V 6V 12V 24V 36V 110V 220V	NONE-Non-marking LE-Laser etched

Notes:

* Base voltage on LEDs:
1.8V @20mA for red, yellow and orange LED colors
2.8V @20mA for blue, green and white LED colors
** 3A is only for functions 1NO1NC(SPDT)

Illum. Options

PS

Symbol
9.20X9.20

Symbol Illum.

PY

Symbol
8.0X8.1

Ring Illum. & Symbol Illum.

Actuator

Non-illum.

Dot illum.

Ring illum.

Lens Options

Illum. Options

SPDT Non-illum.

DPDT Non-illum.

SPDT Illum.

DPDT Illum.

SPDT RGB Color

Dimensions

Square Bezel Anti Vandal Switch Ø19mm

32.00 [1.260 in]

Ø15.30 [Ø.602 in]

Ø13.20 [Ø.520 in]

2.50 [.098 in]

25.00 [.984 in]

38.0±1.0 [1.50±.04in]

0.50 [.197 in]

5.20 [.205 in]

12.00 [.472 in]

36.9±1.0 [1.45±.04in]

2.8 [.11 in]

10.00 [.394 in]

Body

O-Ring

Hex nut

Denotes LED color

LED voltage

M19X1.0

Single & Bi-color

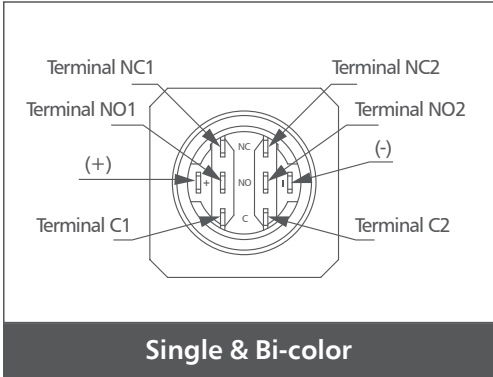
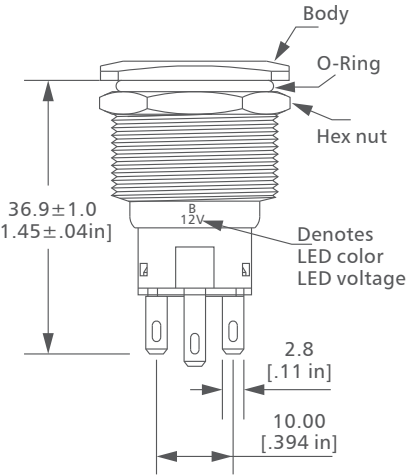
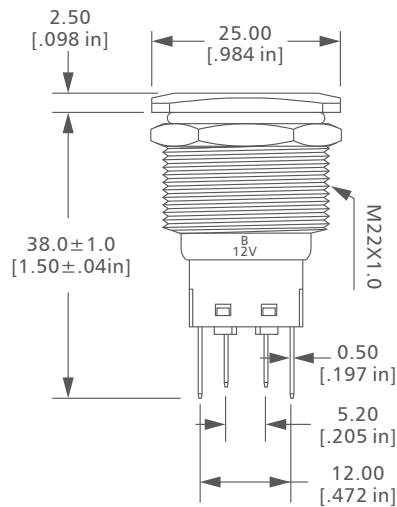
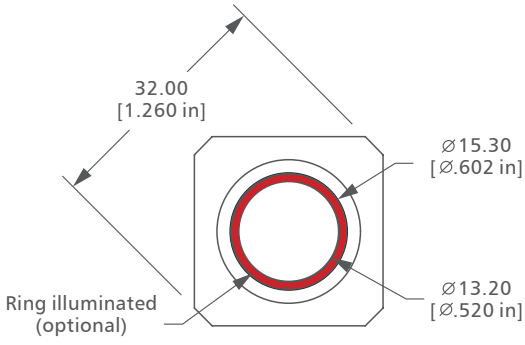
Tri-color

Panel Cutout

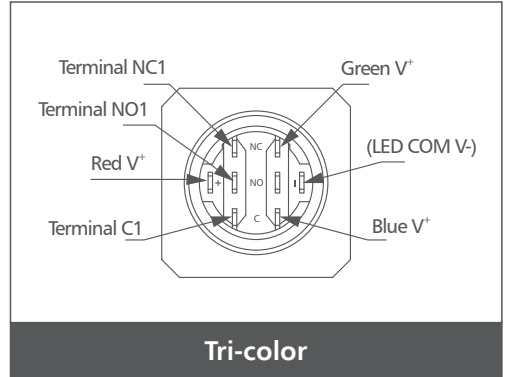
C = Common
NO = Normally open
NC = Normally closed
Terminals (-) and (+) used with illum. option only

Dimensions

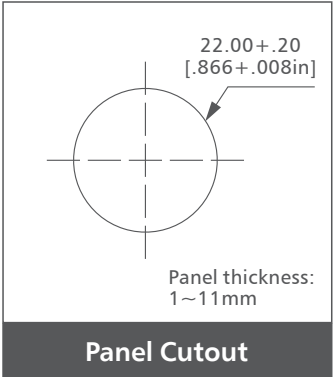
Square Bezel Anti Vandal Switch Ø22mm



Single & Bi-color



Tri-color



Panel Cutout

C = Common
NO = Normally open
NC = Normally closed
Terminals (-) and (+) used with illum. option only



Ultra Short Anti Vandal Switch
Ø 19mm / Ø 22mm / Ø 25mm

Specifications

Electrical rating:50mA, 24VDC
Mechanical life:1000,000 Cycles
Electrical life:50,000 Cycles
Contact resistance: 50mΩ Max
Insulation resistance: 1000mΩ Min
Dielectric strength: 2.000VAC
Operating / Storage Temperature:-25°C to 55°C
Travel : 0.5mm
Moisture protection: IP67
Actuation force: 4N
Panel thickness: 1-3mm
Mounting nut torque: 5-14Nm

Features & Benefits

- 19, 22 or 25mm diameter panel cutout
- Variety of LED option
- Multiple function options
- Ring illumination available
- IP67 rated

Order Code

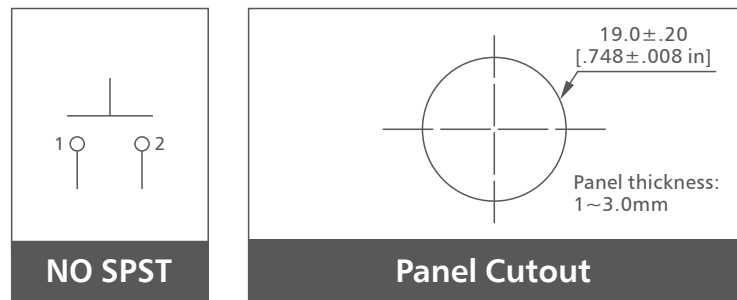
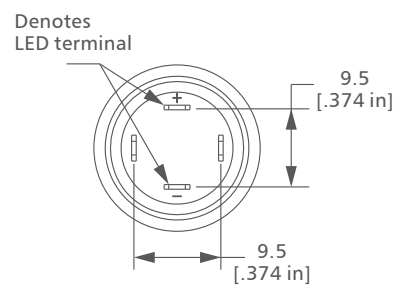
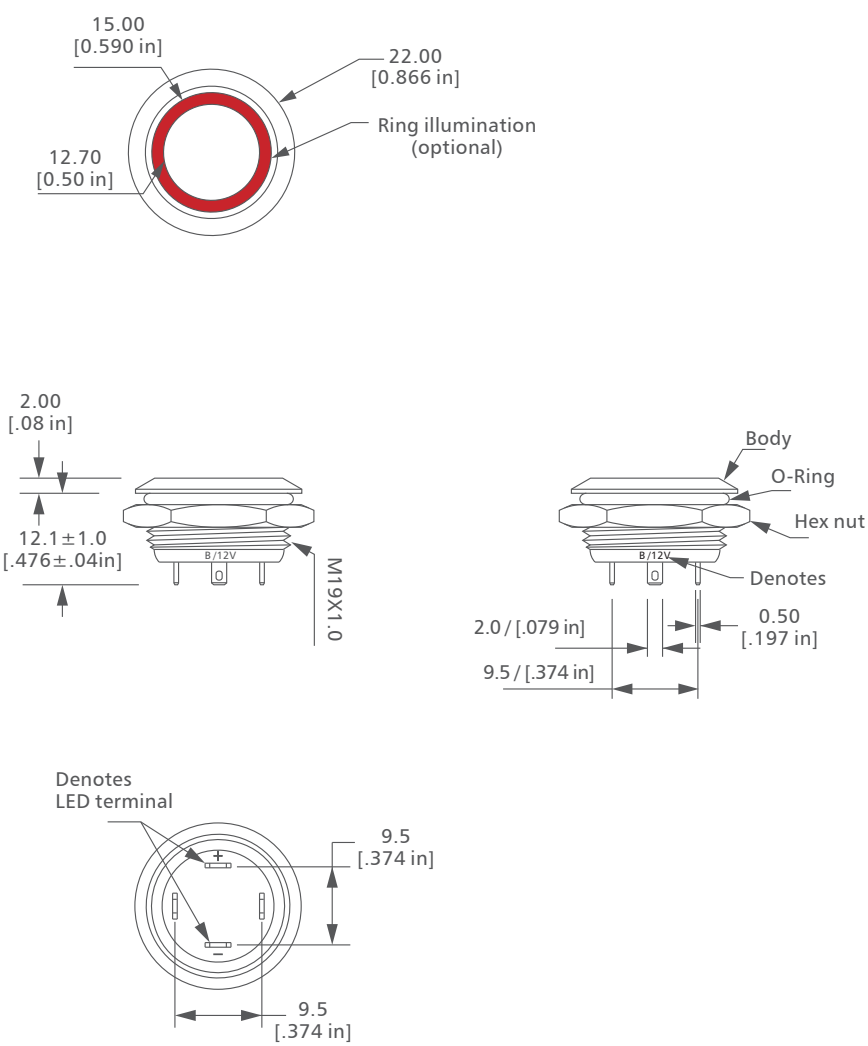
Series	Actuator Options	Terminal Options	Function Options	Material Options	Illumination Style Options	LED-Color Options	Illumination Voltage Options	Graphic Options
☐ L19U L22U L25U	☐ F- Flat	☐ NONE-Solder lug(2.0x0.5)	☐ M-Momentary 1-1NO	☐ S-Stainless steel	☐ NONE-Non-illum. R-Ring	☐ NONE-Non-illum. W- White R- Red O- Orange G-Green B-Blue Y-Yellow	☐ NONE-Non-illum. 1-Base voltage** 3.3V 6V 12V 24V	☐ NONE-Non-illum. LE-Laser etched

Notes:

*Base voltage on LEDs:
1.8V @ 20mA for red, yellow and orange LED colors
2.8V @ 20mA for blue, green and white LED colors

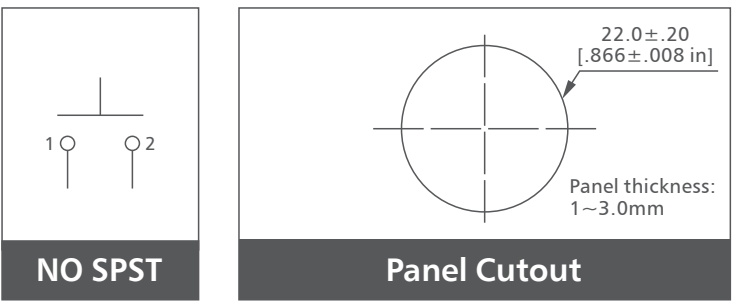
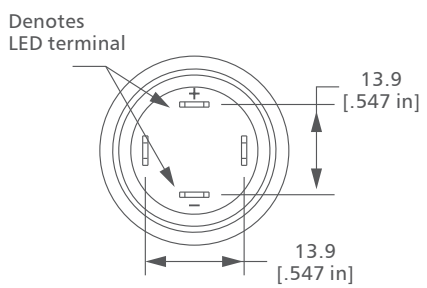
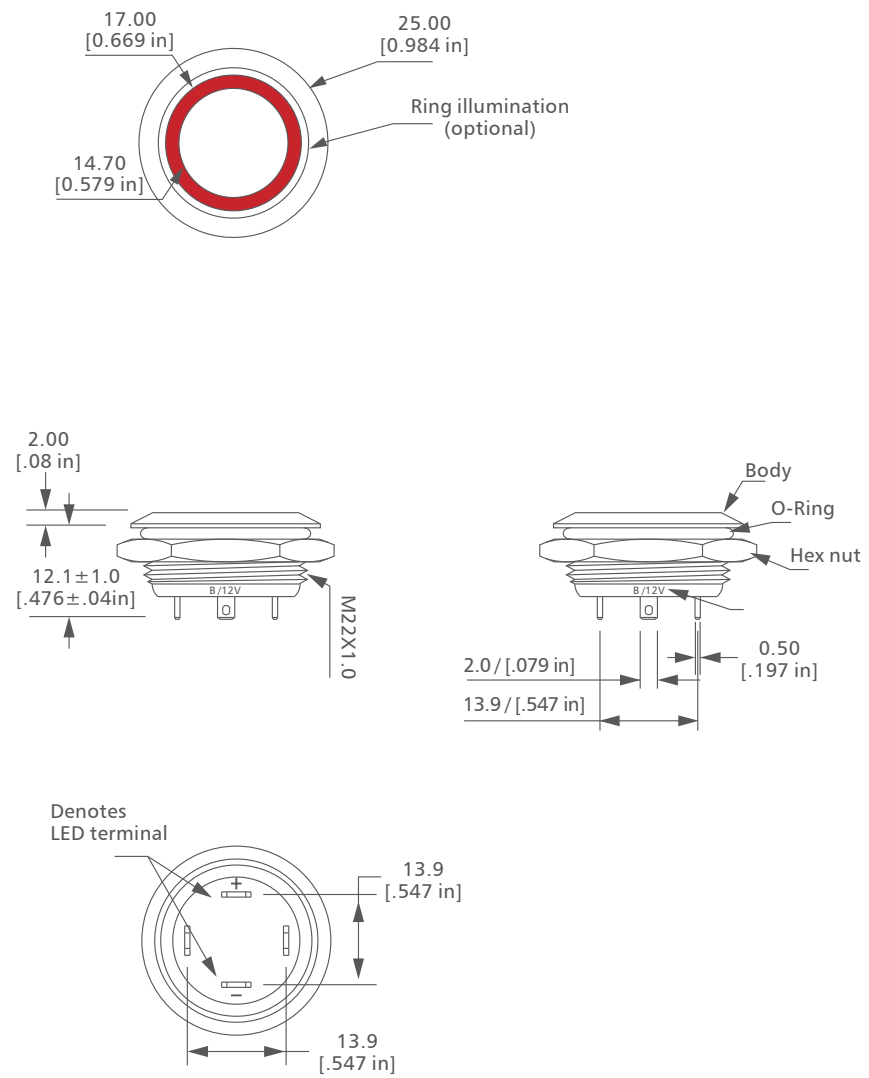
Dimensions

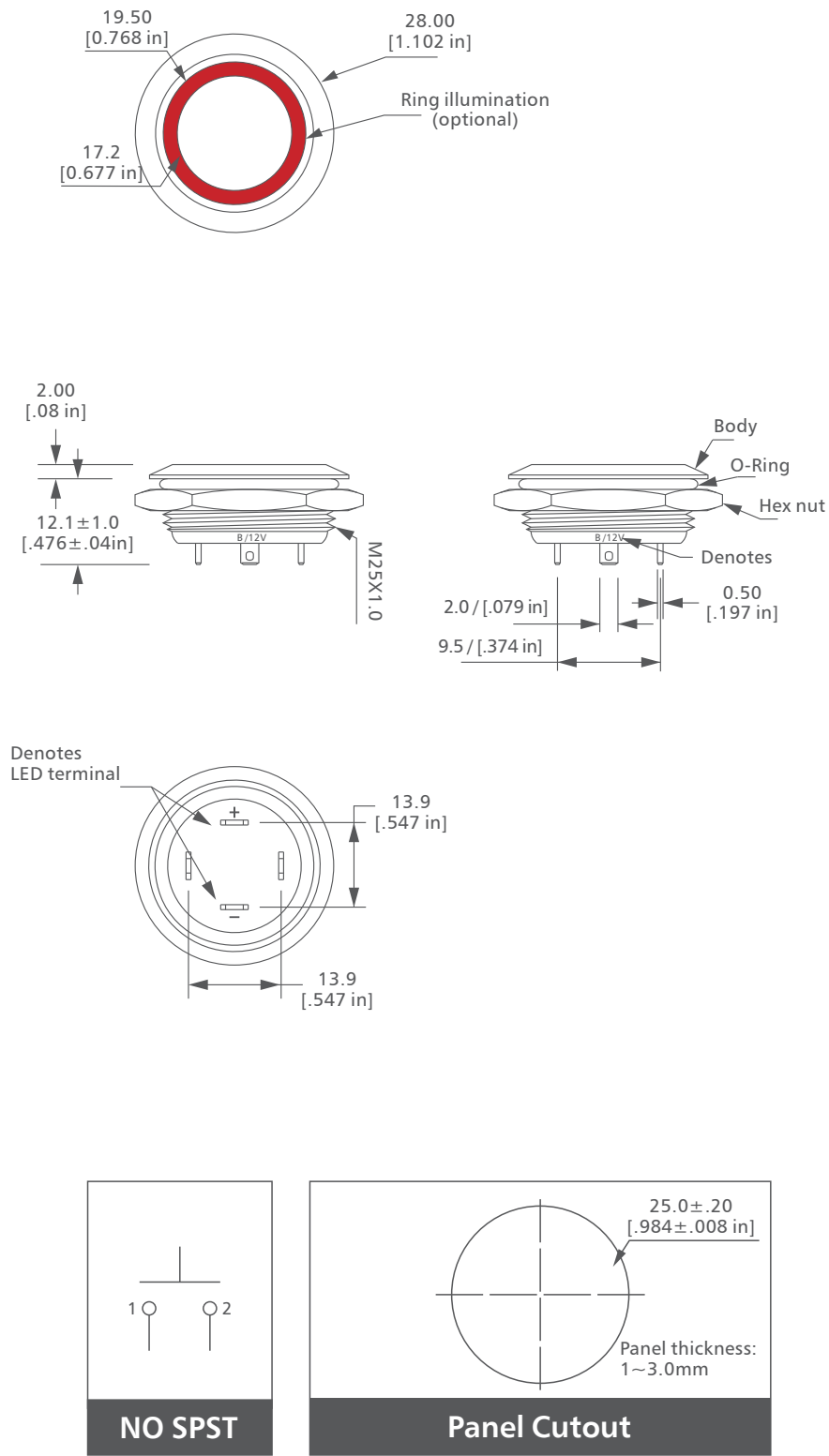
Ultra Short Anti Vandal Switch Ø19mm



Dimensions

Ultra Short Anti Vandal Switch Ø22mm





Emergency Stop Switch





Emergency Stop Switch Ø16mm/Ø19mm/Ø 22mm

Product Description

The Turn to Release Emergency Stop Switches provides you with a way to stop your ctuator instantly in case of emergency. All you do is press the button down and it will lock in the Off position, stopping the movement of your actuator. To put it back in the On position, just turn the switch clockwise to release it. Please be aware you may require a relay for actuator control.

Specifications

Max Rating:Ith: 5A, Ui: 250VAC
Switch Rating:250VAC 0.5A
Mechanical Life:1,000,000 Cycles
Electrical Life:50,000 Cycles
Contact Resistance:50mΩMax.
Insulation Resistance:1000MΩMin.
Dielectric Strength:2,000VAC
Operating/Storage Temperature:-20°C to 55°C
Panel Thickness:1-5mm
Mounting Nut Torque:5-14Nm

Features & Benefits

- 16, 19 or 22mm diameter panel cutout
- Push lock - Turn Release
- 1NO1NC, 2NO2NC
- Solder lug (2.8X0.5mm)
- IP65 rated

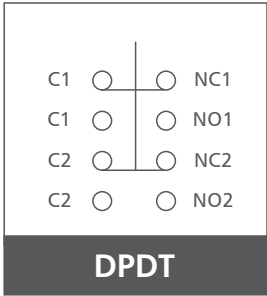
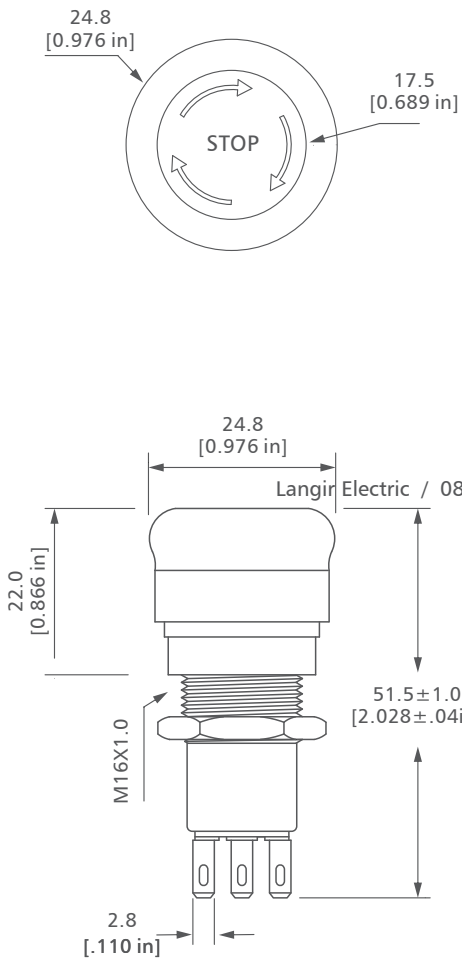
Order Code

Series	Actuator ** Options	Terminal Options	Function Options	Material Options	Graphic (Options)
ES16-16mm** ES19-19mm ES22-22mm	NONE- Smooth edge K- Knurled edge	NONE- Solder lug (2.8x0.5)	11-1NO1NC 11-1NO1NC	S- Stainless Steel N- Nickel Plated-brass	Customizable

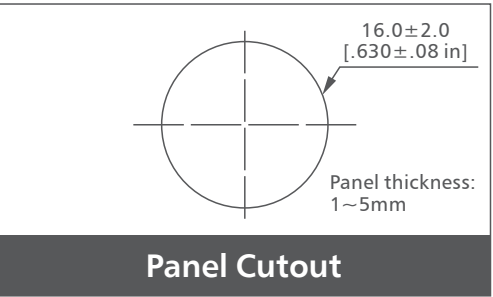
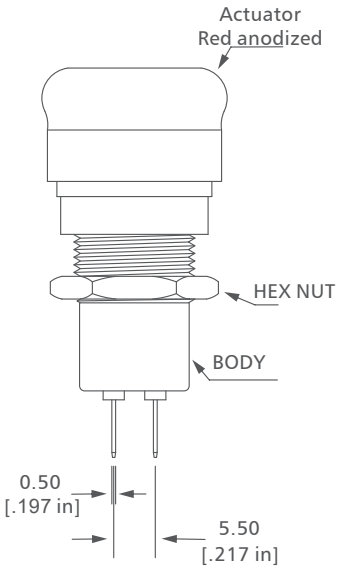
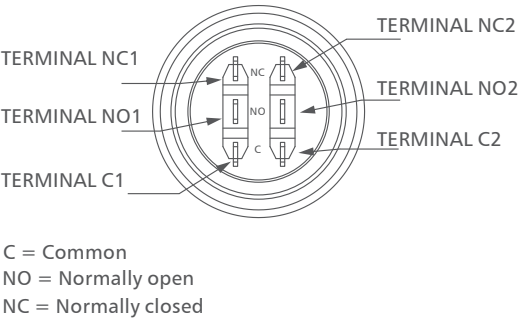
Notes:

* ES16 for plastic body.
** Accept customizable.

Dimensions

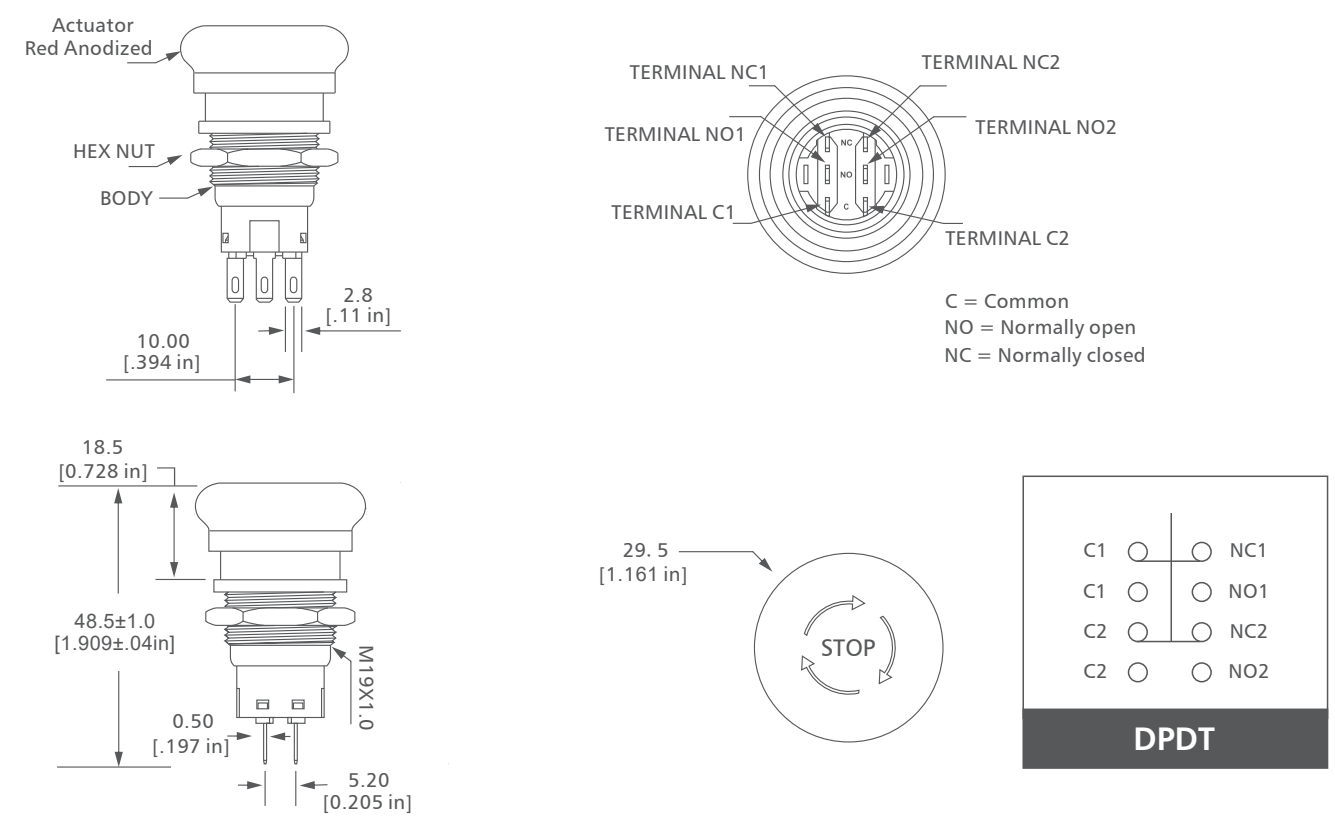


Emergency Stop Switch Ø16mm



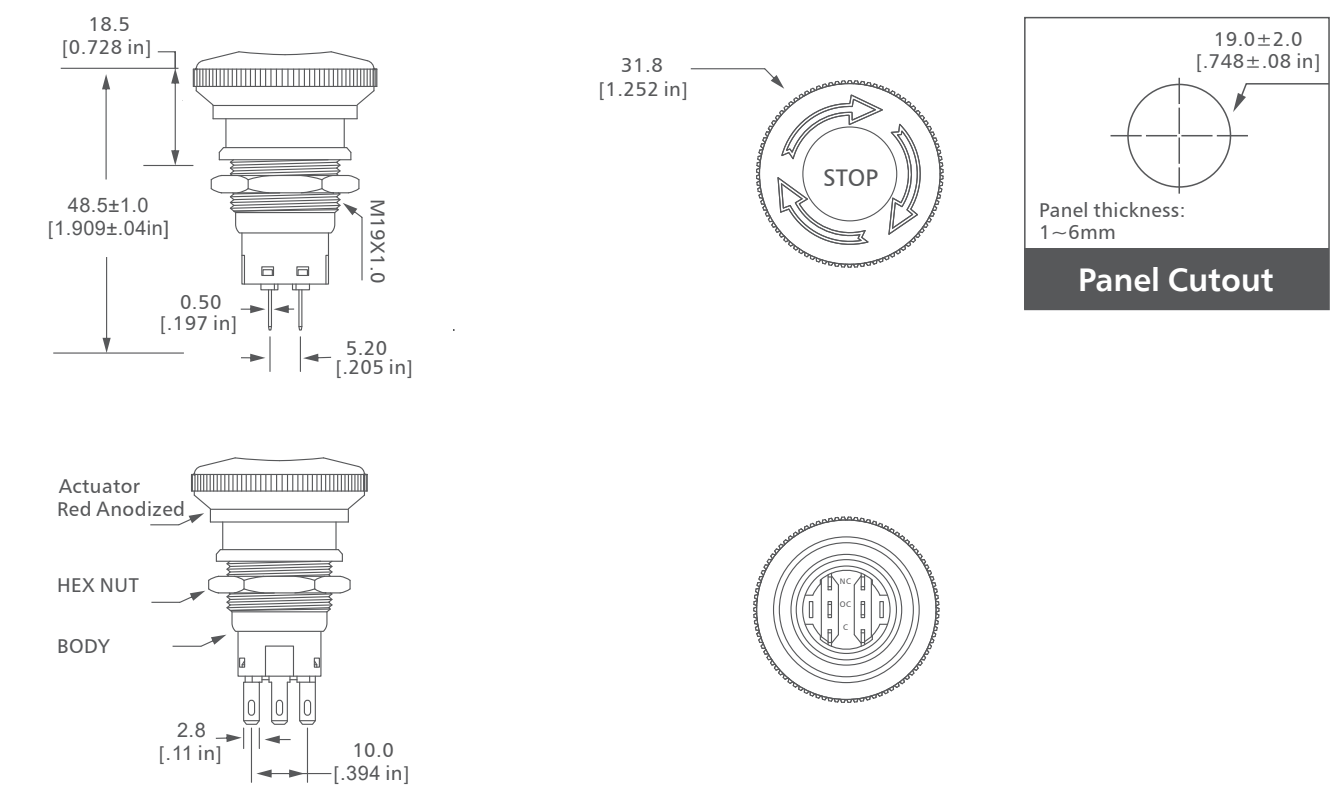
Smooth Edge

Emergency Stop Switch Ø19mm



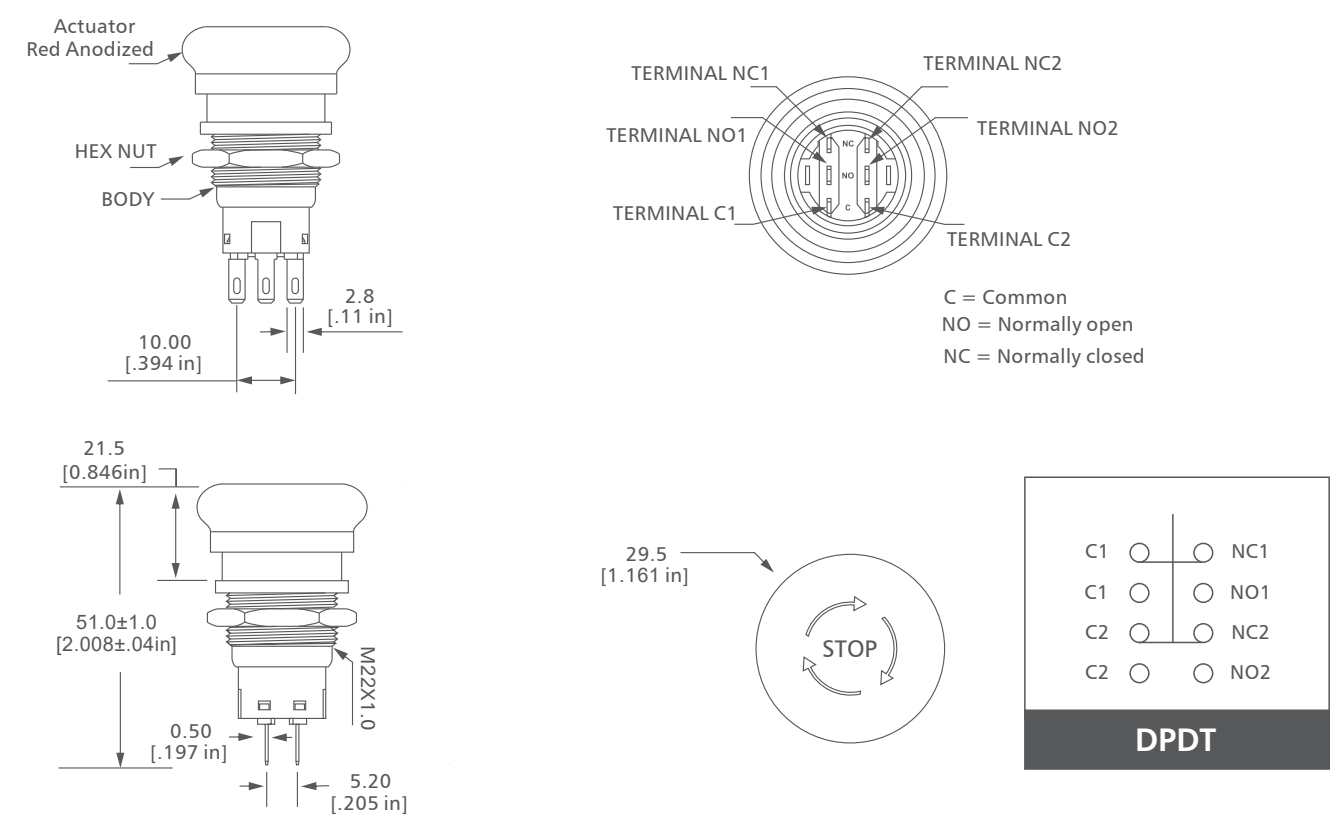
Knurled Edge

Emergency Stop Switch Ø19mm



Smooth Edge

Emergency Stop Switch Ø22mm



Knurled Edge

Emergency Stop Switch Ø22mm

