

LOGIC LEVEL MOMENTARY ACTION COMMERCIAL GRADE LED ILLUMINATED & WATERTIGHT SEALED

The OTTO LP9L Lighted Dome series is a quality precision switch designed for use in panels, control grips, instruments and other demanding applications where attractive, rugged, lighted logic level pushbutton switches are required.

The LP9L series offers a positive tactile feedback, signaling the operator when the switch is operated with the added benefit of reliable LED illumination. The LP9L series offers four button versions; flush and raised profile with either a glossy or matte finish. Featuring short behind panel depth, it comes with either a snap-in case or a threaded case for hex nut mounting.

The LP9L series is constructed to meet IP68S watertight seal. Expect 1,000,000 operations at 50mA resistive.

The LP9L series are momentary snap-action double break switches, available in standard and low operate forces. The LED is available in five colors and has the ability to accommodate 2 or 12VDC.

Features:

- Logic level switch
- Watertight to IP68S
- LED lighted with the ability to accommodate 2 or 12VDC
- LED available in 6 colors
- Flush & raised button style
- Matte or glossy button finish
- Positive tactile feedback contact transfer
- Withstands shock & vibration
- Short behind panel depth
- RoHS compliant



Raised Dome

Also available
with Flush Dome

Standard Characteristics/Ratings:

ELECTRICAL RATINGS:

Load			
Logic Level:	10mA @ 5VDC (Resistive)		
DWV:	1050Vrms through switch contacts only		
Electrical Life:			
1,000,000 cycles			
LIGHTING:			
Light Source Voltage (DC)	Actual Voltage Nominal (DC)		Voltage Max (DC)
2	2		2.6
12	13.5		14.5
Mechanical Life:			
1,000,000 cycles			
Seal:			
IP68S			
Operating Temp Range:			
-40°C to +85°C			
Operating Force:			
1.7 +/- 0.5 lb. (standard force)			
.75 +/- .25 lb. (low force)			
Total Travel:			
0.080 inches max			
Overtravel:			
0.010 inches min			
MATERIALS:			
Case:			
Thermoplastic			
Button:			
Thermoplastic			
Terminals:			
Brass with gold over silver			
Mounting Hardware:			
Hex nut, lockwasher and panel seal gasket (threaded version)			
Panel seal gasket (snap-in version)			

LP9L PART NUMBER CODE

LP9L	-	X	X	X	X	X	X	X	X
Button Style*	Case Style*	Terminal Style	Circuit Form	Operating Force	Light Source**	Case Color	Button Color		
1. Flush Dome Standard Finish	1. Standard Round Bezel Threaded	1. Solder	1. N.O.	1. Standard Force Snap-Action	A. 2V Red LED	1. Red	1. Red		
2. Raised Dome Standard Finish	2. Standard Round Bezel Snap-In	2. PC Pin	2. N.C.	2. Low Force Snap-Action	B. 2V Green LED	2. Black	2. Black		
3. Flush Dome Matte Finish			3. 2 Circuit		C. 2V Amber LED	3. Orange***	3. Orange		
4. Raised Dome Matte Finish					D. 2V Blue LED	4. Yellow***	4. Yellow		
					E. 2V White LED	5. Green***	5. Green		
					F. 12V Red LED	6. Blue***	6. Blue		
					G. 12V Green LED	7. Violet***	7. Violet		
					H. 12V Amber LED	8. Gray***	8. Gray		
					J. 12V Blue LED	9. White	9. White		
					K. 12V White LED				

* Button and case will be of the same texture.

For all mixed gloss/matte combination options, contact factory.

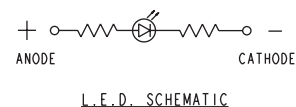
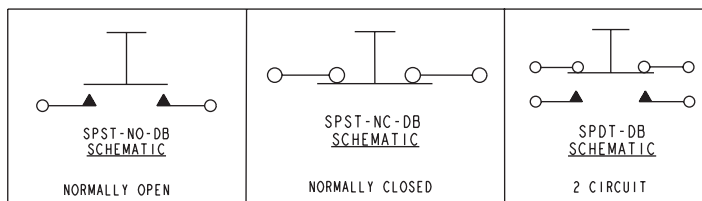
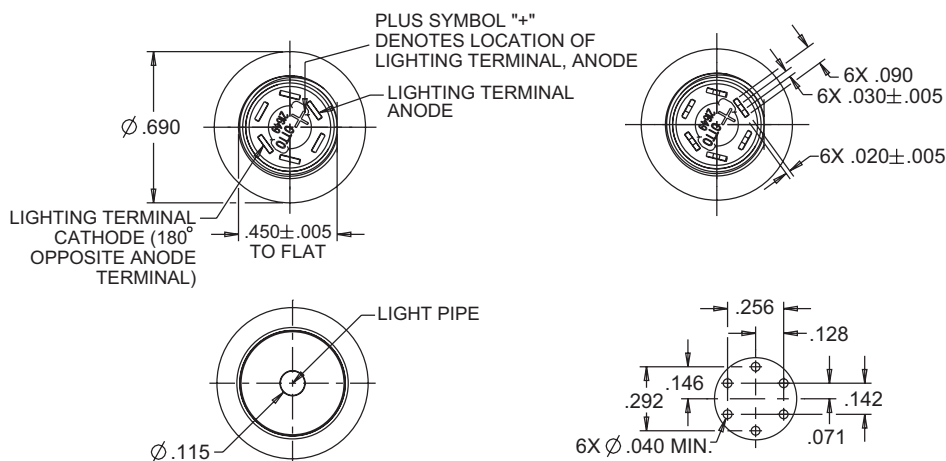
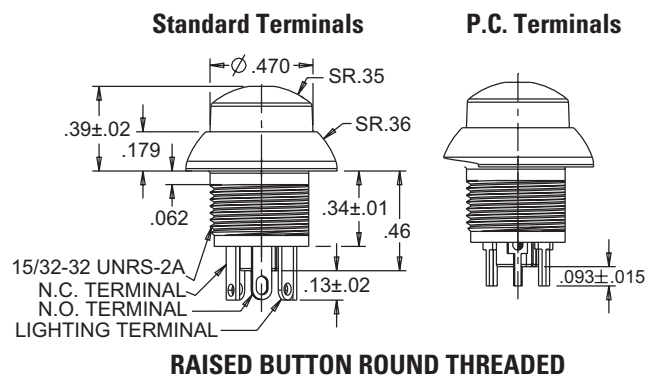
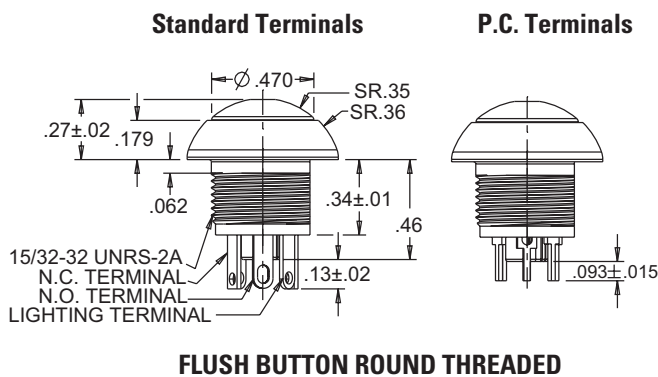
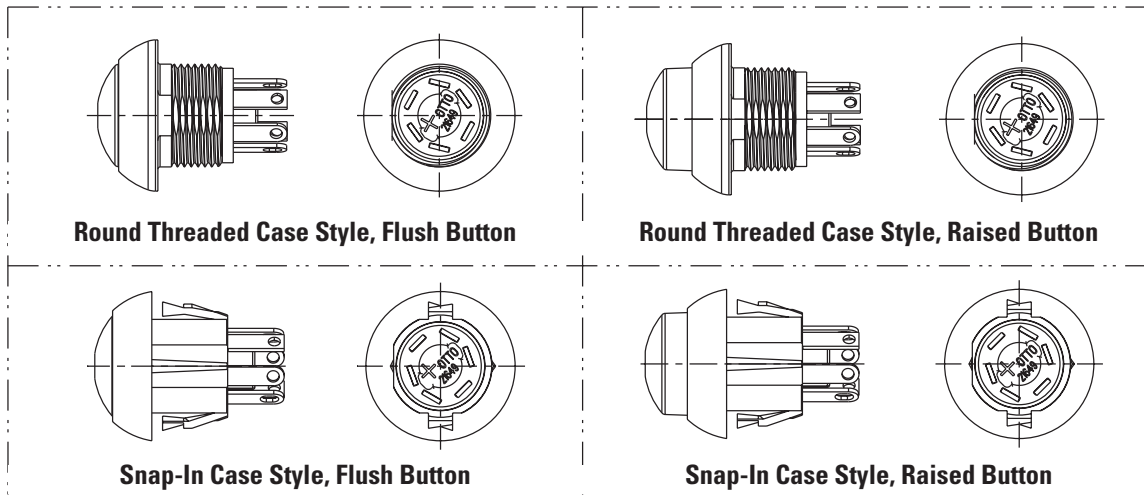
** 2V LED's are intended for use with an external resistor. See LED voltage chart in appendix for details on the approximate value of the resistor.

*** For minimum requirement, contact factory.

ILLUMINATED SEALED DOME PUSHBUTTONS

LP9L
ILLUMINATED
PUSHBUTTONS

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LED VOLTAGE/CURRENT RATINGS TABLE

ILLUMINATED PUSHBUTTON SWITCH & INDICATOR LIGHTS VOLTAGE/CURRENT RATINGS TABLES

LP3, LP5 AND LPL SERIES
LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LED COLOR	FORWARD CURRENT	TYP. FORWARD VOLTAGE (DC)	MAX. FORWARD VOLTAGE (DC)
2V*	RED	20mA	1.9V	2.5V
	GREEN	20mA	2.2V	2.6V
	AMBER			
	BLUE	20mA	3.3V	4V
	DEEP GREEN			
6V	ALL COLORS	20mA	6V	8V
12V	ALL COLORS	20mA	12V	14.5V
24V	ALL COLORS	20mA	24V	28.6V

LP3S
LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LED COLOR	FORWARD CURRENT	TYP. FORWARD VOLTAGE (DC)	MAX. FORWARD VOLTAGE (DC)
2V*	RED	20mA	2V	2.5V
	GREEN			
	AMBER			
	BLUE	20mA	3.2V	4V
	DEEP GREEN			
	WHITE			
12V	ALL COLORS	20mA	12V	14V
24V	ALL COLORS	20mA	24V	28.6V

LP7-D and LP9 SERIES
LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LED COLOR, WAVELENGTH (nm)	FORWARD CURRENT	TYP. FORWARD VOLTAGE	MAX. FORWARD VOLTAGE
2V LIGHTPIPE STYLE*	RED (631)	20mA	2V	2.4V
	GREEN (525)	20mA	3.2V	3.6V
	AMBER (591)	20mA	2.1V	2.4V
	BLUE (470)	20mA	3.3V	3.8V
	WHITE	5mA	2.9V	3.15V
2V, TRANSLUCENT FULLY ILLUMINATED STYLE*	RED (630)	20mA	1.95V	2.5V
	GREEN (525)	20mA	3.3V	4.1V
	AMBER (601)	20mA	2.1V	2.5V
	BLUE (465)	20mA	3.3V	4V
	WHITE	5mA	2.85V	3.1V
12V ALL PRODUCTS	ALL COLORS, SAME AS 2V	(20mA)	12V	14V

LP9L SERIES
LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LED COLOR, WAVELENGTH (nm)	FORWARD CURRENT	TYP. FORWARD VOLTAGE	MAX. FORWARD VOLTAGE
2V	RED (631)	20mA	2V	2.4V
	GREEN (525)	20mA	3.2V	3.6V
	AMBER (591)	20mA	2.1V	2.4V
	BLUE (470)	20mA	3.3V	3.8V
	WHITE	5mA	2.9V	3.15V
12V	ALL COLORS, SAME AS 2V	(20mA)	12V	14V

*Intended for use with external resistor. The "2 volt" switches are intended to have a resistor added in series into the lighting circuit by the customer. To determine the approximate value of the resistor, use the equation below:

$$\text{RESISTOR SIZE} = \frac{\text{POWER SUPPLY VOLTAGE} - \text{LED FORWARD VOLTAGE}}{\text{LED FORWARD CURRENT}}$$

Mouser Electronics

Authorized Distributor

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OTTO:

[LP9L-31232B22](#) [LP9L-32111A22](#) [LP9L-32211A22](#) [LP9L-41211B22](#) [LP9L-11111D22](#) [LP9L-11111E22](#)