

## MOMENTARY ACTION COMMERCIAL GRADE LED ILLUMINATED & WATERTIGHT SEALED

The OTTO LP9 Lighted Dome series is a quality precision switch designed for use in panels, control grips, instruments, heavy equipment and other demanding applications where attractive, rugged, lighted pushbutton switches are required.

The LP9 series offers a positive tactile feedback, signaling the operator when the switch is operated with the added benefit of reliable LED illumination. The LP9 series offers four button versions; flush and raised profile with either a glossy or matte finish. It also comes with a threaded case for hex nut mounting while providing a short behind panel depth.

The LP9 series is constructed to meet IP68S watertight seal. Expect 25,000 operations at full rated load.

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

### Features:

- Watertight to IP68S
- RGB LED option (2VDC only)
- LED lighting available in 6 colors with the ability to accommodate 2 or 12VDC
- Flush & raised button style
- Matte or glossy button finish
- Full button illumination style available with glossy button finish
- Positive tactile feedback contact transfer
- Withstands shock & vibration
- Short behind panel depth
- RoHS compliant



#### Standard Characteristics/Ratings:

##### ELECTRICAL RATINGS: Ratings at 28 VDC or 115 VAC

Load	N.O./N.C.	2 Circuit	Cycles	Operating Force
Resistive:	5A	4A	25,000	Standard
Inductive:	3A	2A	25,000	Standard
Resistive:	500mA	—	500,000	Standard
Resistive:	200mA	—	500,000	Low
DVV	1000Vrms through switch contacts only			
Logic Level	10mA @ 5VDC		1,000,000	

**Electrical Life:** See Rating Chart

#### MECHANICAL:

**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)  
0.75 +/- 0.25 lb. (low force)

**Total Travel:** 0.080 inches max

**Overtravel:** 0.010 inches min

#### MATERIALS:

**Case:** Thermoplastic

**Button:** Thermoplastic

**Terminals:** Brass with gold

**Mounting Hardware:** Hex nut, lockwasher and panel gasket for round/threaded style case  
Panel gasket for snap-in style case only

### LP9 PART NUMBER CODE

LP9	-	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 - Lightpipe	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 - Lightpipe	2. Standard Round Bezel Snap-In	2. PC Pin	2. N.C. ③	2. Low Force Snap-Action	B. 2V Green LED**	2. Black	2. Black		
3. Flush Dome Matte Finish Lightpipe		3. RGB PC Pin	3. 2 Circuit		C. 2V Amber LED**	3. Orange ①	3. Orange		
4. Raised Dome Matte Finish Lightpipe					D. 2V Blue LED**	4. Yellow ①	4. Yellow		
5. Flush Dome Standard Finish - Fully Illuminated					E. 2V White LED**	5. Green ①	5. Green		
6. Raised Dome Standard Finish - Fully Illuminated					F. 12V Red LED	6. Blue ①	6. Blue		
					G. 12V Green LED	7. Violet ①	7. Violet		
					H. 12V Amber LED	8. Gray ①	8. Gray		
					J. 12V Blue LED	9. White	9. White		
					K. 12V White LED				
					L. 2V RGB LED**		A. Translucent White ②		

Your official representative



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\* 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.

① For minimum requirement, contact factory.

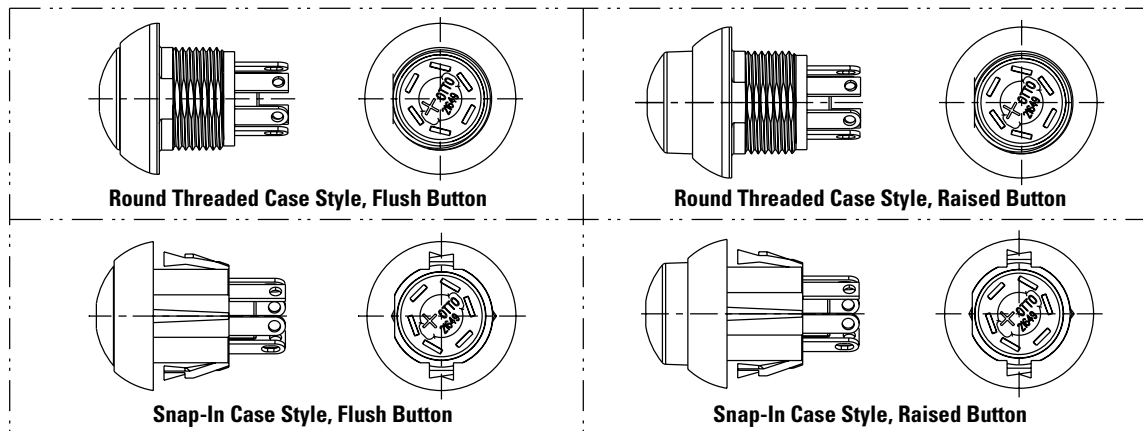
② Full illumination button styles available with translucent Button Color selection A only

③ Not available with RGB LED option.

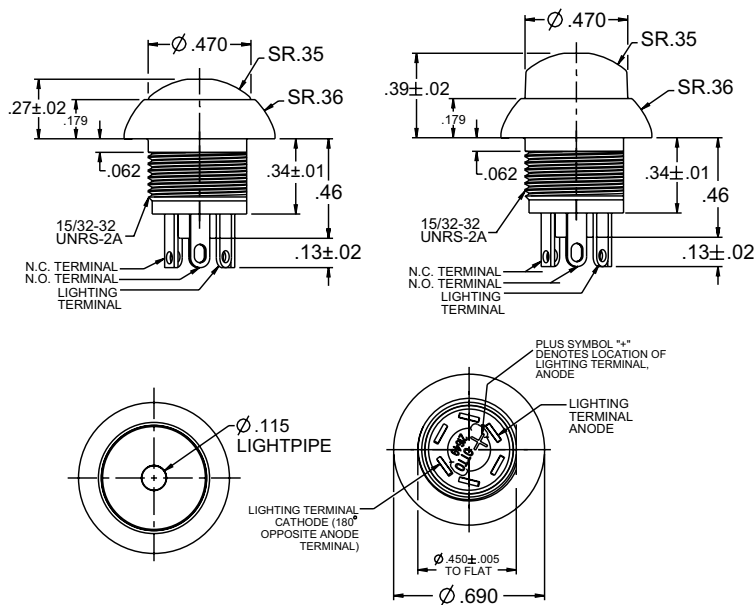
# SEALED ILLUMINATED DOME PUSHBUTTONS

**LP9**  
ILLUMINATED  
PUSHBUTTONS

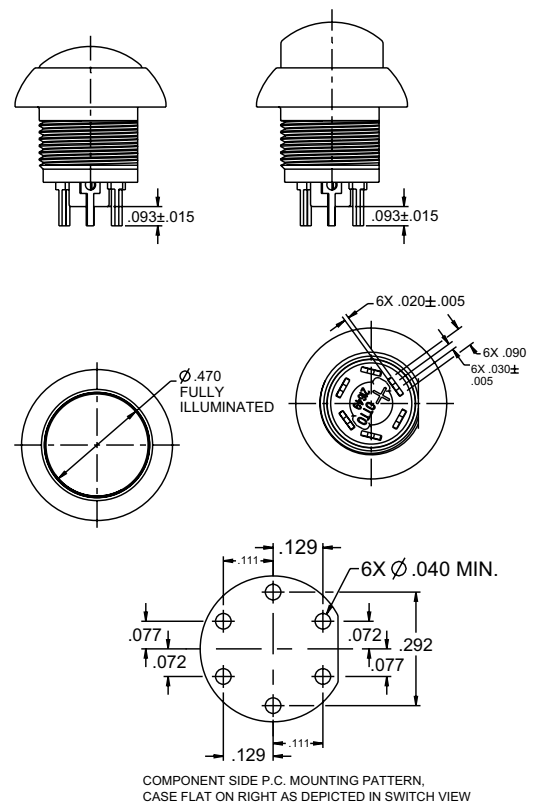
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## Standard Terminals



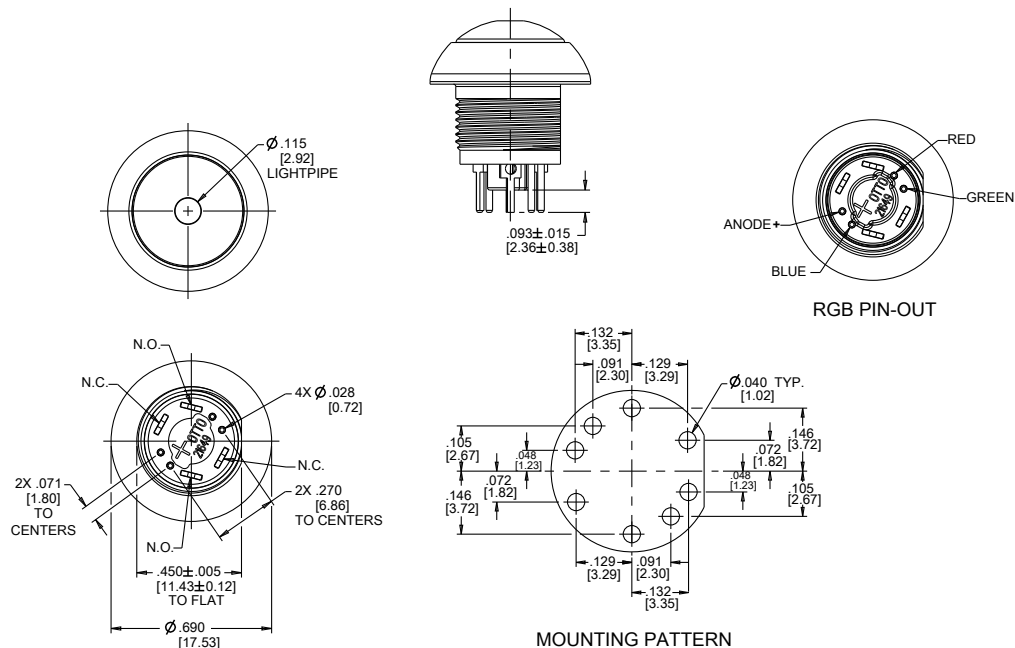
## PC Pin Terminals (Full Illumination Option Shown)



RECOMMENDED PANEL OPENINGS FOR SNAP-IN STYLE CASE		
PANEL THICKNESS	RECOMMENDED Ø	DIM. ACROSS D-FLAT
.024	Ø .505	.460
.118	Ø .505	.460

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## RGB LED with PC Pin Terminals (Lightpipe Option Shown; Flush Button, Round Threaded)



RGB LED ELECTRICAL CHARACTERISTICS ( $T_J = 25^\circ\text{C}$ )					
RGB LED VOLTAGE/ CURRENT COMPONENT RATINGS					REVERSE VOLTAGE, $V_R$ (V) AT $I_R = 10 \mu\text{A}^b$
LIGHT SOURCE VOLTAGE CATEGORY	LED COLOR	FORWARD VOLTAGE $V_F$ (V) <sup>a</sup>			
		MIN.	TYP.	MAX.	MAX.
2V, RGB	---				
	RED	1.7	2.1	2.5	4.0
	GREEN	2.5	2.9	3.4	4.0
	BLUE	2.5	2.9	3.4	4.0

FORWARD VOLTAGE TOLERANCE IS  $\pm 0.1\text{V}$ . TEST CURRENT: RED= 15 mA, GREEN= 10 mA, BLUE= 10 mA.

## SCHEMATICS

