

## ALTERNATE ACTION RING ILLUMINATED, METAL CASE & BUTTON



High Profile  
Curved Button



The LP5-V series is an alternate action switch that has been designed to provide attractive, lighted position indication for applications in harsh environments, where security and reliability are paramount. The series features both aluminum and stainless steel cases watertight to IP68S. UL1500 ignition protected. Momentary action is available in the LP3-V series.

This high reliability switch offers the durability and ruggedness our customers have come to expect with the added benefit of illumination. Ideal for marine, off-highway and industrial control applications that require an illuminated switch.

This switch offers positive tactile feedback and a variety of LED colors available in both flat and domed actuator bezel shapes.

### Features:

- **Security (aluminum) or vandal resistant (stainless steel) case & button**
- **Ring illuminated**
- **Watertight to IP68S**
- **Variety of button options and LED colors**
- **Drop in replacement to the P5-V series**
- **UL recognized**
- **RoHS compliant**

### Standard Characteristics/Ratings:

#### ELECTRICAL RATINGS:

Load	Sea Level @ 28VDC or 115VAC, 60/400Hz
Resistive	5A
Inductive	3A
Lamp	1A
Motor	3A
DWV	1000Vrms through switch contacts only
Logic Level	10mA @ 5VDC
<b>Electrical Life:</b>	25,000 cycles

#### LIGHTING:

Light Source Voltage (DC)	Actual Voltage Nominal (DC)	Voltage Max (DC)
2	2	2.6
6	7	8
12	13.5	14.5
24	28	28.6

<b>Mechanical Life:</b>	200,000 cycles
<b>Seal:</b>	IP64 or IP68S
<b>Operating Temp Range:</b>	-55°C to +85°C
<b>Operating Force:</b>	3.0 lbs. +1.0/-0.5 lb.
<b>Total Travel:</b>	0.180 inches max
<b>Overtravel:</b>	0.012 inches min

#### MATERIALS:

<b>Case:</b>	Stainless steel (316) or anodized aluminum alloy
<b>Button:</b>	Clear Thermoplastic
<b>Center Cap:</b>	Stainless steel (316) or anodized aluminum alloy
<b>Terminals:</b>	Standard and logic level options available
<b>Mounting Hardware:</b>	Hex or knurl nut, lockwasher and panel seal gasket

### LP5-V PART NUMBER CODE

Type	Case Style	Circuit Rating	Light Source Type** w/ Rev. Pol Protection	Seal Level	Case/Center Cap Color	Button Profile
A. Aluminum	1. 5/8-24 & Hex Nut	0. Indicator Light	A. 2V Red LED	2. Dusttight	1. Silver	1. High Profile Flat Button
V. Stainless	2. 5/8-24 & Knurl Nut*	1. SPST/Std.	B. 2V Green LED	3. Watertight	2. Black***	2. High Profile Curved Button
	3. 5/8-24 W/D-Flat & Hex Nut	2. SPDT/Std.	C. 2V Amber LED			3. Low Profile Flat Button
	4. 5/8-24 W/D-Flat & Knurl Nut*	3. SPST/Logic Level	D. 6V Red LED			4. Low Profile Curved Button
	5. 3/4-20 & Hex Nut	4. SPDT/Logic Level	E. 6V Green LED			5. Flush Profile Flat Button
	6. 3/4-20 & Knurl Nut*		F. 6V Amber LED			
	7. 3/4-20 W/D-Flat & Hex Nut		G. 12V Red LED			
	8. 3/4-20 W/D-Flat & Knurl Nut*		H. 12V Green LED			
			J. 12V Amber LED			
			K. 24V Red LED			
			L. 24V Green LED			
			M. 24V Amber LED			
			N. 2V Blue LED			
			P. 6V Blue LED			
			Q. 12V Blue LED			
			R. 24V Blue LED			
			S. 2V Deep Green			
			T. 6V Deep Green			
			U. 12V Deep Green			
			V. 24V Deep Green			

\* Contact factory for Knurl Nut option

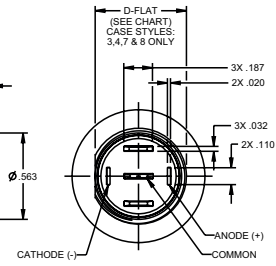
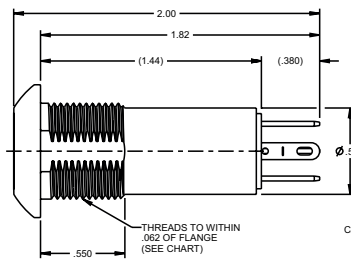
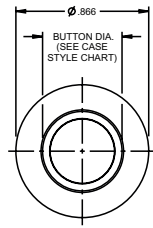
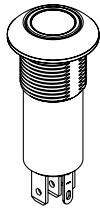
\*\* 2V LED's are intended for use with an external resistor. See appendix for complete voltage/ratings table. For additional LED lighting options, contact factory.

\*\*\* Only available on LP5-A styles.

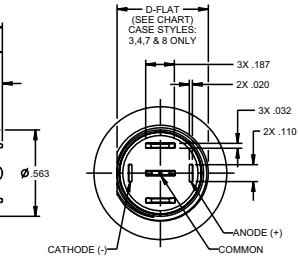
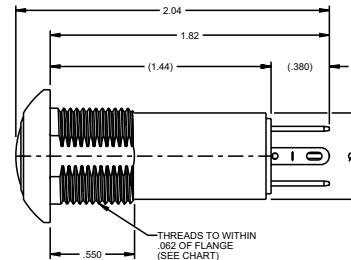
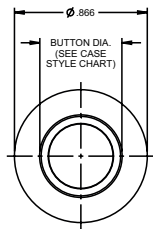
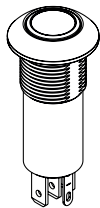
# ILLUMINATED VANDAL RESISTANT PUSHBUTTONS

## ALTERNATE ACTION RING ILLUMINATED, STAINLESS STEEL CASE & BUTTON

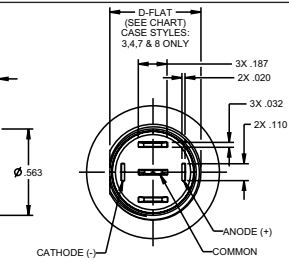
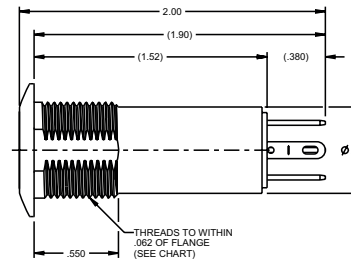
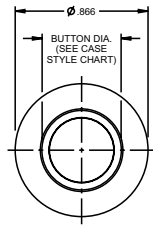
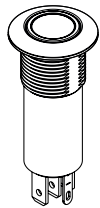
High Profile Flat Button  
Button Profile Style 1



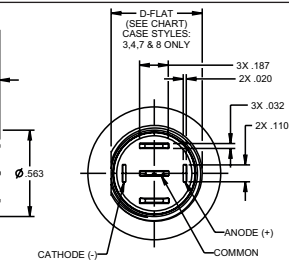
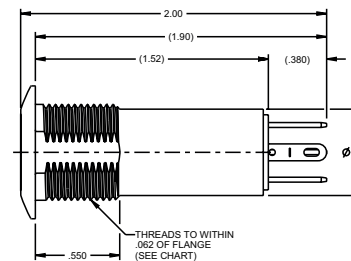
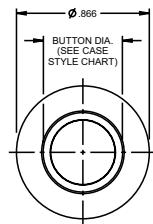
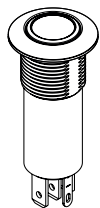
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Button Profile Style 2



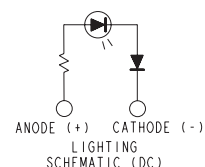
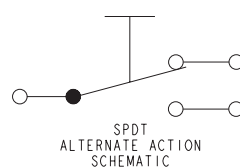
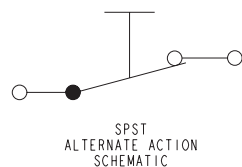
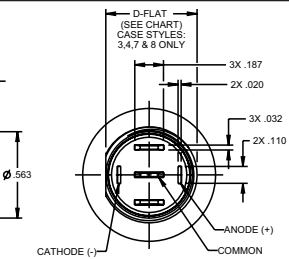
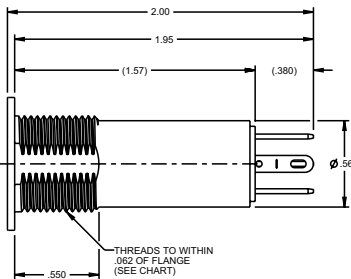
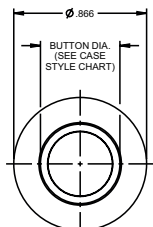
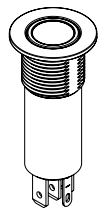
Low Profile Flat Button  
Button Profile Style 3



Low Profile Curved Button  
Button Profile Style 4



Flush Profile Flat Button  
Button Profile Style 5



# LED VOLTAGE/CURRENT RATINGS TABLE

## ROCKER AND ROTARY SWITCH VOLTAGE/CURRENT RATINGS TABLES

### K1, K2, K3P and K4 LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LIGHT SOURCE COLOR	FORWARD CURRENT	TYPICAL FORWARD/ NOMINAL VOLTAGE	MAX. FORWARD VOLTAGE
6 VDC INCANDESCENT	WHITE	.2 AMPS	6 VDC	8 VDC
12 VDC INCANDESCENT	WHITE	.08 AMPS	12 VDC	14 VDC
24 VDC INCANDESCENT	WHITE	.04 AMPS	24 VDC	28 VDC
125 VAC NEON	AMBER	1.9 mA	125 VAC	125 VAC
250 VAC NEON	AMBER	1.9 mA	250 VAC	250 VAC
2 V LED PRODUCTS*	RED	20 mA	1.9 VDC	2.5 VDC
	GREEN	20 mA	2.15 VDC	2.5 VDC
	AMBER	20 mA	1.95 VDC	2.5 VDC
	BLUE	20 mA	3.5 VDC	4.0 VDC
6 V LED PRODUCTS	SEE CHART	20 mA	6 VDC	8 VDC
12 V LED PRODUCTS	SEE CHART	20 mA	12 VDC	14 VDC
24 V LED PRODUCTS	SEE CHART	20 mA	24 VDC	28 VDC

### K3/K5 LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LIGHT SOURCE COLOR	FORWARD CURRENT	TYPICAL FORWARD/ NOMINAL VOLTAGE	MAX. FORWARD VOLTAGE
6 VDC INCANDESCENT	WHITE	.2 AMPS	6 VDC	8 VDC
12 VDC INCANDESCENT	WHITE	.08 AMPS	12 VDC	14 VDC
24 VDC INCANDESCENT	WHITE	.04 AMPS	24 VDC	28 VDC
125 VAC NEON	AMBER	1.9 mA	125 VAC	125 VAC
250 VAC NEON	AMBER	1.9 mA	250 VAC	250 VAC
2 V LED PRODUCTS*	RED	20 mA	2.0 VDC	2.5 VDC
	GREEN	20 mA	2.2 VDC	2.6 VDC
	AMBER	20 mA	2.1 VDC	2.5 VDC
6 V LED PRODUCTS	SEE CHART	20 mA	6 VDC	8 VDC
12 V LED PRODUCTS	SEE CHART	20 mA	12 VDC	14 VDC
24 V LED PRODUCTS	SEE CHART	20 mA	24 VDC	28 VDC

### R2 LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LIGHT SOURCE COLOR	FORWARD CURRENT	TYPICAL FORWARD/ NOMINAL VOLTAGE	MAX. FORWARD VOLTAGE
2 V LED PRODUCTS*	RED	20 mA	2.0 VDC	2.5 VDC
	GREEN	20 mA	2.2 VDC	2.6 VDC
	AMBER	20 mA	2.1 VDC	2.5 VDC
6 V LED PRODUCTS	SEE CHART	20 mA	6 VDC	8 VDC
12 V LED PRODUCTS	SEE CHART	20 mA	12 VDC	14 VDC
24 V LED PRODUCTS	SEE CHART	20 mA	24 VDC	28 VDC

\*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:

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

# 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* PRODUCTS	RED	20 mA	1.9V	2.5V
	GREEN	20 mA	2.2V	2.6V
	AMBER			
	BLUE	20 mA	3.3V	4V
	DEEP GREEN			
6V PRODUCTS	ALL COLORS	20 mA	6V	8V
12V PRODUCTS	ALL COLORS	20 mA	12V	14.5V
24V PRODUCTS	ALL COLORS	20 mA	24 V	28.6 V

### LP3S

#### LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

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

### 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)	20 mA	2V	2.4V
	GREEN (525)	20 mA	3.2V	3.6V
	AMBER (591)	20 mA	2.1V	2.4V
	BLUE (470)	20 mA	3.3V	3.8V
	WHITE	5 mA	2.9V	3.15V
2V, TRANSLUCENT FULLY ILLUMINATED STYLE	RED (630)	20 mA	1.95V	2.5V
	GREEN (525)	20 mA	3.3V	4.1V
	AMBER (601)	20 mA	2.1V	2.5V
	BLUE (465)	20 mA	3.3V	4V
	WHITE	5 mA	2.85V	3.1V
12V ALL PRODUCTS	ALL COLORS, SAME AS 2V	(20 mA)	12.0V	14.0V

### LP9L SERIES

#### LIGHTING VOLTAGE/CURRENT COMPONENTS RATINGS

LIGHT SOURCE VOLTAGE CATEGORY	LED COLOR, WAVELENGTH (nm)	FORWARD CURRENT	TYP. FORWARD VOLTAGE	MAX. FORWARD VOLTAGE
2V PRODUCTS	RED (631)	20 mA	2V	2.4V
	GREEN (525)	20 mA	3.2V	3.6V
	AMBER (591)	20 mA	2.1V	2.4V
	BLUE (470)	20 mA	3.3V	3.8V
	WHITE	5 mA	2.9V	3.15V
12V PRODUCTS	ALL COLORS, SAME AS 2V	(20 mA)	12.0V	14.0V

\*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:

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

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