SHORTER, MOMENTARY ACTION, RING ILLUMINATED, VANDAL RESISTANT CASE & BUTTON

OTTO's LP3S-V series of vandal resistant, momentary action pushbutton switches are a shorter behind panel version of OTTO's LP3-V series. The LP3S-V offers the same case styles, circuit ratings and button types as the LP3-V, but with shorter construction. An excellent choice when space is limited, the LP3S-V switch is designed to provide attractive, lighted position indication for demanding applications, where security and reliability are crucial. The series features both aluminum and stainless steel cases with a watertight to IP68S and IP69K option.

This shorter, yet highly reliable switch offers the durability and ruggedness our customers have come to expect with the added benefit of illumination. The LP3S-V is ideal for marine, off-highway and industrial control applications that require a rugged sealed 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**
- **Shorter behind panel version of OTTO's LP3-V**
- **Ring illuminated**
- **Watertight to IP68S and IP69K option**
- **Variety of button options and LED colors**
- **Drop in replacement to the LP3-V and P8-V series**
- **RoHS compliant**

Standard Characteristics/Ratings:

ELECTRICAL RATINGS:

Load	Sea Level @ 28VDC	Cycles
Resistive	5A	25,000
Inductive	3A	25,000
Lamp	1A	25,000
Motor	3A	25,000
DWV	1000Vrms through switch contacts only	
Logic Level	10mA @ 5VDC	250,000

LIGHTING:

Light Source Voltage (DC)	Actual Voltage Nominal (DC)	Voltage Max (DC)
2	2	2.5
12	12	14
24	24	28.6

Mechanical Life:	250,000 cycles
Seal:	IP64 or IP68S and IP69K
Operating Temp Range:	-55°C to +85°C
Operating Force:	2.5 +/- 0.5 lb. or 4.0 +/- 1.0 lb.
Total Travel:	0.080 inches +/- 0.015
Overtravel:	0.010 inches min

MATERIALS:

Case:	Stainless steel (316) or anodized aluminum alloy
Button:	Thermoplastic
Center Cap:	Stainless steel (316) or anodized aluminum alloy
Mounting Hardware:	Hex nut, lockwasher and panel seal gasket (watertight only)

LP3S-V PART NUMBER CODE

LP3S – X X X X X X X X

Type

A. Aluminum
V. Stainless

Case Style*

1. 5/8-24 & Hex Nut
3. 5/8-24 W/D–Flat & Hex Nut
5. 3/4-20 & Hex Nut
7. 3/4-20 W/D–Flat & Hex Nut

*For Knurl nut options, consult factory

Circuit Rating

1. SPST N.O./Std.
3. SPDT 2 Circuit/Std.
4. SPST N.O./Logic Level
6. SPDT 2 Circuit/Logic Level

Light Source Type w/ Rev. Pol Protection**

A. 2V Red LED
B. 2V Green LED
C. 2V Amber LED
G. 12V Red LED
H. 12V Green LED
J. 12V Amber LED
K. 24V Red LED
L. 24V Green LED
M. 24V Amber LED
N. 2V Blue LED
Q. 12V Blue LED
R. 24V Blue LED
S. 2V Deep Green LED
U. 12V Deep Green LED
V. 24V Deep Green LED
W. 2V White LED
X. 12V White LED
Y. 24V White LED

Seal Level

2. Dusttight
3. Watertight

Operating Force

2. 2.5±0.5 lbs.
4. 4.0 ±1.0 lbs.

Case/Center Cap Color

1. Silver
2. Black***

Button Profile

1. High Profile Flat Button
2. High Profile Curved Button
3. Low Profile Flat Button
4. Low Profile Curved Button
5. Flush Profile Flat Button

CASE STYLE		
DIMENSION	1 & 3	5 & 7
(BUTTON DIA.)	0.525	0.590
(THREAD)	5/8-24 UNEF-2A	3/4-20 UNEF-2A
FLAT	0.594	0.718

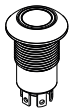
**2V LED's are intended for use with an external resistor. See appendix for complete voltage/ratings table. For additional LED lighting options, contact factory.

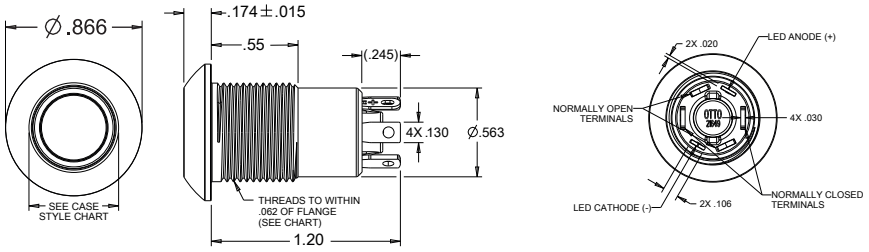
*** Only available on LP3S-A styles.

ILLUMINATED VANDAL RESISTANT PUSHBUTTONS

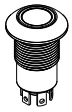
SHORTER MOMENTARY ACTION RING ILLUMINATED, VANDAL RESISTANT CASE & BUTTON

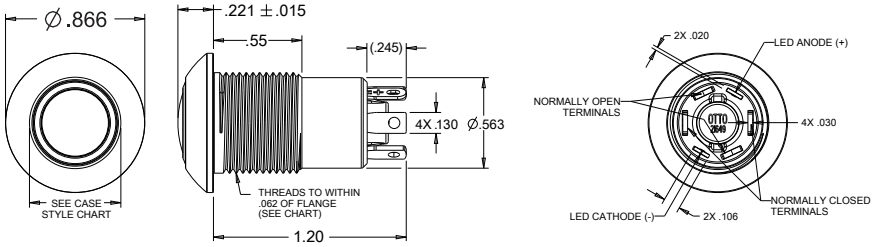
LP3S-XXXXXXX1
High Profile Flat Button



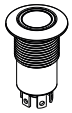


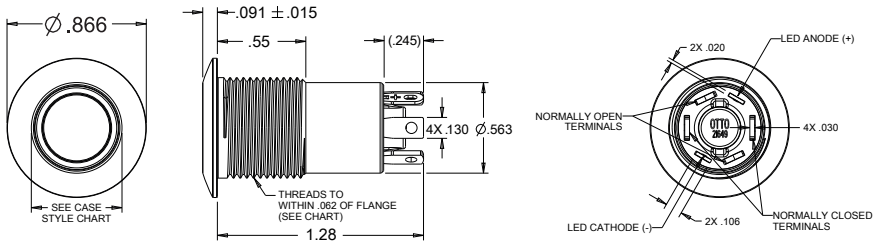
LP3S-XXXXXXX2
High Profile Curved Button



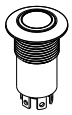


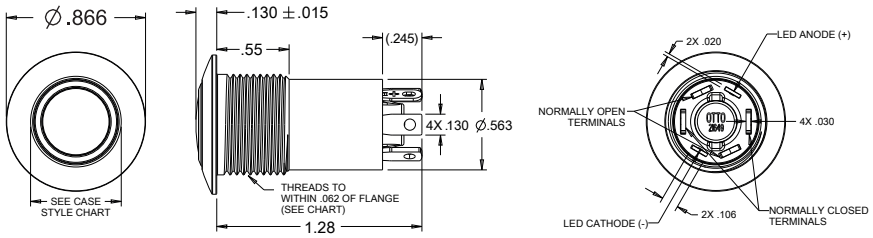
LP3S-XXXXXXX3
Low Profile Flat Button



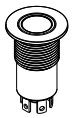


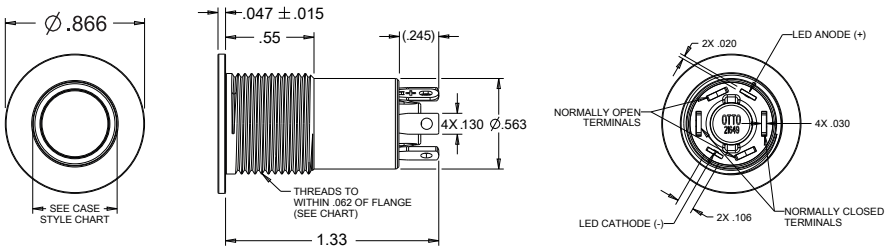
LP3S-XXXXXXX4
Low Profile Curved Button

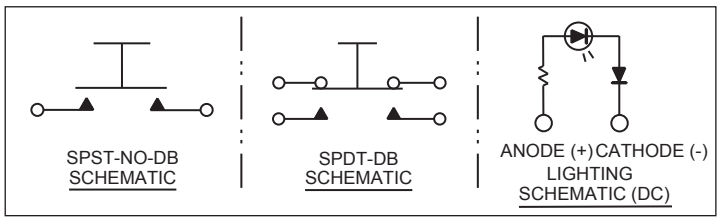




LP3S-XXXXXXX5
Flush Profile Flat Button







LED VOLTAGE/CURRENT RATINGS TABLE

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:

RESISTOR SIZE = POWER SUPPLY VOLTAGE - LED FORWARD VOLTAGE
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:

RESISTOR SIZE = POWER SUPPLY VOLTAGE - LED FORWARD VOLTAGE
LED FORWARD CURRENT

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