

# HALL EFFECT LINEAR OUTPUT PUSHBUTTONS

**HPL**  
LINEAR OUTPUT  
PUSHBUTTONS

10 MILLION LINEAR OUTPUT CYCLES USING CONTACTLESS HALL EFFECT TECHNOLOGY

The HPL Hall Effect Linear Output Pushbutton Switch utilizes Hall effect technology to provide the user an output proportional to the travel of the button. The HPL delivers up to 10 million cycles. This rugged switch is ideal for applications where a simple on/off control is insufficient and a linear output is desired. Using the HPL, an operator can control the motion of a device as well as the speed of the movement. The HPL switch is an ideal control device for valves and variable speed drives, and can be used in industrial control, heavy equipment and material handling applications.

The HPL is offered as a stand-alone switch and in a dual HPL rocker assembly. As with all OTTO switches, a wide variety of case and button styles and colors are offered, along with various termination styles and two levels of sealing. OTTO can provide custom configurations as well as provide the HPL switches installed in a control grip.

## Features:

- Programmable outputs of 0.5 to 4.5 volts
- 10 million cycles
- Hall effect for reliable contactless switching
- Watertight per IP68S available
- Front or behind panel mounting
- Choice of termination styles
- Rocker version available
- RoHS/WEEE/Reach compliant



HPL-4 15/32" - 32 Thread Rear Mount Shown with Wire Leads



HPL-R Hall Effect Rocker



HPL-3 - 5/8" Front Mount with Wire Leads

## HPL PART NUMBER CODE

HPL	-	X	X	X	X	X	X	X
<b>Case Style</b>		<b>Output</b>	<b>Terminal Style</b>	<b>Seal Level</b>	<b>Case Color</b>	<b>Button Color</b>	<b>Button Style*</b>	
1. Press Fit		1. 1.0 - 4.0VDC	1. 3 Straight Pins, 0.100" Centers	1. IP65 Splashproof	1. Clear Anodized	1. Red	1. 0.375" OD (Case Styles 1, 3, 4 & 6)	
3. Front Mount 5/8" Thread		2. 4.0 - 1.0VDC	2. 18" Potted 22 AWG Wire Leads	2. IP68S Watertight	2. Black Anodized	2. Black	2. 0.500" OD Domed (Case Styles 1, 3 & 6)	
4. Rear Mount 15/32" Thread		3. 0.5 - 4.5VDC				3. Orange		
6. Rear Mount 5/8" Thread		4. 4.5 - 0.5VDC				4. Yellow		
R. Rocker Assembly						5. Green		
						6. Blue		
						7. Purple		
						8. Gray		
						9. White		

\* For availability of larger button diameters, contact factory.

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**Standard Characteristics/Ratings:**

**MECHANICAL:**

<b>Mechanical Life:</b>	1,000,000 cycles full stroke per button, IP68S rated 10,000,000 cycles full stroke per button, IP64 rated
<b>Button Travel:</b>	0.135 inches min to 0.160 inches max
<b>Full Travel Force:</b>	0.15 inches, 3.0 lbs. typical to 3.8 lbs. max @ 25°C
<b>Reset Force:</b>	5 oz min @ 25°C
<b>Electrical Life:</b>	10,000,000 cycles

**ELECTRICAL RATINGS: Rated at Vcc = 5V @ 25°C Load = 1mA (4.7KΩ)**

Electrical	Units	1 - 4 Volts			4 - 1 Volts			0.5 - 4.5 Volts			4.5 - 0.5 Volts		
		Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max
Supply Voltage	VDC	4.5	5	5.5	4.5	5	5.5	4.5	5	5.5	4.5	5	5.5
Output Voltage (Button Up)	VDC @ 5V Vcc	0.85	1	1.15	3.85	4	4.15	0.35	0.5	0.65	4.35	4.5	4.85
Output Voltage (Button Down)	VDC @ 5V Vcc	3.85	4	4.15	0.85	1	1.15	4.35	4.5	4.65	0.35	0.5	0.65
Supply Current	mA	N/A	8	10	N/A	8	10	N/A	8	10	N/A	8	10
Continuous Output Current	mA	-1	N/A	1	-1	N/A	1	-1	N/A	1	-1	N/A	1
Output Resistance (Io ≤ -2mA)	Ω	N/A	1	10	N/A	1	10	N/A	1	10	N/A	1	10

**ELECTRONICS:**

**Seal Integrity:** IP65 or IP68S

**ENVIRONMENTAL:**

**Operating Temp Range:** -40°C to +85°C

**Humidity:** 96% RH, 70°C, 96 hours

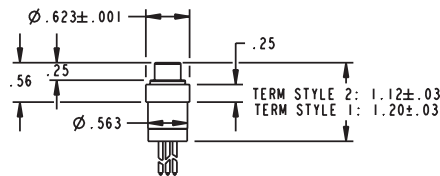
**MATERIALS:**

**Housing:** Anodized Aluminum alloy

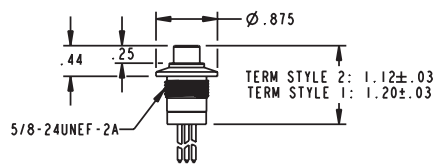
**Button Cap:** Thermoplastic

**Mounting Hardware:** Lockwasher, hex nut, washer when applicable

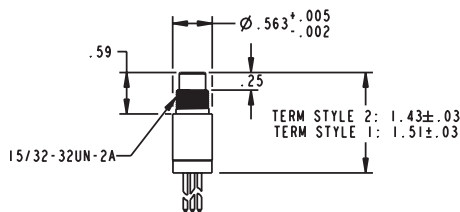
**.375" O.D. Button Style**



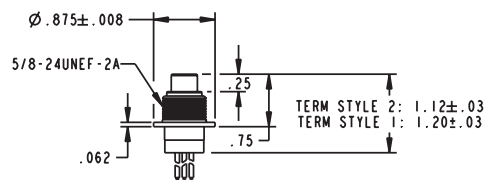
HPL - 1XXXXX I  
PRESS FIT



HPL - 3XXXXX I  
5/8" THREAD  
FRONT MOUNT



HPL - 4XXXXX I  
15/32" THREAD  
REAR MOUNT



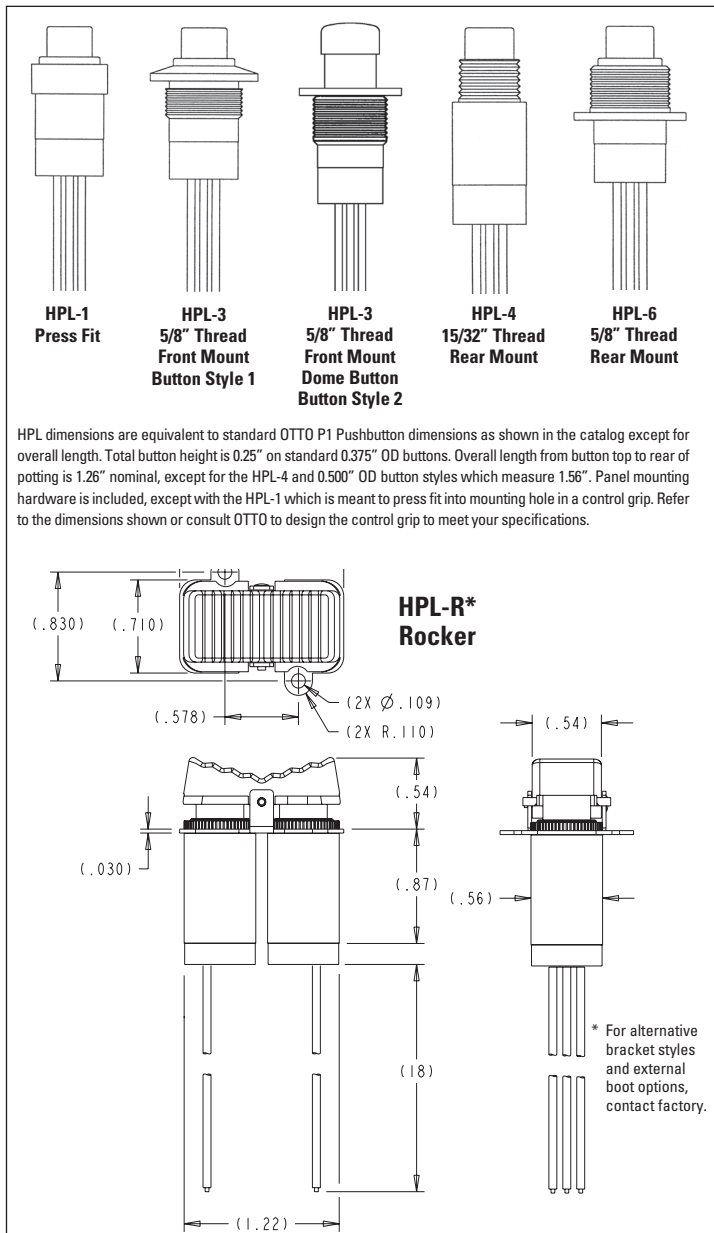
HPL - 6XXXXX I  
5/8" THREAD  
REAR MOUNT

# HALL EFFECT LINEAR OUTPUT PUSHBUTTONS

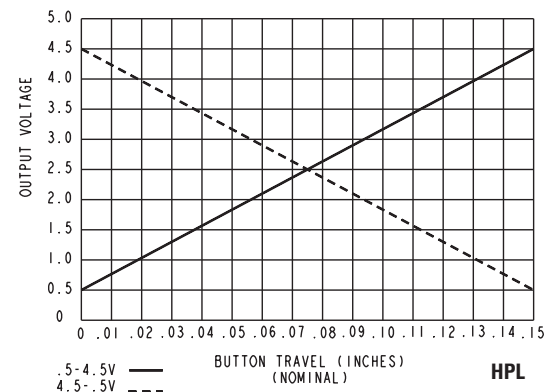
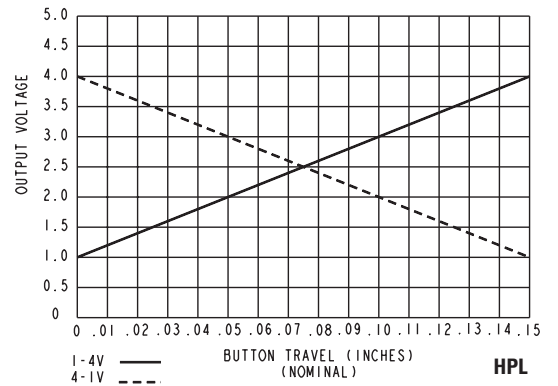
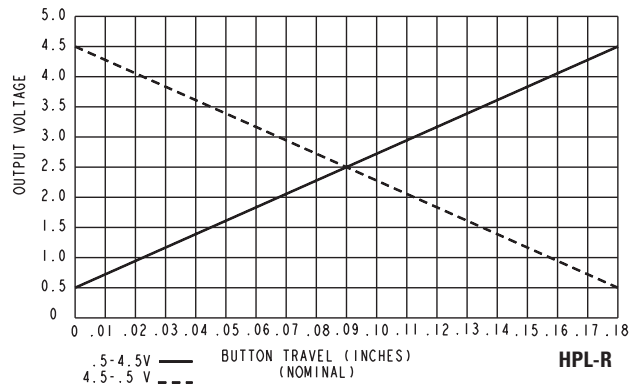
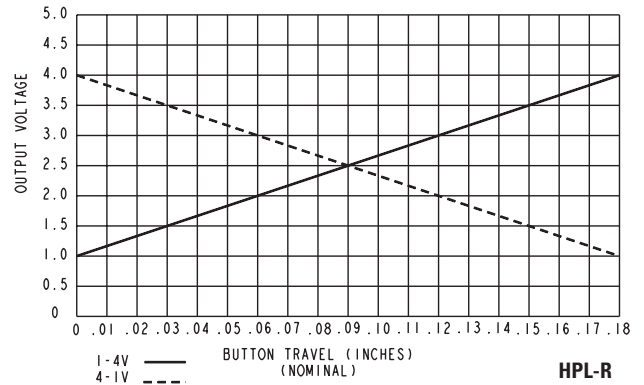
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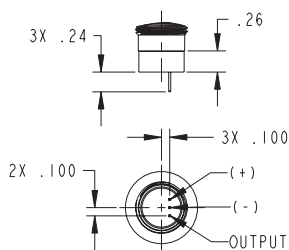
## Case Styles



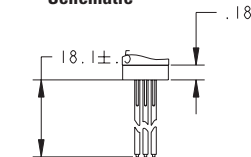
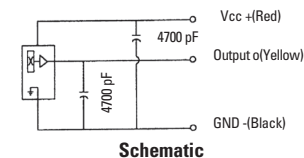
## Linear Output Graphs (Vcc = 5V @ 20°C)



## Terminal Styles



**TERMINAL STYLE 1**  
3 STRAIGHT PINS  
.100 CENTERS



**TERMINAL STYLE 2**  
18" POTTED  
22 AWG, UL 1569  
WIRE LEADS