

10 MILLION LINEAR OUTPUT CYCLES USING CONTACTLESS HALL EFFECT TECHNOLOGY

The HPL Hall Effect Linear Output Pushbutton Switch is a revolutionary switch utilizing 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.



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

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 PART NUMBER CODE

| | | | | | | | | | | | | |
|--------------------------------|---|-----------------|---|---------------------------------------|---|---------------------|---|-------------------|--|---------------------|--|--|
| HPL | - | X | X | X | X | X | X | X | | | | |
| Case Style | | Output | | Terminal Style | | Seal Level | | Case Color | | Button Color | | Button Style* |
| 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 | | R. Rocker Assembly (Case Style R) |
| 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.

HALL EFFECT LINEAR OUTPUT PUSHBUTTONS

HPL
LINEAR OUTPUT
PUSHBUTTONS

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Standard Characteristics/Ratings:

MECHANICAL:

| | |
|---------------------------|--|
| Mechanical Life: | 1,000,000 cycles full stroke per button, IP68S rated 10,000,000 cycles full stroke per button, IP64 rated |
| Button Travel: | 0.135 inches min to 0.160 inches max |
| Full Travel Force: | 0.15 inches, 3.0 lbs. typical to 3.8 lbs. max @ 25°C |
| Reset Force: | 5 oz min @ 25°C |
| Electrical Life: | 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 (I _o ≤ -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

Storage Temp Range: -65°C to +105°C

Humidity: 96% RH, 70°C, 96 hours

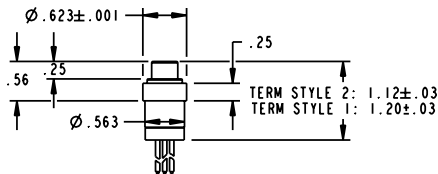
MATERIALS:

Housing: Anodized Aluminum alloy

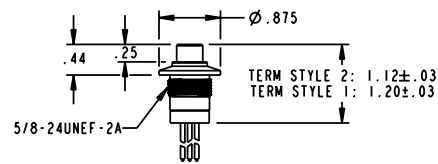
Button Cap: Thermoplastic

Mounting Hardware: Lockwasher, hex nut, washer when applicable

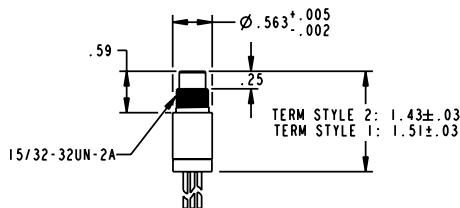
.375" O.D. Button Style



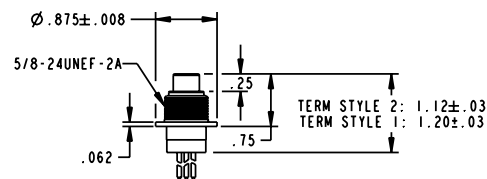
HPL - 1XXXXX I
PRESS FIT



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



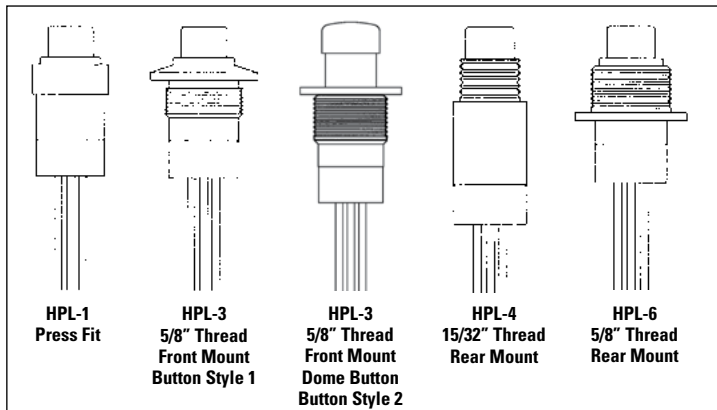
HPL - 4XXXXX I
15/32" THREAD
REAR MOUNT



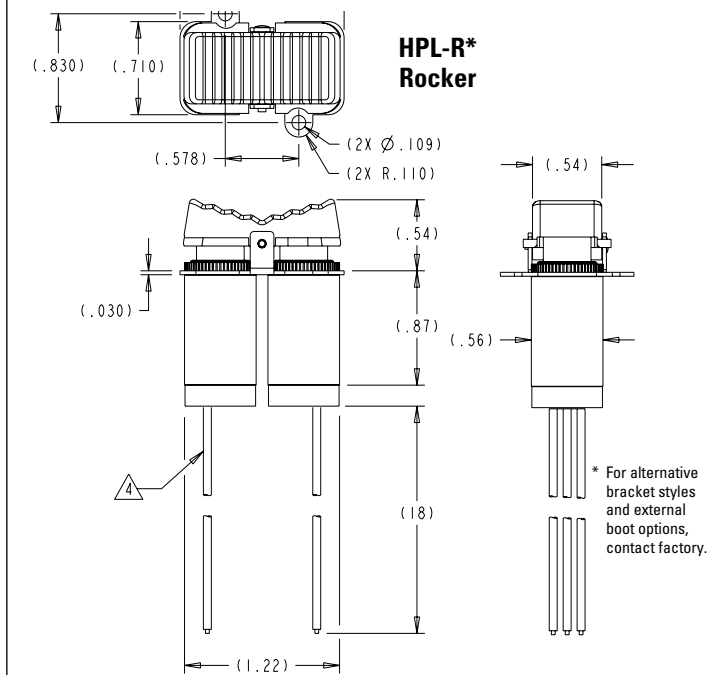
HPL - 6XXXXX I
5/8" THREAD
REAR MOUNT

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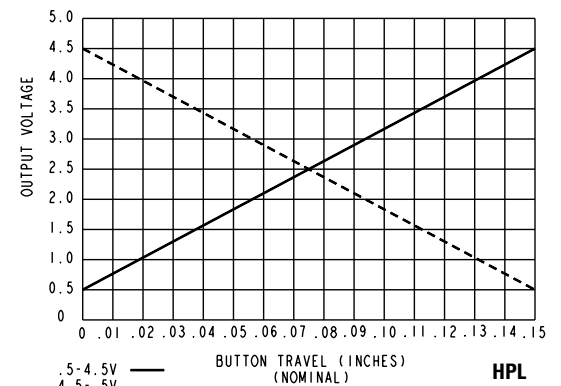
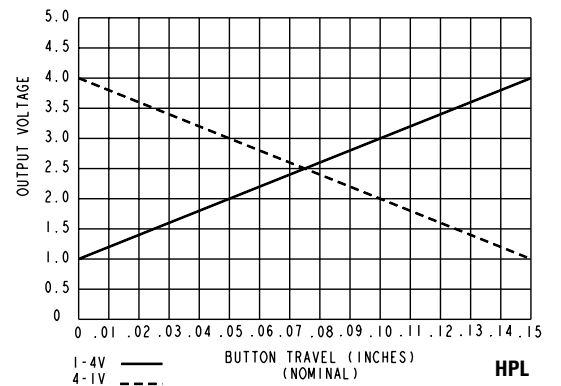
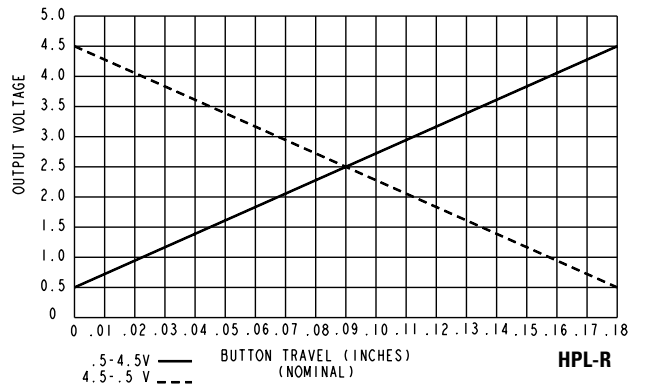
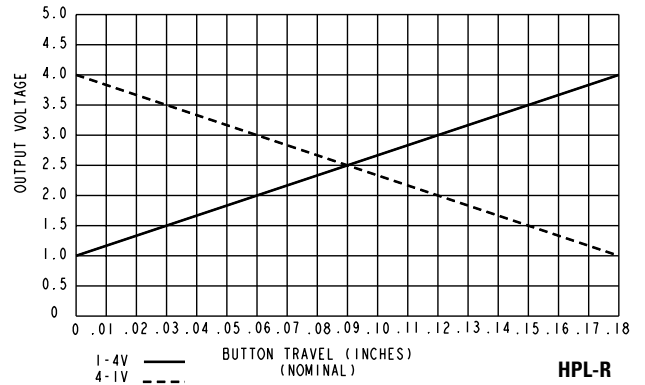
Case Styles



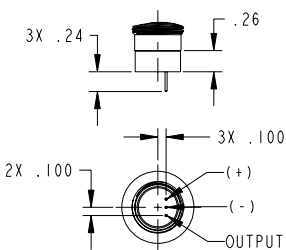
HPL dimensions are equivalent to standard OTTO P1 Pushbutton dimensions as shown in the catalog except for overall length. Total button height is 0.25" on standard 0.375" OD buttons. Overall length from button top to rear of potting is 1.26" nominal, except for the HPL-4 and 0.500" OD buttons which measure 1.56". Panel mounting hardware is included, except with the HPL-1 which is meant to press fit into mounting hole in a control grip. Refer to the dimensions shown or consult OTTO to design the control grip to meet your specifications.



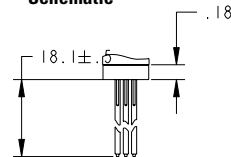
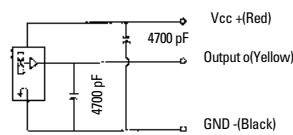
Linear Output Graphs (Vcc = 5V @ 20°C)



Terminal Styles



TERMINAL STYLE 1
3 STRAIGHT PINS
.100 CENTERS



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

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

OTTO:

[HPL-3322211](#) [HPL-3322212](#) [HPL-3322222](#) [HPL-3322282](#) [HPL-6322221](#) [HPL-1121121](#) [HPL-1121221](#) [HPL-1121222](#) [HPL-1122221](#) [HPL-1211221](#) [HPL-1311221](#) [HPL-1321211](#) [HPL-1321212](#) [HPL-1321221](#) [HPL-1321222](#) [HPL-1321262](#) [HPL-1322212](#) [HPL-1322221](#) [HPL-1322292](#) [HPL-1422242](#) [HPL-3111111](#) [HPL-3111132](#) [HPL-3111221](#) [HPL-3121121](#) [HPL-3121212](#) [HPL-3121222](#) [HPL-3122212](#) [HPL-3122221](#) [HPL-3122222](#) [HPL-3222212](#) [HPL-3222221](#) [HPL-3311221](#) [HPL-3311252](#) [HPL-3321211](#) [HPL-3321221](#) [HPL-3321222](#) [HPL-3322221](#) [HPL-3322232](#) [HPL-3421121](#) [HPL-4122221](#) [HPL-4211211](#) [HPL-4312221](#) [HPL-4321211](#) [HPL-4321221](#) [HPL-4322241](#) [HPL-4422221](#) [HPL-6122222](#) [HPL-6322251](#) [HPL-6322262](#) [HPL-R11122R](#) [HPL-R11212R](#) [HPL-R12212R](#) [HPL-R12221R](#) [HPL-R12222R](#) [HPL-R12224R](#) [HPL-R22222R](#) [HPL-R31222R](#) [HPL-R32122R](#) [HPL-R32222R](#) [HPL-R32224R](#) [HPL-R42122R](#) [HPL-R42222R](#) [HPL-4132221](#)