

## MOMENTARY ACTION, SEALED SUBMINIATURE PUSHBUTTON SNAP-ACTION SWITCHES

The P7 series incorporates OTTO's patented double break design in a significantly smaller package than the P1 series. These subminiature switches embrace today's technology requirements by allowing for a large number of switches to fit within a faceplate or a small panel space.

The long life snap-action design offers low contact resistance (25mΩ max initial) and is protected from the environment by a silicone rubber boot, operating on a "rolling sleeve" principle that gives long sealed life and smooth operation. Mechanical life is 2 million operations.

The P7 series is designed to meet the requirements of MIL-PRF-8805 including low level switching (10mA @ 30mV) with power switching up to 5 amps at 28VDC as well.

A variety of mounting styles are offered to best match the application. The P7-1, P7-2, P7-7 and P7-8 case styles feature a swaged bushing shape to allow press fit installation in aircraft flight control and hand grips and similar applications. The other styles feature threaded bushing mounting. The P7-3 and P7-A case styles have a front panel bezel, while the P7-5 and P7-6 have conventional bushings for rear panel mounted installations. Silver or black bezels are standard. Other colors available on special order.

Pushbuttons are available in a choice of nine colors. Excellent tactile feedback assures the operator that contact transfer has been made.

A choice of MIL-SPEC and commercial versions of these switches are offered: Moistureproof and dusttight to IP64 and MIL-PRF-8805 Design 2 or watertight to IP68S and to MIL-PRF-8805 Design 3.

## Features:

- Low level switching capability
- Less than 25mΩ initial contact resistance
- High contact pressure
- 6 circuit variations
- Positive tactile feedback
- Variety of mounting styles
- Square button option with case style A
- Qualified to MIL-PRF-8805/110
- Mechanical life is 2 million cycles
- Moistureproof and dusttight to IP64 and MIL-PRF-8805 Design 2 or Watertight to IP68S and MIL-PRF-8805 Design 3
- RoHS compliant



### Standard Characteristics/Ratings:

ELECTRICAL RATINGS:		Sea Level @ 28VDC or 115VAC, 60Hz			50,000 feet @ 28VDC or 115VAC, 60Hz		
Load	Circuits:	1 & 2	3-5	6	1 & 2	3-5	6
Resistive		5A	2.5A	4A	5A	2.5A	4A
Inductive		3A	1.5A	2A	3A	1.5A	2A
Lamp		1A	0.5A	N/A	N/A	N/A	N/A
Motor		3A	1.5A	N/A	N/A	N/A	N/A
DWV		1050Vrms				400Vrms	
Center Contact		3A max					
Low Level		10mA @ 30mV					
Electrical Life:	50,000 cycles full load (25,000 low level)						
Mechanical Life:	2,000,000 cycles						
Seal:	Moistureproof and dusttight to IP64 and MIL-PRF-8805 Design 2 or Watertight to IP68S and MIL-PRF-8805 Design 3						
Operating Temp Range:	-55°C to +85°C						
Operating Force:	1.7 +/- 0.5 lb.						
Total Travel:	0.080 inches max						
Overtravel:	0.010 inches min						
MATERIALS:							
Case:	Anodized aluminum alloy						
Button:	Thermoplastic						
Terminals:	Brass with gold over silver						
Terminal Hardware:	None provided						
Mounting Hardware:	Hex nut, lockwasher and panel gasket when applicable						

# COMMERCIAL & MILITARY GRADES

**P7**  
SUBMINIATURE  
PUSHBUTTONS

SEALED AGAINST DUST & MOISTURE, LOW LEVEL SWITCHING OPTION

<p><b>P7-1 Series</b></p> <p><b>Case Style 1</b> <b>Press Fit Mount</b></p> <p>Also available with PC terminals.</p>		<p><b>P7-6 Series</b></p> <p><b>Case Style 6</b> <b>15/32" Threaded Bushing</b></p> <p>Also available with PC pins.</p>																																																																																	
<p><b>P7-2 Series</b></p> <p><b>Case Style 2</b> <b>Press Fit Mount</b></p> <p>Also available with PC pins.</p>		<p><b>P7-7 Series</b></p> <p><b>Case Style 7</b> <b>Press Fit Mount</b></p> <p>Also available with PC pins.</p>																																																																																	
<p><b>P7-3 Series</b></p> <p><b>Case Style 3</b> <b>Bezel/Threaded Bushing</b></p> <p>Also available with PC pins.</p>		<p><b>P7-8 Series</b></p> <p><b>Case Style 8</b> <b>Press Fit Mount Guarded Button</b></p> <p>Also available with PC pins.</p>																																																																																	
<p><b>P7-5 Series</b></p> <p><b>Case Style 5</b> <b>1/4" Threaded Bushing</b></p> <p>Also available with PC pins.</p>		<p><b>P7-A Series</b></p> <p><b>Case Style A</b> <b>15/32" Threaded Bushing</b></p> <p><b>Square Button Shown</b></p> <p>Also available with PC pins and round buttons. Round Button versions do not have a D-flat.</p>																																																																																	
<p><b>Terminal Style "A" &amp; "B"</b></p> <p><b>Standard</b></p>		<p><b>Important Note:</b> Because the base case interface has epoxy applied over it, dimensions to this surface are difficult to measure. This surface is not recommended as a hard stop, due to the extra variation of the epoxy surface.</p> <p><b>P7 PART NUMBER CODE</b></p> <table><tr><th>P7</th><th>-</th><th>X</th><th>X</th><th>X</th><th>X</th><th>X</th><th>X</th></tr><tr><th>Case Style</th><th>Terminal Style/Construction Grade</th><th>Circuit Form</th><th>Contact Rating/Force</th><th>Case Color/Button Dia.</th><th>Button Color</th></tr><tr><td>1. Style 1</td><td>A. Solder/Commercial</td><td>1. N.O.</td><td>1. Std. Rating/Std. Force (1.7 lbs.)</td><td>1. Clear/Std.</td><td>1. Red</td></tr><tr><td>2. Style 2</td><td>B. Solder/Watertight</td><td>2. N.C.</td><td>2. Low Level/Std. Force (1.7 lbs.)</td><td>2. Black/Std.</td><td>2. Black</td></tr><tr><td>3. Style 3</td><td>Commercial</td><td>3. N.C. 3 Terminal</td><td>3. Std. Rating/High Force (4.0 lbs.)</td><td>3. Clear/0.312 ①</td><td>3. Orange</td></tr><tr><td>5. Style 5</td><td>1. Solder/Military/Short</td><td>4. N.O. 3 Terminal</td><td>4. Low Level/High Force (4.0 lbs.)</td><td>4. Black/0.312 ①</td><td>4. Yellow</td></tr><tr><td>6. Style 6</td><td>2. Solder/Commercial/Short</td><td>5. 5 Terminal</td><td>5. Std. Rating/High Force (4.0 lbs.)</td><td>5. Clear/ Square .50 ②</td><td>5. Green</td></tr><tr><td>7. Style 7</td><td>3. Solder/Mil. Watertight/Short</td><td>6. 2 Circuit</td><td>6. Low Level/High Force (4.0 lbs.)</td><td>6. Black/ Square .50 ②</td><td>6. Blue</td></tr><tr><td>8. Style 8</td><td>4. PC Pin/Commercial</td><td></td><td>5. Std. Rating/Low Force (12 oz.)</td><td></td><td>7. Purple</td></tr><tr><td>A. Style A</td><td>5. PC Pin/Military</td><td></td><td>6. Low Level/Low Force (12 oz.)</td><td></td><td>8. Gray</td></tr><tr><td></td><td>6. PC Pin/Mil. Watertight</td><td></td><td></td><td></td><td>9. White</td></tr><tr><td></td><td>7. Solder/Com. Watertight/Short</td><td></td><td></td><td></td><td></td></tr><tr><td></td><td>8. PC Pin/Com. Watertight</td><td></td><td></td><td></td><td></td></tr></table> <p>① Not available with Case Styles 2 &amp; 5 ② Available with Case Style A only</p>		P7	-	X	X	X	X	X	X	Case Style	Terminal Style/Construction Grade	Circuit Form	Contact Rating/Force	Case Color/Button Dia.	Button Color	1. Style 1	A. Solder/Commercial	1. N.O.	1. Std. Rating/Std. Force (1.7 lbs.)	1. Clear/Std.	1. Red	2. Style 2	B. Solder/Watertight	2. N.C.	2. Low Level/Std. Force (1.7 lbs.)	2. Black/Std.	2. Black	3. Style 3	Commercial	3. N.C. 3 Terminal	3. Std. Rating/High Force (4.0 lbs.)	3. Clear/0.312 ①	3. Orange	5. Style 5	1. Solder/Military/Short	4. N.O. 3 Terminal	4. Low Level/High Force (4.0 lbs.)	4. Black/0.312 ①	4. Yellow	6. Style 6	2. Solder/Commercial/Short	5. 5 Terminal	5. Std. Rating/High Force (4.0 lbs.)	5. Clear/ Square .50 ②	5. Green	7. Style 7	3. Solder/Mil. Watertight/Short	6. 2 Circuit	6. Low Level/High Force (4.0 lbs.)	6. Black/ Square .50 ②	6. Blue	8. Style 8	4. PC Pin/Commercial		5. Std. Rating/Low Force (12 oz.)		7. Purple	A. Style A	5. PC Pin/Military		6. Low Level/Low Force (12 oz.)		8. Gray		6. PC Pin/Mil. Watertight				9. White		7. Solder/Com. Watertight/Short						8. PC Pin/Com. Watertight				
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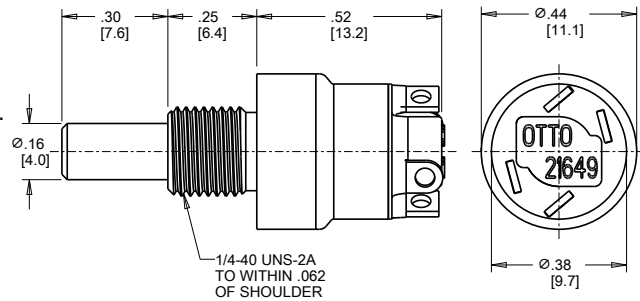
## EXAMPLES OF CUSTOMIZED P7 SEALED PUSHBUTTONS

**Special Longer Length Button**

Panel seal gasket and watertight enclosure.  
Button is black nylon. Bezel is black anodized aluminum alloy.

**Actuation**  
Momentary

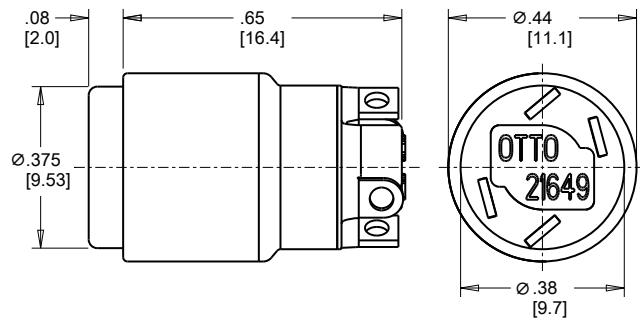
**OTTO Part Number**  
P7-500001

**Special Large Button, Press Fit**

Available with a 0.375" dia. button with three color options.

<b>Color</b>	<b>OTTO Part Number</b>
Red	P7-900001
Black	P7-900002
White	P7-900009

Contact factory for additional button color options.

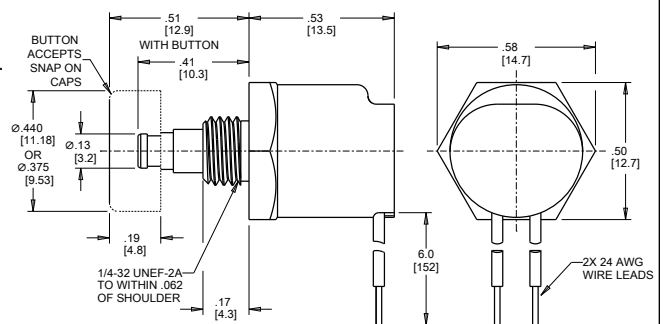
**Special Snap-On Button, Wire Leads**

Features changeable snap-on button caps available in two diameters and in a range of colors. Switch is splashproof sealed per MIL-PRF-8805 and is supplied with a silicone panel gasket.

**Part Number: P7-500018**

<b>Button Color</b>	<b>0.440" Dia.</b>	<b>0.375" Dia.</b>
Red	C400725-1	C400723-1
Black	C400725-2	C400723-2
Orange	C400725-3	C400723-3
White	C400725-9	C400723-9

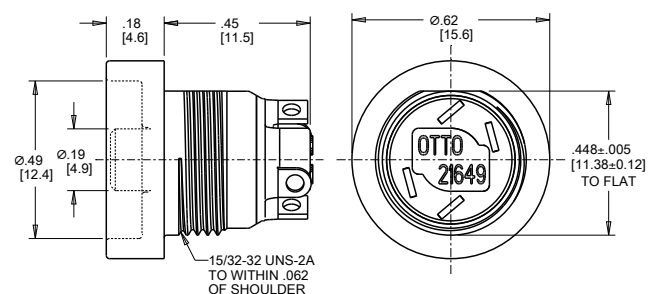
Contact factory for additional button color options.

**Mini Pushbutton, Shrouded**

This shrouded pushbutton is designed to reduce the chance of inadvertent actuation. Button size is .19". Enclosure design is watertight per IP68S.

**Actuation**  
Momentary

**OTTO Part Number**  
P7-900196



# Mouser Electronics

Authorized Distributor

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