

# MINI-SIZED PER MIL-PRF-8805/110

**P7**  
SUBMINIATURE  
PUSHBUTTONS

## 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:

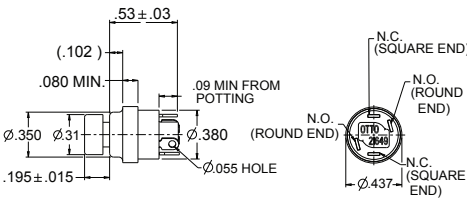
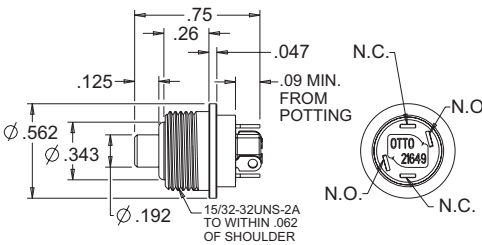
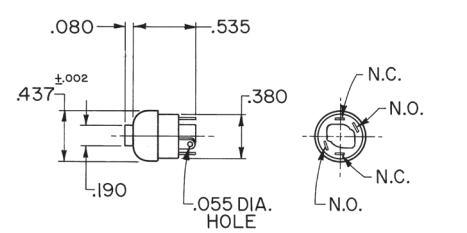
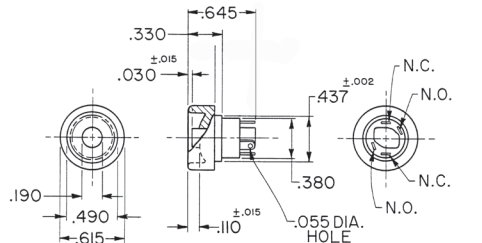
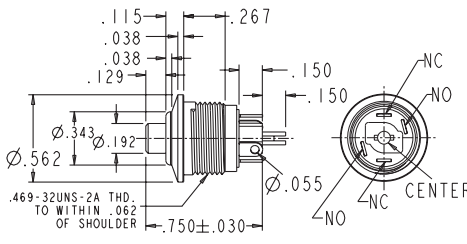
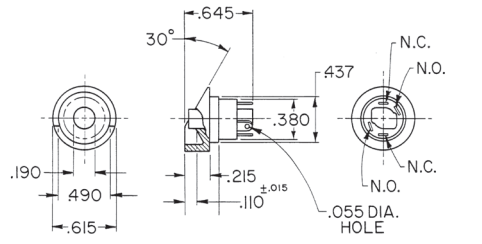
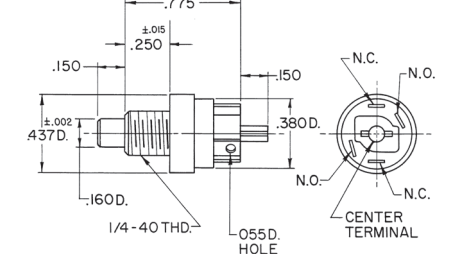
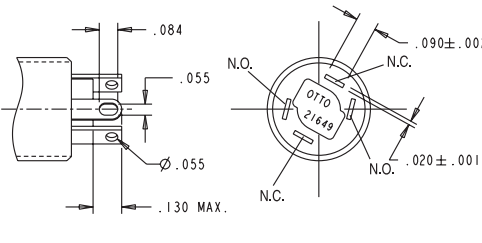
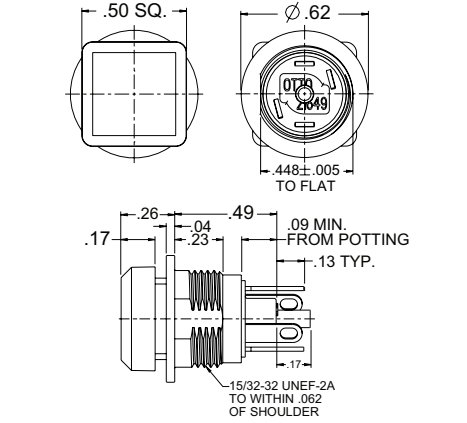
- Low level switching capability
- Less than 25mΩ initial contact resistance
- High contact pressure
- 6 circuit variations
- Positive tactile feedback
- Variety of mounting styles
- Square button option with case style A
- Qualified to MIL-PRF-8805/110
- Mechanical life is 2 million cycles
- Moistureproof 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					
<b>Electrical Life:</b>		50,000 cycles full load (25,000 low level)					
<b>Mechanical Life:</b>		2,000,000 cycles					
<b>Seal:</b>		Moistureproof and dusttight to IP64 and MIL-PRF-8805 Design 2 or Watertight to IP68S and MIL-PRF-8805 Design 3					
<b>Operating Temp Range:</b>		-55°C to +85°C					
<b>Operating Force:</b>		1.7 +/- 0.5 lb.					
<b>Total Travel:</b>		0.080 inches max					
<b>Overtravel:</b>		0.010 inches min					
<b>MATERIALS:</b>							
<b>Case:</b>		Anodized aluminum alloy					
<b>Button:</b>		Thermoplastic					
<b>Terminals:</b>		Brass with gold over silver					
<b>Terminal Hardware:</b>		None provided					
<b>Mounting Hardware:</b>		Hex nut, lockwasher and panel gasket when applicable					

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>Terminal Style "A" &amp; "B"</b></p> <p><b>Standard</b></p>																																																																									
<p><b>P7-A Series</b></p> <p><b>Case Style A</b> <b>15/32" Threaded Bushing Square Button Shown</b></p> <p>Also available with PC pins and round buttons.</p> <p>Round Button versions do not have a D-flat.</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> <p>P7 - X X X X X X</p> <table border="1"> <thead> <tr> <th>Case Style</th> <th>Terminal Style/Construction Grade</th> <th>Circuit Form</th> <th>Contact Rating</th> <th>Case Color/Button Dia.</th> <th>Button Color</th> </tr> </thead> <tbody> <tr> <td>1. Style 1</td> <td>A. Solder/Commercial</td> <td>1. N.O.</td> <td>1. Std.</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</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></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></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></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></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></td> <td>7. Purple</td> <td>7. Purple</td> </tr> <tr> <td>A. Style A</td> <td>5. PC Pin/Military</td> <td></td> <td></td> <td>8. Gray</td> <td>8. Gray</td> </tr> <tr> <td></td> <td>6. PC Pin/Mil. Watertight</td> <td></td> <td></td> <td>9. White</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> </tbody> </table>		Case Style	Terminal Style/Construction Grade	Circuit Form	Contact Rating	Case Color/Button Dia.	Button Color	1. Style 1	A. Solder/Commercial	1. N.O.	1. Std.	1. Clear/Std.	1. Red	2. Style 2	B. Solder/Watertight	2. N.C.	2. Low Level	2. Black/Std.	2. Black	3. Style 3	Commercial	3. N.C. 3 Terminal		3. Clear/0.312 ①	3. Orange	5. Style 5	1. Solder/Military/Short	4. N.O. 3 Terminal		4. Black/0.312 ①	4. Yellow	6. Style 6	2. Solder/Commercial/Short	5. 5 Terminal		5. Clear/Square .50 ②	5. Green	7. Style 7	3. Solder/Mil. Watertight/Short	6. 2 Circuit		6. Black/Square .50 ②	6. Blue	8. Style 8	4. PC Pin/Commercial			7. Purple	7. Purple	A. Style A	5. PC Pin/Military			8. Gray	8. Gray		6. PC Pin/Mil. Watertight			9. White	9. White		7. Solder/Com. Watertight/Short						8. PC Pin/Com. Watertight				
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① Not available with Case Styles 2 & 5  
② Available with Case Style A only

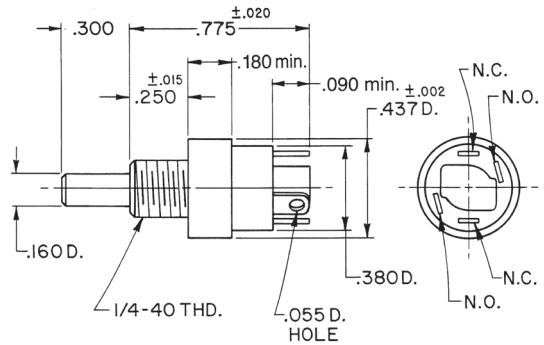
## EXAMPLES OF CUSTOMIZED P7 SEALED PUSHBUTTONS



### 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



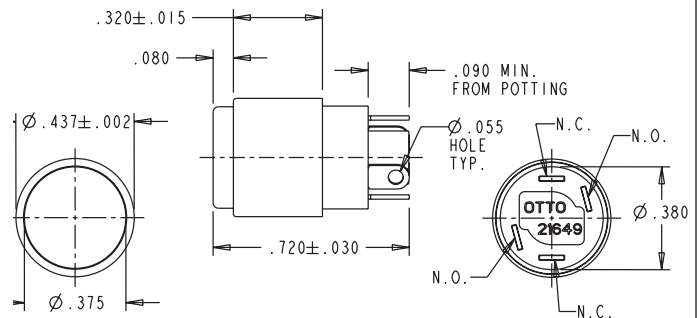
### Special Large Button, Press Fit

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

**Color**  
Red  
Black  
White

**OTTO Part Number**  
P7-900001  
P7-900002  
P7-900009

Contact factory for additional button color options.



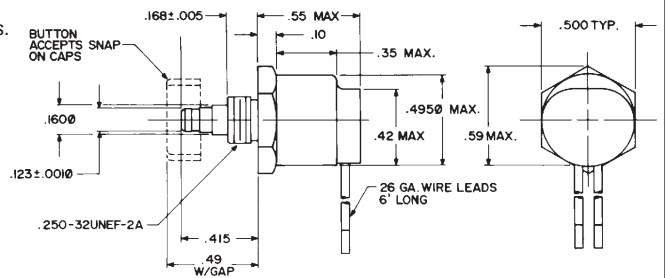
### Special Snap-On Button, Wire Leads

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

Button Color	0.440" Dia.	0.375" Dia.
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

