

## MOMENTARY ACTION, SEALED SUB-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.

The long life snap-action design is protected from the environment by a silicon rubber boot, operating on a patented "rolling sleeve" principle that gives long sealed life and smooth operation.

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 case style has 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 contact resistance
- High contact pressure
- 6 circuit variations
- Positive tactile feedback
- Variety of mounting styles
- Qualified to MIL-PRF-8805/110
- Moistureproof & dusttight to IP64 & MIL-PRF-8805 Design 2 or watertight to IP68S & MIL-PRF-8805 Design 3
- RoHS/WEEE/Reach compliant



### Standard Characteristics/Ratings:

| ELECTRICAL RATINGS:   |           | Sea Level @ 28VDC                                                 |      |     | 50,000 feet @ 28VDC |      |     |
|-----------------------|-----------|-------------------------------------------------------------------|------|-----|---------------------|------|-----|
| 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 |
| DVV                   |           | 1050Vrms                                                          |      |     | 400Vrms             |      |     |
| Center Contact        |           |                                                                   |      |     | 3A max              |      |     |
| Low Level             |           |                                                                   |      |     | 10mA @ 30mV         |      |     |
| Electrical Life:      |           | 25,000 cycles                                                     |      |     |                     |      |     |
| Mechanical Life:      |           | 1,000,000 cycles                                                  |      |     |                     |      |     |
| Seal:                 |           | IP64 and MIL-PRF-8805 Design 2 or 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              |      |     |                     |      |     |

SEALED AGAINST DUST &amp; MOISTURE, LOW LEVEL SWITCHING OPTION

| <p><b>P7-1 Series</b></p> <p><b>Case Style 1</b><br/><b>Press Fit Mount</b></p> <p>Also available with<br/>PC terminals.</p>   |                                   | <p><b>P7-6 Series</b></p> <p><b>Case Style 6</b><br/><b>15/32" Threaded Bushing</b></p> <p>Also available with<br/>PC pins.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                         |                                   |              |                |                         |              |            |                      |         |         |               |        |            |                      |         |              |               |          |            |            |                    |  |                  |           |            |                          |                    |  |                  |           |            |                            |               |  |  |          |            |                                 |              |  |  |         |            |                      |  |  |  |           |  |                    |  |  |  |         |  |                           |  |  |  |          |  |                                 |  |  |  |  |  |                           |  |  |  |  |
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| <p><b>P7-2 Series</b></p> <p><b>Case Style 2</b><br/><b>Press Fit Mount</b></p> <p>Also available with<br/>PC pins.</p>        |                                   | <p><b>P7-7 Series</b></p> <p><b>Case Style 7</b><br/><b>Press Fit Mount</b></p> <p>Also available with<br/>PC pins.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                |                         |                                   |              |                |                         |              |            |                      |         |         |               |        |            |                      |         |              |               |          |            |            |                    |  |                  |           |            |                          |                    |  |                  |           |            |                            |               |  |  |          |            |                                 |              |  |  |         |            |                      |  |  |  |           |  |                    |  |  |  |         |  |                           |  |  |  |          |  |                                 |  |  |  |  |  |                           |  |  |  |  |
| <p><b>P7-3 Series</b></p> <p><b>Case Style 3</b><br/><b>Bezel/Threaded Bushing</b></p> <p>Also available with<br/>PC pins.</p> |                                   | <p><b>P7-8 Series</b></p> <p><b>Case Style 8</b><br/><b>Press Fit Mount Guarded Button</b></p> <p>Also available with<br/>PC pins.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                |                         |                                   |              |                |                         |              |            |                      |         |         |               |        |            |                      |         |              |               |          |            |            |                    |  |                  |           |            |                          |                    |  |                  |           |            |                            |               |  |  |          |            |                                 |              |  |  |         |            |                      |  |  |  |           |  |                    |  |  |  |         |  |                           |  |  |  |          |  |                                 |  |  |  |  |  |                           |  |  |  |  |
| <p><b>P7-5 Series</b></p> <p><b>Case Style 5</b><br/><b>1/4" Threaded Bushing</b></p> <p>Also available with<br/>PC pins.</p>  |                                   | <p><b>Terminal Style "A" &amp; "B"</b></p> <p><b>Standard</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                |                         |                                   |              |                |                         |              |            |                      |         |         |               |        |            |                      |         |              |               |          |            |            |                    |  |                  |           |            |                          |                    |  |                  |           |            |                            |               |  |  |          |            |                                 |              |  |  |         |            |                      |  |  |  |           |  |                    |  |  |  |         |  |                           |  |  |  |          |  |                                 |  |  |  |  |  |                           |  |  |  |  |
| <p><b>PC Pin Mounting Pattern</b></p> <p>(As viewed from switch bottom. See above drawings for terminal identification.)</p>   |                                   | <p><b>P7 PART NUMBER CODE</b></p> <p>P7 - X X X X X X</p> <table><thead><tr><th>Case Style</th><th>Terminal Style/Construction Grade</th><th>Circuit Form</th><th>Contact Rating</th><th>Bezel 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></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></td><td>6. Blue</td></tr><tr><td>8. Style 8</td><td>4. PC Pin/Commercial</td><td></td><td></td><td></td><td>7. Purple</td></tr><tr><td></td><td>5. PC Pin/Military</td><td></td><td></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></tbody></table> |                | Case Style              | Terminal Style/Construction Grade | Circuit Form | Contact Rating | Bezel 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. Green | 7. Style 7 | 3. Solder/Mil. Watertight/Short | 6. 2 Circuit |  |  | 6. Blue | 8. Style 8 | 4. PC Pin/Commercial |  |  |  | 7. Purple |  | 5. PC Pin/Military |  |  |  | 8. Gray |  | 6. PC Pin/Mil. Watertight |  |  |  | 9. White |  | 7. Solder/Com. Watertight/Short |  |  |  |  |  | 8. PC Pin/Com. Watertight |  |  |  |  |
| Case Style                                                                                                                     | Terminal Style/Construction Grade | Circuit Form                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Contact Rating | Bezel 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. Green                          |              |                |                         |              |            |                      |         |         |               |        |            |                      |         |              |               |          |            |            |                    |  |                  |           |            |                          |                    |  |                  |           |            |                            |               |  |  |          |            |                                 |              |  |  |         |            |                      |  |  |  |           |  |                    |  |  |  |         |  |                           |  |  |  |          |  |                                 |  |  |  |  |  |                           |  |  |  |  |
| 7. Style 7                                                                                                                     | 3. Solder/Mil. Watertight/Short   | 6. 2 Circuit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                |                         | 6. Blue                           |              |                |                         |              |            |                      |         |         |               |        |            |                      |         |              |               |          |            |            |                    |  |                  |           |            |                          |                    |  |                  |           |            |                            |               |  |  |          |            |                                 |              |  |  |         |            |                      |  |  |  |           |  |                    |  |  |  |         |  |                           |  |  |  |          |  |                                 |  |  |  |  |  |                           |  |  |  |  |
| 8. Style 8                                                                                                                     | 4. PC Pin/Commercial              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                         | 7. Purple                         |              |                |                         |              |            |                      |         |         |               |        |            |                      |         |              |               |          |            |            |                    |  |                  |           |            |                          |                    |  |                  |           |            |                            |               |  |  |          |            |                                 |              |  |  |         |            |                      |  |  |  |           |  |                    |  |  |  |         |  |                           |  |  |  |          |  |                                 |  |  |  |  |  |                           |  |  |  |  |
|                                                                                                                                | 5. PC Pin/Military                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                         | 8. Gray                           |              |                |                         |              |            |                      |         |         |               |        |            |                      |         |              |               |          |            |            |                    |  |                  |           |            |                          |                    |  |                  |           |            |                            |               |  |  |          |            |                                 |              |  |  |         |            |                      |  |  |  |           |  |                    |  |  |  |         |  |                           |  |  |  |          |  |                                 |  |  |  |  |  |                           |  |  |  |  |
|                                                                                                                                | 6. PC Pin/Mil. Watertight         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                         | 9. White                          |              |                |                         |              |            |                      |         |         |               |        |            |                      |         |              |               |          |            |            |                    |  |                  |           |            |                          |                    |  |                  |           |            |                            |               |  |  |          |            |                                 |              |  |  |         |            |                      |  |  |  |           |  |                    |  |  |  |         |  |                           |  |  |  |          |  |                                 |  |  |  |  |  |                           |  |  |  |  |
|                                                                                                                                | 7. Solder/Com. Watertight/Short   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                         |                                   |              |                |                         |              |            |                      |         |         |               |        |            |                      |         |              |               |          |            |            |                    |  |                  |           |            |                          |                    |  |                  |           |            |                            |               |  |  |          |            |                                 |              |  |  |         |            |                      |  |  |  |           |  |                    |  |  |  |         |  |                           |  |  |  |          |  |                                 |  |  |  |  |  |                           |  |  |  |  |
|                                                                                                                                | 8. PC Pin/Com. Watertight         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                |                         |                                   |              |                |                         |              |            |                      |         |         |               |        |            |                      |         |              |               |          |            |            |                    |  |                  |           |            |                          |                    |  |                  |           |            |                            |               |  |  |          |            |                                 |              |  |  |         |            |                      |  |  |  |           |  |                    |  |  |  |         |  |                           |  |  |  |          |  |                                 |  |  |  |  |  |                           |  |  |  |  |

① Not available with Case Styles 1, 2 &amp; 5.

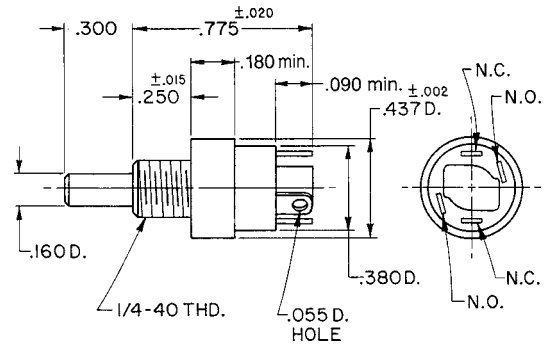
## EXAMPLES OF CUSTOMIZED P7 SEALED PUSHBUTTONS



### 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

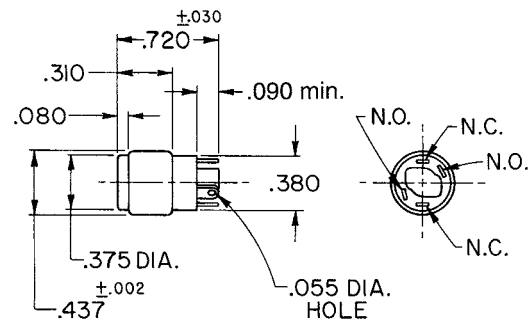


### Special Large Button, Press Fit

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

**Color**  
Red P7-900001  
Black P7-900002  
White P7-900009

Contact factory for additional button color options.



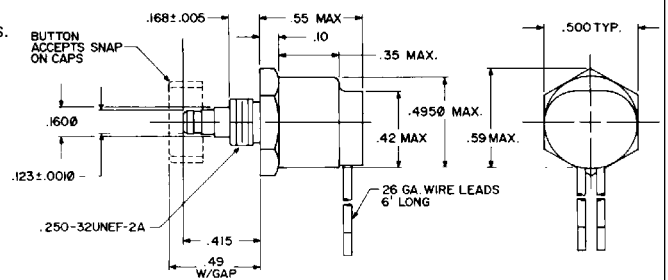
### Special Snap-On Button, Wire Leads

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

| 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   |

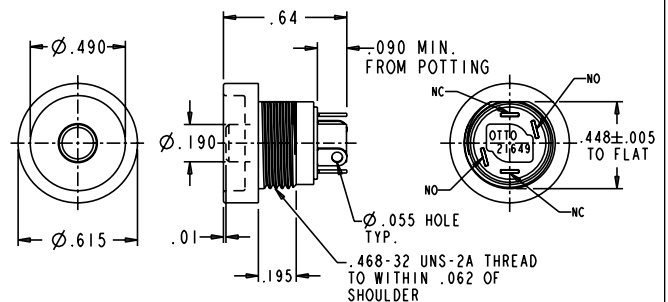
Contact factory for additional button color options.



### 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



# Mouser Electronics

Authorized Distributor

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

## OTTO:

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