

## 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 |
| DWV                   |           | 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              |      |     |                     |      |     |

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

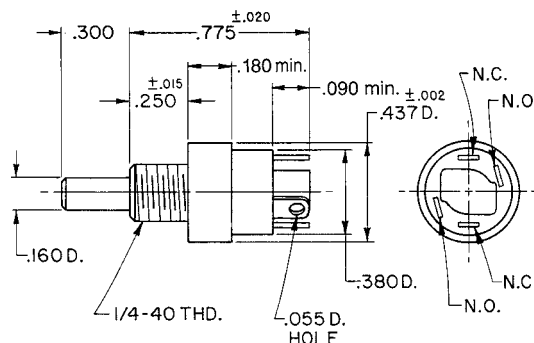
SEALED AGAINST DUST & MOISTURE, LOW LEVEL SWITCHING OPTION

| <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</b><br/><b>"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> <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</th><th>Bezel 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.</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></table> |                                                                                                                                        |                | P7                      | -            | X | X | X | X | X | X | 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 |  |  |  |  |
| P7                                                                                                                             | -                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | X                                                                                                                                      | X              | X                       | X            | X | X |   |   |   |   |            |                                   |              |                |                         |              |            |                      |         |         |               |        |            |                      |         |              |               |          |            |            |                    |  |                  |           |            |                          |                    |  |                  |           |            |                            |               |  |  |          |            |                                 |              |  |  |         |            |                      |  |  |  |           |  |                    |  |  |  |         |  |                           |  |  |  |          |  |                                 |  |  |  |  |  |                           |  |  |  |  |
| 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                        |                |                         |              |   |   |   |   |   |   |            |                                   |              |                |                         |              |            |                      |         |         |               |        |            |                      |         |              |               |          |            |            |                    |  |                  |           |            |                          |                    |  |                  |           |            |                            |               |  |  |          |            |                                 |              |  |  |         |            |                      |  |  |  |           |  |                    |  |  |  |         |  |                           |  |  |  |          |  |                                 |  |  |  |  |  |                           |  |  |  |  |

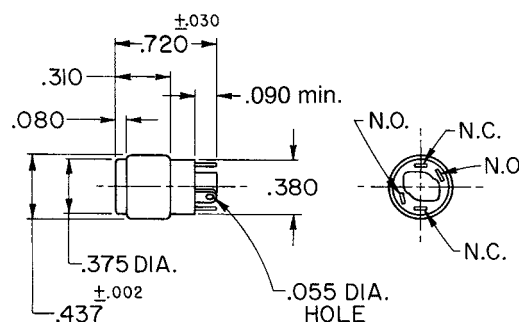
## EXAMPLES OF CUSTOMIZED P7 SEALED PUSHBUTTONS



|                  |                         |
|------------------|-------------------------|
| <b>Actuation</b> | <b>OTTO Part Number</b> |
| Momentary        | P7-500001               |

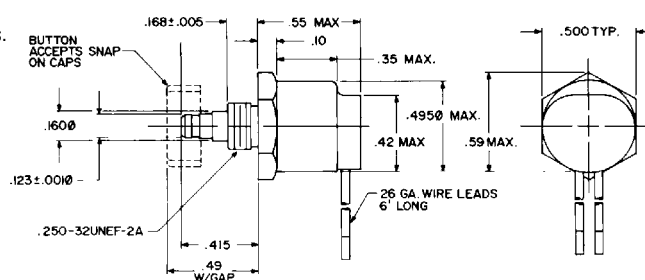


| Color | OTTO Part Number |
|-------|------------------|
| Red   | P7-900001        |
| Black | P7-900002        |
| White | P7-900009        |

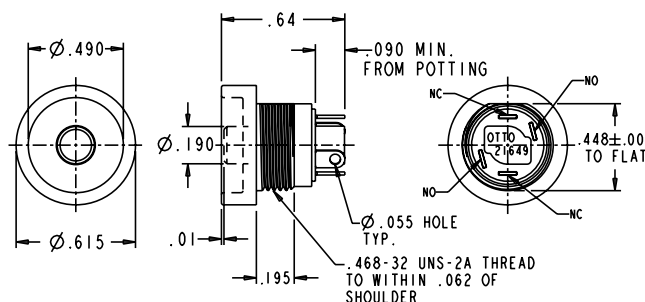


**Part Number: P7-500018**

| 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   |



|                  |                         |
|------------------|-------------------------|
| <b>Actuation</b> | <b>OTTO Part Number</b> |
| Momentary        | P7-900196               |



# Mouser Electronics

Authorized Distributor

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

## OTTO:

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