# SEALED COMMERCIAL GRADE PUSHBUTTONS

#### MOMENTARY ACTION, SEALED, SNAP-ACTION, DOUBLE BREAK

Makes and breaks every time! Less than  $25m\Omega$  contact resistance because the OTTO design features inherent rocking action that breaks welds and wipes contacts clean.

The P3 is the commercial version of the P1 Pushbutton switch, offering vastly improved life under extreme conditions found in some industrial environments. The pushbutton is sealed by a silicone boot operating on our patented "rolling sleeve," providing longer life and smoother operation over a wide temperature range. Epoxy protects the contacts and terminals from hostile environments and solder flux.

High contact force (120g/4.2 oz), low contact resistance ( $25m\Omega$  max) and short contact bounce are the result of our snapaction mechanism. These characteristics provide exceptional current carrying capabilities over the life of the switch. With the optional low level (gold plate) configuration, the P3 is well suited to interface directly to computers and other solid state devices.

Watertight sealing is available by simply adding "W" to your part number. Because the P3 is a double break switch, wide connection possibilities, longer life and greater capacity are offered. The P3 design provides a unique terminal connection to the moving element for added flexibility. Special versions can be provided with five terminals to control up to four circuits.

# **Features:**

- Button sealed with patented "rolling sleeve" principle
- Contact area sealed at button & terminals
- Less than 25mΩ contact resistance
- Positive tactile feedback
- Engraved buttons & bezels available
- UL recognized & CSA certified
- 1 million mechanical cycle life
- Watertight to IP68S available in all versions
- Watertight to IP69K available in non push-pull versions
- RoHS/WEEE/Reach compliant

#### **P3 PART NUMBER CODE P3** Case Style Terminal Circuit Button Operating Style/Rating **Form** Force/Action 1. Solder/Std. 1. N.O. 1. 2.5 lbs./Momentary 1. Style 1 1. Red 3. Style 3 2. Screw/Std 2. N.C. 2. 4.0 lbs./Momentary 2. Black **6.** Style 6 3. Solder/Low Level 3. N.C. 3 Terminal 3. Push-Pull 3. Orange 4. N O 3 Terminal 4. Push-Pull Style 7 4. Screw/Low Level 4. Yellow High Force\*\* 8. Style 8 5. 5 Terminal 5. Green 6. 2 Circuit 6. Blue

7. Purple 8. Gray 9. White

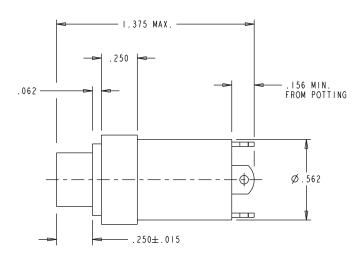




Standard Chara	cteristics/Ratings:			
ELECTRICAL RATINGS:				
Load	Sea Level @ 28VDC or 115VAC, 60/400Hz	50,000 feet @ 28VDC or 115VAC, 60/400Hz	Cycles	
Resistive	10A	N/A	100,000	
Inductive	5A	5A	100,000	
Lamp	3A	N/A	100,000	
Center Contact	3A max	N/A	100,000	
DWV	1050Vrms	400Vrms		
Low Level	10mA @ 30mV max DC	or peak AC		
Electrical Life:	25,000 or 100,000 cycles (depending on configuration) High Force Push Pull 5,000 cycles			
Mechanical Life:	1 million cycles, circuit forms 1, 2 & 6 100,000 cycles, circuit forms 3, 4 & 5 High Force Push Pull 5,000 cycles			
Seal:	IP64 or IP68S and IP64 or IP68S on	I IP69K push-pull versions		
Shock:	MIL-STD-202, me	thod 207		
Operating Temp Ra	ange: -55°C to +85°C, H	igh Force Push Pull -40°C to	+85°C	
Operating Force:	2.5 lbs. or 4.0 lbs. Push-Pull: .5 to 2. Push-Pull High Fo			
Reset Force:	0.75 lb. min or 1.0	lb.		
Total Travel:	0.085 +/- 0.015 inc	ches		
Overtravel:	0.012 inches min			
Movement Differen	ntial: 0.015 inches min			
MATERIALS:				
Case:	Anodized aluminu	Anodized aluminum alloy		
Button:	Thermoplastic	Thermoplastic		
Terminals:	Brass with silver,	Brass with silver, gold for low level		
Terminal Hardware	: Screws, lockwash	er and terminal lug for screw	terminal option	
Mounting Hardware: Hex nut, lockwasher and panel seal when applicable		plicable		

<sup>\*</sup> Add "W" suffix for watertight to IP68S and IP69K for Operating Force/Action selections 1 and 2. Add "W" suffix for watertight to IP68S for Operating Force/Action selections 3 and 4.
\*\*Available in Case Style 3 only.

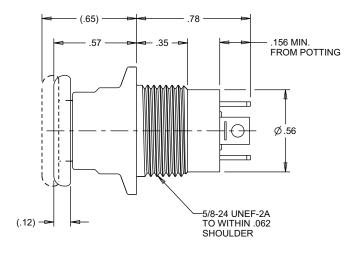
### IDEAL FOR USE IN HEAVY MACHINERY & COMMERCIAL APPLICATIONS

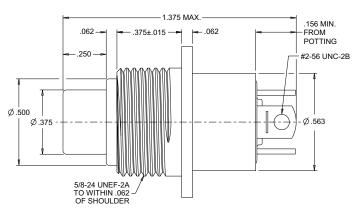


1.50 MAX. -.312±.015 .062 .156 MIN FROM POTTING .062  $\emptyset.563$ Ø.375±.015 .187 625-24UNEF-2A THD TO WITHIN .062 OF SHOULDER . 38 -

Style P3-11\_2

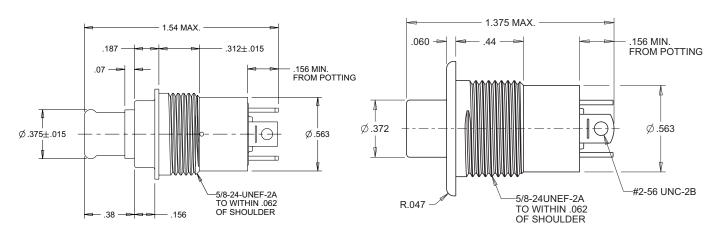
Style P3-33\_3 Push-Pull





Style P3-33 4 Push-Pull High Force

Style P3-61 1



Style P3-71\_3

Style P3-83\_1

# NOTEWORTHY DESIGNS

#### **EXAMPLES OF CUSTOMIZED P3 SERIES SEALED PUSHBUTTONS**

### **Special Shaped Bezel**

Total Travel: 0.085" +/- 0.015" Operating Force: 2.5, +0.5, -1.0 lb. Reset Force: 0.75 lb. min

Circuit: SPNO-DB (Other circuits available)

Mechanical Life: 1,000,000 cycles

Button: Red nylon

Housing: Clear anodized aluminum

P3-30017



#### **Special Journaled Button**

Watertight to IP68S, black anodized case and thermoplastic button available in nine colors.

Circuit: SPNO-DB

Mechanical Life: 1,000,000 cycles Electrical Life: 100,000 cycles

P3-90308-X

(X denotes button color)



#### Special Large Round Button, **Quick Connect Tab Terminals**

Total Travel: 0.085" +/- 0.015" **Operating Force:** 4.0 +/- 1.0 lb. Reset Force: 1.0 lb. min

Circuit: SPNO-DB (Other circuits available)

Mechanical Life: 1,000,000 cycles

Button: Black nylon

Housing: Clear anodized aluminum

P3-30031



#### **Large Diameter Button**

Nine different button colors, black anodized protective shroud, watertight to IP68S.

Circuit: SPNO-DB

Mechanical Life: 1,000,000 cycles Electrical Life: 100,000 cycles at full load

(X denotes button color)



### **Special Right Angle, Quick Connect** Tabs, P3-6 Style

Total Travel: 0.085" +/- 0.015" **Operating Force:** 2.5, +0.5, -1.0 lb. Reset Force: 0.75 lb. min Circuit: SPNO-DB

Mechanical Life: 1,000,000 cycles

Button: Red nylon

Housing: Clear anodized aluminum

P3-60024



#### Special "H" Case with **Round Shaped Button**

**Operating Force:** 4.0 +/- 1.0 lb.

Reset Force: 1 0 lb min

Circuit: SPNC-DB (Other circuits available)

Mechanical Life: 1,000,000 cycles

Button: Red nylon

Housing: Black anodized aluminum

P3-80016



# Special Snap-In, Panel-Sealed, **Rectangular Shaped Button**

Total Travel: 0.125" max Operating Force: 4.0 +/- 1.0 lb. Reset Force: 1.0 lb. min

Circuit: SPNO-DB (Other circuits available)

Mechanical Life: 1,000,000 cycles **Button:** Black polyester

Housing: Clear anodized celenex P3-90037



## **Large Diameter Button**

Nylon button is 1.187". Snaps on to special style body with leads. Dusttight to IP64.

Operating Force: 2.5, +0.5, -1.0 lb. Mechanical Life: 1,000,000 cycles Rating: 10 amps Resistive Circuit: SPDT 2 circuit

P3-30101-X



#### **Protective Shroud**

This pushbutton is designed to avoid accidental actuation of the switch. The shroud requires the operator to purposely operate the switch. The actuation occurs below the height of the protective shroud, thus protecting against unintentional actuation.

Same ratings and sealing characteristics as the standard P3 series.

SPNC is shown.

P3-90009



#### **Emergency Stop Pushbutton** PART NUMBER BUTTON COLOR P330115-1 RFD P330115-2 P330115-3 BLACK ORANGE YELLOW Ø.875 P330115-4 P330115-5 P330115-6 P330115-7 P330115-8 VIOLET GRAY P330115-9 WHITE .182 X .032 FASTONS