PUSHBUTTONS PER MIL-PRF-8805/3 (MS25089)

MOMENTARY ACTION, SEALED, SNAP-ACTION, DOUBLE BREAK

The P1 offers a mechanical life that is well beyond the 50,000 cycles required by MIL-PRF-8805. The double break switching mechanism has an incredibly fast transfer time, reducing arcing and increasing contact life. The inherent wiping action breaks welds and scrubs the contacts clean on every actuation.

The P1 switch offers vastly improved life under extreme conditions found in most military environments. Moistureproofing is accomplished in two ways. The pushbutton is sealed with a silicone boot operating on our patented "rolling sleeve," providing longer life and smoother operation over a wide temperature range. Epoxy seals protect the contacts and terminals from hostile environments and solder flux.

Watertight sealing to Commercial (IP68S) and Military (MIL-PRF-8805 Design 3) standards are available. This watertight design is also available in commercial construction as the P3 series (add "W" to your part number).

High contact force (120g/4.2 oz), low contact resistance (25mΩ max initial) and short contact bounce result from our snap-action mechanism. These characteristics guarantee exceptional current carrying capabilities over the life of the switch. With the optional low level (gold plate) configuration, the P1 is well suited to interface directly to computers and other solid state devices.

The P1 switch is a quality precision snap-action switch designed for use in panel boards, control grips, computers, instruments, pressure switches and other hand or machine operated applications where sealed pushbutton switches are required. Its precision permits the P1 to be used as a limit switch with unique size, high electrical ratings and a wide choice of mounting styles.

Features:

- **Button sealed with patented "rolling sleeve" principle**
- **Contact area sealed at button & terminals**
- **Less than 25mΩ initial contact resistance**
- **Ideal for low level switching as well as up to 10 amp duty**
- **Positive tactile feedback**
- **Variety of mounting styles**
- **Engraved buttons & bezels available**
- **UL recognized & CSA certified**
- **Watertight to IP68S available**
- **RoHS compliant**

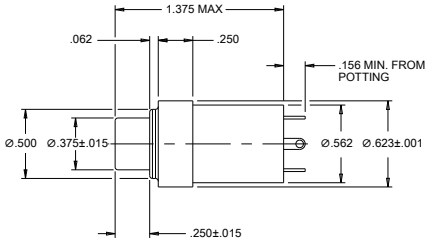
Standard Characteristics/Ratings:		
ELECTRICAL RATINGS:		
Load	**Sea Level @ 28VDC or 115VAC, 60/400Hz**	**50,000 feet @ 28VDC or 115VAC, 60/400Hz**
Resistive	10A	N/A
Inductive	5A	5A
Lamp	3A	N/A
Motor	3A	N/A
Center Contact	3A max	N/A
DWV	1000Vrms	400Vrms
Low Level	10mA @ 30mV max DC or peak AC	
Electrical Life:	25,000 cycles	
Mechanical Life:	50,000 cycles, circuit forms 3, 4, & 5 250,000 cycles, circuit forms 1, 2 & 6	
Seal:	MIL-PRF-8805 Design 2 or Watertight per IP68S or MIL-PRF-8805 Design 3	
Operating Temp Range:	-55°C to +85°C	
Operating Force:	2.5 lbs. or 4.0 lbs.	
Reset Force:	0.75 lb. or 1.0 lb.	
Total Travel:	0.085 +/- 0.015 inches	
Overtravel:	0.012 inches min	
Movement Differential:	0.015 inches min	
MATERIALS:		
Case:	Black anodized aluminum alloy	
Button:	Thermoplastic	
Terminals:	Brass with silver plate, gold plate for low level	
Terminal Hardware:	Screws, lockwasher and solder lugs for screw terminal option	
Mounting Hardware:	Hex nut and lockwasher, panel seal on watertight switches	

Specifications Subject To Change Without Notice

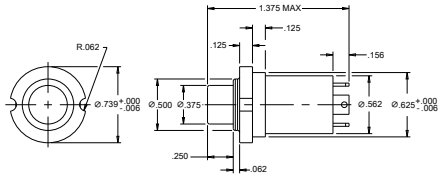
PUSHBUTTONS PER MIL-PRF-8805/3 (MS25089)

MOMENTARY ACTION, LOW LEVEL UP TO 10 AMPS

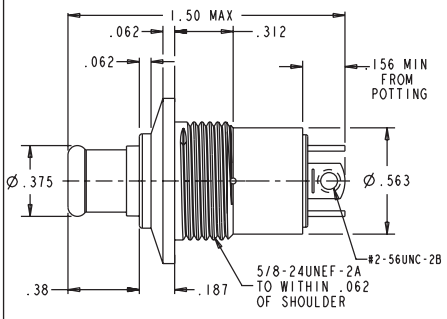
P1-1 (MIL-A)



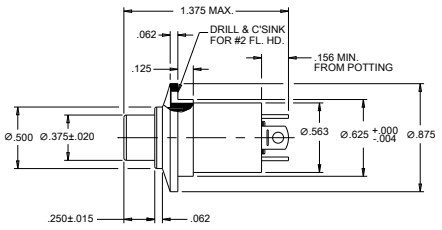
P1-2 (MIL-B)



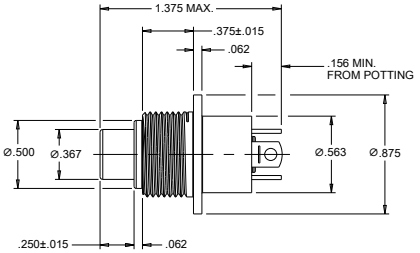
P1-3 (MIL-C)
Push-Pull Style Shown



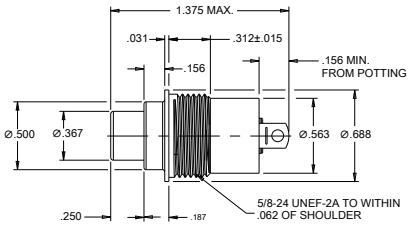
P1-5 (MIL-E)



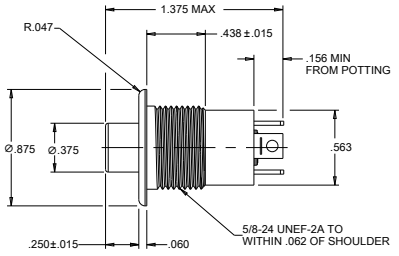
P1-6 (MIL-F)



P1-7 (MIL-G)

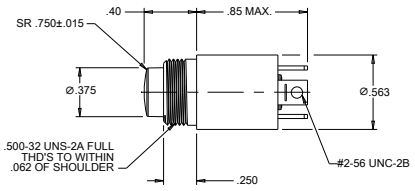


P1-8 (MIL-H)



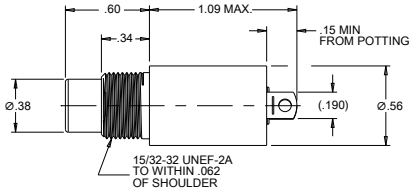
Unsealed P1-90013

Operating Force: 4.0 +/- 1.0 lb.
Circuit: SPDT-DB
Case: Black anodized aluminum
Button: Black nylon



Watertight P1-90024
Dusttight P1-90014

Operating Force: 4.0 +/- 1.0 lb.
Circuit: SPST-N.O.
Case: Black anodized aluminum
Button: Red nylon



PUSHBUTTONS PER MIL-PRF-8805/3 (MS25089)

MOMENTARY ACTION, LOW LEVEL UP TO 10 AMPS

P1 PART NUMBER CODE

P1 – X X X X X *

Case Style
1. Style A
2. Style B
3. Style C
5. Style E
6. Style F
7. Style G
8. Style H

Terminal Style
1. Solder/Std.
2. Screw/Std.
3. Solder/Low Level
4. Screw/Low Level

Circuit Form
1. N.O.
2. N.C.
3. N.C. 3 Terminal ①
4. N.O. 3 Terminal ①
5. 5 Terminal ①
6. 2 Circuit

Switch Action
1. 2.5 lbs. Momentary
2. 4.0 lbs. Momentary ②
3. Push-Pull

Button Color
1. Red
2. Black
3. Orange
4. Yellow
5. Green
6. Blue
7. Purple
8. Gray
9. White

*** Add "W" for watertight to IP68S.** (For watertight seal to MIL-PRF-8805 Design 3, please contact factory.)

① Circuit styles with 3 and 5 terminals have 50,000 cycle mechanical life per MIL-PRF-8805.
② Military standard is 4.0 lbs.

ORDERING INFORMATION:

Select the OTTO P1 series switch to match your application requirements. Combinations of features are almost unlimited. When ordering, specify the Military (MS) Number and/or OTTO Part Number.

Example: P1-32629 is MS25089-3CW, "C" style case, 2 circuit contact configuration, 4.0 lbs. operating force, white button. For low level model, specify P1-34629, MS25089-3CWL. A partial cross reference list of Military (MS) Numbers to OTTO Part Numbers may be found in the back section of this catalog.

Specifications Subject To Change Without Notice

EXAMPLES OF CUSTOMIZED P1 SERIES SEALED PUSHBUTTONS

Special Cap On Press Fit Case

Total Travel: 0.085" +/- 0.015"
Operating Force: 4.0 +/- 1.0 lb.
Reset Force: 1.0 lb. min
Circuit: SPDT 2 circuit
Mechanical Life: 250,000 cycles
Button: Black oxide #303 Stainless Steel
Housing: Black anodized aluminum

P1-10047

Long Pushbutton

Dusttight per MIL-PRF-8805, this extra long button is installed in a Type P1 "C" case style.

Total Travel: 0.085" +/- 0.015"
Operating Force: 4.0 lbs.
Circuit: SPNO-DB
Rating: 10 amps Resistive
Mechanical Life: 250,000 cycles
Electrical Life: 25,000 cycles

P1-30074

Special Push-Pull Switch

Total Travel: 0.085" +/- 0.015"
Operating Force: 0.5 lb. to 2.0 lbs.
Circuit: SPNO-DB
Mechanical Life: 250,000 cycles
Button: Black on white nylon
Housing: Black anodized aluminum
Case: Style "C"

P1-30052

Large Diameter Button

Button diameter is 1.187" and is red anodized aluminum mounted on a Type P1 style "C" body. Button is free to rotate 360°.

Total Travel: 0.085" +/- 0.015"
Operating Force: 2.5, +0.5, -1.0 lb.
Circuit: SPDT 2 circuit
Rating: 10 amps Resistive
Mechanical Life: 250,000 cycles
Electrical Life: 25,000 cycles

P1-30075

Special Knurled Shroud

Total Travel: 0.085" +/- 0.015"
Operating Force: 4.0 +/- 1.0 lb.
Rest Force: 1.0 lb. min
Circuit: SPDT 2 circuit
Mechanical Life: 250,000 cycles
Button: Red nylon
Housing: Black anodized aluminum

P1-90108

Vandal Resistant

Stainless steel housing and button are watertight sealed. Ideal for unattended machines operated by the public.

Operating Force: 2.5, +1.0, -0.5 lb.
Circuit: SPNO-DB
Mechanical Life: 250,000 cycles
Bezel: 1.5" dia.
Button: 0.812" dia.

P1-90135-2

For smaller 0.969" dia., DPDT-DB design, see P4-10155-2.

- Large buttons, up to 0.765" diameter
- Symbols & 9 colors of buttons
- Watertight to IP68S
- 10 amp resistive rating

NOTE: Refer to Standard Legends Chart in Appendix for available symbols.

P1-10142-X