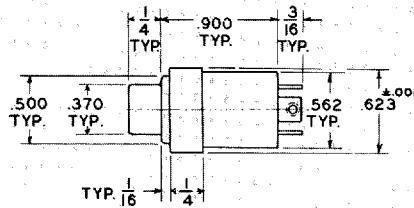
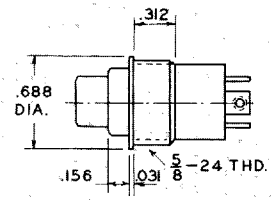


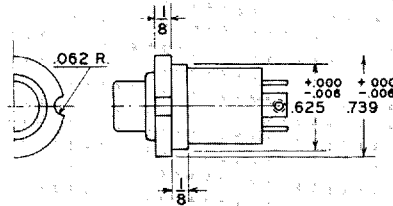
P1-1 (MIL-A)



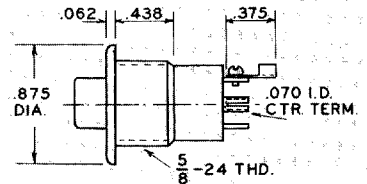
P1-7 (MIL-G)



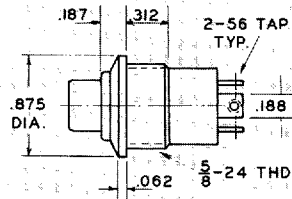
P1-2 (MIL-B)



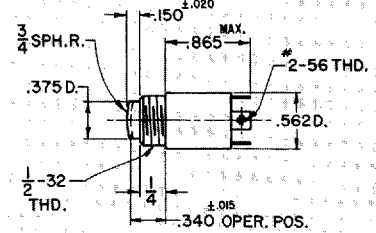
P1-8 (MIL-H)



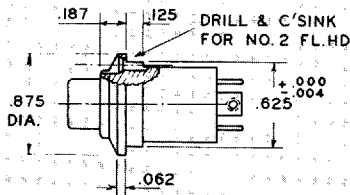
P1-3 (MIL-C)



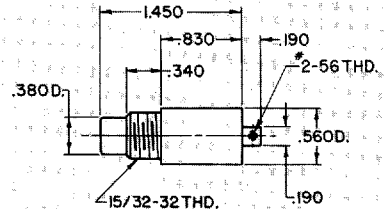
Unsealed P1-90013
Operating Force: 5 lbs. max.
Circuit: SPDT-DB
Case: Black anodized aluminum.
Button: Black Nylon.



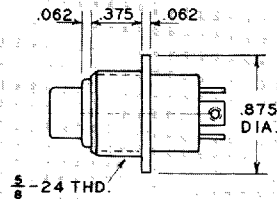
P1-5 (MIL-E)



Waterproof P1-90024
Dust-Tight P1-90014
Operating Force: 4 ± 1 lbs.
Circuit: SPST-N.O.
Case: Black anodized aluminum.
Button: Red Nylon.



P1-6 (MIL-F)



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.

Here is an example of how to construct an OTTO Part Number:
P1-32629 is MS25089-3CW, "C" style case, two-circuit contact configuration, 4 lb. 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.

① Specials are serialized. Subsequent numbers do not specify standard features.
② Circuit styles with 3 and 5 terminals have 50,000 cycle mechanical life per MIL-S-8805.
③ Military standard is 4 lbs.

P1 PART NUMBER CODE

Use these codes to specify the characteristics required for your application
P1- X X X X X

Case Style	Terminal Style/Rating	Circuit Form	Operating Force/Action	Button Color
1. Style A	0. Special ①	1. N.O.	1. 2.5 lb./Momentary	1. Red
2. Style B	1. Solder/Standard	2. N.C.	2. 4 lb./Momentary ③	2. Black
3. Style C	2. Screw/Standard	3. N.C. 3-Term ②	3. Push-Pull	3. Orange
4. Style D	3. Solder/Low Level	4. N.O. 3-Term ②		4. Yellow
5. Style E	4. Screw/Low Level	5. 5 Terminal ②		5. Green
6. Style F		6. Two Circuit		6. Blue
7. Style G				7. Purple
8. Style H				8. Gray
				9. White

P1**Pushbuttons per MIL-S-8805/3****FEATURES:**

- Button sealed with patented "rolling sleeve" principle.
- Contact area dust-tight sealed at button and terminals.
- Less than 25 milliohms contact resistance.
- Ideal for low level switching as well as 10 amp. duty.
- Positive tactile feedback.
- Variety of mounting styles.
- Trip point repeatable within .001".
- Engraved buttons and bezels available.
- UL recognized.

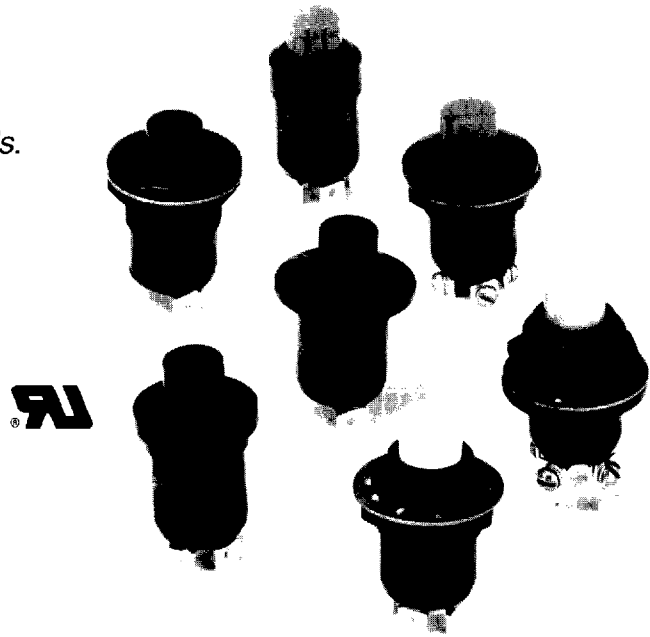
Mechanical life beyond the 200,000 cycles required of MIL-S-8805; up to one million cycles for special designs with reduced operating force. Makes and breaks every time! Less than 25 milliohms contact resistance because the OTTO design features inherent rocking-action that breaks welds and wipes contacts clean.

The OTTO P1 series pushbutton switch offers vastly improved life under extreme conditions found in most military environments. Moisture-proofing 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.

Waterproof sealing (submergible) to 3 feet water pressure is available on special order but not as a military approved version as there are no Military specifications. The 15/32 inch threaded bushing waterproof design designated P1-90024 is shown on the next page. This waterproof design is also available in commercial construction as the P3 series.

Higher than normal (120 grams) contact pressure, amazingly low (25 milliohms max. standard) contact resistance and extremely low contact bounce are all the result of the OTTO patented snap-action mechanism. Extra long electrical life and precise trip point offer added value and precision operation.

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

**SPECIFICATIONS:**

Electrical Circuit: Because the OTTO P1 is a double-break switch, wide connection possibilities, in addition to longer life and greater capacity, are offered. The OTTO 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 4 circuits. See "Circuit" in part code for options.

ELECTRICAL RATINGS:

(at 28 VDC or 115 VAC, 60/400 Hz.)

LOAD	AMPERES	LIFE (Nominal)
Resistive	10	25,000 cycles
Inductive	5	25,000 cycles
Lamp	3	25,000 cycles
Center Terminal	3 max.	25,000 cycles

Mechanical Life: 250,00 cycles for NO & NC.
50,000 cycles for 3 & 5 terminal styles.

Temperature Range: -55° to +85°C.

Seal: Moisture Proof and dust-tight.

Shock: High shock MIL-STD-202, method 207.

Operating Force: 4 ±1 lbs. or 2.5 +0.5, -1.0 lbs.

Release Force: .75 lb. minimum. (1 lb. for 4 lb. Operating Force model)

Materials:

Case: Aluminum alloy, anodized black.
Button: Nylon, choice of colors.
Boot: Internal, silicone rubber.
Nut: Brass, black oxidized.

Mounting: Bushing mounting via a supplied 5/8-24 hex nut and an internal tooth lockwasher.

Terminals: The terminals are suitable for soldering or screw connection with optional 2-56 x 1/8" screws, split lockwashers, and solder lugs.

US Patent No. 3,612,793. Canadian Pat. No. 917,719.

Special Cap on Swage Mount.

Mechanical:

Total Travel: .085 ±.015
Operating Force: 4 ±1 lbs.
Reset Force: 1 lbs. min.
Circuit: SPDT, Two circuit.
Mechanical Life: 250,000 cycles.

Physical:

Button Color: Black Oxide #303 S.S.
Housing: Black anodized aluminum.

P1-10047



Long Pushbutton

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

Total Travel: .085 ±.015
Operating force: 4 lbs.
Mechanical Life: 250,000 cycles.
Electrical Life: 25,000 cycles.
Rating: 10 Amperes, Resistive.
Circuit: SPNO-DB

P1-30074



Special Engraved Bezel.

Mechanical:

Operating Force: 4 ±1 lbs.
Reset Force: 1 lbs. min.
Circuit: SPDT, Two circuit.
Mechanical Life: 250,000 cycles.

Physical:

Button Color: Red.
Housing: Red anodized aluminum.

P1-30047

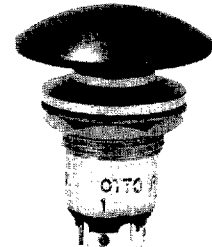


Large Diameter Button

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

Total travel: .085 ±.015
Operating Force: 2.5 +.5, -1 lbs.
Mechanical Life: 250,000 cycles
Electrical Life: 25,000 cycles
Rating: 10 Amperes, Resistive.
Circuit: SPDT-Two circuit.

P1-30075



Special Push-Pull Switch

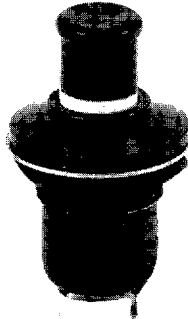
Mechanical:

Total Travel: .085 ±.015
Operating Force: .5 - 2 lbs.
Circuit: SPNO-DB.
Mechanical Life: 250,000 cycles.

Physical:

Case Style "C"
Button Color: Black on white nylon.
Housing: Black anodized aluminum.

P1-30052

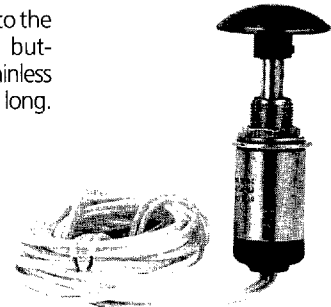


Large Diameter Button

This switch is all special. In addition to the special 1.187 inch diameter sealed button, the plunger and housing are stainless steel. Sealed wire leads are 72 inches long.

Total travel: .085 ±.015
Movement Differential: .040 max.
Pretravel: .070 max.
Rating: 5 amps, resistive

P1-90121



Special Push-Pull

Threaded 15/32" Dia. bushing, potted wire leads.

Mechanical:

Total travel: .085 ±.015
Circuit: SPNC-DB
Rating: Low Level

Physical:

Button Color: Black on white nylon.
Housing: Black anodized aluminum.

P1-90140

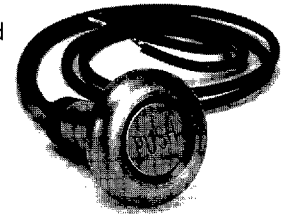


Vandal-Proof to Survive Abuse

Stainless Steel housing and button is watertight sealed. Ideal for unattended machines operated by the public. Bezel 1.5" dia., button .812" dia.

Operating Force: 2.5, +1, - 0.5 lbs.
Mechanical Life: 250,000 cycles
Circuit: SPNO-DB

P1-90135-2



For smaller .969 in. dia., DPDT-DB design, see P4-10155-2, page 21

Special Knurled Shroud

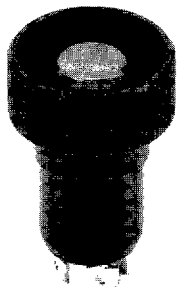
Mechanical:

Total Travel: .085 ±.015
Operating Force: 4 ±1 lbs.
Rest Force: 1 lbs. min.
Circuit: SPDT, 2-Circuit.
Mechanical Life: 250,000 cycles.

Physical:

Button Color: Red Nylon
Housing: Black anodized aluminum.

P1-90108



Special Domed Button "F" Style

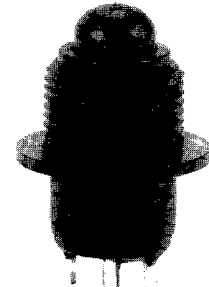
Mechanical:

Total Travel: .085 ±.015
Operating Force: 4 ±1 lbs.
Reset Force: 1 lbs. min.
Circuit: SPNO-DB, 3 terminal.
Mechanical Life: 250,000 cycles.

Physical:

Button Color: Black
Housing: Black anodized aluminum.

P1-60001



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