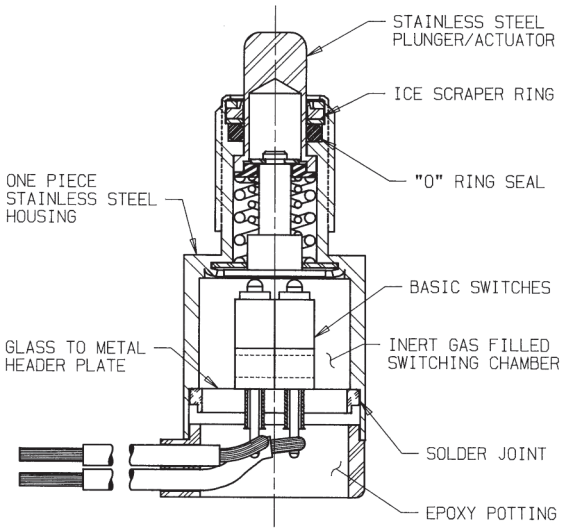
SEALED AGAINST IMMERSION & CORROSIVE ATMOSPHERES

P6 series switches are sealed against immersion and corrosive atmospheres. These switches are designed for rugged duty both mechanically and electrically. A one-piece stainless steel housing, sealed at the plunger with an O-ring seal and at the base with a glass-to-metal header provides true environment-free sealing to comply with MIL-PRF-8805/39, MIL-PRF-8805/40, MIL-PRF-8805/43 and MIL-PRF-8805/100. Most case parts are grounded for EMI reduction.

The P6 series is available with roller plunger styles for cam or slide actuation and pin plunger for in-line actuation. Contact factory for additional designs.

P6 series features the OTTO B2, B3 or B5 series snap-action basic switch. High contact pressure and unique contact design provides low contact resistance for low level switching as well as full rated service.




**Cross section example of OTTO P6-24XXX series.**

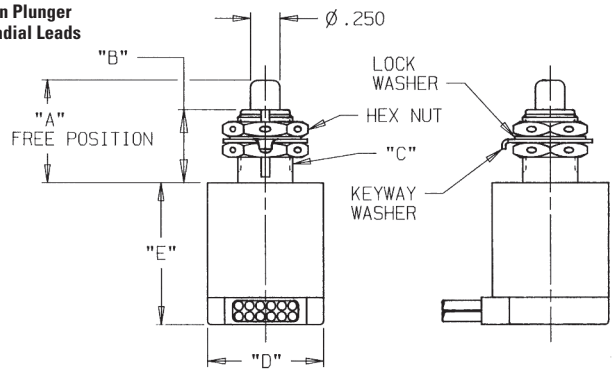
## Features:

- **Complies with MIL-PRF-8805 sealing**
- **One-piece housing**
- **Sealed at plunger with O-rings**
- **Sealed at base with a glass seal**
- **EMI reduction construction**
- **Choice of pin or roller plunger**
- **Choice of axial or radial leads**

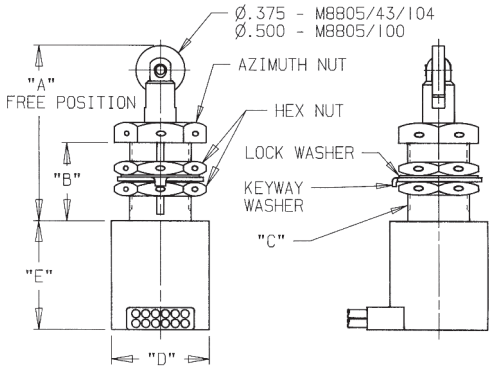
# SEALED LIMIT SWITCHES

FEATURING OTTO B2 & B3 SERIES BASIC SWITCHES

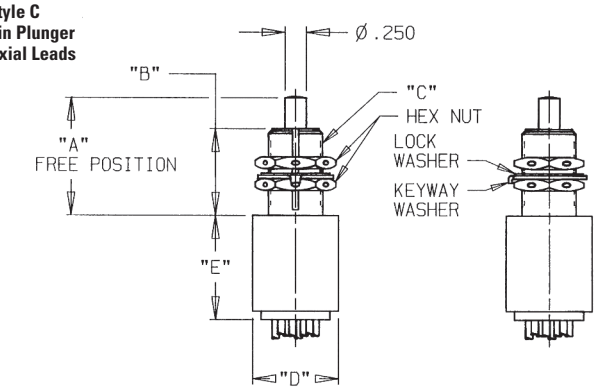
**Style A**
**Pin Plunger**
**Radial Leads**



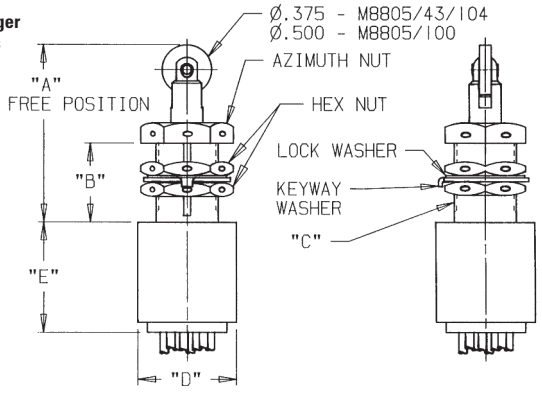

**Style B**
**Roller Plunger**
**Radial Leads**




**Style C**
**Pin Plunger**
**Axial Leads**




**Style D**
**Roller Plunger**
**Axial Leads**



## FEATURING OTTO B2 & B3 SERIES BASIC SWITCHES

### SPECIFICATIONS: Standard Models

**ELECTRICAL RATINGS:**

| Load | Sea Level @ 28VDC | 50,000 feet @ 28VDC |
|---|---|---|
| **RATING TABLE 1** | | |
| Resistive | 7A | 7A |
| Inductive | 4A | 2.5A |
| Motor | 4A | 4A |
| DWV | 1000Vrms | 400Vrms |
| **RATING TABLE 2** | | |
| Resistive | 7A | 7A |
| Inductive | 2A | 2A |
| Motor | 4A | 4A |
| Lamp | 2A | 1A |
| DWV | 1250Vrms | 600Vrms |
| **RATING TABLE 3** | | |
| Resistive | 4A | 4A |
| Inductive | 2A | 2A |
| Motor | 4A | 4A |
| DWV | 1000Vrms | 400Vrms |

**RATING TABLE 4**

| Load Type | Power Circuit | Elex Logic | Low Level | Power Circuit | Elex Logic |
|---|---|---|---|---|---|
| Resistive | 1A | 0.01A | 0.01A | 1A | 0.01A |
| Inductive | 0.5A | N/A | N/A | 0.5A | N/A |
| DWV | 1000Vrms | | | 400Vrms | |

**Electrical Life:** 25,000 cycles

**Low Level Life:** 25,000 cycles

**Contact Resistance:** Per MIL-PRF-8805

**Operating Force:** 6.0 lbs. to 12.0 lbs. standard. Other forces available.

**Overtravel Force:** 30.0 lbs. max

**Release Force:** 4.0 lbs. min

**Pretravel:**
MIL-S-8805/39, /40, /43: 0.040 inches
MIL-S-8805/100: 0.070 inches
MIL-S-8805/104: 0.050 inches

**Movement Differential:**
MIL-S-8805/39, /40, /43: 0.020 inches
MIL-S-8805/100: 0.035 inches
MIL-S-8805/104: 0.030 inches

**Overtravel:**
MIL-S-8805/39, /40, /100: 0.250 inches
MIL-S-8805/43, /104: 0.125 inches

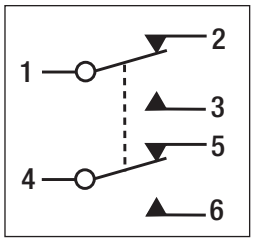
**Wire Type:**
Per MIL-W-22759/7
Marked per MIL-W-5088.
Standard length: 6 feet. Other lengths available.

**Operating Temp Range:** -55°C to 85°C

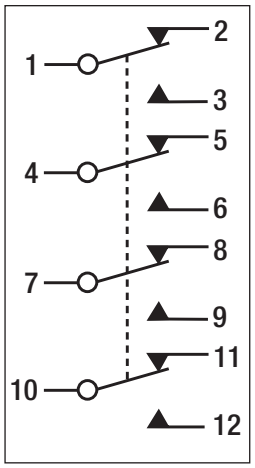
**Mounting/Termination:**

Bushing mounting with positive, non-turn features. Wire leads potted at terminal base for strain relief and added insulation. Each wire is marked with circuit identification.

For specific details not shown above, please consult the appropriate military specification sheet or OTTO's product drawing.




**2PDT Schematic**




**4PDT Schematic**

| Circuitry | Plunger/Lead Exit Style | Dim. A Free Position (inches +/- 0.030) | Dim. B Bushing Length (inches +/- 0.030) | Dim. C Thread (inches) | Dim. D Body Dia. (max inches) | Dim. E Body Length (max inches) | Electrical Rating Table | Military Number | Catalog Number |
|---|---|---|---|---|---|---|---|---|---|
| **MIL-S-8805/39** | | | | | | | | | |
| 2PDT | A-Pin/Radial | 1.375 | 1.000 | 0.625-24 | 0.720 | 0.980 | 1 | MS21321-1 | P6-24000 |
| 4PDT | A-Pin/Radial | 1.375 | 1.000 | 0.625-24 | 1.031 | 1.200 | 1 | MS21321-2 | P6-24001 |
| **MIL-S-8805/40** | | | | | | | | | |
| 2PDT | A-Pin/Radial | 1.375 | 1.000 | 0.625-24 | 1.015 | 0.980 | 3 | MS24331-1 | P6-24002 |
| **MIL-S-8805/43** | | | | | | | | | |
| 2PDT | A-Pin/Radial | 0.875 | 0.625 | 0.469-32 | 0.720 | 1.000 | 1 | MS27240-1 | P6-24003 |
| 4PDT | A-Pin/Radial | 0.875 | 0.625 | 0.469-32 | 1.031 | 1.200 | 1 | MS27240-2 | P6-24004 |
| 2PDT | B-Roller/Radial ① | 1.295 | N/A | 0.469-32 | 0.720 | 1.000 | 1 | MS27240-3 | P6-14000 |
| 4PDT | B-Roller/Radial ① | 1.295 | N/A | 0.469-32 | 1.031 | 1.200 | 1 | MS27240-4 | P6-14001 |
| 2PDT | A-Pin/Radial | 0.875 | 0.625 | 0.469-32 | 0.720 | 1.000 | 4 | MS27240-5 | P6-24005 |
| 4PDT | A-Pin/Radial | 0.875 | 0.625 | 0.469-32 | 1.031 | 1.200 | 4 | MS27240-6 | P6-24006 |
| 2PDT | B-Roller/Radial ① | 1.295 | N/A | 0.469-32 | 0.720 | 1.000 | 4 | MS27240-7 | P6-14002 |
| 4PDT | B-Roller/Radial ① | 1.295 | N/A | 0.469-32 | 1.031 | 1.200 | 4 | MS27240-8 | P6-14003 |
| **MIL-S-8805/100** | | | | | | | | | |
| 4PDT | A-Pin/Radial | 1.375 | 1.000 | 0.625-24 | 1.030 | 1.100 | 2 | MIL-PRF-8805/100-007 | P6-24043 |
| 4PDT | C-Pin/Radial | 1.375 | 1.000 | 0.625-24 | 1.030 | 1.200 | 2 | MIL-PRF-8805/100-008 | P6-24044 |
| 4PDT | B-Roller/Axial | 1.781 | 0.794 | 0.625-24 | 0.925 | 1.100 | 2 | MIL-PRF-8805/100-009 | P6-14035 |
| 4PDT | D-Roller/Axial | 1.781 | 0.794 | 0.625-24 | 1.030 | 1.200 | 2 | MIL-PRF-8805/100-010 | P6-14036 |
| 4PDT | A-Pin/Radial | 1.375 | 1.000 | 0.625-24 | 1.030 | 1.100 | 2 | MIL-PRF-8805/100-015 | P6-24007 |
| 4PDT | C-Pin/Axial | 1.375 | 1.000 | 0.625-24 | 1.030 | 1.200 | 2 | MIL-PRF-8805/100-016 | P6-24008 |
| 4PDT | B-Roller/Radial ② | 1.781 | 0.794 | 0.625-24 | 1.030 | 1.100 | 2 | MIL-PRF-8805/100-017 | P6-14005 |
| 4PDT | D-Roller/Axial ② | 1.781 | 0.794 | 0.625-24 | 1.030 | 1.200 | 2 | MIL-PRF-8805/100-018 | P6-14006 |
| **MIL-S-8805/104** | | | | | | | | | |
| 4PDT | A-Pin/Radial | 1.375 | 1.000 | 0.469-32 | 0.850 | 1.100 | 2 | MIL-PRF-8805/104-001 | P6-20001 |
| 4PDT | B-Roller/Radial ① | 1.719 | 0.895 | 0.469-32 | 0.850 | 1.100 | 2 | MIL-PRF-8805/104-002 | P6-10002 |
| 4PDT | C-Pin/Axial | 1.375 | 1.000 | 0.469-32 | 0.850 | 1.100 | 2 | MIL-PRF-8805/104-003 | P6-20002 |
| 4PDT | D-Roller/Axial ① | 1.719 | 0.895 | 0.469-32 | 0.850 | 1.200 | 2 | MIL-PRF-8805/104-004 | P6-10003 |

**① Roller diameter is 0.375 inches. ② Roller diameter is 0.500 inches.**

**NOTE: SEE MILITARY QPL CROSS REFERENCE LISTING IN APPENDIX.**

# SPECIAL DESIGNS

## APPLICATION-SPECIFIC MODIFIED PRODUCTS

### Modified Military Styles

These switches are special designs meeting the requirements of MIL-S-8805/104.

| Circuitry | Free Position (inches) | Bushing Length (inches) | Overall Length (inches) | Catalog Number |
|---|---|---|---|---|
| **Pin Plunger, Radial Lead Exit** | | | | |
| 2PDT | 1.375 | 1.000 | 2.325 | P6-20077 |
| 2PDT | 1.575 | 1.200 | 2.525 | P6-20084 |
| 2PDT | 0.875 | 0.625 | 1.825 | P6-20076 |
| 4PDT | 1.285 | 1.000 | 2.485 | P6-20055 |
| **Pin Plunger, Axial Lead Exit** | | | | |
| 2PDT | 0.875 | 0.625 | 2.250 | P6-20003 |
| 2PDT | 1.575 | 1.200 | 2.950 | P6-20005 |
| **Roller Plunger, Radial Lead Exit** | | | | |
| 2PDT | 1.295 | 0.675 | 2.295 | P6-10007 |
| 2PDT | 1.295 | 0.675 | 2.245 | P6-10016 |
| 2PDT | 1.980 | 1.095 | 2.930 | P6-10060 |
| **Roller Plunger, Axial Lead Exit** | | | | |
| 2PDT | 1.295 | 0.675 | 2.670 | P6-10070 |
| 4PDT | 1.700 | 1.000 | 3.000 | P6-10050 |

### Environment-Free Plunger

Rugged sealed two pole switch features a small rectangular case only 0.500" thick. Bushing is 15/32-32.

**Total Travel:** 0.220" min

**Operating Force:** 10.0 lbs. max

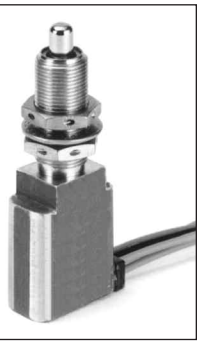
**Release Force:** 4.0 lbs. min

**Circuit:** 2PDT

**Rating:** 7 amps Resistive
3 amps Inductive

**Contacts:** Gold plate

**P6-20054**



### Flange Mount

Low profile four pole switch features flange mounted stainless steel housing with an 8 pin connector.

**Operating Force:** 4.0 lbs. to 9.0 lbs.

**Release Force:** 2.0 lbs. min

**Circuit:** 4PST N.C.

**Rating:** 0.5 amps Resistive for 100,000 cycles

**Contacts:** Gold plate

**P6-20090**

### Longer Bushing

This two pole switch features an extra long mounting bushing. Bushing is 15/32-32.

**Overtravel:** 0.250" min

**Operating Force:** 9.0 +/- 3.0 lbs.

**Release Force:** 4.0 lbs. min

**Circuit:** 2PDT

**Rating:** 7 amps Resistive
3 amps Inductive

**Contacts:** Gold plate

**P6-20005**

### Rubber Bonded Leads

Aircraft switch features special 48" leads with a Fluorosilicone rubber bonded to wire leads.

**Total Travel:** 0.300" min

**Operating Force:** 11.0 +/- 5.0 lbs.

**Release Force:** 4.0 lbs. min

**Circuit:** 4PDT

**Rating:** 0.04 amps to 0.5 amps Inductive

**Contacts:** Gold plate

**P6-20050**