

# Limit Switches



SEALED AGAINST IMMERSION & CORROSIVE ATMOSPHERES



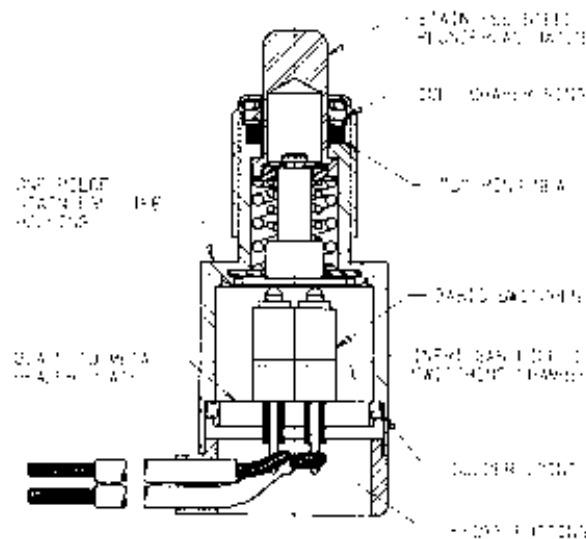
P6 series switches are sealed against immersion and corrosive atmospheres. These switches are designed for rugged duty both mechanically and electrically. A one-piece stainless steel or nickel plated brass housing, sealed at the plunger with an O-ring seal and at the base with a glass-to-metal header option provides true environment-free sealing to comply with MIL-PRF-8805/39, MIL-PRF-8805/40, MIL-PRF-8805/43, MIL-PRF-8805/100 and MIL-PRF-8805/104. 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.

## 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**
- **Reach compliant**



Cross section example of OTTO P6-24XXX series.

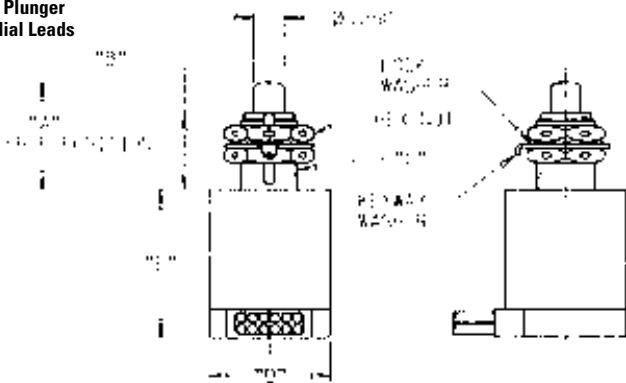
LIMIT SWITCHES

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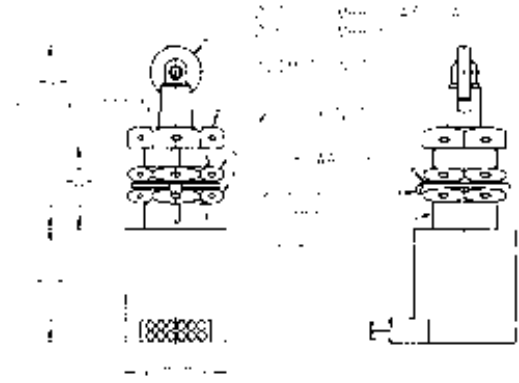
FEATURING OTTO B2 & B3 SERIES BASIC SWITCHES



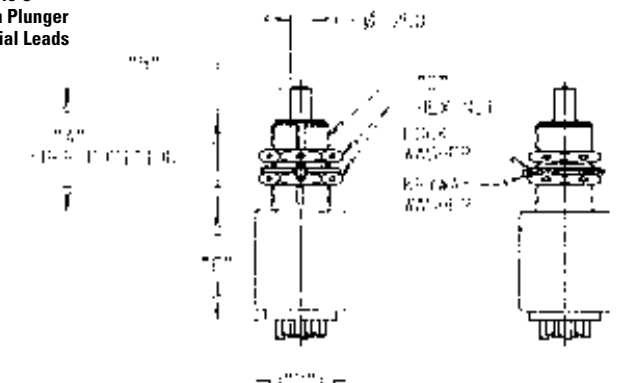
**Style A**  
Pin Plunger  
Radial Leads



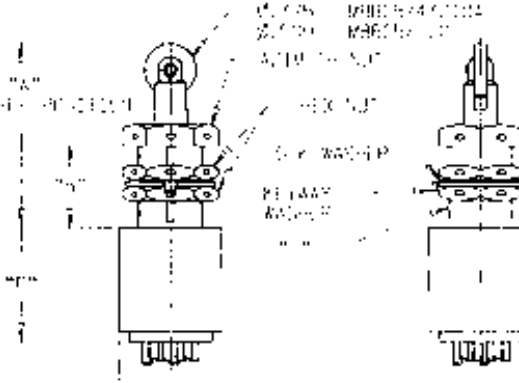
**Style B**  
Roller Plunger  
Radial Leads



**Style C**  
Pin Plunger  
Axial Leads



**Style D**  
Roller Plunger  
Axial Leads



# SEALED LIMIT SWITCHES

**P6**  
SEALED LIMIT SWITCHES

FEATURING OTTO B2 & B3 SERIES BASIC SWITCHES

SPECIFICATIONS: Standard Models					
<b>ELECTRICAL RATINGS:</b>					
<b>Load</b>	<b>Sea Level @ 28VDC</b>	<b>50,000 feet @ 28VDC</b>			
<b>RATING TABLE 1</b>					
Resistive	7A	7A			
Inductive	4A	2.5A			
Motor	4A	4A			
DVV	1000Vrms	400Vrms			
<b>RATING TABLE 2</b>					
Resistive	7A	7A			
Inductive	2A	2A			
Motor	4A	4A			
Lamp	2A	1A			
DVV	1250Vrms	600Vrms			
<b>RATING TABLE 3</b>					
Resistive	4A	4A			
Inductive	2A	2A			
Motor	4A	4A			
DVV	1000Vrms	400Vrms			
<b>RATING TABLE 4</b>					
<b>Load Type</b>	<b>Power Circuit</b>	<b>Elex Logic</b>	<b>Low Level</b>	<b>Power Circuit</b>	<b>Elex Logic</b>
Resistive	1A	0.01A	0.01A	1A	0.01A
Inductive	0.5A	N/A	N/A	0.5A	N/A
DVV	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-PRF-8805/39, /40, /43: 0.040 inches  
 MIL-PRF-8805/100: 0.070 inches  
 MIL-PRF-8805/104: 0.050 inches

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

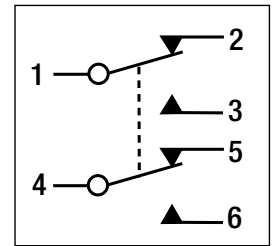
**Overtravel:**  
 MIL-PRF-8805/39, /40, /100: 0.250 inches  
 MIL-PRF-8805/43, /104: 0.125 inches

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

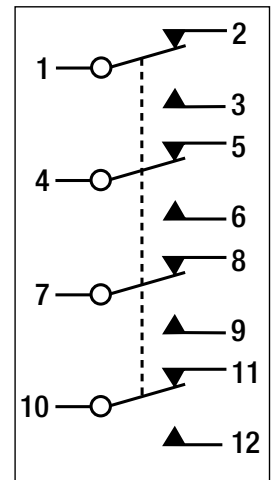
**Operating Temp Range:** -55°C to 85°C

**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
<b>MIL-PRF-8805/39</b>									
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
<b>MIL-PRF-8805/40</b>									
2PDT	A-Pin/Radial	1.375	1.000	0.625-24	1.015	0.980	3	MS24331-1	P6-24002
<b>MIL-PRF-8805/43</b>									
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 *	1.295	N/A	0.469-32	0.720	1.000	1	MS27240-3	P6-14000
4PDT	B-Roller/Radial *	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 *	1.295	N/A	0.469-32	0.720	1.000	4	MS27240-7	P6-14002
4PDT	B-Roller/Radial *	1.295	N/A	0.469-32	1.031	1.200	4	MS27240-8	P6-14003
<b>MIL-PRF-8805/100</b>									
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/Axial	1.375	1.000	0.625-24	1.030	1.200	2	MIL-PRF-8805/100-008	P6-24044
4PDT	B-Roller/Radial **	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 **	1.781	0.794	0.625-24	1.030	1.100	2	MIL-PRF-8805/100-017	P6-14005
4PDT	D-Roller/Axial **	1.781	0.794	0.625-24	1.030	1.200	2	MIL-PRF-8805/100-018	P6-14006
<b>MIL-PRF-8805/104</b>									
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 *	1.719	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 *	1.719	0.895	0.469-32	0.850	1.200	2	MIL-PRF-8805/104-004	P6-10003

\* Roller diameter is 0.375 inches. \*\* Roller diameter is 0.500 inches.

NOTE: SEE MILITARY QPL CROSS REFERENCE LISTING IN APPENDIX.

APPLICATION-SPECIFIC MODIFIED PRODUCTS

**Modified Military Styles**

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



Circuitry	Free Position (inches)	Bushing Length (inches)	Overall Length (inches)	Catalog Number
<b>Pin Plunger, Radial Lead Exit</b>				
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
<b>Pin Plunger, Axial Lead Exit</b>				
2PDT	0.875	0.625	2.250	P6-20003
2PDT	1.575	1.200	2.950	P6-20005
<b>Roller Plunger, Radial Lead Exit</b>				
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
<b>Roller Plunger, Axial Lead Exit</b>				
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.

**P6-20054**

**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



**Flange Mount**

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

**P6-20090**

**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



**Longer Bushing**

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

**P6-20005**

**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



**Rubber Bonded Leads**

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

**P6-20050**

**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



**Sleaved Wires**

This two pole switch features a lower spring force and sleeved wires.

**P6-24111**

**Overtravel:** 0.500" min  
**Operating Force:** 3.0 to 6.0 lbs.  
**Release Force:** 2.0 lbs. min  
**Circuit:** 2PDT  
**Rating:** 7 amps Resistive  
 4 amps Inductive  
**Contacts:** Gold



**Adjustable Roller Plunger**

Design 4 (Resilient) sealed 2PDT limit switch with adjustable orientation of roller plunger at 45° increments. 72" wire leads included.

**P6-14000**

**Overtravel:** 0.125" min  
**Operating Force:** 9.0 +/- 3.0 lbs.  
**Release Force:** 4.0 lbs. min  
**Circuit:** 2PDT  
**Rating:** 7 amps Resistive  
 4 amps Inductive  
**Contacts:** Gold

