



## AT SERIES | POSITION SWITCHES

SNAP ACTION PRECISION POSITION SWITCHES (RATED 4 AMPS @ 28VDC)

### Features

- Qualified per MIL-PRF-8805, Enclosure Symbol 5
- Hermetically sealed with dry nitrogen gas backfill
- Proven snap-action switching, reliable performance and long life
- Excellent shock and vibration resistance
- Switching up to 4 amps
- Optimal for low level circuits
- Temperature range between -275°F and 450°F
- Small, lightweight axis-symmetric design for robustness and reliability
- Single and multiple pole designs available
- Various mounting configurations for custom applications
- Sealed and unsealed plunger options
- Wide range of side plate designs for narrow width applications
- PMA Approvals for various commercial aircraft
- Customer approvals for space and military applications



### Introduction

KLIXON® hermetic snap-action position switches are ideal for extremely harsh and demanding environments as found in aircraft, military, aerospace, and aircraft engines applications. KLIXON® precision hermetic position switches have been used for over 55 years in a wide range of applications. Our switches are found on virtually all commercial and military aircraft, as well as various space vehicles and satellites worldwide.

Our design library has over 2,000 switch package designs which allow for “off-the-shelf” solutions to meet most application needs. Custom designs are also available if the customer’s application requires different form factors, or actuation methods. We offer a wide choice of precision position switches ideally suited for mission-critical applications that require accurate switching in extreme temperatures, high vibration and shock environments, or in the presence of typical aerospace fluids including but not limited to coolants, oils, hydraulic fluid, fuel, and de-icing fluids.

### Applications

<b>AT Series</b>	<ul style="list-style-type: none"> <li>• Flight Control Actuators</li> <li>• Landing Gear Steering</li> <li>• Landing Gear Down &amp; Locked</li> </ul>	<ul style="list-style-type: none"> <li>• Engine Start Quadrant</li> <li>• Helicopter Litter Door Latch</li> <li>• Helicopter Rotor Brake</li> </ul>	<ul style="list-style-type: none"> <li>• Helicopter Rotor Brake</li> <li>• APU Valve Indication</li> <li>• Throttle Grip Control</li> </ul>	<ul style="list-style-type: none"> <li>• Satellite Applications</li> <li>• Satellite Arm Extended</li> <li>• Parachute Release</li> </ul>
<b>3AT Series</b>	<ul style="list-style-type: none"> <li>• Engine Start Valves</li> <li>• Bleed Air Valves</li> </ul>	<ul style="list-style-type: none"> <li>• Env. Control Systems Valve</li> <li>• Avionics Cooling Valves</li> </ul>	<ul style="list-style-type: none"> <li>• Anti-Icing Valves</li> <li>• Fuel Valves</li> </ul>	<ul style="list-style-type: none"> <li>• Thrust Reverser</li> <li>• Flap Assembly</li> </ul>
<b>4AT Series</b>	<ul style="list-style-type: none"> <li>• Liquid Oxygen Valves</li> <li>• Solar Array Position</li> </ul>	<ul style="list-style-type: none"> <li>• Satellite Antenna Position</li> <li>• Mars Observer</li> </ul>	<ul style="list-style-type: none"> <li>• International Space Station Applications</li> <li>• Lunar Rover Release &amp; Power Up</li> </ul>	
<b>10AT Series (MIL-PRF-8805)</b>	<ul style="list-style-type: none"> <li>• Gearbox</li> <li>• Blade Fold Indication</li> <li>• Landing Gear Indication</li> <li>• Steering Wheel Switch</li> </ul>	<ul style="list-style-type: none"> <li>• Ejection Seat Armed</li> <li>• Cargo Handling Systems</li> <li>• Helicopter Rotor Condition</li> <li>• Helicopter Door Indication</li> </ul>	<ul style="list-style-type: none"> <li>• Antenna Position</li> <li>• Throttle Quadrant</li> <li>• Thrust Reverser</li> <li>• Flight Control Actuators</li> </ul>	<ul style="list-style-type: none"> <li>• EVA Space Suit</li> <li>• Space Capsule Controls</li> <li>• Inertial Upper Stage</li> <li>• Weapons Systems</li> </ul>

### Nomenclature

Precision hermetic position switches are sometimes referred to as:

- Position switches
- Aircraft switches
- Miniature switches
- Hermetic switches
- Aerospace switches
- Sensitive switches
- Limit switches
- Military switches
- Switches



# SPECIFICATIONS

## Performance & Actuation Characteristics Chart

	AT	3AT	4AT	10AT		
<b>Device Type</b>	Standard	High Temperature	Low Temperature	High Amperage		
<b>Maximum Actuating Force (STP)</b>	20 oz	20 oz	28 oz	30 oz		
<b>Minimum Release Force (STP)</b>	4 oz	4 oz	1 oz	1 oz		
<b>Maximum Pretravel</b>	0.009"	0.009"	0.009"	0.009"		
<b>Maximum Movement Differential</b>	0.003"	0.003"	0.003"	0.003"		
<b>Minimum Overtravel</b>	0.002"	0.002"	0.002"	0.002"		
<b>Overtravel Stop</b>	No	No	No	No		
<b>Maximum Force on Actuator</b>	5 lb	5 lb	5 lb	5 lb		
<b>Current Ratings in Amps (28VDC)</b>	<b>Resistance</b>	3	1	1	3	4
	<b>Inductive</b>	1	½	½	1	1
	<b>Lamp</b>	1	½	½	1	2
<b>Minimum Life @ Rated Load</b>	25K	50K	25K	25K	25K	
<b>Minimum Mechanical Life Cycles</b>	100K		100K	50K	50K	
<b>Ambient Temperature Range</b>	-65°F to 275°F (-53.8°C to 135°C)		-65°F to 450°F (-53.8°C to 232.2°C)	-275°F to 275°F (-170.5°C to 135°C)	-85°F to 275°F (-65°C to 135°C)	
<b>Dielectric Strength</b> Terminal to Case Terminal to Terminal	1000 VRMS 800 VRMS		500 VRMS 500 VRMS	1000 VRMS 800 VRMS	1000 VRMS 800 VRMS	
<b>Max Leakage</b>	1 x 10 <sup>-8</sup> Std. cc He/Sec @ 1 atmosphere differential					
<b>Shock Resistance</b>	200G, 6 ms sawtooth					
<b>Vibration Resistance</b>	65G, 10-2000Hz, .5DA or 65GTMS					
<b>Insulation Resistance @ 500VDC</b>	100 Megohms					
<b>Voltage Drop @ 1 amp</b>	0.04		0.12	0.04	0.04	
<b>SEAL (MIL-S-8805)</b>	Design Enclosure 5					
<b>Backfill</b>	Dry nitrogen with 10% helium					

### NOTE FOR DRAWINGS

1. Because of restricted space we can only show a small percentage of our switch packages and dimensional drawings. Please contact the factory if you do not see the solution you need, or if you require more detailed envelope drawings.
2. Unless otherwise noted, standard leads are AWG #20 per MIL-W-22759/9.
3. All exposed materials on packaged designs are corrosion resistant steel with the exception of the side plates on Style 7 switches which are anodized aluminum alloy.
4. All hardware provided is corrosion resistant steel.

### Technical Terms

#### Electrical Life

The minimum number of cycles allowable for a switch under a specified combination of electrical load, actuation and environmental criteria. Usually specified for the maximum current and temperature rating of the switch.

#### Mechanical Life

The minimum number of cycles allowable for a switch with no electrical load, and a specified combination of actuation and environmental criteria.

#### Contact Erosion

A general loss of material from one or both surfaces of a pair of mating contacts. This is as a result of switching electrical loads.

## Technical Terms (cont.)

### Pole

The number of completely separate circuits contained in a switch. A single pole switch can control only one circuit at a time. A double pole switch can control two independent circuits at the same time.

### Throw

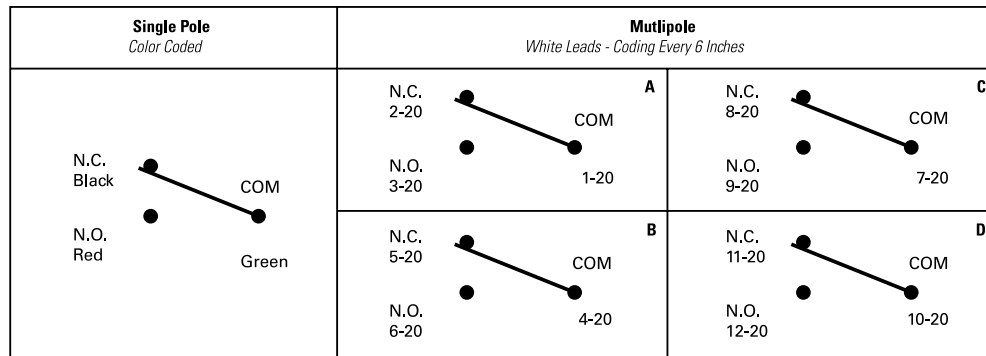
The number of circuits that each individual pole of a switch can control. The number of throws is completely independent of the number of poles.

### Contact Resistance

The resistance offered to flow of current during its passage between electrical contacts. For practical reasons, lead and terminal resistance may be included in the actual measurement, as well as the contact resistance proper.

### Termination Leads or Connectors

Sensata uses 20 gauge wire per MIL-W-22759 as shown below. Alternative gauges, MIL specs and color coding schemes are available upon request. Sensata will also provide switches with connectors to meet customer application needs.



**Terminal Identification**  
 Red = Normally Open  
 Green = Common  
 Black = Normally Closed

**Wire Leads**  
 AWG 20 MIL-W-22759/9

**NOTE:**  
 Diagrams show circuits when actuator is in free position.

### Dielectric Withstanding Voltage \*

The maximum voltage that a switch can withstand between specified points without leakage current exceeding a specified value.

### Insulation Resistance \*

The resistance offered by the insulating members of a component part to a direct voltage tending to produce a leakage current through or on the surface of these members. Insulation resistance should not be considered the equivalent of dielectric withstanding voltage.

### Loads

Three types of loads associated with electrical switches are: resistive, inductive and lamp. Of concern when discussing loads are their effect on the switch contacts.

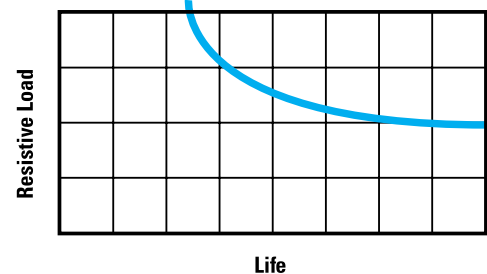
### Resistive

Purely resistive loads are the easiest to switch. Contact life is maximized when switching purely resistive loads because contact erosion is minimized.

### Inductive

Inductive loads result in the most contact erosion. This is due to the tendency of the current to continue traveling across the contact while opening, causing arcing.

Life Expectancy vs Current



\* Insulation resistance measurements should not be considered to be equivalent to dielectric withstand voltage tests. A clear, dry insulation may have a high insulation resistance and yet possess a mechanical fault that would cause failure in the dielectric withstand voltage test. Conversely, a dirty, deteriorated insulation with a low insulation resistance might not break down under a high potential of a DWV test.

## Technical Terms (cont.)

### Lamp

In-rush current is the condition that result in the lamp load rating. The resistance rating of a lamp is normally specified when the lamp is hot. However, when the lamp is cold the resistance is low. This in-rush current can be 10 times the normal current, resulting in welding of the contacts.

### Low Level Circuit

Low level circuits are classified in MIL-8805 as those with resistive loads less than 10mA at 30mV. The use of gold plated contacts and the hermetic enclosure of the switch contacts afford an ideal environment for switching low level loads.

### Pretravel

The distance the button moves from the free position to the actuation point.

### Free Position

The position of the button when there is no external force other than gravity applied to it.

### Actuation Point

The position of the button at which the movable contact snaps from the normally closed contact position to the normally open contact position.

### Release Position

The position of the button at which the movable contact snaps from the normally open contact position to the normally closed contact position.

### Maximum Overtravel Position

The position of the button when the positive overtravel stop is reached. Further overtravel would damage the switch.

### Actuation Force

The force which must be applied to the button to cause the movable contact to snap from the normally closed contact position to the normally open contact position.

### Release Force

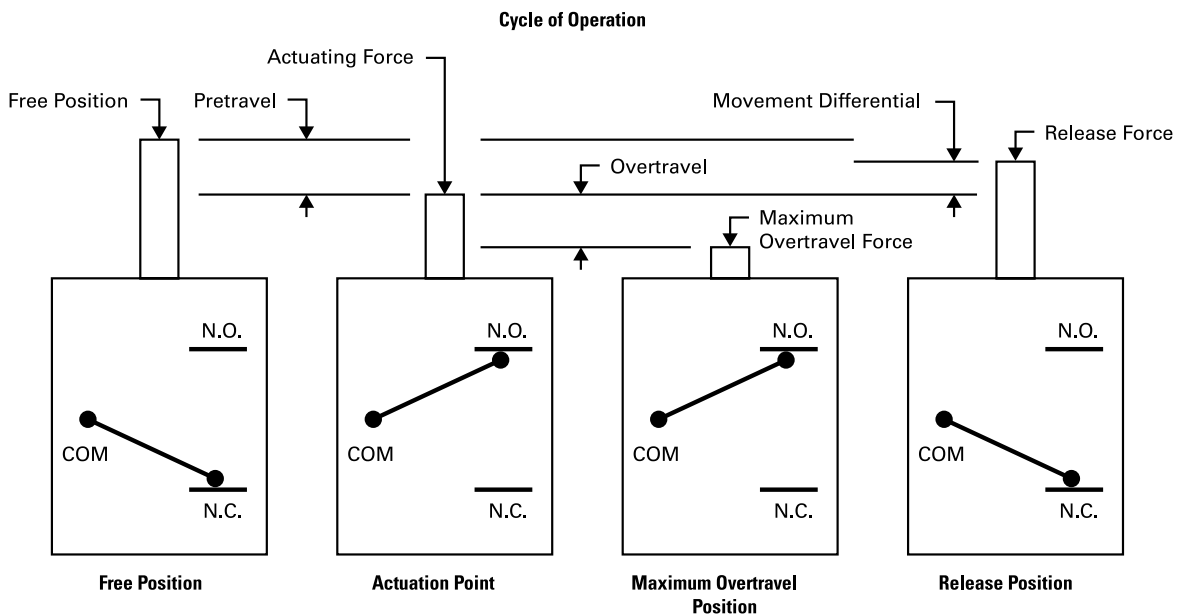
The level to which the force on the button must be reduced to allow the contacts to snap from the normally open position to the normally closed contact position.

### Overtravel

The distance that the button can travel beyond the actuation point.

### Movement Differential

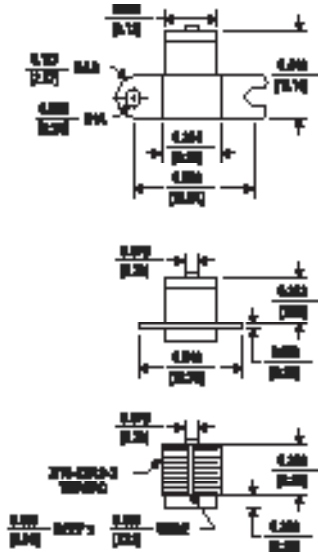
The distance the button moves from the actuation point to the release point.





# DIMENSIONS AND ORDERING OPTIONS

All dimensions are in millimeters.



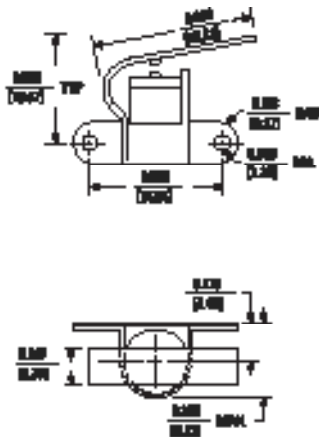
## BASIC "AT", BRACKET/FLANGE/THREADS, 1 POLE

AT63 - 1 2 - 0

	Basic Switch & Actuator Body Style			
	AT63	AT63	AT63	AT63
Bracket	AT63	AT63	AT63	AT63
Flange	AT63	AT63	AT63	AT63
Threads	AT63	AT63	AT63	AT63
Actuating Force (max)	20 mN	20 mN	20 mN	20 mN
Release Force (max)	1 mN	1 mN	1 mN	4 mN
Pretravel (mm)	.305" (1.2mm)			
Movement CMF (mm)	.305" (1.2mm)			
Overtravel (mm)	.305" (1.2mm)			
Positive Overtravel Stop	Min	Fla	Min	Min
Min. Force-on Actuation (approx. Weight (no load))	0.5 lb	0.5 lb	0.5 lb	0.5 lb
	0.20 oz	0.15 oz	0.20 oz	0.15 oz

Option	Termination	Lead Length
1 NPT	1 Solder Brn	1 6" (150mm)
1 NPT N.C.	1 TH ±.125 MAX	2 12" (305mm)
1 NPT N.O.	1 TH ±.125 MAX	3 18" (457mm)
	2 Parallel Leads	4 24" (610mm)
		5 30" (762mm)
		6 36" (914mm)
		7 42" (1067mm)
		8 48" (1219mm)
		9 54" (1372mm)
		10 60" (1524mm)



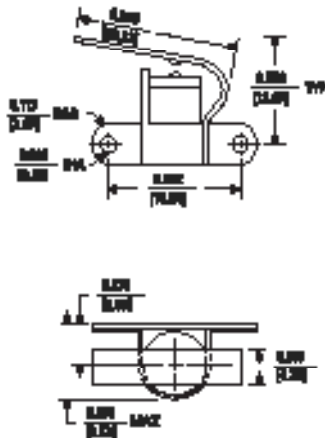
## BASIC "AT", RIGHT HAND ACTUATOR, 1 POLE

AT201 - 2 2 - 0

	Basic Switch & Actuator Body Style			
	AT201	AT201	AT201	AT201
Actuating Force (max)	24 mN	24 mN	24 mN	24 mN
Release Force (max)	1 mN	1 mN	1 mN	4 mN
Pretravel (mm)	.305" (1.2mm)			
Movement CMF (mm)	.305" (1.2mm)			
Overtravel (mm)	.305" (1.2mm)			
Positive Overtravel Stop	Yes	Yes	Yes	Yes
Min. Force-on Actuation (approx. Weight (no load))	0.5 lb	0.5 lb	0.5 lb	0.5 lb
	0.20 oz	0.15 oz	0.20 oz	0.20 oz

Option	Termination	Lead Length
1 NPT	1 Solder Brn	1 6" (150mm)
1 NPT N.C.	1 TH ±.125 MAX	2 12" (305mm)
1 NPT N.O.	1 TH ±.125 MAX	3 18" (457mm)
	2 Parallel Leads	4 24" (610mm)
		5 30" (762mm)
		6 36" (914mm)
		7 42" (1067mm)
		8 48" (1219mm)
		9 54" (1372mm)
		10 60" (1524mm)



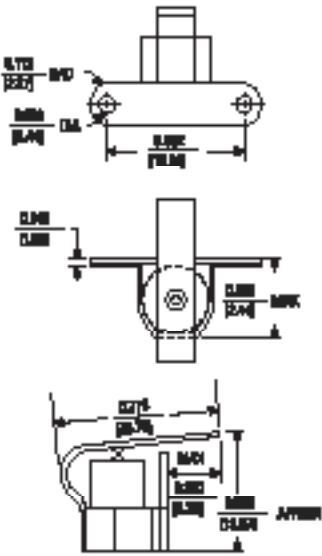
## BASIC "AT", LEFT HAND ACTUATOR, 1 POLE

AT201 - 2 2 - 4

	Basic Switch & Actuator Body Style			
	AT201	AT201	AT201	AT201
Actuating Force (max)	24 mN	24 mN	24 mN	24 mN
Release Force (max)	1 mN	1 mN	1 mN	4 mN
Pretravel (mm)	.305" (1.2mm)			
Movement CMF (mm)	.305" (1.2mm)			
Overtravel (mm)	.305" (1.2mm)			
Positive Overtravel Stop	Yes	Yes	Yes	Yes
Min. Force-on Actuation (approx. Weight (no load))	0.5 lb	0.5 lb	0.5 lb	0.5 lb
	0.20 oz	0.15 oz	0.20 oz	0.20 oz

Option	Termination	Lead Length
1 NPT	1 Solder Brn	1 6" (150mm)
1 NPT N.C.	1 TH ±.125 MAX	2 12" (305mm)
1 NPT N.O.	1 TH ±.125 MAX	3 18" (457mm)
	2 Parallel Leads	4 24" (610mm)
		5 30" (762mm)
		6 36" (914mm)
		7 42" (1067mm)
		8 48" (1219mm)
		9 54" (1372mm)
		10 60" (1524mm)



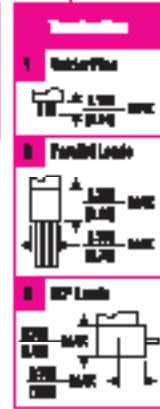
### BASIC "AT", CENTRAL ACTUATOR, 1 POLE

A T 2 2 1 - 4

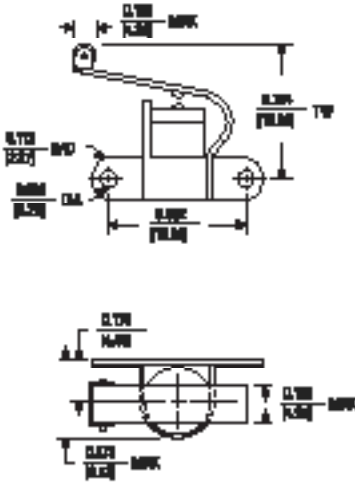
Actuating Force [ozin]  
Release Force [ozin]  
Forward Inlet  
Minimum Inlet [ozin]  
Overward Inlet  
Positive Overward Stop  
Min. Force on Retainer  
approx. Weight [ozin lead]

Basic Models & Actuator Body Style			
AT201	AT202	AT203	AT204
act	act/imp	imp/imp	act/imp
20 oz	24 oz	20 oz	20 oz
1 oz	1 oz	1 oz	4 oz
Forward Inlet			
200" (0.70oz)			
Minimum Inlet			
250" (1.0oz)			
Overward Inlet			
270" (0.8oz)			
Yes	Yes	Yes	Yes
6 lb	6 lb	6 lb	6 lb
0.2 oz	0.2 oz	0.2 oz	0.2 oz

Operation	
0	SPST
1	SPST N.C.
0	SPST N.C.



Lead Length	
1	6" (150mm)
2	12" (300mm)
3	18" (450mm)
4	24" (600mm)
5	30" (750mm)
6	36" (900mm)
7	42" (1050mm)
8	48" (1200mm)
9	54" (1350mm)
10	60" (1500mm)



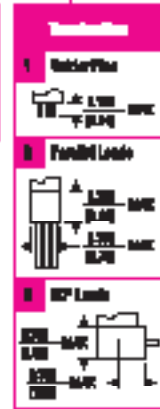
### BASIC "AT", LEFT HAND ACTUATOR, 1 POLE

A T 2 2 2 - 5

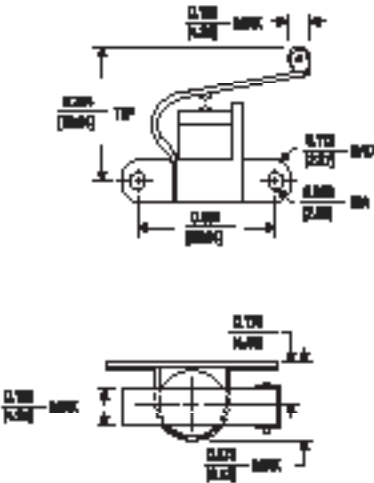
Actuating Force [ozin]  
Release Force [ozin]  
Forward Inlet  
Minimum Inlet [ozin]  
Overward Inlet  
Positive Overward Stop  
Min. Force on Retainer  
approx. Weight [ozin lead]

Basic Models & Actuator Body Style			
AT201	AT202	AT203	AT204
act	act/imp	imp/imp	act/imp
20 oz	24 oz	20 oz	20 oz
1 oz	1 oz	1 oz	4 oz
Forward Inlet			
200" (0.70oz)			
Minimum Inlet			
250" (1.0oz)			
Overward Inlet			
270" (0.8oz)			
Yes	Yes	Yes	Yes
6 lb	6 lb	6 lb	6 lb
0.19 oz	0.19 oz	0.20 oz	0.20 oz

Operation	
0	SPST
1	SPST N.C.
0	SPST N.C.



Lead Length	
1	6" (150mm)
2	12" (300mm)
3	18" (450mm)
4	24" (600mm)
5	30" (750mm)
6	36" (900mm)
7	42" (1050mm)
8	48" (1200mm)
9	54" (1350mm)
10	60" (1500mm)



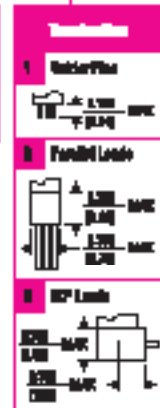
### BASIC "AT", RIGHT HAND ACTUATOR, 1 POLE

A T 2 2 1 - 2

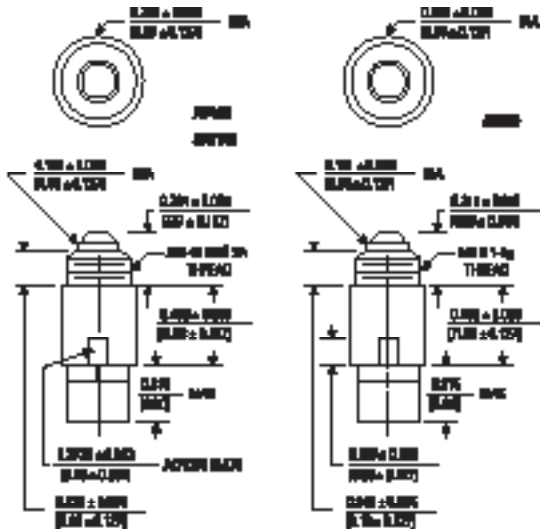
Actuating Force [ozin]  
Release Force [ozin]  
Forward Inlet  
Minimum Inlet [ozin]  
Overward Inlet  
Positive Overward Stop  
Min. Force on Retainer  
approx. Weight [ozin lead]

Basic Models & Actuator Body Style			
AT201	AT202	AT203	AT204
act	act/imp	imp/imp	act/imp
20 oz	24 oz	20 oz	20 oz
1 oz	1 oz	1 oz	4 oz
Forward Inlet			
200" (0.70oz)			
Minimum Inlet			
250" (1.0oz)			
Overward Inlet			
270" (0.8oz)			
Yes	Yes	Yes	Yes
6 lb	6 lb	6 lb	6 lb
0.2 oz	0.2 oz	0.2 oz	0.2 oz

Operation	
0	SPST
1	SPST N.C.
0	SPST N.C.



Lead Length	
1	6" (150mm)
2	12" (300mm)
3	18" (450mm)
4	24" (600mm)
5	30" (750mm)
6	36" (900mm)
7	42" (1050mm)
8	48" (1200mm)
9	54" (1350mm)
10	60" (1500mm)



**THREADED HEX BODY, FLAT & ROUND PLUNGER, 1 POLE**

**AT208 - 1 2 - 10**

	Basic-Stock II Assembled/Plunger Style		
	JPM20	JSM20	JSM20
Assembling Force (lbf)	30 lbf	30 lbf	30 lbf
Release Force (lbf)	4 oz	4 oz	4 oz
Pretravel (mm)	0.001" (0.0025)	0.001" (0.0025)	0.001" (0.0025)
Microtravel (mm)	0.001" (0.0025)	0.001" (0.0025)	0.001" (0.0025)
Overtravel (mm)	0.001" (0.0025)	0.001" (0.0025)	0.001" (0.0025)
Positive Overtravel Stop	Yes	Yes	Yes
Max. Force w/ Actuator	30 lbf	30 lbf	30 lbf
Approx. Weight (per head)	0.3 g	0.3 g	0.3 g

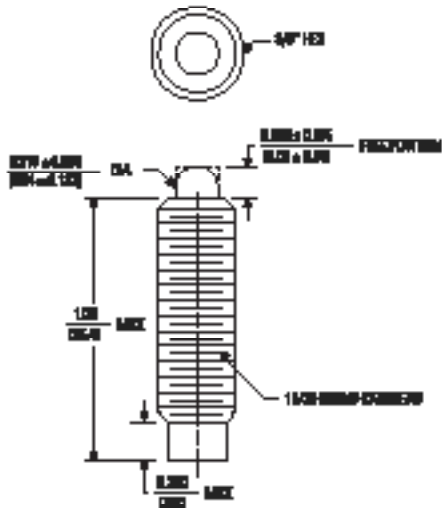
Operation	
1	SWT
1	SPSC P.L.C.
1	SPSC P.L.C.

Transition	
1	Switch Flaw
2	SWT
3	SPSC P.L.C.
4	SPSC P.L.C.
5	SWT
6	SWT
7	SPSC P.L.C.
8	SPSC P.L.C.
9	SWT
10	SWT

Lead Length	
1	1" (25.4mm)
2	1.25" (31.75mm)
3	1.5" (38.1mm)
4	1.75" (44.45mm)
5	2" (50.8mm)
6	2.25" (57.15mm)
7	2.5" (63.5mm)
8	2.75" (69.85mm)
9	3" (76.2mm)
10	3.25" (82.55mm)



**THREADED HEX BODY, FLAT & ROUND PLUNGER, 1 POLE**

**18AT304 - 2 2 - 18**

	Basic-Stock II Assembled/Plunger Style		
	JPM20	JSM20	JSM20
Assembling Force (lbf)	30 lbf	30 lbf	30 lbf
Release Force (lbf)	1 oz	4 oz	4 oz
Pretravel (mm)	0.001" (0.0025)	0.001" (0.0025)	0.001" (0.0025)
Microtravel (mm)	0.001" (0.0025)	0.001" (0.0025)	0.001" (0.0025)
Overtravel (mm)	0.001" (0.0025)	0.001" (0.0025)	0.001" (0.0025)
Positive Overtravel Stop	Yes	Yes	Yes
Max. Force w/ Actuator	30 lbf	30 lbf	30 lbf
Approx. Weight (per head)	0.7 g	0.7 g	0.7 g

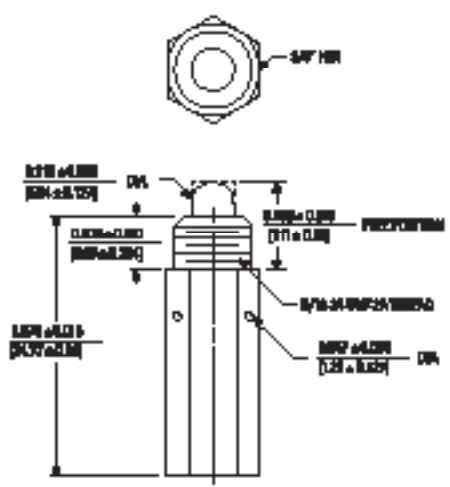
Operation	
1	SWT
1	SPSC P.L.C.
1	SPSC P.L.C.

Transition	
1	Switch Flaw
2	SWT
3	SPSC P.L.C.
4	SPSC P.L.C.
5	SWT
6	SWT
7	SPSC P.L.C.
8	SPSC P.L.C.
9	SWT
10	SWT

Lead Length	
1	1" (25.4mm)
2	1.25" (31.75mm)
3	1.5" (38.1mm)
4	1.75" (44.45mm)
5	2" (50.8mm)
6	2.25" (57.15mm)
7	2.5" (63.5mm)
8	2.75" (69.85mm)
9	3" (76.2mm)
10	3.25" (82.55mm)



**THREADED HEX BODY, FLAT & ROUND PLUNGER, 1 POLE**

**AT304 - 0 2 - 2**

	Basic-Stock II Assembled/Plunger Style		
	JPM20	JSM20	JSM20
Assembling Force (lbf)	30 lbf	30 lbf	30 lbf
Release Force (lbf)	1 oz	4 oz	4 oz
Pretravel (mm)	0.001" (0.0025)	0.001" (0.0025)	0.001" (0.0025)
Microtravel (mm)	0.001" (0.0025)	0.001" (0.0025)	0.001" (0.0025)
Overtravel (mm)	0.001" (0.0025)	0.001" (0.0025)	0.001" (0.0025)
Positive Overtravel Stop	Yes	Yes	Yes
Max. Force w/ Actuator	30 lbf	30 lbf	30 lbf
Approx. Weight (per head)	0.5 g	0.5 g	0.5 g

Operation	
1	SWT
1	SPSC P.L.C.
1	SPSC P.L.C.

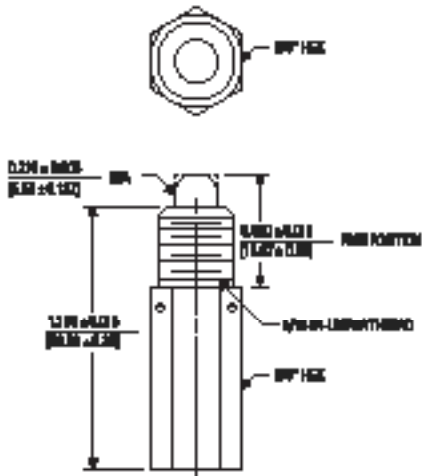
  

Transition	
1	Switch Flaw
2	SWT
3	SPSC P.L.C.
4	SPSC P.L.C.
5	SWT
6	SWT
7	SPSC P.L.C.
8	SPSC P.L.C.
9	SWT
10	SWT

Lead Length	
1	1" (25.4mm)
2	1.25" (31.75mm)
3	1.5" (38.1mm)
4	1.75" (44.45mm)
5	2" (50.8mm)
6	2.25" (57.15mm)
7	2.5" (63.5mm)
8	2.75" (69.85mm)
9	3" (76.2mm)
10	3.25" (82.55mm)

**THREADED HEX BODY, FLAT & BOUND PLUNGERS, 1 POLE**



**1BATS14 - 0 3 - 10**

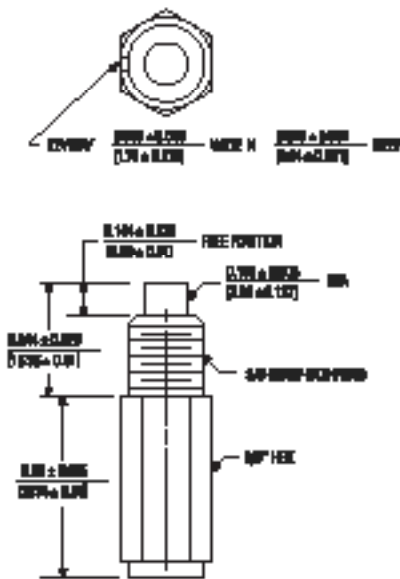
	Balls Switch & Actuator/Body Style		
	AT200	AT210	AT220
Actuating Force (max)	20 oz	20 oz	20 oz
Release Force (max)	1 oz	4 oz	
Pretravel (max)	0.10" (2.54mm)		
Movement ENT. (max)	0.08" (2.03mm)		
Overtravel (min)	1.20" (30.48mm)		
Positive Overtravel Stop	Yes	Yes	
Max Force on Actuator	20 lb	20 lb	
Approx. Weight (see back)	0.2 oz	0.2 oz	

Quantity	Options
0	SPDT
1	SPNC N.C.
2	SPNC N.C.

Termination
1 Solder Wire
2 Pressfit Leads
3 SP Leads

Lead Length
1 5" (127mm)
2 12" (305mm)
3 18" (457mm)
4 24" (610mm)
5 30" (762mm)
6 36" (914mm)
7 42" (1067mm)
8 48" (1219mm)
9 54" (1372mm)
10 72" (1829mm)

**THREADED HEX BODY, FLAT PLUNGERS, 1 POLE**



**AT201 - 2 2 - 2**

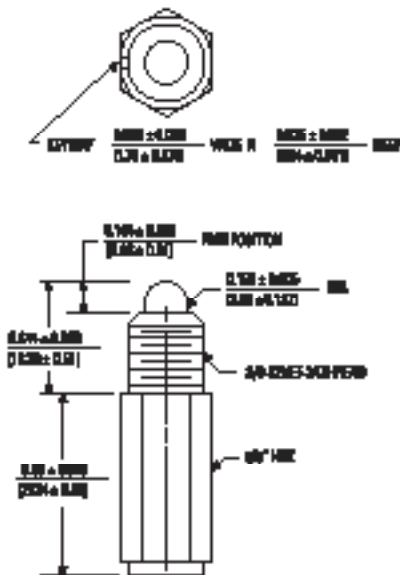
	Balls Switch & Actuator/Body Style		
	AT200	AT210	AT220
Actuating Force (max)	100 oz		
Release Force (max)	20 oz		
Plug End / Ball-Bearing	Yes		
Pretravel (max)	0.10" (2.54mm)		
Movement ENT. (max)	0.08" (2.03mm)		
Overtravel (min)	0.90" (22.86mm)		
Positive Overtravel Stop	Yes		
Max Force on Actuator	20 lb		
Approx. Weight (see back)	0.3 oz		

Quantity	Options
0	SPDT
1	SPNC N.C.
2	SPNC N.C.

Termination
1 Solder Wire
2 Pressfit Leads
3 SP Leads

Lead Length
1 5" (127mm)
2 12" (305mm)
3 18" (457mm)
4 24" (610mm)
5 30" (762mm)
6 36" (914mm)
7 42" (1067mm)
8 48" (1219mm)
9 54" (1372mm)
10 72" (1829mm)

**THREADED HEX BODY, BOUND PLUNGER, 1 POLE**



**AT200 - 2 2 - 2**

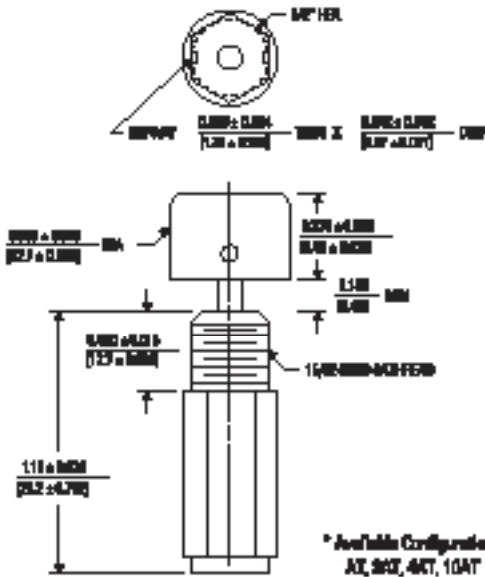
	Balls Switch & Actuator/Body Style		
	AT200	AT210	AT220
Actuating Force (max)	100 oz		
Release Force (max)	20 oz		
Plug End / Ball-Bearing	Yes		
Pretravel (max)	0.20" (5.08mm)		
Movement ENT. (max)	0.10" (2.54mm)		
Overtravel (min)	0.20" (5.08mm)		
Positive Overtravel Stop	Yes		
Max Force on Actuator	20 lb		
Approx. Weight (see back)	1.0 oz		

Quantity	Options
0	SPDT
1	SPNC N.C.
2	SPNC N.C.

Termination
1 Solder Wire
2 Pressfit Leads
3 SP Leads

Lead Length
1 5" (127mm)
2 12" (305mm)
3 18" (457mm)
4 24" (610mm)
5 30" (762mm)
6 36" (914mm)
7 42" (1067mm)
8 48" (1219mm)
9 54" (1372mm)
10 72" (1829mm)





\* 3AT / 4AT variants available

Actuating Force (max)	25 ac	25 ac
Release Force (max)	25 ac	25 ac
Plunger Seal / MIL-D-8839	Yes	Yes
Retravel (max)	.363" (9.2mm)	.363" (9.2mm)
Movement OHL (max)	.363" (9.2mm)	.363" (9.2mm)
Overtravel (min)	.125" (3.18mm)	.125" (3.18mm)
Positive Overtravel Stop	Yes	Yes
Max Force on Actuator	30 lb	30 lb
Approx Weight (per head)	1.1 oz	1.1 oz

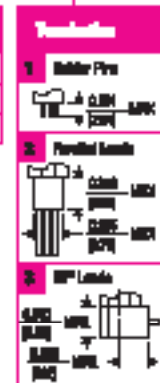
\* Available Configurations:  
AT, 3AT, 4AT, 10AT

## THREADED HEX BODY, PARALLEL PLUNGER, 1 POLE

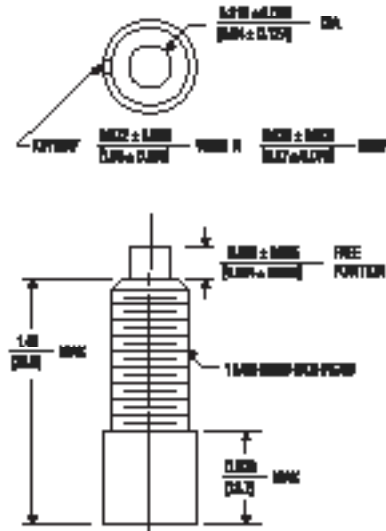
AT01 - 3 3 - 1

Basic-Stroke & Actuating Body Style	
AT01	AT02
act	act/amp
25 ac	15 ac
25 ac	25 ac
Yes	Yes
.363" (9.2mm)	.363" (9.2mm)
.363" (9.2mm)	.363" (9.2mm)
.125" (3.18mm)	.125" (3.18mm)
Yes	Yes
30 lb	30 lb
1.1 oz	1.1 oz

Option
0 3AT
1 3AT, M.E.
2 3AT, M.E.



Lead Length
1 8" (203mm)
2 12" (305mm)
3 18" (457mm)
4 24" (609mm)
5 30" (762mm)
6 36" (914mm)
7 42" (1067mm)
8 48" (1219mm)
9 54" (1372mm)
10 60" (1524mm)



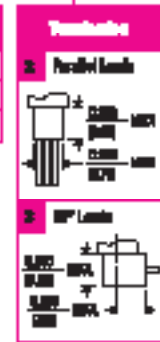
Basic-Stroke & Actuating Body Style			
AT01	AT02	AT03	AT04
act	act/amp	act	act/amp
15 ac	15 ac	15 ac	15 ac
1 ac	4 ac	25 ac	25 ac
No	No	Yes	Yes
.363" (9.2mm)	.363" (9.2mm)	.363" (9.2mm)	.363" (9.2mm)
.363" (9.2mm)	.363" (9.2mm)	.363" (9.2mm)	.363" (9.2mm)
.125" (3.18mm)	.125" (3.18mm)	.125" (3.18mm)	.125" (3.18mm)
Yes	Yes	Yes	Yes
30 lb	30 lb	30 lb	30 lb
1.2 oz	1.2 oz	1.2 oz	1.2 oz

## THREADED, FLAT PLUNGER, 1 POLE

AT01 - 3 3 - 1

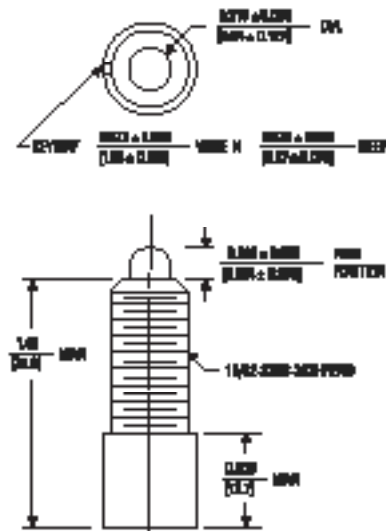
Basic-Stroke & Actuating Body Style			
AT01	AT02	AT03	AT04
act	act/amp	act	act/amp
15 ac	15 ac	15 ac	15 ac
1 ac	4 ac	25 ac	25 ac
No	No	Yes	Yes
.363" (9.2mm)	.363" (9.2mm)	.363" (9.2mm)	.363" (9.2mm)
.363" (9.2mm)	.363" (9.2mm)	.363" (9.2mm)	.363" (9.2mm)
.125" (3.18mm)	.125" (3.18mm)	.125" (3.18mm)	.125" (3.18mm)
Yes	Yes	Yes	Yes
30 lb	30 lb	30 lb	30 lb
1.2 oz	1.2 oz	1.2 oz	1.2 oz

Option
0 3AT
1 3AT, M.E.
2 3AT, M.E.



Lead Length
1 8" (203mm)
2 12" (305mm)
3 18" (457mm)
4 24" (609mm)
5 30" (762mm)
6 36" (914mm)
7 42" (1067mm)
8 48" (1219mm)
9 54" (1372mm)
10 60" (1524mm)

\* 3AT / 4AT variants available



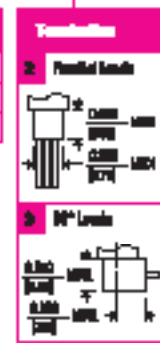
Basic-Stroke & Actuating Body Style			
AT01	AT02	AT03	AT04
act	act/amp	act	act/amp
15 ac	15 ac	15 ac	15 ac
1 ac	4 ac	25 ac	25 ac
No	No	Yes	Yes
.363" (9.2mm)	.363" (9.2mm)	.363" (9.2mm)	.363" (9.2mm)
.363" (9.2mm)	.363" (9.2mm)	.363" (9.2mm)	.363" (9.2mm)
.125" (3.18mm)	.125" (3.18mm)	.125" (3.18mm)	.125" (3.18mm)
Yes	Yes	Yes	Yes
30 lb	30 lb	30 lb	30 lb
1.2 oz	1.2 oz	1.2 oz	1.2 oz

## THREADED, ROUND PLUNGER, 1 POLE

AT01 - 3 3 - 1

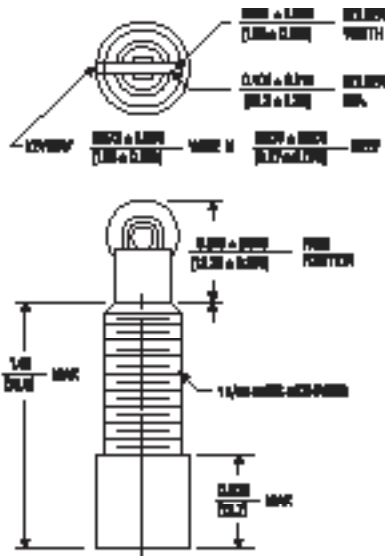
Basic-Stroke & Actuating Body Style			
AT01	AT02	AT03	AT04
act	act/amp	act	act/amp
15 ac	15 ac	15 ac	15 ac
1 ac	4 ac	25 ac	25 ac
No	No	Yes	Yes
.363" (9.2mm)	.363" (9.2mm)	.363" (9.2mm)	.363" (9.2mm)
.363" (9.2mm)	.363" (9.2mm)	.363" (9.2mm)	.363" (9.2mm)
.125" (3.18mm)	.125" (3.18mm)	.125" (3.18mm)	.125" (3.18mm)
Yes	Yes	Yes	Yes
30 lb	30 lb	30 lb	30 lb
1.2 oz	1.2 oz	1.2 oz	1.2 oz

Option
0 3AT
1 3AT, M.E.
2 3AT, M.E.



Lead Length
1 8" (203mm)
2 12" (305mm)
3 18" (457mm)
4 24" (609mm)
5 30" (762mm)
6 36" (914mm)
7 42" (1067mm)
8 48" (1219mm)
9 54" (1372mm)
10 60" (1524mm)

\* 3AT / 4AT variants available

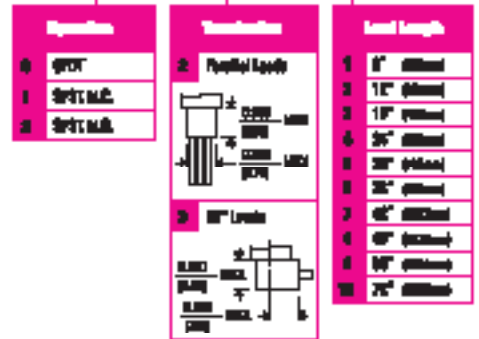


Actuating Force (max)  
Release Force (max)  
Plunger Seal / MIL-S-9806  
Frictional (max)  
Movement (FTL) (max)  
Overtravel (in)  
Positive Overtravel Stop  
Min Force on Actuator  
Approx Weight (no leads)

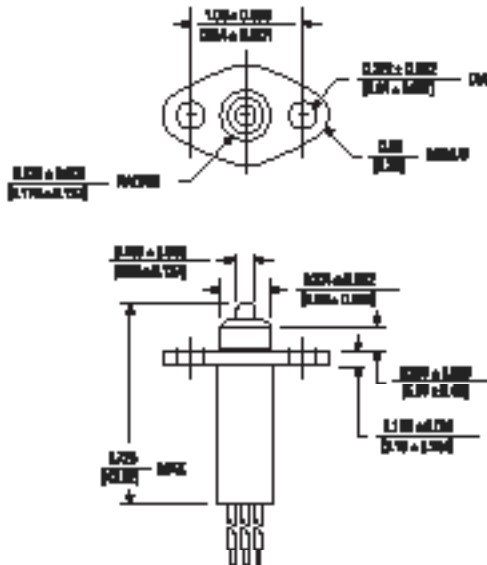
Mechanical & Interconnecting Style			
MTC	WTC	MTC	WTC
rel	rel	rel	rel
30 oz	30 oz	100 oz	115 oz
8 oz	4 oz	30 oz	30 oz
No	No	Yes	Yes
.007" (max)	.007" (max)	.007" (max)	.007" (max)
.007" (1 Dia)	.007" (1 Dia)	.007" (1 Dia)	.007" (1 Dia)
.100" (1 Dia)	.100" (1 Dia)	.100" (1 Dia)	.100" (1 Dia)
Yes	Yes	Yes	Yes
30 lb	30 lb	30 lb	30 lb
1.3 oz	1.3 oz	1.3 oz	1.3 oz

### THREADED, ROLLER PLUNGER, 1 POLE

WTCMTC - 1 0 - 1



\*SPDT/4MT versions available

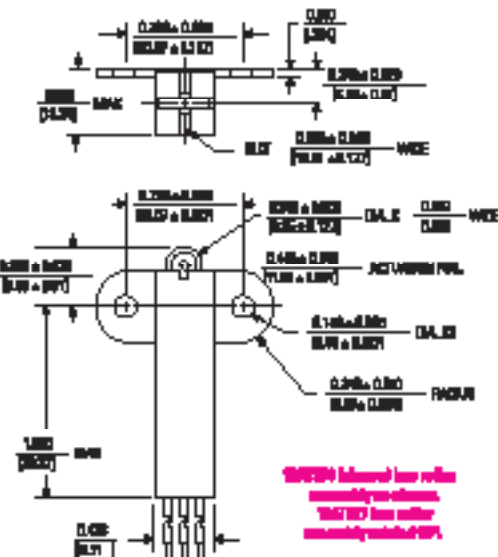


Actuating Force (max)  
Release Force (max)  
Plunger Seal / MIL-S-9806  
Frictional (max)  
Movement (FTL) (max)  
Overtravel (in)  
Positive Overtravel Stop  
Min Force on Actuator  
Approx Weight (no leads)

Mechanical & Interconnecting Style	
WTCMTC	MTC
rel	rel
30 oz	30 oz
30 oz	30 oz
Yes	Yes
.007" (1 Dia)	.007" (1 Dia)
.007" (1 Dia)	.007" (1 Dia)
.100" (1 Dia)	.100" (1 Dia)
Yes	Yes
30 lb	30 lb
1.3 oz	1.3 oz

### FLANGE MOUNT, SEALED PLUNGER, 1 POLE

WTCMTC - 0 2 - 1



Actuating Force (max)  
Release Force (max)  
Plunger Seal / MIL-S-9806  
Frictional (max)  
Movement (FTL) (max)  
Overtravel (in)  
Positive Overtravel Stop  
Min Force on Actuator  
Approx Weight (no leads)

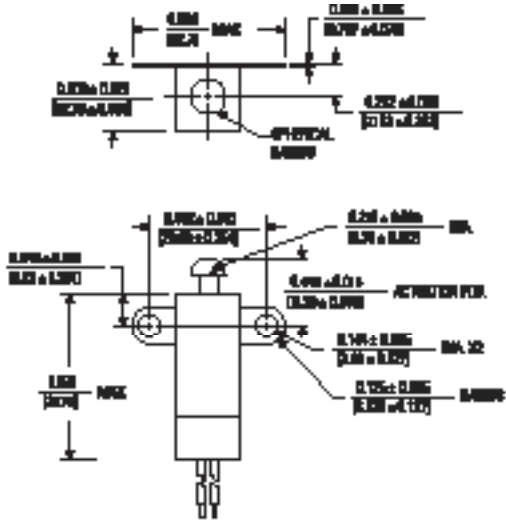
Mechanical & Interconnecting Style	
WTCMTC	WTCMTC
rel	rel
30 oz	30 oz
16 oz	16 oz
No	No
.007" (1 Dia)	.007" (1 Dia)
.007" (1 Dia)	.007" (1 Dia)
.100" (1 Dia)	.100" (1 Dia)
Yes	Yes
30 lb	30 lb
1.3 oz	1.3 oz

### FLANGE MOUNT, SEALED ROLLER PLUNGER, 1 POLE

WTCMTC - 1 2 - 1



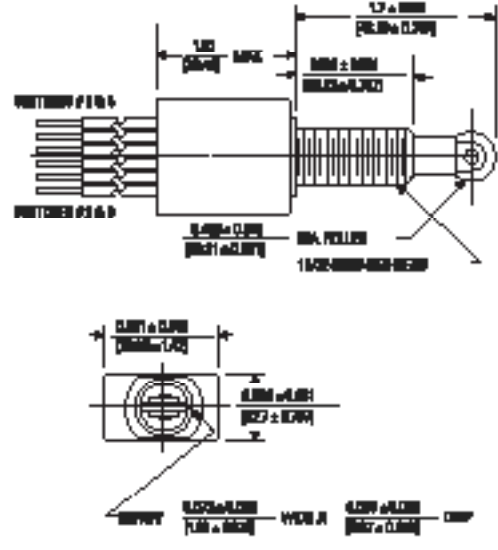
WTCMTC MTC rel has roller assembly available  
WTCMTC MTC rel has roller assembly available



**FLANGE MOUNT, UNSEALED ROUND PLUNGER, 1 POLE**

WALSER - 1 2 - 3

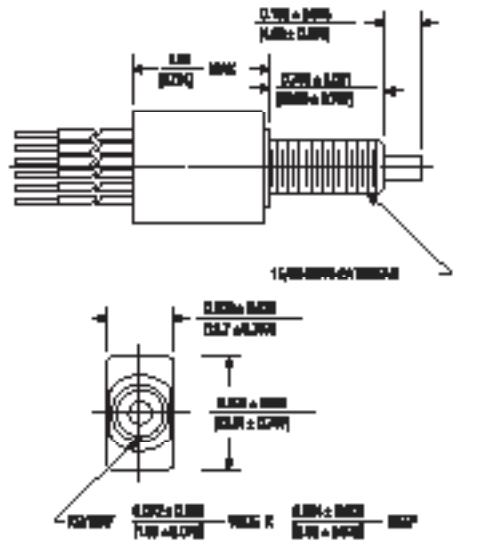
	Pole Switch & Actuator Style		Operation	Termination	Lead Length
	WALSER	WALSER			
Actuating Force (max)	20 mN	20 mN	0: SPST	2: Parallel Leads	1: 6" (150mm)
Release Force (max)	4 mN	4 mN	1: SPST, M.C.		2: 12" (300mm)
Plunger Seal / MIL-D-8835	Flu	Flu	2: SPST, M.C.		3: 18" (450mm)
Protected (max)	30V (1.0W)	30V (1.0W)			4: 24" (600mm)
Microswitch CNT. (max)	30V (1.0W)	30V (1.0W)			5: 30" (750mm)
Overtravel (in)	0.02" (0.5mm)	0.02" (0.5mm)			6: 36" (900mm)
Positive Overtravel Stop	Yes	Yes			7: 42" (1050mm)
Max Force on Actuator	20 mN	20 mN			8: 48" (1200mm)
Approx Weight (no leads)	0.20 g	0.20 g			9: 54" (1350mm)
					10: 72" (1800mm)



**THREADED, SEALED ROLLER PLUNGER, 2 POLE**

WALSER - 3 3 - 1

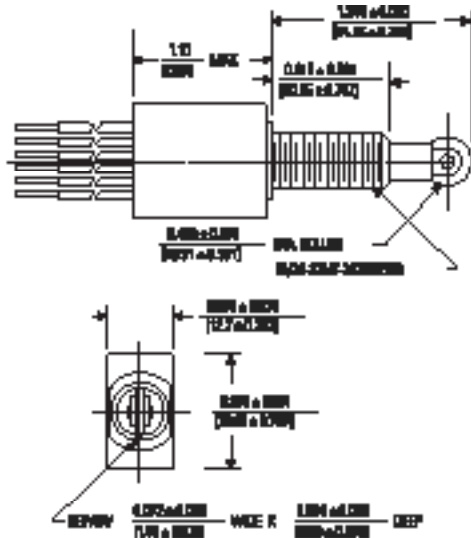
	Pole Switch & Actuator Style		Operation	Termination	Lead Length
	WALSER	WALSER			
Actuating Force (max)	160 mN	160 mN	3: SPST	2: Parallel Leads	1: 6" (150mm)
Release Force (max)	30 mN	30 mN	4: SPST, M.C.		2: 12" (300mm)
Plunger Seal / MIL-D-8835	Yes	Yes	5: SPST, M.C.		3: 18" (450mm)
Protected (max)	30V (1.0W)	30V (1.0W)	6: SPST, M.C./M.A.		4: 24" (600mm)
Microswitch CNT. (max)	30V (1.0W)	30V (1.0W)			5: 30" (750mm)
Overtravel (in)	0.02" (0.5mm)	0.02" (0.5mm)			6: 36" (900mm)
Positive Overtravel Stop	Yes	Yes			7: 42" (1050mm)
Max Force on Actuator	20 mN	20 mN			8: 48" (1200mm)
Approx Weight (no leads)	0.4 g	0.4 g			9: 54" (1350mm)
					10: 72" (1800mm)



**THREADED, SEALED FLAT PLUNGER, 2 POLE**

WALSER - 3 3 - 1

	Pole Switch & Actuator Style			Operation	Termination	Lead Length
	WALSER	WALSER	WALSER			
Actuating Force (max)	200 mN	200 mN	200 mN	3: SPST	2: Parallel Leads	1: 6" (150mm)
Release Force (max)	10 mN	10 mN	10 mN	4: SPST, M.C.		2: 12" (300mm)
Plunger Seal / MIL-D-8835	Yes	Yes	Yes	5: SPST, M.C.		3: 18" (450mm)
Protected (max)	30V (1.0W)	30V (1.0W)	30V (1.0W)	6: SPST, M.C./M.A.		4: 24" (600mm)
Microswitch CNT. (max)	30V (1.0W)	30V (1.0W)	30V (1.0W)			5: 30" (750mm)
Overtravel (in)	0.02" (0.5mm)	0.02" (0.5mm)	0.02" (0.5mm)			6: 36" (900mm)
Positive Overtravel Stop	Yes	Yes	Yes			7: 42" (1050mm)
Max Force on Actuator	20 mN	20 mN	20 mN			8: 48" (1200mm)
Approx Weight (no leads)	0.4 g	0.4 g	0.4 g			9: 54" (1350mm)
						10: 72" (1800mm)



Actuating Force (max)  
 Release Force (max)  
 Plunger Seal / Nil L-9-9995  
 Pretravel (max)  
 Movement (mm)  
 Overtravel (mm)  
 Positive Overtravel Stop  
 Max Force on Actuator  
 Approx Weight (no leads)

Stroke-Stroke II Actuating/Release Cycle	
JY200	JY2000
At 100 ms	At 100 ms
100 ms	100 ms
70 ms	70 ms
Yes	Yes
Δ30" (4.76mm)	Δ30" (4.76mm)
Δ30" (4.76mm)	Δ30" (4.76mm)
Δ30" (4.76mm)	Δ30" (4.76mm)
Yes	Yes
30 lb	30 lb
1.4 oz	1.4 oz

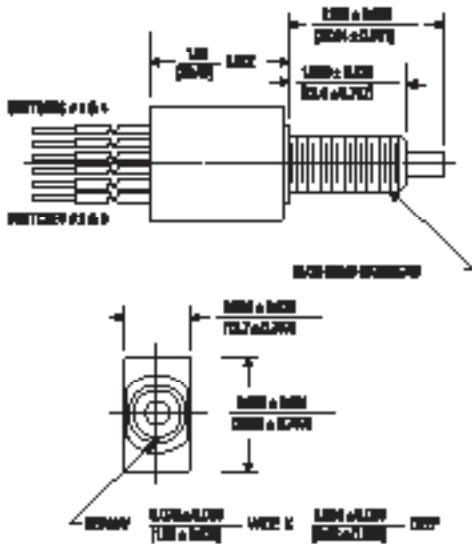
### THREADED, SEALED ROLLER PLUNGER, 2 POLE

JY200 - 4 2 - 2

Operation	
2	SPST
4	SPST, N.C.
6	SPST, N.C.
8	SPST, N.C./N.O.

Termination	
2	Parallel Leads
3	SP Leads

Lead Length	
1	6" (152mm)
2	12" (305mm)
3	18" (457mm)
4	24" (609mm)
5	30" (762mm)
6	36" (914mm)
7	42" (1067mm)
8	48" (1219mm)
9	54" (1372mm)
10	72" (1829mm)



Actuating Force (max)  
 Release Force (max)  
 Plunger Seal / Nil L-9-9995  
 Pretravel (max)  
 Movement (mm)  
 Overtravel (mm)  
 Positive Overtravel Stop  
 Max Force on Actuator  
 Approx Weight (no leads)

Stroke-Stroke II Actuating/Release Cycle	
JY200	JY2000
At 100 ms	At 100 ms
100 ms	100 ms
70 ms	70 ms
Yes	Yes
Δ30" (4.76mm)	Δ30" (4.76mm)
Δ30" (4.76mm)	Δ30" (4.76mm)
Δ30" (4.76mm)	Δ30" (4.76mm)
Yes	Yes
30 lb	30 lb
1.8 oz	1.8 oz

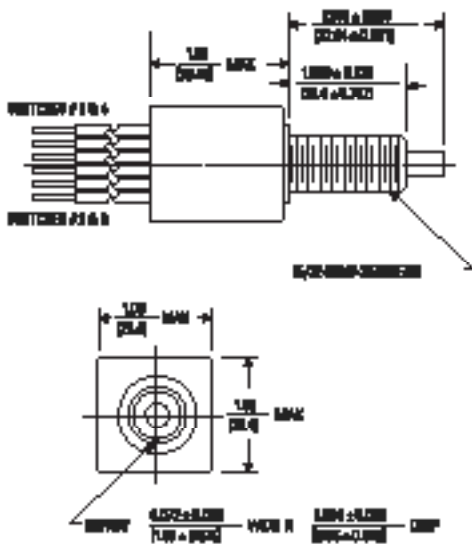
### THREADED, SEALED FLAT PLUNGER, 3 POLE

JY200 - 6 2 - 6

Operation	
3	SPST
4	SPST, N.C.
6	SPST, N.C.
9	SPST, N.C./N.O.

Termination	
5	Parallel Leads
3	SP Leads

Lead Length	
1	6" (152mm)
2	12" (305mm)
3	18" (457mm)
4	24" (609mm)
5	30" (762mm)
6	36" (914mm)
7	42" (1067mm)
8	48" (1219mm)
9	54" (1372mm)
10	72" (1829mm)



Actuating Force (max)  
 Release Force (max)  
 Plunger Seal / Nil L-9-9995  
 Pretravel (max)  
 Movement (mm)  
 Overtravel (mm)  
 Positive Overtravel Stop  
 Max Force on Actuator  
 Approx Weight (no leads)

Stroke-Stroke II Actuating/Release Cycle	
JY200	JY2000
At 100 ms	At 100 ms
100 ms	100 ms
70 ms	70 ms
Yes	Yes
Δ30" (4.76mm)	Δ30" (4.76mm)
Δ30" (4.76mm)	Δ30" (4.76mm)
Δ30" (4.76mm)	Δ30" (4.76mm)
Yes	Yes
30 lb	30 lb
2.4 oz	2.4 oz

### THREADED, SEALED FLAT PLUNGER, 3 OR 4 POLE

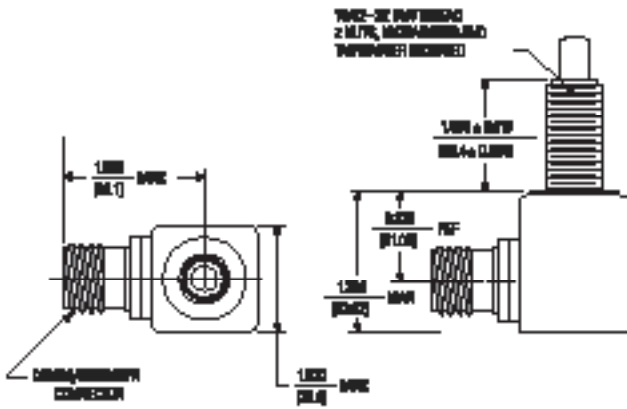
JY200 - 3 2 - 4

Operation	
3	SPST
4	SPST, N.C.
6	SPST, N.C.
12	4PST
14	4PST, N.C.
12	4PST, N.O.

Termination	
5	Parallel Leads
3	SP Leads

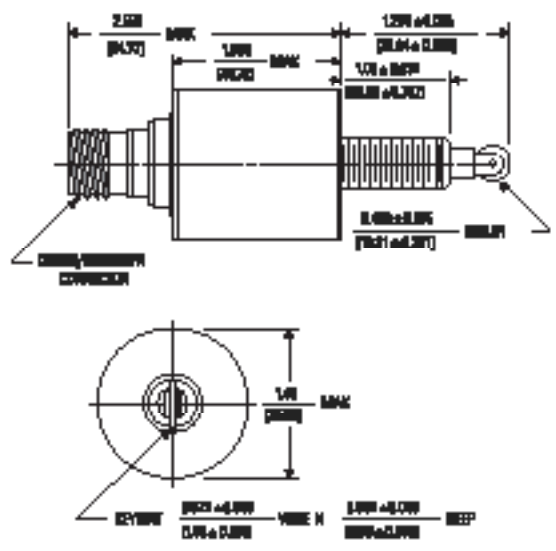
Lead Length	
1	6" (152mm)
2	12" (305mm)
3	18" (457mm)
4	24" (609mm)
5	30" (762mm)
6	36" (914mm)
7	42" (1067mm)
8	48" (1219mm)
9	54" (1372mm)
10	72" (1829mm)

**FLINGER SWITCH, 1 POLE**



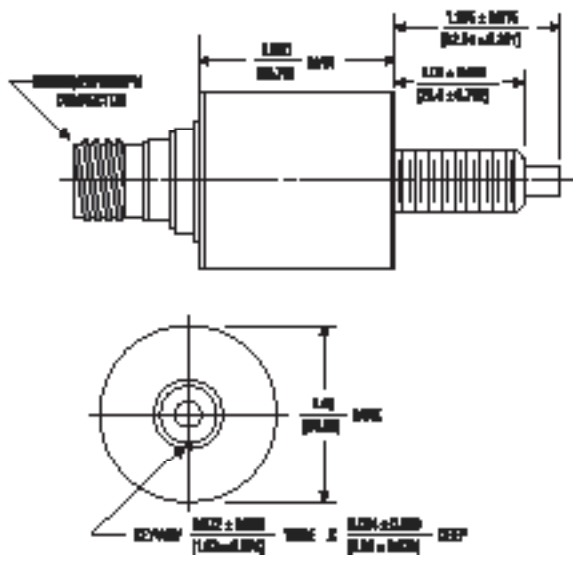
Flinger Switch 1 Pole	
Actuating Force (max)	11.0 oz
Release Force (max)	7.0 oz
Preload (max)	.025" (.005mm)
Microswitch CRT (max)	.011" (.005mm)
Overtravel (min)	.025" (.005mm)
Approx Weight (no leads)	4 oz

\* Various connectors available



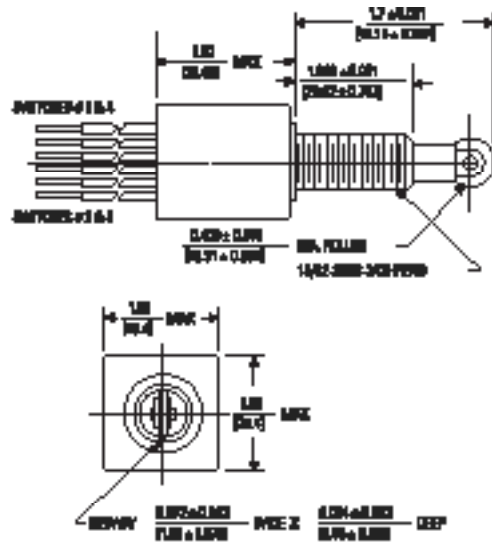
Roller Plunger Switch 4 Pole	
Actuating Force (max)	7.0 oz
Release Force (max)	1.0 oz
Preload (max)	.025" (.005mm)
Microswitch CRT (max)	.025" (.011mm)
Overtravel (min)	.025" (.005mm)
Max Force on Actuator	20 lbs
Approx Weight (no leads)	6.1 oz

\* Various connectors available



Flat Plunger Switch 4 Pole	
Actuating Force (max)	8.0 oz
Release Force (max)	7.0 oz
Preload (max)	.025" (.005mm)
Microswitch CRT (max)	.025" (.011mm)
Overtravel (min)	.025" (.005mm)
Max Force on Actuator	20 lbs
Approx Weight (no leads)	6.1 oz

\* Various connectors available



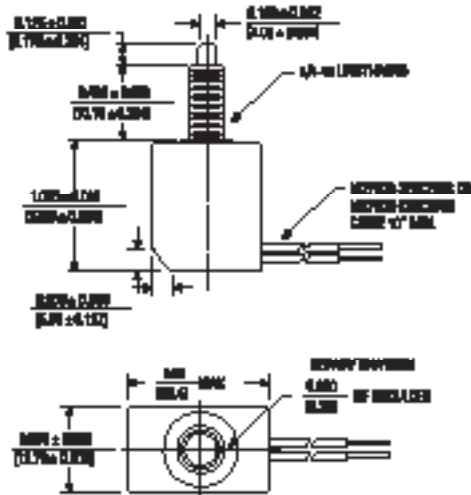
### THREADED, SEALED ROLLER PLUNGER, 1 OR 4 POLE

AT400 - 7 3 - 1

Pole Config & Actuator Style	
AT400	AT400P
1/4 Amp	1/2 Amp
Actuating Force (mN)	160 mN
Release Force (mN)	80 mN
Plunger Seal / MIL-D-8839	Yes
Patented (mm)	.300" (7.62mm)
Microswitch DML (mm)	.300" (7.62mm)
Overtravel (mm)	.300" (7.62mm)
Positive Overtravel Stop	Yes
Max Force on Actuator	30 lb
Approx Weight (g/ leads)	24 m



Lead Length	
1	6" (152mm)
2	12" (305mm)
3	18" (457mm)
4	24" (609mm)
5	30" (762mm)
6	36" (914mm)
7	42" (1067mm)
8	48" (1219mm)
9	54" (1372mm)
10	60" (1524mm)



### SMALLEST HERMETIC 2-POLE, PLUNGER (FLAT) SWITCH

AT200 - 0 2 - 0

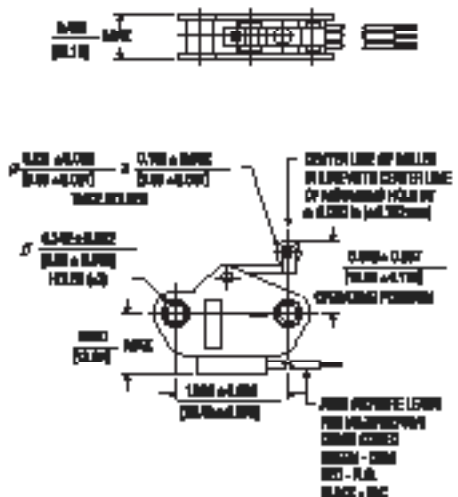
Pole Config & Actuator Style	
AT200	AT200P
1/4 Amp	1/2 Amp
Actuating Force (mN)	64 mN
Release Force (mN)	32 mN
Plunger Seal / MIL-S-8839	No
Patented (mm)	.310" (7.87mm)
Microswitch DML (mm)	.310" (7.87mm)
Overtravel (mm)	.310" (7.87mm)
Max Force on Actuator	20 lbs
Approx Weight (g/ leads)	1.8 m



Lead Length	
1	6" (152mm)
2	12" (305mm)
3	18" (457mm)
4	24" (609mm)
5	30" (762mm)
6	36" (914mm)
7	42" (1067mm)
8	48" (1219mm)
9	54" (1372mm)
10	60" (1524mm)

### SIDE PLATE, RIGHT ASYL 1 POLE

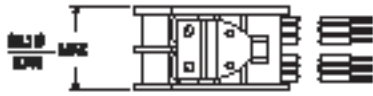
AT300 - 2 3 - 0



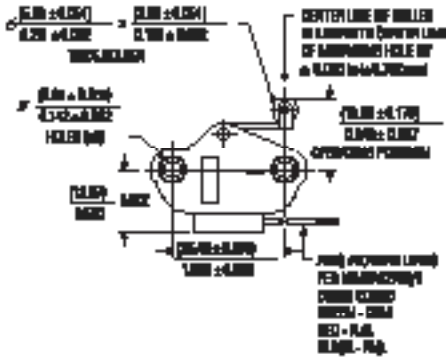
Pole Config & Actuator Style	
AT300	AT300P
1/4 Amp	1/2 Amp
Actuating Force (mN)	32 mN
Release Force (mN)	16 mN
Patented (mm)	.200" (5.08mm)
Microswitch DML (mm)	.300" (7.62mm)
Overtravel (mm)	.150" (3.81mm)
Positive Overtravel Stop	Yes
Max Force on Actuator	10 lbs
Approx Weight (g/ leads)	0.6 m



Lead Length	
1	6" (152mm)
2	12" (305mm)
3	18" (457mm)
4	24" (609mm)
5	30" (762mm)
6	36" (914mm)
7	42" (1067mm)
8	48" (1219mm)
9	54" (1372mm)
10	60" (1524mm)



### SIDE PLATE, RIGHT ARM, 2 POLE



Actuating Force (max)  
Release Force (max)  
Pretravel (max)  
Movement (UL), (max)  
Overtravel (min)  
Positive Overtravel Stop  
Min Force on Actuator  
Approx Weight (no leads)

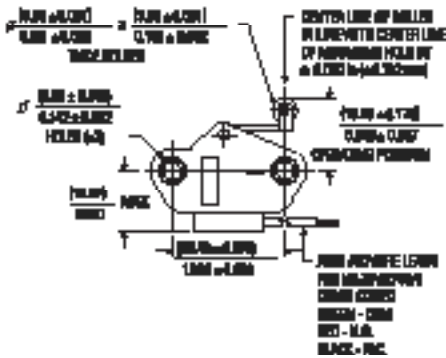
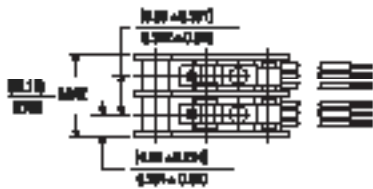
Basic Switch & Actuator/Body Style	
JW207	JW208
M Amp	M Amp
40 m	40 m
4 m	4 m
Pretravel (mm)	
.037 (0.94)	
Movement (UL) (mm)	
.037 (0.94)	
Overtravel (mm)	
.037 (0.94)	
Yes	Yes
80 lbs	80 lbs
0.70 oz	0.70 oz

10AT214 - 3 3 - 4

Operation
3 DPDT
4 DPSC P.L.C.
5 DPSC P.L.C.
6 DPSC P.L.C./N.C.

Termination
8 8P Leads

Lead Length
1 6" (152mm)
2 8" (203mm)
3 10" (254mm)
4 12" (305mm)
5 14" (357mm)
6 16" (406mm)
7 18" (457mm)
8 20" (508mm)
9 24" (609mm)
10 30" (762mm)



Actuating Force (max)  
Release Force (max)  
Pretravel (max)  
Movement (UL), (max)  
Overtravel (min)  
Positive Overtravel Stop  
Min Force on Actuator  
Approx Weight (no leads)

Basic Switch & Actuator/Body Style	
JW207	JW208
M Amp	M Amp
24 m	24 m
4 m	4 m
Pretravel (mm)	
.037 (0.94)	
Movement (UL) (mm)	
.037 (0.94)	
Overtravel (mm)	
.037 (0.94)	
Yes	Yes
80 lbs	80 lbs
0.88 oz	0.88 oz

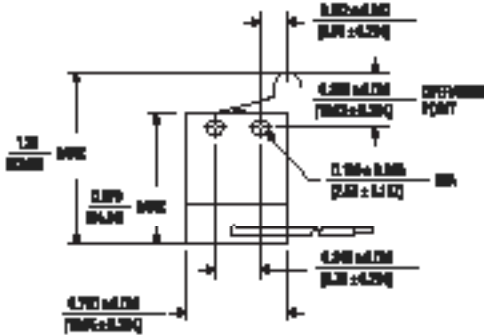
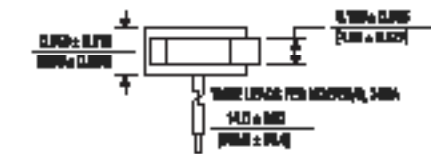
### SIDE PLATE, RIGHT ARM, 2 POLE

10AT215 - 5 3 - 5

Operation
3 DPDT
4 DPSC P.L.C.
5 DPSC P.L.C.
6 DPSC P.L.C./N.C.

Termination
8 8P Leads

Lead Length
1 6" (152mm)
2 8" (203mm)
3 10" (254mm)
4 12" (305mm)
5 14" (357mm)
6 16" (406mm)
7 18" (457mm)
8 20" (508mm)
9 24" (609mm)
10 30" (762mm)



Actuating Force (max)  
Flange Seal / MIL-0-8805  
Pretravel (max)  
Release Force (max)  
Movement (UL), (max)  
Overtravel (min)  
Positive Overtravel Stop  
Min Force on Actuator  
Approx Weight (no leads)

Basic Switch & Actuator/Body Style	
JW209	JW210
M Amp	M Amp
20 m	20 m
Flange Seal / MIL-0-8805	
Yes	
Pretravel (mm)	
.037 (0.94)	
Release Force (max)	
0.1 m	
Movement (UL), (max)	
.037 (0.94)	
Overtravel (mm)	
.037 (0.94)	
Yes	Yes
0 lb	0 lb
0.8 oz	0.8 oz

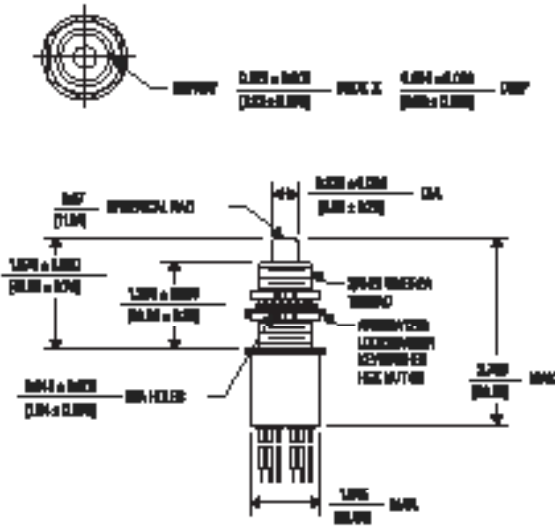
### LEAF SPRING SWITCH, 1 POLE

90A200 - 3 3 - 1

Operation
3 SPDT

Termination
8 8P Leads

Lead Length
1 6" (152mm)
2 12" (305mm)
3 18" (457mm)
4 24" (609mm)
5 30" (762mm)
6 36" (914mm)
7 42" (1067mm)
8 48" (1220mm)
9 54" (1372mm)
10 72" (1829mm)



### ROUNDED PLUNGER SWITCH, 2 POLE

SWITCH - 2 - 10

- Actuating Force (max)
- Release Force (max)
- Pretravel (max)
- Movement (EXT. force)
- Overtravel (min)
- Max Force in Release
- Applied Voltage (see table)

Body Style(s) & Actuator/Body Style	
SWITCH	High Drop (max)
1	120 to 250 oz
2	50 oz
3	350* (1.50mm)
4	350* (1.70mm)
5	350* (1.50mm)
6	120 oz
7	50 oz

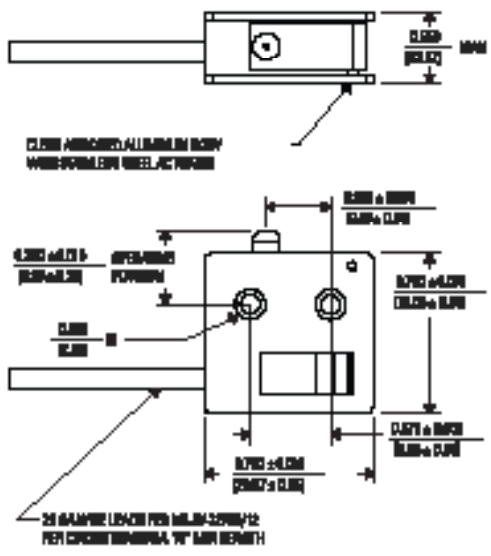
Operation	
3	DPDT
4	DPNG, P.L.C.
5	DPNG, P.L.C.
6	DPNG, P.L.C./P.L.C.

Termination	
2	Panel Leads

Lead Length	
1	6" (min)
2	6" (min)
3	6" (min)
4	24" (min)
5	30" (min)
6	36" (min)
7	42" (min)
8	48" (min)
9	60" (min)
10	72" (min)

Ref: M3221 & M3222/241

\* Various connector available



### SIDE PLATE, 1 POLE

SWITCH - 1 - 10

- Actuating Force (max)
- Release Force (max)
- Movement (EXT. force)
- Overtravel (min)

Body Style(s) & Actuator/Body Style	
SWITCH	1 Pole
1	10 oz
2	5 oz
3	350* (1.70mm)
4	350* (2.00mm)

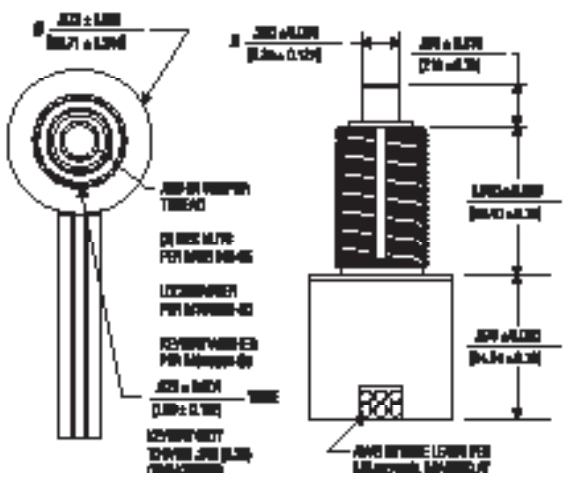
Operation	
1	SPDT
2	SPNG, P.L.C.
3	SPNG, P.L.C.

Termination	
4	60° Leads

Lead Length	
1	6" (min)
2	12" (min)
3	18" (min)
4	24" (min)
5	30" (min)
6	36" (min)
7	42" (min)
8	48" (min)
9	60" (min)
10	72" (min)

Ref: M3221 & M3222/2

\* Various connector available



### FLAT PLUNGER SWITCH, 2 POLE

SWITCH - 2 - 10

- Actuating Force (max)
- Release Force (max)
- Pretravel (max)
- Movement (EXT. force)
- Overtravel (min)
- Max Force in Release
- Applied Voltage (see table)

Body Style(s) & Actuator/Body Style	
SWITCH	2 Pole
1	80 to 100 oz
2	50 oz
3	350* (1.70mm)
4	350* (1.90mm)
5	350* (1.50mm)
6	80 oz
7	24 oz

Operation	
3	DPDT
4	DPNG, P.L.C.
5	DPNG, P.L.C.
6	DPNG, P.L.C./P.L.C.

Termination	
2	Panel Leads
4	90° Angle Leads

Lead Length	
1	6" (min)
2	6" (min)
3	6" (min)
4	24" (min)
5	30" (min)
6	36" (min)
7	42" (min)
8	48" (min)
9	60" (min)
10	72" (min)





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