



**Sensata**  
Technologies



**KLIXON**<sup>®</sup>

**PRECISION SWITCHES**

<b>3</b>	<b>Introduction to KLIXON® precision switches</b>
<b>6</b>	<b>KLIXON® AT Series</b> – Snap Action Precision Position Switches (rated 4 amps @ 28VDC)
<b>22</b>	<b>KLIXON® 10AT / 11AT / 12AT Series</b> – Hermetic Control Switches
<b>24</b>	<b>KLIXON® 10AT-MIL Series</b> – Military Qualified Snap Action Precision Position Switches
<b>32</b>	<b>KLIXON® KX Series</b> – Precision Sine Switches (rated 10 amps @ 28VDC, 120VAC)
<b>38</b>	<b>KLIXON® 4HVS Series</b> – High Performance Hermetic Interlock Switches
<b>40</b>	<b>KLIXON® 6PS &amp; 7PS Series</b> – Hermetic Stainless Steel Pressure Switches
<b>48</b>	<b>KLIXON® 2SE Series</b> – Solid-State Airflow Sensors
<b>52</b>	<b>MIL-SPEC Qualification List &amp; “Closest Match” Cross Reference</b>



## INTRODUCTION TO KLIXON® PRECISION SWITCHES

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- Hermetically sealed with dry nitrogen gas backfill
- Excellent shock and vibration resistance
- Switching up to 10 amps
- Optimal for low level circuits
- Temperature range between -275°F and 450°F
- Single and multiple pole designs available
- Small, axis-symmetric design for robustness and reliability
- Small and lightweight
- Various mounting configurations for custom applications
- Sealed and unsealed plunger options
- Wide range of side plate designs for narrow width applications
- Proven snap-action switching, reliable performance and long life
- MIL-S-8805 qualification option
- Approvals for various space, weapons, military and commercial aircraft OEMs

KLIXON® hermetic miniature and sub-miniature snap-action switches are ideal for extremely harsh and demanding environments as found in aircraft, military, aerospace, and aircraft engines applications. KLIXON® precision hermetic switches have been used for over 40 years in a wide range of applications, and can be found on virtually all commercial and military aircraft, as well as various space vehicles and satellites worldwide.

Sensata specialize in custom and semi-custom solutions. Over time we have built-up a design library of over 2,000 switch packages, and have an off the shelf solution to meet most standard and non-standard needs.

We offer a wide choice of precision switches ideally suited for rugged and high cost of failure applications. Sensata Technologies also manufactures a hermetically sealed snap-acting pressure switch line for applications in aerospace and electronics where high reliability and resistance to severe environments is essential.

## APPLICATIONS

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- Aircraft landing gear and helicopter weight-on-wheels
- Valve position indication in aircraft engines and APU's
- Aircraft environmental control systems and engine controls
- Aircraft flight control surfaces
- Stores away (munitions)
- Door stairway indication
- Brake controls
- Parachute openers
- Bomb racks and ejectors
- APUs
- Satellite panel indication and satellite arm indication
- Pilot ejection seats
- Missile launchers
- Thrust reversers
- Explosive actuators
- EVA equipment
- IUS platform
- Hydraulic / servo controls
- Engine valve indication
- Gearboxes
- Warhead safety circuits
- Weapon firing systems and trigger switches
- Rocket motor controls
- Space station

## NOMENCLATURE

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Precision hermetic switches are often referred to as:

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

## 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.

### 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

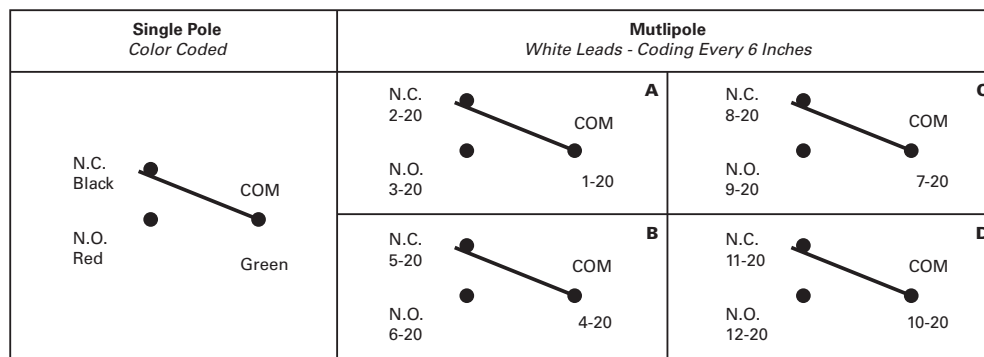
The number of circuits that each individual pole of a switch can control. The number of throws is completely independent of the number of poles.

### 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.

*\* 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.*

## 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 travelling across the contact while opening, causing arcing.

### 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

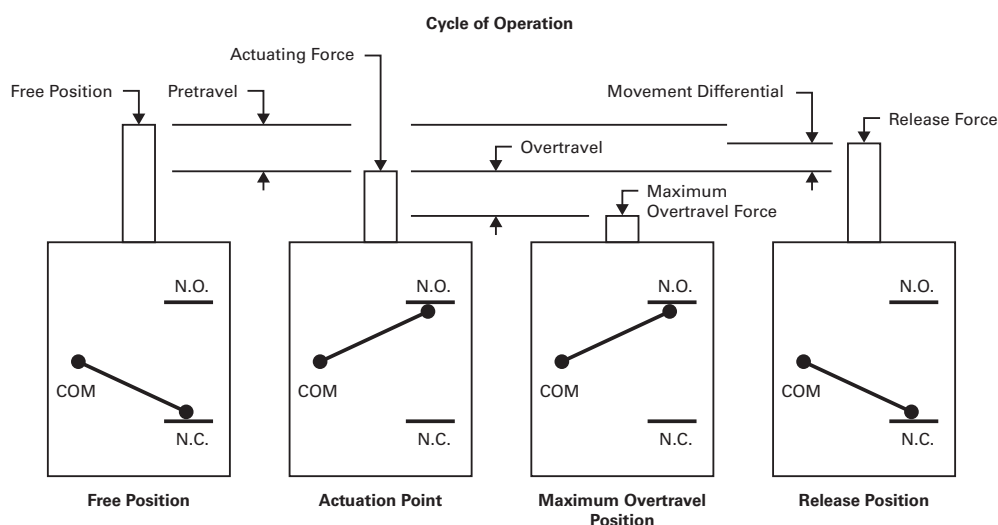
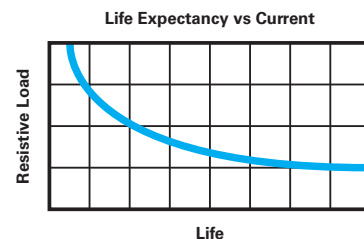
The level to which the force on the button must be reduced to allow the contacts to snap from the normally open position to the normally closed contact position.

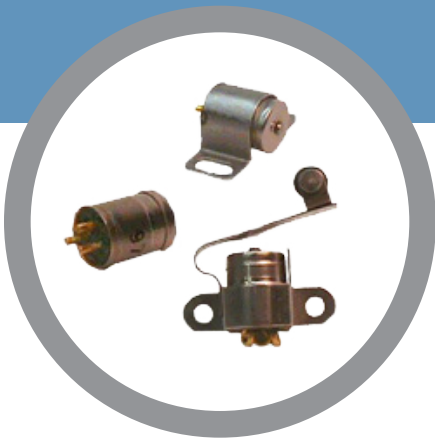
### Overtravel

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.





# KLIXON® | AT Series

## Snap Action Precision Position Switches

### FEATURES

- Meet the demands of low-level current switching applications
- Various mechanical and electrical configurations available as standard or custom configurations
- Actuation plungers of various shapes and materials available
- Multi-pole switch package options
- Mounting via threaded brushings or side-plate design
- Wiring can be supplied as flying leads or via a variety of standard connectors

### INTRODUCTION

The Klixon® AT series are our most popular family of precision hermetic switches because of their broad performance envelope, small size, and ability to be easily incorporated into a wide variety of packages. Klixon® AT series switches are available as basic switches, basic switches with mounting brackets and actuators, or as switch packages. Packages are formed by configuring various electrical terminations, actuator means and physical construction around one or more basic switches.

Within this family there are four basic switches: the AT, the 3AT, the 4AT, and the 10AT. Each has been optimized for particular performance characteristics and is capable of meeting the demands of low-level current switching applications.

#### Standard AT Series

The AT basic switch is the standard device in the AT family, capable of switching up to 3 amps at 28 VDC into resistive loads. See the chart for inductive and lamp loads. Electrical life at these loads is 25K cycles, minimum. Lower currents extend life up to the minimum mechanical life of 100K cycles.

#### High Temperature 3AT Series

If your application requires a device which operates at higher ambient temperatures, then consider the 3AT. Electrical and mechanical life are the same, while the maximum current level is 1A at 28 VDC into resistive loads.

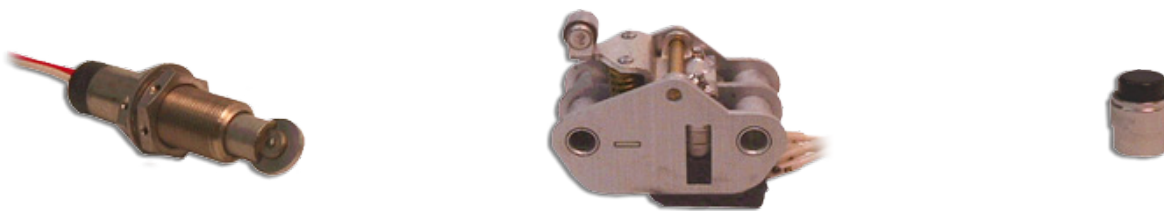
#### Low Temperature 4AT Series

This device is designed to operate at temperatures lower than the standard AT switch, ideal for space applications. Electrical life at 3A, 28VDC is 10K cycles for resistive loads.

#### High Amperage 10AT Series

Designed to operate at lower temperatures and higher current capability than the standard AT switch, the 10AT's maximum current has been extended to 4A at 28VDC (resistive), with an electrical life is 25K cycles and mechanical life is 50K cycles. 10AT's are on the military qualified parts list (MIL-S-8805).





### PERFORMANCE & ACTUATION CHARACTERISTICS CHART

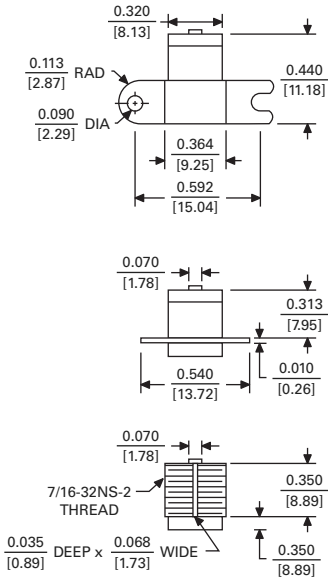
		AT		3AT	4AT	10AT
<b>Device Type</b>		Standard		High Temperature	Low Temperature	High Amperage
<b>Maximum Actuating Force (STP)</b>		20 oz		20 oz	28 oz	30 oz
<b>Minimum Release Force (STP)</b>		4 oz		4 oz	1 oz	1 oz
<b>Maximum Pretravel</b>		0.009"		0.009"	0.009"	0.009"
<b>Maximum Movement Differential</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.

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

3AT47 - 1 3 - 6



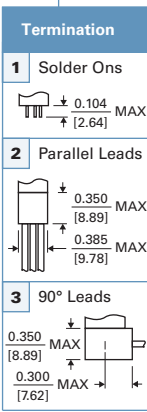
AT104-01, 10AT17-03-10, 10AT15-03-10

Bracket  
Flange  
Threads

Actuating Force (max)  
Release Force (max)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)

Basic Switch & Actuator/Body Style			
AT373	3AT46	4AT48	10AT15
std	hi temp	low temp	hi amp
20 oz	20 oz	28 oz	30 oz
1 oz	1 oz	1 oz	4 oz
		.009" (0.23mm)	
			.005" (0.13mm)
.003" (0.38mm)			
No	No	No	No
5 lb	5 lb	5 lb	5 lb
0.15 oz	0.15 oz	0.15 oz	0.15 oz

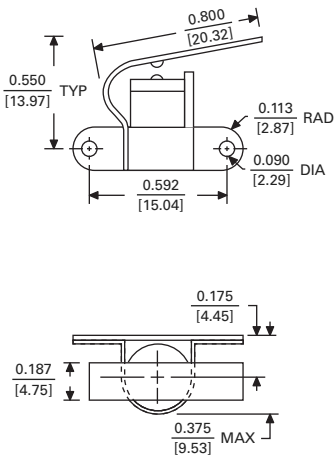
Operation	
0	SPDT
1	SPST, N.C.
2	SPST, N.O.



Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

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

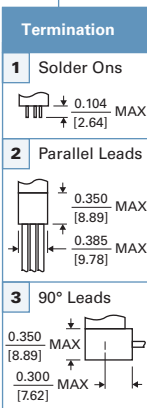
AT289 - 2 2 - 5



Actuating Force (max)  
Release Force (max)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)

Basic Switch & Actuator/Body Style			
AT289	3AT40	4AT43	10AT27
std	hi temp	low temp	hi amp
24 oz	24 oz	35 oz	35 oz
1 oz	1 oz	1 oz	4 oz
		.250" (6.35mm)	
		.050" (1.27mm)	
.015" (0.38mm)			
Yes	Yes	Yes	Yes
5 lb	5 lb	5 lb	5 lb
0.18 oz	0.18 oz	0.18 oz	0.18 oz

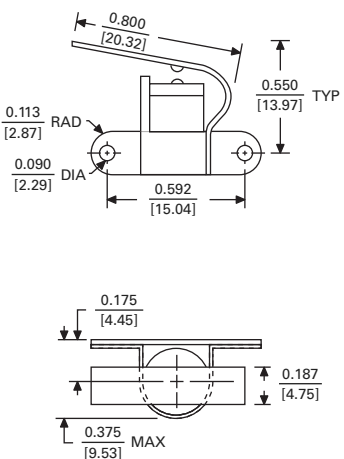
Operation	
0	SPDT
1	SPST, N.C.
2	SPST, N.O.



Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

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

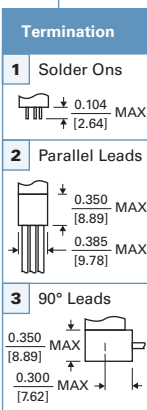
AT290 - 2 2 - 4



Actuating Force (max)  
Release Force (max)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)

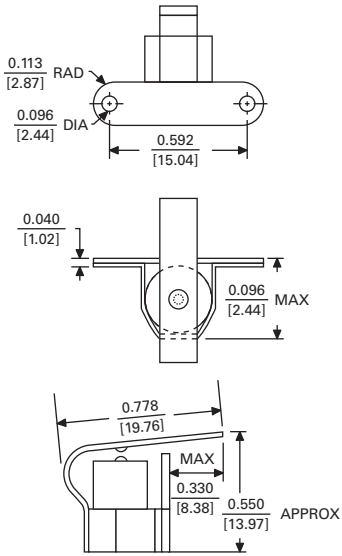
Basic Switch & Actuator/Body Style			
AT290	3AT41	4AT44	10AT28
std	hi temp	low temp	hi amp
24 oz	24 oz	35 oz	35 oz
1 oz	1 oz	1 oz	4 oz
		.250" (6.35mm)	
		.050" (1.27mm)	
.015" (0.38mm)			
Yes	Yes	Yes	Yes
5 lb	5 lb	5 lb	5 lb
0.18 oz	0.18 oz	0.18 oz	0.18 oz

Operation	
0	SPDT
1	SPST, N.C.
2	SPST, N.O.



Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)



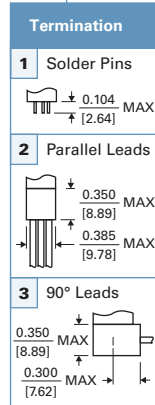


**BASIC "AT", CENTRAL ACTUATOR, 1 POLE**

**3AT53 - 2 1 - 4**

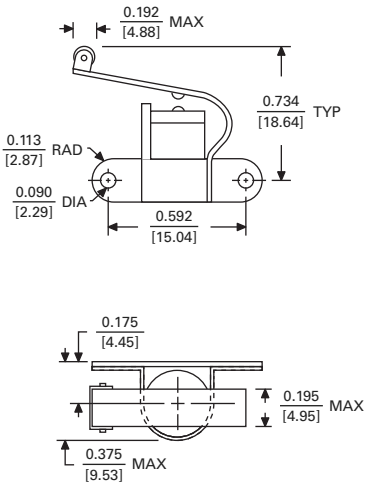
Basic Switch & Actuator/Body Style				
AT294	3AT53	4AT50	10AT29	
std	hi temp	low temp	hi amp	
Actuating Force (max)	24 oz	24 oz	35 oz	35 oz
Release Force (max)	1 oz	1 oz	1 oz	4 oz
Pretravel (max)	.250" (6.35mm)			
Movement Diff. (max)	.050" (1.27mm)			
Overtravel (min)	.015" (0.38mm)			
Positive Overtravel Stop	Yes	Yes	Yes	Yes
Max Force on Actuator	5 lb	5 lb	5 lb	5 lb
Approx Weight (no leads)	0.2 oz	0.2 oz	0.2 oz	0.2 oz

Operation	
0	SPDT
1	SPST, N.C.
2	SPST, N.O.



Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

Actuating Force (max)  
Release Force (max)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)

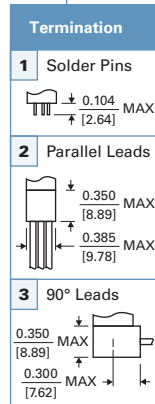


**BASIC "AT", LEFT HAND ACTUATOR, 1 POLE**

**AT292 - 1 2 - 5**

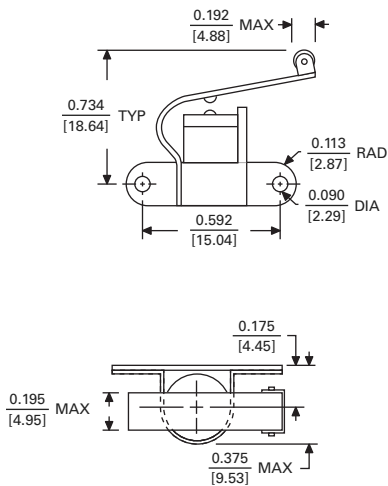
Basic Switch & Actuator/Body Style				
AT292	3AT43	4AT46	10AT31	
std	hi temp	low temp	hi amp	
Actuating Force (max)	24 oz	24 oz	35 oz	35 oz
Release Force (max)	1 oz	1 oz	1 oz	4 oz
Pretravel (max)	.250" (6.35mm)			
Movement Diff. (max)	.050" (1.27mm)			
Overtravel (min)	.015" (0.38mm)			
Positive Overtravel Stop	Yes	Yes	Yes	Yes
Max Force on Actuator	5 lb	5 lb	5 lb	5 lb
Approx Weight (no leads)	0.18 oz	0.18 oz	0.18 oz	0.18 oz

Operation	
0	SPDT
1	SPST, N.C.
2	SPST, N.O.



Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

Actuating Force (max)  
Release Force (max)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)

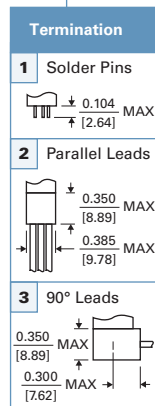


**BASIC "AT", RIGHT HAND ACTUATOR, 1 POLE**

**AT291 - 2 2 - 2**

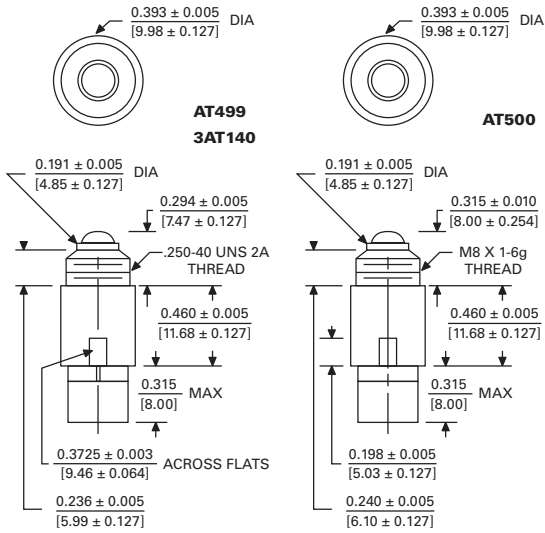
Basic Switch & Actuator/Body Style				
AT291	3AT42	4AT45	10AT30	
std	hi temp	low temp	hi amp	
Actuating Force (max)	24 oz	24 oz	35 oz	35 oz
Release Force (max)	1 oz	1 oz	1 oz	4 oz
Pretravel (max)	.250" (6.35mm)			
Movement Diff. (max)	.050" (1.27mm)			
Overtravel (min)	.015" (0.38mm)			
Positive Overtravel Stop	Yes	Yes	Yes	Yes
Max Force on Actuator	5 lb	5 lb	5 lb	5 lb
Approx Weight (no leads)	0.2 oz	0.2 oz	0.2 oz	0.2 oz

Operation	
0	SPDT
1	SPST, N.C.
2	SPST, N.O.



Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

Actuating Force (max)  
Release Force (max)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)



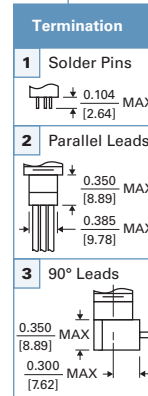
### THREADED HEX BODY, FLAT & ROUND PLUNGER, 1 POLE

AT500 - 2 2 - 10

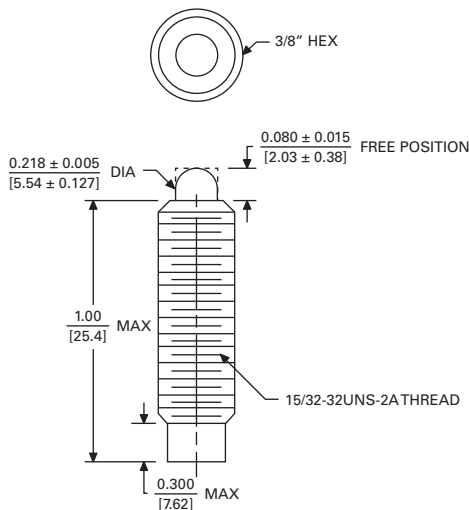
Basic Switch & Actuator/Body Style		
AT499	3AT140	AT500
<i>std</i>	<i>hi temp</i>	<i>std</i>
Actuating Force (max)		
Release Force (max)		
Pretravel (max)		
Movement Diff. (max)		
Overtravel (min)		
Positive Overtravel Stop		
Max Force on Actuator		
Approx Weight (no leads)		

Actuating Force (max)  
Release Force (max)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)

Operation	
0	SPDT
1	SPST, N.C.
2	SPST, N.O.



Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)



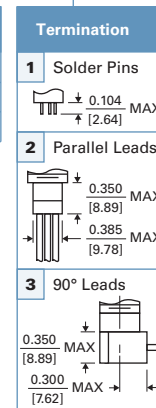
### THREADED HEX BODY, FLAT & ROUND PLUNGER, 1 POLE

10AT384 - 2 2 - 10

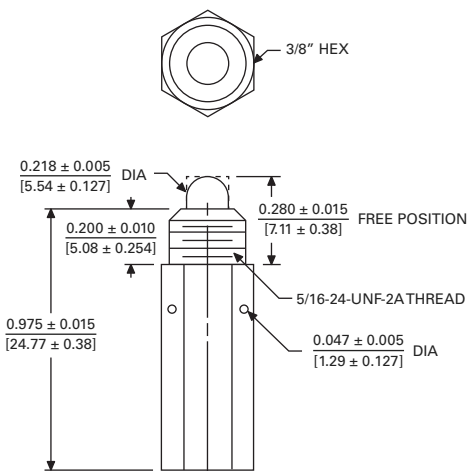
Basic Switch & Actuator/Body Style		
AT414	3AT141	10AT384
<i>std</i>	<i>hi temp</i>	<i>hi amp</i>
Actuating Force (max)		
Release Force (max)		
Pretravel (max)		
Movement Diff. (max)		
Overtravel (min)		
Positive Overtravel Stop		
Max Force on Actuator		
Approx Weight (no leads)		

Flat Plunger  
Round Plunger  
Actuating Force (max)  
Release Force (max)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)

Operation	
0	SPDT
1	SPST, N.C.
2	SPST, N.O.



Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)



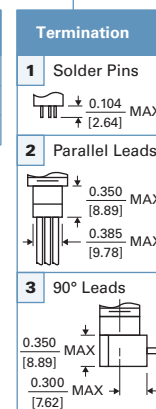
### THREADED HEX BODY, FLAT & ROUND PLUNGER, 1 POLE

AT394 - 0 3 - 3

Basic Switch & Actuator/Body Style		
AT393	3AT143	10AT361
<i>std</i>	<i>hi temp</i>	<i>hi amp</i>
Actuating Force (max)		
Release Force (max)		
Pretravel (max)		
Movement Diff. (max)		
Overtravel (min)		
Positive Overtravel Stop		
Max Force on Actuator		
Approx Weight (no leads)		

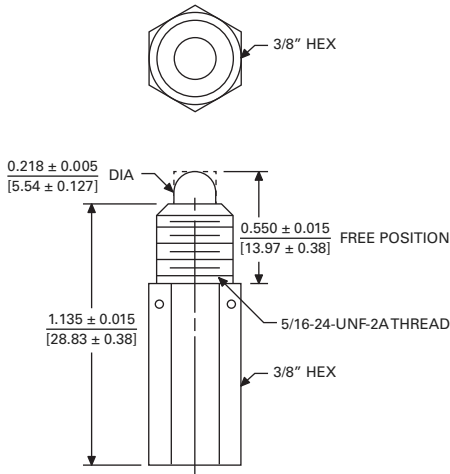
Flat Plunger  
Round Plunger  
Actuating Force (max)  
Release Force (max)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)

Operation	
0	SPDT
1	SPST, N.C.
2	SPST, N.O.

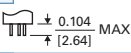
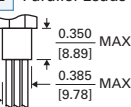
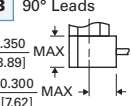


Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

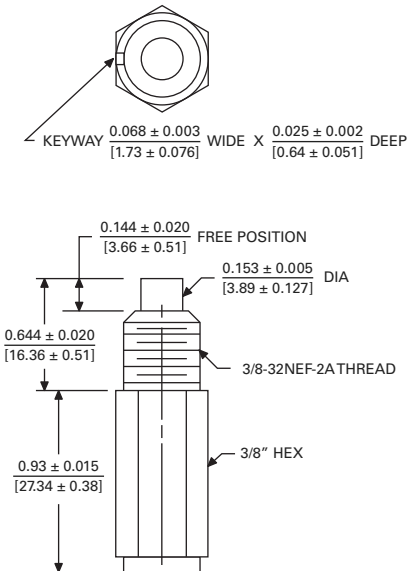
THREADED HEX BODY, FLAT & ROUND PLUNGER, 1 POLE



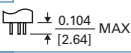
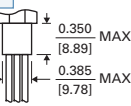
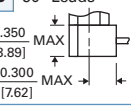
**10AT364 - 0 3 - 10**

	Basic Switch & Actuator/Body Style			Operation	Termination	Lead Length
	AT395	3AT145	10AT363			
Flat Plunger	AT395	3AT145	10AT363	0 SPDT 1 SPST, N.C. 2 SPST, N.O.	1 Solder Pins  2 Parallel Leads  3 90° Leads 	1 6" (153mm) 2 12" (305mm) 3 18" (458mm) 4 24" (610mm) 5 30" (762mm) 6 36" (915mm) 7 42" (1067mm) 8 48" (1220mm) 9 60" (1524mm) 10 72" (1829mm)
Round Plunger	AT396	3AT146	10AT364			
Actuating Force (max)	20 oz		30 oz			
Release Force (max)	1 oz		4 oz			
Pretravel (max)	.010" (.254mm)					
Movement Diff. (max)	.005" (.127mm)					
Overtravel (min)	.125" (3.18mm)					
Positive Overtravel Stop	Yes		Yes			
Max Force on Actuator	20 lb		20 lb			
Approx Weight (no leads)	0.6 oz		0.6 oz			

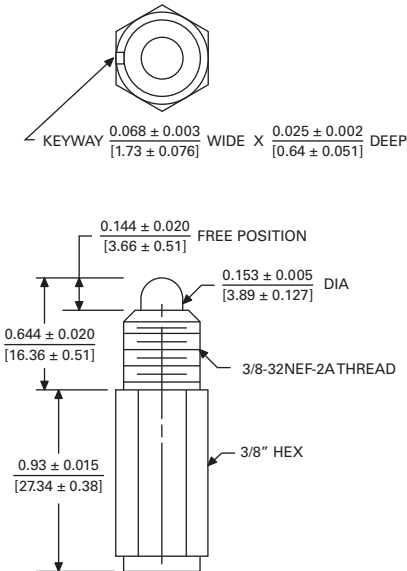
THREADED HEX BODY, FLAT PLUNGER, 1 POLE




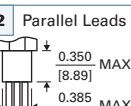
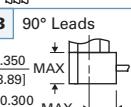
**AT268 - 2 2 - 2**

	Basic Switch & Actuator/Body Style			Operation	Termination	Lead Length
	AT268	3AT138	10AT7			
Actuating Force (max)	104 oz			0 SPDT 1 SPST, N.C. 2 SPST, N.O.	1 Solder Pins  2 Parallel Leads  3 90° Leads 	1 6" (153mm) 2 12" (305mm) 3 18" (458mm) 4 24" (610mm) 5 30" (762mm) 6 36" (915mm) 7 42" (1067mm) 8 48" (1220mm) 9 60" (1524mm) 10 72" (1829mm)
Release Force (max)	24 oz					
Plunger Seal / MIL-S-8805	Yes					
Pretravel (max)	.010" (.254mm)					
Movement Diff. (max)	.005" (.127mm)					
Overtravel (min)	.060" (1.52mm)					
Positive Overtravel Stop	Yes					
Max Force on Actuator	20 lb					
Approx Weight (no leads)	0.5 oz					

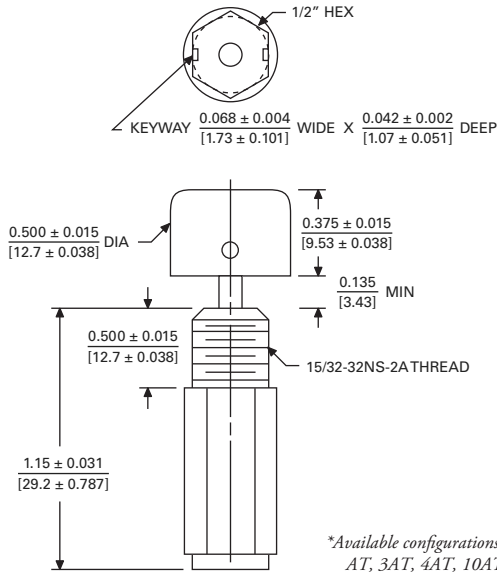
THREADED HEX BODY, ROUND PLUNGER, 1 POLE



**AT269 - 2 2 - 2**

	Basic Switch & Actuator/Body Style			Operation	Termination	Lead Length
	AT269	3AT139	10AT76			
Actuating Force (max)	104 oz			0 SPDT 1 SPST, N.C. 2 SPST, N.O.	1 Solder Pins  2 Parallel Leads  3 90° Leads 	1 6" (153mm) 2 12" (305mm) 3 18" (458mm) 4 24" (610mm) 5 30" (762mm) 6 36" (915mm) 7 42" (1067mm) 8 48" (1220mm) 9 60" (1524mm) 10 72" (1829mm)
Release Force (max)	24 oz					
Plunger Seal / MIL-S-8805	Yes					
Pretravel (max)	.020" (.508mm)					
Movement Diff. (max)	.010" (.254mm)					
Overtravel (min)	.125" (3.18mm)					
Positive Overtravel Stop	Yes					
Max Force on Actuator	30 lb					
Approx Weight (no leads)	1.0 oz					

## THREADED HEX BODY, PADDLE PLUNGER, 1 POLE



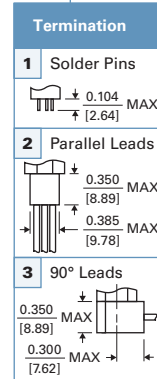
\*3AT / 4AT versions available

Actuating Force (max)  
Release Force (max)  
Plunger Seal / MIL-S-8805  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)

Basic Switch & Actuator/Body Style	AT224		10AT87	
	std	hi amp	std	hi amp
Actuating Force (max)	104 oz	104 oz	104 oz	104 oz
Release Force (max)	24 oz	24 oz	24 oz	24 oz
Plunger Seal / MIL-S-8805	Yes	Yes	Yes	Yes
Pretravel (max)	.020" (.508mm)			
Movement Diff. (max)	.010" (.254mm)			
Overtravel (min)	.125" (3.18mm)			
Positive Overtravel Stop	Yes	Yes	Yes	Yes
Max Force on Actuator	30 lb		30 lb	
Approx Weight (no leads)	1.1 oz		1.1 oz	

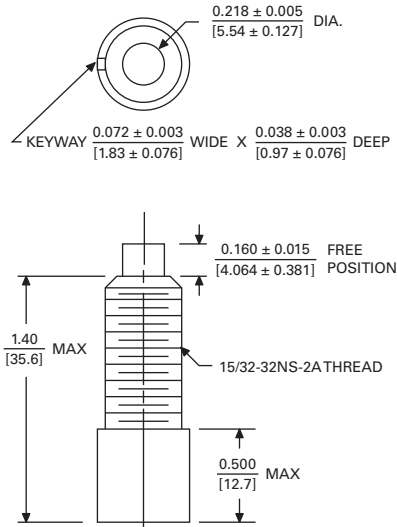
AT87 - 0 3 - 9

Operation	
0	SPDT
1	SPST, N.C.
2	SPST, N.O.



Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

## THREADED, FLAT PLUNGER, 1 POLE

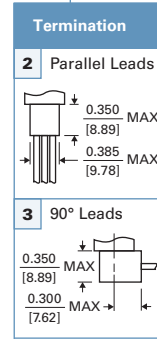


Actuating Force (max)  
Release Force (max)  
Plunger Seal / MIL-S-8805  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)

Basic Switch & Actuator/Body Style	AT400		10AT366		AT403		10AT369	
	std	hi amp	std	hi amp	std	hi amp	std	hi amp
Actuating Force (max)	20 oz	30 oz	104 oz	112 oz	104 oz	112 oz	104 oz	112 oz
Release Force (max)	1 oz	4 oz	24 oz	24 oz	24 oz	24 oz	24 oz	24 oz
Plunger Seal / MIL-S-8805	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Pretravel (max)	.010" (.254mm)		.020" (.51mm)		.010" (.254mm)		.020" (.51mm)	
Movement Diff. (max)	.005" (.127mm)		.005" (.127mm)		.005" (.127mm)		.005" (.127mm)	
Overtravel (min)	.125" (3.18mm)		.125" (3.18mm)		.125" (3.18mm)		.125" (3.18mm)	
Positive Overtravel Stop	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Max Force on Actuator	30 lb		30 lb		30 lb		30 lb	
Approx Weight (no leads)	1.2 oz	1.2 oz	1.2 oz	1.2 oz	1.2 oz	1.2 oz	1.2 oz	1.2 oz

AT403 - 0 2 - 4

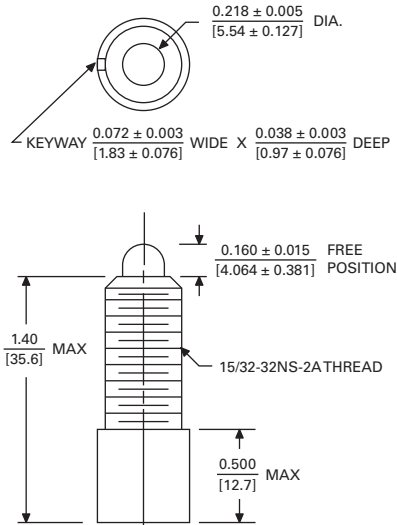
Operation	
0	SPDT
1	SPST, N.C.
2	SPST, N.O.



Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

\*3AT / 4AT versions available

## THREADED, ROUND PLUNGER, 1 POLE

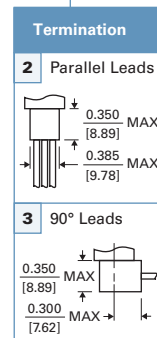


Actuating Force (max)  
Release Force (max)  
Plunger Seal / MIL-S-8805  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)

Basic Switch & Actuator/Body Style	AT401		10AT367		AT404		10AT370	
	std	hi amp	std	hi amp	std	hi amp	std	hi amp
Actuating Force (max)	20 oz	30 oz	104 oz	112 oz	104 oz	112 oz	104 oz	112 oz
Release Force (max)	1 oz	4 oz	24 oz	24 oz	24 oz	24 oz	24 oz	24 oz
Plunger Seal / MIL-S-8805	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Pretravel (max)	.010" (.254mm)		.020" (.51mm)		.010" (.254mm)		.020" (.51mm)	
Movement Diff. (max)	.005" (.127mm)		.005" (.127mm)		.005" (.127mm)		.005" (.127mm)	
Overtravel (min)	.125" (3.18mm)		.125" (3.18mm)		.125" (3.18mm)		.125" (3.18mm)	
Positive Overtravel Stop	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Max Force on Actuator	30 lb		30 lb		30 lb		30 lb	
Approx Weight (no leads)	1.2 oz	1.2 oz	1.2 oz	1.2 oz	1.2 oz	1.2 oz	1.2 oz	1.2 oz

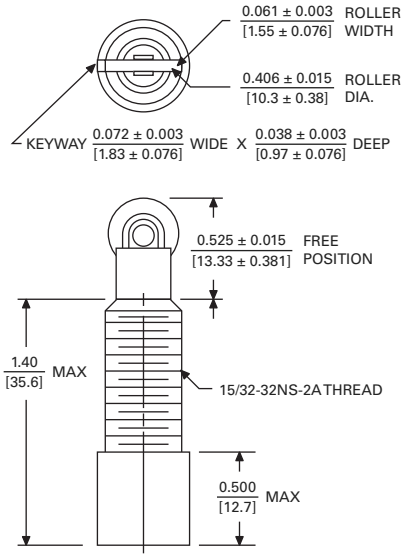
AT401 - 2 3 - 1

Operation	
0	SPDT
1	SPST, N.C.
2	SPST, N.O.



Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

\*3AT / 4AT versions available



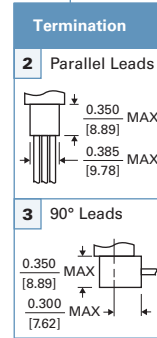
THREADED, ROLLER PLUNGER, 1 POLE

10AT371 - 1 3 - 9

Basic Switch & Actuator/Body Style			
AT402	10AT368	AT405	10AT371
std	hi amp	std	hi amp
20 oz	30 oz	104 oz	112 oz
1 oz	4 oz	24 oz	24 oz
No	No	Yes	Yes
.010" (.254mm)	.020" (.51mm)	.005" (.127mm)	.005" (.127mm)
.125" (3.18mm)	.125" (3.18mm)	Yes	Yes
30 lb	30 lb	30 lb	30 lb
1.3 oz	1.3 oz	1.3 oz	1.3 oz

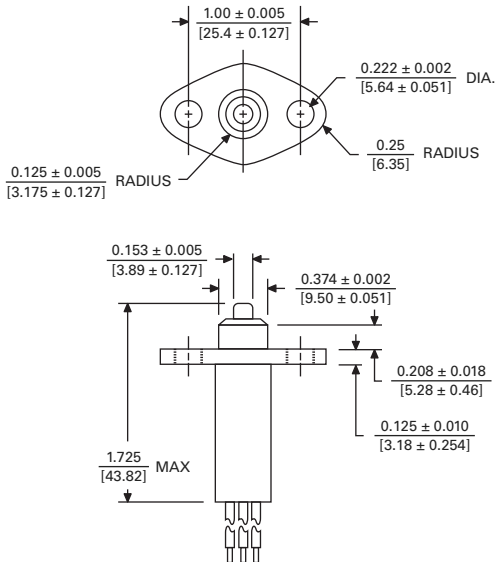
Actuating Force (max)  
 Release Force (max)  
 Plunger Seal / MIL-S-8805  
 Pretravel (max)  
 Movement Diff. (max)  
 Overtravel (min)  
 Positive Overtravel Stop  
 Max Force on Actuator  
 Approx Weight (no leads)

Operation	
0	SPDT
1	SPST, N.C.
2	SPST, N.O.



Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

\* 3AT / 4AT versions available



FLANGE MOUNT, SEALED PLUNGER, 1 POLE

10AT376 - 0 2 - 7

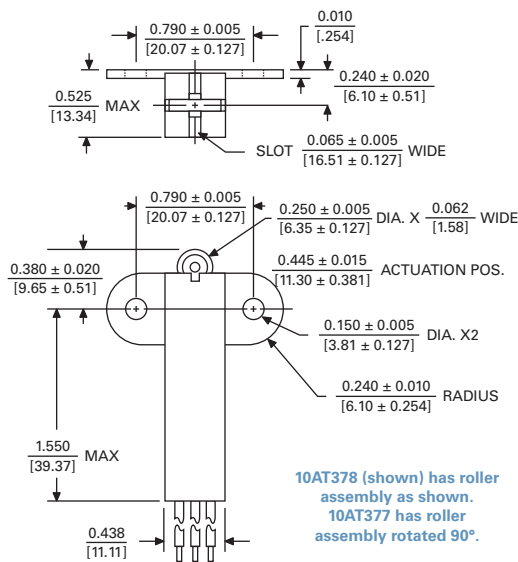
Basic Switch & Actuator/Body Style	
10AT376	
hi amp	
192 oz	
112 oz	
Yes	
.040" (1.02mm)	
.010" (.254mm)	
.125" (3.18mm)	
Yes	
30 lbs	
1.1 oz	

Actuating Force (max)  
 Release Force (max)  
 Plunger Seal / MIL-S-8805  
 Pretravel (max)  
 Movement Diff. (max)  
 Overtravel (min)  
 Positive Overtravel Stop  
 Max Force on Actuator  
 Approx Weight (no leads)

Operation	
0	SPDT
1	SPST, N.C.
2	SPST, N.O.

Termination	
2	Parallel Leads

Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)



FLANGE MOUNT, SEALED ROLLER PLUNGER, 1 POLE

10AT377 - 1 2 - 5

Basic Switch & Actuator/Body Style	
10AT377	10AT378
hi amp	hi amp
30 oz	30 oz
16 oz	16 oz
Yes	Yes
.040" (1.02mm)	
.010" (.254mm)	
.125" (3.18mm)	
Yes	Yes
30 lbs	30 lbs
1.2 oz	1.2 oz

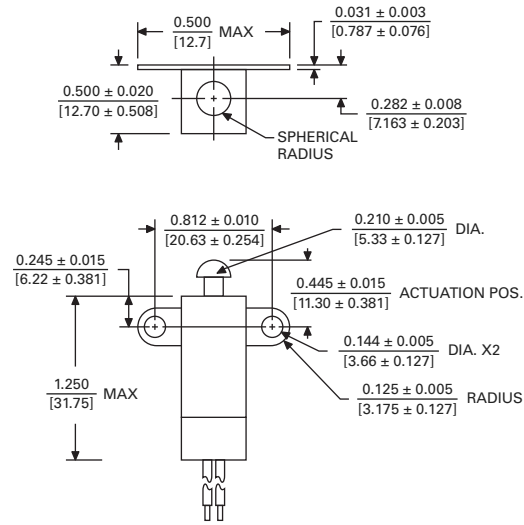
Actuating Force (max)  
 Release Force (max)  
 Plunger Seal / MIL-S-8805  
 Pretravel (max)  
 Movement Diff. (max)  
 Overtravel (min)  
 Positive Overtravel Stop  
 Max Force on Actuator  
 Approx Weight (no leads)

Operation	
0	SPDT
1	SPST, N.C.
2	SPST, N.O.

Termination	
2	Parallel Leads

Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

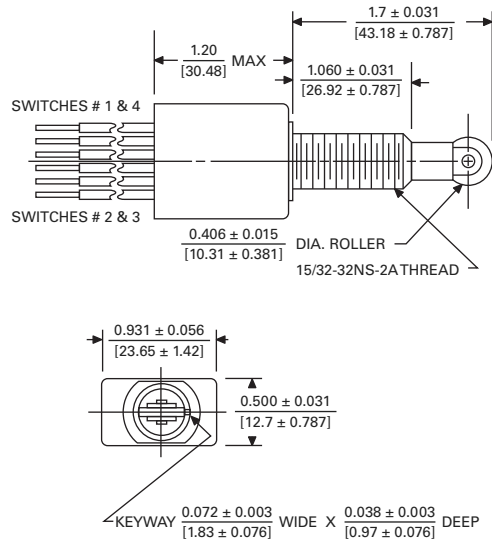
10AT378 (shown) has roller assembly as shown.  
 10AT377 has roller assembly rotated 90°.



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

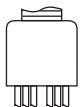

10AT379 - 1 2 - 9

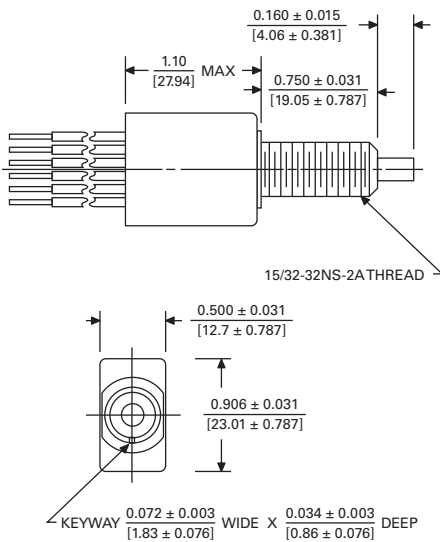
Basic Switch & Actuator/Body Style	Operation	Termination	Lead Length
<b>10AT379</b>	<b>0</b> SPDT	<b>2</b> Parallel Leads	<b>1</b> 6" (153mm)
<i>hi amp</i>	<b>1</b> SPST, N.C.		<b>2</b> 12" (305mm)
<i>Actuating Force (max)</i>	<b>2</b> SPST, N.O.		<b>3</b> 18" (458mm)
<i>Release Force (max)</i>			<b>4</b> 24" (610mm)
<i>Plunger Seal / MIL-S-8805</i>			<b>5</b> 30" (762mm)
<i>Pretravel (max)</i>			<b>6</b> 36" (915mm)
<i>Movement Diff. (max)</i>			<b>7</b> 42" (1067mm)
<i>Overtravel (min)</i>			<b>8</b> 48" (1220mm)
<i>Positive Overtravel Stop</i>			<b>9</b> 60" (1524mm)
<i>Max Force on Actuator</i>			<b>10</b> 72" (1829mm)
<i>Approx Weight (no leads)</i>			



### THREADED, SEALED ROLLER PLUNGER, 2 POLE

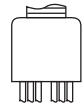
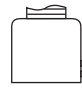
10AT373 - 3 3 - 1

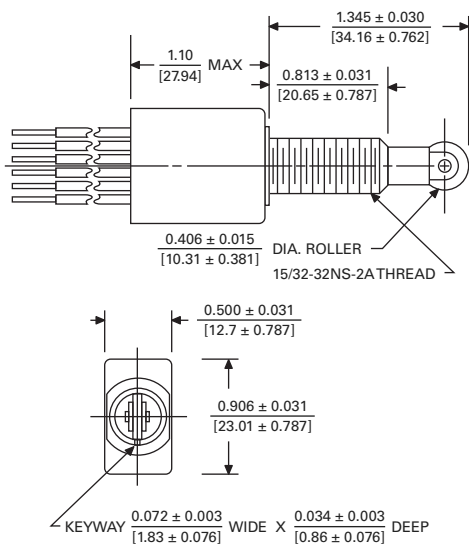
Basic Switch & Actuator/Body Style	Operation	Termination	Lead Length
<b>3AT147</b> <b>10AT373</b>	<b>3</b> DPDT	<b>2</b> Parallel Leads	<b>1</b> 6" (153mm)
<i>hi temp</i> <i>hi amp</i>	<b>4</b> DPST, N.C.		<b>2</b> 12" (305mm)
<i>Actuating Force (max)</i>	<b>5</b> DPST, N.O.	<b>3</b> 90° Leads	<b>3</b> 18" (458mm)
<i>Release Force (max)</i>	<b>6</b> DPST, NC/NO		<b>4</b> 24" (610mm)
<i>Plunger Seal / MIL-S-8805</i>			<b>5</b> 30" (762mm)
<i>Pretravel (max)</i>			<b>6</b> 36" (915mm)
<i>Movement Diff. (max)</i>			<b>7</b> 42" (1067mm)
<i>Overtravel (min)</i>			<b>8</b> 48" (1220mm)
<i>Positive Overtravel Stop</i>			<b>9</b> 60" (1524mm)
<i>Max Force on Actuator</i>			<b>10</b> 72" (1829mm)
<i>Approx Weight (no leads)</i>			



### THREADED, SEALED FLAT PLUNGER, 2 POLE

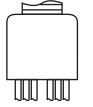
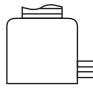
AT391 - 3 2 - 7

Basic Switch & Actuator/Body Style	Operation	Termination	Lead Length
<b>AT391</b> <b>3AT148</b> <b>10AT358</b>	<b>3</b> DPDT	<b>2</b> Parallel Leads	<b>1</b> 6" (153mm)
<i>std</i> <i>hi temp</i> <i>hi amp</i>	<b>4</b> DPST, N.C.		<b>2</b> 12" (305mm)
<i>Actuating Force (max)</i>	<b>5</b> DPST, N.O.	<b>3</b> 90° Leads	<b>3</b> 18" (458mm)
<i>Release Force (max)</i>	<b>6</b> DPST, N.C./N.O.		<b>4</b> 24" (610mm)
<i>Plunger Seal / MIL-S-8805</i>			<b>5</b> 30" (762mm)
<i>Pretravel (max)</i>			<b>6</b> 36" (915mm)
<i>Movement Diff. (max)</i>			<b>7</b> 42" (1067mm)
<i>Overtravel (min)</i>			<b>8</b> 48" (1220mm)
<i>Positive Overtravel Stop</i>			<b>9</b> 60" (1524mm)
<i>Max Force on Actuator</i>			<b>10</b> 72" (1829mm)
<i>Approx Weight (no leads)</i>			



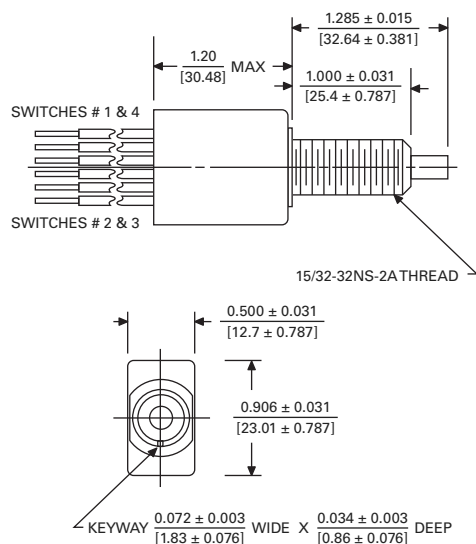
### THREADED, SEALED ROLLER PLUNGER, 2 POLE

**AT392 - 4 3 - 2**

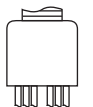
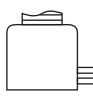
Basic Switch & Actuator/Body Style		Operation	Termination	Lead Length
<b>AT392</b>	<b>10AT359</b>	<b>3</b> DPDT	<b>2</b> Parallel Leads	<b>1</b> 6" (153mm)
<i>std</i>	<i>hi amp</i>	<b>4</b> DPST, N.C.		<b>2</b> 12" (305mm)
		<b>5</b> DPST, N.O.		<b>3</b> 18" (458mm)
		<b>6</b> DPST, N.C./N.O.		<b>4</b> 24" (610mm)
				<b>5</b> 30" (762mm)
				<b>6</b> 36" (915mm)
				<b>7</b> 42" (1067mm)
				<b>8</b> 48" (1220mm)
				<b>9</b> 60" (1524mm)
				<b>10</b> 72" (1829mm)

Actuating Force (max)  
Release Force (max)  
Plunger Seal / MIL-S-8805  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)

### THREADED, SEALED FLAT PLUNGER, 2 POLE

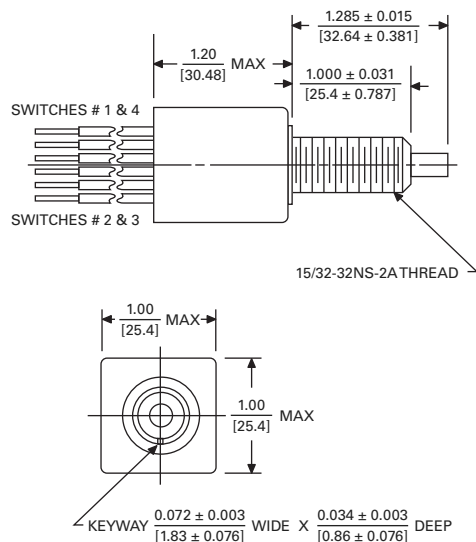


**AT406 - 6 2 - 6**

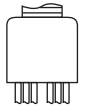
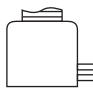
Basic Switch & Actuator/Body Style		Operation	Termination	Lead Length
<b>AT406</b>	<b>10AT372</b>	<b>3</b> DPDT	<b>2</b> Parallel Leads	<b>1</b> 6" (153mm)
<i>hi amp</i>	<i>hi amp</i>	<b>4</b> DPST, N.C.		<b>2</b> 12" (305mm)
		<b>5</b> DPST, N.O.		<b>3</b> 18" (458mm)
		<b>6</b> DPST, N.C./N.O.		<b>4</b> 24" (610mm)
				<b>5</b> 30" (762mm)
				<b>6</b> 36" (915mm)
				<b>7</b> 42" (1067mm)
				<b>8</b> 48" (1220mm)
				<b>9</b> 60" (1524mm)
				<b>10</b> 72" (1829mm)

Actuating Force (max)  
Release Force (max)  
Plunger Seal / MIL-S-8805  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)

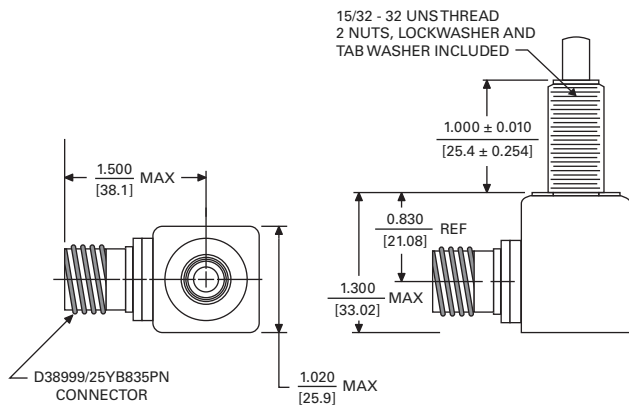
### THREADED, SEALED FLAT PLUNGER, 3 OR 4 POLE



**AT409 - 9 2 - 4**

Basic Switch & Actuator/Body Style		Operation	Termination	Lead Length
<b>AT409</b>	<b>10AT375</b>	<b>7</b> 3PDT	<b>2</b> Parallel Leads	<b>1</b> 6" (153mm)
<i>hi amp</i>	<i>hi amp</i>	<b>8</b> 3PST, N.C.		<b>2</b> 12" (305mm)
		<b>9</b> 3PST, N.O.		<b>3</b> 18" (458mm)
		<b>10</b> 4PDT		<b>4</b> 24" (610mm)
		<b>11</b> 4PST, N.C.		<b>5</b> 30" (762mm)
		<b>12</b> 4PST, N.O.		<b>6</b> 36" (915mm)
				<b>7</b> 42" (1067mm)
				<b>8</b> 48" (1220mm)
				<b>9</b> 60" (1524mm)
				<b>10</b> 72" (1829mm)

Actuating Force (max)  
Release Force (max)  
Plunger Seal / MIL-S-8805  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)



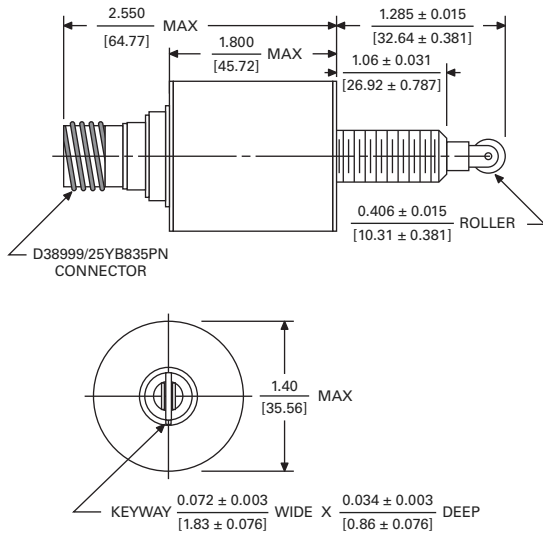
## PLUNGER SWITCH, 1 POLE

10AT482 - 1

Basic Switch & Actuator/Body Style		Operation	
<b>10AT482</b>		<b>1</b> SPST	
<i>std</i>			
Actuating Force (max)	112 oz		
Release Force (min)	16 oz		
Pretravel (max)	.020" (.508mm)		
Movement Diff. (max)	.010" (.254mm)		
Overtravel (min)	.125" (3.18mm)		
Approx Weight (no leads)	4 oz		

Actuating Force (max)  
Release Force (min)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Approx Weight (no leads)

\*Various connectors available



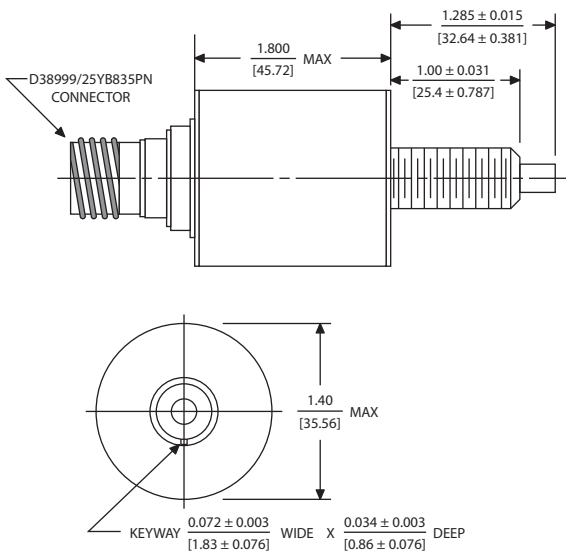
## ROLLER PLUNGER SWITCH, 4 POLE

10AT490 - 1

Basic Switch & Actuator/Body Style		Operation	
<b>10AT490</b>		<b>1</b> 4PDT	
<i>std</i>			
Actuating Force (max)	160 oz		
Release Force (min)	16 oz		
Pretravel (max)	.030" (.76mm)		
Movement Diff. (max)	.020" (.51mm)		
Overtravel (min)	.200" (5.08mm)		
Max Force on Actuator	30 lbs		
Approx Weight (no leads)	5.1 oz		

Actuating Force (max)  
Release Force (min)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Max Force on Actuator  
Approx Weight (no leads)

\*Various connectors available



## FLAT PLUNGER SWITCH, 4 POLE

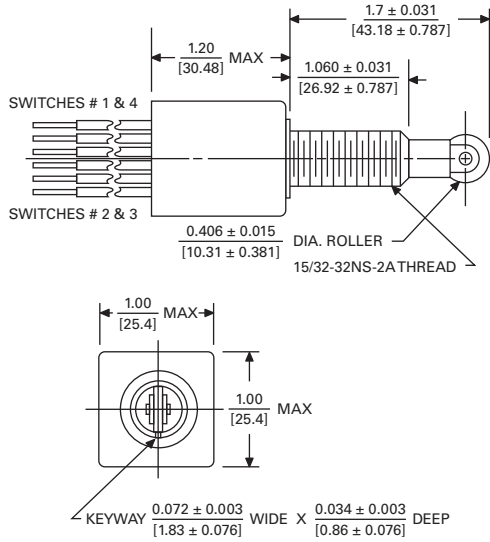
10AT493 - 1

Basic Switch & Actuator/Body Style		Operation	
<b>10AT493</b>		<b>1</b> 4PDT	
<i>std</i>			
Actuating Force (max)	160 oz		
Release Force (min)	16 oz		
Pretravel (max)	.030" (.76mm)		
Movement Diff. (max)	.020" (.51mm)		
Overtravel (min)	.200" (5.08mm)		
Max Force on Actuator	30 lbs		
Approx Weight (no leads)	5.1 oz		

Actuating Force (max)  
Release Force (min)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Max Force on Actuator  
Approx Weight (no leads)

\*Various connectors available



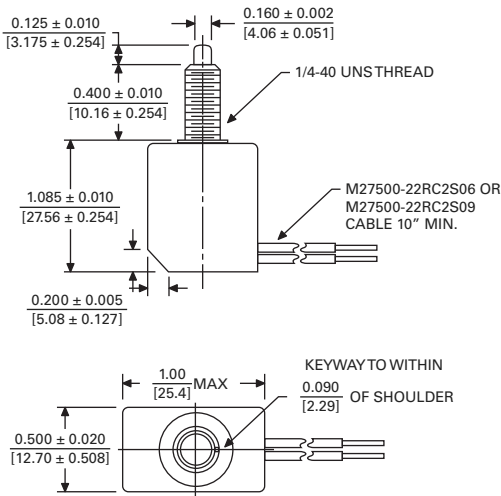


THREADED, SEALED ROLLER PLUNGER, 3 OR 4 POLE

AT408 - 7 3 - 1

Basic Switch & Actuator/Body Style		Operation	Termination	Lead Length
<b>AT408</b>	<b>10AT374</b>	<b>7</b> 3PDT	<b>2</b> Parallel Leads 	<b>1</b> 6" (153mm)
<i>hi amp</i>	<i>hi amp</i>	<b>8</b> 3PST, N.C.		<b>2</b> 12" (305mm)
160 oz	160 oz	<b>9</b> 3PST, N.O.	<b>3</b> 90° Leads 	<b>3</b> 18" (458mm)
16 oz	16 oz	<b>10</b> 4PDT		<b>4</b> 24" (610mm)
Yes	Yes	<b>11</b> 4PST, N.C.	<b>5</b> 30" (762mm)	<b>6</b> 36" (915mm)
Yes	Yes	<b>12</b> 4PST, N.O.		<b>7</b> 42" (1067mm)
Pretravel (max)	.030" (.76mm)			<b>8</b> 48" (1220mm)
Movement Diff. (max)	.020" (.51mm)			<b>9</b> 60" (1524mm)
Overtravel (min)	.200" (5.1mm)			<b>10</b> 72" (1829mm)
Positive Overtravel Stop	Yes			
Max Force on Actuator	30 lb			
Approx Weight (no leads)	3.4 oz			

Actuating Force (max)  
Release Force (max)  
Plunger Seal / MIL-S-8805  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)

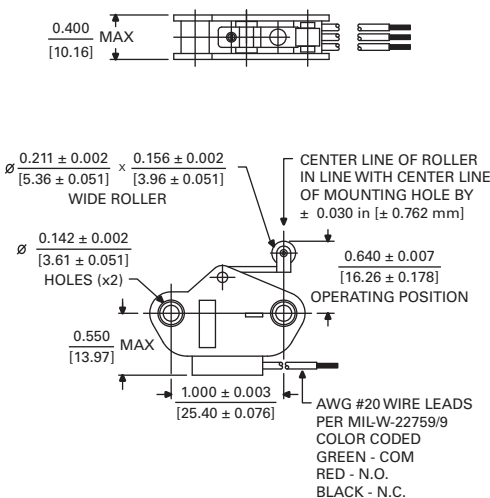


SMALLEST HERMETIC 2-POLE, PLUNGER (FLAT) SWITCH

10AT503 - 6 3 - 8

Basic Switch & Actuator/Body Style		Operation	Termination	Lead Length
<b>3AT149</b>	<b>10AT503</b>	<b>3</b> DPDT	<b>3</b> 90° Leads	<b>1</b> 6" (153mm)
<i>hi temp</i>	<i>hi amp</i>	<b>4</b> DPST, N.C.		<b>2</b> 12" (305mm)
64 oz		<b>5</b> DPST, N.O.	<b>3</b> 18" (458mm)	<b>3</b> 18" (458mm)
16 oz	No	<b>6</b> DPST, N.C. / N.O.		<b>4</b> 24" (610mm)
Plunger Seal / MIL-S-8805				<b>5</b> 30" (762mm)
Pretravel (max)	.010" (.254mm)			<b>6</b> 36" (915mm)
Movement Diff. (max)	.010" (.254mm)			<b>7</b> 42" (1067mm)
Overtravel (min)	.095" (2.41mm)			<b>8</b> 48" (1220mm)
Max Force on Actuator	20 lbs			<b>9</b> 60" (1524mm)
Approx Weight (no leads)	1.0 oz			<b>10</b> 72" (1829mm)

Actuating Force (max)  
Release Force (max)  
Plunger Seal / MIL-S-8805  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Max Force on Actuator  
Approx Weight (no leads)

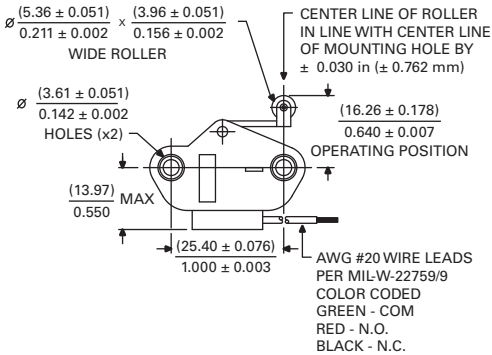
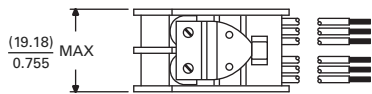


SIDE PLATE, RIGHT ARM, 1 POLE

AT355 - 2 3 - 8

Basic Switch & Actuator/Body Style			Operation	Termination	Lead Length
<b>AT355</b>	<b>3AT150</b>	<b>10AT313</b>	<b>0</b> SPDT	<b>3</b> 90° Leads	<b>1</b> 6" (153mm)
<i>std</i>	<i>hi temp</i>	<i>hi amp</i>			<b>2</b> 12" (305mm)
24 oz	4 oz		<b>1</b> SPST, N.C.	<b>3</b> 18" (458mm)	<b>3</b> 18" (458mm)
4 oz					<b>4</b> 24" (610mm)
Pretravel (max)	.040" (1.02mm)		<b>2</b> SPST, N.O.	<b>5</b> 30" (762mm)	<b>6</b> 36" (915mm)
Movement Diff. (max)	.030" (.76mm)				<b>7</b> 42" (1067mm)
Overtravel (min)	.125" (3.18mm)			<b>8</b> 48" (1220mm)	
Positive Overtravel Stop	Yes			<b>9</b> 60" (1524mm)	
Max Force on Actuator	10 lbs			<b>10</b> 72" (1829mm)	
Approx Weight (no leads)	0.40 oz				

Actuating Force (max)  
Release Force (max)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)



### SIDE PLATE, RIGHT ARM, 2 POLE

10AT314 - 3 3 - 4

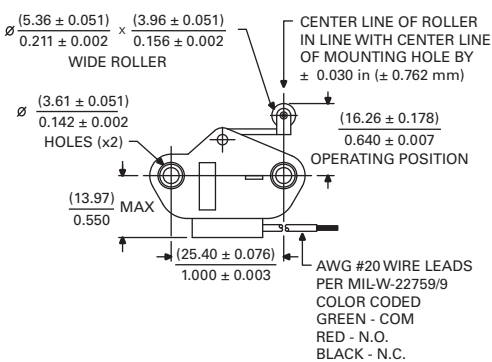
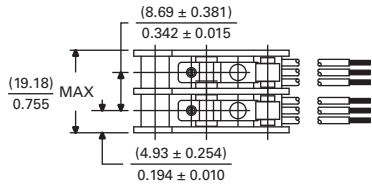
Basic Switch & Actuator/Body Style	
AT356	10AT314
<i>std</i>	<i>hi amp</i>
Actuating Force (max)	48 oz
Release Force (max)	4 oz
Pretravel (max)	.040" (1.02mm)
Movement Diff. (max)	.040" (1.02mm)
Overtravel (min)	.125" (3.18mm)
Positive Overtravel Stop	Yes
Max Force on Actuator	10 lbs
Approx Weight (no leads)	0.70 oz

Operation	
3	DPDT
4	DPST, N.C.
5	DPST, N.O.
6	DPST, N.C / N.O.

Termination	
3	90° Leads

Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

Actuating Force (max)  
Release Force (max)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)



### SIDE PLATE, RIGHT ARM, 2 POLE

10AT315 - 5 3 - 5

Basic Switch & Actuator/Body Style	
AT357	10AT315
<i>std</i>	<i>hi amp</i>
Actuating Force (max)	24 oz
Release Force (max)	4 oz
Pretravel (max)	.040" (1.02mm)
Movement Diff. (max)	.030" (.76mm)
Overtravel (min)	.125" (3.18mm)
Positive Overtravel Stop	Yes
Max Force on Actuator	10 lbs
Approx Weight (no leads)	0.80 oz

Operation	
3	DPDT
4	DPST, N.C.
5	DPST, N.O.
6	DPST, N.C / N.O.

Termination	
3	90° Leads

Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

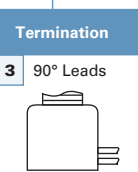
Actuating Force (max)  
Release Force (max)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)

### LEAF SPRING SWITCH, 1 POLE

10AT505 - 0 3 - 1

Basic Switch & Actuator/Body Style	
3AT151	10AT505
<i>hi temp</i>	<i>hi amp</i>
Actuating Force (max)	20 oz
Plunger Seal / MIL-S-8805	Yes
Pretravel (max)	.035" (.89mm)
Release Force (max)	4.0 oz
Movement Diff. (max)	.010" (.254mm)
Overtravel (min)	.065" (1.65mm)
Positive Overtravel Stop	Yes
Max Force on Actuator	5 lb
Approx Weight (no leads)	0.6 oz

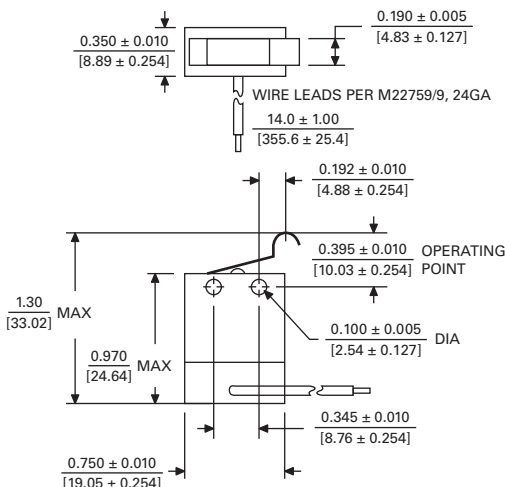
Operation	
0	SPDT

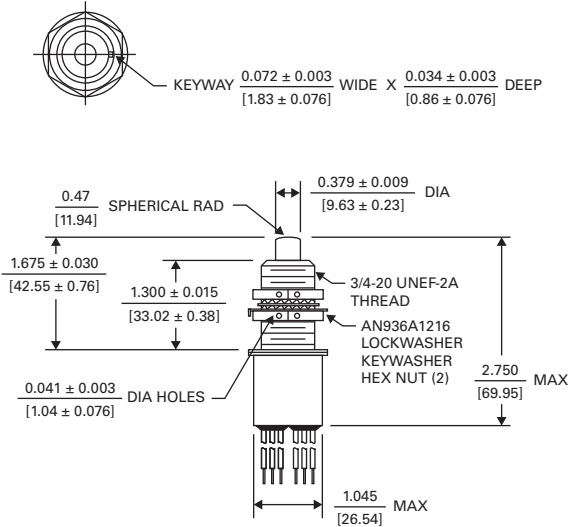


Termination	
3	90° Leads

Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

Actuating Force (max)  
Plunger Seal / MIL-S-8805  
Pretravel (max)  
Release Force (max)  
Movement Diff. (max)  
Overtravel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)





**ROUNDED PLUNGER SWITCH, 2 POLE**

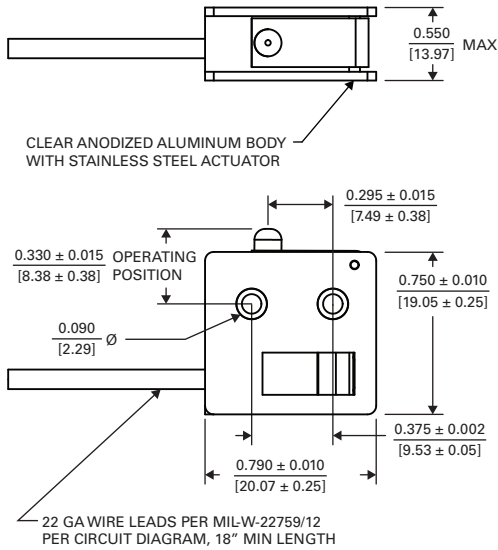
**3AT152 - 3 2 - 10**

Basic Switch & Actuator/Body Style	Operation	Termination	Lead Length
<b>3AT152</b> High Temp (500°F)	<b>3</b> DPDT <b>4</b> DPST, N.C. <b>5</b> DPST, N.O. <b>6</b> DPST, N.C / N.O.	<b>2</b> Parallel Leads	<b>1</b> 6" (153mm) <b>2</b> 12" (305mm) <b>3</b> 18" (458mm) <b>4</b> 24" (610mm) <b>5</b> 30" (762mm) <b>6</b> 36" (915mm) <b>7</b> 42" (1067mm) <b>8</b> 48" (1220mm) <b>9</b> 60" (1524mm) <b>10</b> 72" (1829mm)

Actuating Force (max)  
Release Force (min)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Max Force on Actuator  
Approx Weight (no leads)

Ref: MS24594-1 & M8805/41

\*Various connectors available



**SIDE PLATE, 1 POLE**

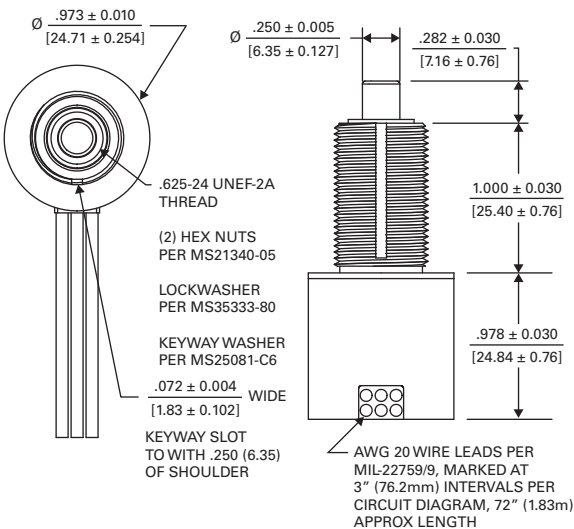
**10AT511 - 0 3 - 10**

Basic Switch & Actuator/Body Style	Operation	Termination	Lead Length
<b>3AT137</b> hi temp <b>10AT511</b> hi amp	<b>0</b> SPDT <b>1</b> SPST, N.C. <b>2</b> SPST, N.O.	<b>3</b> 90° Leads	<b>1</b> 6" (153mm) <b>2</b> 12" (305mm) <b>3</b> 18" (458mm) <b>4</b> 24" (610mm) <b>5</b> 30" (762mm) <b>6</b> 36" (915mm) <b>7</b> 42" (1067mm) <b>8</b> 48" (1220mm) <b>9</b> 60" (1524mm) <b>10</b> 72" (1829mm)

Actuating Force (max)  
Release Force (max)  
Movement Diff. (max)  
Overtravel (min)

Ref: MS27216 & M8805/8

\*Various connectors available



**FLAT PLUNGER SWITCH, 2 POLE**

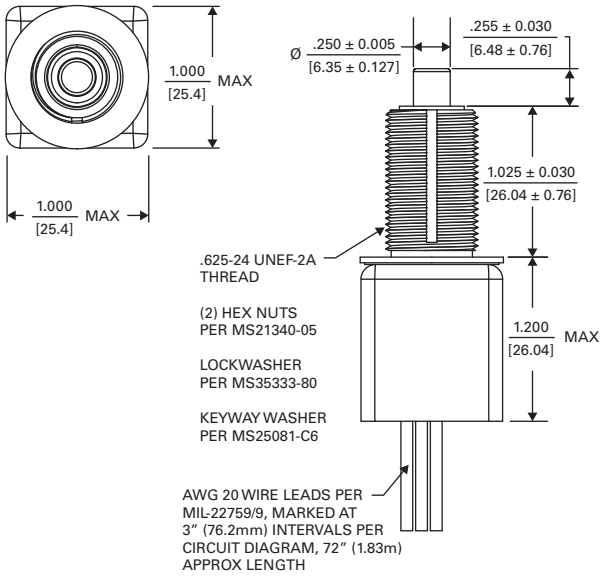
**10AT506 - 3 2 - 10**

Basic Switch & Actuator/Body Style	Operation	Termination	Lead Length
<b>10AT506</b> hi temp	<b>3</b> DPDT <b>4</b> DPST, N.C. <b>5</b> DPST, N.O. <b>6</b> DPST, N.C / N.O.	<b>2</b> Parallel Leads <b>3</b> 90° Angle Leads	<b>1</b> 6" (153mm) <b>2</b> 12" (305mm) <b>3</b> 18" (458mm) <b>4</b> 24" (610mm) <b>5</b> 30" (762mm) <b>6</b> 36" (915mm) <b>7</b> 42" (1067mm) <b>8</b> 48" (1220mm) <b>9</b> 60" (1524mm) <b>10</b> 72" (1829mm)

Actuating Force (max)  
Release Force (min)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Max Force on Actuator  
Approx Weight (no leads)

Ref: M8805/80-01

\*Various connectors available



Actuating Force (max) 96 to 192 oz  
 Release Force (min) 64 oz  
 Pretravel (max) .030" (7.62mm)  
 Movement Diff. (max) .010" (.254mm)  
 Overtravel (min) .250" (6.35mm)  
 Max Force on Actuator 192 oz  
 Approx Weight (no leads) 7.4 oz

### FLAT PLUNGER SWITCH, 3 or 4 POLE

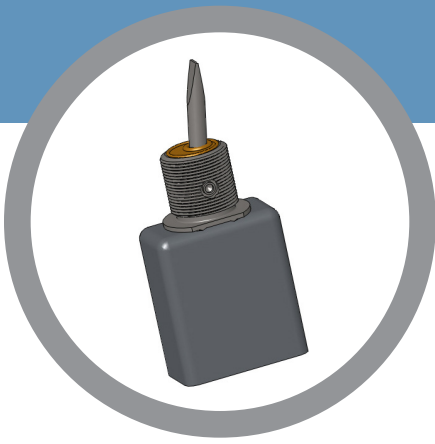
10AT507 - 3 2 - 10

Basic Switch & Actuator/Body Style		Operation		Termination		Lead Length	
<b>10AT507</b>		<b>7</b>	3PDT	<b>2</b>	Parallel Leads	<b>1</b>	6" (153mm)
<i>hi temp</i>		<b>8</b>	3PST, N.C.	<b>3</b>	90° Angle Leads	<b>2</b>	12" (305mm)
		<b>9</b>	3PST, N.O.			<b>3</b>	18" (458mm)
		<b>10</b>	4PDT			<b>4</b>	24" (610mm)
		<b>11</b>	4PST, N.C.			<b>5</b>	30" (762mm)
		<b>12</b>	4PST, N.O.			<b>6</b>	36" (915mm)
						<b>7</b>	42" (1067mm)
						<b>8</b>	48" (1220mm)
						<b>9</b>	60" (1524mm)
						<b>10</b>	72" (1829mm)

Ref: M8805/80-04

\*Various connectors available





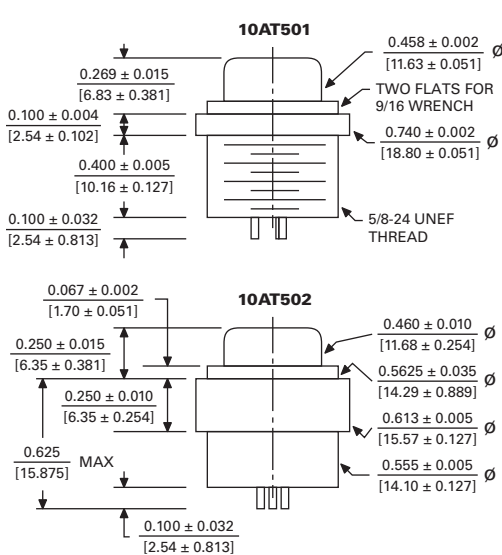
# KLIXON® | 10AT / 11AT / 12AT Series

## Hermetic Control Switch Packages

### INTRODUCTION

The Klixon® 10AT series are stainless steel, hermetic position limit switches, Klixon® 11AT and 12AT series are position control switches. All 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 40 years in a wide range of applications, and can be found on virtually all commercial and military aircraft, as well as various space vehicles and satellites worldwide.

SPECIFICATIONS	
<b>Current Rating (Resistance   Inductive   Lamp)</b>	4 amps, 28VDC   1 amp, 28VDC   2 amp, 28VDC
<b>Dielectric Strength</b>	1050 volts (RMS) Terminal to Case, 800 volts (RMS) Terminal to Terminal
<b>Life Cycles</b>	25,000 cycles @ rated load, mechanical life of 100,000 cycles
<b>Ambient Temperature Range</b>	-85°F to +275°F (-65°C to +135°C)
<b>Seal</b>	Hermetic per MIL-PRF-8805, design enclosure 5
<b>Max Leak Rate</b>	1x10 <sup>-8</sup> C.C. std. HE/sec @ 1 ATM differential
<b>Voltage Drop at 1 amp</b>	0.040 volts max
<b>Insulation</b>	100 megaohms min
<b>Vibration Resistance</b>	65G, 10-2000Hz, .5 DA or 65 G RMS
<b>Shock Resistance</b>	200 G, 6 ms sawtooth



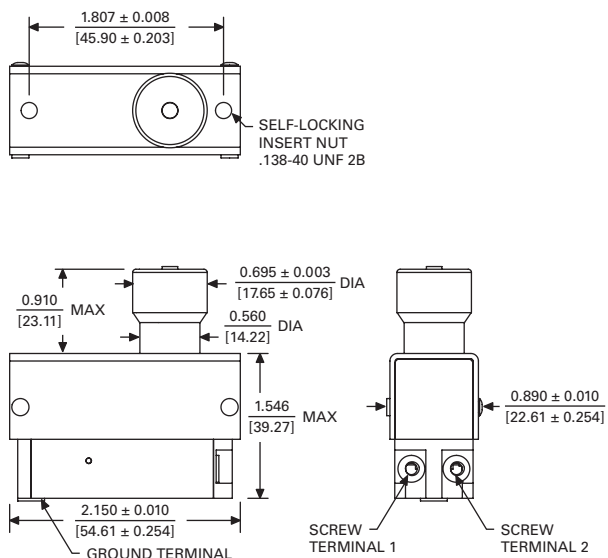
### HERMETIC PUSH BUTTON MOMENTARY SWITCH

**10AT502 - 1 - 0 2 - 10**

Basic Switch & Actuator/Body Style	Button Color	Operation	Termination	Lead Length
<b>10AT501</b>	<b>1</b> Red	<b>0</b> SPDT	<b>1</b> Solder Pins	<b>1</b> 6" (153mm)
<b>10AT502</b>	<b>2</b> Black	<b>1</b> SPDT, N.C.	<b>2</b> Parallel Leads	<b>2</b> 12" (305mm)
	<b>3</b> Gray	<b>2</b> SPDT, N.O.		<b>3</b> 18" (458mm)
				<b>4</b> 24" (610mm)
				<b>5</b> 30" (762mm)
				<b>6</b> 36" (915mm)
				<b>7</b> 42" (1067mm)
				<b>8</b> 48" (1220mm)
				<b>9</b> 60" (1524mm)
				<b>10</b> 72" (1829mm)

*Actuating Force (max)* 40 oz    24 oz  
*Pretravel (max)* .040" (1.02mm)  
*Movement Diff. (max)* .030" (.76mm)  
*Total Travel (min)* .050" (1.27mm)    .125" (3.18mm)  
*Max Force on Actuator* 10 lbs    10 lbs  
*Approx Weight* 0.80 oz    0.80 oz

Termination details: **1** Solder Pins ± 0.104 MAX [2.64]    **2** Parallel Leads



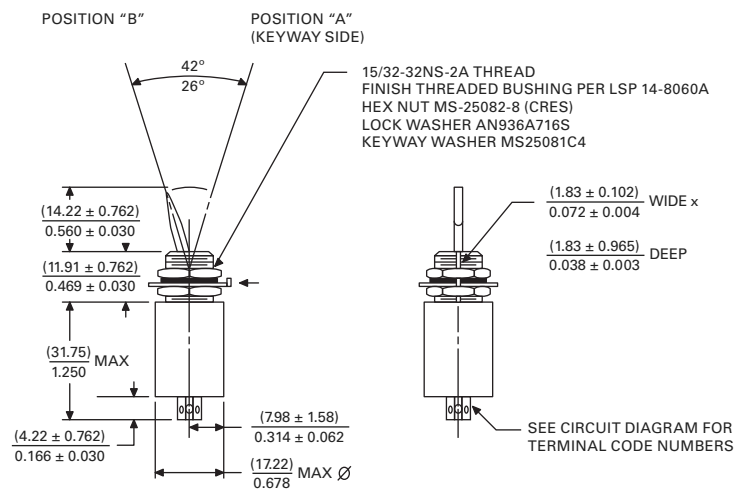
### FOOT SWITCH (CONTROL SWITCH)

**10AT504 - 5 1 - 5**

Basic Switch & Actuator/Body Style	Operation	Termination	Lead Length
<b>10AT504</b>	<b>5</b> DPST, N.O.	<b>1</b> Screws	<b>1</b> 6" (153mm)
			<b>2</b> 12" (305mm)
			<b>3</b> 18" (458mm)
			<b>4</b> 24" (610mm)
			<b>5</b> 30" (762mm)
			<b>6</b> 36" (915mm)
			<b>7</b> 42" (1067mm)
			<b>8</b> 48" (1220mm)
			<b>9</b> 60" (1524mm)
			<b>10</b> 72" (1829mm)

Actuating Force (max)  
Pretravel (max)  
Movement Diff. (max)  
Total Travel (min)  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight

112 to 176 oz
.090" (2.29mm)
.050" (1.27mm)
.165" (4.19mm)
Yes
20 lbs
0.9 oz



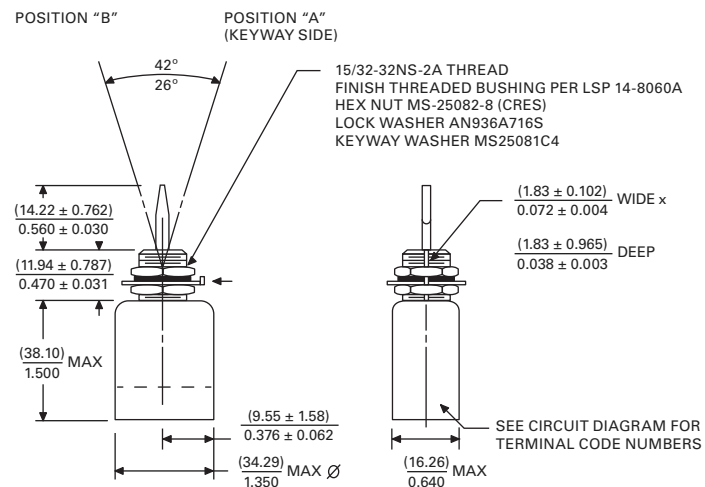
### TOGGLE SWITCH

**11AT1 - 0 1**

Actuating Force  
Current Capacity (28Vdc)

Basic Switch & Actuator/Body Style	Operation	Termination
<b>11AT1</b>	<b>0</b> SPDT	<b>1</b> Solder Pins
112 to 176 oz	<b>1</b> SPST, N.C.	± 0.104 MAX ↑ [2.64]
3.5A (res) / 1.5A (ind)	<b>2</b> SPST, N.O.	

Toggle Position	Toggle Action	Circuit
POSITION "A"	MAINTAINED	1 2 3 ○ ○ ○
POSITION "B"	MAINTAINED	1 2 3 ○ ○ ○



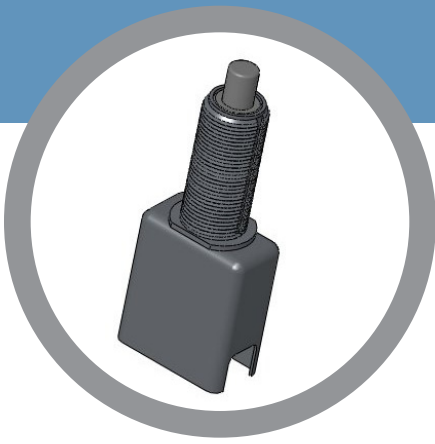
### TOGGLE SWITCH, SP3T

**12AT1 - 3 1**

Actuating Force  
Current Capacity (28Vdc)

Basic Switch & Actuator/Body Style	Operation	Termination
<b>12AT1</b>	<b>3</b> SP3T	<b>1</b> Solder Pins
16 to 64 oz		
3.5A (res) / 1.5A (ind)		

Toggle Position	Toggle Action	Circuit
POSITION "A"	MAINTAINED	1 3 4 ○ ○ ○ 2
CENTER	MAINTAINED	1 3 4 ○ ○ ○ 2
POSITION "B"	MAINTAINED	1 3 4 ○ ○ ○ 2



# KLIXON® | Military Qualified 10AT Series

## Snap Action Precision Position Switches

### FEATURES

- Stainless steel, hermetic seal construction
- Rated up to 4 amps, 30VDC
- MIL-PRF-8805 qualified
- Various mounting configurations for custom applications
- Excellent shock and vibration resistance
- Distributor stock available

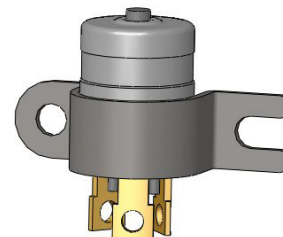
### INTRODUCTION

The Klixon® 10AT series are hermetic position switches 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 40 years in a wide range of applications, and can be found on virtually all commercial and military aircraft, as well as various space vehicles and satellites worldwide.

SPECIFICATIONS	
<b>Current Rating, Resistance</b>	4 amps, 28VDC
<b>Current Rating, Inductive</b>	1 amp, 28VDC
<b>Current Rating, Lamp</b>	2 amps, 28VDC
<b>Dielectric Strength</b>	1050 volts (RMS) Terminal to Case 800 volts (RMS) Terminal to Terminal
<b>Life Cycles</b>	25,000 cycles @ rated load, mechanical life of 100,000 cycles
<b>Ambient Temperature Range</b>	-85°F to +275°F (-65°C to +135°C)
<b>Seal</b>	Hermetic per MIL-PRF-8805, design enclosure 5
<b>Max Leak Rate</b>	1x10 <sup>-8</sup> C.C. std. HE/sec @ 1 ATM differential
<b>Voltage Drop at 1 amp</b>	0.040 volts max
<b>Insulation</b>	100 megaohms min
<b>Vibration Resistance</b>	65G, 10-2000Hz, .5 DA or 65 G RMS
<b>Shock Resistance</b>	200 G, 6 ms sawtooth



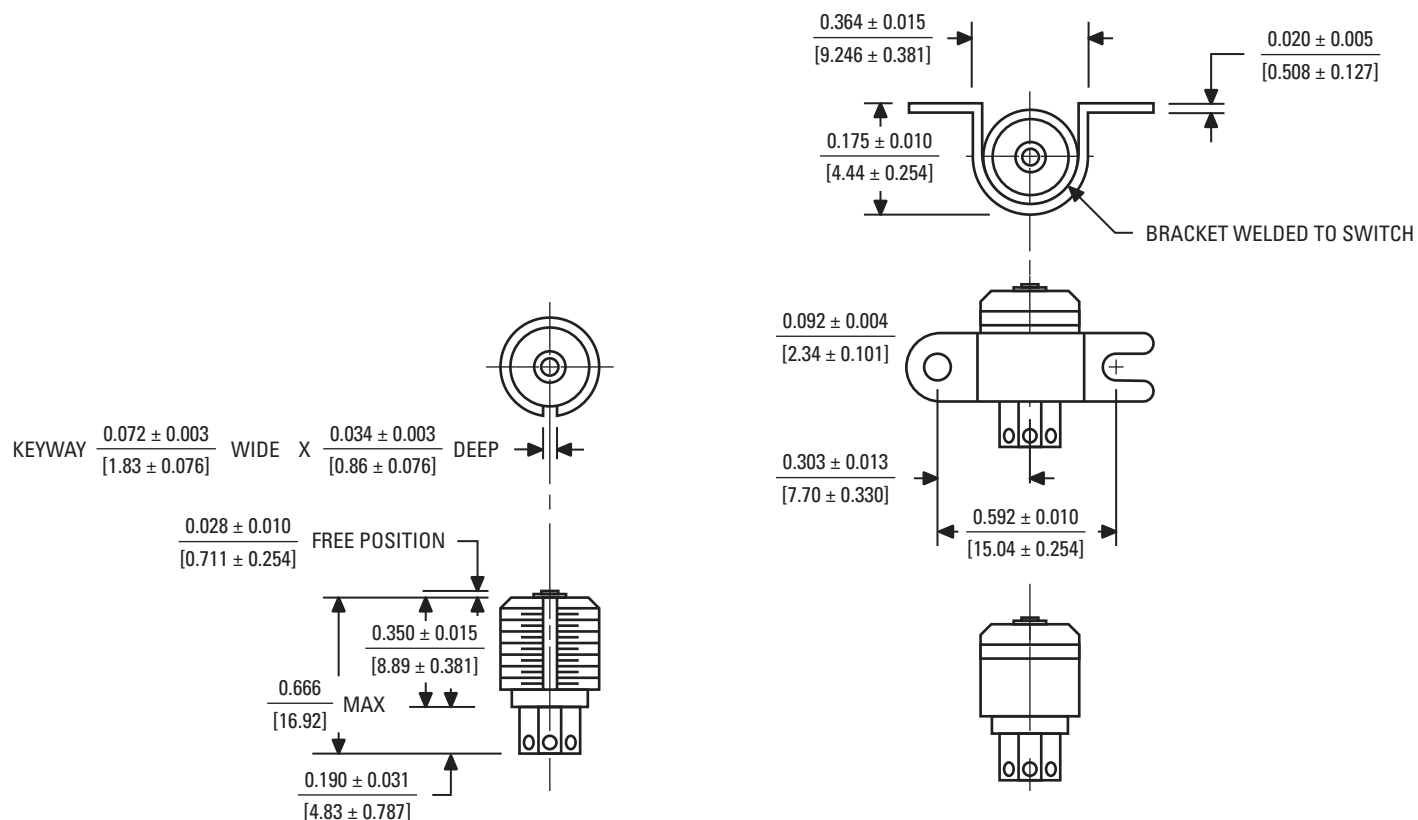


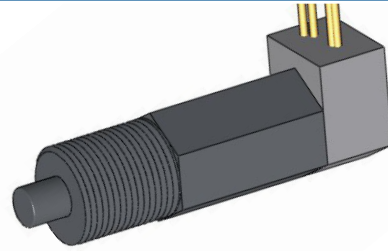
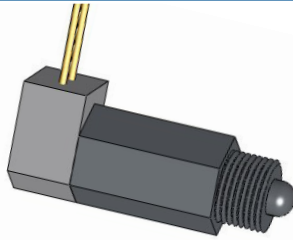


**MIL-S-8805 CROSS REFERENCE CHART (SPDT)**

Mil Spec	Sensata PN	Plunger Type	Wire Leads	Threaded Mount	Actuating Force	Movement Differential	Pretravel	Overtravel	Release Force
M8805/68-022	10AT117-01	Flat	No Wires	None	30 oz max	0.005" max	0.009" max	0.002" min	4 oz min
M8805/68-023	10AT17-01	Flat	No Wires	7/16-32NS-2A	30 oz max	0.005" max	0.009" max	0.002" min	4 oz min
M8805/68-024	10AT17-02-10	Flat	Parallel	7/16-32NS-2A	30 oz max	0.005" max	0.009" max	0.002" min	4 oz min
M8805/68-025	10AT17-03-10	Flat	90° Angle	7/16-32NS-2A	30 oz max	0.005" max	0.009" max	0.002" min	4 oz min
M8805/68-026	10AT15-01	Flat	No Wires	Bracket Mount	30 oz max	0.005" max	0.009" max	0.002" min	4 oz min
M8805/68-027	10AT15-02-10	Flat	Parallel	Bracket Mount	30 oz max	0.005" max	0.009" max	0.002" min	4 oz min
M8805/68-028	10AT15-03-10	Flat	90° Angle	Bracket Mount	30 oz max	0.005" max	0.009" max	0.002" min	4 oz min

**DIMENSIONAL DRAWINGS – Threaded Mount (10AT17-01), Basic Switch (10AT117-01), Bracket Mount (10AT15-01), Flat Plunger**

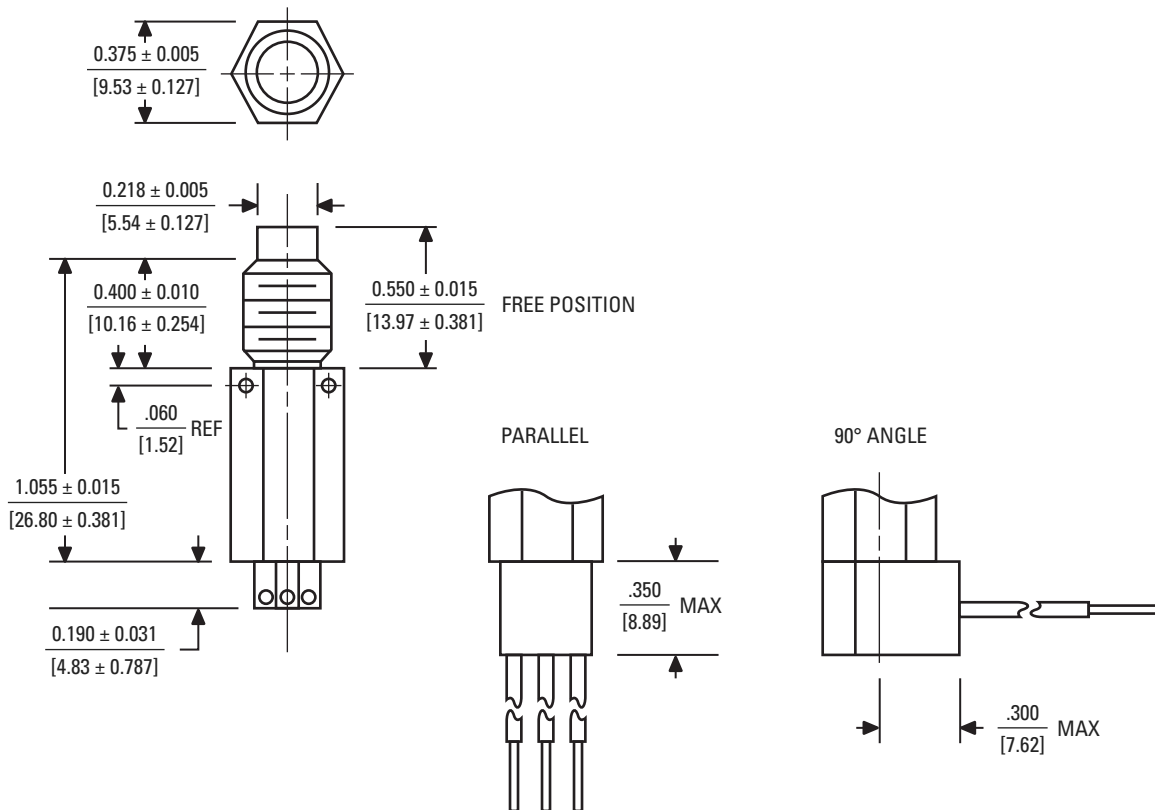


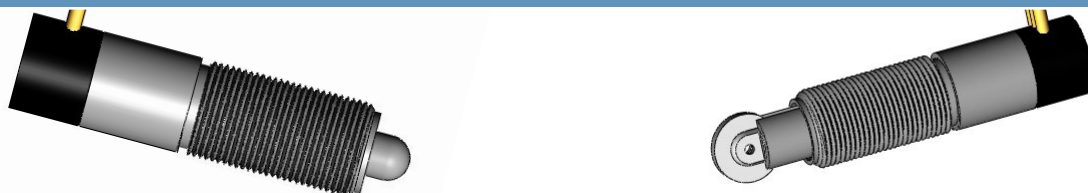


### MIL-S-8805 CROSS REFERENCE CHART (SPDT)

Mil Spec	Sensata PN	Plunger Type	Wire Leads	Threaded Mount	Actuating Force	Movement Differential	Pretravel	Overtravel	Release Force
M8805/72-033	10AT363-02-10	Flat	Parallel	5/16-24UNF-2A	30 oz max	0.005" max	0.010" max	0.125" min	4 oz min
M8805/72-034	10AT361-02-10	Flat	Parallel	5/16-24UNF-2A Short	30 oz max	0.005" max	0.010" max	0.125" min	4 oz min
M8805/72-035	10AT363-03-10	Flat	90° Angle	5/16-24UNF-2A	30 oz max	0.005" max	0.010" max	0.125" min	4 oz min
M8805/72-036	10AT361-03-10	Flat	90° Angle	5/16-24UNF-2A Short	30 oz max	0.005" max	0.010" max	0.125" min	4 oz min
M8805/72-037	10AT364-02-10	Spherical	Parallel	5/16-24UNF-2A	30 oz max	0.005" max	0.010" max	0.125" min	4 oz min
M8805/72-038	10AT362-02-10	Spherical	Parallel	5/16-24UNF-2A Short	30 oz max	0.005" max	0.010" max	0.125" min	4 oz min
M8805/72-039	10AT364-03-10	Spherical	90° Angle	5/16-24UNF-2A	30 oz max	0.005" max	0.010" max	0.125" min	4 oz min
M8805/72-040	10AT362-03-10	Spherical	90° Angle	5/16-24UNF-2A Short	30 oz max	0.005" max	0.010" max	0.125" min	4 oz min
M8805/73-013	10AT7-02-10	Flat	Parallel	3/8-32 NEF-2A	104 oz max	0.010" max	0.020" max	0.125" min	24 oz min
M8805/73-014	10AT7-03-10	Flat	90° Angle	3/8-32 NEF-2A	104 oz max	0.010" max	0.020" max	0.125" min	24 oz min
M8805/73-015	10AT76-02-10	Spherical	Parallel	3/8-32 NEF-2A	104 oz max	0.010" max	0.020" max	0.125" min	24 oz min
M8805/73-016	10AT76-03-10	Spherical	90° Angle	3/8-32 NEF-2A	104 oz max	0.010" max	0.020" max	0.125" min	24 oz min

### DIMENSIONAL DRAWINGS – Threaded Mount, Flat Plunger, Hex Body Configuration (10AT363-01, 10AT363-02, 10AT363-03)

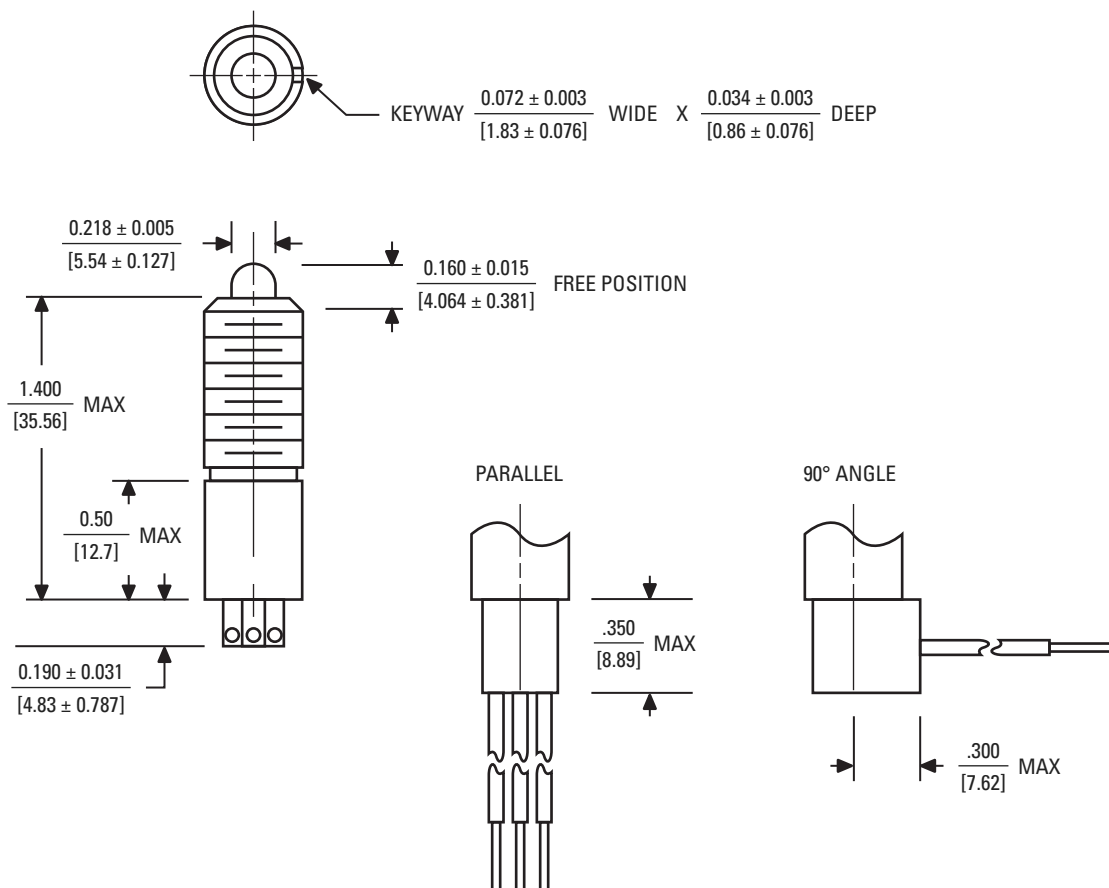


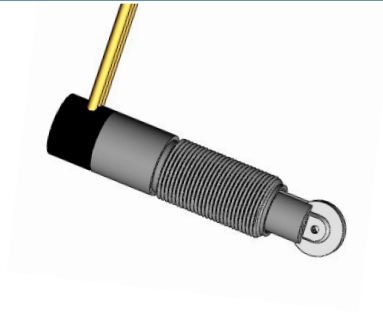


**MIL-S-8805 CROSS REFERENCE CHART (SPDT)**

Mil Spec	Sensata PN	Plunger Type	Wire Leads	Threaded Mount	Actuating Force	Movement Differential	Pretravel	Overtravel	Release Force
M8805/74-035	10AT366-02-10	Flat	Parallel	15/32-32NS-2A	30 oz max	0.005" max	0.010" max	0.125" min	4 oz min
M8805/74-036	10AT368-02-10	Roller	Parallel	15/32-32NS-2A	30 oz max	0.005" max	0.010" max	0.125" min	4 oz min
M8805/74-037	10AT366-03-10	Flat	90° Angle	15/32-32NS-2A	30 oz max	0.005" max	0.010" max	0.125" min	4 oz min
M8805/74-038	10AT368-03-10	Roller	90° Angle	15/32-32NS-2A	30 oz max	0.005" max	0.010" max	0.125" min	4 oz min
M8805/74-039	10AT369-02-10	Flat, O-Ring	Parallel	15/32-32NS-2A	112 oz max	0.005" max	0.020" max	0.125" min	24 oz min
M8805/74-040	10AT371-02-10	Roller, O-Ring	Parallel	15/32-32NS-2A	112 oz max	0.005" max	0.020" max	0.125" min	24 oz min
M8805/74-041	10AT369-03-10	Flat, O-Ring	90° Angle	15/32-32NS-2A	112 oz max	0.005" max	0.020" max	0.125" min	24 oz min
M8805/74-042	10AT371-03-10	Roller, O-Ring	90° Angle	15/32-32NS-2A	112 oz max	0.005" max	0.020" max	0.125" min	24 oz min
M8805/74-043	10AT367-02-10	Spherical	Parallel	15/32-32NS-2A	30 oz max	0.005" max	0.010" max	0.125" min	4 oz min
M8805/74-044	10AT367-03-10	Spherical	90° Angle	15/32-32NS-2A	30 oz max	0.005" max	0.010" max	0.125" min	4 oz min
M8805/74-045	10AT370-02-10	Spherical, O-Ring	Parallel	15/32-32NS-2A	112 oz max	0.005" max	0.020" max	0.125" min	24 oz min
M8805/74-046	10AT370-03-10	Spherical, O-Ring	90° Angle	15/32-32NS-2A	112 oz max	0.005" max	0.020" max	0.125" min	24 oz min

**DIMENSIONAL DRAWINGS – Threaded Mount, Spherical Plunger Configuration (10AT367-01, 10AT367-02, 10AT367-03)**

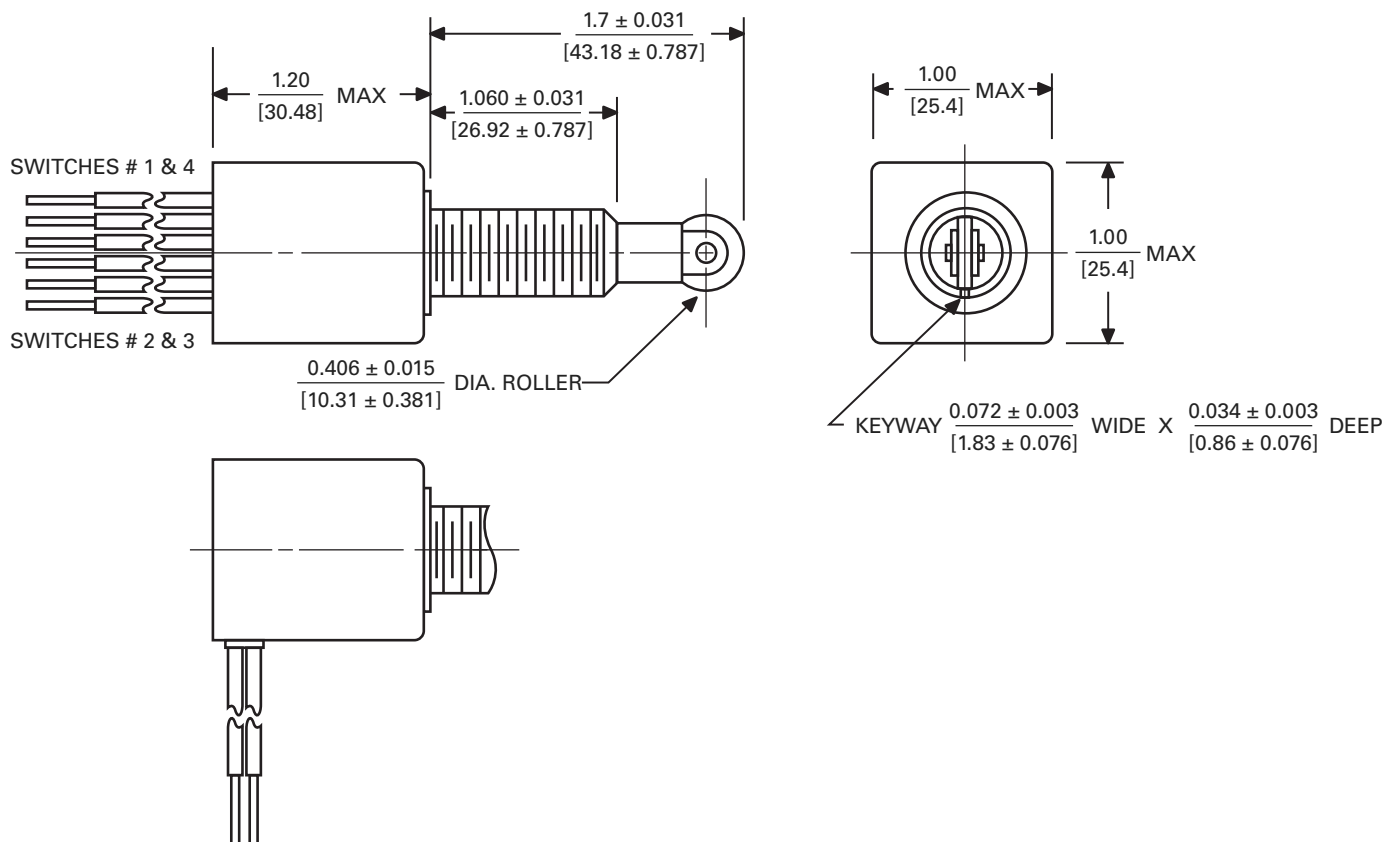


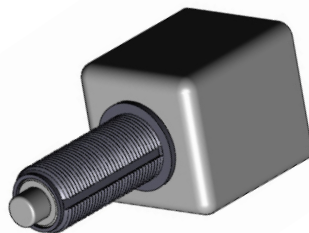


### MIL-S-8805 CROSS REFERENCE CHART (2PDT)

Mil Spec	Sensata PN	Plunger Type	Wire Leads	Threaded Mount	Actuating Force	Movement Differential	Pretravel	Overtravel	Release Force
M8805/70-033	10AT372-32-10	Flat	Parallel	15/32-32NS-2A	160 oz max	0.020" max	0.020" to 0.030"	0.200" min	16 oz min
M8805/70-034	10AT373-32-10	Roller	Parallel	15/32-32NS-2A	160 oz max	0.020" max	0.020" to 0.030"	0.200" min	16 oz min
M8805/70-035	10AT372-33-10	Flat	90° Angle	15/32-32NS-2A	160 oz max	0.020" max	0.020" to 0.030"	0.200" min	16 oz min
M8805/70-036	10AT373-33-10	Roller	90° Angle	15/32-32NS-2A	160 oz max	0.020" max	0.020" to 0.030"	0.200" min	16 oz min

### DIMENSIONAL DRAWINGS – Threaded Mount, Roller Plunger, 4PDT Configuration (10AT374-102-10 & 10AT374-103-10)

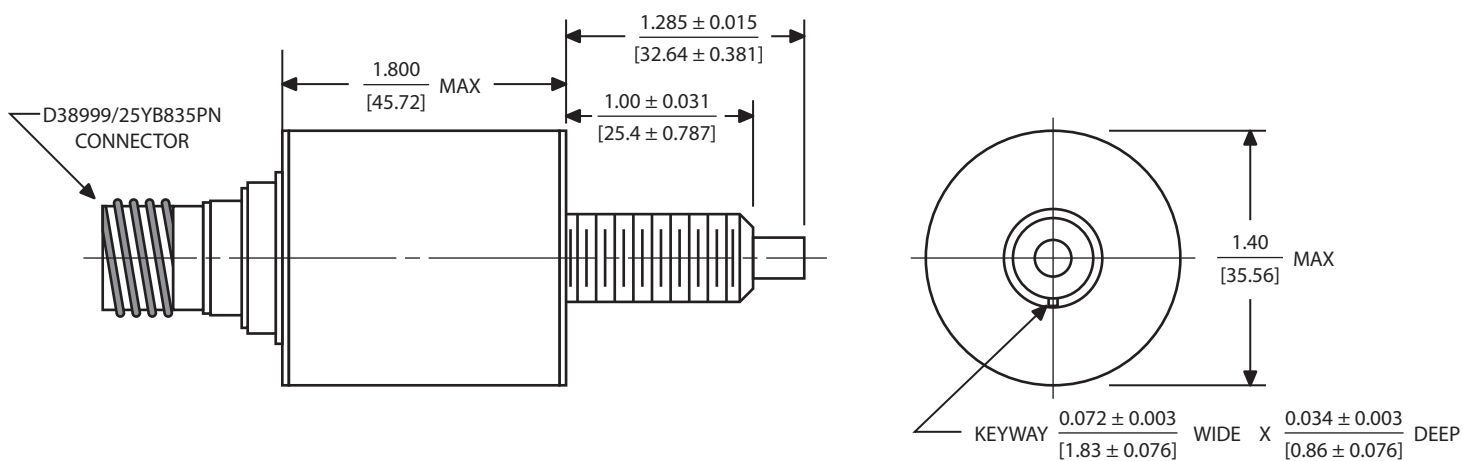




### MIL-S-8805 CROSS REFERENCE CHART (4PDT)

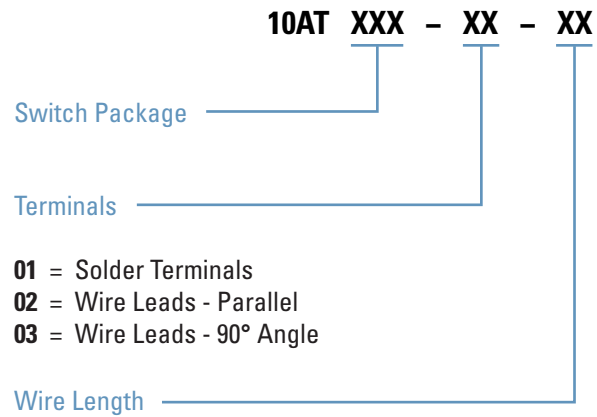
Mil Spec	Sensata PN	Plunger Type	Connector	Threaded Mount	Actuating Force	Movement Differential	Pretravel	Overtravel	Release Force
M8805/116-022	10AT493-1	Flat	D38999/25YB35PN Connector	15/32-32NS-2A	160 oz max	0.020" max	0.030" max	0.200" min	16 oz min
M8805/70-037	10AT375-102-10	Flat	Parallel	15/32-32NS-2A	160 oz max	0.020" max	0.030" max	0.200" min	16 oz min
M8805/70-038	10AT374-102-10	Roller	Parallel	15/32-32NS-2A	160 oz max	0.020" max	0.030" max	0.200" min	16 oz min
M8805/70-039	10AT375-103-10	Flat	90° Angle	15/32-32NS-2A	160 oz max	0.020" max	0.030" max	0.200" min	16 oz min
M8805/70-040	10AT374-103-10	Roller	90° Angle	15/32-32NS-2A	160 oz max	0.020" max	0.030" max	0.200" min	16 oz min

### DIMENSIONAL DRAWINGS – Threaded Mount, 4PDT, Flat Plunger Configuration (10AT493)



## STANDARD PART NUMBER BUILDER

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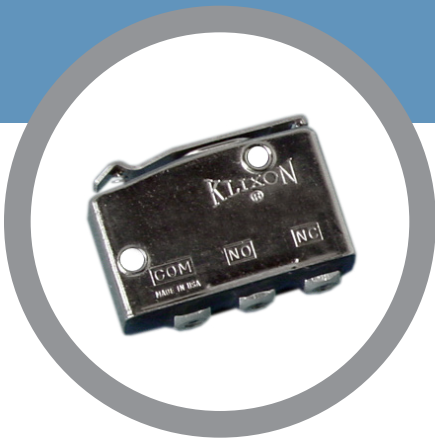


- 01** = Solder Terminals
- 02** = Wire Leads - Parallel
- 03** = Wire Leads - 90° Angle

*No dash # needed if solder terminals*

- 1** = 6" (152mm)
- 2** = 12" (305mm)
- 3** = 18" (457mm)
- 4** = 24" (610mm)
- 5** = 30" (762mm)
- 6** = 36" (914mm)
- 7** = 42" (1067mm)
- 8** = 48" (1219mm)
- 9** = 60" (1524mm)
- 10** = 72" (1829mm)





# KLIXON® | KX Series

## Precision Sine Switches

### KX FEATURES

- Hermetic seal provides exceptional operational freedom from environmental conditions
- Compactly designed to fit small, narrow spaces
- Available with either screw or solder lug type terminals
- Snap-acting sine switch provides exceptional resistance to shock and vibration
- Embedded leads are available
- Lead lengths can be supplied to customer requirements

### INTRODUCTION

The Klixon® KX Series hermetically sealed sine switch is a precision snap-acting device. It is designed for use in the aerospace industry and for other applications where operational freedom from environmental conditions is a requirement.

KX series switches are sealed within a one-piece steel case engineered to withstand extremely low or high ambient pressures. True hermetic sealing is achieved with a metal “wave type” diaphragm at the actuating lever. The actuating arm is keyed to hold the arm in alignment and to prevent damage to the diaphragm.

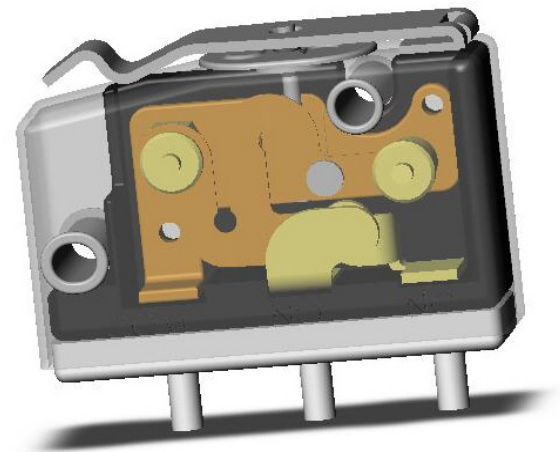
The switching element is the versatile Klixon® sine switch. This simple, one-piece element eliminates knife edges and high friction joints. Rigidly supported at both ends and accurately prestressed in tension, the sine switch features outstanding resistance to shock and vibration.

Klixon® switches have been used in a variety of aircraft, weapons systems, aircraft engine and aerospace applications for well over 30 years. A brief listing of typical applications include:

- Door interlock systems
- Aircraft engine ignitions
- Aircraft missile launcher position indication
- External stores emergency jettison switches
- Stowed / deployed indication for thrust reversers
- Safety ignition indication for military jet engines
- Radar pod door switches
- Tank/armored personnel carrier missile launcher switches
- Tank gun turret position indication

**KX - 4 - 1 - 1**

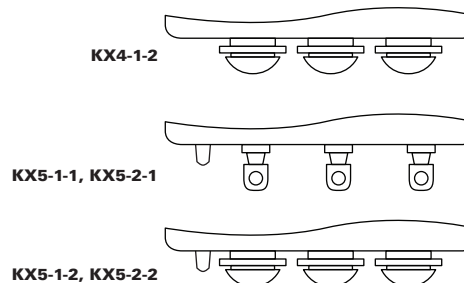
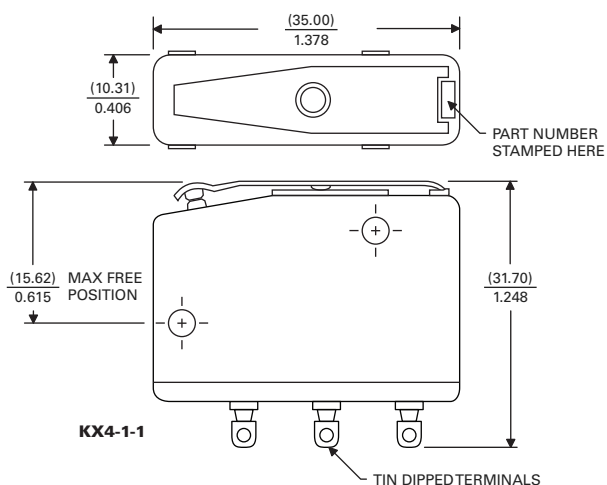
Seal		Max Ambient Temperature		Terminals	
<b>4</b>	Epoxy Sealed (class 4)	<b>1</b>	KX4 - 160°F (71°C) KX5 - 275°F (135°C)	<b>1</b>	Solder Lug
<b>5</b>	Hermetically Sealed (class 5, MIL-S-8805)	<b>2</b>	KX5 - 375°F (191°C)	<b>2</b>	Screw





### PERFORMANCE & ACTUATION CHARACTERISTICS CHART

	<b>KX4-1-1 KX4-1-2</b>	<b>KX5-1-1 KX5-1-2</b>	<b>KX5-2-1 KX5-2-2</b>
<b>Device Type</b>	Environmental Seal	Hermetic Seal	Hermetic Seal, High Temperature
<b>Actuating Force (STP)</b>	8 to 24 oz	8 to 24 oz	16 to 48 oz
<b>Min Release Force (STP)</b>	3 oz	3 oz	3 oz
<b>Max Pretravel</b>	0.025"	0.025"	0.035"
<b>Max Movement Differential</b>	0.020"	0.020"	0.024"
<b>Min Overtravel</b>	0.015"	0.015"	0.015"
<b>Positive, Overtravel Stop</b>	Yes	Yes	Yes
<b>Max Force on Actuator</b>	25 lb	25 lb	25 lb
<b>Current Ratings in Amps</b> 28VDC & 110VAC 60-400Hz	<b>Resistance</b>	10	5
	<b>Inductive</b>	5	3
	<b>Lamp</b>	3	2
<b>Min Life @ Rated Load</b>	25K	25K	25K
<b>Ambient Temperature Range</b>	-65°F to 160°F (-53.8°C to 71.1°C)	-65°F to 275°F (-53.8°C to 135°C)	-65°F to 375°F (-53.8°C to 190.5°C)
<b>Dielectric Strength</b>	1250 VRMS	1250 VRMS	1250 VRMS
<b>Shock Resistance</b>	100G w/o damage		
<b>Vibration Resistance</b>	20G		
<b>Contact Arrangement</b>	SPDT	SPDT	SPDT
<b>Backfill</b>	—	Dry nitrogen with 10% helium	Dry nitrogen with 10% helium
<b>Seal (MIL-S-8805)</b>	Resilent, Class 4 (epoxy seal)	Fusion, Class 5 (hermetic seal)	Fusion, Class 5 (hermetic seal)
<b>Max Leakage</b>	1 x 10 <sup>-6</sup> Std. cc He/Sec	1 x 10 <sup>-8</sup> Std. cc He/Sec	1 x 10 <sup>-8</sup> Std. cc He/Sec



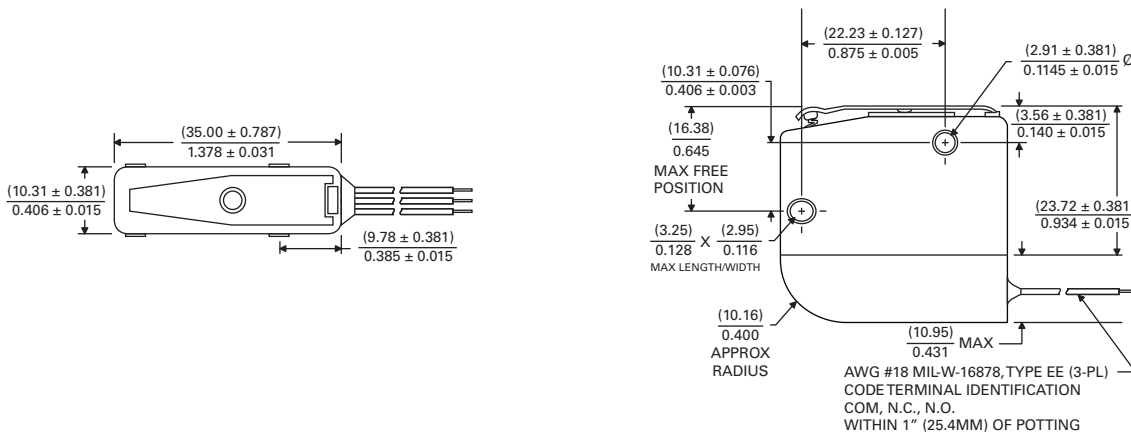
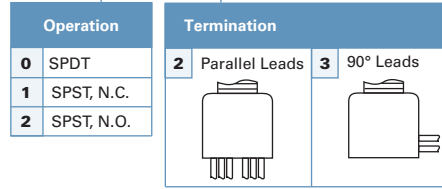
Basic Switch		
KX4	KX5	KX52
sealed	hermetic	hermetic hi temp
Actuating Force (max)	24 oz	24 oz
Release Force (max)	3 oz	3 oz
Pretravel (max)	.025" (1.02mm)	
Movement Diff. (max)	.020" (.76mm)	
Overtravel (min)	.015" (3.18mm)	
Ambient Temperature Range	-67°F to 160°F (-55°C to 71°C)	
Dielectric Strength	1250 VRMS terminal to terminal 1250 VRMS terminal to case	
Approx Weight (no leads)	0.90 oz	

### 001 SINE SWITCH PACKAGE, 1 POLE (10 amps)

KX5 - 001 - 0 3 - 10

Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

Actuating Force (max)  
Release Force (max)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Ambient Temperature Range  
Dielectric Strength  
Approx Weight (no leads)



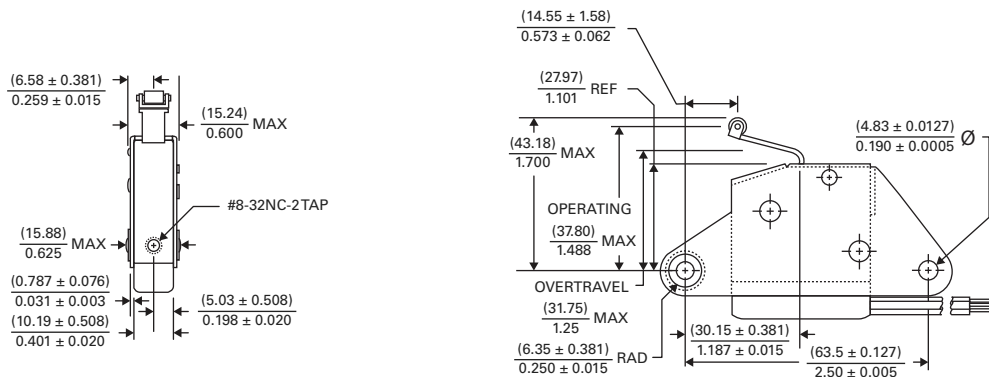
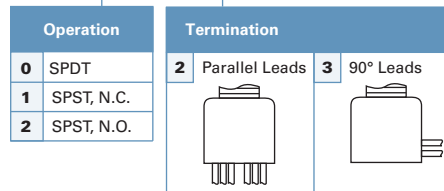
Basic Switch		
KX4	KX5	KX52
std	hi amp	hi amp
Actuating Force (max)	48 oz	48 oz
Release Force (max)	8 oz	8 oz
Movement Diff. (max)	.090" (2.29mm)	

### 002 SIDE PLATE SWITCH PACKAGE, 1 POLE (10 amps)

KX5 - 002 - 0 3 - 6

Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

Actuating Force (max)  
Release Force (max)  
Movement Diff. (max)



Basic Switch		
KX4	KX5	KX52
std	hi amp	hi amp
Actuating Force (max)	96 oz	96 oz
Overtravel Force (max)	160 oz	160 oz
Pretravel (max)	.100" (2.54mm)	
Movement Diff. (max)	.06" (1.53mm)	
Overtravel (min)	.175" (4.45mm)	
Ambient Temperature Range	-65°F to 275°F (-54°C to 135°C)	
Approx Weight (no leads)	12 oz	

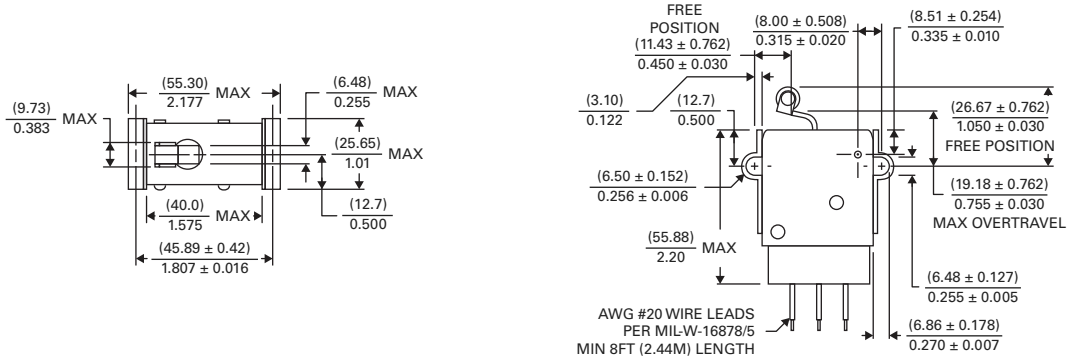
### 003 SIDE PLATE SWITCH PACKAGE, 2 POLE (10 amps)

KX5 - 003 - 3 2 - 8

Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

Operation		Termination	
3	DPDT	2	Parallel Leads
4	DPST, N.C.	3	90° Leads
5	DPST, N.O.		
6	DPST, N.C., N.O.		

Actuating Force (max)  
Overtravel Force (max)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Ambient Temperature Range  
Approx Weight (no leads)



Basic Switch		
KX4	KX5	KX52
sealed	hermetic	hermetic hi temp
Actuating Force (max)	160 oz	160 oz
Release Force (max)	32 oz	32 oz
Pretravel (max)	.150" (3.81mm)	
Movement Diff. (max)	.020" (.76mm)	
Overtravel (min)	.450" (11.43mm)	

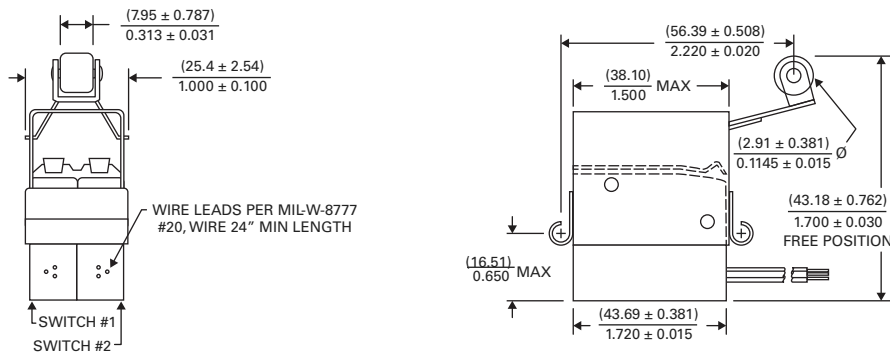
### 004 ROLLER LEAF SWITCH PACKAGE, 2 POLE (10 amps)

KX5 - 004 - 3 2 - 10

Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

Operation		Termination	
3	DPDT	2	Parallel Leads
4	DPST, N.C.	3	90° Leads
5	DPST, N.O.		
6	DPST, N.C., N.O.		

Actuating Force (max)  
Release Force (max)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)



Basic Switch		
KX4	KX5	KX52
std	hi amp	hi amp
Actuating Force (max)	96 oz	96 oz
Release Force (max)	32 oz	32 oz
Pretravel (max)	.075" (1.91mm)	
Movement Diff. (max)	.030" (.76mm)	
Overtravel (min)	.175" (4.45mm)	
Ambient Temperature Range	-65°F to 275°F (-54°C to 135°C)	
Positive Overtravel Stop	Yes	
Max Force on Actuator	20 lbs	
Approx Weight (no leads)	12 oz	

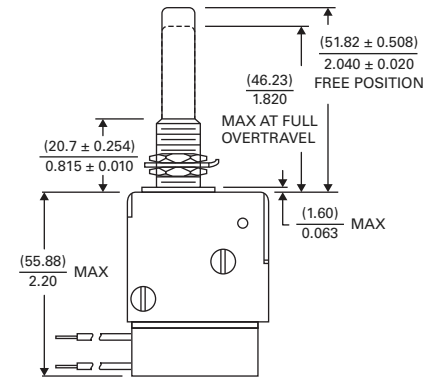
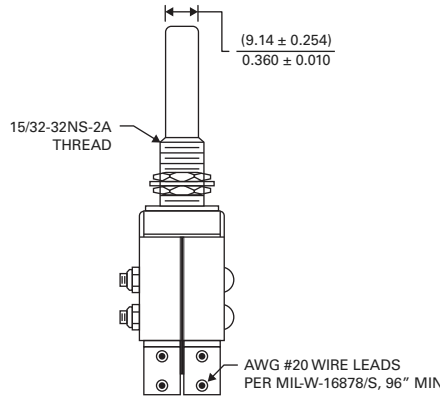
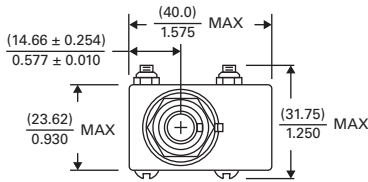
### 005 PLUNGER SWITCH PACKAGE, 2 POLE (10 amps)

KX5 - 005 - 3 3 - 10

Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

Operation		Termination	
3	DPDT	2	Parallel Leads
4	DPST, N.C.	3	90° Leads
5	DPST, N.O.		
6	DPST, N.C., N.O.		

Actuating Force (max)  
Release Force (max)  
Pretravel (max)  
Movement Diff. (max)  
Overtravel (min)  
Ambient Temperature Range  
Positive Overtravel Stop  
Max Force on Actuator  
Approx Weight (no leads)



Basic Switch		
KX4	KX5	KX52
std	hi amp	hi amp
Actuating Force (max)	48 oz	48 oz
Release Force (max)	8 oz	8 oz
Movement Diff. (max)	.090" (2.29mm)	

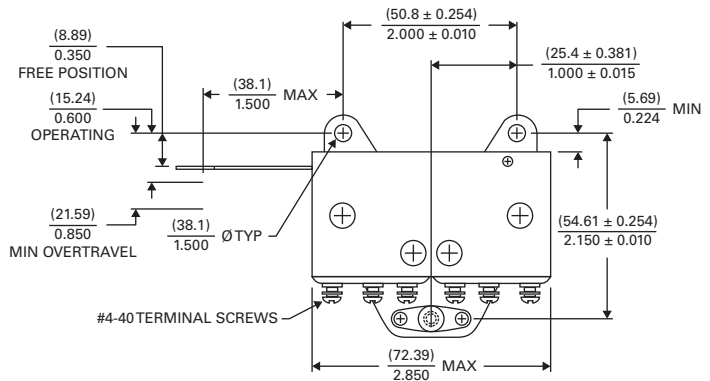
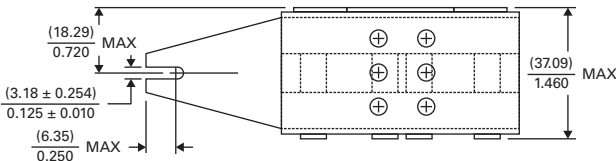
### 006 LEAF SWITCH PACKAGE, 4 POLE (10 amps)

KX5 - 006 - 10 3 - 10

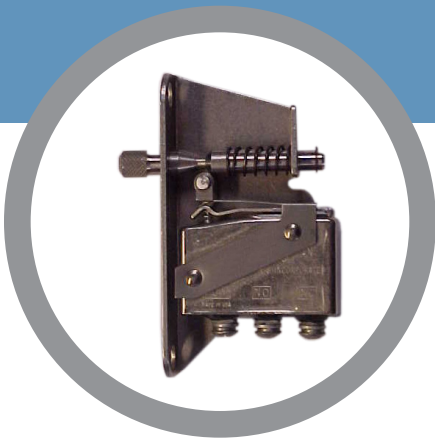
Lead Length	
1	6" (153mm)
2	12" (305mm)
3	18" (458mm)
4	24" (610mm)
5	30" (762mm)
6	36" (915mm)
7	42" (1067mm)
8	48" (1220mm)
9	60" (1524mm)
10	72" (1829mm)

Operation		Termination	
7	3PDT	2	Parallel Leads
8	3PST, N.C.	3	90° Leads
9	3PST, N.O.		
10	4PDT		
11	4PST, N.C.		
12	4PST, N.O.		

Actuating Force (max)  
Release Force (max)  
Movement Diff. (max)







# KLIXON® | 4HVS Series

## High Performance Hermetic Interlock Switches

### FEATURES

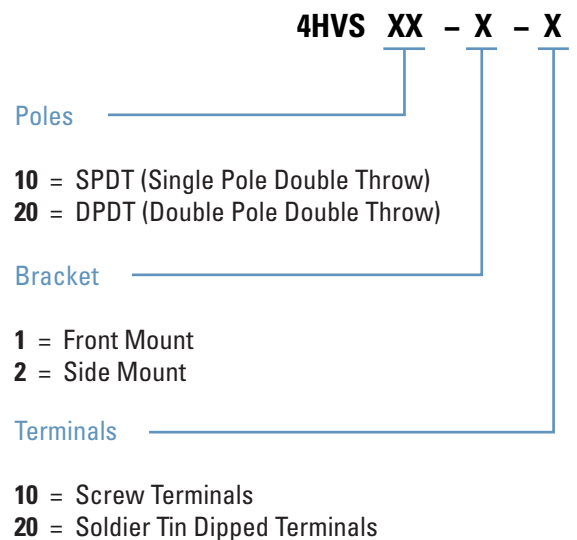
- Explosion-proof device
- Stainless steel, hermetic seal construction
- Rated to 10 amps
- Rated for 28 VDC and 110 VAC, 60-900 Hz
- Available in single pole, double throw (SPDT) and double pole, double throw (DPDT)
- Screw or soldier terminals

### INTRODUCTION

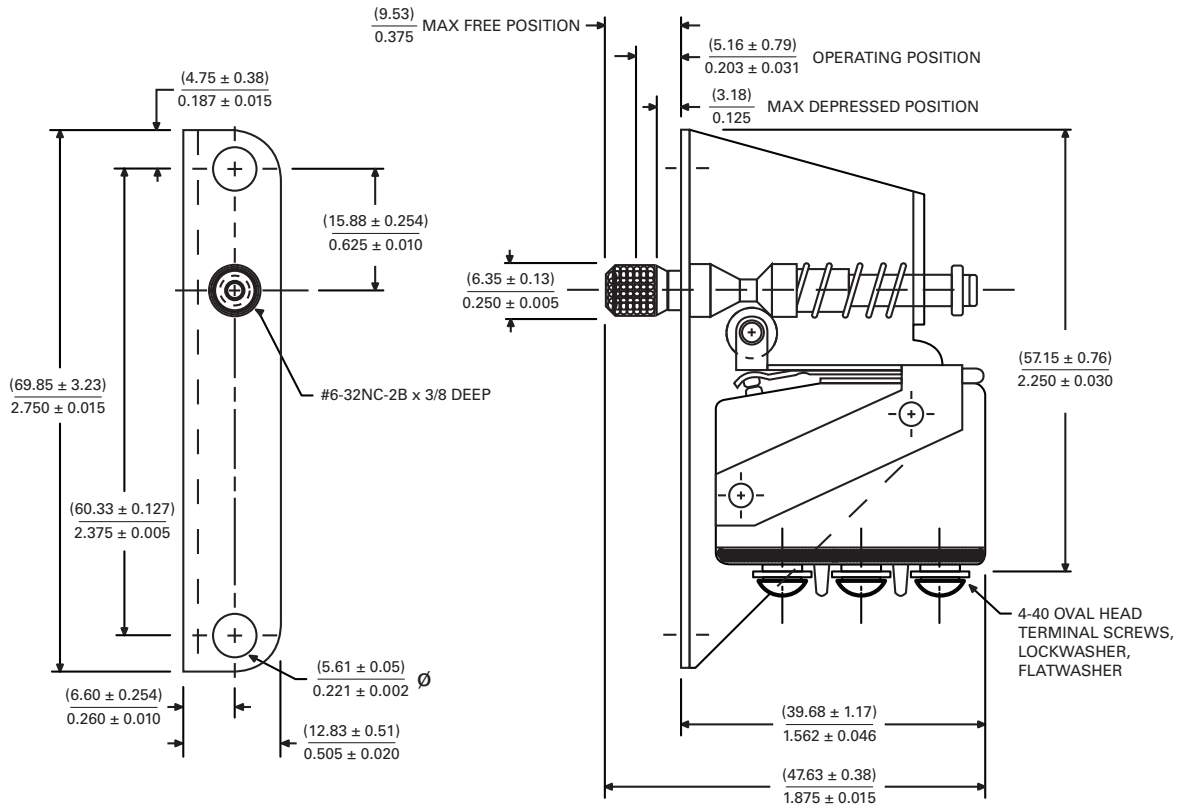
The Klixon® 4HVS series of interlock switches utilizes a hermetically sealed snap-acting sine switch to create a high reliability yet cost effective solution. The 4HVS Series was developed for the most severe environments, and the most demanding applications. Ideal for guarding engine compartments, access and maintenance hatches, electrical cabinets, machinery, and industrial equipment. Its explosion-proof design and one-piece steel case construction make it well suited for fuel wetted areas. Its high vibration resistance makes it an ideal choice for ground and air vehicle applications.

Our part number building block approach utilizes standard components and provides a wide variety of options...while retaining the cost advantage of off-the-shelf devices.

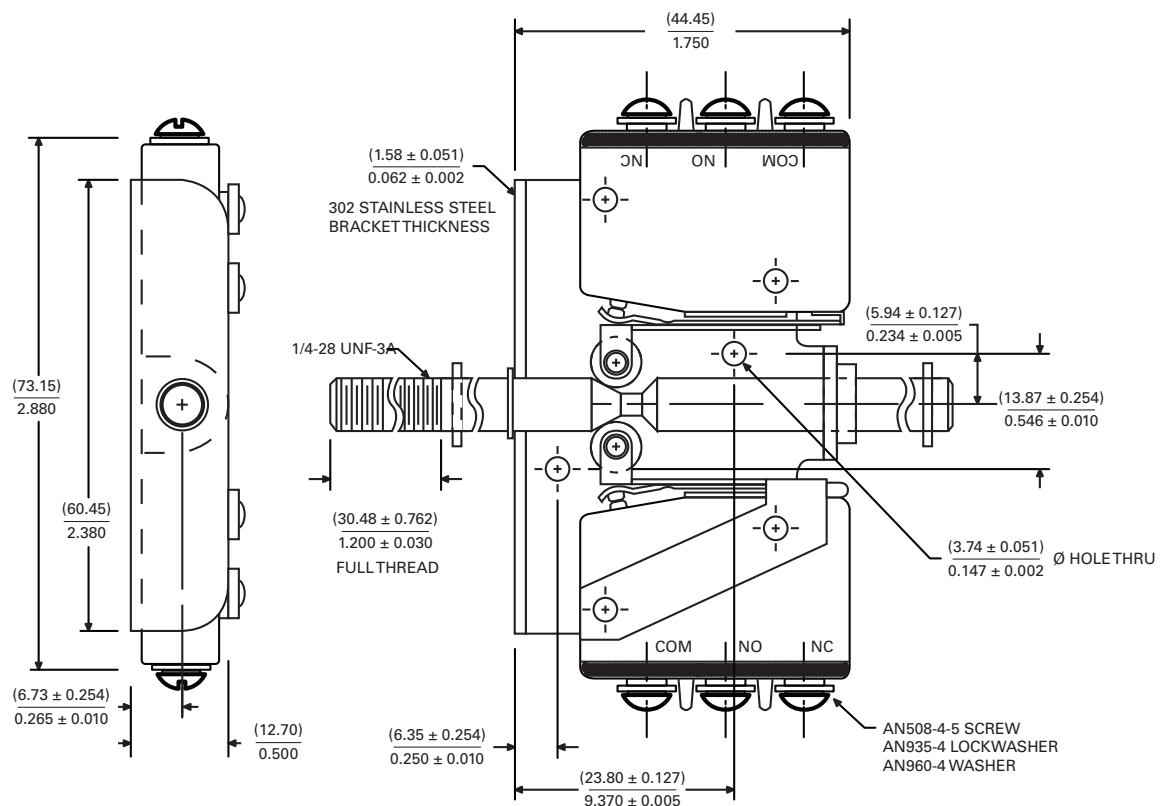
SPECIFICATIONS		
<b>Current Capacity</b>	28 VDC	115 VAC, 60 - 900Hz
<b>Resistance</b>	10 amps	10 amps
<b>Inductive</b>	5 amps, L/R .026	5 amps PF 0.7
<b>Lamp</b>	3 amps	3 amps
<b>Dielectric Strength</b>	1250 volts (RMS)	
<b>Full Overtavel Force</b>	5 lbs max	
<b>Life @ Rated Load</b>	25,000 cycles	
<b>Amb. Temperature Range</b>	-65F to +275F (-65C to +150C)	
<b>Seal</b>	Hermetic per MIL-S-8805D	
<b>Max Leak Rate</b>	1x10 <sup>-8</sup> C.C. std. HE/sec	
<b>Backfill</b>	Dry nitrogen	
<b>Max MV Drop</b>	20 MV @ 1 amp	
<b>Vibration Resistance</b>	Swept sinusoidal vibration per MIL-S-8805 Test Condition A	
<b>Shock Resistance</b>	100 G's, 1/2 sine, 11 ms duration	

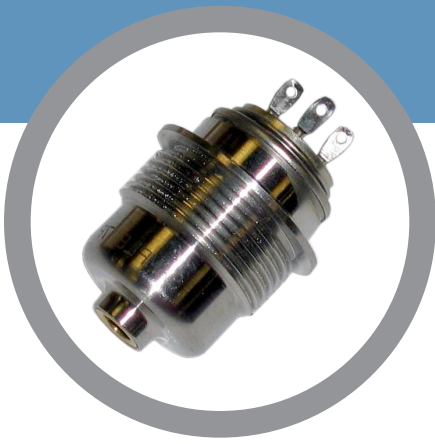


**DIMENSIONAL DRAWINGS – 4HVS10-1-10**



**DIMENSIONAL DRAWINGS – 4HVS20-1-10**





# KLIXON® | 6PS & 7PS Series

## Hermetic Stainless Steel Pressure Switch

### FEATURES

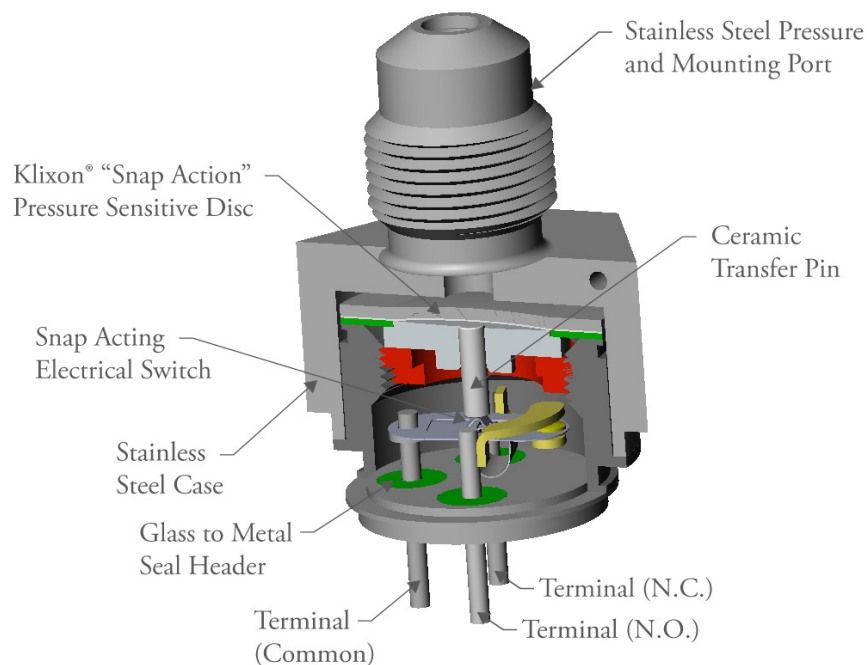
- Hermetically sealed per MIL-E-5400 paragraph 6.3.10
- Covers actuation range of 45 to 700 PSIA
- Maximum corrosion resistance under hostile conditions
  - 300 series stainless steel construction for all environment exposed parts
  - Stainless steel and brass construction for media exposed parts
- High vibration resistance
- 8000 psi minimum burst pressure
- SPDT switch configuration
- Available in a wide range of standard and custom configurations

### INTRODUCTION

The Klixon® 6PS and 7PS series precision pressure switches are snap-acting, all-welded devices with hermetically sealed switch contacts. Our pressure switches were developed for applications in aerospace and electronics where high reliability and/or resistance to severe environments is required. To ensure maximum corrosion resistance under hostile conditions, all parts exposed to the pressure media and the environment are made of brass or 300 series stainless steel — no rubber parts are used.

Small and lightweight, 6PS and 7PS Series switches can be mounted by their pressure ports alone, allowing maximum flexibility of design. Full contact force is maintained even during high shock and vibration—regardless of applied pressure—because the positive, snap-action disc works in tandem with snap-action switch contacts.

There are over 1,000 existing 6PS switch package designs. The 6PS is ideal for highly customized package and performance needs. The 7PS is ideal for higher volume standard solution needs.



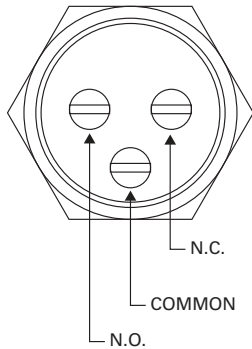


SPECIFICATIONS	
<b>Temperature Rating</b>	-65°F to 275°F (-53.8°C to +135°C)
<b>Vibration Resistance</b>	25 G, 20–2000 cps (no contact chatter in excess of 10 microseconds)
<b>Burst Pressure</b>	8,000 PSI minimum
<b>Proof Pressure</b>	8 times actuating pressure
<b>Life @ Rated Current</b>	50,000 cycles
<b>Current Capacity</b>	Resistive : 5amp @ 28 VDC Inductive : 2amp @ 28 VDC Lamp : 1amp @ 28 VDC
<b>Dielectric Strength</b>	Terminal to terminal : 1000 vrms Terminal to case : 1000 vrms
<b>Weight</b>	Without Leads : 30 grams maximum With Connector : 60 grams maximum
<b>Metal Parts Exposed to Pressure &amp; Environment</b>	300 series stainless steel CA-360-2 (1/2 hard leaded brass)
<b>Potting Material</b>	Epoxy resin

PRESSURE SPECIFICATIONS	
<b>Range of Actuation Pressure Settings</b>	at STP from 45 PSIA to 700 PSIA
<b>Range of Deactuation Pressure Settings</b>	Standard : 60% to 85% of actuation pressure Special : 85% to 90% of actuation pressure
<b>Range of Tolerances on Actuation &amp; Deactuation Pressure</b>	Standard : up to $\pm 6\%$ of actuation pressure ( $\pm 10$ PSI minimum) Special : up to $\pm 4\%$ of actuation pressure ( $\pm 5$ PSI minimum)  <i>Choice of deactuation pressure setting and tolerances affects price</i>

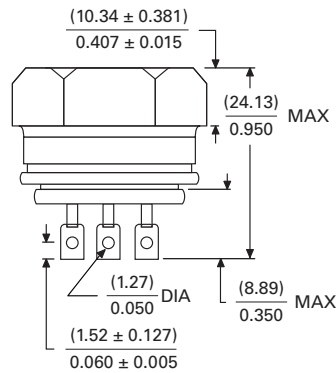
Actuation Pressure (PSIA)			Deactuation Pressure (PSIA)			
Pressure	Standard Tolerance	Special Tolerance	Standard 60% to 85%	Special 85% to 90%	Standard Tolerance	Special Tolerance
45 to 134	$\pm 10$	$\pm 5$	28 to 112	40 to 117	$\pm 10$	$\pm 5$
135 to 164	$\pm 10$	$\pm 7$	83 to 137	117 to 144	$\pm 10$	$\pm 7$
165 to 249	$\pm 15$	$\pm 10$	101 to 208	142 to 216	$\pm 15$	$\pm 10$
250 to 369	$\pm 20$	$\pm 15$	153 to 310	217 to 324	$\pm 20$	$\pm 15$
370 to 429	$\pm 25$	$\pm 20$	225 to 361	319 to 378	$\pm 25$	$\pm 20$
430 to 489	$\pm 30$	$\pm 20$	261 to 412	370 to 432	$\pm 30$	$\pm 20$
490 to 549	$\pm 35$	$\pm 25$	297 to 463	421 to 486	$\pm 35$	$\pm 25$
550 to 599	$\pm 40$	$\pm 25$	333 to 510	472 to 540	$\pm 40$	$\pm 25$
600 to 700	Consult Factory					

## 6PS SERIES - DESIGN TYPE

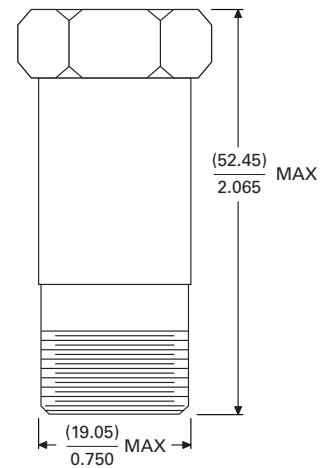


Lockwire holes are  $.047 \pm .006$  [1.19 ± .15] diameter. Located  $.050 \pm .008$  [1.27 ± .20] from port face of hex

### FLATTENED & PIERCED TERMINALS

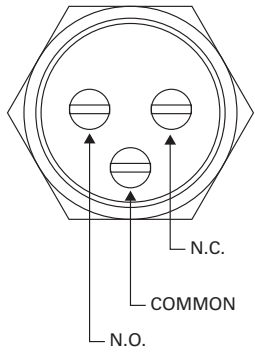


### MS33678-10SL-3P (SPDT) IS33678-10SL-4P (SPST NC/NO)

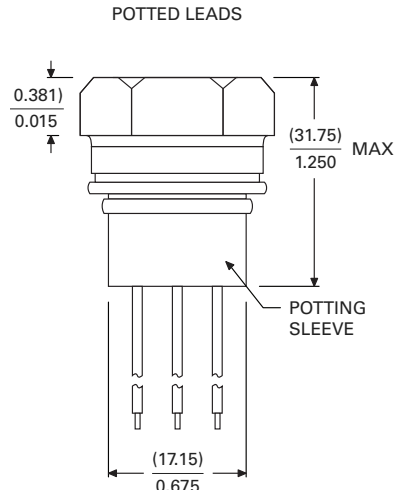
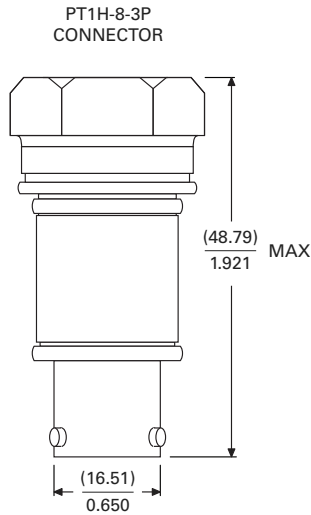


		SPDT	SPDT	SPDT	SPDT	SPST	SPST
<b>1/8" OD Tubing MS 33656 -E2</b>		<b>6PS100</b> without lock- wire holes	<b>6PS150</b> with lock- wire holes	<b>6PS102</b> without lock- wire holes	<b>6PS152</b> with lock- wire holes	<b>6PS103</b> without lock- wire holes	<b>6PS153</b> with lock- wire holes
<b>3/16" OD Tubing MS 33656 -E3</b>		<b>6PS200</b> without lock- wire holes	<b>6PS250</b> with lock- wire holes	<b>6PS202</b> without lock- wire holes	<b>6PS252</b> with lock- wire holes	<b>6PS203</b> without lock- wire holes	<b>6PS253</b> with lock- wire holes
<b>1/4" OD Tubing MS 33656 -E4</b>		<b>6PS300</b> without lock- wire holes	<b>6PS350</b> with lock- wire holes	<b>6PS302</b> without lock- wire holes	<b>6PS352</b> with lock- wire holes	<b>6PS303</b> without lock- wire holes	<b>6PS353</b> with lock- wire holes
<b>5/16" OD Tubing MS 33656 -E5</b>		<b>6PS400</b> without lock- wire holes	<b>6PS450</b> with lock- wire holes	<b>6PS402</b> without lock- wire holes	<b>6PS452</b> with lock- wire holes	<b>6PS403</b> without lock- wire holes	<b>6PS453</b> with lock- wire holes
<b>3/8" OD Tubing MS 33656 -E6</b>		<b>6PS500</b> without lock- wire holes	<b>6PS550</b> with lock- wire holes	<b>6PS502</b> without lock- wire holes	<b>6PS552</b> with lock- wire holes	<b>6PS503</b> without lock- wire holes	<b>6PS553</b> with lock- wire holes
<b>1/8" Pipe Fitting MS 33677</b>		<b>6PS600</b> without lock- wire holes	<b>6PS650</b> with lock- wire holes	<b>6PS602</b> without lock- wire holes	<b>6PS652</b> with lock- wire holes	<b>6PS603</b> without lock- wire holes	<b>6PS653</b> with lock- wire holes
<b>1/4" Pipe Fitting MS 33677</b>		<b>6PS700</b> without lock- wire holes	<b>6PS750</b> with lock- wire holes	<b>6PS702</b> without lock- wire holes	<b>6PS752</b> with lock- wire holes	<b>6PS703</b> without lock- wire holes	<b>6PS753</b> with lock- wire holes

## 6PS SERIES - DESIGN TYPE



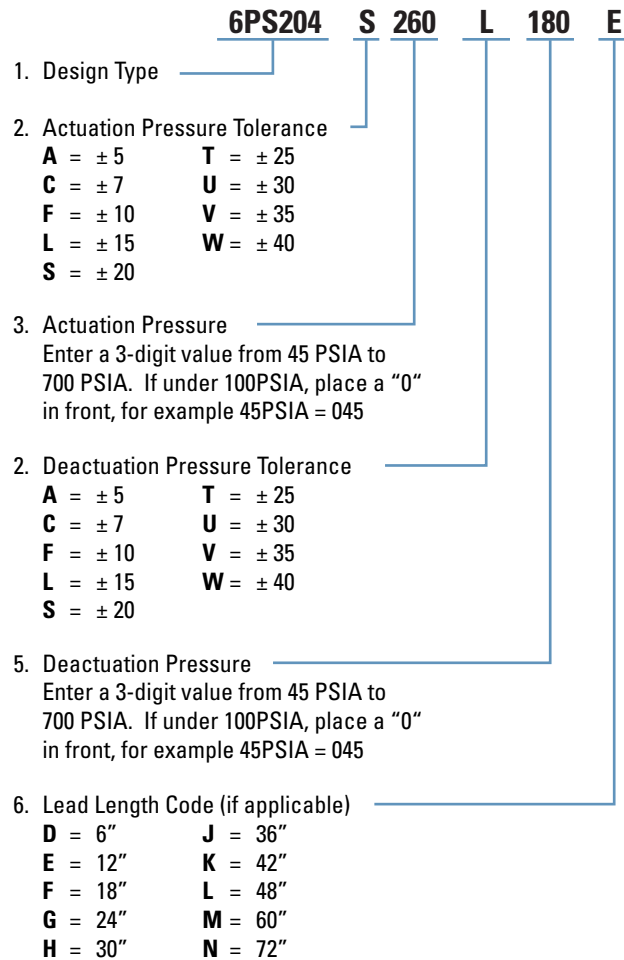
Lockwire holes are  $.047 \pm .006$  [ $1.19 \pm .15$ ] diameter. Located  $.050 \pm .008$  [ $1.27 \pm .20$ ] from port face of hex



		SPST	SPST	SPDT	SPDT	SPST (NC)	SPST (NC)	SPST (NO)	SPST (NO)
<b>1/8" OD Tubing MS 33656 -E2</b>		<b>6PS104</b> without lock-wire holes	<b>6PS154</b> with lock-wire holes	<b>6PS101</b> without lock-wire holes	<b>6PS151</b> with lock-wire holes	<b>6PS105</b> without lock-wire holes	<b>6PS155</b> with lock-wire holes	<b>6PS106</b> without lock-wire holes	<b>6PS156</b> with lock-wire holes
<b>3/16" OD Tubing MS 33656 -E3</b>		<b>6PS204</b> without lock-wire holes	<b>6PS254</b> with lock-wire holes	<b>6PS201</b> without lock-wire holes	<b>6PS251</b> with lock-wire holes	<b>6PS205</b> without lock-wire holes	<b>6PS255</b> with lock-wire holes	<b>6PS206</b> without lock-wire holes	<b>6PS256</b> with lock-wire holes
<b>1/4" OD Tubing MS 33656 -E4</b>		<b>6PS304</b> without lock-wire holes	<b>6PS354</b> with lock-wire holes	<b>6PS301</b> without lock-wire holes	<b>6PS351</b> with lock-wire holes	<b>6PS305</b> without lock-wire holes	<b>6PS355</b> with lock-wire holes	<b>6PS306</b> without lock-wire holes	<b>6PS356</b> with lock-wire holes
<b>5/16" OD Tubing MS 33656 -E5</b>		<b>6PS404</b> without lock-wire holes	<b>6PS454</b> with lock-wire holes	<b>6PS401</b> without lock-wire holes	<b>6PS451</b> with lock-wire holes	<b>6PS405</b> without lock-wire holes	<b>6PS455</b> with lock-wire holes	<b>6PS406</b> without lock-wire holes	<b>6PS456</b> with lock-wire holes
<b>3/8" OD Tubing MS 33656 -E6</b>		<b>6PS504</b> without lock-wire holes	<b>6PS554</b> with lock-wire holes	<b>6PS501</b> without lock-wire holes	<b>6PS551</b> with lock-wire holes	<b>6PS505</b> without lock-wire holes	<b>6PS555</b> with lock-wire holes	<b>6PS506</b> without lock-wire holes	<b>6PS556</b> with lock-wire holes
<b>1/8" Pipe Fitting MS 33677</b>		<b>6PS604</b> without lock-wire holes	<b>6PS654</b> with lock-wire holes	<b>6PS601</b> without lock-wire holes	<b>6PS651</b> with lock-wire holes	<b>6PS605</b> without lock-wire holes	<b>6PS655</b> with lock-wire holes	<b>6PS606</b> without lock-wire holes	<b>6PS656</b> with lock-wire holes
<b>1/4" Pipe Fitting MS 33677</b>		<b>6PS704</b> without lock-wire holes	<b>6PS754</b> with lock-wire holes	<b>6PS701</b> without lock-wire holes	<b>6PS751</b> with lock-wire holes	<b>6PS705</b> without lock-wire holes	<b>6PS755</b> with lock-wire holes	<b>6PS706</b> without lock-wire holes	<b>6PS756</b> with lock-wire holes

## 6PS PART NUMBER BUILDER

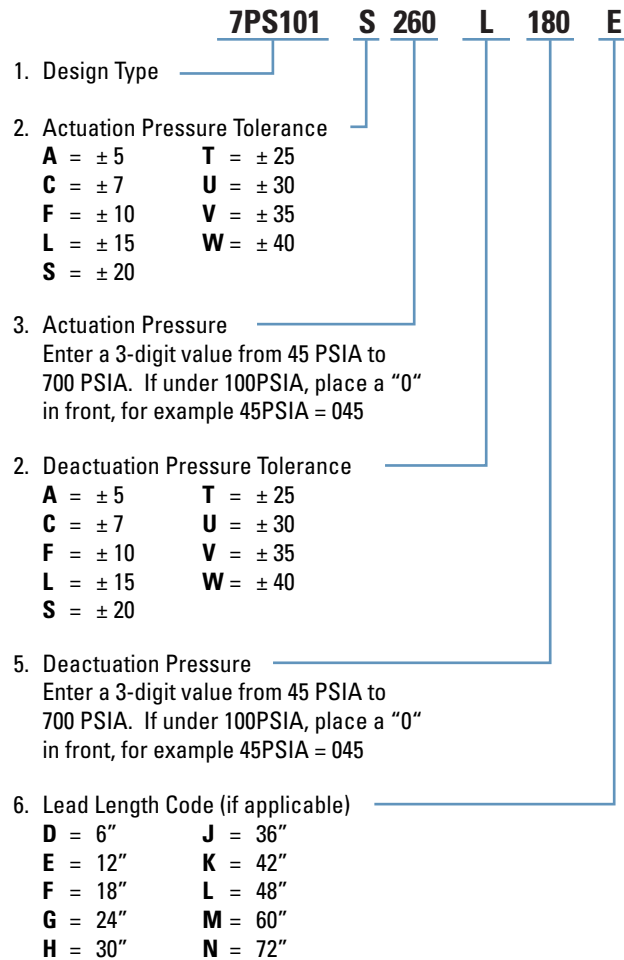
See pressure table for standard tolerances for the actuation and deactuation pressures. Note, after building the part number, consult the factory for pricing and to confirm pressure specifications are valid.



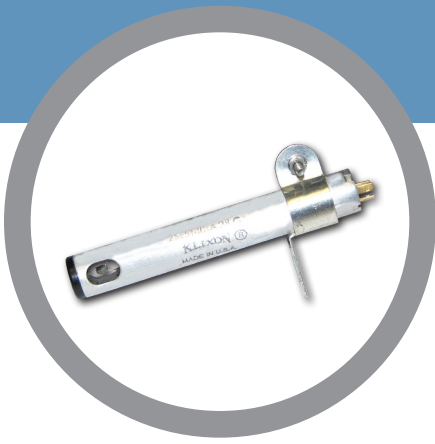
7PS SERIES - DESIGN TYPE				
Pressure Port	Terminals	FLATTENED & PIERCED TERMINALS	POTTED LEADS	PT1H-8-3P CONNECTOR
		<p>1.00" (25.4 mm) HEX or FLANGE</p>	<p>1.0" (25.4mm) HEX or FLANGE</p>	<p>1.0" (25.4mm) HEX or FLANGE</p>
1/8" OD Tubing MS 33656 -E2 (1" HEX)		7PS100	7PS101	7PS102
3/16" OD Tubing MS 33656 -E3 (1" HEX)		7PS200	7PS201	7PS202
1/4" OD Tubing MS 33656 -E4 (1" HEX)		7PS300	7PS301	7PS302
5/16" OD Tubing MS 33656 -E5 (1" HEX)		7PS400	7PS401	7PS402
3/8" OD Tubing MS 33656 -E6 (1" HEX)		7PS500	7PS501	7PS502
1/8" Pipe Fitting MS 33677 (1" HEX)		7PS600	7PS601	7PS602
1/4" Pipe Fitting MS 33677 (1" HEX)		7PS700	7PS701	7PS702
1" O.D. x 0.040" Flange Mount		7PS800	7PS801	7PS802

## 7PS PART NUMBER BUILDER

See pressure table for standard tolerances for the actuation and deactuation pressures. Note, after building the part number, consult the factory for pricing and to confirm pressure specifications are valid.







# KLIXON® | 2SE Series

## Solid-State Air Flow Sensors

### FEATURES

- Solid-state design for improved reliability
- SPST or SPDT configuration
- Normally open or normally closed
- Commercial or military grades available
- Low power dissipation (approximately 3 watts)
- Excellent shock and vibration resistance

### INTRODUCTION

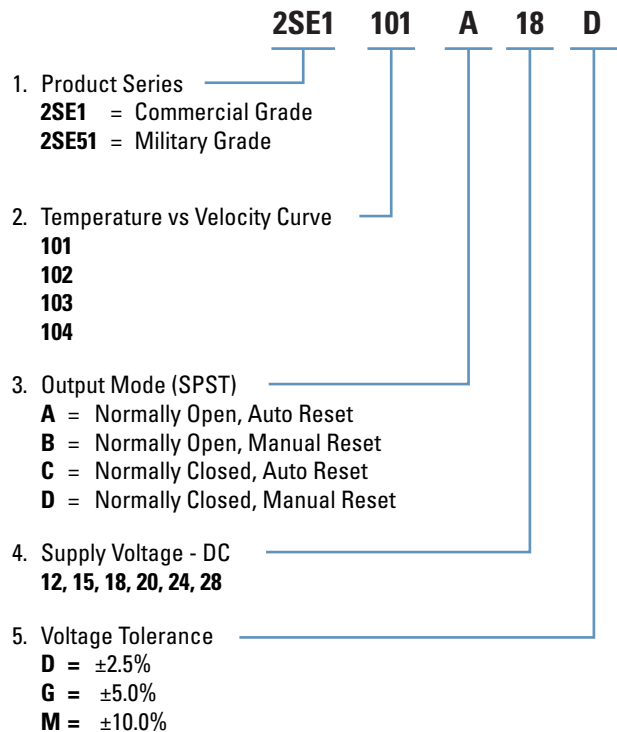
Sensata is a world leader in the design and manufacture of air flow sensors. We build devices that are high-quality, dependable, and reasonably priced. We can customize Klixon® air flow sensors to meet your engineering needs. Our solid-state vane switch is ideal for recognizing loss or reduction of airflow in electronic equipment. Typically used in power supplies, data processing equipment, and large electronic cabinets.

Unlike its electromechanical vane switch predecessor, our solid-state switch continues to provide reliable switching even in the dirtiest of environments. Klixon® air flow sensors are designed to recognize loss or reduction of airflow in:

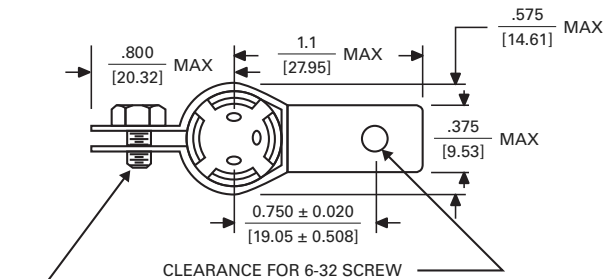
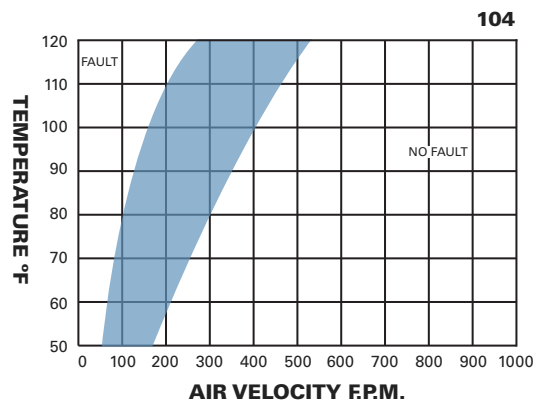
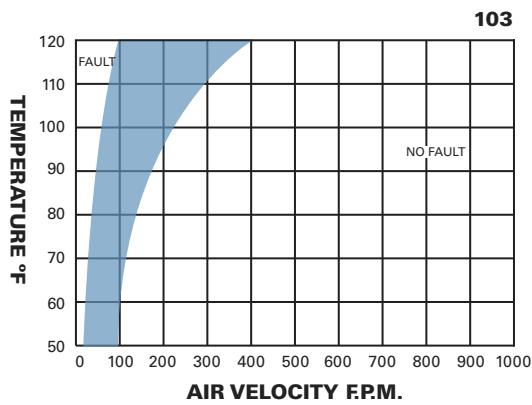
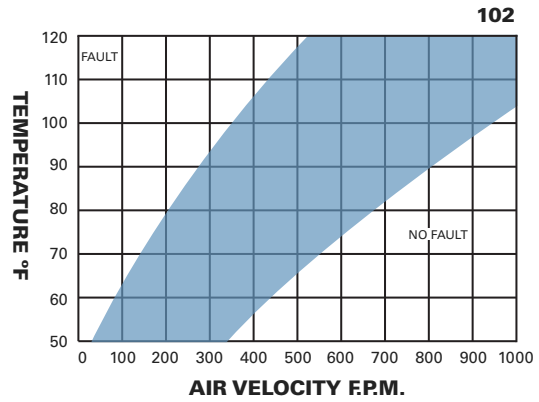
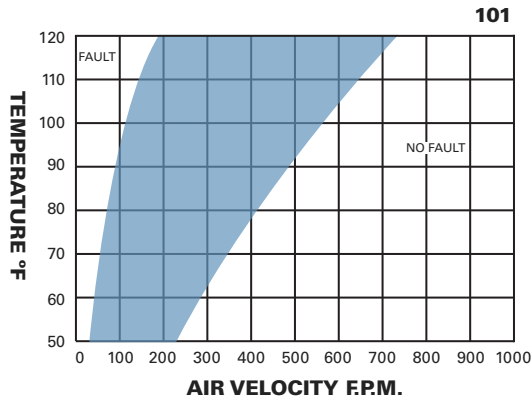
- Power supplies
- Data processing units
- Commercial electronic equipment
- Military electronic equipment

SPECIFICATIONS	
<b>Supply Voltage</b>	30 VDC max
<b>Switching Capacity</b>	up to 400 milliamps
<b>Operating Temperature</b>	+10°C to +50°C
<b>Amb. Temperature Range</b>	up to 150°C
<b>Life Cycles</b>	100,000
<b>Average Weight</b>	20 grams

### STANDARD PART NUMBER BUILDER







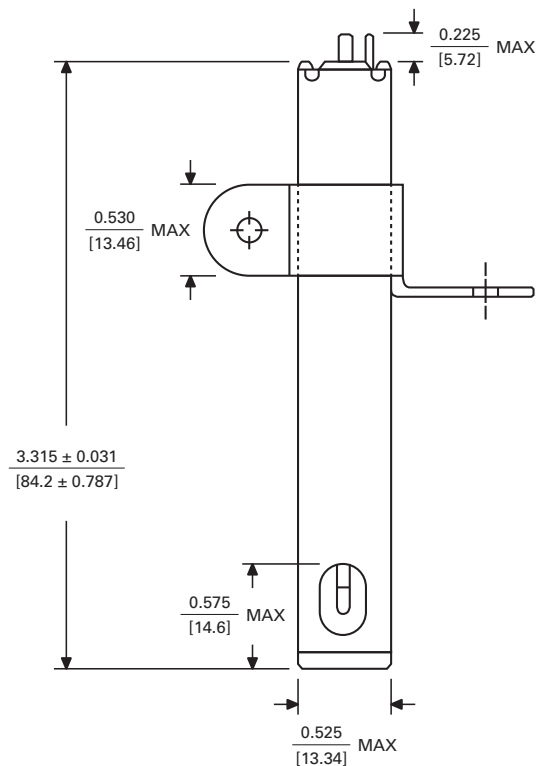
COMMERCIAL GRADE:  
SHEET METAL SCREW  
MILITARY GRADE:  
MACHINE SCREW, WASHER, NUT

TERMINALS ARE GOLD PLATED BRASS

$\frac{0.092 \pm 0.005}{[2.34 \pm 0.127]}$  WIDE X  $\frac{0.031 \pm 0.003}{[0.787 \pm 0.08]}$  THICK

WIRE LEADS AVAILABLE INTERNALLY WIRED, 22 AWG

MATING FEMALE QUICK-CONNECT  
TERMINALS ARE AVAILABLE, ORDER  
P/M 17874-1 FOR KIT OF 3.  
(ARK-LES P/N 3700HZC)



## SENSATA M8805 MIL SPEC SWITCH QUALIFICATIONS

Military Specification	Sensata Part Number	Seal	Poles	Configuration	Wire Leads	Threaded Mount
M8805/68-022	10AT117-01	Hermetic	SPDT	Flat Plunger	No Wires	None
M8805/68-023	10AT17-01	Hermetic	SPDT	Flat Plunger	No Wires	7/16-32NS-2A THD
M8805/68-024	10AT17-02-10	Hermetic	SPDT	Flat Plunger	Parallel - 72"	7/16-32NS-2A THD
M8805/68-025	10AT17-03-10	Hermetic	SPDT	Flat Plunger	Right Angle - 72"	7/16-32NS-2A THD
M8805/68-026	10AT15-01	Hermetic	SPDT	Flat Plunger	No Wires	Bracket Mount
M8805/68-027	10AT15-02-10	Hermetic	SPDT	Flat Plunger	Parallel - 72"	Bracket Mount
M8805/68-028	10AT15-03-10	Hermetic	SPDT	Flat Plunger	Right Angle - 72"	Bracket Mount
M8805/70-033	10AT372-32-10	Hermetic	2PDT	Sealed Flat Plunger	Parallel - 72"	15/32-32NS-2A THD
M8805/70-034	10AT373-32-10	Hermetic	2PDT	Sealed Roller Plunger	Parallel - 72"	15/32-32NS-2A THD
M8805/70-035	10AT372-33-10	Hermetic	2PDT	Sealed Flat Plunger	Right Angle - 72"	15/32-32NS-2A THD
M8805/70-036	10AT373-33-10	Hermetic	2PDT	Sealed Roller Plunger	Right Angle - 72"	15/32-32NS-2A THD
M8805/70-037	10AT375-102-10	Hermetic	4PDT	Sealed Flat Plunger	Parallel - 72"	15/32-32NS-2A THD
M8805/70-038	10AT374-102-10	Hermetic	4PDT	Sealed Roller Plunger	Parallel - 72"	15/32-32NS-2A THD
M8805/70-039	10AT375-103-10	Hermetic	4PDT	Sealed Flat Plunger	Right Angle - 72"	15/32-32NS-2A THD
M8805/70-040	10AT374-103-10	Hermetic	4PDT	Sealed Roller Plunger	Right Angle - 72"	15/32-32NS-2A THD
M8805/72-033	10AT363-02-10	Hermetic	SPDT	Flat Plunger	Parallel - 72"	5/16-24UNF-2A THD
M8805/72-034	10AT361-02-10	Hermetic	SPDT	Flat Plunger	Parallel - 72"	5/16-24UNF-2A THD Short
M8805/72-035	10AT363-03-10	Hermetic	SPDT	Flat Plunger	Right Angle - 72"	5/16-24UNF-2A THD
M8805/72-036	10AT361-03-10	Hermetic	SPDT	Flat Plunger	Right Angle - 72"	5/16-24UNF-2A THD Short
M8805/72-037	10AT364-02-10	Hermetic	SPDT	Spherical Plunger	Parallel - 72"	5/16-24UNF-2A THD
M8805/72-038	10AT362-02-10	Hermetic	SPDT	Spherical Plunger	Parallel - 72"	5/16-24UNF-2A THD Short
M8805/72-039	10AT364-03-10	Hermetic	SPDT	Spherical Plunger	Right Angle - 72"	5/16-24UNF-2A THD
M8805/72-040	10AT362-03-10	Hermetic	SPDT	Spherical Plunger	Right Angle - 72"	5/16-24UNF-2A THD Short
M8805/73-013	10AT7-02-10	Hermetic	SPDT	Sealed Flat Plunger	Parallel - 72"	3/8-32 NEF-2A THD
M8805/73-014	10AT7-03-10	Hermetic	SPDT	Sealed Flat Plunger	Right Angle - 72"	3/8-32 NEF-2A THD
M8805/73-015	10AT76-02-10	Hermetic	SPDT	Sealed Spherical Plunger	Parallel - 72"	3/8-32 NEF-2A THD
M8805/73-016	10AT76-03-10	Hermetic	SPDT	Sealed Spherical Plunger	Right Angle - 72"	3/8-32 NEF-2A THD
M8805/74-035	10AT366-02-10	Hermetic	SPDT	Flat Plunger	Parallel - 72"	15/32-32NS-2A THD
M8805/74-036	10AT368-02-10	Hermetic	SPDT	Roller Plunger	Parallel - 72"	15/32-32NS-2A THD
M8805/74-037	10AT366-03-10	Hermetic	SPDT	Flat Plunger	Right Angle - 72"	15/32-32NS-2A THD
M8805/74-038	10AT368-03-10	Hermetic	SPDT	Roller Plunger	Right Angle - 72"	15/32-32NS-2A THD
M8805/74-039	10AT369-02-10	Hermetic	SPDT	Sealed Flat Plunger	Parallel - 72"	15/32-32NS-2A THD
M8805/74-040	10AT371-02-10	Hermetic	SPDT	Sealed Roller Plunger	Parallel - 72"	15/32-32NS-2A THD
M8805/74-041	10AT369-03-10	Hermetic	SPDT	Sealed Flat Plunger	Right Angle - 72"	15/32-32NS-2A THD
M8805/74-042	10AT371-03-10	Hermetic	SPDT	Sealed Roller Plunger	Right Angle - 72"	15/32-32NS-2A THD
M8805/74-043	10AT367-02-10	Hermetic	SPDT	Spherical Plunger	Parallel - 72"	15/32-32NS-2A THD
M8805/74-044	10AT367-03-10	Hermetic	SPDT	Spherical Plunger	Right Angle - 72"	15/32-32NS-2A THD
M8805/74-045	10AT370-02-10	Hermetic	SPDT	Sealed Spherical Plunger	Parallel - 72"	15/32-32NS-2A THD
M8805/74-046	10AT370-03-10	Hermetic	SPDT	Sealed Spherical Plunger	Right Angle - 72"	15/32-32NS-2A THD

**"CLOSEST MATCH" CROSS REFERENCE**

Hermetic Mil Spec Solutions		Sensata's Closest Hermetic Solutions		General Description		
Military Specification	M8805	PN	Military Specification	Configuration	Wire Leads	Threaded Mount
M8805/80-01	/80	10AT506-33-10		Plunger	2PDT	5/8-24
M8805/80-03	/80	10AT506-33-10		Plunger	2PDT	5/8-24
M8805/80-04	/80	10AT507-103-10		Plunger	4PDT	5/8-24
M8805/80-05	/80	10AT358-33-10		Plunger	2PDT	15/32-32
M8805/80-06	/80	10AT510-103-10		Plunger	4PDT	15/32-32
M8805/80-07	/80	10AT373-33-10	M8805/70-036	Roller	2PDT	15/32-32
M8805/80-08	/80	10AT374-103-10	M8805/70-040	Roller	4PDT	15/32-32
MS24594-1	/41	3AT152-32-10		Plunger	2PDT	3/4-20
MS27216-1	/8	10AT511-01		Leaf	SPDT	NA
MS27216-2	/8	10AT511-02-2		Leaf	SPDT	NA
MS27216-3	/8	10AT511-03-2		Leaf	SPDT	NA
MS27216-4	/8	10AT511-02-9		Leaf	SPDT	NA
MS27216-5	/8	10AT511-01		Leaf	SPDT	NA
MS27216-6	/8	10AT511-01		Leaf	SPDT	NA
M8805/82-002	/82	10AT509-01		Leaf	SPDT	NA
MS21321-1	/39	10AT506-33-10		Plunger	2PDT	5/8-24
MS21321-2	/39	10AT507-103-10		Plunger	4PDT	5/8-24
MS24331-1	/40	10AT506-33-10		Plunger	2PDT	5/8-24
MS27240-1	/43	10AT358-33-10		Plunger	2PDT	15/32 -32
MS27240-2	/43	10AT510-103-10		Plunger	4PDT	15/32 -32
MS27240-3	/43	10AT373-33-10	M8805/70-036	Roller	2PDT	15/32 -32
MS27240-4	/43	10AT374-103-10	M8805/70-040	Roller	4PDT	15/32 -32
MS27240-5	/43	10AT358-33-10		Plunger	2PDT	15/32 -32
MS27240-6	/43	10AT510-103-10		Plunger	4PDT	15/32 -32
MS27240-7	/43	10AT373-33-10	M8805/70-036	Roller	2PDT	15/32 -32
MS27240-8	/43	10AT374-103-10	M8805/70-040	Roller	4PDT	15/32 -32

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**Sensata**  
Technologies

**The World Depends on Sensors and Controls**

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