



# Sensata Technologies

## KX SERIES



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## | KX SERIES

### SINE SWITCH

### Introduction

Aerospace and defense customers rely on the SENSATA KX Series sealed sine switch when freedom from environmental conditions is required. The versatile KLIXON sine switch element eliminates knife edges and high friction joints. It is sealed within a one-piece steel case with a metal "wave type" diaphragm at the actuating lever engineered to withstand high or low ambient pressures. Typical uses on aircraft include door interlock systems, engine ignition, and thrust reverser indication.



### Features

- Hermetic or environmental sealing options provide design freedom for various environmental conditions
- Compactly designed to fit small, narrow spaces
- Snap-acting Klixon sine switch provides exceptional resistance to shock and vibration
- Available with either screw or solder lug type terminals
- Wire leads are available
- Lead lengths can be supplied to customer requirements

### Applications

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



### SPECIFICATIONS

Where **KX5** or **KX4** is the temperature rating and type of seal:

Device	Sealed Enclosure Requirement	Maximum Temp.
<b>KX4</b>	Symbol 4 per MIL-PRF-8805 (epoxy sealed)	160° F (71°C)
<b>KX5-1</b>	Symbol 5 per MIL-PRF-8805 (fusion sealed)	275° F (135°C)
<b>KX5-2</b>	Symbol 5 per MIL-PRF-8805 (fusion sealed)	375° F (190°C)

## Performance Characteristics

		Resilient Standard Temp.	Hermetic Standard Temp.	Hermetic High Temp.
		KX4	KX5-1	KX5-2
<b>Actuating Force</b>		8 - 24 oz.	8 - 24 oz.	16 - 48 oz.
<b>Release Force</b>		3.0 oz. min.	3.0 oz. min.	3.0 oz. min.
<b>Pretravel</b>		0.025" max.	0.025" max.	0.035" max.
<b>Movement Differential</b>		0.020" max.	0.020" max.	0.024" max.
<b>Overtravel</b>		0.015" min.	0.015" min.	0.015" min.
<b>Positive, Overtravel Stop</b>		Yes	Yes	Yes
<b>Max. Allowable Force on Actuator</b>		25 lbs. Min.	25 lbs. Min.	25 lbs. Min.
<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>Current Rating</b> <b>28 VDC</b> <b>110 VAC, 60-400Hz</b>	<b>Resistive</b>	5 Amps		
	<b>Inductive</b>	3 Amps		
	<b>Lamp</b>	2 Amps		
<b>Minimum Life at Rated Load</b>		25,000 cycles	25,000 cycles	25,000 cycles
<b>Vibration Resistance - MIL-STD-202-204 (Test Condition A)</b>		10 G	10 G	10 G
<b>Shock Resistance</b> <b>1/2 sine wave, 11ms duration</b>		100 G w/o damage	100 G w/o damage	100 G w/o damage
<b>Dielectric Strength</b>		1250 VRMS	1250 VRMS	1250 VRMS
<b>Contact Arrangement</b>		SPDT	SPDT	SPDT
<b>Backfill</b>		n/a	Dry nitrogen	Dry nitrogen
<b>Seal</b>		Enclosure 4, *Resilient	Enclosure 5, **Hermetic	Enclosure 5, **Hermetic
<b>Weight</b>		1.0 oz. max.	1.1 oz. max.	1.2 oz. max.

\* Leakage Rate = 1 x 10<sup>-6</sup> cc std atmosphere Helium/second

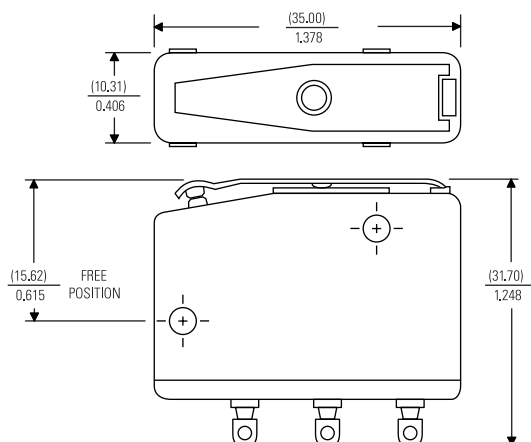
\*\* Leakage Rate = 1 x 10<sup>-8</sup> cc std atmosphere Helium/second



## DIMENSIONS

Revise to read "Dimensions in inches (mm)

Note: Terminal configurations shown below for illustration purposes



### STANDARD TERMINAL CONFIGURATIONS:

Figure A - Epoxy sealed terminals

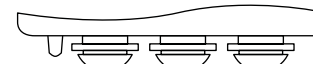


Figure B - Fusion sealed (Glass)



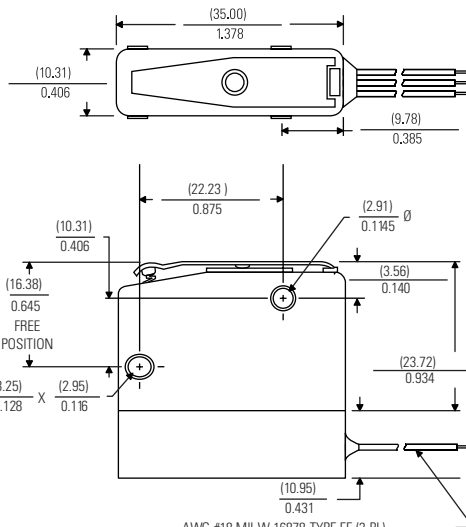
Tin dipped terminals

Figure C - Fusion sealed (Ceramic)



001 SINE SWITCH PACKAGE, 1 POLE (10 amps)

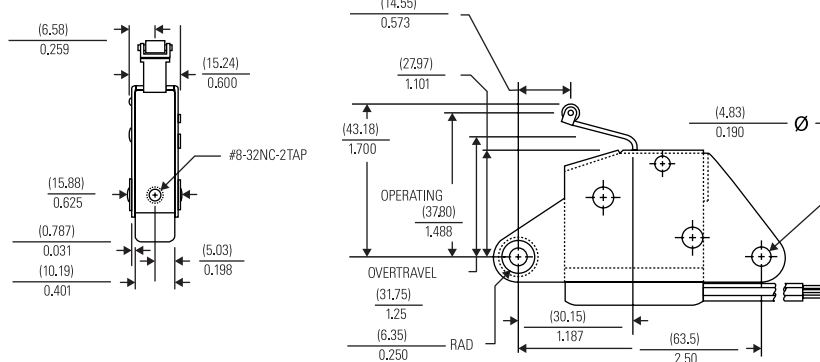
Basic Switch	KX4	KX5-1	KX5-2
Actuating Force (max)	24 oz	24 oz	24 oz
Release Force (max)	3 oz	3 oz	3 oz
Pretravel (max)	.025" (1.02mm)		
Movement Diff (max)	.020" (.76mm)		
Overtravel (min)	.015" (3.18mm)		
Dielectric Strength	1250 VRMS terminal to terminal 1250 VRMS terminal to case		
Approx Weight (no leads)	0.90 oz		



NOTE: LEADS SHOWN ABOVE ARE BENT AT 90 DEGREES, HOWEVER STRAIGHT LEADS ARE ALSO AVAILABLE UPON REQUEST.

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

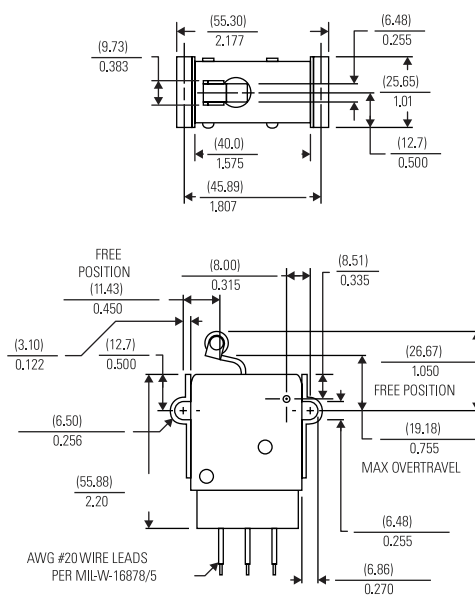
Basic Switch	KX4	KX5-1	KX5-2
Actuating Force (max)	48 oz	48 oz	48 oz
Release Force (max)	8 oz	8 oz	8 oz
Movement Diff (max)	.090" (2.29mm)		



NOTE: LEADS SHOWN ABOVE ARE BENT AT 90 DEGREES, HOWEVER STRAIGHT LEADS ARE ALSO AVAILABLE UPON REQUEST.

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

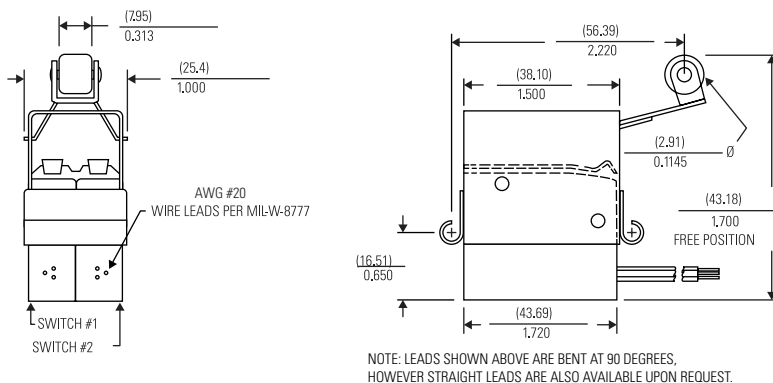
Basic Switch	KX4	KX5-1	KX5-2
Actuating Force (max)	96 oz	96 oz	96 oz
Overtravel Force (max)	160 oz	160 oz	160 oz
Pretravel (max)	.100" (2.54mm)		
Movement Diff (max)	.06" (1.53mm)		
Overtravel (min)	.175" (4.45mm)		
Approx Weight (no leads)	12 oz		



NOTE: LEADS ALSO AVAILABLE WITH 90 DEGREE EXIT UPON REQUEST.

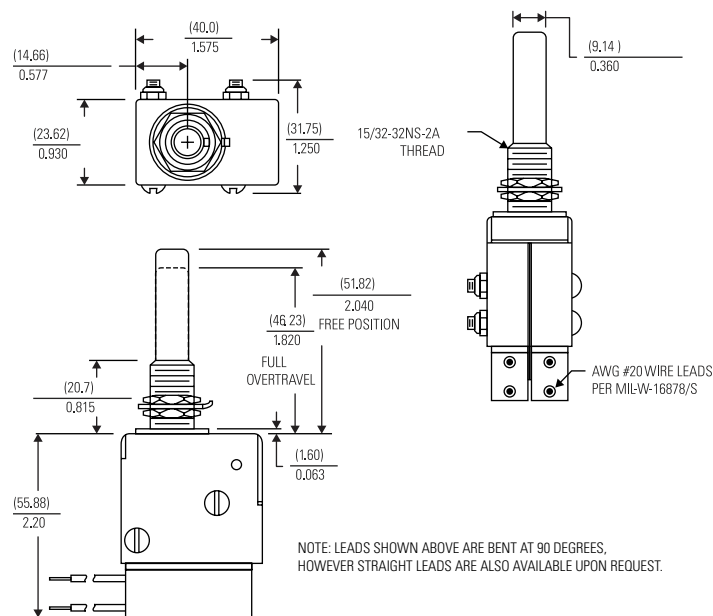
### 004 ROLLER LEAF SWITCH PACKAGE, 2 POLE (10 amps)

Basic Switch	KX4	KX5-1	KX5-2
<b>Actuating Force (max)</b>	160 oz	160 oz	160 oz
<b>Release Force (max)</b>	32 oz	32 oz	32 oz
<b>Pretravel (max)</b>	.150" (3.81mm)		
<b>Movement Diff. (max)</b>	.020" (.76mm)		
<b>Overtravel (min)</b>	.450" (11.43mm)		



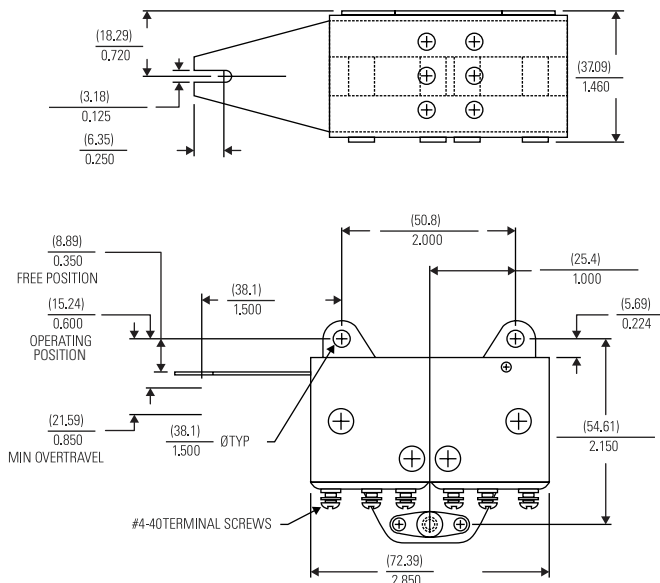
### 005 PLUNGER SWITCH PACKAGE, 2 POLE (10 amps)

Basic Switch	KX4	KX5-1	KX5-2
<b>Actuating Force (max)</b>	96 oz	96 oz	96 oz
<b>Release Force (max)</b>	32 oz	32 oz	32 oz
<b>Pretravel (max)</b>	.075" (1.91mm)		
<b>Movement Diff. (max)</b>	.030" (.76mm)		
<b>Overtravel (min)</b>	.175" (4.45mm)		
<b>Positive Overtravel Stop</b>	Yes		
<b>Max Force on Actuator</b>	20 lbs		
<b>Approx Weight (no leads)</b>	12 oz		



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

Basic Switch	KX4	KX5-1	KX5-2
<b>Actuating Force (max)</b>	48 oz	48 oz	48 oz
<b>Release Force (max)</b>	8 oz	8 oz	8 oz
<b>Movement Diff. (max)</b>	.090" (2.29mm)		



Note: All dimensions are reference only.



## WARNINGS



### RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE

- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

**Failure to follow these instructions can result in serious injury, or equipment damage.**



### HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Disconnect all power before installing or working with this equipment
- Verify all connections and replace all covers before turning on power

**Failure to follow these instructions will result in death or serious injury.**

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