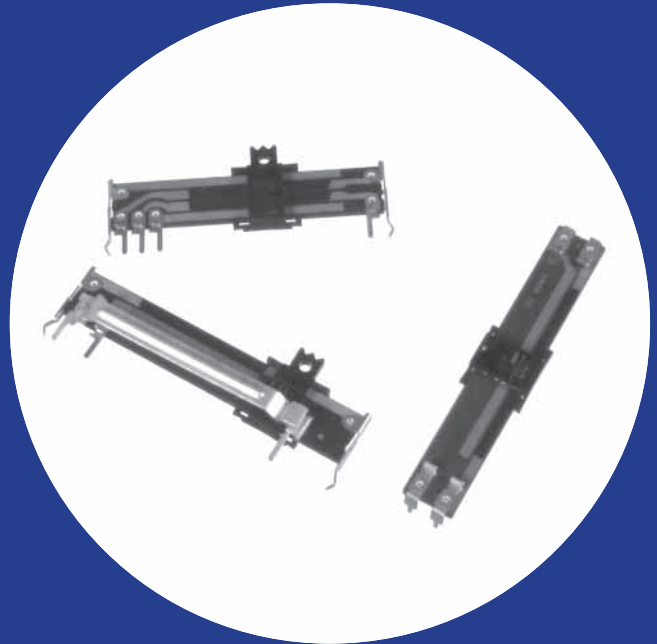


## Linear Motion Composition Slide Controls

### Features

- Innovative AC power switch, SPST or SPDT, available on mono element resistors
- 10-60mm slider travel
- 1,000 watts power rating (SPST switch)
- 600 watts power rating (SPDT switch)
- Detent at 50% travel available
- Multiple detents available
- Single or dual element designs
- Economical
- Wide resistance range
- Slim construction permits stacking many units in a small space
- RoHS Compliant



Patent No.: US: 5,959,525 , Taiwan: 204502.

## Electrical and Mechanical Specifications

### Resistance Range

500 ohms through 1 megohms

### Resistance Tolerance

Standard  $\pm 20\%$   
Available  $\pm 10\%$

### Resistance Tapers

Standard: Linear  
Special: Available upon request

### Insulation Resistance

10 megohms at 250 VDC

### Voltage Rating

Across end terminals  
Linear curves—300 VDC  
(Not to exceed wattage ratings)

### Maximum Operating Voltage

Size \ Taper	10mm	15mm 20mm	30mm	45mm	60mm
Linear	100VDC	150VDC 200VDC	250VDC	300VDC	500VDC
Non-linear	50VDC	50VDC 150VDC	200VDC	250VDC	300VDC

### Power Rating, watts

Size \ Taper	10mm	15mm 20mm	30mm	45mm	60mm
Linear	0.05w	0.1w	0.2w	0.25w	0.5w
Non-linear	0.025w	0.05w	0.1w	0.15w	0.25w

### Power Switch (optional)

- SPST - 10,000 cycles carrying 1,000 watts 120 VAC  
(Tungsten-filament)  
10,000 cycles switching 6A 120 VAC @ 0.75-0.80PF  
(Inductive load)
- SPDT - 10,000 cycles carrying 600 watts 120 VAC  
(Tungsten-filament)  
6,000 cycles switching 3A 120 VAC @ 0.75-0.80PF  
(Inductive load)

### Slide Travel

X and U Style: 10, 15, 20, 30, 45, and 60mm  
V Style: 10, 15, 25, 40, and 55mm

Switch: 20mm = 17mm electrical + 3mm switch  
30mm = 27mm electrical + 3mm switch (SPST only)

### Actuator Information

See illustrations, page 4 (Actuator Styles)

### Operating Force

Either direction 20-150 gf  
Switch force: 100-500 gf

### Stop Strength

3K gf maximum, measured at base of slider

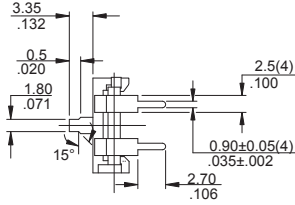
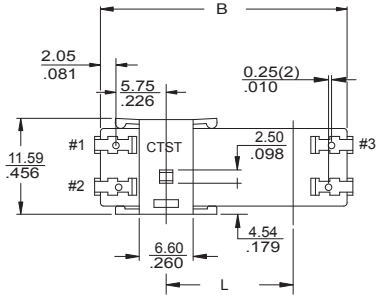
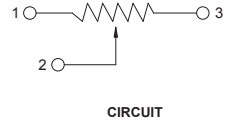
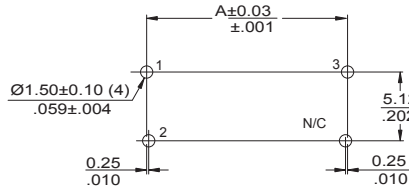
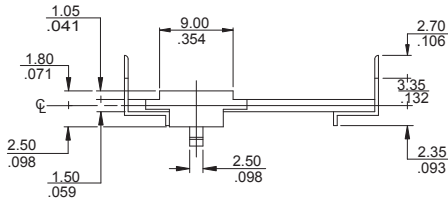
### Detent Force (detent optional)

Leaving detent: 20-200 gf over operating force

### Operating Life

10,000 cycles

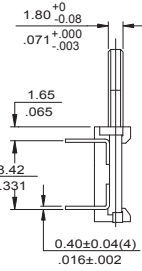
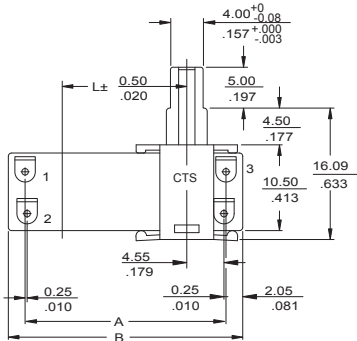
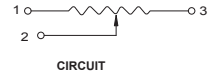
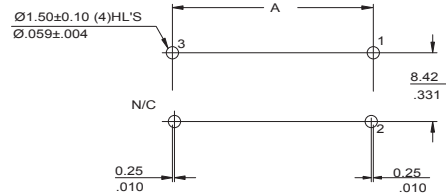
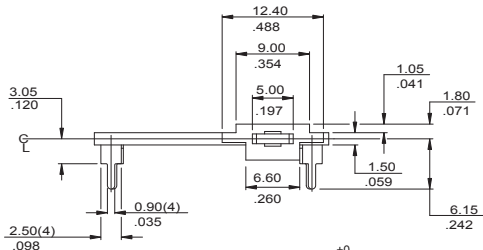
## TYPE V448 MONO



MODEL	DIMENSIONS		
	L (Travel)	A	B
V448-10M	10/ .394	30.20/1.189	28.70/1.130
V448-15M	15/ .591	35.20/1.387	33.70/1.372
V448-25M	25/ .984	45.20/1.180	43.70/1.721
V448-40M	40/ 1.575	60.20/2.370	58.70/2.311
V448-55M	55/ 2.166	75.20/2.961	73.70/2.902

DIMENSION:  $\frac{\text{mm}}{\text{INCH}}$

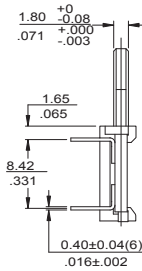
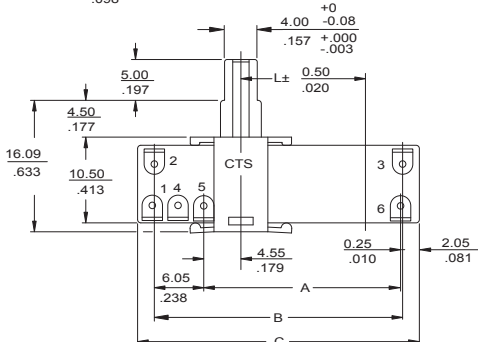
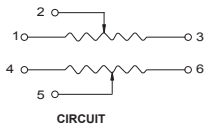
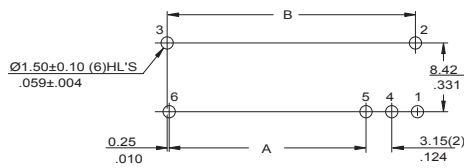
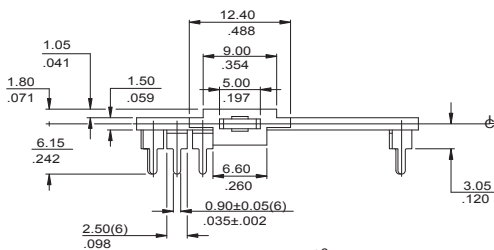
## TYPE U448 MONO



MODEL	DIMENSIONS		
	L(Travel)	A	B
U448-10M	10/ .394	19.60/ .772	23.70/ .933
U448-15M	15/ .591	24.60/ .969	28.70/1.130
U448-20M	20/ .787	29.60/1.165	33.70/1.327
U448-30M	30/ 1.181	39.60/1.559	43.70/1.720
U448-45M	45/ 1.772	54.60/2.149	58.70/2.311
U448-60M	60/ 2.362	69.60/2.740	73.70/2.902

DIMENSION:  $\frac{\text{mm}}{\text{INCH}}$

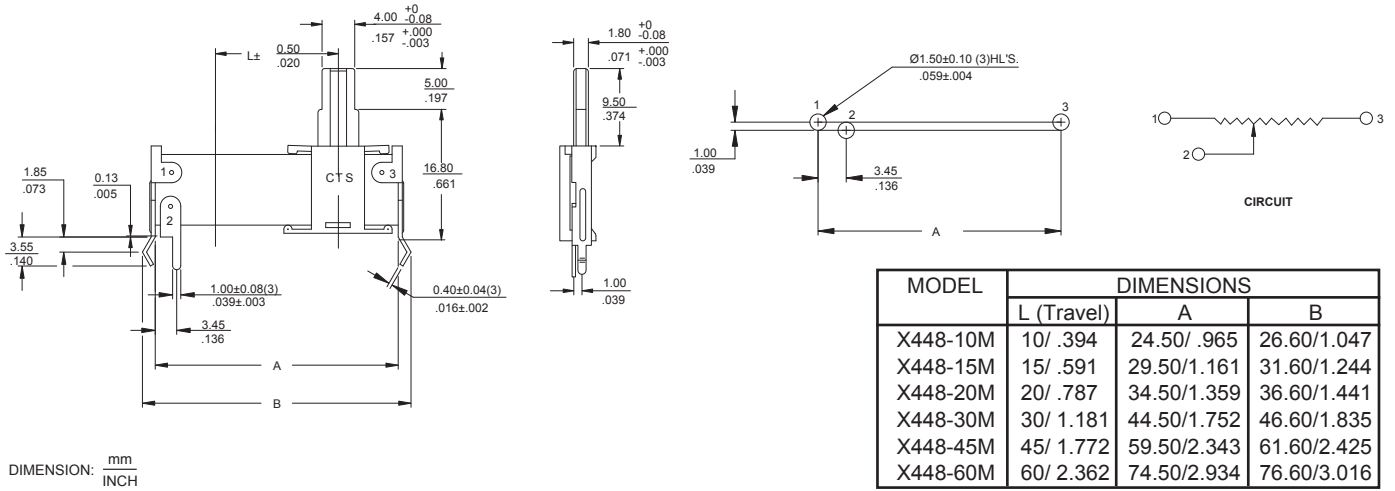
## TYPE U448 DUAL



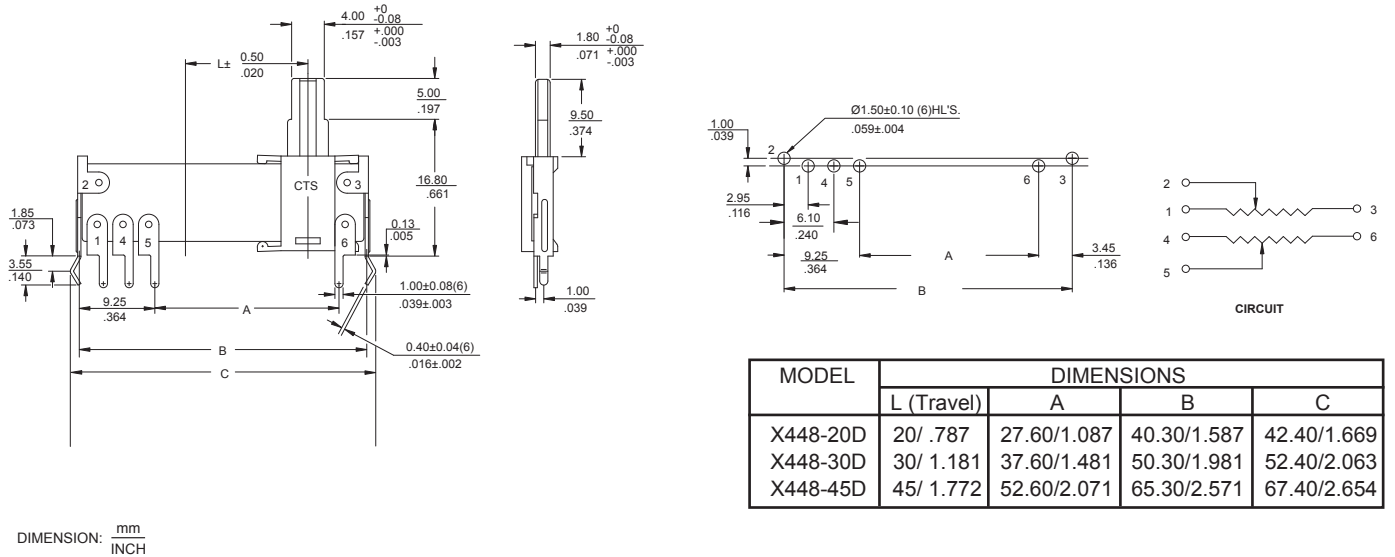
MODEL	DIMENSIONS			
	L(Travel)	A	B	C
U448-20D	20/ .787	29.10/1.146	35.40/1.394	39.50/1.555
U448-30D	30/ 1.181	39.10/1.539	45.40/1.787	49.50/1.949
U448-45D	45/ 1.772	54.10/2.130	60.40/2.378	64.50/2.539

DIMENSION:  $\frac{\text{mm}}{\text{INCH}}$

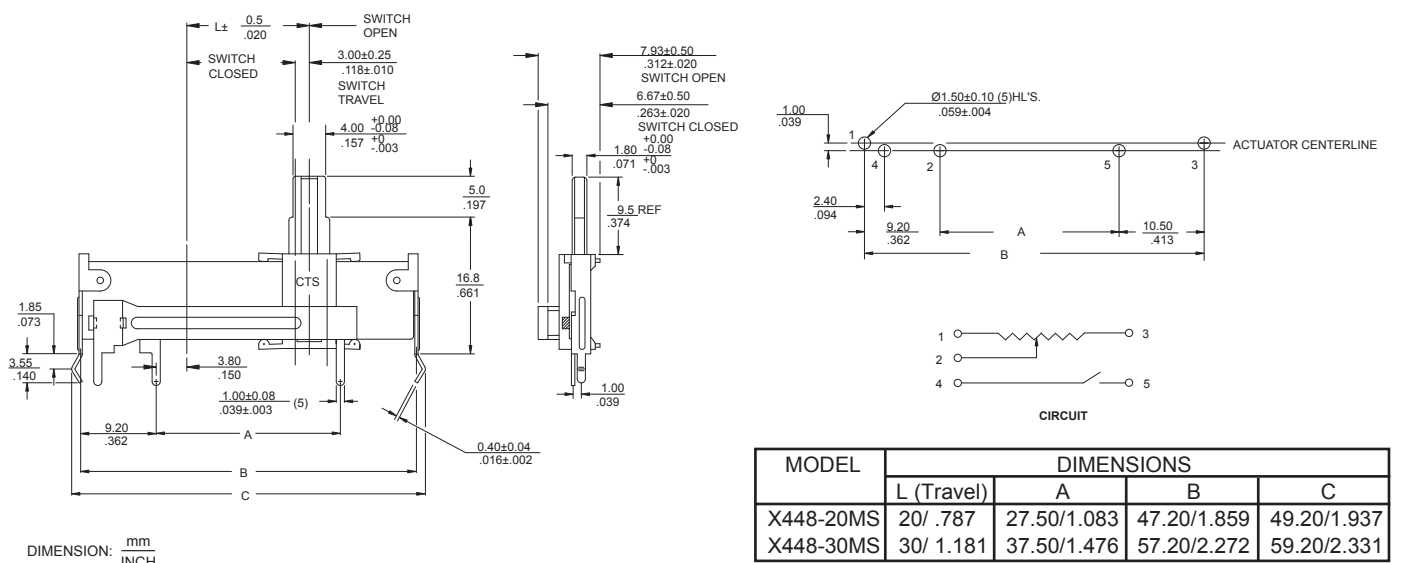
## TYPE X448 MONO



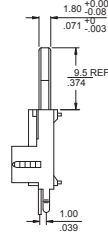
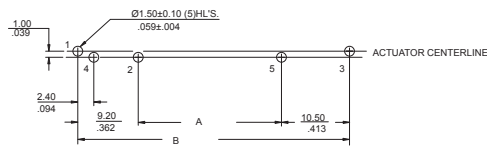
## TYPE X448 DUAL



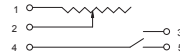
## TYPE X448 MONO W/SPST SWITCH



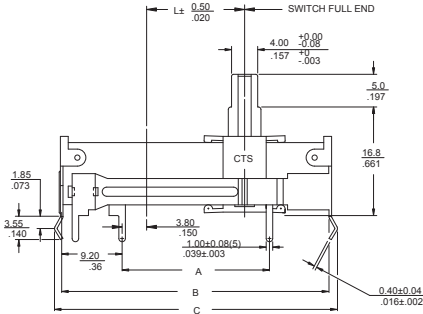
# TYPE X448 MONO W/SPDT SWITCH (with style A actuator only)



DIMENSION: mm  
INCH

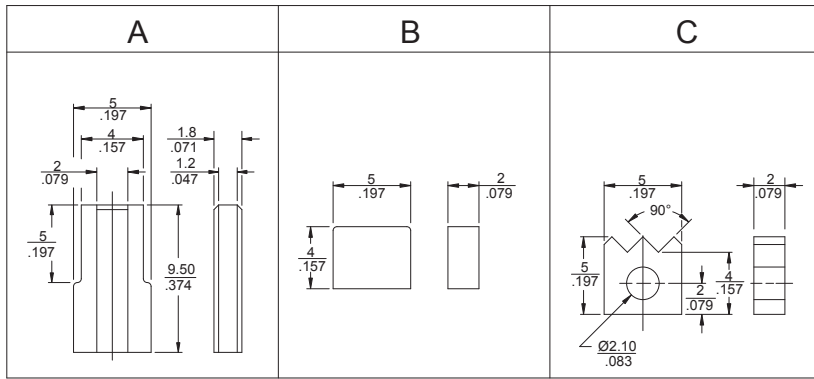


CIRCUIT

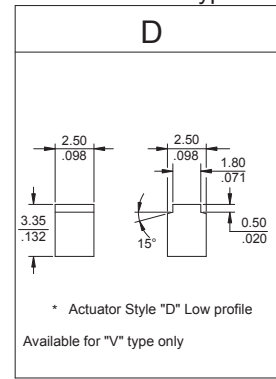


MODEL	DIMENSIONS			
	L (Travel)	A	B	C
X448-20MS	20/ .787	27.50/1.083	47.20/1.859	49.20/1.937

## 448 Series Actuator Styles



Actuator Style "D"  
Available for "V" type only



## Ordering Information

**448**

**U**

**E**

**2**

**102**

**B**

**D**

**N**

**MOUNTING STYLE**  
**U**- ACTUATOR-PARALLEL TO PC BOARD(mono only)  
**X**- ACTUATOR PERPENDICULAR TO PC BOARD(mono only)  
**V**- ACTUATOR(low profile) PERPENDICULAR TO PCB (mono only)

**TRAVEL**  
**U & X TYPES V-TYPE**  
**A**- 10mm **A**- 10mm  
**B**- 15mm **B**- 15mm  
**C**- 20mm **C**- 25mm  
**D**- 30mm **D**- 40mm  
**E**- 45mm **E**- 55mm  
**F**- 60mm

**RESISTANCE CODE (EXAMPLES)**

CODE	RESISTANCE
501	500 ohms
102	1K
252	2.5K
502	5K
103	10K
253	25K
503	50K
104	100K

**TAPER**  
**D**- LINEAR  
**A**- CW 10% AUDIO  
**B**- CCW 10% AUDIO

**ACTUATOR STYLE**  
**U & X TYPES V-TYPE**  
**2**- STYLE A: 9.5mm **1**- STYLE D: 3.35mm  
**3**- STYLE B: 4.0mm  
**4**- STYLE C: 5.0mm

**RESISTANCE TOLERANCE**  
**A**- ±10%  
**B**- ±20%  
**C**- ±30%

**SPECIALS**  
**N**- NO SPECIALS  
**C**- CENTER DETENT  
**M**- MULTIPLE DETENT (30mm only)  
**S**- SPST POWER SWITCH (20 & 30mm X type only)  
**D**- SPDT POWER SWITCH (20 mm X type and 9.5mm actuator only)

Consult factory for dual elements/other customized features.