

# Series 270

## 16mm Rotary Potentiometer

- 16mm Compact size
- Versatile Mounting Styles
- Single, Tandem, and Concentric Options
- Power Switch Option
- Panel Seal Available
- Low Noise Output



### Ordering Information

Series	Terminal Style	Mounting Style "A"	Shaft Length "L"	Shaft Dia. and Trim	Resistance Code	Resistance Tolerance	Taper	Switch Type	Special Options
270/275	T	2	20	R	103	B	1	A	1

Code	Spec.
T	Solder lug
*X	PC
*U	PC formed to front
V	PC formed to rear

\* Series 275 required

Code	Spec.
2	.250"
3	.375"
8	1.000"

3/8"-32UNEF-2A  
Length Increment: 1/8"

Code	Spec.
1	Twist tab
0	Bracket

Code	Spec.
16	.500"
20	.625"
24	.750"
28	.875"
32	1.000"

Length Increment: 1/32"

Code	Spec.
16	.500" (trim "U" & "K" only)
28	.875" (trim "V" only)
32	.984" (trim "W" only)

Code	Spec.
A	.125" Dia. round
B	.125" Dia. flatted
C	.125" Dia. slotted
R	.156" Dia. round
F	.156" Dia. flatted
S	.156" Dia. slotted
G	.187" Dia. round
H	.187" Dia. flatted
J	.187" Dia. slotted
X	.236" Dia. round
L	.236" Dia. flatted
M	.236" Dia. slotted
N	.236" Dia. split knurl (18 teeth)
P	.250" Dia. round
D	.250" Dia. flatted
E	.250" Dia. slotted
T	.236" Dia. split knurl (24 teeth)

Code	Spec.
*U	.187" Dia. split knurl (.500" shaft length)
**K	.236" Dia. split knurl (.500" shaft length)
*V	.187" Dia. flatted (.875" shaft length only)
**W	.236" Dia. flatted (.984" shaft length only)

Code	Spec.
A	None
B	Rotary
C	Momentary
D	Push-pull

Code	Spec.
1	Linear
2	10% Audio
3	10% CCW Audio

Code	Spec.
A	±10%
B	±20%
C	±30%

Code	Spec.
1	500 Ω
102	1 kΩ
252	2.5 kΩ
502	5 kΩ
103	10 kΩ
253	25 kΩ
503	50 kΩ
104	100 kΩ

Code	Spec.
1	Left locating lug
2	Left locating lug with 50% detent
3	Right locating lug with 50% detent
4	Right locating lug
5	No locating lug

\*Not available with switch  
\*\*With rotary switch only

## Electrical Specifications

Parameter	Conditions & Remarks	Min	Max	Unit
Resistance Range	Linear	500	2 Meg	Ω
	Audio	5k	200k	Ω
Resistance Tolerance	Standard	-30	+30	%
	Special	-20	+20	%
	Special	-10	+10	%
Power Rating	@ 55°C, resistances ≤100 kΩ		0.25	watts
	@ 55°C, resistances >100 kΩ		0.20	watts
Dielectric Strength	1 minute		750	VAC
Insulation Resistance	250 VDC	100		MΩ
Maximum Operating Voltage			500	VDC
Effective Electrical Angle of Rotation	Without switch		300	°
	With switch		290	°

## Mechanical and Environmental

Parameter	Conditions & Remarks	Min	Max	Unit
Operating Temperature Range		-10	+70	°C
Rotational Life		10,000		cycles
Mechanical Angle	Without switch		300	°
	With switch		315	°
Rotational Torque		36	360	gf-cm
Stop Strength		5.76		kgf-cm
Push-Pull Strength of Shaft:	10 kg for 10 seconds			
Soldering Condition:	Maximum temperature of 260° for 5 seconds			
Mounting Information:	Bushing, twist tab, solder lug, snap-in PC bracket, PC terminal			
Packaging:	Standard cardboard box packaging			

*All testing is performed at room ambient conditions except as noted. Users should verify device actual performance in their specific applications. This product is compliant to RoHS3 Directive 2015/863 Amendments of Annex II on 31 March 2015, and REACH SVHC Directive EC 1907/2006 Amendments of Annex XIV & Annex XVII on 15 January 2018.*

*Custom and value-added options available on request. Please contact your sales representative for additional information.*

## Electrical and Mechanical Specifications

### Metal Shaft and Bushing

#### Single or Dual Section Potentiometer with One Shaft

Shaft Diameter		Bushing Diameter	
inch	mm	inch	mm
.125	3.20	1/4" – 32UNEF-2A	M7 X .75P
.156	4.00	1/4" – 32UNEF-2A	M7 X .75P
.187	4.70	3/8" – 32UNEF-2A	M7 X .75P
.236	6.00	3/8" – 32UNEF-2A	M8 X .75P
.250	6.35	3/8" – 32UNEF-2A	M9 X .75P

#### Concentric Tandem Potentiometer with Two Shafts

Outer Shaft Diameter		Inner Shaft Diameter		Bushing Diameter	
inch	mm	inch	mm	inch	mm
.236	6.00	.156	4.0	3/8" – 32UNEF-2A	M8 X .75P
.250	6.35	.125	3.2	3/8" – 32UNEF-2A	M9 X .75P

**Molded Shaft and Bushing**

*Single Section Potentiometer with One Shaft*

Shaft Diameter		Bushing Diameter	
inch	mm	inch	mm
.156	4.00	1/4" – 32UNEF-2A	M7 X .75P
.187	4.70	3/8" – 32UNEF-2A	M7 X .75P
.236	6.00	3/8" – 32UNEF-2A	M8 X .75P
.250	6.35	3/8" – 32UNEF-2A	M9 X .75P

**Shaft with Twist Tab, Bend Tab, Snap-in PC Bracket, or PC Terminal**

*All metal or molded shaft diameters can be used except .187"(4.7mm), which can be used with snap-in PC bracket only.*

**Terminal Information**

**Standard:**

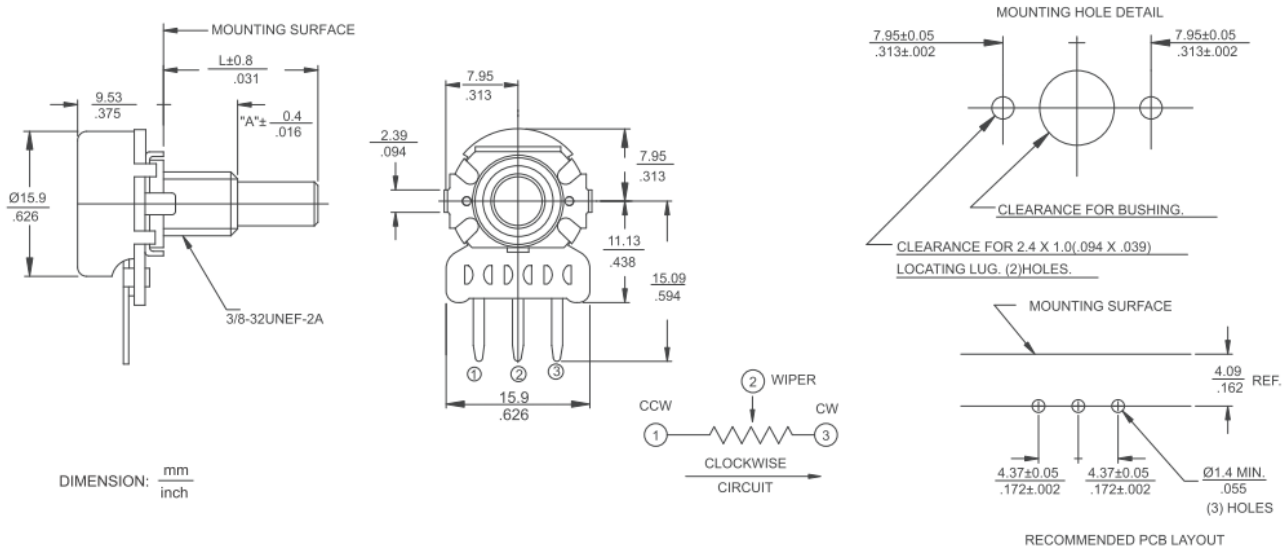
- T: Solder lug formed 90° to the rear on single and multi-section.
- X: PC terminals standard .438" (11.1mm) from center line of control to PC board, straight terminals extend .156" (4.0mm) into PC board.
- U: PC terminals formed 90° forward toward mounting surface. Terminals extend .187" (4.7mm) beyond mounting surface.
- V: PC terminals formed 90° to the rear, away from panel mounting. Terminals extend .442" (11.2mm) from mounting surface.

**Special:**

- T: Solder lug perpendicular to shaft. Or, solder lug formed 60° to the rear.
- W: Wire wrap terminals — .156" (4.0mm) terminal extension beyond base, formed 60° to the rear.

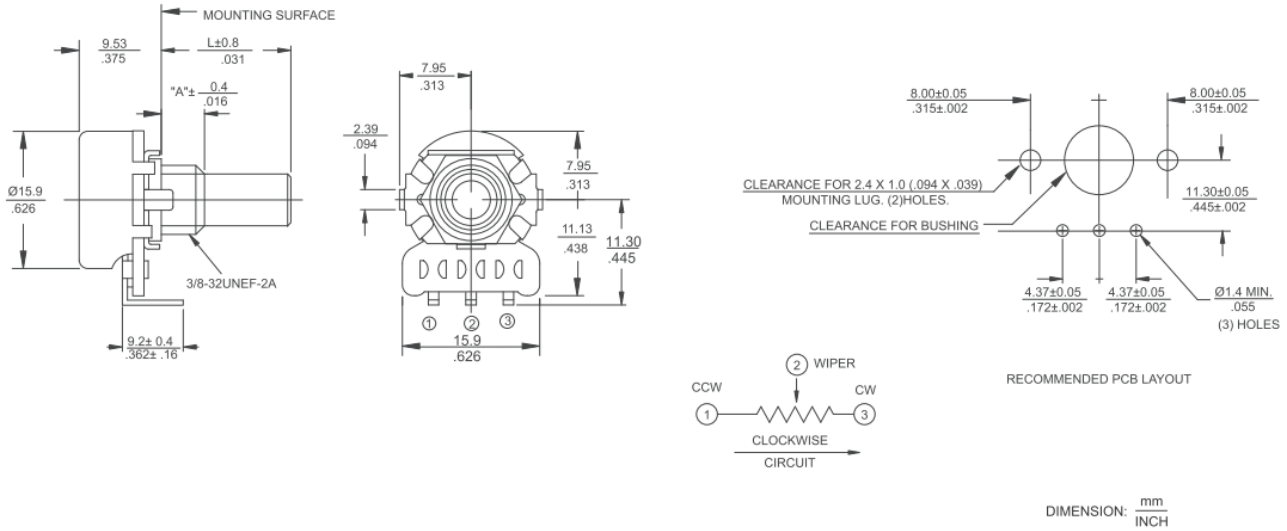
**Electrical and Mechanical Specifications**

Series 270X Metal Shaft, Bushing Mount, Printed Circuit "X" Type Terminals

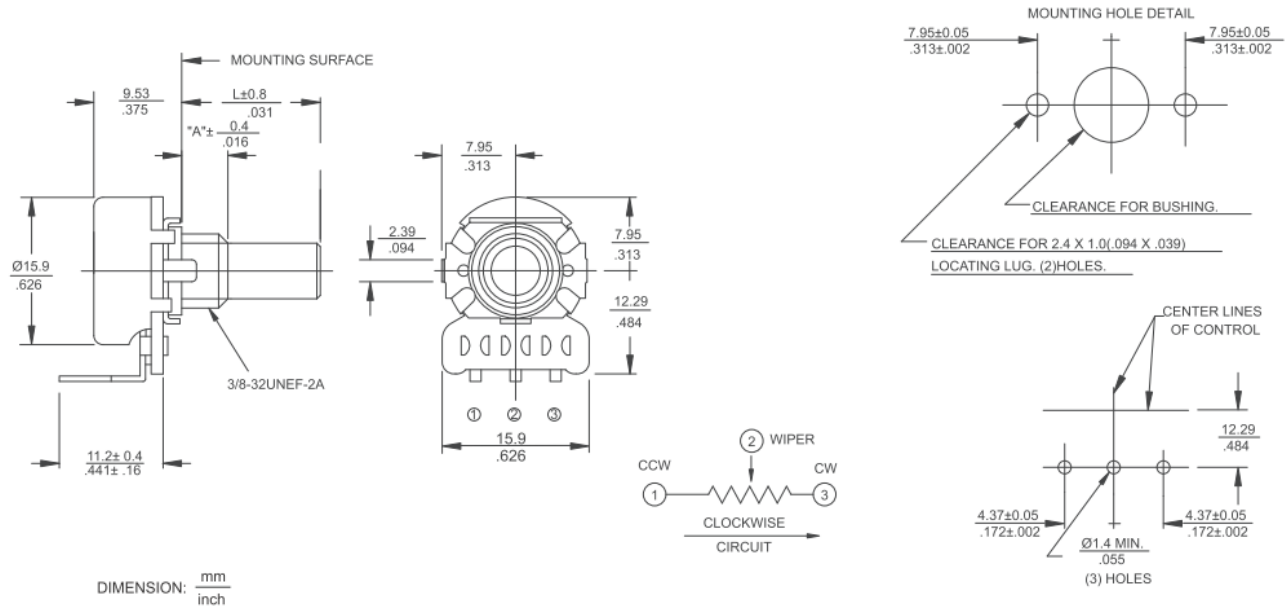


## Electrical and Mechanical Specifications

### Series 270U Metal Shaft, Bushing Mount, Printed Circuit "U" Type Terminals

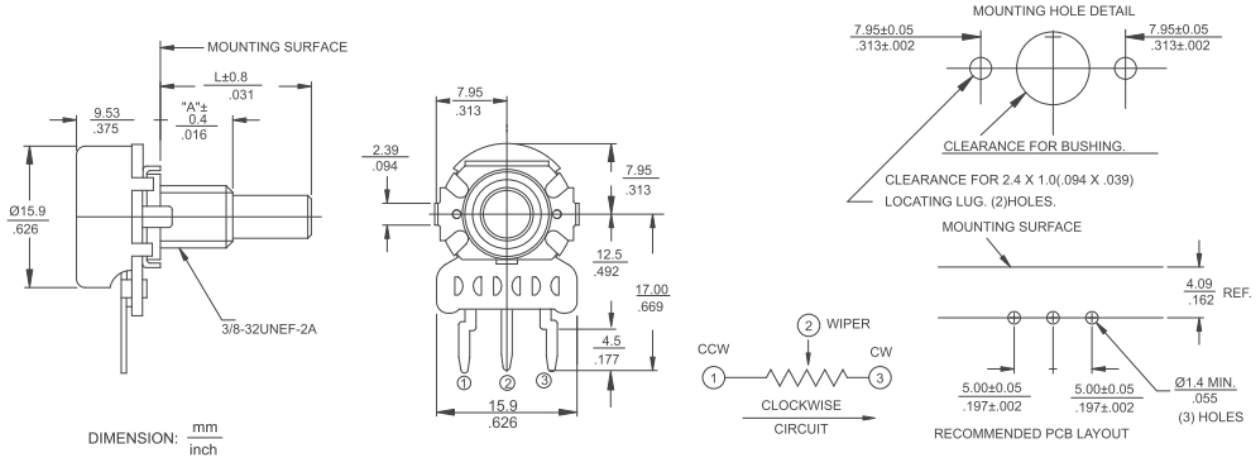


### Series 270V Metal Shaft, Bushing Mount, Printed Circuit "V" Type Terminals

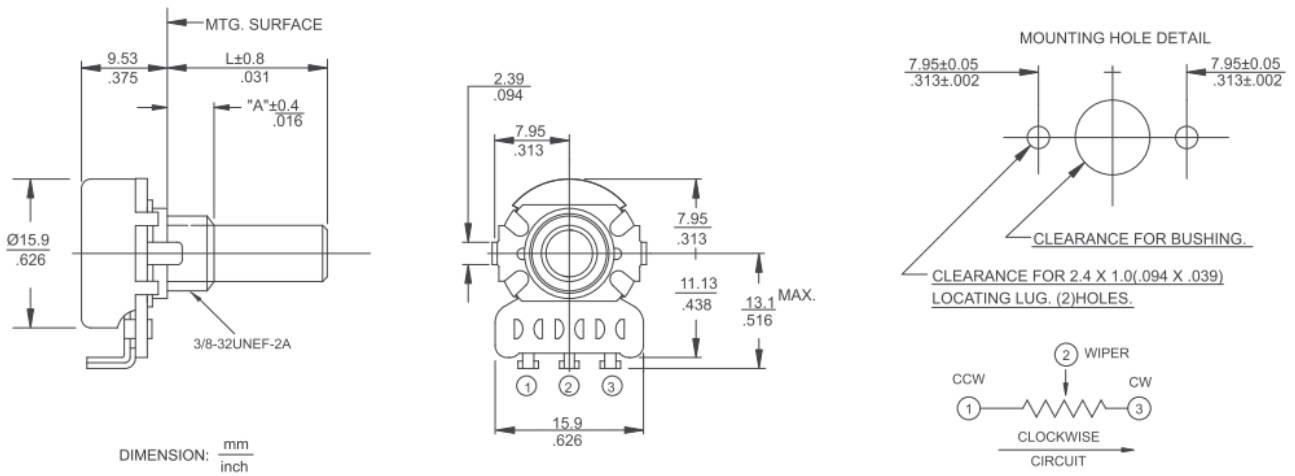


## Electrical and Mechanical Specifications

### Series 275X Metal Shaft, Bushing Mount, Printed Circuit "X" Type Terminals

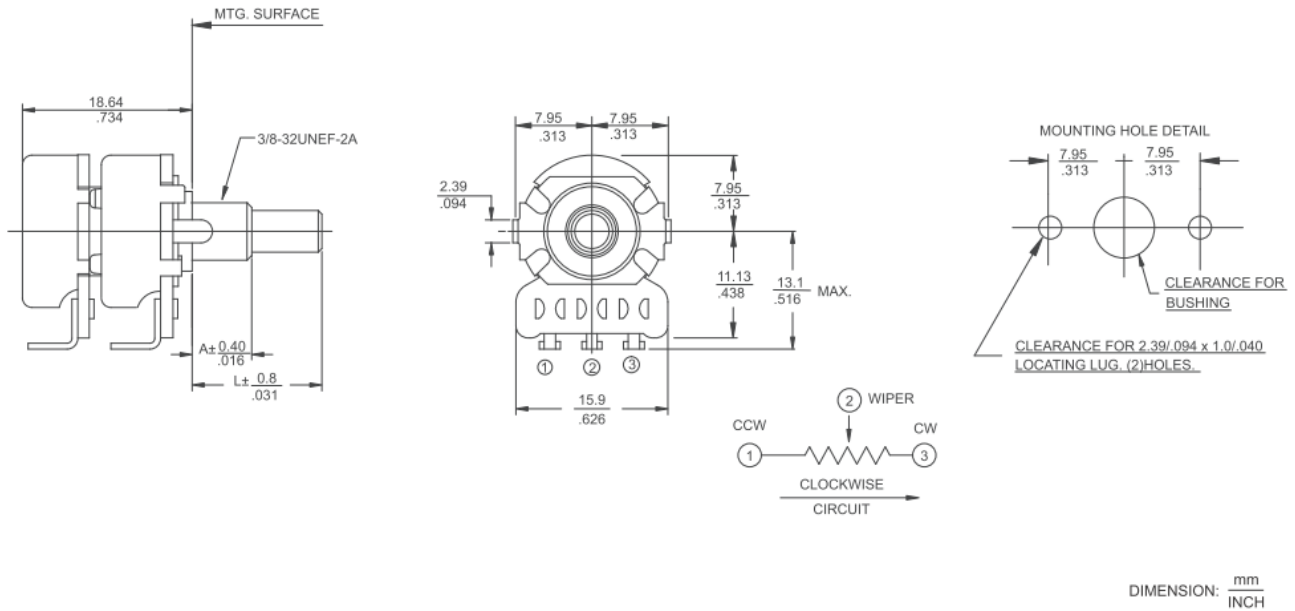


### Series 270T Metal Shaft, Bushing Mount, Solder Lug "T" Type Terminals

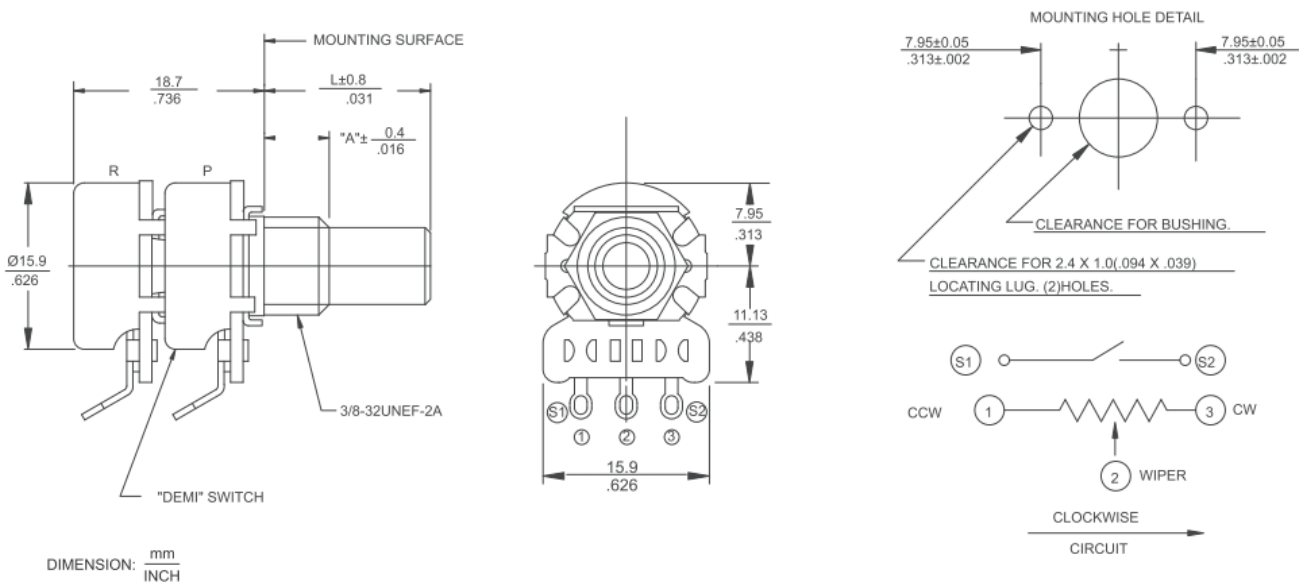


## Electrical and Mechanical Specifications

Series 270T-2 Dual Section, Metal Shaft, Bushing Mount, Solder Lug "T" Type Terminals

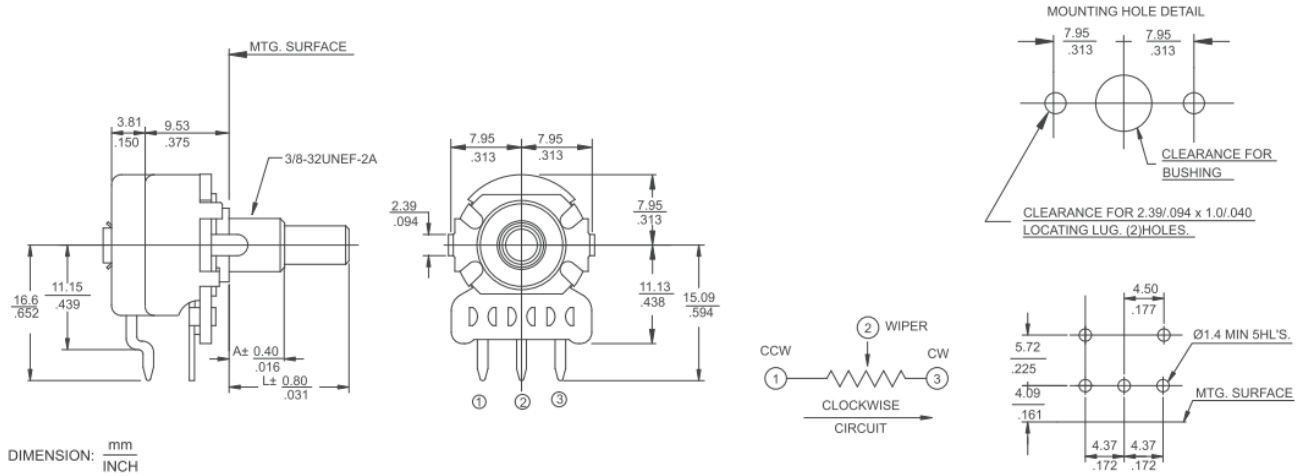


Series 270T-x-C/D Metal Shaft, Bushing Mount, Solder Lug "T" Type Terminals, DEMI Switch



## Electrical and Mechanical Specifications

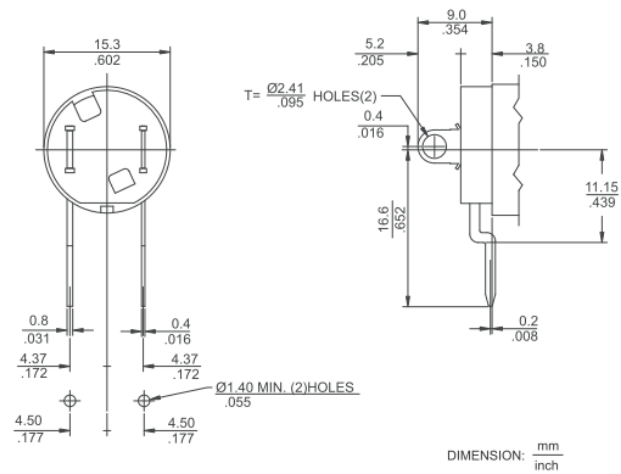
Series 270X-x-B Metal Shaft, Bushing Mount, Printed Circuit "X" Type Terminals, Rotary Switch



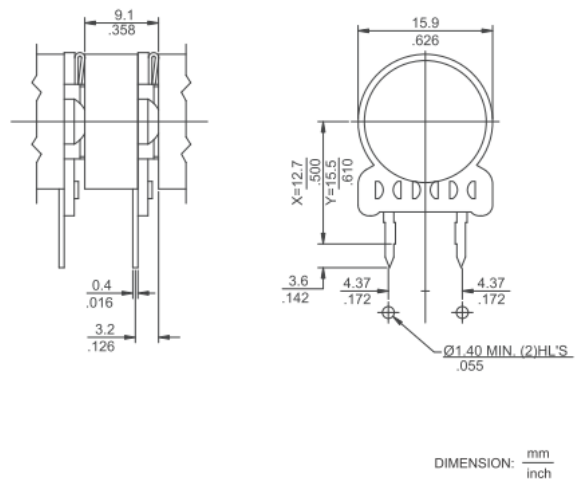
### Optional Power Switches (All SPST)

SERIES	TYPE	ELECTRICAL RATING
057	Rotary	5A @ 20 VDC
		3A @ 125 VAC (UL&CSA Recognized)

Switch Actuating Angle -25°  
Switch Actuating Torque - 2 to 10 in. oz.  
(144 to 720gf-cm)



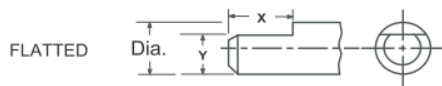
SERIES	TYPE	ELECTRICAL RATING
DEMI	Push On-Pull Off	3A @ 20 VDC
DEMI	Momentary Contact Push On	3A @ 20 VDC



Shaft Diameter and Trim Options



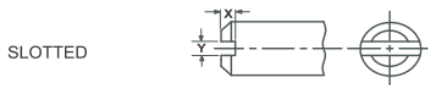
Type	Diameter
A	.125" (3.18 mm)
R	.156" (3.96 mm)
G	.187" (4.75 mm)
X	.236" (6.00 mm)
P	.250" (6.35 mm)



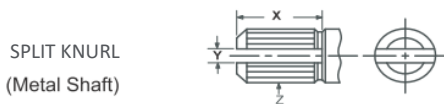
Type	Diameter	X	Y
B	.125" (3.18 mm)	.250" (6.35 mm)	.109" (2.77 mm)
D	.250" (6.35 mm)	.375" (9.52 mm)	.156" (3.96 mm)
H	.187" (4.75 mm)	.250" (6.35 mm)	.156" (3.96 mm)
F	.156" (3.96 mm)	.250" (6.35 mm)	.109" (2.77 mm)
L	.236" (6.00 mm)	.472" (12.0mm)	.177" (4.50 mm)
V*	.187" (4.75 mm)	.313" (7.95 mm)	.156" (3.96 mm)
W**	.236" (6.00 mm)	.472" (12.0 mm)	.177" (4.50 mm)

\*Molded Shaft, FMS .875" (22.2 mm), not available with switch

\*\*Molded Shaft, FMS .984" (25.0 mm), with rotary switch only



Type	Diameter	X	Y
C	.125" (3.18 mm)	.047" (1.19 mm)	.039" (1.00 mm)
S	.156" (3.96 mm)	.047" (1.19 mm)	.039" (1.00 mm)
J	.187" (4.75 mm)	.047" (1.19 mm)	.039" (1.00 mm)
M	.236" (6.00 mm)	.047" (1.19 mm)	.039" (1.00 mm)
E	.250" (6.35 mm)	.047" (1.19 mm)	.039" (1.00 mm)



Type	Diameter	X	Y	Z
N	.236" (6.00 mm)	.342" (8.70 mm)	.039" (1.00 mm)	18 Teeth
T	.236" (6.00 mm)	.279" (7.10 mm)	.062" (1.57 mm)	24 Teeth



Type	Diameter	X	Y	Z
U*	.187" (4.75 mm)	.062" (1.57 mm)	.046" (1.17 mm)	18 Teeth
K**	.236" (6.00 mm)	.200" (5.08 mm)	.046" (1.17 mm)	18 Teeth

\*Molded Shaft, FMS .500" (12.7 mm), not available with switch

\*\*Molded Shaft, FMS .500" (12.7 mm), with rotary switch only