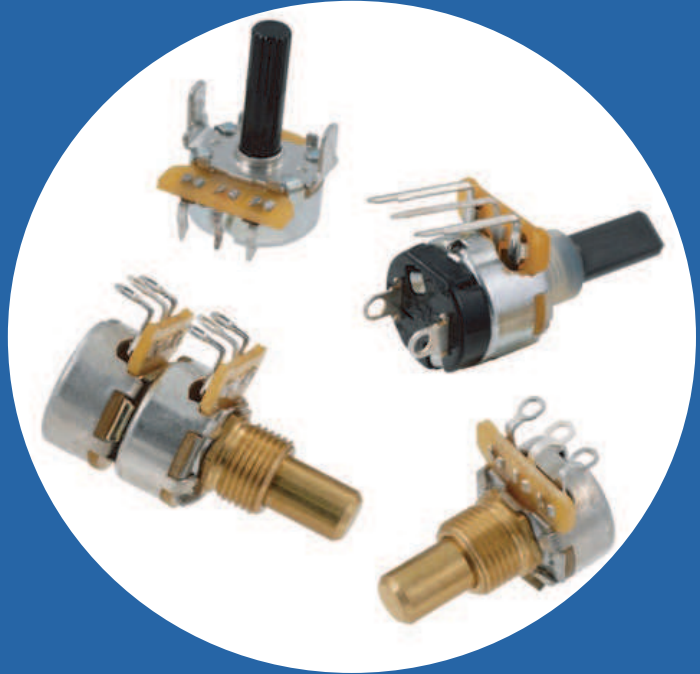


Industrial 16mm Diameter Carbon Composition Rotary Potentiometer

Features

- Versatile Mounting Styles
 - Bushing
 - Twist or Bend Tab
 - Snap-in PC Bracket
 - PC Terminal
- Single, Tandem, or Concentric Units
- Power Switch Available
- Panel Seal Available
- Wide Resistance Range
- Low Noise
- RoHS compliant



Electrical and Mechanical Specifications

Resistance Range

500 ohms through 2 Megohms, linear
5K ohms through 200K ohms, audio

Resistance Tolerance

±30%, ±20%, ±10%

Power Rating

1/4 watts @ 55°C (Resistance up to 100K ohms)
1/5 watts @ 55°C (Resistance above 100K ohms)

Dielectric Strength

750 VAC for 1 minute

Maximum Operating Voltage

500 VDC

Insulation Resistance

100 Megohms minimum @ 250 VDC

Angle of Rotation

Total Rotation (Potentiometer and Switch)

Without Switch: 300°

With Switch: 315°

Effective Electrical Angle (Potentiometer)

Without Switch: 300°

With Switch: 290°

Rotational Torque

36-360 gf-cm

Stop Strength

5.76 kgf-cm minimum

Push-Pull Strength of Shaft

10 kg for 10 seconds

Rotational life

10K cycles

Operating temperature

-10°C to +70°C

Solder Heat Resistance

260°C for 5 seconds

Mounting Information

- Bushing
- Twist Tab
- Bend Tab
- Snap-in PC Bracket
- PC Terminal

Electrical and Mechanical Specifications

Shaft and Bushing Information

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:

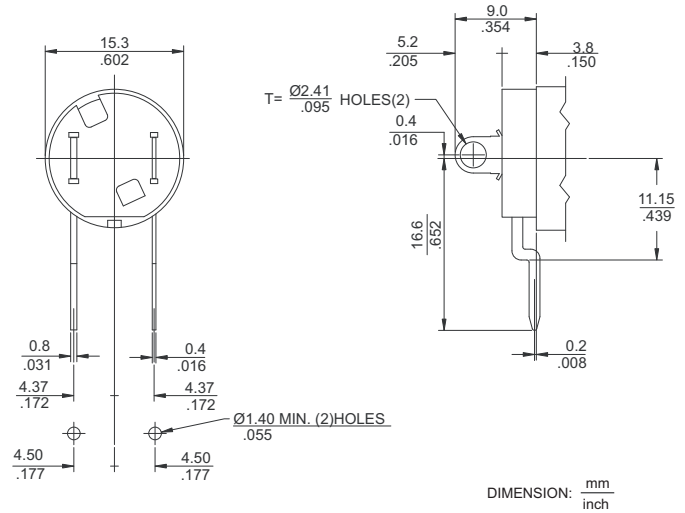
- T: Solder lug perpendicular to shaft. Or, solder lug formed 60° to the rear.
- W: Wire wrap terminals — .156" (4.0mm) terminal extension beyond base, formed 60° to the rear.

Electrical and Mechanical Specifications

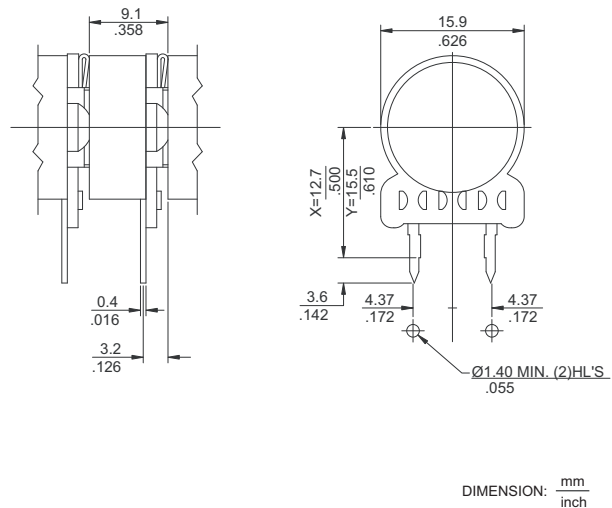
Optional Power Switches (All SPST)

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

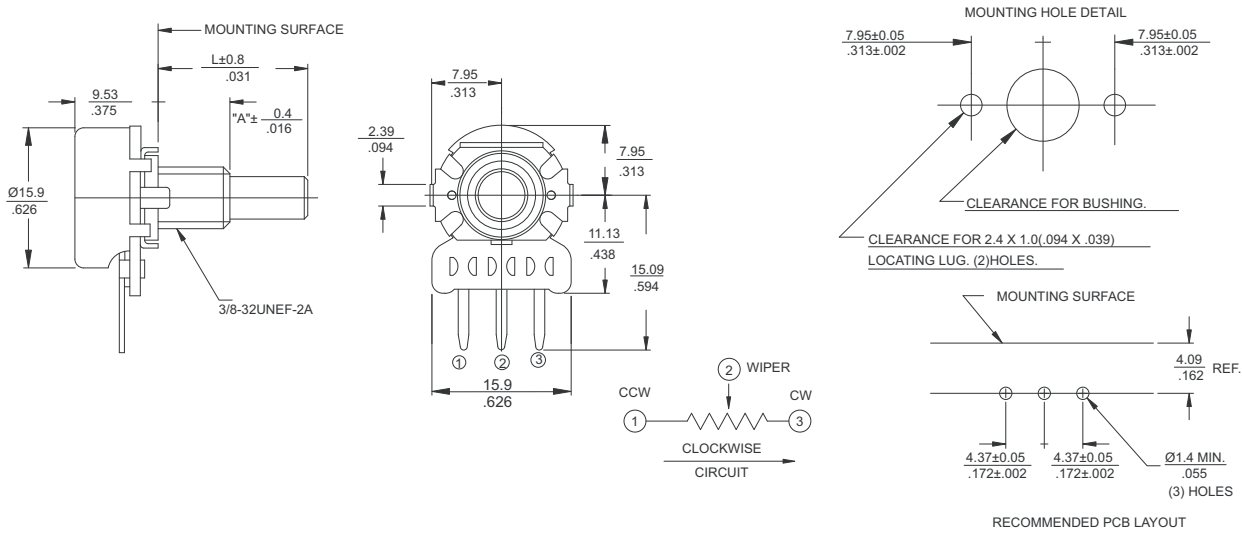
Switch Actuating Angle -25°
 Switch Actuating Torque - 2 to 10 in. oz.
 (144 to 720gf-cm)



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

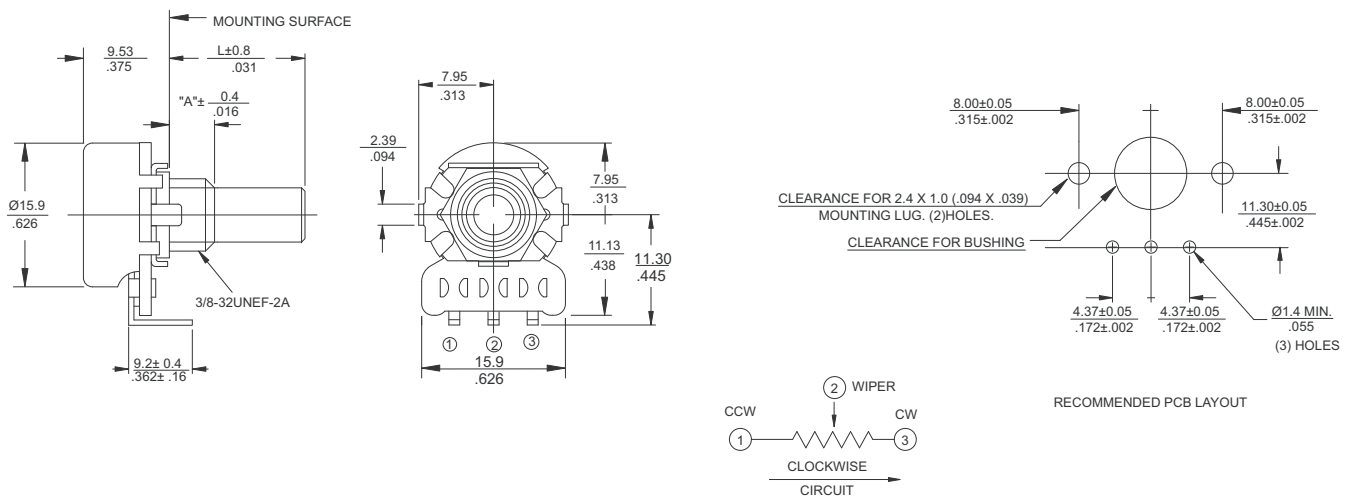


270X Metal Shaft, Bushing Mount, Printed Circuit "X" Type Terminals



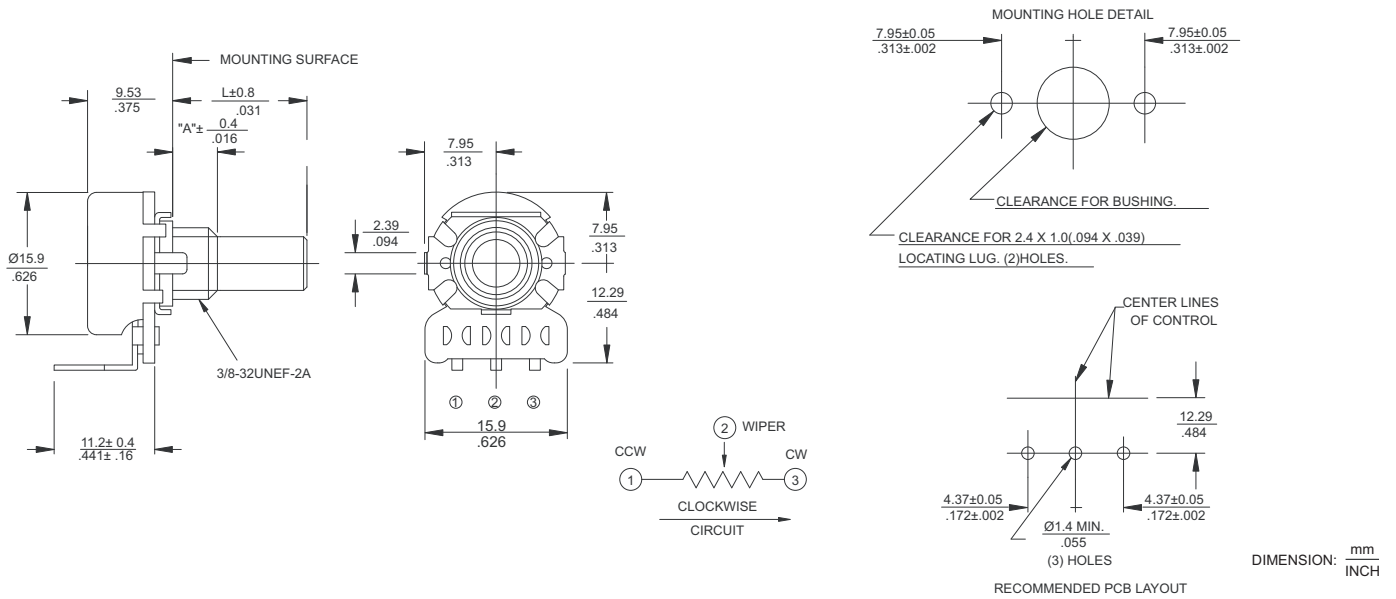
DIMENSION: $\frac{\text{mm}}{\text{INCH}}$

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

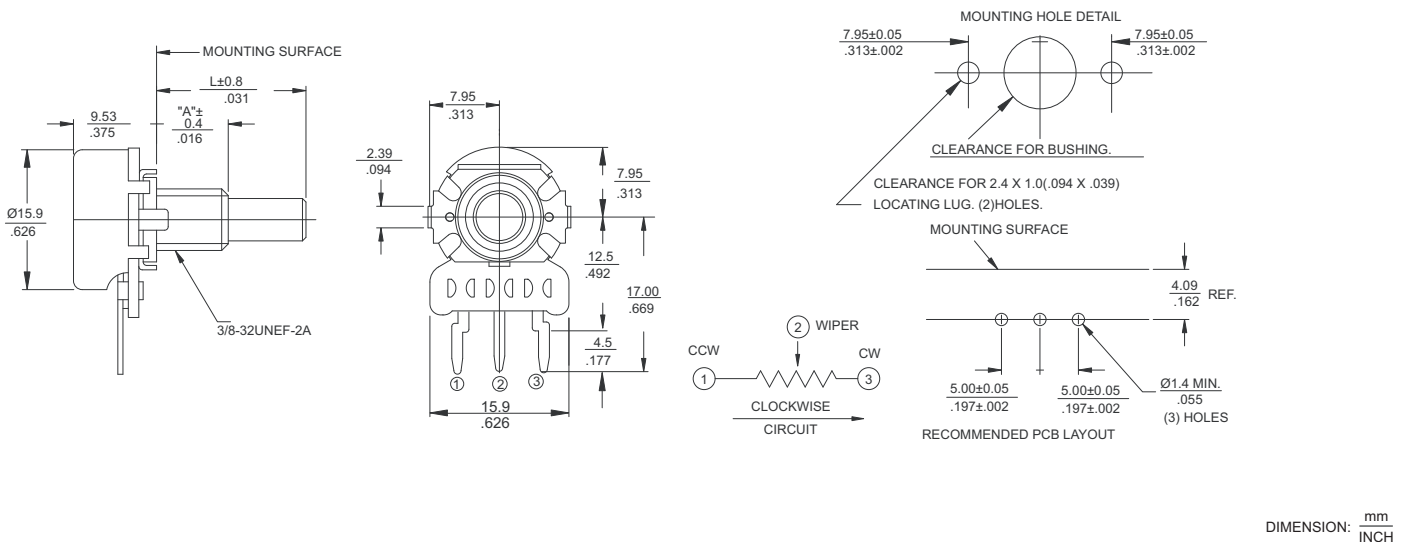


DIMENSION: $\frac{\text{mm}}{\text{INCH}}$

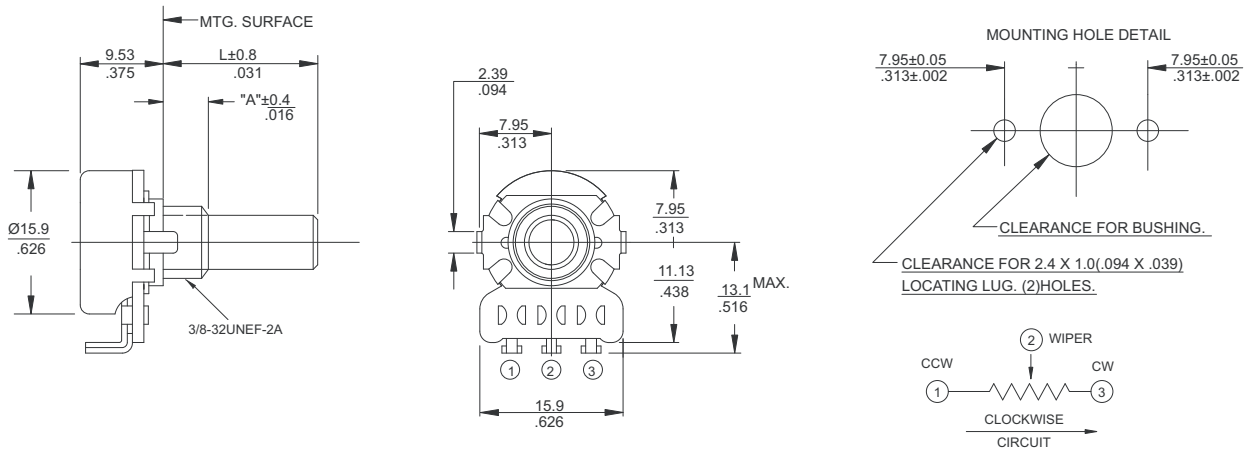
270V Metal Shaft, Bushing Mount, Printed Circuit "V" Type Terminals



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

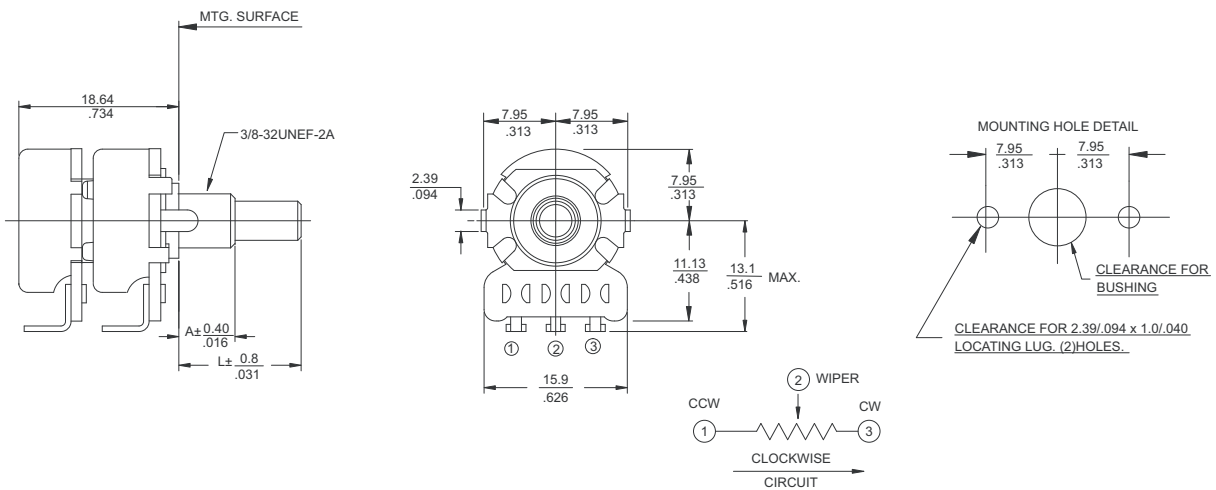


270T Metal Shaft, Bushing Mount, Solder Lug "T" Type Terminals



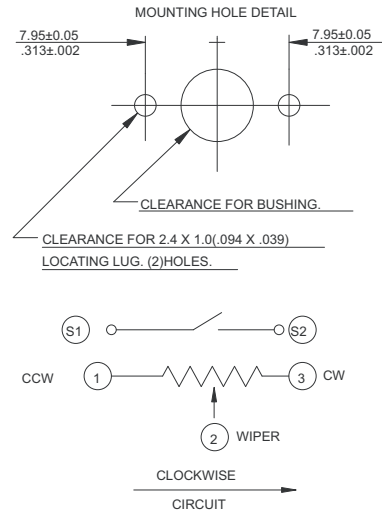
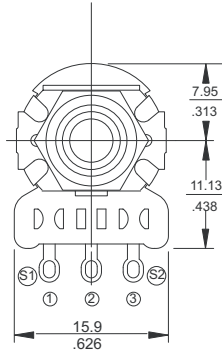
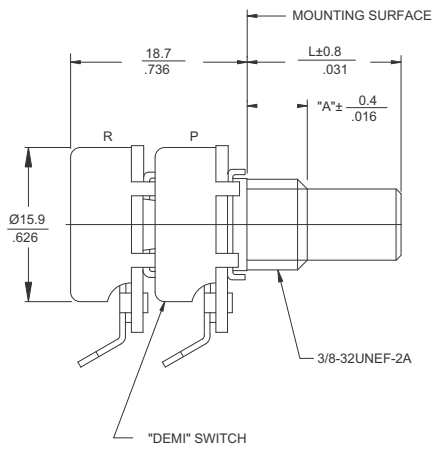
DIMENSION: $\frac{\text{mm}}{\text{inch}}$

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



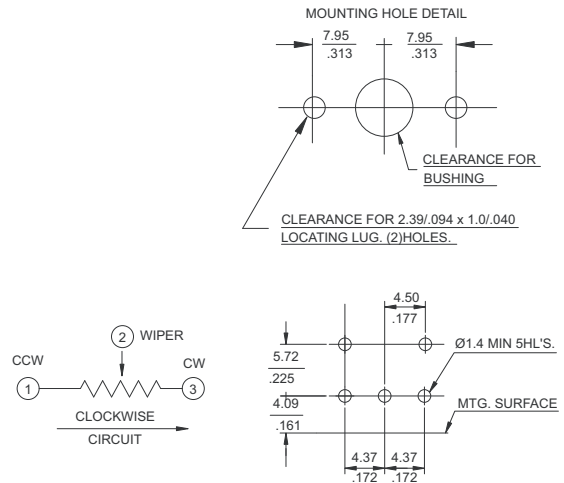
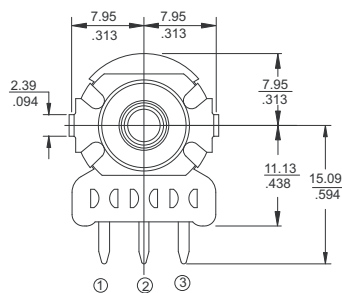
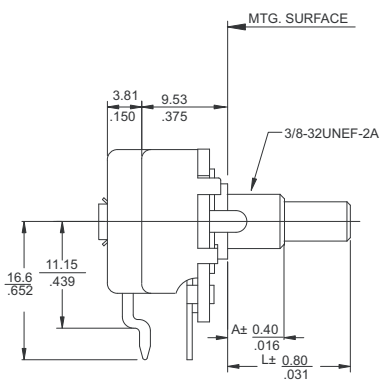
DIMENSION: $\frac{\text{mm}}{\text{INCH}}$

270T-DEMIT Metal Shaft, Bushing Mount, Solder Lug "T" Type Terminals, DEMI Switch.



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

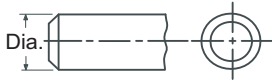
270X-057X Metal Shaft, Bushing Mount, Printed Circuit "X" Type Terminals, Rotary 057 Switch



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

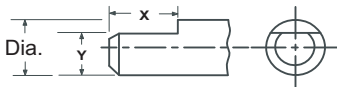
Shaft Diameter and Trim

ROUND



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)

FLATTED

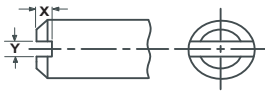


Type	Diameter	X	Y
B	.125" (3.18 mm)	.250" (6.35 mm)	.109" (2.77 mm)
D	.250" (6.35 mm)	.375" (9.52 mm)	.156" (3.96 mm)
H	.187" (4.75 mm)	.250" (6.35 mm)	.156" (3.96 mm)
F	.156" (3.96 mm)	.250" (6.35 mm)	.109" (2.77 mm)
L	.236" (6.00 mm)	.472" (12.0mm)	.177" (4.50 mm)
V*	.187" (4.75 mm)	.313" (7.95 mm)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

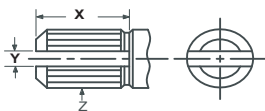
**Molded Shaft, FMS .984" (25.0 mm), with rotary switch only

SLOTTED



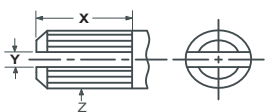
Type	Diameter	X	Y
C	.125" (3.18 mm)	.047" (1.19 mm)	.039" (1.00 mm)
S	.156" (3.96 mm)	.047" (1.19 mm)	.039" (1.00 mm)
J	.187" (4.75 mm)	.047" (1.19 mm)	.039" (1.00 mm)
M	.236" (6.00 mm)	.047" (1.19 mm)	.039" (1.00 mm)
E	.250" (6.35 mm)	.047" (1.19 mm)	.039" (1.00 mm)

KNURLED & SLOTTED
(Metal Shaft)



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

KNURLED & SLOTTED
(Molded Shaft)



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

Ordering Information

270/275

T

2

20

R

103

B

1

A

1

TERMINAL STYLE

- T – SOLDER LUG
- *X – PC
- *U – FORMED TO FRONT
- V – FORMED TO REAR

* Required for 275 Series

MOUNTING STYLE "A"

BRASS BUSHING MOUNT LENGTH EXAMPLES

- 2 – .250"
- 3 – .375"
- 8 – 1.000"

3/8" – 32UNEF-2A
LENGTH INCREMENT: 1/8"

TWIST TAB MOUNT

- 1 – TWIST TAB

BRACKET MOUNT

- 0 – BRACKET

SHAFT LENGTH "L"

METAL SHAFTS EXAMPLES

- 16 – .500"
- 20 – .625"
- 24 – .750"
- 28 – .875"
- 32 – 1.000"

LENGTH INCREMENT: 1/32"

MOLDED SHAFT

- 16 – .500" (shaft trim "U" & "K" only)
- 28 – .875" (shaft trim "V" only)
- 32 – .984" (shaft trim "W" only)

RESISTANCE CODE EXAMPLES

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

TAPER

- 1 – LINEAR
- 2 – 10% AUD
- 3 – 10% CCW AUD

SWITCH TYPE

- A – NONE
- B – SPST ROTARY
- C – DEMI MOMENTARY
- D – DEMI PUSH-PULL

RESIST TOL

- A – ±10%
- B – ±20%
- C – ±30%

SHAFT DIAMETER AND TRIM

METAL SHAFT

- 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. SLOTTED & KNURLED
- P – .250" DIA. ROUND
- D – .250" DIA. FLATTED
- E – .250" DIA. SLOTTED
- T – .236" DIA. SLOTTED & KNURLED

MOLDED SHAFT

- *U – .187" DIA. SLOTTED & KNURLED (.500" shaft length only)
- **K – .236" DIA. SLOTTED & KNURLED (.500" shaft length only)
- *V – .187" DIA. FLATTED (.875" shaft length only)
- **W – .236" DIA. FLATTED (.984" shaft length only)

* Molded shaft not available with switch

** Molded shaft with rotary switch only

SPECIALS

- 1 – LEFT LOCATING LUG
- 2 – 50% DETENT WITH LEFT LOCATING LUG
- 3 – 50% DETENT WITH RIGHT LOCATING LUG
- 4 – RIGHT LOCATING LUG
- 5 – NO LOCATING LUG

Note :

Consult CTS for custom or not listed features including shaft, bushing, longer life cycles, solderable cover, anti-static design, etc.