

## Series 270 Technical Data

### Commercial Miniature 5/8" (16mm) Diameter Composition Variable Resistors

- Miniature 5/8" (16mm) size
- Versatile mounting styles:
  - bushing
  - twist tab
  - bend tab
  - snap-in PC bracket
  - solder lug or PC terminals  
(shaft parallel or perpendicular to the panel)
- 100  $\Omega$  to 5 Meg  $\Omega$  resistance range
- Molded or metal shafts
- SPST power switches
- Single, tandem, or concentric units
- Panel seal
- Rear extended shaft



### Electrical and Mechanical Specifications

#### Resistance Range

100  $\Omega$  through 5 Meg  $\Omega$  (linear taper).

#### Resistance Tolerance

Standard:  $\pm 20\%$

Special: Other tolerances available in most resistance values.

#### Power Rating, Watts

$\frac{1}{4}$  watt per section through 100K

$\frac{1}{5}$  watt per section above 100K

Full rating @ 55°C derated to no load at 85°C,  
linear taper, bushing mounted control on steel panel  
4" x 4" x .050" (101.6mm x 101.6mm x 1.27mm).  
(Derating required on two section controls.)

#### Voltage Rating

Bushings to Terminals:

High pot test, one minute — 750 VAC

Operating maximum — 500 VDC

Across End Terminals:

350 VDC, load not to exceed listed wattage ratings.

#### Resistance Tapers

Standard: Linear, 10% Audio and 10% CCW Audio

Special tapers available to meet most requirements

#### Angle of Rotation

##### Total Rotation

Without Switch:  $300^\circ \pm 5^\circ$

With Switch:  $315^\circ \pm 5^\circ$

##### Effective Rotation

Without Switch:  $300^\circ$  (approximate)

With Switch:  $290^\circ$  (approximate)

#### Panel Mounting Information

##### Bushing Mount

Standard: Brass

(continued on next page)

## Electrical and Mechanical Specifications *(continued)*

### All Other Mounts

Standard: Twist tab (designated by "1")  
Special: Bend tab — 2 or 3 ears  
Bracket mounted

### Suggested Panel for Twist Tab

.042" thick (1.07mm)

### Locating Lugs (Bushing Mount)

Standard: .312" (7.9mm) radius from center of control.  
Special: .375" (9.53mm) radius from center of control.  
Standard Position: Left side supplied unless otherwise specified.  
Other Positions: Available with lug right side, without lugs, or with lugs both left and right sides.

### Water Seal Construction

Controls are also available to prevent water from entering the control through either the O.D. of shaft and/or the bushing.

## Shaft and Bushing Information

### Bushing Lengths Available

Standard: .187" or .250" (4.75mm or 6.35mm)  
Special: .125" increments (3.2mm increments)

### Thread Size

Standard: 1/4" – 32  
3/8" – 32  
M7 x .75  
M8 x .75P  
Special: As required

### Molded Shafts Available

*(Shown with preferred diameter bushing)*

#### Bushing Mounted or Ear Mounted

SHAFT DIAMETER		BUSHING DIAMETER	
INCH	MM	INCH	MM
.156	4.0	1/4" – 32	M7X.75
.187	4.7	—	M7X.75
.236	6.0	3/8" – 32	M8X.75
.250	6.35	3/8" – 32	M9X.75

### Metal Shafts Available

*(Shown with preferred diameter bushing)*

#### Single or Dual Units

SHAFT DIAMETER		BUSHING DIAMETER	
INCH	MM	INCH	MM
.125	3.2	1/4" – 32	M7X.75
.156	4.0	1/4" – 32	M7X.75
.187	4.7	3/8" – 32	M7X.75
.236	6.0	3/8" – 32	M8X.75
.250	6.35	3/8" – 32	M9X.75

### Concentric Tandem Units

Available in two combinations:

**A** – .125" (3.2mm) diameter rear shaft  
.250" (6.35mm) panel shaft  
(3/8 – 32 or M9X.75)

**B** – .156" (4.0mm) diameter rear shaft  
.236" (6.0mm) diameter panel shaft  
(3/8 – 32 or M8X.75)

Most metal shaft diameters can be used with twist tab mountings. With bracket mount, only .187 diameter shafts are used, with turn-down available to obtain smaller diameters.

### Metal

Lengths: Minimum .125" (3.2mm) beyond bushing; special lengths as required.  
Trims: Plain round screwdriver slotted, flattened, knurled. Other trims available upon request.

### Molded

Flatted and knurled with screwdriver slot available in many lengths and diameters.

### Terminal Information

Standard: T Solder lug formed 90° to the rear.  
Special: *(See below)*

- T: Solder lug perpendicular to shaft.  
T: Solder lug formed 60° to the rear.  
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 .520" (13.2mm) from mounting surface.  
W: Wire wrap terminals — .156" (4.0mm) terminal extension beyond base, formed 60° to the rear.  
BX: PC terminals standard .438" (11.1mm) from center line of control to PC board; straight terminals extend .156" (4.0mm) into PC board.  
X: PC terminals standard .505" (12.8mm) from center line of control to PC board, with .136" (3.4mm) straight terminal extension beyond PC board standoff.  
Y: PC terminals standard .602" (15.3mm) from centerline of control to PC board, with .140" (3.5mm) straight terminal extension beyond PC board standoff.

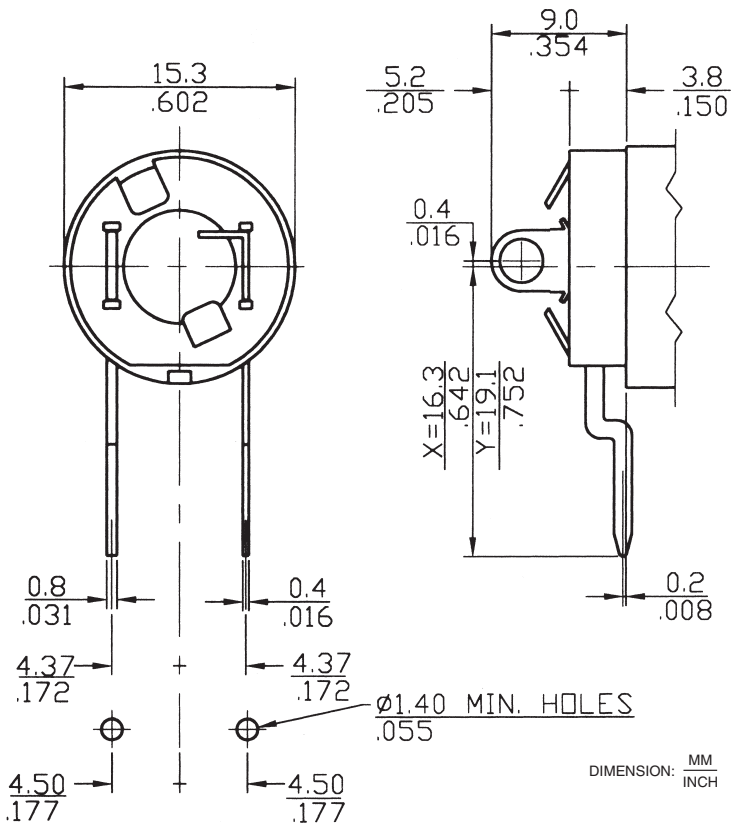
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Electrical and Mechanical Specifications (continued)

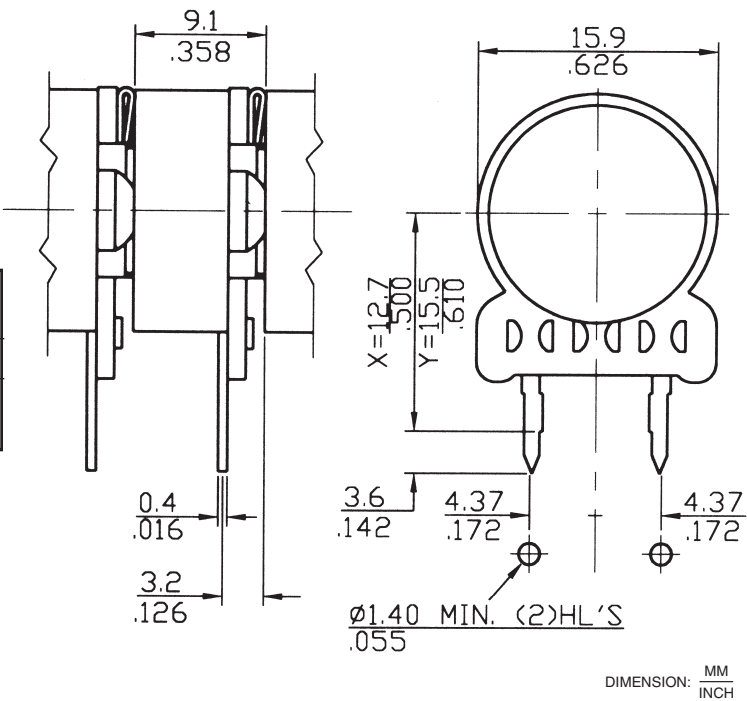
Power Switches Available (all SPST)

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

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



SERIES	TYPE	ELECTRICAL RATING
DEMI	Push-Pull	3A @ 20 VDC
DEMI	Momentary contact Push on	3A @ 20 VDC



MTG. SURFACE

9.35  
.374

$L \pm 0.8$   
.031

\*A"  $\pm 0.4$   
.016

Ø15.9  
.626

2.4  
.094

8.0  
.315

11.1  
.437

15.0  
.591 MAX.

8.0 ± 0.05  
.315 ± .002

CLEARANCE FOR BUSHING.

CLEARANCE FOR 2.4 X 1.0  
LOCATING LUG. (2)HOLES.

DIMENSION: MM / INCH

STANDARD MOUNTING SURFACE

9.53  
.375

4.78  
.188

2.34  
.092

L ± .08  
.031

17.53  
.690 MAX.

15.50  
.610 MIN.

7.95  
.313

19.05  
.750

11.13  
.438

3.96  
.156

15.88  
.625

2.08  
.082

15.24  
.600

1.32  
.052

4.16  
.164

CLEARANCE FOR SHAFT

Ø1.4 MIN.(3) HOLES  
.055

4.37 ± 0.05  
.172 ± .002

4.37 ± 0.05  
.172 ± .002

4.09  
.161

MTG. SURFACE

ALL PIERCING TOLERANCES ±0.05/.002

DIMENSION: MM  
INCH

Technical drawing of a mechanical part showing three views: front, top, and side. The drawing includes dimensions in inches and millimeters. Key features include a central circular hole, four side holes, and a rectangular slot. The top view is labeled "MTG. SURFACE". Dimensions are provided for various features, including diameters, radii, and distances between features.

**Front View Dimensions:**

- Overall width: 17.53 (.690 MAX.)
- Overall height: 19.05 (.750)
- Central hole diameter: 15.50 (.610 MIN.)
- Distance from left edge to center: 7.14 (.281)
- Distance from right edge to center: 7.95 (.313)
- Distance from top edge to center: 11.11 (.438)
- Distance from bottom edge to center: 11.11 (.438)
- Distance from left edge to first side hole: 9.53 (.375)
- Distance from first side hole to center: 5.56 (.219)
- Distance from center to last side hole: 5.56 (.219)
- Distance from last side hole to right edge: 9.53 (.375)
- Distance from top edge to first side hole: 7.14 (.281)
- Distance from first side hole to center: 7.95 (.313)
- Distance from center to last side hole: 7.95 (.313)
- Distance from last side hole to right edge: 7.14 (.281)
- Distance from left edge to first side hole: 9.53 (.375)
- Distance from first side hole to center: 5.56 (.219)
- Distance from center to last side hole: 5.56 (.219)
- Distance from last side hole to right edge: 9.53 (.375)

**Top View Dimensions:**

- Overall width: 15.88 (.625)
- Overall height: 19.05 (.750)
- Distance from left edge to center: 7.14 (.281)
- Distance from right edge to center: 7.95 (.313)
- Distance from top edge to center: 11.11 (.438)
- Distance from bottom edge to center: 11.11 (.438)
- Distance from left edge to first side hole: 9.53 (.375)
- Distance from first side hole to center: 5.56 (.219)
- Distance from center to last side hole: 5.56 (.219)
- Distance from last side hole to right edge: 9.53 (.375)
- Distance from top edge to first side hole: 7.14 (.281)
- Distance from first side hole to center: 7.95 (.313)
- Distance from center to last side hole: 7.95 (.313)
- Distance from last side hole to right edge: 7.14 (.281)
- Distance from left edge to first side hole: 9.53 (.375)
- Distance from first side hole to center: 5.56 (.219)
- Distance from center to last side hole: 5.56 (.219)
- Distance from last side hole to right edge: 9.53 (.375)

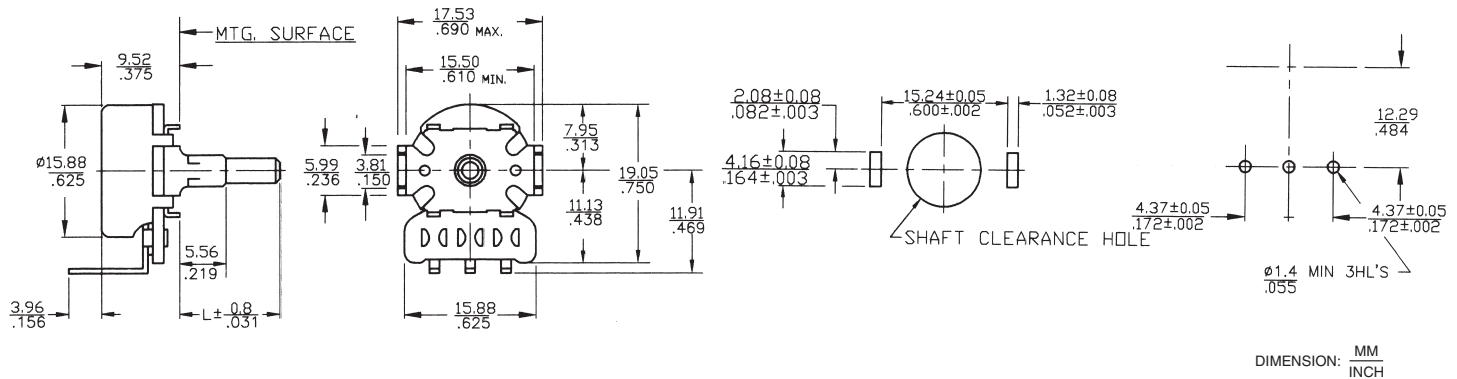
**Side View Dimensions:**

- Overall width: 15.88 (.625)
- Overall height: 19.05 (.750)
- Distance from left edge to center: 7.14 (.281)
- Distance from right edge to center: 7.95 (.313)
- Distance from top edge to center: 11.11 (.438)
- Distance from bottom edge to center: 11.11 (.438)
- Distance from left edge to first side hole: 9.53 (.375)
- Distance from first side hole to center: 5.56 (.219)
- Distance from center to last side hole: 5.56 (.219)
- Distance from last side hole to right edge: 9.53 (.375)
- Distance from top edge to first side hole: 7.14 (.281)
- Distance from first side hole to center: 7.95 (.313)
- Distance from center to last side hole: 7.95 (.313)
- Distance from last side hole to right edge: 7.14 (.281)
- Distance from left edge to first side hole: 9.53 (.375)
- Distance from first side hole to center: 5.56 (.219)
- Distance from center to last side hole: 5.56 (.219)
- Distance from last side hole to right edge: 9.53 (.375)

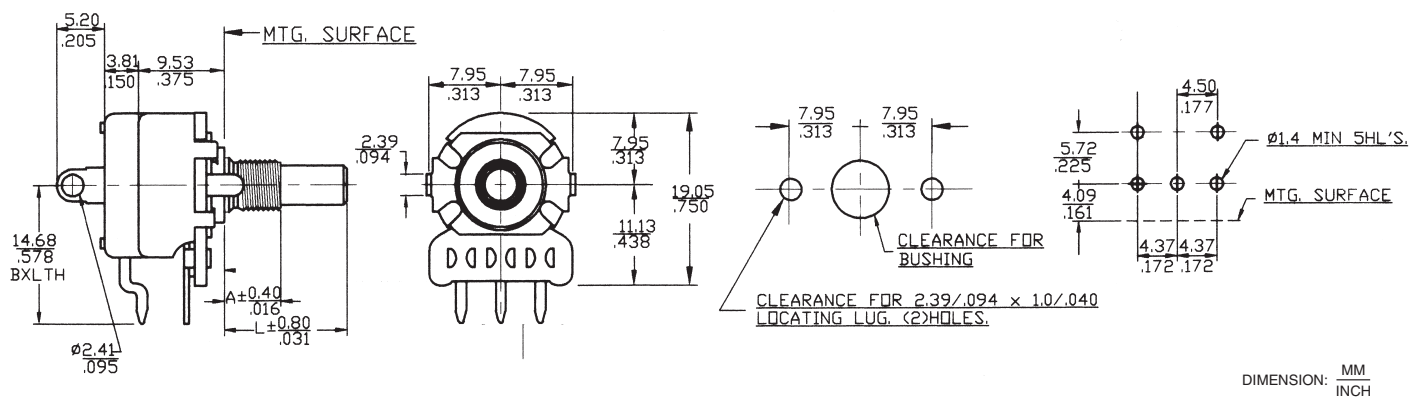
**Notes:**

- ALL PIERCING TOLERANCES  $\pm 0.05 / .002$
- DIMENSION: MM INCH

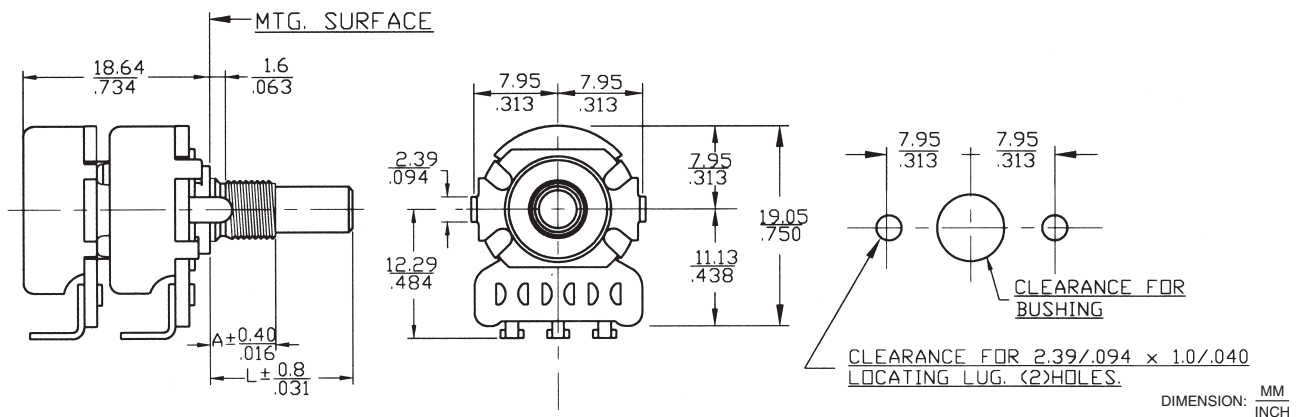
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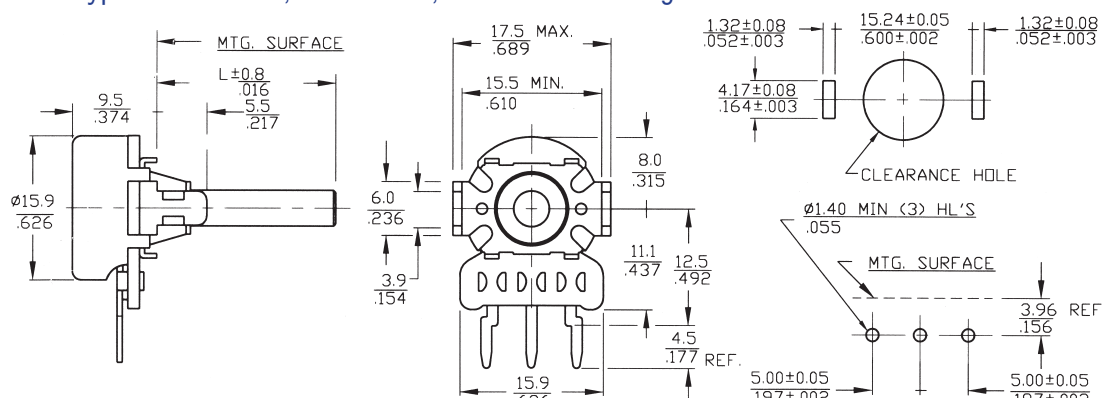
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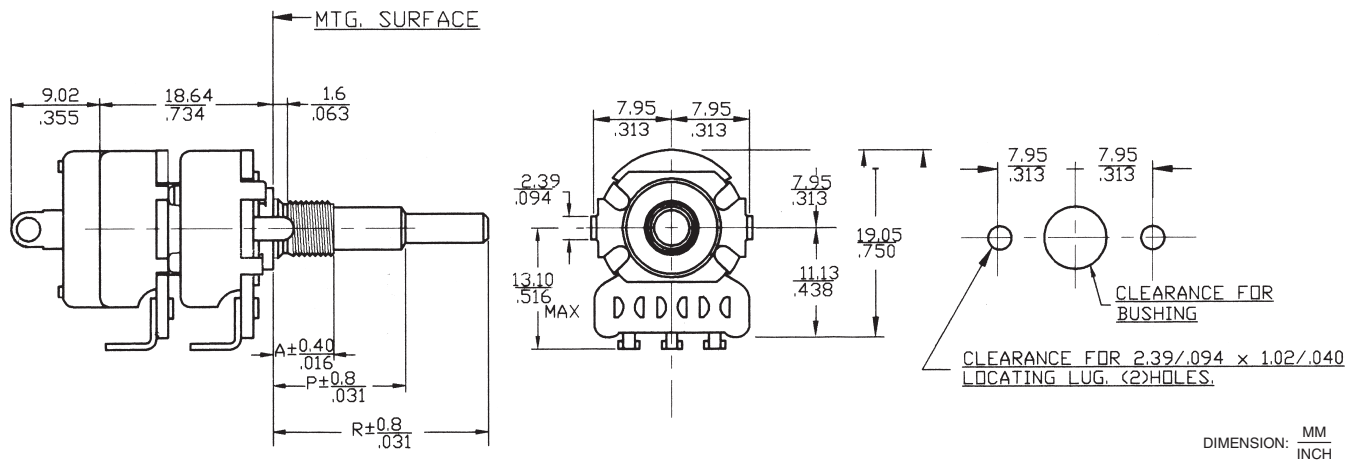
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## T057-C2-270 Solder Lug Terminal SPST Switch, Solder Lug Terminals, Concentric Metal Shafts, Bushing Mount



## 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
- W - FORMED TO REAR

**SHAFT LENGTH**

From Mounting Surface 1/32" (0.8mm) Increments  
Examples:

**Metal Shafts**

- 20 - .625" (15.9MM)
- 24 - .750" (19.1MM)
- 28 - .875" (22.2MM)
- 32 - 1.000" (25.4MM)

**Moulded Shafts**

Limited Lengths Available, See Shaft Trim selection

- 16 - Shaft U, .500" (12.7MM)
- 28 - Shaft V, .875" (22.2MM)
- 32 - Shaft W, 1.0" (25MM)

**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

**RESIST TOL**

- A - ±10%
- B - ±20%
- C - ±30%

**SPECIALS**

- 1 - NONE
- 2 - 50% DETENT
- 4 - LOCATING LUG FOR RIGHT SIDE
- 5 - NO LOCATING LUG

**MOUNTING STYLE**

**BUSHING LENGTH: 1/8" (3.2MM) INCREMENTS**

**EXAMPLES:**

- 2 - .250" (6.35MM)
- 3 - .375" (9.5MM)
- 8 - 1.000" (25.4MM)
- 1 - TWIST TAB MOUNT

BUSHING MOUNT SUPPLIED WITH LOCATING LUG LEFT SIDE TERMINALS DOWN

**SHAFT TRIM**

- A - .125" DIAM. ROUND BRASS
- B - .125" DIAM. FLAT BRASS
- C - .125" DIAM. SD SLOT BRASS
- R - .156" DIAM. ROUND BRASS
- F - .156" DIAM. FLAT BRASS
- S - .156" DIAM. SD SLOT BRASS
- G - .187" DIAM. ROUND BRASS
- H - .187" DIAM. FLAT BRASS
- J - .187" DIAM. SD SLOT BRASS
- X - .236" DIAM. ROUND BRASS
- L - .236" DIAM. FLAT BRASS
- M - .236" DIAM. SD SLOT BRASS
- N - .236" DIAM. SK BRASS
- P - .250" DIAM. ROUND BRASS
- D - .250" DIAM. FLAT BRASS
- E - .250" DIAM. SD SLOT BRASS
- T - .250" DIAM. SK BRASS
- U - .187" DIAM. .500" FMS SK MOLDED
- V - .187" DIAM. .875" FMS FLAT MOLDED
- W - .236" DIAM. .984" FMS FLATTED (.472" X .177") MOLDED
- K - .236" DIAM. .500" FMS SK MOLDED (SWITCH ONLY)

**NOTES:** 275 series available in "X" and "U" style PC Terminals only.  
 .125" dia. & .156" dia. shaft thickness is .109".  
 .187" dia. shaft flat thickness is .156".  
 .236" dia. shaft flat thickness is .177".  
 .250" dia. shaft flat thickness is .156".

\*BX construction and terminal length supplied unless otherwise specified

## Order From:

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