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With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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3MN-Series

3MS-Series

3MA-Series

Switch

Alternate Action

Miniature Pushbutton

Switch

Sealed Snap-Action

Miniature Pushbutton

Snap-Action Miniature Pushbutton Switch

Specifications

Contact Rating refer to ordering scheme

Electrical Life 50,000 make & break cycles @ full

Contact Resistance. 3MN& 3MA-Series: 10 m Ω max. ini-

tial @ 2-4 VDC 100mA for both sil-

ver & gold plated contacts.

 $3MS\text{-}\tilde{Series}$: 50 m Ω max. initial @ 2-4 VDC 100mA for both silver &

gold plated contacts.

Insulation Resistance . . . 1000 M Ω min.

Dielectric Strength 1500 Volts RMS @ sea level

Operating Temperature . . . -30°C to +85°C Index of Protection 3MS -Series: IP68 Cap Installation Support . . 3MS-Series: 10 lbs. max. Solder Heat Resistance. . . MIL-STD-202, Method 210

Actuator Travel 25°

Materials

(DAP) (UL 94V-0)

3MS-Series: Glass filled nylon 6/6, flame retardant, heat stabilized (UL

94V-0)

3MN-Series: Thermoplastic poly-

ester, black

3MS & 3MA-Series: Glass filled nylon or glass filled polyester (UL

94V-0)

3MA-Series: Zinc, nickel plated

Switch Support Retainer . .3MS-Series: Stainless Steel

Terminal Seal Epoxy

3M-Series Optional Cap

To order a cap assembled on a switch, specify the switch number followed by the cap part number and the word "assembled". Ex: 3MN-SP-7-P2-B6-M6QE-C13ASSEMBLED

To order caps in bulk, specify the Series, followed by the cap. Ex.) 3MN-C13







Cap Size Color

1 SERIES OR SWITCH CATALOG NUMBER 3MN, 3MS or 3MA

2	CA	Ρ	SI	Z	Ε

C1 C2 C3 C4	round 7.6mm dia. round 9.35 mm dia. square 11.7 x 11.7mm round 5mm dia.	C5 C6	round 14.5mm dia. (for 3MA w/ PL bushing) brass chrome plated (for 3MA w/ PD bushing)
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3 CAP COLOR

1	white	5	yellow
2	black	6	green
3	red	7	blue

4

Black, white & red standard. Other colors available. Consult factory.



3MN-Series Ordering Scheme

with Square Actuator



with Plunger Actuator



1 SERIES 3MN Snap-Action Miniature Pushbutton Switch			
2 POI SP	LES single pole	DP	double pole
3 CIR	RCUIT nomentary		
7	ON	(ON)	

4 ACTUATOR¹

SQUARE ACTUATOR (use with Color Options in Selection 5A & 5B.)

AP1 AP2 square with no frame square raised above frame AP3 square flush with frame

PLUNGER ACTUATOR (use with Bushing Options in Selection 5)
P0 2.5mm short plunger(for B6 bushing only)
P1 5.2mm plunger(for bushing B10,B11,B20,B21; 7.5mm for B6)
P2 2.0mm plunger(for bushing B10,B11,B20,B21; 4.2mm for B6)

5A ACTUATOR COLOR & 5B FRAME COLOR^{1,2}

white 4 orange 7 blue 5 yellow 6 green 2 blac 3 red 8 brown 9 gray black

Black, white and red are standard. Other colors available, consult factory for details.

Selection 5B is blank if actuator style is AP1 (no frame)

OR

5 BUSHING

Unthreaded (for terminations VS6-VS9 only) Threaded keyway

B6 B10 B11 Threaded with flat **B20** Unthreaded keyway Unthreaded with flat

NOTE:

If ordering optional CAP with bushings B10, B11, B20 or B21, specify actuator P1.

For CAP with bushing B6, specify actuator P2.

For CAP options, see ordering scheme on page 35.

6 TERMINATION				
M1	Solder Lug			
M2	PCB			
M5-1	Wire Wrap .750 [19.05]			
M5-3	Wire Wrap .425 [10.80]			
M6	PC Mount, 90° horizontal			
M7	PC Mount, 90° vertical			
VS2	PC Mount, U bracket, .620 mounting x .460 high			
VS3	PC Mount, U bracket, .620 mounting x .630 high			
VS4	PC Mount, U bracket, .750 mounting x .460 high			
VS5	PC Mount, U bracket, .750 mounting x .630 high			
VS6	PC Mount, U bracket, .460 high (for B6 bushing only)			
VS7	PC Mount, U bracket, .630 high (for B6 bushing only)			
VS8	PC Mount, U bracket, .460 high (for B6 bushing only)			
VS9	PC Mount, U bracket, .630 high (for B6 bushing only)			

7 CONTACT

G Q R	Material silver ¹ silver ¹ gold ²	Terminal Plating gold over silver ³ silver ¹ gold ²	Rating 1A@120VAC or 28VDC 1A@120VAC or 28VDC 0.4VA max. @20V max (AC/DC)	Approvals UL, CUL UL, CUL
	9-1	golu	0.4 VA IIIAX. @ 20 V IIIAX (AO/DO)	
NOT	E:			

Tin-lead option available with PC type terminations only.

- Moveable contact & terminals: copper alloy, silver plate Moveable contact & terminals: copper alloy with gold plate over nickel plate Terminals: silver plate with outer layer in gold plating

8 EPOXY SEAL

Ε epoxy seal

Contact



3MS-Series Ordering Scheme

Series



Actuator

1 SERIES 3MS Sealed Snap-Action Miniature Pushbutton Switch

Poles

2 POLES WSP single pole

WDP double pole

Circuit

3 CIRCUIT () - momentary

(ON)

4 ACTUATOR

.173" plunger (for B1 bushing); .276" (for B4 bushing) .220" plunger (for B1 bushing); .327" (for B4 bushing) .087" plunger (for B1 bushing); .193" (for B4 bushing) P2 **P3**

5 BUSHING

Threaded B4 Unthreaded **6 TERMINATION** Solder Lug

PCB PC Mount, 90° horizontal M6 Snap-In, 90° horizontal M61 M7 PC Mount, 90° vertical M71 Snap-In, 90° vertical VS2 PC Mount, U bracket,

.620 mounting x .460 high

VS21 Snap-In, U bracket, VS2 PC Mount, U bracket,
.620 mounting x .460 high
VS3 PC Mount, U bracket,
.620 mounting x .630 high
VS4 PC Mount, U bracket,

Seal

.750 mounting x .460 high PC Mount, U bracket, .750 mounting x .630 high

7 CONTACT

Rating 1A@120VAC or 28VDC 1A@120VAC or 28VDC Material Terminal Plating Approvals gold over silver silver1 UL, CUL **IP68** IP68 Q R silver silver gold² 0.4VA max. @20V max gold (AC/DC)

NOTE:

Tin-lead option available with PC type terminations only.

Moveable contact & terminals: copper alloy, silver plate

Moveable contact & terminals: copper alloy with gold plate over nickel plate

Terminals: silver plate with outer layer in gold plating

Termination

7 EPOXY SEAL epoxy seal

3MA-Series Ordering Scheme







Circuit



Actuator



Actuator

Color

Frame

Color







with Plunger **Actuator**







Circuit



Actuator



Bushing



Termination





1 SERIES

3MA Alternate-Action Miniature Pushbutton Switch

2 POLES SP single pole

DP double pole

3P three pole

4P four pole

3 CIRCUIT

2-1, 5-4, 8-7, 11-10 ON OPEN NONE

4 ACTUATOR

SQUARE ACTUATOR (use with Color Options in Selection 5A & 5B.)
AP1 square with no frame

square raised above frame AP2

PLUNGER ACTUATOR (use with Bushing Options in Selection 5)
PA .118 dia. x .299" plunger length
PI .118 dia. x .244" plunger length
PL .118 dia. x .327" plunger length

PC PD .315" dia. brass chrome plated plunger (for BD bushing only) .242" dia. brass chrome plated plunger (for BD bushing only)

5A ACTUATOR COLOR & 5B FRAME COLOR^{1,2}

1 white 2 black 4 orange 5 yellow blue 8 brown red 6 green 9 gray
Black, red and white are standard. Other colors available, consult factory for details. Selection 5B is blank if actuator style AP1 (no frame)

OR

5 BUSHING

Big bushing for PC, PD actuator 15/32" Threaded 1/4 - 40 BD

B₁₀ **B20** Unthreaded Unthreaded with flat

NOTE: For CAP options, see ordering scheme on page 35.

6 TERMINATION M1 Solder Lug

M2 PCB Wire Wrap .750 [19.05] Wire Wrap .964 [24.48] Wire Wrap .425 [10.80] M5-1 M5-2 M5-3 Wire Wrap 1.062 [26.87] PC Mount, 90° horizontal PC Mount, 90° vertical M5-4 M6

PC Mount, U bracket, .620 mounting x .460 high PC Mount, U bracket, VS2 VS3 .620 mounting x .630 high PC Mount, U bracket, .750 mounting x .460 high PC Mount, U bracket, VS5

.750 mounting x .630 high

7 CONTACT

G

Q

R

Rating 6A@125VAC or 28VDC, Material Terminal Plating Approvals UL, CUL gold over silver silver1 3A@250VAC gold² 6A@125VAC or 28VDC 6A@125VAC or 28VDC, tin-lead4 UL, CUL silver1 tin-lead⁴ 3A@250VAC UL, CUL silver1 silver 6A@125VAC or 28VDC 3A@250VAC

0.4VA max. @20V max (AC/DC) gold² gold² NOTE:

Tin-lead option available with PC type terminations only

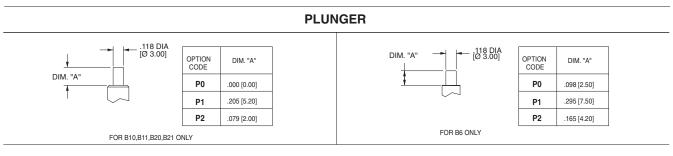
Moveable contact & terminals: copper alloy, silver plate
Moveable contact & terminals: copper alloy with gold plate over nickel plate
Terminals: silver plate with outer layer in gold plating
Outer terminals: copper alloy with tin-lead over nickel plate

8 EPOXY SEAL

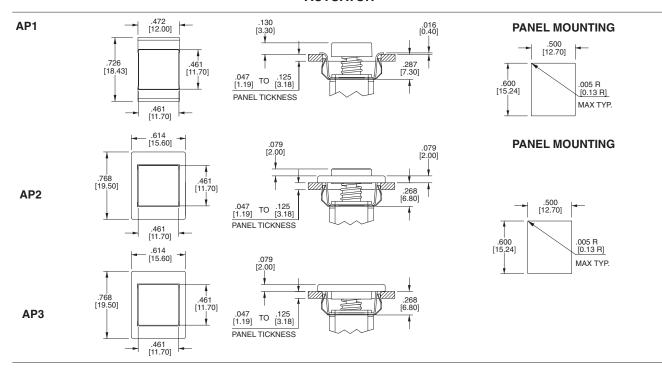
epoxy seal



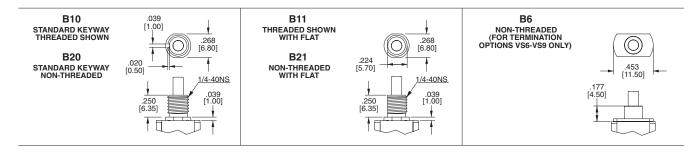
3MN-Series Dimensional Specifications: in. [mm]



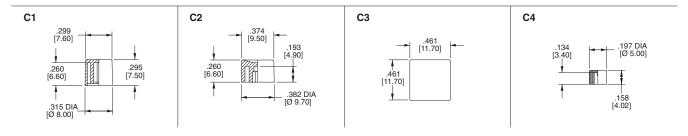
ACTUATOR



BUSHING

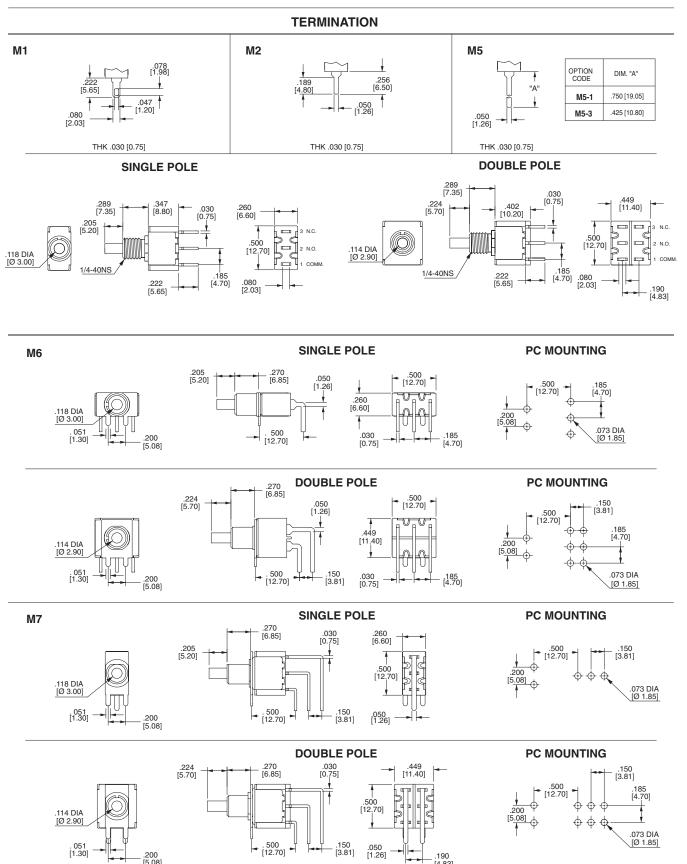


CAP





3MN-Series Dimensional Specifications: in. [mm]



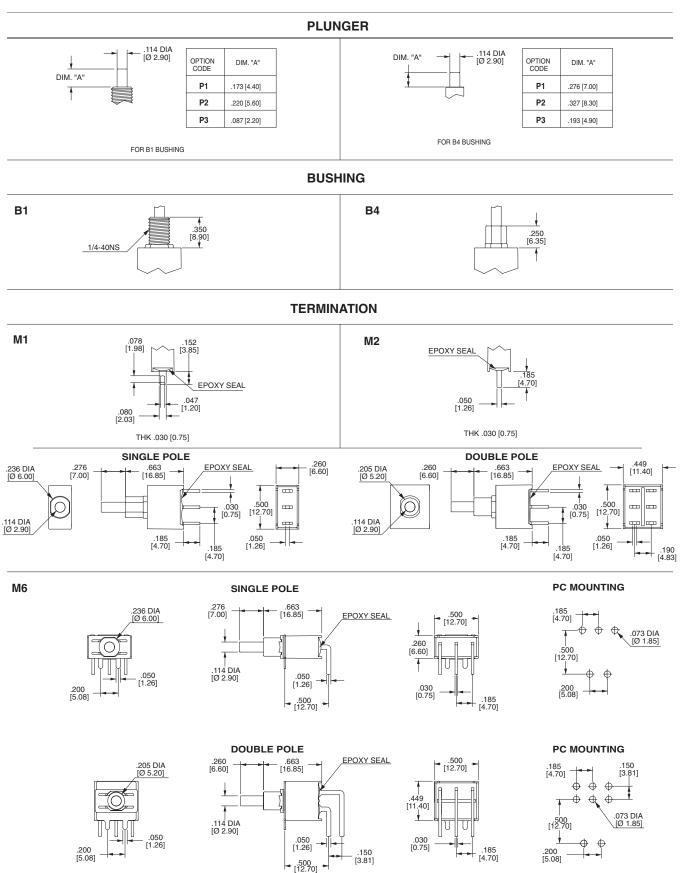


3MN-Series Dimensional Specifications: in. [mm]

TERMINATION SINGLE POLE PC MOUNTING VS2-VS3 **VS6-VS7** (For B6 Bushing Only) .205 [5.20] .125 [3.18] .270 [6.85] OPTION CODE DIM. "A" .460 [11.68] VS2 .620 [15.75] VS6 .185 [4.70] .630 [16.00] VS3 VS7 ф ф . 050 [1.26] .020 [0.50] .125 [3.18] .185 [4.70] .185 [4.70] .321 ____.620 [15.75] .620 [15.75] [8.15] **DOUBLE POLE** VS2-VS3 **PC MOUNTING VS6-VS7** (For B6 Bushing Only) .114 DIA [Ø 2.90] .224 [5.70] .270 [6.85] OPTION CODE VS2 .460 [11.68] 185 VS6 VS3 VS7 .073 DIA [Ø 1.85] .020 [0.50] .020 [0.50] .030 .190 [4.83] .125 [3.18] .185 [4.70] .185 [4.70] .321 [8.15] .620 [15.75] .620 [15.75] **SINGLE POLE PC MOUNTING VS4-VS5 VS8-VS9** (For B6 Bushing Only) .118 DIA [Ø 3.00] .165 [4.20] .250 [6.35] OPTION CODE DIM. "A" .270 [6.85] .185 [4.70] VS4 .460 [11.68] VS8 .750 [19.05] .630 [16.00] .177 [4.50] .073 DIA [Ø 1.85] Ф . 050 [1.26] Φ .020 [0.50] . 050 [1.26] .185 [4.70] .362 .750 [19.05] .750 [19.05] **PC MOUNTING** VS4-VS5 **DOUBLE POLE VS8-VS9** (For B6 Bushing Only) .114 DIA [Ø 2.90] .165 [4.20] .224 [5.70] OPTION CODE DIM. "A" .270 [6.85] Ф VS4 .460 [11.68] VS8 .750 [19.05] Ф .185 [4.70] .630 [16.00] VS5 VS9 .073 DIA [Ø 1.85] .020 [0.50] 190 [4.83] .185 [4.70] .185 [4.70] .362 [9.20] .750 [19.05] .750 _ [19.05] _

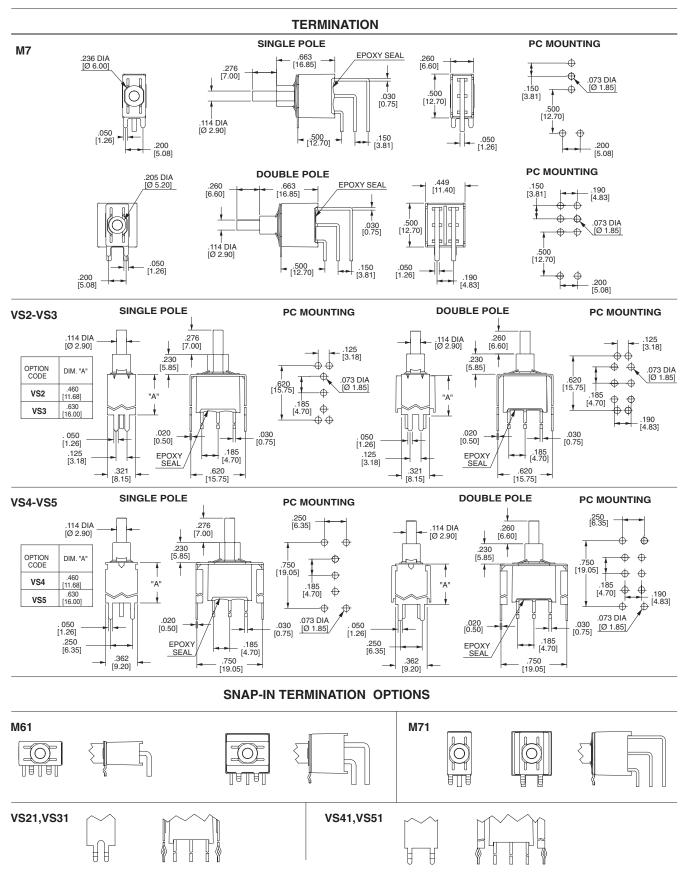


3MS-Series Dimensional Specifications: in. [mm]





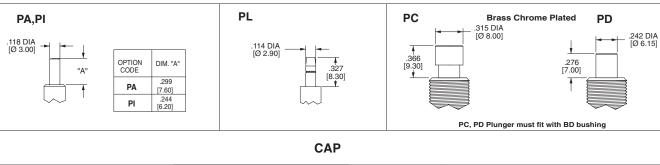
3MS-Series Dimensional Specifications: in. [mm]

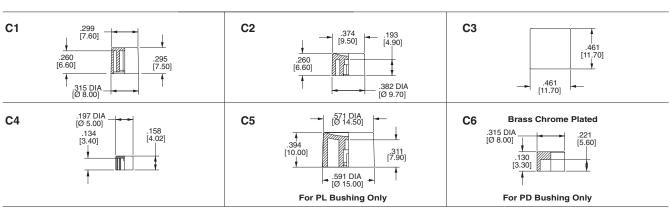


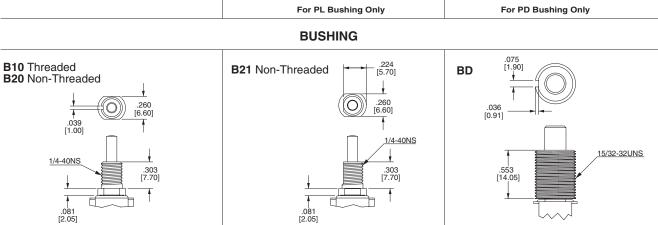
M61,M71,VS21,VS31,VS41,VS51 have the same P.C. mounting but with snap-in bracket.



3MA-Series Dimensional Specifications: in. [mm] **ACTUATOR** AP1 .472 [12.00] **PANEL MOUNTING** .173 [4.40] .500 [12.70] .465 [11.80] .728 [18.50] .047 TO .125 [1.19] TO [3.18] .551 [14.00] .005 R [0.13 R] .600 [15.24] PANEL TICKNESS MAX TYP. .465 [11.80] .114 [2.90] AP2 .614 [15.60] **PANEL MOUNTING** [2.00] .500 [12.70] .768 [19.50] .465 [11.80] .047 TO .125 [1.19] TO [3.18] .532 [13.50] .600 [15.24] .005 R [0.13 R] PANEL TICKNESS MAX TYP. .465 [11.80] **PLUNGER** PLPC PA,PI **Brass Chrome Plated** PD .315 DIA [Ø 8.00] .242 DIA [Ø 6.15] .118 DIA [Ø 3.00] .114 DIA [Ø 2.90]

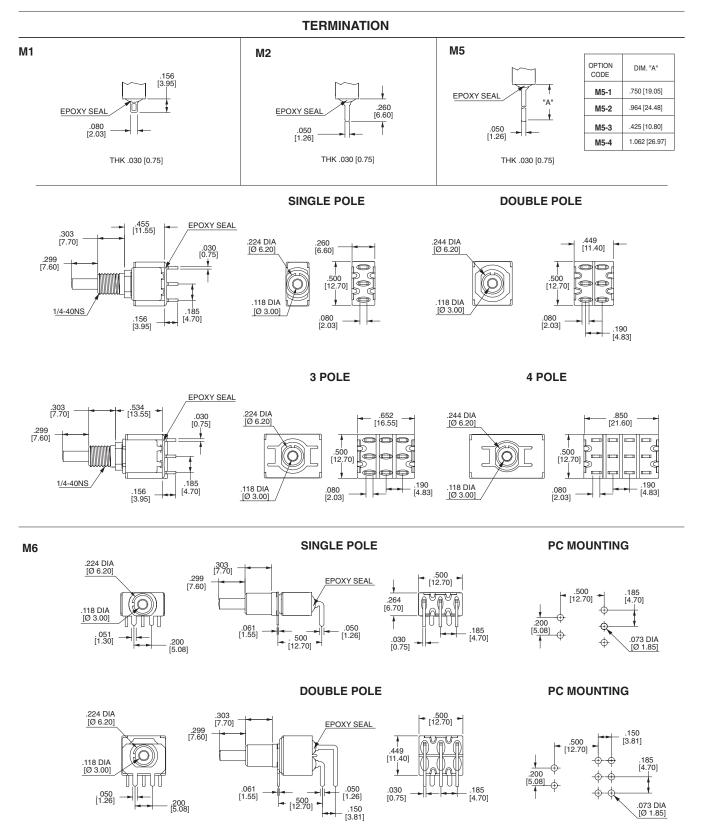








3MA-Series Dimensional Specifications: in. [mm]





3MA-Series Dimensional Specifications: in. [mm]

