

2M-Series

Miniature Toggles Switches

PRODUCT WEBPAGE

request sample, configure part





The 2M family of miniature toggle switches is composed of three switch series; the 2M1-Series miniature toggle switch, the 2MS-Series sealed miniature toggle switch, and the 2M1H-Series premium sealed miniature toggle switch. These series all feature PC mounting and offer a variety of ratings, circuits, contact materials, terminal platings, toggle styles and lengths, and optional color caps.

125, 250 Poles Amps

VDC

Typical Applications

Instrumentation

- Networking
- · Medical Equipment
- Military







Telecommunications

Tech Specs



2M1H-Series **Premium Sealed** Miniature Toggle Switch



2MS-Series Sealed Miniature Toggle Switch



2M1-Series Miniature Toggle Switch

Electrical

Contact Rating	refer to ordering scheme
Electrical Life	50,000 make & break cycles @ full load
Contact Resistance	10 mΩ max. initial @ 2-4 VDC 100mA for both silver & gold plated contacts
Insulation Resistance	1000 MΩ min.
Dielectric Strength	1500 Volts RMS @ sea level

Physical

Operating Temperature	-30°C to +85°C
Index of Protection	2MIH-Series: IP67 2MS-Series: IP67
Solder Heat Resistance	MIL-STD-202, Method 210
Actuator Travel	25°

Material

Case	2MIH-Series & 2MI-Series: Dially phthalate (DAP) (UL 94V-0) 2MS-Series: Glass filled nylon 6/6,flame retardant, heat stabilized (UL 94V-0)
Toggle	2MIH-Series: Brass, black finish with o-ring seal 2MS-Series: Brass, chrome plated, internal o-ring sealed 2MI-Series: Brass, chrome plated
Bushing	2MIH-Series: Brass, black finish with o-ring seal 2MS-Series: Glass filled nylon 6/6,flame retardant, heat stabilized (UL 94V-0) 2MI-Series: Brass, nickel plated
Housing	Stainless Steel
Bracket	2MS-Series: Nylon (UL 94V-0) 2MI-Series: Stainless Steel
Actuator Retainer	2MS-Series: Stainless Steel
Switch Support	Brass, tin plated
Terminal Seal	Ероху

Ordering Scheme

Part Number

Selection 1. SERIES

2M1H Premium Sealed Miniature Toggle Switch

2. POLES / CIRCUIT

() - mome	entary			
Pósition:	1 ′	2	3	
	2-3, 5-6	Connected Terminals	2-1, 5-4	
SP1	ON [']	NONE	ON	
SP2	ON	NONE	(ON)	
SP3	ON	OFF	ÒN ´	
SP4	(ON)	OFF	(ON)	
SP5	ÒN	OFF	(ON)	
DP1	ON	NONE	ÒN Í	
DP2	ON	NONE	(ON)	
DP3	ON .	OFF	ÓN Í	
DP4	(ON)	OFF	(ON)	
DP5	ON	OFF	(ON)	
DP6 *	ŌΝ ͺ	ON	ÔN (
DP7 *	(ON)	ON	(ON)	
DP8 *	ÓN	ON	(ON)	
*Center position connects 2-3, 5-4				

3. ACTUATOR STYLE

.709" [18 mm] length ΤK .512" [13.00 mm] length

4. BUSHING

BK .386" [9.80 mm] threaded, flat

5. TERMINATION 7

M1 Solder Lug	M51	Wire Wrap, .750" [[19.05mm]	length
M2 PCB	M52	Wire Wrap, .964"	24.48mm	length
M3 Quick Connect	M53	Wire Wrap, .425"	[10.80mm]	length
	M54	Wire Wrap, 1.062"	25.97mm	length

6. CONTACTS / TERMINALS

	Contact Material	Terminal Platin	g Rating A	Approvals
G	silver ¹	gold over silver	5A 125VAC or 28VDC,	91 , IP67
		•	2A 250VAC	
K P	gold ^{2,5} silver ^{1,6}	tin ^{4,7}	0.4VA max 20V max ((AC/DC) IP67
P	silver ^{1,6}	tin ^{4,7}	5A 125VAC or 28VDC,	91 , iP67
		2A	250VAC	·
Q	silver ¹ silver ¹	5A	125VAC or 28VDC,	911 , IP67
-		2A	250VAC	·
R	gold ² gold ³	0.4VA max	20V max (AC/DC)	IP67

7. EPOXY SEAL

Epoxy Seal

Notes: Switches supplied with (1) 2MI-HDW4 hex nut and (1) 3MNH-WCP-0872 O-Ring
Movable contact and terminal platings: silver over copper alloy
Movable contact and terminal platings: gold over nickel over copper alloy
Terminal platings: gold over nickel over copper alloy
Terminal platings: tin over copper alloy
Terminal contact platings: gold over nickel alloy
Terminal contact platings: silver over nickel alloy
Tin option not available with MI & M3 terminations.

Ordering Scheme

Part Number

3

Selection

1. SERIES

2MS Sealed Miniature Toggle Switch

2. POLES

WSP Single pole - uses terminals 1, 2 & 3 **WDP** Double pole - uses terminals 1, 2, 3, 4, 5 & 6 **W3P** Three pole - uses terminals 1, 2, 3, 4, 5, 6, 7, 8 & 9

3. CIRCUIT

() - momentary			
Position:	1 '	2	3
	2-3, 5-6	Connected Terminals	2-1, 5-4
1	ON	NONE	ON .
2	ON	NONE	(ON)
3	ON .	OFF	ON .
4	(ON)	OFF	(ON)
5	ÓN	OFF	(ON)

4. ACTUATOR STYLE

Round Bat Plastic Anti-Static .496" length Round Short Bat P2 Plastic Anti-Static .299" length Long Black Plastic .492" length

5. BUSHING

Threaded, Keyway **B4** Unthreaded, Short, Keyway, Flat

Notes:
BI Bushing switches supplied with (2) 2MI-HDW2 nuts, (1) 2MI-HDW11 washer and
(1) 2MI-HDW15 locking ring. See page 76-77.

Movable contact & terminal platings: silver over copper alloy

Movable contact & terminal platings: gold over nickel over copper alloy

Terminal platings: tin over nickel over copper alloy

Tin option not available with M1 terminal

6. TERMINATION

M14 Solder Lug VS21 Vertical, Snap-In, .460" PCB [11.70mm] VS3 Vertical, 630" [16mm]
VS31 Vertical, Snap-In, .630" [16mm]
U2 Vertical, .551" [14mm] -М3 Quick Connect **M51** Wire Wrap, .750" [19.05mm] **M52** Wire Wrap, .964" [24.48mm] **M53** Wire Wrap, .425" [10.80mm] **M54** Wire Wrap, 1.062" [25.97mm] only 3PDT **VS4** Vertical, .461" [11.70mm] M6 Right Angle, PC Thru-Hole VS41 Vertical, Snap-In, .461" M61 Right Angle, Snap-In M7 Vertical, Right Angle, [11.70mm] Vertical, .551" [14mm] only 3PDT PC Thru-Hole M71 Vertical, Right Angle, Snap-In VS2 Vertical, .461" [11.70mm] **VS5** Vertical, .630" [16mm] **VS51** Vertical, Snap-In, .630" [16mm

7. CONTACTS / TERMINALS

Co G	ntact Material silver ¹	Terminal Plating gold over silver 2A	Rating Approvals 5A 125VAC or 28VDC, 250VAC
K P	gold ² silver ¹	tin ^{3, 4} tin ^{3, 4}	0.4VA max 20V max (AC/DC) IP67 5A 125VAC or 28VDC, c
R	gold ²	2A gold ²	250VAC 0.4VA max 20V max (AC/DC) IP67

8. EPOXY SEAL

Epoxy Seal without Epoxy Seal

6

ଞ୍ଚ Configure Complete Part Number >

Browse Standard Parts >

Sample Part Number

Selection 1. SERIES

2M1 Miniature Toggle Switch

2. POLES

Single pole - uses terminals 1, 2 & 3 Double pole - uses terminals 1, 2, 3, 4, 5 & 6 Three pole - uses terminals 1, 2, 3, 4, 5, 6, 7, 8 & 9 Four pole - uses terminals 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 & 12 DP

5. BUSHING

Threaded Standard, keyway **B2** Non-Threaded Standard, keyway **B3** Threaded Short, keyway

B4 Non-Threaded Short, keyway **B5** High Torque, 7.5mm, flat

5

B6 High Torque, 8.0mm, keyway

B7 Long threaded

B8 Metric

B9 Splashproof

BO 15/32" Threaded (Standard for T7 & T8 actuator styles)

BA Threaded for T6 **BA** Threaded for T6

BB Non-Threaded for T6 BE Threaded Hi Torque for T6

BL Threaded, Locking

3. CIRCUIT

() - momentary Position: 1 Connected Terminals 3, 5-6, 8-9, 11-12 2-1, 5-4, 8-7, 11-10 ON 2 ON NONE (ON) ON **OFF** ÓN 4 5 (ON) OFF (ON) OFF (ON) ON 6* ON ON ÓN (ON) ON (ON) 8* ON *Available with DP and 4P switches only. Center position connects 2-3, 5-4, 8-9, 11-10

4 ACTUATOR STYLE

ı		CICAICKOILL		
ı	Tl	Round Bat	Т7	Large Bat (B0 bushing)
	T2	Round Short Bat	Т8	X-Lärge Bàt (B0 bushing)
	Т3	Paddle	Т9	Black Plastic `
	T4	Medium Paddle	TO	Rectangular
	TA	Locking Lever	TA	Locking Lever
		Long Paddle	TI	Locking Lever
	Т6	Flat (B1,B2,B5,BA,BB,BE)	TL	Locking Lever

Notes: B1 Bushing switches supplied with (2) 2M1-HDW2 nuts, (1) 2M1-HDW11 washer and (1) 2M1-HDW15 locking ring.

Movable contact & terminal platings: silver over copper alloy

Movable contact & terminal platings: gold over nickel over copper alloy

Terminal platings: tin over nickel over copper alloy

Tin option not available with M1 terminal Movable contact & terminal platings: silver over copper alloy

In option not available with MI terminal Movable contact & terminal pic silver over copper alloy Movable contact & terminal platings: gold over nickel over copper alloy Terminal platings: tin over nickel over copper alloy Tin option not available with MI terminal

6. TERMINATION

M14 Solder Lug VS21 Vertical, Snap-In, .460" М2 PCB [11.70mm] Vertical, .630" [16mm] **Quick Connect** VS31 Vertical, Snap-In, .630" [16mm]
U2 Vertical, .551" [14mm] -Wire Wrap, .750" [19.05mm] M51 M51 Wire Wrap, .750" [19.05mm]
M52 Wire Wrap, .964" [24.48mm]
M53 Wire Wrap, .425" [10.80mm]
M54 Wire Wrap, 1.062" [25.97mm]
M6 Right Angle, PC Thru-Hole
M61 Right Angle, Snap-In
W7 Vertical, Right Angle, only 3PDT VS4 Vertical, .461" [11.70mm] VS41 Vertical, Snap-In, .461" [11.70mm] Vertical, .551" [14mm] -PC Thru-Hole only 3PDT **VS5** Vertical, .630" [16mm] M71 Vertical, Right Angle, Snap-In VS2 Vertical, 461" [11.70mm] VS51 Vertical, Snap-In, .630" [16mm]

7. CONTACTS / TERMINALS

	ontact Materia silver ¹	l Terminal Plating gold over silver	Rating 5A 125VAC or 28VDC, 2A 250VAC	Approvals A) , (), IP67
K P	gold ² silver ¹	tin ^{3, 4} tin ^{3, 4}	0.4VA max 20V max (A 5A 125VAC or 28VDC, 2A 250VAC	AC/DC) N/A 91 , () , IP67
Q	silver 1	silver 1	5A 125VAC or 28VDC, 2A 250VAC	91 , (£ , IP67
R	gold ²	gold ²	0.4VA max 20V max (A	AC/DC) N/A

8. EPOXY SEAL

Epoxy Seal without Epoxy Seal

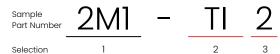
🛚 Configure Complete Part Number > 📉 🐵 Browse Standard Parts >

Ordering Scheme Accessories

2M-Series Accessories

To order accessories assembled on a switch, specify the switch number followed by the accessory part number and the word "assembled". Ex: 2M1-SP1-T1-B1-M1QE-T12 ASSEMBLED. To order accessories in bulk, specify the Series, followed by the accessory. Ex: 2M1-T12. See page 76 for dimensional specifications.

Optional Toggle Cap



1. SERIES

2M1 Fits 2M1H, 2MS or 2M1

2. TOGGLE CAP SIZE

T1 10.6 mm **T2** 7.6 mm

3. CAP COLOR

1 White 5 Yellow 2 Black 6 Green 3 Red 7 Blue

Optional Dress and Knurled Nuts

Sample Part Number	2M1	_	HDW3
Selection	1		2

1. SERIES

2M1 Fits 2M1H, 2MS or 2M1

2. NUT

HDW3 Dress nut for 1/4" bushing HDW5 Knurled nut for 15/32" bushing (2M1-Series only)

Optional Rubber Seals



1. SERIES

2M1 Fits 2M1H, 2MS or 2M1

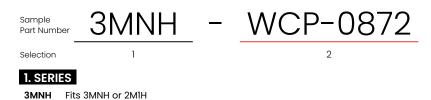
2. RUBBER BOOT SEAL

EIA 1/4 - 40" UNS bushing (Not available for B0 bushing option)

K1 Metric M6 bushing (B8 bushing only)

YEID 15/32 - 32" UNS bushing (TJ, TK and B0 bushings only)

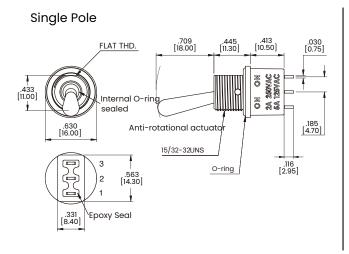
YEIE 15/32 - 32" UNS bushing 1/2 boot (T7, T8, TJ, TK and B0 bushings only)

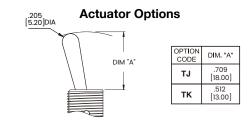


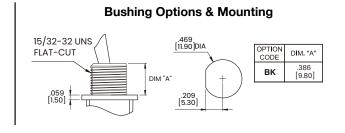
2. RUBBER O-RING

WCP-0872 For 15/32 bushing option

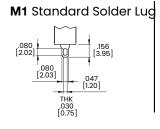
inches [millimeters]

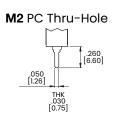


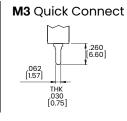


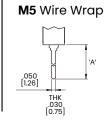


Termination Options



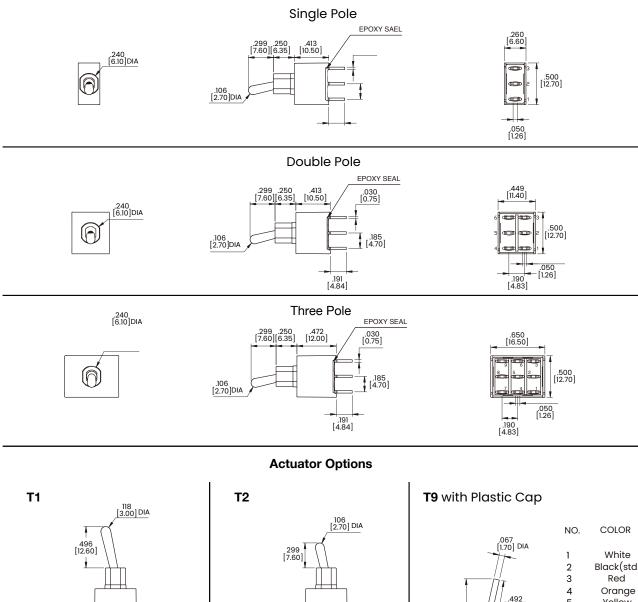






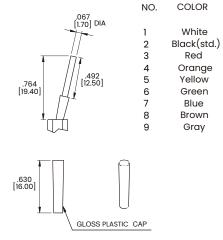
OPTION CODE	DIM.'A'
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

inches [millimeters]

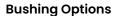


P1 Plastic Toggle P2 Plastic Toggle | 106 | 107 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 10

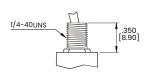




inches [millimeters]



В1

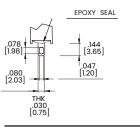


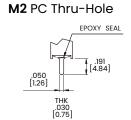


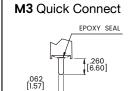


Termination Options

M1 Standard Solder Lug

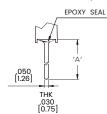






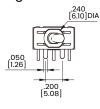
THK .030 [0.75]

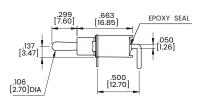
M5 Wire Wrap

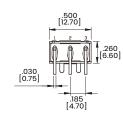


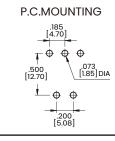
OPTION CODE	DIM.'A'
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

M6 Single Pole

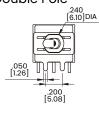


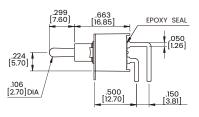


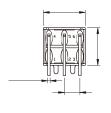


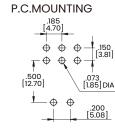


M6Double Pole

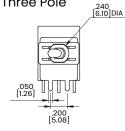


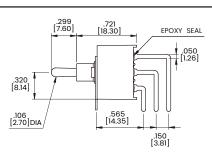


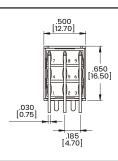


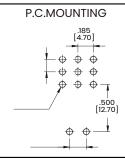


M6 Three Pole

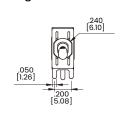


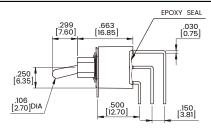


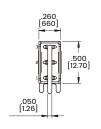


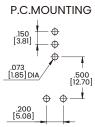


M7 Single Pole



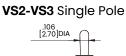


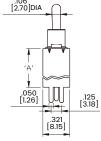


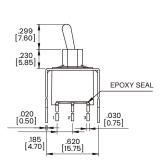


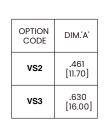
.106 [2.70]DIA

inches [millimeters]

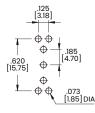




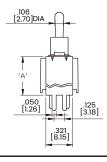


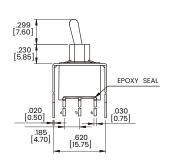


P.C.MOUNTING



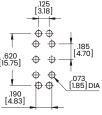
VS2-VS3 Double Pole



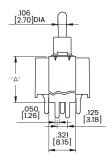


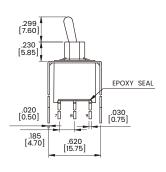
OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING .125 [3.18]



U2-VS3 Three Pole



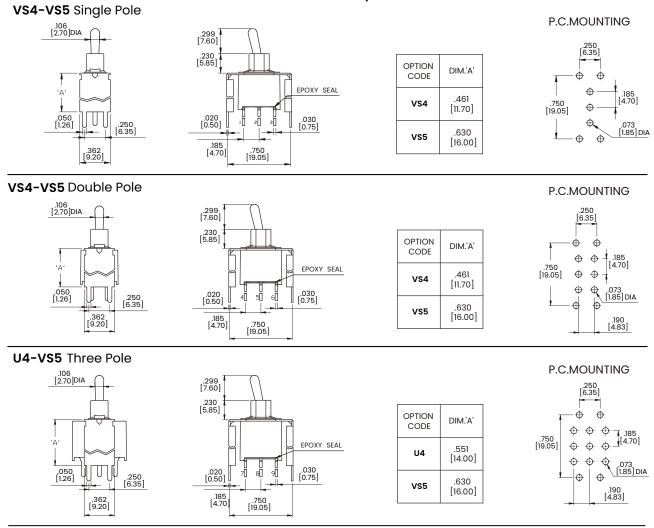


OPTION CODE	DIM.'A'
U2	.551 [14.00]
VS3	.630 [16.00]

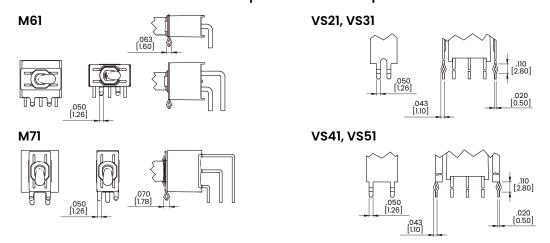
P.C.MOUNTING

inches [millimeters]



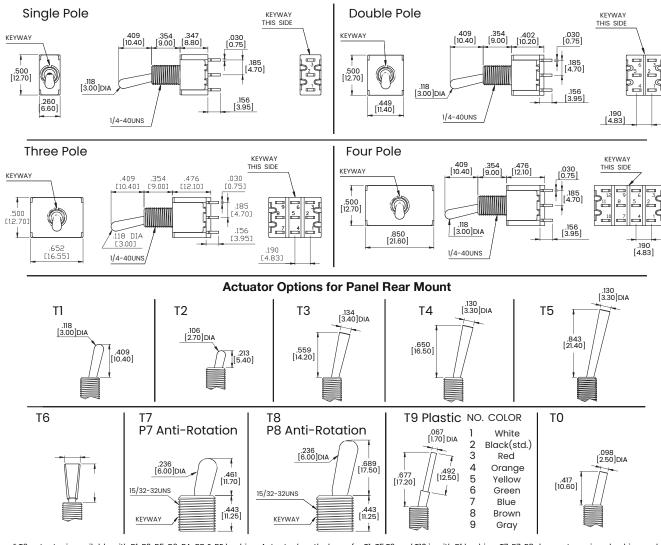


Snap-In Termination Options

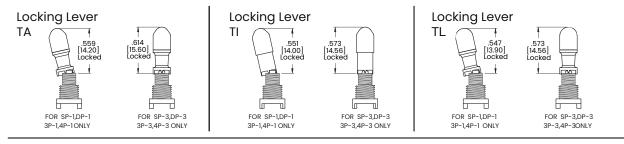


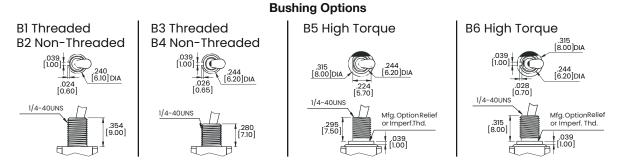
^{*} PC Mounting for M61, M71, VS21, VS31, VS41, VS51 refer to M6, M7, VS2, VS3, VS4, VS5 respectively.

inches [millimeters]



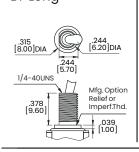
^{*} T6 actuator is available with B1, B2, B5, B6, BA, BB & BE bushing. Actuator length shown for T1-T5,T9 and T10 is with B1 bushing. T7, P7, P8 does not require a bushing code.

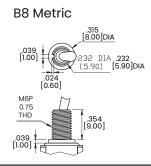


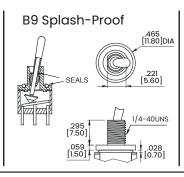


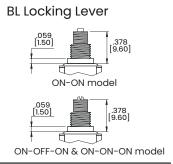
inches [millimeters]

B7 Long

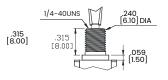


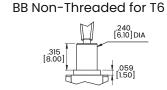


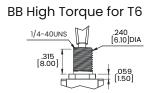




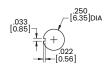
BA Threaded for T6



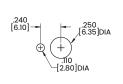




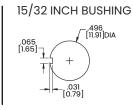
1/4 INCH BUSHING

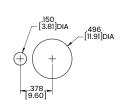






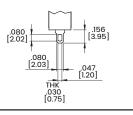
Panel Mounting

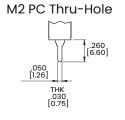


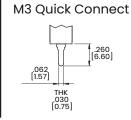


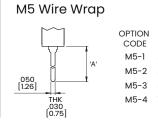
Termination Options

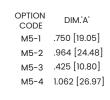
M1 Standard Solder Lug



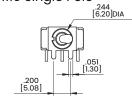


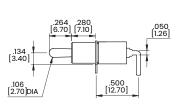


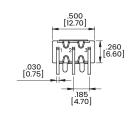


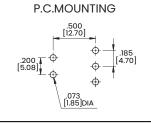


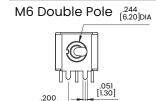


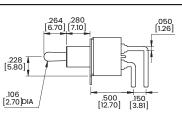


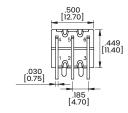


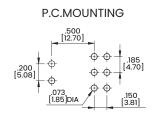


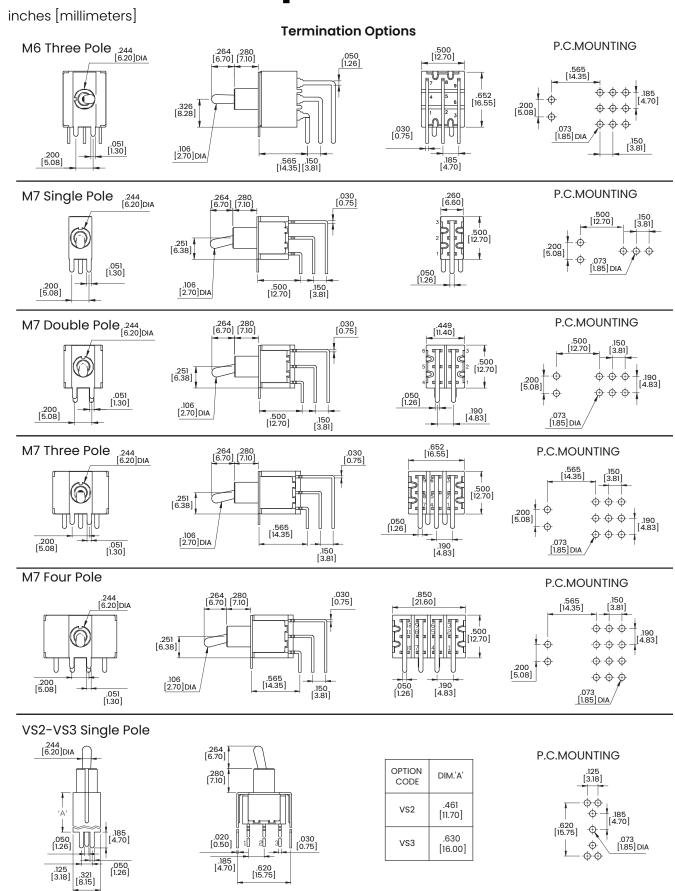








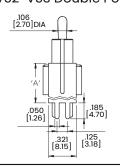


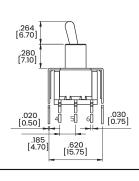


inches [millimeters]

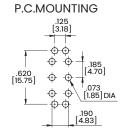
VS2-VS3 Double Pole

Termination Options

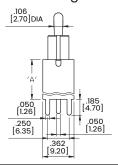


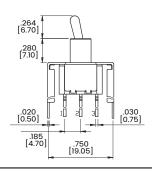


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

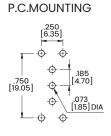


VS4-VS5 Single Pole

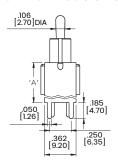


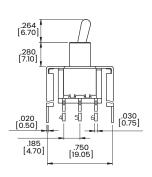


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]



VS4-VS5 Double Pole





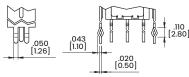
OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

Snap-In Termination Options

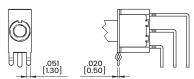
M61 (available with SP & DP)



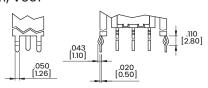




M71 (available with SP & DP)



VS41, VS51



^{*} PC Mounting for M61,M71,VS21,VS31,VS41,VS5 1 refer to M6,M7,VS2,VS3,VS4,VS5 respectively.

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