

Toggle Switches



Series 100

Miniature

P.01 ~ 08



Series 100A

Sealed Miniature

P.09 ~ 15



Series 100C

Dust-Proofed Miniature

P.09 ~ 15



Series 200

Sub-Miniature

P.16 ~ 20



Series 200A

Sealed Sub-Miniature

P.21 ~ 25



Series 200C

Dust-Proofed Sub-Miniature

P.21 ~ 25



Series 200B

Sealed Surface Mount

P.26 ~ 31



Series 100H (NEW !)

High Performance Sealed

P.32 ~ 34



Series L7

Power

P.35 ~ 37



Series L7A

Sealed Power

P.38 ~ 41

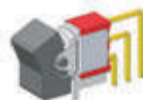


Series L7C

Splash-Proofed Power

P.42 ~ 43

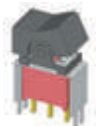
Rocker Switches



Series 300

Miniature

P.44 ~ 52



Series 300A

Sealed Miniature

P.53 ~ 60



Series 300C

Dust-Proofed Miniature

P.53 ~ 60



Series 400

Sub-Miniature

P.61 ~ 64



Series 400A

Sealed Sub-Miniature

P.65 ~ 68



Series 400C

Dust-Proofed Sub-Miniature

P.65 ~ 68



Series 400B

Sealed Surface Mount

P.69 ~ 72



Series MR

Sealed Marine

P.73 ~ 78



Series R19

Power

P.79 ~ 88



Series R19U

Ultraminiature

P.89 ~ 92

Slide Switches



Series 500

Miniature

P.93 ~ 97



Series 500A

Sub-Miniature

P.98 ~ 99



Series 600

Miniature for PCB

P.100 ~ 102



Series 600A

Low Power

P.103 ~ 104



Series SS

Side Button

P.105

Pushbutton Switches



Series 700

Snap-Acting

P.106 ~ 111



Series 700A

Sealed Snap-Acting

P.112 ~ 116



Series 700L

Alternate Acting

P.117 ~ 123



Series 800

Sub-Miniature

P.124 ~ 128



Series 800A

Sealed Sub-Miniature

P.129 ~ 132



Series 800C

Dust-Proofed Sub-Miniature

P.129 ~ 132



Series 800B

Sealed Surface Mount

P.133 ~ 137



Series 700H (NEW!)

High Performance Sealed

P.138 ~ 141



Series FS

Foot Switch

P.142 ~ 145



Series SP86

Dip (Key type)

P.146



Series SP88

Dip (Key type)

P.147



Series IP

Quad-Illumination

P.148 ~ 150



Series LP (LS-A & LS-S)

Illuminated Momentary & Alternate

P.151



Series LP (WPL-X)

Illuminated Momentary & Alternate

P.152 ~ 158



Series R18

Miniature & Sub-Miniature

P.159 ~ 162



Series WP

(None) Latching & Interlocking

P.163 ~ 167



Series 180

Illuminated & Pilot type

P.168 ~ 179

Anti-Vandal Switches



Series AV

12, 16, 19, 22, 25mm P.180 ~ 196



Series AV01/AV01L

12mm OFF-MOM Anti-Vandal P.197 ~ 199



Series AV02/AV02L (NEW !)

12mm ON-MOM Anti-Vandal P.200 ~ 201



Series AV03/AV03L (NEW !)

12mm ON-ON Anti-Vandal P.202 ~ 203



Series AV04

IP67 12mm Anti-Vandal P.204 ~ 205



Series AV07/AV07L (NEW !)

12mm OFF-ON Anti-Vandal P.206 ~ 207



Series AVx5 (NEW !)

16A Anti-Vandal Switches P.208 ~ 211



Series AV06 (NEW !)

Anti-Vandal Pushbutton Switches P.212 ~ 216



Series AVx3 (NEW !)

Anti-Vandal Emergency Switches P.217 ~ 218



Series AVx (NEW !)

Anti-Vandal Key and Selector Switches P.219 ~ 221



Series 700/700H (NEW !)

Pull-Push Emergency Switches P.222



Series IL (NI-04 & NI-05)

Indicator Lights P.223 ~ 226



Series AVMB/AVMBL

Anti-Vandal Buzzers P.227 ~ 228

Rotary Switches



Series 840

Multi-Poles & Multi-Positions P.229 ~ 231



Series 900A

Dip & Surface Mount P.232 ~ 235



Series 900B

Sealed Dip & Surface Mount P.236 ~ 239

Tact Switches



Series KRS

Dip & Surface Mount Tactile P.240 ~ 245



Series KRSS

8mm x 8mm Tactile P.246



Series KRSA

Sealed 8mm x 8mm Tactile P.247



Series KRSAM

Sealed Surface Mount P.248



Series DAS

Double Action P.249 ~ 250



Series LP ~ LP14

Illuminated Dip & Surface Mount P.251 ~ 257

Touch Key Switches



Series TK (NEW !)

Illuminated 16, 19, 22mm P.258 ~ 262

Miscellaneous



Series 900

Thumbwheel & Pushwheel P.263 ~ 270



Series DP10

Piano Type Dip P.271 ~ 274



Series R22

Fuse Holders P.275



Series TPS

Detector P.276 ~ 277



Series DM

Micro P.278 ~ 282



Series KLS

Keylock P.283 ~ 286



Series MB

Buzzer P.287 ~ 293



Series IL

Indicator Lights P.294 ~ 296



Rocker

Slide

Pushbutton

A/

Rotary

Tact

Touch Key

Miscellaneous

Specifications and Dimensions subject to change

HOW TO ORDER SYSTEM



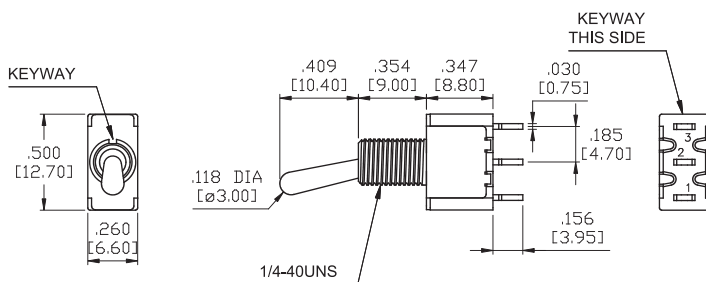
SPDT



Model No.	Switching Position		
SP-1	ON	NONE	ON
SP-2	ON	NONE	(ON)
SP-3	ON	OFF	ON
SP-4	(ON)	OFF	(ON)
SP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

Schematic

2Comm.



DPDT



Model No.	Switching Position		
DP-1	ON	NONE	ON
DP-2	ON	NONE	(ON)
DP-3	ON	OFF	ON
DP-4	(ON)	OFF	(ON)
DP-5	ON	OFF	(ON)
Term. Comm.	2-3,5-6	OPEN	2-1,5-4

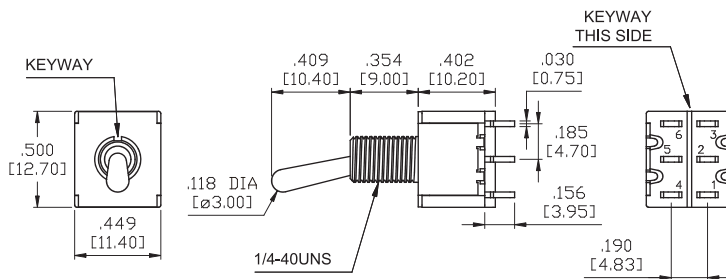
Model No.	Switching Position		
DP-6	ON	ON	ON
DP-7	(ON)	ON	(ON)
DP-8	ON	ON	(ON)
Term. Comm.	2-3,5-6	2-3,5-4	2-1,5-4

Schematic

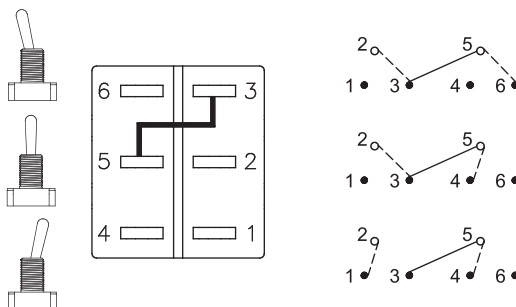
2Comm.



5Comm.



WIRING FOR ON-ON-ON (3-WAY) FUNCTION



3PDT



Model No.	Switching Position		
3P-1	ON	NONE	ON
3P-2	ON	NONE	(ON)
3P-3	ON	OFF	ON
3P-4	(ON)	OFF	(ON)
3P-5	ON	OFF	(ON)
Term. Comm.	2-3,5-6 8-9	OPEN	2-1,5-4 8-7

Schematic

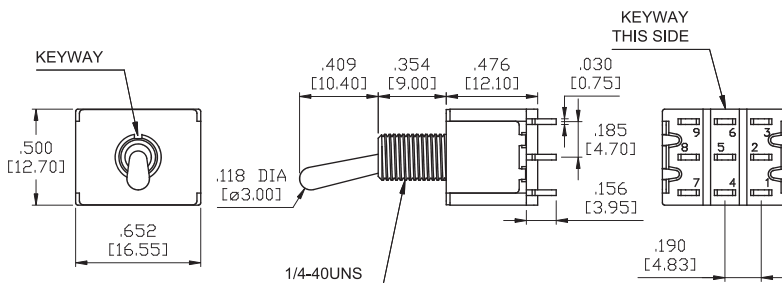
2Comm.



5Comm.

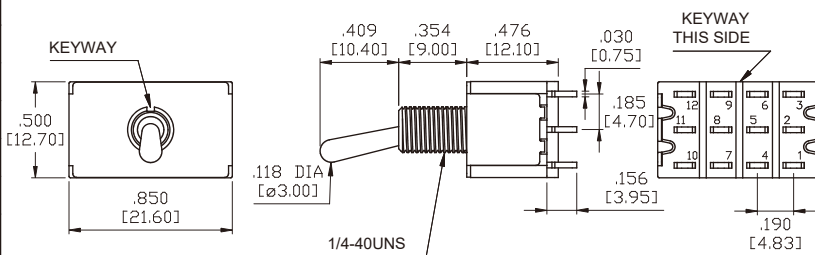


8Comm.

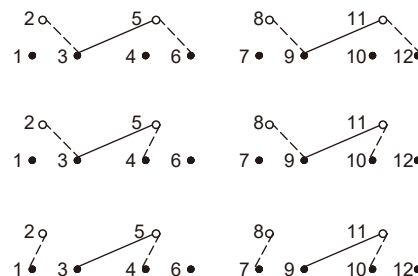
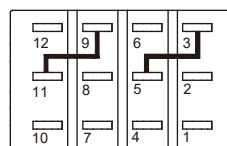
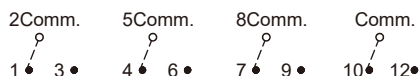


Model No.	Switching Position		
4P-1	ON	NONE	ON
4P-2	ON	NONE	(ON)
4P-3	ON	OFF	ON
4P-4	(ON)	OFF	(ON)
4P-5	ON	OFF	(ON)
Term. Comm.	2-3,5-6 8-9 11-12	OPEN	2-1,5-4 8-7 11-10

Model No.	Switching Position		
4P-6	ON	ON	ON
4P-7	(ON)	ON	(ON)
4P-8	ON	ON	(ON)
Term. Comm.	2-3,5-6	2-3,5-4	2-1,5-4
	8-9	8-9	8-7
	11-12	11-10	11-10



Schematic



.106 DIA
[ø2.70]

.213
[5.40]

Technical drawing of a tapered screw. The drawing shows a screw with a tapered shank and a threaded base. The dimensions are: .129 DIA [ø3.27] for the shank diameter and .559 [14.20] for the shank length.

5

.130 DIA
[ø3.30]

.843
[21.40]

Technical drawing of a shaft and pin assembly. The shaft has a diameter of .236 DIA [ø6.00] and a keyway. The pin has a diameter of .461 [11.70] and a length of .443 [11.25]. The shaft is labeled 15/32-32UNS.

Technical drawing of a screw with a conical tip. The drawing shows a screw with a conical tip and a keyway. Dimensions are given in inches and millimeters. The conical tip has a diameter of .236 DIA [Ø6.00] and a height of .689 [17.50]. The screw body has a diameter of .443 [11.25] and a length of 15/32-32UNS. A keyway is shown on the side of the screw body.

Technical drawing of a 10-32 UNF x 1.00 inch Hex Head Cap Screw. The drawing shows the screw with dimensions: .067 DIA [ø1.70] for the thread, .677 [17.20] for the shank length, and .492 [12.50] for the head height. A color key on the right lists 9 colors: 1 White, 2 Black(std.), 3 Red, 4 Orange, 5 Yellow, 6 Green, 7 Blue, 8 Brown, 9 Gray.

FOR SP-1,DP-1
3P-1,4P-1 ONLY

FOR SP-3,DP-3
3P-3,4P-3 ONLY

FOR SP-1,DP-1
3P-1,4P-1 ONLY

FOR SP-3,DP-3
3P-3,4P-3 ONLY

.547
[13.90]
Locked

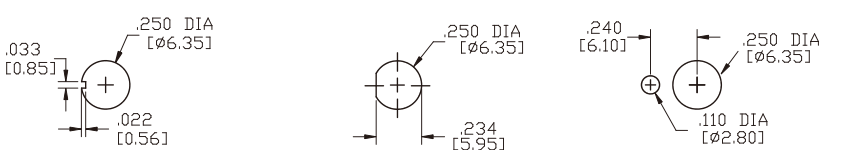
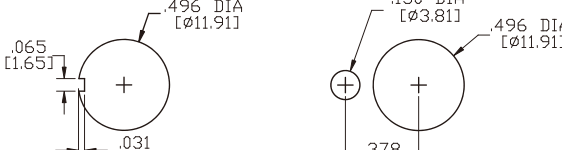
FOR SP-1,DP-1
3P-1,4P-1 ONLY

FOR SP-3,DP-3
3P-3,4P-3 ONLY

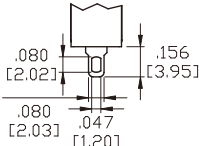
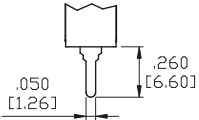
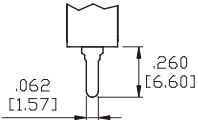
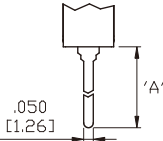
BUSHING OPTIONS

B1 THD B2 NON-THD .039 [1.00] .240 DIA [ø6.10] .024 [0.60] 1/4-40UNS .354 [9.00]	B3 THD B4 NON-THD .039 [1.00] .240 DIA [ø6.10] .026 [0.65] 1/4-40UNS .280 [7.10]	B5 HIGH TORQUE .315 DIA [ø8.00] .244 DIA [ø6.20] .224 5.70 1/4-40UNS .295 [7.50] .039 [1.00] Mfg. Option Relief or Imperf. Thd.	B6 HIGH TORQUE .315 DIA [ø8.00] .244 DIA [ø6.20] .039 [1.00] .028 [0.70] 1/4-40UNS .315 [8.00] .039 [1.00] Mfg. Option Relief or Imperf. Thd.
B7 LONG .315 DIA [ø8.00] .244 DIA [ø6.20] .224 5.70 1/4-40UNS .378 [9.60] .039 [1.00] Mfg. Option Relief or Imperf. Thd.	B8 METRIC .315 DIA [ø8.00] .232 DIA [ø5.90] .039 [1.00] .024 [0.60] M6P 0.75 THD .354 [9.00] .039 [1.00]	B9 SPLASH-PROOF .465 DIA [ø11.80] .221 [5.60] .295 [7.50] .059 [1.50] 1/4-40UNS .028 [0.70] SEALS	BL LOCKING LEVER .059 [1.50] .378 [9.60] ON-ON model .059 [1.50] .378 [9.60] ON-OFF-ON & ON-ON-ON model
BA THD For T6 1/4-40UNS .240 DIA [ø6.10] .315 [8.00] .059 [1.50]	BB NON-THD For T6 .240 DIA [ø6.10] .315 [8.00] .059 [1.50]	BE HIGH TORQUE For T6 1/4-40UNS .240 DIA [ø6.10] .315 [8.00] .059 [1.50]	

PANEL MOUNTING

1/4 INCH BUSHING 	15/32 INCH BUSHING 
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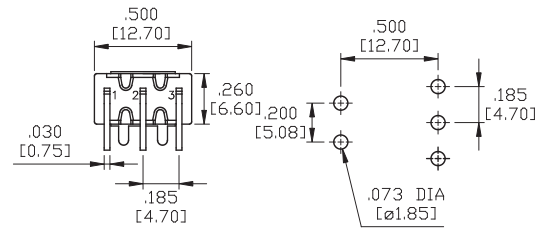
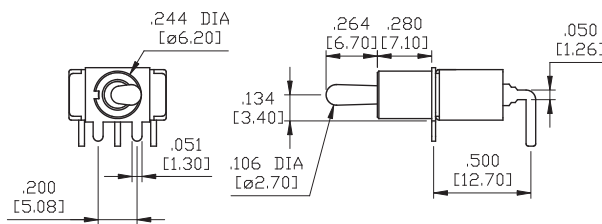
TERMINATION OPTIONS

M1 STD. SOLDER LUG  THK .030 [0.75]	M2 PC THRU-HOLE  THK .030 [0.75]	M3 QUICK CONNECT  THK .030 [0.75]	M5 WIRE WRAP  <table><tr><th>OPTION CODE</th><th>DIM.'A'</th></tr><tr><td>M5-1</td><td>.750 [19.05]</td></tr><tr><td>M5-2</td><td>.964 [24.48]</td></tr><tr><td>M5-3</td><td>.425 [10.80]</td></tr><tr><td>M5-4</td><td>1.062 [26.97]</td></tr></table>	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]
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]												

TERMINATION OPTIONS

M6

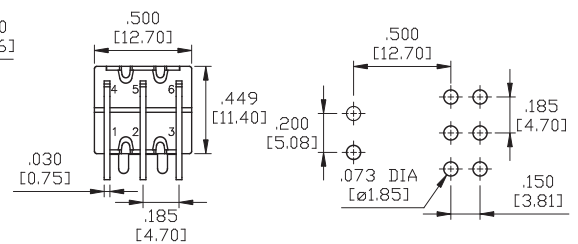
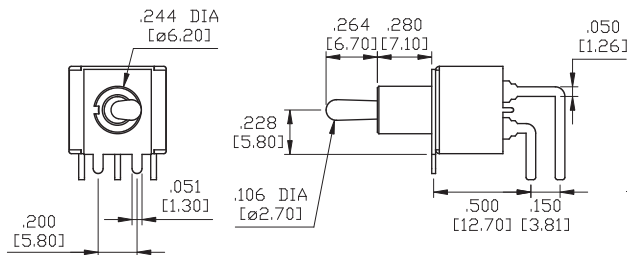
P.C.MOUNTING



SPDT

M6

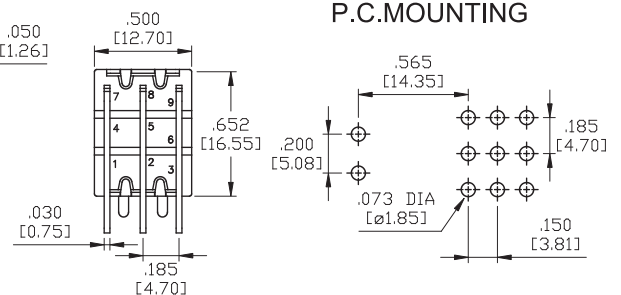
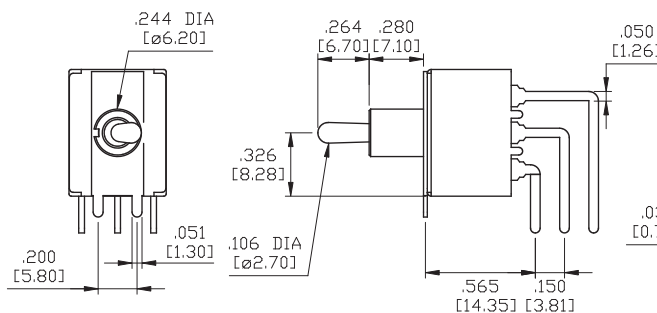
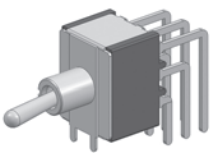
P.C.MOUNTING



DPDT

M6

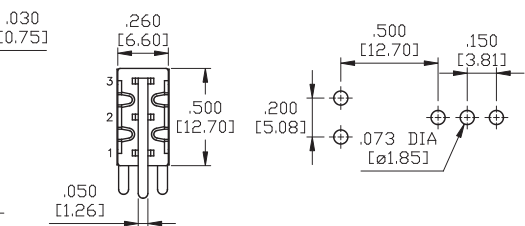
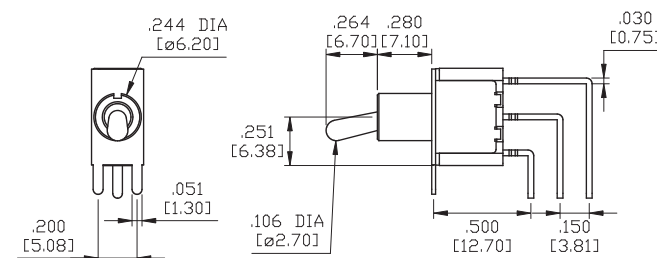
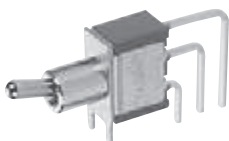
P.C.MOUNTING



3PDT

M7

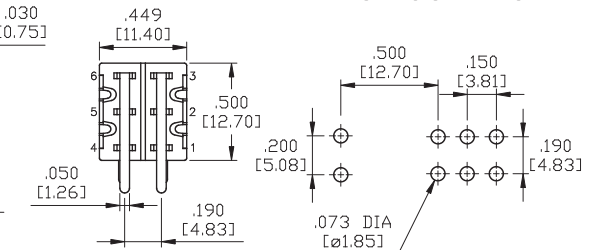
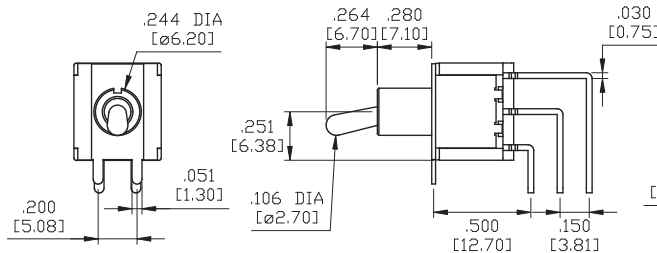
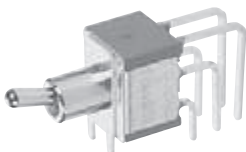
P.C.MOUNTING



SPDT

M7

P.C.MOUNTING



DPDT

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

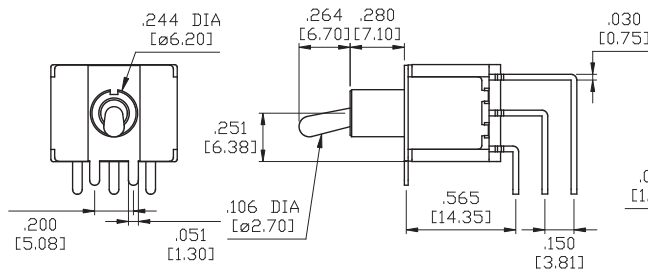
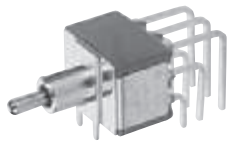
Tact

Touch Key

Miscellaneous

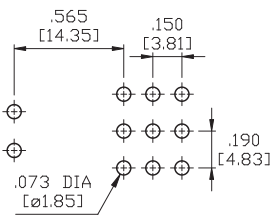
TERMINATION OPTIONS

M7

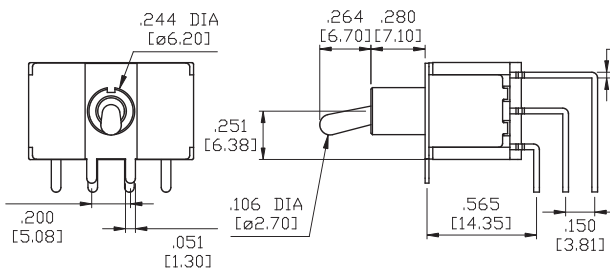
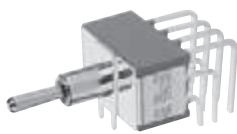


3PDT

P.C.MOUNTING

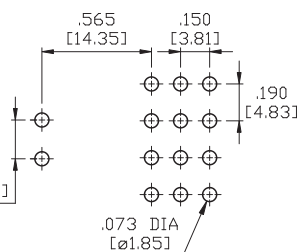


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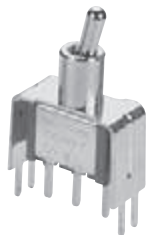


4PDT

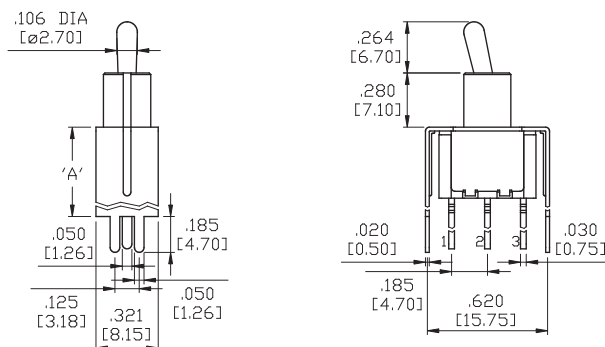
P.C.MOUNTING



VS2-VS3

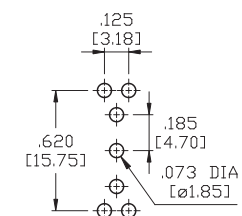


SPDT



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

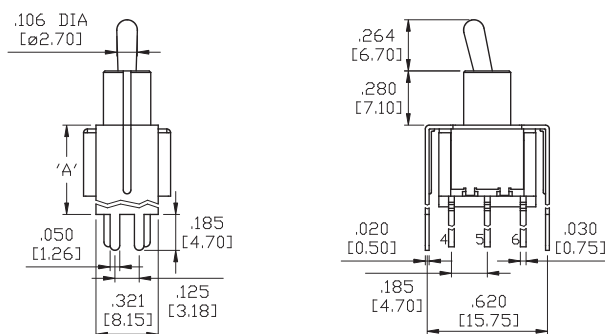
P.C.MOUNTING



VS2-VS3

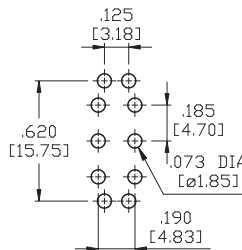


DPDT



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

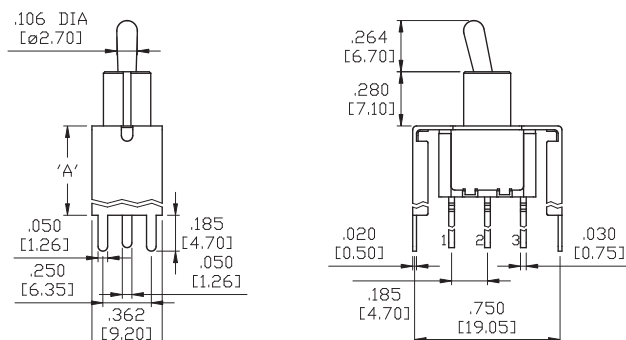
P.C.MOUNTING



VS4-VS5

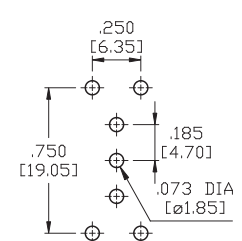


SPDT



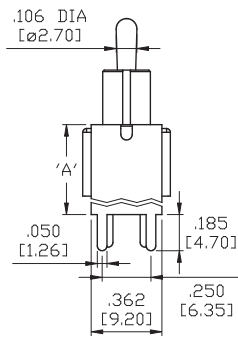
OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

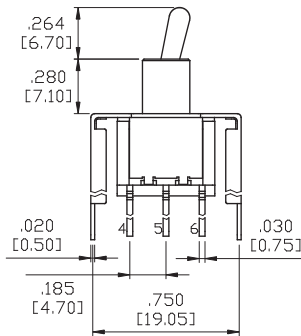


TERMINATION OPTIONS

VS4-VS5

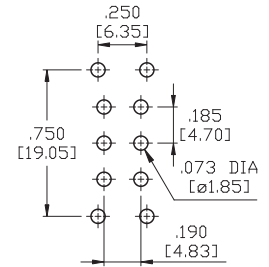


DPDT



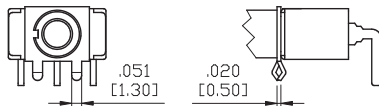
OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

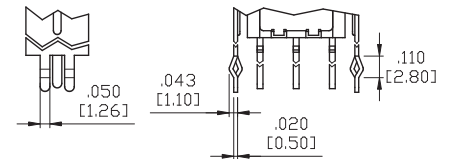


SNAP-IN TERMINATION OPTIONS

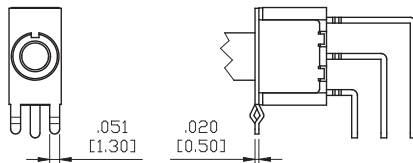
M61 (AVAILABLE WITH SPDT AND DPDT)



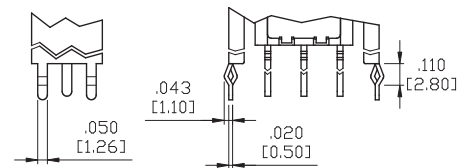
VS21,VS31



M71 (AVAILABLE WITH SPDT AND DPDT)



VS41,VS51

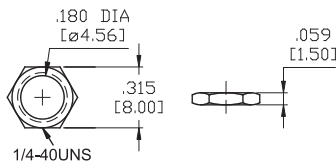


* PC Mounting for M61,M71,VS21,VS31,VS41,VS51 refer to M6,M7,VS2,VS3,VS4,VS5 respectively.

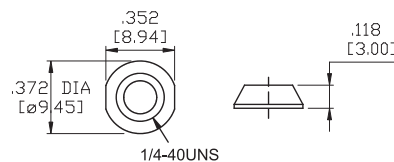
HARDWARE

NUT

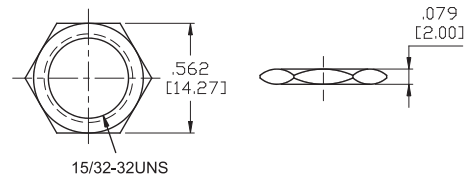
STD. HDW2



DRESS NUT HDW3

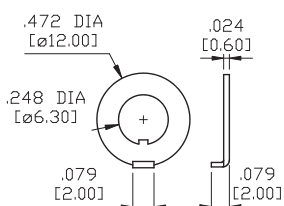


HDW4 - FOR T7,T8 ONLY

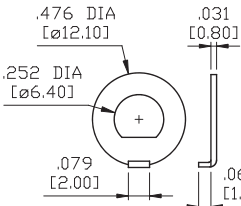


LOCKING RING

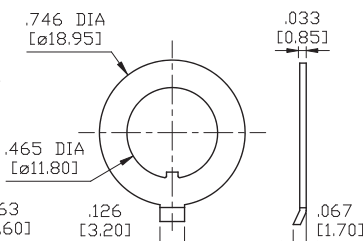
STD. HDW15



STD. HDW16

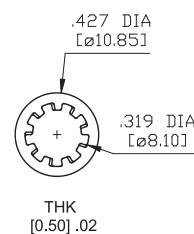


HDW17 - FOR T7,T8 ONLY

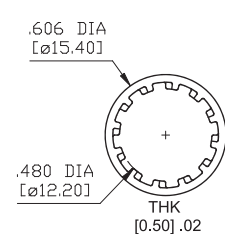


LOCK WASHER

STD. HDW11



HDW12 - FOR T7,T8 ONLY



TOGGLE CAPS

T1 ACTUATOR CAP



* MATERIAL: PVC.

T2 ACTUATOR CAP



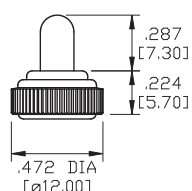
* MATERIAL: PVC.

T9 ACTUATOR GLOSS PLASTIC



* MATERIAL: ABS.

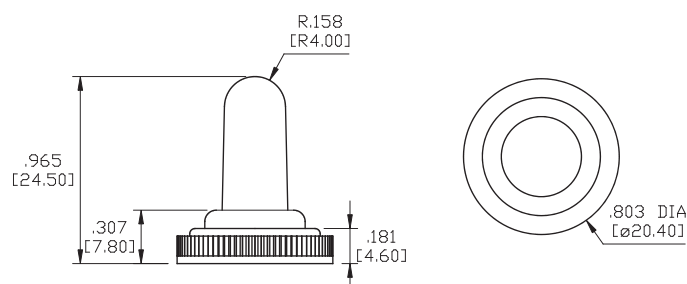
E1 RUBBER HOOD



E1=INCH (STD.)
E1A=INCH WITH INTERNAL-ORING SEALED
K1=METRIC M6P0.75 THD (For B8 bushing only)

* FOR T1 ACTUATOR ONLY.

YE1A06 M12xP0.75 RUBBER HOOD



* FOR T8 ACTUATOR ONLY.

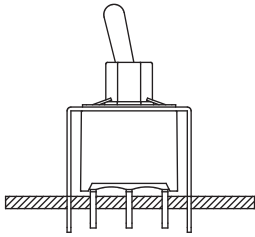
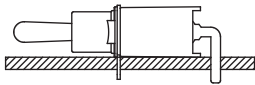
CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
Q	Silver ¹	Silver plated ¹	5Amps @ 125VAC or 28VDC 2Amps @ 250VAC	
P		Tin plated ⁵ ⁷		
R	Gold ²	Gold plated ⁴	0.4VA max @ 20V max (AC or DC)	
K		Tin plated ⁵ ⁶		
G	Silver ¹	Gold over silver ³	5Amps @ 125VAC or 28VDC 2Amps @ 250VAC	

1. Movable Contact / Terminals: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.
5. Outer Terminals: Copper alloy with pure tin plated.
6. Terminal Contact: Gold plated over nickel plated.
7. Terminal Contact: Palladium nickel alloy (or Silver) plated.

* P, K not available with M1 and M3 terminals

* 6Amps (Movable Contact: coin silver, silver plated) available to model ON-NONE-ON without UL approval



SPECIFICATIONS:

CONTACT RATING: Refer to "Contact Material Options" for more info.
 ELECTRICAL LIFE: 50,000 make-and-break cycles at full load.
 CONTACT RESISTANCE: 10mΩ max. initial @2-4VDC
 100mA for both silver and gold plated contacts.
 INSULATION RESISTANCE: 1,000MΩ Min.
 DIELECTRIC STRENGTH: 1,500 V RMS @ sea level.
 OPERATING TEMPERATURE: -30°C~+85°C.

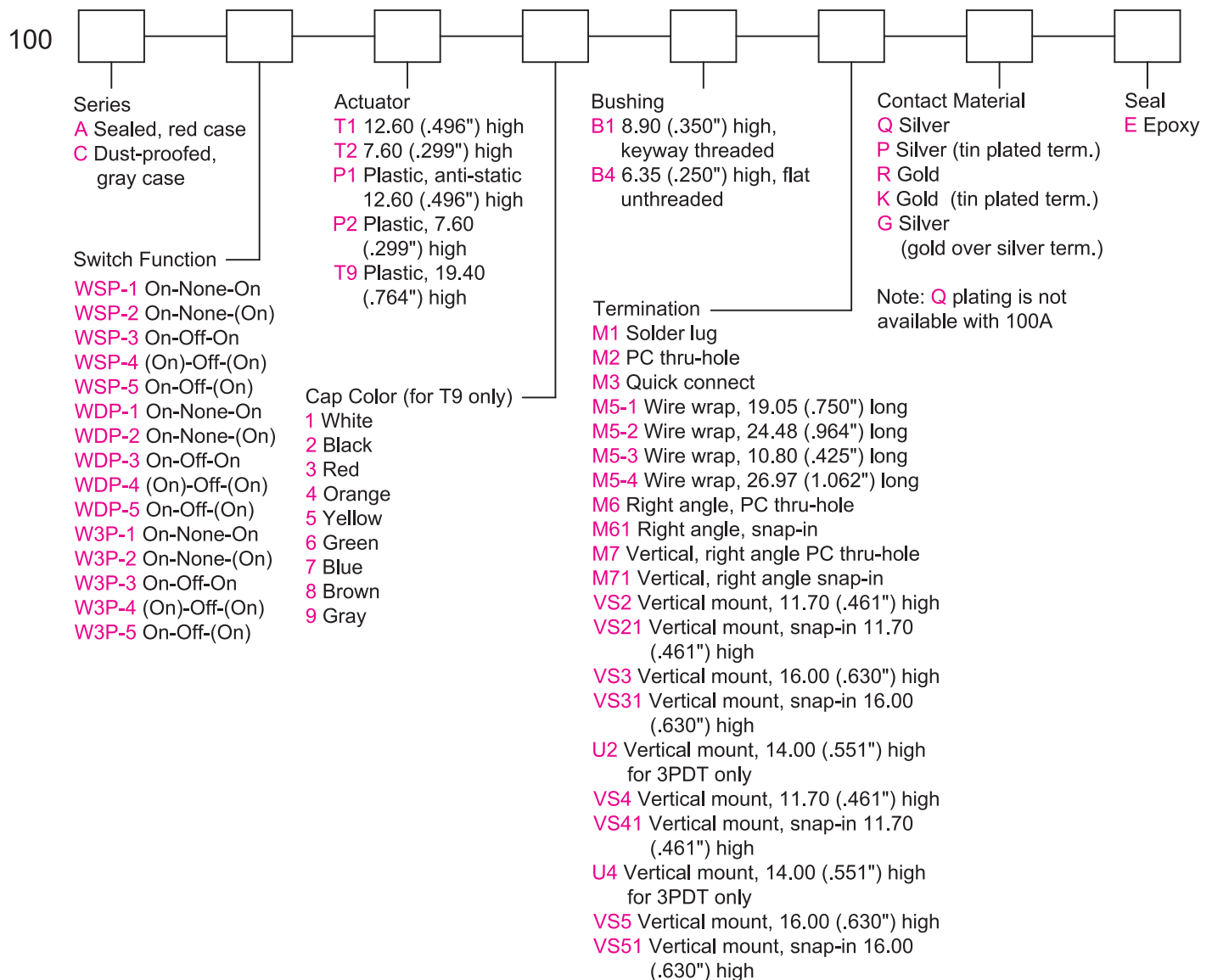
MATERIALS:

CASE & BUSHING: PA9T or FR52, flame retardant, heat stabilized (UL94V-0).
 ACTUATOR: Brass chrome plated, internal o-ring sealed (100A).
 ACTUATOR: Brass chrome plated (100C).
 SWITCH SUPPORT: Brass, tin plated.
 TERMINAL SEAL: Epoxy.

Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



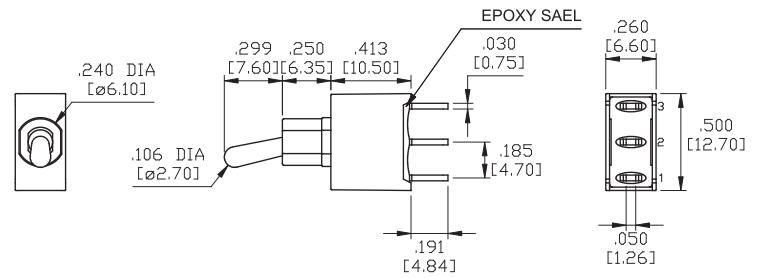
SPDT



Model No.	Switching Position		
WSP-1	ON	NONE	ON
WSP-2	ON	NONE	(ON)
WSP-3	ON	OFF	ON
WSP-4	(ON)	OFF	(ON)
WSP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

Schematic

2Comm.



DPDT



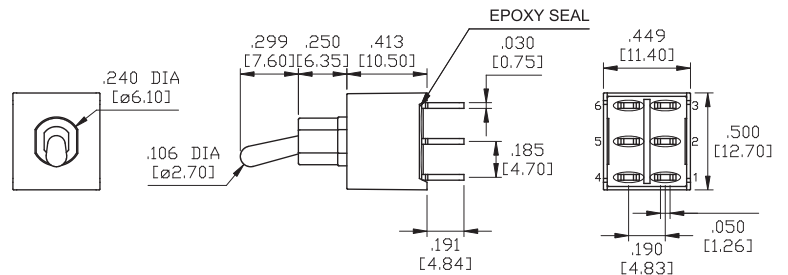
Model No.	Switching Position		
WDP-1	ON	NONE	ON
WDP-2	ON	NONE	(ON)
WDP-3	ON	OFF	ON
WDP-4	(ON)	OFF	(ON)
WDP-5	ON	OFF	(ON)
Term. Comm.	2-3,5-6	OPEN	2-1,5-4

Schematic

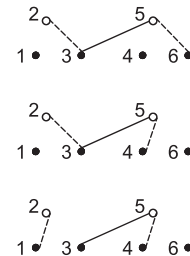
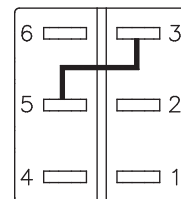
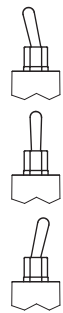
2Comm.



5Comm.



WIRING FOR ON-ON-ON (3-WAY) FUNCTION



3PDT



Model No.	Switching Position		
W3P-1	ON	NONE	ON
W3P-2	ON	NONE	(ON)
W3P-3	ON	OFF	ON
W3P-4	(ON)	OFF	(ON)
W3P-5	ON	OFF	(ON)
Term. Comm.	2-3,5-6 8-9	OPEN	2-1,5-4 8-7

Schematic

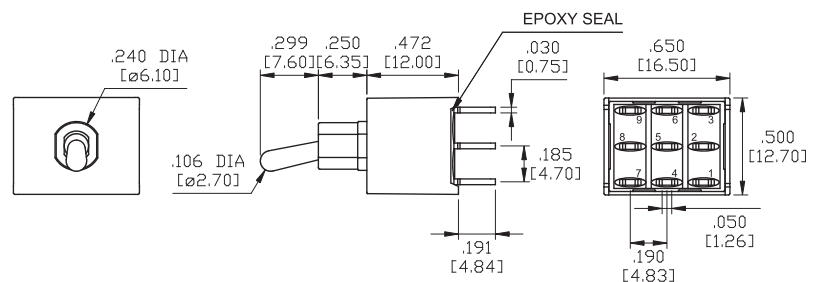
2Comm.



5Comm.

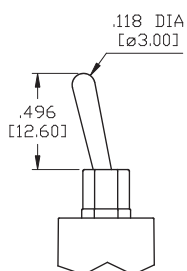


8Comm.

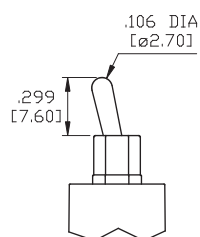


ACTUATOR OPTIONS

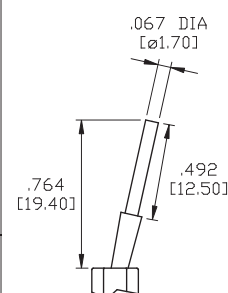
T1



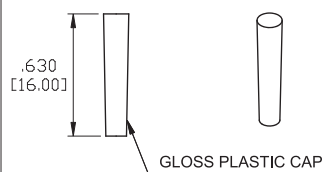
T2



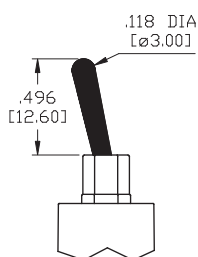
T9 WITH PLASTIC CAP



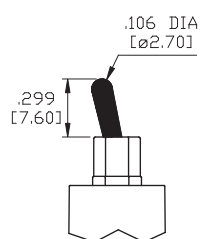
NO.	COLOR
1	White
2	Black(std.)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray



P1 PLASTIC TOGGLE



P2 PLASTIC TOGGLE

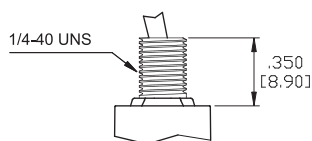


* Subtract 2.20mm (.087") from actuator height for B1 bushing

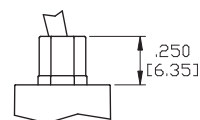
* Subtract 1.90mm (.075) from actuator height for B1 bushing

BUSHING OPTIONS

B1

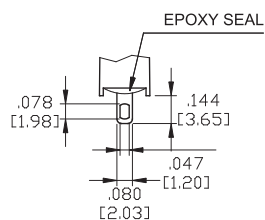


B4



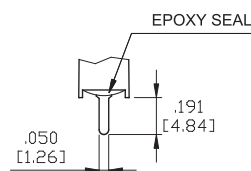
TERMINATION OPTIONS

M1 STD. SOLDER LUG



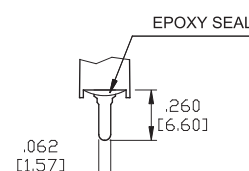
THK .030 [0.75]

M2 PC THRU-HOLE



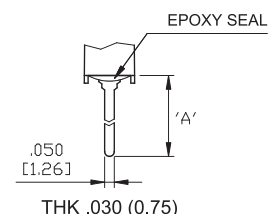
THK .030 [0.75]

M3 QUICK CONNECT



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]

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

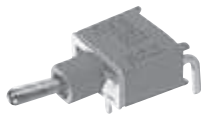
Tact

Touch Key

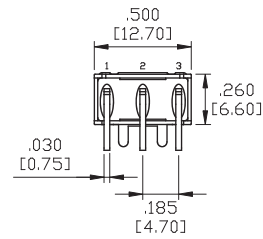
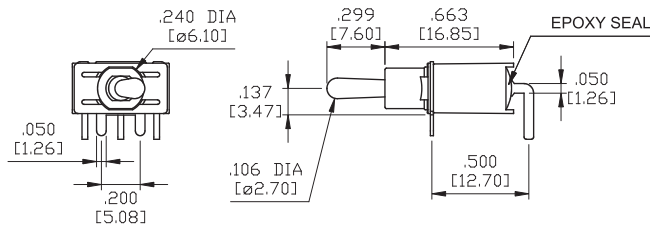
Miscellaneous

TERMINATION OPTIONS

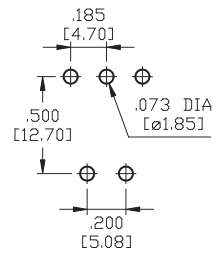
M6



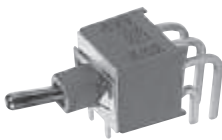
SPDT



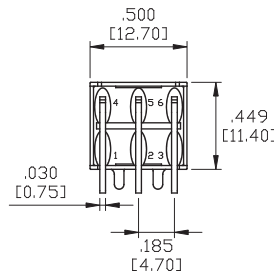
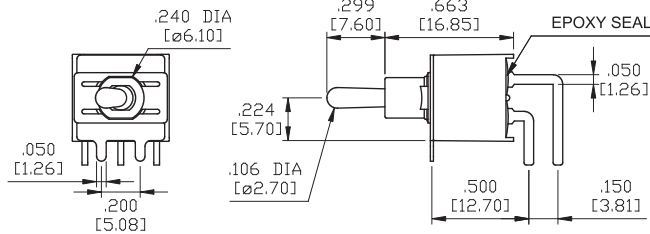
P.C.MOUNTING



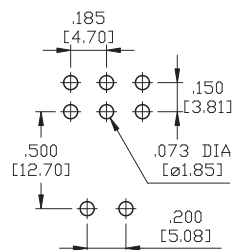
M6



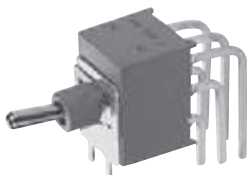
DPDT



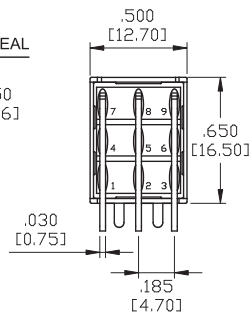
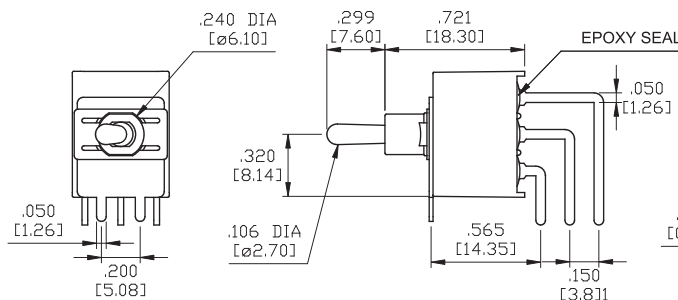
P.C.MOUNTING



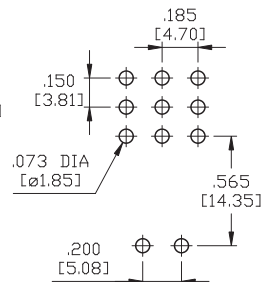
M6



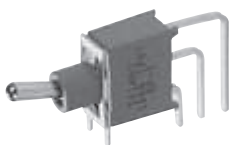
3PDT



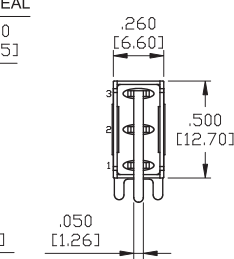
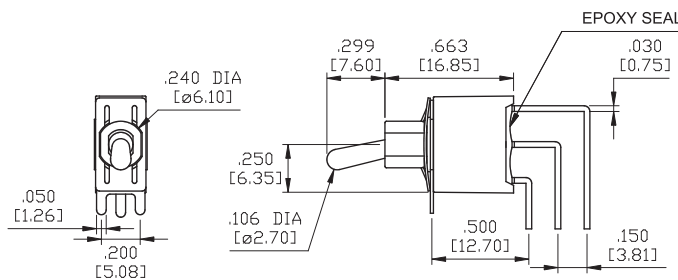
P.C.MOUNTING



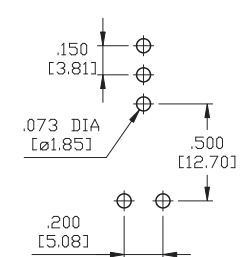
M7



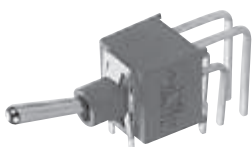
SPDT



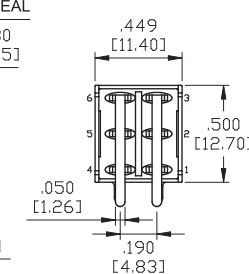
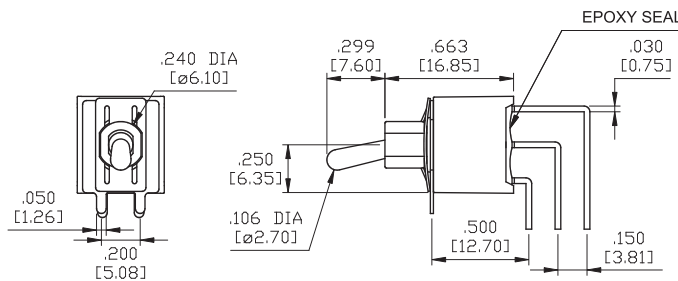
P.C.MOUNTING



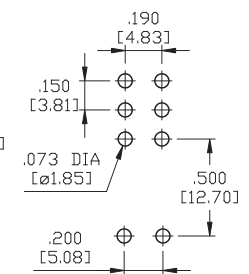
M7



DPDT

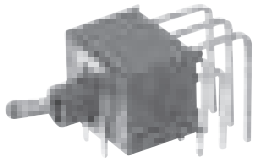


P.C.MOUNTING

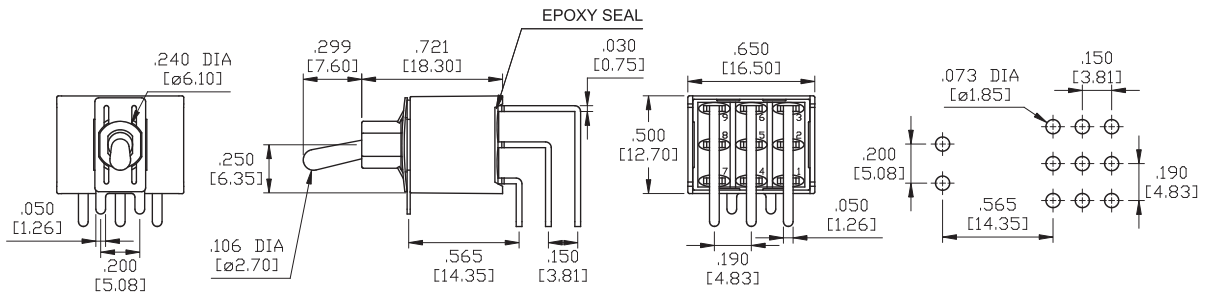


TERMINATION OPTIONS

M7

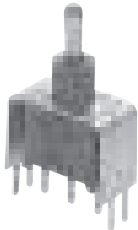


3PDT

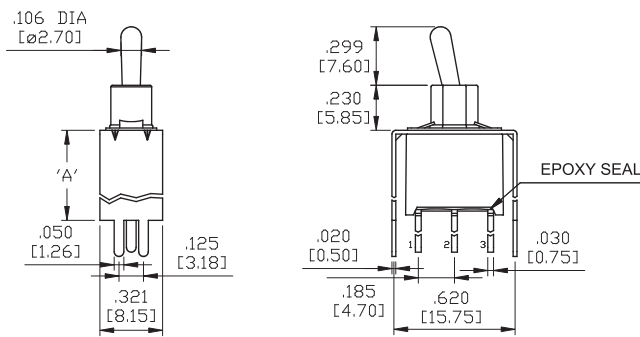


P.C.MOUNTING

VS2-VS3

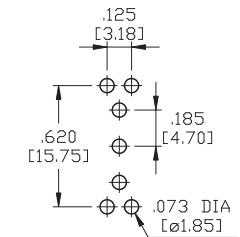


SPDT



P.C.MOUNTING

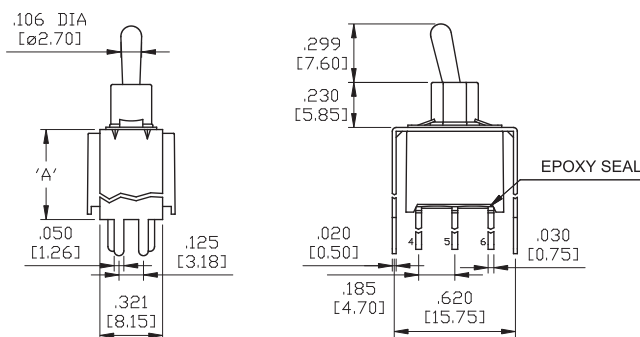
OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]



VS2-VS3

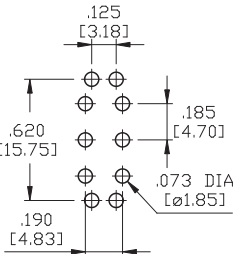


DPDT



P.C.MOUNTING

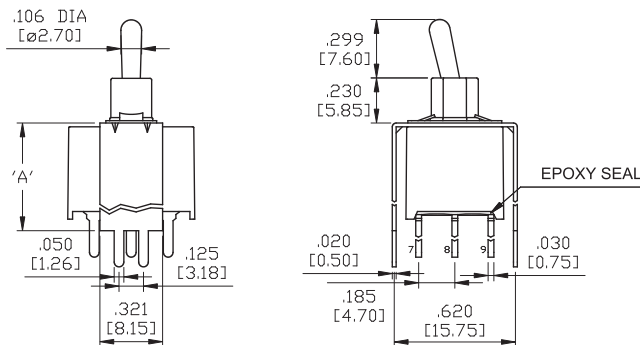
OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]



U2-VS3

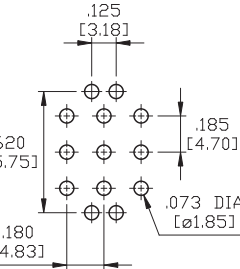


3PDT



P.C.MOUNTING

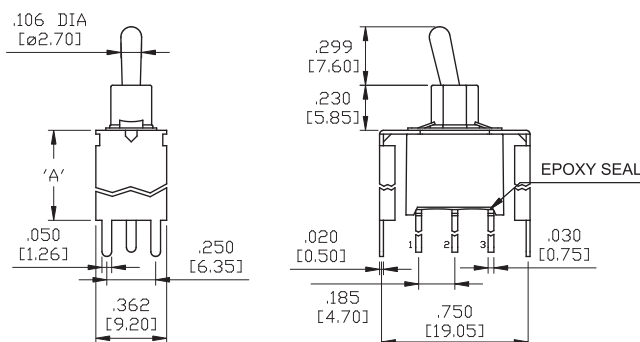
OPTION CODE	DIM.'A'
U2	.551 [14.00]
VS3	.630 [16.00]



VS4-VS5

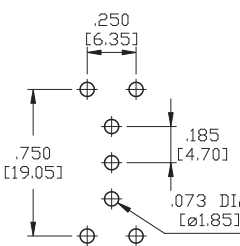


SPDT



P.C.MOUNTING

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



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

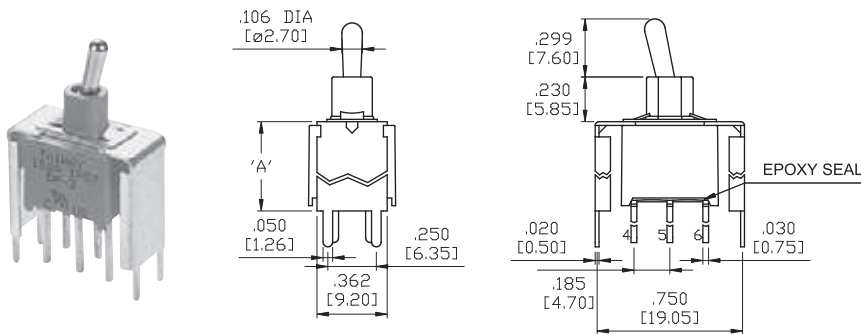
Touch Key

Miscellaneous

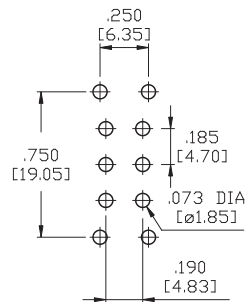
TERMINATION OPTIONS

VS4-VS5

P.C.MOUNTING



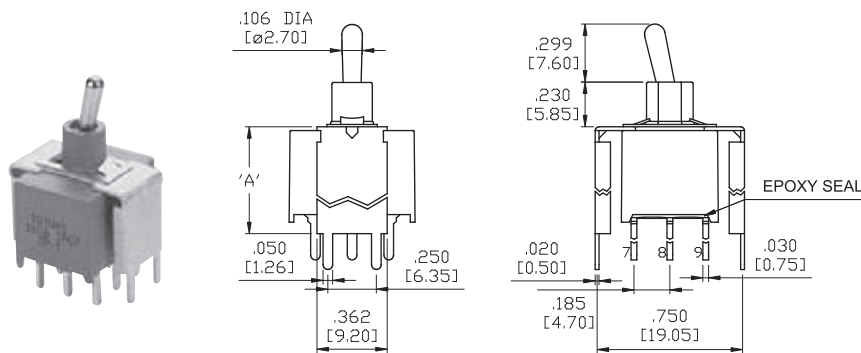
OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]



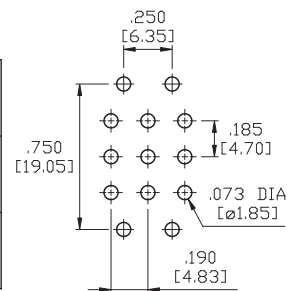
DPDT

U4-VS5

P.C.MOUNTING



OPTION CODE	DIM.'A'
U4	.551 [14.00]
VS5	.630 [16.00]

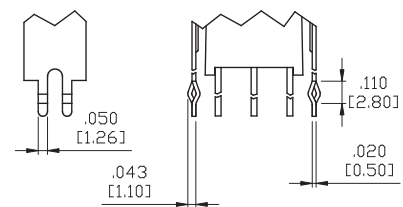
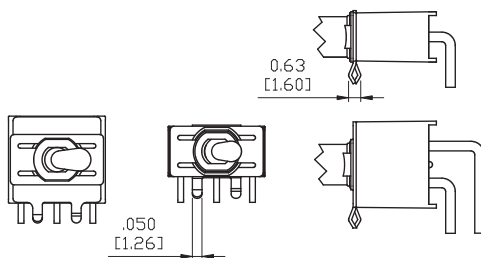


3PDT

SNAP-IN TERMINATION OPTIONS

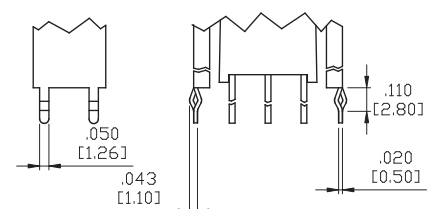
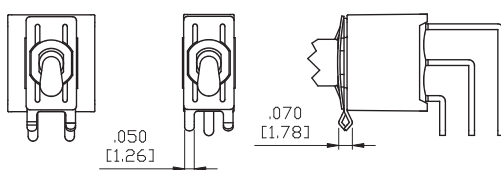
M61

VS21,VS31



M71

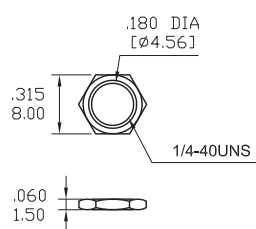
VS41,VS51



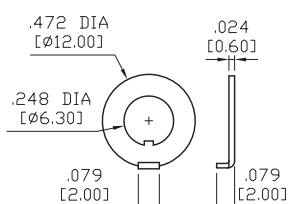
* PC Mounting for M61,M71,VS21,VS31,VS41,VS51 refer to M6,M7,VS2,VS3,VS4,VS5 respectively.

HARDWARE

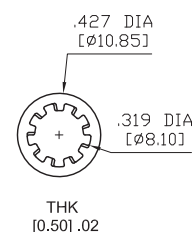
NUT



LOCKING RING



LOCK WASHER



* Nut, locking ring and lock washer supplied standard with threaded bushings.

* Consult us for optional nut, locking ring and lock washer styles.

CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
G	Silver ¹	Gold over silver ³	5Amps @ 125VAC or 28VDC 2Amps @ 250VAC	 IP67
P		Tin plated ⁵ ₇		
R	Gold ²	Gold plated ⁴	0.4VA max @ 20V max (AC or DC)	IP67
K		Tin plated ⁵ ₆		

* Standard G plating for sealed product.

1. Movable Contact: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.
5. Outer Terminals: Copper alloy with pure tin plated.
6. Terminal Contact: Gold plated over nickel plated.
7. Terminal Contact: Gold over silver plated.

* P, K not available with M1 and M3 terminals.

* 6Amps (Movable Contact: coin silver, silver plated) available to model ON-NONE-ON without UL approval

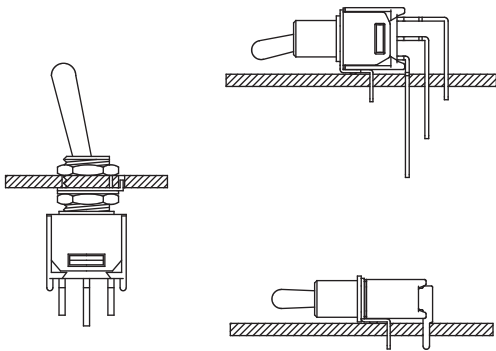
* IP67 protection for 100A series only.

SPECIFICATIONS:

CONTACT RATING: Refer to "Contact Material Options" for more info.
 ELECTRICAL LIFE: 30,000 make-and-break cycles at full load.
 CONTACT RESISTANCE: 20mΩ max. initial @2-4VDC
 100mA for both silver and gold plated contacts.
 INSULATION RESISTANCE: 1,000MΩ min.
 DIELECTRIC STRENGTH: 1,500V RMS @ sea level.
 OPERATING TEMPERATURE: -30°C to +85°C.

MATERIALS:

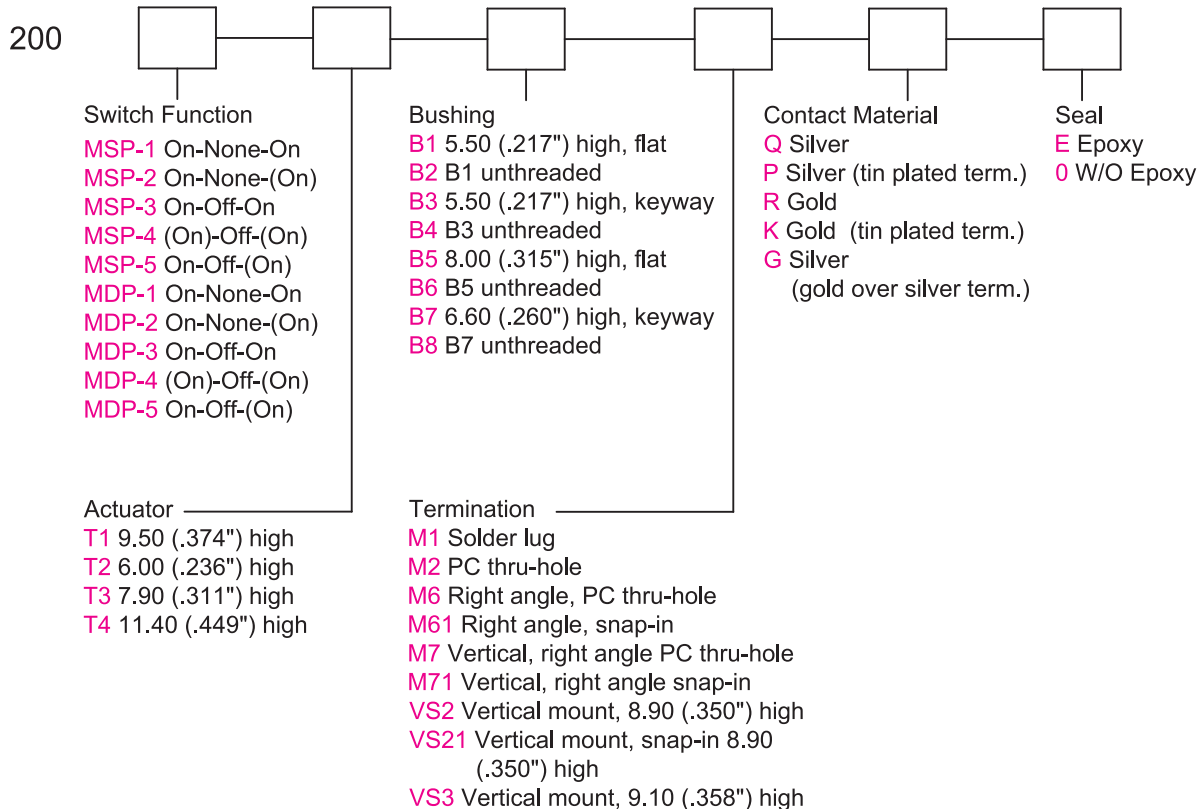
CASE: Diallyl phthalate (DAP)(UL 94V-0).
 TOGGLE HANDLE: Brass, chrome plated.
 BUSHING: Brass, nickel plated.
 HOUSING: Stainless steel.
 SWITCH SUPPORT: Brass, tin plated.
 TERMINAL SEAL: Epoxy.



Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



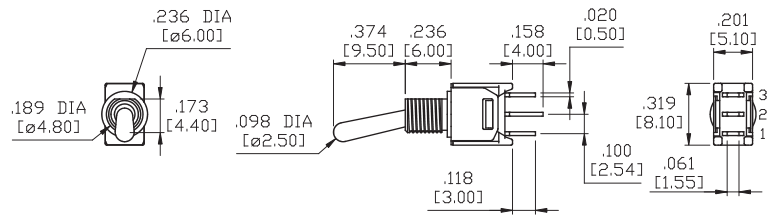
SPDT



Model No.	Switching Position		
MSP-1	ON	NONE	ON
MSP-2	ON	NONE	(ON)
MSP-3	ON	OFF	ON
MSP-4	(ON)	OFF	(ON)
MSP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

Schematic

2Comm.



DPDT

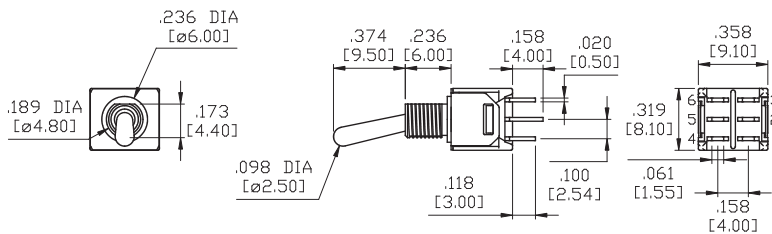


Model No.	Switching Position		
MDP-1	ON	NONE	ON
MDP-2	ON	NONE	(ON)
MDP-3	ON	OFF	ON
MDP-4	(ON)	OFF	(ON)
MDP-5	ON	OFF	(ON)
Term. Comm.	2-3,5-6	OPEN	2-1,5-4

Schematic

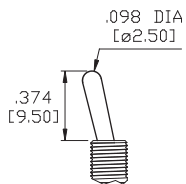
2Comm.

5Comm.

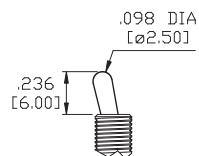


ACTUATOR OPTIONS

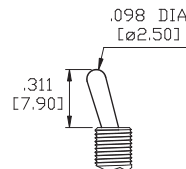
T1



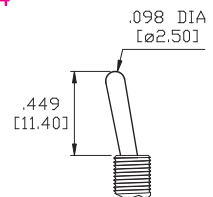
T2



T3



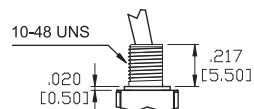
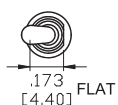
T4



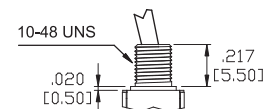
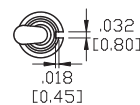
* Actuator length shown above is with B1 bushing M1 and M2 terminals.
* please consult us for detailed spec on specific item.

BUSHING OPTIONS

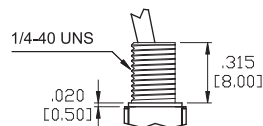
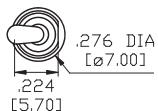
B1 THD B2 NON-THD



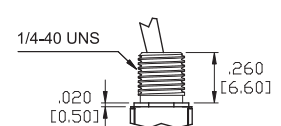
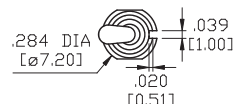
B3 THD B4 NON-THD



B5 THD B6 NON-THD

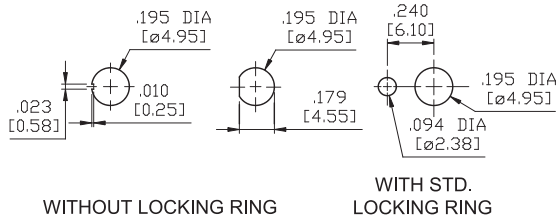


B7 THD B8 NON-THD

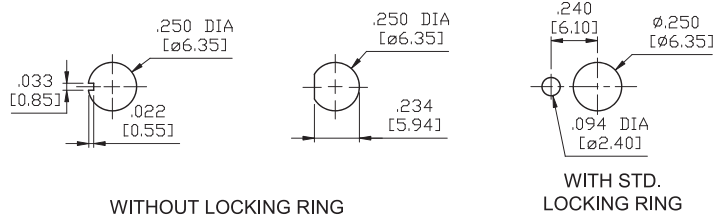


PANEL MOUNTING

10-48 INCH BUSHING

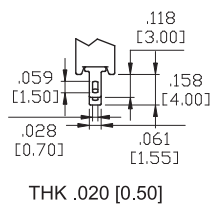


1/4 INCH BUSHING

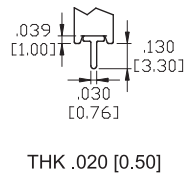


TERMINATION OPTIONS

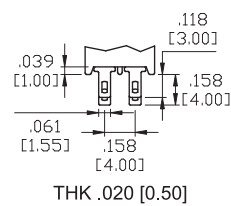
M1 STD. SOLDER LUG



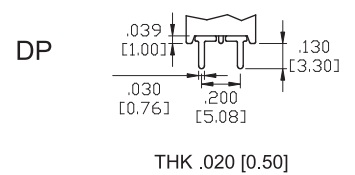
M2 PC THRU-HOLE



M1 STD. SOLDER LUG

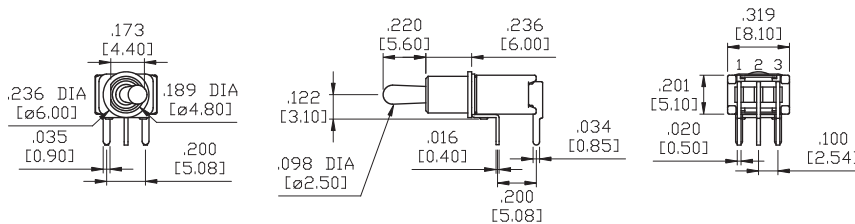


M2 PC THRU-HOLE

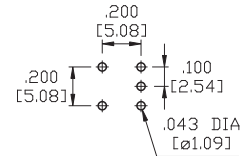


M6

P.C.MOUNTING

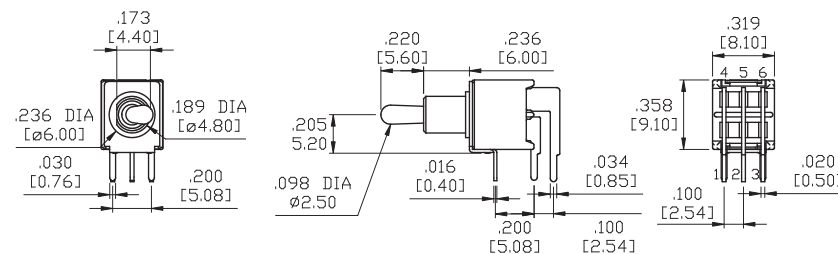
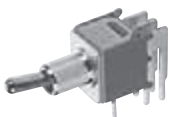


SPDT

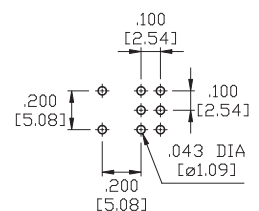


M6

P.C.MOUNTING

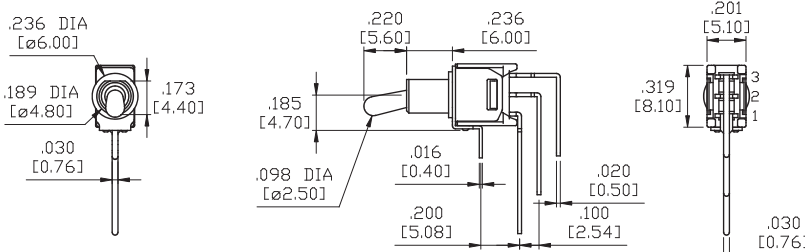
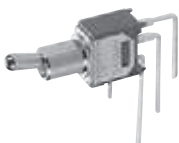


DPDT

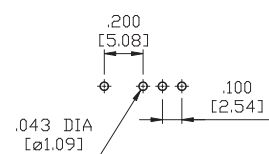


M7

P.C.MOUNTING

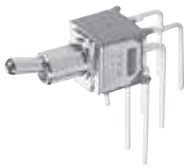


SPDT

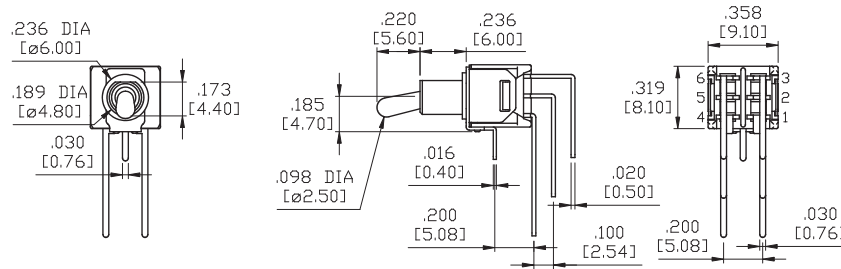


TERMINATION OPTIONS

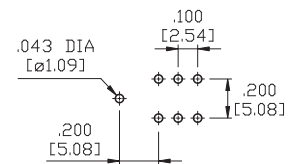
M7



DPDT



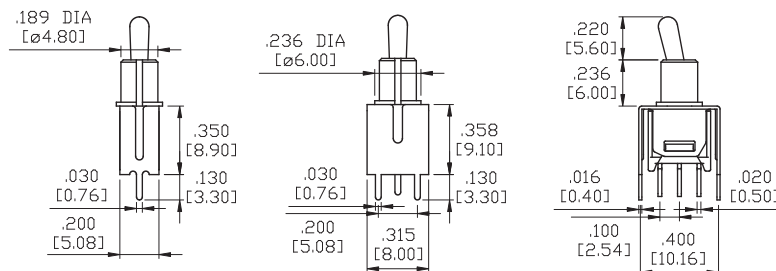
P.C.MOUNTING



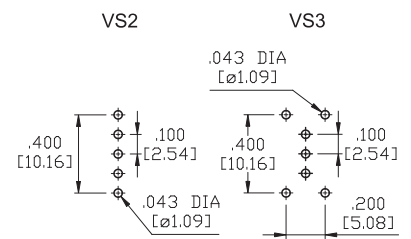
VS2-VS3



SPDT



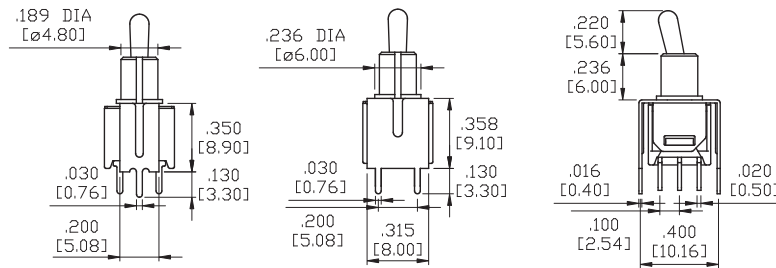
P.C.MOUNTING



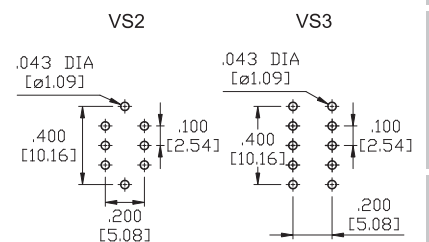
VS2-VS3



DPDT

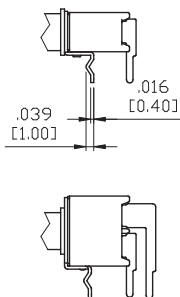


P.C.MOUNTING

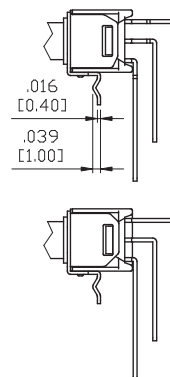


SNAP-IN TERMINATION OPTIONS

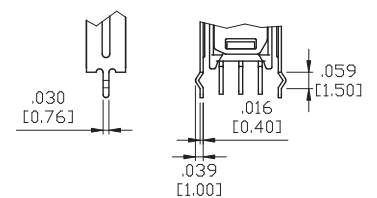
M61



M71



VS21



* PC Mounting for M61,M71,VS21 refer to M6,M7,VS2 respectively.

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous

HARDWARE

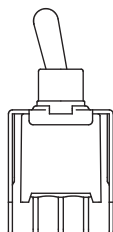
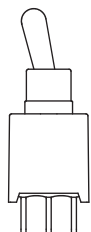
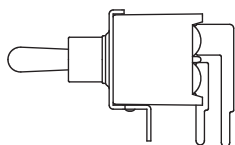
NUT	LOCK WASHER	LOCKING RING (OPTIONAL)
STD. HDW21	STD. HDW22	LOCKING RING (OPTIONAL) HDW23 HDW24

CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
Q	Silver ¹	Silver plated ¹	3Amps @ 125VAC or 28VDC 1.5Amps @ 250VAC	
P		Tin plated ^{5/7}		
R	Gold ²	Gold plated ⁴	0.4VA max @ 20V max (AC or DC)	
K		Tin plated ^{5/6}		
G	Silver ¹	Gold over silver ³	3Amps @ 125VAC or 28VDC 1.5Amps @ 250VAC	

1. Movable Contact / Terminals: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.
5. Outer Terminals: Copper alloy with pure tin plated.
6. Terminal Contact: Gold plated over nickel plated.
7. Terminal Contact: Palladium nickel alloy (or Silver) plated.

* P, K not available with M1 terminal.



SPECIFICATIONS:

CONTACT RATING: Refer to "Contact Material Options" for more info.
 ELECTRICAL LIFE: 30,000 make-and-break cycles at full load.
 CONTACT RESISTANCE: 20mΩ max. initial @2-4VDC
 100mA for both silver and gold plated contacts.
 INSULATION RESISTANCE: 1,000MΩ min.
 DIELECTRIC STRENGTH: 1,500V RMS @ sea level.
 OPERATING TEMPERATURE: -30°C to +85°C.

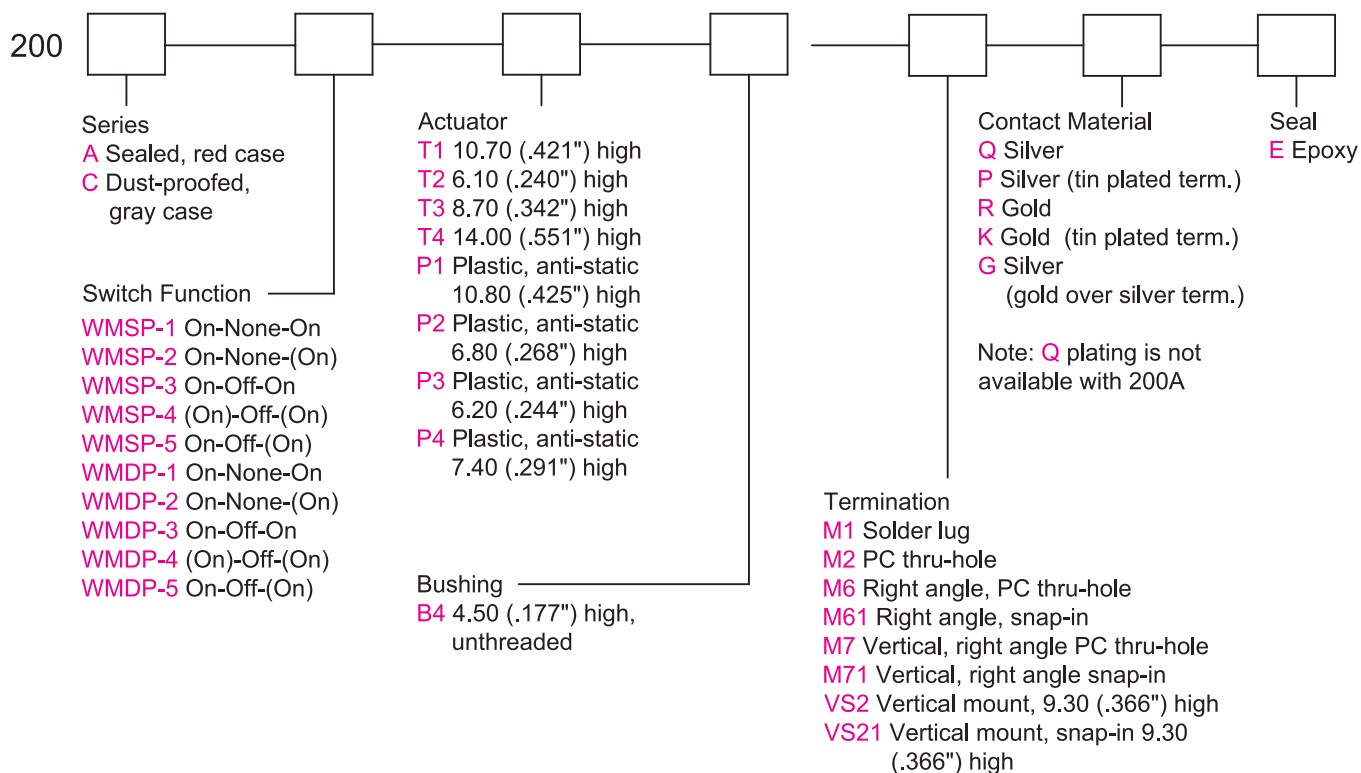
MATERIALS:

CASE & BUSHING: PA9T or 46 or FR52, flame retardant, heat stabilized (UL 94V-0).
 ACTUATOR: Brass, chrome plated, internal o-ring sealed (200A).
 ACTUATOR: Brass, chrome plated (200C).
 SWITCH SUPPORT: Brass, tin plated.
 TERMINAL SEAL: Epoxy.

Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



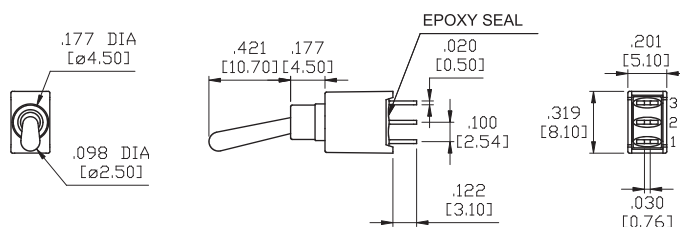
SPDT



Model No.	Switching Position		
WMSP-1	ON	NONE	ON
WMSP-2	ON	NONE	(ON)
WMSP-3	ON	OFF	ON
WMSP-4	(ON)	OFF	(ON)
WMSP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

Schematic

2Comm.



DPDT

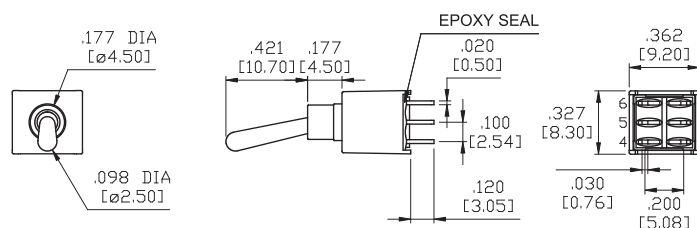


Model No.	Switching Position		
WMDP-1	ON	NONE	ON
WMDP-2	ON	NONE	(ON)
WMDP-3	ON	OFF	ON
WMDP-4	(ON)	OFF	(ON)
WMDP-5	ON	OFF	(ON)
Term. Comm.	2-3,5-6	OPEN	2-1,5-4

Schematic

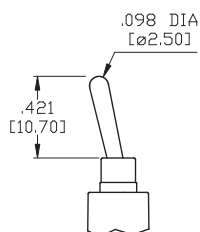
2Comm.

5Comm.

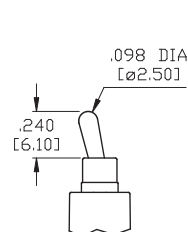


ACTUATOR OPTIONS

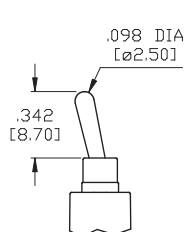
T1



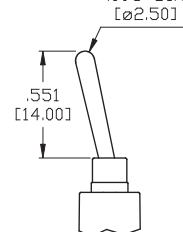
T2



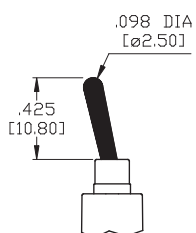
T3



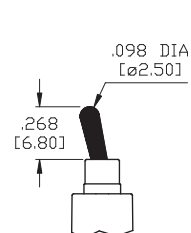
T4



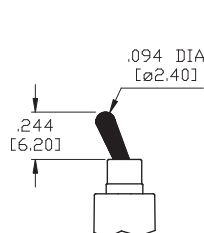
P1 PLASTIC TOGGLE



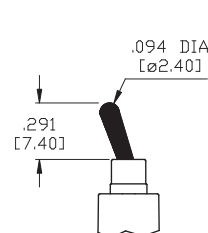
P2 PLASTIC TOGGLE



P3 PLASTIC TOGGLE



P4 PLASTIC TOGGLE

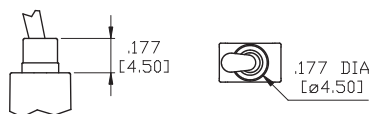


* Actuator length shown above is with B4 bushing.
* Please consult us for detailed spec on specific item.

* PLASTIC TOGGLE is capable of withstanding ESD resistance 9000VDC.

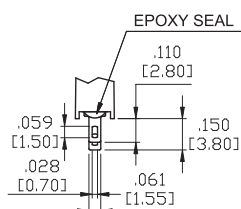
BUSHING OPTIONS

B4

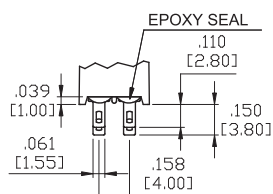


TERMINATION OPTIONS

M1 STD. SOLDER LUG

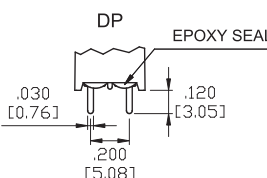
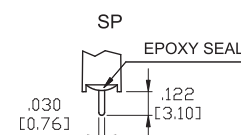


THK .020 [0.50]

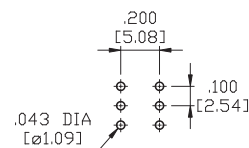
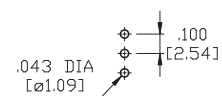


THK .020 [0.50]

M2 PC THRU-HOLE



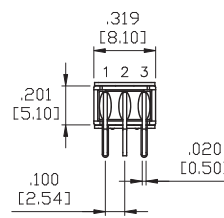
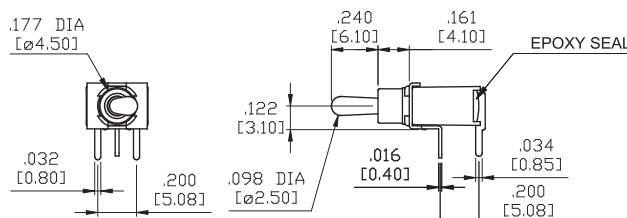
P.C.MOUNTING



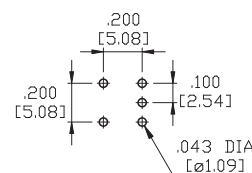
M6



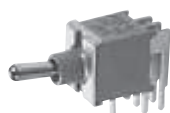
SPDT



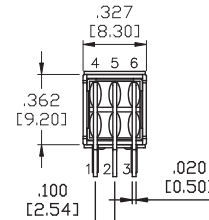
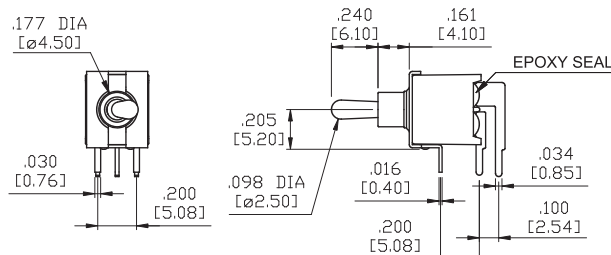
P.C.MOUNTING



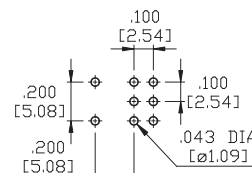
M6



DPDT



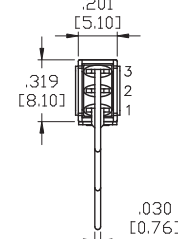
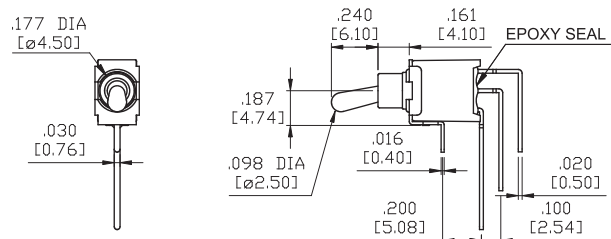
P.C.MOUNTING



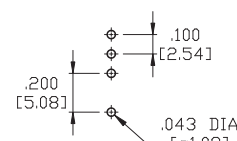
M7



SPDT

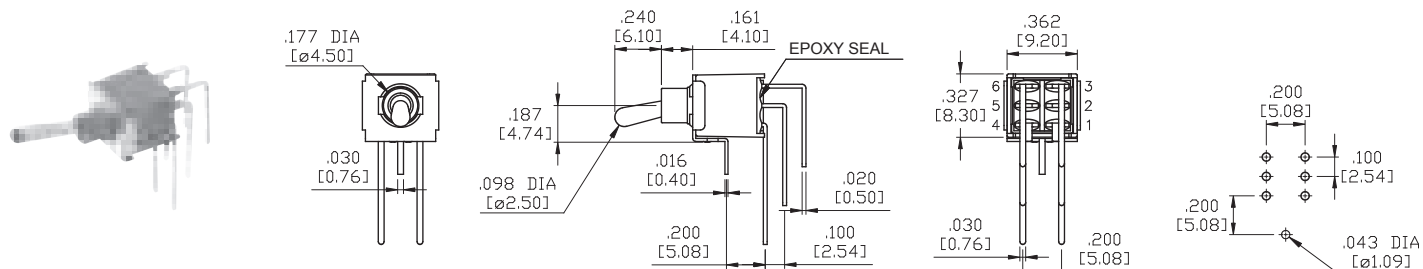


P.C.MOUNTING



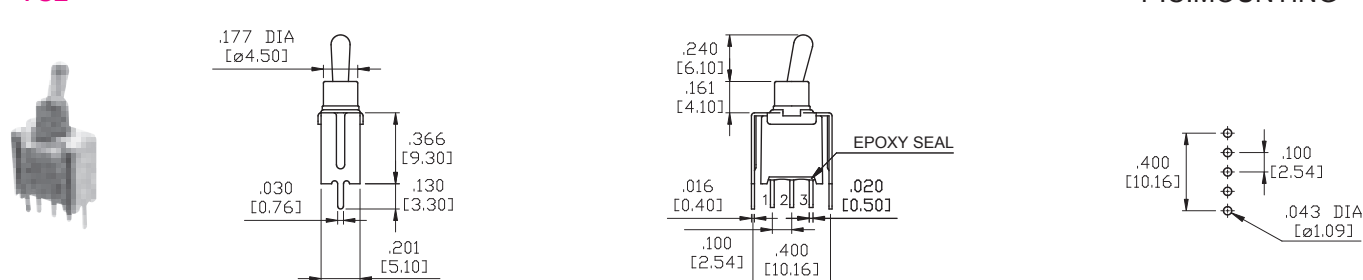
TERMINATION OPTIONS

M7



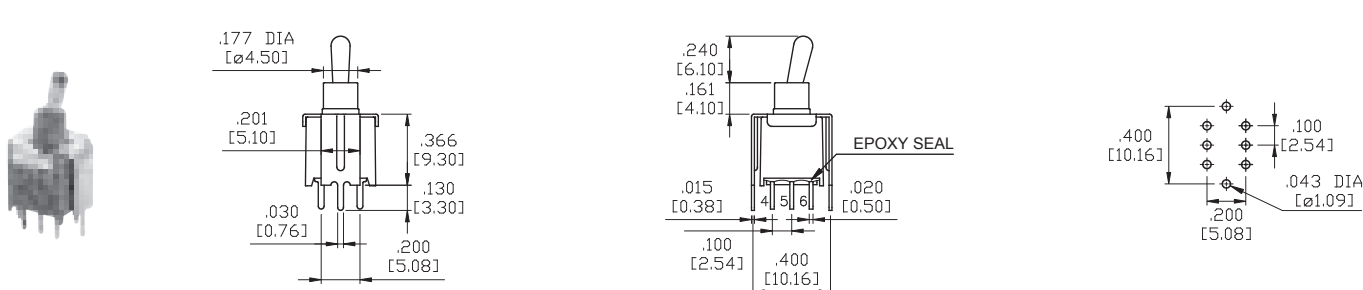
DPDT

VS2



SPDT

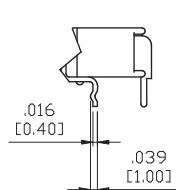
VS2



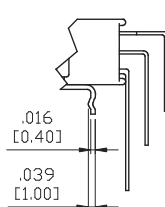
DPDT

SNAP-IN TERMINATION OPTIONS

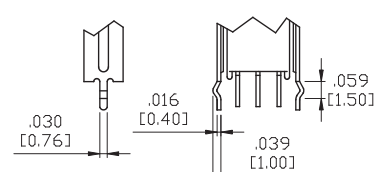
M61



M71



VS21



* PC Mounting for M61,M71,VS21 refer to M6,M7,VS2 respectively.

CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
G	Silver ¹	Gold over silver ³	3Amps @ 125VAC or 28VDC 1.5Amps @ 250VAC	IP67
P		Tin plated ⁵ ⁷		
R	Gold ²	Gold plated ⁴	0.4VA max @ 20V max (AC or DC)	IP67
K		Tin plated ⁵ ⁶		

* Standard G plating for sealed product.

1. Movable Contact: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.
5. Outer Terminals: Copper alloy with pure tin plated.
6. Terminal Contact: Gold plated over nickel plated.
7. Terminal Contact: Palladium nickel alloy (or Silver) plated.

* P, K not available with M1 terminal.

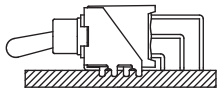
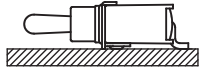
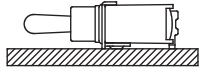
* IP67 protection for 200A series only.

SPECIFICATIONS:

CONTACT RATING: Refer to "Contact Material Options" for more info.
 ELECTRICAL LIFE: 30,000 make-and-break cycles at full load.
 CONTACT RESISTANCE: 20mΩ max typ. initial@2-4 VDC
 100mA for both silver and gold contacts.
 INSULATION RESISTANCE: 1,000MΩ min.
 DIELECTRIC STRENGTH: 1,500 V RMS.@ sea level.
 OPERATING TEMPERATURE: -30°C to +85°C.

MATERIALS:

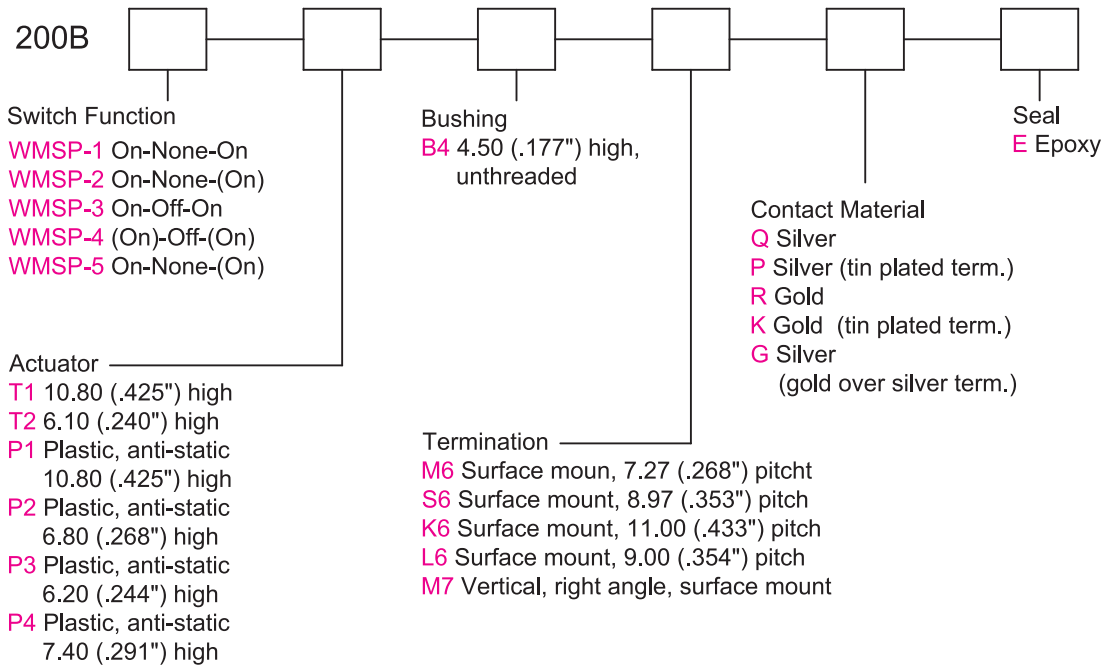
CASE & BUSHING: PA46 or FR52, flame retardant, heat stabilized(UL 94V-0).
 ACTUATOR: Brass, chrome plated, internal o-ring sealed (std).
 ESD TOGGLE: Nylon46+carbon fiber (ESD resistance 9000VDC)
 SWITCH SUPPORT: Brass (or Phosphor bronze), tin plated.
 TERMINAL SEAL: Epoxy.



Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



M6

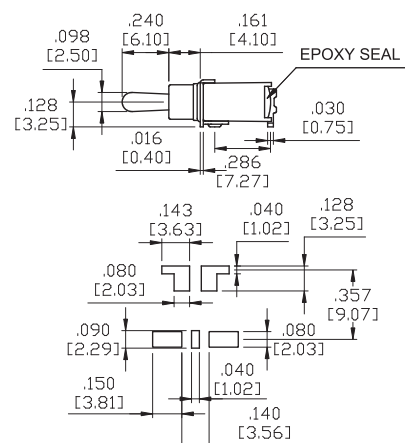
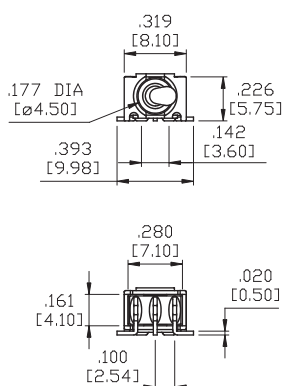


Model No.	Switching Position		
WMSP-1	ON	NONE	ON
WMSP-2	ON	NONE	(ON)
WMSP-3	ON	OFF	ON
WMSP-4	(ON)	OFF	(ON)
WMSP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

Schematic

2Comm.

1 3



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous

SPDT

S6

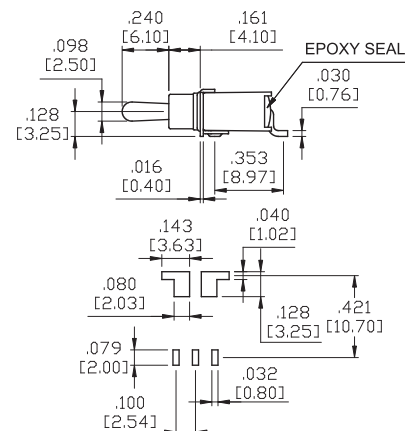
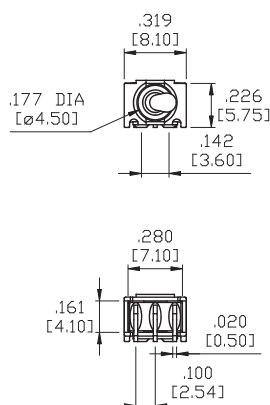


Model No.	Switching Position		
WMSP-1	ON	NONE	ON
WMSP-2	ON	NONE	(ON)
WMSP-3	ON	OFF	ON
WMSP-4	(ON)	OFF	(ON)
WMSP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

Schematic

2Comm.

1 3



SPDT

L6

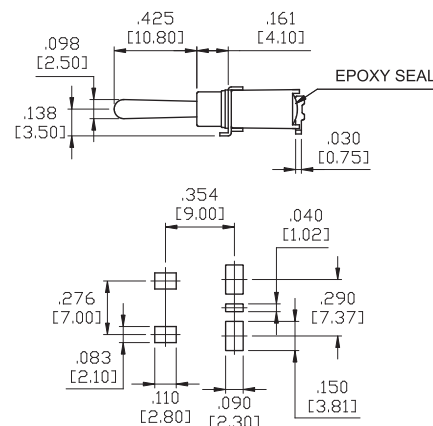
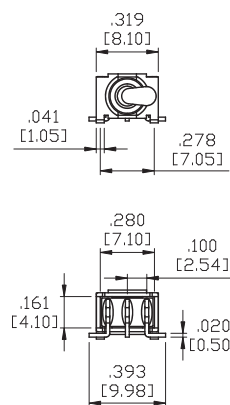


Model No.	Switching Position		
WMSP-1	ON	NONE	ON
WMSP-2	ON	NONE	(ON)
WMSP-3	ON	OFF	ON
WMSP-4	(ON)	OFF	(ON)
WMSP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

Schematic

2Comm.

1 3



SPDT

K6



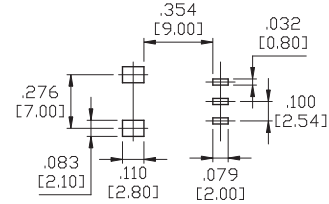
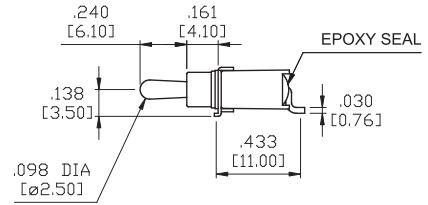
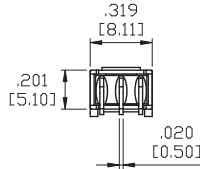
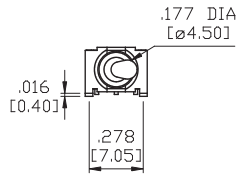
Model No.	Switching Position		
WMSP-1	ON	NONE	ON
WMSP-2	ON	NONE	(ON)
WMSP-3	ON	OFF	ON
WMSP-4	(ON)	OFF	(ON)
WMSP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

Schematic

2Comm.

1 • 3 •

SPDT



M7



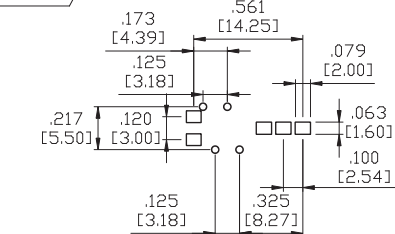
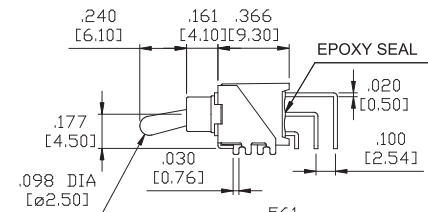
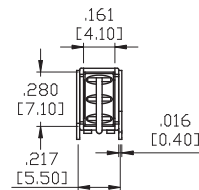
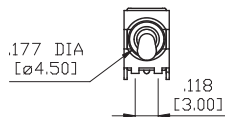
Model No.	Switching Position		
WMSP-1	ON	NONE	ON
WMSP-2	ON	NONE	(ON)
WMSP-3	ON	OFF	ON
WMSP-4	(ON)	OFF	(ON)
WMSP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

Schematic

2Comm.

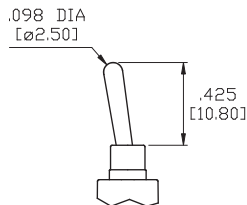
1 • 3 •

SPDT



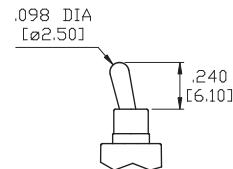
ACTUATOR OPTIONS

T1

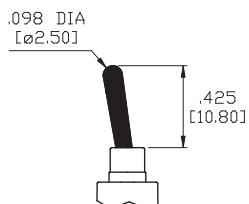


* Available with L6, S6, K6, M7 terminals only.

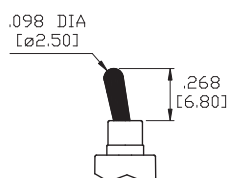
T2



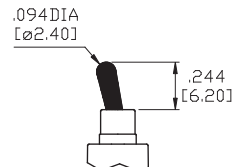
P1 PLASTIC TOGGLE



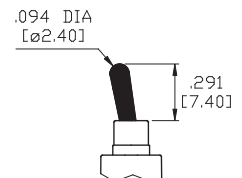
P2 PLASTIC TOGGLE



P3 PLASTIC TOGGLE

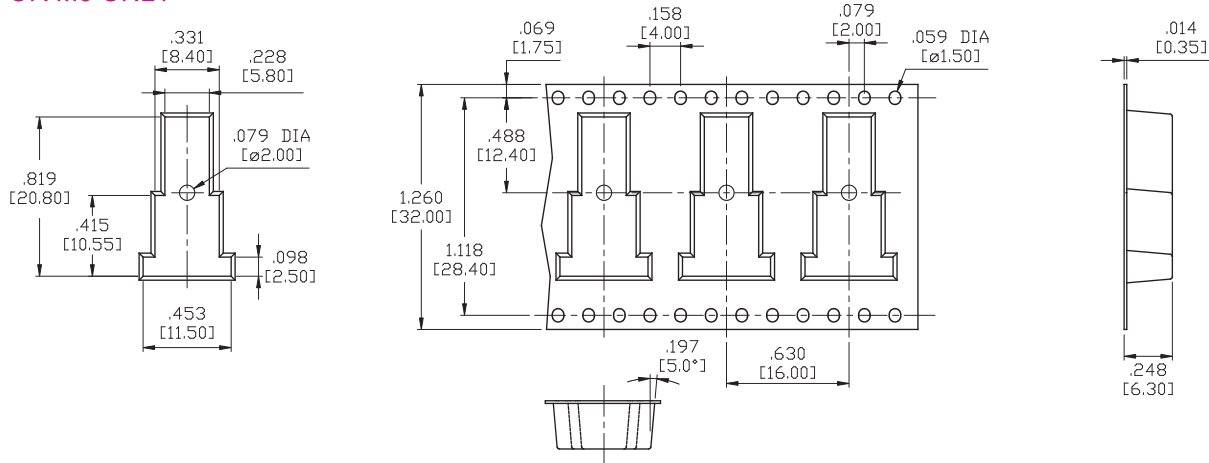


P4 PLASTIC TOGGLE

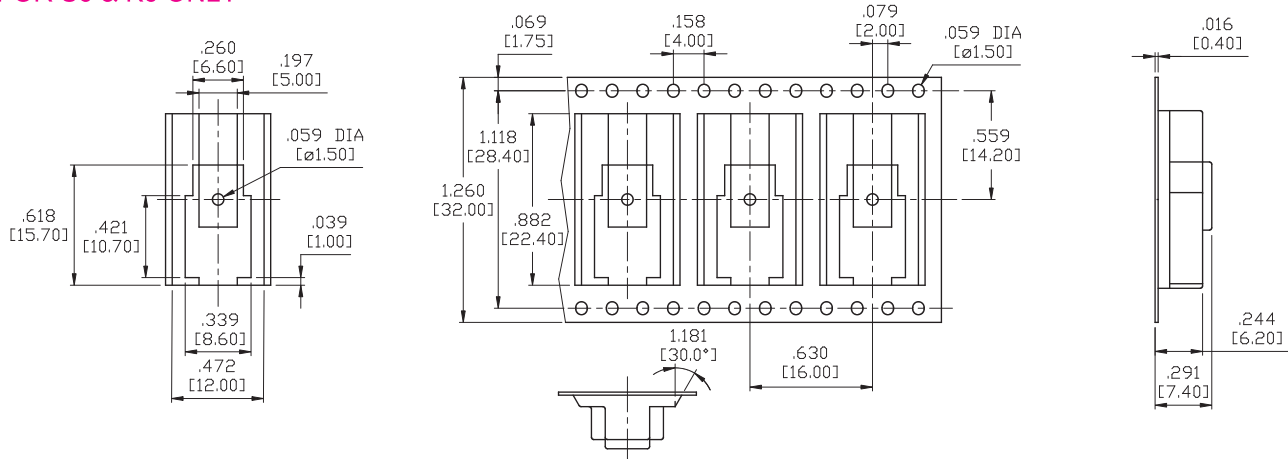


REEL TAPING

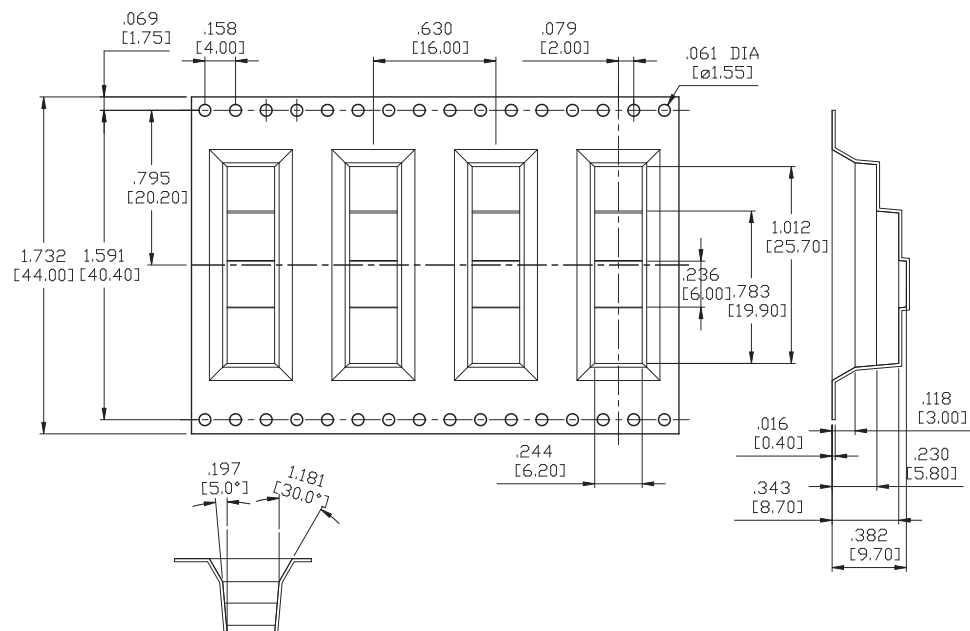
FOR M6 ONLY



FOR S6 & K6 ONLY



FOR M7 ONLY



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

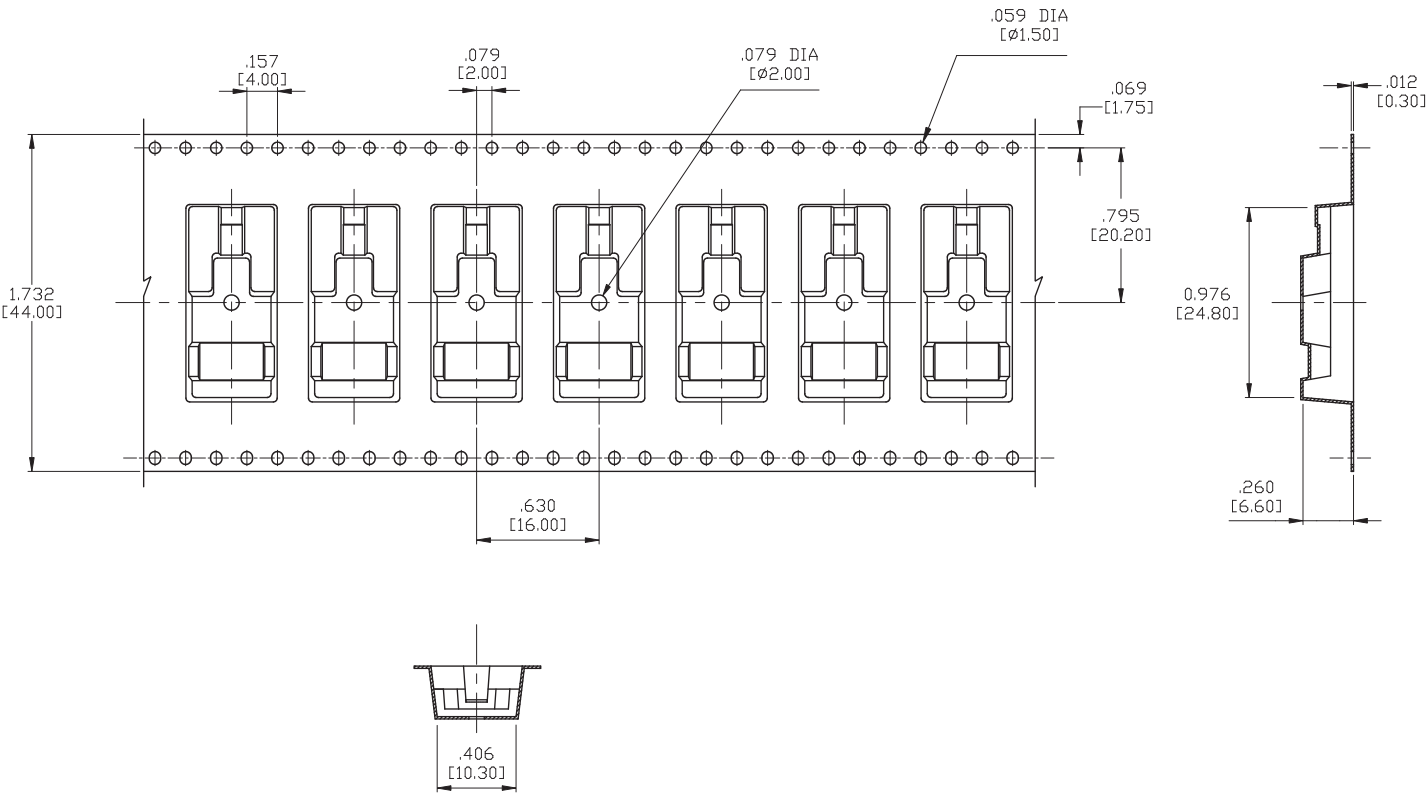
Tact

Touch Key

Miscellaneous

REEL TAPING

FOR L6 ONLY



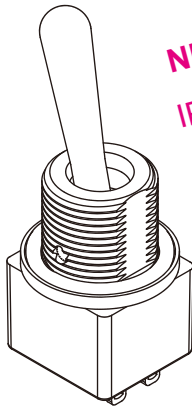
REEL TAPING

REEL INFORMATION	
OUTSIDE DIAMETER	12.99 [330.00]
PILOT HOLE	.502 [13.00]
QUANTITY PER REEL	500 400 (M7 model)

CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
Q	Silver ¹	Silver plated ¹	3Amps @ 125VAC or 28VDC 1.5Amps @ 250VAC	IP67
P		Tin plated ⁵ ₇		
R	Gold ²	Gold plated ⁴	0.4VA max @ 20V max (AC or DC)	IP67
K		Tin plated ⁵ ₆		
G	Silver ¹	Gold over silver ³	3Amps @ 125VAC or 28VDC 1.5Amps @ 250VAC	IP67

1. Movable Contact / Terminals: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.
5. Outer Terminals: Copper alloy with pure tin plated.
6. Terminal Contact: Gold plated over nickel plated.
7. Terminal Contact: Palladium nickel alloy (or Silver) plated.



NEW !
IP 67 Protection

SPECIFICATIONS:

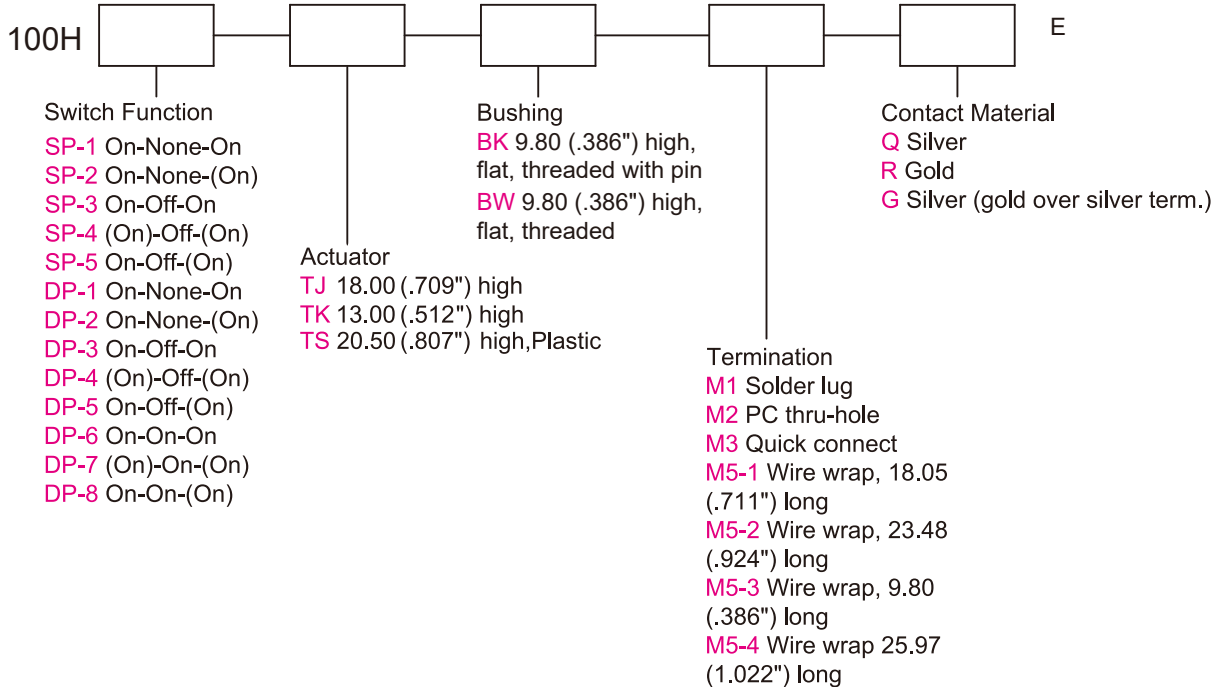
CONTACT RATING: Refer to "Contact Material Options" for more info.
ELECTRICAL LIFE: Min. 50,000 make-and-break cycles at full load.
CONTACT RESISTANCE: 10m-ohms max. initial @2-4VDC
100mA for both silver and gold plated contacts.
INSULATION RESISTANCE: 1,000M-ohms min.
DIELECTRIC STRENGTH: 1,500VAC for 1 minute.
OPERATING TEMPERATURE: -30°C to +85°C

MATERIALS:

CASE: Diallyl phthalate(DAP)(UL 94V-0).
TOGGLE HANDLE: Brass, black finish with o-ring sealed.
BUSHING: Brass, black finish with o-ring sealed
EXTERNAL SHELL: FR52 (UL 94V-0).
TERMINAL SEAL: Epoxy.

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



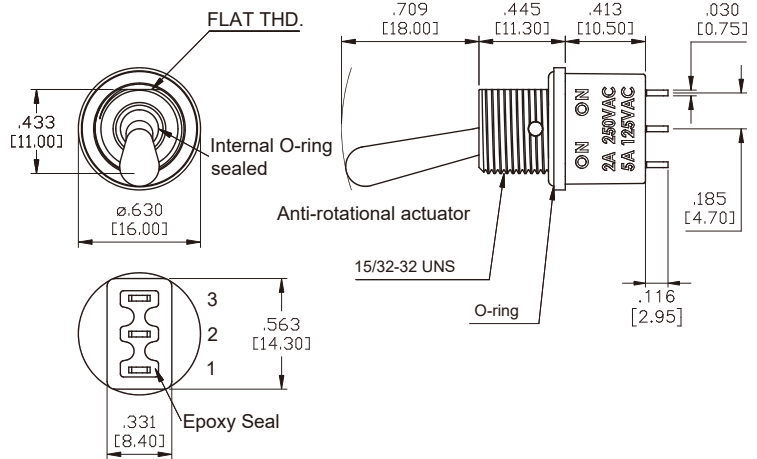
SPDT



Model No.	Switching Position		
SP-1	ON	NONE	ON
SP-2	ON	NONE	(ON)
SP-3	ON	OFF	ON
SP-4	(ON)	OFF	(ON)
SP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

Schematic

2Comm.



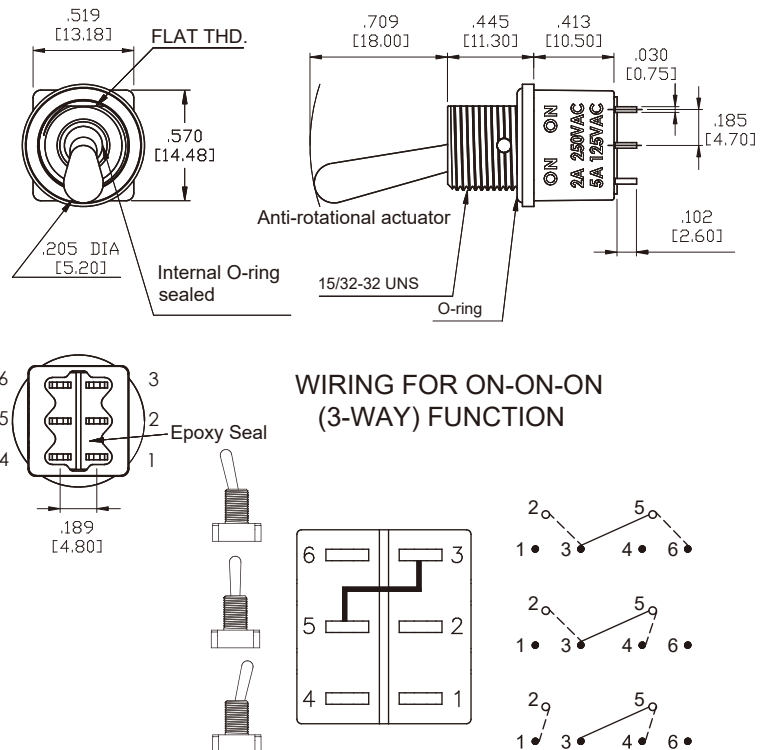
DPDT



Model No.	Switching Position		
DP-1	ON	NONE	ON
DP-2	ON	NONE	(ON)
DP-3	ON	OFF	ON
DP-4	(ON)	OFF	(ON)
DP-5	ON	OFF	(ON)
Term. Comm.	2-3,5-6	OPEN	2-1,5-4

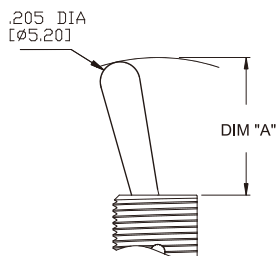
Schematic

2Comm. 5Comm.



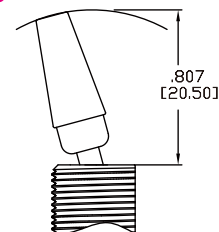
ACTUATOR OPTIONS

TJ&TK



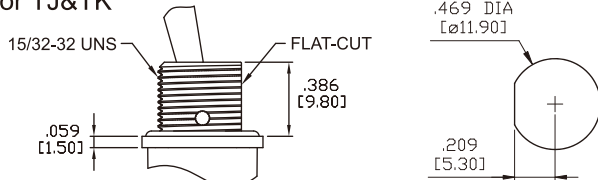
OPTION CODE	DIM. "A"
TJ	.709 [18.00]
TK	.512 [13.00]

TS

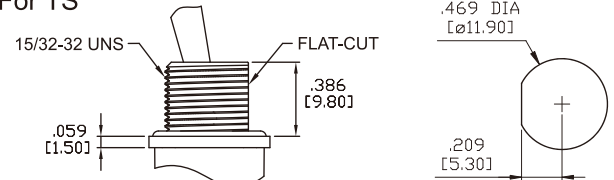


BUSHING OPTION & MOUNTING

BK For TJ&TK



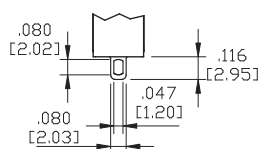
BW For TS



() = MOMENTARY

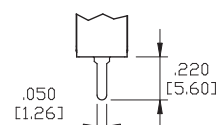
TERMINATION OPTIONS

M1 STD. SOLDER LUG



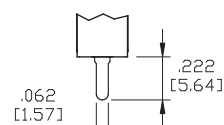
THK .030 [0.75]

M2 PC THRU-HOLE



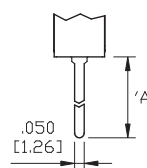
THK .030 [0.75]

M3 QUICK CONNECT



THK .030 [0.75]

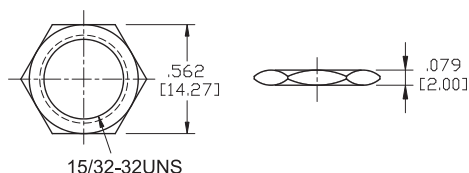
M5 WIRE WRAP



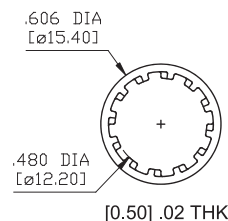
THK .030 [0.75]

OPTION CODE	DIM.'A'
M5-1	.711 [18.05]
M5-2	.924 [23.48]
M5-3	.386 [9.80]
M5-4	1.022 [25.97]

NUT



LOCK WASHER



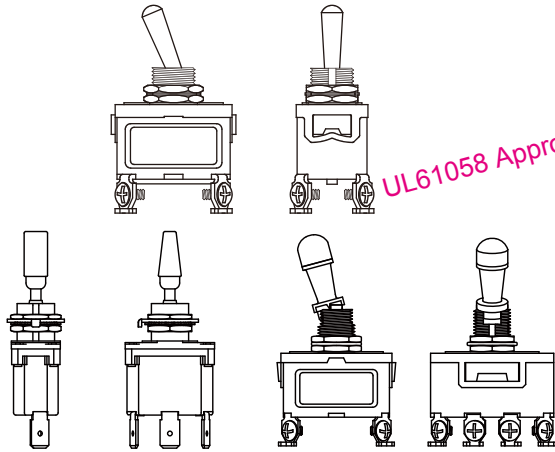
CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
Q	Silver ¹	Silver plated ¹	5Amps @ 125VAC or 28VDC 2Amps @ 250VAC	RI [®] IP67
P		Tin plated ^{5 7}		
R	Gold ²	Gold plated ⁴	0.4VA max @ 20V max (AC or DC)	IP67
K		Tin plated ^{5 6}		IP67
G	Silver ¹	Gold over silver ³	5Amps @ 125VAC or 28VDC 2Amps @ 250VAC	RI [®] IP67

1. Movable Contact / Terminals: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.
5. Outer Terminals: Copper alloy with pure tin plated.
6. Terminal Contact: Gold plated over nickel plated.
7. Terminal Contact: Palladium nickel alloy (or Silver) plated.

* P, K not available with M1 and M3 terminals

* 6Amps (Movable Contact: coin silver, silver plated) available to model ON-NONE-ON without UL approval



UL61058 Approved

SPECIFICATIONS:

RATING: 10A 250AC, 15A 125VAC.
INSULATION RESISTANCE: DC 500V 200M-ohms min.
CONTACT RESISTANCE: DC 2-4V 1A 20m-ohms max.
WITHSTAND VOLTAGE: AC 1500V for 1 minute.

MATERIALS:

BUSHING: C3604 brass.
COVER: Iron.
ACTUATOR: C3604 brass.
CONTACT ARM: Red brass.
SILVER CONTACT: AG SNO₂+IN.
CONTACT HOLDER: Red brass.
HOUSING: Phenolic resin.
TERMINAL: Bronze.
SCREW: Iron.

SPST

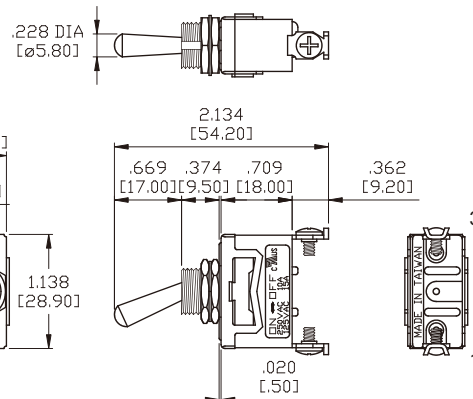


Model No.	Switching Position		
2P-1	ON	NONE	OFF
2P-A	MOM	NONE	OFF
Term. Comm.	1-3	OPEN	OPEN

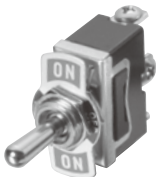
Schematic



Switching Plate (ON-OFF etc.) available



SPDT

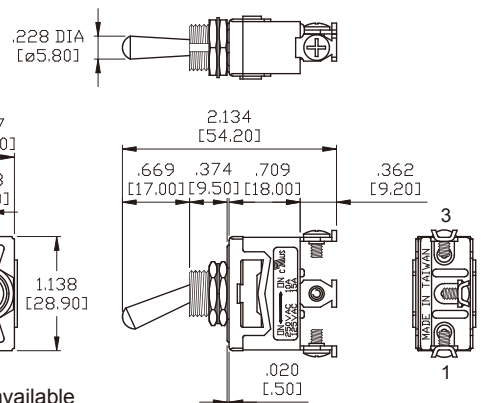


Model No.	Switching Position		
SP-1	ON	NONE	ON
SP-A	MOM	NONE	ON
SP-2	ON	OFF	ON
SP-4	MOM	OFF	MOM
SP-T	MOM	OFF	ON
Term. Comm.	2-3	OPEN	2-1

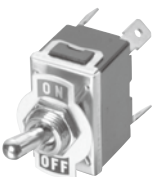
Schematic



Switching Plate (ON-ON etc.) available



DPST

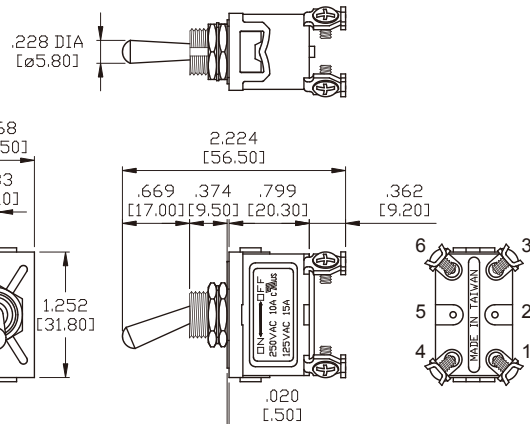


Model No.	Switching Position		
FP-1	ON	NONE	OFF
FP-A	MOM	NONE	OFF
Term. Comm.	1-3, 4-6	OPEN	OPEN

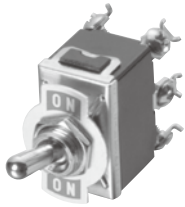
Schematic



Switching Plate (ON-OFF etc.) available

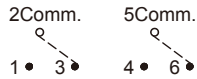


DPDT

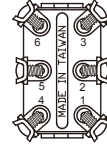
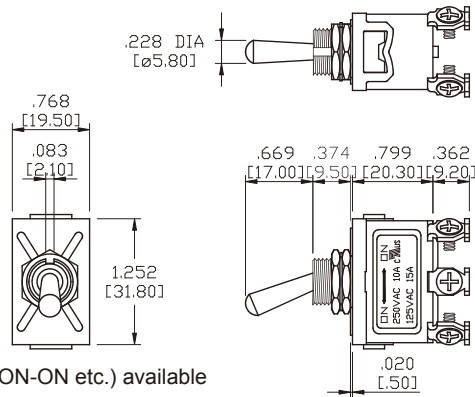


Model No.	Switching Position		
DP-1	ON	NONE	ON
DP-A	MOM	NONE	ON
DP-3	ON	OFF	ON
DP-4	MOM	OFF	MOM
DP-T	MOM	OFF	ON
Term. Comm.	2-3, 5-6	OPEN	2-1, 5-4

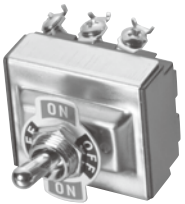
Schematic



Switching Plate (ON-ON etc.) available



3PDT

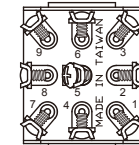
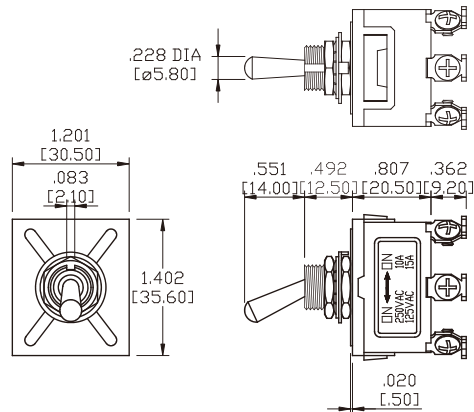


Model No.	Switching Position		
3P-1	ON	NONE	ON
3P-3	ON	OFF	ON
3P-4	MOM	OFF	MOM
Term. Comm.	2-1, 5-4, 8-7	OPEN	2-3, 5-6, 8-9

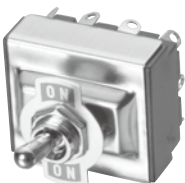
Schematic



Switching Plate (ON-ON etc.) available

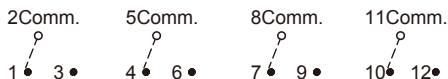


4PDT

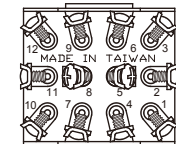
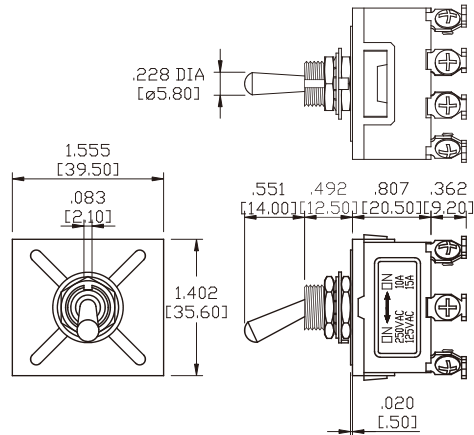


Model No.	Switching Position		
4P-1	ON	NONE	ON
4P-3	ON	OFF	ON
4P-4	MOM	OFF	MOM
Term. Comm.	2-1, 5-4, 8-7, 11-10	OPEN	2-3, 5-6, 8-9, 11-12

Schematic

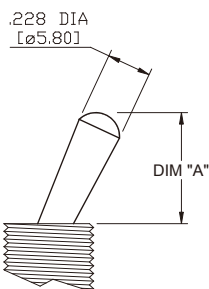


Switching Plate (ON-ON etc.) available



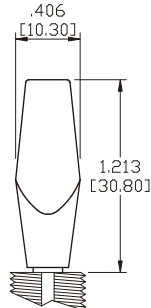
ACTUATOR OPTIONS

OPTION CODE	DIM "A"
A1	.433 [11.00]
A2	.571 [14.50]
A3	.669 [17.00]
A4	.827 [21.00]
A5	1.181 [30.00]



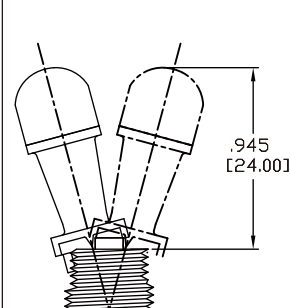
Actuator length shown for A1~A5 is with B2 bushing

P1



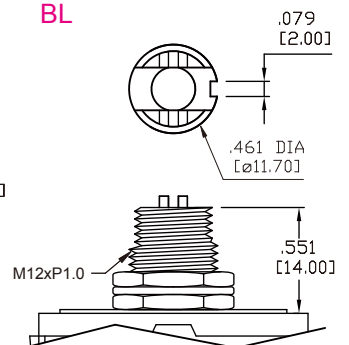
Only available with B3 bushing

TL

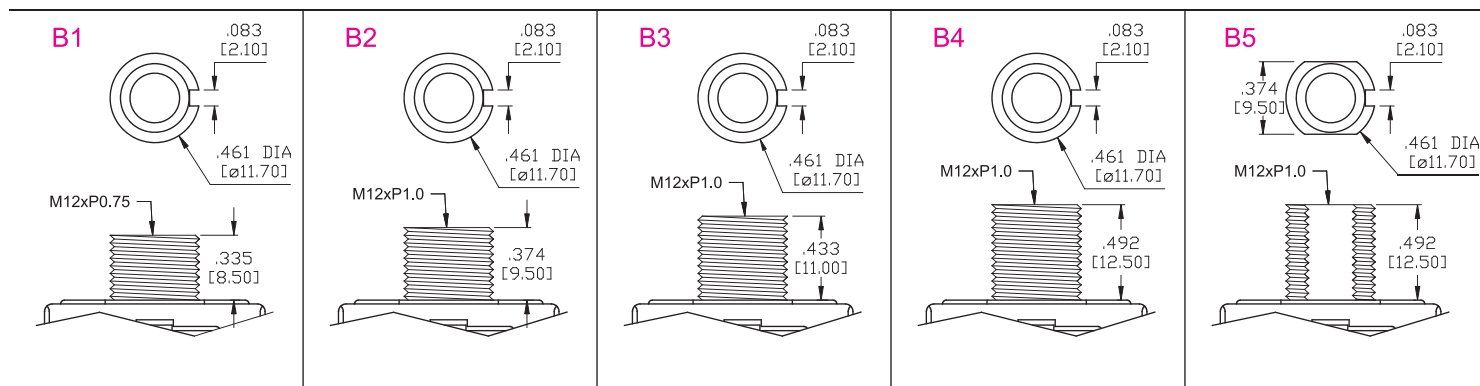


Only available with BL bushing

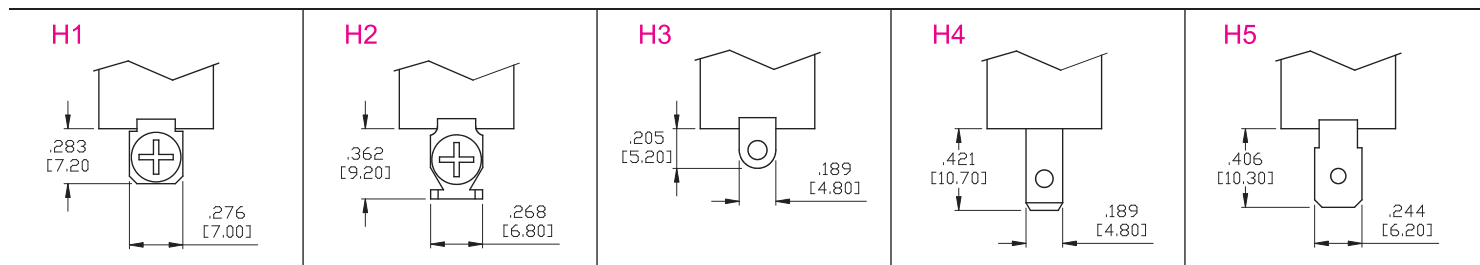
BL



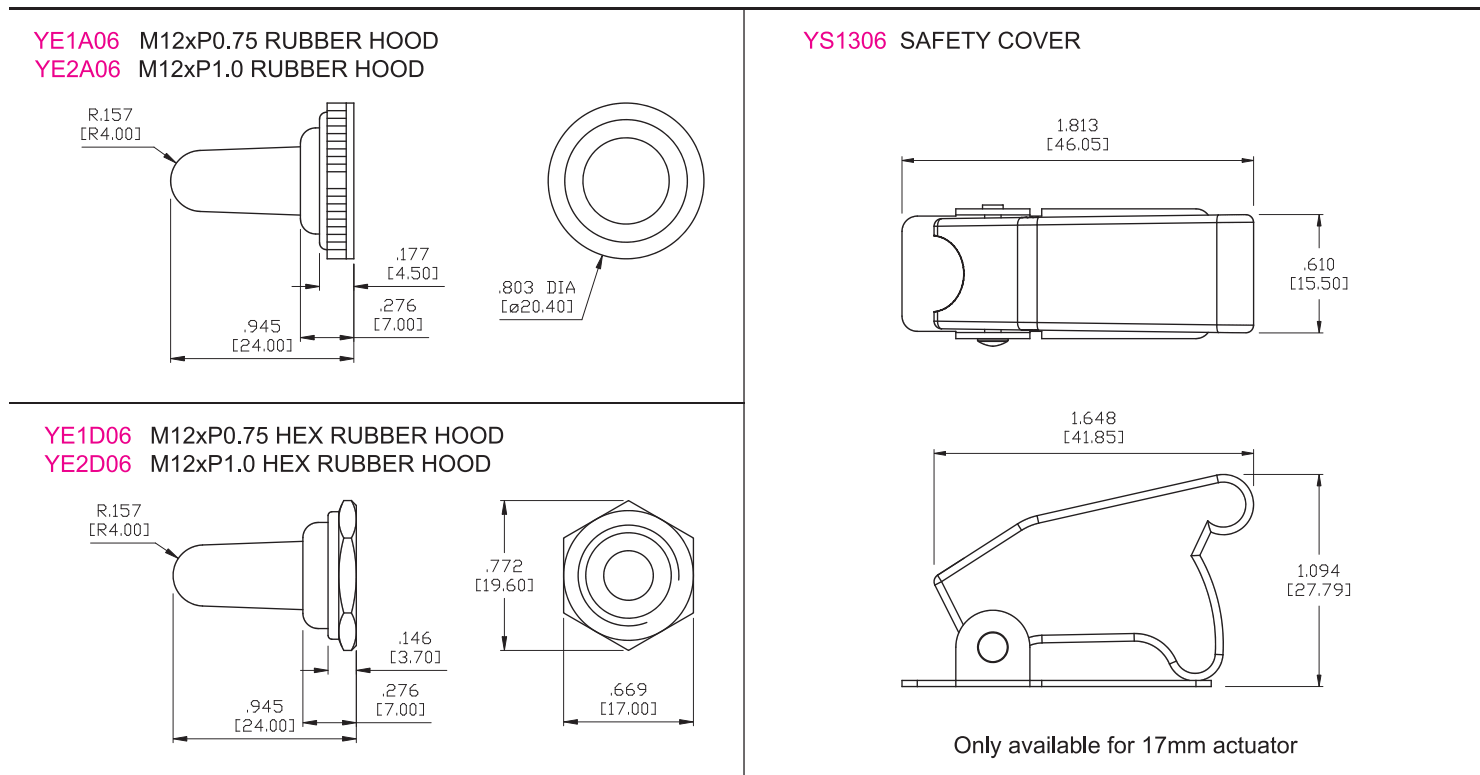
BUSHING OPTIONS



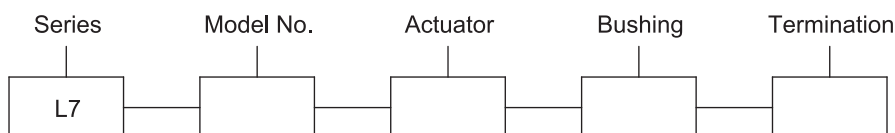
TERMINATION OPTIONS



OPTIONAL TOGGLE CAPS



HOW TO ORDER



Specifications and Dimensions subject to change

Toggle

Rocker

Slide

Pushbutton

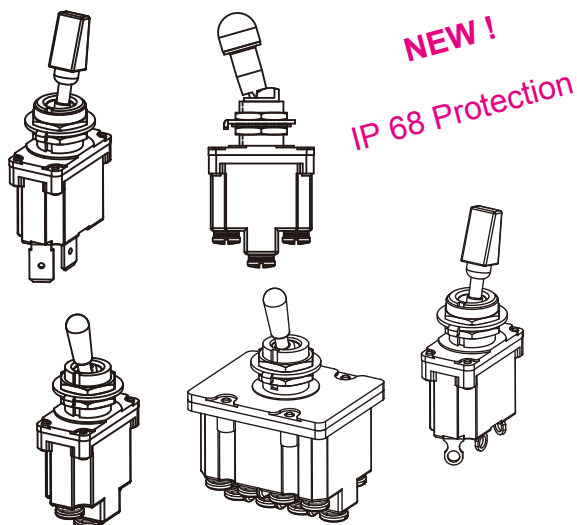
AV

Rotary

Tact

Touch Key

Miscellaneous



SPECIFICATIONS:

RATING: 12A 125/250VAC, 1/2HP 125VAC, 1HP 250VAC.
 INSULATION RESISTANCE: DC 500V 100M-ohms min.
 CONTACT RESISTANCE: DC 2-4V 1A 20m-ohms max.
 DIELECTRIC STRENGTH: AC 1500V for 1 minute.

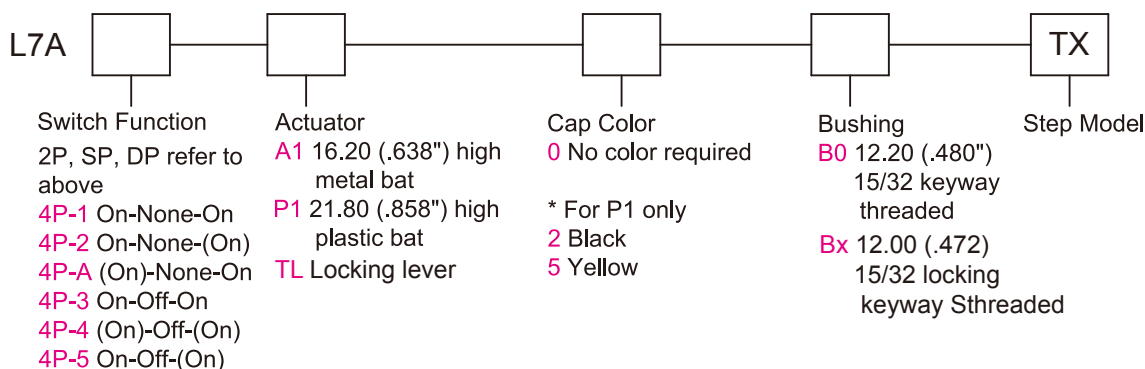
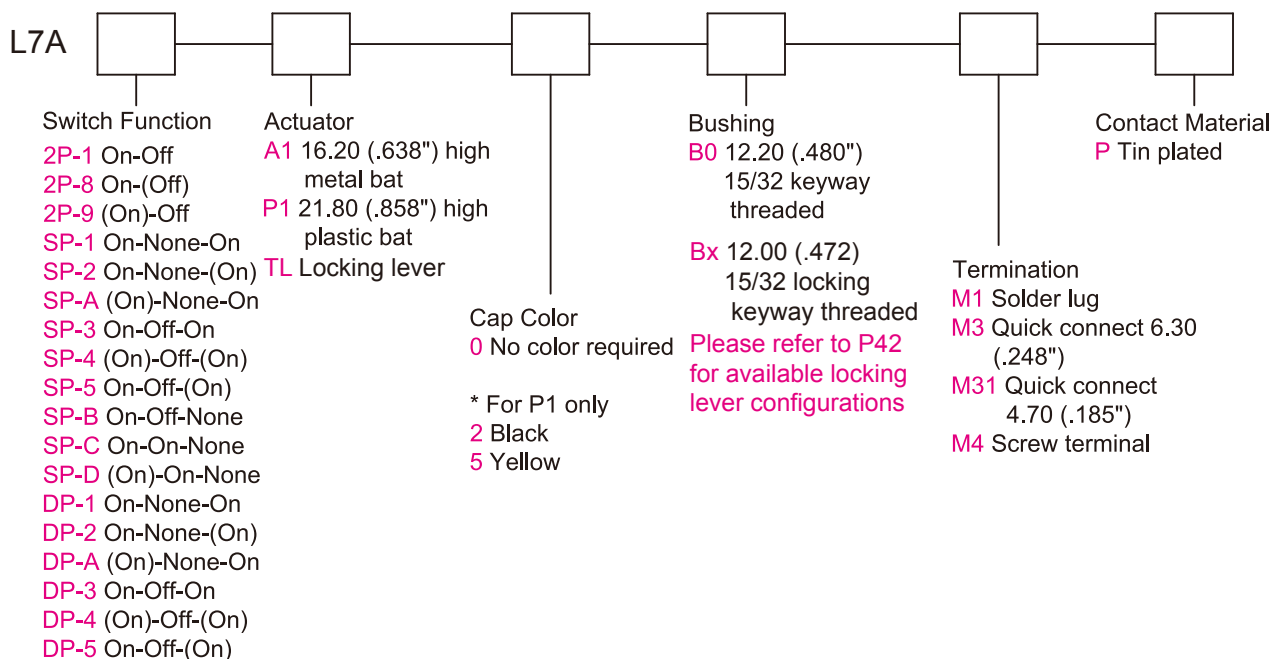
MATERIALS:

BUSHING: Zinc alloy.
 BODY: Nylon 66.
 ACTUATOR: Brass, nickel plated, anti-rotation.
 ORING: Silicon gasket.
 CONTACT: Silver alloy.
 TERMINAL: Brass, tin plated.
 NUT: Brass.
 WASHER: Steel.
 LOCKING RING: Steel.

Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



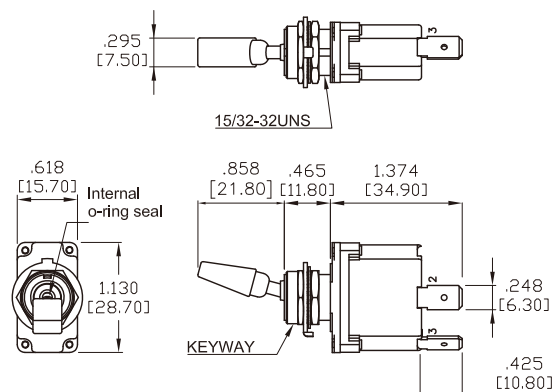
SPST



Model No.	Switching Position		
2P-1	ON	NONE	OFF
2P-8	ON	NONE	(OFF)
2P-9	(ON)	NONE	OFF
Term. Comm.	2-3	N/A	OPEN

Model No.	Switching Position		
2P-B	ON	OFF	NONE
Term. Comm.	2-3	OPEN	N/A

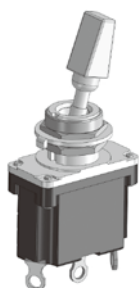
Schematic



Remark:

For 2P-B model, the switch becomes 2-position with center being one extreme position.

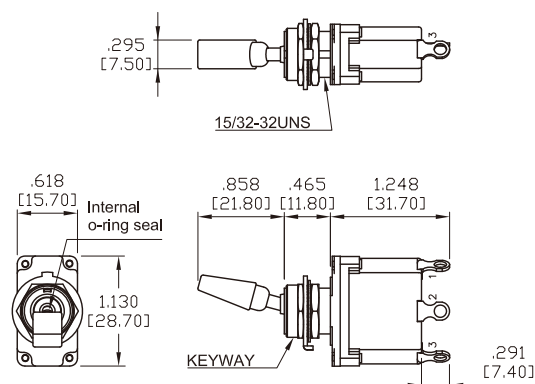
SPDT



Model No.	Switching Position		
SP-1	ON	NONE	ON
SP-2	ON	NONE	(ON)
SP-A	(ON)	NONE	ON
SP-3	ON	OFF	ON
SP-4	(ON)	OFF	(ON)
SP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

Model No.	Switching Position		
SP-C	ON	ON	NONE
SP-D	(ON)	ON	NONE
Term. Comm.	2-3	2-1	N/A

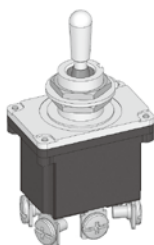
Schematic



Remark:

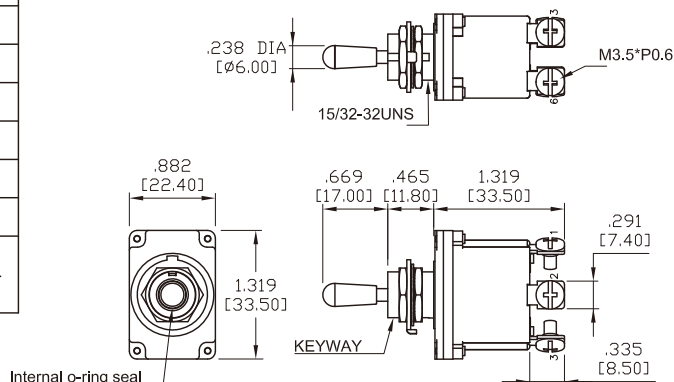
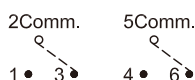
For SP-C, SP-D models, the switch becomes 2-position with center being one extreme position.

DPDT



Model No.	Switching Position		
DP-1	ON	NONE	ON
DP-2	ON	NONE	(ON)
DP-A	(ON)	NONE	ON
DP-3	ON	OFF	ON
DP-4	(ON)	OFF	(ON)
DP-5	ON	OFF	(ON)
Term. Comm.	2-3, 5-6	OPEN	2-1, 5-4

Schematic



SPST



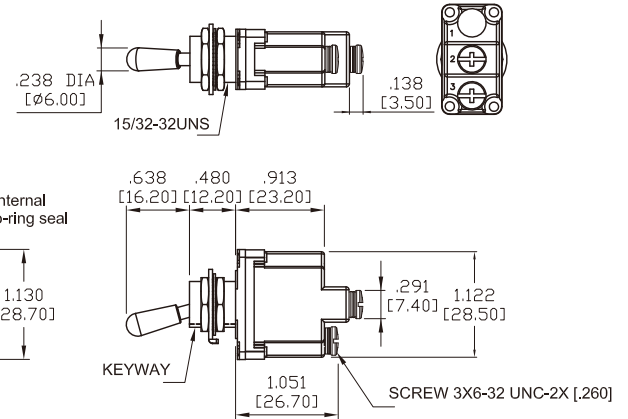
Model No.	Switching Position		
2P-1	ON	NONE	OFF
2P-8	ON	NONE	(OFF)
2P-9	(ON)	NONE	OFF
Term. Comm.	2-3	N/A	OPEN

Model No.	Switching Position		
2P-B	ON	OFF	NONE
Term. Comm.	2-3	OPEN	N/A

Schematic



STEP MODEL



Remark:

For 2P-B model, the switch becomes 2-position with center being one extreme position.

SPDT



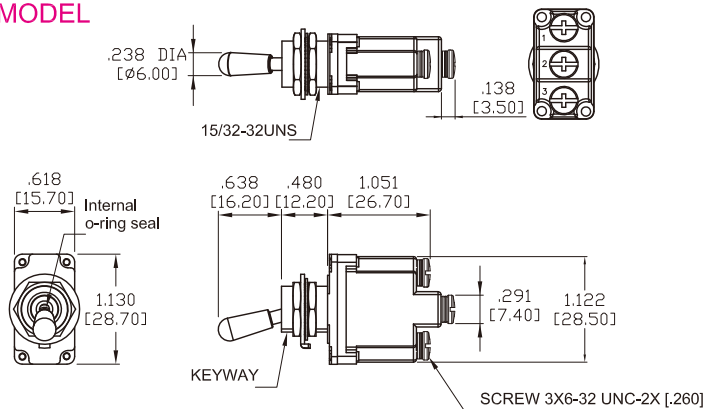
Model No.	Switching Position		
SP-1	ON	NONE	ON
SP-2	ON	NONE	(ON)
SP-A	(ON)	NONE	ON
SP-3	ON	OFF	ON
SP-4	(ON)	OFF	(ON)
SP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

Model No.	Switching Position		
SP-C	ON	ON	NONE
SP-D	(ON)	ON	NONE
Term. Comm.	2-3	2-1	N/A

Schematic



STEP MODEL



Remark:

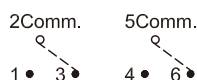
For SP-C, SP-D models, the switch becomes 2-position with center being one extreme position.

DPDT

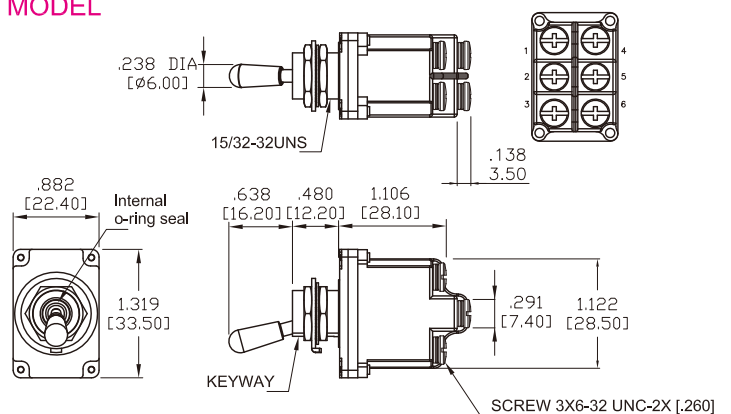


Model No.	Switching Position		
DP-1	ON	NONE	ON
DP-2	ON	NONE	(ON)
DP-A	(ON)	NONE	ON
DP-3	ON	OFF	ON
DP-4	(ON)	OFF	(ON)
DP-5	ON	OFF	(ON)
Term. Comm.	2-3, 5-6	OPEN	2-1, 5-4

Schematic



STEP MODEL



4PDT



Model No.	Switching Position		
4P-1	ON	NONE	ON
4P-2	ON	NONE	(ON)
4P-A	(ON)	NONE	ON
4P-3	ON	OFF	ON
4P-4	(ON)	OFF	(ON)
4P-5	ON	OFF	(ON)
Term. Comm.	2-3, 5-6 8-9, 11-12	OPEN	2-1, 5-4 8-7, 11-10

Schematic

2Comm.

1 • 3 •

5Comm.

4 • 6 •

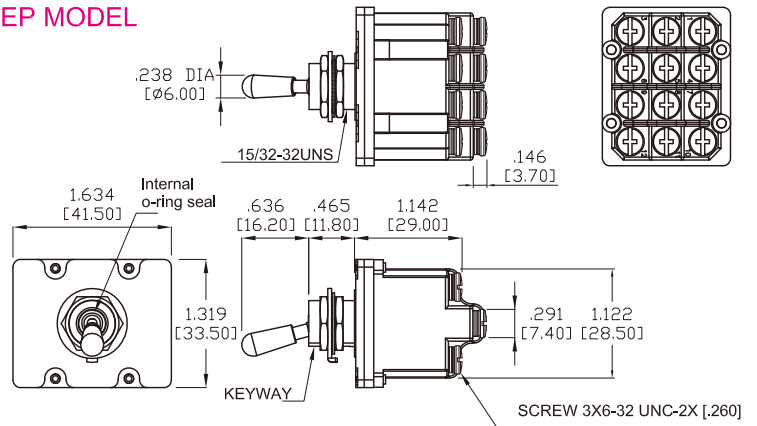
8Comm.

7 • 9 •

11Comm.

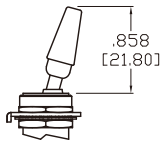
10 • 12 •

STEP MODEL



ACTUATOR OPTIONS

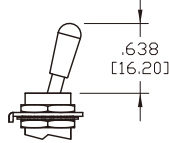
P1



Cap Color	
2	Black
5	Yellow

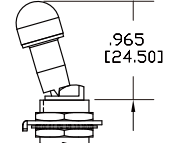
MATERIAL: Nylon 6/6

A1



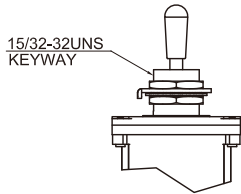
MATERIAL: Brass nickel plated

TL

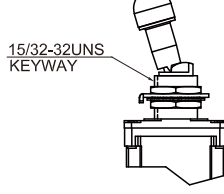


BUSHING OPTION

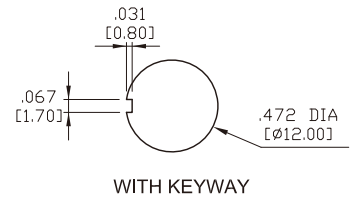
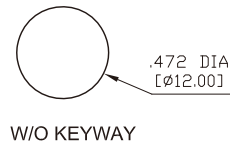
B0



Bx

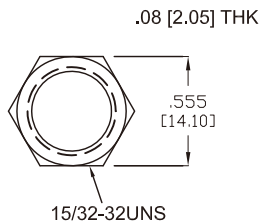


PANEL MOUNTING

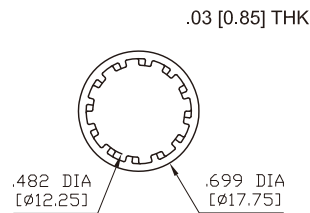


HARDWARE

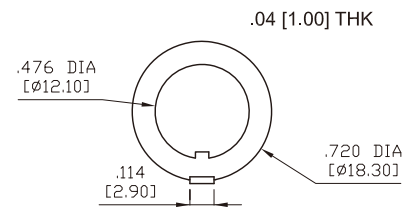
NUT



WASHER

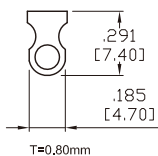


LOCKING RING

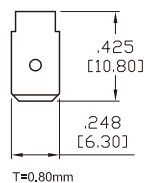


TERMINATION OPTIONS

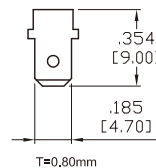
M1



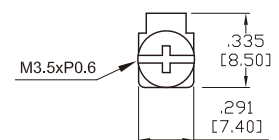
M3



M31

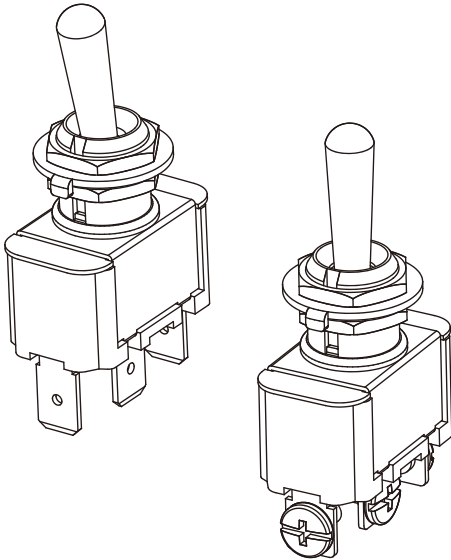


M4



Locking Options				
Bushing Locking Type (Keyway on Left)	Keyway Side	Center Position	Opposite Keyway Side	Applicable Circuit
BA 	locked IN	locked IN	locked IN	ON-OFF-ON ON-ON-ON
BB 	locked IN	locked IN	locked OUT	ON-OFF-ON ON-ON-ON
BD 	locked IN	locked OUT	locked IN	ON-OFF ON-NONE-ON ON-OFF-ON ON-ON-ON
BE 	locked OUT	locked IN	locked OUT	ON-OFF-ON (ON)-OFF-(ON) ON-OFF-(ON) ON-ON-ON ON-ON-(ON) (ON)-ON-(ON) ON-OFF-NONE ON-ON-NONE (ON)-ON-NONE NONE-OFF-(ON)
BF 	locked OUT	locked OUT	locked IN	ON-OFF ON-(OFF) ON-NONE-ON OFF-(ON) ON-NONE-(ON) ON-OFF-ON ON-OFF-(ON) ON-ON-ON ON-ON-(ON) ON-OFF-NONE ON-ON-NONE
BG 	locked IN	locked OUT	locked OUT	ON-OFF ON-NONE-ON ON-OFF-ON ON-ON-ON
BH 	locked OUT	locked from Center to Keyway Side	locked IN	ON-OFF-ON ON-ON-ON
BJ 	locked IN	locked from Center to Opp. Keyway Side	locked OUT	ON-OFF-ON ON-ON-ON
BK 	locked OUT	locked IN	locked IN	ON-OFF-ON ON-OFF-(ON) ON-ON-ON ON-ON-(ON) ON-OFF-NONE ON-ON-NONE
BL 	locked OUT	locked from Center to Keyway Side	locked OUT	ON-OFF-ON (ON)-OFF-(ON) ON-OFF-(ON) ON-ON-ON ON-ON-(ON) (ON)-ON-(ON)
BM 	locked OUT	locked IN	locked IN	ON-OFF-ON ON-OFF-(ON) ON-ON-ON ON-ON-(ON) ON-OFF-NONE ON-ON-NONE
BN 	locked OUT	locked from Center to Opp. Keyway Side	locked OUT	ON-OFF-ON ON-OFF-(ON) (ON)-OFF-(ON) ON-ON-ON ON-ON-(ON) (ON)-ON-(ON)
BP 	locked IN	locked IN	locked OUT	ON-OFF-ON ON-ON-ON

NEW !



SPECIFICATIONS:

CONTACT RATING: 12A 250VAC, 20A 125VAC, 1HP 125/250VAC.
ELECTRICAL LIFE: 30,000 make-and-break cycles at full load.
CONTACT RESISTANCE: 20m-ohms max. initial @2-4VDC
INSULATION RESISTANCE: 500VDC 100M-ohms min.
DIELECTRIC STRENGTH: 1,500VAC for 1 minute.
SOLDERING TEMPERATURE: Hand soldering 350°C for max. 3sec.
OPERATING TEMPERATURE: -30°C to +85°C

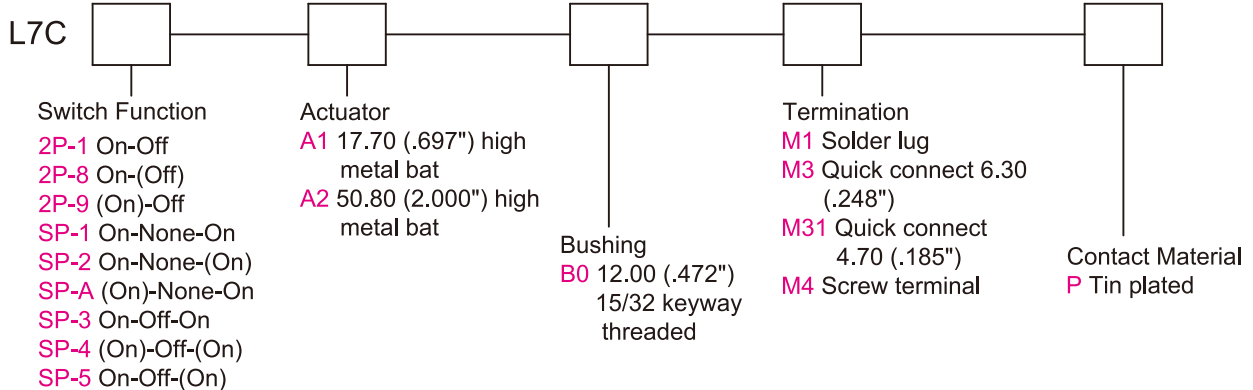
MATERIALS:

CASE: Phenolic molding compound (UL94V-1).
ACTUATOR: Brass, nickel plated with internal oring sealed.
BUSHING: Brass, nickel plated
HOUSING: Stainless steel.
PIVOT PIN: PA66 (UL94V-0).
SPRING: Piano wire.
CONTACT: Silver rivet.
TERMINAL: Brass, tin plated.
NUT: Brass, nickel plated.
WASHER & LOCKING RING: Steel, nickel plated.

Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM

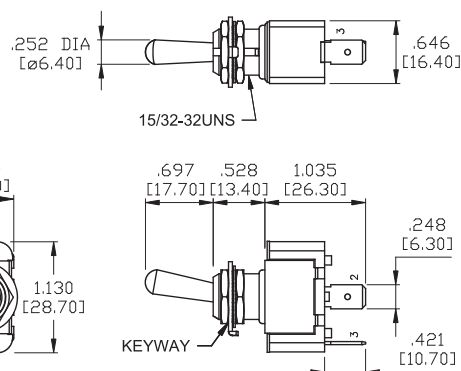


SPST



Model No.	Switching Position		
2P-1	ON	NONE	OFF
2P-8	ON	NONE	(OFF)
2P-9	(ON)	NONE	OFF
Term. Comm.	2-3	N/A	OPEN

Schematic

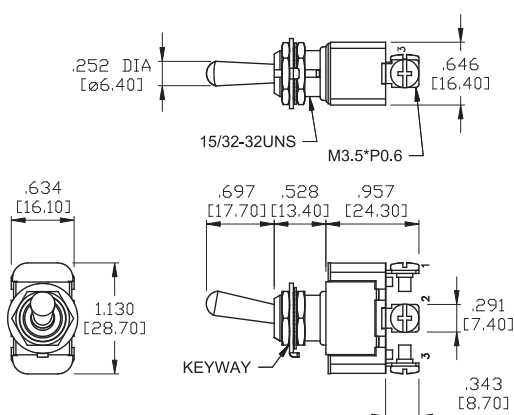


SPDT



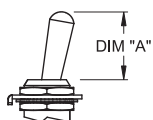
Model No.	Switching Position		
SP-1	ON	NONE	ON
SP-2	ON	NONE	(ON)
SP-A	(ON)	NONE	ON
SP-3	ON	OFF	ON
SP-4	(ON)	OFF	(ON)
SP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

Schematic



ACTUATOR OPTIONS

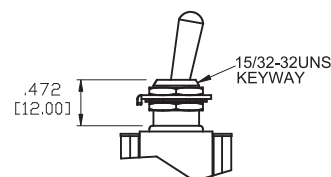
A1



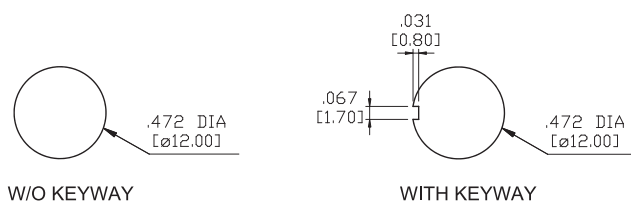
OPTION CODE	DIM "A"
1	.697 [17.70]
2	2.000 [50.80]

BUSHING OPTIONS

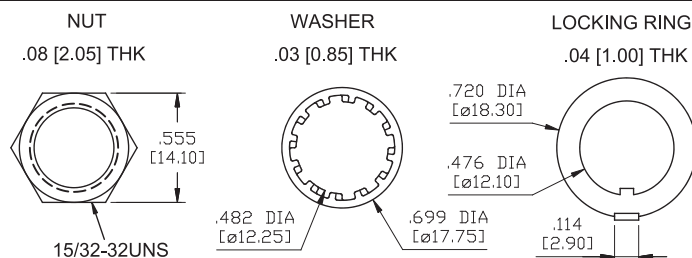
B0



PANEL MOUNTING

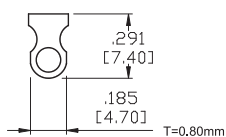


HARDWARE

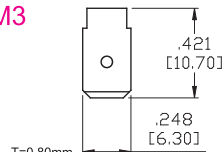


TERMINATION OPTIONS

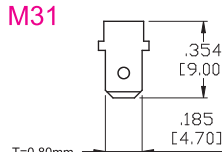
M1



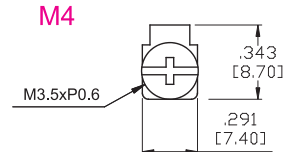
M3



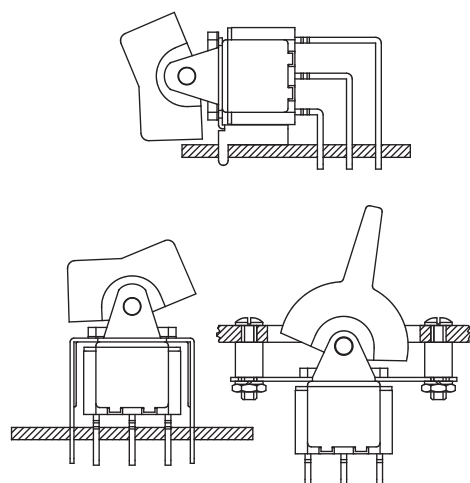
M31



M4



()=MOMENTARY

**SPECIFICATIONS:**

CONTACT RATING: Refer to "Contact Material Options" for more info.
 ELECTRICAL LIFE: 50,000 make-and-break cycles at full load.
 CONTACT RESISTANCE: 10mΩ max. initial @ 2-4VDC.
 100mA for both silver and gold plated contacts.
 INSULATION RESISTANCE: 1,000MΩ min.
 DIELECTRIC STRENGTHS: 1,500V RMS @ sea level.
 OPERATING TEMPERATURE:-30°C to +85°C.

MATERIALS:

CASE: Diallyl phthalate(DAP)(UL 94V-0).
 ROCKERS: Nylon 6/6 or ABS.
 BUSHING: Zinc, nickel plated.
 HOUSING: Stainless steel.
 FRONT/REAR MOUNTING: Stainless steel.
 SWITCH SUPPORT: Brass, tin plated.
 TERMINAL SEAL: Epoxy.

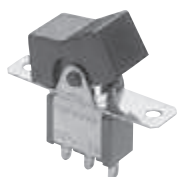
Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM

300						
Switch Function	Actuator		Actuator Color		Contact Material	Seal
SP-1 On-None-On	R1 STD. rocker		1 White		Q Silver	E Epoxy
SP-2 On-None-(On)	R2 STD. paddle		2 Black		P Silver (tin plated term.)	O W/O Epoxy
SP-3 On-Off-On	R3 Medium rocker		3 Red		R Gold	
SP-4 (On)-Off-(On)	R4 Large paddle		4 Orange		K Gold (tin plated term.)	
SP-5 On-Off-(On)	R5 Large rocker		5 Yellow		G Silver	
DP-1 On-None-On	R6 Rocker with frame		6 Green		(gold over silver term.)	
DP-2 On-None-(On)	R7 Paddle with frame		7 Blue			
DP-3 On-Off-On	RA R1 with - O marking		8 Brown			
DP-4 (On)-Off-(On)	RC R6 with white • marking		9 Gray			
DP-5 On-Off-(On)	RD R1 with I O			Termination		
DP-6 On-On-On	RE R3 with red • marking			M1 Solder lug		
DP-7 (On)-On-(On)	RI R1 with red • marking			M2 PC thru-hole		
DP-8 On-On-(On)	RK R3 with UP DOWN marking			M3 Quick connect		
DP-9 None-On-(On)	C6 R6 with I O Marking			M5-1 Wire wrap, 19.05 (.750") long		
3P-1 On-None-On	W7 R7 without frame			M5-2 Wire wrap, 24.48 (.964") long		
3P-2 On-None-(On)				M5-3 Wire wrap, 10.80 (.425") long		
3P-3 On-Off-On				M5-4 Wire wrap, 26.97 (1.062") long		
3P-4 (On)-Off-(On)				M6 Right angle, PC thru-hole		
3P-5 On-Off-(On)				M61 Right angle, snap-in		
4P-1 On-None-On				M7 Vertical, right angle PC thru-hole		
4P-2 On-None-(On)				M71 Vertical, right angle snap-in		
4P-3 On-Off-On				VS2 Vertical mount, 11.70 (.461") high		
4P-4 (On)-Off-(On)	Frame Color			VS21 Vertical mount, snap-in 11.70 (.461") high		
4P-5 On-Off-(On)	0 No color required			VS3 Vertical mount, 16.00 (.630") high		
4P-6 On-On-On	1 White			VS31 Vertical mount, snap-in 16.00 (.630") high		
4P-7 (On)-On-(On)	2 Black			VS4 Vertical mount, 11.70 (.461") high		
4P-8 On-On-(On)	3 Red			VS41 Vertical mount, snap-in 11.70 (.461") high		
	4 Orange			VS5 Vertical mount, 16.00 (.630") high		
	5 Yellow			VS51 Vertical mount, snap-in 16.00 (.630") high		
	6 Green					
	7 Blue					
	8 Brown					
	9 Gray					

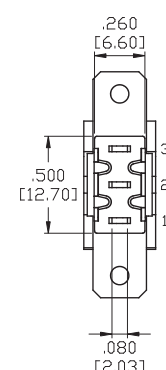
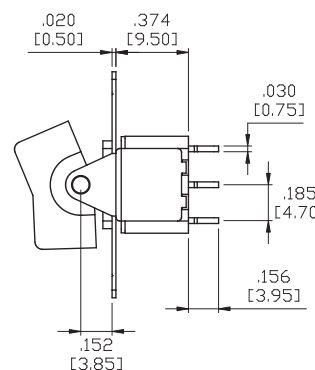
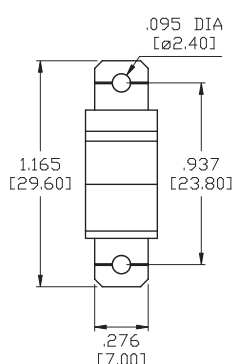
SPDT



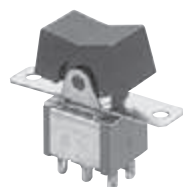
Model No.	Switching Position		
SP-1	ON	NONE	ON
SP-2	ON	NONE	(ON)
SP-3	ON	OFF	ON
SP-4	(ON)	OFF	(ON)
SP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

Schematic

2Comm.



DPDT



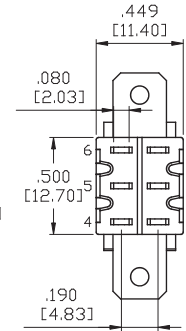
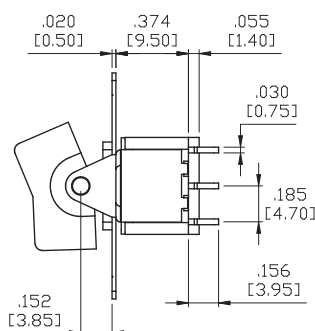
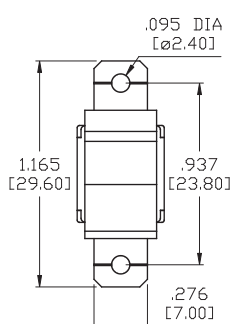
Model No.	Switching Position		
DP-1	ON	NONE	ON
DP-2	ON	NONE	(ON)
DP-3	ON	OFF	ON
DP-4	(ON)	OFF	(ON)
DP-5	ON	OFF	(ON)
Term. Comm.	2-3,5-6	OPEN	2-1,5-4

Model No.	Switching Position		
DP-6	ON	ON	ON
DP-7	(ON)	ON	(ON)
DP-8	ON	ON	(ON)
DP-9	OFF	ON	(ON)
Term. Comm.	2-3,5-6	2-3,5-4	2-1,5-4

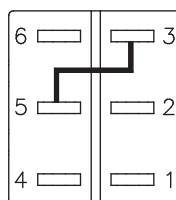
Schematic

2Comm.

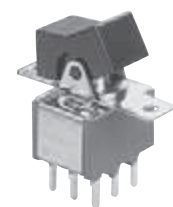
5Comm.



WIRING FOR ON-ON-ON (3-WAY) FUNCTION



3PDT



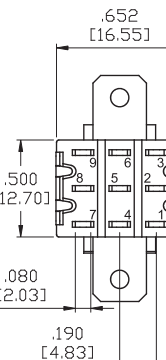
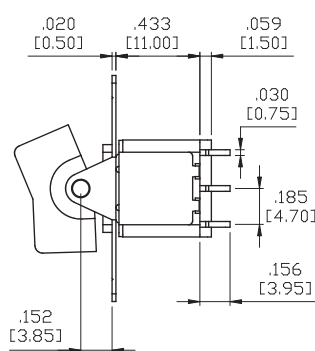
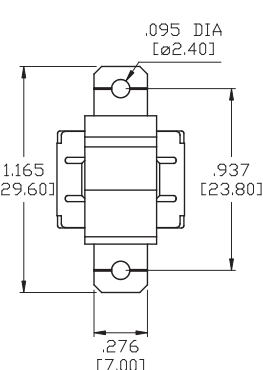
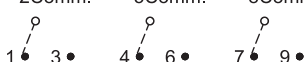
Model No.	Switching Position		
3P-1	ON	NONE	ON
3P-2	ON	NONE	(ON)
3P-3	ON	OFF	ON
3P-4	(ON)	OFF	(ON)
3P-5	ON	OFF	(ON)
Term. Comm.	2-3,5-6 8-9	OPEN	2-1,5-4 8-7

Schematic

2Comm.

5Comm.

8Comm.

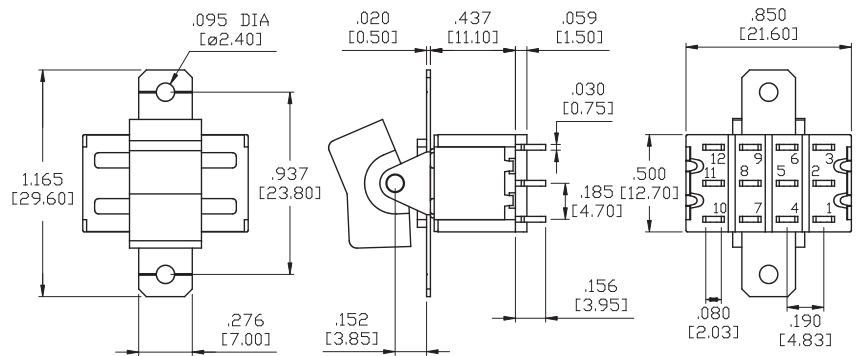


4PDT

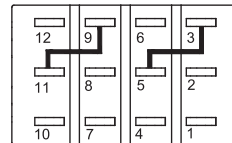


Model No.	Switching Position		
4P-1	ON	NONE	ON
4P-2	ON	NONE	(ON)
4P-3	ON	OFF	ON
4P-4	(ON)	OFF	(ON)
4P-5	ON	OFF	(ON)
Term. Comm.	2-3,5-6 8-9, 11-12	OPEN	2-1,5-4 8-7, 11-10

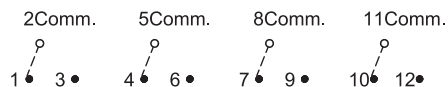
Model No.	Switching Position		
4P-6	ON	ON	ON
4P-7	(ON)	ON	(ON)
4P-8	ON	ON	(ON)
4P-9	OFF	ON	(ON)
Term. Comm.	2-3,5-6 8-9, 11-12	2-3,5-4 8-9, 11-10	2-1,5-4 8-7, 11-10



WIRING FOR ON-ON-ON (3-WAY) FUNCTION

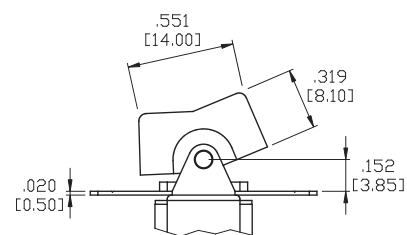
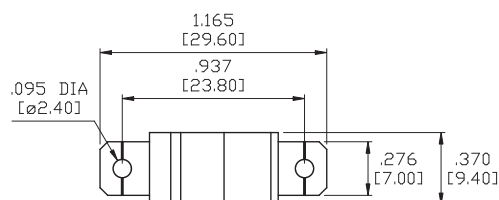


Schematic

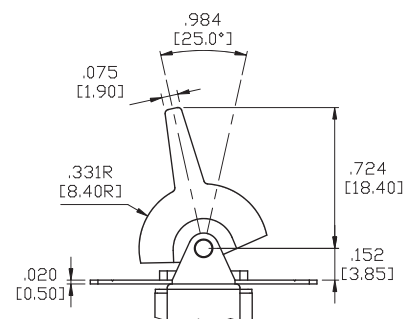
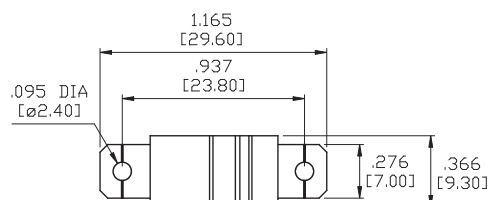


ACTUATOR OPTIONS FOR PANEL REAR MOUNT

R1

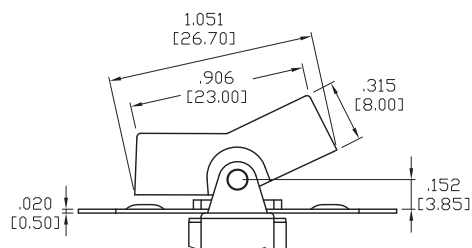
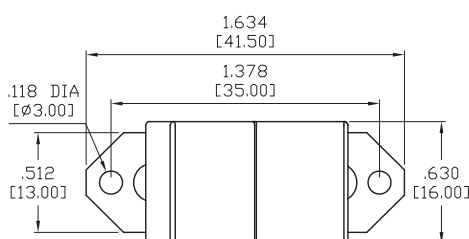


R2

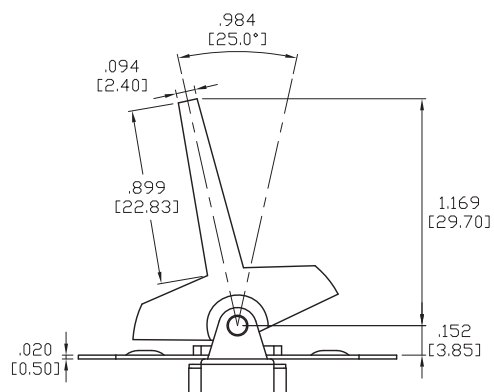
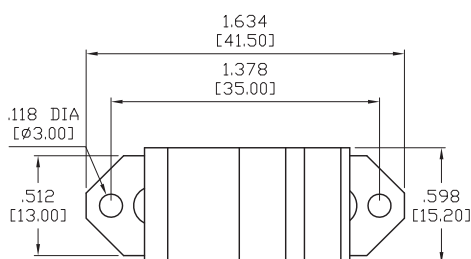


ACTUATOR OPTIONS FOR PANEL REAR MOUNT

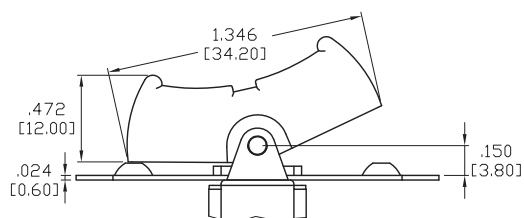
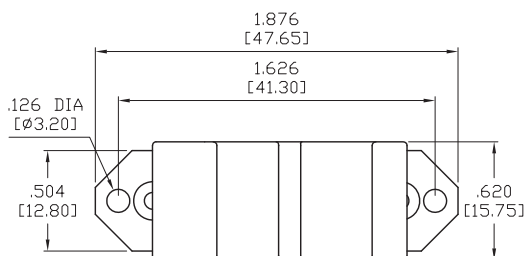
R3



R4

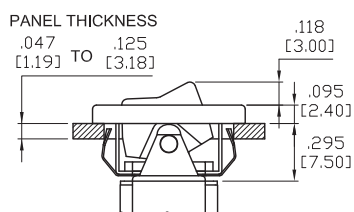
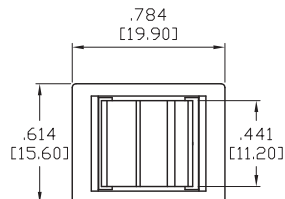


R5

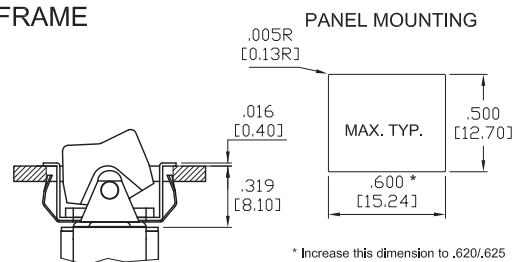
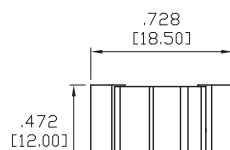


ACTUATOR OPTIONS FOR SNAP-IN FRONT MOUNT

R6

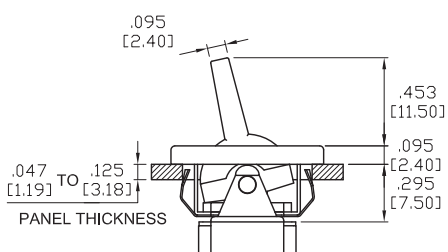
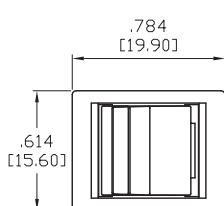


R6 WITHOUT FRAME

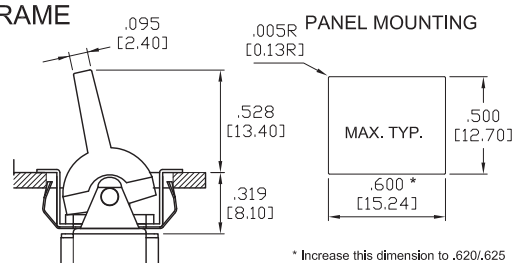
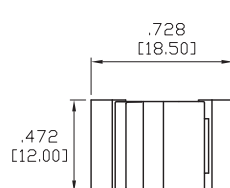


* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

R7



R7 WITHOUT FRAME



* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

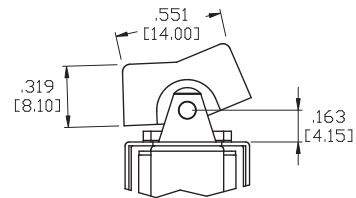
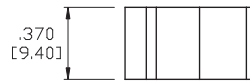
Tact

Touch Key

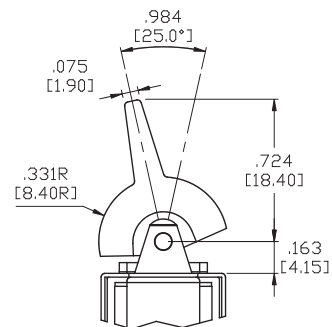
Miscellaneous

ACTUATOR OPTIONS FOR P.C. MOUNT

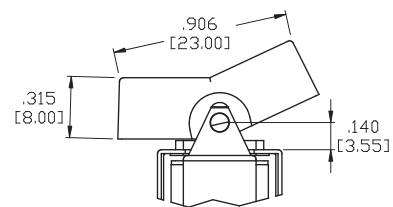
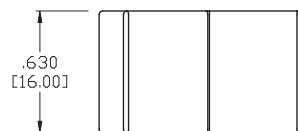
R1



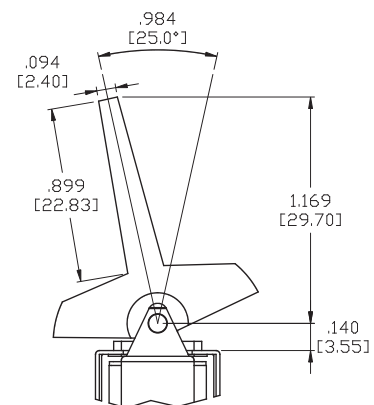
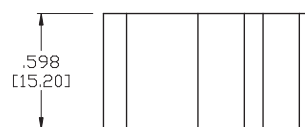
R2



R3

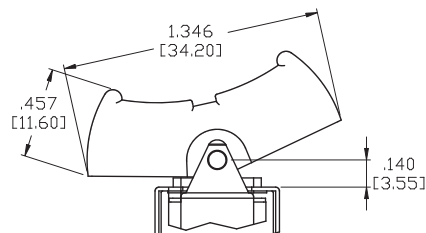
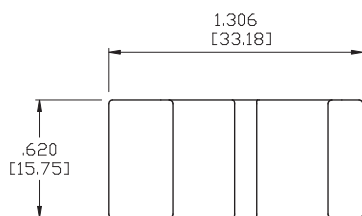


R4

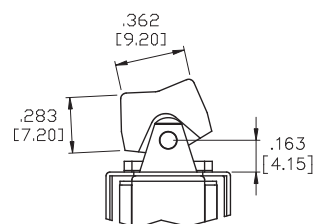
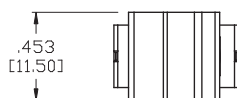
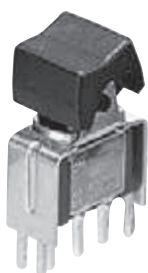


ACTUATOR OPTIONS FOR P.C. MOUNT

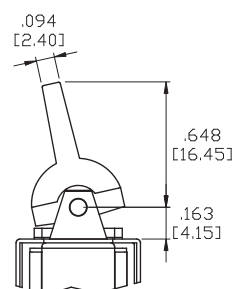
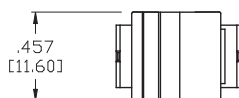
R5



R6

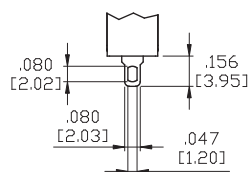


R7



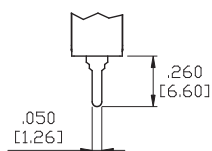
TERMINATION OPTIONS

M1 STD. SOLDER LUG



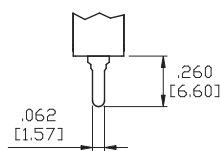
THK .030 [0.75]

M2 PC THRU-HOLE



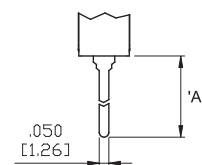
THK .030 [0.75]

M3 QUICK CONNECT



THK .030 [0.75]

M5 WIRE WRAP



THK .030 [0.75]

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]

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

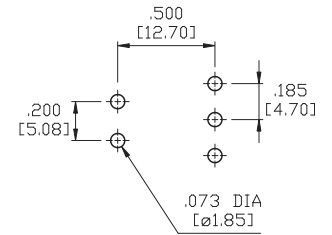
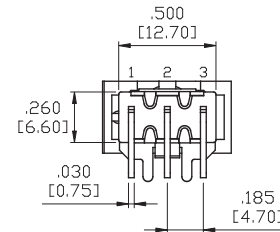
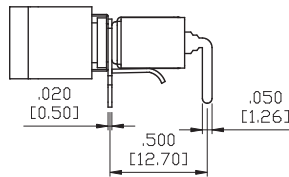
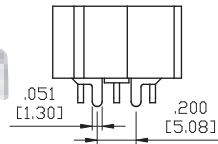
Touch Key

Miscellaneous

TERMINATION OPTIONS

M6

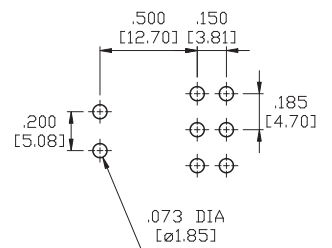
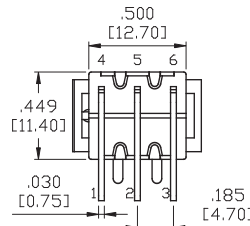
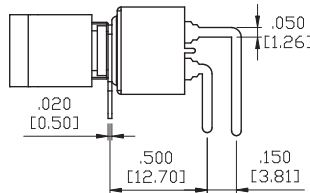
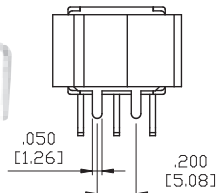
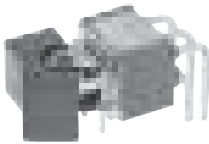
P.C.MOUNTING



SPDT

M6

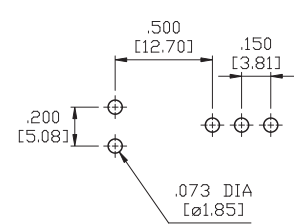
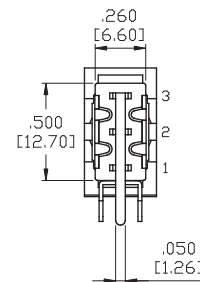
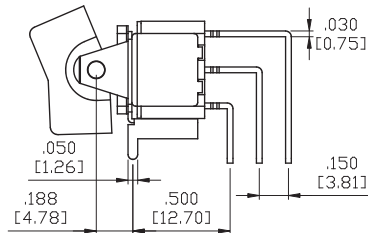
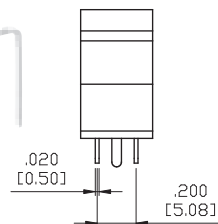
P.C.MOUNTING



DPDT

M7

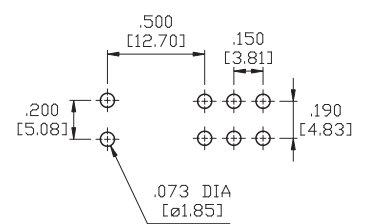
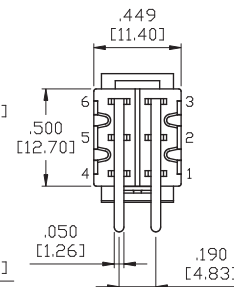
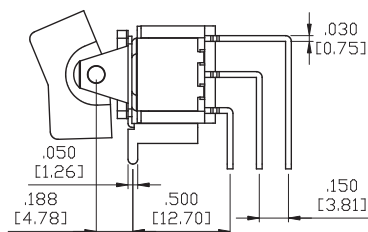
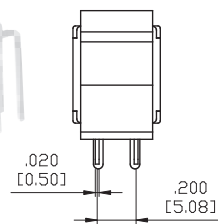
P.C.MOUNTING



SPDT

M7

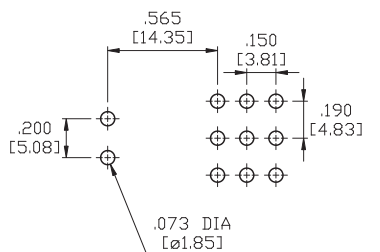
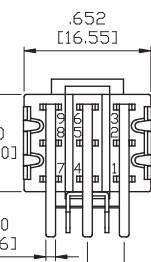
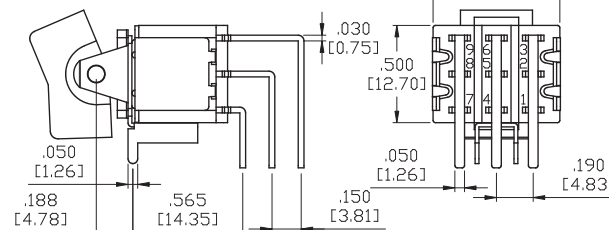
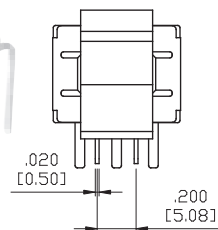
P.C.MOUNTING



DPDT

M7

P.C.MOUNTING



3PDT

TERMINATION OPTIONS

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

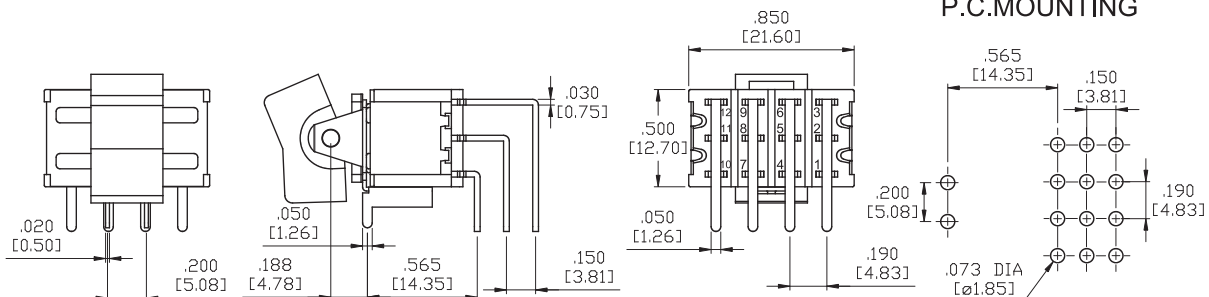
Touch Key

Miscellaneous

M7



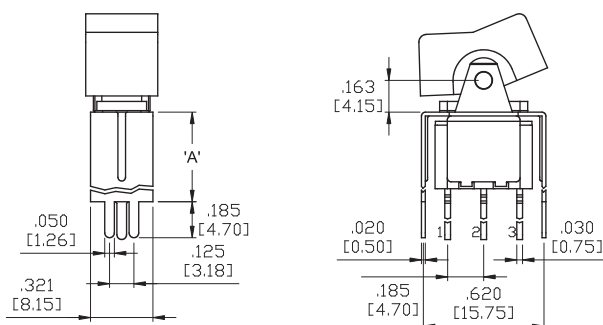
4PDT



VS2-VS3



SPDT



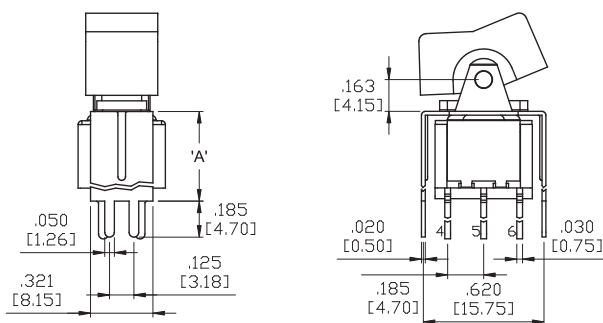
OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

VS2-VS3



DPDT



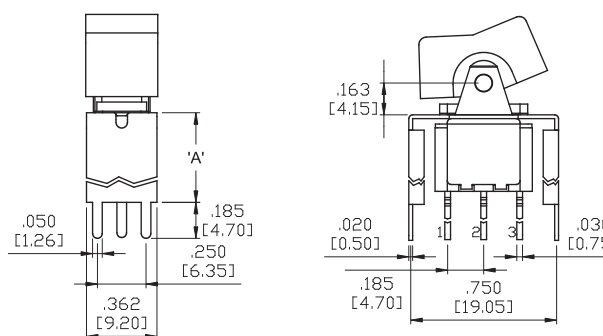
OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

P.C.MOUNTING

VS4-VS5



SPDT



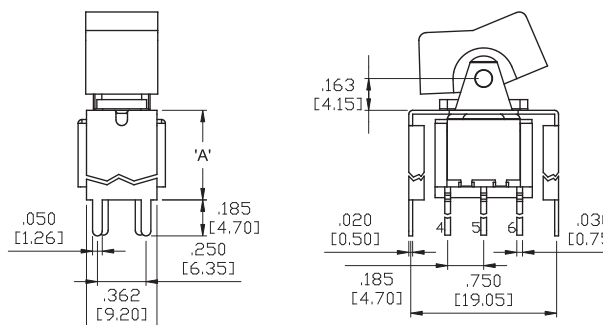
OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

VS4-VS5



DPDT

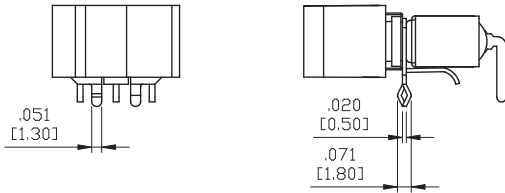


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

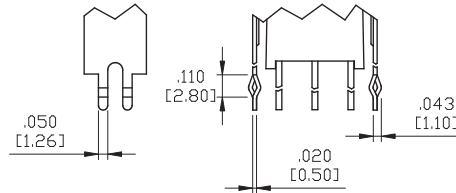
P.C.MOUNTING

SNAP-IN TERMINATION OPTIONS

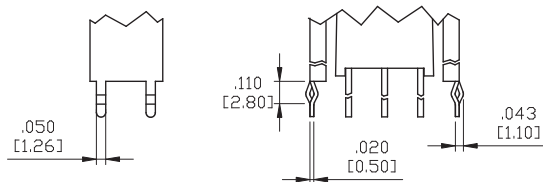
M61



VS21,VS31



VS41,VS51



* PC Mounting for M61,VS21,VS31,VS41,VS51 refer to M6,VS2,VS3,VS4,VS5 respectively.

CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
Q	Silver ¹	Silver plated ¹	5Amps @ 125VAC or 28VDC 2Amps @ 250VAC	
P		Tin plated ⁵ ⁷		
R	Gold ²	Gold plated ⁴	0.4VA max @ 20V max (AC or DC)	
K		Tin plated ⁵ ⁶		
G	Silver ¹	Gold over silver ³	5Amps @ 125VAC or 28VDC 2Amps @ 250VAC	

1. Movable Contact / Terminals: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.
5. Outer Terminals: Copper alloy with pure tin plated.
6. Terminal Contact: Gold plated over nickel plated.
7. Terminal Contact: Palladium nickel alloy (or Silver) plated.

* P, K not available with M1 and M3 terminals

* 6Amps (Movable Contact: coin silver, silver plated) available to model ON-NONE-ON without UL approval

Series 300A/C (Sealed) Miniature Rocker & Paddle Switches

SPECIFICATIONS:

CONTACT RATING: Refer to "Contact Material Options" for more info.
ELECTRICAL LIFE: 50,000 make-and-break cycles at full load.
CONTACT RESISTANCE: 10mΩ max. initial @2-4VDC.
100mA, for both silver and gold plated contacts.
INSULATION RESISTANCE: 1,000MΩ min.
DIELECTRIC STRENGTH: 1500V RMS @ sea level.
OPERATING TEMPERATURE: -30°C to +85°C.

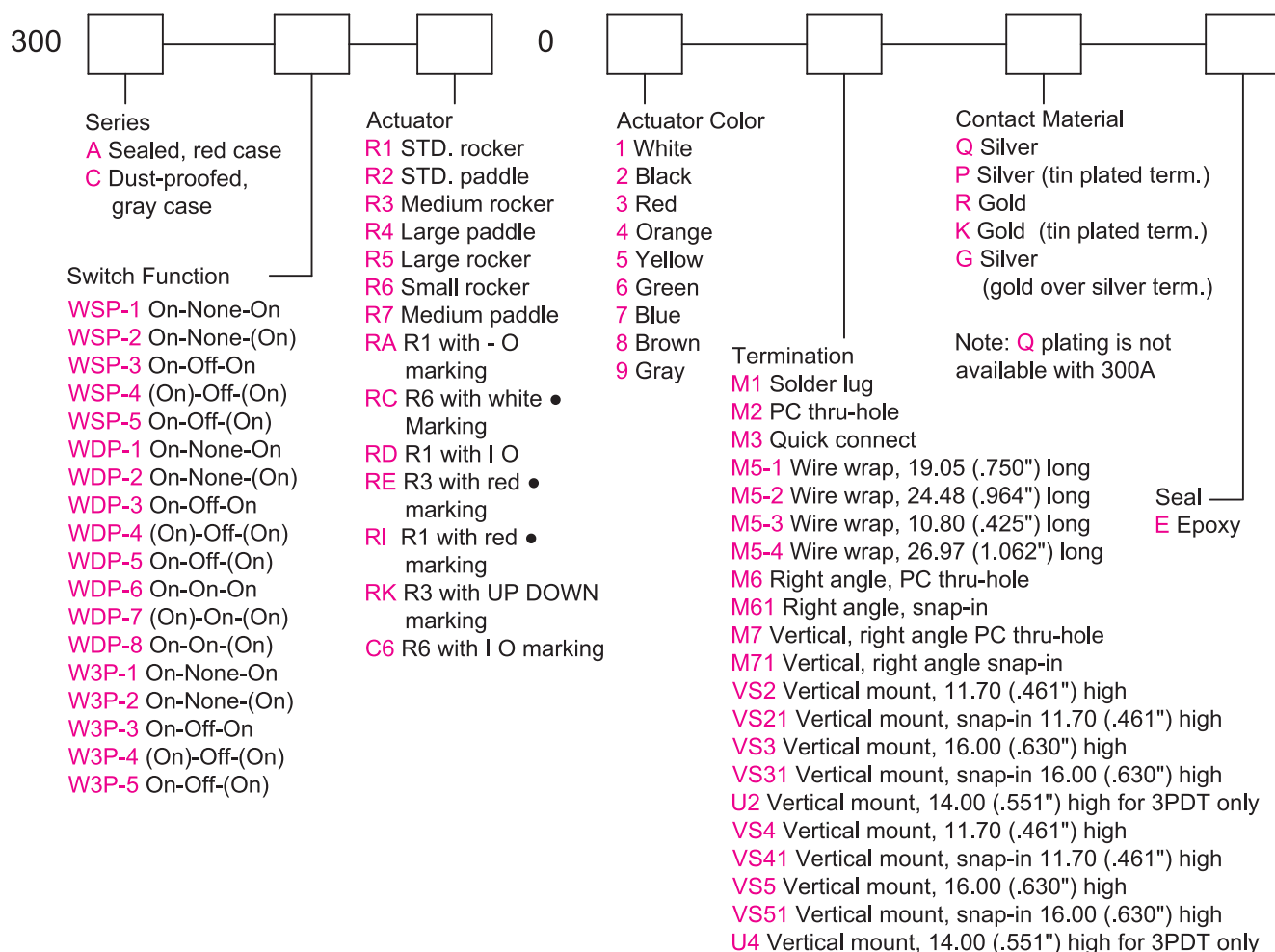
MATERIALS:

CASE & BUSHING: PA9T or FR52, flame retardant, heat stabilized (UL 94V-0).
ACTUATOR: Nylon, black std, internal o-ring sealed (300A).
ACTUATOR: Nylon, black std (300C).
PANEL REAR MOUNT: Nylon, black std.
SWITCH SUPPORT: Brass, tin plated.
ACTUATOR PIVOT & MOUNTING BRACKET: Nylon, black std.
ACTUATOR PIVOT RETAINER: Stainless steel.
TERMINAL SEAL: Epoxy.

Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous

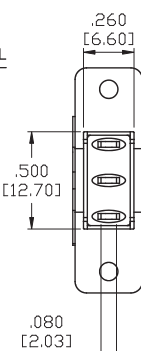
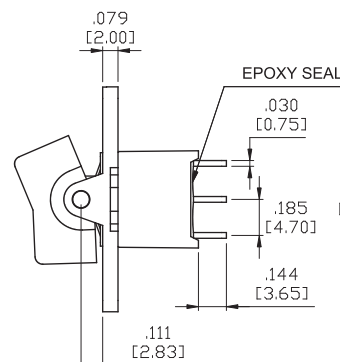
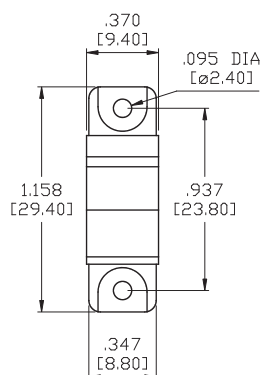
Series 300A/C (Sealed) Miniature Rocker & Paddle Switches

SPDT

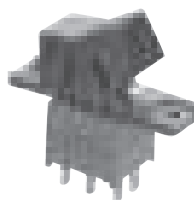


Model No.	Switching Position		
WSP-1	ON	NONE	ON
WSP-2	ON	NONE	(ON)
WSP-3	ON	OFF	ON
WSP-4	(ON)	OFF	(ON)
WSP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

Schematic

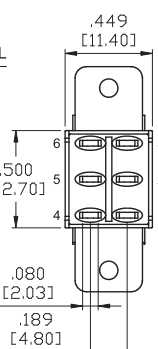
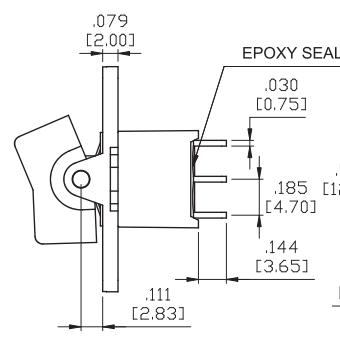
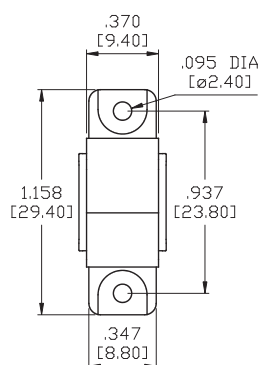
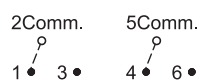


DPDT

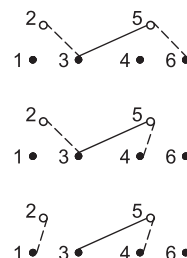
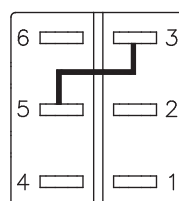


Model No.	Switching Position		
WDP-1	ON	NONE	ON
WDP-2	ON	NONE	(ON)
WDP-3	ON	OFF	ON
WDP-4	(ON)	OFF	(ON)
WDP-5	ON	OFF	(ON)
Term. Comm.	2-3,5-6	OPEN	2-1,5-4

Schematic



WIRING FOR ON-ON-ON (3-WAY) FUNCTION

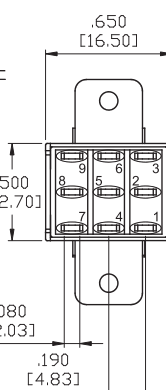
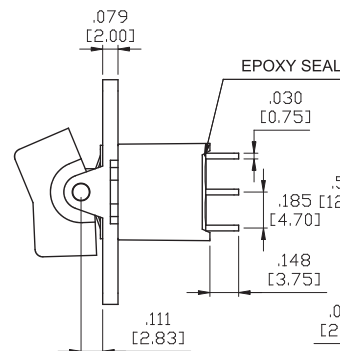
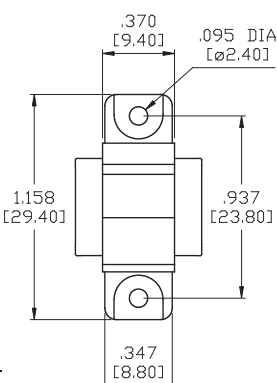


3PDT



Model No.	Switching Position		
W3P-1	ON	NONE	ON
W3P-2	ON	NONE	(ON)
W3P-3	ON	OFF	ON
W3P-4	(ON)	OFF	(ON)
W3P-5	ON	OFF	(ON)
Term. Comm.	2-3,5-6,8-9	OPEN	2-1,5-4,8-7

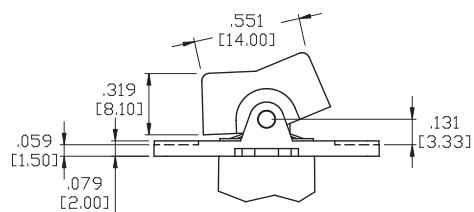
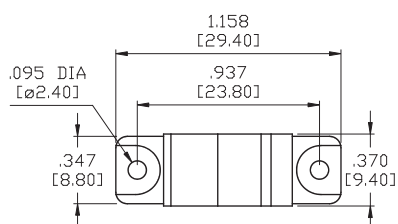
Schematic



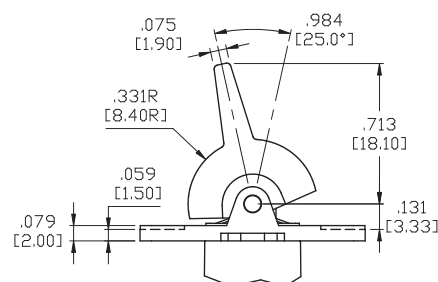
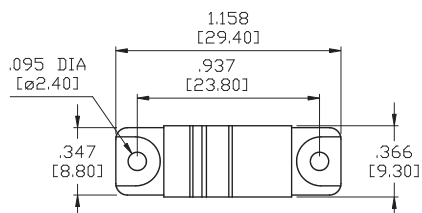
Series 300A/C (Sealed) Miniature Rocker & Paddle Switches

ACTUATOR OPTIONS FOR PANEL REAR MOUNT

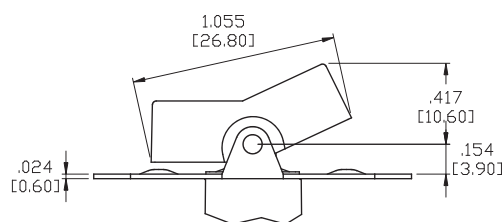
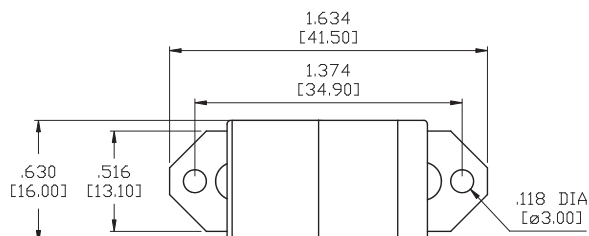
R1



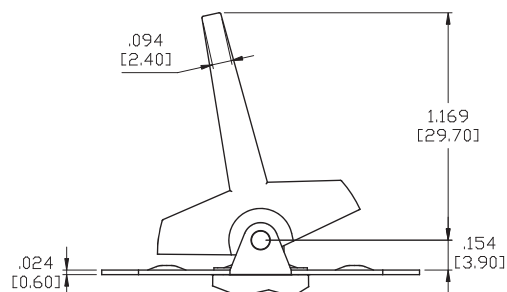
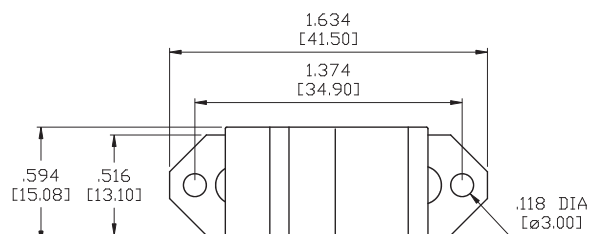
R2



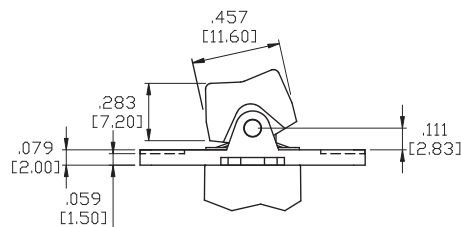
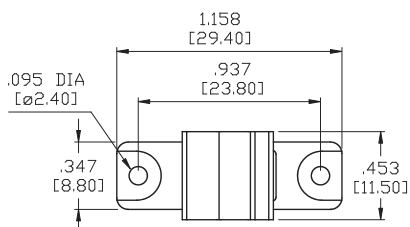
R3



R4



R6



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

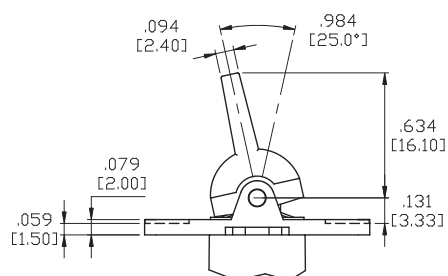
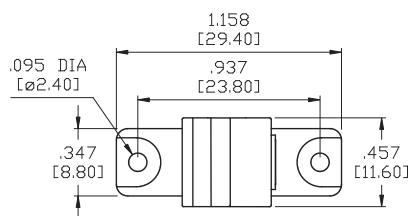
Touch Key

Miscellaneous

Series 300A/C (Sealed) Miniature Rocker & Paddle Switches

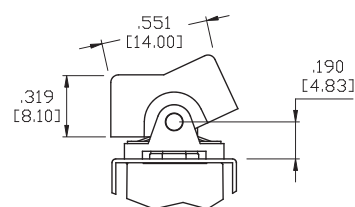
ACTUATOR OPTIONS FOR PANEL REAR MOUNT

R7

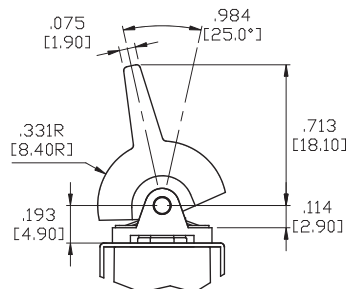


ACTUATOR OPTIONS FOR P.C MOUNT

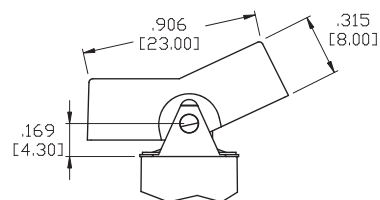
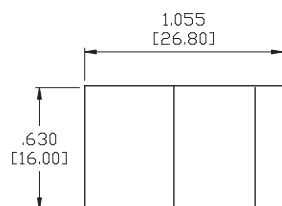
R1



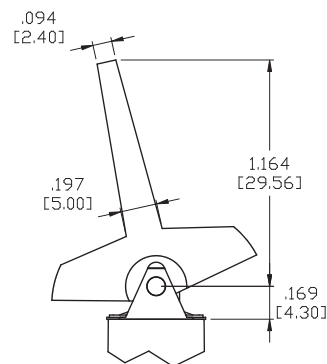
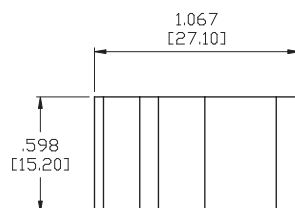
R2



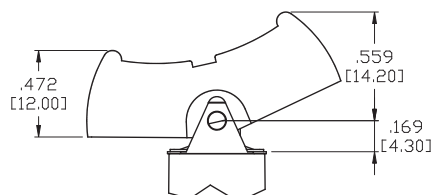
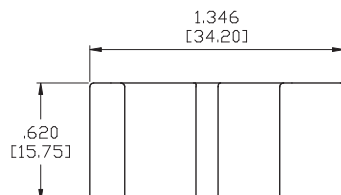
R3



R4



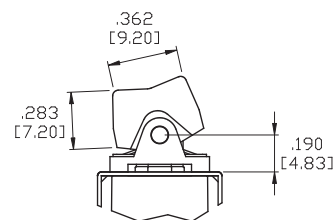
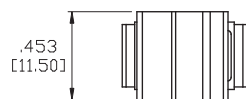
R5



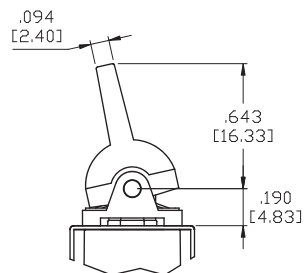
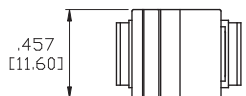
Series 300A/C (Sealed) Miniature Rocker & Paddle Switches

ACTUATOR OPTIONS FOR P.C MOUNT

R6

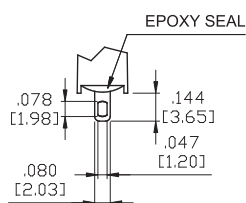


R7



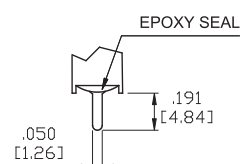
TERMINATION OPTIONS

M1 STD. SOLDER LUG



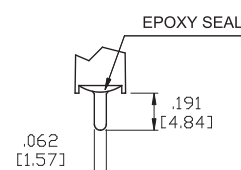
THK .030 [0.75]

M2 PC THRU-HOLE



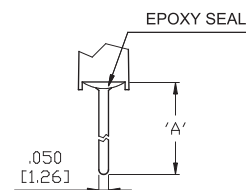
THK .030 [0.75]

M3 QUICK CONNECT



THK .030 [0.75]

M5 WIRE WRAP



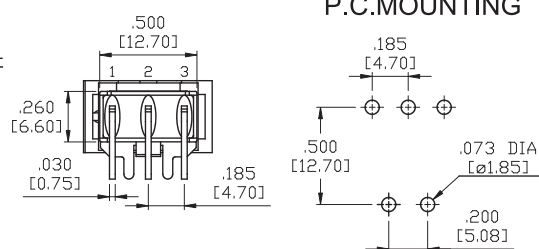
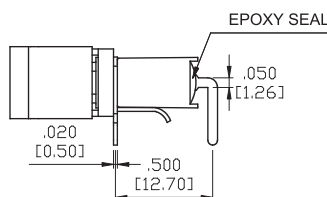
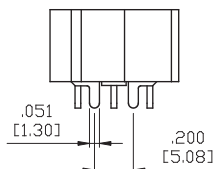
THK .030 [0.75]

OPTION CODE	DIM.'A'
M5-1	.711 [18.05]
M5-2	.924 [23.48]
M5-3	.386 [9.80]
M5-4	1.022 [25.97]

M6



SPDT

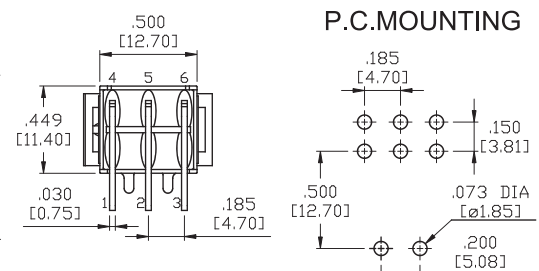
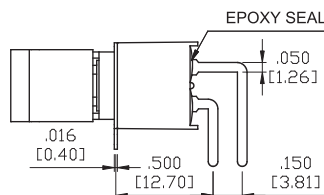
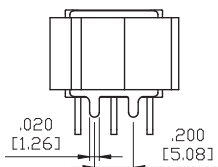


P.C.MOUNTING

M6



DPDT

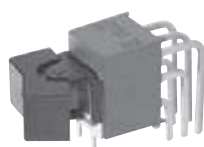


P.C.MOUNTING

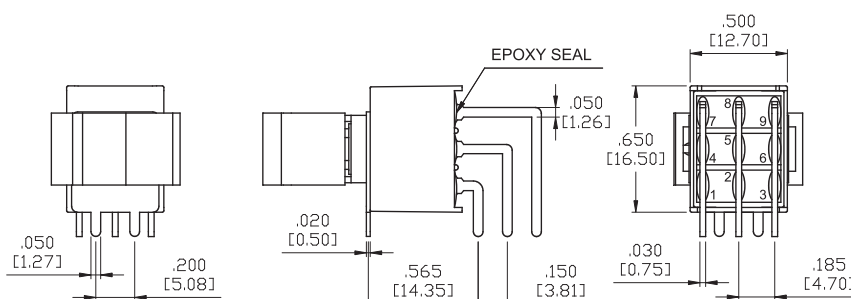
Series 300A/C (Sealed) Miniature Rocker & Paddle Switches

TERMINATION OPTIONS

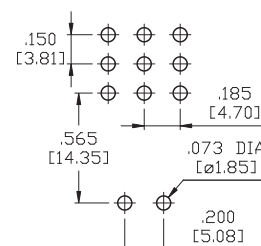
M6



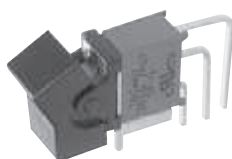
3PDT



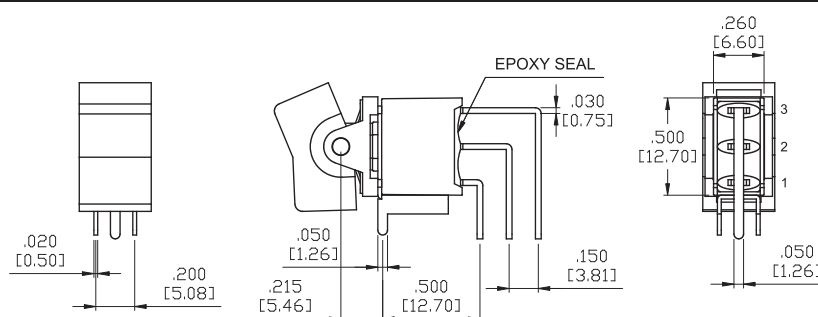
P.C.MOUNTING



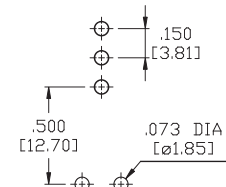
M7



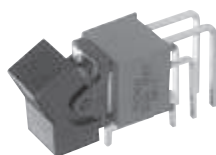
SPDT



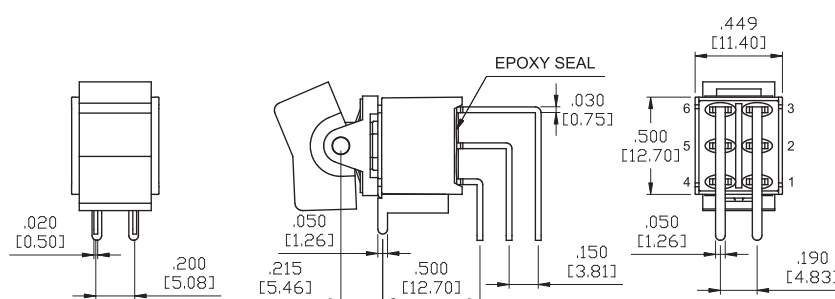
P.C.MOUNTING



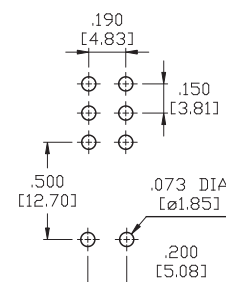
M7



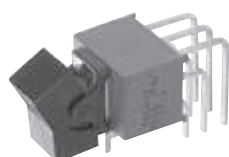
DPDT



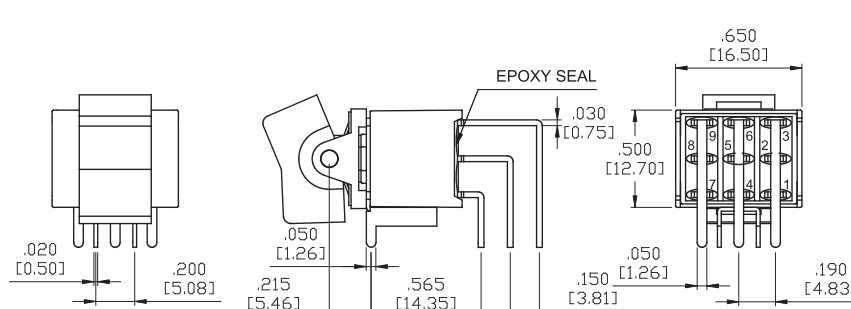
P.C.MOUNTING



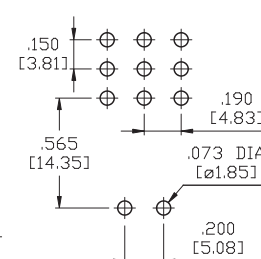
M7



3PDT



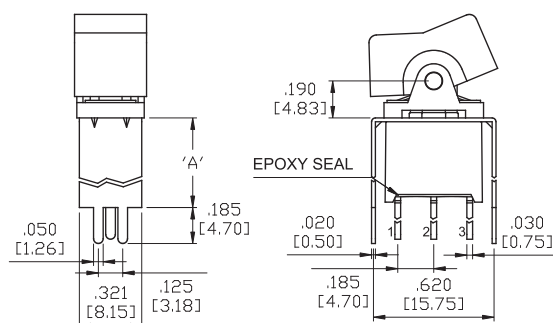
P.C.MOUNTING



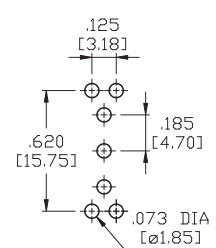
VS2-VS3



SPDT



P.C.MOUNTING



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

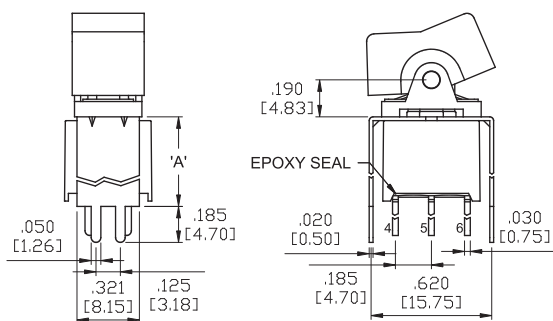
Series 300A/C (Sealed) Miniature Rocker & Paddle Switches

TERMINATION OPTIONS

VS2-VS3

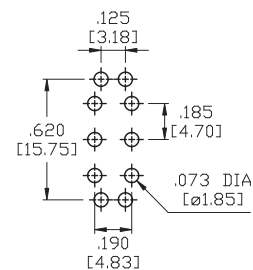


DPDT



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

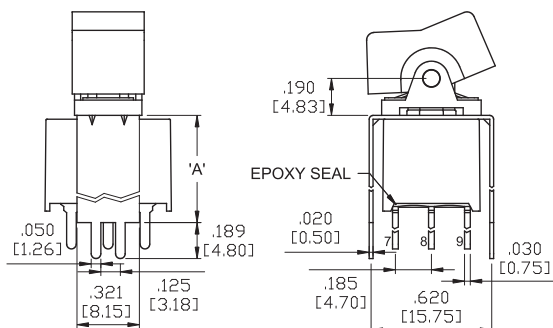
P.C.MOUNTING



U2-VS3

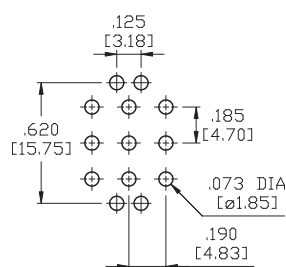


3PDT



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

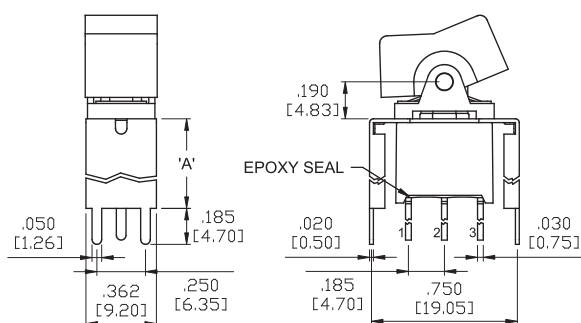
P.C.MOUNTING



VS4-VS5

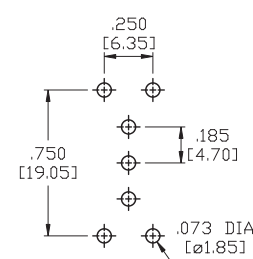


SPDT



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

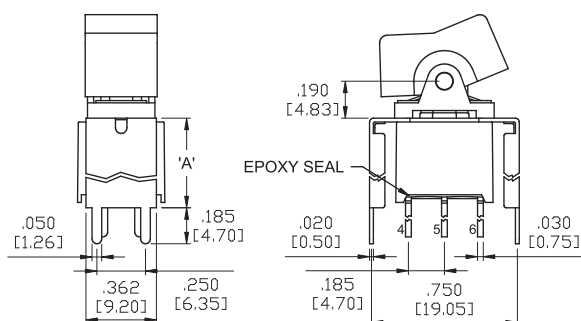
P.C.MOUNTING



VS4-VS5

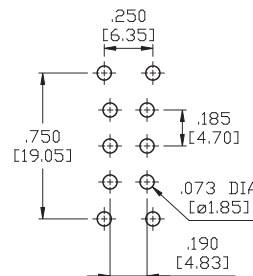


DPDT



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

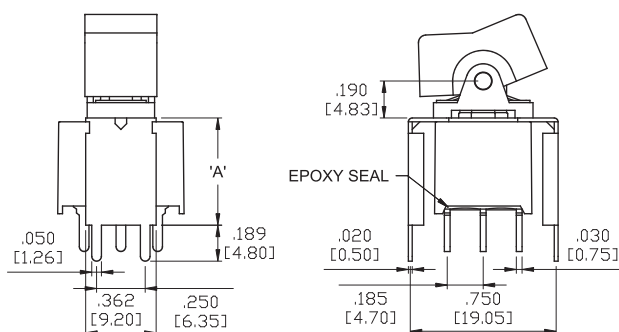
P.C.MOUNTING



U4-VS5

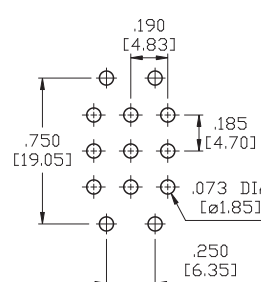


3PDT



OPTION CODE	DIM.'A'
U4	.551 [14.00]
VS5	.630 [16.00]

P.C.MOUNTING



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

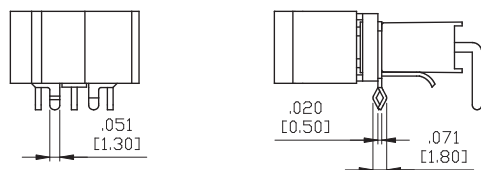
Touch Key

Miscellaneous

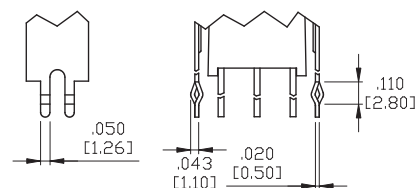
Series 300A/C (Sealed) Miniature Rocker & Paddle Switches

SNAP-IN TERMINATION OPTIONS

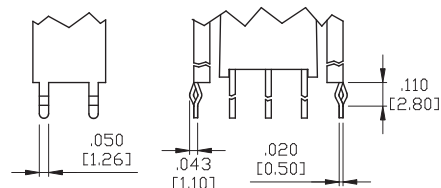
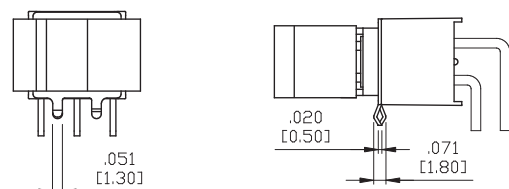
M61



VS21,VS31



VS41,VS51



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

CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
G	Silver ¹	Gold over silver ³	5Amps @ 125VAC or 28VDC 2Amps @ 250VAC	 IP67
P		Tin plated ⁵ ₇		
R	Gold ²	Gold plated ⁴	0.4VA max @ 20V max (AC or DC)	IP67
K		Tin plated ⁵ ₆		

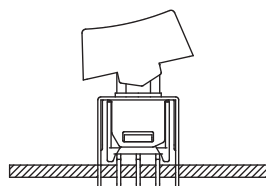
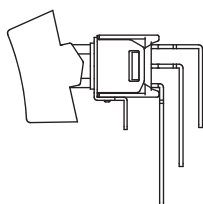
* Standard G plating for sealed product.

1. Movable Contact: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.
5. Outer Terminals: Copper alloy with pure tin plated.
6. Terminal Contact: Gold plated over nickel plated.
7. Terminal Contact: Palladium nickel alloy (or Silver) plated.

* P, K not available with M1 and M3 terminals

* 6Amps (Movable Contact: coin silver, silver plated) available to model ON-NONE-ON without UL approval

* IP67 protection for 300A series only

**SPECIFICATIONS:**

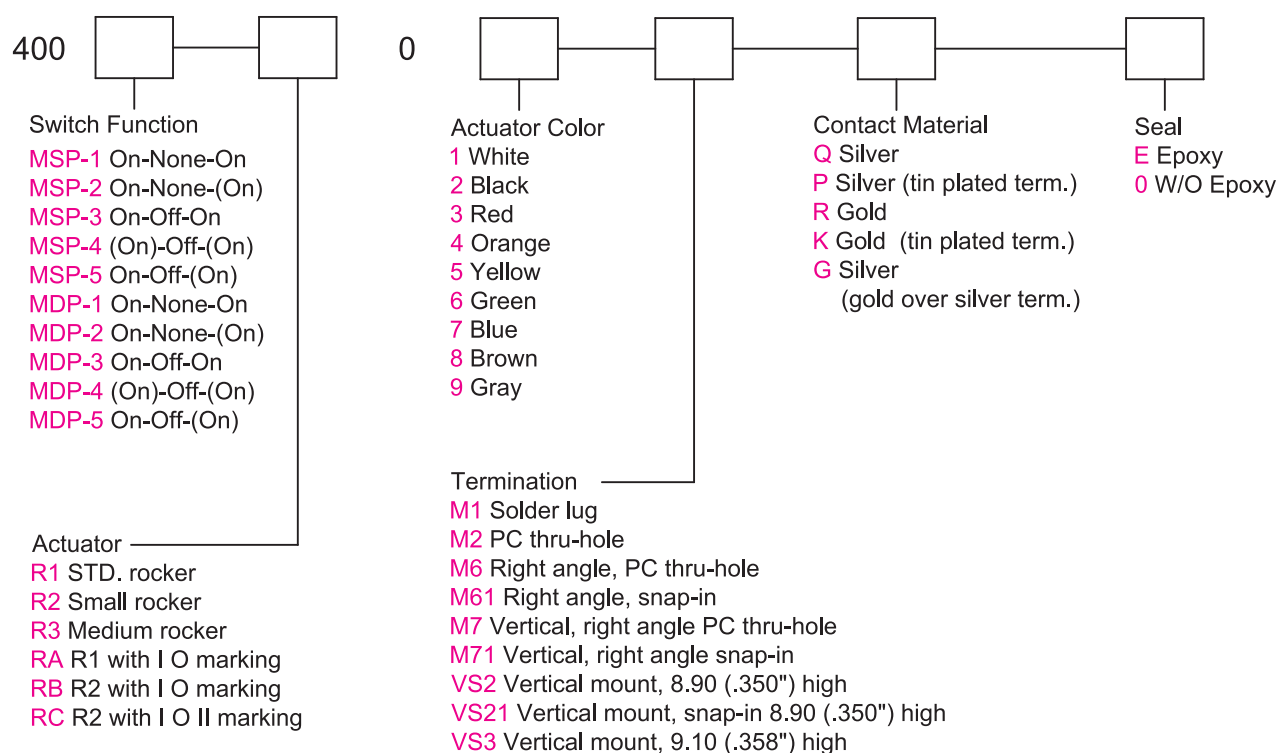
CONTACT RATING: Refer to "Contact Material Options" for more info.
 ELECTRICAL LIFE: 30,000 make-and-break cycles at full load.
 CONTACT RESISTANCE: 20mΩ max. initial @ 2-4 VDC
 100mA for both silver and gold plated contacts.
 INSULATION RESISTANCE: 1,000MΩ min.
 DIELECTRIC STRENGTH: 1,500 V RMS @ sea level.
 OPERATING TEMPERATURE: -30°C to +85°C.

MATERIALS:

CASE: Diallyl phthalate(DAP)(UL 94V-0).
 ROCKER: Nylon 6/6 (UL 94V-0).
 BUSHING: Zinc, nickel plated.
 HOUSING: Stainless Steel.
 SWITCH SUPPORT: Brass, tin plated.
 TERMINAL SEAL: Epoxy.

Specifications and Dimensions subject to change

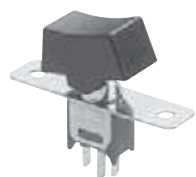
If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM

Series 400

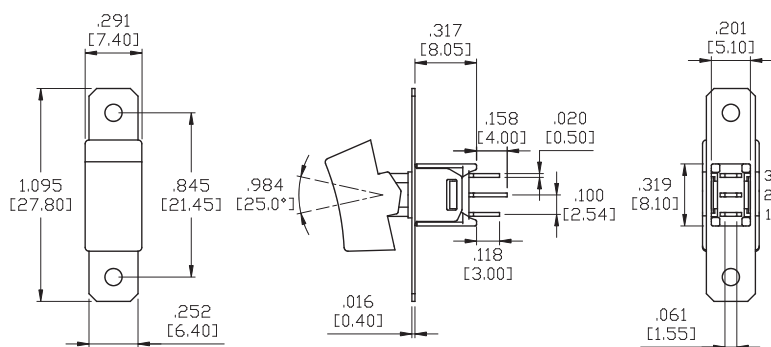
Sub-Miniature Rocker Switches

SPDT

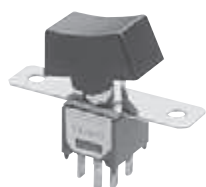


Model No.	Switching Position		
MSP-1	ON	NONE	ON
MSP-2	ON	NONE	(ON)
MSP-3	ON	OFF	ON
MSP-4	(ON)	OFF	(ON)
MSP-5	ON	OFF	(ON)
TERM. COMM.	2-3	OPEN	2-1

Schematic

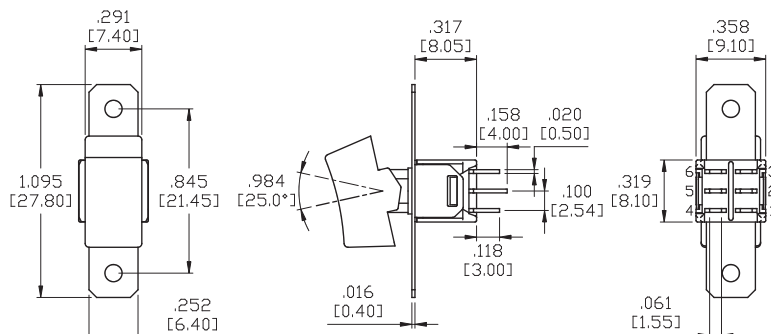
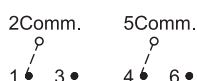


DPDT



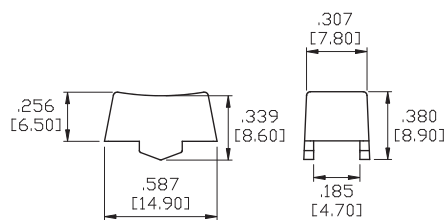
Model No.	Switching Position		
MDP-1	ON	NONE	ON
MDP-2	ON	NONE	(ON)
MDP-3	ON	OFF	ON
MDP-4	(ON)	OFF	(ON)
MDP-5	ON	OFF	(ON)
TERM. COMM.	2-3,5-6	OPEN	2-1,5-4

Schematic

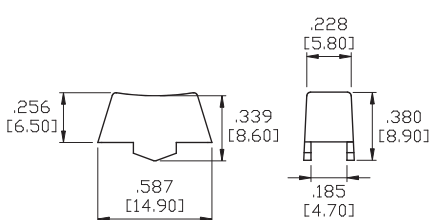


ACTUATOR OPTIONS

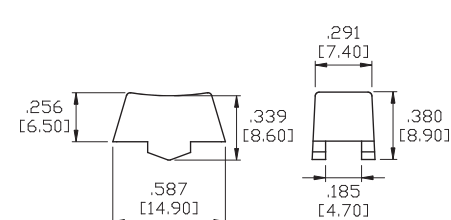
R1



R2

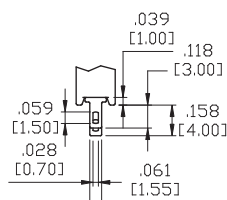


R3



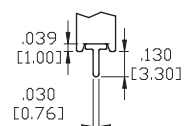
TERMINATION OPTIONS

M1 STD. SOLDER LUG

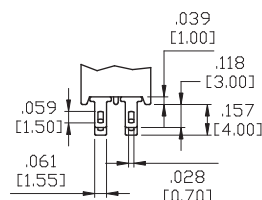


SP

M2 PC THRU-HOLE

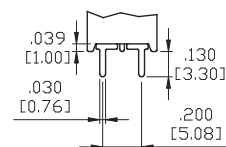


M1 STD. SOLDER LUG



DP

M2 PC THRU-HOLE

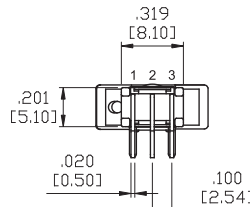
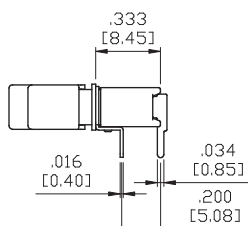
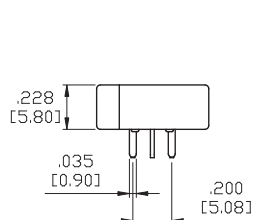


TERMINATION OPTIONS

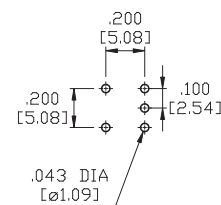
M6



SPDT



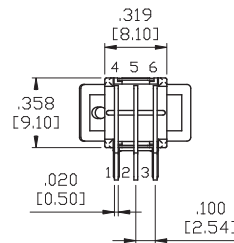
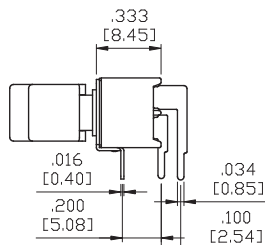
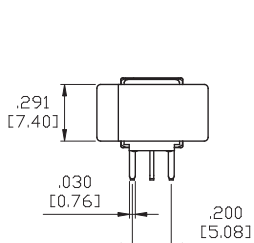
P.C.MOUNTING



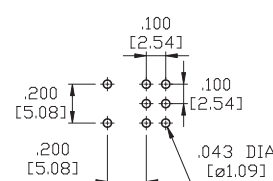
M6



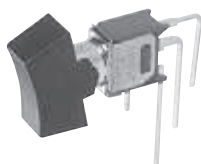
DPDT



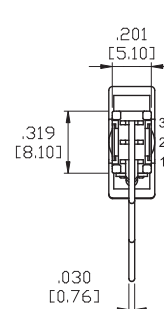
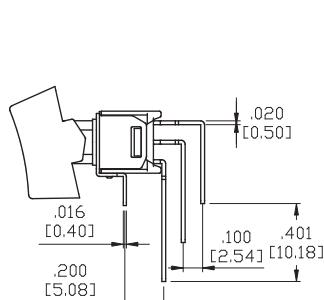
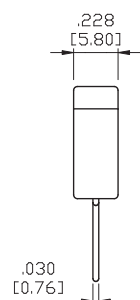
P.C.MOUNTING



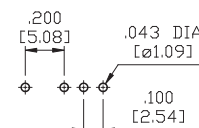
M7



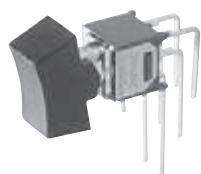
SPDT



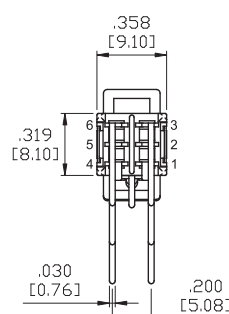
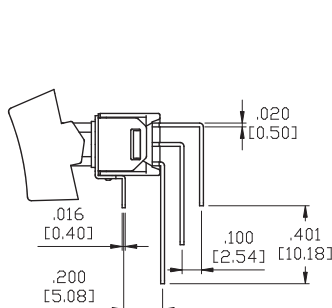
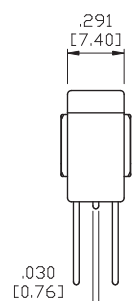
P.C.MOUNTING



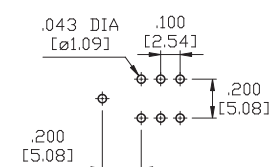
M7



DPDT



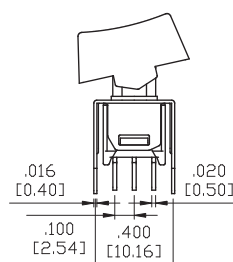
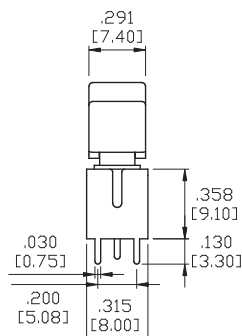
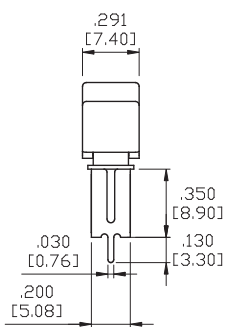
P.C.MOUNTING



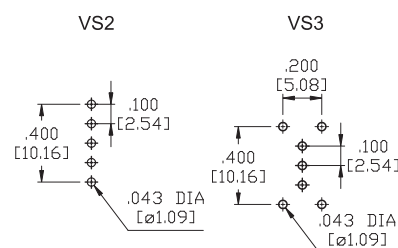
VS2-VS3



SPDT



P.C.MOUNTING



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

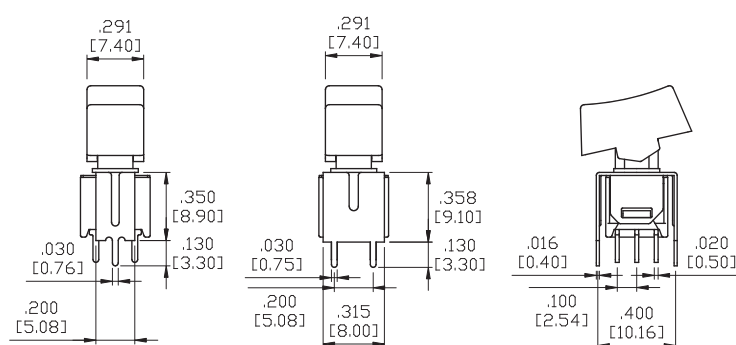
Miscellaneous

TERMINATION OPTIONS

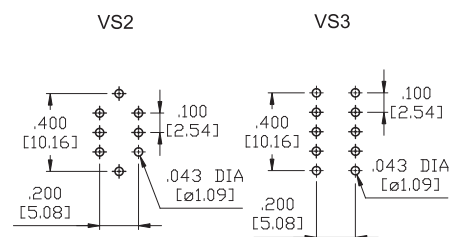
VS2-VS3



DPDT

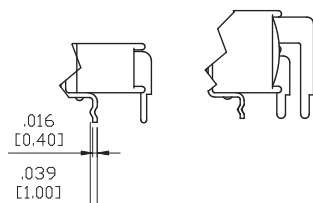


P.C.MOUNTING

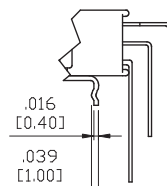


SNAP-IN TERMINATION OPTIONS

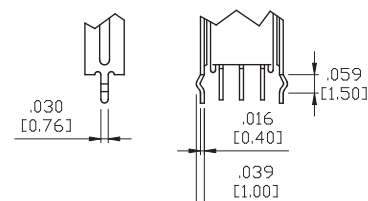
M61



M71



VS21



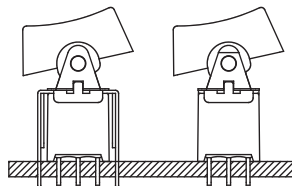
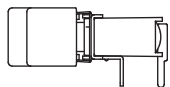
* PC Mounting for M61,M71,VS21 refer to M6,M7,VS2 respectively.

CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
Q	Silver ¹	Silver plated ¹	3Amps @ 125VAC or 28VDC 1.5Amps @ 250VAC	
P		Tin plated ^{5/7}		
R	Gold ²	Gold plated ⁴	0.4VA max @ 20V max (AC or DC)	
K		Tin plated ^{5/6}		
G	Silver ¹	Gold over silver ³	3Amps @ 125VAC or 28VDC 1.5Amps @ 250VAC	

1. Movable Contact / Terminals: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.
5. Outer Terminals: Copper alloy with pure tin plated.
6. Terminal Contact: Gold plated over nickel plated.
7. Terminal Contact: Palladium nickel alloy (or Silver) plated.

* P, K is not available with M1 terminal.



SPECIFICATIONS:

CONTACT RATING: Refer to "Contact Material Options" for more info.
 ELECTRICAL LIFE: 30,000 make-and-break cycles at full load.
 CONTACT RESISTANCE: 20mΩ max. initial @2-4VDC
 100mA, for both silver and gold plated contacts.
 INSULATION RESISTANCE: 1,000MΩ min.
 DIELECTRIC STRENGTH: 1500V RMS max. @ sea level.
 OPERATING TEMPERATURE: -30°C to +85°C.

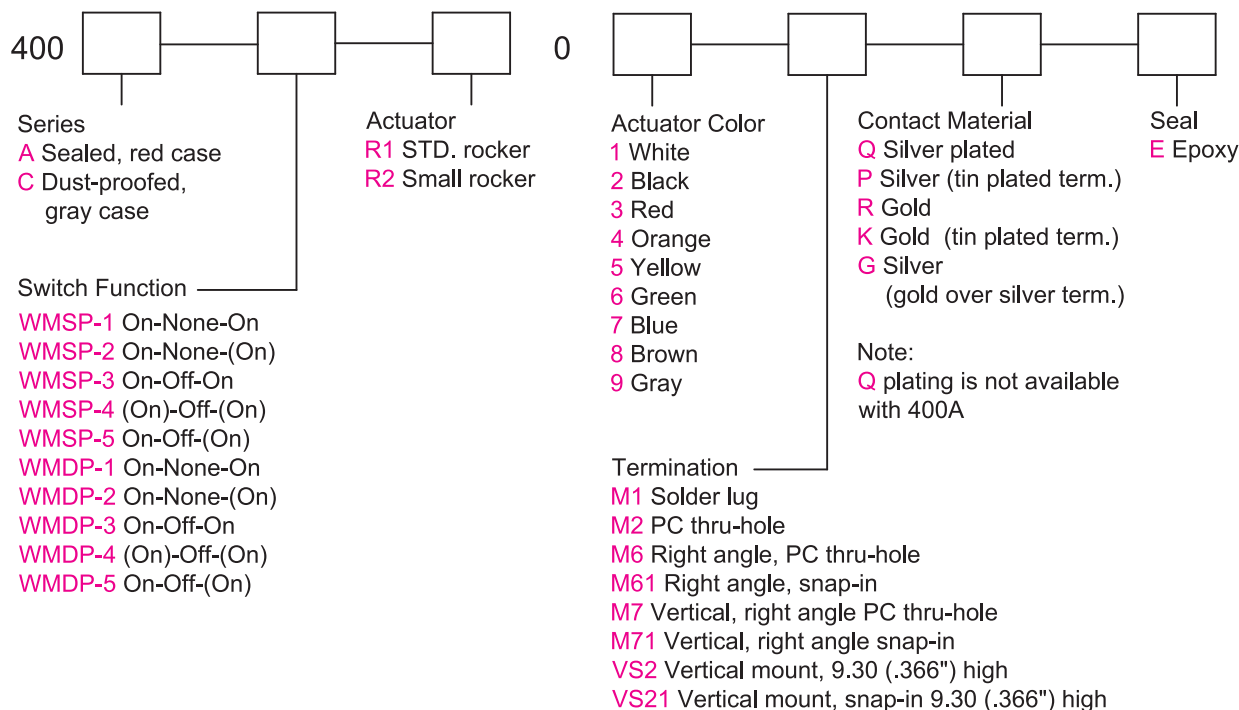
MATERIALS:

CASE & BUSHING: PA9T or FR52, flame retardant, heat stabilized (UL 94V-0).
 ROCKER: PA46 (UL 94V-0) or ABS.
 ACTUATOR: Brass, chrome plated, internal o-ring sealed (400A).
 ACTUATOR: Brass, chrome plated (400C).
 SWITCH SUPPORT: Brass, tin plated.
 TERMINAL SEAL: Epoxy.

Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



Series 400A/C

(Sealed) Sub-Miniature Rocker Switches

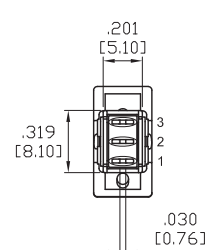
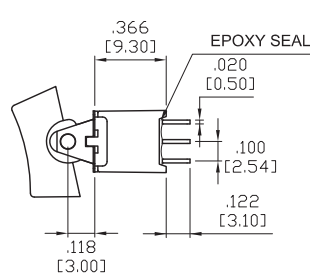
SPDT



Model No.	Switching Position		
WMSP-1	ON	NONE	ON
WMSP-2	ON	NONE	(ON)
WMSP-3	ON	OFF	ON
WMSP-4	(ON)	OFF	(ON)
WMSP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

Schematic

2Comm.



DPDT



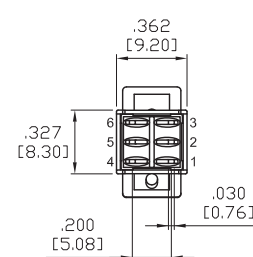
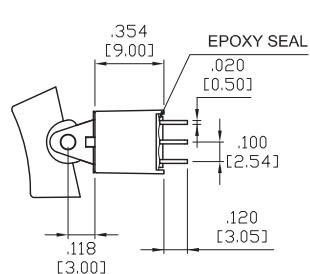
Model No.	Switching Position		
WMDP-1	ON	NONE	ON
WMDP-2	ON	NONE	(ON)
WMDP-3	ON	OFF	ON
WMDP-4	(ON)	OFF	(ON)
WMDP-5	ON	OFF	(ON)
Term. Comm.	2-3,5-6	OPEN	2-1,5-4

Schematic

2Comm.

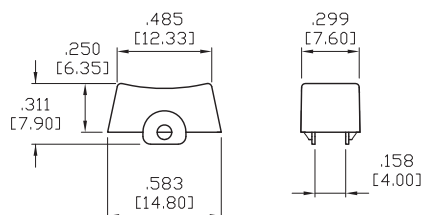


5Comm.

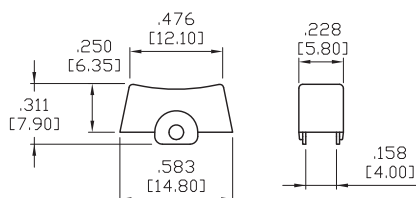


ACTUATOR OPTIONS

R1



R2

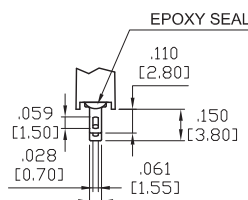


ACTUATOR COLORS	
1	White
2	Black (std.)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

TERMINATION OPTIONS

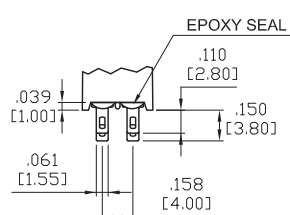
M1 STD. SOLDER LUG

SP



THK .020 [0.50]

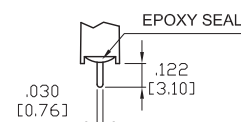
DP



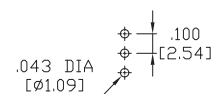
THK .020 [0.50]

M2 PC THRU-HOLE

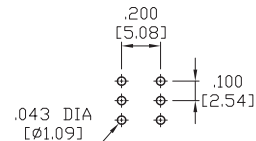
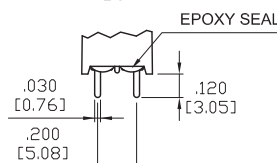
SP



P.C.MOUNTING



DP

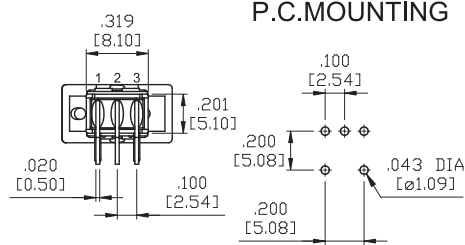
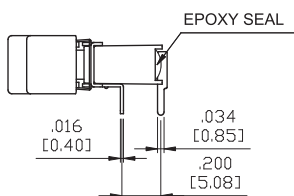
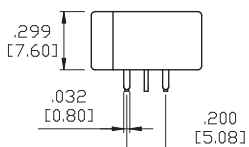


TERMINATION OPTIONS

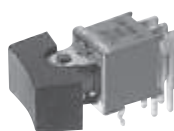
M6



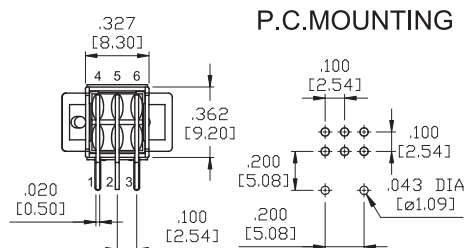
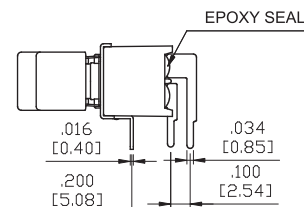
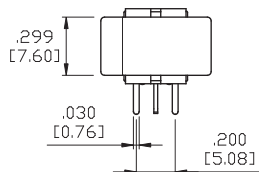
SPDT



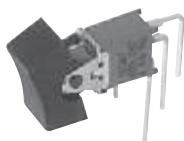
M6



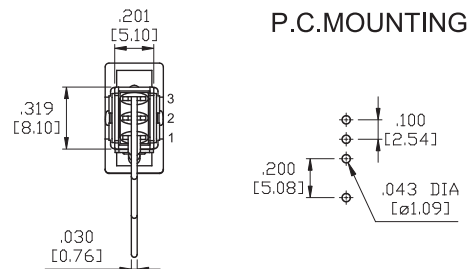
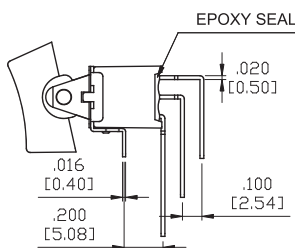
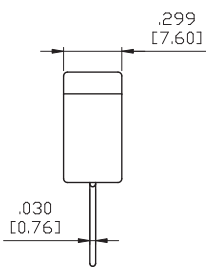
DPDT



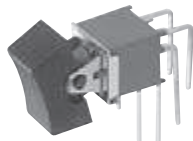
M7



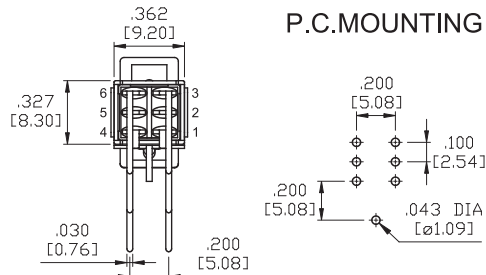
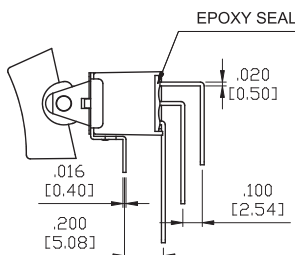
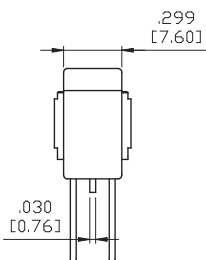
SPDT



M7



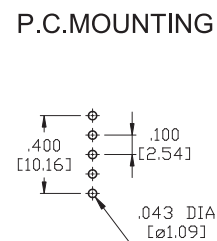
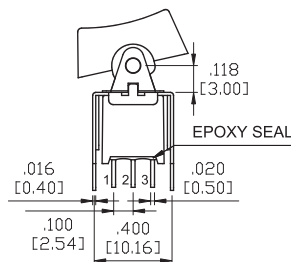
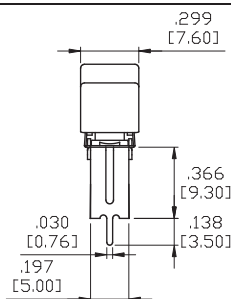
DPDT



VS2



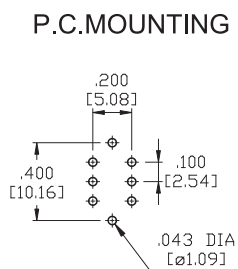
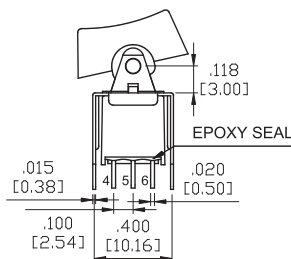
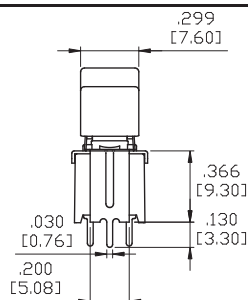
SPDT



VS2



DPDT



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

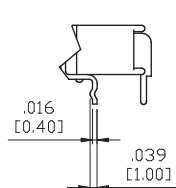
Tact

Touch Key

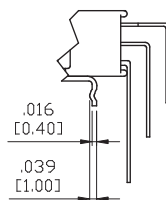
Miscellaneous

SNAP-IN TERMINATION OPTIONS

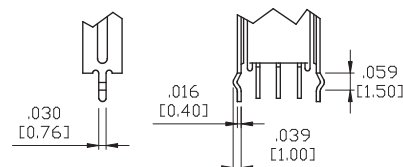
M61



M71



VS21



* PC Mounting for M61,M71,VS21 refer to M6,M7,VS2 respectively.

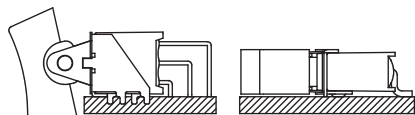
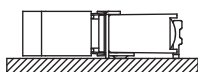
CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
G	Silver ¹	Gold over silver ³	3Amps @ 125VAC or 28VDC 1.5Amps @ 250VAC	IP67
P		Tin plated ⁵ ₇		
R	Gold ²	Gold plated ⁴	0.4VA max @ 20V max (AC or DC)	IP67
K		Tin plated ⁵ ₆		

* Standard G plating for sealed product.

1. Movable Contact: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.
5. Outer Terminals: Copper alloy with pure tin plated.
6. Terminal Contact: Gold plated over nickel plated.
7. Terminal Contact: Palladium nickel alloy (or Silver) plated.

* IP67 protection for series 400A only.



SPECIFICATIONS:

CONTACT RATING: Refer to "Contact Material Options" for more info.
 ELECTRICAL LIFE: 30,000 make-and-break cycles at full load.
 CONTACT RESISTANCE: 20mΩ max. initial @2-4 VDC
 100mA, for both silver and gold plated contacts.
 INSULATION RESISTANCE: 1,000MΩ min.
 DIELECTRIC STRENGTH: 1500V RMS max. @ sea level.
 OPERATING TEMPERATURE: -30°C to +85°C.

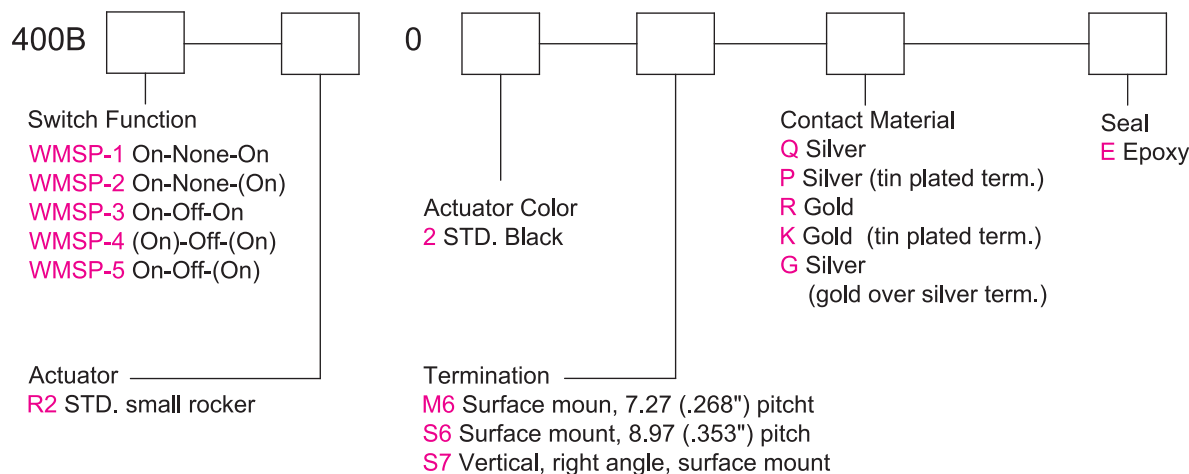
MATERIALS:

CASE & BUSHING: PA46 or FR52, flame retardant, heat stabilized (UL 94V-0).
 ROCKER: PA46 (UL 94V-0), black std.
 ACTUATOR: Brass, internal o-ring sealed (std).
 SWITCH SUPPORT: Brass (or Phosphor bronze), tin plated.
 TERMINAL SEAL: Epoxy.

Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



Series 400B

Sealed Surface Mount Rocker Switches

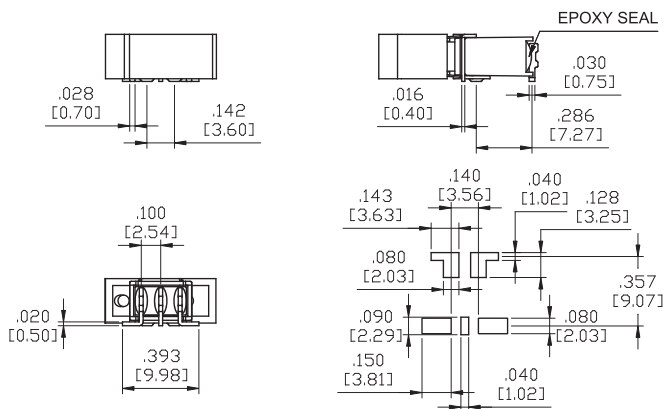
M6



Model No.	Switching Position		
WMSP-1	ON	NONE	ON
WMSP-2	ON	NONE	(ON)
WMSP-3	ON	OFF	ON
WMSP-4	(ON)	OFF	(ON)
WMSP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

Schematic 2Comm.
1 3•

SPDT



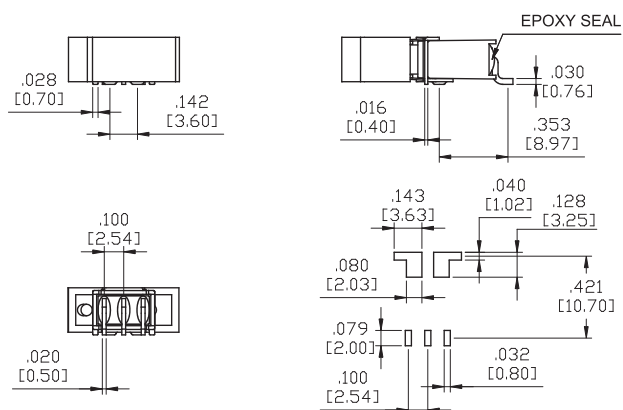
S6



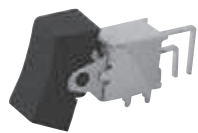
Model No.	Switching Position		
WMSP-1	ON	NONE	ON
WMSP-2	ON	NONE	(ON)
WMSP-3	ON	OFF	ON
WMSP-4	(ON)	OFF	(ON)
WMSP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

Schematic 2Comm.
1 3•

SPDT



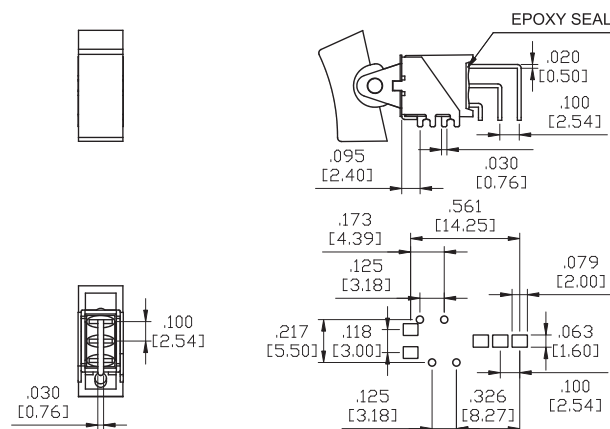
S7



Model No.	Switching Position		
WMSP-1	ON	NONE	ON
WMSP-2	ON	NONE	(ON)
WMSP-3	ON	OFF	ON
WMSP-4	(ON)	OFF	(ON)
WMSP-5	ON	OFF	(ON)
Term. Comm.	2-3	OPEN	2-1

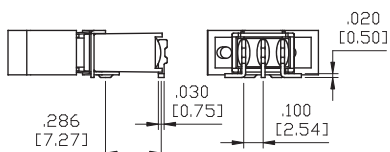
Schematic 2Comm.
1 3•

SPDT

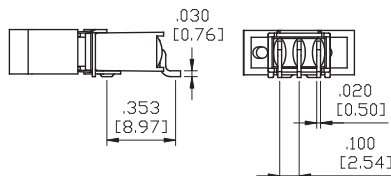


TERMINATION OPTIONS

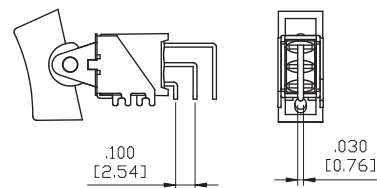
M6



S6

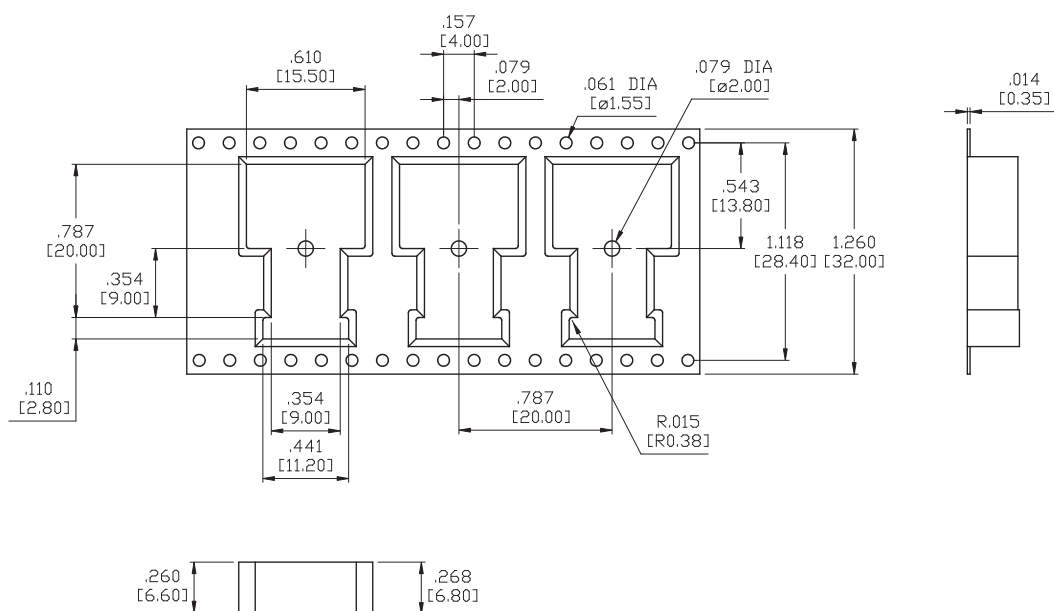


S7

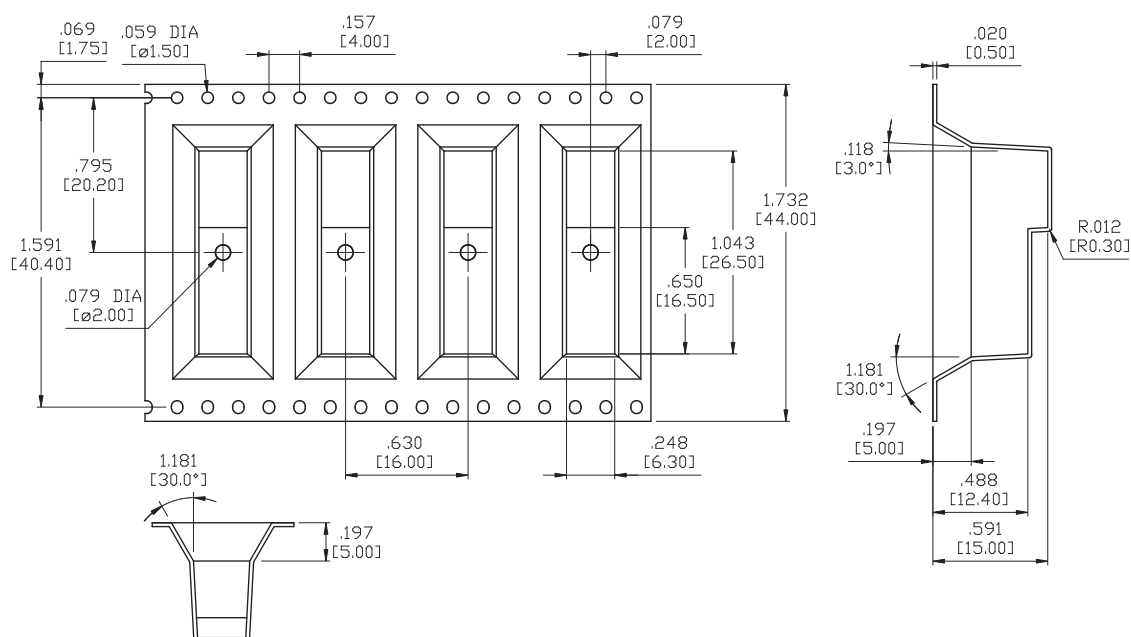


REEL TAPING

FOR M6,S6 ONLY



FOR S7 ONLY



REEL TAPING

REEL INFORMATION	
OUTSIDE DIAMETER	12.99 [330.00]
PILOT HOLE	.502 [13.00]
QUANTITY PER REEL	400

CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
Q	Silver ¹	Silver plated ¹	3Amps @ 125VAC or 28VDC 1.5Amps @ 250VAC	IP67
P		Tin plated ⁵ ₇		
R	Gold ²	Gold plated ⁴	0.4VA max @ 20V max (AC or DC)	IP67
K		Tin plated ⁵ ₆		
G	Silver ¹	Gold over silver ³	3Amps @ 125VAC or 28VDC 1.5Amps @ 250VAC	IP67

1. Movable Contact / Terminals: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.
5. Outer Terminals: Copper alloy with pure tin plated.
6. Terminal Contact: Gold plated over nickel plated.
7. Terminal Contact: Palladium nickel alloy (or Silver) plated.

CONTACT RATING: 20(8)A, 16(8)A 125~250VAC, 16A 30VDC.
ELECTRICAL LIFE: 30,000 make-and-break cycles at full load.
CONTACT RESISTANCE: 20m-ohms max. initial @2-4VDC
INSULATION RESISTANCE: 500VDC 100M-ohms min.
DIELECTRIC STRENGTH: 1,500VAC for 1 minute.
RESISTOR: 12V with 1K-Ohms, 24V with 2.2K-Ohms.
SOLDERING TEMPERATURE: Hand soldering 350°C for max. 3sec.
OPERATING TEMPERATURE: -20°C to +85°C

BASE: PBT UL94V-0.
ACTUATOR: PC (Hard surface) or TPR (Soft surface).
COVER: Nylon 66 UL94V-0.
ACTUATOR BLOCK: PC UL94V-0.
PIVOT PIN: PBT UL94V-0.
SPRING: Stainless steel.
CONTACT: Copper, silver rivet.
TERMINAL: Brass, tin plated.
SEAL: Silicone.
LAMP: LED.

If your preferred product configuration is not shown, please contact our sales representative for custom design.

MR

Switch Function

2P-1 On-Off

2P-8 On-(Off)

2P-9 (On)-Off

SP-1 On-None-On

SP-2 On-(On)

SP-3 On-Off-On

SP-4 (On)-Off-(On)

SP-5 On-Off-(On)

FP-1 On-Off

FP-8 On-(Off)

FP-9 (On)-Off

DP-1 On-None-On

DP-2 On-(On)

DP-3 On-Off-On

DP-4 (On)-Off-(On)

DP-5 On-Off-(On)

DP-6 On-On-On

Actuator

0 No Actuator

Sxx Soft surface

Hxx Hard surface

Actuator Color

0 None

2 Black

Legend Symbol

Position 1 & Position 2

See Page 78 for pattern code

LED Voltage

12V

24V

LED Position 1 & Position 2

0 None

R Red

G Green

B Blue

O Orange

W White

Terminal

M1 Solder lug

M3 Quick connect 6.35 (.250")

M31 Quick connect 4.74 (.187")

M4 Screw terminal

B3 8-pin quick connect 6.35 (.250") with barrier

F3 B3 without barrier

BA 10-pin quick connect 6.35 (.250") with barrier

FA BA without barrier

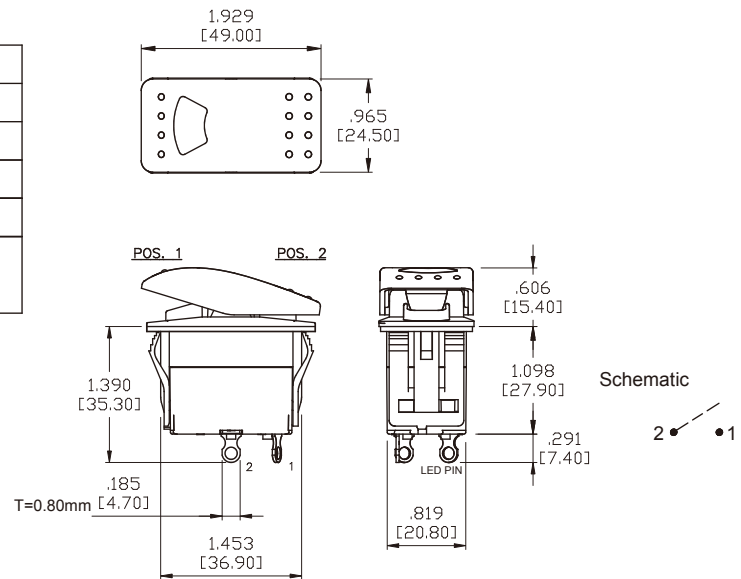
MR M 

Switch Mounting Panel

- 1 Central mounting
- 2 End mounting
- 3 Single mounting
- 4 Hole plug

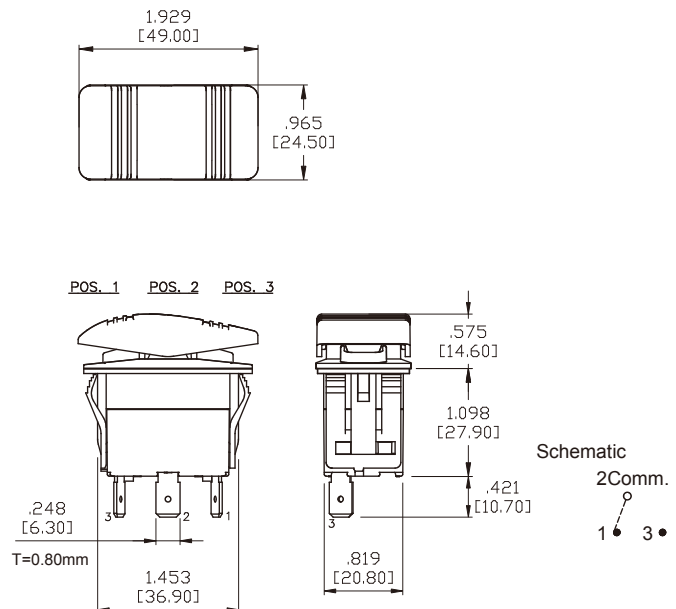
SPST

Model No.	Switching Position		
	POS. 1		POS. 2
2P-1	ON	NONE	OFF
2P-8	ON	NONE	(OFF)
2P-9	(ON)	NONE	OFF
Term. Comm.	2-1	N/A	OPEN



SPDT

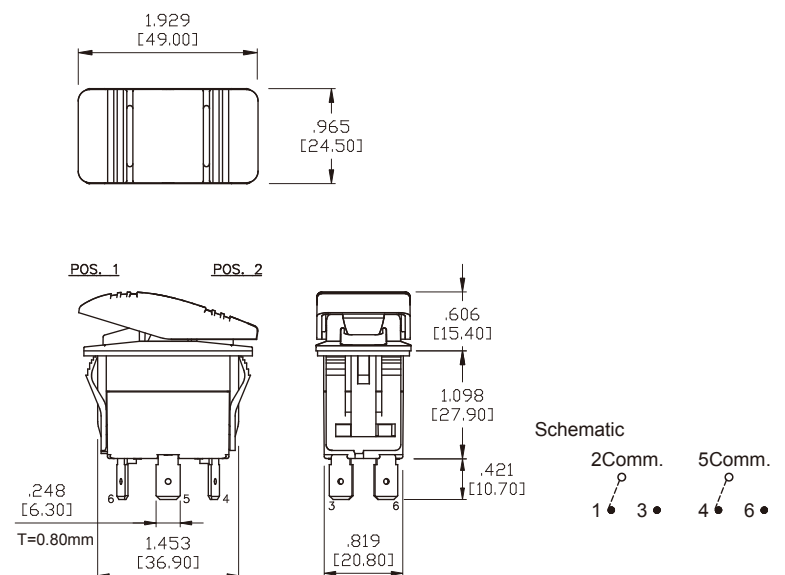
Model No.	Switching Position		
	POS. 1	POS. 2	POS. 3
SP-1	ON	NONE	ON
SP-2	ON	NONE	(ON)
SP-3	ON	OFF	ON
SP-4	(ON)	OFF	(ON)
SP-5	ON	OFF	(ON)
Term. Comm.	2-1	OPEN	2-3



DPDT

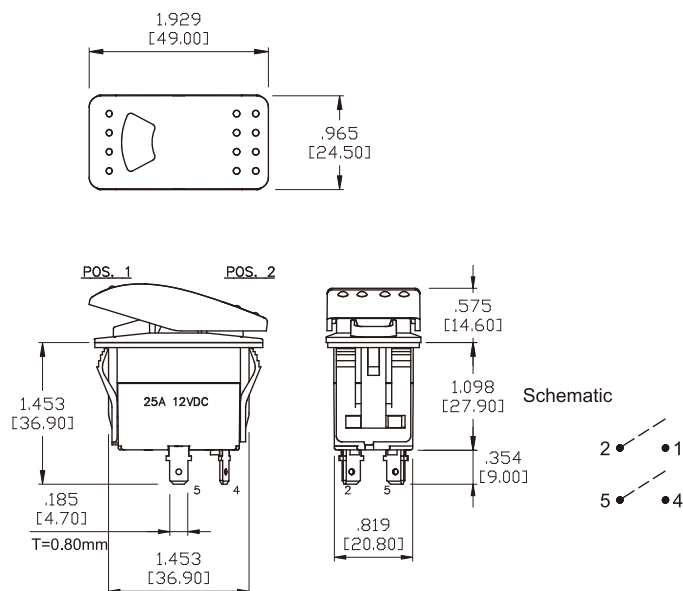
Model No.	Switching Position		
	POS. 1	POS. 2	POS. 3
DP-1	ON	NONE	ON
DP-2	ON	NONE	(ON)
DP-3	ON	OFF	ON
DP-4	(ON)	OFF	(ON)
DP-5	ON	OFF	(ON)
Term. Comm.	2-1,5-4	OPEN	2-3,5-6

Model No.	Switching Position		
	POS. 1	POS. 2	POS. 3
DP-6	ON	ON	ON
Term. Comm.	2-1,5-4	2-1,5-6	2-3,5-6

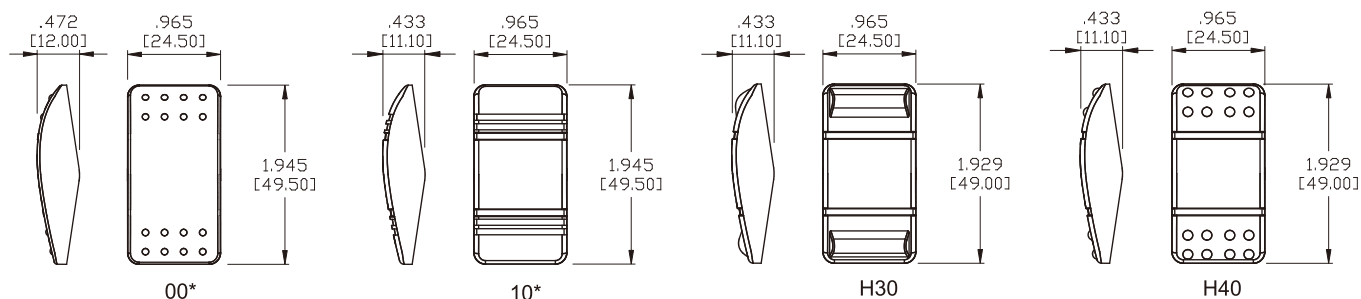


DPST

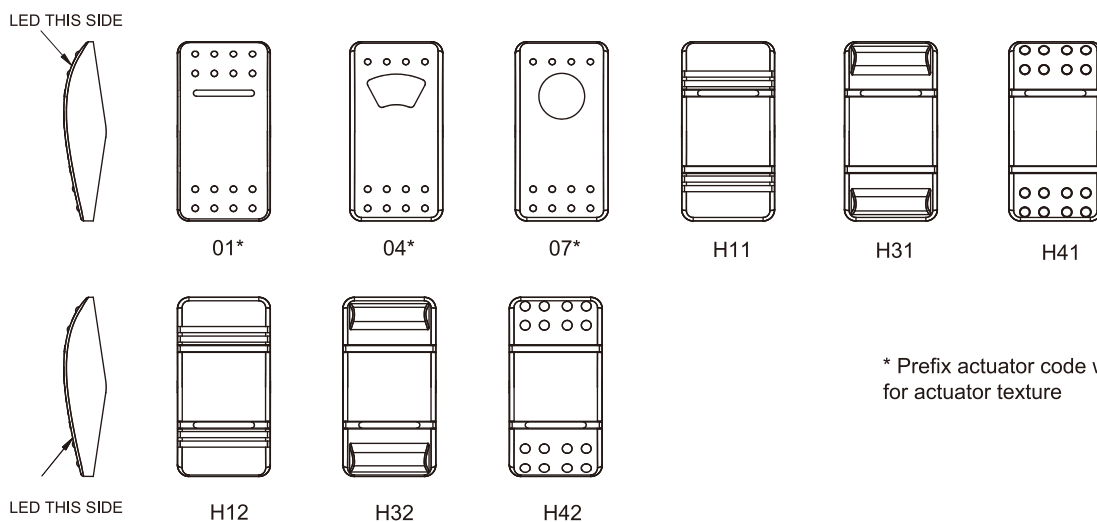
Model No.	Switching Position		
	POS. 1		POS. 2
FP-1	ON	NONE	OFF
FP-8	ON	NONE	(OFF)
FP-9	(ON)	NONE	OFF
Term. Comm.	2-1,5-4	N/A	OPEN



ACTUATOR OPTIONS

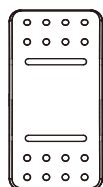


ACTUATOR WITH SINGLE LED OPTIONS



* Prefix actuator code with S (Soft) or H (Hard) for actuator texture

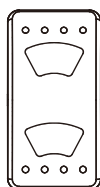
ACTUATOR WITH DUEL LED OPTIONS



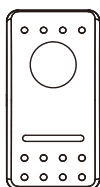
03*



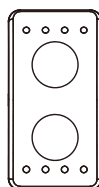
05*



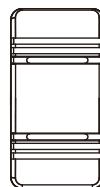
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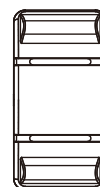
08*



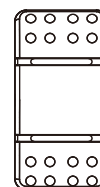
09*



H13



H33



H43

* Prefix the code with S (Soft) or H (Hard) for actuator texture

ACTUATOR COLOR OPTIONS

Code	Color
0	Without Actuator
2	Black

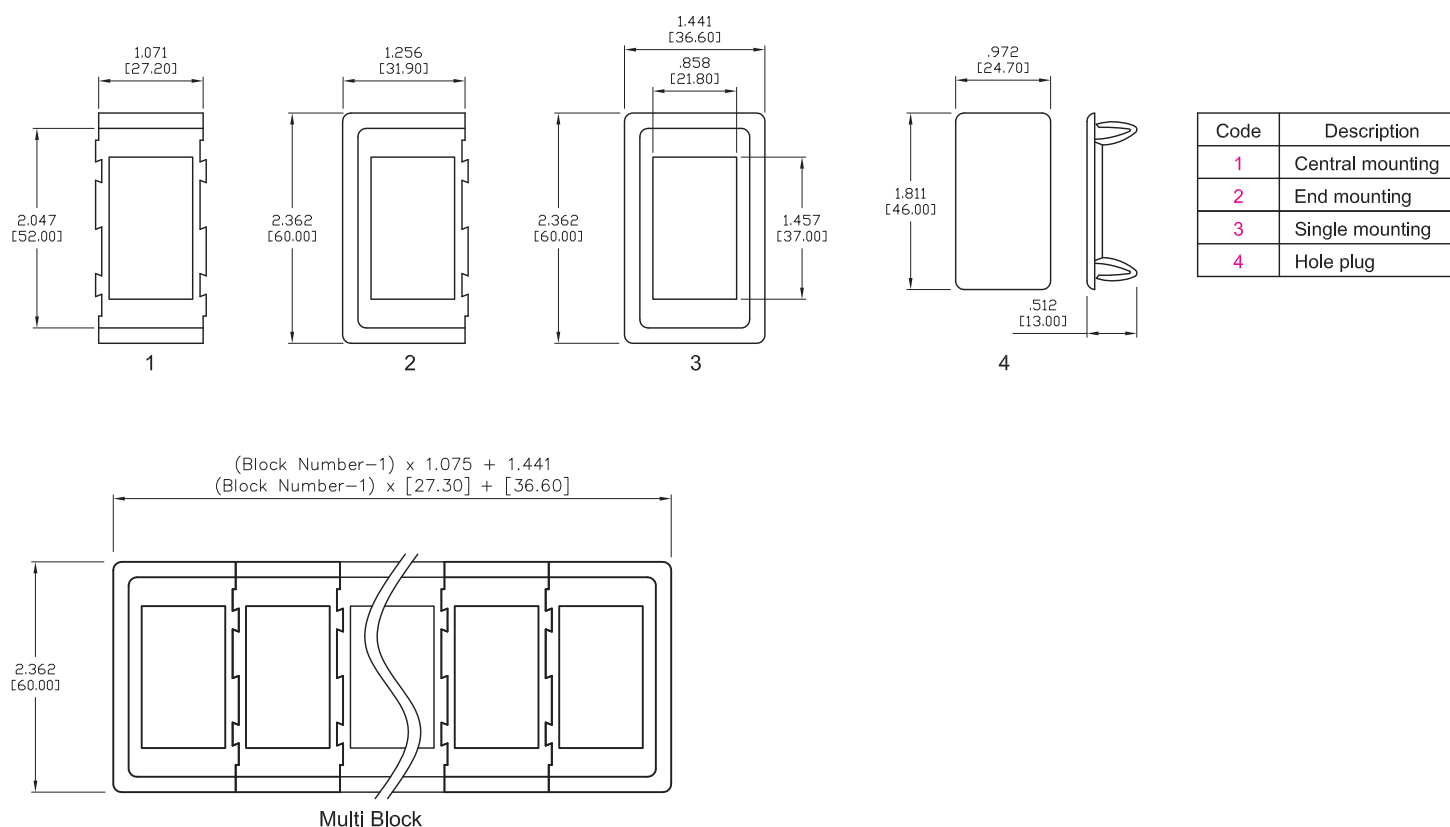
LED COLOR OPTIONS

Code	Color
R	Red
G	Green
B	Blue
O	Orange
W	White
0	No LED

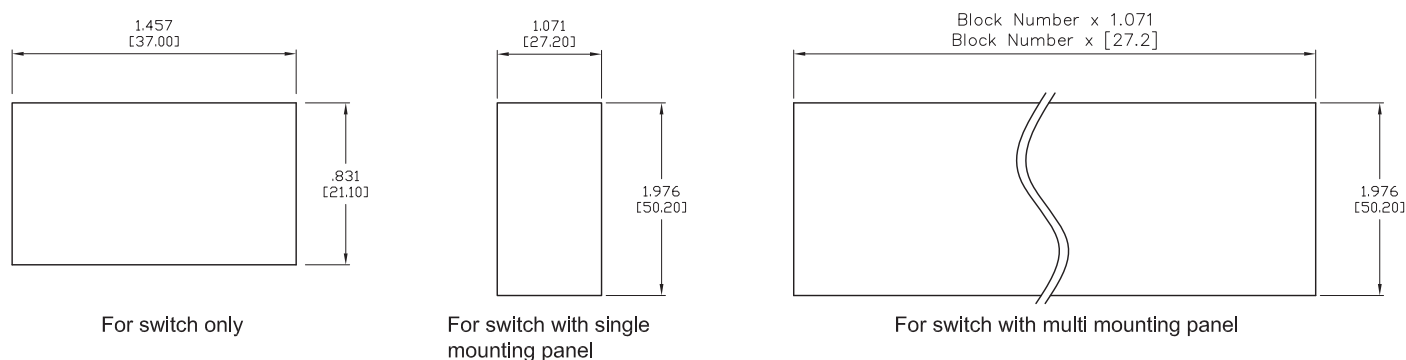
TERMINATION OPTIONS

M1 	M3 	M31 	M4
B3 8-pin With barrier BA 10-pin With barrier 	F3 8-pin W/O barrier FA 10-pin W/O barrier 		

SWITCH MOUNTING PANEL OPTIONS



PANEL CUTOUT



LEGEND & SYMBOL OPTIONS

					BILGE PUMP		UP	
001	011	021	031	041	051	061	071	081
					WATER PUMP		DOWN	
002	012	022	032	042	052	062	072	082
					ENG HATCH			
003	013	023	033	043	053	063	073	083
					HORN			
004	014	024	034	044	054	064	074	084
					BLOWER			
005	015	025	035	045	055	065	075	085
					NAV LTS			
006	016	026	036	046	056	066	076	086
	BATTERY PARALLEL				COURT LTS			
007	017	027	037	047	057	067	077	087
					PANEL LTS		HIGH	LIGHT
008	018	028	038	048	058	068	078	088
					ANCH LTS	WIPER	LOW	
009	019	029	039	049	059	069	079	089
					TRIM TAB	BILGE		
010	020	030	040	050	060	070	080	090

SPECIFICATIONS:

CONTACT RATING: 6A 250VAC 10A 125VAC.
ELECTRICAL LIFE: 10,000 Operations.
MECHANICAL LIFE: 50,000 Operations.
CONTACT RESISTANCE: <20m-ohms.
INSULATION RESISTANCE: >1,000M-ohms.
DIELECTRIC STRENGTHS: >1,500 volts 1min.
>3,000 Volts between poles.

MATERIALS:

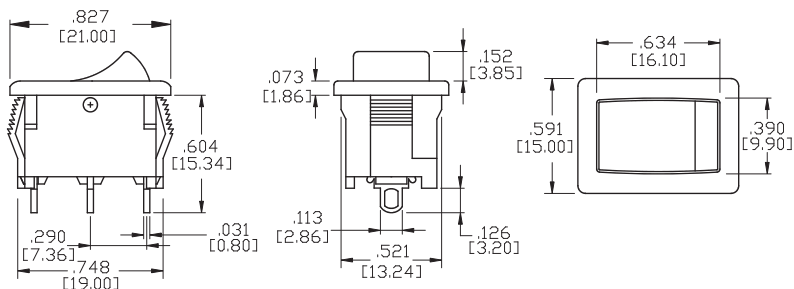
HOUSING: 66 Nylon(UL 94V-2).
ACTUATOR: 66 Nylon(UL 94V-2).
MOVABLE CONTACTS: Copper, silver plated.
STATIONARY CONTACTS: Copper, silver plated.
TERMINALS: Copper, silver plated.
CONTACT SPRING: Piano wire.

Specifications and Dimensions subject to change



SPST & SPDT

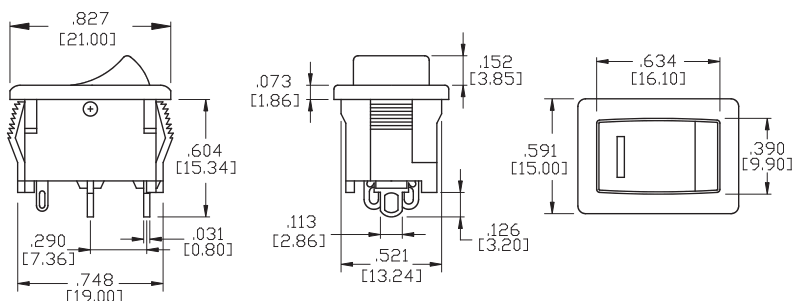
Model No.	Type
33A	ON-OFF
33B	ON-ON
33C	(ON)-OFF
33D	ON-(OFF)
33F	ON-OFF-ON
33H	(ON)-OFF-(ON)



SPST

Model No.	Type
R19-33E	ON-OFF W/LED
R19-33G	SPDT ON-(ON)

LED Color	
1	Red
2	Yellow
3	Green
4	Blue



MARK OPTIONS

A



B



C



D



E

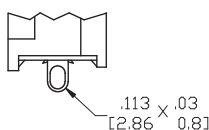


F

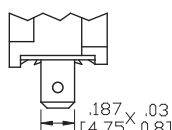


TERMINATION OPTIONS

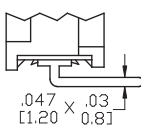
M1



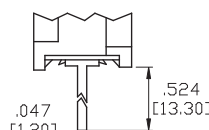
M2



M3



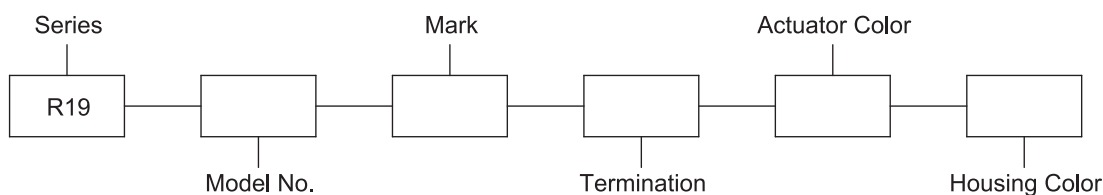
M4



COLOR OPTIONS

Actuator and Housing Colors	
1	White
2	Black (Std.)
3	Red
4	Charcoal Gray

HOW TO ORDER



SPECIFICATIONS:

CONTACT RATING: 5A 250VAC 10 125VAC.
ELECTRICAL LIFE: 10,000 Operations.
MECHANICAL LIFE: 50,000 Operations.
CONTACT RESISTANCE: <20m-ohms.
INSULATION RESISTANCE: >1,000M-ohms.
DIELECTRIC STRENGTHS: >1,500 volts 1min.
>3,000 volts between poles.

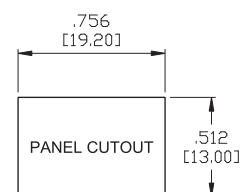
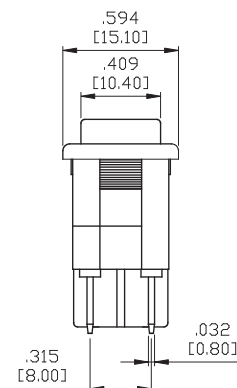
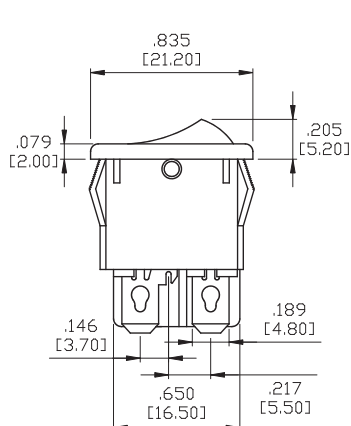
MATERIALS:

HOUSING: 66 Nylon(UL 94V-2).
ACTUATOR: 66 Nylon(UL 94V-2).
MOVABLE CONTACTS: Copper, silver plated.
STATIONARY CONTACTS: Copper, silver plated.
TERMINALS: Copper, silver plated.
CONTACT SPRING: Piano wire.

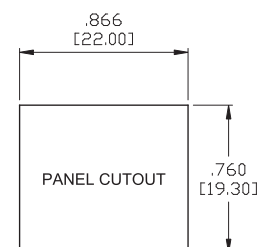
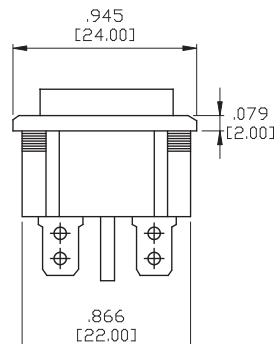
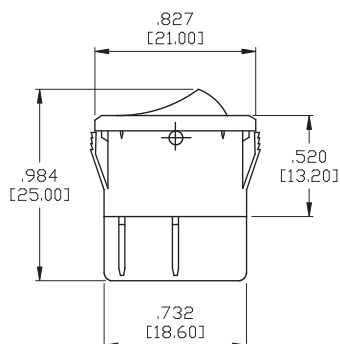
Specifications and Dimensions subject to change



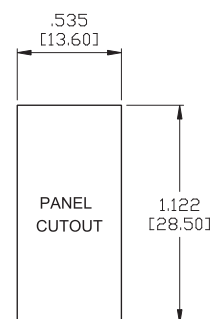
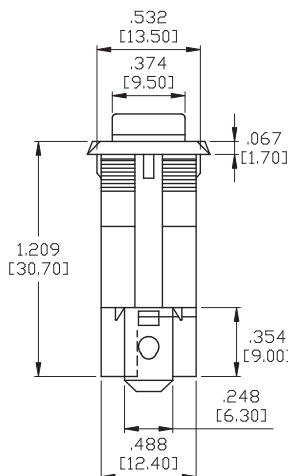
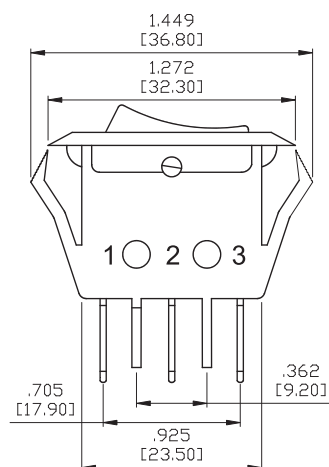
Model No.	Type
R19-001 SPST ILLUMINATED	ON-OFF
R19-20 DPST	ON-OFF
R19-201 DPST ILLUMINATED	ON-OFF
R19-00 SPST	ON-OFF



Model No.	Type
JS-606PA	ON-OFF
JS-606PB	ON-ON
JS-606PC	ON-OFF-ON
JS-606PD	(ON)-OFF



Model No.	Type
R902 SPST ILLUMINATED	ON-OFF
R902A SPST	ON-OFF
R902B SPST	ON-OFF-ON



SPECIFICATIONS:

CONTACT RATING: 10A 250VAC 16A 125VAC.
ELECTRICAL LIFE: 20,000 cycles.
MECHANICAL LIFE: 50,000 cycles.
CONTACT RESISTANCE: 50m-ohms.
INSULATION RESISTANCE: DC 500V 100M-ohms min.
DIELECTRIC STRENGTHS: AC 1,500V 1min.

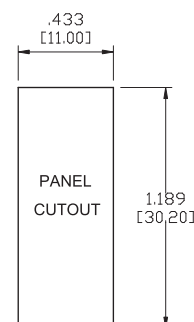
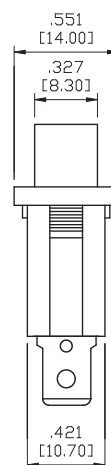
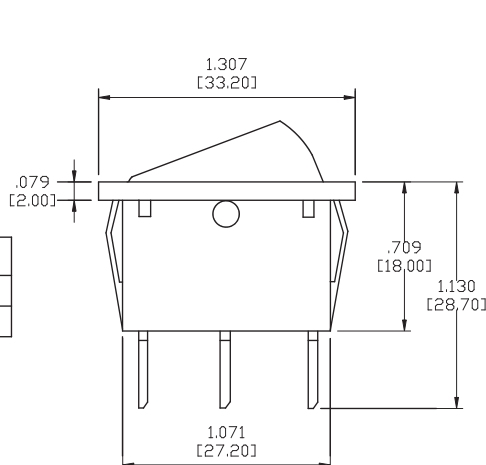
MATERIALS:

HOUSING: 66 Nylon(UL 94V-2).
ACTUATOR: 66 Nylon(UL 94V-2).
MOVABLE CONTACTS: Copper, silver plated.
STATIONARY CONTACTS: Copper, silver plated.
TERMINALS: Copper, silver plated.
CONTACT SPRING: Piano wire.

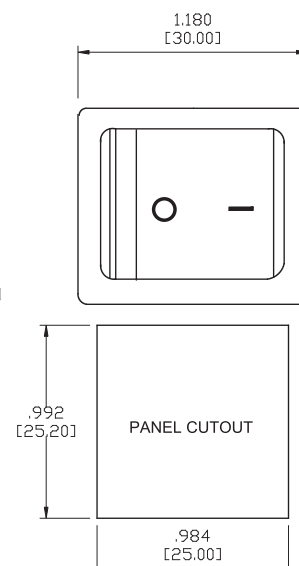
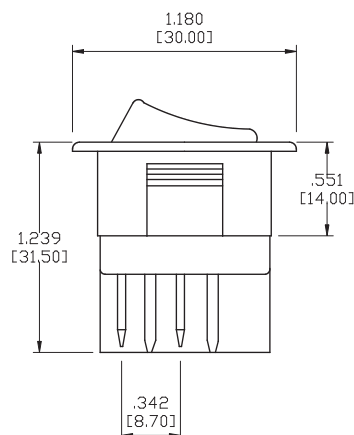
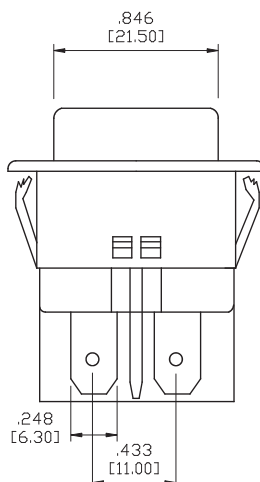
Specifications and Dimensions subject to change



Model No.	Type
R30-001	SPST ILLUMINATED
R30-00	SPST ON-OFF

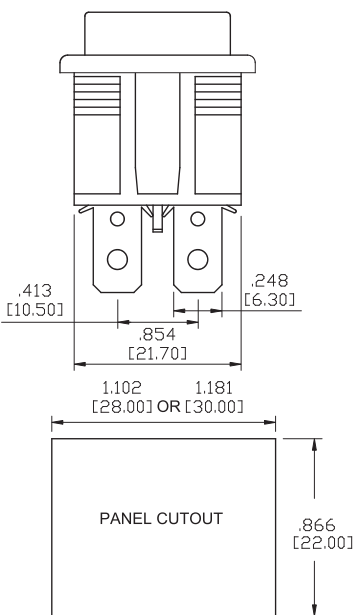
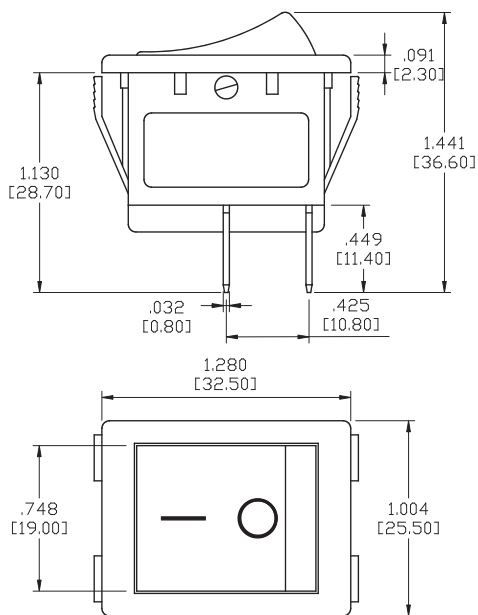


Model No.	Type
JS-618A	DPST ON-OFF
JS-618B	DPDT ON-ON



Series R19

Power Rocker Switches



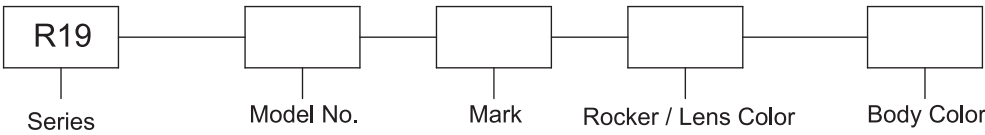
Model No.	Type
JS-608L	DPST ILLUMINATED
JS-608A	DPST ON-OFF
JS-608B	DPDT ON-ON
JS-608C	DPDT ON-OFF-ON

COLOR OPTIONS

Rocker / Lens Color			
1	White/Milky	6	Red
2	Black	7	Orange/Amber
3	Charcoal Gray	8	Green
4	Lt. Gray	9	Blue
5	-		

Body Color	
A	White
B	Black
C	Charcoal Gray
D	Light Gray

HOW TO ORDER



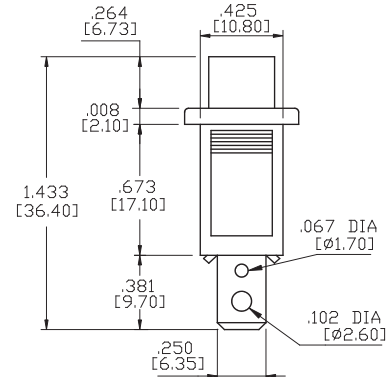
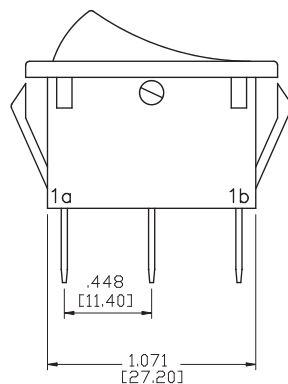
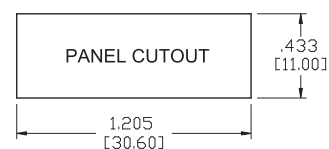
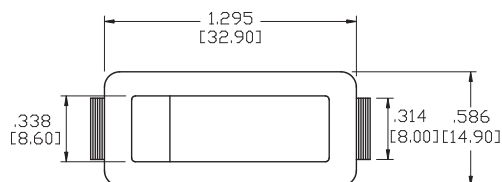
SPECIFICATIONS:

CONTACT RATING: 10A 250V AC 16A 125V AC.
ELECTRICAL LIFE: 20,000 cycles.
MECHANICAL LIFE: 50,000 cycles.
CONTACT RESISTANCE: 50m-ohms.
INSULATION RESISTANCE: DC 500V 100M-ohms min.
DIELECTRIC STRENGTHS: AC 1500V 1 min.

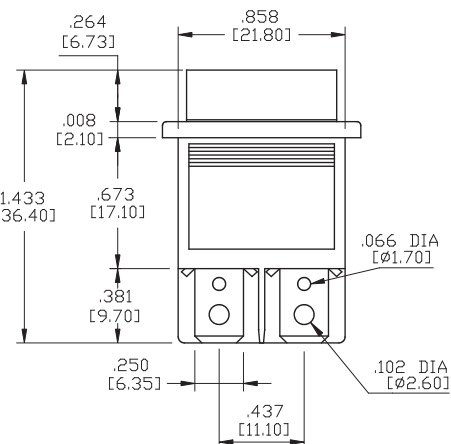
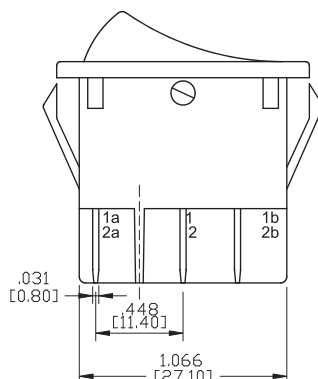
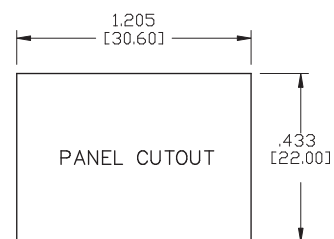
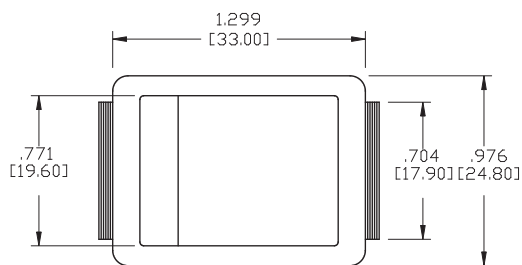
MATERIALS:

HOUSING: 66 Nylon(UL 94V-2).
ACTUATOR: 66 Nylon(UL 94V-2).
MOVABLE CONTACTS: Copper, silver plated.
STATIONARY CONTACTS: Copper, silver plated.
TERMINALS: Copper, silver plated.
CONTACT SPRING: Piano wire.

Specifications and Dimensions subject to change



Model No.	Type
R-41	SPST ON-OFF
R-42	SPST ILLUMINATED
R-43	SPDT ON-OFF-ON
R-44	SPDT ON-(ON)
R-45	SPDT ON-ON
R-46	SPDT (ON)-OFF-(ON)
R-47	SPDT ON-OFF-(ON)
R-48	SPST ON-(OFF)



Model No.	Type
R-51	DPST ON-OFF
R-52	DPDT ON-OFF-ON
R-53	ON-OFF ILLUMINATED
R-54	DPDT ON-ON
R-55	DPST (ON)-OFF
R-56	DPDT (ON)-OFF-(ON)

SPECIFICATIONS:

CONTACT RATING: 10A 125V AC 6A 250VAC.
ELECTRICAL LIFE: 20,000 cycles.
MECHANICAL LIFE: 50,000 cycles.
CONTACT RESISTANCE: 50m-ohms.
INSULATION RESISTANCE: DC 500V 100M-ohms min.
DIELECTRIC STRENGTHS: AC 1500V 1 min.

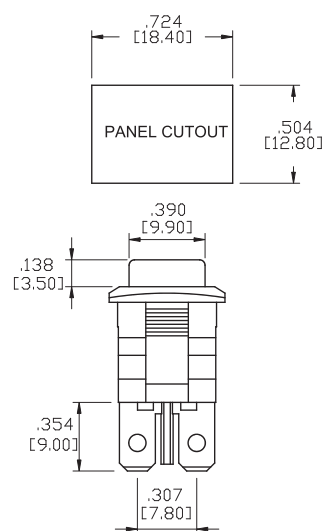
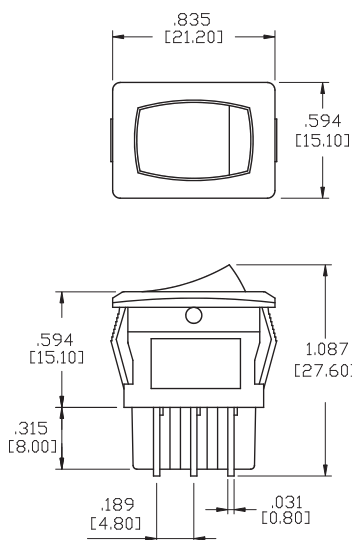
MATERIALS:

HOUSING: 66 Nylon(UL 94V-2).
ACTUATOR: 66 Nylon(UL 94V-2).
MOVABLE CONTACTS: Copper, silver plated.
STATIONARY CONTACTS: Copper, silver plated.
TERMINALS: Copper, silver plated.
CONTACT SPRING: Piano wire.

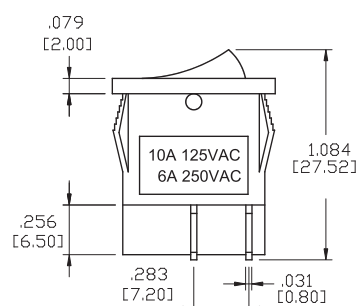
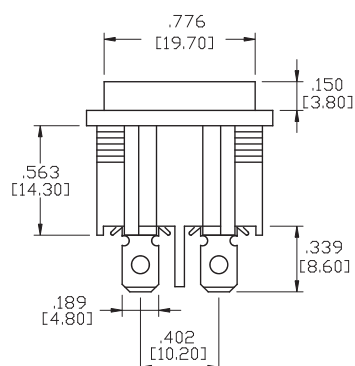
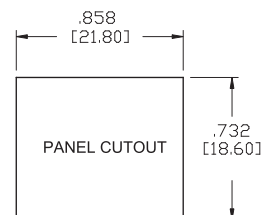
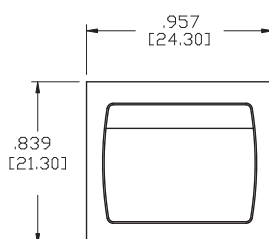
Specifications and Dimensions subject to change



Model No.	Type
R-66P A	DPST ON-OFF
R-66P B	DPDT ON-ON
R-66P C	DPDT ON-OFF-ON
R-66P D	DPDT (ON)-OFF-ON
R-66P E	DPDT (ON)-OFF-(ON)



Model No.	Type
R-33A	DPST ON-OFF
R-33B	DPST ON-OFF ILLUMINATED
R-33C	DPDT ON-ON
R-33D	DPDT ON-OFF-ON
R-33E	DPDT (ON)-OFF-(ON)



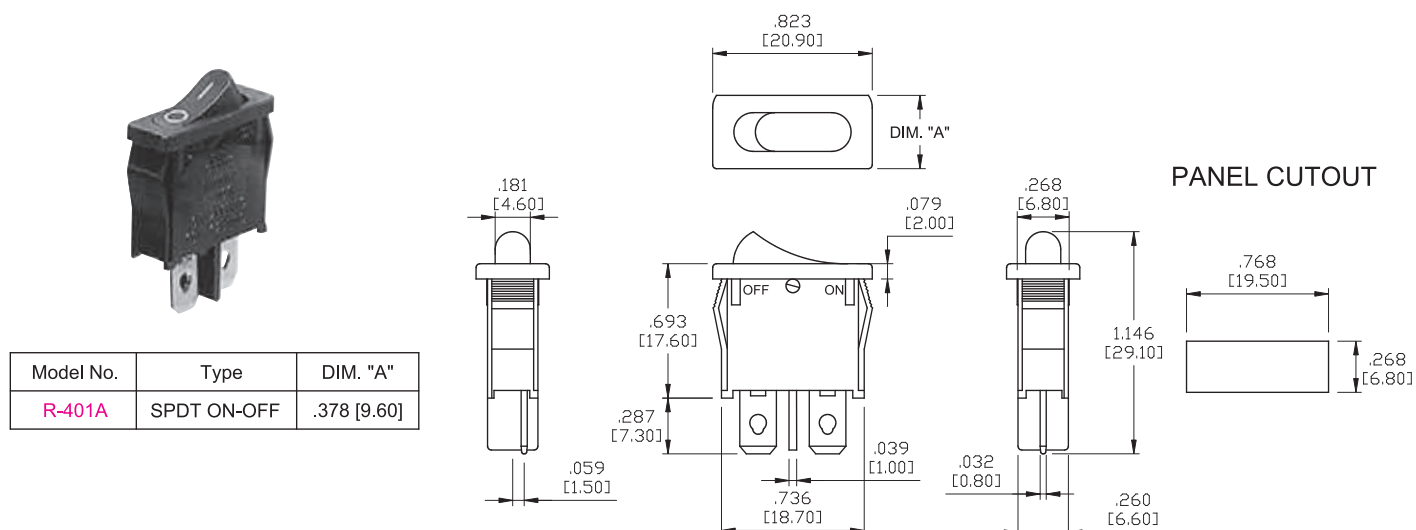
SPECIFICATIONS:

RATING: 10A 125VAC, 6A 250VAC.
 CONTACT RESISTANCE: DC2V-4V/0.1A less than 20m-ohms.
 INSULATION RESISTANCE: DC 500V more than 500M-ohms.
 LIFE ELECTRICAL (AC):a. RESISTANCE 10,000 cycles.
 b. INDUCTIVE 6,000 cycles.
 DIELECTRIC STRENGTH: 1000VAC min(Between Terminals)
 3000VAC miniutes (between terminal and contact).

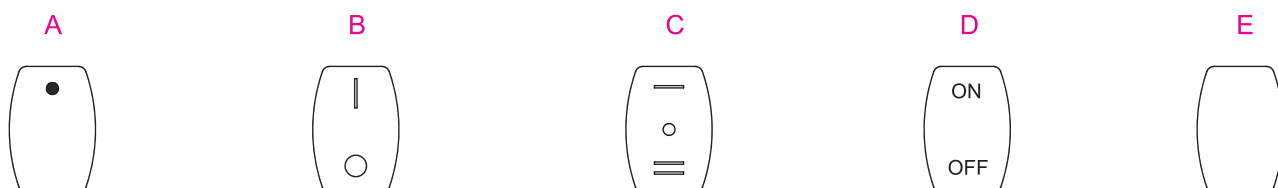
MATERIALS:

ROCKER: Nylon 6/6, black std.
 HOUSING: Nylon 6/6, black std.
 MOVABLE ARM: Phosphor bronze.
 CONTACT: Silver alloy.
 TERMINALS: Brass, silver plated.

Specifications and Dimensions subject to change



MARK OPTIONS

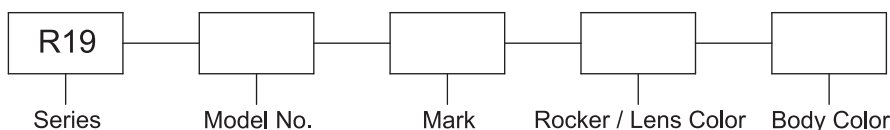


COLOR OPTIONS

Rocker / Lens Color			
1	White/Milky	6	Red
2	Black	7	-
3	Gray	8	Green
4	-	9	-
5	Yellow		

Body Color	
A	White
B	Black
C	Gray
D	-

HOW TO ORDER



SPECIFICATIONS:

CONTACT RATING: 10A 125V AC 6A 250VAC.
ELECTRICAL LIFE: 20,000 cycles.
MECHANICAL LIFE: 50,000 cycles.
CONTACT RESISTANCE: 50m-ohms.
INSULATION RESISTANCE: DC 500V 100M-ohms min.
DIELECTRIC STRENGTHS: AC 1500V 1 min.

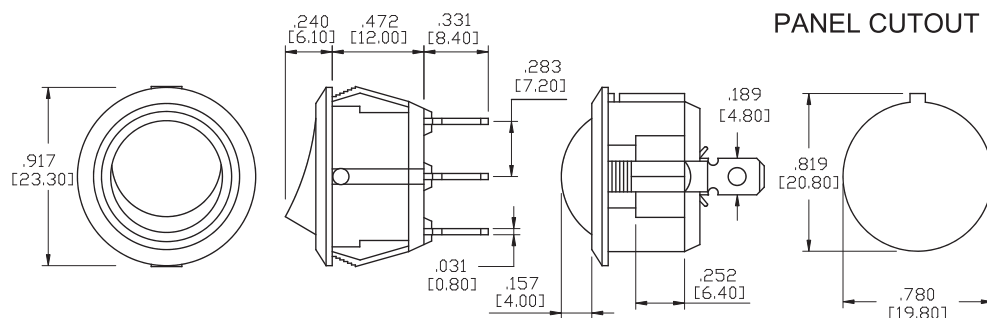
MATERIALS:

HOUSING: 66 Nylon(UL 94V-2).
ACTUATOR: 66 Nylon(UL 94V-2).
MOVABLE CONTACTS: Copper, silver plated.
STATIONARY CONTACTS: Copper, silver plated.
TERMINALS: Copper, silver plated.
CONTACT SPRING: Piano wire.

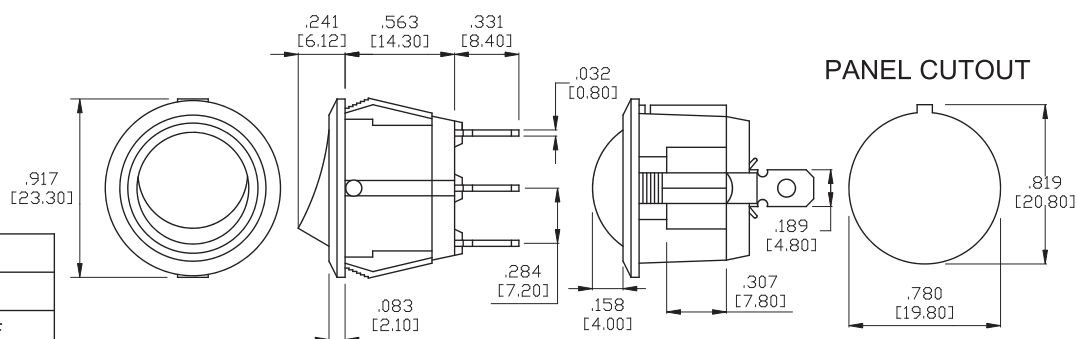
Specifications and Dimensions subject to change



Model No.	Type
R-208A	SPST ON-OFF
R-208B	SPST ON-OFF ILLUMINATED
R-208C	SPDT ON-ON
R-208E	SPST ON-(OFF)



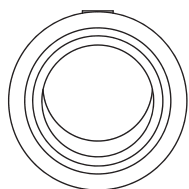
Model No.	Type
R-112	SPDT ON-ON
R-112A	SPST ON-OFF
R-112B	SPST ON-OFF (ILLUMINATED)
R-112C	SPDT ON-OFF-ON
R-112L	SPST ON-OFF (ILLUMINATED)



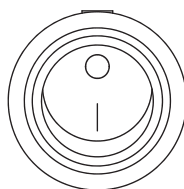
* With T3 Actuator

ACTUATOR OPTIONS

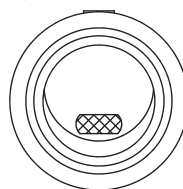
T1



T2

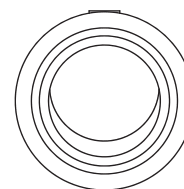


T3



ILLUMINATED

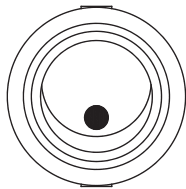
T4



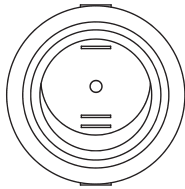
ILLUMINATED

ACTUATOR OPTIONS

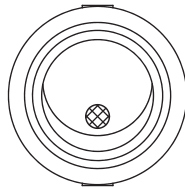
T5



T6

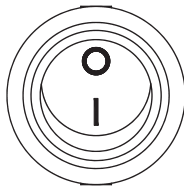


T7



ILLUMINATED

T8



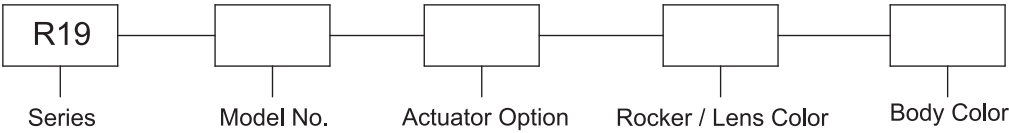
ILLUMINATED

COLOR OPTIONS

Rocker / Lens Color			
1	White/Milky	6	Red
2	Black	7	Orange/Amber
3	Charcoal Gray	8	Green
4	Light Gray	9	Blue
5	-		

Body Color	
A	White
B	Black
C	Charcoal Gray
D	Light Gray

HOW TO ORDER



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

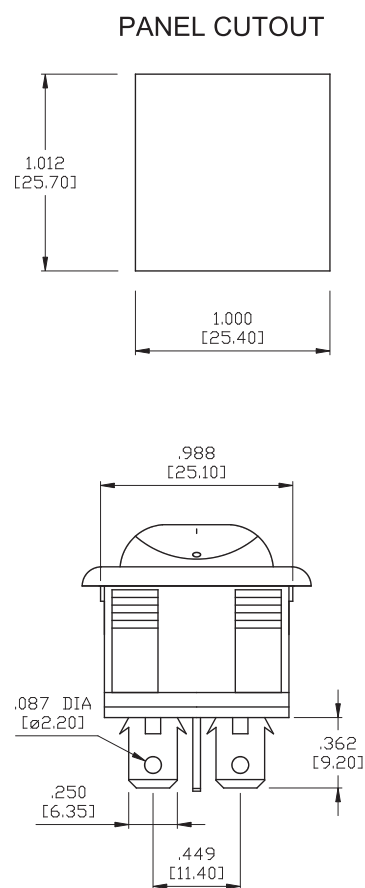
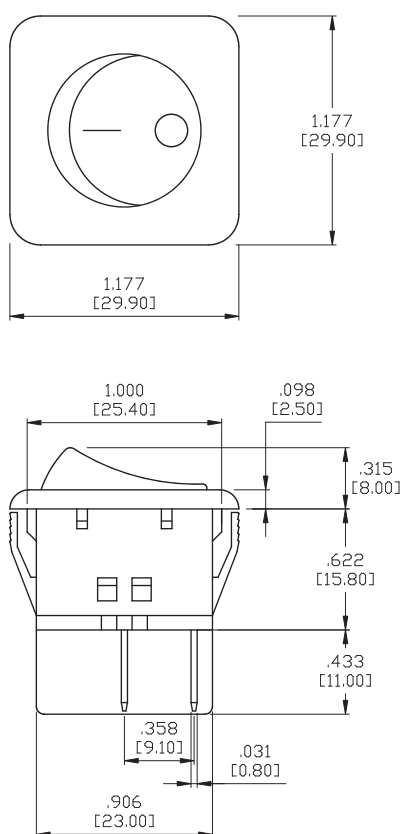
Touch Key

Miscellaneous

SPECIFICATIONS:

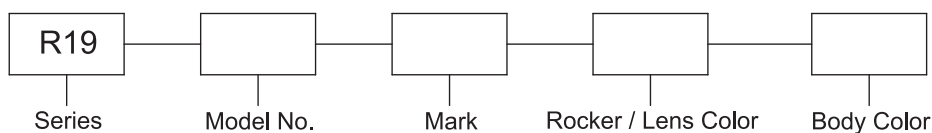
CONTACT RATING: 10A 250V AC 15A 125VAC.
 ELECTRICAL LIFE: 10,000 cycles.
 MECHANICAL LIFE: 10,000 cycles.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: DC 500V 500M-ohms min.
 DIELECTRIC STRENGTHS: AC 2,000V 1 min.
 OPERATING FORCE: 700±200gf.

Specifications and Dimensions subject to change



Model No.	Type
R-22A	DPST ON-OFF
R-22B	DPST ON-OFF (ILLUMINATED)
R-22C	DPDT ON-ON
R-22D	DPDT ON-ON (ILLUMINATED)

HOW TO ORDER



For Mark, Rocker / Lens Color, please refer to page 85 & 87.

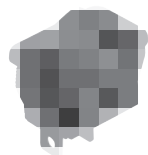
SPECIFICATIONS:

CONTACT RATING: 3A 250VAC 6A 125VAC.
ELECTRICAL LIFE: 10,000 Operations.
MECHANICAL LIFE: 10,000 Operations min.
CONTACT RESISTANCE: <20m-ohms.
INSULATION RESISTANCE: 500VDC, 100M-ohms min.
DIELECTRIC STRENGTHS: 1,000VAC for 1minute.

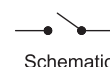
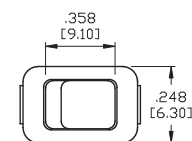
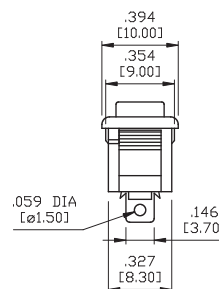
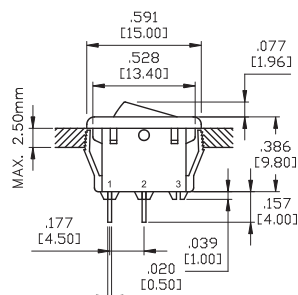
MATERIALS:

BODY: Nylon 66 (UL 94V-2).
ACTUATOR: Nylon 66 (UL 94V-2).
MOVABLE CONTACTS: Copper, silver plated.
SPRING: Piano wire.
TERMINALS: Copper, silver plated.

Specifications and Dimensions subject to change

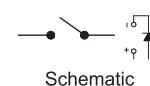
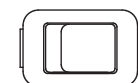
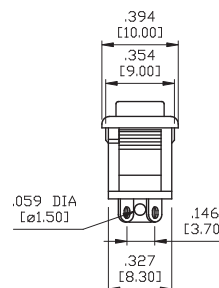
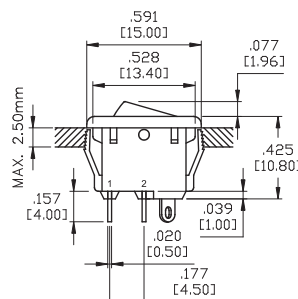


Model No.	Type
33A	ON-OFF
33B	ON-ON
33C	(ON)-OFF



Model No.	Type
33E	ON-OFF W/LED

LED Color	
6	Red
7	Orange
8	Green



MARK OPTIONS



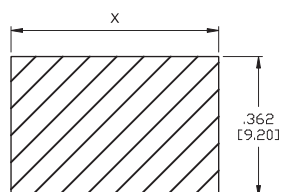
Illuminated



Illuminated

PANEL MOUNTING

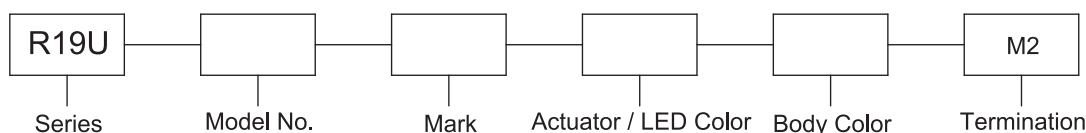
	X Cutout Dimension	Panel Thickness
A	.535 [13.60] +0.00 -0.10	0.75~1.25
B	.539 [13.70] +0.00 -0.10	1.25~2.00
C	.543 [13.80] +0.00 -0.10	2.00~2.50



COLOR OPTIONS

Actuator Color		Body Color	
1	White	A	White
2	Black (Std.)	B	Black
3	Gray	C	Gray
6	Red		

HOW TO ORDER



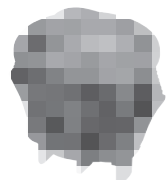
SPECIFICATIONS:

CONTACT RATING: 3A 250VAC 6A 125VAC.
ELECTRICAL LIFE: 10,000 Operations.
MECHANICAL LIFE: 10,000 Operations min.
CONTACT RESISTANCE: <20m-ohms.
INSULATION RESISTANCE: 500VDC, 100M-ohms min.
DIELECTRIC STRENGTHS: 1,000VAC for 1minute.

MATERIALS:

BODY: Nylon 66 (UL 94V-2).
ACTUATOR: Nylon 66 (UL 94V-2).
MOVABLE CONTACTS: Copper, silver plated.
SPRING: Piano wire.
TERMINALS: Copper, silver plated.

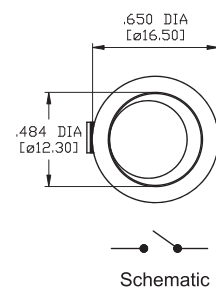
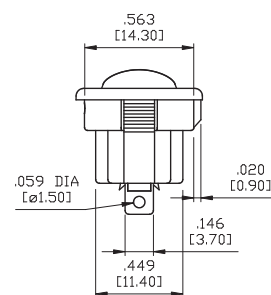
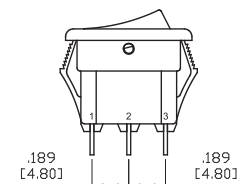
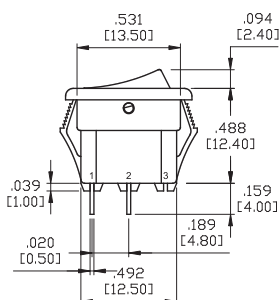
Specifications and Dimensions subject to change



Model No.	Type
R112	ON-ON
R112A	ON-OFF
R112B	ON-OFF W/LED

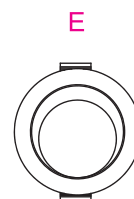
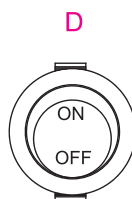
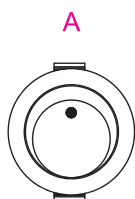
Lamp Color	
6	Red
7	Orange
8	Green

* R112B Only

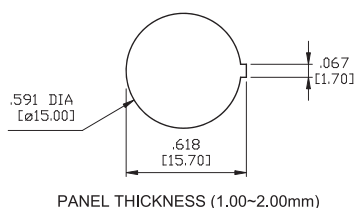


Schematic with LED

MARK OPTIONS



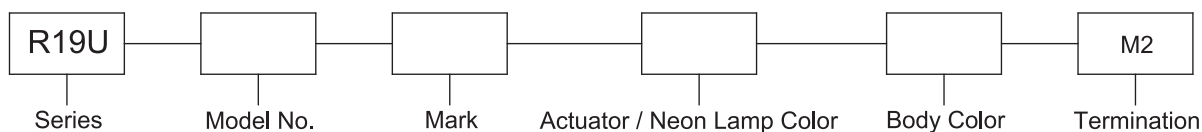
PANEL MOUNTING



COLOR OPTIONS

Actuator Color		Body Color	
1	White	A	White
2	Black (Std.)	B	Black
3	Gray	C	Gray
6	Red		

HOW TO ORDER



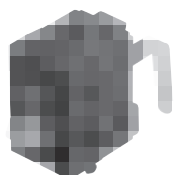
SPECIFICATIONS:

CONTACT RATING: 3A 250VAC/125VAC.
ELECTRICAL LIFE: 10,000 Operations.
MECHANICAL LIFE: 10,000 Operations min.
CONTACT RESISTANCE: <20m-ohms.
INSULATION RESISTANCE: 500VDC, 1000M-ohms min.
DIELECTRIC STRENGTHS: 1,500VAC for 1minute.

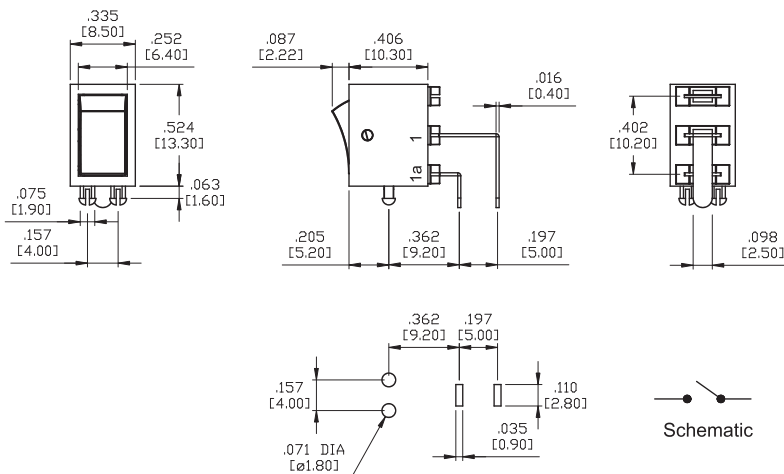
MATERIALS:

BODY: Nylon 66 (UL 94V-2).
ACTUATOR: Nylon 66 (UL 94V-2).
MOVABLE CONTACTS: Copper, silver plated.
SPRING: Piano wire.
TERMINALS: Brass, silver plated.

Specifications and Dimensions subject to change



Model No.	Type
33A	ON-OFF
33B	ON-ON

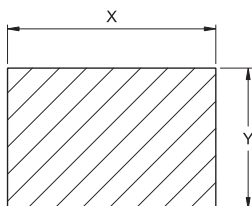


MARK OPTIONS



PANEL MOUNTING

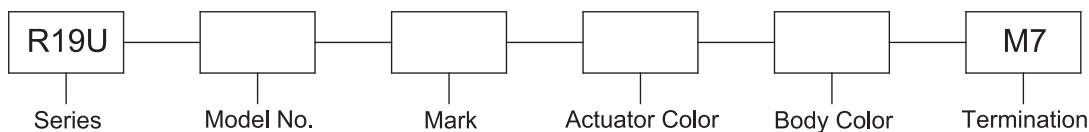
X Cutout Dimension	Y Cutout Dimension
.528~.543 [13.40~13.80]	.338~.354 [8.60~9.00]



COLOR OPTIONS

Actuator Color		Body Color	
1	White	A	White
2	Black (Std.)	B	Black
3	Gray	C	Gray
5	Yellow		
6	Red		
7	Orange		
8	Green		
9	Blue		

HOW TO ORDER



SPECIFICATIONS:

CONTACT RATING: 3A 250VAC/125VAC.
ELECTRICAL LIFE: 10,000 Operations.
MECHANICAL LIFE: 10,000 Operations min.
CONTACT RESISTANCE: <50m-ohms.
INSULATION RESISTANCE: 500VDC, 100M-ohms min.

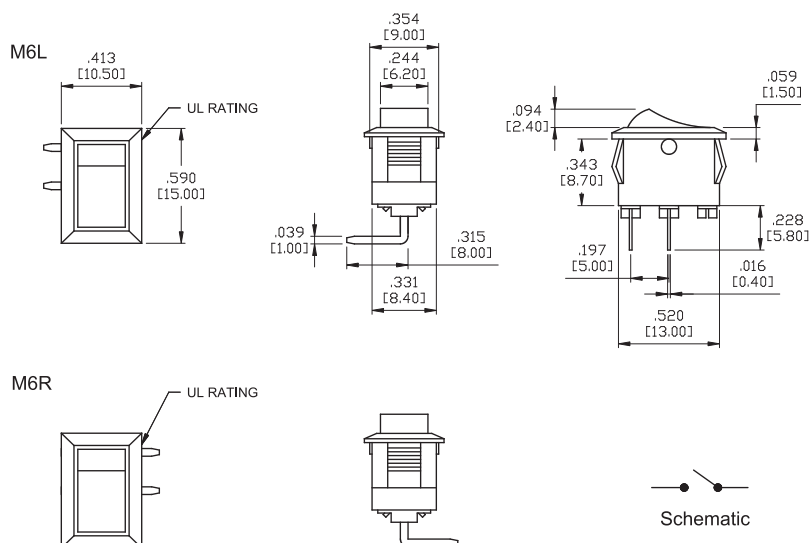
MATERIALS:

BODY: Nylon 66 (UL 94V-2).
ACTUATOR: Nylon 66 (UL 94V-2).
MOVABLE CONTACTS: Copper, silver plated.
SPRING: Piano wire.
TERMINALS: Brass, silver plated.

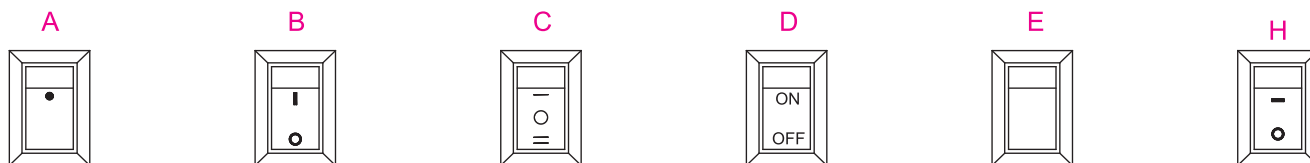
Specifications and Dimensions subject to change



Model No.	Type
33A	ON-OFF
33B	ON-ON

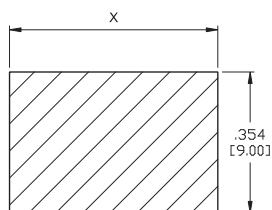


MARK OPTIONS



PANEL MOUNTING

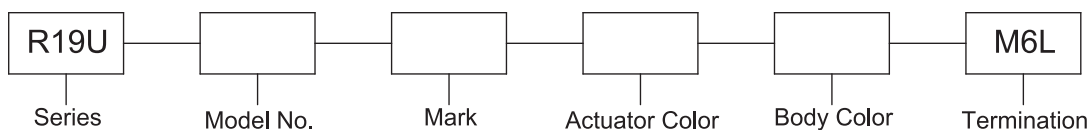
	X Cutout Dimension	Panel Thickness
A	.547 [13.90] $\begin{smallmatrix} +0.00 \\ -0.10 \end{smallmatrix}$	0.75~1.25
B	.555 [14.10] $\begin{smallmatrix} +0.00 \\ -0.10 \end{smallmatrix}$	1.25~2.00
C	.563 [14.30] $\begin{smallmatrix} +0.00 \\ -0.10 \end{smallmatrix}$	2.00~3.00

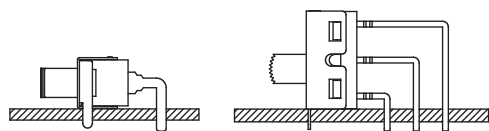
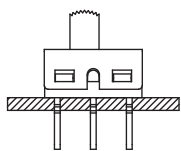


COLOR OPTIONS

Actuator Color		Body Color	
1	White	A	White
2	Black (Std.)	B	Black
3	Gray	C	Gray
5	Yellow		
6	Red		
7	Orange		
8	Green		
9	Blue		

HOW TO ORDER



**SPECIFICATIONS:**

CONTACT RATING: Refer to "Contact material Options" for more info.

CONTACT RESISTANCE: 10mΩ max. initial @ 2-4VDC
100mA for both silver and gold plated contacts.

ELECTRICAL LIFE: 50,000 actuations at full load.

INSULATION RESISTANCE: 1,000MΩ Min.

DIELECTRIC STRENGTHS: 1,500V RMS @ sea level.

OPERATION TEMPERATURE: -30°C to +85°C.

MATERIALS:

CASE: Diallyl phthalate(DAP)(UL 94V-0).

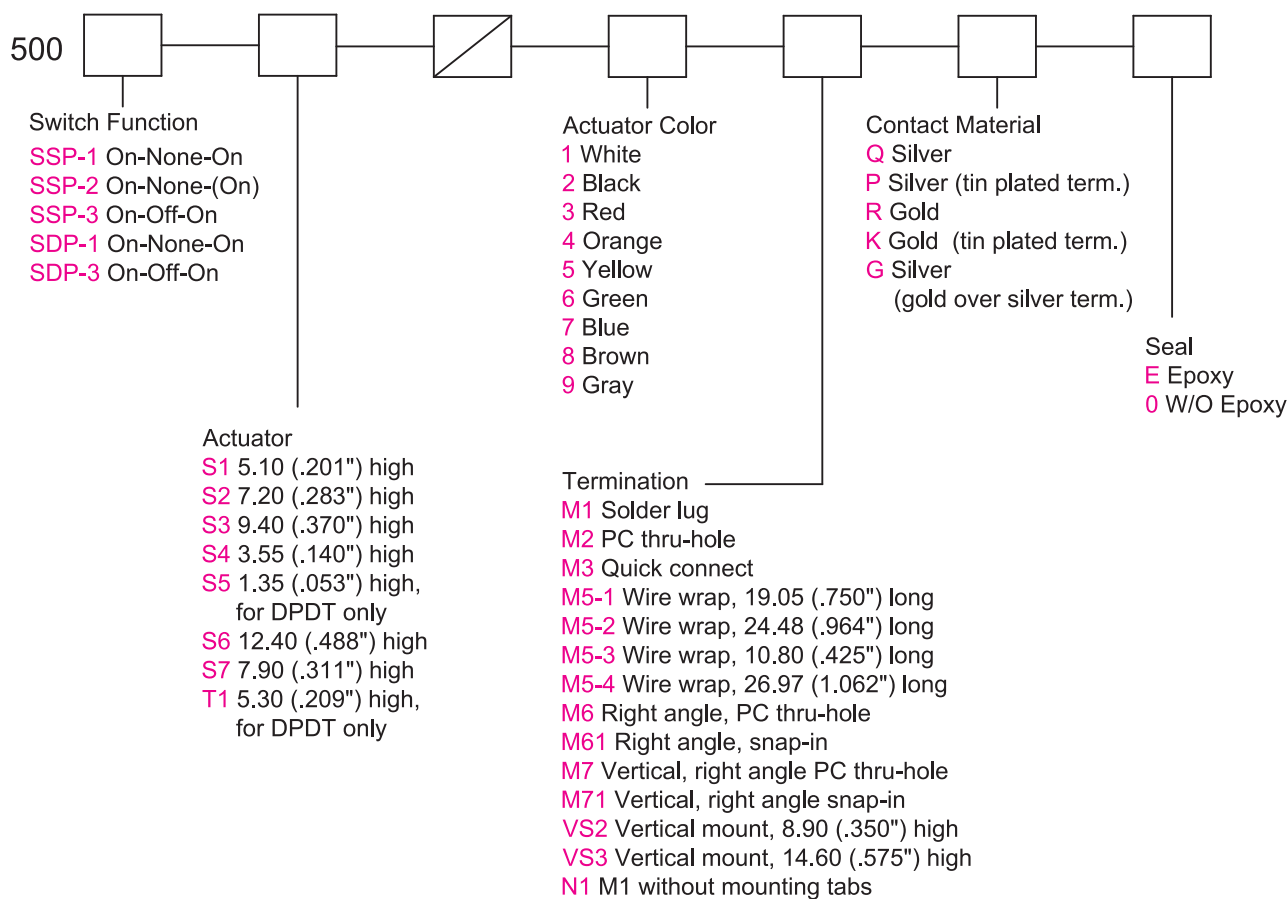
HOUSING: Stainless Steel.

SLIDE HANDLE: Nylon 6, black standard.

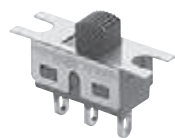
TERMINAL SEAL: Epoxy.

Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM

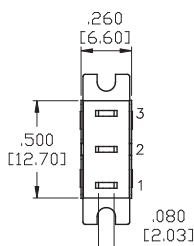
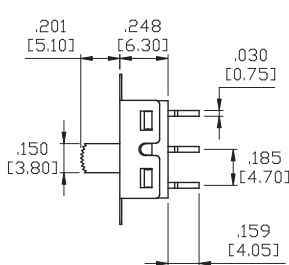
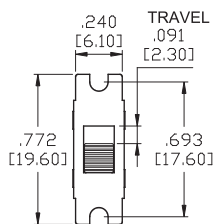
SPDT



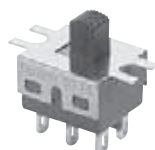
Model No.	Switching Position		
SSP-1	ON	NONE	ON
SSP-2	ON	NONE	(ON)
SSP-3	ON	OFF	ON
Term. Comm.	2-1	OPEN	2-3

Schematic

2Comm.



DPDT



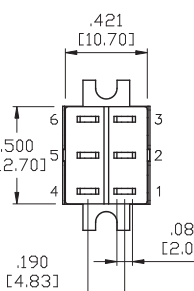
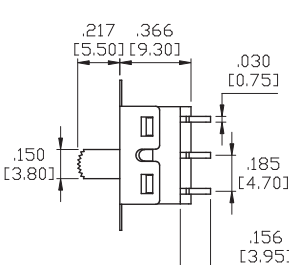
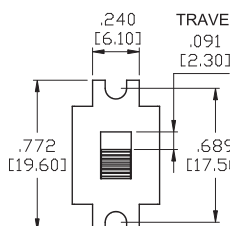
Model No.	Switching Position		
SDP-1	ON	NONE	ON
SDP-3	ON	OFF	ON
Term. Comm.	2-1 5-4	OPEN	2-3 5-6

Schematic

2Comm.

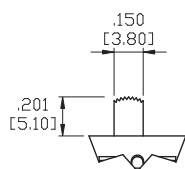


5Comm.



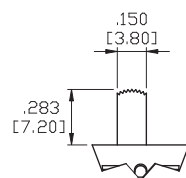
ACTUATOR OPTIONS

S1



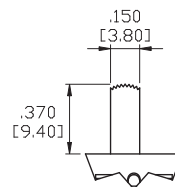
* Add 0.40 (.016) from actuator height for DPDT-M1 and M2 model.

S2



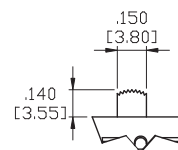
* Add 0.20 (.008) from actuator height for DPDT-M1 and M2 model.

S3



* Add 0.30 (.012) from actuator height for DPDT-M1 and M2 model.

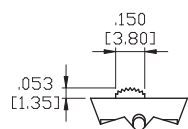
S4



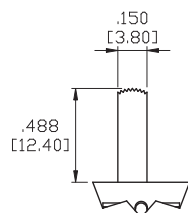
* Add 0.40 (.016) from actuator height for DPDT-M1 and M2 model.

* All actuator length shown is SPDT model with M1 and M2 terminals.

S5 FOR DPDT ONLY

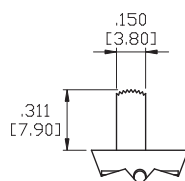


S6



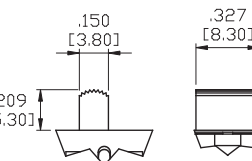
* Add 0.70 (.028) from actuator height for DPDT-M1 and M2 model.

S7



* Add 0.40 (.016) from actuator height for DPDT model.

T1 FOR DPDT ONLY

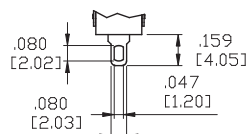


ACTUATOR COLORS	
1	White
2	Black (Std.)
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

* All actuator length shown is SPDT model with M1 and M2 terminals.

TERMINATION OPTIONS

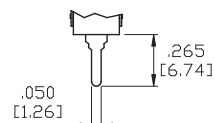
M1 STD. SOLDER LUG



THK .030 [0.75]

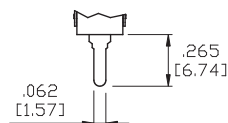
* Standard with Mounting Tabs.

M2 PC THRU-HOLE



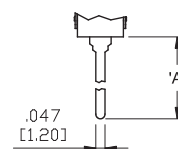
THK .030 [0.75]

M3 QUICK CONNECT



THK .030 [0.75]

M5 WIRE WRAP



THK .030 [0.75]

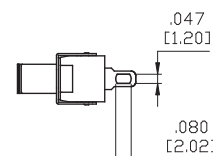
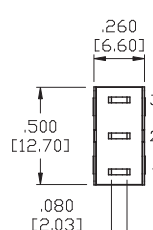
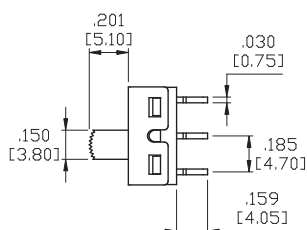
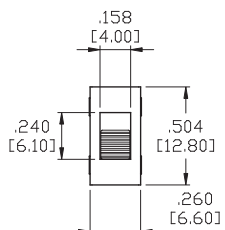
OPTION CODE	DIM. 'A'
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]
M5-4	1.062 [26.97]

TERMINATION OPTIONS WITHOUT MOUNTING TABS

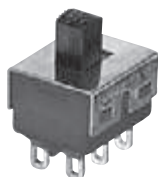
N1



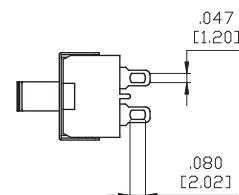
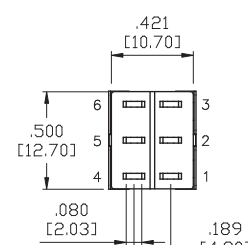
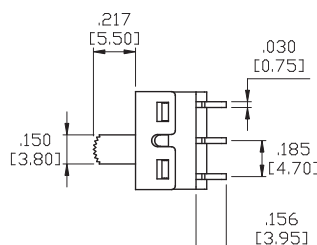
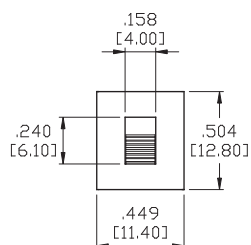
SPDT



N1



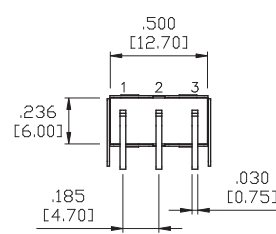
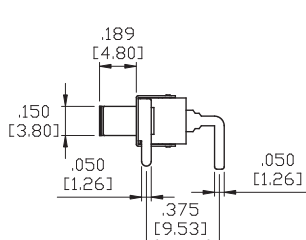
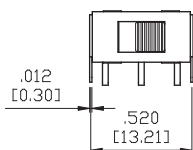
DPDT



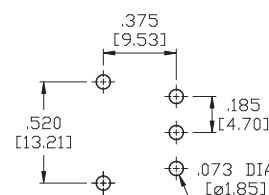
M6



SPDT



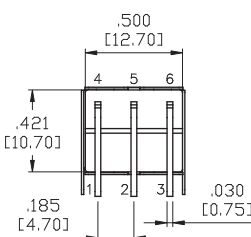
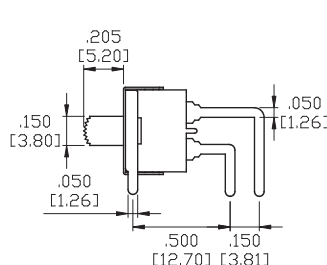
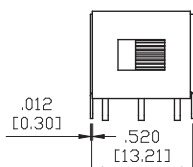
P.C.MOUNTING



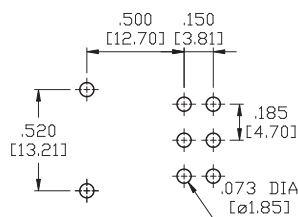
M6



DPDT



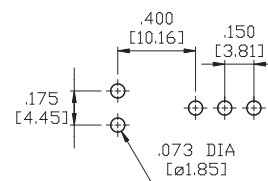
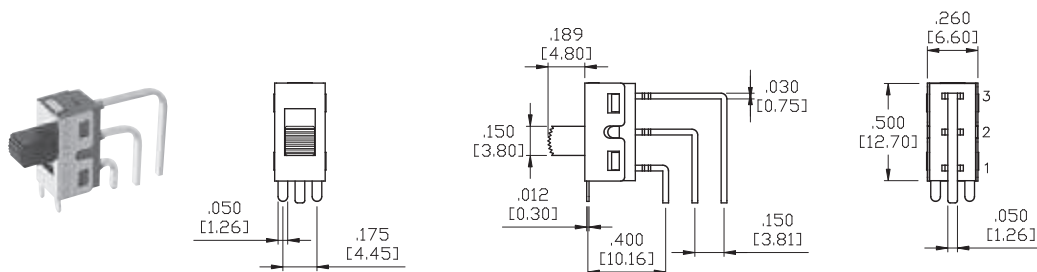
P.C.MOUNTING



TERMINATION OPTIONS WITHOUT MOUNTING TABS

M7

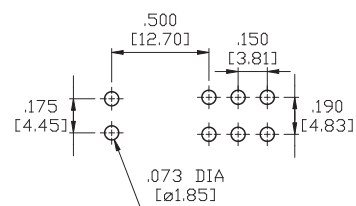
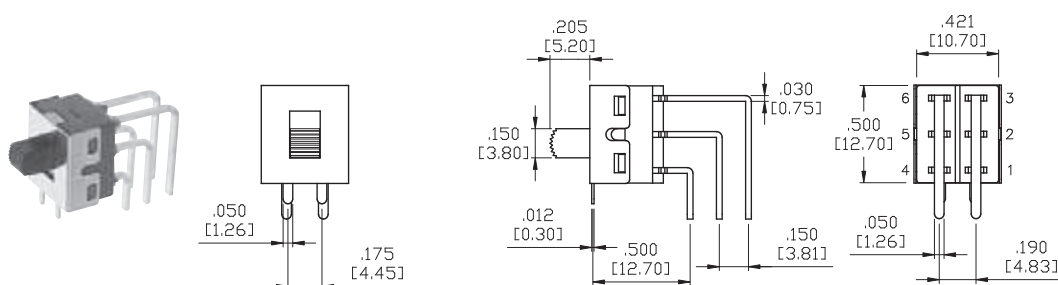
P.C.MOUNTING



SPDT

M7

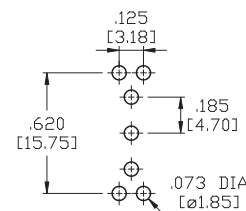
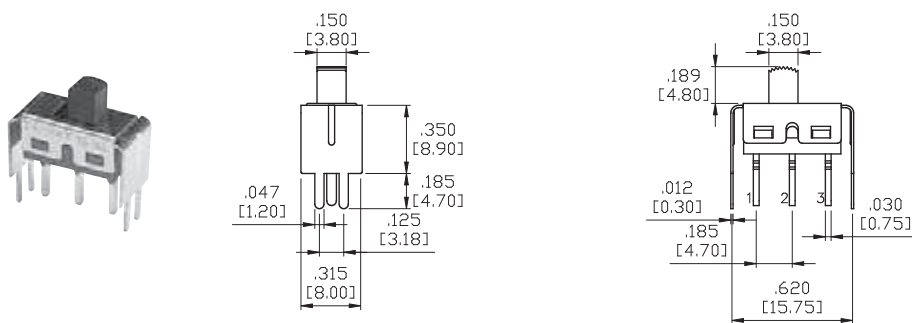
P.C.MOUNTING



DPDT

VS-2

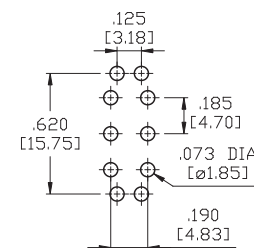
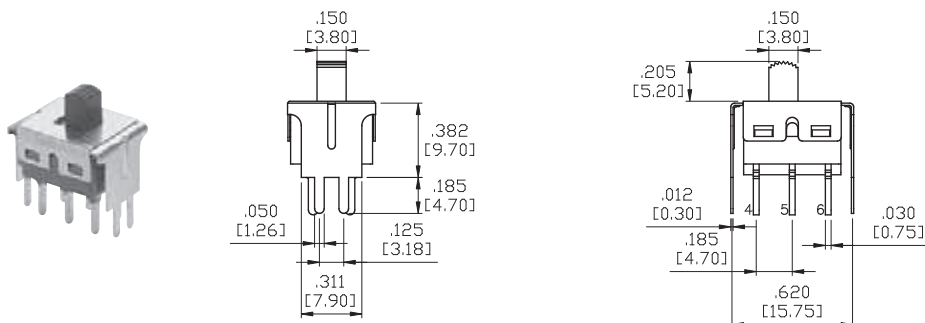
P.C.MOUNTING



SPDT

VS-2

P.C.MOUNTING



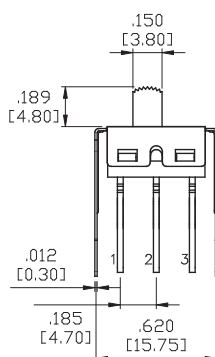
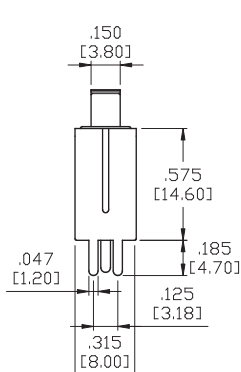
DPDT

TERMINATION OPTIONS WITHOUT MOUNTING TABS

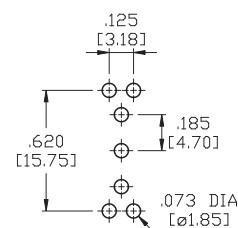
VS-3



SPDT



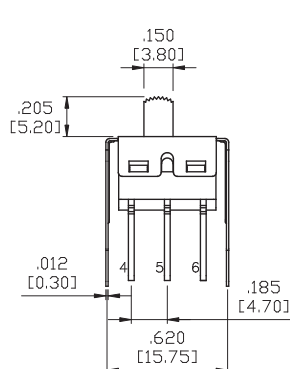
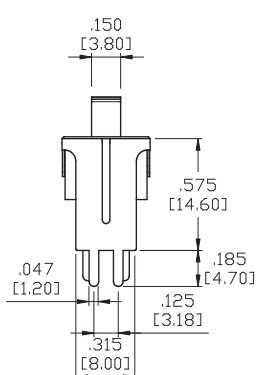
P.C.MOUNTING



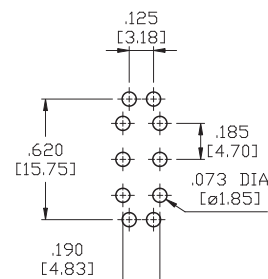
VS-3



DPDT



P.C.MOUNTING



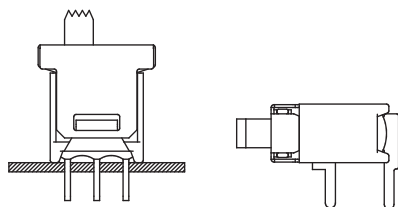
CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
Q	Silver ¹	Silver plated ¹	5Amps @ 125VAC or 28VDC 2Amps @ 250VAC	
P		Tin plated ⁵ ₇		
R	Gold ²	Gold plated ⁴	0.4VA max @ 20V max (AC or DC)	
K		Tin plated ⁵ ₆		
G	Silver ¹	Gold over silver ³	5Amps @ 125VAC or 28VDC 2Amps @ 250VAC	

1. Movable Contact / Terminals: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.
5. Outer Terminals: Copper alloy with pure tin plated.
6. Terminal Contact: Gold plated over nickel plated.
7. Terminal Contact: Palladium nickel alloy (or Silver) plated.

* P, K is not available with M1 and M3 terminals

* 6Amps (Movable Contact: coin silver, silver plated) available with model ON-NONE-ON without UL approval



SPECIFICATIONS:

CONTACT RATING: Refer to "Contact Material Options" for more info.

CONTACT RESISTANCE: 20mΩ max. initial @ 2-4VDC
100mA for both silver and gold plated contacts.

ELECTRICAL LIFE: 30,000 actuations at full load.

INSULATION RESISTANCE: 1,000MΩ min.

DIELECTRIC STRENGTHS: 1,500V RMS @ sea level.

OPERATION TEMPERATURE:-30°C to +85°C.

MATERIALS:

CASE: Diallyl phthalate(DAP)(UL 94V-0).

HOUSING: Brass, tin plated.

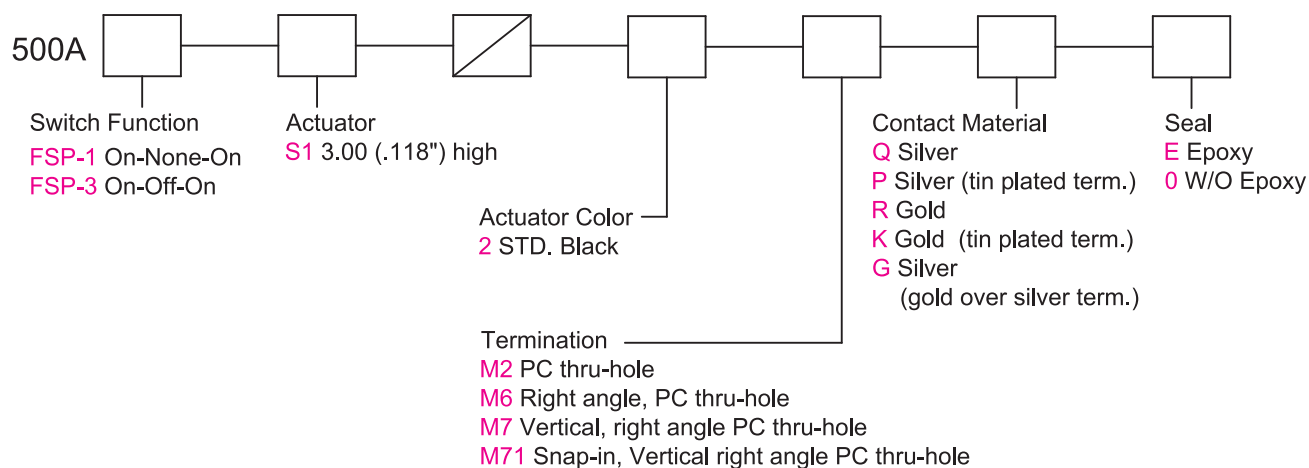
SLIDE HANDLE: Nylon 6/6, black standard.

TERMINAL SEAL: Epoxy.

Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



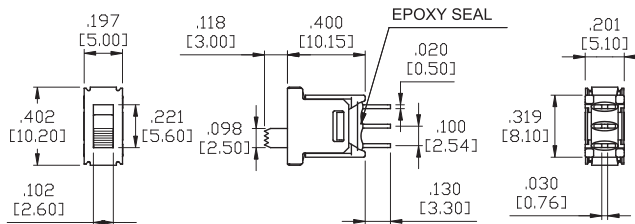
M2



SPDT

Model No.	Switching Position		
FSP-1	ON	NONE	ON
FSP-3	ON	OFF	ON
Term. Comm.	2-1	OPEN	2-3

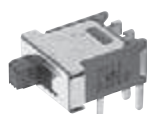
Schematic



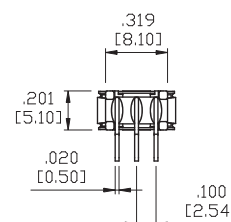
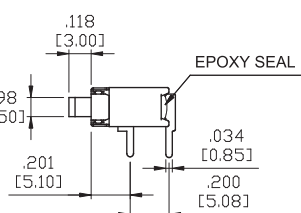
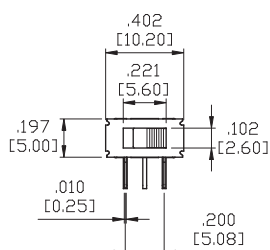
P.C.MOUNTING



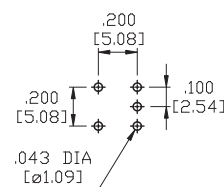
M6



SPDT



P.C.MOUNTING

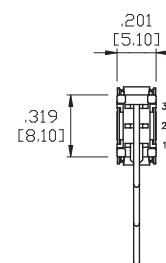
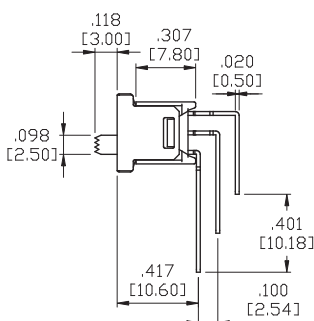
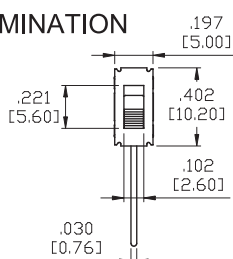


M7

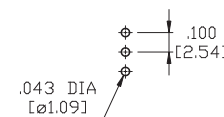
M71 SNAP-IN TERMINATION



SPDT



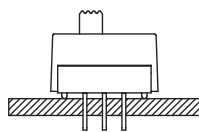
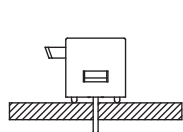
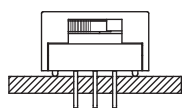
P.C.MOUNTING



CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
Q	Silver ¹	Silver plated ¹	3Amps @ 125VAC or 28VDC 1.5Amps @ 250VAC	
P		Tin plated ⁵ ₇		
R	Gold ²	Gold plated ⁴	0.4VA max @ 20V max (AC or DC)	
K		Tin plated ⁵ ₆		
G	Silver ¹	Gold over silver ³	3Amps @ 125VAC or 28VDC 1.5Amps @ 250VAC	

1. Movable Contact / Terminals: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.
5. Outer Terminals: Copper alloy with pure tin plated.
6. Terminal Contact: Gold plated over nickel plated.
7. Terminal Contact: Palladium nickel alloy (or Silver) plated.



SPECIFICATIONS:

CONTACT RATING: Refer to "Contact material Options" for more info.

CONTACT RESISTANCE: 10mΩ max.

ELECTRICAL LIFE: 10,000 cycles at full load.

MECHANICAL LIFE: 20,000 cycles.

INSULATION RESISTANCE: 1,000MΩ min. @ 500VDC.

OPERATION TEMPERATURE: -30°C to +85°C.

MATERIALS:

CASE: PBT.

HOUSING: POM.

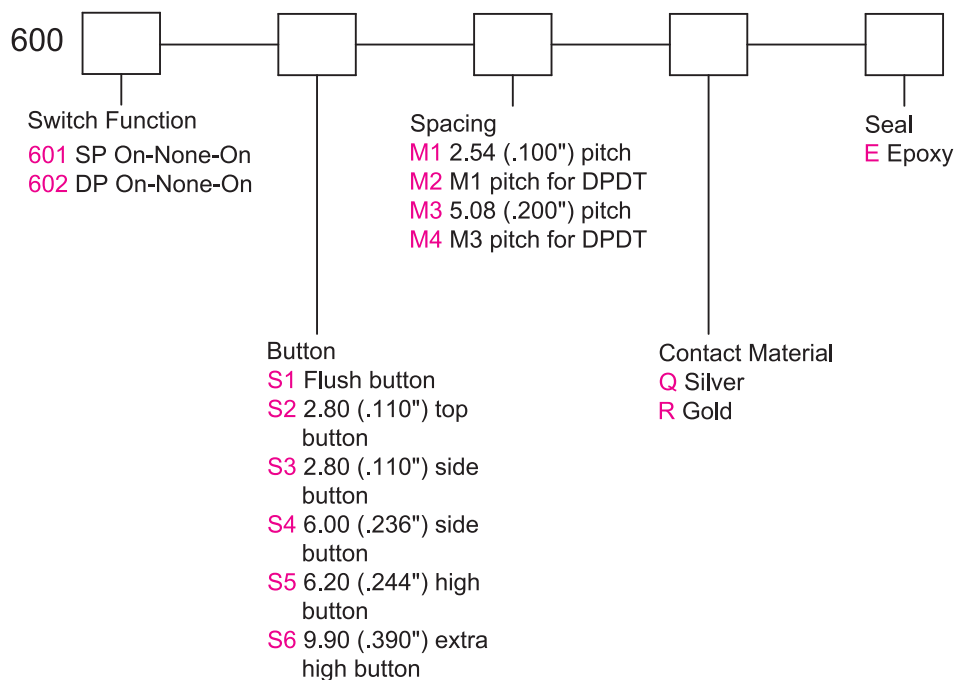
SLIDE HANDLE: PBT.

TERMINAL SEAL: Epoxy.

Specifications and Dimensions subject to change

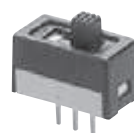
If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



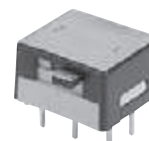
SPDT

Model No.	Switching Position		
	ON	NONE	ON
601	2-1	OPEN	2-3



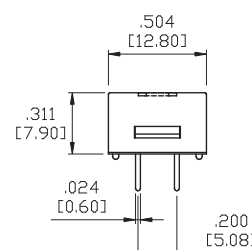
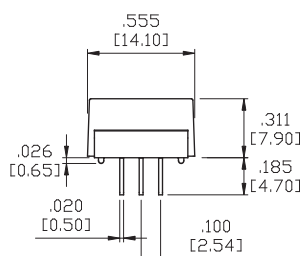
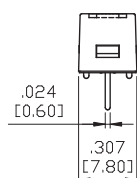
DPDT

Model No.	Switching Position		
	ON	NONE	ON
602	2-1,5-4	OPEN	2-3,5-6

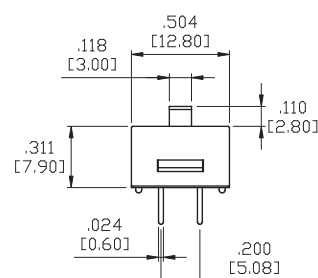
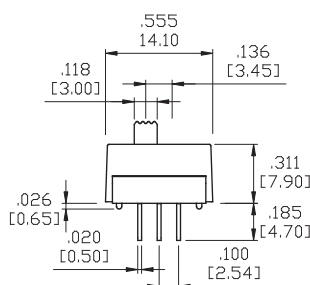
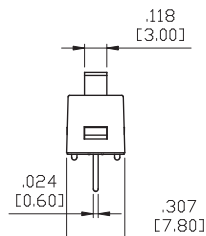


BUTTON OPTIONS

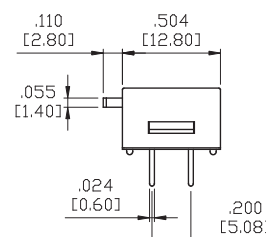
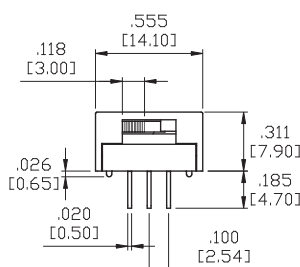
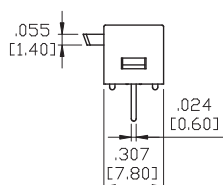
S1 FLUSH BUTTON



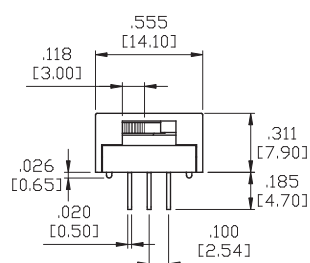
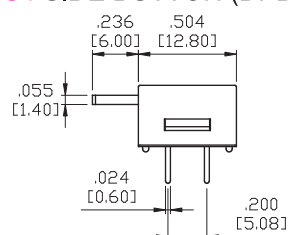
S2 TOP BUTTON



S3 SIDE BUTTON



S4 SIDE BUTTON (DPDT ONLY)



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

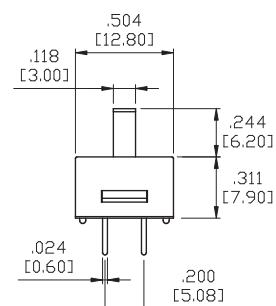
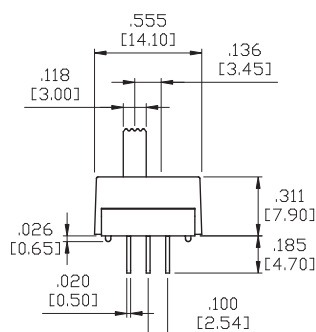
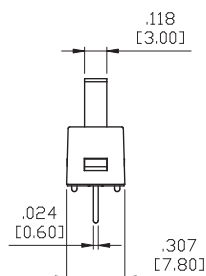
Tact

Touch Key

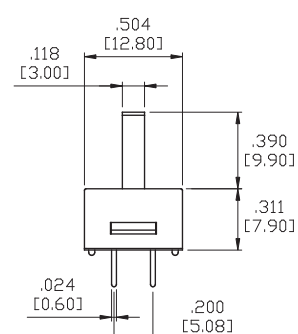
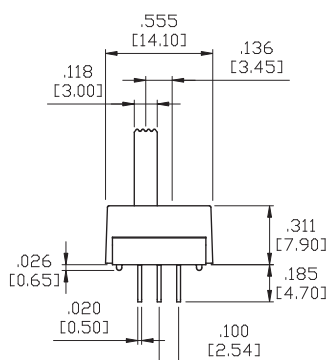
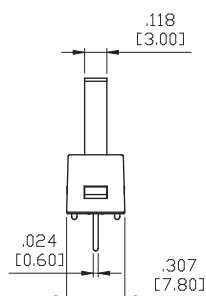
Miscellaneous

BUTTON OPTIONS

S5 HIGH BUTTON

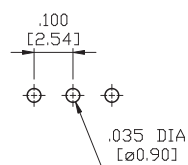


S6 EXTRA HIGH BUTTON

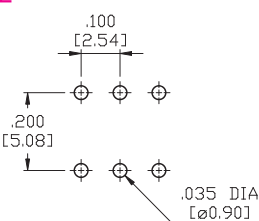


SPACING OPTIONS

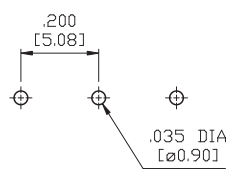
M1



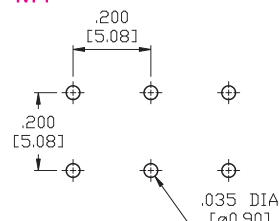
M2



M3



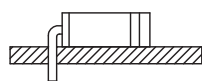
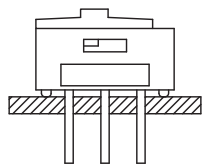
M4



CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
Q	Silver ¹	Silver plated ¹	2Amps @ 250VAC	
R	Gold ²	Gold plated ³	0.1Amps @ 30VDC	

1. Movable Contact & Terminals: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Copper alloy, with gold plated over nickel plated.



SPECIFICATIONS:

CONTACT RATING: DC 12V 0.5A.
CONTACT RESISTANCE: 30m Ω max.
MECHANICAL LIFE: 1,000 cycles.
INSULATION RESISTANCE: 500M Ω min. at 500VDC.

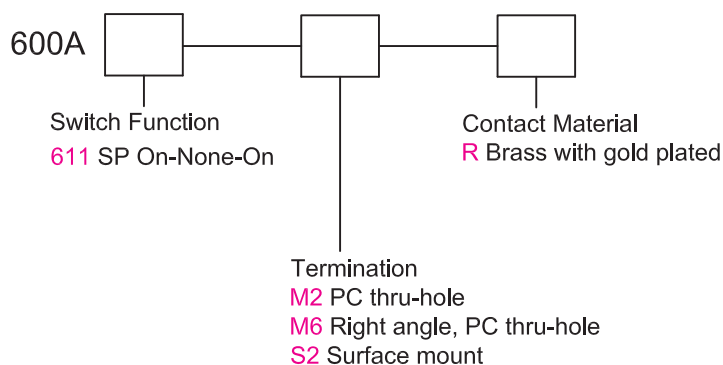
MATERIALS:

HOUSING: Nylon 6/6 (UL94V-0).
SLIDE HANDLE: Nylon 6/6 (UL94V-0).
TERMINAL: Brass, gold over nickel plated.

Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous

Series 600A

Low Power Slide Switches

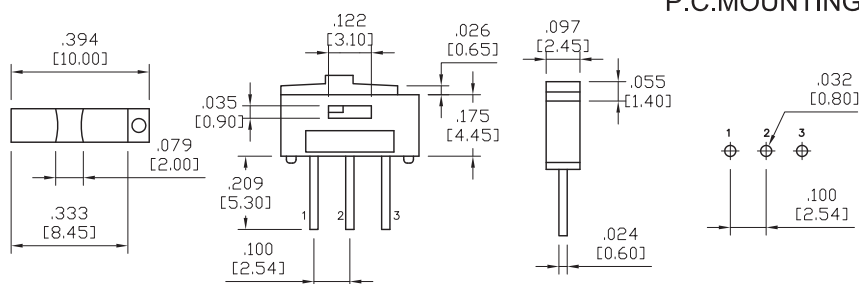
M2

P.C.MOUNTING



Model No.	Switching Position		
611	ON	NONE	ON
Term. Comm.	2-1	OPEN	2-3

SPDT



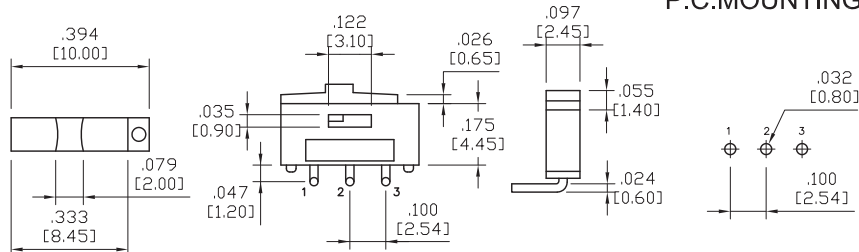
M6

P.C.MOUNTING



Model No.	Switching Position		
611	ON	NONE	ON
Term. Comm.	2-1	OPEN	2-3

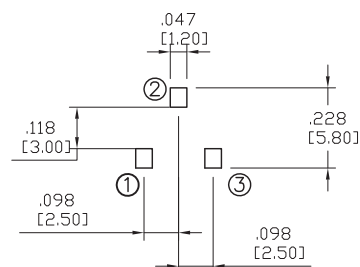
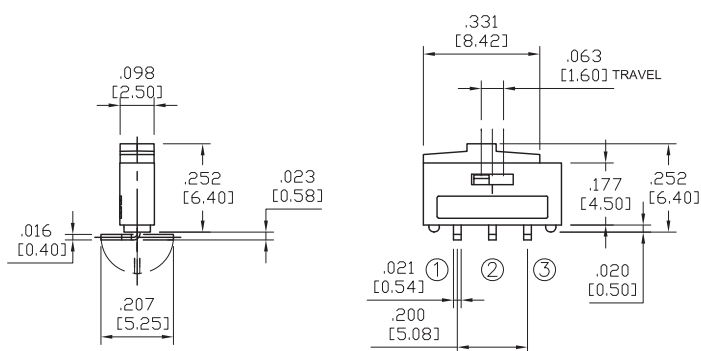
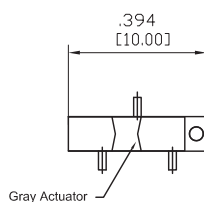
SPDT



S2

P.C.MOUNTING

Model No.	Switching Position		
611	ON	NONE	ON
Term. Comm.	2-1	OPEN	2-3



SPDT

CONTACT MATERIAL OPTIONS

Coding	Contact & Terminal Material	Rating	Agency Approvals
R	Brass with gold plating	0.5A @ 12VDC	

SPECIFICATIONS:

RATING: DC30V 0.3A.
 INSULATION RESISTANCE: >100M-ohms DC500V.
 WITHSTAND VOLTAGE: AC500V 1 min.
 CONTACT RESISTANCE: <30m-ohms.
 SOLDERING TEMPERATURE: 255°C max. 5 sec.

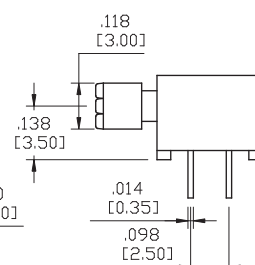
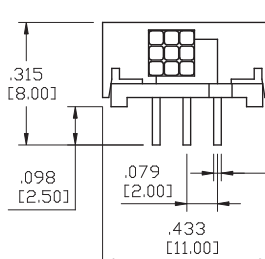
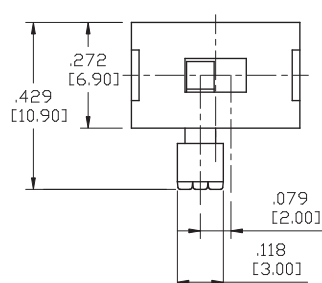
MECHANICAL LIFE: 30,000 cycles.
 ELECTRICAL LIFE: 10,000 cycles.
 OPERATING TEMPERATURE: -20°C to +70°C.
 AMBIENT HUMIDITY: <85%RH.
 OPERATING FORCE: 200±150gf.

Specifications and Dimensions subject to change

01P-22

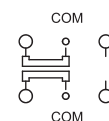


2P2T

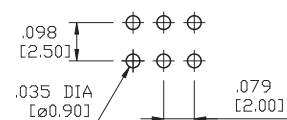


Drawing Scale: 2 / 1

SCHEMATIC



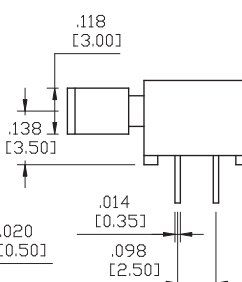
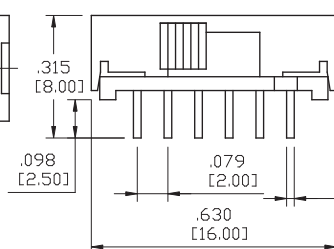
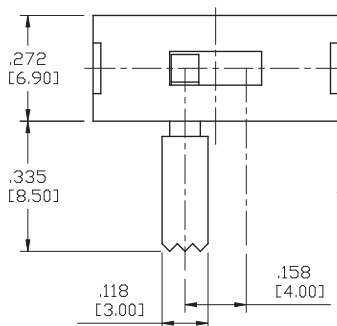
P.C.B. MOUNTING



03P-42

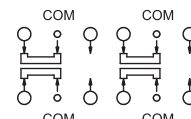


4P2T

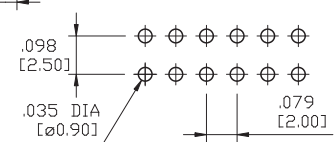


Drawing Scale: 2 / 1

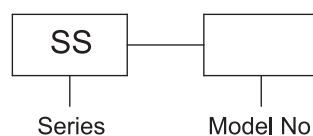
SCHEMATIC



P.C.B. MOUNTING



HOW TO ORDER



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

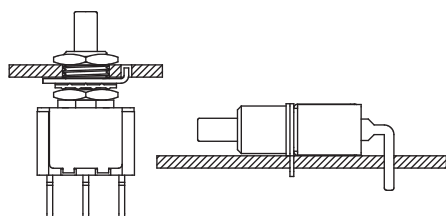
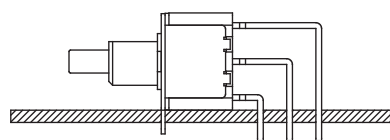
Miscellaneous

SPECIFICATIONS:

CONTACT RATING: Refer to "Contact Material Options" for more info.
 ELECTRICAL LIFE: 50,000 make and break cycles at full load.
 CONTACT RESISTANCE: 10mΩ max. initial @ 2-4 VDC.
 INSULATION RESISTANCE: 1,000 MΩ min.
 DIELECTRIC STRENGTH: 1,500V RMS @ sea level.
 OPERATION TEMPERATURE: -30°C TO +85°C.

MATERIALS:

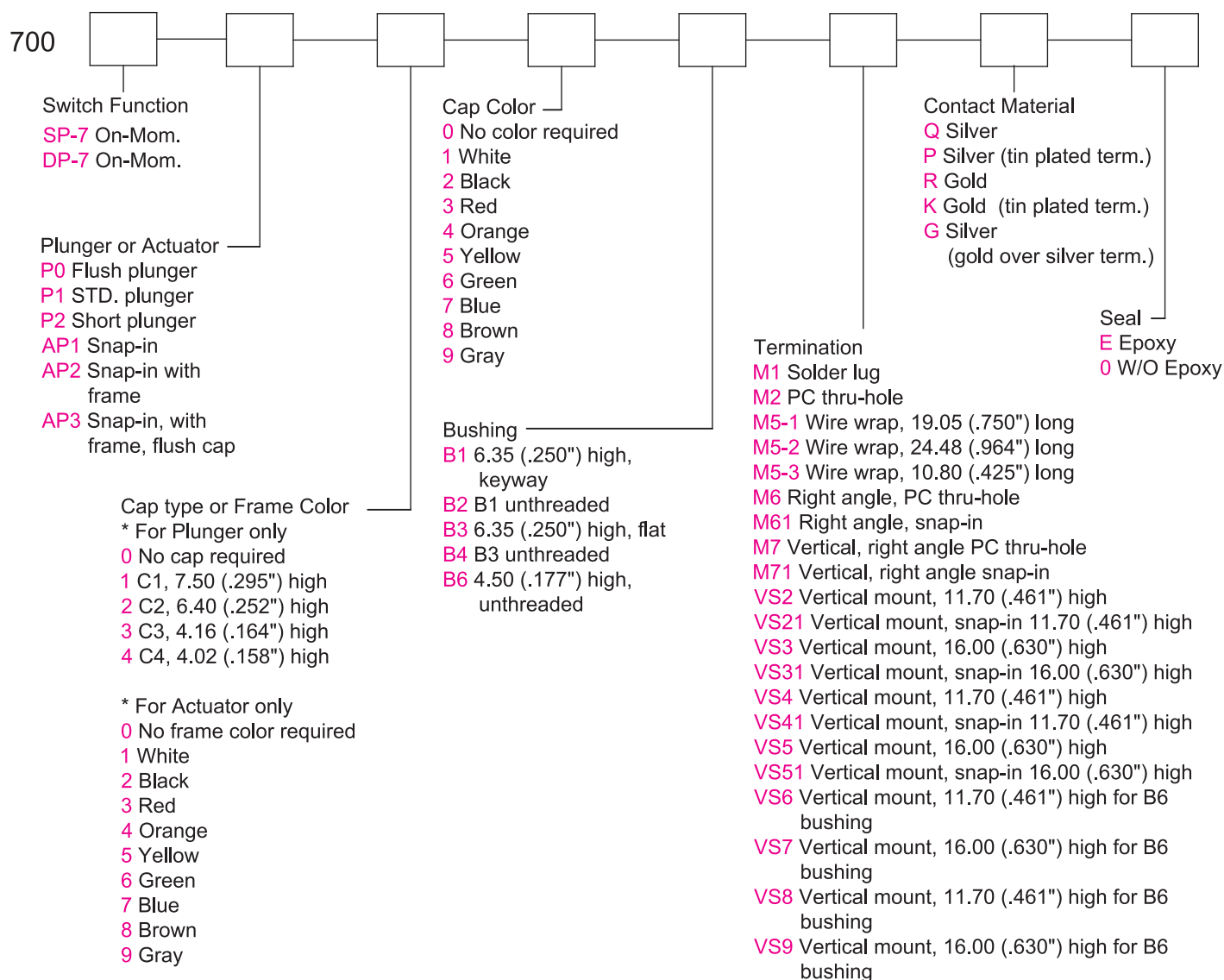
CASE: Diallyl phthalate(DAP)(UL 94V-0).
 PLUNGER: PBT or FR52 (UL 94V-0).
 BUSHING: Brass, nickel plated.
 HOUSING: Stainless steel.
 TERMINAL SEAL: Epoxy.



Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

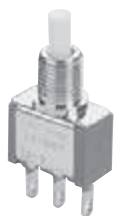
HOW TO ORDER SYSTEM



Series 700

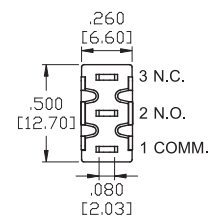
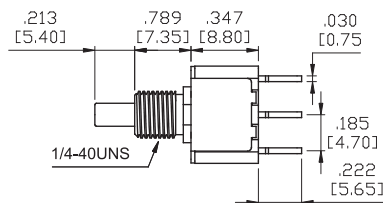
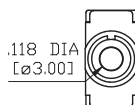
Snap-Acting Pushbutton Switches

SPDT



Model No.	Type	
SP-7	ON	MOM
Term. Comm.	1-3	1-2

Schematic



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

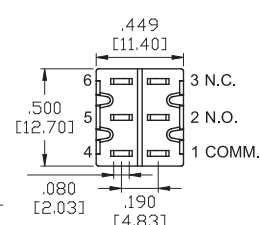
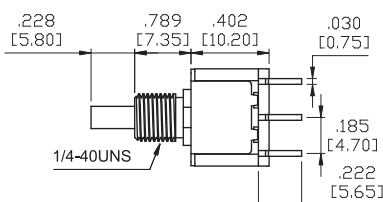
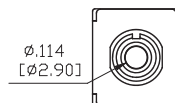
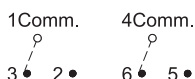
Miscellaneous

DPDT



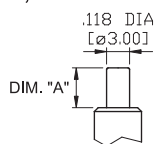
Model No.	Type	
DP-7	ON	MOM
Term. Comm.	1-3,4-6	1-2,4-5

Schematic



PLUNGER OPTIONS

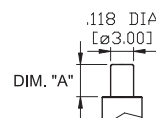
FOR B1,B2,B3,B4 ONLY



OPTION CODE	DIM. "A"
P0	.000 [0.00]
P1	.213 [5.40]
P2	.091 [2.30]

* Plunger length shown with SPDT model.

FOR B6 ONLY

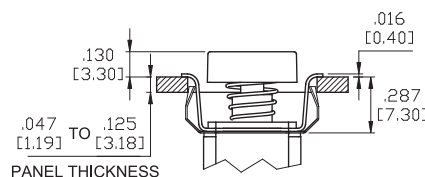
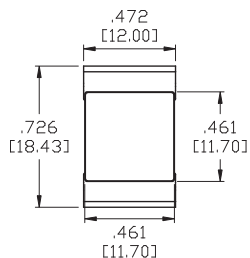
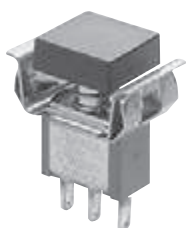


OPTION CODE	DIM. "A"
P1	.157 [4.00]
P2	.106 [2.70]

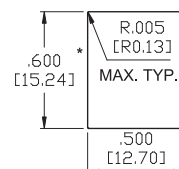
* Plunger length shown with SPDT model.

ACTUATOR OPTIONS FOR SNAP-IN FRONT MOUNT

AP1

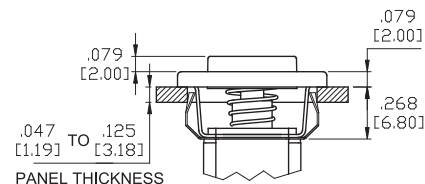
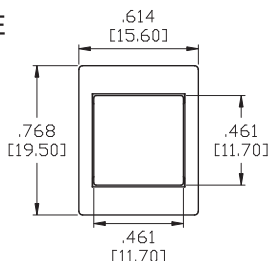
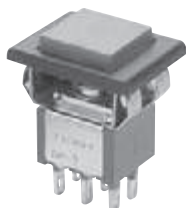


PANEL MOUNTING

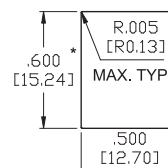


* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

AP2 WITH FRAME

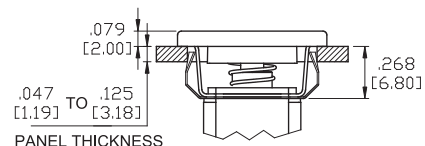
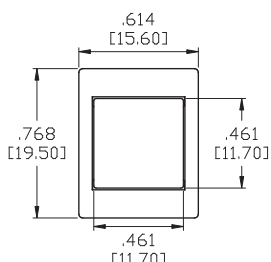


PANEL MOUNTING



* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

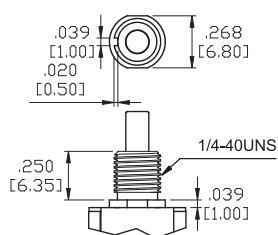
AP3 FLUSH CAP



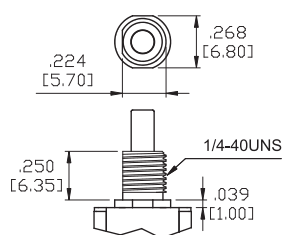
MOM=MOMENTARY

BUSHING OPTIONS

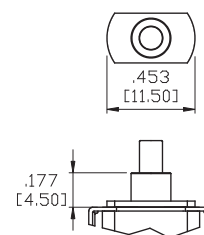
B1 THD STD
B2 NON-THD



B3 THD STD
B4 NON-THD

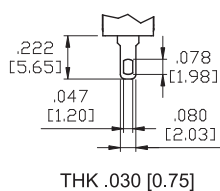


B6 NON-THD
(FOR TERMINATION OPTIONS VS6-VS9 ONLY)

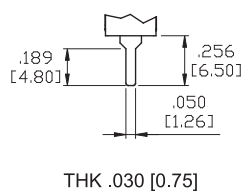


TERMINATION OPTIONS

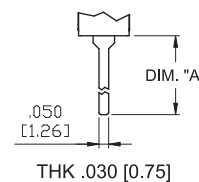
M1 STD. SOLDER LUG



M2 PC THRU-HOLE



M5 WIRE WRAP

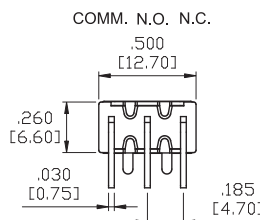
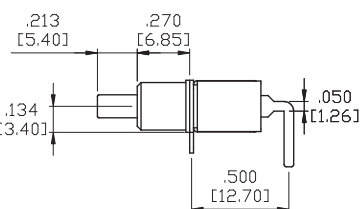
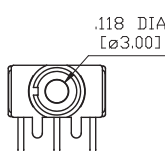


OPTION CODE	DIM. "A"
M5-1	.750 [19.05]
M5-2	.964 [24.48]
M5-3	.425 [10.80]

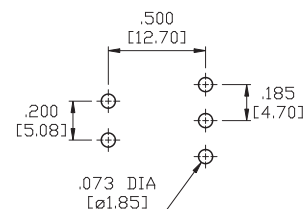
M6



SPDT



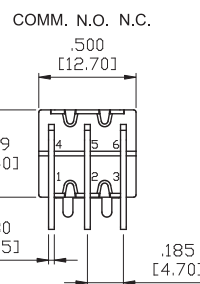
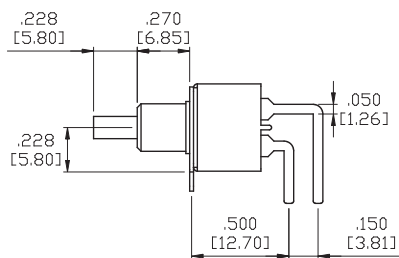
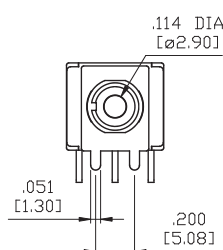
P.C.MOUNTING



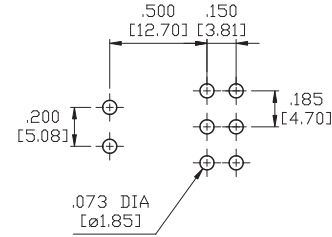
M6



DPDT



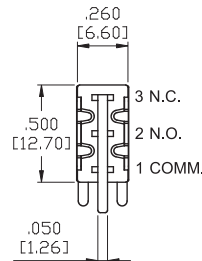
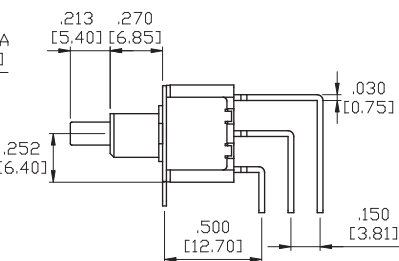
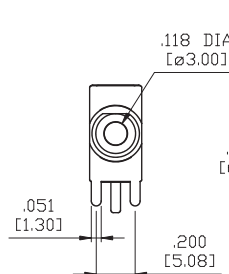
P.C.MOUNTING



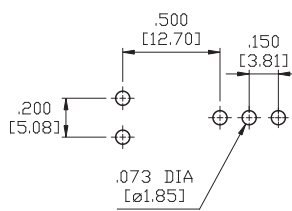
M7



SPDT

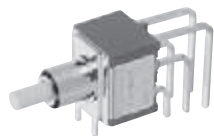


P.C.MOUNTING

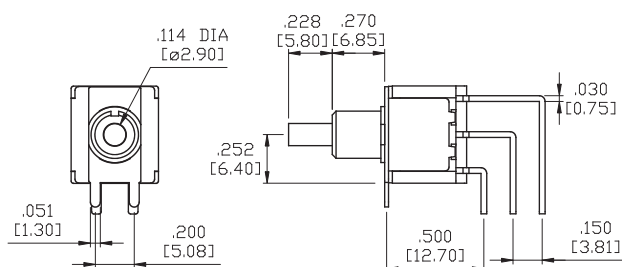


TERMINATION OPTIONS

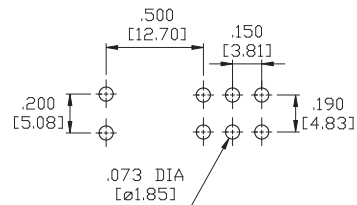
M7



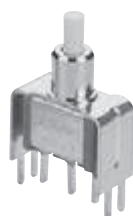
DPDT



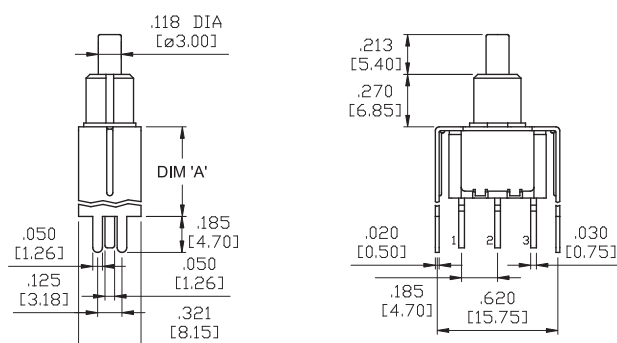
P.C.MOUNTING



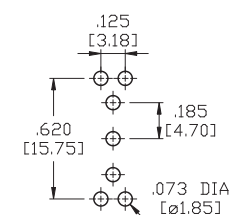
VS2-VS3



SPDT



P.C.MOUNTING

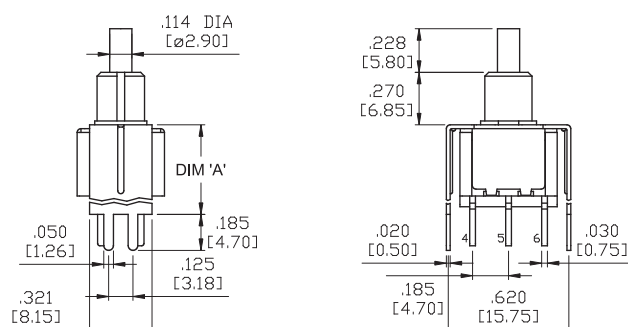


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

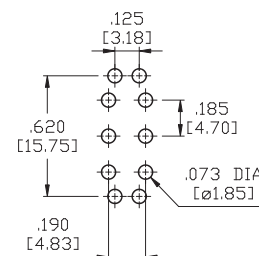
VS2-VS3



DPDT

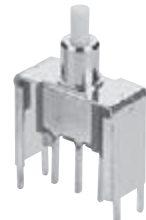


P.C.MOUNTING

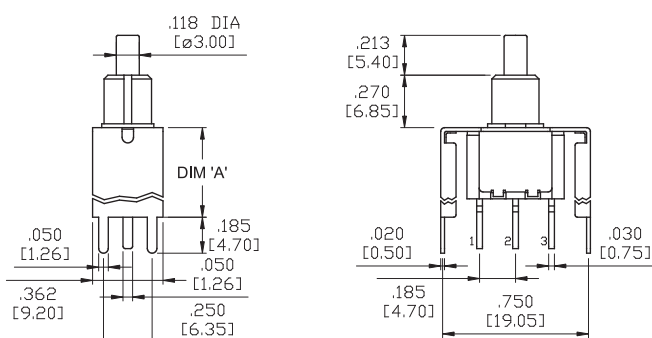


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

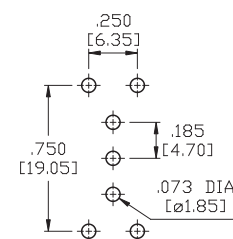
VS4-VS5



SPDT

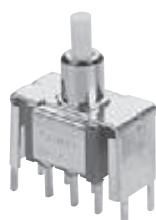


P.C.MOUNTING

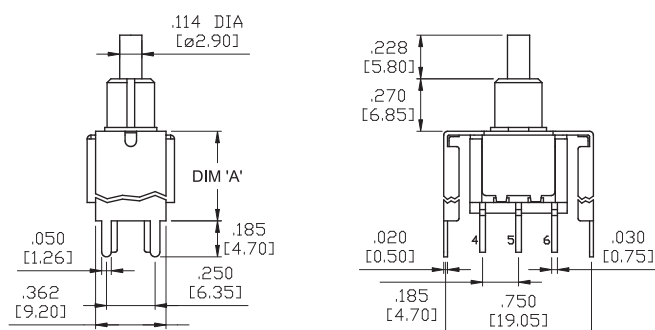


OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

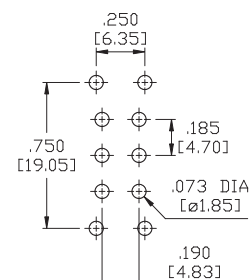
VS4-VS5



DPDT



P.C.MOUNTING



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

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

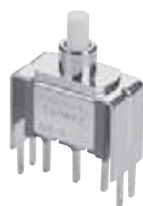
Touch Key

Miscellaneous

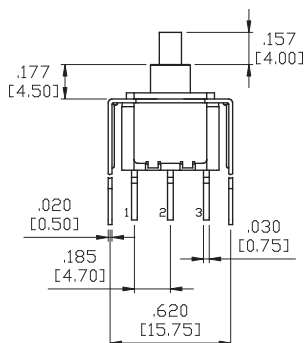
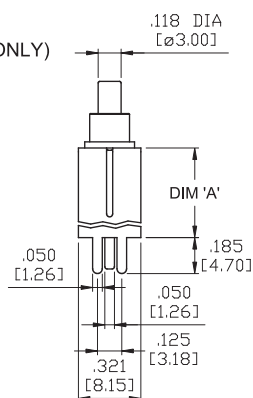
TERMINATION OPTIONS

VS6-VS7

(FOR B6 BUSHING ONLY)

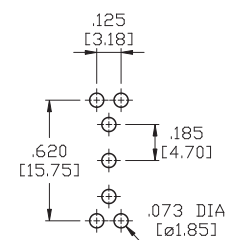


SPDT



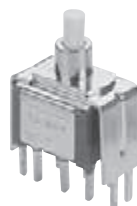
OPTION CODE	DIM.'A'
VS6	.461 [11.70]
VS7	.630 [16.00]

P.C.MOUNTING

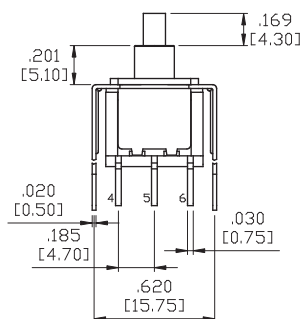
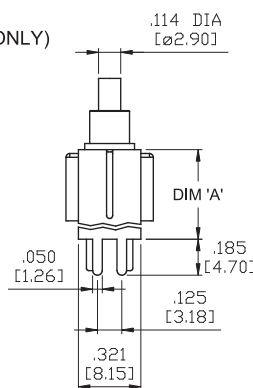


VS6-VS7

(FOR B6 BUSHING ONLY)

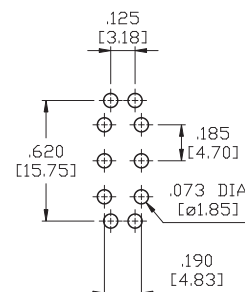


DPDT



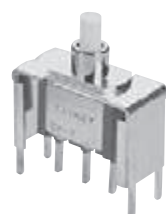
OPTION CODE	DIM.'A'
VS6	.461 [11.70]
VS7	.630 [16.00]

P.C.MOUNTING

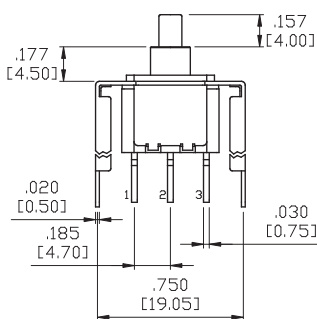
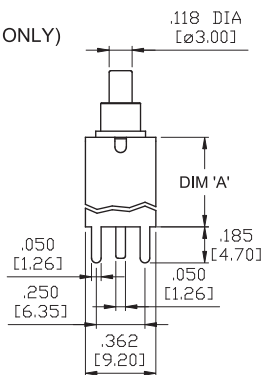


VS8-VS9

(FOR B6 BUSHING ONLY)

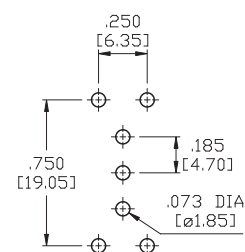


SPDT



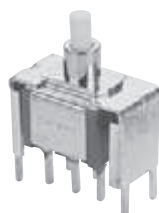
OPTION CODE	DIM.'A'
VS8	.461 [11.70]
VS9	.630 [16.00]

P.C.MOUNTING

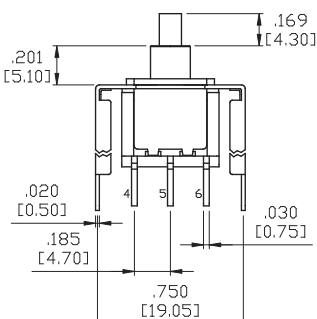
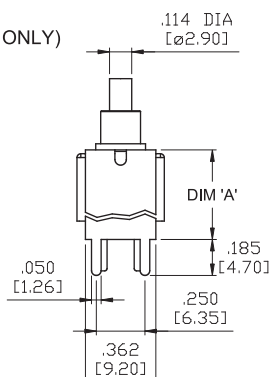


VS8-VS9

(FOR B6 BUSHING ONLY)

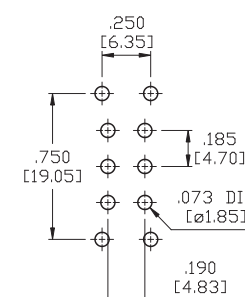


DPDT



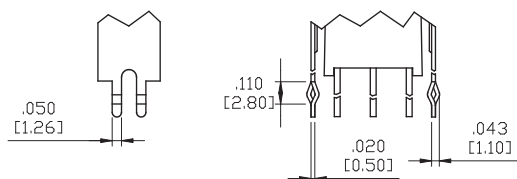
OPTION CODE	DIM.'A'
VS8	.461 [11.70]
VS9	.630 [16.00]

P.C.MOUNTING

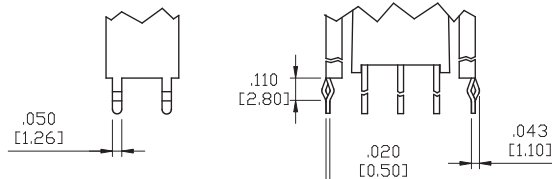


SNAP-IN TERMINATION OPTIONS

VS21,VS31



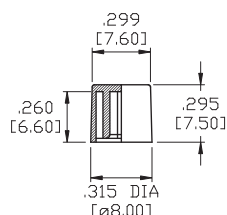
VS41,VS51



* PC Mounting for VS21,VS31,VS41,VS51 refer to VS2,VS3,VS4,VS5 respectively.

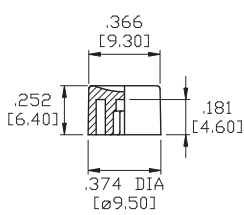
PLUNGER CAPS

C1



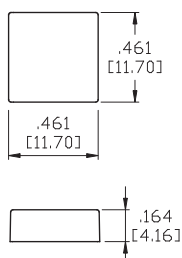
* MATERIAL: ABS.

C2



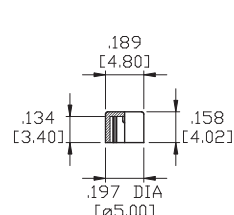
* MATERIAL: ABS.

C3



* MATERIAL: ABS.

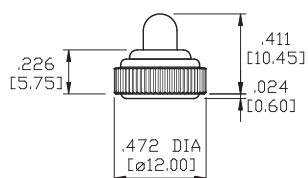
C4



* MATERIAL: ABS.

CAP AND FRAME COLORS	
1	White
2	Black
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

E3 RUBBER HOOD



E3=INCH (STD.)
E3A=INCH WITH INTERNAL-ORING SEALED

* FOR P1 PLUNGER ONLY.

CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
Q	Silver ¹	Silver plated ¹	1Amps @ 120VAC or 38VDC	
R	Gold ²	Gold plated ³	0.4VA max @ 20V max (AC or DC)	
G	Silver ¹	Gold over silver ⁴	1Amps @ 120VAC or 38VDC	

1. Movable Contact / Terminals: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Copper alloy, with gold plated over nickel plated.
4. Terminals: Silver plated with outer layer in gold plating.

SPECIFICATIONS:

CONTACT RATING: Refer to "Contact Material Options" for more info.

ELECTRICAL LIFE: 50,000 make-and-break cycles at full load.

CONTACT RESISTANCE: 10mΩ max. initial @ 2-4 VDC
100 mA for both silver and gold plated contacts.

INSULATION RESISTANCE: 1,000MΩ min.

DIELECTRIC STRENGTH: 1,500V RMS min. @ sea level.

OPERATING TEMPERATURE: -30°C to +85°C.

CAP INSTALLATION FORCE: 10 lbs, max.

MATERIALS:

CASE & BUSHING: PA9T or FR52, flame retardant, heat stabilized (94V-0).

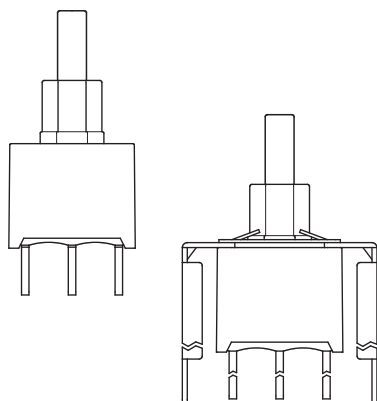
PLUNGER: Nylon 6/6 or PBT with internal o-ring sealed (700A).

PLUNGER: Nylon 6/6 or PBT (700C).

SWITCH SUPPORT: Brass or steel, tin plated.

SWITCH SUPPORT RETAINER: Stainless steel.

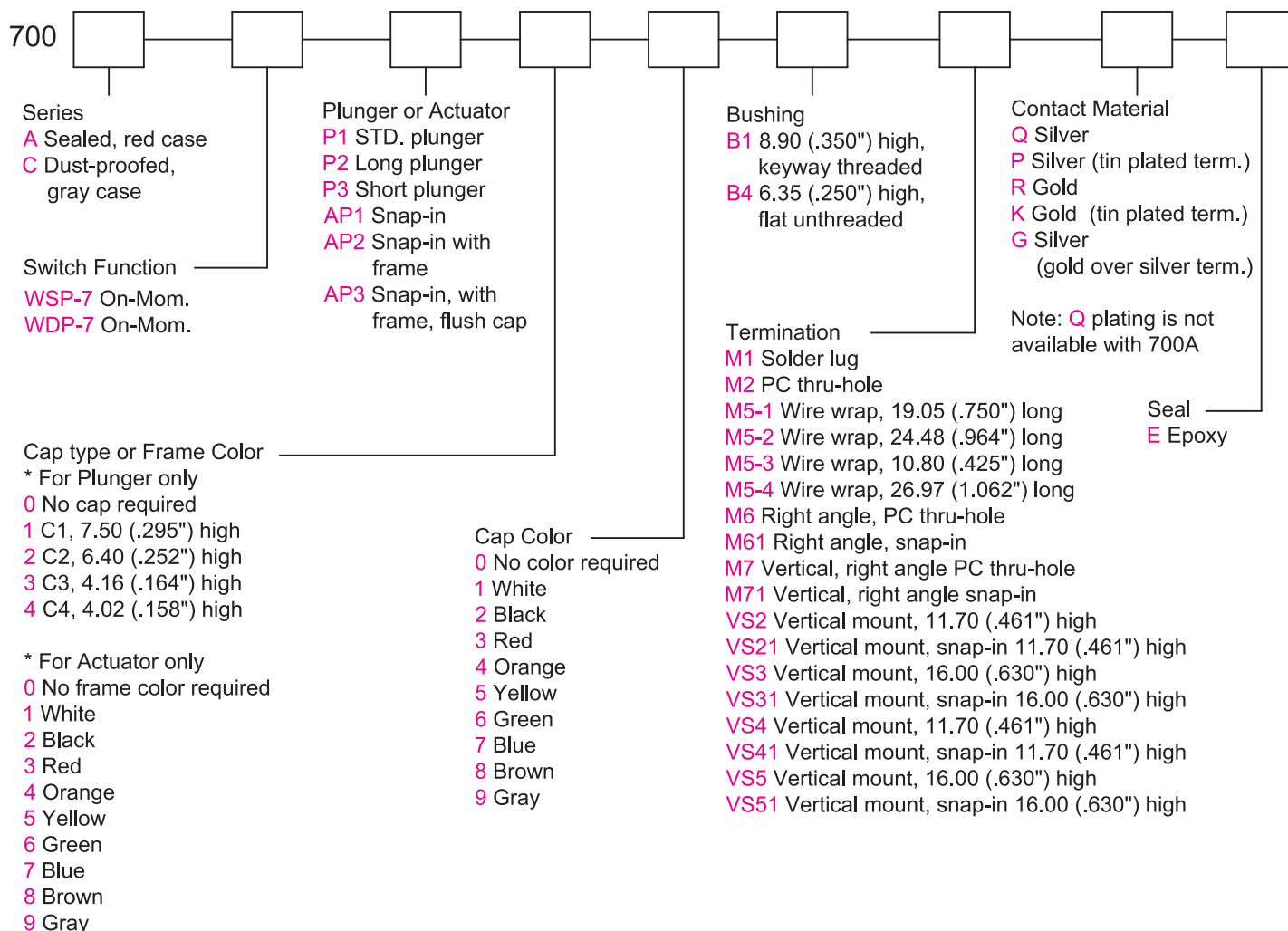
TERMINAL SEAL: Epoxy.



Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



Series 700A/C

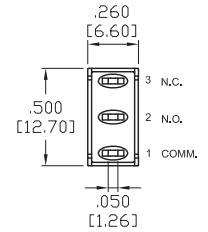
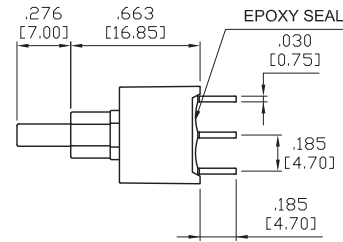
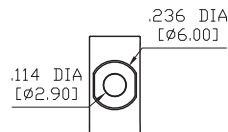
(Sealed) Snap-Acting Pushbutton Switches

SPDT



Model No.	Type	
WSP-7	ON	MOM
Term. Comm.	1-3	1-2

Schematic

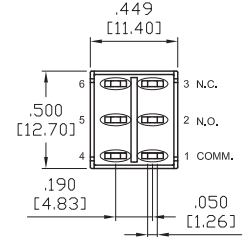
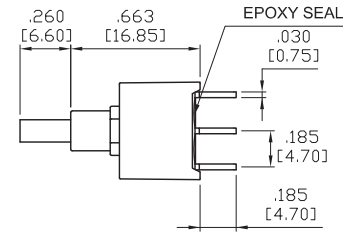
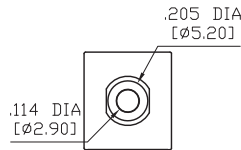
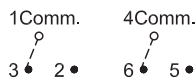


DPDT



Model No.	Type	
WDP-7	ON	MOM
Term. Comm.	1-3,4-6	1-2,4-5

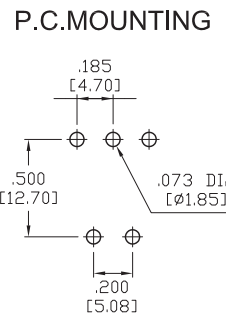
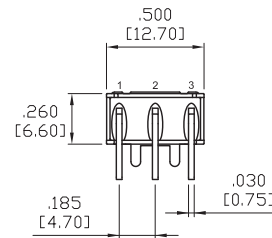
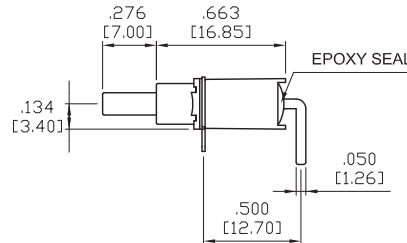
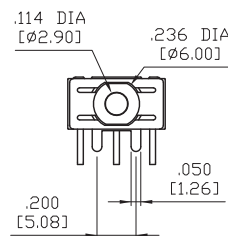
Schematic



M6



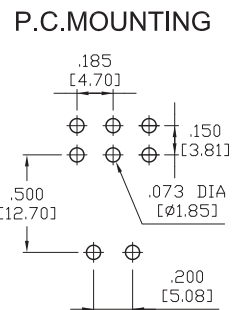
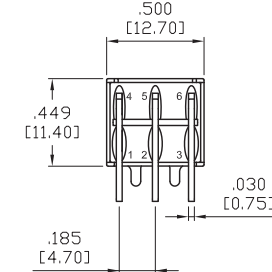
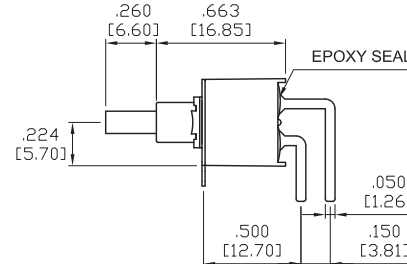
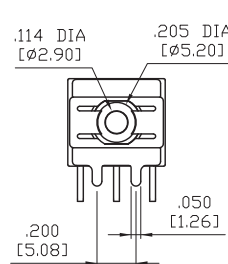
SPDT



M6

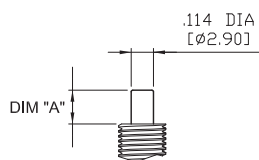


DPDT



PLUNGER OPTIONS

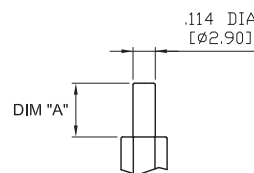
FOR B1 BUSHING



OPTION CODE	DIM. "A"
P1	.181 [4.60]
P2	.228 [5.80]
P3	.087 [2.20]

* Plunger length shown with SPDT model

FOR B4 BUSHING

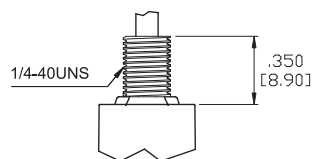


OPTION CODE	DIM. "A"
P1	.276 [7.00]
P2	.323 [8.20]
P3	.193 [4.90]

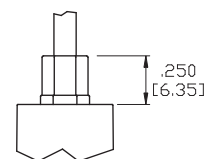
* Plunger length shown with SPDT model

BUSHING OPTIONS

B1

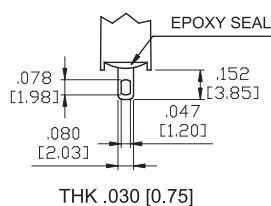


B4

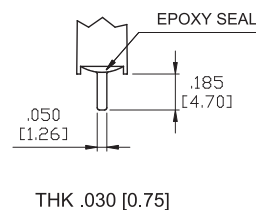


TERMINATION OPTIONS

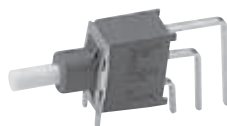
M1



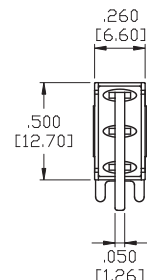
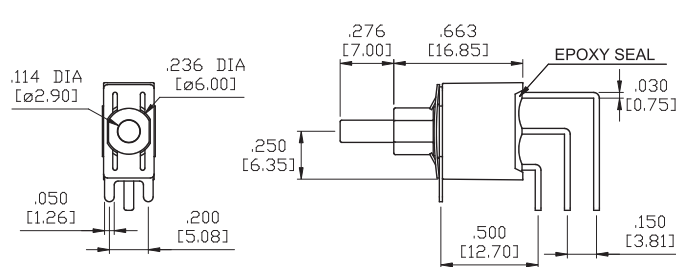
M2



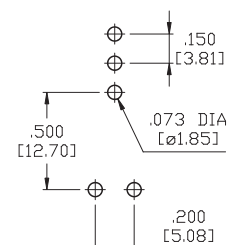
M7



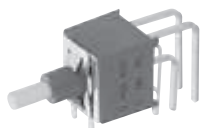
SPDT



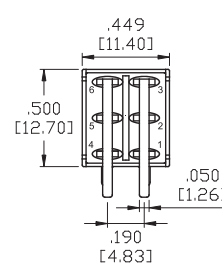
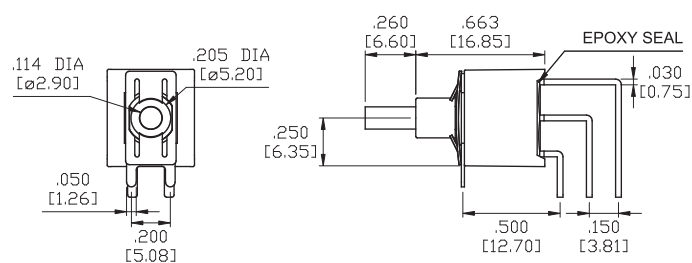
P.C.MOUNTING



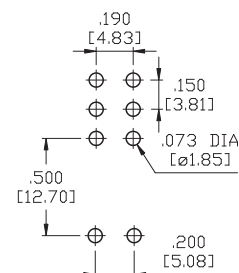
M7



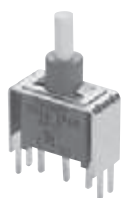
DPDT



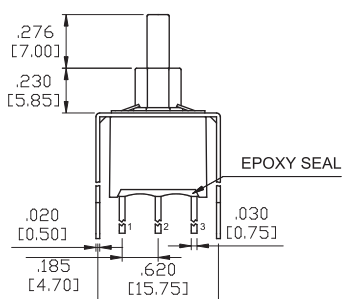
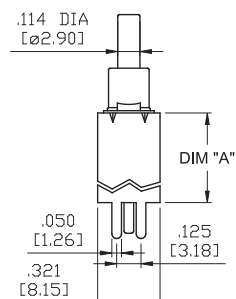
P.C.MOUNTING



VS2-VS3

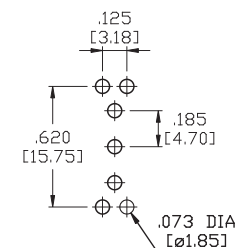


SPDT



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

P.C.MOUNTING

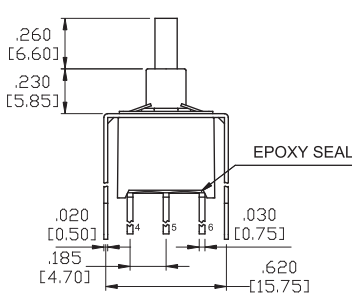
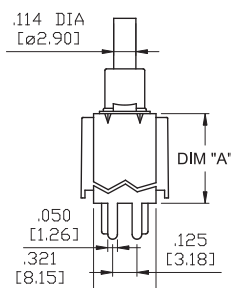


TERMINATION OPTIONS

VS2-VS3

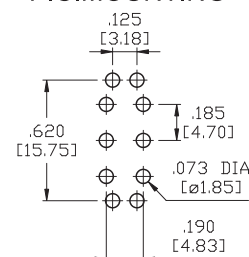


DPDT

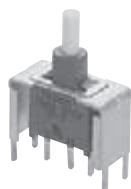


OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]

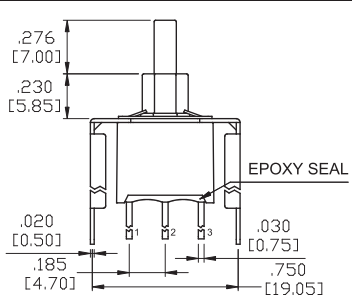
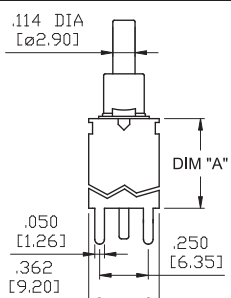
P.C.MOUNTING



VS4-VS5

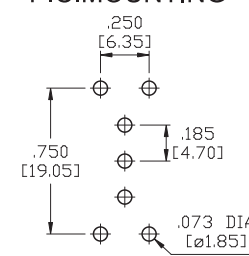


SPDT



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

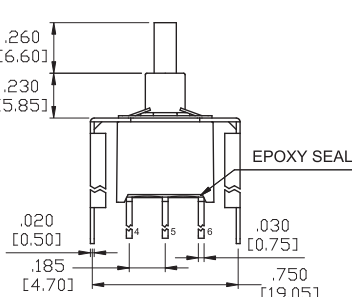
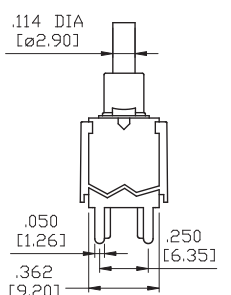
P.C.MOUNTING



VS4-VS5

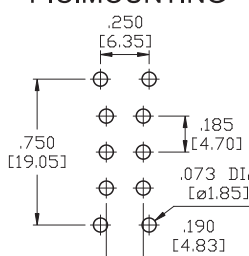


DPDT



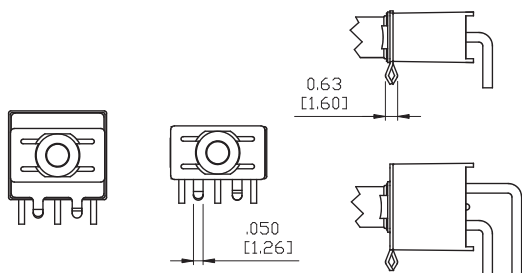
OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

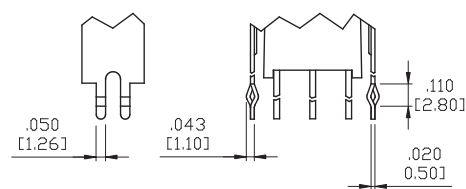


SNAP-IN TERMINATION OPTIONS

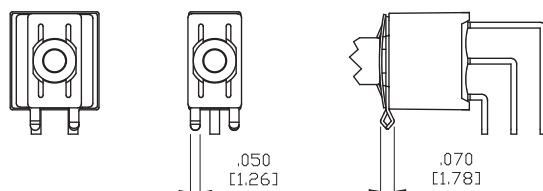
M61



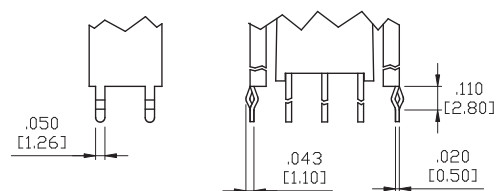
VS21,VS31



M71



VS41,VS51



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

Series 700A/C

(Sealed) Snap-Acting Pushbutton Switches

PLUNGER CAPS

C1 * MATERIAL: ABS.	C2 * MATERIAL: ABS.	C3 * MATERIAL: ABS.	C4 * MATERIAL: ABS.	<table><tr><th colspan="2">CAP AND FRAME COLORS</th></tr><tr><td>1</td><td>White</td></tr><tr><td>2</td><td>Black</td></tr><tr><td>3</td><td>Red</td></tr><tr><td>4</td><td>Orange</td></tr><tr><td>5</td><td>Yellow</td></tr><tr><td>6</td><td>Green</td></tr><tr><td>7</td><td>Blue</td></tr><tr><td>8</td><td>Brown</td></tr><tr><td>9</td><td>Gray</td></tr></table>	CAP AND FRAME COLORS		1	White	2	Black	3	Red	4	Orange	5	Yellow	6	Green	7	Blue	8	Brown	9	Gray
CAP AND FRAME COLORS																								
1	White																							
2	Black																							
3	Red																							
4	Orange																							
5	Yellow																							
6	Green																							
7	Blue																							
8	Brown																							
9	Gray																							

CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
Q	Silver ¹	Silver plated ¹	1Amps @ 120VAC or 38VDC	 IP68
R	Gold ²	Gold plated ³	0.4VA max @ 20V max (AC or DC)	IP68
G	Silver ¹	Gold over silver ⁴	1Amps @ 120VAC or 38VDC	 IP68

* Standard G plating for sealed product.

1. Movable Contact / Terminals: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Copper alloy, with gold plated over nickel plated.
4. Terminals: Silver plated with outer layer in gold plating.

* IP68 protection for 700A series only.

SPECIFICATIONS:

CONTACT RATING: Refer to "Contact Material Options" for more info.
ELECTRICAL LIFE: 50,000 make and break cycles at full load.
CONTACT RESISTANCE: 10mΩ max. initial @2-4VDC
INSULATION RESISTANCE: 1,000MΩ min.
DIELECTRIC STRENGTH: 1,500V RMS @ sea level.
OPERATION TEMPERATURE: -30°C to +85°C.

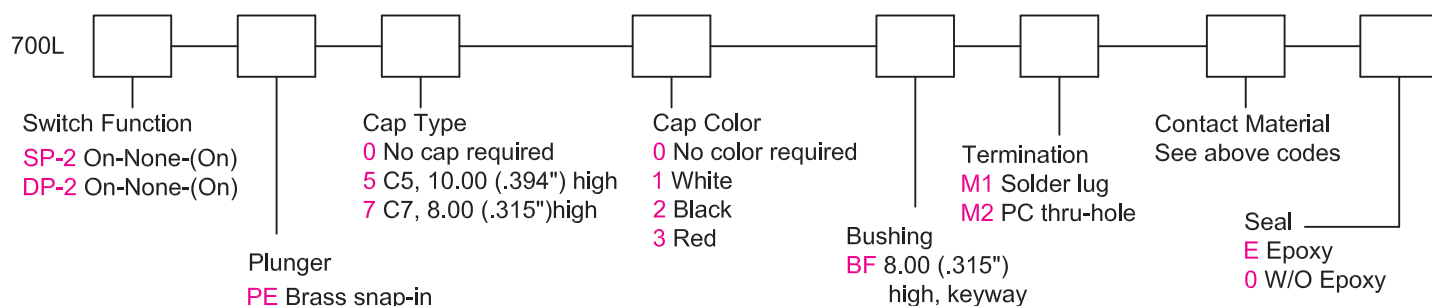
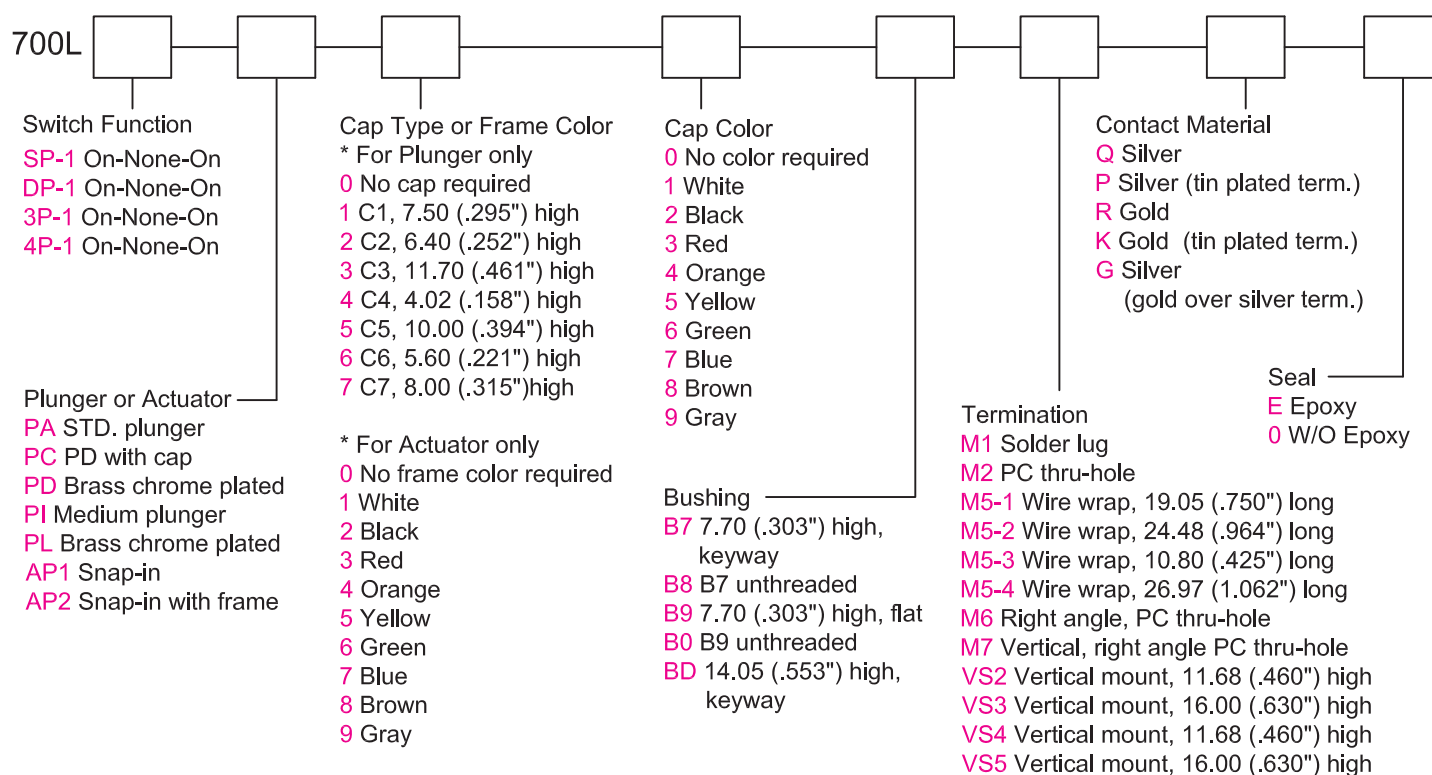
MATERIALS:

CASE: Diallyl phthalate(DAP)(UL 94V-0).
PLUNGER: Polybutylene terephthalate (PBT) or Nylon (UL 94V-0).
FRAME: Nylon 6/6 (UL 94HB), black standard.
BUTTON & CAP: Nylon 6/6 or ABS, black standard.
BUSHING: Brass, nickel plated.
HOUSING: Stainless steel.
TERMINAL SEAL: Epoxy.

Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous

Series 700L

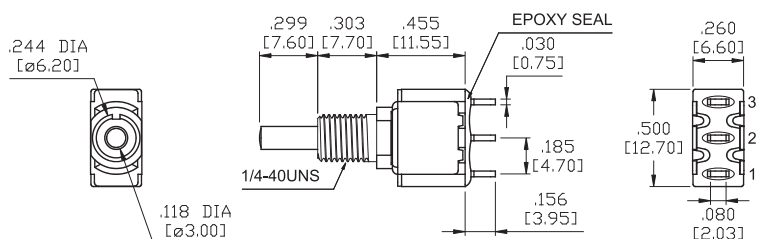
Alternate Acting Pushbutton Switches

SPDT



Model No.	Switching Position		
SP-1	ON	NONE	ON
Term. Comm.	2-3	OPEN	2-1

Schematic

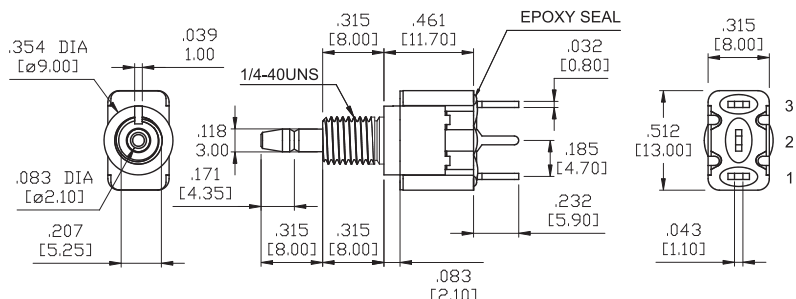


SPDT



Model No.	Switching Position		
SP-2	ON	NONE	(ON)
Term. Comm.	2-3	OPEN	2-1

Schematic

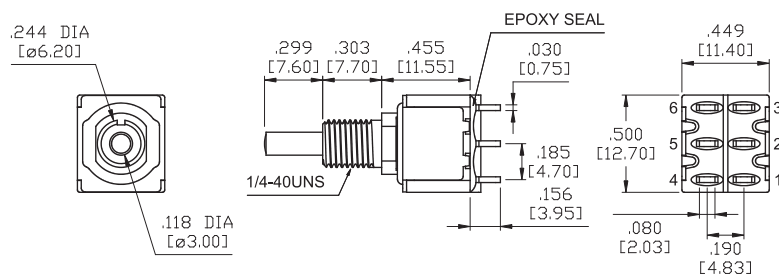
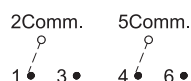


DPDT

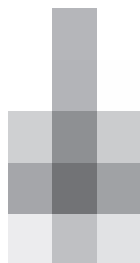


Model No.	Switching Position		
DP-1	ON	NONE	ON
Term. Comm.	2-3,5-6	OPEN	2-1,5-4

Schematic

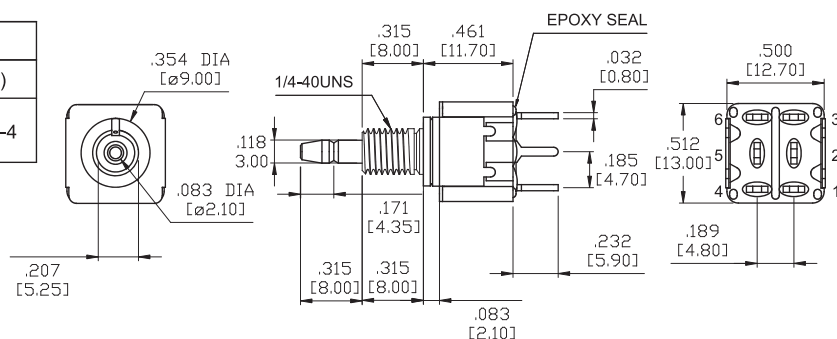
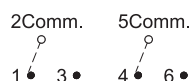


DPDT



Model No.	Switching Position		
DP-2	ON	NONE	(ON)
Term. Comm.	2-3,5-6	OPEN	2-1,5-4

Schematic

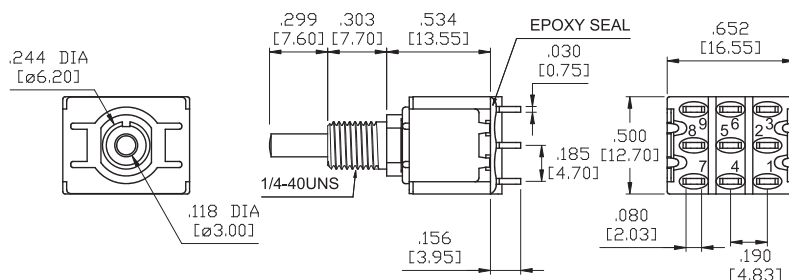
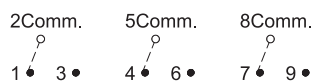


3PDT



Model No.	Switching Position		
3P-1	ON	NONE	ON
Term. Comm.	2-3,5-6 8-9	OPEN	2-1,5-4 8-7

Schematic



Series 700L

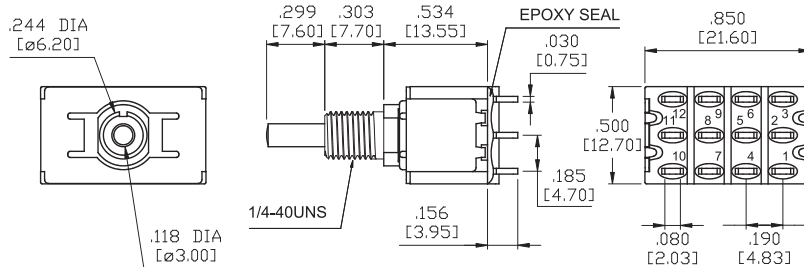
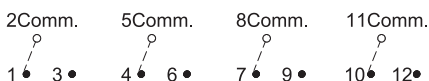
Alternate Acting Pushbutton Switches

4PDT



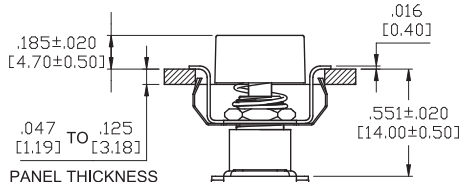
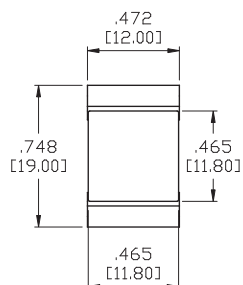
Model No.	Switching Position		
4P-1	ON	NONE	ON
Term. Comm.	2-3,5-6 8-9 11-12	OPEN	2-1,5-4 8-7 11-10

Schematic

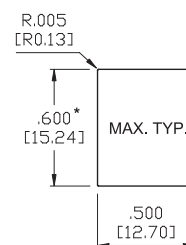


ACTUATOR OPTIONS FOR SNAP-IN FRONT MOUNT

AP1

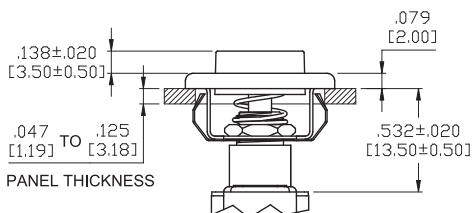
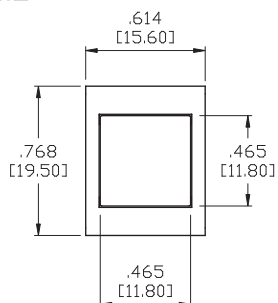


PANEL MOUNTING

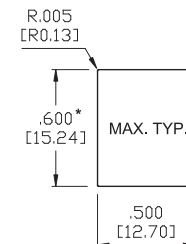


* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

AP2 WITH FRAME

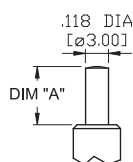


PANEL MOUNTING



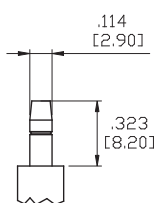
* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

PLUNGER OPTIONS (SP-1 & DP-1 MODEL)



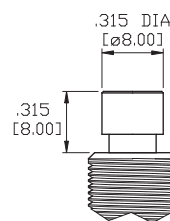
OPTION CODE	DIM "A"
PA	.299 [7.60]
PI	.244 [6.20]

PL



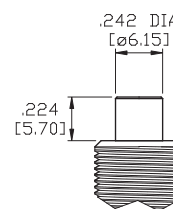
* Plunger material: Brass Nickel Plated

PC



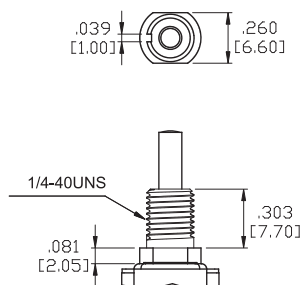
* Plunger material: Brass Chrome Plated
* PC,PD must configure with BD bushing

PD

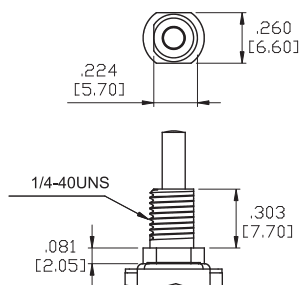


BUSHING OPTIONS (SP-1 & DP-1 MODEL)

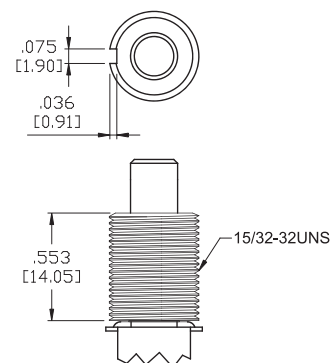
B7 THD STD
B8 NON-THD



B9 THD STD
B0 NON-THD

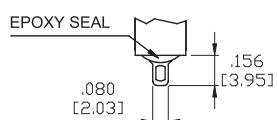


BD THD STD



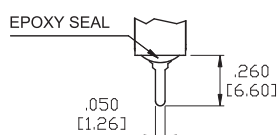
TERMINATION OPTIONS (SP-1 & DP-1 MODEL)

M1 STD. SOLDER LUG



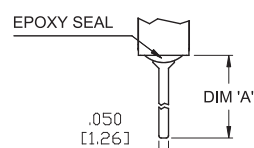
THK .030 [0.75]

M2 PC-THRU HOLE



THK .030 [0.75]

M5 WIRE WRAP



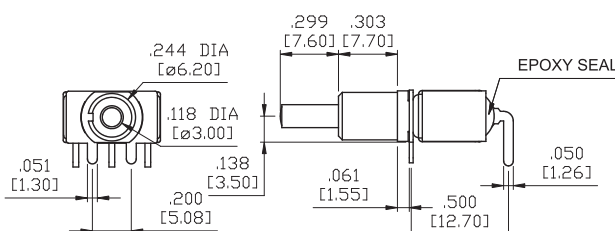
THK .030 [0.75]

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]

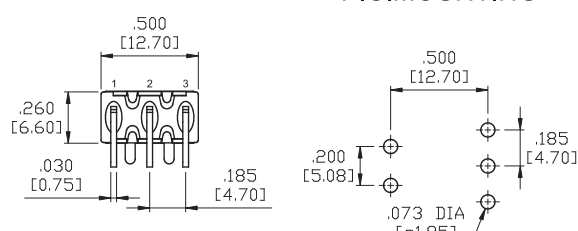
M6



SPDT



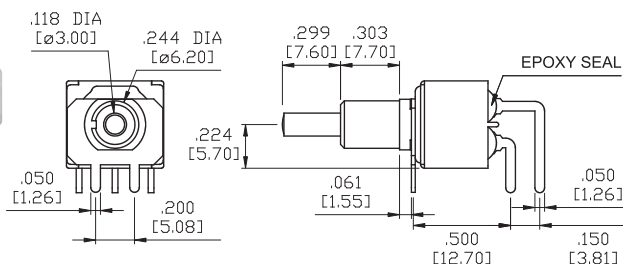
P.C.MOUNTING



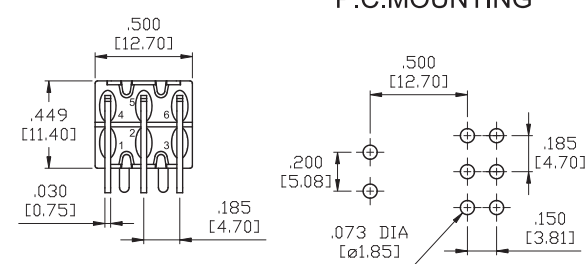
M6



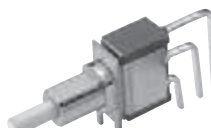
DPDT



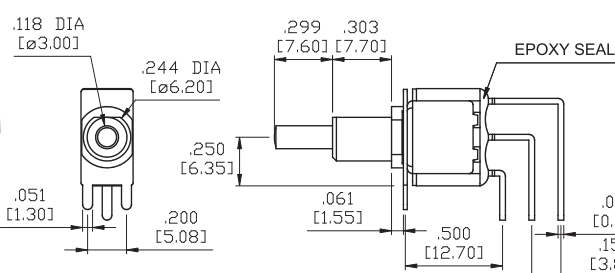
P.C.MOUNTING



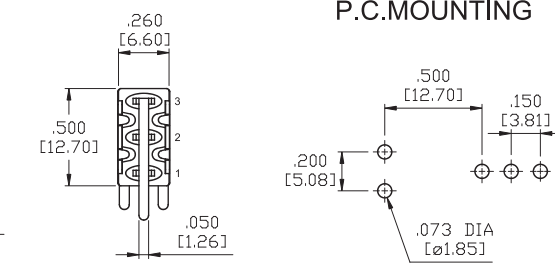
M7



SPDT



P.C.MOUNTING

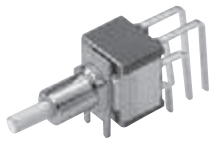


Series 700L

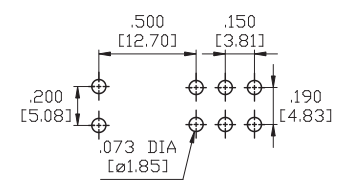
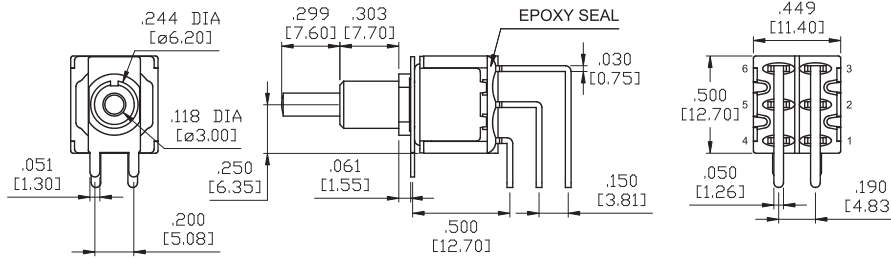
Alternate Acting Pushbutton Switches

M7

P.C.MOUNTING

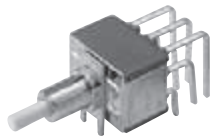


DPDT

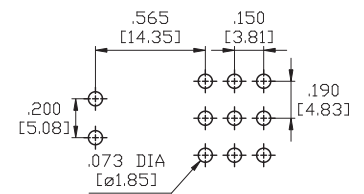
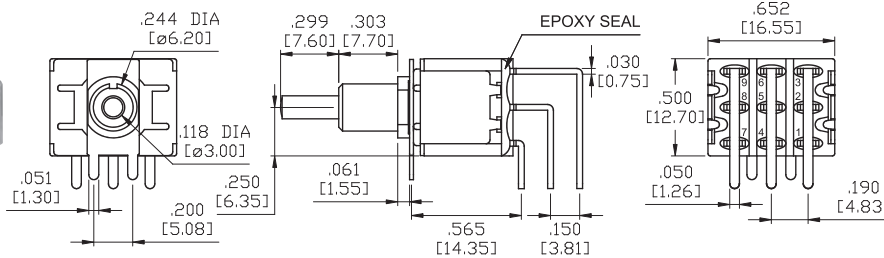


M7

P.C.MOUNTING

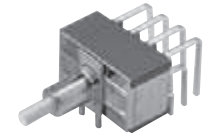


3PDT

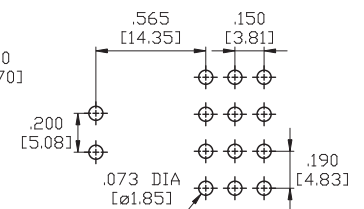
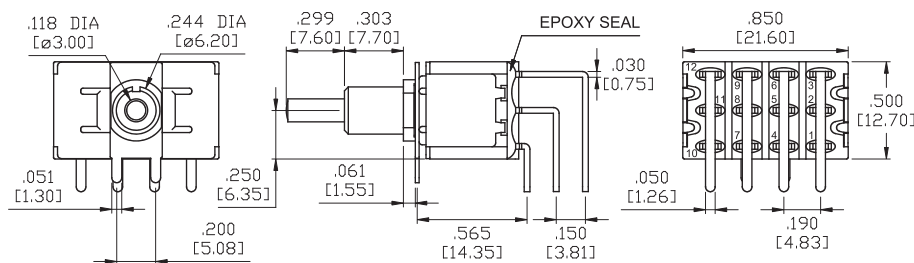


M7

P.C.MOUNTING



4PDT

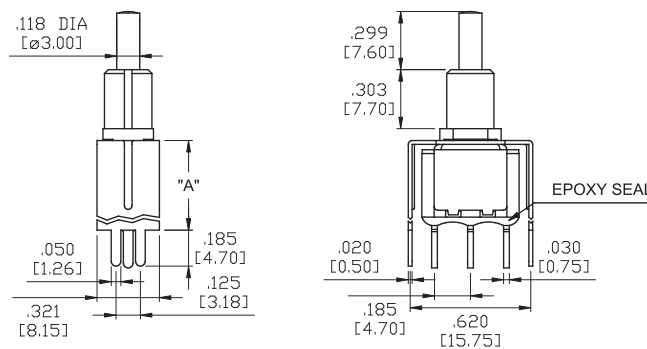


VS2-VS3

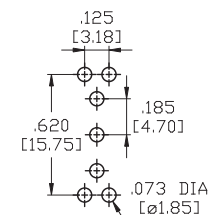
P.C.MOUNTING



SPDT



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

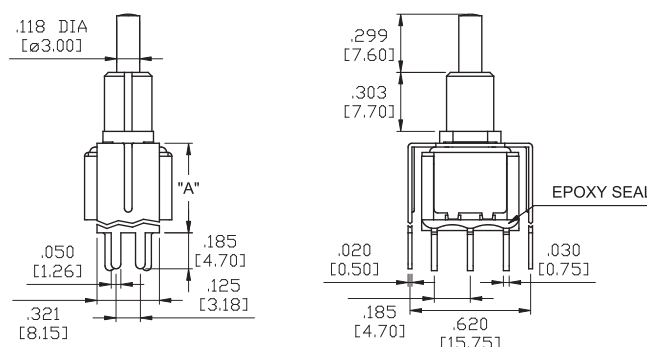


VS2-VS3

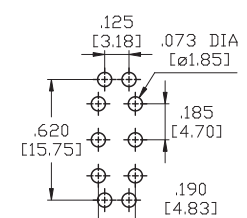
P.C.MOUNTING



DPDT



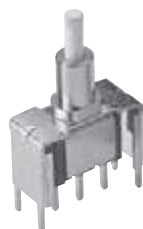
OPTION CODE	DIM.'A'
VS2	.461 [11.70]
VS3	.630 [16.00]



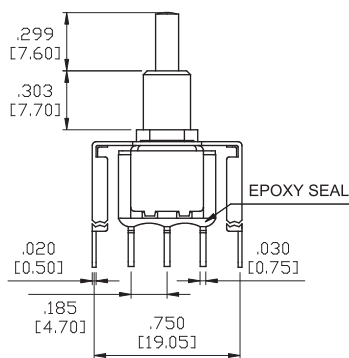
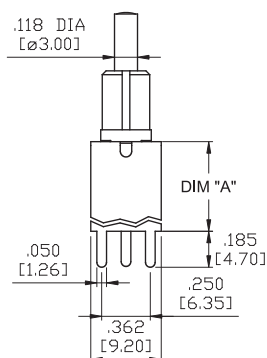
Series 700L

Alternate Acting Pushbutton Switches

VS4-VS5

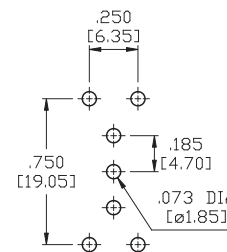


SPDT



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

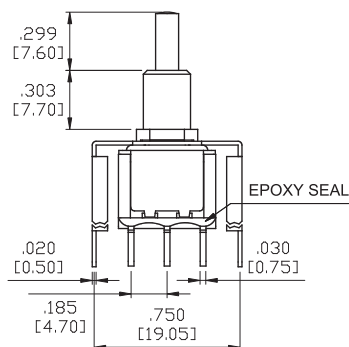
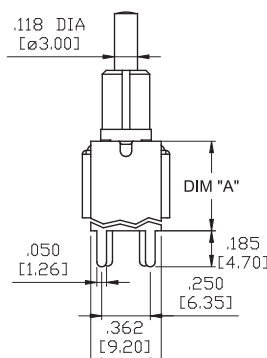
P.C.MOUNTING



VS4-VS5

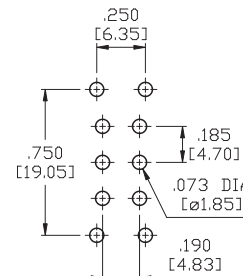


DPDT



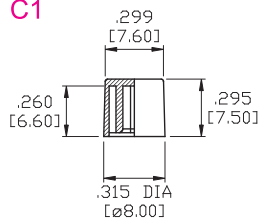
OPTION CODE	DIM.'A'
VS4	.461 [11.70]
VS5	.630 [16.00]

P.C.MOUNTING

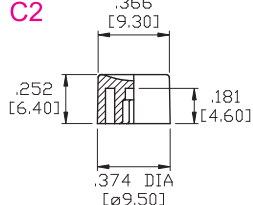


PLUNGER CAPS

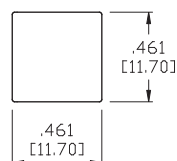
C1



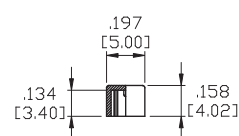
C2



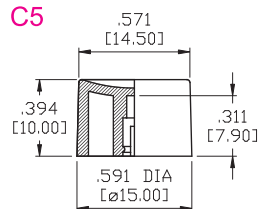
C3



C4

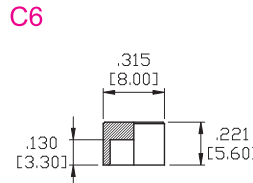


C5



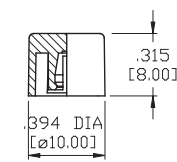
For PL plunger only

C6



For PD plunger only

C7



For PL plunger only

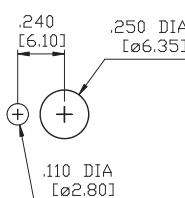
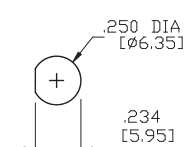
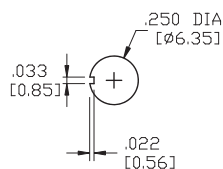
CAP AND FRAME COLORS

1	White
2	Black
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

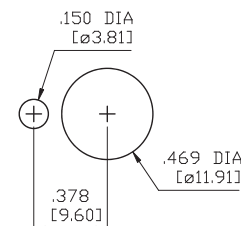
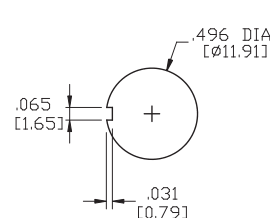
MATERIAL: ABS for C1~C5.
MATERIAL: Brass for C6
Chrome or nickel plated.

PANEL MOUNTING

1/4 INCH BUSHING

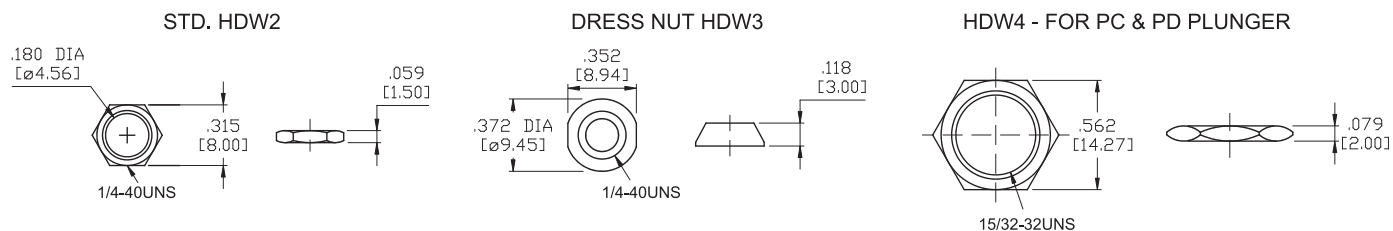


15/32 INCH BUSHING

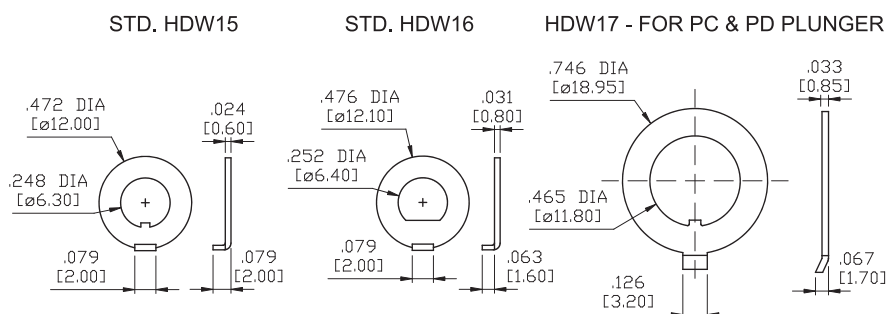


HARDWARE

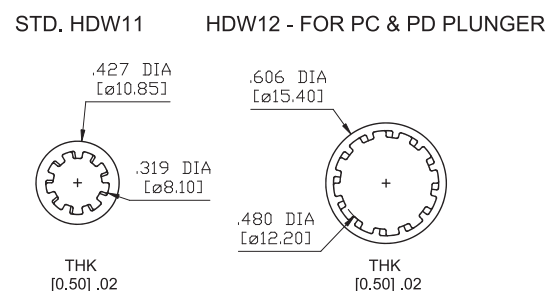
NUT



LOCKING RING



LOCK WASHER

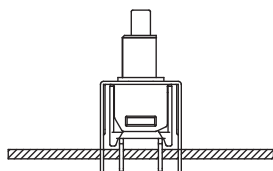
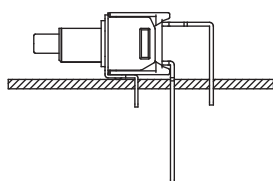


CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
Q	Silver ¹	Silver plated ⁶	6Amps @ 125VAC or 28VDC 3Amps @ 250VAC	
P		Tin plated ^{5 8}		
R	Gold ²	Gold plated ⁴	0.4VA max @ 20V max (AC or DC)	
K		Tin plated ^{5 7}		
G	Silver ¹	Gold over silver ³	6Amps @ 125VAC or 28VDC 3Amps @ 250VAC	

1. Movable Contact: Coin silver, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.
5. Outer Terminals: Copper alloy with pure tin plated.
6. Terminals: Copper alloy, silver plated.
7. Terminal Contact: Gold plated over nickel plated.
8. Terminal Contact: Palladium nickel alloy (or Silver) plated.

* P, K not available with M1 termination.

**SPECIFICATION:**

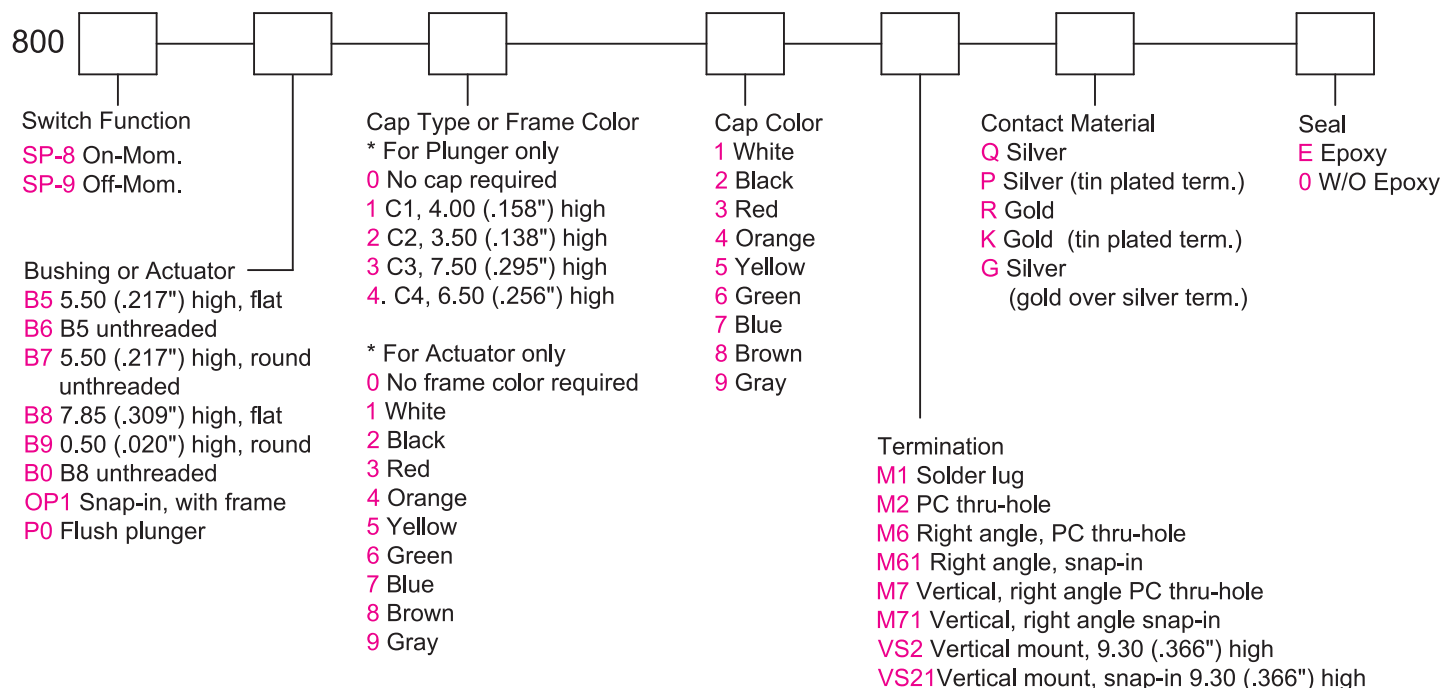
CONTACT RATING: Refer to "Contact Material Options" for more info.
 ELECTRICAL LIFE: 30,000 make-and-break cycles at full load.
 CONTACT RESISTANCE: 20mΩ max. initial @2-4 VDC
 100mA for both silver and gold plated contacts.
 INSULATION RESISTANCE: 1000MΩ min.
 DIELECTRIC STRENGTH: 1500V RMS @ sea level.
 OPERATING TEMPERATURE: -30°C to +85°C.

MATERIALS:

CASE: Diallyl phthalate(DAP)(UL 94V-0).
 PLUNGER: Polybutylene terephthalate (PBT) or Nylon 6/6.
 BUSHING: Brass, nickel plated.
 SWITCH SUPPORT: Brass, tin plated.
 HOUSING: Stainless steel.
 TERMINAL SEAL: Epoxy.

Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

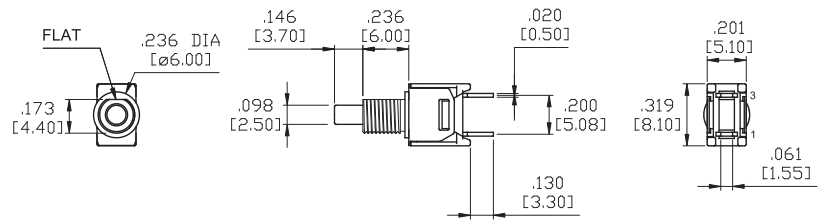
HOW TO ORDER SYSTEM

SPST



Model No.	Type	
SP-9	OFF	MOM

Schematic

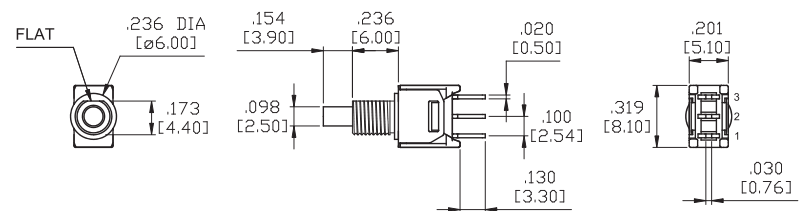
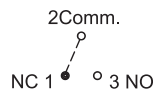


SPDT



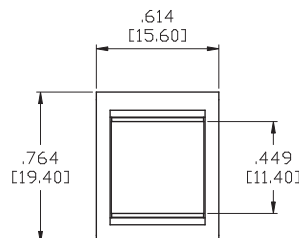
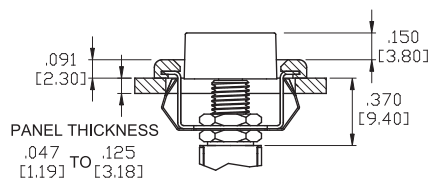
Model No.	Type	
SP-8	ON	MOM
Term. Comm.	2-1	2-3

Schematic

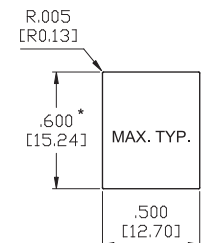


ACTUATOR OPTIONS FOR SNAP-IN FRONT MOUNT

OP1

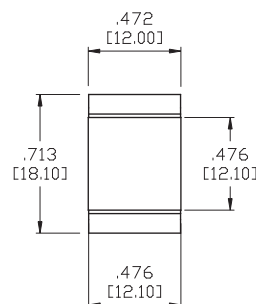
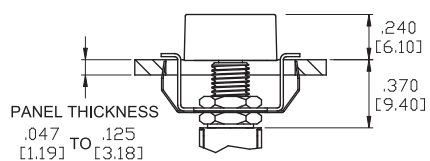


PANEL MOUNTING

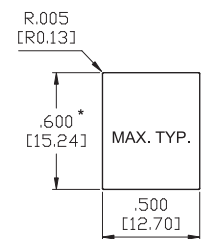


* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

OP1 WITHOUT FRAME



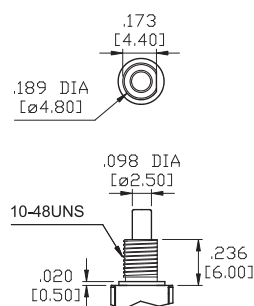
PANEL MOUNTING



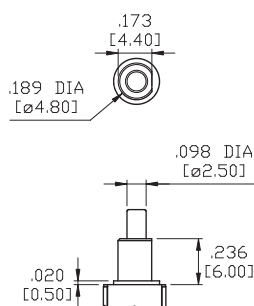
* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

BUSHING OPTIONS

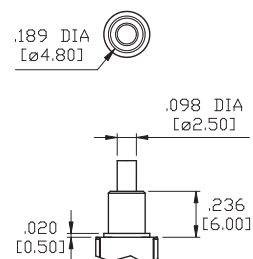
B5



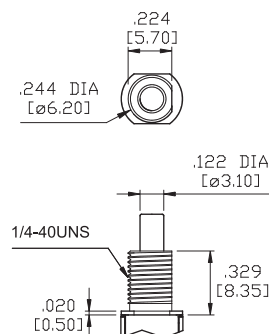
B6



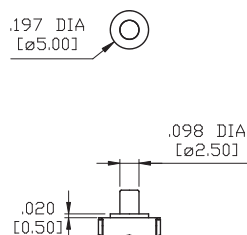
B7



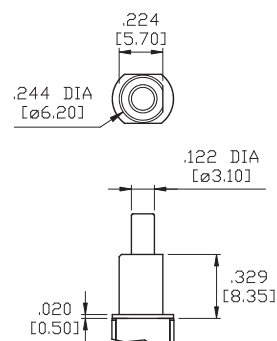
B8



B9

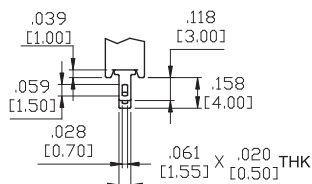


B0

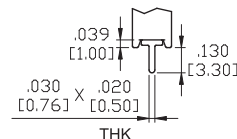


TERMINATION OPTIONS

M1



M2

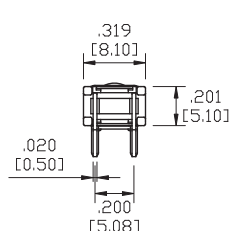
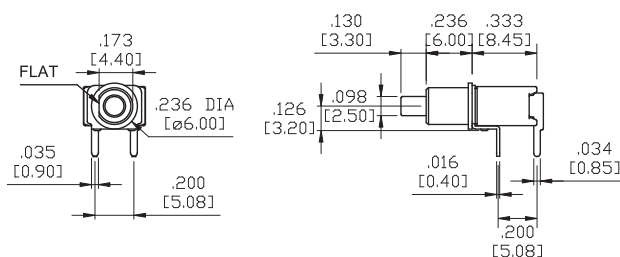


TERMINATION OPTIONS

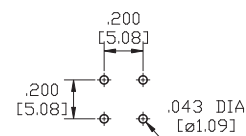
M6



SPST



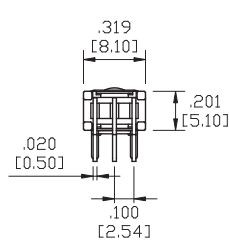
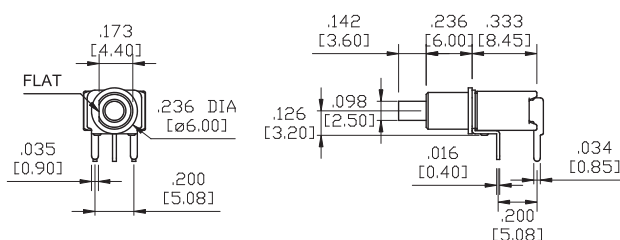
P.C.MOUNTING



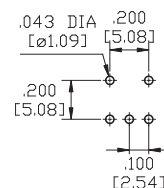
M6



SPDT



P.C.MOUNTING



TERMINATION OPTIONS

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

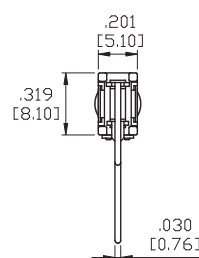
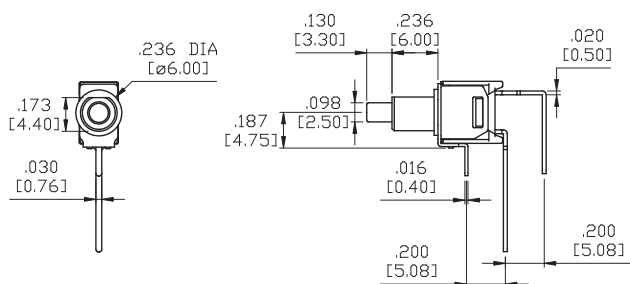
Touch Key

Miscellaneous

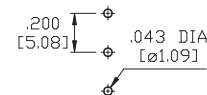
M7



SPST



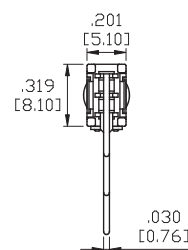
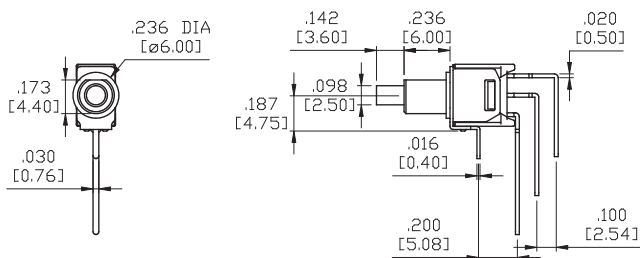
P.C.MOUNTING



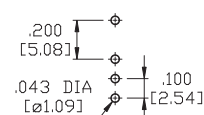
M7



SPDT



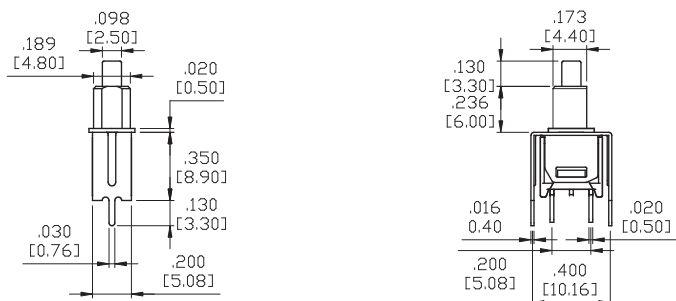
P.C.MOUNTING



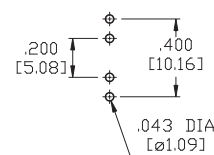
VS2



SPST



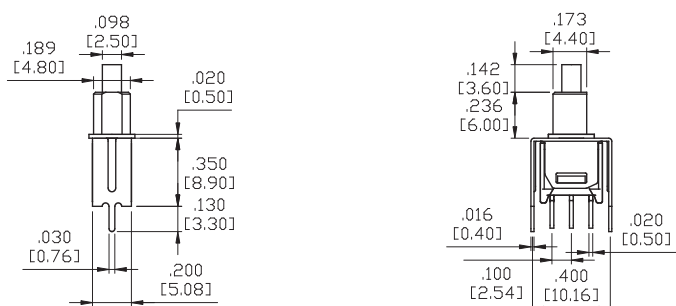
P.C.MOUNTING



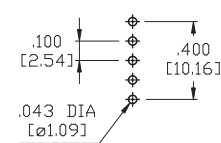
VS2



SPDT

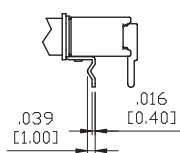


P.C.MOUNTING

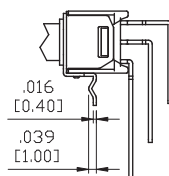


SNAP-IN TERMINATION OPTIONS

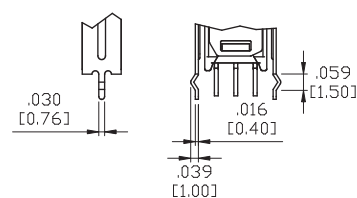
M61



M71



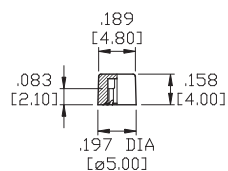
VS21



* PC Mounting for M61,M71,VS21 refer to M6,M7,VS2 respectively.

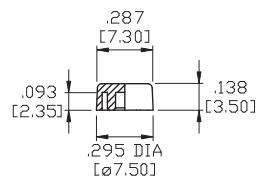
PLUNGER CAPS

C1



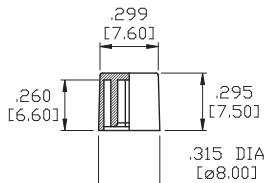
* MATERIAL: ABS.

C2



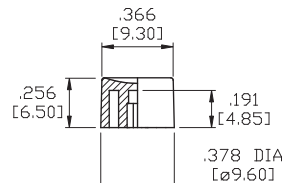
* MATERIAL: ABS.

C3



* MATERIAL: ABS.

C4



* MATERIAL: ABS.

CAP AND FRAME COLORS

1	White
2	Black
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

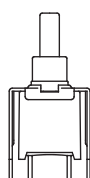
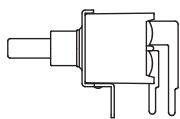
* C3 & C4 cap is only for plunger with B8 and B0 bushing.

CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
Q	Silver ¹	Silver plated ¹	1Amps @ 125VAC or 28VDC	
P		Tin plated ^{5/7}		
R	Gold ²	Gold plated ⁴	0.4VA max @ 20V max (AC or DC)	
K		Tin plated ^{5/6}		
G	Silver ¹	Gold over silver ³	1Amps @ 125VAC or 28VDC	

1. Movable Contact / Terminals: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.
5. Outer Terminals: Copper alloy with pure tin plated.
6. Terminal Contact: Gold plated over nickel plated.
7. Terminal Contact: Palladium nickel alloy (or Silver) plated.

* P, K is not available with M1 terminal.



SPECIFICATIONS:

CONTACT RATING: Refer to "Contact Material Options" for more info.
ELECTRICAL LIFE: 30,000 make-and break cycles at full load.
CONTACT RESISTANCE: 20mΩ max. initial @ 2-4VDC
100mA for both silver and gold plated contacts.
INSULATION RESISTANCE: 1,000MΩ min.
DIELECTRIC STRENGTH: 1500V RMS min. @ sea level.
OPERATING TEMPERATURE: -30°C to +85°C.

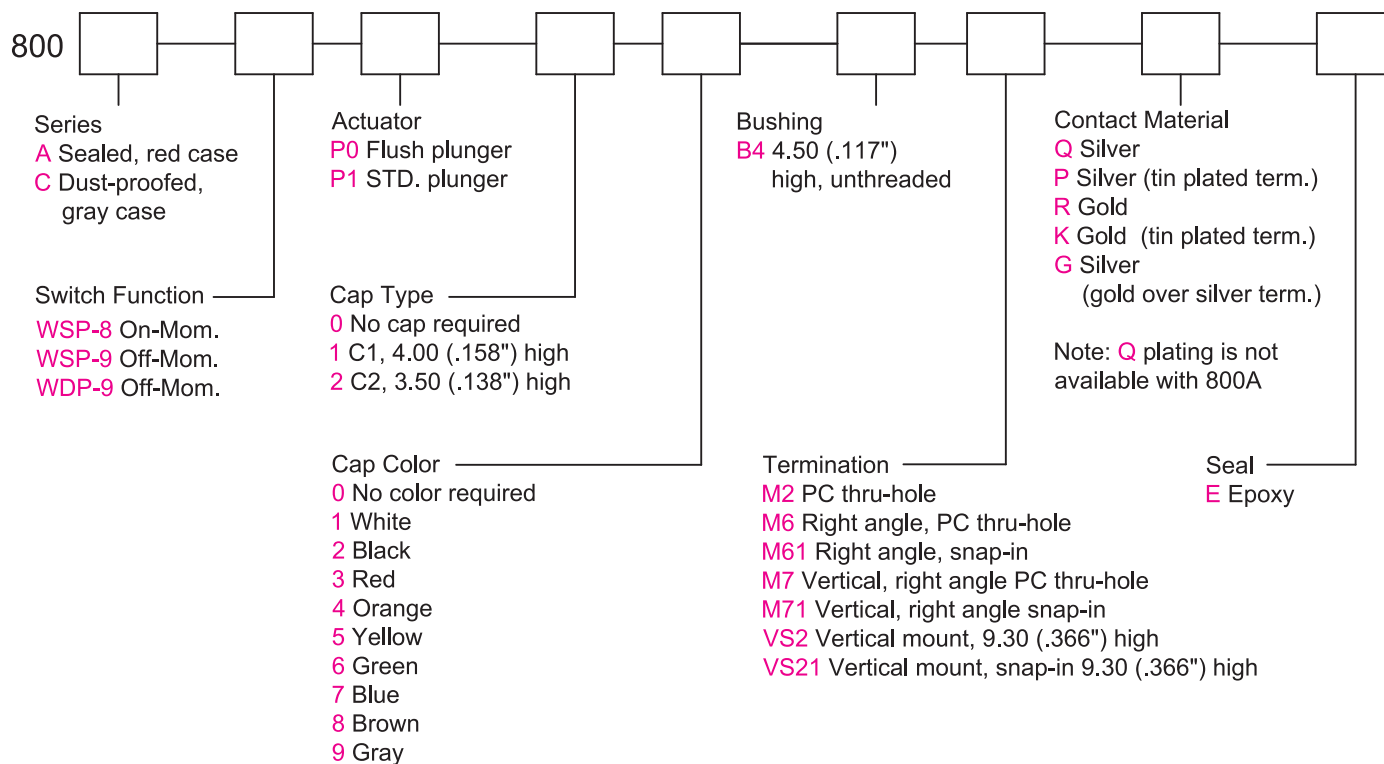
MATERIALS:

CASE & BUSHING: PA9T or FR52, flame retardant, heat stabilized (UL 94V-0).
PLUNGER: FR52 (UL 94V-0), with internal o-ring sealed (800A).
PLUNGER: FR52 (UL 94V-0) (800C).
SWITCH SUPPORT: Brass, tin plated.
TERMINAL SEAL: Epoxy.

Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



Series 800A/C

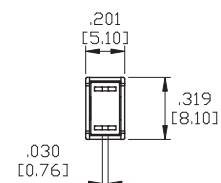
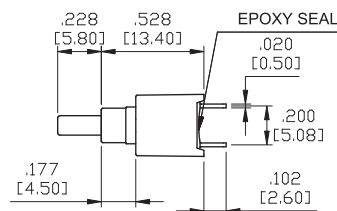
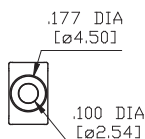
(Sealed) Sub-Miniature Pushbutton Switches

SPST



Model No.	Type	
WSP-9	OFF	MOM

Schematic

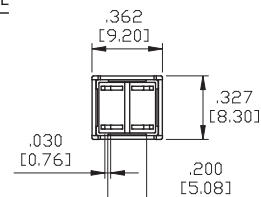
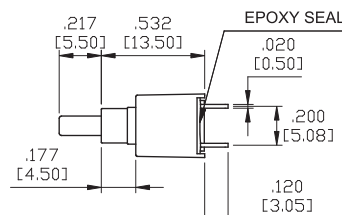
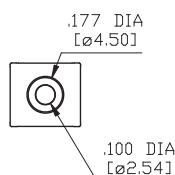
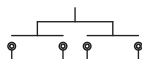


DPST



Model No.	Type	
WDP-9	OFF	MOM

Schematic

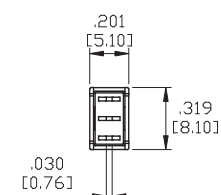
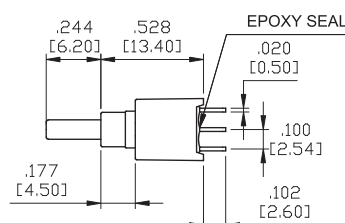
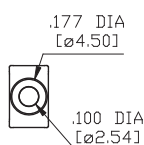


SPDT



Model No.	Type	
WSP-8	ON	MOM
Term. Comm.	2-1	2-3

Schematic

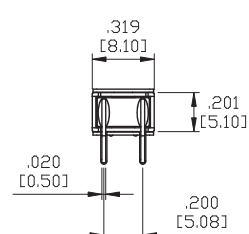
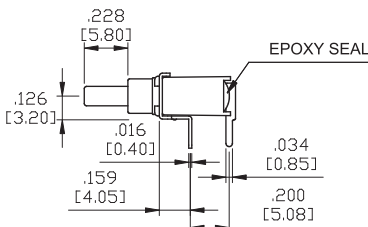
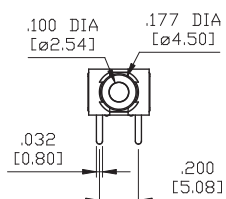


TERMINATION OPTIONS

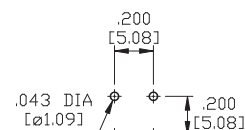
M6



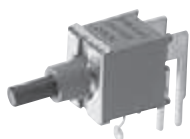
SPST



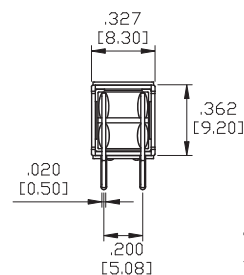
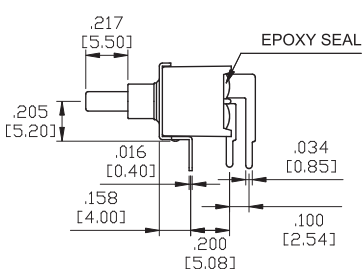
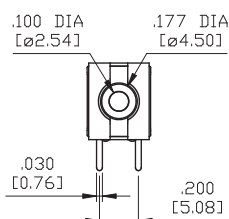
P.C.MOUNTING



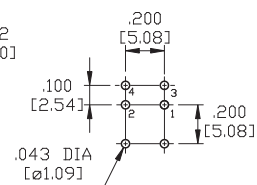
M6



DPST



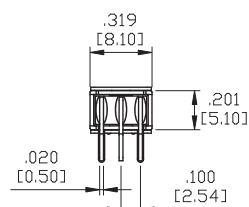
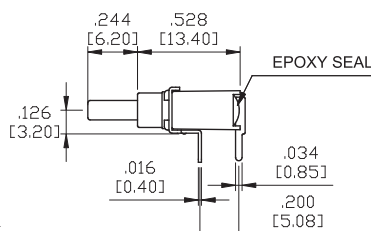
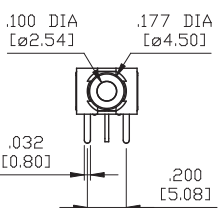
P.C.MOUNTING



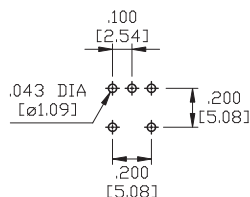
M6



SPDT



P.C.MOUNTING



TERMINATION OPTIONS

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

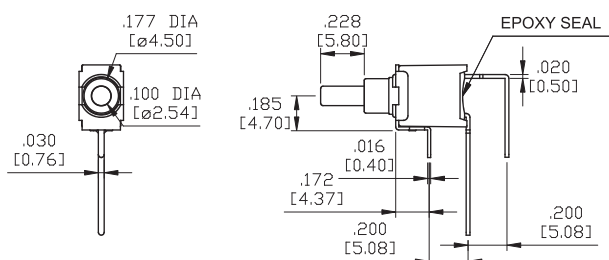
Touch Key

Miscellaneous

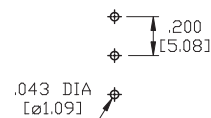
M7



SPST



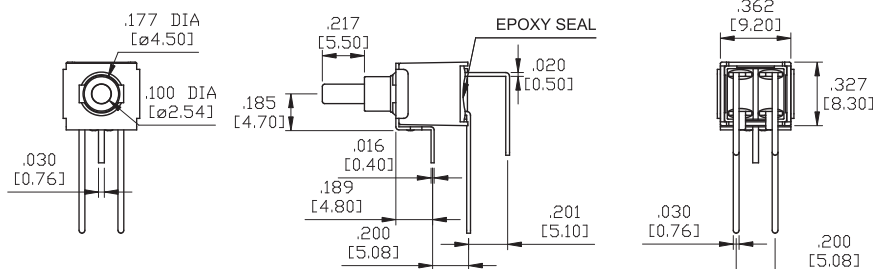
P.C.MOUNTING



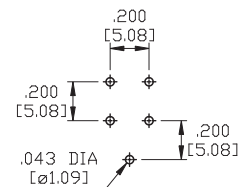
M7



DPST



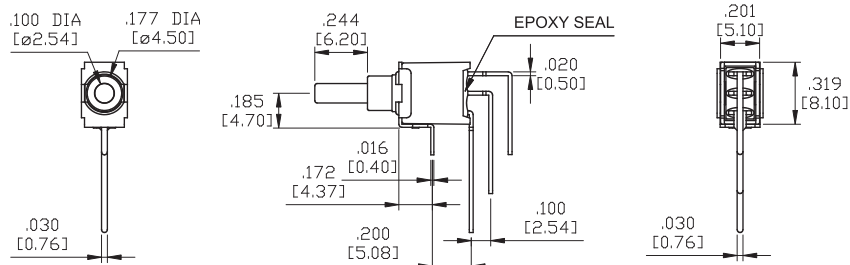
P.C.MOUNTING



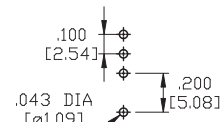
M7



SPDT



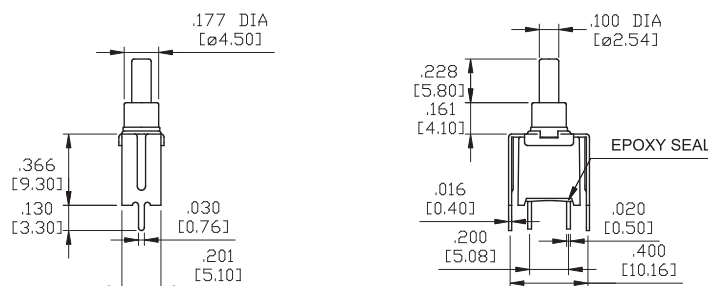
P.C.MOUNTING



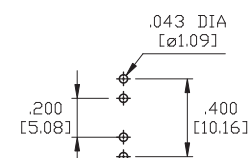
VS-2



SPST



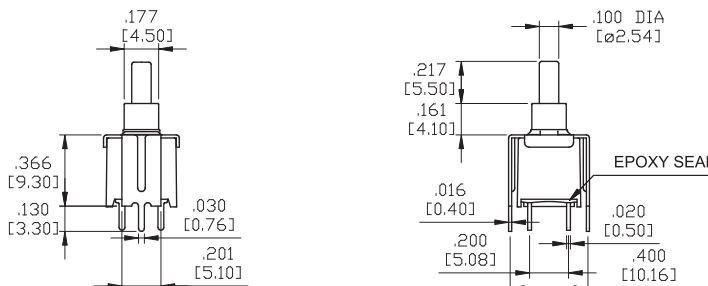
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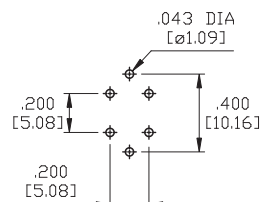
VS-2



DPST



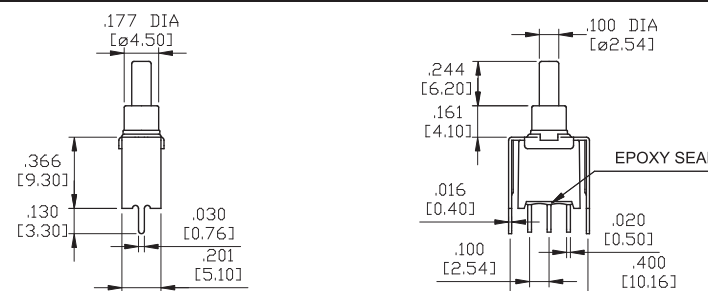
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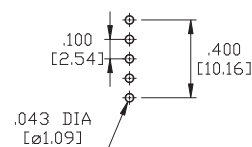
VS2



SPDT

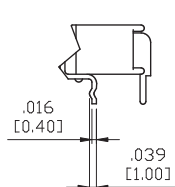


P.C.MOUNTING

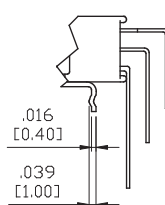
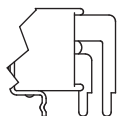


SNAP-IN TERMINATION OPTIONS

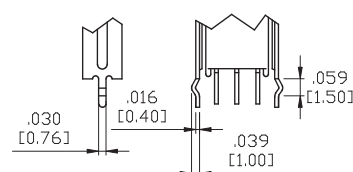
M61



M71



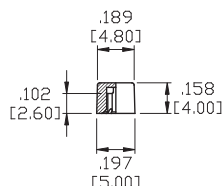
VS21



* PC Mounting for M61,M71,VS21 refer to M6,M7,VS2 respectively.

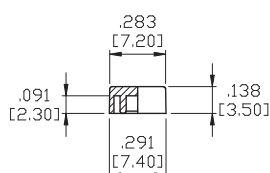
PLUNGER CAPS

C1



* MATERIAL: ABS.

C2



* MATERIAL: ABS.

CAP COLORS			
1	White	6	Green
2	Black	7	Blue
3	Red	8	Brown
4	Orange	9	Gray
5	Yellow		

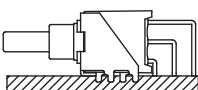
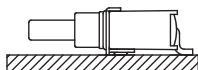
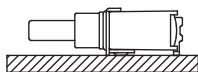
CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
G	Silver ¹	Gold over silver ³	1Amps @ 125VAC or 28VDC	IP67
P		Tin plated ⁵ ⁷		
R	Gold ²	Gold plated ⁴	0.4VA max @ 20V max (AC or DC)	IP67
K		Tin plated ⁵ ⁶		

* Standard G plating for sealed product.

1. Movable Contact: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.
5. Outer Terminals: Copper alloy with pure tin plated.
6. Terminal Contact: Gold plated over nickel plated.
7. Terminal Contact: Palladium nickel alloy (or Silver) plated.

* IP67 protection for 800A series only.



SPECIFICATIONS:

CONTACT RATING: Refer to "Contact Material Options".
 ELECTRICAL LIFE: 30,000 make-and-break cycles at full load.
 CONTACT RESISTANCE: 20mΩ max. initial @2-4VDC, 100mA
 INSULATION RESISTANCE: 1,000mΩ min.
 DIELECTRIC STRENGTH: 1,500V RMS min.@sea level.
 OPERATING TEMPERATURE: -30°C to +85°C.

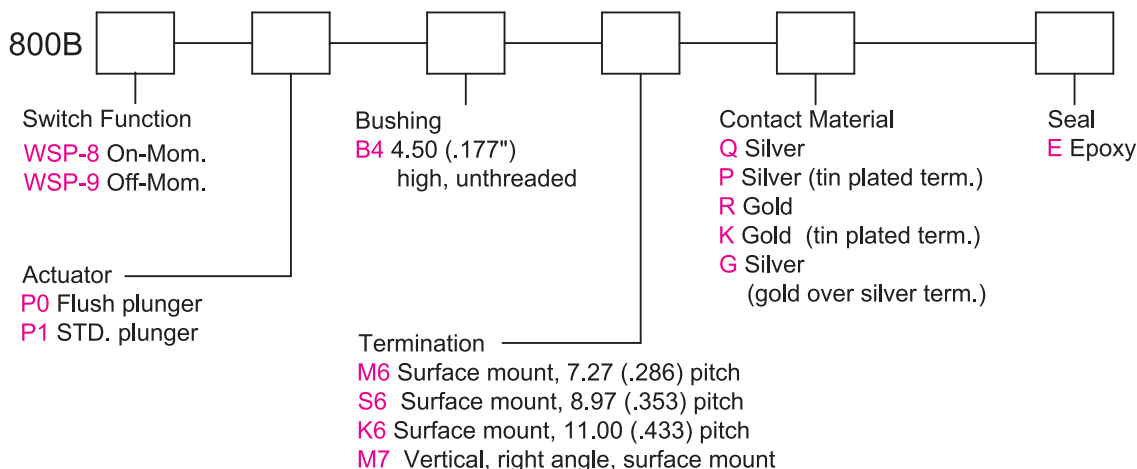
MATERIALS:

CASE & BUSHING: PA46 or FR52, flame retardant, heat stabilized(UL 94V-0).
 PLUNGER: FR52 or PA46 (UL 94V-0), with internal o-ring sealed.
 SURFACE PLATE: Brass (or Phosphor bronze), tin plated.
 TERMINAL SEAL: Epoxy.

Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



M6

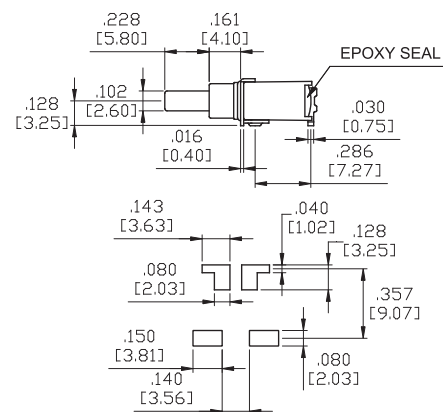
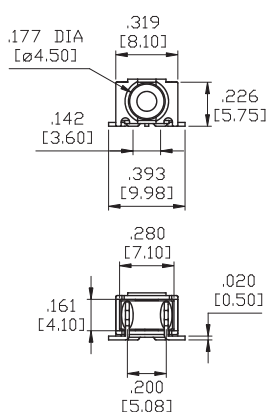


Model No.	Type	
WSP-9	OFF	MOM

Schematic



SPST



M6

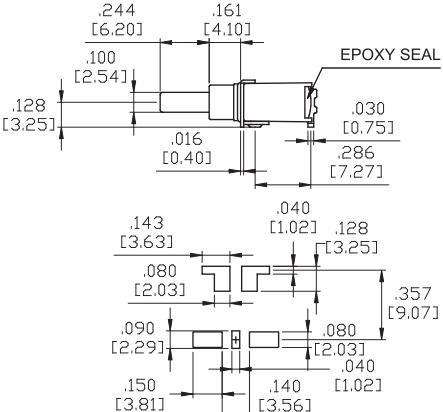
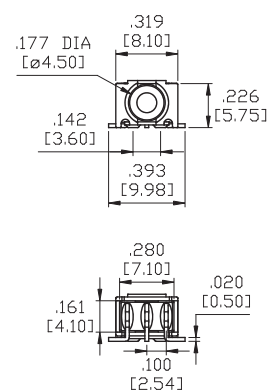


Model No.	Type	
WSP-8	ON	MOM
Term. Comm.	2-1	2-3

Schematic



SPDT



S6

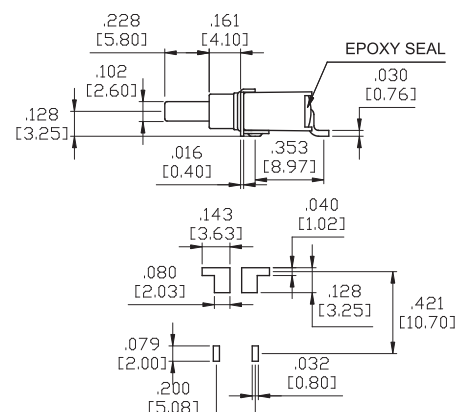
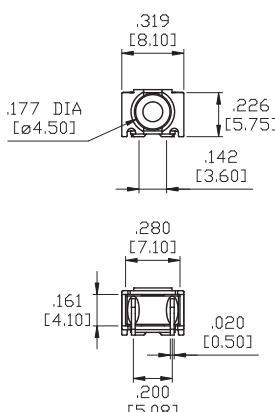


Model No.	Type	
WSP-9	OFF	MOM

Schematic



SPST

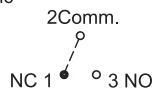


S6

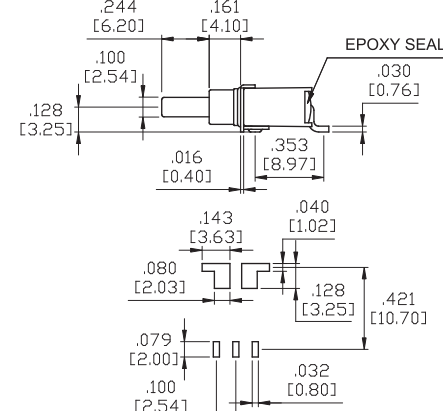
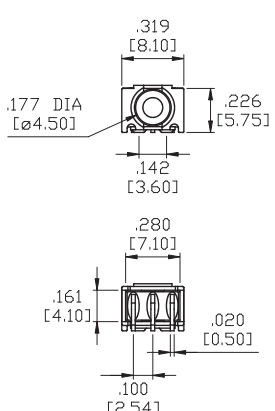


Model No.	Type	
WSP-8	ON	MOM
Term. Comm.	2-1	2-3

Schematic



SPDT



K6

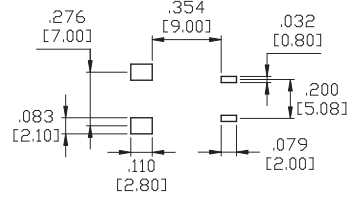
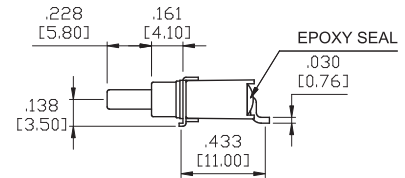
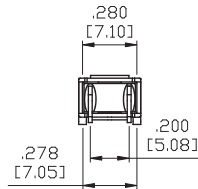
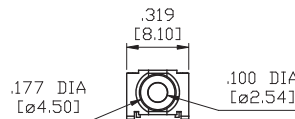


Model No.	Type	
WSP-9	OFF	MOM

Schematic



SPST

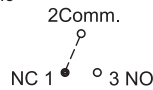


K6

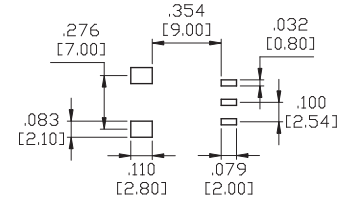
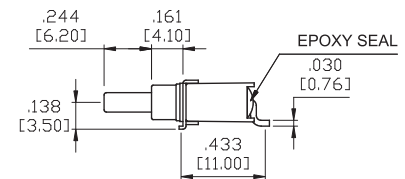
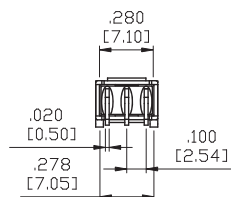
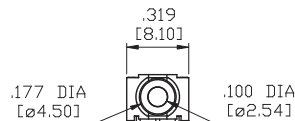


Model No.	Type	
WSP-8	ON	MOM
Term. Comm.	2-1	2-3

Schematic



SPDT



M7

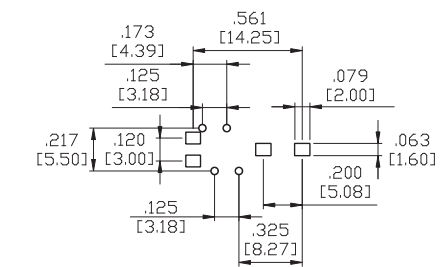
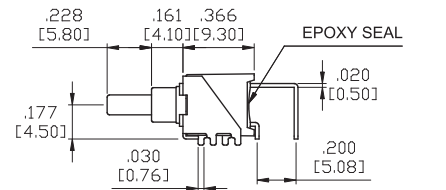
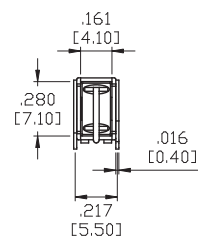
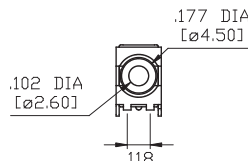


Model No.	Type	
WSP-9	OFF	MOM

Schematic



SPST



M7

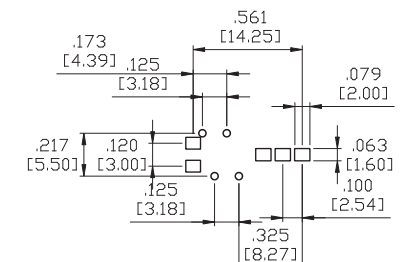
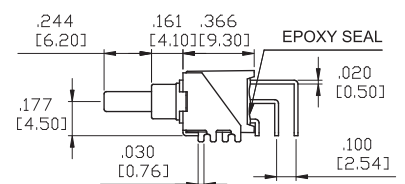
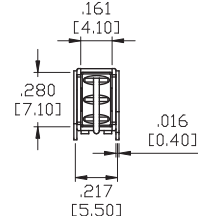
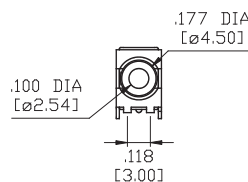


Model No.	Type	
WSP-8	ON	MOM
Term. Comm.	2-1	2-3

Schematic

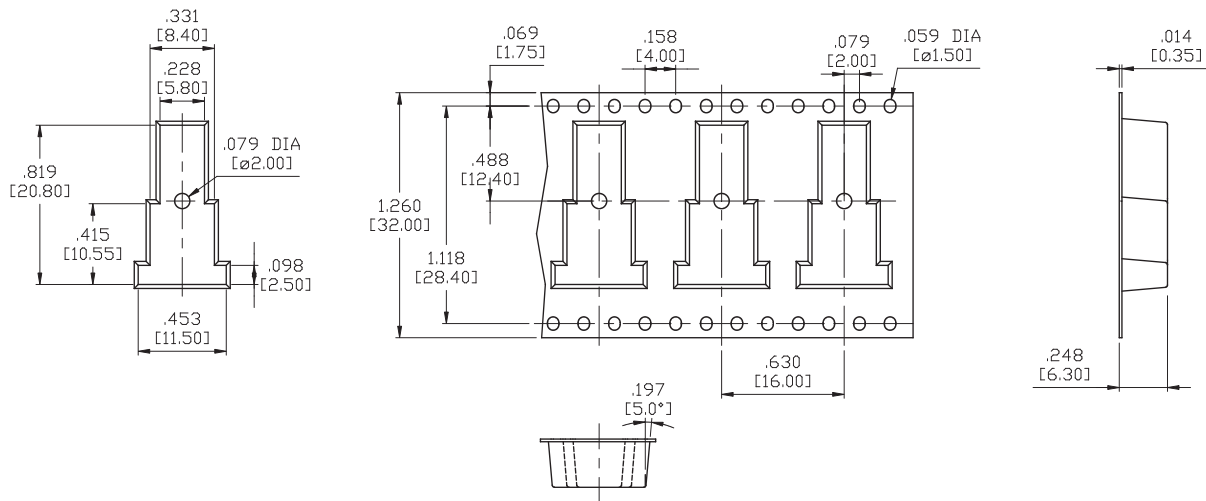


SPDT

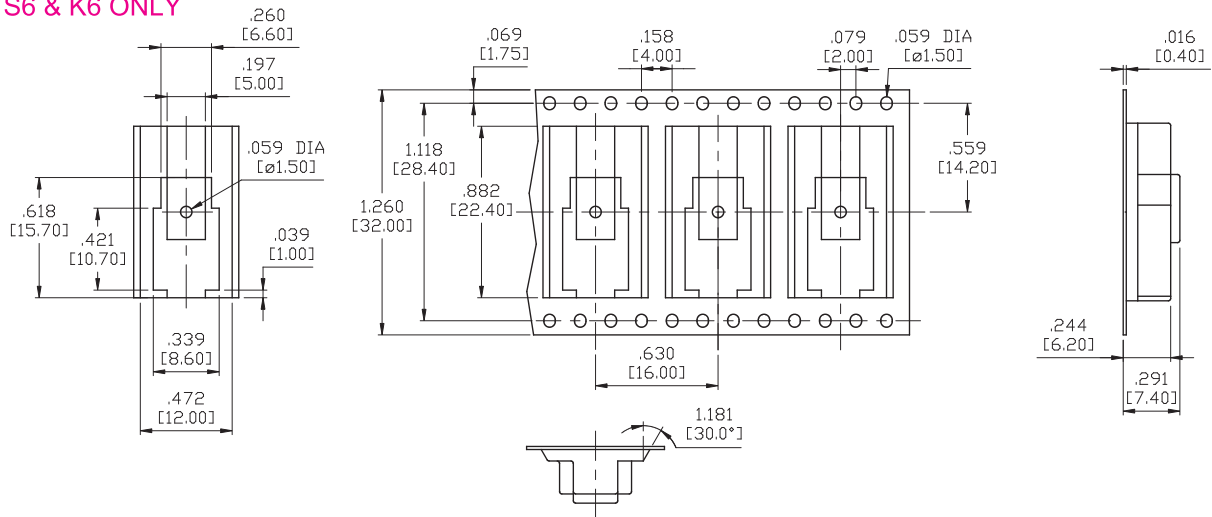


REEL TAPING

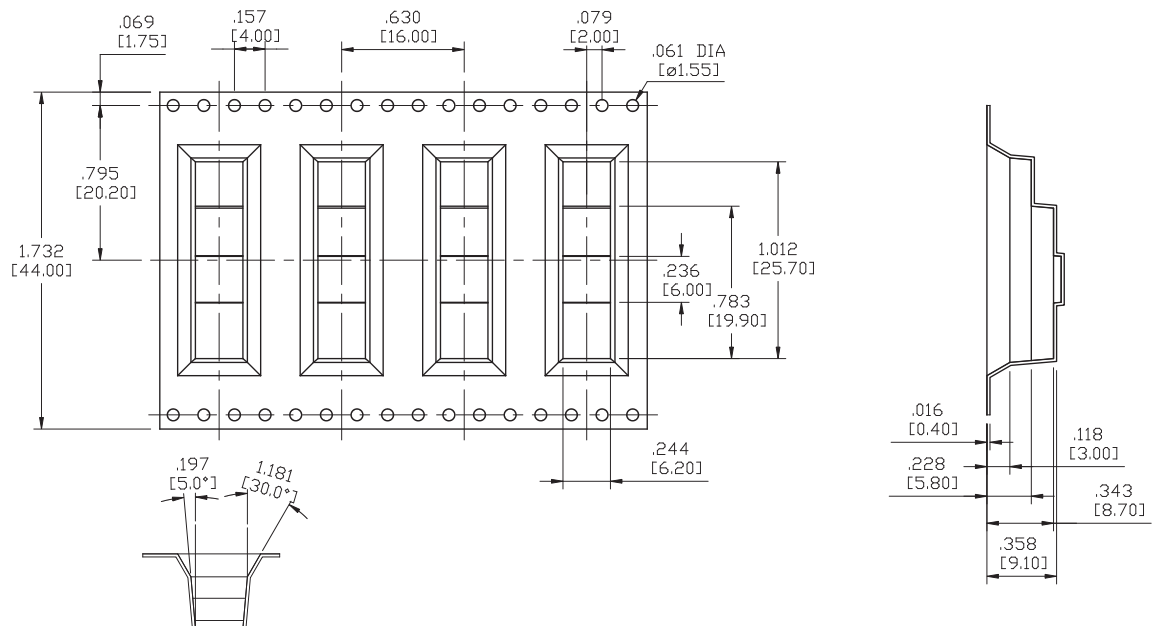
FOR M6 ONLY



FOR S6 & K6 ONLY



FOR M7 ONLY



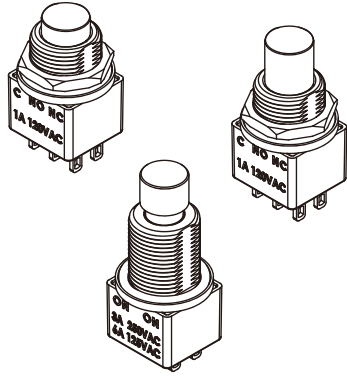
REEL TAPING

REEL INFORMATION	
OUTSIDE DIAMETER	12.99 [330.00]
PILOT HOLE	.502 [13.00]
QUANTITY PER REEL	500 400 (M7 model)

CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
Q	Silver ¹	Silver plated ¹	1Amps @ 125VAC or 28VDC	IP67
P		Tin plated ⁵ ₇		
R	Gold ²	Gold plated ⁴	0.4VA max @ 20V max (AC or DC)	IP67
K		Tin plated ⁵ ₆		
G	Silver ¹	Gold over silver ³	1Amps @ 125VAC or 28VDC	IP67

1. Movable Contact / Terminals: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.
5. Outer Terminals: Copper alloy with pure tin plated.
6. Terminal Contact: Gold plated over nickel plated.
7. Terminal Contact: Palladium nickel alloy (or Silver) plated.



NEW !
IP68 Protection

SPECIFICATIONS:

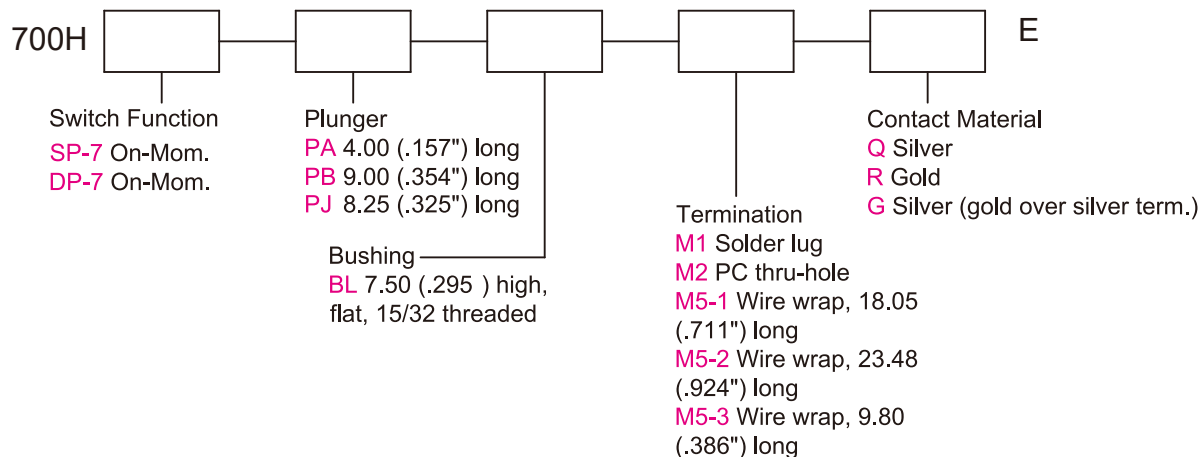
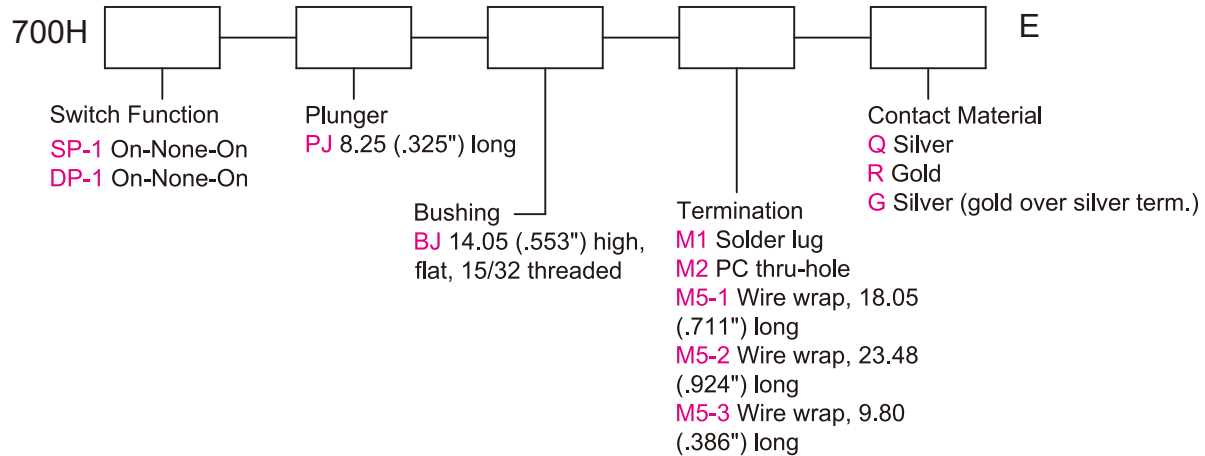
CONTACT RATING: Refer to "Contact Material Options" for more info.
ELECTRICAL LIFE: Min. 50,000 make-and-break cycles at full load.
CONTACT RESISTANCE: 10m-ohms max. initial @2-4VDC
100mA for both silver and gold plated contacts.
INSULATION RESISTANCE: 1,000M-ohms min.
DIELECTRIC STRENGTH: 1,500VAC for 1 minute.
OPERATING TEMPERATURE: -30°C to +85°C.

MATERIALS:

CASE: Diallyl phthalate(DAP)(UL 94V-0).
PLUNGER: Brass, black finish with o-ring sealed.
BUSHING: Brass, black finish with o-ring sealed.
EXTERNAL SHELL: FR52 (UL 94V-0).
TERMINAL SEAL: Epoxy.

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



Series 700H

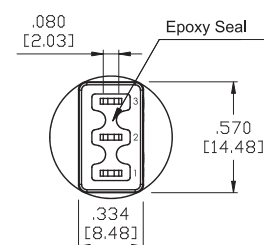
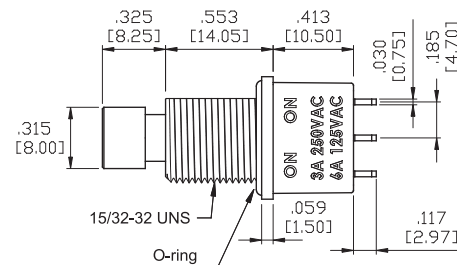
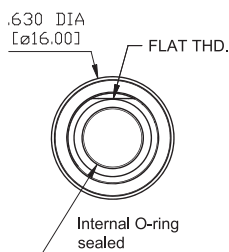
High Performance Sealed Pushbutton Switches

SPDT



Model No.	Switching Position		
	ON	NONE	ON
Term. Comm.	2-3	OPEN	2-1

Schematic

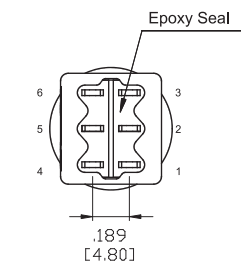
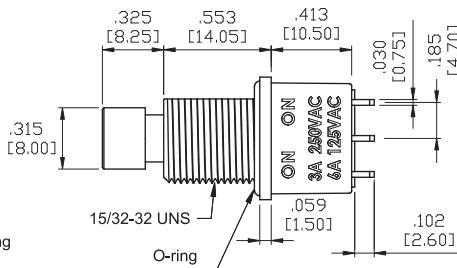
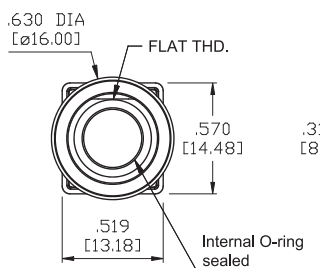
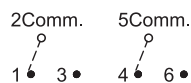


DPDT



Model No.	Switching Position		
	ON	NONE	ON
Term. Comm.	2-3,5-6	OPEN	2-1,5-4

Schematic



SPDT

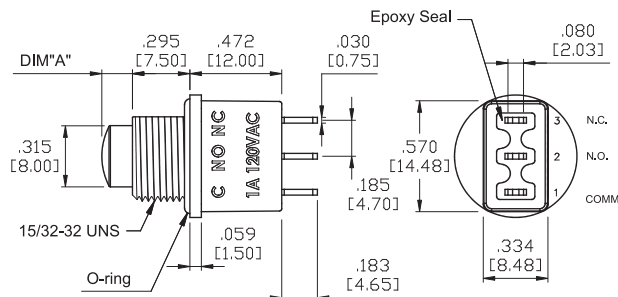
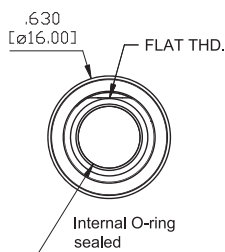


Model No.	Switching Position	
	ON	MOM
Term. Comm.	1-3	1-2

Schematic



OPTION CODE	DIM. "A"
PA	.157 [4.00]
PB	.354 [9.00]



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous

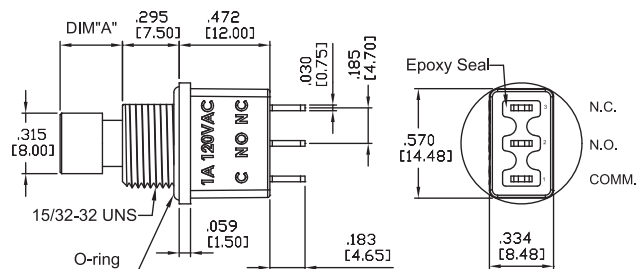
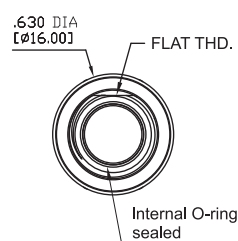
SPDT

Model No.	Switching Position	
SP-7	ON	MOM
Term. Comm.	1-3	1-2

Schematic



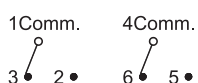
OPTION CODE	DIM. "A"
PJ	.325 [8.25]



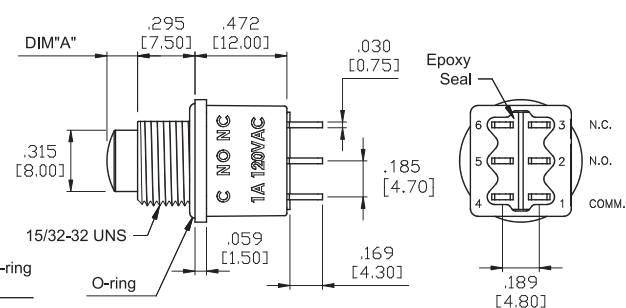
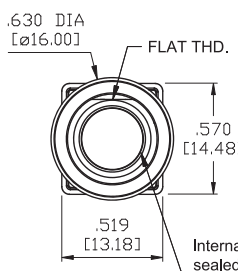
DPDT

Model No.	Switching Position	
DP-7	ON	MOM
Term. Comm.	1-3,4-6	1-2,4-5

Schematic



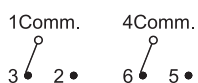
OPTION CODE	DIM. "A"
PA	.157 [4.00]
PB	.354 [9.00]



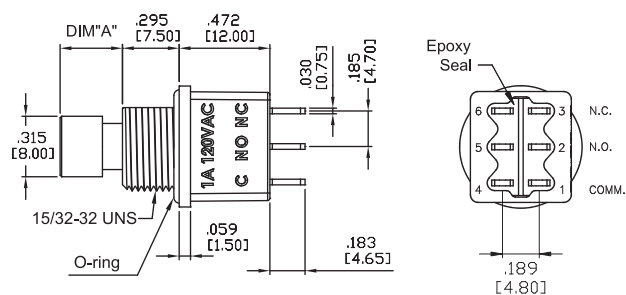
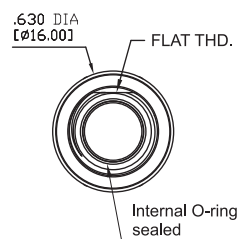
DPDT

Model No.	Switching Position	
DP-7	ON	MOM
Term. Comm.	1-3,4-6	1-2,4-5

Schematic

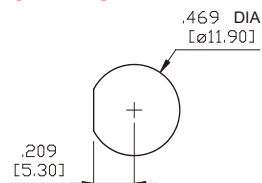


OPTION CODE	DIM. "A"
PJ	.325 [8.25]



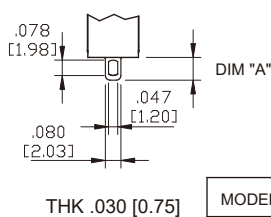
PANEL MOUNTING

15/32-32 UNS FLAT-CUT THD. BUSHING



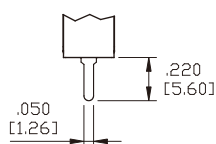
TERMINATION OPTIONS

M1 STD. SOLDER LUG



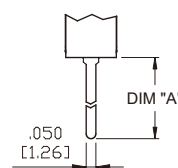
MODEL	DIM "A"
DP-1	.116 [2.95]
DP-7	.183 [4.65]

M2 PC THRU-HOLE



THK .030 [0.75]

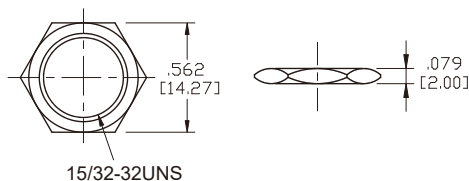
M5 WIRE WRAP



THK .030 [0.75]

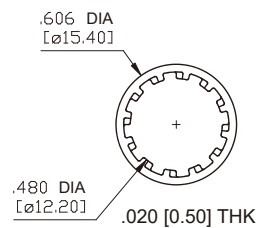
OPTION CODE	DIM "A"
M5-1	.711 [18.05]
M5-2	.924 [23.48]
M5-3	.386 [9.80]

NUT



15/32-32UNS

LOCK WASHER



CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
Q	Silver ¹	Silver plated ¹	(DP-1) 6Amps @ 125VAC or 28VDC 3Amps @ 250VAC (DP-7) 1Amps @ 120VAC or 38VDC	UL ^c IP68
R	Gold ²	Gold plated ⁴	0.4VA max @ 20V max (AC or DC)	
G	Silver ¹	Gold over silver ³	(DP-1) 6Amps @ 125VAC or 28VDC 3Amps @ 250VAC (DP-7) 1Amps @ 120VAC or 38VDC	UL ^c IP68

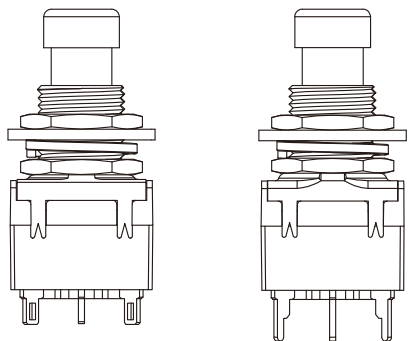
1. Movable Contact / Terminals: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.

SPECIFICATIONS:

CONTACT RATING: 2A/4A 250/125VAC, 2A/4A 24/12VDC.
 ELECTRICAL LIFE: 20,000 make-and-break cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max. initial @2-4VDC
 INSULATION RESISTANCE: 500VDC 100M-ohms min.
 DIELECTRIC STRENGTH: 1,500VAC for 1 minute.
 OPERATING FORCE: SPDT (M1 & M2) 1500gf, DPDT (M1) 1600gf (M2) 1900gf, 3PDT (M1 & M2) 3500gf.
 OPERATING TEMPERATURE: -20°C to +65°C

MATERIALS:

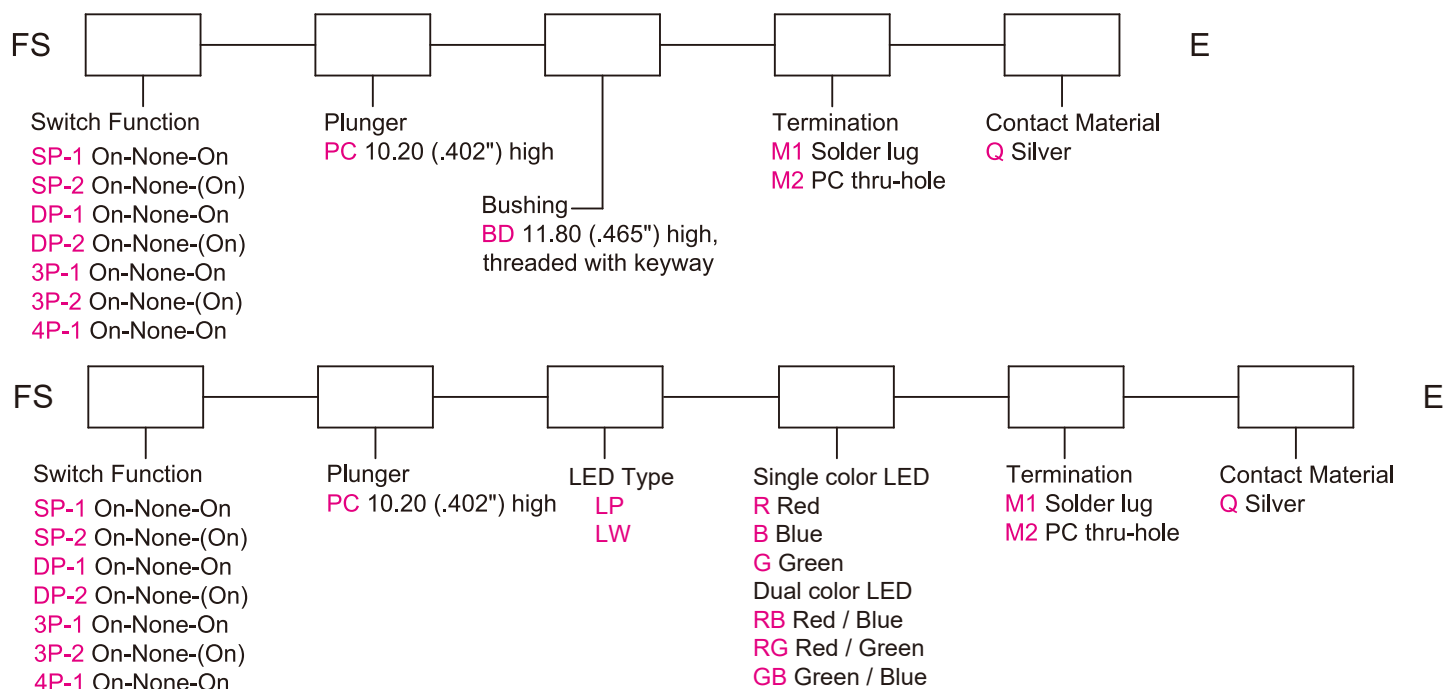
BASE: Nylon 66 (UL94V-0).
 PLUNGER & CAP: Brass, nickel plated.
 BUSHING: Brass, nickel plated
 COVER: Stainless steel.
 PIVOT PIN: Brass or POM.
 SPRING: Piano wire.
 TERMINAL & CONTACT: Copper, tin plated.
 NUT: Brass, nickel plated.
 RING: POM.
 WASHER: Steel, nickel plated.



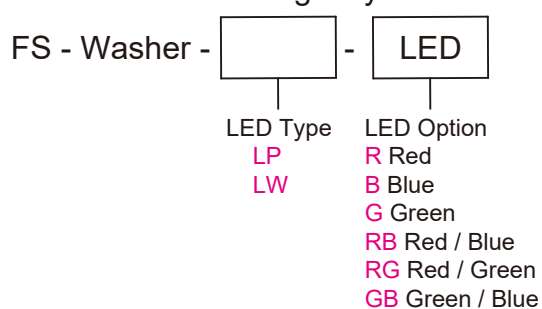
Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



For LED Washer ring only

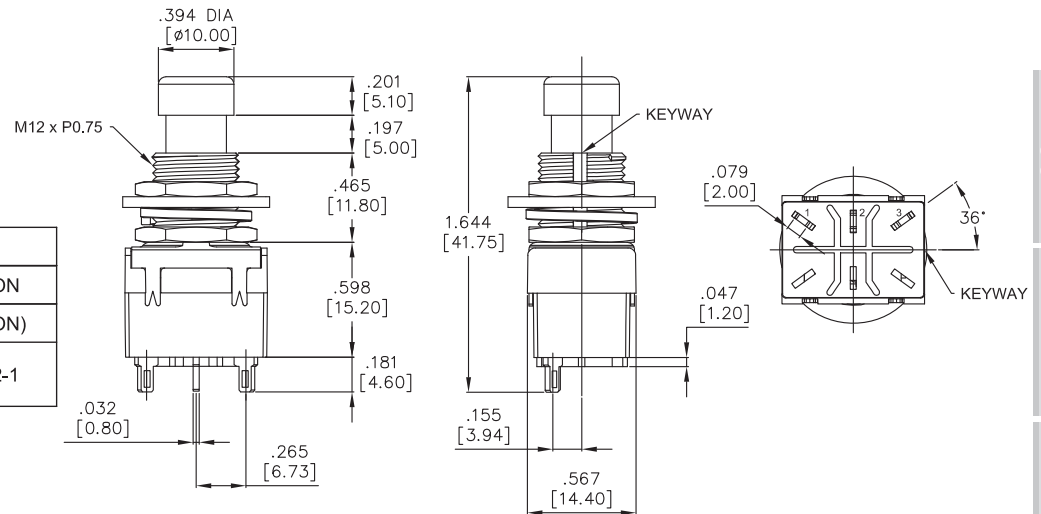


SPDT



Model No.	Switching Position		
SP-1	ON	NONE	ON
SP-2	ON	NONE	(ON)
Term. Comm.	2-3	OPEN	2-1

Schematic

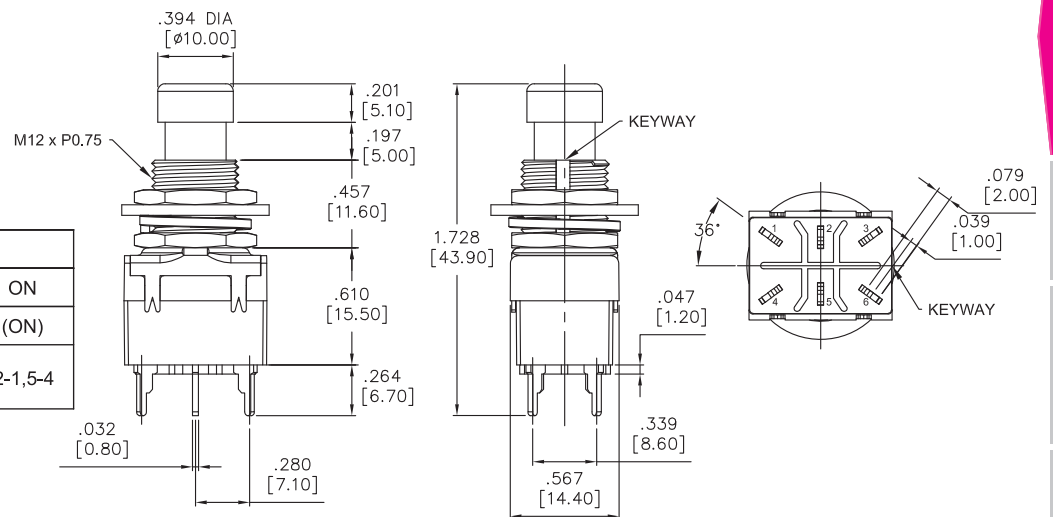
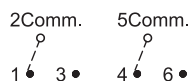


DPDT



Model No.	Switching Position		
DP-1	ON	NONE	ON
DP-2	ON	NONE	(ON)
Term. Comm.	2-3,5-6	OPEN	2-1,5-4

Schematic

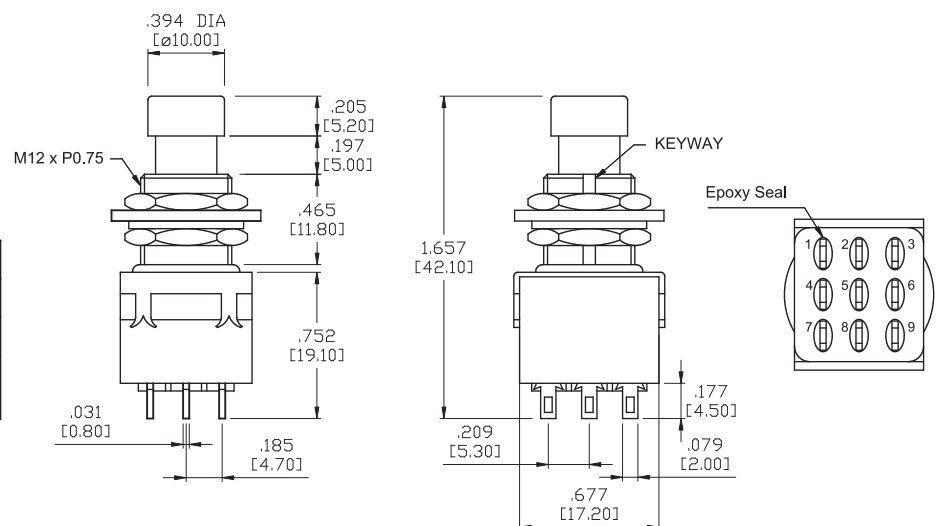


3PDT



Model No.	Switching Position		
3P-1	ON	NONE	ON
3P-2	ON	NONE	(ON)
Term. Comm.	2-3,5-6 8-9	OPEN	2-1,5-4 8-7

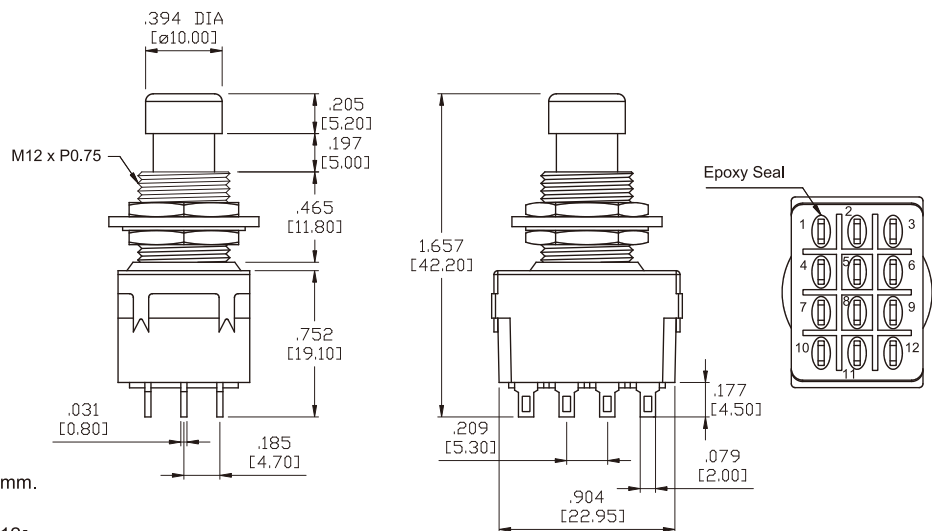
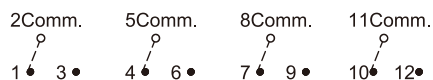
Schematic



4PDT

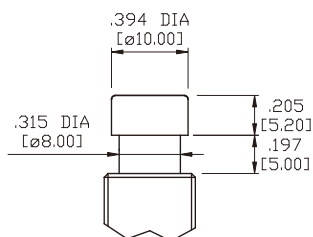
Model No.	Switching Position		
4P-1	ON	NONE	ON
Term. Comm.	2-3,5-6 8-9,11-12	OPEN	2-1,5-4 8-7,11-10

Schematic

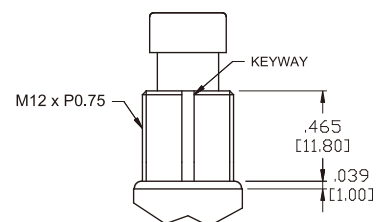


PLUNGER & BUSHING OPTIONS

PC

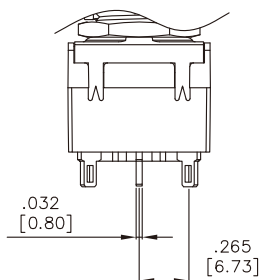


BD

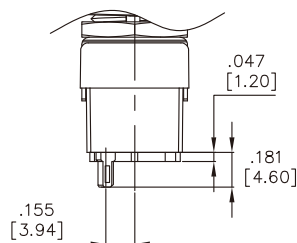


TERMINATION OPTIONS

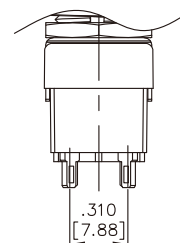
M1



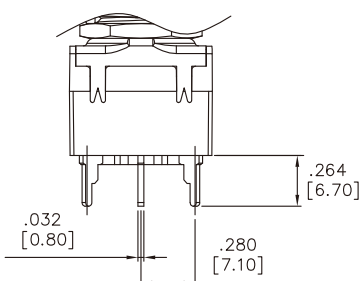
SP



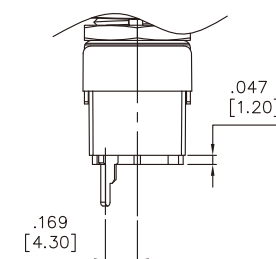
DP



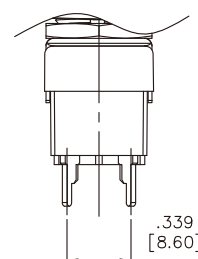
M2



SP

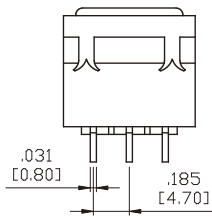


DP

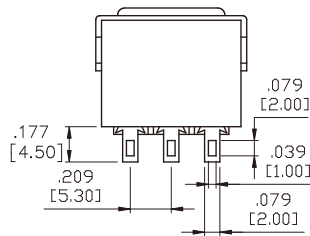


TERMINATION OPTIONS

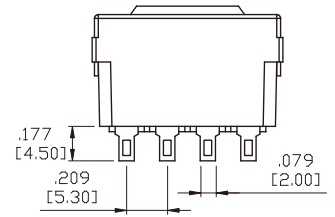
M1



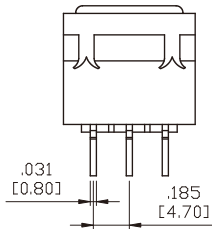
3P



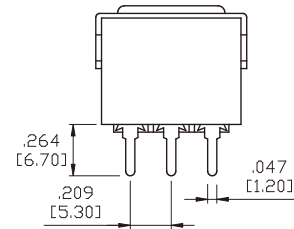
4P



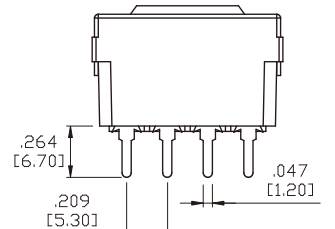
M2



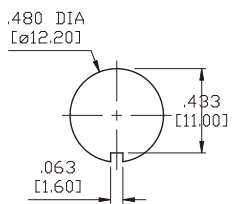
3P



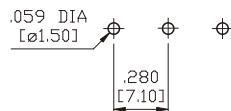
4P



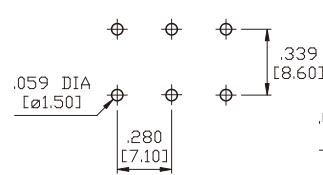
PANEL & PC MOUNTING



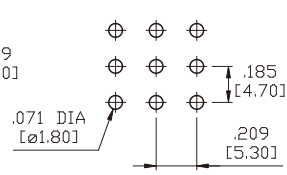
SP



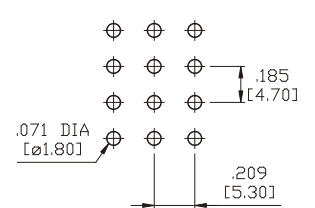
DP



3P



4P

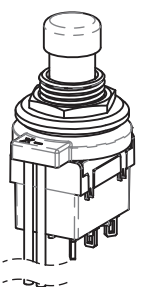


Panel Thickness 3.00mm max.

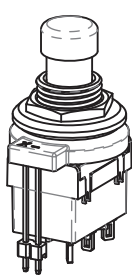
LED TYPE & MOUNTING

SINGLE COLOR LED

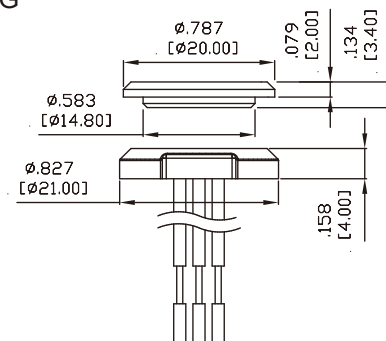
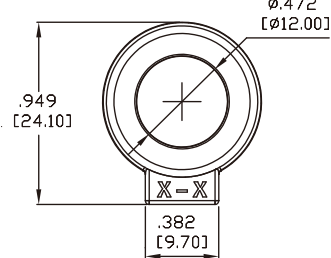
LW



LP

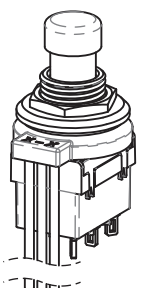


DIMENSIONS OF THE LED RING

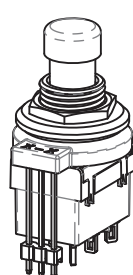


DUAL COLOR LED

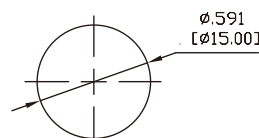
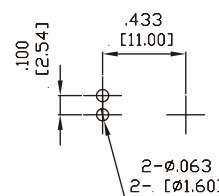
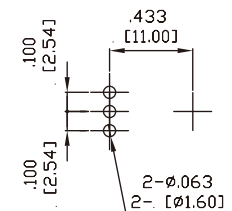
LW



LP



Mounting Cut-out

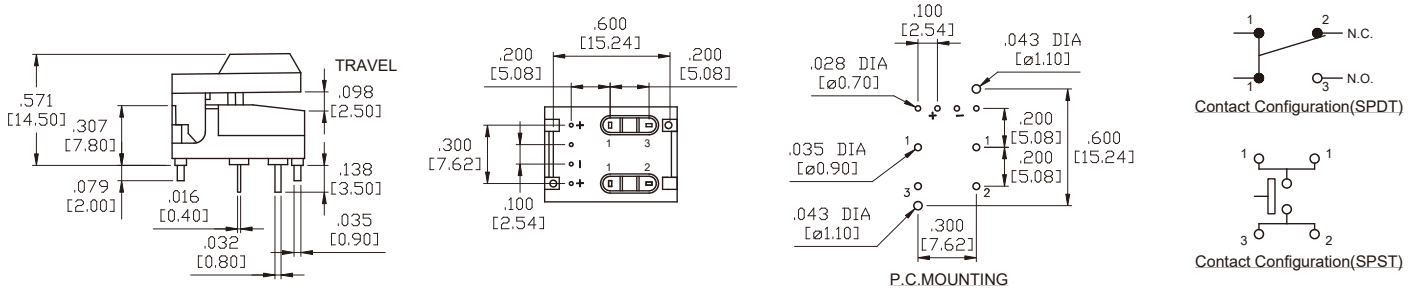
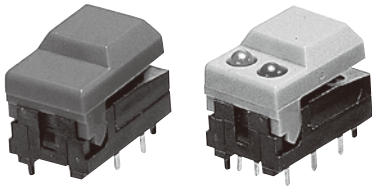
Panel Thickness:
0.8mm Min.
3.0mm Max.Single Color
PCB Mounting LayoutDual Colors
PCB Mounting Layout

LED COLOR OPTION

Code	Single color LED
R	Red
B	Blue
G	Green
Code	Dual color LED
RB	Red / Blue
RG	Red / Green
GB	Green / Blue

SPECIFICATIONS:

RATING: 12mA 24VDC (SPDT), 50mA 12VDC (SPST).
 INITIAL CONTACT RESISTANCE: 100mΩ max. (initial).
 DIELECTRIC STRENGTH: 250V AC 1 minute (Except between terminals of LED).
 INSULATION RESISTANCE: 100M min.(250V DC megger).
 ELECTRICAL LIFE: 100,000 operations min. (Rated voltage and current).
 STATIC CAPACITY: 1.5pF max.(1MHz)
 OPERATING FORCE: 170gf±50gf (SPDT), 450gf±100gf (SPST).
 FUNCTION: Momentary (SPDT), tactile (SPST).
 OPERATION TEMPERATURE RANGE: -10°C to +60°C



CAP STYLES

A0 	A1 	A2
B0 	B1 	B2

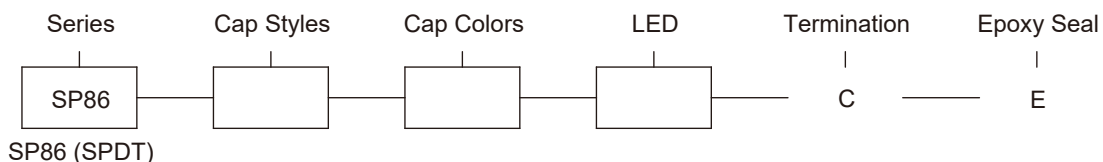
CAP COLORS

1=RED 6=ORANGE
 2=YELLOW 7=BLUE
 4=WHITE 8=BROWN
 5=BLACK 9=GRAY

LED COLORS

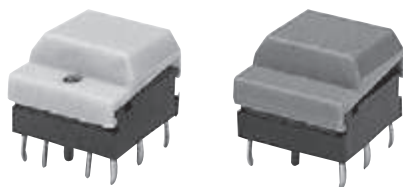
LEFT: 1=RED 2=YELLOW 3=GREEN
 RIGHT: 1=RED 2=YELLOW 3=GREEN

HOW TO ORDER

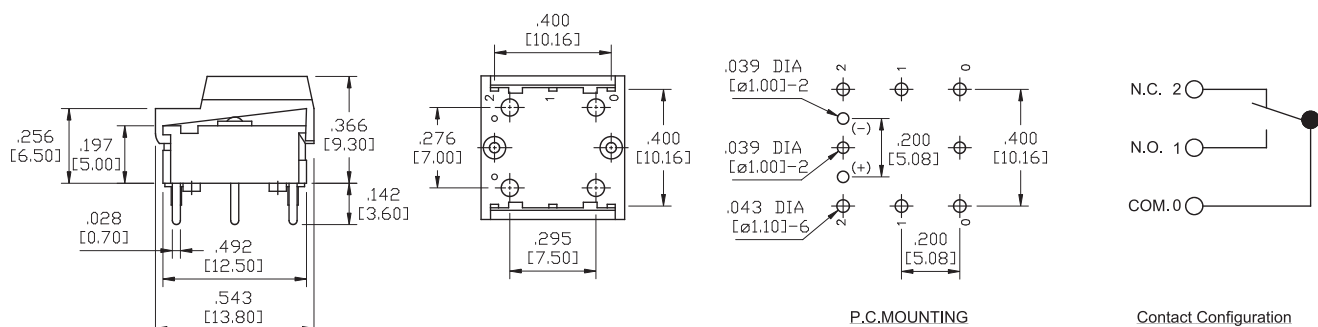


SPECIFICATIONS:

RATING: 50mA 24VDC (Minimum 1µA current is acceptable)
 INITIAL CONTACT RESISTANCE: 20m-ohms max. (AC 200µV, 5mA)
 DIELECTRIC STRENGTH: 250V AC 1 minute (Except between terminals of LED)
 INSULATION RESISTANCE: 100M-ohms min. (250V DC megger)
 ELECTRICAL LIFE: 200,000 operations (Rated voltage and current)
 STATIC CAPACITY: 1.5pF max. (1MHz)
 SHOCK RESISTANCE: 30G (3 directions perpendicular to each other 3 times for each direction)
 OPERATION TEMPERATURE RANGE: -10°C to +60°C

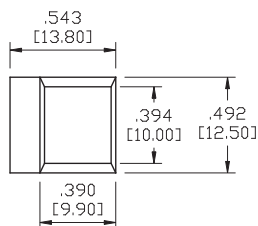


Specifications and Dimensions subject to change

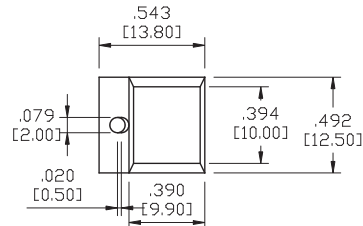


CAP STYLES

A0



A1



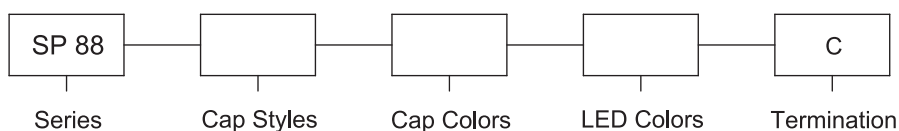
CAP COLORS

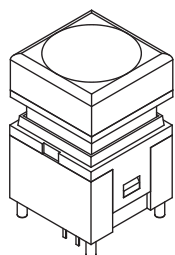
1=RED
 2=YELLOW
 3=GREEN
 4=WHITE
 5=BLACK
 7=BLUE
 8=Brown

LED COLORS

1=RED
 2=YELLOW
 3=GREEN

HOW TO ORDER



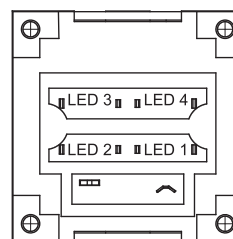
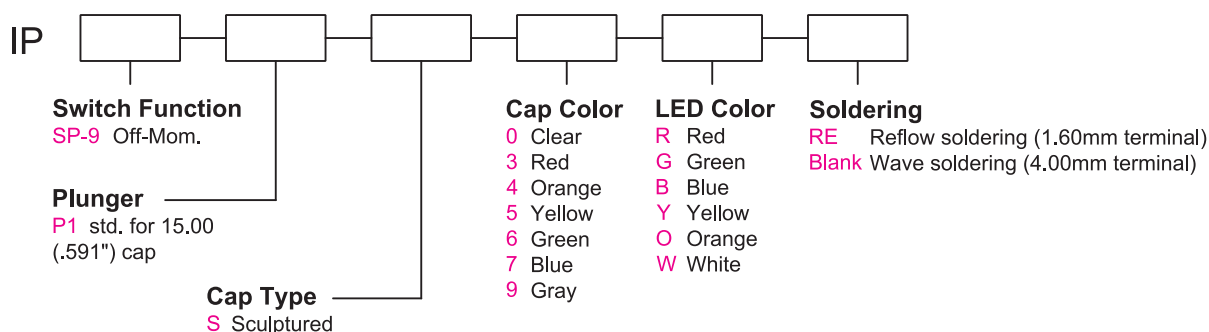
**SPECIFICATIONS:**

CONTACT RATING: 100mA @ 12VDC (resistive load).
 ELECTRICAL LIFE: 500,000 cycles min.
 CONTACT RESISTANCE: 200m-ohms max. initial.
 INSULATION RESISTANCE: 100M-ohms @ 250VDC min.
 DIELECTRIC STRENGTH: 1,500V RMS @ sea level for 1 minute.
 ACTUATION FORCE: 1.9N max.
 TRAVEL: Pretravel 2.90mm (.114"), Overtravel 1.40mm (.055"),
 Total Travel 4.30mm (.169").
 SOLDERING TEMPERATURE: 260°C for 3 seconds max.
 OPERATING TEMPERATURE: -25°C to +50°C.

MATERIALS:

LOWER HOUSING: Nylon 66 + 30% fibre glass.
 TERMINAL: Phosphor bronze, tin over nickel plated.
 MOVABLE CONTACT: Brass, gold over nickel plated.
 LED COVER: Nylon 66.
 PLUNGER: Nylon 66.
 UPPER HOUSING: Nylon 66.
 DIFFUSER: PC.
 SCULPTURED CAP: PC.

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM

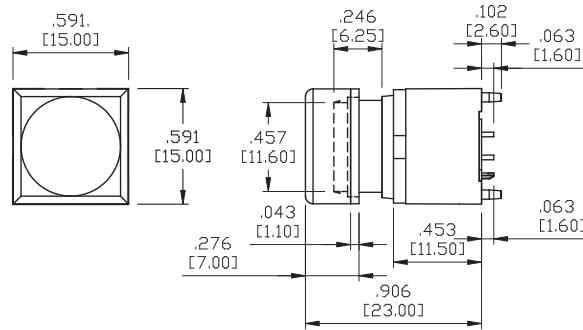
BOTTOM VIEW

Note:

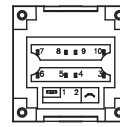
When Bi-color (ex. Red and Green) is requested, the LED placement sequence will be LED 1 and LED 3. The ordering part number will be:

IP-SP9-P1-S0-R0G0

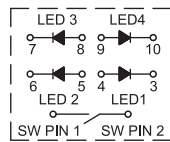
NON-TACTILE



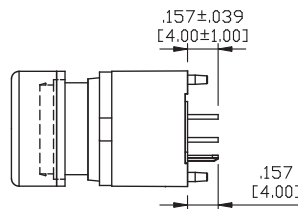
P/N: IP-SP9-P1-S0-xxxx-RE



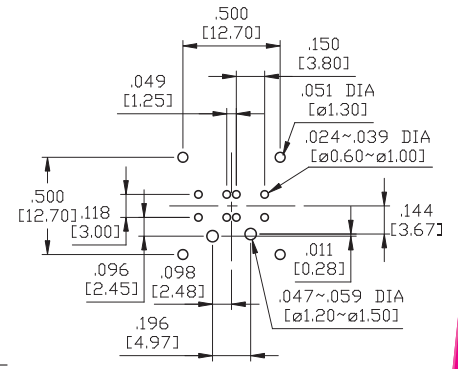
Model No.	Type	
SP-9	OFF	MOM



Schematic (BOTTOM VIEW)



P/N: IP-SP9-P1-S0-xxxx

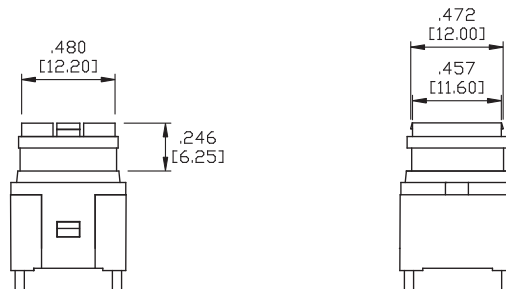


P.C.B Mounting

PLUNGER OPTIONS

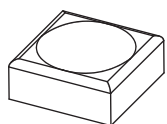
P1

* Plunger Color: White.

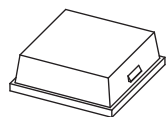


PLUNGER CAPS

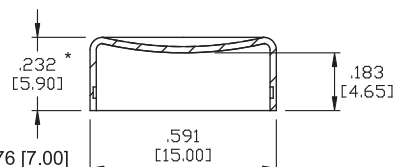
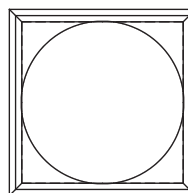
S Sculptured Cap



Cap



White Diffuser



* With Diffuser: .276 [7.00]

CAP COLORS	
0	Clear (Std.)
1	White
2	Black
3	Red
4	Orange
5	Yellow
6	Green
7	Blue
8	Brown
9	Gray

LED SPECIFICATIONS



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

	Red	Green	Blue	Yellow	Orange	White
Minimum Luminous (mcd)	120	380	50	36	70	480
Standard Luminous (mcd)	250	470	130	80	180	800
Forward Peak Current (mA)	185	150	150	150	175	150
Power Dissipation (mW)	75	102.5	120	75	75	120
Forward Voltage (V), Typ. at $I_f = 20\text{mA}$	1.95	3.10	3.30	2.10	2.00	3.30
Forward Voltage (V), Max. at $I_f = 20\text{mA}$	2.50	4.10	4.00	2.50	2.50	4.00
Reverse Voltage (V)	5	5	5	5	5	5
Dominant Wavelength (nm)	630	525	470	570	590	N/A
Spread Angle (degree)	140	120	120	120	120	120
Ambient Temperature Range	-40°C to +85°C					
Moisture Sensitivity Level	Level 4					

The specifications shown are determined at a room temperature of 25°C. LED is not available separately, it is isolated and requires an external power source. The IP pushbutton switch can be configured up to four LEDs for multi-illumination.

LEGENDS

Legend is not provided as a standard option, please consult factory for a customized legend. Film insert material is Clear Polyester with thickness of 0.1mm max.

SPECIFICATIONS:

RATING: 50V DC 200mA max.

CONTACT RESISTANCE: <30m-ohms.

INSULATION RESISTANCE: >100M-ohms DC 500V.

OPERATING FORCE: 200±100gf.

AMBIENT TEMPERATURE: -20°C to +70°C.

ELECTRICAL LIFE: 100,000 cycles.

Specifications and Dimensions subject to change

Toggle

Rocker

Slide

Pushbutton

AV

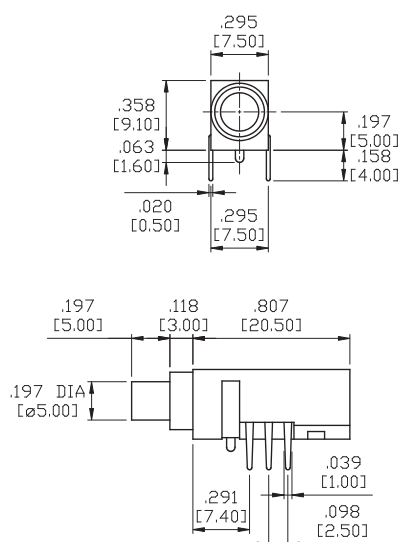
Rotary

Tact

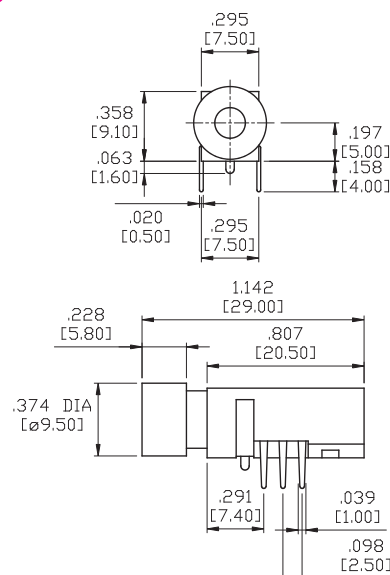
Touch Key

Miscellaneous

LS-A



LS-S



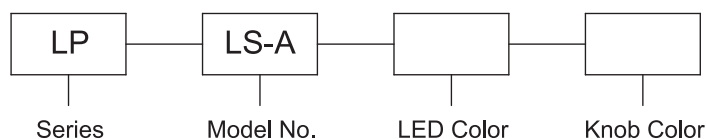
LED COLORS

Code	LED Color
R	Red
G	Green
Y	Yellow
B	Blue

KNOB COLORS

Code	LED Color
B	Black

HOW TO ORDER



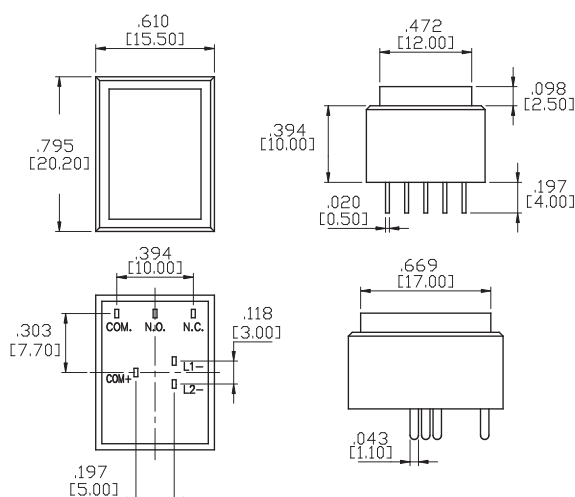
SPECIFICATIONS:

CONTACT: Silver contact (Gold plated).
 ELECTRICAL RATING: AC125, 250V 1A @ resistive load).
 INSULATION RESISTANCE: More than 100M-ohms at DC 500V.
 DIELECTRIC STRENGTH:
 a. 500V RMS(50/60Hz) between terminals.
 b. 1,000V RMS(50/60Hz) between terminals and ground for one minute.
 CONTACT RESISTANCE: Less than 30m-ohms initial @ 1A and 6VDC.
 MECHANICAL LIFE:
 a. MOMENTARY ACTION: More than 300,000 operations.
 b. ALTERNATE ACTION: More than 100,000 operations.
 ELECTRICAL LIFE: Over 30,000 operations max.
 OPERATING TEMPERATURE: -15°C ~ +50°C.
 AMBIENT HUMIDITY: 80% RH max.

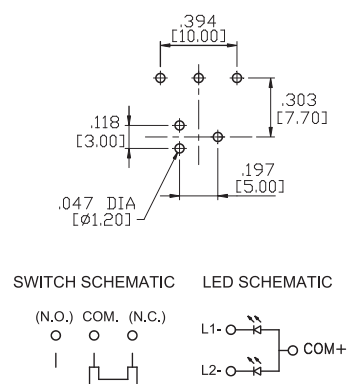
Specifications and Dimensions subject to change

WPL-25

Model No.	LED COLOR
WPL-25R	Red
WPL-25G	Green
WPL-25RG	Red / Green



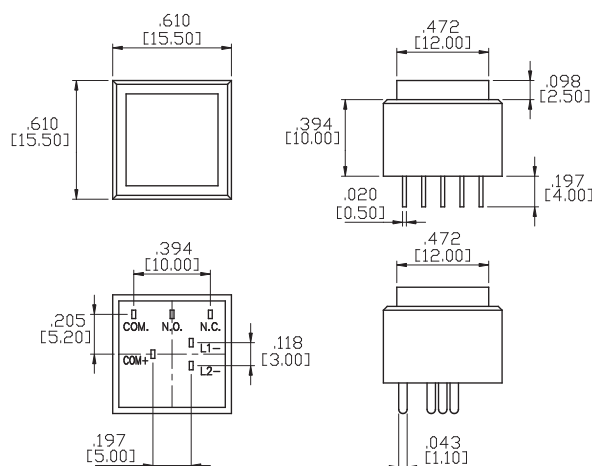
P.C.B. LAYOUT



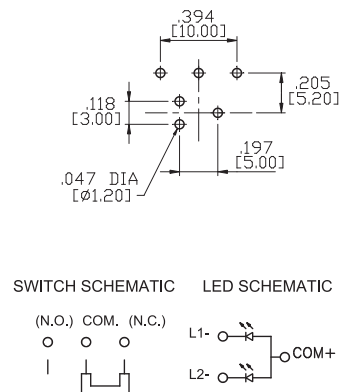
WPL-26



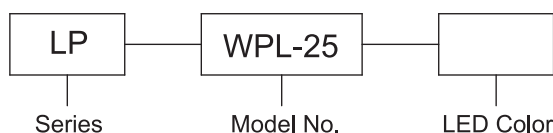
Model No.	LED COLOR
WPL-26R	Red
WPL-26G	Green
WPL-26RG	Red / Green



P.C.B. LAYOUT



HOW TO ORDER



SPECIFICATIONS:

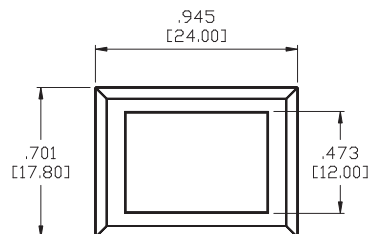
CONTACT RATING: 5A 125/250VAC.
 ELECTRICAL LIFE: 100,000 cycles with resistive load 3A 125VAC.
 CONTACT RESISTANCE: 50m-ohms max (initial).
 INSULATION RESISTANCE: 500VDC 200M-ohms min.
 DIELECTRIC STRENGTH: 1,000V RMS 50~60Hz.
 OPERATING TEMPERATURE: -25°C ~ +50°C.
 OPERATING FORCE: 190±50gf max. (SPDT).
 250±50gf max. (DPDT Square)
 & 300±50gf max. (DPDT Rectangular).
 TOTAL TRAVEL: 2.30±0.50mm.
 SOLDERING: 360°C for 4sec. (Manual)
 260°C for 3sec. (Wave).

MATERIALS:

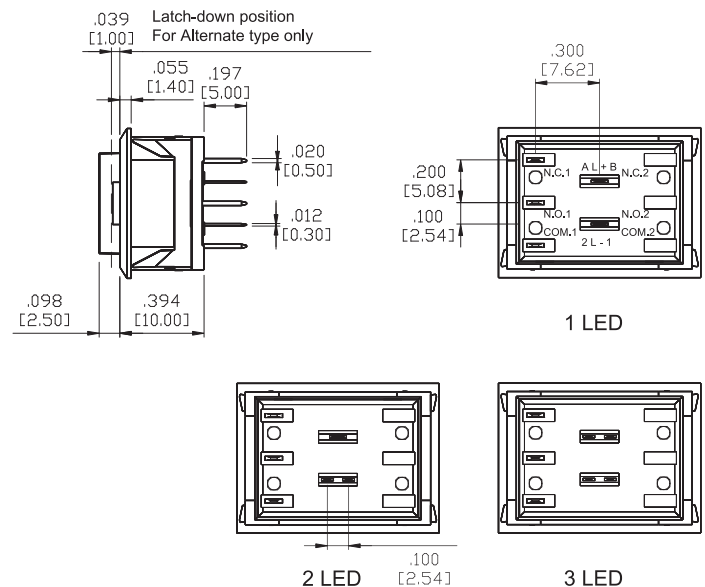
SNAP-IN FRAME: Stainless steel.
 HOUSING: PA.
 BASE: PA.
 CONTACT: Silver alloy.
 SPRING: Piano wire.
 LED TERMINAL: PBS with Au plated.
 TERMINAL: PBS with Au plated.
 LED: Surface type LED.

Specifications and Dimensions subject to change

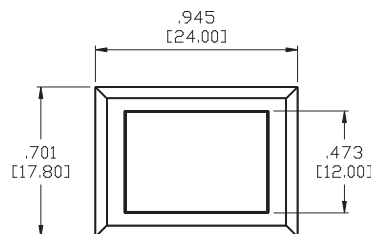
Rectangular Snap-in Style, SPDT, Solder lug



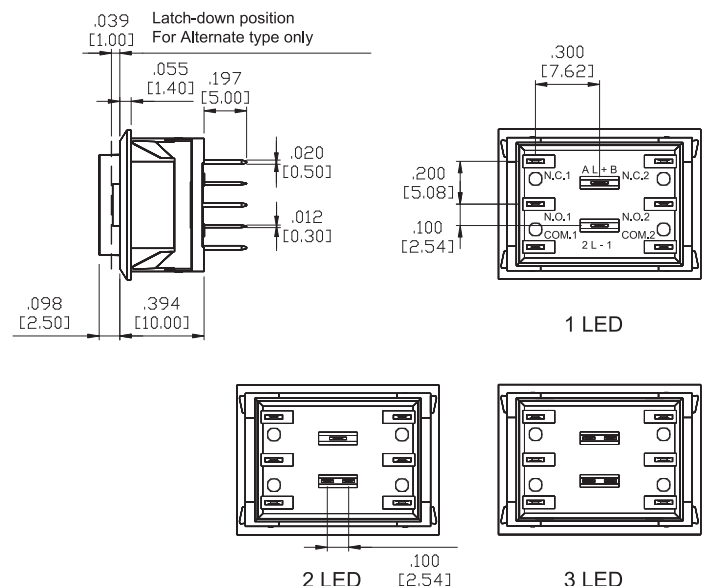
Model No.	Type
WPL-251-M	Momentary
WPL-251-A	Alternate



Rectangular Snap-in Style, DPDT, Solder lug



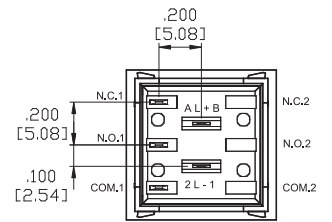
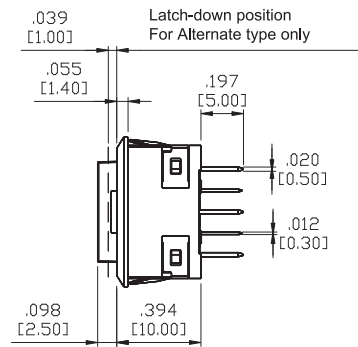
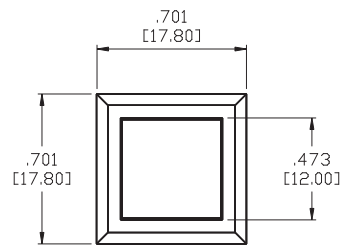
Model No.	Type
WPL-252-M	Momentary
WPL-252-A	Alternate



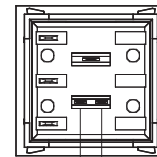
Series LP

Illuminated Pushbutton Switches

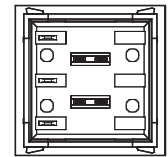
Square Snap-in Style, SPDT, Solder lug



1 LED



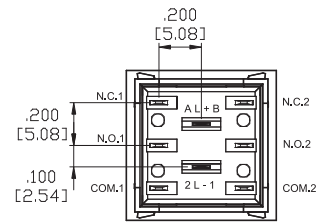
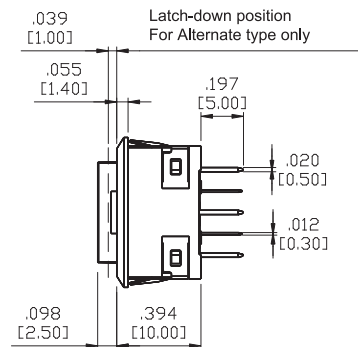
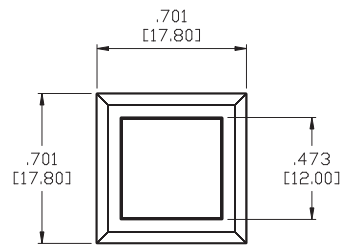
2 LED



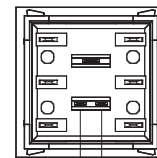
3 LED

Model No.	Type
WPL-261-M	Momentary
WPL-261-A	Alternate

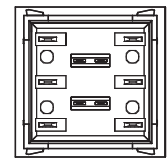
Square Snap-in Style, DPDT, Solder lug



1 LED



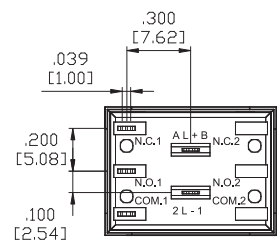
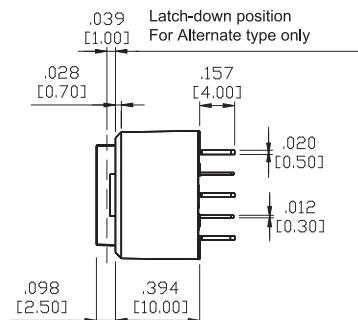
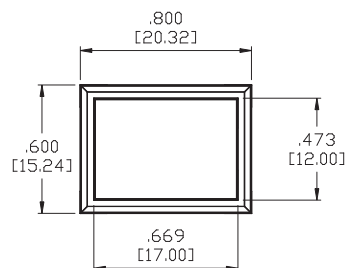
2 LED



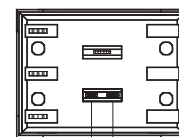
3 LED

Model No.	Type
WPL-262-M	Momentary
WPL-262-A	Alternate

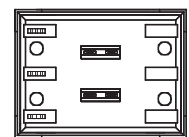
Rectangular Style, SPDT, PC Through-Hole



1 LED



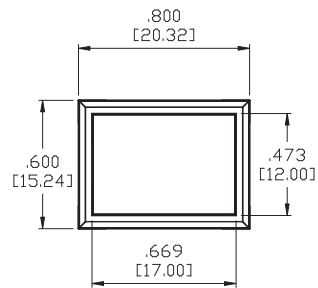
2 LED



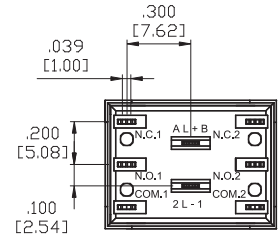
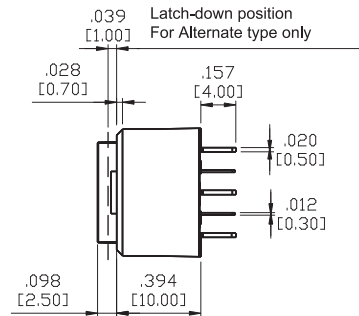
3 LED

Model No.	Type
WPL-251-M	Momentary
WPL-251-A	Alternate

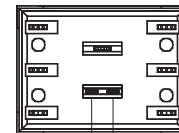
Rectangular Style, DPDT, PC Through-Hole



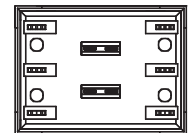
Model No.	Type
WPL-252-M	Momentary
WPL-252-A	Alternate



1 LED

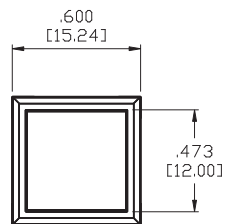


2 LED

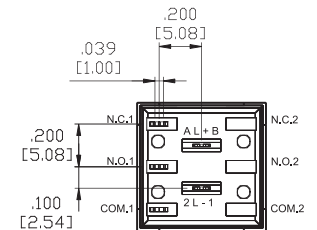
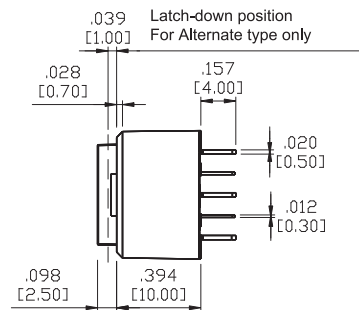


3 LED

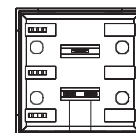
Square Style, SPDT, PC Through-Hole



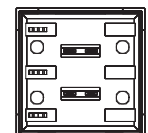
Model No.	Type
WPL-261-M	Momentary
WPL-261-A	Alternate



1 LED

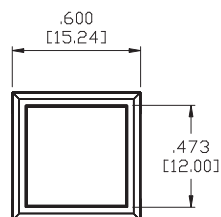


2 LED

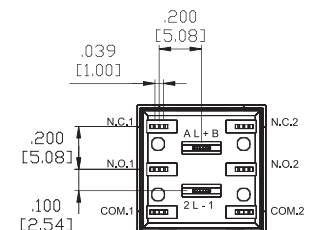
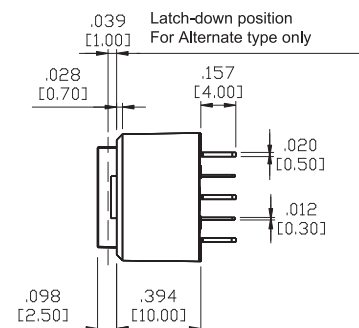


3 LED

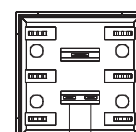
Square Style, DPDT, PC Through-Hole



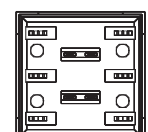
Model No.	Type
WPL-262-M	Momentary
WPL-262-A	Alternate



1 LED



2 LED



3 LED

Toggle

Rocker

Slide

Pushbutton

AV

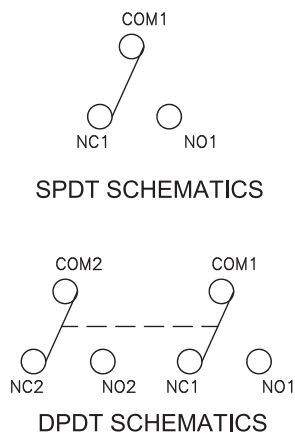
Rotary

Tact

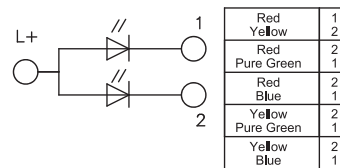
Touch Key

Miscellaneous

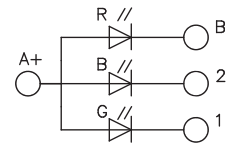
SWITCH & LED SCHEMATICS



Single color LED

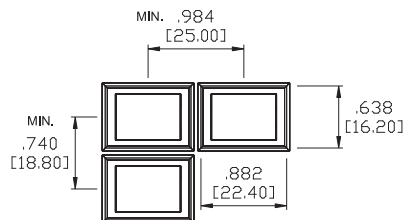


Dual colors LED

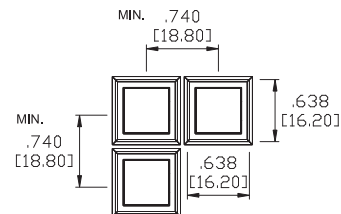


Full (RGB) colors LED

PANEL MOUNTING (M1 TYPE)



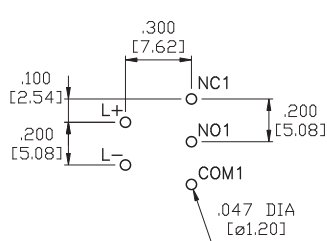
Panel Thickness: 1.0~3.2mm



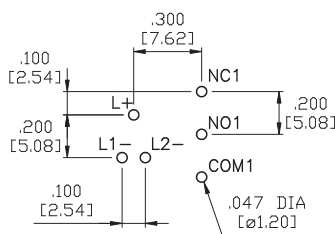
Panel Thickness: 1.0~3.2mm

PCB MOUNTING (M2 TYPE)

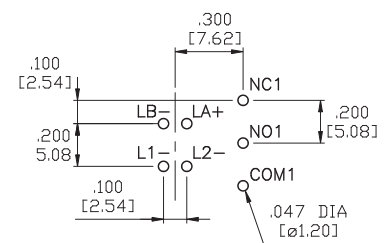
Rectangular SPDT



1 LED

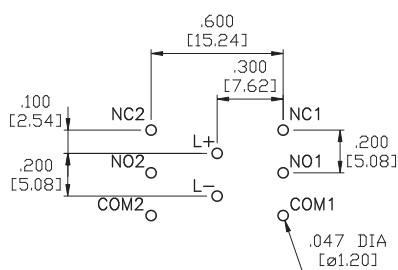


2 LEDs

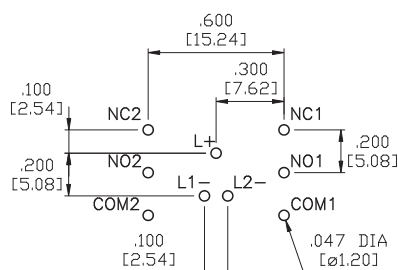


3 LEDs

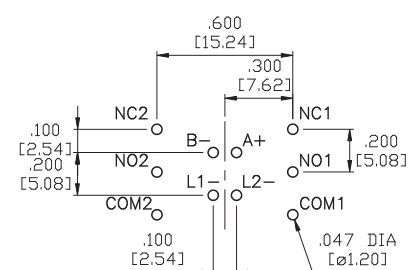
Rectangular DPDT



1 LED

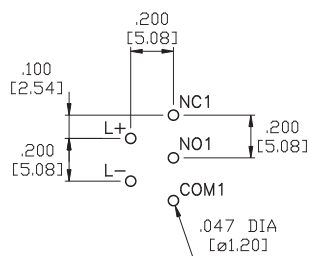


2 LEDs

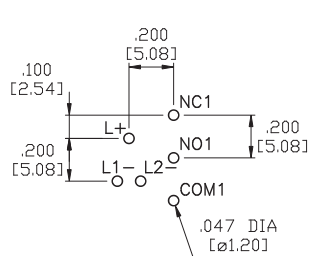


3 LEDs

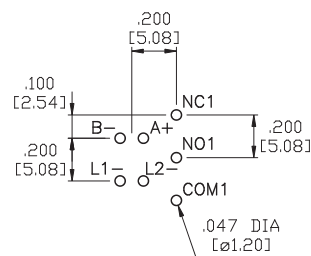
Square SPDT



1 LED

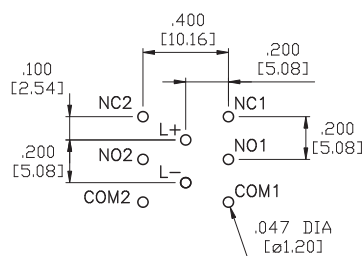


2 LEDs

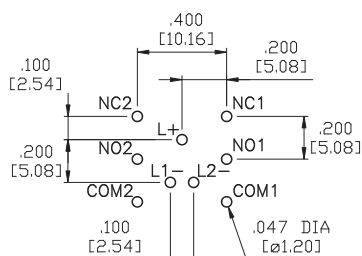


3 LEDs

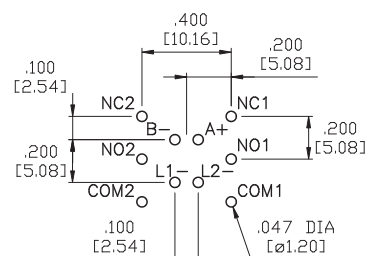
Square DPDT



1 LED



2 LEDs



3 LEDs

LED SPECIFICATIONS

Single Color	Forward Voltage Vf(V) at If=20mA			Dominant Wavelength dom(nm)			Luminous Intensity Iv(mcd) at If=20mA			Power Dissipation Pd(mW)
	Min	Typ	Max	Min	Typ	Max	Min	Typ	Max	
Red	-	1.8	2.6	-	643	-	3.7	13	-	60
Super Yellow	-	2.0	2.5	585	590	595	80	125	-	75
Pure Green	-	-	3.8	520	-	530	200	-	230	80
Blue	-	3.1	3.6	460	465	470	40	-	-	108
White	-	-	3.8	See note 1			300	-	400	100
Dual Colors										
Red	1.7	-	2.5	630	-	650	50	-	100	75
Super Yellow	1.7	-	2.5	585	-	595	80	-	160	75
Red	1.7	-	2.5	630	-	650	50	-	100	75
Pure Green	2.8	-	3.7	520	-	530	200	-	500	111
Red	1.7	-	2.5	630	-	650	50	-	100	75
Blue	2.8	-	3.7	460	-	470	40	-	80	111
Super Yellow	1.7	-	2.5	580	-	595	80	-	160	75
Pure Green	2.8	-	3.7	520	-	530	200	-	500	111
Super Yellow	1.7	-	2.5	585	-	595	80	-	160	75
Blue	2.8	-	3.7	460	-	470	40	-	80	111
Pure Green	-	-	3.8	-	525	-	200	250	-	80
Blue	-	-	3.8	-	465	-	50	70	-	80
RGB										
Red	-	2.0	2.5	632	637	642	50	65	-	75
Green	-	3.1	3.6	520	525	530	100	125	-	114
Blue	-	3.1	3.6	460	465	470	30	35	-	114

LED SPECIFICATIONS

Reverse Voltage Vr(V) max.	Reverse Current Ir(uA) at Vr=5V	Forward Current If(mA) max.
5V	100uA	30mA

Notes:

1.Chromaticity Coordinates

X=0.265 / Y=0.280

2.LED is static sensitive devices

3.LED circuit is isolated and requires external power source

4.LED is an integral part of the switch

5.Emitting color is $\pm 20\%$

6.Forward voltage is $\pm 0.1V$

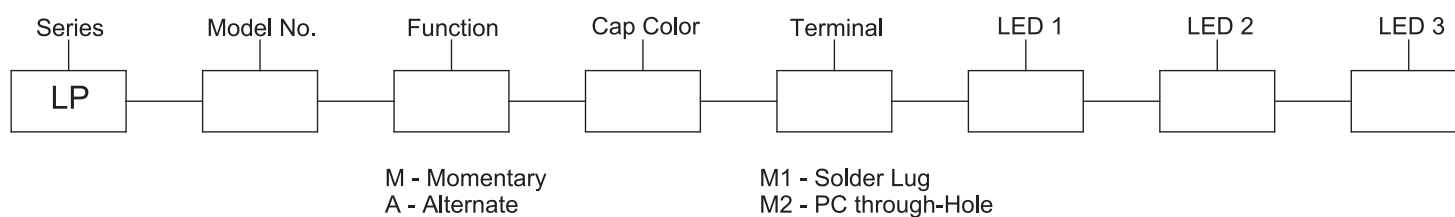
7.Luminous intensity is $\pm 20\%$

CAP & LED OPTIONS

Code	Cap Color
1	Red
2	Green
3	Yellow
6	Black
8	Blue
9	Transparency

Code	Led Color
R	Red
G	Pure Green
Y	Yellow
B	Blue
0	Without LED

HOW TO ORDER

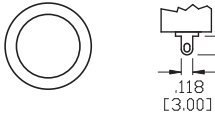
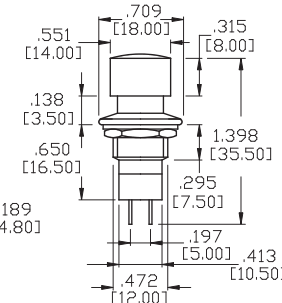
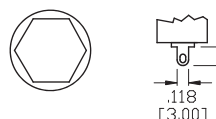
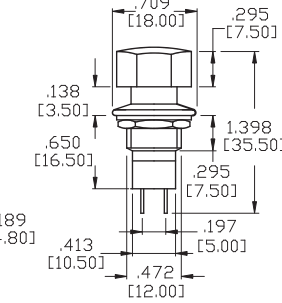
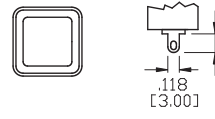
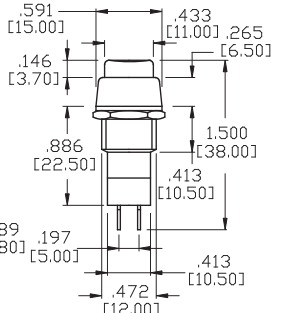
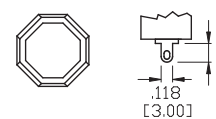
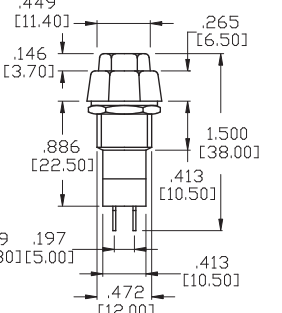
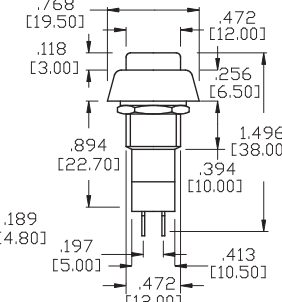
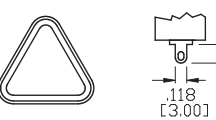
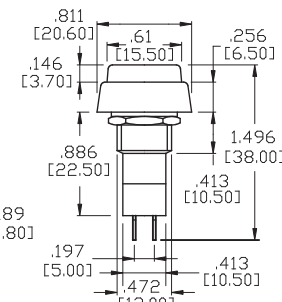
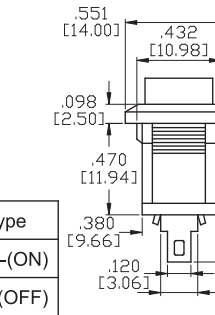
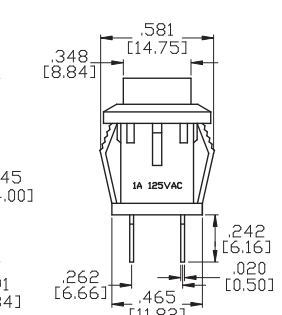
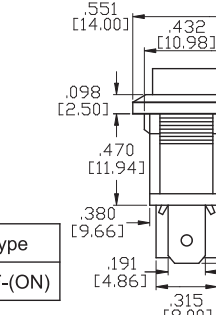
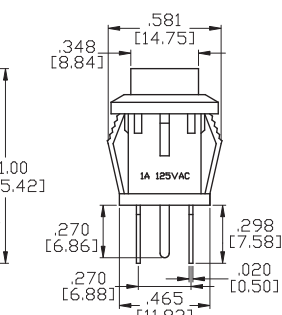
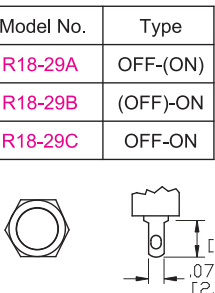
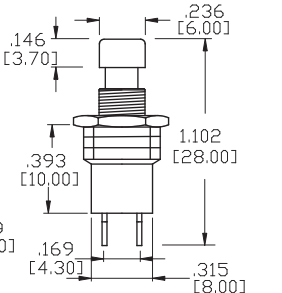
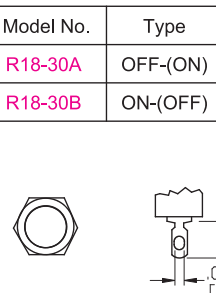
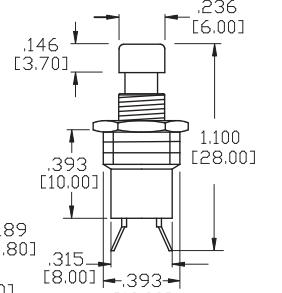


SPECIFICATIONS:

PROOF VOLTAGE: 1,500 V AC.
CONTACT RESISTANCE: 20m-ohms max.
ELECTRICAL LIFE: 50,000 cycles min.
MECHANICAL LIFE: 100,000 cycles min.

CIRCUITRY: S.P.S.T.
CONTACT RATING: 1A 250VAC, 3A 125VAC.
INSULATION RESISTANCE: 100M-ohms min.

Specifications and Dimensions subject to change

 <table border="1"> <thead> <tr> <th>Model No.</th><th>Type</th></tr> </thead> <tbody> <tr> <td>R18-21A</td><td>OFF-ON</td></tr> <tr> <td>R18-21B</td><td>OFF-(ON)</td></tr> </tbody> </table> SCALE 1.5:2.44  	Model No.	Type	R18-21A	OFF-ON	R18-21B	OFF-(ON)	 <table border="1"> <thead> <tr> <th>Model No.</th><th>Type</th></tr> </thead> <tbody> <tr> <td>R18-22A</td><td>OFF-ON</td></tr> <tr> <td>R18-22B</td><td>OFF-(ON)</td></tr> </tbody> </table> SCALE 1.5:2.44  	Model No.	Type	R18-22A	OFF-ON	R18-22B	OFF-(ON)		
Model No.	Type														
R18-21A	OFF-ON														
R18-21B	OFF-(ON)														
Model No.	Type														
R18-22A	OFF-ON														
R18-22B	OFF-(ON)														
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Model No.	Type														
R18-23A	OFF-ON														
R18-23B	OFF-(ON)														
Model No.	Type														
R18-24A	OFF-ON														
R18-24B	OFF-(ON)														
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Model No.	Type														
R18-25A	OFF-ON														
R18-25B	OFF-(ON)														
Model No.	Type														
R18-26A	OFF-ON														
R18-26B	OFF-(ON)														
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Model No.	Type														
R18-27A	OFF-(ON)														
R18-27B	ON-(OFF)														
Model No.	Type														
R18-28A	OFF-(ON)														
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Model No.	Type														
R18-29A	OFF-(ON)														
R18-29B	(OFF)-ON														
R18-29C	OFF-ON														
Model No.	Type														
R18-30A	OFF-(ON)														
R18-30B	ON-(OFF)														

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

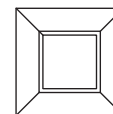
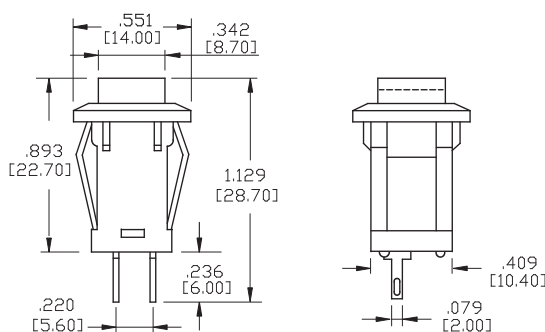
Tact

Touch Key

Miscellaneous



Model No.	Type
R18-32A	OFF-ON LOCK



SPECIFICATIONS:

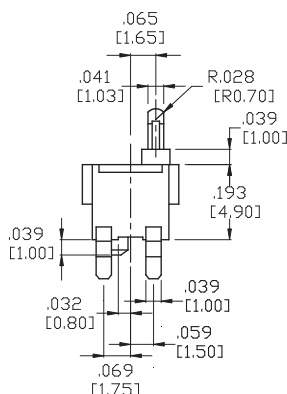
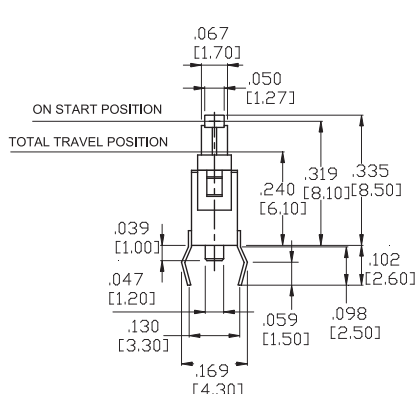
OPERATING TEMPERATURE: -10 to +60°C.
 RATING: 30V DC0.1A.
 INSULATION RESISTANCE: 100V DC 1min 100M-ohms min.
 SOLDERING TEMPERATURE: 230°C 3sec.
 OPERATING LIFE: 50,000 cycles.

MATERIALS:

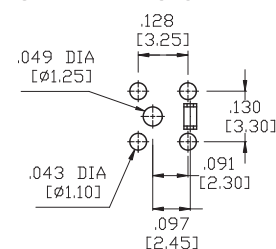
CASE: Nylon 6/6+GF 30%.
 Cover: Nylon 6/6+GF 30%.
 ACTUATOR: Acetal.
 TERMINAL: Brass.

Specifications and Dimensions subject to change

R18-20



P.C.B DIMENSION



SPECIFICATIONS:

CONTACT RATING: 25mA max. @ 50V AC or DC max.
 MECHANICAL LIFE: 50,000 actuations.
 CONTACT RESISTANCE: 20m-ohms max.
 INSULATION RESISTANCE: 100M-ohms min.
 DIELECTRIC STRENGTH: 1,000V RMS min. @ sea level.
 OPERATING TEMPERATURE: -30°C to +65°C.

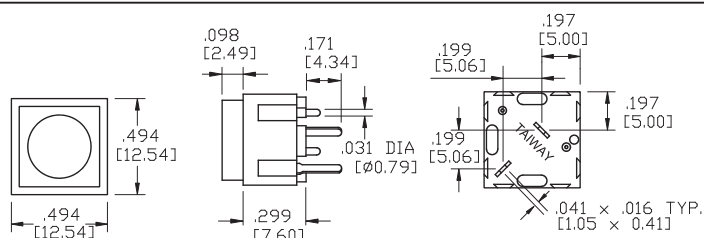
MATERIALS:

CASE: Glass filled nylon 6/6 or nylon 9T.
 BUTTON: ABS.
 SNAP DOME: Stainless steel with gold finish.
 STATIONARY CONTACTS & TERMINAL: Copper alloy, silver plated.

Specifications and Dimensions subject to change



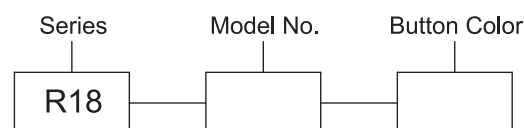
Model No.	Type
801	OFF-MOM



BUTTON COLOR OPTIONS

Color No.	Color	Color No.	Color
1	White	6	Green
2	Black	7	Blue
3	Red(std.)	8	Brown
4	Orange	9	Gray
5	Yellow		

HOW TO ORDER



SPECIFICATIONS:

RATING: DC 30V 0.1A 12V 0.3A.
 OPERATING FORCE: 150gm (std).
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: 100M-ohms @ 500VDC.
 DIELECTRIC STRENGTH: 250VAC for 1 min.

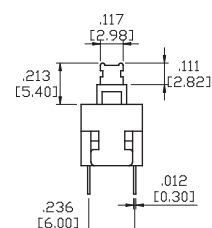
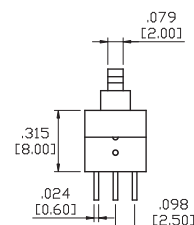
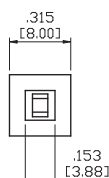
MATERIALS:

BOUNCE: 5m sec. max.
 LIFE CYCLES: 10,000 cycles.
 TEMPERATURE: -25°C to +65°C.
 AMBIENT HUMIDITY: 80% RH max.

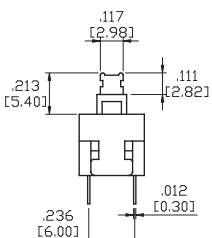
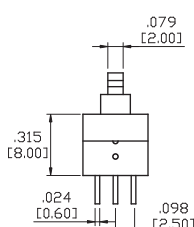
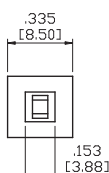
Specifications and Dimensions subject to change



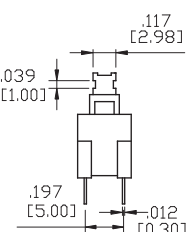
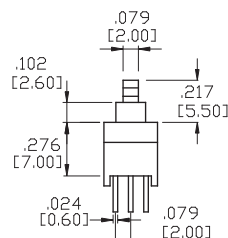
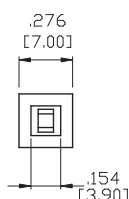
Model No.	Type
807	ON-MOM
809	ON-ON



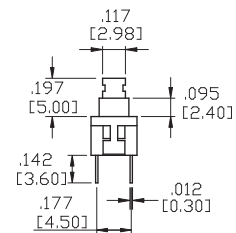
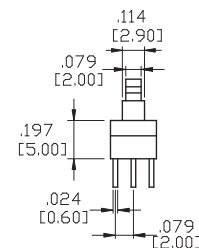
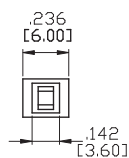
Model No.	Type
807-1	ON-MOM
809-1	ON-ON



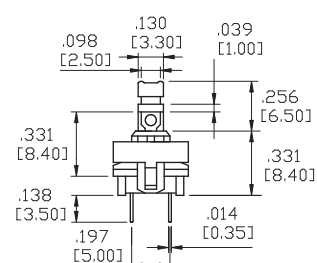
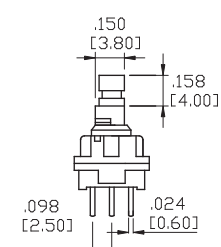
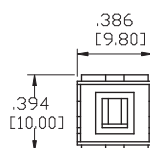
Model No.	Type
807-2	ON-MOM
809-2	ON-ON



Model No.	Type
807-3	ON-MOM
809-3	ON-ON



Model No.	Type
810	ON-MOM
811	ON-ON



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

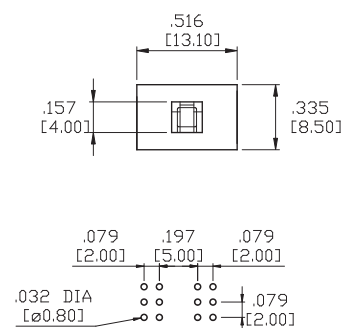
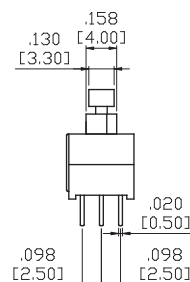
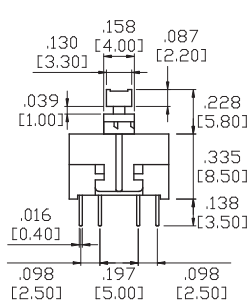
Tact

Touch Key

Miscellaneous



Model No.	Type
812	ON-MOM
813	ON-ON



P.C.MOUNTING

SPECIFICATIONS:

RATING: 3A 125VAC, 1A 250VAC.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: DC 500V 100M-ohms min.
 DIELECTRIC STRENGTH: AC 1,500V 1 min.
 ELECTRICAL LIFE: 6,000 cycles at full load.
 MECHANICAL LIFE: 200,000 (min).
 OPERATING TEMPERATURE: -30°C to +65°C.

MATERIALS:

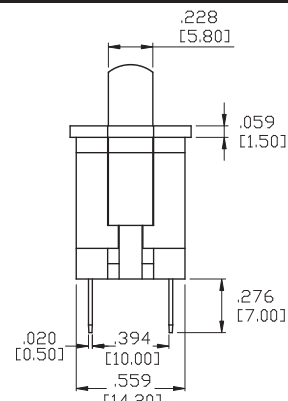
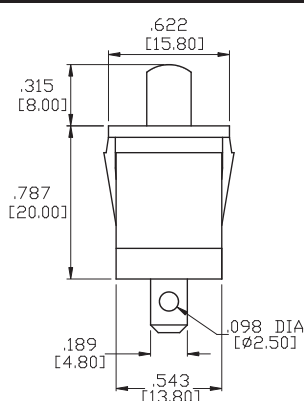
HOUSING: Nylon 6/6.
 PUSHBUTTON: Nylon 6/6.
 TERMINALS: Brass, silver plated.

Specifications and Dimensions subject to change

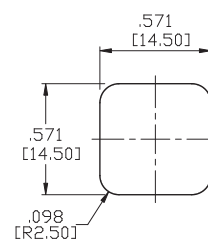
R18-504



Model No.	Type
R18-504	OFF-(ON)



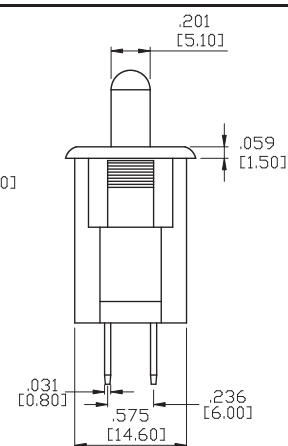
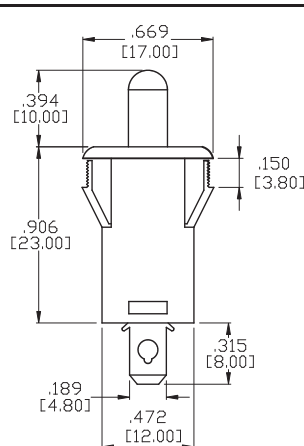
P.C.MOUNTING



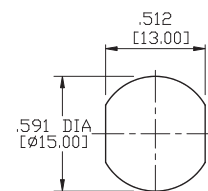
R18-505



Model No.	Type
R18-505	OFF-(ON)



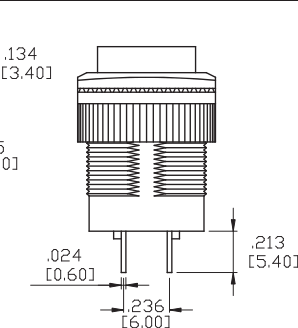
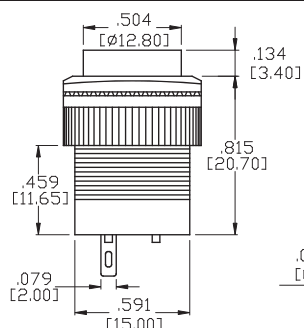
P.C.MOUNTING



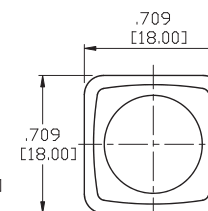
R18-508



Model No.	Type
R18-508A	OFF-ON
R18-508B	OFF-(ON)
R18-508C	OFF-ON ILLUMINATED
R18-508D	OFF-(ON) ILLUMINATED

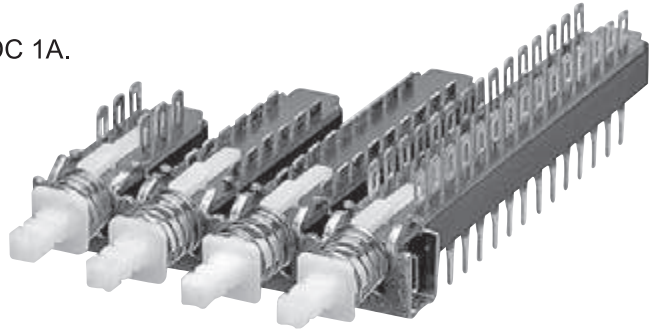


P.C.MOUNTING

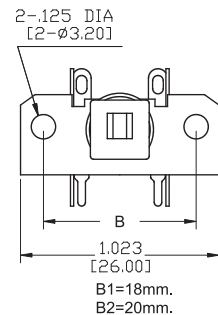
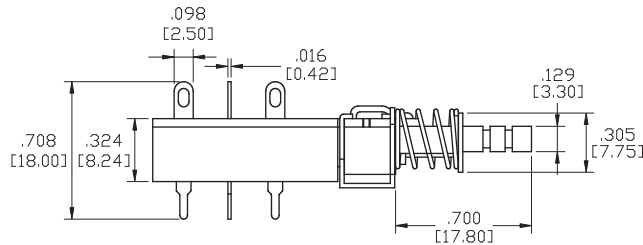
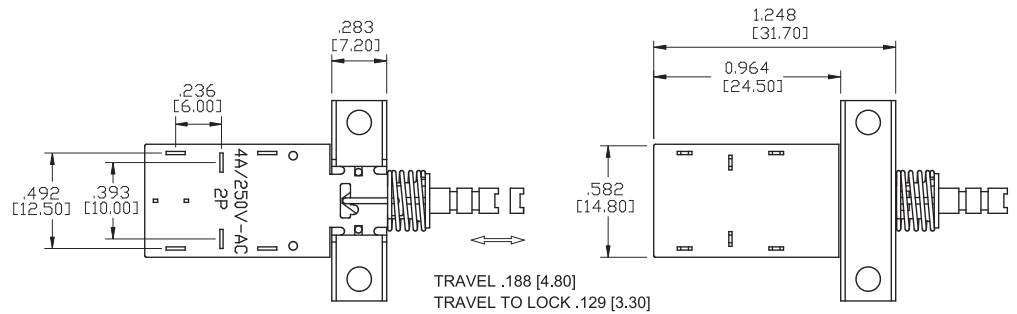
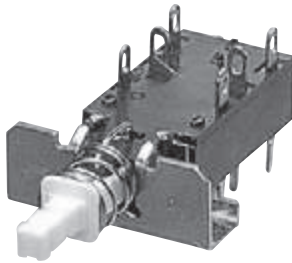


SPECIFICATIONS:

RATING: AC125V 7A, AC250V 4A.
 CIRCUIT: DPDT.
 CONTACT RESISTANCE: 20m-ohms max. @ 5VDC 1A.
 DIELECTRIC STRENGTH: AC 1,500V for 1 min.
 LIFE EXPECTANCY: 6-10 cycle / min.
 ELECTRICAL LIFE: 6,000 cycle.
 OPERATING FORCE: 550 ± 150gf.
 OPERATING MODE: Latching and momentary.
 TRAVEL: (Full) 4.8mm. (Lock) 3.3mm.

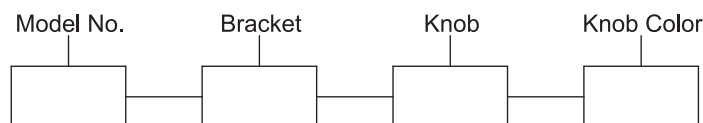


Specifications and Dimensions subject to change



Model No.	Type
WP-1	Momentary
WP-2	Latching

HOW TO ORDER



B0=No Bracket
 B2=20mm

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

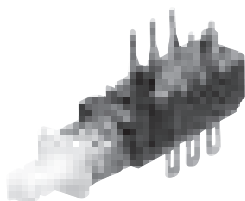
Tact

Touch Key

Miscellaneous

APPLICATIONS:

WP Series pushbutton switches are suitable to be used in wide variety of applications, such as telecommunications, professional audio, sound and electronic test equipment.



FEATURES:

- Wiping for smooth, silent actuation stroke
- Up to 16 poles per module
- Mounting chassis
- Interlocked assemblies
- Optional terminal length
- Snap-on buttons
- Solder lugs on top for hand wiring
- Switch plunger with soldering contacts is removable from the front without disturbing electrical connections
- Enclosed housing protects inner contact area from dust and external intrusion
- Fixed terminals are "staked" in position providing an extra protection to help preventing weakening of solder or flux

SPECIFICATIONS:

CONTACT RESISTANCE: Initial 5m-ohms max., after 25,000 cycles 20m-ohms max.

CURRENT AND VOLTAGE: 0.5A @ 100VAC, 0.2A @ 250VAC, 1A @ 25VDC.

DIELECTRIC STRENGTH: 1,500VAC for 1 min.

INSULATION RESISTANCE: Adjacent Contacts- 2×10^{12} ohms min. (Dry Condition), 3×10^{11} ohms min. (100% Relative Humidity after 96 hrs @70°F); Life Test-100,000 cycles min.

LIFE CYCLE: $\geq 1 \times 10^5$.

MATERIALS:

HOUSING: Polycarbonate (UL94HB).

PLUNGER: Duracon (UL94HB).

TERMINAL BOARD: Polycarbonate.

MOVING CONTACTS: Brass base silver plated.

FIXED CONTACTS: Brass with silver plate over nickel plate.

MOVABLE CONTACT RETURN SPRING: Stainless steel spring.

PLUNGER RETURN SPRING: Baked & Zinc plated steel spring.

ALTERNATE ACTION STAPLE: Highly resistant steel-wire, Chrome plated.

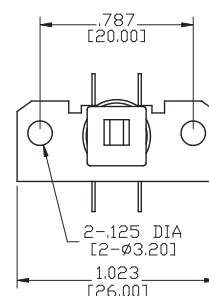
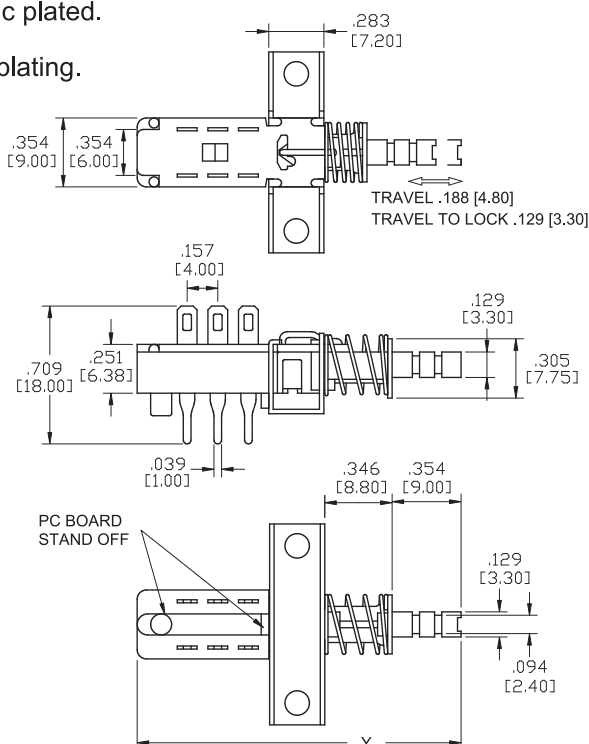
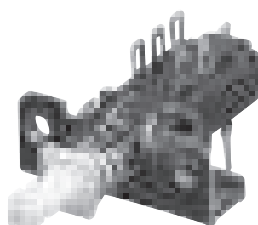
TERMINAL DIE BOND: High strength bonding red resin.

RELEASE BAR: Steel/Zinc plated.

CHASSIS: Steel/Nickel plated or steel/zinc plated.

RELEASE BAR SPRING: Stainless steel.

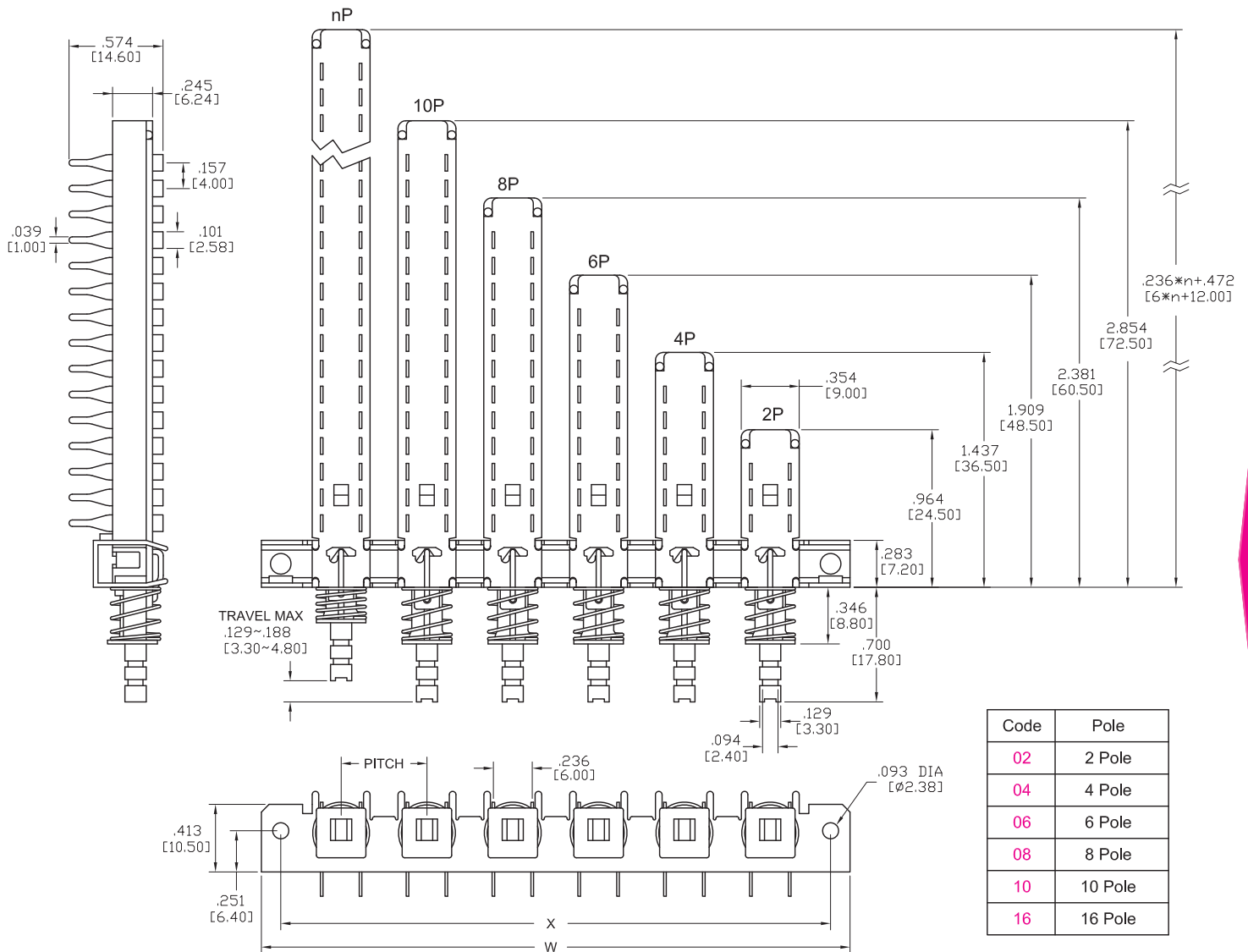
CONTACTS: (Q) Silver plating, (R) Gold plating.



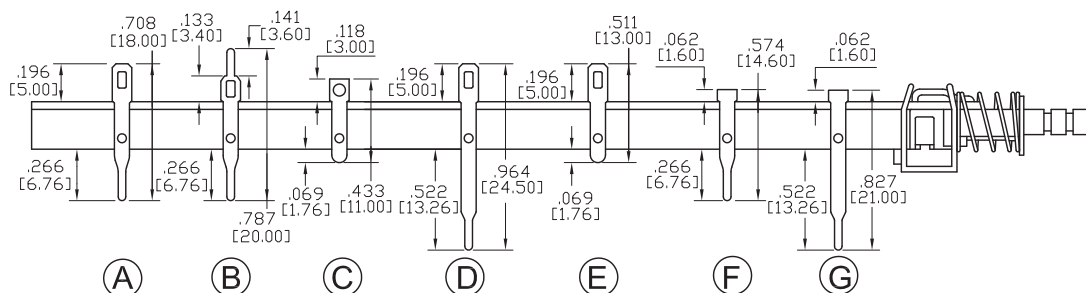
Model No.	Type
WP-3	Momentary
WP-4	Latching
WP-5	Interlocking

Pole	DIM. "Y"
2PDT	42.15
4PDT	54.15
6PDT	66.15
8PDT	78.15
10PDT	90.15
16PDT	126.15

POLE & PITCH & TERMINATION OPTIONS

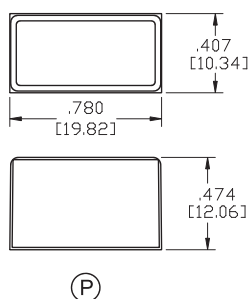
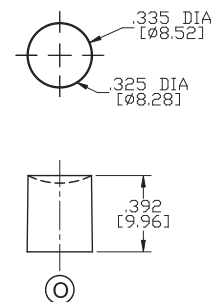
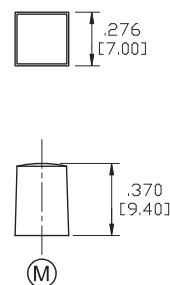
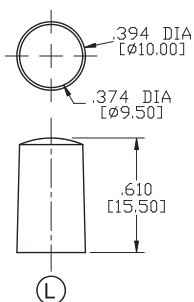
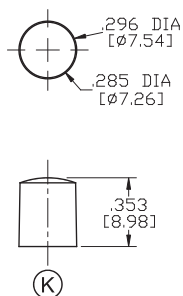
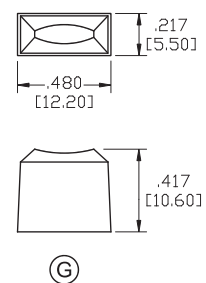
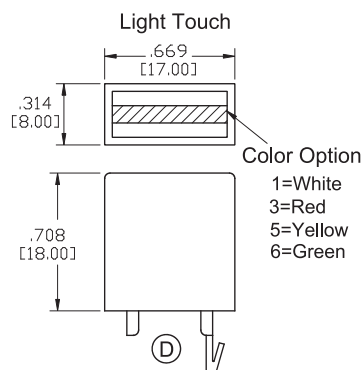
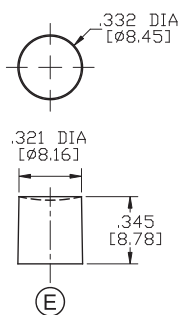
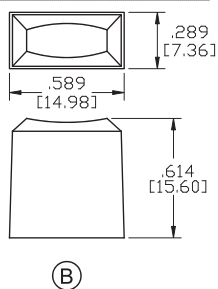


CODE OF SWITCH NUMBER		A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U
CODE OF PITCH (mm)	DIM.	Switch Number																		
		2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1(10.0)	W	36.0	46.0	56.0	66.0	76.0	86.0	96.0	106.0	116.0	126.0	136.0	146.0	156.0	166.0	176.0	186.0	196.0	206.0	216.0
	X	30.0	40.0	50.0	60.0	70.0	80.0	90.0	100.0	110.0	120.0	130.0	140.0	150.0	160.0	170.0	180.0	190.0	200.0	210.0
2(12.5)	W	38.5	51.0	63.5	76.0	88.5	101.0	113.5	126.0	138.5	151.0	163.5	176.0	188.5	201.0	213.5	226.0	238.5	251.0	263.5
	X	32.5	45.0	57.5	70.0	82.5	95.0	107.5	120.0	132.5	145.0	157.5	170.0	182.5	195.0	207.5	220.0	232.5	245.0	257.5
3(15.0)	W	41.0	56.0	71.0	86.0	101.0	116.0	131.0	146.0	161.0	176.0	191.0	206.0	221.0	236.0	251.0	266.0	281.0	296.0	311.0
	X	35.0	50.0	65.0	80.0	95.5	110.0	125.0	140.0	155.0	170.0	185.0	200.0	215.0	230.0	245.0	260.0	275.0	290.0	305.0
4(17.5)	W	43.8	61.0	78.5	96.0	113.5	131.0	148.5	166.0	183.5	201.0	218.5	236.0	253.0	271.0	288.5	306.0	323.5	341.0	358.5
	X	37.5	55.0	72.5	90.0	107.5	125.0	142.5	160.0	177.5	195.0	212.5	230.0	247.5	265.0	282.5	300.0	317.5	335.0	352.5
5(20.0)	W	46.0	66.0	86.0	106.0	126.0	146.0	166.0	186.0	206.0	226.0	246.0	266.0	286.0	306.0	326.0	346.0	366.0	386.0	406.0
	X	40.0	60.0	80.0	100.0	120.0	140.0	160.0	180.0	200.0	220.0	240.0	260.0	280.0	300.0	320.0	340.0	360.0	380.0	400.0



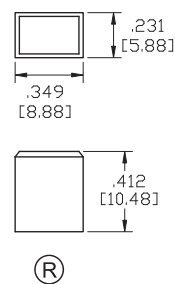
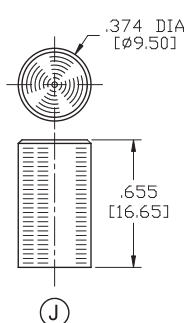
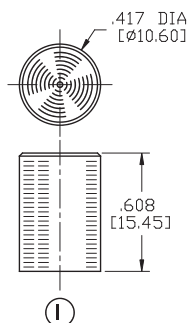
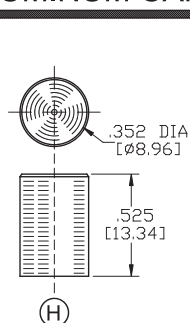
KNOB OPTIONS

PLASTIC CAP



Code	Cap Color
1	White
2	Black
3	Red
4	Chrome
7	Gray

ALUMINUM CAP



Code	Cap Color
2	Black
4	Chrome
8	Gold

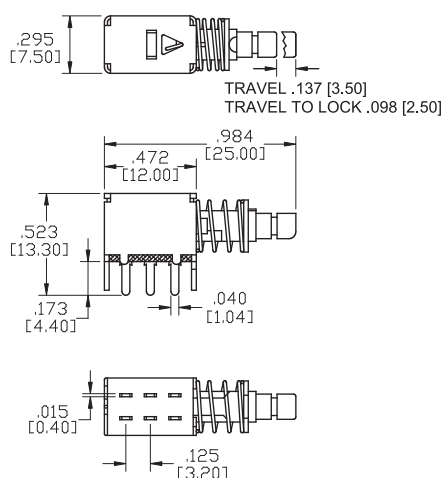
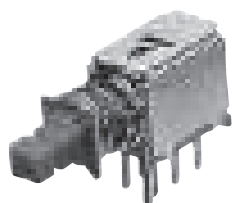
HOW TO ORDER

Model No.	Pole	Pitch Code	Switch Number	Termination	Plating	Material	Knob	Knob Color
	02 08	1	A	A	Q=Silver	P=Std.		
	04 10	2	U	F	R=Gold	V=Valox		
	06 16	5						

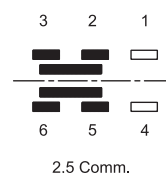
SPECIFICATIONS:

CONTACT RATING: 200mA @30 VAC or VDC max.
 ELECTRICAL LIFE: 30,000 make-and-break cycle at full load.
 CONTACT RESISTANCE: 20m-ohms max. @ 2-4 VDC, 100mA for both silver and gold plated contacts.
 INSULATION RESISTANCE: 100M-ohms min.
 DIELECTRIC STRENGTH: 500VAC for 1 minute.
 OPERATING TEMPERATURE: -10°C to +60°C.

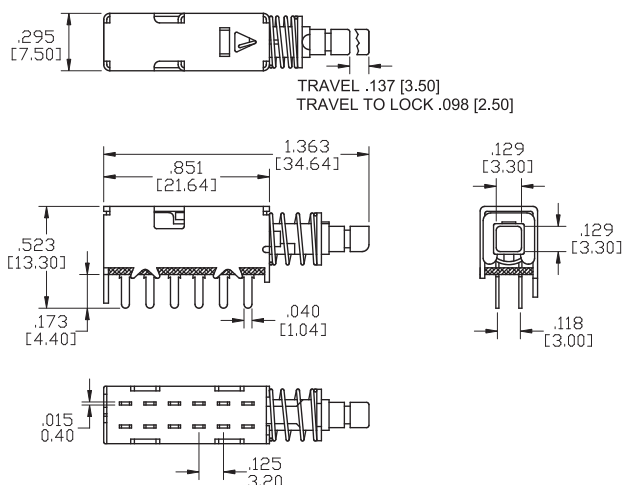
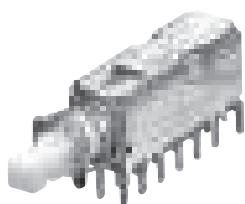
Specifications and Dimensions subject to change



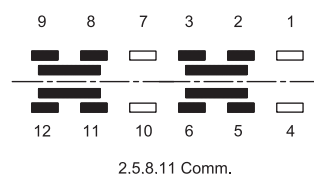
Schematic



Model No.	Type
WP-6	Momentary
WP-7	Latching

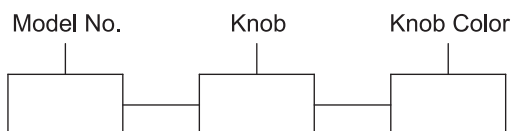


Schematic



Model No.	Type
WP-8	Momentary
WP-9	Latching

HOW TO ORDER



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous

SPECIFICATIONS:

CONTACT RATING: 5A 250VAC max.

ELECTRICAL LIFE: 5A 250VAC 50,000 cycles.

4A 250VAC 60,000 cycles.

2A 250VAC 200,000 cycles.

1A 250VAC 400,000 cycles.

CONTACT RESISTANCE: 50m-ohms max. initial.

INSULATION RESISTANCE: 500VDC 10M-ohms min.

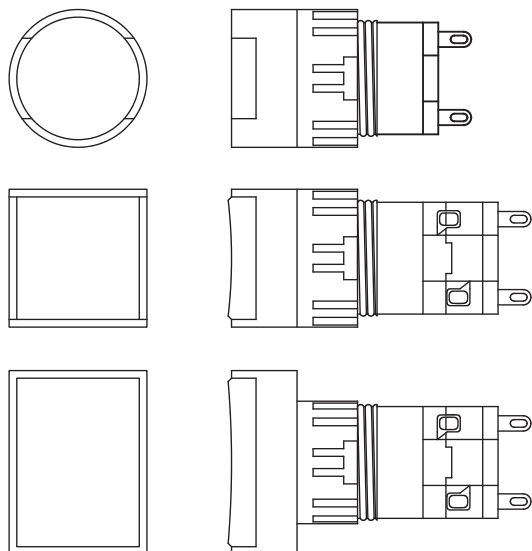
DIELECTRIC STRENGTH: 2500VAC, 50Hz for 1 minute.

CONTACT MATERIAL: Silver plated gold flash.

CASE MATERIAL: High performance plastic with resistance to high temperature and oily environment.

OPERATING TEMPERATURE: -25°C to +55°C.

SOLDERING TEMPERATURE: 300°C for 5sec.



FEATURES:

- Apparent shapes with rectangle 18x24mm, square 18x18mm and round diameter 18mm.
- High bezel that prevents accidental touching.
- Illuminated by midjet grooved T 1 3/4 lamp or multi-LED.
- Snap-action which accelerates on-off switching.
- Normally closed and normally open contacts in each switch block.
- Available with IP65 protection class. (Series 180A)

Specifications and Dimensions subject to change

MOMENTARY ACTIONS

Model No.	Type		Contact block diagram (button not depressed)	Mounting Length (A)	Case Colour
SP-11	Illuminated	SPST		29 mm	black red
SP-01	Non-illuminated				
DP-11	Illuminated	DPST		36.5 mm	black red
DP-01	Non-illuminated				

ALTERNATE ACTIONS

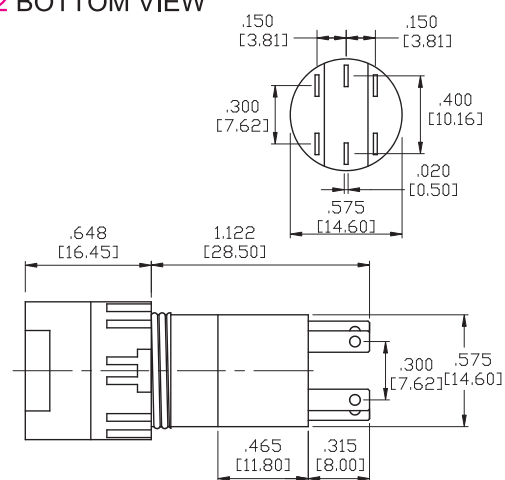
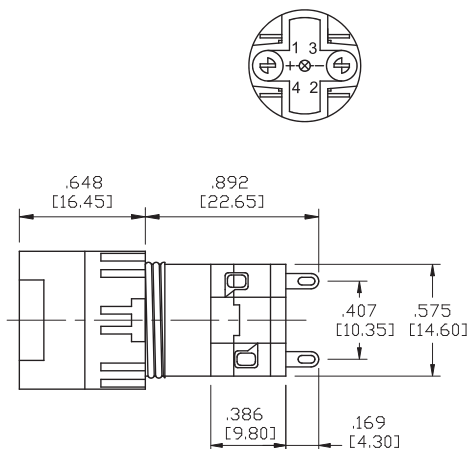
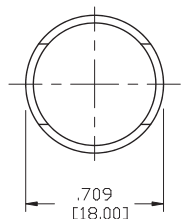
Model No.	Type		Contact block diagram (button not depressed)	Mounting Length (A)	Case Colour
SP-22	Illuminated	SPST		29 mm	black red
SP-02	Non-illuminated				
DP-22	Illuminated	DPST		36.5 mm	black red
DP-02	Non-illuminated				

SHAPE & TERMINATION

ROUND

A1 BOTTOM VIEW

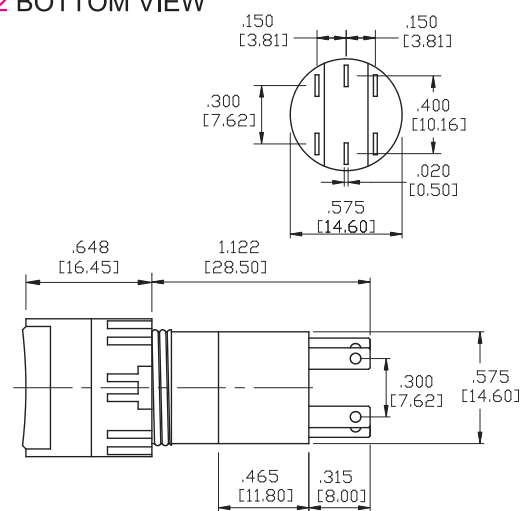
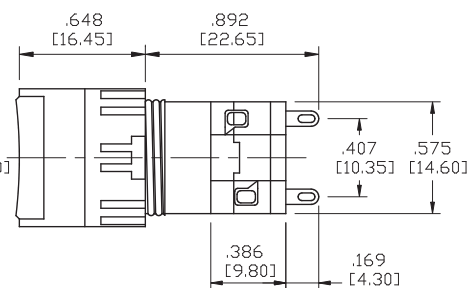
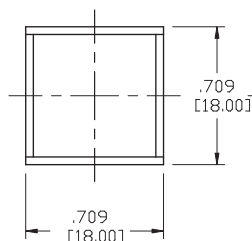
A2 BOTTOM VIEW



SQUARE

B1 BOTTOM VIEW

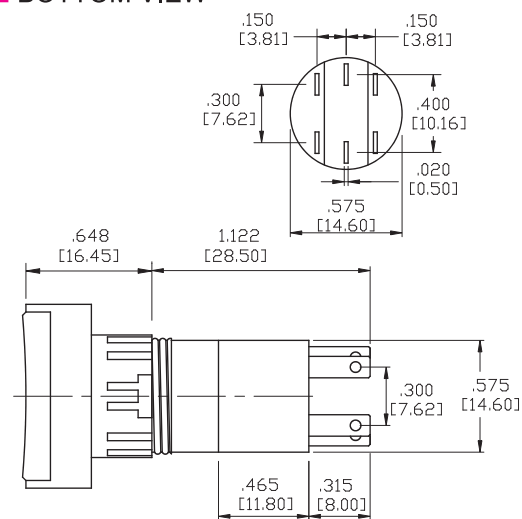
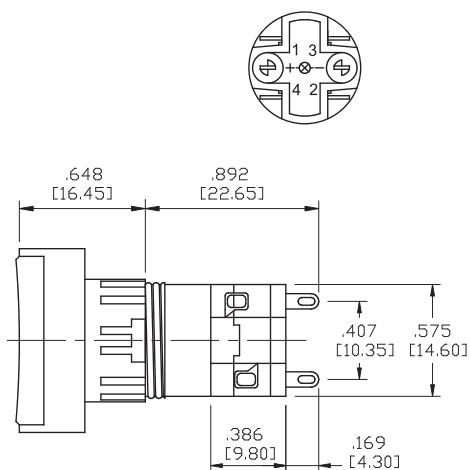
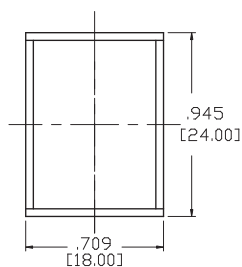
B2 BOTTOM VIEW



RECTANGULAR

C1 BOTTOM VIEW

C2 BOTTOM VIEW



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

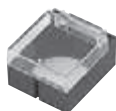
Tact

Touch Key

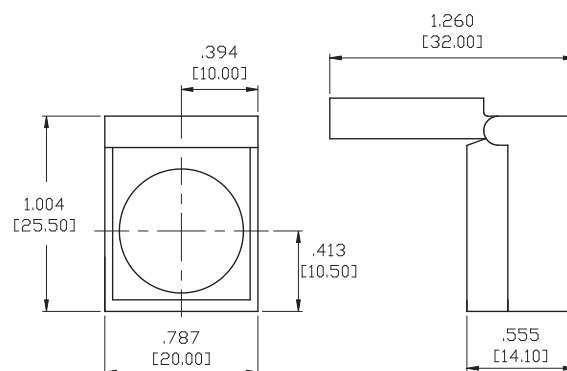
Miscellaneous

ACCESSORIES

01P-200S



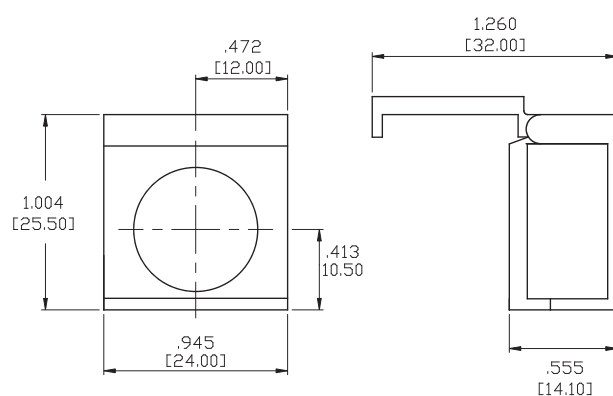
Category	Description
Protection Cap	For square head (90°C)



01P-200R



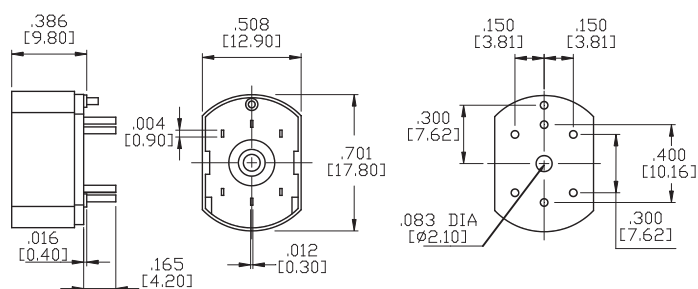
Category	Description
Protection Cap	For rectangular head (90°C)



01P-300



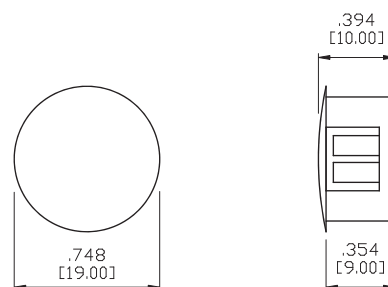
Category	Description
PCB Mounting Socket	Socket insert into PCB board is available for socket type push button switch installation



01P-400



Category	Description
Blanking Plate Block	PVC stopper to stuff the superfluous hole of the panel board only for 16mm hole



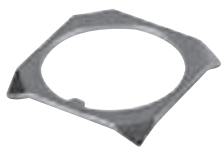
ACCESSORIES

01P-500



Category	Description
Connector	Insulation Socket 2.8 x 0.5mm

010-100



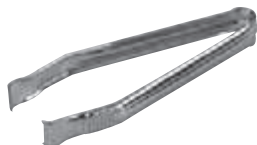
Category	Description
Washer	Anti twisting Ring

01P-T01



Category	Description
Mounting Wrench	Use this for tightening the switch in the mounting hole

01P-T02



Category	Description
Lens Removing Tool	Use this for replacing the fitted color lens

01P-T03



Category	Description
Lamp Extractor	Lamp removing tool

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous

BUTTON COLOR OPTIONS

R = Red

Y = Yellow

G = Green

LAMP & LED OPTIONS

LAMP

$A = 110V$

B = 220V

C = 6V

D = 12V

$$E = 24V$$

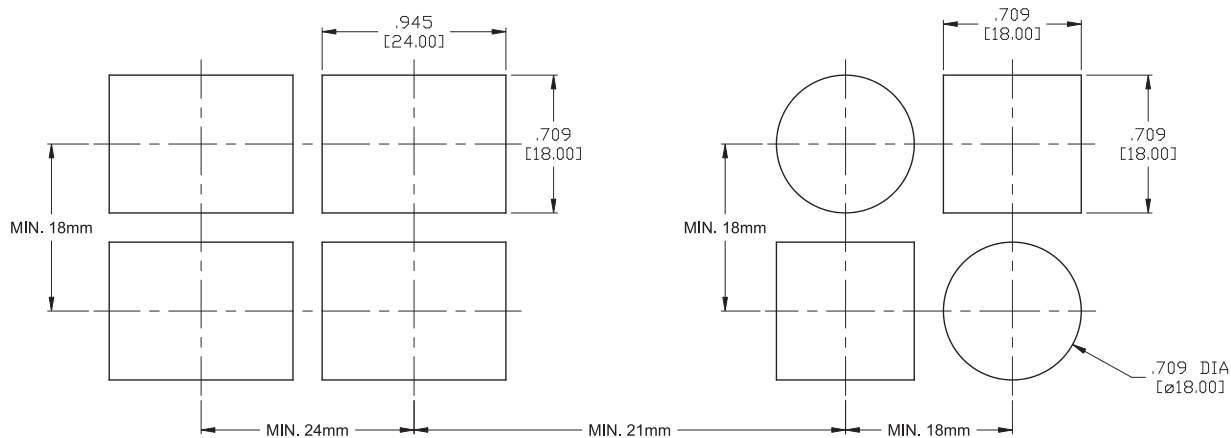
LED

$F = 12V$

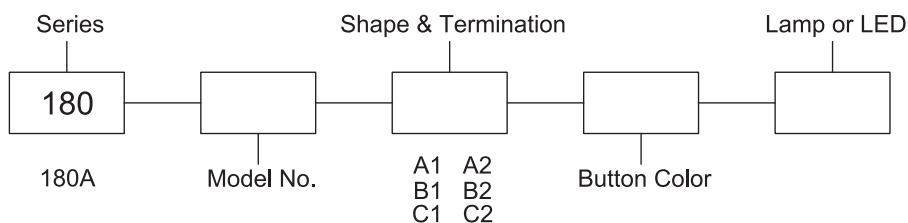
$G = 24V$

PANEL MOUNTINGS

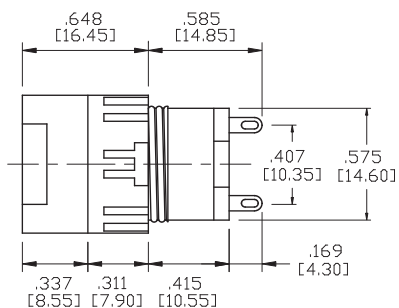
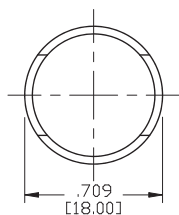
For multi-switches mounting layout



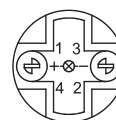
HOW TO ORDER



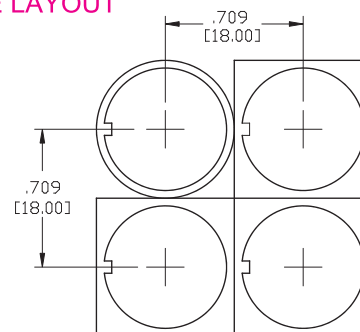
ROUND



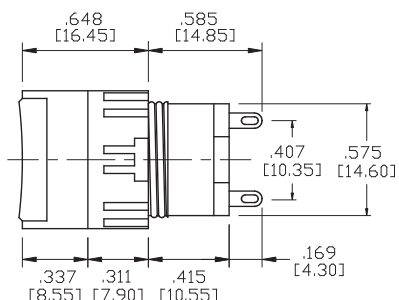
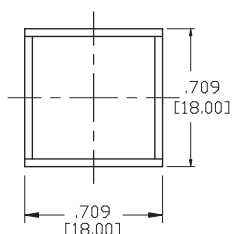
BOTTOM VIEW



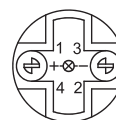
HOLE LAYOUT



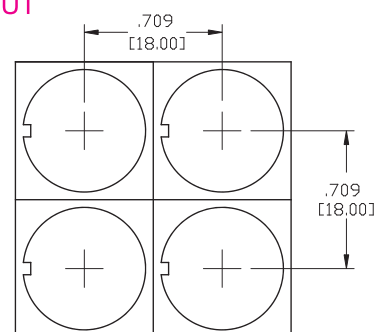
SQUARE



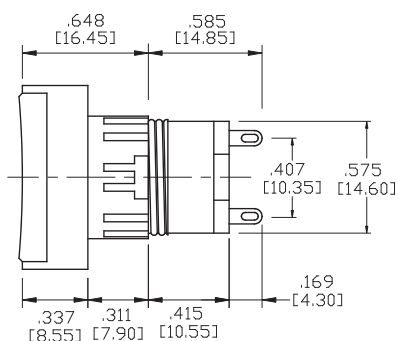
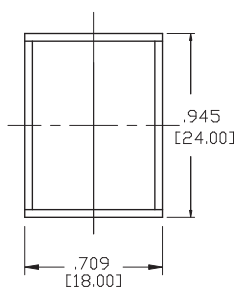
BOTTOM VIEW



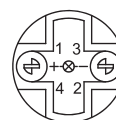
HOLE LAYOUT



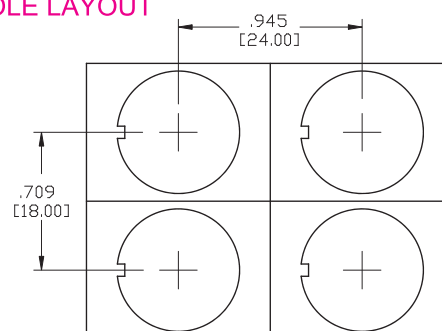
RECTANGULAR



BOTTOM VIEW



HOLE LAYOUT



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous

BUTTON COLOR OPTIONS

R = Red

Y = Yellow

G = Green

LAMP & LED OPTIONS

LAMP

A = 110V

B = 220V

C = 6V

D = 12V

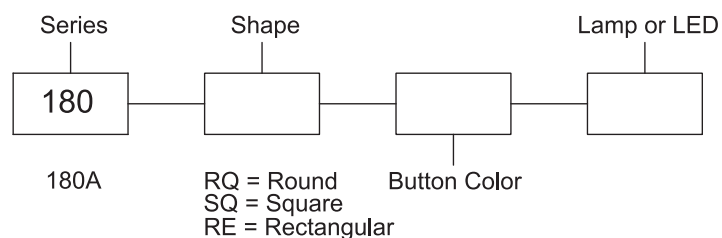
E = 24V

LED

F = 12V

G = 24V

HOW TO ORDER





NEW !

SPECIFICATIONS:

RATING: Ø22mm 0.5A 220VAC / 0.7A 24VDC
 Ø8/10/12/16mm 0.5A 220VAC / 0.7A 24VDC
 ELECTRICAL LIFE: 50,000 cycles.
 CONTACT RESISTANCE: 100m-ohms max.
 TERMINAL OPTION: Solder lug.
 ACTUATOR TYPE: Round / Square / Key / Rotator button.

FEATURES:

- Ø22mm: IP40 or IP65
- Illuminated button with laser etched symbols
- SPDT & DPDT in momentary or alternate functions
- Frame color available in black or silver

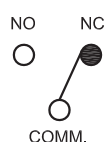
If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM

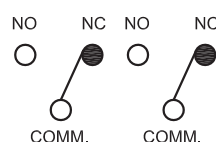
Series	Model	Shape	Bushing	Function	Legend	LED Color	Frame Color	LED Voltage	
180									IP40
	SP-1NO 1NC DP-2NO 2NC	A3-Round B3-Square C3-Rectangular	B1-Ø22mm B3-Ø16mm B4-Ø12mm B5-Ø10mm B6-Ø8mm	P-Indicator M-Momentary A-Alternate	Ø22mm only, please consult factory for legend options	R-Red G-Green Y-Yellow B-Blue W-White	K-Black S-Silver	6V 12V 24V 110V 220V	IP40 IP65

Circuit Diagram

1NO 1NC



2NO 2NC



Shape

A3 Round



B3 Square



C3 Rectangular



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

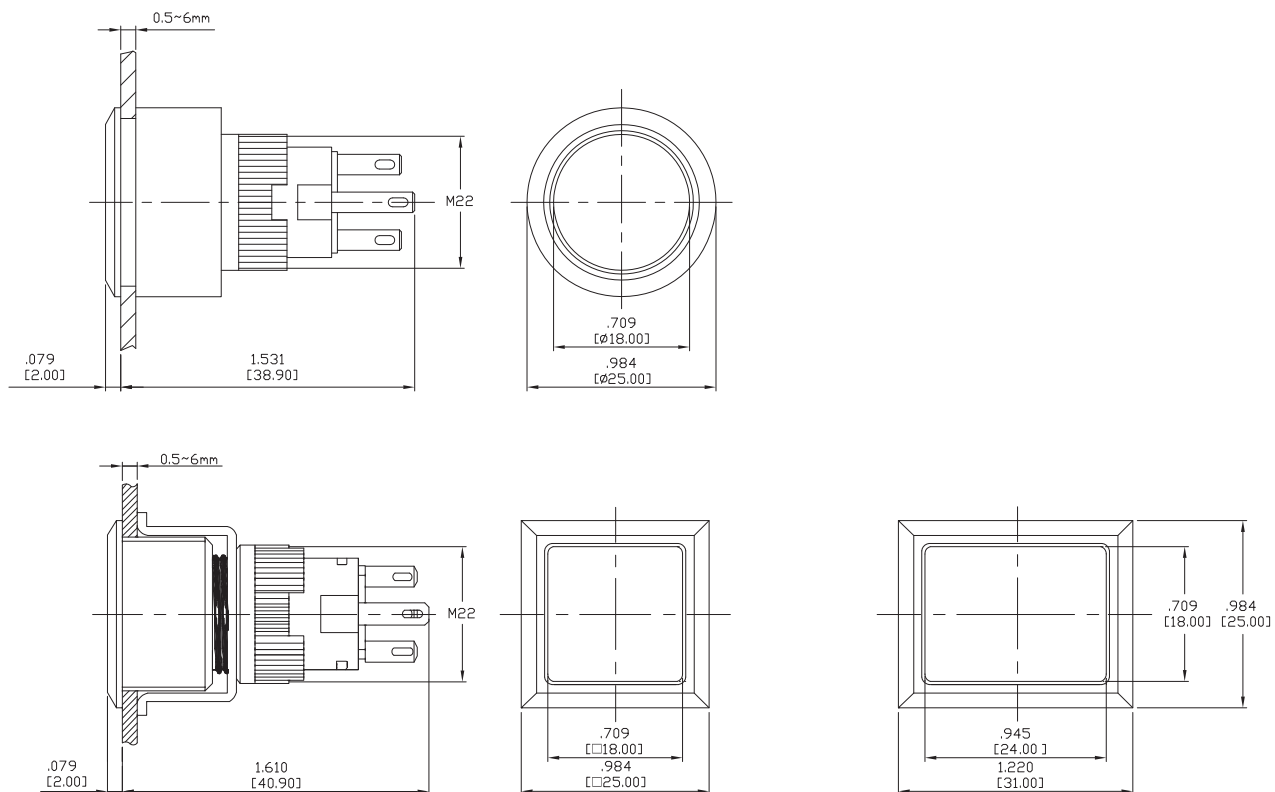
Tact

Touch Key

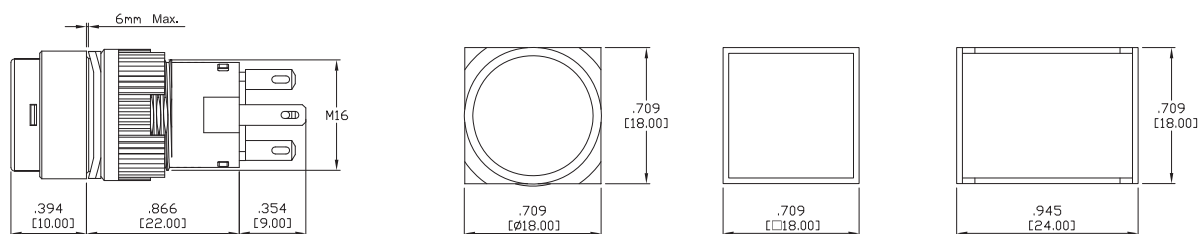
Miscellaneous

Bushing

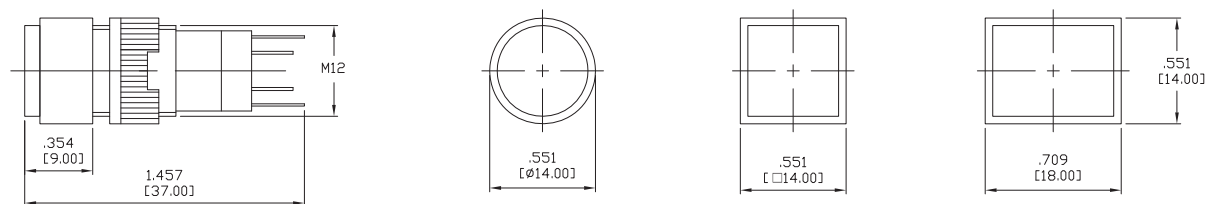
B1



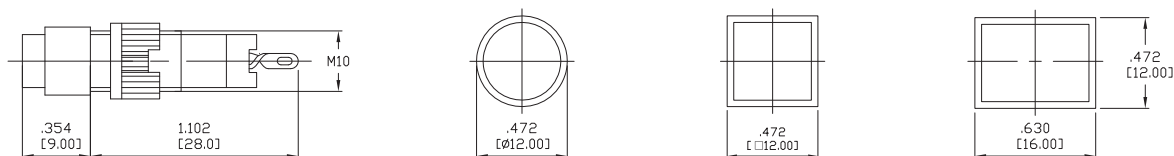
B3



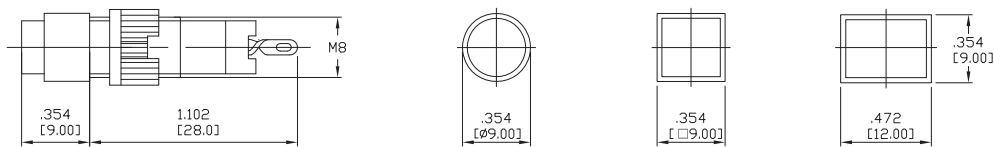
B4



B5



B6



Toggle
Rocker
Slide
Pushbutton
AV
Rotary
Tact
Touch Key
Miscellaneous



SPECIFICATIONS:

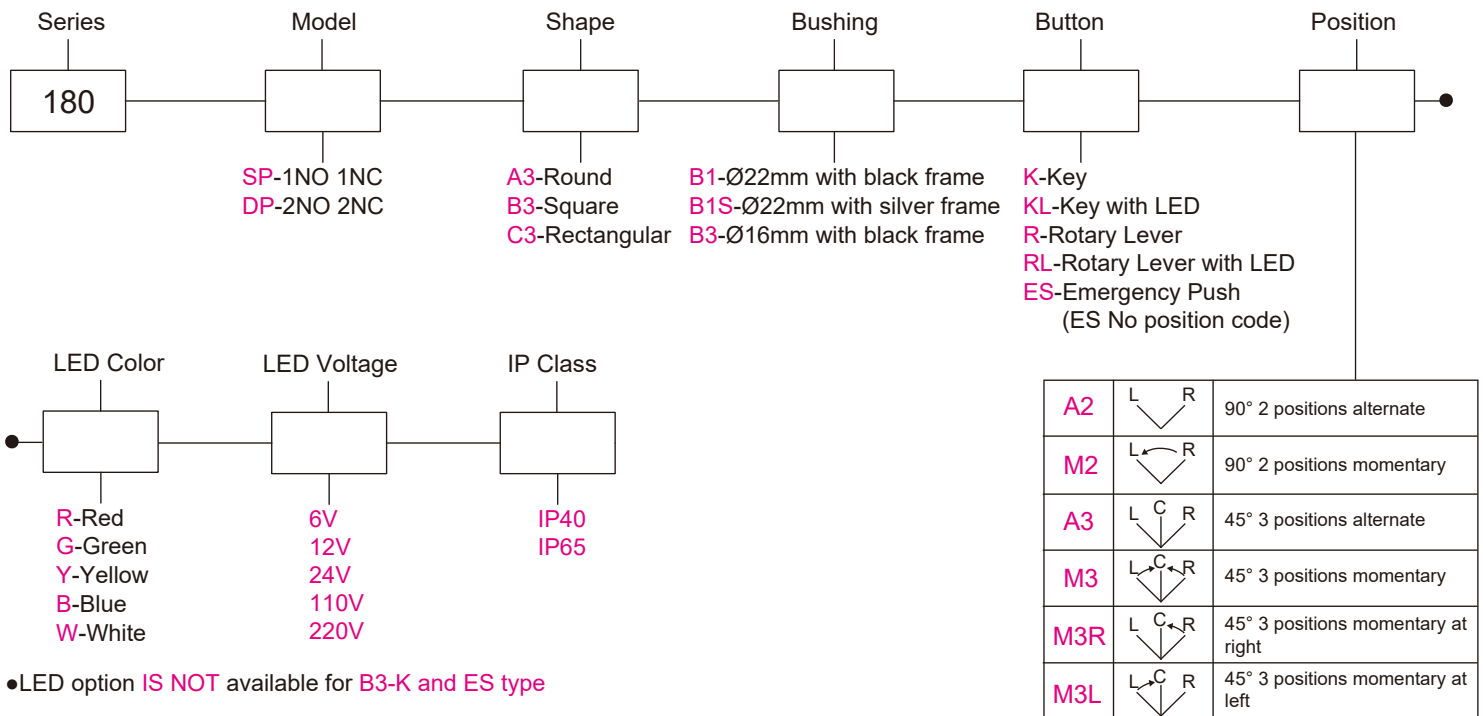
RATING: Ø22mm 0.5A 220VAC / 0.7A 24VDC
 Ø16mm 0.5A 220VAC / 0.7A 24VDC
 ELECTRICAL LIFE: 20,000 cycles.
 CONTACT RESISTANCE: 50m-ohms.
 DIELECTRIC STRENGTH: 2000VAC, 50Hz for 1 minute.
 INSULATION RESISTANCE: 100M-ohms min @ 500VDC.
 SOLDERING TEMPERATURE: 230°C for 3sec.
 OPERATING TEMPERATURE: -25°C to +55°C.

FEATURES:

- Ø22/16mm: IP65 or IP40.
- SPDT & DPDT in momentary or alternate functions.
- Frame color available in black or silver.

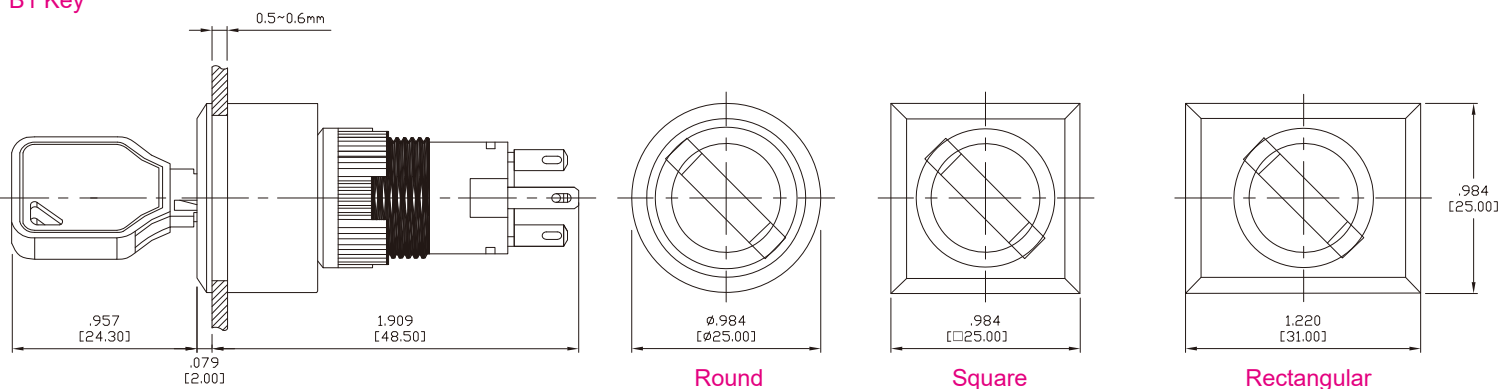
If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM

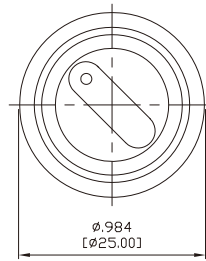
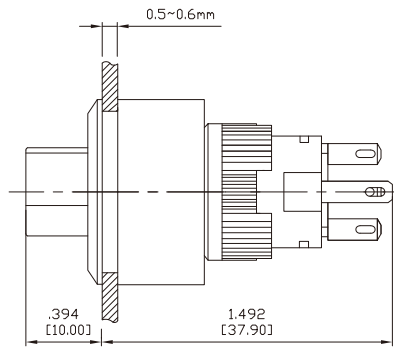


Bushing & Button

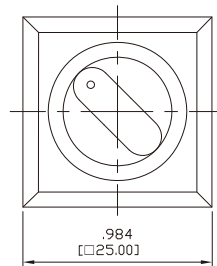
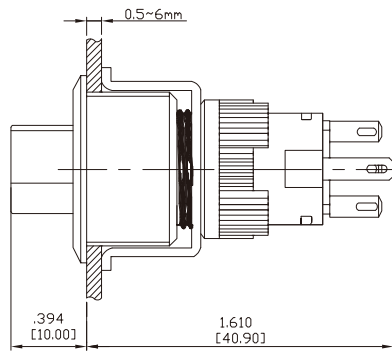
B1 Key



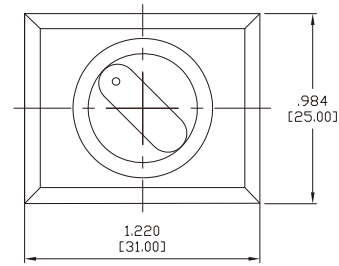
B1 Rotary Lever



Round

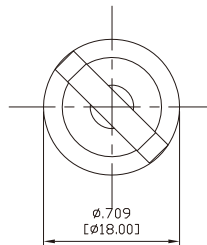
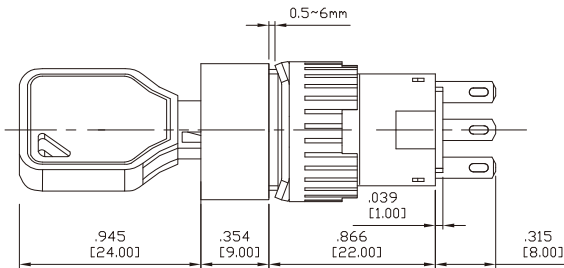


Square

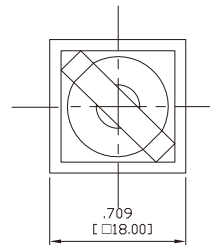


Rectangular

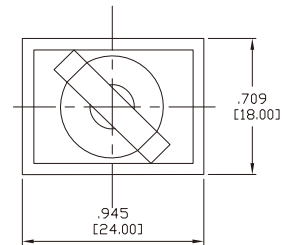
B3 Key



Round

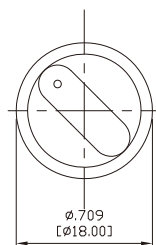
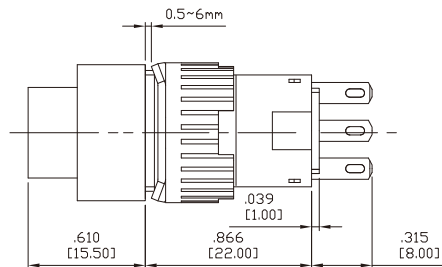


Square

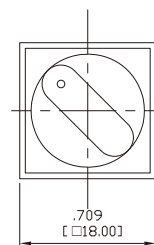


Rectangular

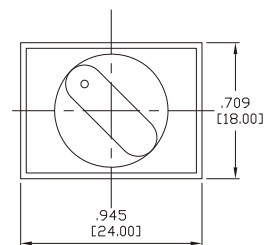
B3 Rotary Lever



Round



Square



Rectangular

SPECIFICATIONS:

BUSHING: Ø22mm.
 CONTACT RATING: 2A @ 48VDC or 125VAC.
 ELECTRICAL LIFE: 10,000cycles at full load.
 CONTACT RESISTANCE: 10m-ohms max. initial @2-4VDC.
 INSULATION RESISTANCE: 1,000M-ohms min. @ 500VDC.
 DIELECTRIC STRENGTH: 3,000VAC for 1 minute.
 OPERATING TEMPERATURE: -20°C ~ +55°C.

MATERIALS:

BUSHING & BUTTON: See Bushing & Button Option.
 CONTACT: Silver alloy.
 BODY & BASE: Glass filled nylon 6/6 (UL 94V-0)
 TERMINAL: Nickel plated brass.
 NUT: Nickel plated brass.

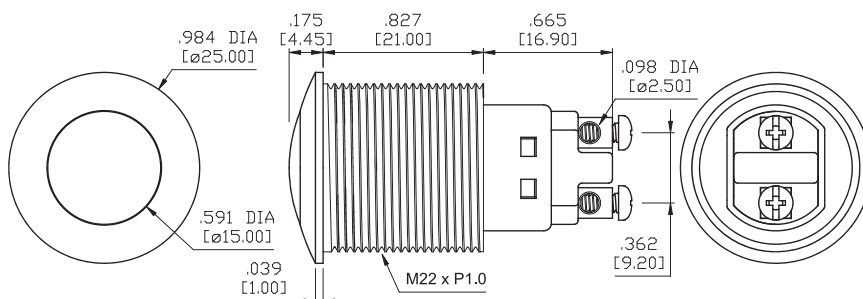
Specifications and Dimensions subject to change

SPST



Model No.	Type
01	OFF MOM

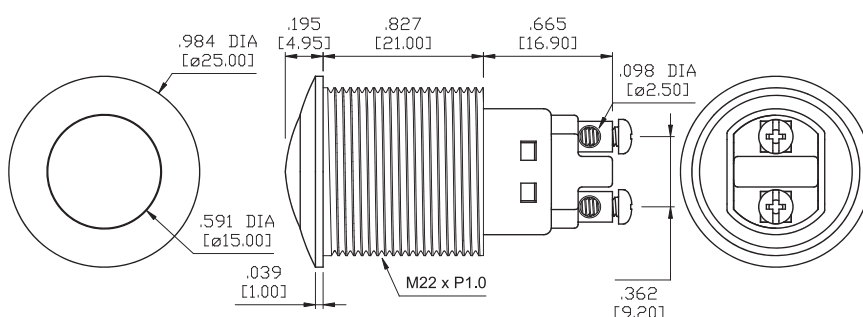
Schematic



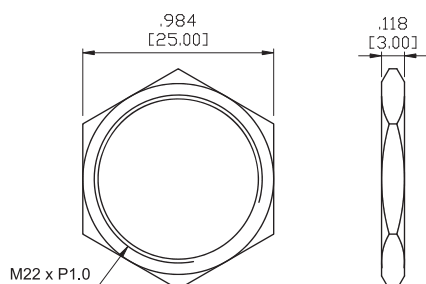
SPST IP65 Front panel protection

Model No.	Type
01	OFF MOM

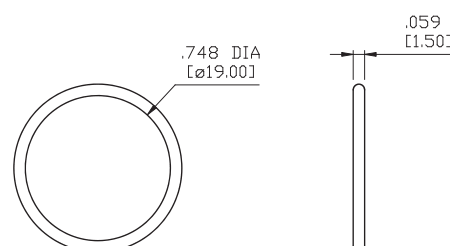
Schematic



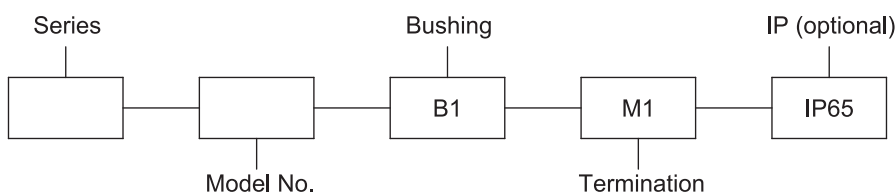
NUT



O-RING



HOW TO ORDER



SPECIFICATIONS:

BUSHING: $\varnothing$ 19mm, $\varnothing$ 16mm, $\varnothing$ 12mm
 CONTACT RATING: 2A @ 36VDC.
 ELECTRICAL LIFE: 200,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max. initial @2-4VDC.
 INSULATION RESISTANCE: 1,000M-ohms min. @ 500VDC.
 DIELECTRIC STRENGTH: 2,000V RMS 50~60Hz.
 IP CLASS: IP65 protection.
 TORQUE: 5~14Nm max. applied to nut.
 OPERATING FORCE: 5.5N max.
 OPERATING TEMPERATURE: -20°C~+55°C.

MATERIALS:

BUSHING: See Bushing Option.
 CONTACT: Silver alloy.
 BASE: PBT.
 NUT: Nickel plated brass.

Specifications and Dimensions subject to change

Toggle

Rocker

Slide

Pushbutton

AV

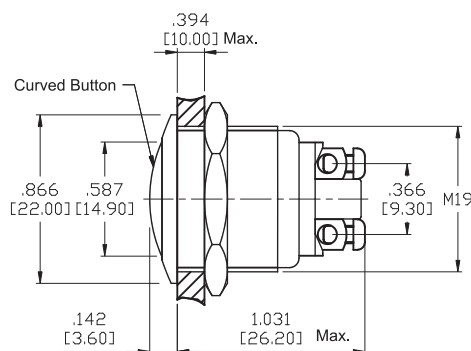
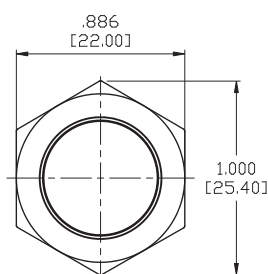
Rotary

Tact

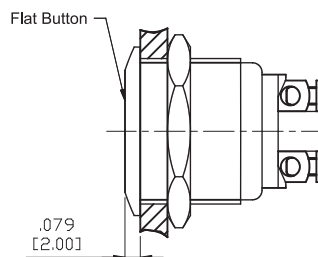
Touch Key

Miscellaneous

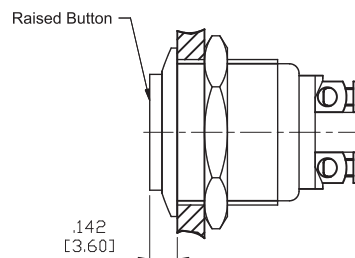
SPST $\varnothing$ 19mm, Solder Lug



Ex. P/N: AV01-B2-M1



Ex. P/N: AV01-B2-M1-F



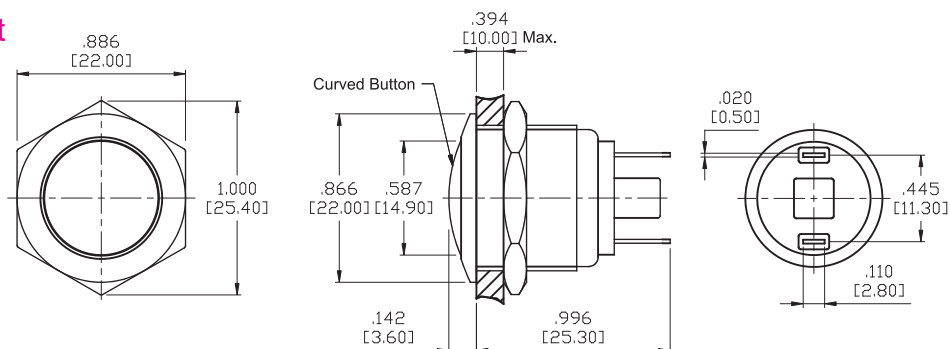
Ex. P/N: AV01-B2-M1-R

Model No.	SPST Type	
01	OFF	MOM

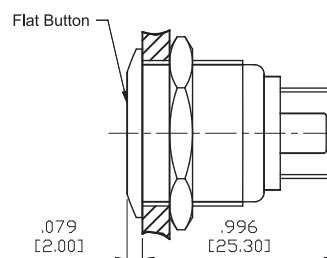
Schematic



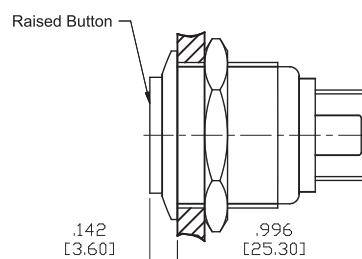
SPST ϕ 19mm, Quick Connect



Ex. P/N: AV01-B2-M3



Ex. P/N: AV01-B2-M3-F



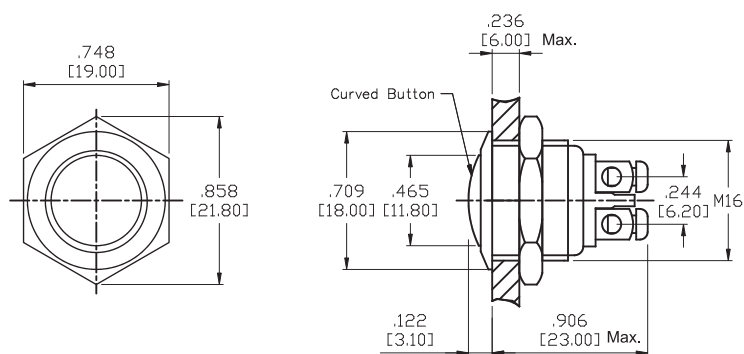
Ex. P/N: AV01-B2-M3-R

Model No.	SPST Type	
01	OFF	MOM

Schematic

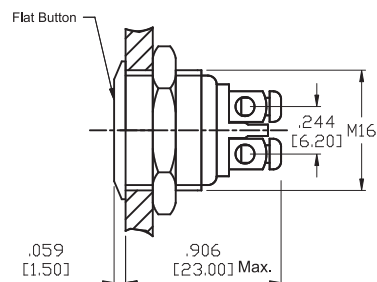
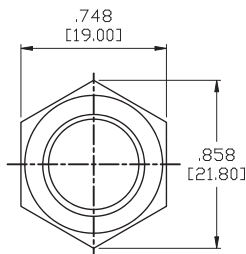


SPST ϕ 16mm, Solder Lug



Ex. P/N: AV01-B3-M1

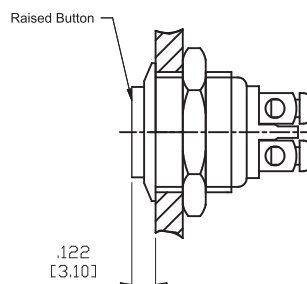
SPST $\varnothing$ 16mm, Solder Lug



Ex. P/N: AV01-B3-M1-F

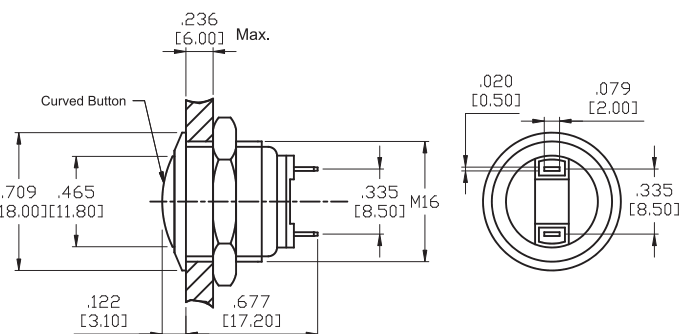
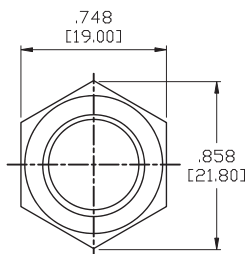
Model No.	SPST Type	
01	OFF	MOM

Schematic



Ex. P/N: AV01-B3-M1-R

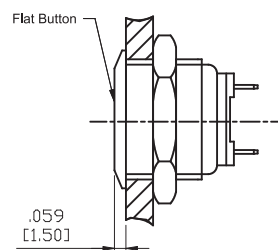
SPST $\varnothing$ 16mm, Quick Connect



Ex. P/N: AV01-B3-M3

Model No.	SPST Type	
01	OFF	MOM

Schematic



Ex. P/N: AV01-B3-M3-F

Toggle

Rocker

Slide

Pushbutton

AV

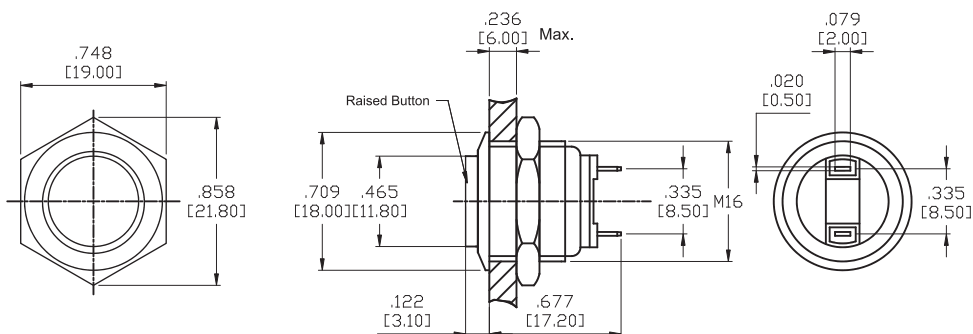
Rotary

Tact

Touch Key

Miscellaneous

SPST $\varnothing$ 16mm, Quick Connect



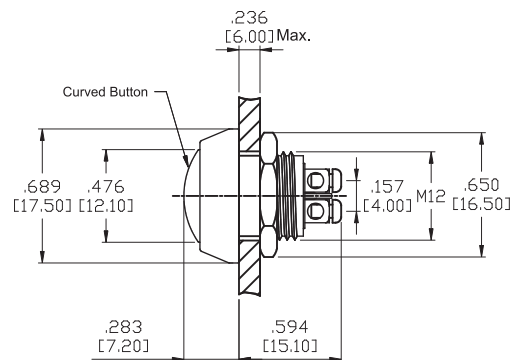
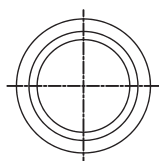
Ex. P/N: AV01-B3-M3-R

Model No.	SPST Type	
01	OFF	MOM

Schematic



SPST $\varnothing$ 12mm, Solder Lug



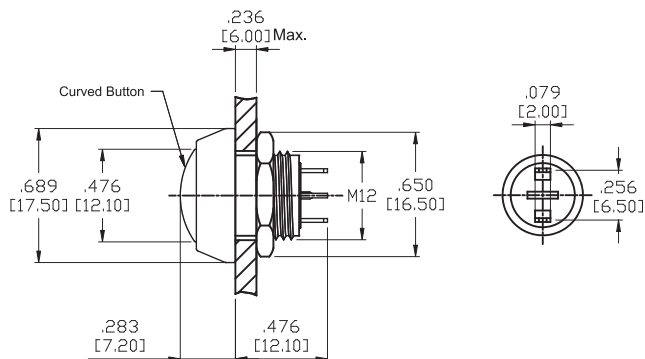
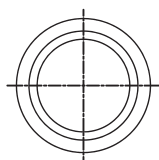
Ex. P/N: AV01-B4-M1

Model No.	SPST Type	
01	OFF	MOM

Schematic



SPST $\varnothing$ 12mm, Quick Connect



Ex. P/N: AV01-B4-M3

Model No.	SPST Type	
01	OFF	MOM

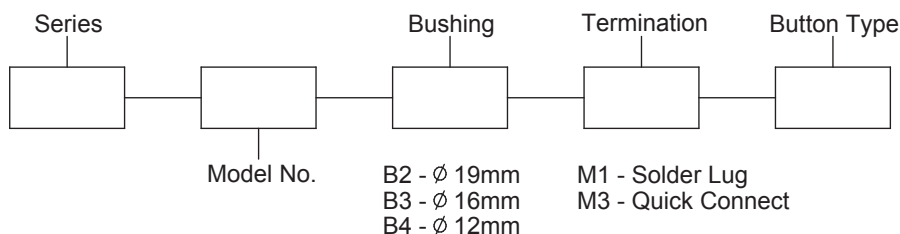
Schematic



BUSHING & BUTTON MATERIAL OPTIONS

Code	Bushing Size	Bushing & Button Material	MOQ
B2,B3,B4	∅ 19,16,12mm	Nickel plated brass with varnished polished	100 PCS
B21,B31,B41	∅ 19,16,12mm	Gold plated brass with varnished polished	500 PCS
B22,B32,B42	∅ 19,16,12mm	Stainless steel with varnished polished	100 PCS
B23,B33,B43	∅ 19,16,12mm	Al. alloy with black nickel plated	500 PCS

HOW TO ORDER



SPECIFICATIONS:

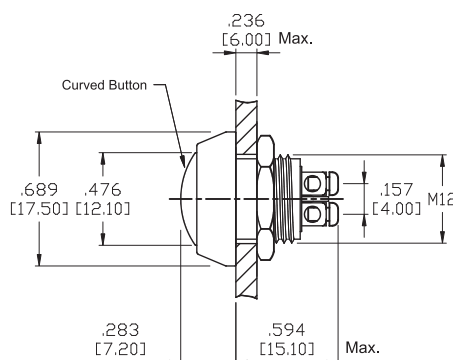
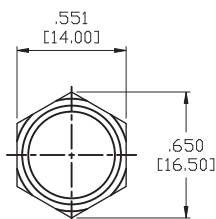
BUSHING: $\varnothing$ 12mm.
 CONTACT RATING: 2A @ 36VDC.
 ELECTRICAL LIFE: 200,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max. initial @2-4VDC.
 INSULATION RESISTANCE: 1,000M-ohms min. @ 500VDC.
 DIELECTRIC STRENGTH: 2,000V RMS 50~60Hz.
 IP CLASS: IP65 protection.
 TORQUE: 5~14Nm max. applied to nut.
 OPERATING FORCE: 5.5N max.
 OPERATING TEMPERATURE: -20°C~+55°C.

MATERIALS:

BUSHING: Zinc alloy, black nickel plated.
 CONTACT: Silver alloy.
 BUTTON & BASE: PBT.
 NUT: Nickel plated brass.

Specifications and Dimensions subject to change

SPST $\varnothing$ 12mm, Solder Lug



Ex. P/N: AV01P-B4-M1-x

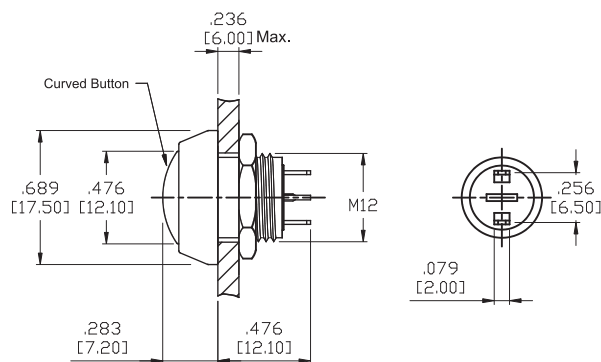
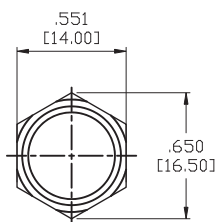
Replace "x" with button color

Model No.	SPST Type	
01	OFF	MOM

Schematic



SPST $\varnothing$ 12mm, Quick Connect



Ex. P/N: AV01P-B4-M3-x

Replace "x" with button color

Model No.	SPST Type	
01	OFF	MOM

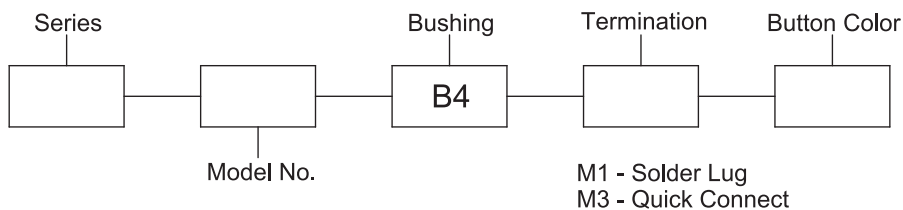
Schematic



BUTTON COLOR OPTIONS

Code	Button Color
R	Red
G	Green
Y	Yellow
O	Orange
B	Blue
W	White
K	Black

HOW TO ORDER



SPECIFICATIONS:

BUSHING: $\varnothing$ 30~16mm.

CONTACT RATING:

$\varnothing$ 16,19mm 0.5A @ 220~250VAC (Resistive & Inductive load)

$\varnothing$ 22,25,28,30mm 2A @ 220~250VAC (Inductive load)

3A @ 220~250VAC (Resistive load)

ELECTRICAL LIFE: 50,000cycles at full load.

CONTACT RESISTANCE: 50m-ohms max. initial @2-4VDC.

INSULATION RESISTANCE: 1,000M-ohms min. @ 500VDC.

DIELECTRIC STRENGTH: 2,000V RMS 50~60Hz.

IP CLASS: IP65 or IP67 front panel protection.

TORQUE: 5~14Nm max. applied to nut.

OPERATING FORCE: $\varnothing$ 30,28mm-7.5N max. $\varnothing$ 25mm-7N max. $\varnothing$ 22mm-5.5N max. $\varnothing$ 19mm-5N max. $\varnothing$ 16mm-4N max.

OPERATING TEMPERATURE: -20°C~+55°C.

MATERIALS:

BUSHING: See Bushing Option.

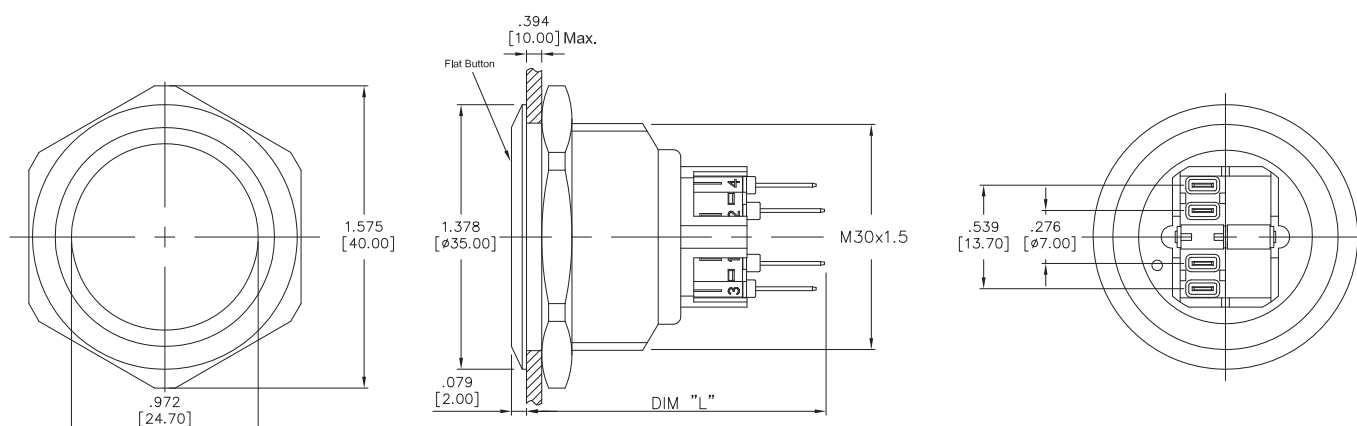
CONTACT: Silver alloy.

BASE: PBT or PA.

NUT: Nickel plated brass.

Specifications and Dimensions subject to change

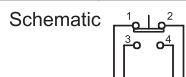
Non-latching & Latching $\varnothing$ 30mm, Quick Connect



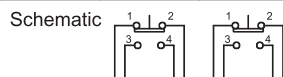
Ex. P/N: AV02-BB2-M3-F (L=38.40)

AV03-BB2-M3-F (L=40.80)

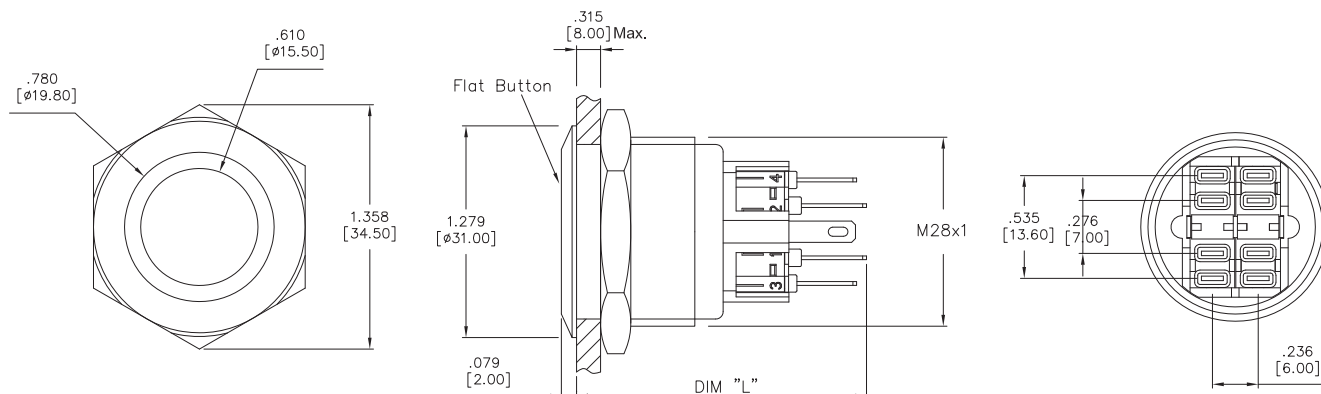
Model No.	SPDT Type	
02	ON	MOM
03	ON	ON



Model No.	DPDT Type	
12	ON	MOM
13	ON	ON



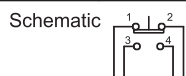
Non-latching & Latching $\varnothing$ 28mm, Quick Connect



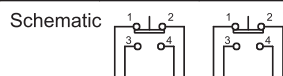
Ex. P/N: AV02-BA2-M3-F (L=38.40)

AV03-BA2-M3-F (L=40.80)

Model No.	SPDT Type	
02	ON	MOM
03	ON	ON



Model No.	DPDT Type	
12	ON	MOM
13	ON	ON



Non-latching & Latching Ø25mm, Quick Connect

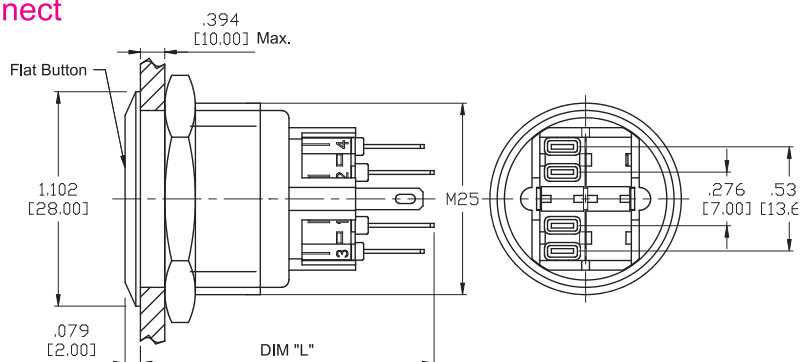
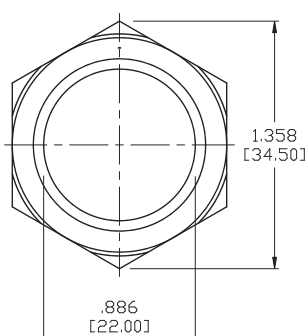
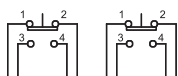
Model No.	SPDT Type	
02	ON	MOM
03	ON	ON

Schematic



Model No.	DPDT Type	
12	ON	MOM
13	ON	ON

Schematic

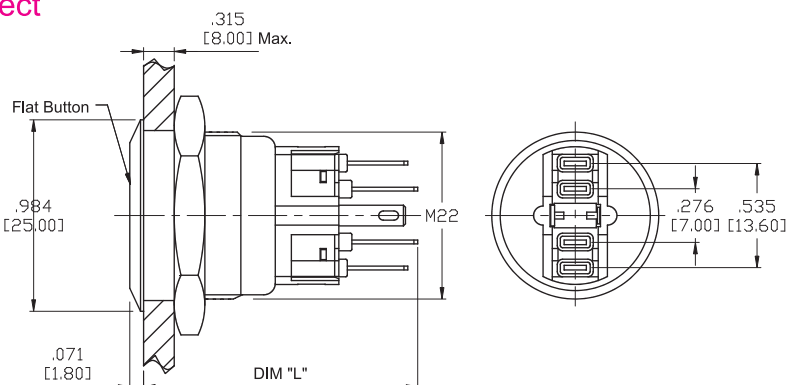
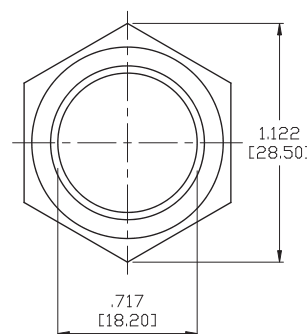


Ex. P/N: AV02-B02-M3-F (L=38.35mm)
AV03-B02-M3-F (L=41.35mm)

Non-latching & Latching Ø22mm, Quick Connect

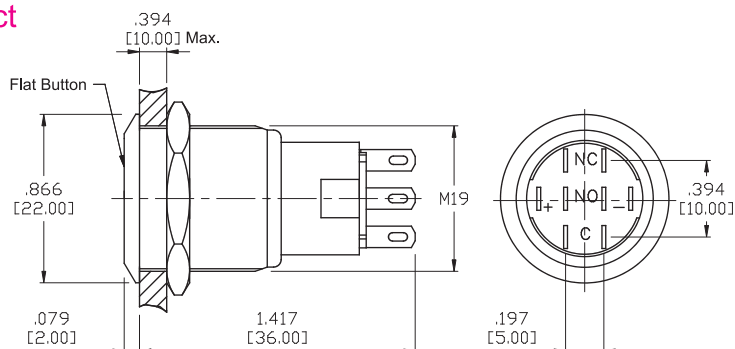
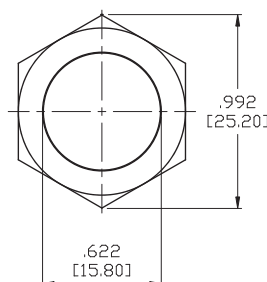
Model No.	SPDT Type	
02	ON	MOM
03	ON	ON

Schematic



Ex. P/N: AV02-B12-M3-F (L=35.8mm)
AV03-B12-M3-F (L=40.8mm)

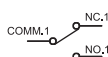
Non-latching & Latching Ø19mm, Quick Connect



Ex. P/N: AV02-B22-M3-F
AV03-B22-M3-F

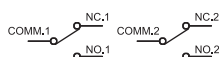
Model No.	SPDT Type	
02	ON	MOM
03	ON	ON

Schematic

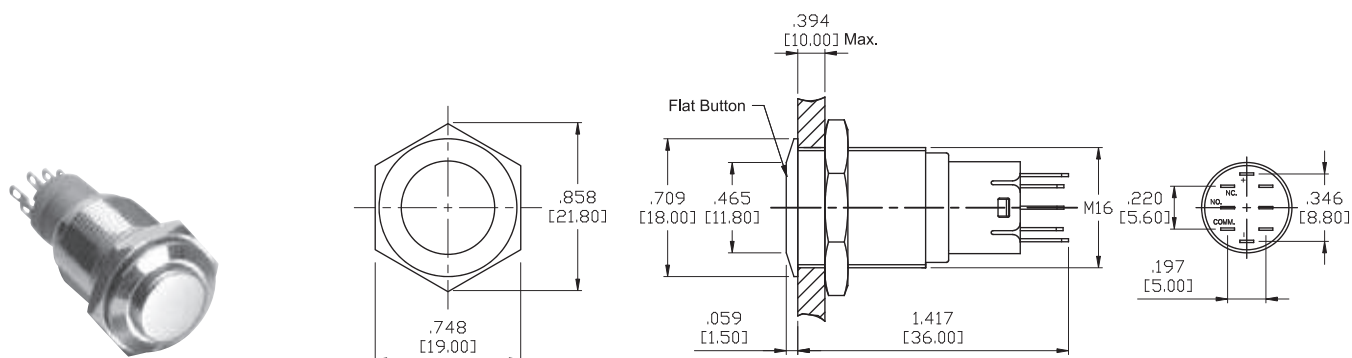


Model No.	DPDT Type	
12	ON	MOM
13	ON	ON

Schematic



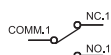
Non-latching & Latching Ø 16mm, Quick Connect



Ex. P/N: AV02-B3-M3-F & AV03-B3-M3-F

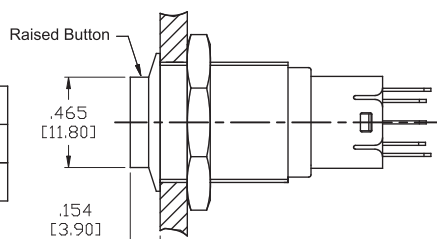
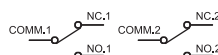
Model No.	SPDT Type	
02	ON	MOM
03	ON	ON

Schematic



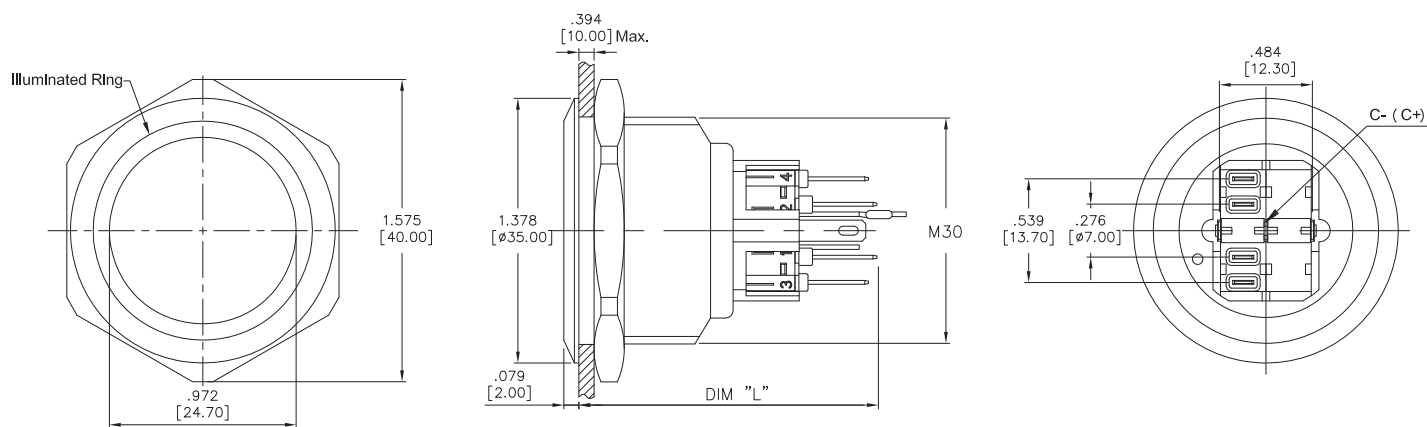
Model No.	DPDT Type	
12	ON	MOM
13	ON	ON

Schematic



Ex. P/N: AV02-B3-M3-R & AV03-B3-M3-R

Illuminated Non-latching & Latching Ø 30mm, Quick Connect



Ex. P/N: AV02L-BB2-M3-FR-x (L=38.40) Replace "x" with LED color
AV03L-BB2-M3-FR-x (L=40.80)

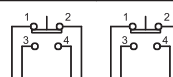
Model No.	SPDT Type	
02L	ON	MOM
03L	ON	ON

Schematic

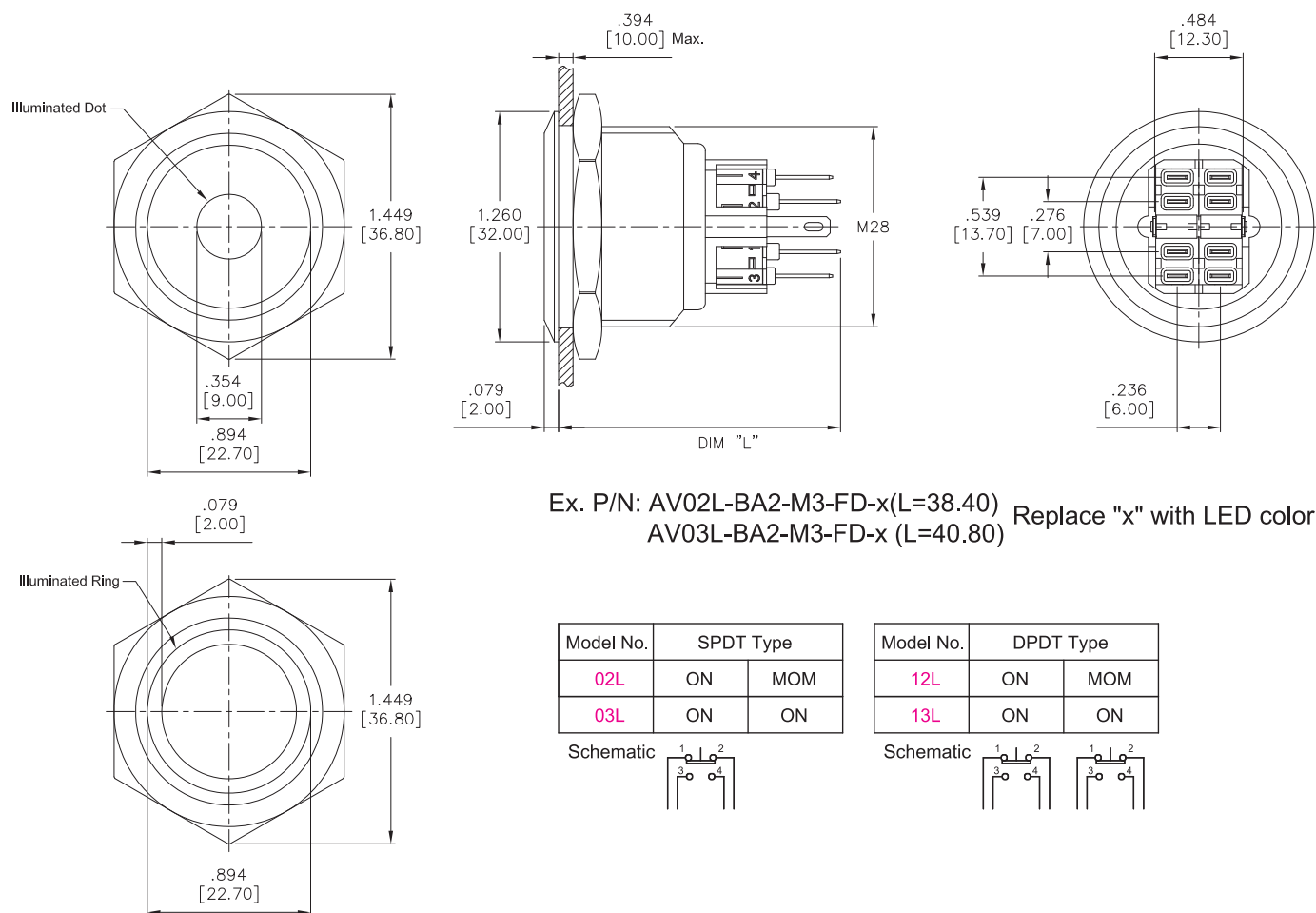


Model No.	DPDT Type	
12L	ON	MOM
13L	ON	ON

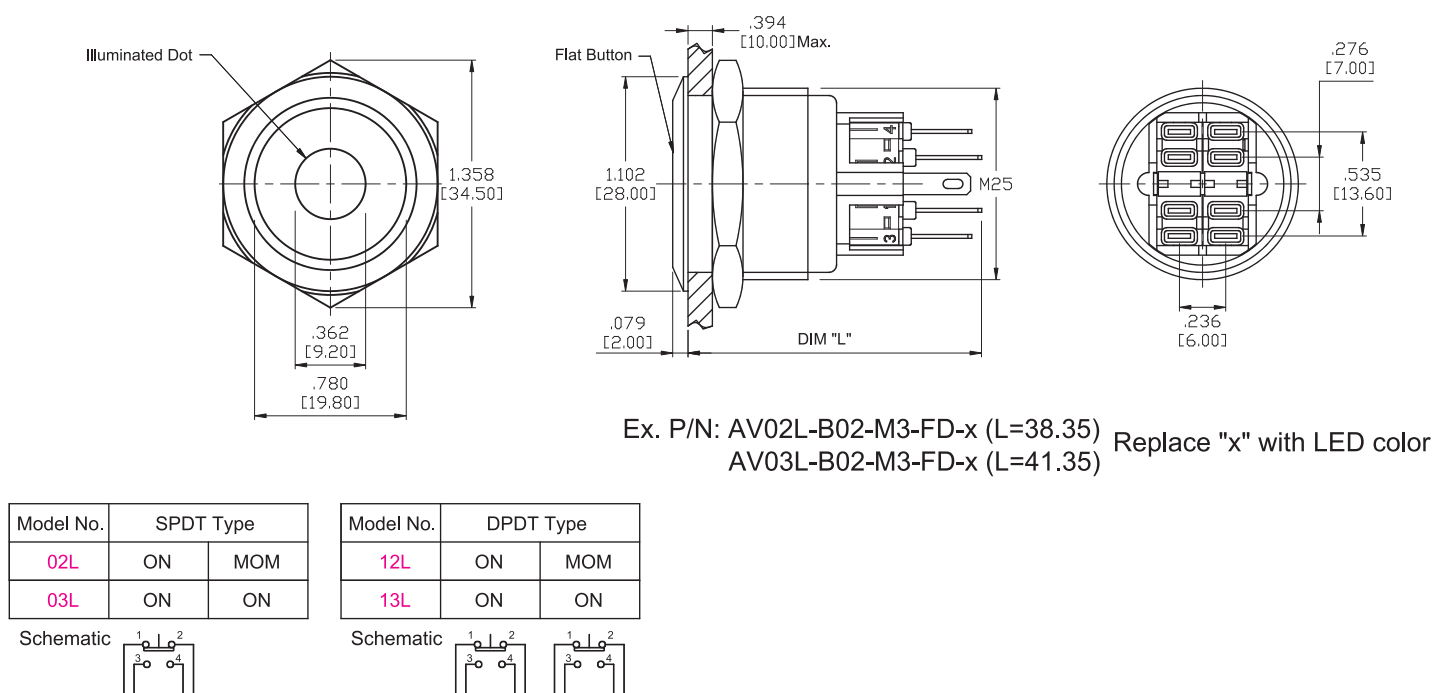
Schematic



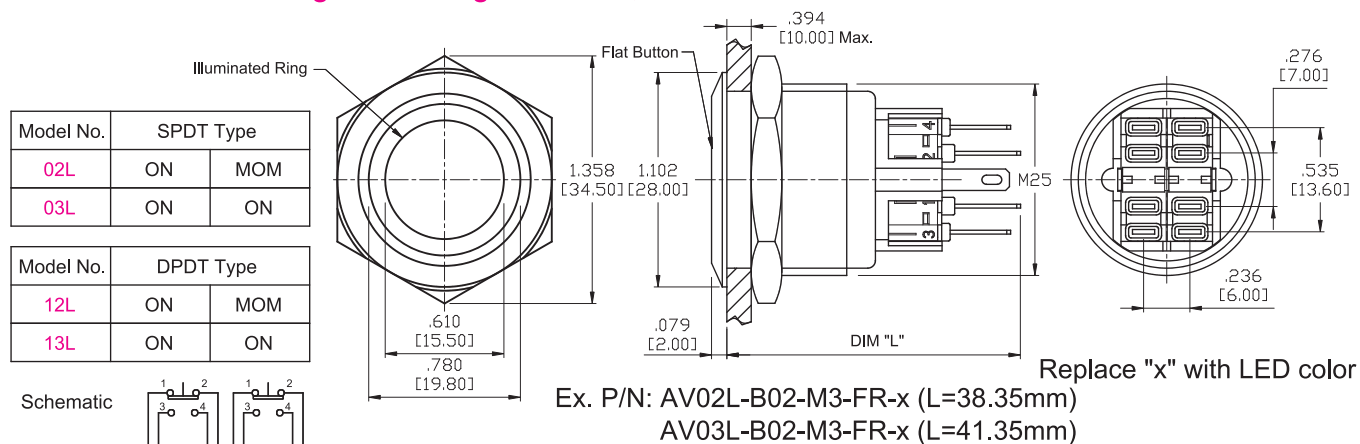
Illuminated Non-latching & Latching Ø 28mm, Quick Connect



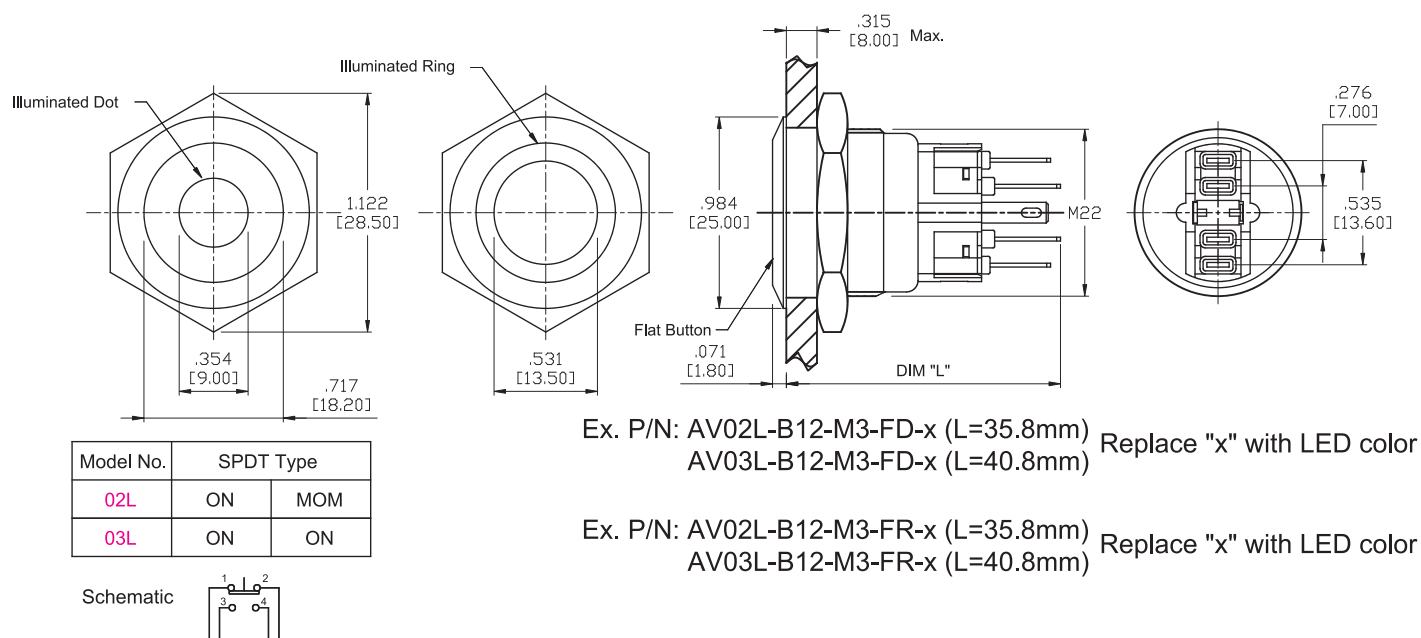
Illuminated Non-Latching & Latching Ø 25mm, Quick Connect



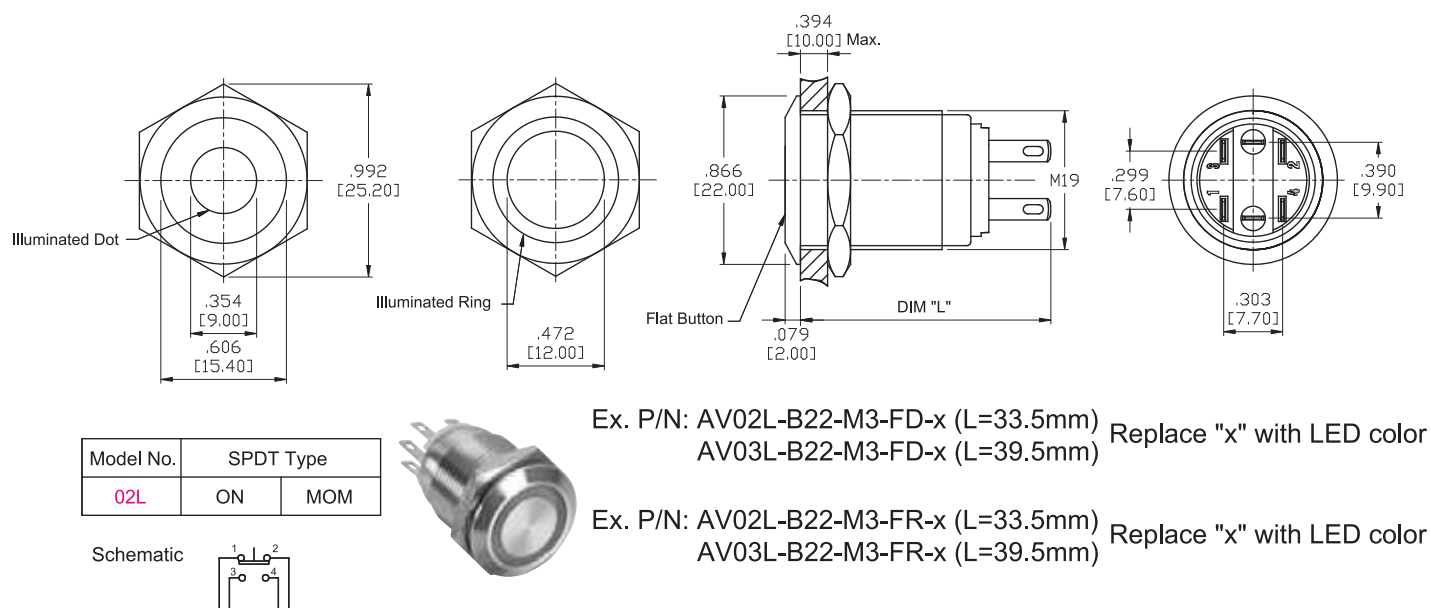
Illuminated Non-Latching & Latching Ø 25mm, Quick Connect



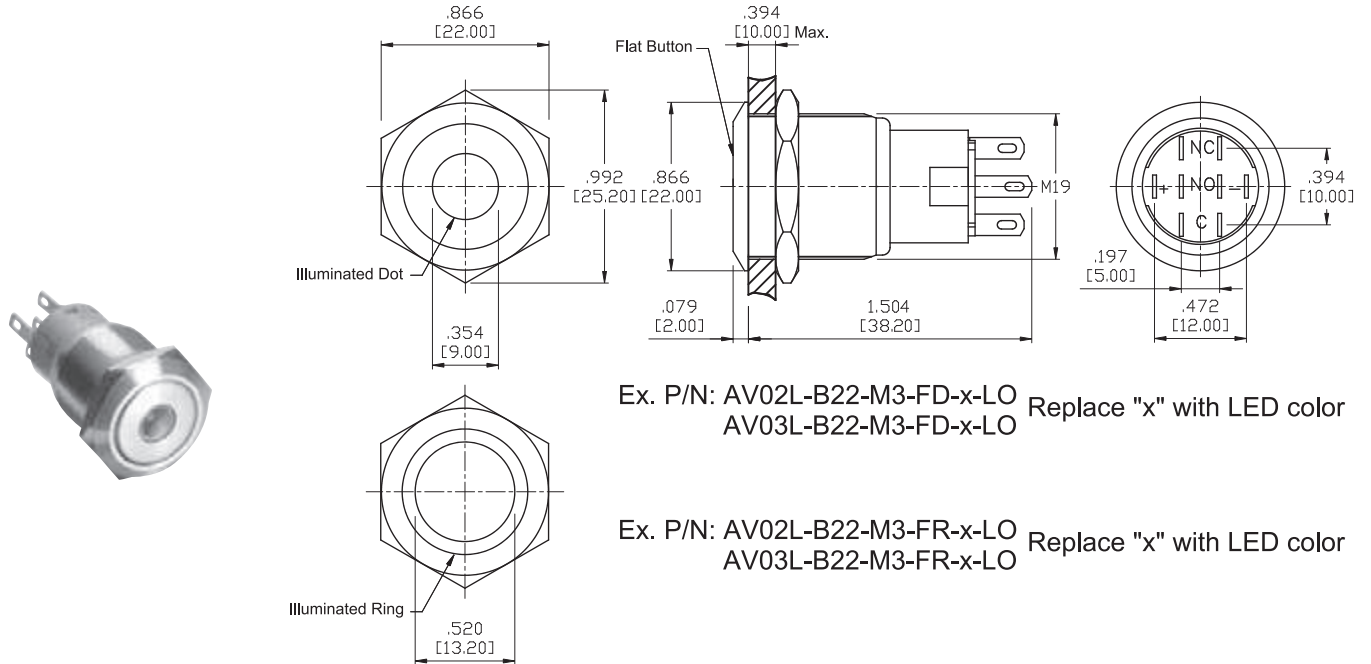
Illuminated Non-Latching & Latching Ø 22mm, Quick Connect



Illuminated Non-Latching & Latching Ø 19mm, Quick Connect

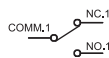


Illuminated Non-Latching & Latching Ø 19mm, Quick Connect, Long Case



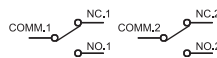
Model No.	SPDT Type	
02L	ON	MOM
03L	ON	ON

Schematic

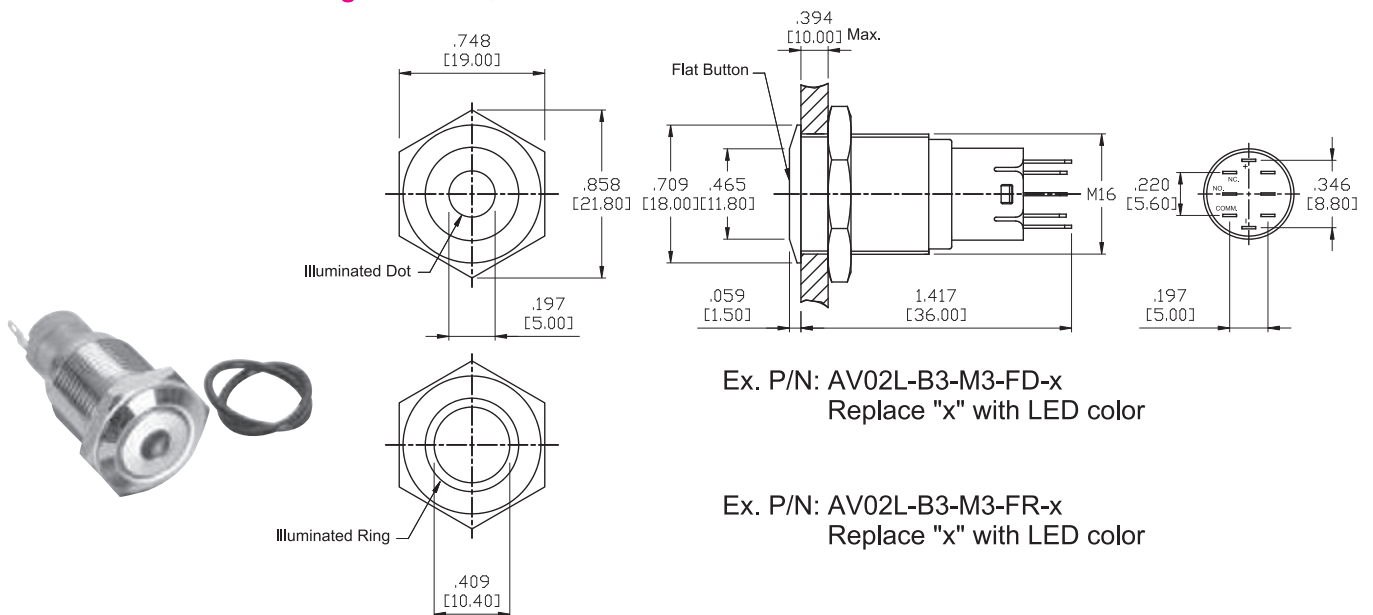


Model No.	DPDT Type	
12L	ON	MOM
13L	ON	ON

Schematic

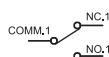


Illuminated Non-Latching Ø16mm, Quick Connect



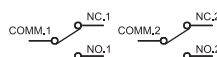
Model No.	SPDT Type	
02L	ON	MOM

Schematic

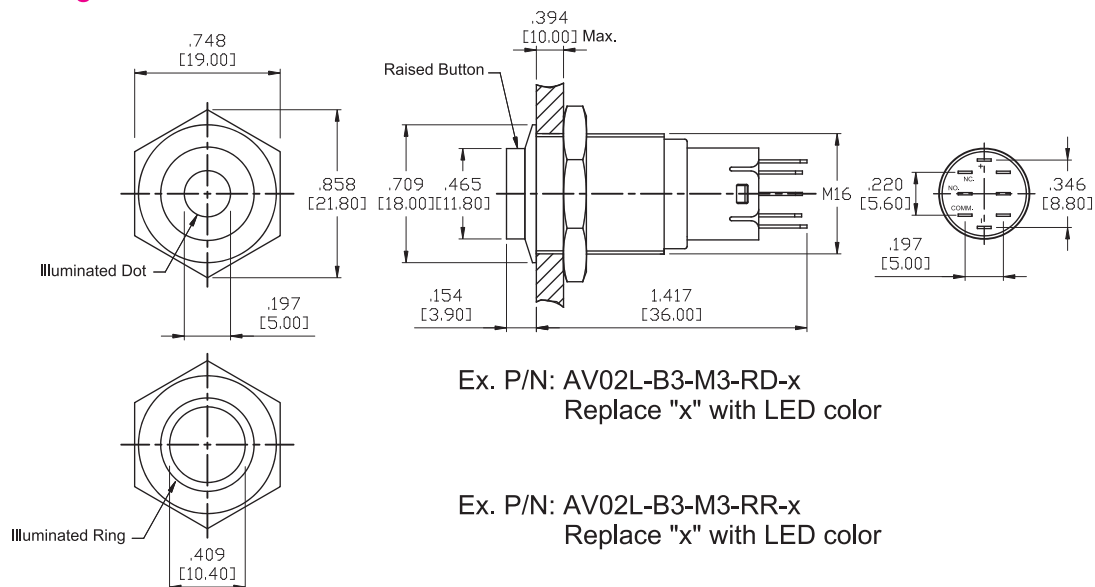


Model No.	DPDT Type	
12L	ON	MOM

Schematic

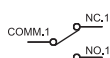


Illuminated Non-Latching Ø 16mm, Quick Connect



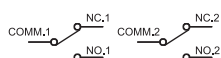
Model No.	SPDT Type	
02L	ON	MOM

Schematic

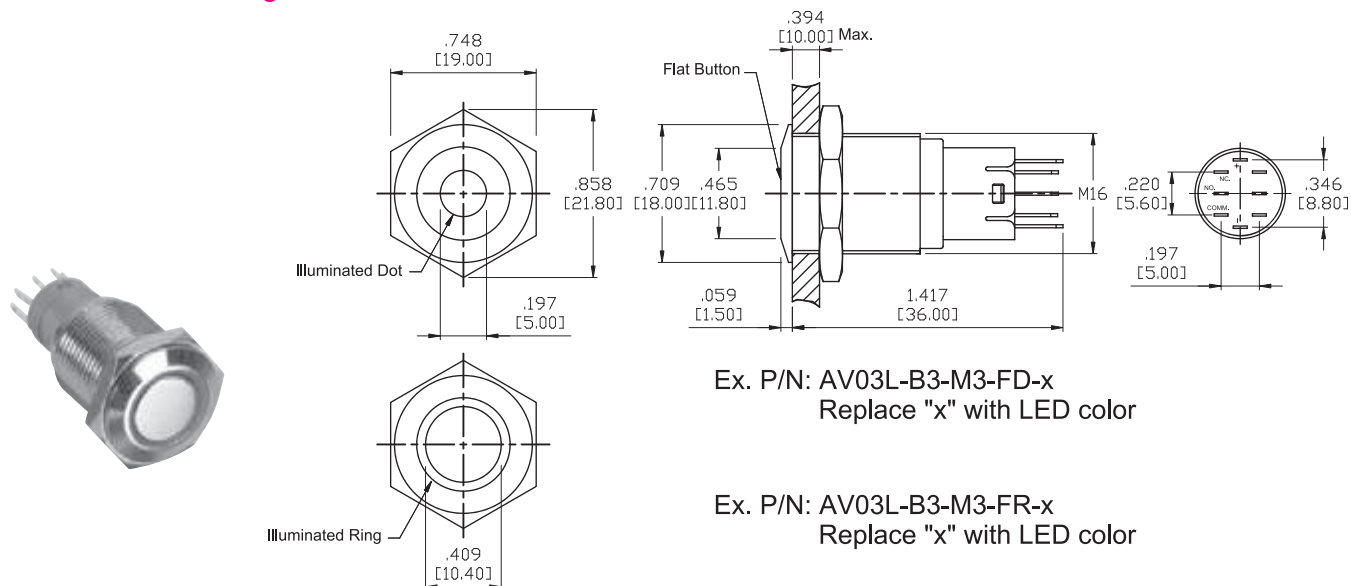


Model No.	DPDT Type	
12L	ON	MOM

Schematic

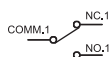


Illuminated Latching Ø16mm, Quick Connect



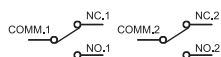
Model No.	SPDT Type	
03L	ON	ON

Schematic

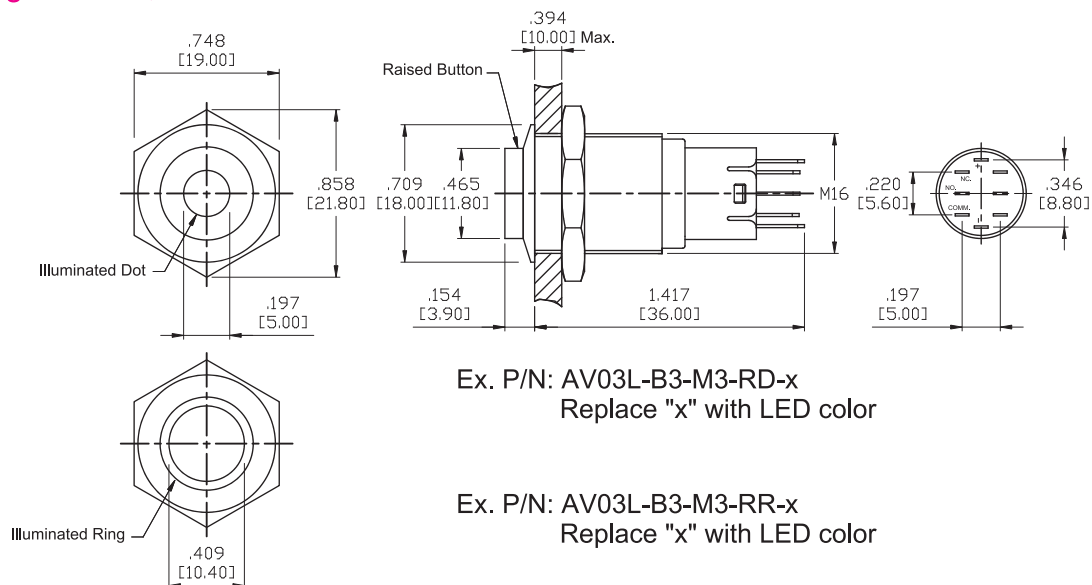


Model No.	DPDT Type	
13L	ON	ON

Schematic

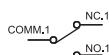


Illuminated Latching Ø16mm, Quick Connect



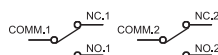
Model No.	SPDT Type	
03L	ON	ON

Schematic



Model No.	DPDT Type	
13L	ON	ON

Schematic



BUSHING & BUTTON MATERIAL OPTIONS

Code	Bushing Size	Bushing & Button Material	MOQ
B3	Ø16mm	Nickel plated brass with varnished polished	100 PCS
B31	Ø16mm	Gold plated brass with varnished polished	2,000 PCS
B02,B12,B22,B32	Ø25,22,19,16mm	Stainless steel with varnished polished	100 PCS
B23,B33	Ø19,16mm	Al. alloy with black nickel plated	2,000 PCS

LED COLOR OPTIONS

Code	Button Color
R	Red
G	Green
Y	Yellow
O	Orange
B	Blue
W	White

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

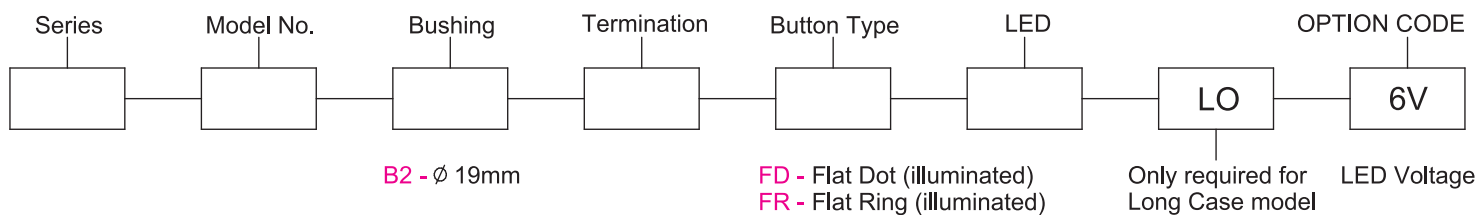
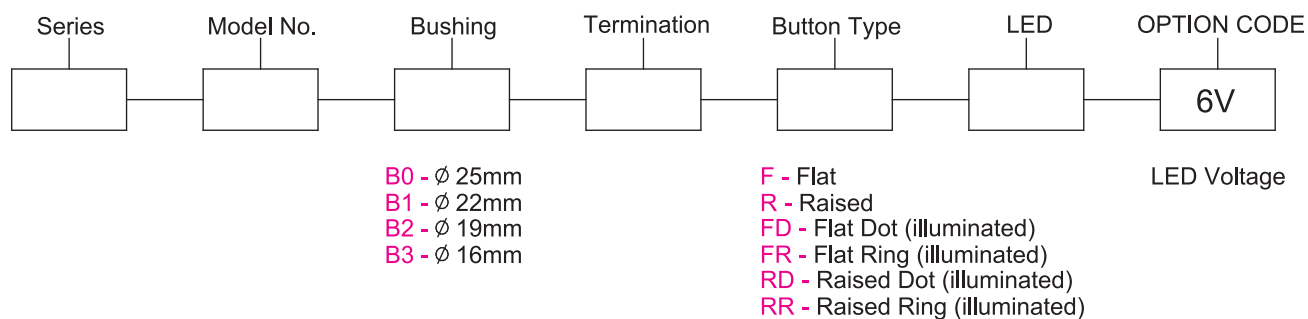
Touch Key

Miscellaneous

OPTION CODE

Code	LED Voltage and Consumption
6V	6V (AC/DC Compatible) 15mA
12V	12V (AC/DC Compatible) 15mA
24V	24V (AC/DC Compatible) 15mA
36V	36V (AC/DC Compatible) 15mA
110V	110V (AC/DC Compatible) 5mA
220V	220V (AC/DC Compatible) 5mA

HOW TO ORDER



SPECIFICATIONS:

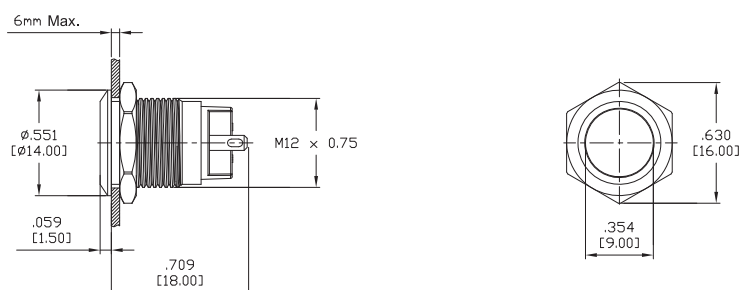
BUSHING: $\varnothing$ 12mm.
 CONTACT RATING: 2A @ 36VDC.
 ELECTRICAL LIFE: 50,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: 1,000M-ohms min.
 DIELECTRIC STRENGTH: 1,500V RMS 50Hz.
 IP CLASS: IP67 front panel.
 TORQUE: 0.6Nm max. applied to nut
 OPERATING FORCE: 2.5~4N.
 OPERATING TEMPERATURE: -25°C~+55°C.

MATERIALS:

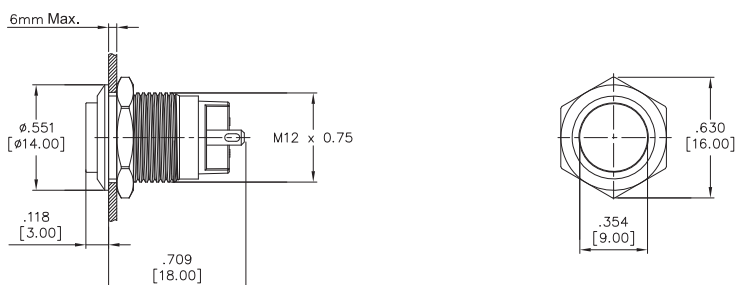
BUSHING: Stainless steel
 CONTACT: Stainless steel
 BASE: PA

Specifications and Dimensions subject to change

SPST 12mm, Flat Button



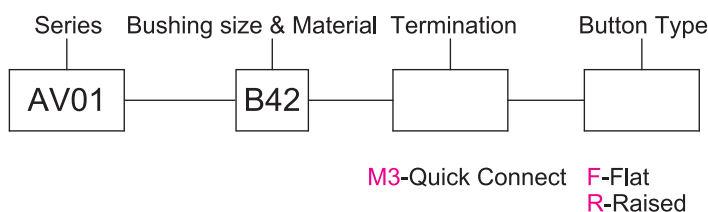
SPST 12mm, Raised Button



BUSHING & BUTTON MATERIAL OPTIONS

Code	Bushing Size	Bushing & Button Material	MOQ
B42	$\varnothing$ 12mm	Stainless steel with varnished polished	100 PCS

HOW TO ORDER



SPECIFICATIONS:

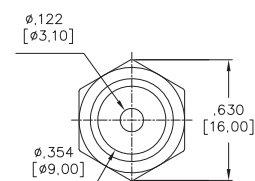
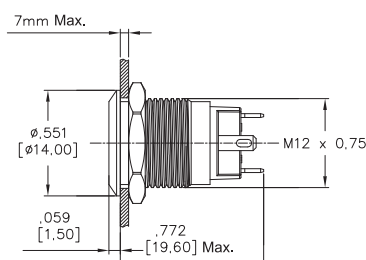
BUSHING: $\varnothing$ 12mm.
 CONTACT RATING: 2A @ 36VDC.
 ELECTRICAL LIFE: 50,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: 1,000M-ohms min.
 DIELECTRIC STRENGTH: 1,500V RMS 50~60Hz.
 IP CLASS: IP67 front panel protection & IK08.
 TORQUE: 0.2Nm max. applied to nut
 OPERATING FORCE: 2.5~4N.
 OPERATING TEMPERATURE: -20°C~+55°C.

MATERIALS:

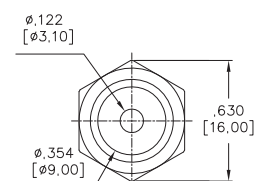
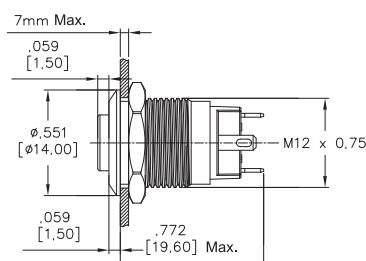
BUSHING: Stainless steel
 CONTACT: Stainless steel
 BASE: PA

Specifications and Dimensions subject to change

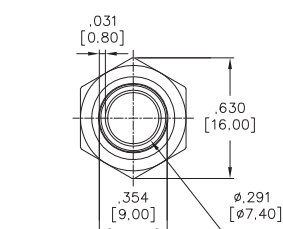
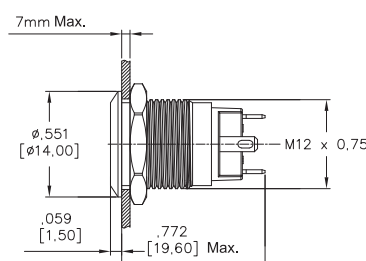
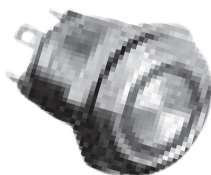
Illuminated SPST, Flat Dot Button



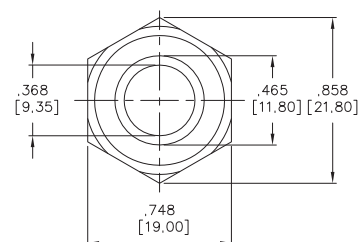
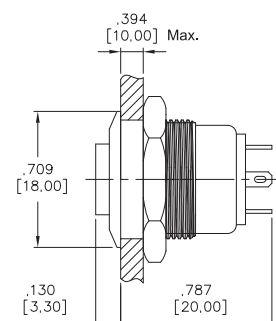
Illuminated SPST, Raised Dot Button



Illuminated SPST, Flat Ring Button



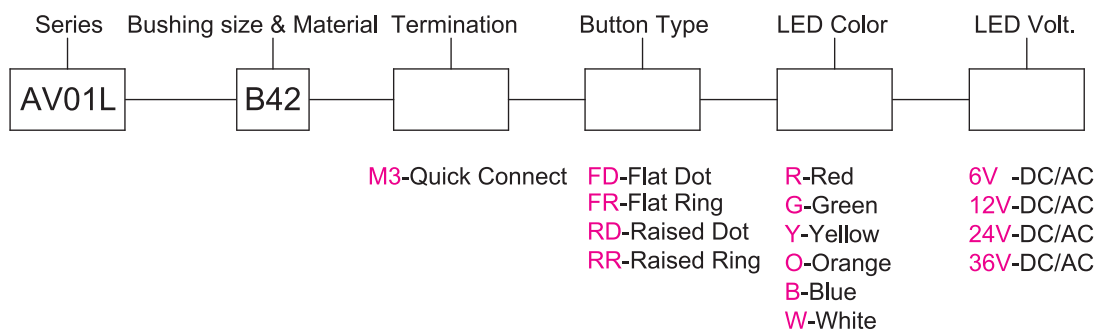
Illuminated SPST, Raised Ring Button



BUSHING & BUTTON MATERIAL OPTIONS

Code	Bushing Size	Bushing & Button Material	MOQ
B42	ø 12mm	Stainless steel with varnished polished	100 PCS

HOW TO ORDER



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous

SPECIFICATIONS:

BUSHING: Ø12mm.

CONTACT RATING: 0.5A @ 220V.

ELECTRICAL LIFE: 50,000cycles at full load.

CONTACT RESISTANCE: 50m-ohms max.

INSULATION RESISTANCE: 100M-ohms min.

DIELECTRIC STRENGTH: 1,500VAC RMS 50Hz

IP CLASS: IP40.

TORQUE: 0.2Nm max. applied to nut

OPERATING FORCE: 4N.

OPERATING TEMPERATURE: -25°C~+55°C.

MATERIALS:

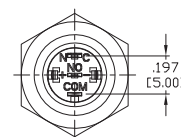
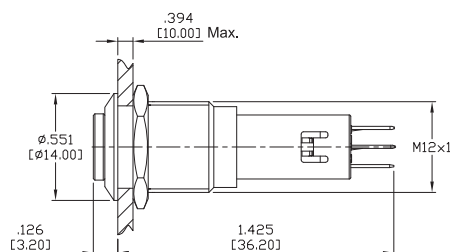
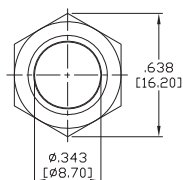
BUSHING: Stainless steel

CONTACT: Stainless steel

BASE: PA

Specifications and Dimensions subject to change

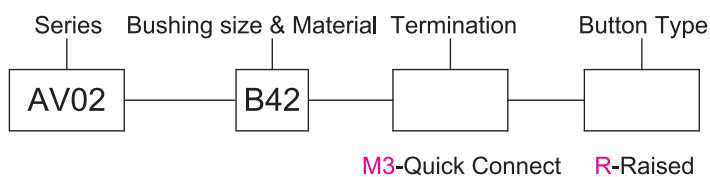
Non-latching 12mm, Quick Connect



BUSHING & BUTTON MATERIAL OPTIONS

Code	Bushing Size	Bushing & Button Material	MOQ
B42	Ø 12mm	Stainless steel with varnished polished	100 PCS

HOW TO ORDER



SPECIFICATIONS:

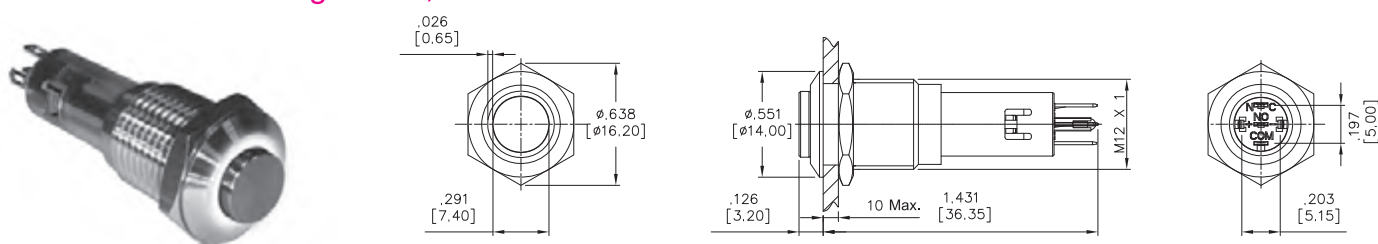
BUSHING: $\varnothing$ 12mm.
 CONTACT RATING: 0.5A @ 220V.
 ELECTRICAL LIFE: 50,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: 100M-ohms min.
 DIELECTRIC STRENGTH: 1,500VAC RMS 50Hz
 IP CLASS: IP40.
 TORQUE: 0.2Nm max. applied to nut
 OPERATING FORCE: 4N.
 OPERATING TEMPERATURE: -25°C~+55°C.

MATERIALS:

BUSHING: Stainless steel
 CONTACT: Stainless steel
 BASE: PA

Specifications and Dimensions subject to change

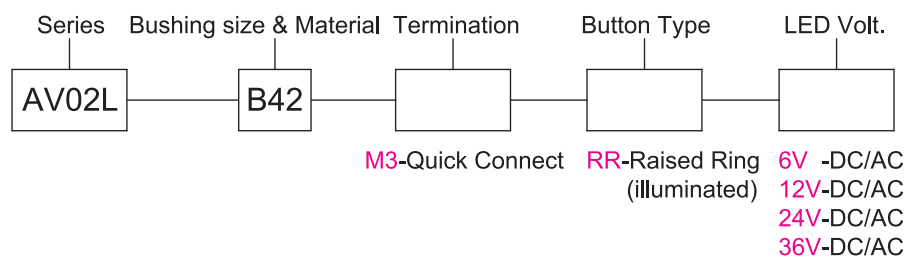
Illuminated Non-latching 12mm, Quick Connect



BUSHING & BUTTON MATERIAL OPTIONS

Code	Bushing Size	Bushing & Button Material	MOQ
B42	$\varnothing$ 12mm	Stainless steel with varnished polished	100 PCS

HOW TO ORDER



SPECIFICATIONS:

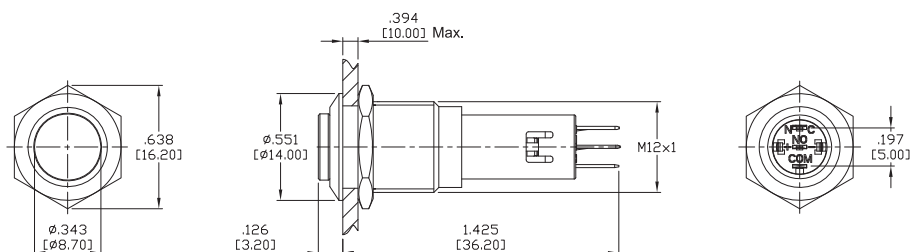
BUSHING: $\varnothing$ 12mm.
 CONTACT RATING: 0.5A @ 220V.
 ELECTRICAL LIFE: 50,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: 100M-ohms min.
 DIELECTRIC STRENGTH: 1,500VAC RMS 50Hz
 IP CLASS: IP40.
 TORQUE: 0.2Nm max. applied to nut
 OPERATING FORCE: 4N.
 OPERATING TEMPERATURE: -25°C~+55°C.

MATERIALS:

BUSHING: Stainless steel
 CONTACT: Stainless steel
 BASE: PA

Specifications and Dimensions subject to change

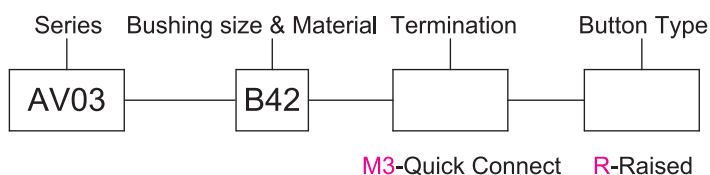
latching 12mm, Quick Connect



BUSHING & BUTTON MATERIAL OPTIONS

Code	Bushing Size	Bushing & Button Material	MOQ
B42	$\varnothing$ 12mm	Stainless steel with varnished polished	100 PCS

HOW TO ORDER



SPECIFICATIONS:

BUSHING: $\varnothing$ 12mm.

CONTACT RATING: 0.5A @ 220V.

ELECTRICAL LIFE: 50,000cycles at full load.

CONTACT RESISTANCE: 50m-ohms max.

INSULATION RESISTANCE: 100M-ohms min.

DIELECTRIC STRENGTH: 1.500VAC RMS 50Hz

IP CLASS: IP40.

TORQUE: 0.2Nm max. applied to nut

OPERATING FORCE: 4N.

OPERATING TEMPERATURE: -25°C~+55°C.

MATERIALS:

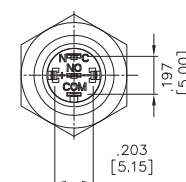
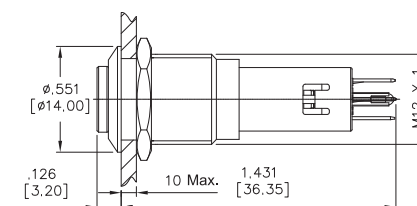
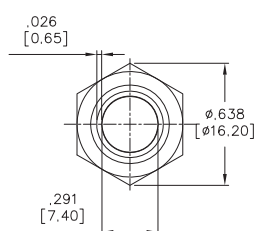
BUSHING: Stainless steel

CONTACT: Stainless steel

BASE: PA

Specifications and Dimensions subject to change

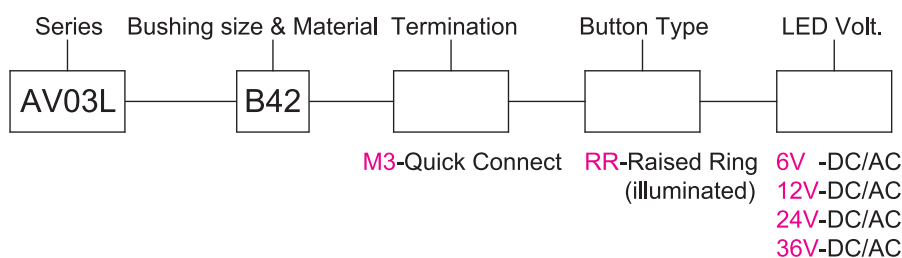
Illuminated latching 12mm, Quick Connect



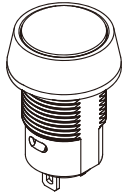
BUSHING & BUTTON MATERIAL OPTIONS

Code	Bushing Size	Bushing & Button Material	MOQ
B42	ø 12mm	Stainless steel with varnished polished	100 PCS

HOW TO ORDER



NEW !
IP67 Front Panel
Protection



SPECIFICATIONS:

CONTACT RATING: Refer to "Contact Material Options" for more info.
ELECTRICAL LIFE: 200,000 cycles @ 100mA 24VDC.
CONTACT RESISTANCE: 50m-ohms max. initial @2-4VDC
100mA for gold over silver plated contacts.
INSULATION RESISTANCE: 1G-ohms min.
DIELECTRIC STRENGTH: 1,000VAC for 1 minute.
OPERATING TEMPERATURE: -30°C to +85°C.

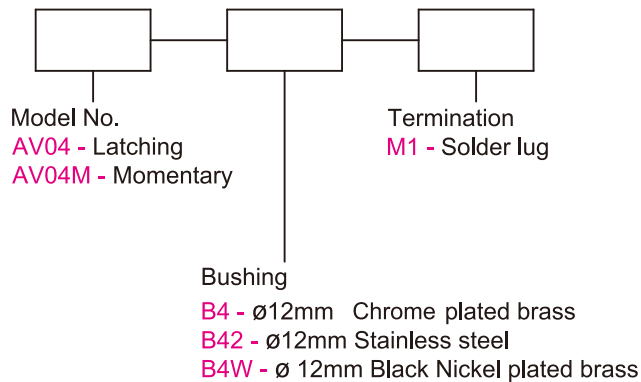
MATERIALS:

BUTTON: Stainless steel or brass.
BODY: Stainless steel or brass with threaded bushing.
BASE: NYLON 6/6 (UL 94V-0).
TERMINAL & CONTACT: Gold over silver plated.
TERMINAL SEAL: Epoxy.

Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

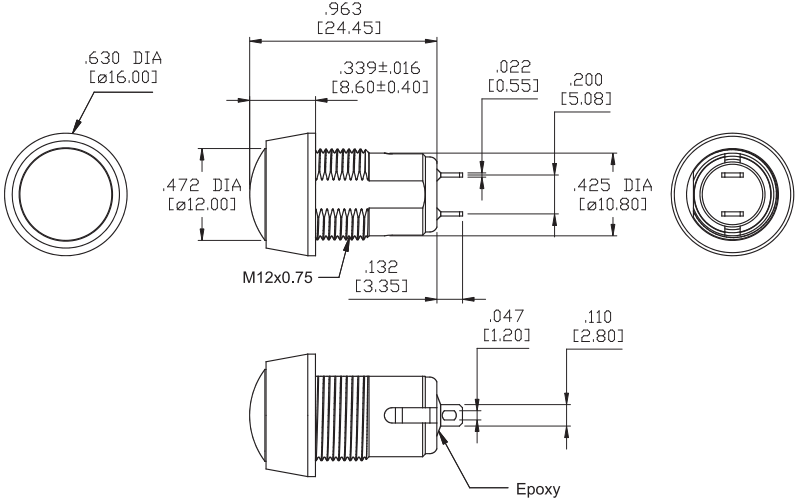
HOW TO ORDER SYSTEM





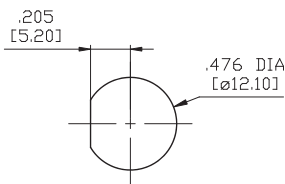
Model No.	Switching Position	
AV04	OFF	ON
AV04M	OFF	MOM
Term. Comm.	OPEN	1-3

Schematic



PANEL MOUNTING

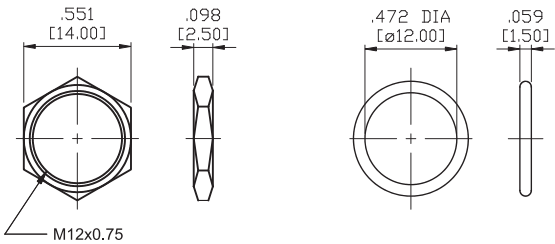
M12 x 0.75 FLAT-CUT THD. BUSHING



HARDWARE

NUT

O-RING



CONTACT MATERIAL OPTIONS

Coding	Contact Material	Terminal Plating	Rating	Agency Approvals
G	Gold over silver ¹	Gold over silver ¹	100mA 24VDC 2A 125VAC	

1. Movable Contact / Terminals: Copper alloy, silver plated with outer layer in gold plating

SPECIFICATIONS:

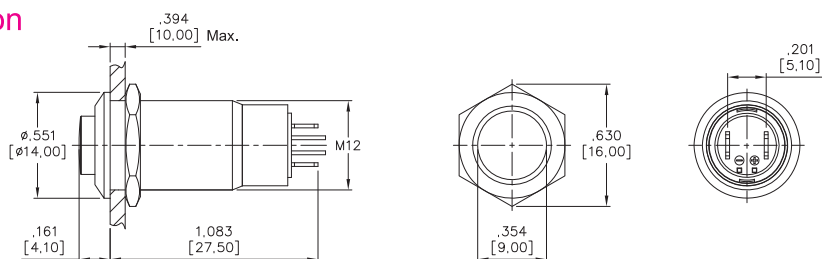
BUSHING: $\varnothing$ 12mm.
 CONTACT RATING: 1A @ 36VDC.
 ELECTRICAL LIFE: 50,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: 1,000M-ohms min.
 DIELECTRIC STRENGTH: 1,500V RMS 50Hz.
 IP CLASS: IP40.
 SWITCH FUNCTION: OFF-ON
 TORQUE: 0.6Nm max. applied to nut
 OPERATING FORCE: 3.5N.
 OPERATING TEMPERATURE: -25°C~+55°C.

MATERIALS:

BUSHING: Stainless steel
 CONTACT: Stainless steel
 BASE: PA

Specifications and Dimensions subject to change

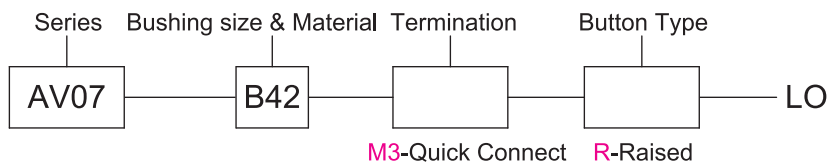
Latching SPST 12mm, Raised Button



BUSHING & BUTTON MATERIAL OPTIONS

Code	Bushing Size	Bushing & Button Material	MOQ
B42	$\varnothing$ 12mm	Stainless steel with varnished polished	100 PCS

HOW TO ORDER



SPECIFICATIONS:

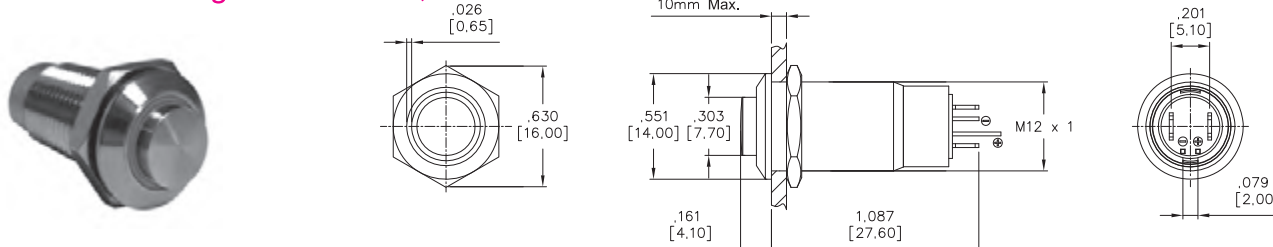
BUSHING: $\varnothing$ 12mm.
 CONTACT RATING: 1A @ 36VDC.
 ELECTRICAL LIFE: 50,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: 1,000M-ohms min.
 DIELECTRIC STRENGTH: 1,500V RMS 50~60Hz.
 IP CLASS: IP40.
 SWITCH FUNCTION: OFF-ON
 TORQUE: 0.6Nm max. applied to nut
 OPERATING FORCE: 3.5N.
 OPERATING TEMPERATURE: -25°C~+55°C.

MATERIALS:

BUSHING: Stainless steel
 CONTACT: Stainless steel
 BASE: PA

Specifications and Dimensions subject to change

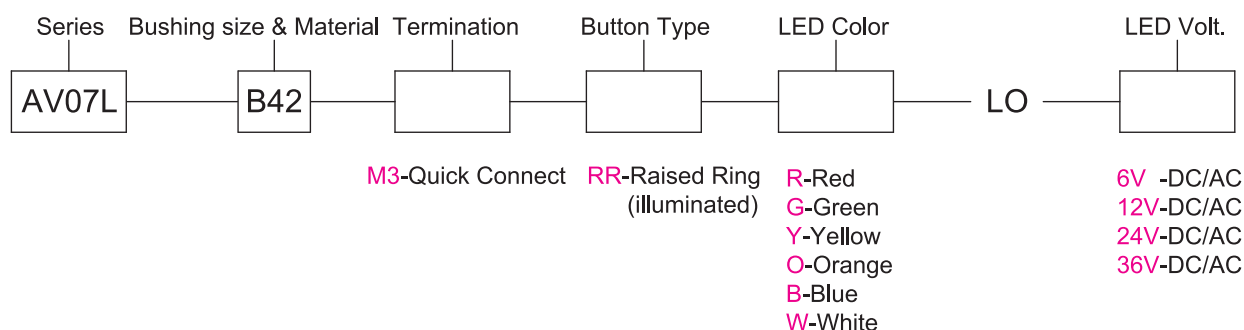
Illuminated Latching SPST 12mm, Raised Button

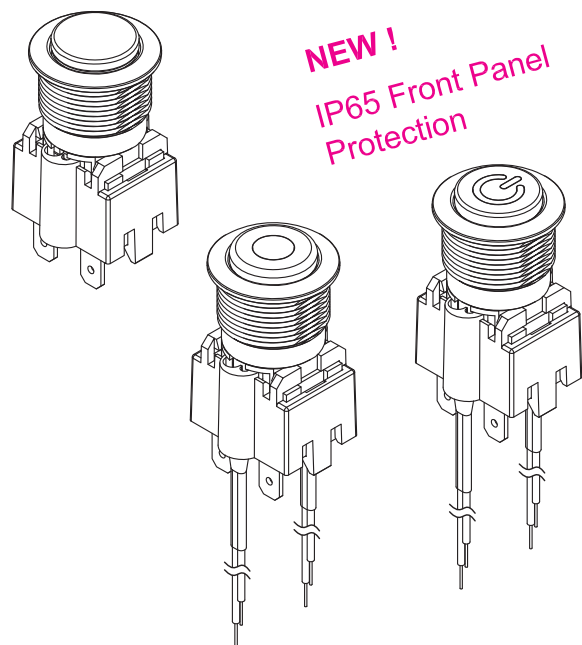


BUSHING & BUTTON MATERIAL OPTIONS

Code	Bushing Size	Bushing & Button Material	MOQ
B42	$\varnothing$ 12mm	Stainless steel with varnished polished	100 PCS

HOW TO ORDER





SPECIFICATIONS:

CONTACT RATING: 16A 125/250VAC.
ELECTRICAL LIFE: 10,000 cycles min. at full load.
CONTACT RESISTANCE: Max. 300mΩ.
INSULATION RESISTANCE: 500VDC 100M-ohms min.
DIELECTRIC STRENGTH: 1,500VAC for 1 minute.
OPERATING TEMPERATURE: -30°C to +85°C.

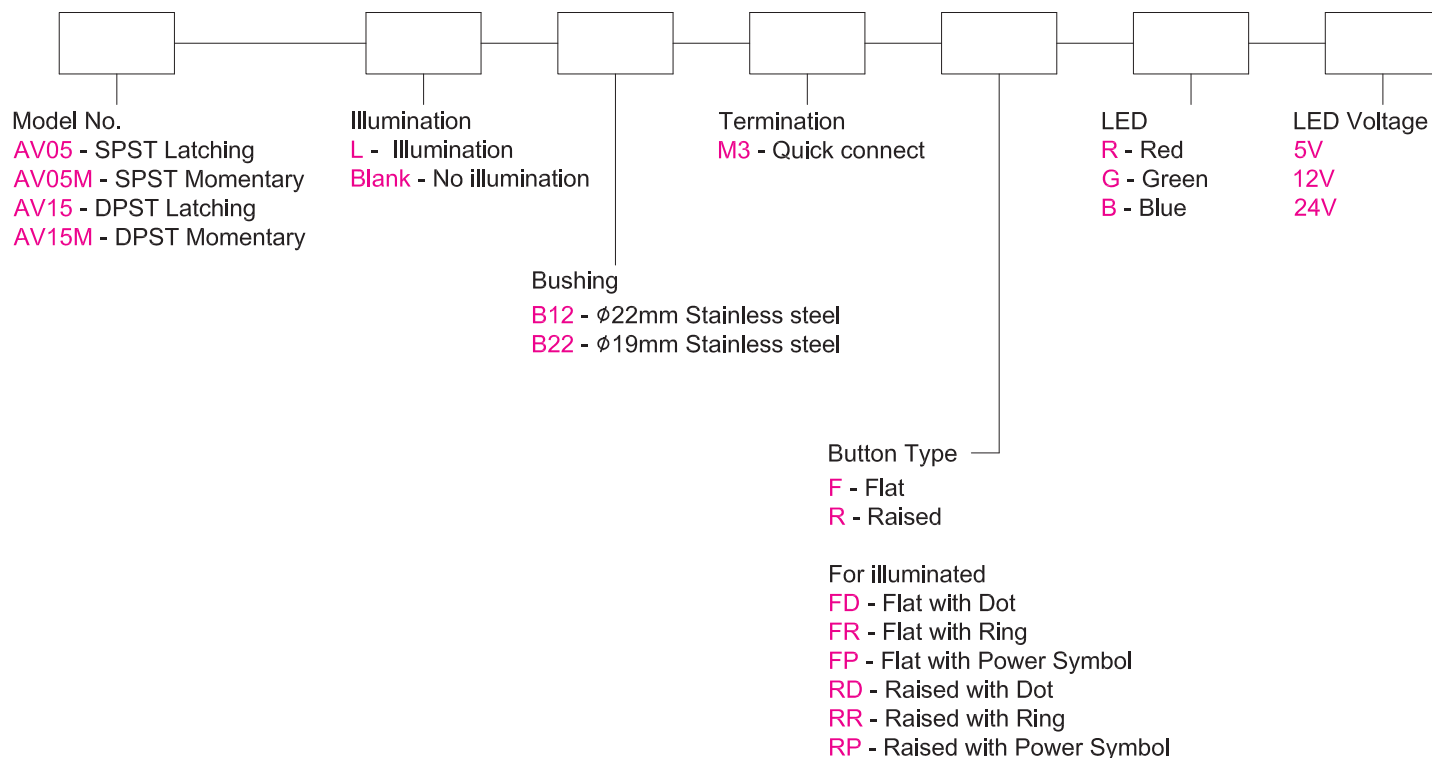
MATERIALS:

BUTTON: Stainless steel.
BUSHING: Stainless steel with threaded bushing.
BODY: NYLON 6/6 (UL 94V-0).
O-RING: Silicone.
INTERMEDIATE CONNECTOR: POM.
ILLUMINATION PART: PC.
CONTACT: Silver alloy.
TERMINAL: Brass silver plated.

Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

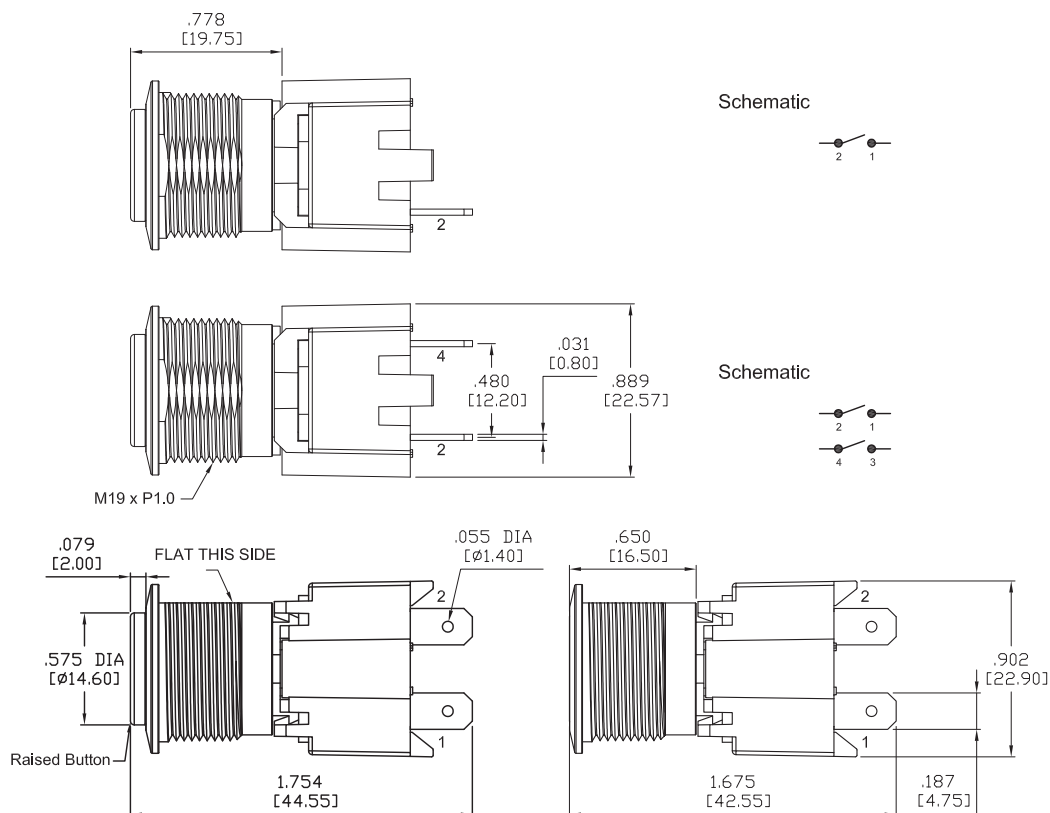
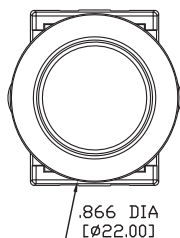
HOW TO ORDER SYSTEM



Non-latching & Latching $\varnothing 19\text{mm}$, Quick Connect

Model No.	SPST Switching Position	
AV05	OFF	ON
AV05M	OFF	MOM
Term. Comm.	OPEN	2-1

Model No.	DPST Switching Position	
AV15	OFF	ON
AV15M	OFF	MOM
Term. Comm.	OPEN	2-1, 4-3



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

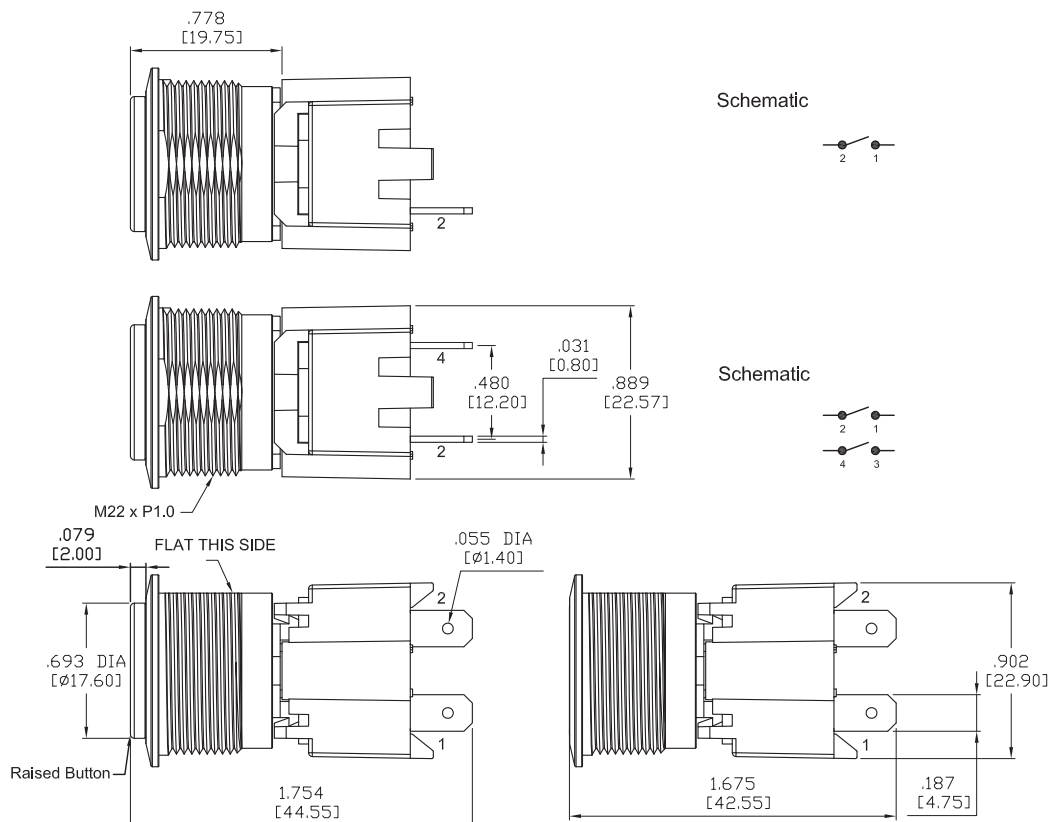
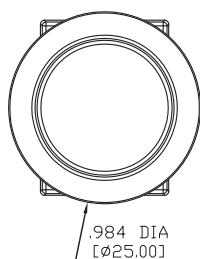
Touch Key

Miscellaneous

Non-latching & Latching $\varnothing 22\text{mm}$, Quick Connect

Model No.	SPST Switching Position	
AV05	OFF	ON
AV05M	OFF	MOM
Term. Comm.	OPEN	2-1

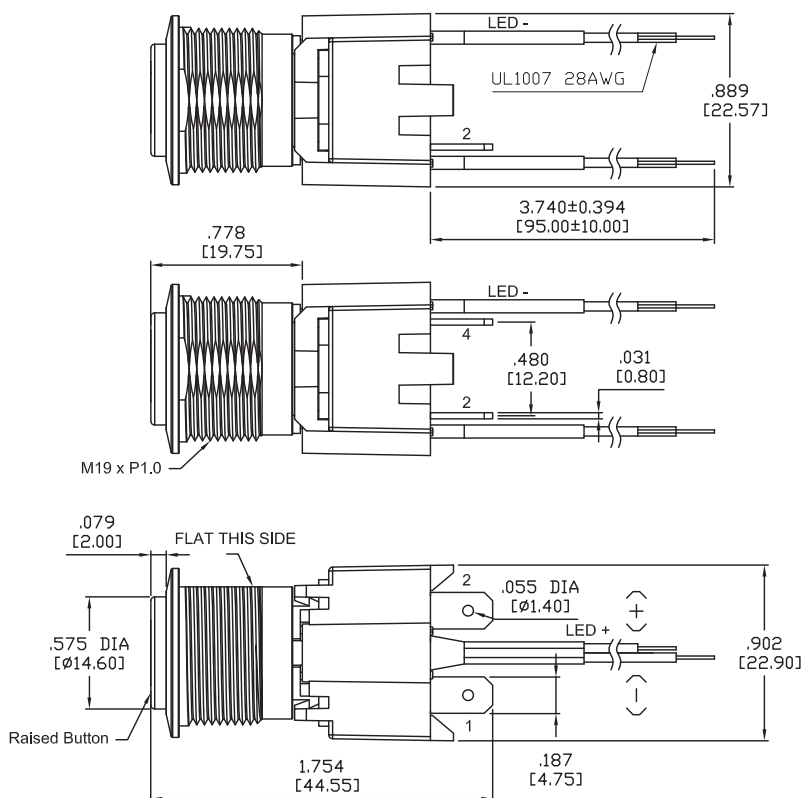
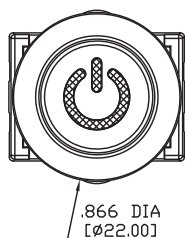
Model No.	DPST Switching Position	
AV15	OFF	ON
AV15M	OFF	MOM
Term. Comm.	OPEN	2-1, 4-3



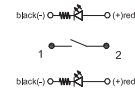
Illuminated Non-latching & Latching Ø19mm, Quick Connect

Model No.	SPST Switching Position	
AV05	OFF	ON
AV05M	OFF	MOM
Term. Comm.	OPEN	2-1

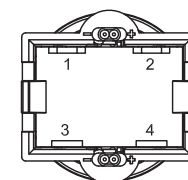
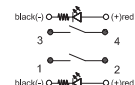
Model No.	DPST Switching Position	
AV15	OFF	ON
AV15M	OFF	MOM
Term. Comm.	OPEN	2-1, 4-3



Schematic



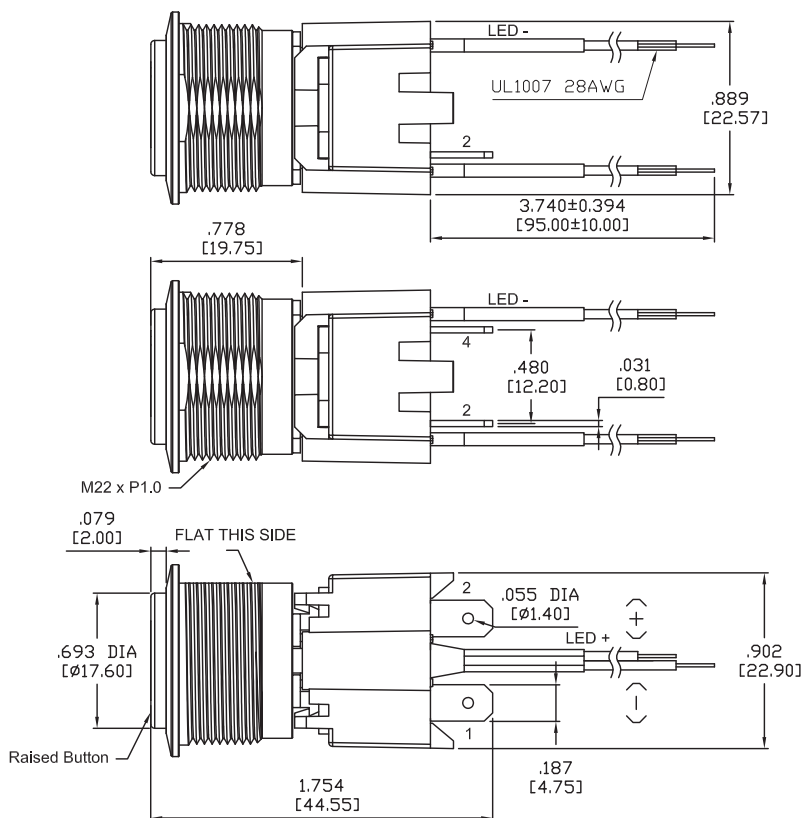
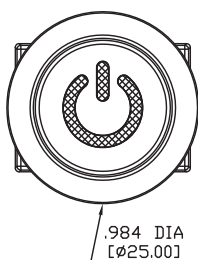
Schematic



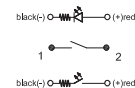
Illuminated Non-latching & Latching Ø22mm, Quick Connect

Model No.	SPST Switching Position	
AV05	OFF	ON
AV05M	OFF	MOM
Term. Comm.	OPEN	2-1

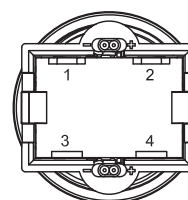
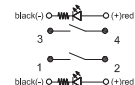
Model No.	DPST Switching Position	
AV15	OFF	ON
AV15M	OFF	MOM
Term. Comm.	OPEN	2-1, 4-3



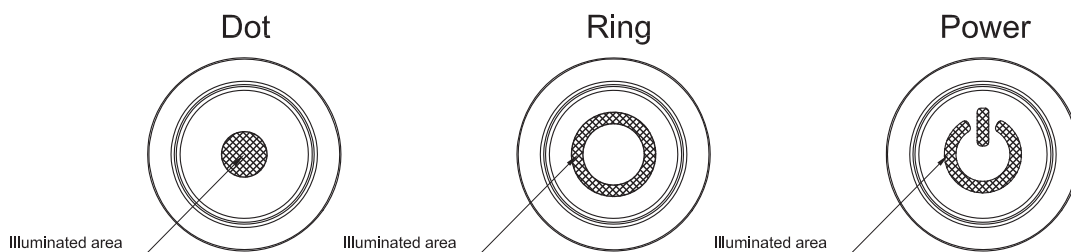
Schematic



Schematic

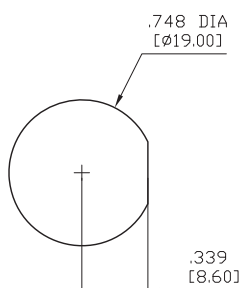


BUTTON TYPE

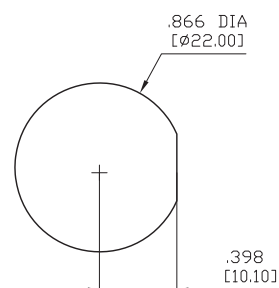


PANEL MOUNTING

M19 x 1.0 FLAT-CUT THD. BUSHING

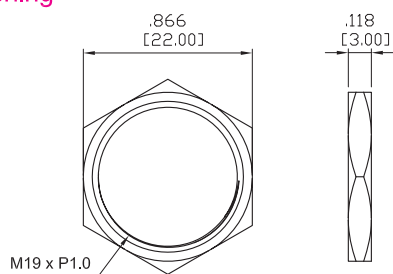


M22 x 1.0 FLAT-CUT THD. BUSHING



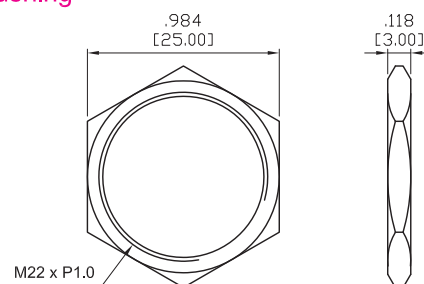
HARDWARE

M19 bushing



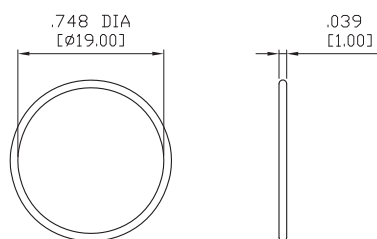
NUT

M22 bushing

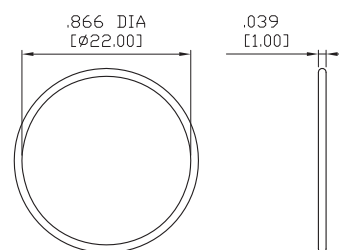


O-RING

M19 bushing



M22 bushing



Toggle

Rocker

Slide

Pushbutton

AV

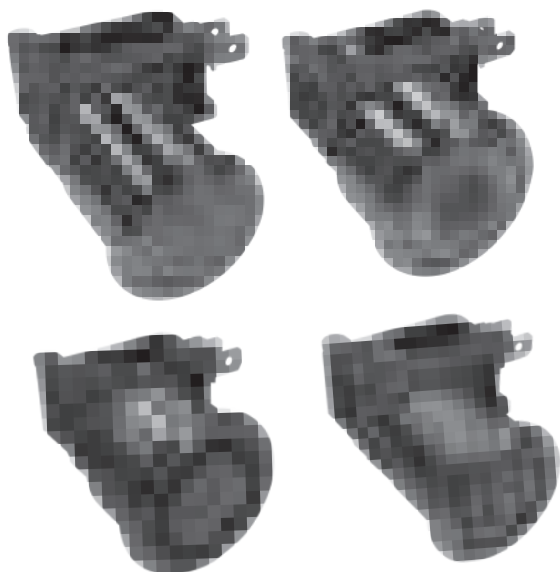
Rotary

Tact

Touch Key

Miscellaneous

**NEW !
HIGH CURRENT !**



SPECIFICATIONS:

CONTACT RATING: 15A /250VAC (Resistive load).
10A /250VAC (Inductive load).
0.3A /250VDC (Inductive load).
ELECTRICAL LIFE: 50,000cycles at full load.
CONTACT RESISTANCE: 50m-ohms max.
INSULATION RESISTANCE: 1,000M-ohms min.
DIELECTRIC STRENGTH: 1,500V RMS 50Hz.
IP CLASS: Latching_IP65; Momentary_IP67.
TORQUE: 0.6Nm max. applied to nut
OPERATING FORCE: 4N.
OPERATING TEMPERATURE: -25°C~+55°C.

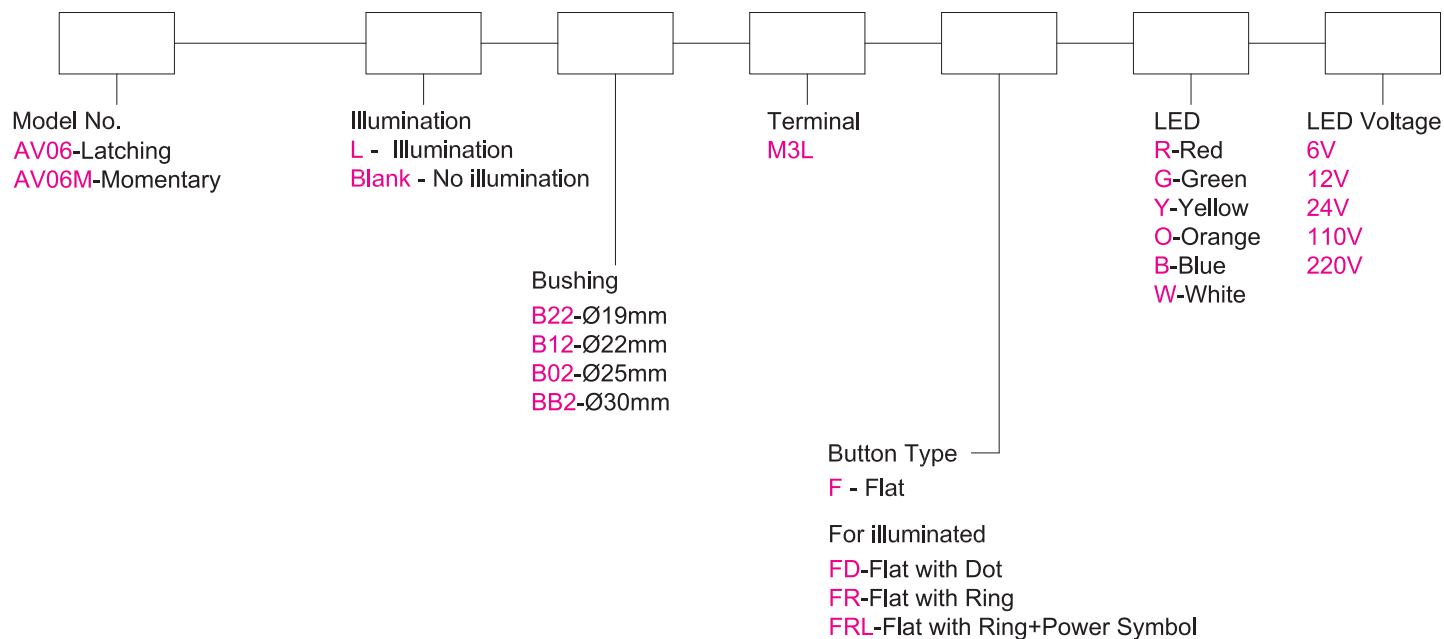
MATERIALS:

BUSHING: Stainless steel
BODY: Stainless steel
BASE: POM

Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



Anti-Vandal Pushbutton Switches

Toggle

Rocker

AV

Rotary

Tact

Non-Latching & Latching Ø25mm

Miscellaneous

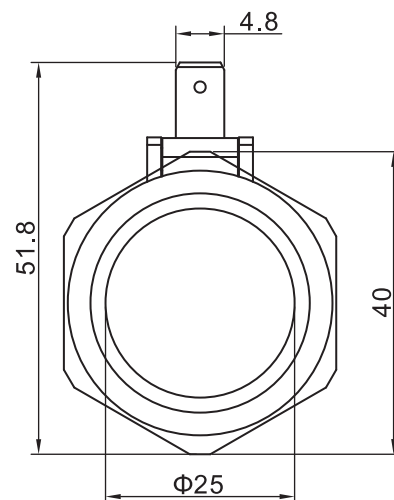
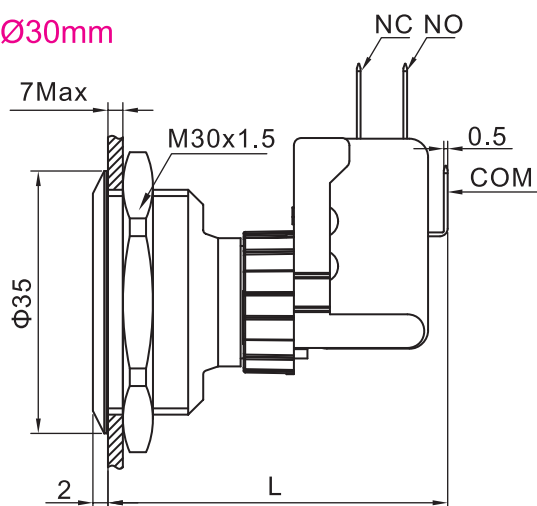
213

Series AV06

Anti-Vandal Pushbutton Switches

Non-Latching & Latching Ø30mm

Model No.	SPST Switching Position	
AV06	ON	ON
AV06M	ON	MOM

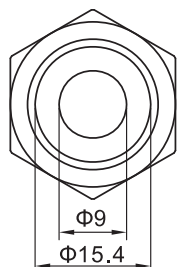


Ex. P/N: AV06-BB2-M3L-F (L=51.2mm)
AV06M-BB2-M3L-F (L=44.9mm)

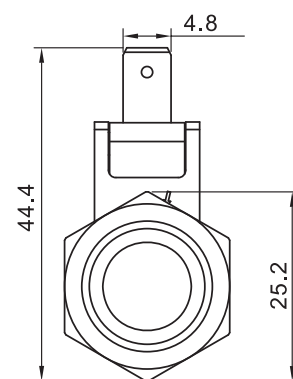
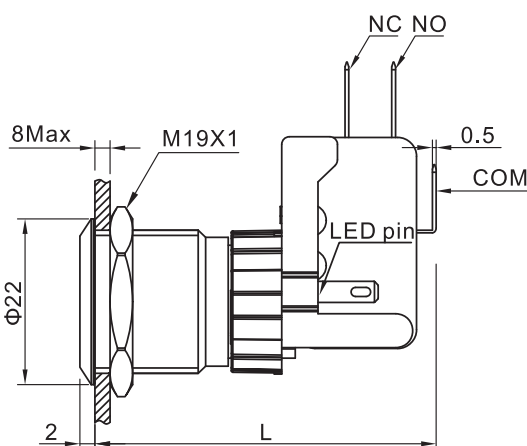
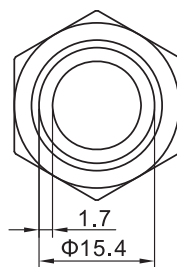
Illuminated Non-Latching & Latching Ø19mm

Model No.	SPST Switching Position	
AV06L	ON	ON
AV06ML	ON	MOM

Illuminated Dot



Illuminated Ring

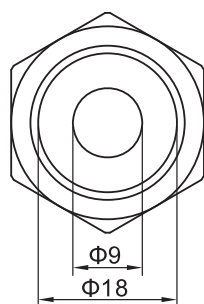


Ex. P/N: AV06L-B22-M3L-FD/FR (L=51.2mm)
AV06ML-B22-M3L-FD/FR (L=44.9mm)

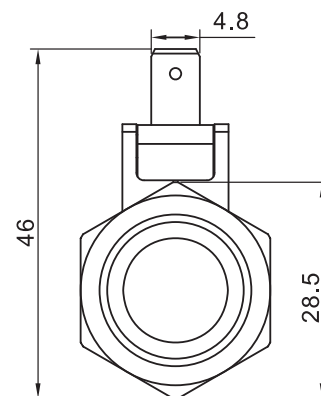
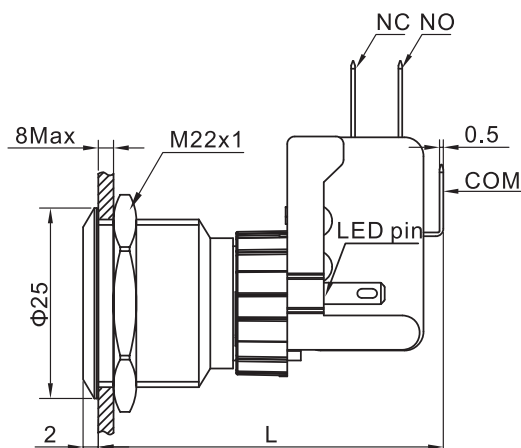
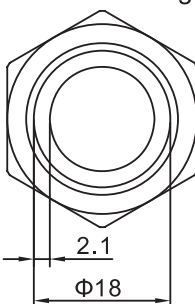
Illuminated Non-Latching & Latching Ø22mm

Model No.	SPST Switching Position	
AV06L	ON	ON
AV06ML	ON	MOM

Illuminated Dot



Illuminated Ring

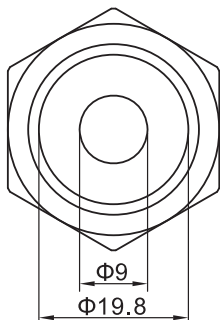


Ex. P/N: AV06L-B12-M3L-FD/FR (L=51.2mm)
AV06ML-B12-M3L-FD/FR (L=44.9mm)

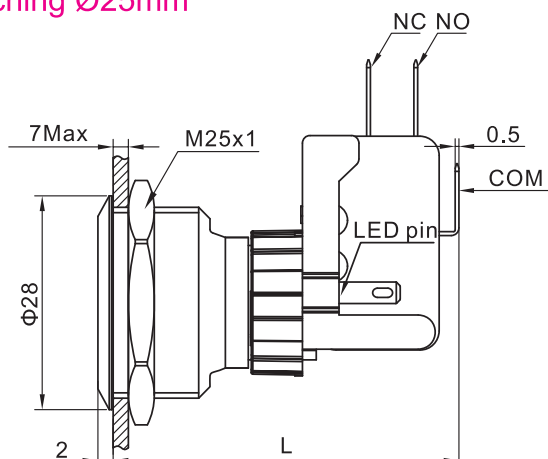
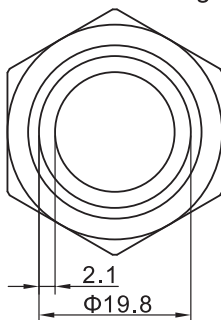
Illuminated Non-Latching & Latching Ø25mm

Model No.	SPST Switching Position	
AV06L	ON	ON
AV06ML	ON	MOM

Illuminated Dot



Illuminated Ring

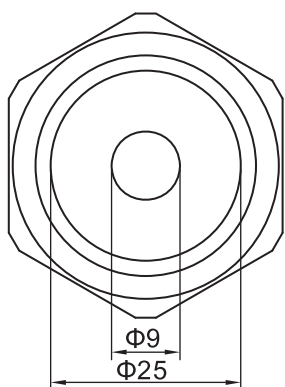


Ex. P/N: AV06L-B02-M3L-FD/FR (L=51.2mm)
AV06ML-B02-M3L-FD/FR (L=44.9mm)

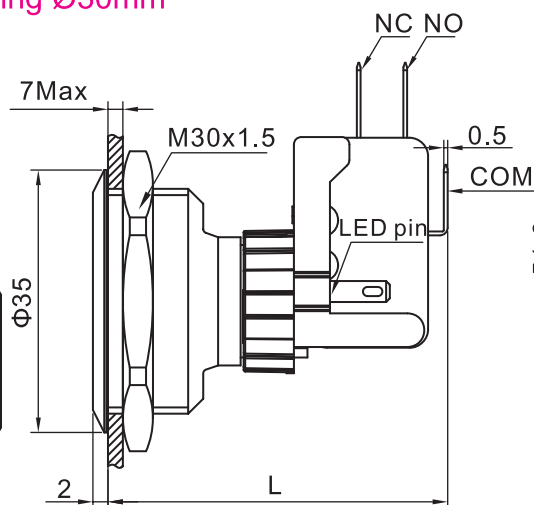
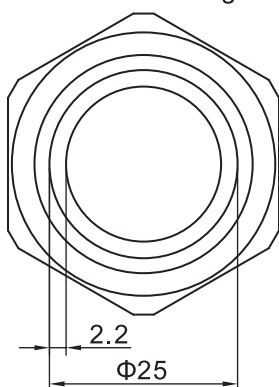
Illuminated Non-Latching & Latching Ø30mm

Model No.	SPST Switching Position	
AV06L	ON	ON
AV06ML	ON	MOM

Illuminated Dot



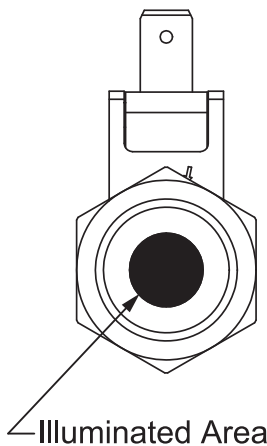
Illuminated Ring



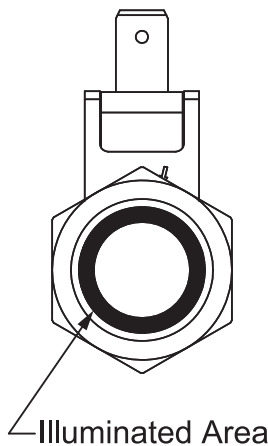
Ex. P/N: AV06L-BB2-M3L-FD/FR (L=51.2mm)
AV06ML-BB2-M3L-FD/FR (L=44.9mm)

BUTTON TYPE

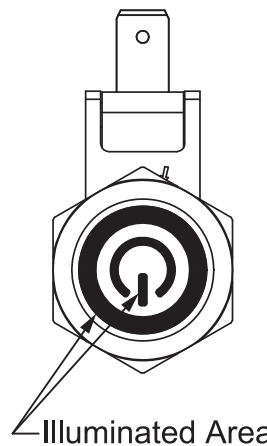
FD: Flat Dot



FR: Flat Ring



FRL: Flat Ring + Power Symbol



BUSHING & BUTTON MATERIAL OPTIONS

Code	Bushing Size	Bushing & Button Material
B22,B12,B02,BB2	Ø19,22,25,30mm	Stainless steel with varnished polished

LED COLOR OPTIONS

Code	LED Color
R	Red
G	Green
Y	Yellow
O	Orange
B	Blue
W	White

OPTION CODE

Code	LED Voltage and Consumption
6V	6V (AC/DC Compatible)
12V	12V (AC/DC Compatible)
24V	24V (AC/DC Compatible)
110V	110V (AC/DC Compatible)
220V	220V (AC/DC Compatible)

SPECIFICATIONS:

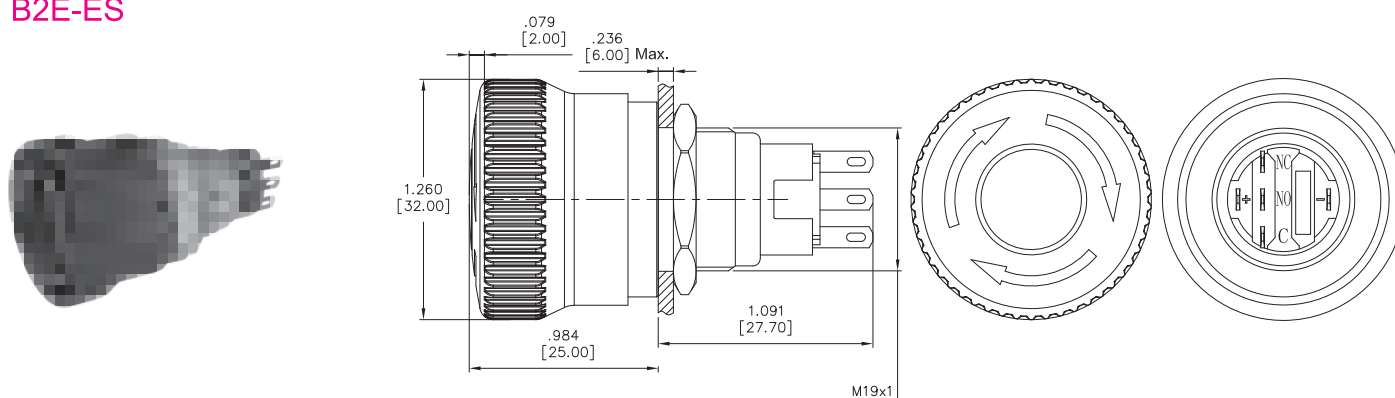
BUSHING: $\varnothing$ 19mm, $\varnothing$ 22mm.
 CONTACT RATING: 0.5A 220V/ 0.7A 24VDC.
 ELECTRICAL LIFE: 50,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: 1,000M-ohms min @ 500VDC.
 DIELECTRIC STRENGTH: 2,000VAC 50~60Hz.
 IP CLASS: IP65 & IK02.
 TORQUE: 5~14Nm max. applied to nut
 OPERATING FORCE: 19mm 0.6Nm/ 22mm 1.0Nm max.
 OPERATING TEMPERATURE: -20°C~+55°C.
 SWITCH FUNCTION: N.O. / N.C. turn to unlock

MATERIALS:

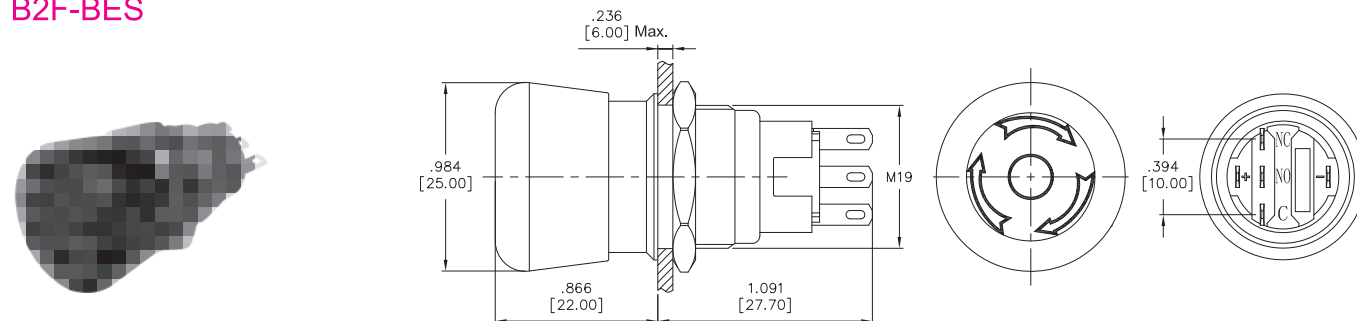
BUSHING: Please refer to Bushing & Button Material Options
 CONTACT: Stainless steel
 BASE: PBT

Specifications and Dimensions subject to change

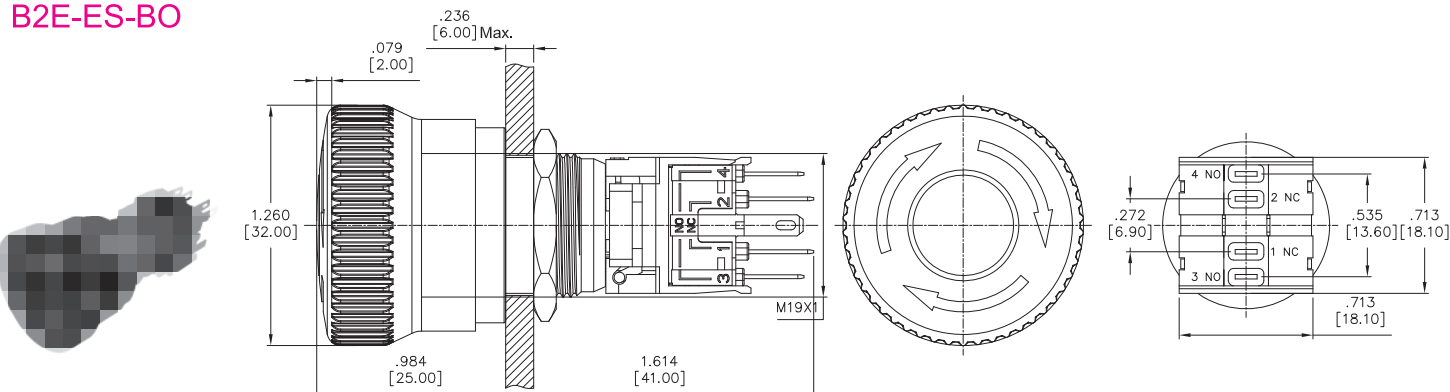
B2E-ES



B2F-BES



B2E-ES-BO



* BO option is not available with BES

Toggle

Rocker

Slide

Pushbutton

AV

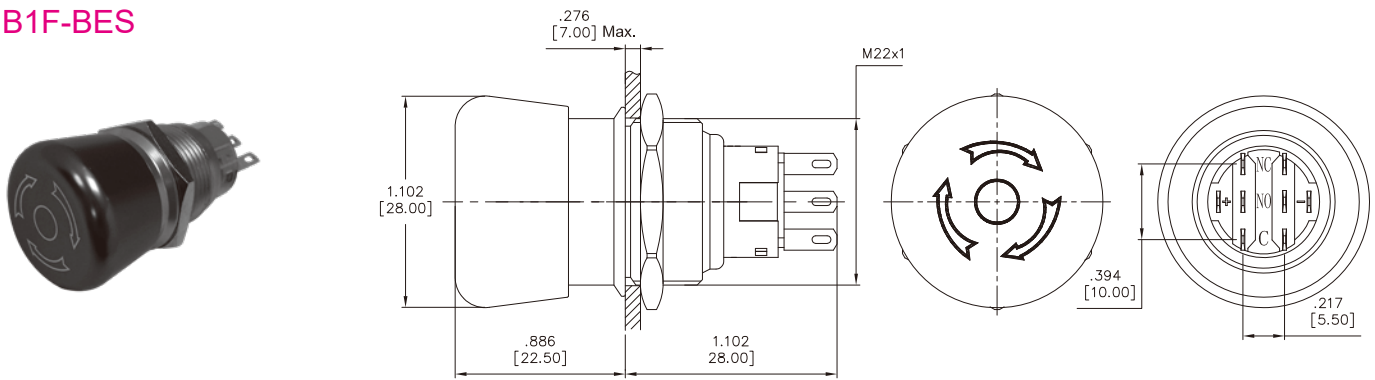
Rotary

Tact

Touch Key

Miscellaneous

B1F-BES

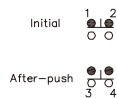


BUSHING & BUTTON MATERIAL OPTIONS

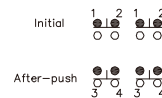
Code	Bushing Size	Bushing & Button Material	MOQ
B2E	Ø 19mm	Al alloy body, red button	100 PCS
B1F / B2F	Ø 22 / 19mm	Al alloy, gold anodized body, red button	100 PCS

CIRCUIT DIAGRAM

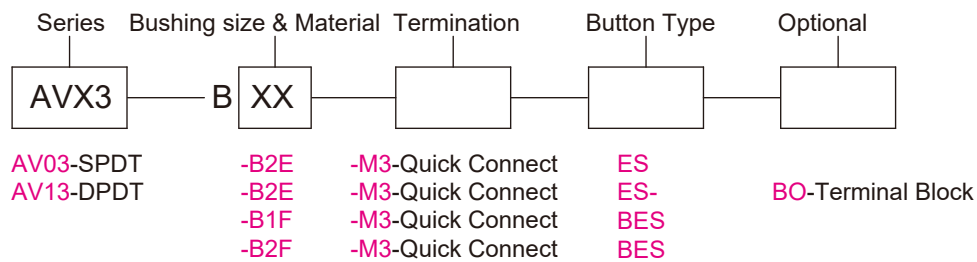
1NO1NC



2NO2NC



PART NO. CONFIGURATION



SPECIFICATIONS:

CONTACT RATING: Ø19,30mm 0.5A@220~250VAC (Resistive & Inductive load)

For 19mm switch with base

2A @ 220~250VAC inductive load

3A @ 220~250VAC resistive load

ELECTRICAL LIFE: 50,000 make-and-break cycles at full load.

CONTACT RESISTANCE: 50mΩ max. initial @2-4VDC

INSULATION RESISTANCE: 1,000MΩ Min. @500VDC

DIELECTRIC STRENGTH: 2,000V RMS @ 50~60Hz.

OPERATING TEMPERATURE: -20°C~+55°C.

MATERIALS:

Bushing & Button: Refer to below table.

Contact: Silver alloy.

Nut: Nickel plated brass.

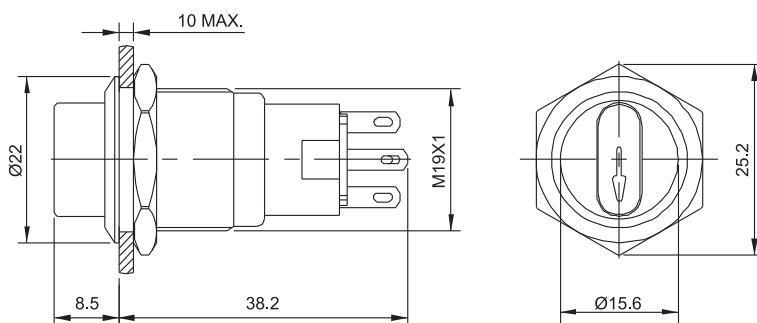
Base: PBT.

19mm, Selector with illuminated arrow



Model No.	SPDT Type	
02L	ON	MOM
03L	ON	ON

Model No.	DPDT Type	
12L	ON	MOM
13L	ON	ON

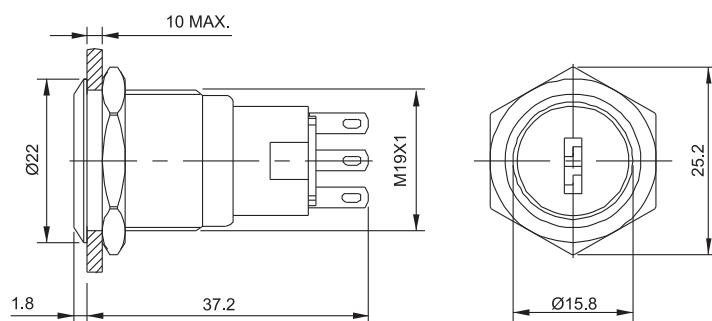


19mm, Key

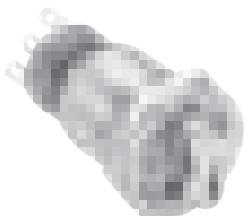


Model No.	SPDT Type	
02	ON	MOM
03	ON	ON

Model No.	DPDT Type	
12	ON	MOM
13	ON	ON

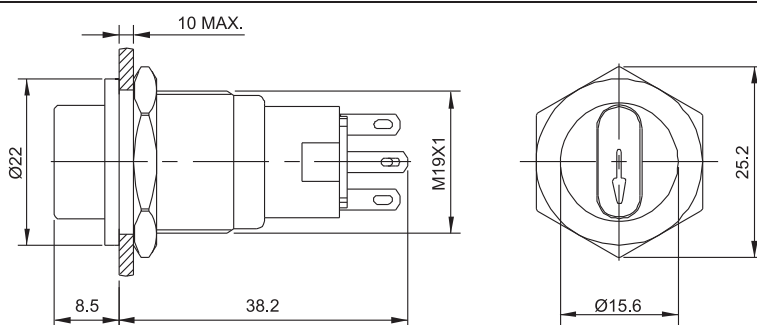


19mm, Selector with illuminated arrow

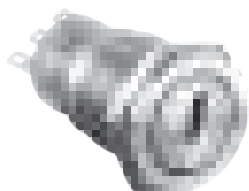


Model No.	SPDT Type	
02L	ON	MOM
03L	ON	ON

Model No.	DPDT Type	
12L	ON	MOM
13L	ON	ON

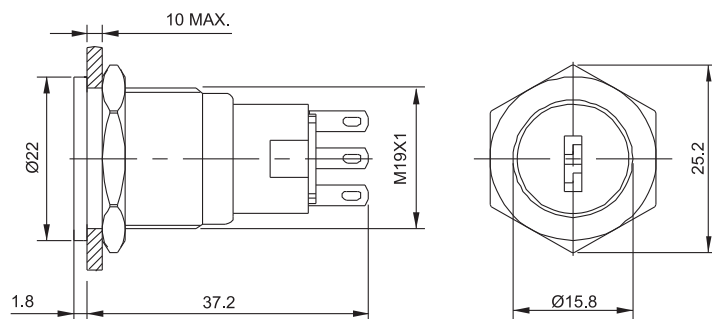


19mm, Key



Model No.	SPDT Type	
02	ON	MOM
03	ON	ON

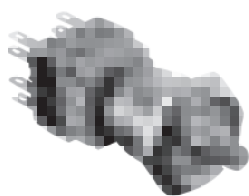
Model No.	DPDT Type	
12	ON	MOM
13	ON	ON



Series AVx

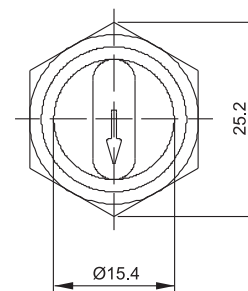
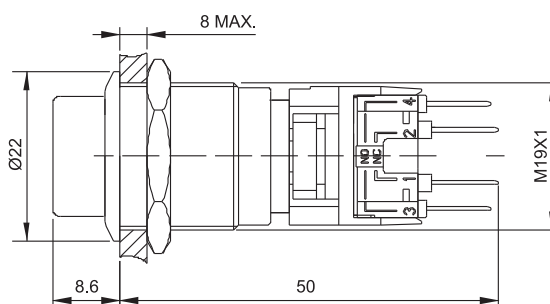
Anti-Vandal Key and Selector Switches

19mm, Selector with Base, illuminated arrow



Model No.	SPDT Type	
02L	ON	MOM
03L	ON	ON

Model No.	DPDT Type	
12L	ON	MOM
13L	ON	ON

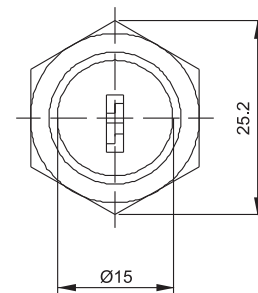
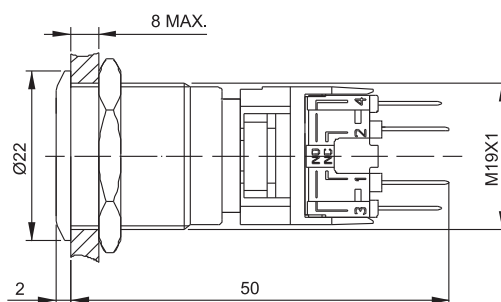


19mm, Key with Base



Model No.	SPDT Type	
02	ON	MOM
03	ON	ON

Model No.	DPDT Type	
12	ON	MOM
13	ON	ON

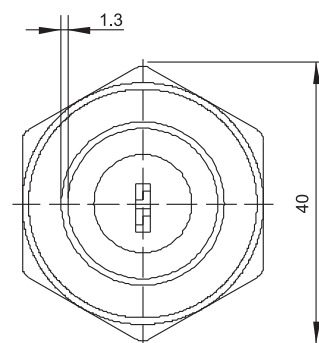
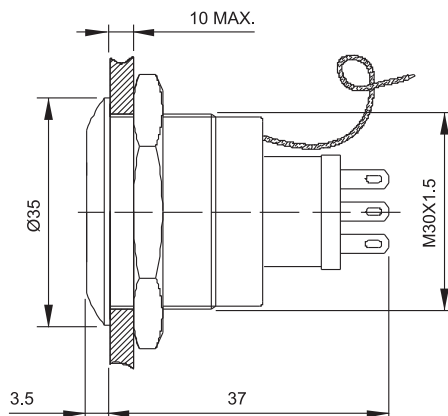


30mm, Key with illuminated ring

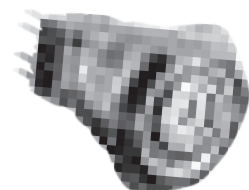


Model No.	SPDT Type	
02L	ON	MOM
03L	ON	ON

Model No.	DPDT Type	
12L	ON	MOM
13L	ON	ON

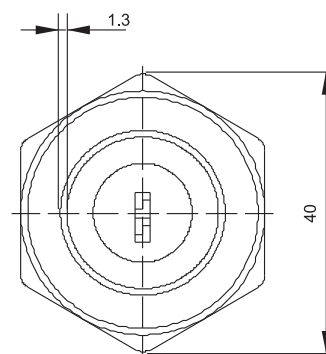
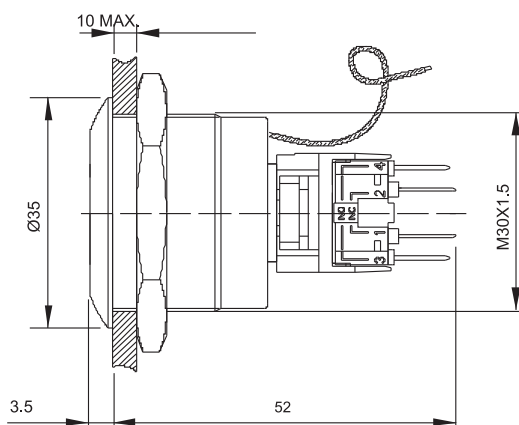


30mm, Knob with Base, illuminated ring



Model No.	SPDT Type	
02L	ON	MOM
03L	ON	ON

Model No.	DPDT Type	
12L	ON	MOM
13L	ON	ON



BUSHING & BUTTON MATERIAL OPTIONS

Code	Bushing Size	Bushing & Button Material
B22	Ø19mm	Stainless steel with varnished polished
BB2	Ø30mm	Stainless steel with varnished polished

OPTION CODE

Code	LED Voltage and Consumption
6V	6V (AC/DC Compatible) 15mA
12V	12V (AC/DC Compatible) 15mA
24V	24V (AC/DC Compatible) 15mA
36V	36V (AC/DC Compatible) 15mA
110V	110V (AC/DC Compatible) 5mA
220V	220V (AC/DC Compatible) 5mA

key and Selector operation chart

19mm & 30mm key and selector switch

Switch type Operation position	90° 2 Position		45° 3 Position	
	1NO1NC	2NO2NC	2NO2NC	

19mm & 30mm key and selector switch with base

Switch type Operation position	90° 2 Position			90° 3 Position			
	1NO1NC	2NO2NC	3NO3NC	2NO2NC	2NO2NC	2NO2NC	3NO3NC

HOW TO ORDER

Series	Model No.	Bushing	Termination	Button Type	LED	LED Voltage
					LO	6V
	02- 1NO1NC Momentary	B22-Ø19mm BB2-Ø30mm	M3	19mm: S2 - Selector, 90° 2 positions S3 - Selector, 45° 3 positions K2 - Key, 90° 2 positions, Keys can be withdrawn in both position K3 - Key, 45° 3 positions, Keys can be withdrawn in three position	For 19mm only	
	03- 1NO1NC Latching			30mm: KC2 - Key with illuminated ring, 90° 2 positions, Keys can be withdrawn in both position KC3 - Key with illuminated ring, 45° 3 positions, Keys can be withdrawn in three position		
	12- 2NO2NC Momentary					
	13- 2NO2NC Latching					
	*Affix L to the end of model number for illumination, available for Button type Key only					

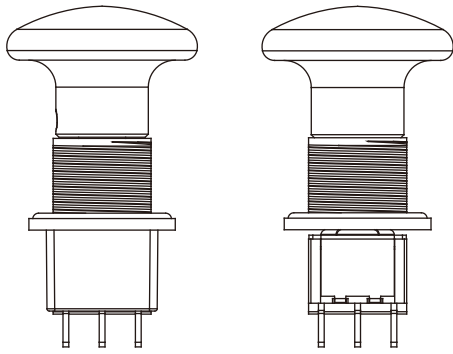
SPECIFICATIONS:

RATING: 0.1A @ 28VDC
ELECTRICAL LIFE: Min. 10,000 make-and-break cycles at full load.
CONTACT RESISTANCE: 20m-ohms max. initial
INSULATION RESISTANCE: 1,000M-ohms min.
DIELECTRIC STRENGTH: 1,500VAC for 1 minute.
OPERATING TEMPERATURE: -30°C to +85°C.
IP67 front panel sealing / IP67 full protection

MATERIALS:

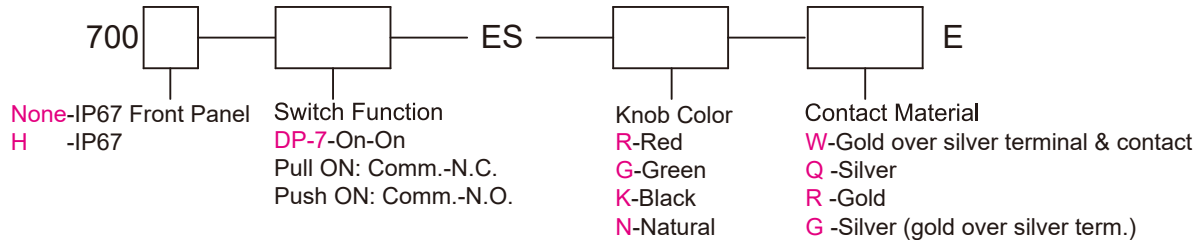
CASE: DAP UL94V-0 & FR52 UL94V-0
TERMINAL SEAL: Epoxy.
ACTUATOR: Brass, nickel plated.
KNOB: Aluminum, anodized.
NUT: Brass, nickel plated.

NEW !

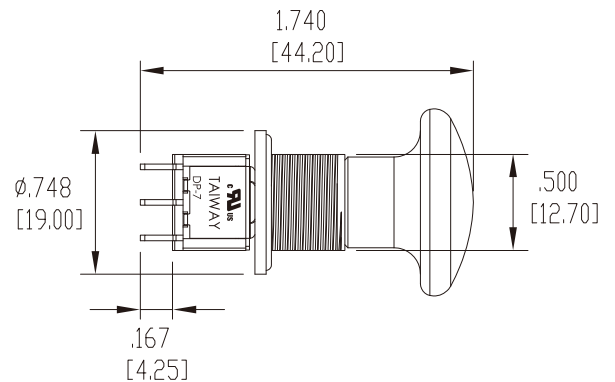
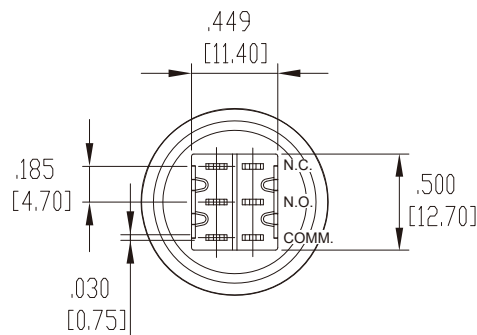


If your preferred product configuration is not shown, please contact our sales representative for custom design.

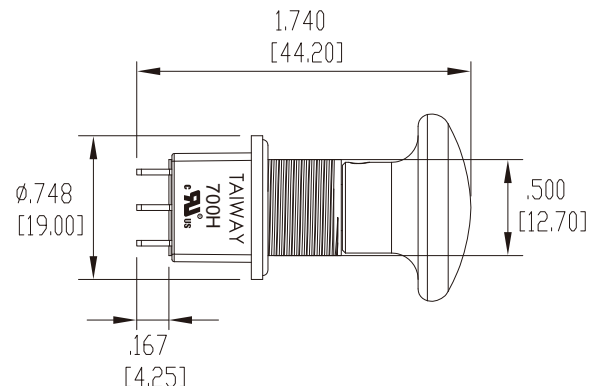
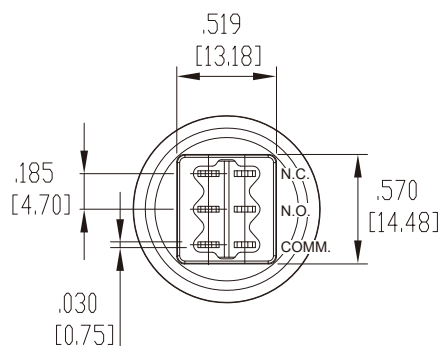
HOW TO ORDER SYSTEM



IP67 Front Panel



IP67



SPECIFICATIONS:

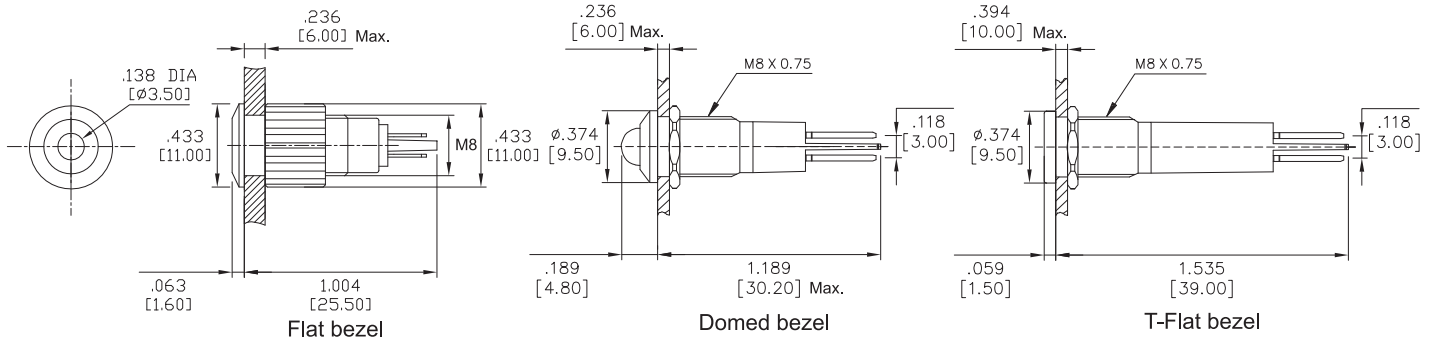
VOLTAGE RANGE: Refer to Voltage Option.
 RATED CURRENT: 15mA.
 DIELECTRIC STRENGTH: 1,100V RMS 50~60Hz.
 OPERATING TEMPERATURE: -20°C to +55°C
 IP CLASS: IP67 / IP68 front panel protection.
 TORQUE: 5~14Nm max. applied to nut.

MATERIALS:

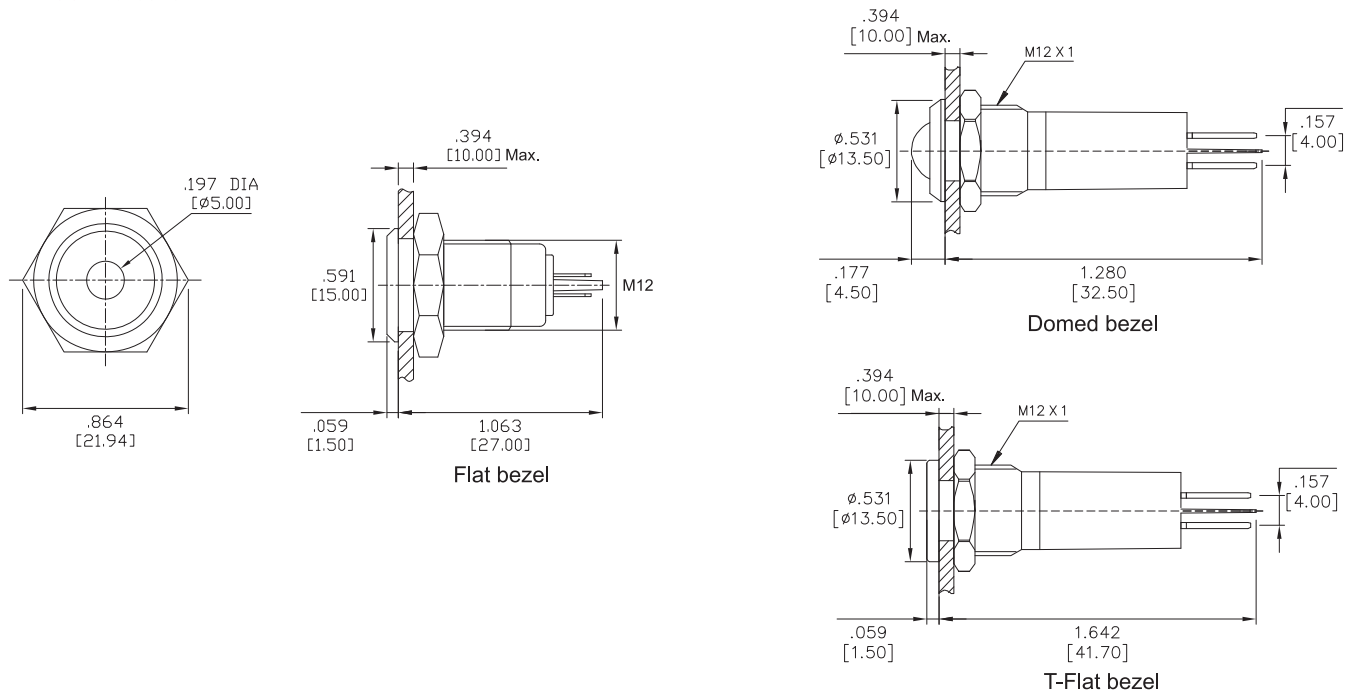
LED COVER: PC.
 BODY: Brass nickel plated, Stainless steel,
 Brass black nickel Plated
 BASE: PBT.
 ILLUMINANT: LED.

Specifications and Dimensions subject to change

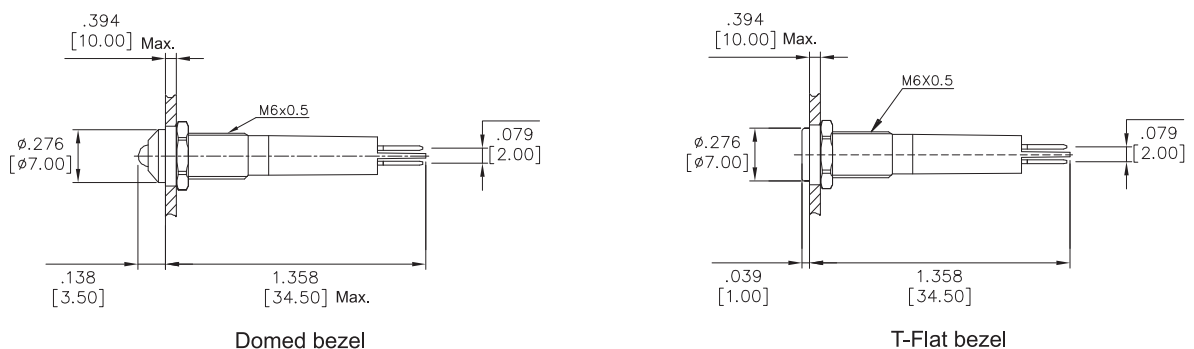
NI-04 Indicator



NI-05 Indicator



NI-06 Indicator



Toggle

Rocker

Slide

Pushbutton

AV

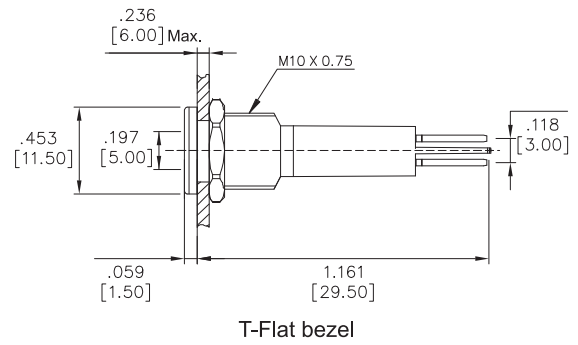
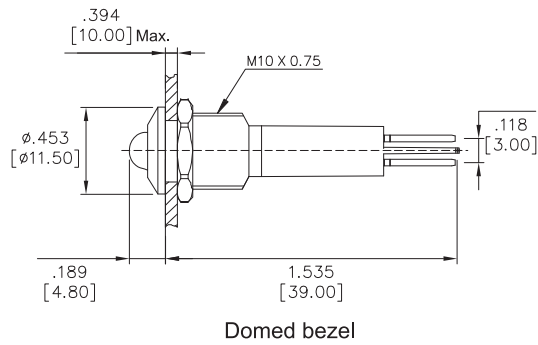
Rotary

Tact

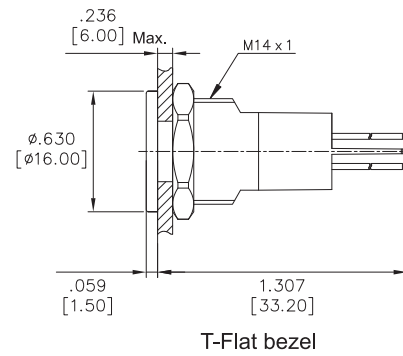
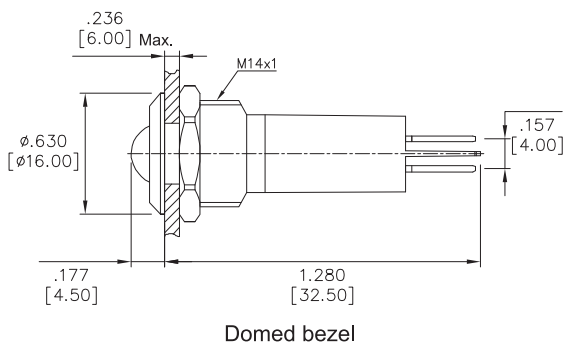
Touch Key

Miscellaneous

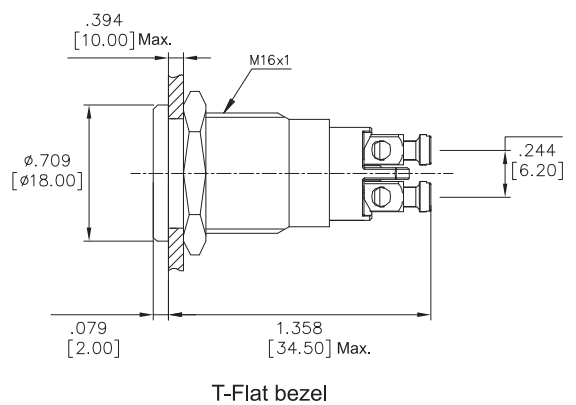
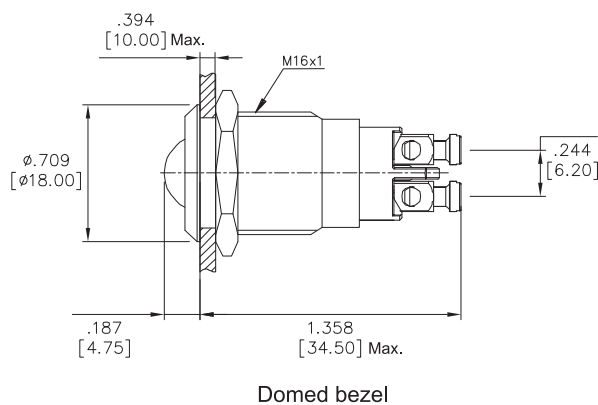
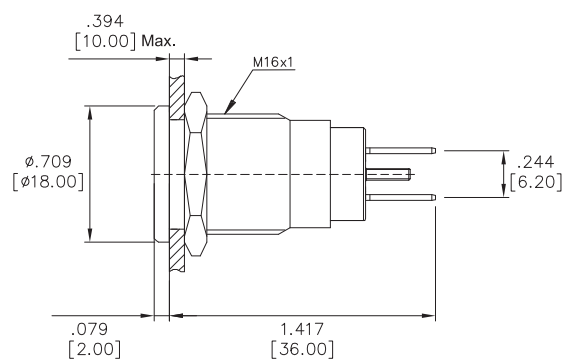
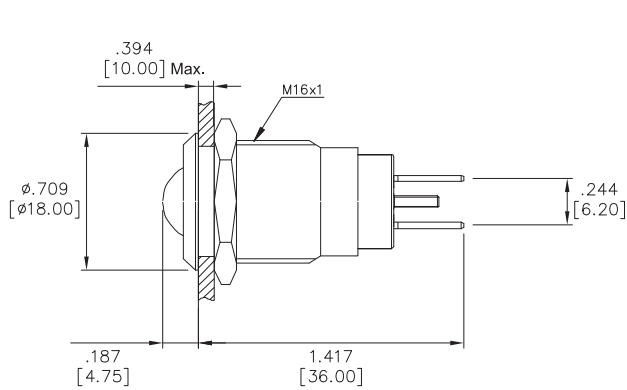
NI-10 Indicator



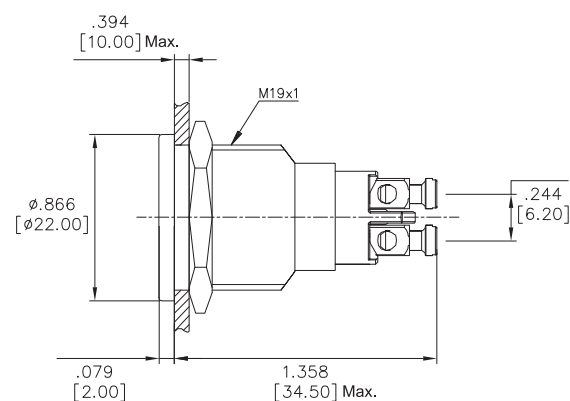
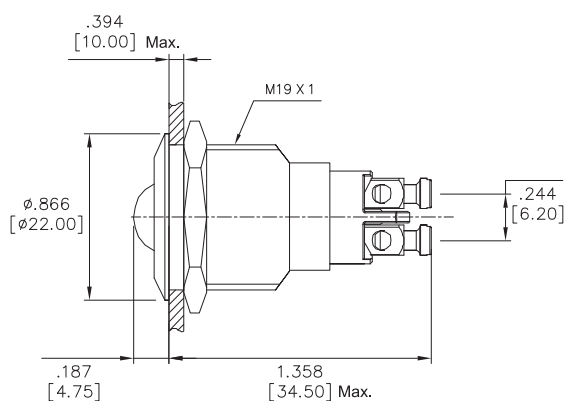
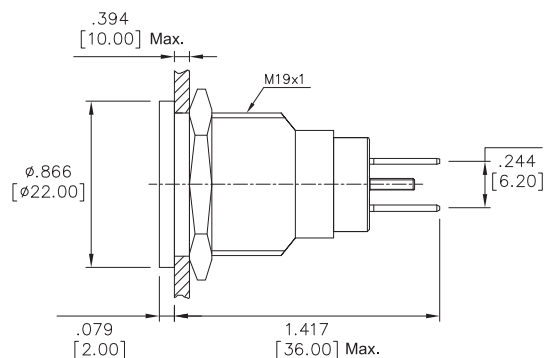
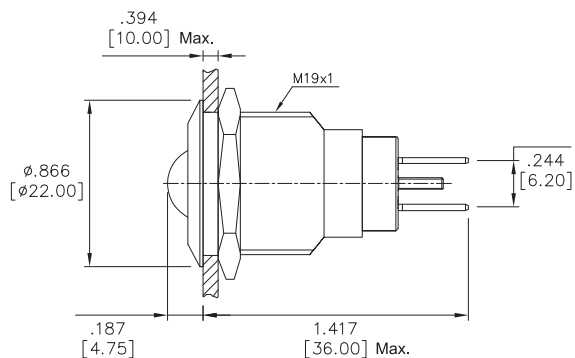
NI-14 Indicator



NI-16 Indicator



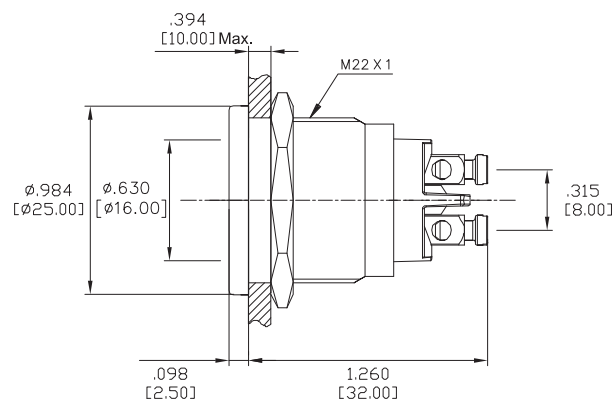
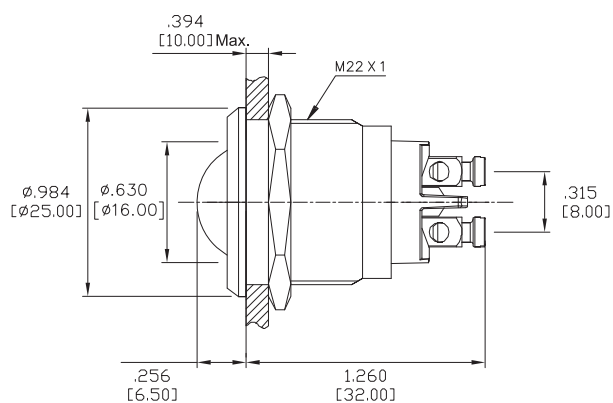
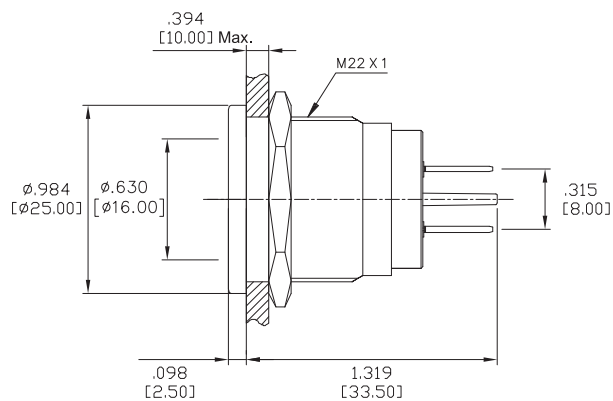
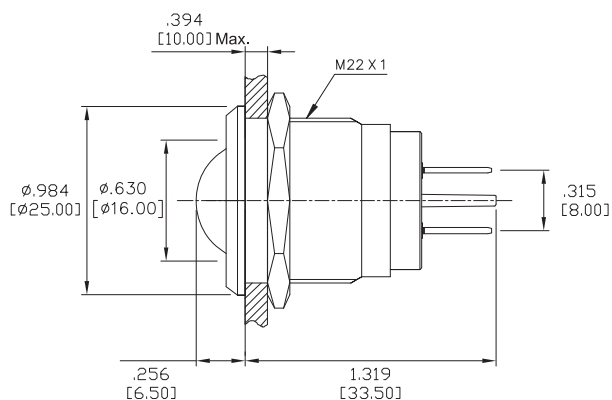
NI-19 Indicator



Domed bezel

T-Flat bezel

NI-22 Indicator



Domed bezel

T-Flat bezel

Toggle

Rocker

Slide

Pushbutton

AV

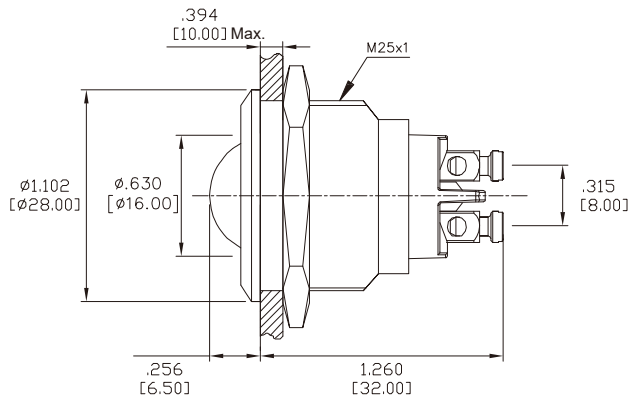
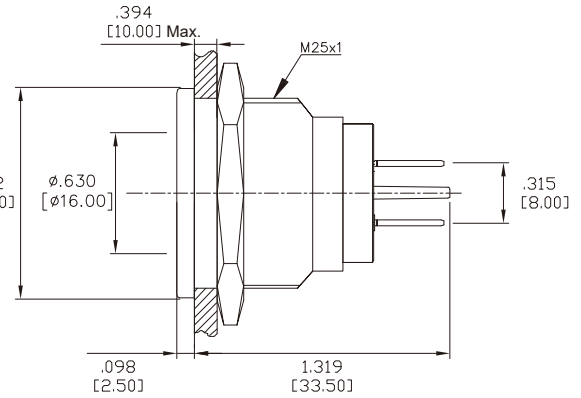
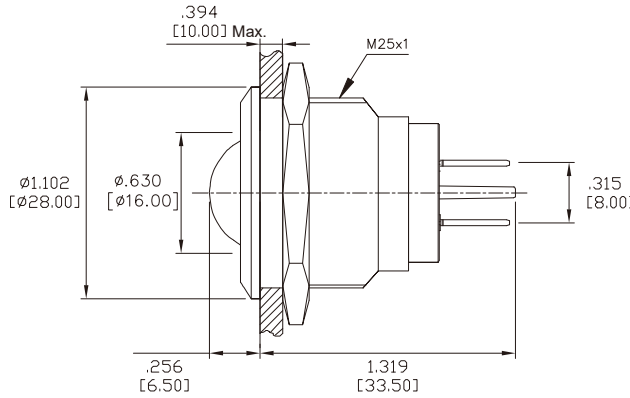
Rotary

Tact

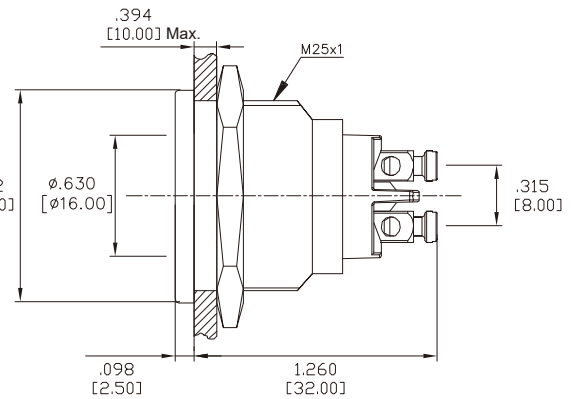
Touch Key

Miscellaneous

NI-25 Indicator



Domed bezel



T-Flat bezel

LED & VOLTAGE OPTIONS & BODY MATERIAL

LED Colors

Code	Color
R	Red
G	Green
Y	Yellow
O	Orange
B	Blue
W	White

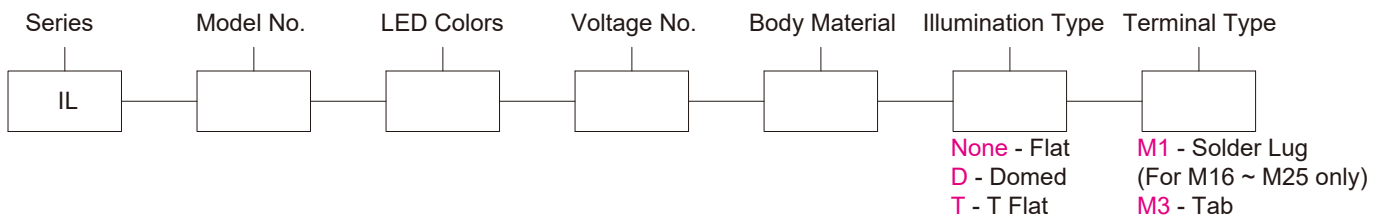
Voltage

Code	Voltage
1	2V
2	6V
3	12V
4	24V
5	110V
6	220V
7	36V
8	2.8V
9	5V
10	48V
11	9V

Body Material

Code	Body Material
N	Brass nickel plated
S	Stainless steel
K	Brass black nickel plated

HOW TO ORDER



*Wire option is available, please consult with factory.

SPECIFICATIONS:

BUSHING: $\phi 16\text{mm}$.

Rated Current: Max. 30mA @ 12/24VDC.

Sound Intensity: $\geq 85\text{dB}$ at 0.1 meter away,
 $\geq 75\text{dB}$ at 1 meter away.

Dielectric Strength: 2,000V RMS 50~60Hz.

Operating Temperature: $-20^{\circ}\text{C} \sim +55^{\circ}\text{C}$

Protection Class: IP40 & IK04.

Torque: 5~14Nm max. applied to nut.

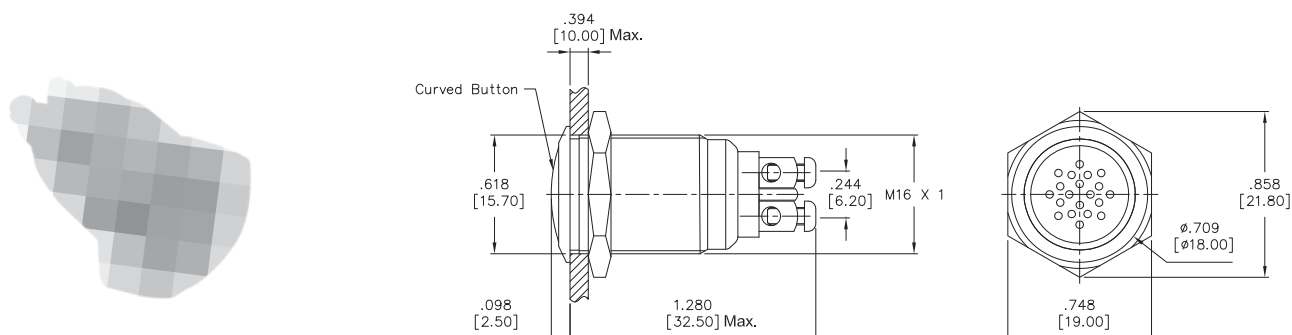
MATERIALS:

Bushing & Button: Stainless steel.

Base: PBT.

Specifications and Dimensions subject to change

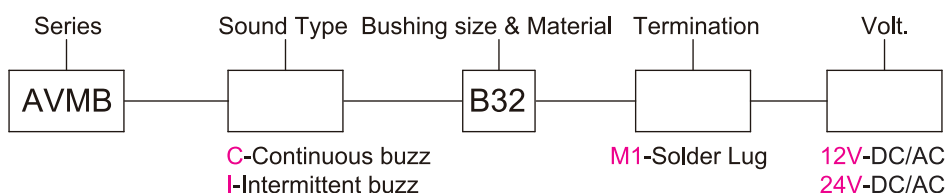
B3 $\phi 16\text{mm}$



BUSHING & BUTTON MATERIAL OPTIONS

Code	Bushing Size	Bushing & Button Material	MOQ
B32	$\phi 16\text{mm}$	Stainless steel with varnished polished	100 PCS

HOW TO ORDER



SPECIFICATIONS:

BUSHING: $\varnothing 19\text{mm}$.

Rated Current: Max. 30mA @ 12/24VDC.

Sound Type: Continuous buzz/Intermittent buzz/

Flash Intermittent buzz.

Sound Intensity: $\geq 85\text{dB}$ at 0.1 meter away,

$\geq 75\text{dB}$ at 1 meter away.

Dielectric Strength: 2,000V RMS 50~60Hz.

Operating Temperature: $-20^{\circ}\text{C} \sim +55^{\circ}\text{C}$

Protection Class: IP40 or IP50 & IK04.

Torque: 5~14Nm max. applied to nut.

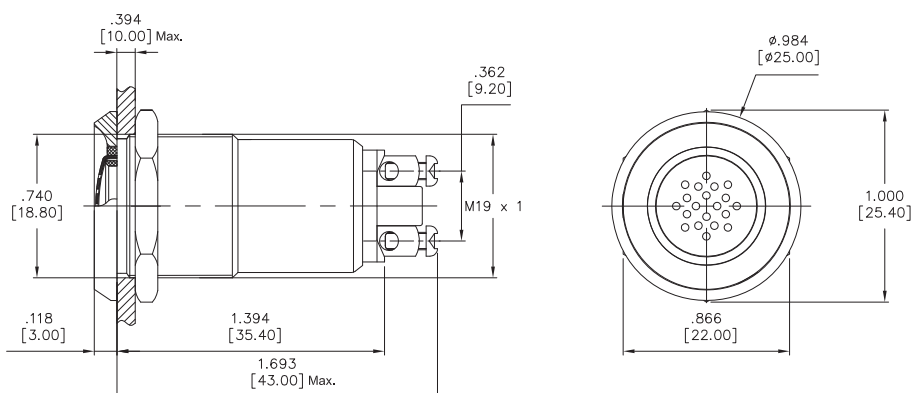
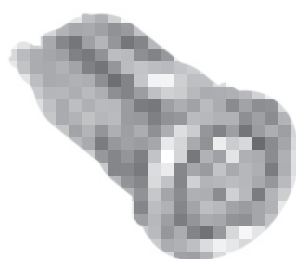
MATERIALS:

Bushing & Button: Stainless steel.

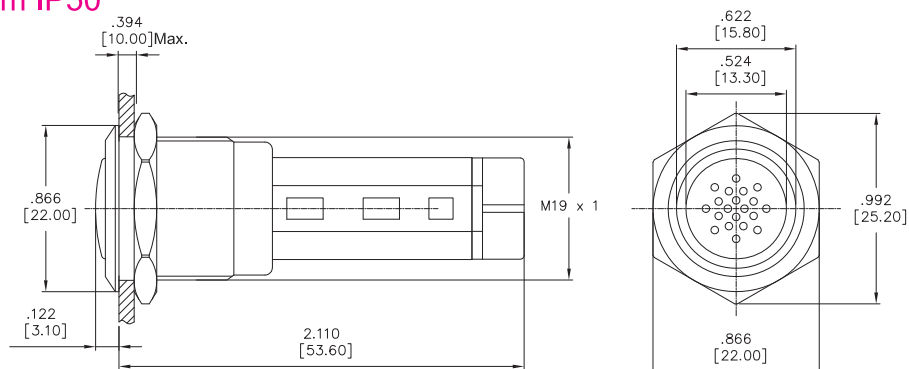
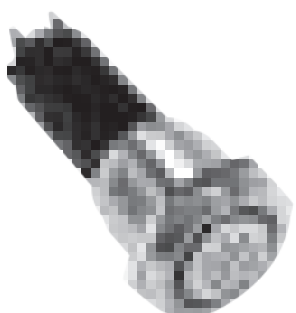
Base: PBT.

Specifications and Dimensions subject to change

Illuminated $\varnothing 19\text{mm}$ IP40



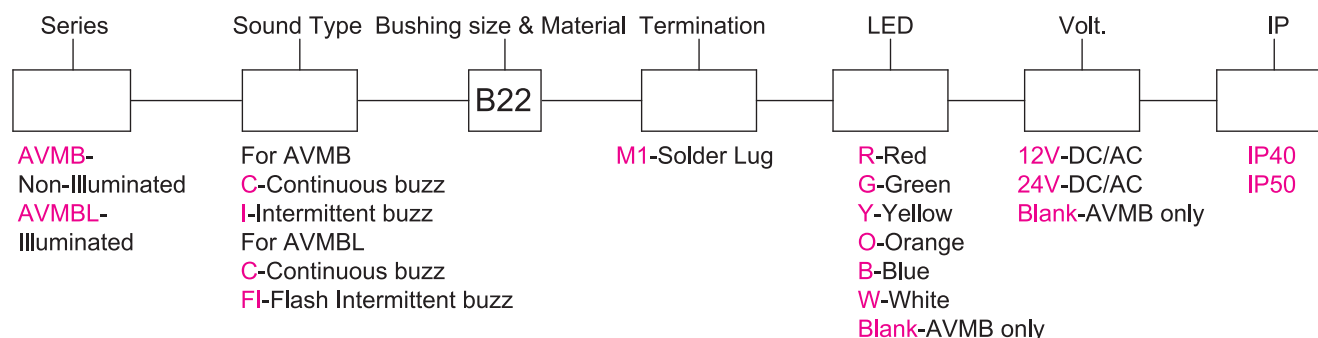
Non-Illuminated & Illuminated $\varnothing 19\text{mm}$ IP50



BUSHING & BUTTON MATERIAL OPTIONS

Code	Bushing Size	Bushing & Button Material	MOQ
B22	$\varnothing 19\text{mm}$	Stainless steel with varnished polished	100 PCS

HOW TO ORDER

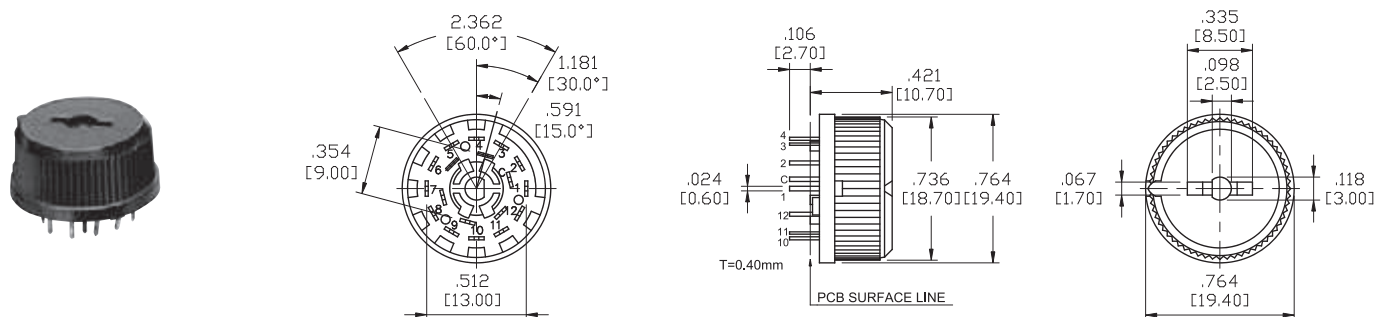


SPECIFICATIONS:

CONTACT RATING: AC/DC 150V 130mA.
ELECTRICAL LIFE: 15,000 cycles at full load
CONTACT RESISTANCE: 25mΩmax. initial.
INSULATION RESISTANCE: 100MΩmax.
DIELECTRIC STRENGTH: 1,000 V RMS @ sea level.
OPERATING TEMPERATURE: -30°C to +80°C.
STOPS: Adjustable 2 through 12 position -30°C indexing.

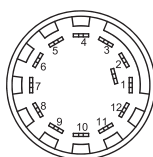
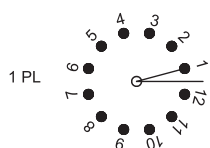
MATERIALS:

SHAFT: Aluminum.
COVER: PA.
BASE: PA.
CONTACTS: PBS+Ag.
TERMINALS: Brass+Ag.
MOVEMENT: PA.
SPRING: SUS.



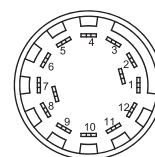
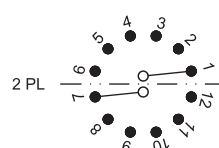
Model No.	Switching Position
8405-1	1P-12Pos

Schematic



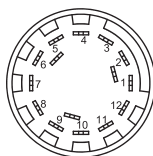
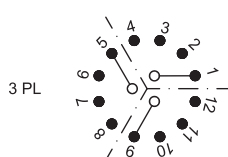
Model No.	Switching Position
8405-2	2P-6Pos

Schematic



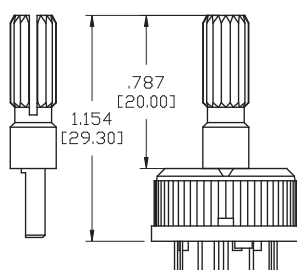
Model No.	Switching Position
8405-3	3P-4Pos

Schematic

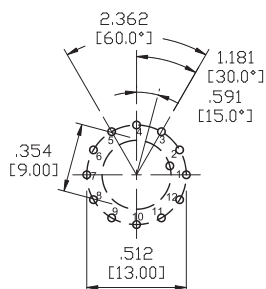


SHAFT OPTIONS

A = With Shaft
B = Without Shaft



P.C.MOUNTING



8405-1 MODELS



8405-2 MODELS



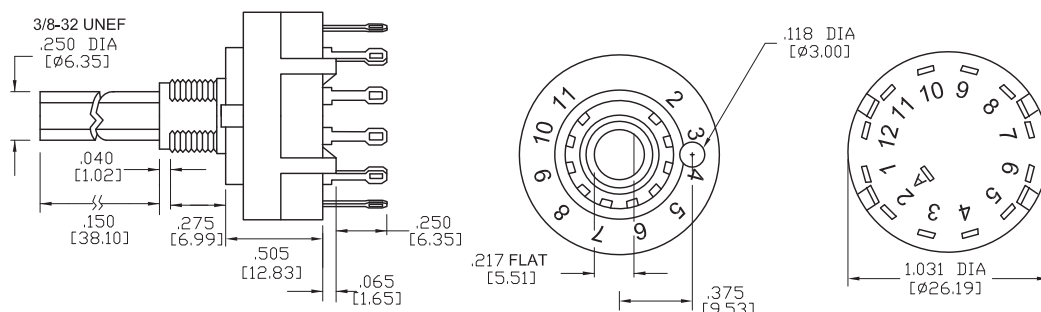
8405-3 MODELS

SPECIFICATIONS:

CONTACT RATING: 300mA @ 125VAC.
 CURRENT CARRYING CAPACITY: 5A continuous. (Non-switching)
 ELECTRICAL LIFE: 15000 cycles at full load up to 30,000 detent operations.
 CONTACT RESISTANCE: 20mΩmax. initial.
 DIELECTRIC STRENGTH: 500 V RMS @ sea level.
 OPERATING TEMPERATURE: -20°C to +85°C.
 STOPS: Adjustable 2 through 12 position -30°C indexing.
 ROTATION TORQUE: 0.5±0.2kg/cm.

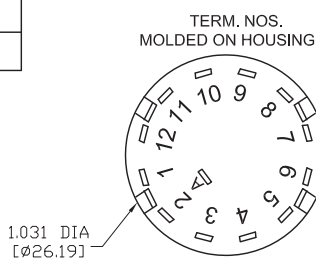
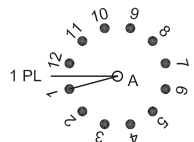
MATERIALS:

SHAFT: Glass filled nylon, color-gray.
 COVER: Glass filled nylon, color-gray.
 BASE: Glass filled nylon, color-gray.
 CONTACTS: Brass, silver plated.
 TERMINALS: Brass, silver plated.
 HARDWARE: Nut-Zinc, nickel plated.
 LOCKWASHER: Steel, bright Zinc plated.
 STOP RING: Brass, nickel plated.



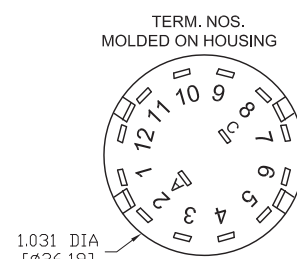
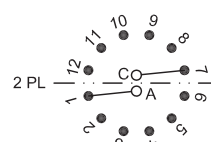
Model No.	Switching Position
8404-1	1P-12Pos

Schematic



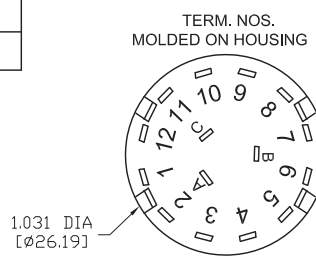
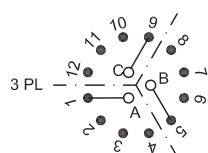
Model No.	Switching Position
8404-2	2P-6Pos

Schematic



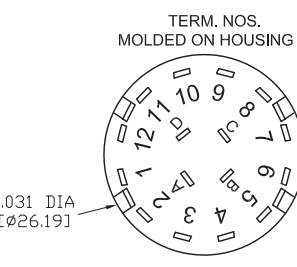
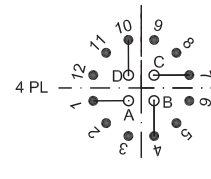
Model No.	Switching Position
8404-3	3P-4Pos

Schematic

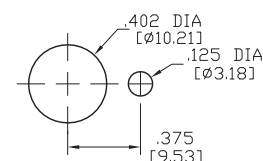
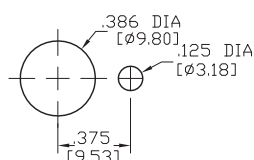


Model No.	Switching Position
8404-4	4P-3Pos

Schematic

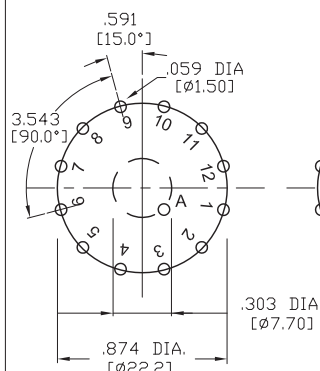


PANEL MOUNTING

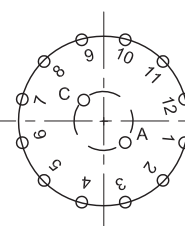


METRIC BUSHING

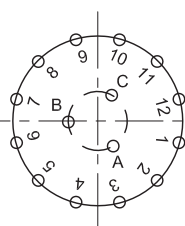
P.C.MOUNTING



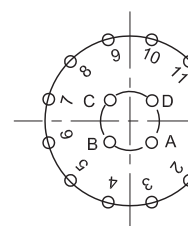
8404-1 MODELS



8404-2 MODELS



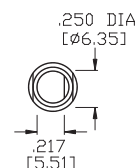
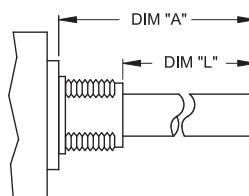
8404-3 MODELS



8404-4 MODELS

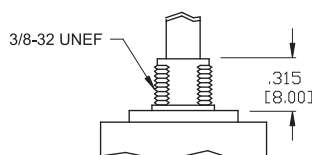
ACTUATOR OPTIONS

Actuator	DIM "A"	DIM "L"
38	1.496 [38.00]	1.181 [30.00]
29	1.142 [29.00]	.827 [21.00]
21	.827 [21.00]	.512 [13.00]
18	.709 [18.00]	.394 [10.00]
15	.591 [15.00]	.276 [7.00]



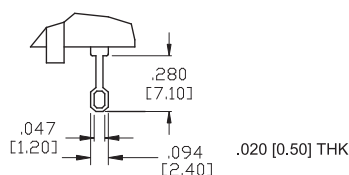
BUSHING OPTIONS

E STD.

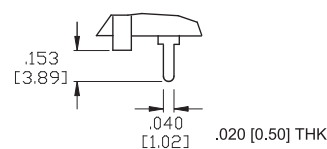


TERMINATION OPTIONS

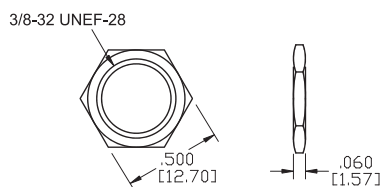
B STD.



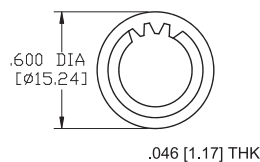
C PRINTED CIRCUIT



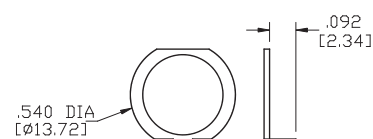
NUT



LOCK WASHER



STOP RING



CONTACT OPTIONS

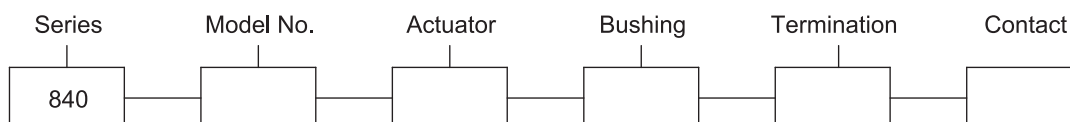
NS STD.

Non-Shorting Contacts: Break before make

SC

Shorting Contacts: Make before break

HOW TO ORDER



Toggle

Rocker

Slide

Pushbutton

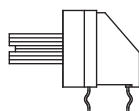
AV

Rotary

Tact

Touch Key

Miscellaneous



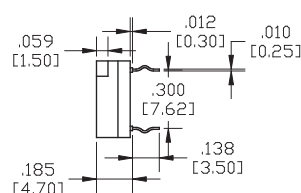
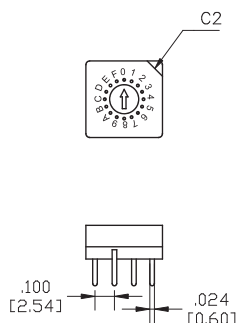
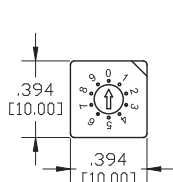
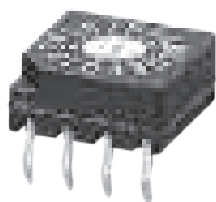
SPECIFICATIONS:

OPERATING VOLTAGE: 24V DC max.
 SWITCHING CURRENT: 100mA max. RxJ 15mA max.
 CARRYING CURRENT: 0.5A max.
 CONTACT RESISTANCE: 100mΩ max.
 INSULATION RESISTANCE: 1,000MΩ min. RxJ 100MΩ
 DIELECTRIC STRENGTH: 300VAC for 1 min.
 OPERATING TEMPERATURE: -10°C to +70°C.
 SOLDERING TEMPERATURE: 250 ± 5°C for 5 sec.
 LIFE: 10,000 step operations min.

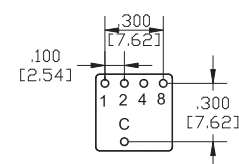
MATERIALS:

HOUSING & KNOB: Thermoplastic.
 PRINTED CIRCUIT BOARDS: Hard gold plated over nickel plated on epoxy fiberglass.
 CONTACTS & TERMINATIONS: Precious metal on phosphor bronze.

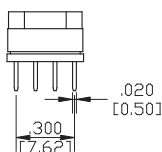
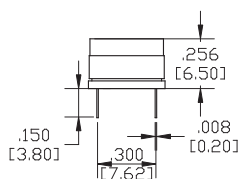
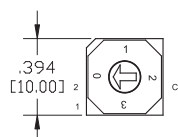
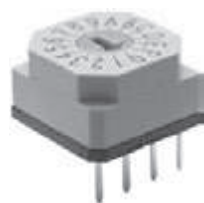
R1



P.C.MOUNTING



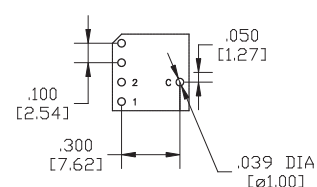
R1J



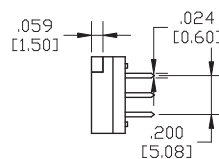
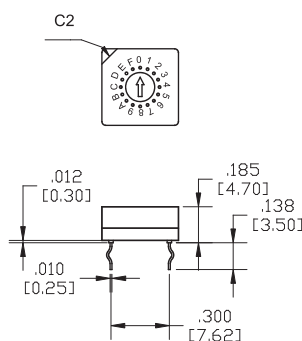
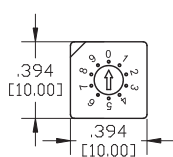
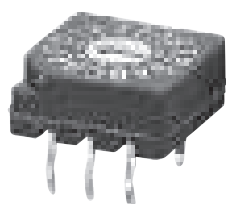
04 BCD-4 POSITION

POSITION	Common C contacted		
	C	1	2
0	●		
1	●	●	
2	●		●
3	●	●	●

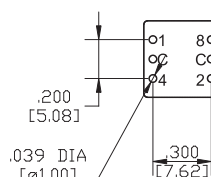
P.C.MOUNTING



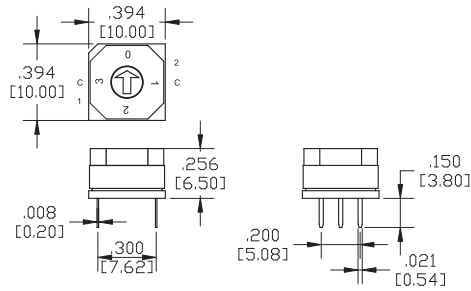
R2



P.C.MOUNTING



R2J

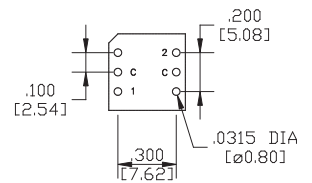


04

BCD-4 POSITION

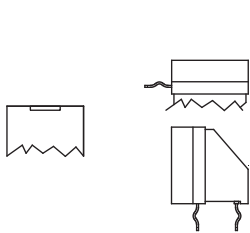
POSITION	Common C contacted		
	C	1	2
0	●		
1	●	●	
2	●		●
3	●	●	●

P.C.MOUNTING

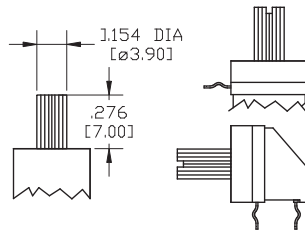


ACTUATOR OPTIONS

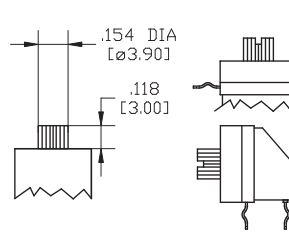
T1 FLUSH



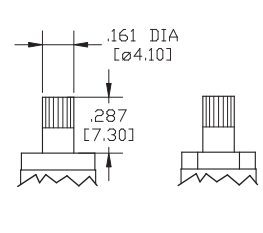
T2



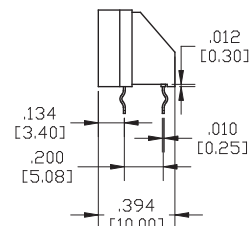
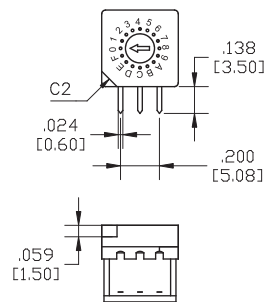
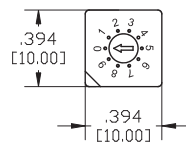
T3



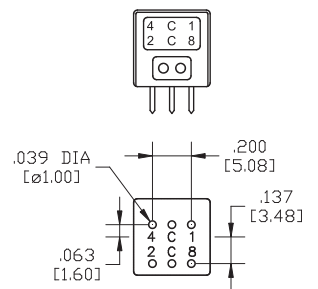
T4 (RxJ ONLY)



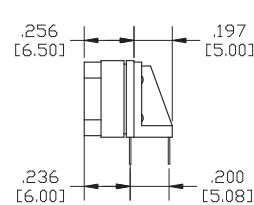
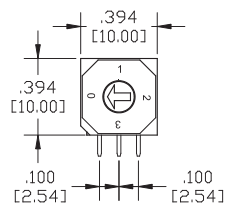
R3



P.C.MOUNTING



R3J

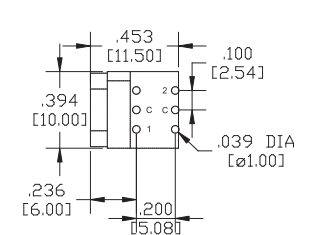


04

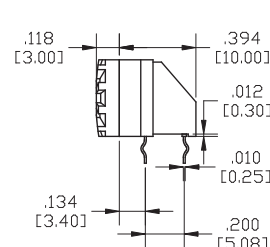
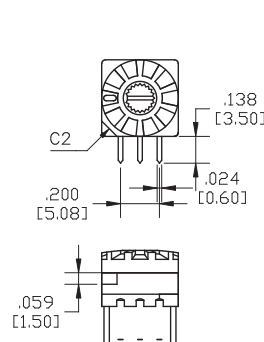
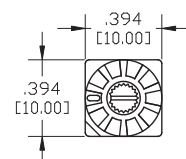
BCD-4 POSITION

POSITION	Common C contacted		
	C	1	2
0	●		
1	●	●	
2	●		●
3	●	●	●

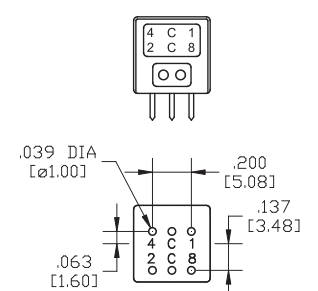
P.C.MOUNTING



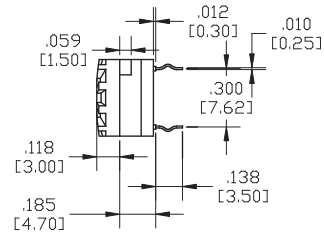
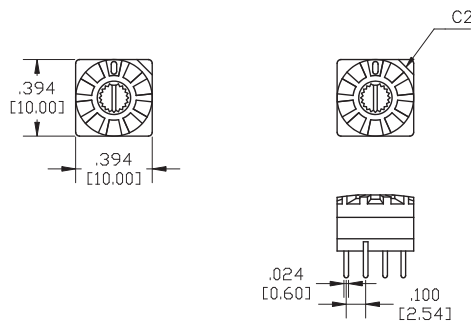
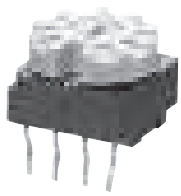
R4



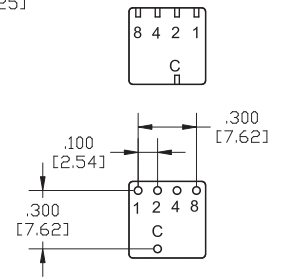
P.C.MOUNTING



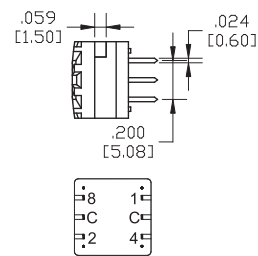
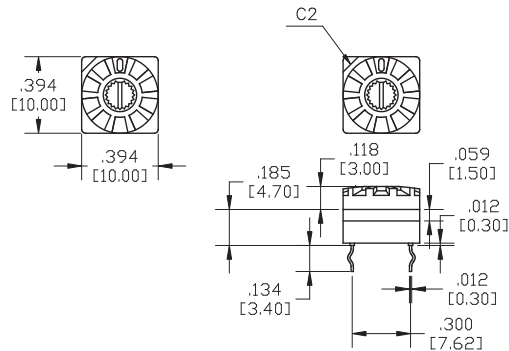
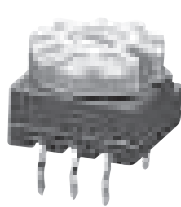
R5



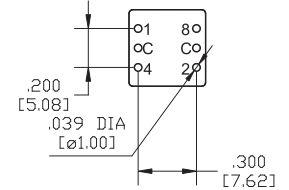
P.C.MOUNTING



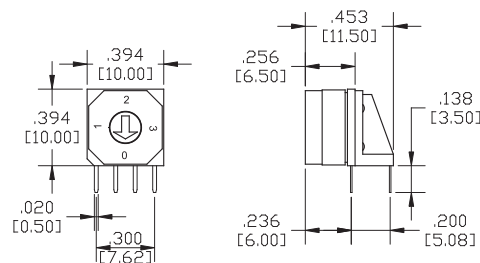
R6



P.C.MOUNTING



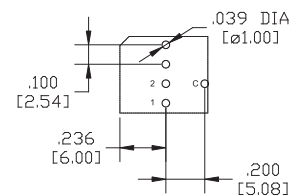
R7J



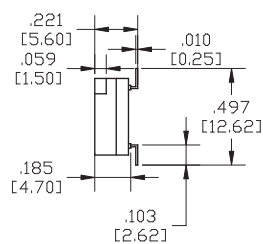
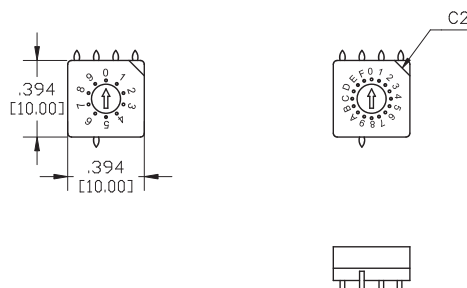
04
BCD-4 POSITION

POSITION	Common C contacted		
	C	1	2
0	●		
1	●	●	
2	●		●
3	●	●	●

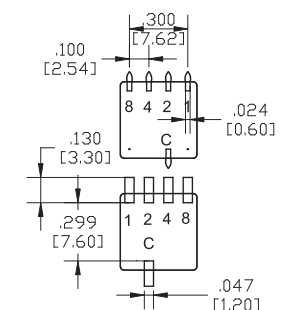
P.C.MOUNTING



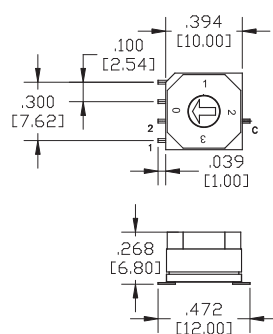
R1B



SURFACE MOUNTING



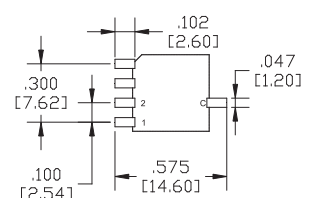
R1BJ



04
BCD-4 POSITION

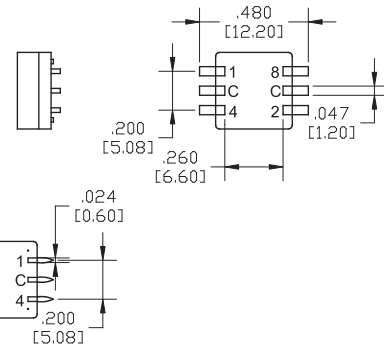
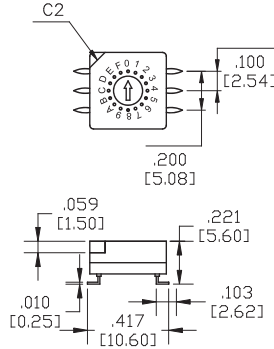
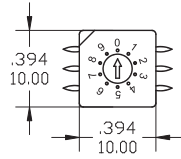
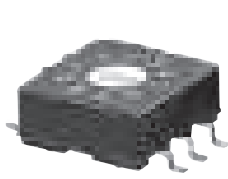
POSITION	Common C contacted		
	C	1	2
0	●		
1	●	●	
2	●		●
3	●	●	●

SURFACE MOUNTING



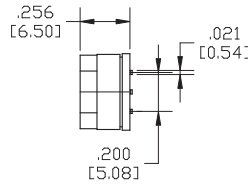
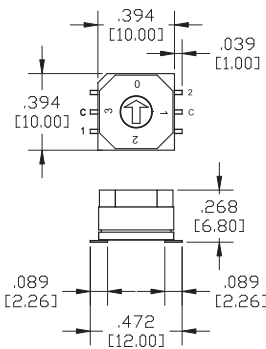
R2B

SURFACE MOUNTING



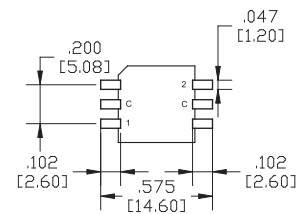
R2BJ

SURFACE MOUNTING



04 BCD-4 POSITION

POSITION	Common C contacted●		
	C	1	2
0	●		
1	●	●	
2	●		●
3	●	●	●



CODES (NOT FOR RxJ MODEL)

CODE NO:11 BCD-8 POSITION

Position	Common C contacted●				
	1	2	4	8	C
0					●
1	●				●
2		●			●
3	●	●			●
4			●		●
5	●		●		●
6		●	●		●
7	●	●	●		●

CODE NO:12 BCD-10 POSITION

Position	Common C contacted●				
	1	2	4	8	C
0					●
1	●				●
2		●			●
3	●	●			●
4			●		●
5	●		●		●
6		●	●		●
7	●	●	●		●
8				●	●
9	●			●	●

CODE NO:14 BCD-16 POSITION

Position	Common C contacted●				
	1	2	4	8	C
0					●
1	●				●
2		●			●
3	●	●			●
4			●		●
5	●		●		●
6		●	●		●
7	●	●	●		●
8				●	●
9	●			●	●
A		●			●
B	●				●
C		●			●
D	●		●		●
E		●	●		●
F	●	●	●		●

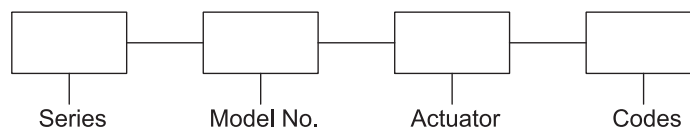
CODE NO:31 BCD COMP.-10 POS.

Position	Common C contacted●				
	1	2	4	8	C
0	●	●	●	●	●
1		●	●	●	●
2	●		●	●	●
3			●	●	●
4	●	●		●	●
5		●		●	●
6	●			●	●
7				●	●
8	●	●	●		●
9		●	●	●	●

CODE NO:33 BCD COMPLEMENT-16 POS.

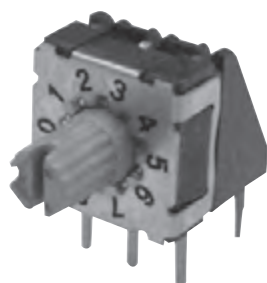
Position	Common C contacted●				
	1	2	4	8	C
0	●	●	●	●	●
1		●	●	●	●
2	●		●	●	●
3			●	●	●
4	●	●		●	●
5		●		●	●
6	●			●	●
7				●	●
8	●	●	●		●
9		●	●	●	●
A	●				●
B		●			●
C	●		●		●
D		●			●
E	●				●
F		●	●	●	●

HOW TO ORDER



(G)Grey / (W)White Actuator = Positive Logic

(R)Red / (P)Pink Actuator = Negative Logic



NEW !
IP 67 Protection

SPECIFICATIONS:

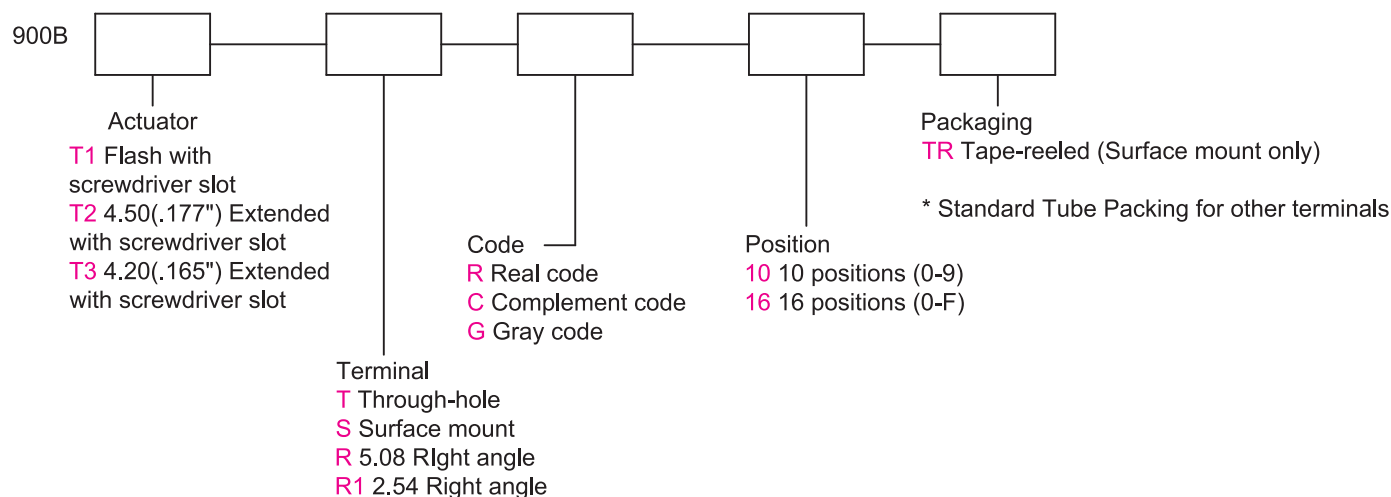
CONTACT RATING: (Non-switching)400mA 42V,
(Switching)100mA 42V.
ELECTRICAL LIFE: 25,000 make-and-break cycles at full load.
CONTACT RESISTANCE: 80m-ohms max. initial @2-4VDC
INSULATION RESISTANCE: 250VDC, 1,000M-ohms min.
DIELECTRIC STRENGTH: 250VAC for 1 minute.
OPERATING FORCE: 120±30gf.
OPERATING TEMPERATURE: -60°C to +125°C.

MATERIALS:

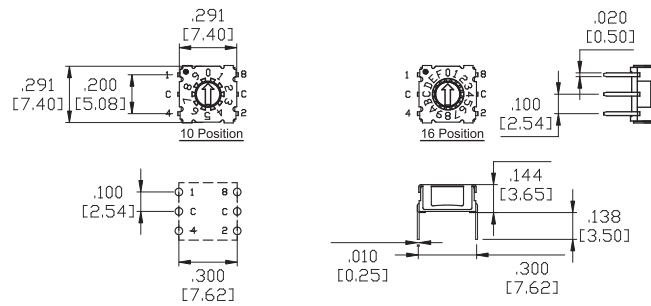
COVER: Stainless Steel.
ACTUATOR: LCP.
BASE: LCP.
O-RING: Silicone.
CONTACT & TERMINAL: Phosphor bronze, gold over nickel plated.

If your preferred product configuration is not shown, please contact our sales representative for custom design.

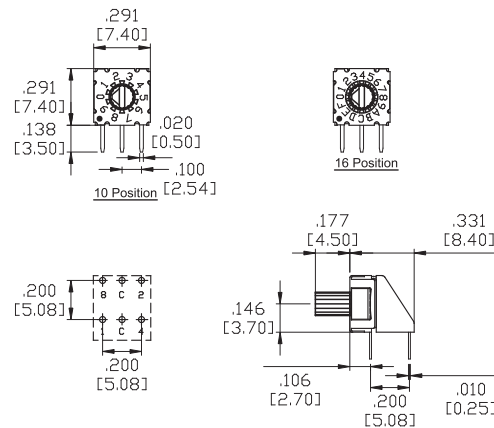
HOW TO ORDER SYSTEM



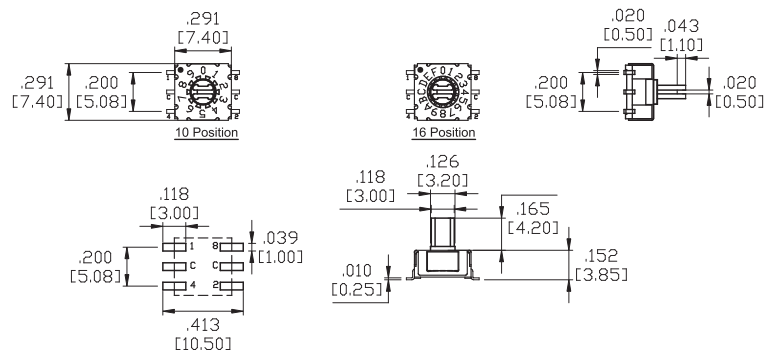
THROUGH HOLE



RIGHT ANGLE

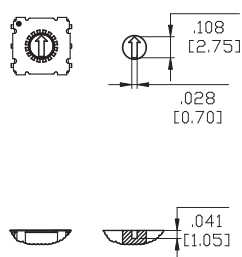


SURFACE MOUNT

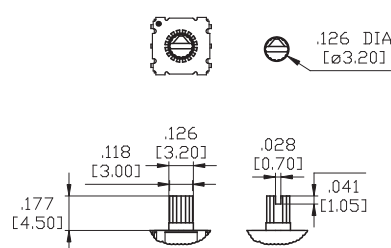


ACTUATOR OPTIONS

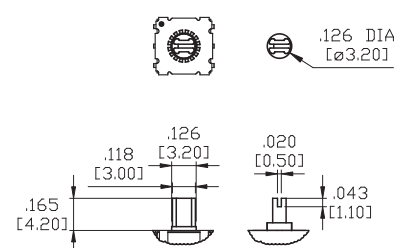
T1 FLUSH



T2 SCREWDRIVER SLOT

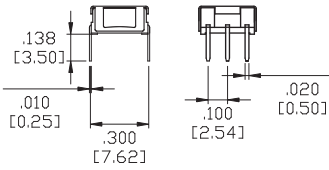


T3 SCREWDRIVER SLOT

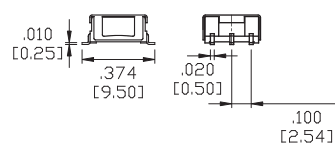


TERMINATION OPTIONS

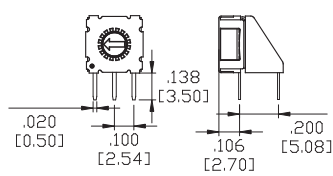
T THROUGH HOLE



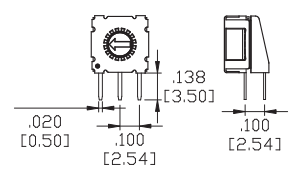
S SURFACE MOUNT



R 5.08 RIGHT ANGLE



R1 2.54 RIGHT ANGLE



CODE & POSITION OPTIONS

R REAL CODE

Position	0	1	2	4	8
0	•	•	•	•	•
1	•	•	•	•	•
2	•	•	•	•	•
3	•	•	•	•	•
4	•	•	•	•	•
5	•	•	•	•	•
6	•	•	•	•	•
7	•	•	•	•	•
8	•	•	•	•	•
9	•	•	•	•	•

Actuator Color: Ivory

Position	0	1	2	4	8
0	•	•	•	•	•
1	•	•	•	•	•
2	•	•	•	•	•
3	•	•	•	•	•
4	•	•	•	•	•
5	•	•	•	•	•
6	•	•	•	•	•
7	•	•	•	•	•
8	•	•	•	•	•
9	•	•	•	•	•
10	•	•	•	•	•
11	•	•	•	•	•
12	•	•	•	•	•
13	•	•	•	•	•
14	•	•	•	•	•
15	•	•	•	•	•

Actuator Color: Yellow

C COMPLEMENT CODE

Position	0	1	2	4	8
0	•	•	•	•	•
1	•	•	•	•	•
2	•	•	•	•	•
3	•	•	•	•	•
4	•	•	•	•	•
5	•	•	•	•	•
6	•	•	•	•	•
7	•	•	•	•	•
8	•	•	•	•	•
9	•	•	•	•	•
10	•	•	•	•	•
11	•	•	•	•	•
12	•	•	•	•	•
13	•	•	•	•	•
14	•	•	•	•	•
15	•	•	•	•	•

Actuator Color: Red

Position	0	1	2	4	8
0	•	•	•	•	•
1	•	•	•	•	•
2	•	•	•	•	•
3	•	•	•	•	•
4	•	•	•	•	•
5	•	•	•	•	•
6	•	•	•	•	•
7	•	•	•	•	•
8	•	•	•	•	•
9	•	•	•	•	•
10	•	•	•	•	•
11	•	•	•	•	•
12	•	•	•	•	•
13	•	•	•	•	•
14	•	•	•	•	•
15	•	•	•	•	•

Actuator Color: Blue

G Gray Code

Position	0	1	2	4	8
0	•	•	•	•	•
1	•	•	•	•	•
2	•	•	•	•	•
3	•	•	•	•	•
4	•	•	•	•	•
5	•	•	•	•	•
6	•	•	•	•	•
7	•	•	•	•	•
8	•	•	•	•	•
9	•	•	•	•	•

Actuator Color: Brown

Position	0	1	2	4	8
0	•	•	•	•	•
1	•	•	•	•	•
2	•	•	•	•	•
3	•	•	•	•	•
4	•	•	•	•	•
5	•	•	•	•	•
6	•	•	•	•	•
7	•	•	•	•	•
8	•	•	•	•	•
9	•	•	•	•	•
10	•	•	•	•	•
11	•	•	•	•	•
12	•	•	•	•	•
13	•	•	•	•	•
14	•	•	•	•	•
15	•	•	•	•	•

Actuator Color: Blue

10 10-POSITION

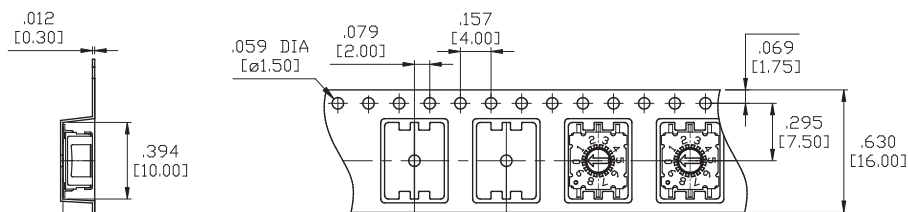


16 16-POSITION

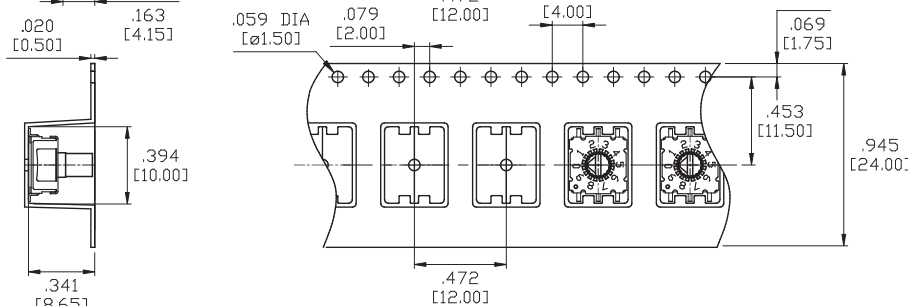


TAPE & REEL PACKING

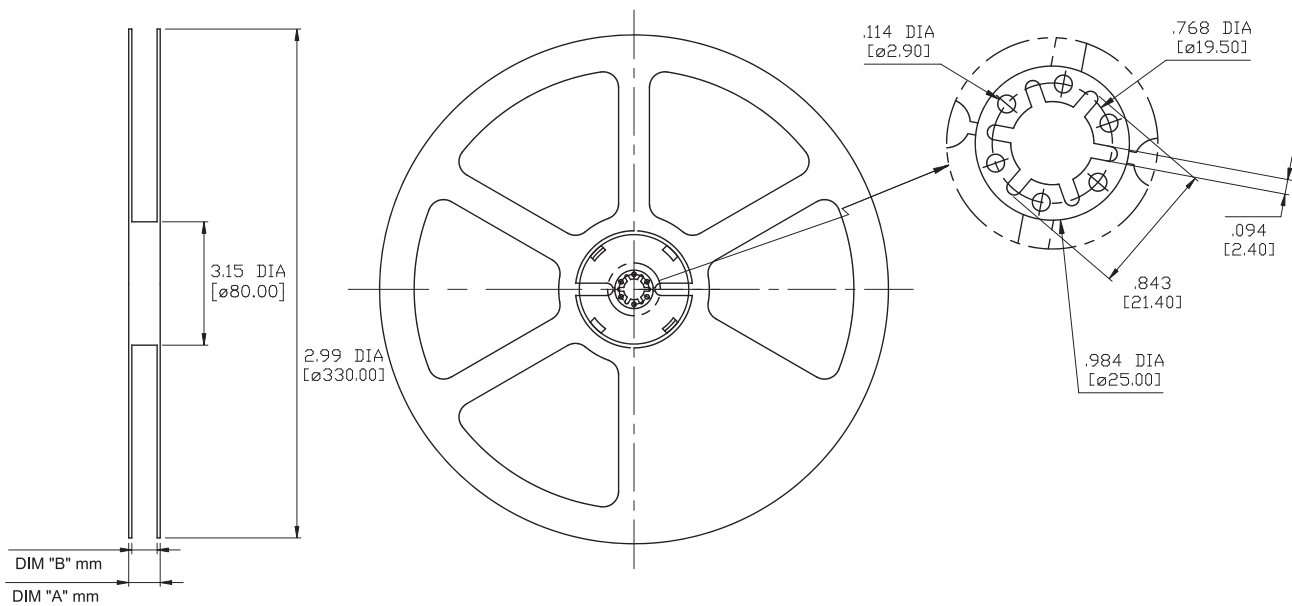
W/O ACTUATOR



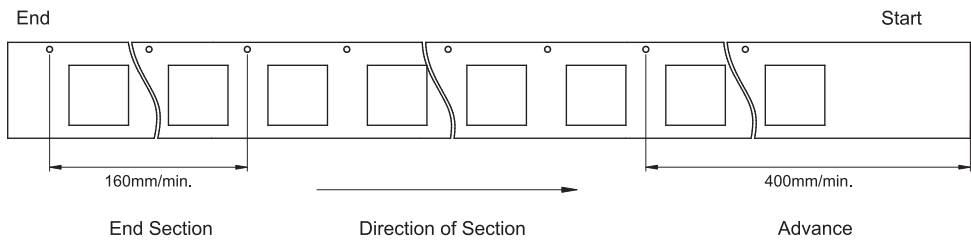
WITH ACTUATOR



TAPE & REEL PACKING



MODEL	Units(pcs)	A	B
W/O ACTUATOR	1300	22.40	16.40
WITH ACTUATOR	600	30.40	24.40



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous

SPECIFICATIONS:

CONTACT RATING: 50mA 12V DC.
 CONTACT RESISTANCE: 100m-ohms max. at 1A 2-4VDC.
 INSULATION RESISTANCE: 100M-ohms max. @ 500VDC.
 WITHSTAND VOLTAGE: 100VAC RMS for 1 min.
 ENDURANCE: 10,000 cycles @ 10 cpm.

TOTAL TRAVEL: 0.25mm.

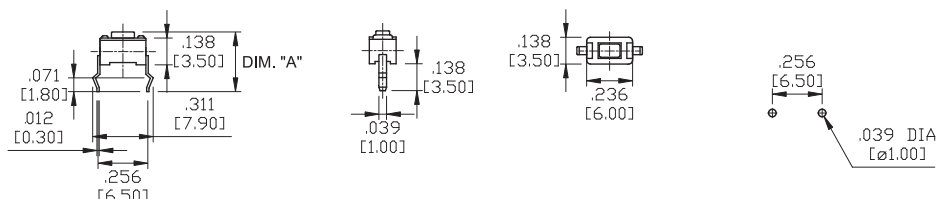
Specifications and Dimensions subject to change

KRS-0312

P.C.B. LAND PATTERN



L	DIM. "A"
1	.169 [4.30]
2	.197 [5.00]

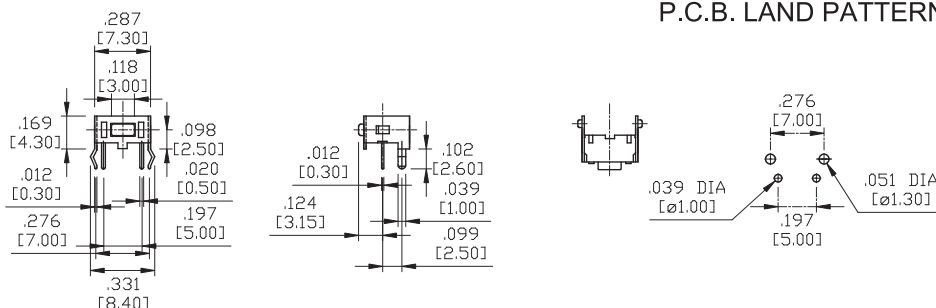


KRS-0314

P.C.B. LAND PATTERN



L	DIM. "A"
1	.124 [3.15]
2	.152 [3.85]

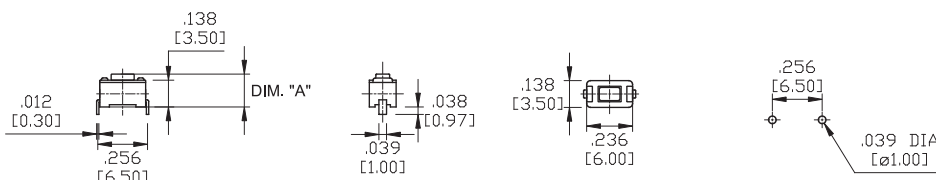


KRS-0315

P.C.B. LAND PATTERN



L	DIM. "A"
1	.169 [4.30]
2	.197 [5.00]

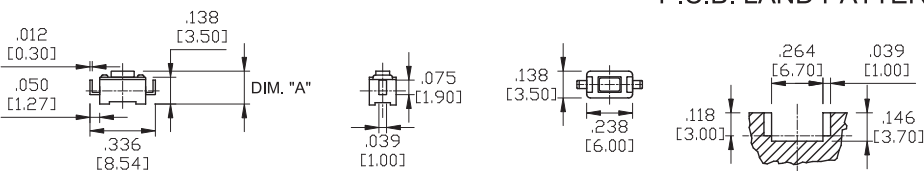


KRS-0316

P.C.B. LAND PATTERN



L	DIM. "A"
1	.169 [4.30]
2	.197 [5.00]

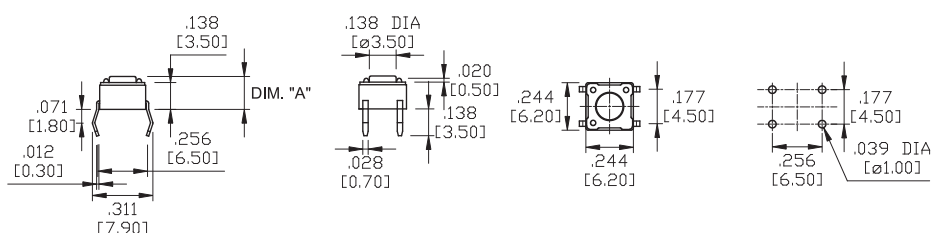


KRS-0612

P.C.B. LAND PATTERN



L	DIM. "A"
1	.169 [4.30]
2	.197 [5.00]
3	.276 [7.00]
5	.374 [9.50]
6	.512 [13.00]
7	.531 [13.50]
8	.315 [8.00]



Series KRS

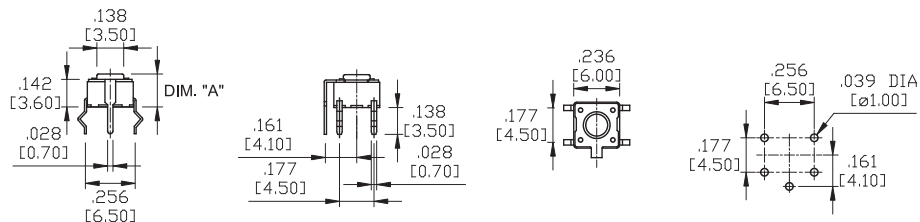
Tact Switches/Tactile Switch SMT

KRS-0613

P.C.B LAND PATTERN



L	DIM. "A"
1	.169 [4.30]
2	.197 [5.00]
3	.276 [7.00]
5	.374 [9.50]

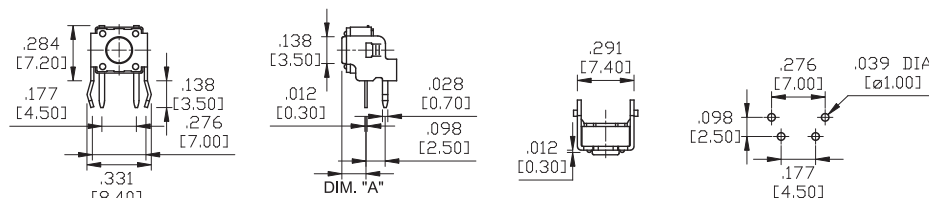


KRS-0614

P.C.B LAND PATTERN

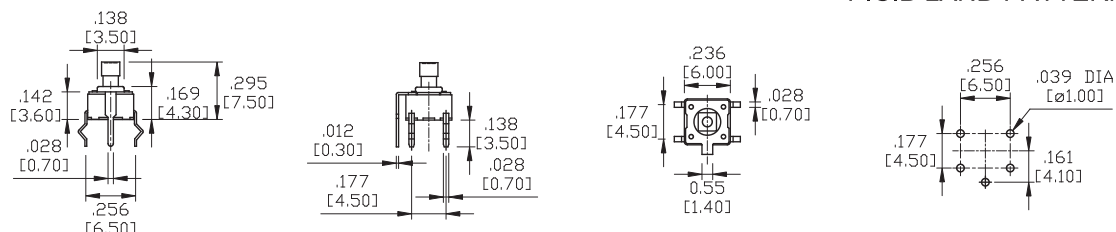


L	DIM. "A"
1	.124 [3.15]
2	.152 [3.85]
3	.230 [5.85]
5	.329 [8.35]
6	.467 [11.85]



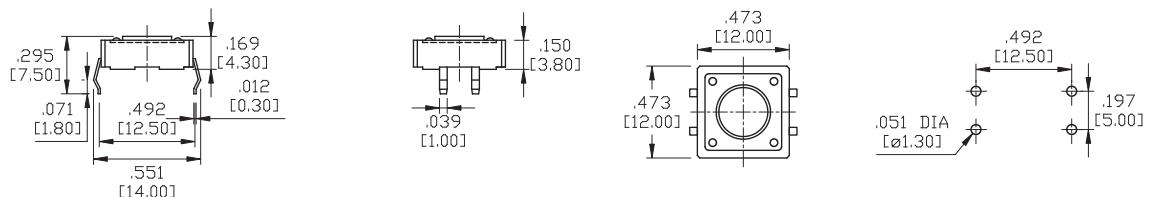
KRS-0615

P.C.B LAND PATTERN



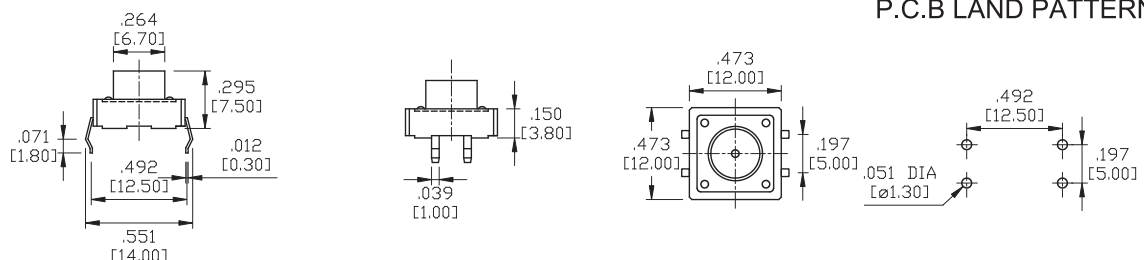
KRS-1213

P.C.B LAND PATTERN



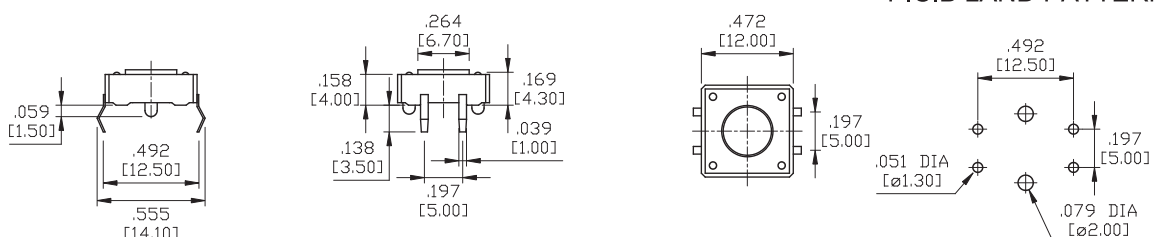
KRS-1223

P.C.B LAND PATTERN



KRS-1243

P.C.B LAND PATTERN



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

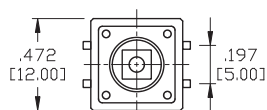
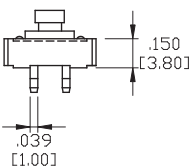
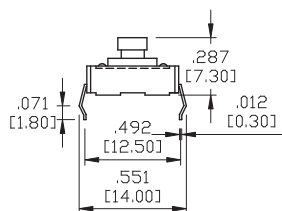
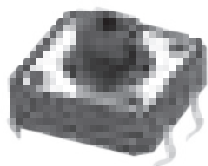
Touch Key

Miscellaneous

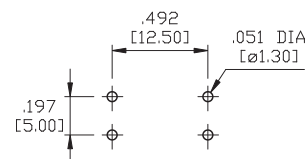
Series KRS

Tact Switches/Tactile Switch SMT

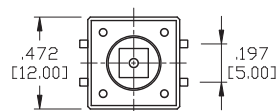
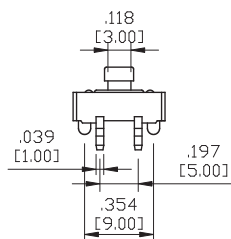
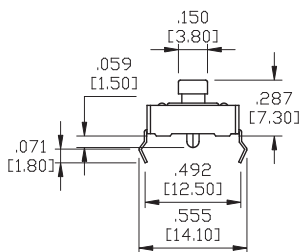
KRS-1263



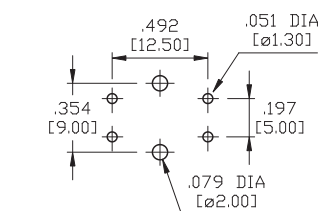
P.C.B LAND PATTERN



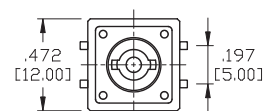
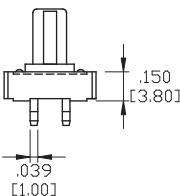
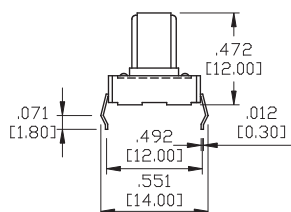
KRS-1273



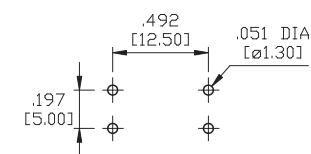
P.C.B LAND PATTERN



KRS-1283



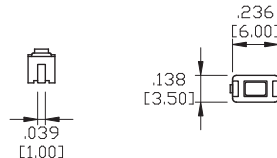
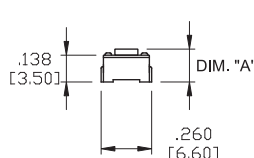
P.C.B LAND PATTERN



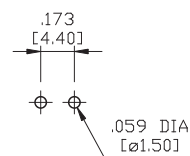
KRSM-3A



L	DIM. "A"
1	.169 [4.30]
2	.197 [5.00]



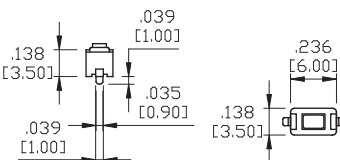
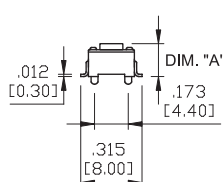
P.C.B LAND PATTERN



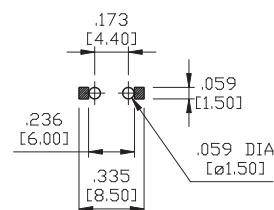
KRSM-3B



L	DIM. "A"
1	.169 [4.30]
2	.197 [5.00]



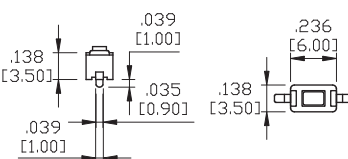
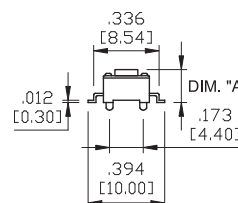
P.C.B LAND PATTERN



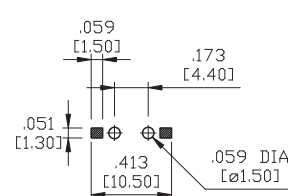
KRSM-3C



L	DIM. "A"
1	.169 [4.30]
2	.197 [5.00]



P.C.B LAND PATTERN



Series KRS

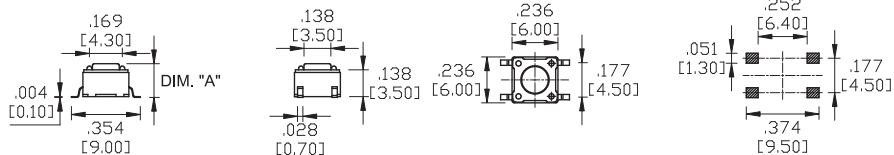
Tact Switches/Tactile Switch SMT

KRSM-6

P.C.B LAND PATTERN

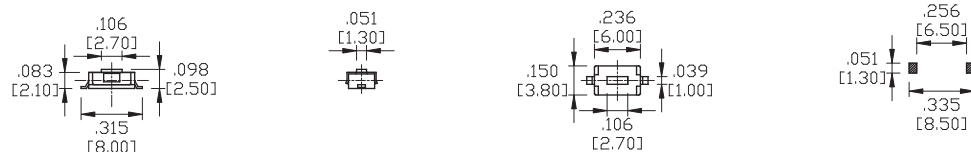


L	DIM. "A"
1	.169 [4.30]
2	.197 [5.00]
3	.276 [7.00]
4	.287 [7.30]
5	.374 [9.50]



KRSM-13

P.C.B LAND PATTERN

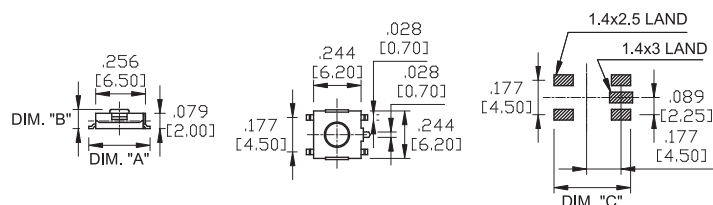


KRSM-16□□

P.C.B LAND PATTERN



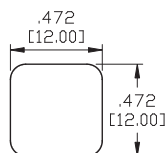
MODEL NO.	DIM."A"	DIM."B"	DIM."C"
KRSM-1611	.315 [8.00]	.098 [2.50]	.394 [10.00]
KRSM-1612	.315 [8.00]	.122 [3.10]	.394 [10.00]
KRSM-1621	.394 [10.00]	.098 [2.50]	.472 [12.00]
KRSM-1622	.394 [10.00]	.122 [3.10]	.472 [12.00]



CAP

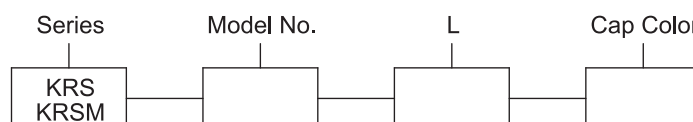
CAP COLORS

For KRS-1263 and KRS-1273 only



Color No.	Color	Color No.	Color
1	White	6	Green
2	Black	7	Blue
3	Red	8	Brown
4	Orange	9	Gray
5	Yellow		

HOW TO ORDER



* Cap color only required when cap is ordered.

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous

SPECIFICATIONS:

RATING: 12 VDC 50 mA.

OPERATING TEMPERATURE: -20°C +70°C.

CONTACT RESISTANCE: 100m-ohms (initial).

INSULATION RESISTANCE: 50M-ohms DC100V Min.

OUTPUT RESOLUTION:

10 pulse / 360°, each detent 36°±3°.

CENTER PUSH TRAVEL:

3SA: 1st=3.1±0.15mm, 2nd=2.9±0.15mm.

3SC: 3.35±0.1mm.

OPERATING FORCE (CENTER PUSH):

1st=100±50gf, 2nd=260±80gf,

rotary=80gf-cm±50gf-cm.

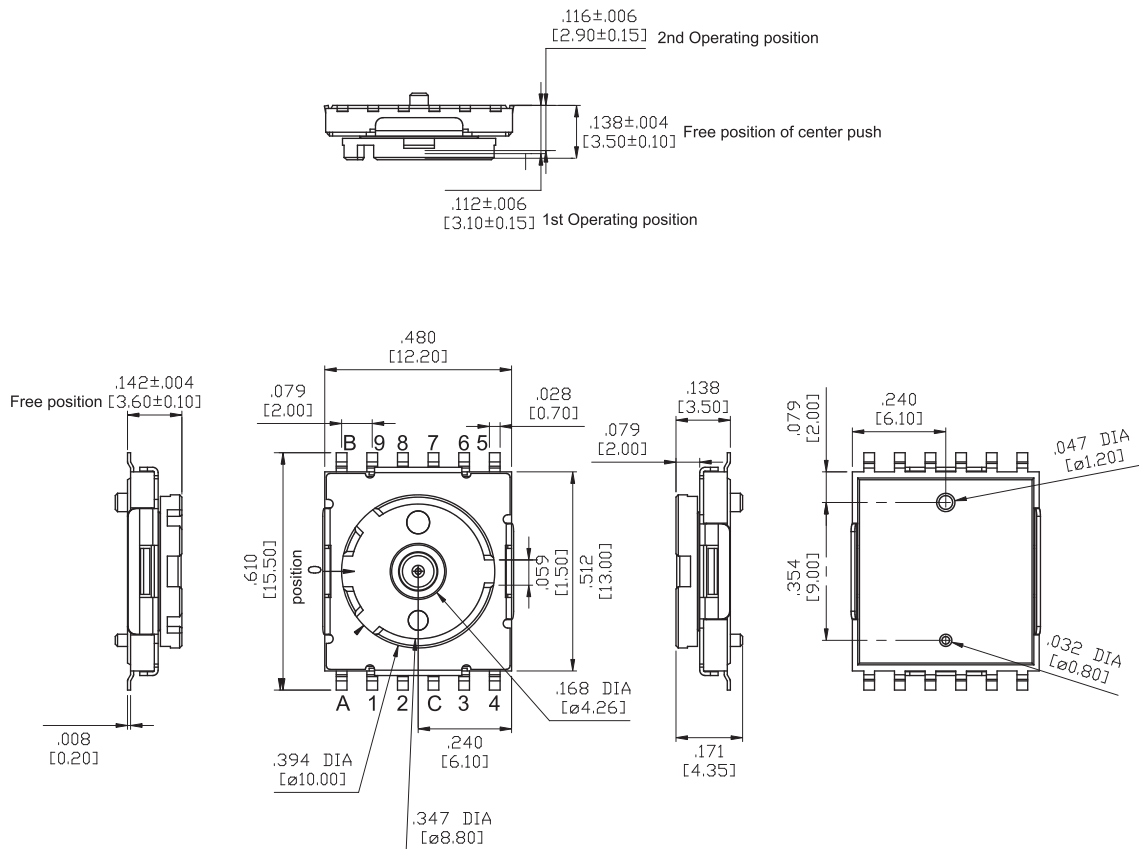
ELECTRICAL LIFE (CENTER PUSH):

center push:100,000 cycles Min.

rotary:50,000 cycles Min.

Specifications and Dimensions subject to change

3SA

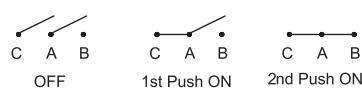


CODE: A (10 position)

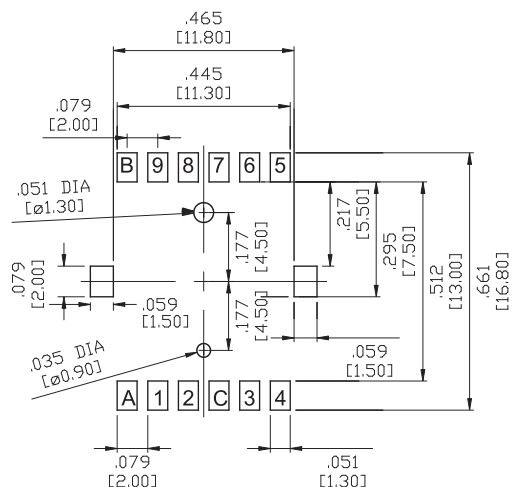
POSITION TERMINAL	0	1	2	3	4	5	6	7	8	9
C		●	●	●	●	●	●	●	●	●
1		●								
2			●							
3				●						
4					●					
5						●				
6							●			
7								●		
8									●	
9										●

The ● marks shows the "ON" position.

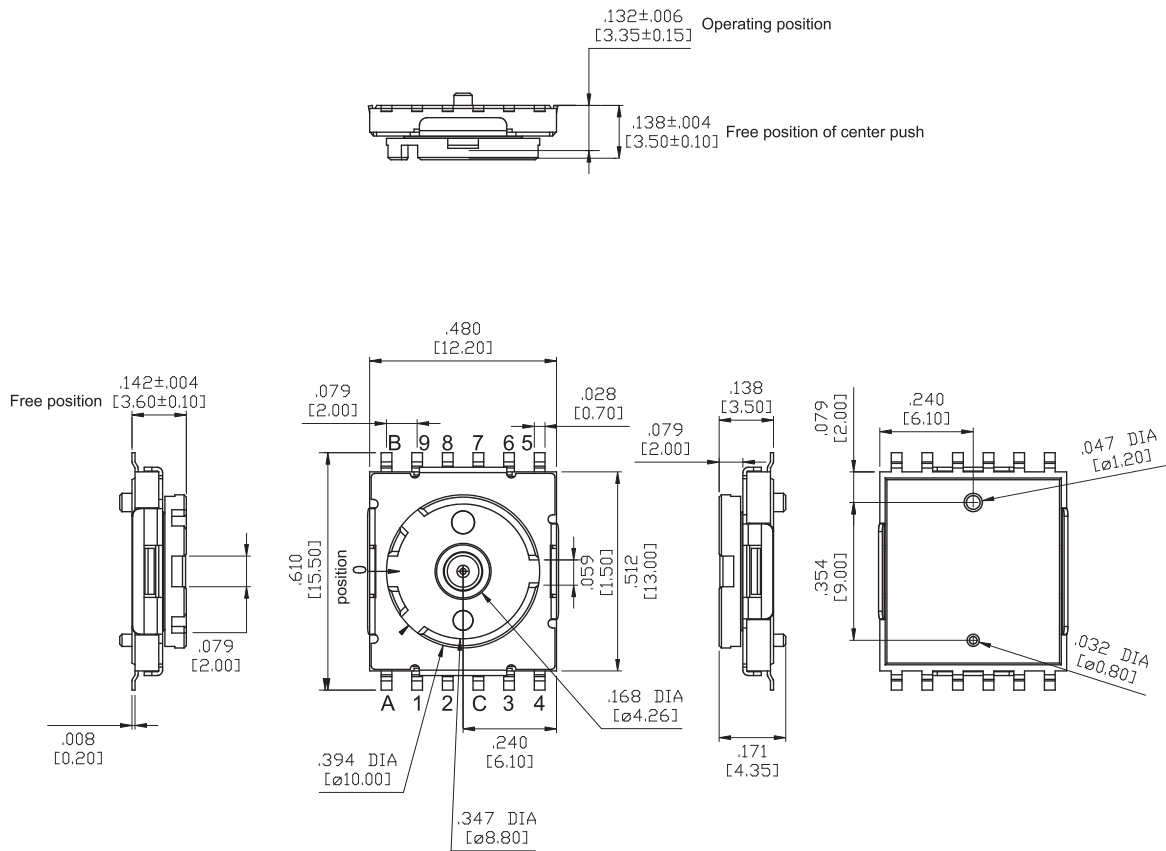
CIRCUIT DIAGRAM OF CENTER PUSH



P.C.B MOUNTING



3SC

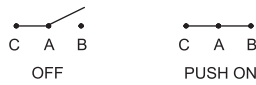


CODE: C (10 position)
CIRCUIT DIAGRAM OF ROTARY

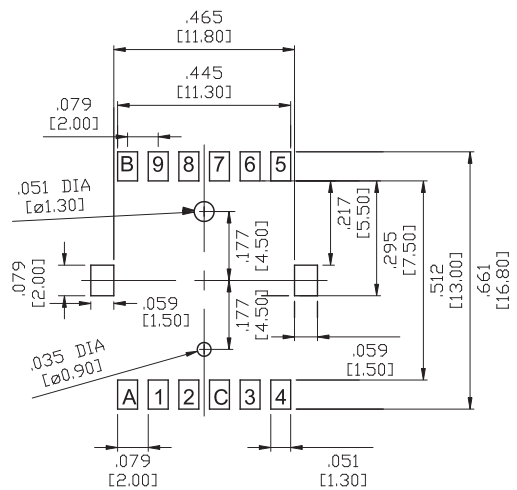
POSITION	0	1	2	3	4	5	6	7	8	9
TERMINAL										
C	●	●	●	●	●	●	●	●	●	●
1		●								
2			●							
3				●						
4					●					
5						●				
6							●			
7								●		
8									●	
9										●

The ● marks shows the "ON" position.

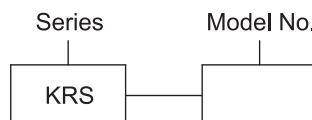
CIRCUIT DIAGRAM OF CENTER PUSH



P.C.B MOUNTING



HOW TO ORDER



SPECIFICATIONS:

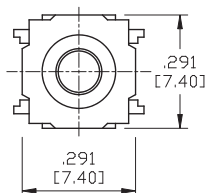
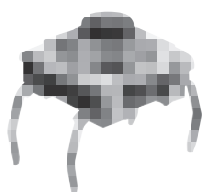
CONTACT RATING: 50mA 12VDC.
 CONTACT RESISTANCE: 100m-ohms max.
 TRAVEL: 0.25±0.10mm.
 LIFE: 100,000 cycles min.
 OPERATING FORCE: 130, 160±30, 250±50gf.

MATERIALS:

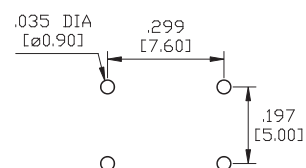
CASE & STEM: Nylon 66 G30%.
 COVER: 0.3t electrolytic tin plate (E.T).
 TERMINAL: 0.3t C2680R-EH.
 C/PLETAT: 0.06t AG-C5210R-EH.
 RUBBER: Silicon.

Specifications and Dimensions subject to change

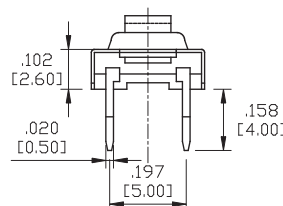
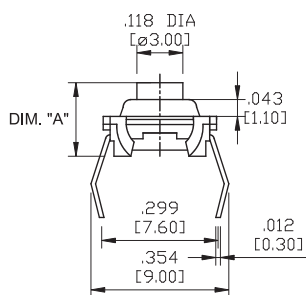
KRSS-0712



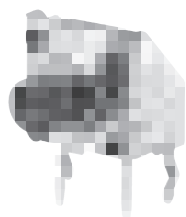
P.C.MOUNTING



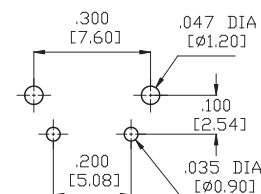
L	DIM. "A"
1	.185 [4.70]
2	.205 [5.20]
3	.272 [6.90]
4	.394 [10.00]



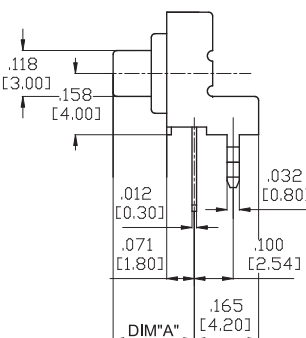
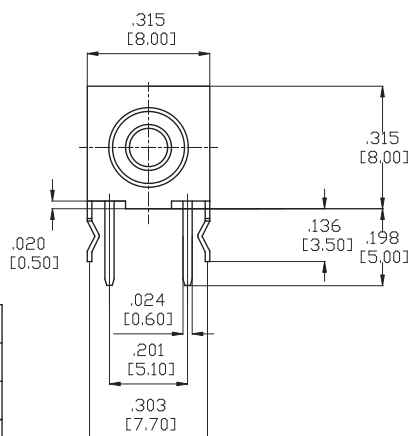
KRSS-0714



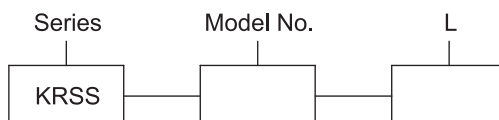
P.C.MOUNTING



L	DIM. "A"
1	.138 [3.50]
2	.158 [4.00]
3	.225 [5.70]
4	.343 [8.70]



HOW TO ORDER



SPECIFICATIONS:

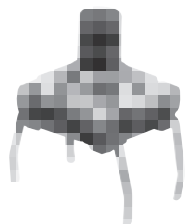
CONTACT RATING: 50mA 12VDC.
 CONTACT RESISTANCE: 30m-ohms max.
 TRAVEL: 0.30±0.10mm (0712), 0.35±0.10mm (0714).
 LIFE: 80,000 cycles min.
 OPERATING FORCE: 160±30gf (0714), 250±30gf (0712 & 0714).

MATERIALS:

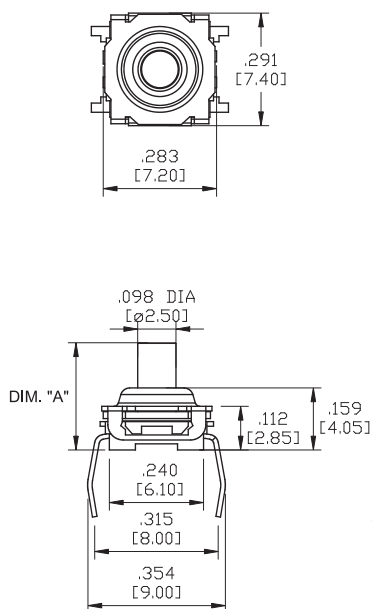
BASE & STEM: Nylon 66.
 COVER: Steel or brass.
 TERMINAL: Brass.
 CONTACT: Silver copper or stainless steel.
 O-RING: Silicon.

Specifications and Dimensions subject to change

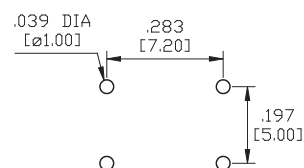
KRSA-0712



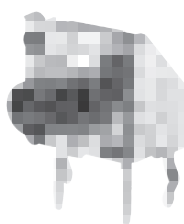
L	DIM. "A"
1	.197 [5.00]
2	.276 [7.00]
3	.335 [8.50]



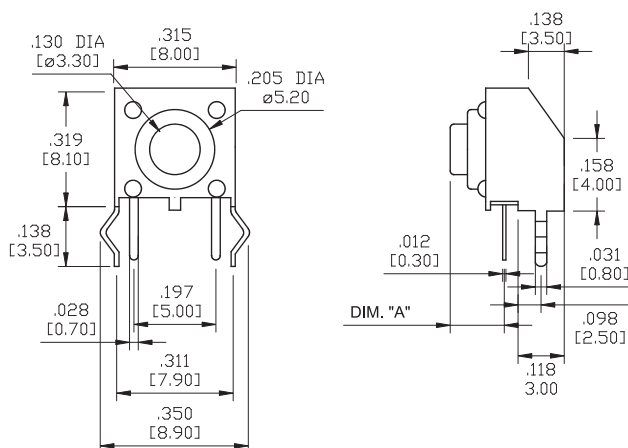
P.C.MOUNTING



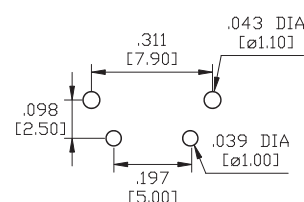
KRSA-0714



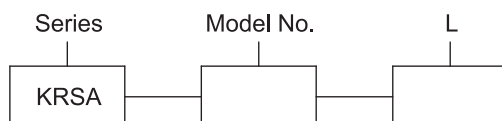
L	DIM. "A"
1	.152 [3.85]
2	.230 [5.85]
3	.309 [7.85]



P.C.MOUNTING



HOW TO ORDER



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous

SPECIFICATIONS:

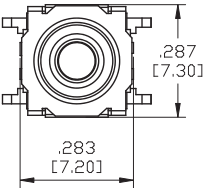
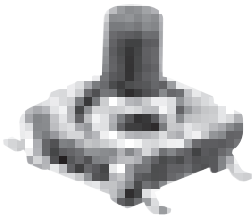
CONTACT RATING: 50mA 12VDC.
CONTACT RESISTANCE: 30m-ohms max.
TRAVEL: 0.30±0.10mm.
LIFE: 80,000 cycles min.
OPERATING FORCE: 250±30gf.

MATERIALS:

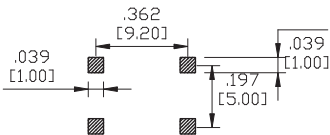
BASE & STEM: Nylon 66.
COVER: Brass.
TERMINAL: Brass.
CONTACT: Silver copper.
O-RING: Silicon.

Specifications and Dimensions subject to change

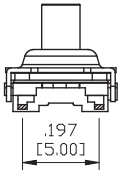
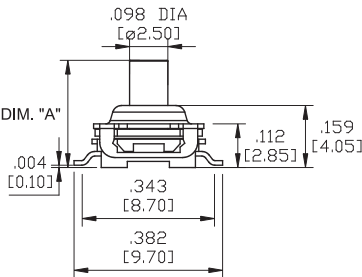
KRSAM-0712



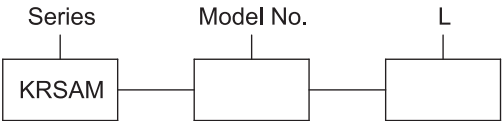
P.C.MOUNTING



L	DIM. "A"
1	.197 [5.00]
2	.276 [7.00]
3	.335 [8.50]



HOW TO ORDER



SPECIFICATIONS:

RATING: 12VDC 50mA.

OPERATING TEMPERATURE: -20°C ~ +70°C.

CONTACT RESISTANCE: 200m-ohms (Initial).

INSULATION RESISTANCE: 100M-ohms MIN.

WITHSTANDING VOLTAGE: 1 minute at 100 VAC.

BOUNCE: 5ms MAX.

ELECTRICAL LIFE: 300,000 times.

OPERATING FORCE: 1st=100gf±30gf, 2nd=260±50gf

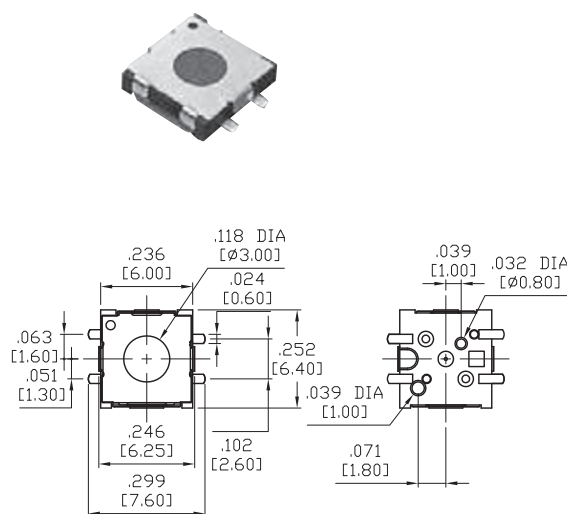
HEAT RESISTANCE:

MANUAL SOLDERING 350°C for 3 sec MAX.

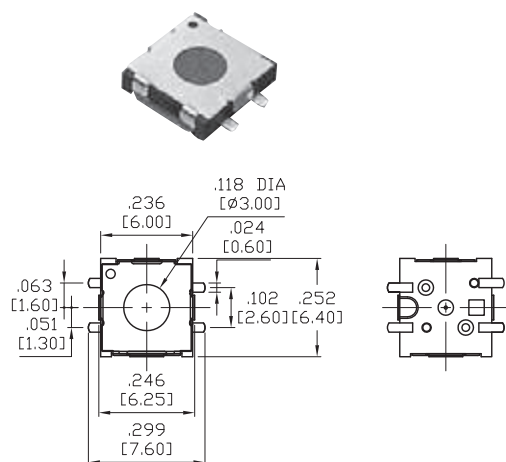
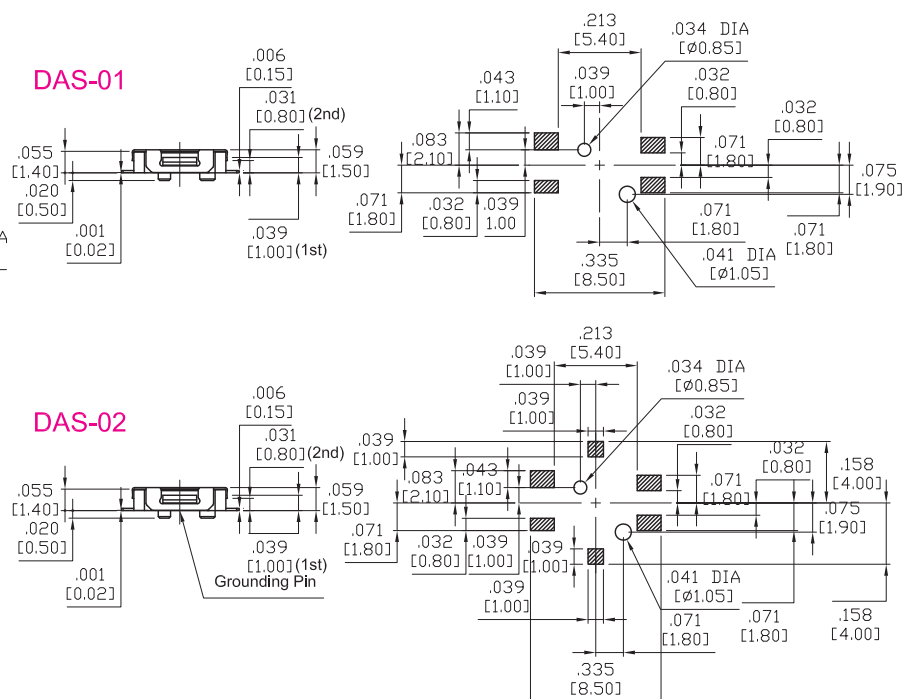
REFLOW SOLDERING 260°C for 5 sec MAX.

PACKING QUANTITY: 2,000 pcs/per reel.

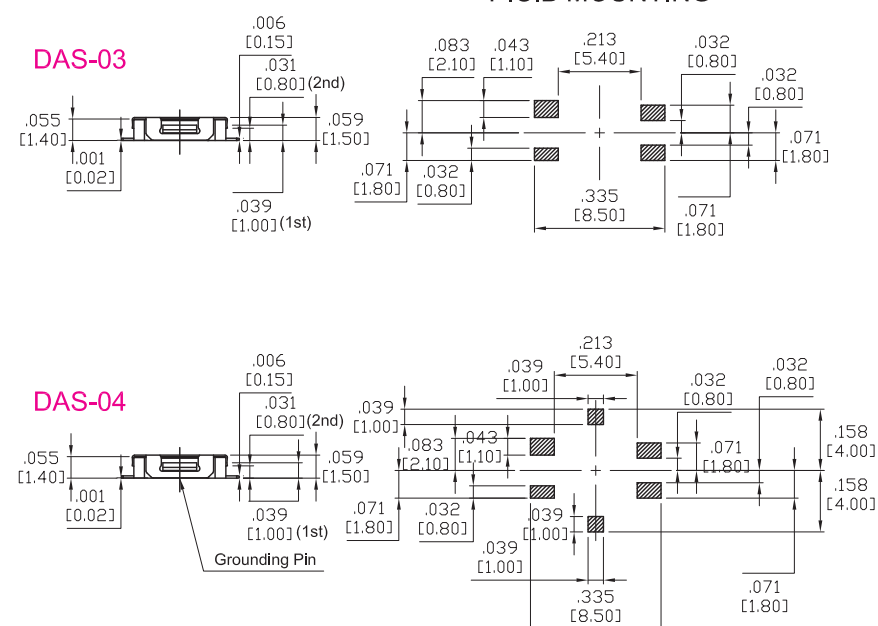
Specifications and Dimensions subject to change



P.C.B MOUNTING



P.C.B MOUNTING



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

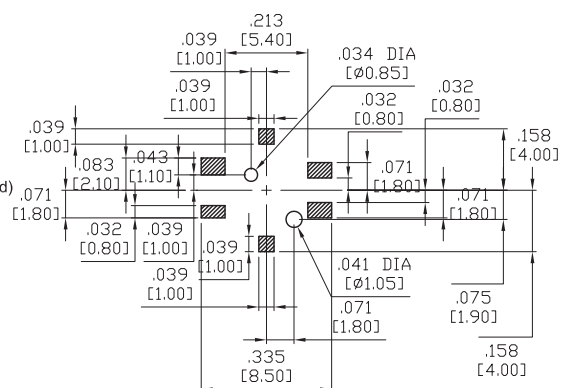
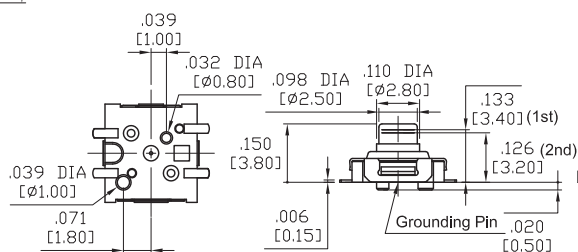
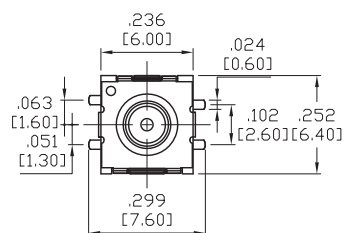
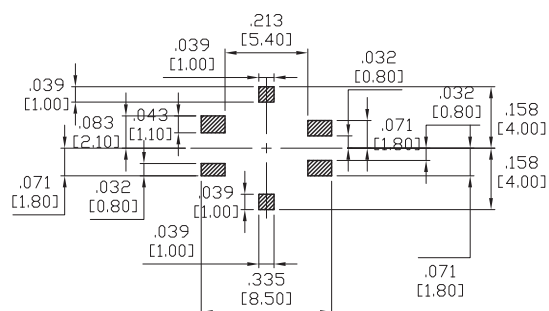
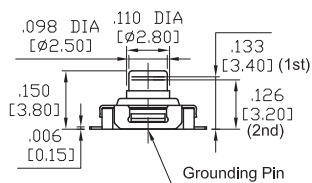
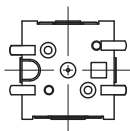
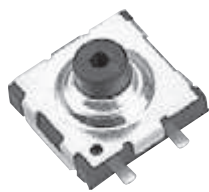
Touch Key

Miscellaneous

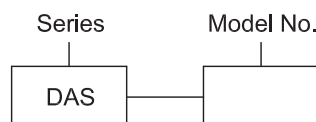
Double Action Switches

Double Action Switches

P.C.B MOUNTING



HOW TO ORDER



SPECIFICATIONS:

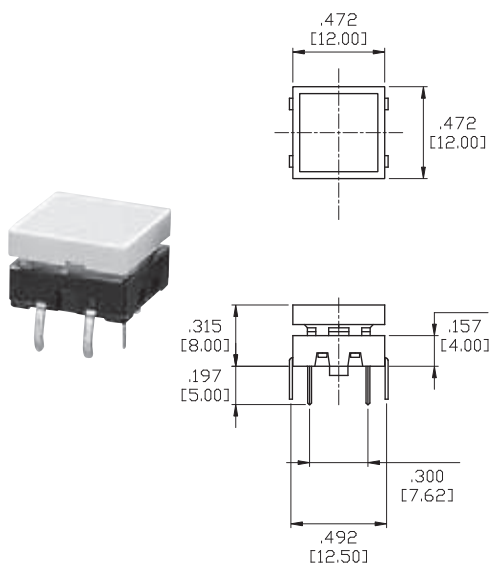
OPERATING TEMPERATURE: -25°C ~ +60°C.
 AMBIENT HUMIDITY: 85%RH max.
 CONTACT ARRANGEMENT: SPST
 CURRENT RATING: 50mA 12VDC.
 LED RATING: 20mA 6V max.
 CONTACT RESISTANCE: 100m-ohms max (initial).
 INSULATION RESISTANCE: 100M-ohms min.
 OPERATING FORCE: 300±50gf max.
 TOTAL TRAVEL: 0.30mm±0.10mm.
 OPERATING LIFE: 5,000,000 cycles min.
 SOLDERING: 260°C @ 3 seconds.

MATERIALS:

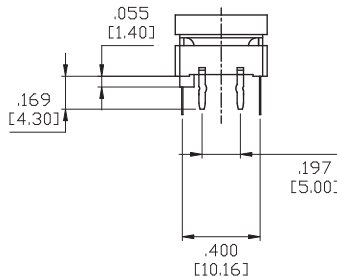
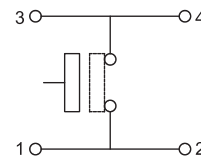
CAP: PC.
 COVER: PC.
 BASE: PA.
 HOUSING: PC.
 LAMP TERMINAL: PBS with Au plated.
 ACT DOME: PBS with Au plated.
 TERMINAL: Brass with Au plated.
 LED: Surface mount chip LED.

Specifications and Dimensions subject to change

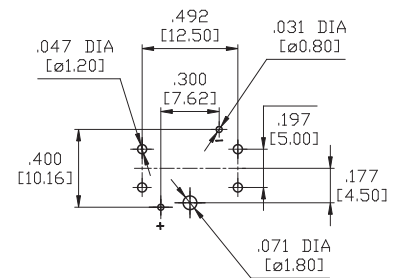
LP-12



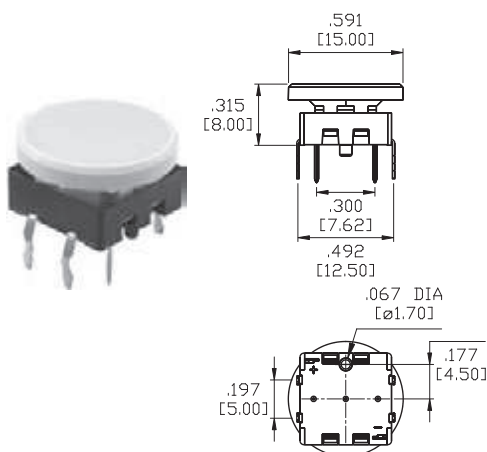
Contact Configuration



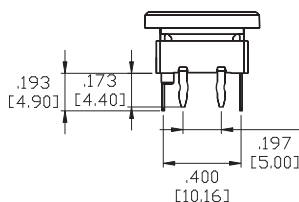
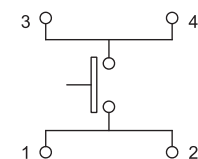
P.C.MOUNTING



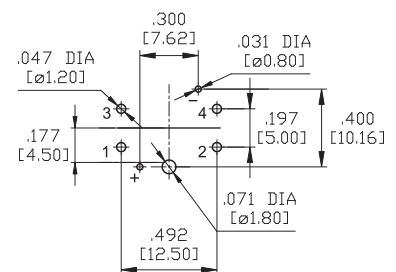
LP-12R



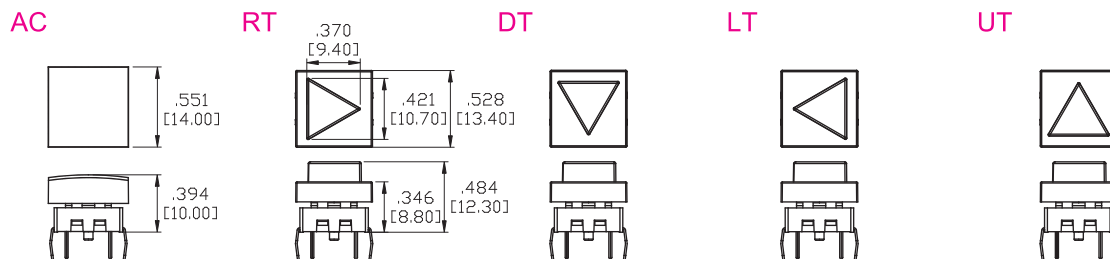
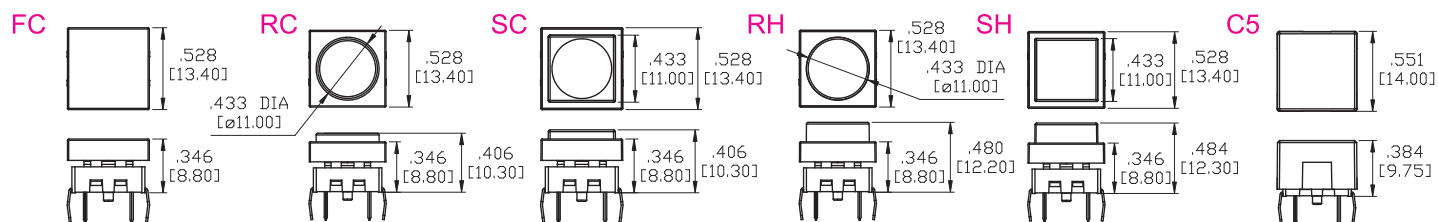
Contact Configuration



P.C.MOUNTING



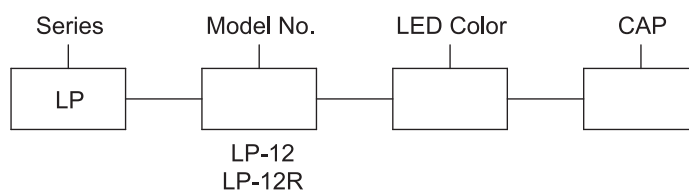
CAP OPTIONS



LED COLORS

Code	LED Color
R	Red
G	Green
Y	Yellow
B	Blue
W	White

HOW TO ORDER



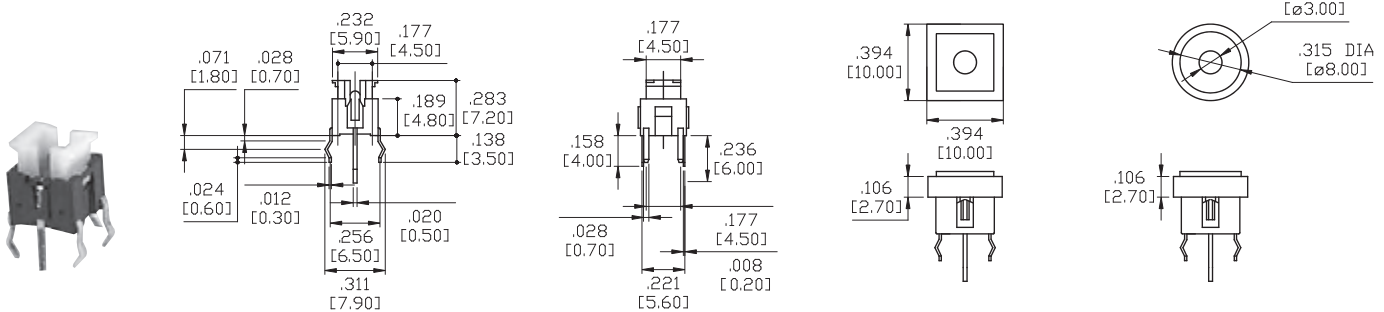
SPECIFICATIONS:

OPERATING TEMPERATURE: -20°C ~ +70°C.
 AMBIENT HUMIDITY: 85%RH max.
 CONTACT ARRANGEMENT: SPST
 RATED VOLTAGE AND CURRENT: 12VDC 50mA.
 LED RATING: 20mA 4V.
 CONTACT RESISTANCE: 100m-ohms max (initial).
 INSULATION RESISTANCE: 100M-ohms min.
 DIELECTRIC STRENGTH: 250VAC for 1 min.
 OPERATING FORCE: 200±50gf max.
 TOTAL TRAVEL: 0.25±0.10mm.
 OPERATING LIFE: 100,000 cycles min.
 MALFUNCTION DURABILITY: 10 to 55 Hz 0.75mm,
 double amplitude during 2 hrs.

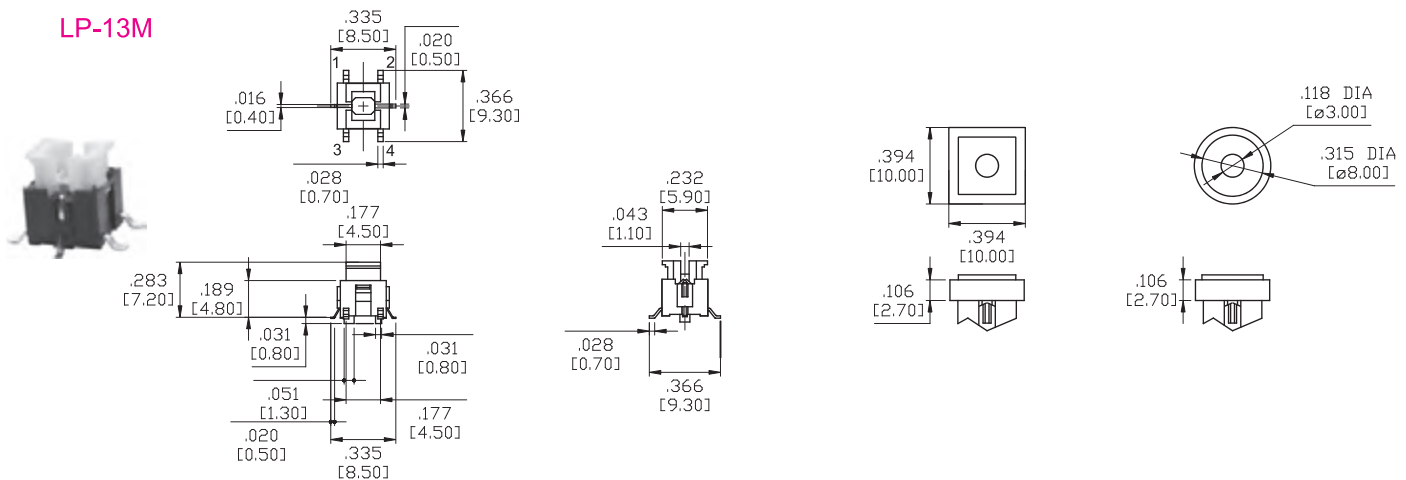
MATERIALS:

CAP: ABS.
 HOUSING: Nylon66+15%gf.
 BASE: PBT.
 MOVABLE BLADE: SUS S01 + AG.
 TERMINAL: Brass + AG.

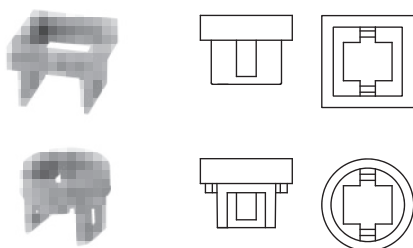
LP-13



LP-13M



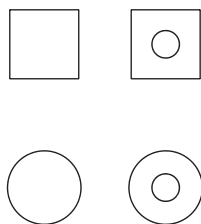
HOUSING & COLOR OPTIONS



Code	Housing Model
A	
B	
E	Without Housing

Code	Color
5	Gray
6	Black
0	Without Housing

CAP & COLOR OPTIONS



Code	CAP Model
A	 Without LED
B	 With LED
C	 Without LED
D	 With LED
E	Without LED

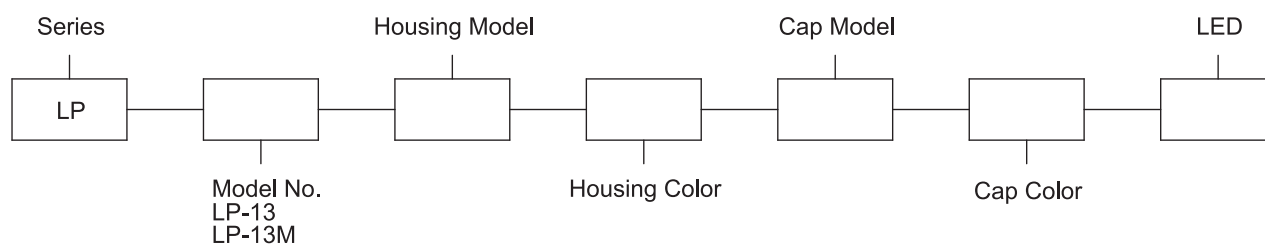
Code	Color
1	Red
2	Green
3	Orange
4	Ivory
5	Gray
6	Black
7	Blue
0	Without CAP

LED COLORS

Code	LED Color
1	Red
2	Green
3	Orange
0	Without LED

Code	LED Color
7	Blue
8	White

HOW TO ORDER



SPECIFICATIONS:

CONTACT RATING: 100mA 30VDC (LPA-M/A).
50mA 12VDC (LPA-T).
ELECTRICAL LIFE: 10,000 cycles (LPA-M/A).
800,000 cycles (LPA-T).
CONTACT RESISTANCE: 100m-ohms max (initial).
INSULATION RESISTANCE: 500VDC 100M-ohms min.
OPERATING TEMPERATURE: 10°C ~ +60°C.
OPERATING FORCE: 200±80gf max. (LPA-M/A).
180±50gf max. (LPA-T).
TOTAL TRAVEL: 2.50mm max. lock 1.50mm (LPA-M/A).
0.30mm±0.20mm (LPA-T).
CIRCUIT: DPDT (LPA-M/A), SPST (LPA-T).

MATERIALS:

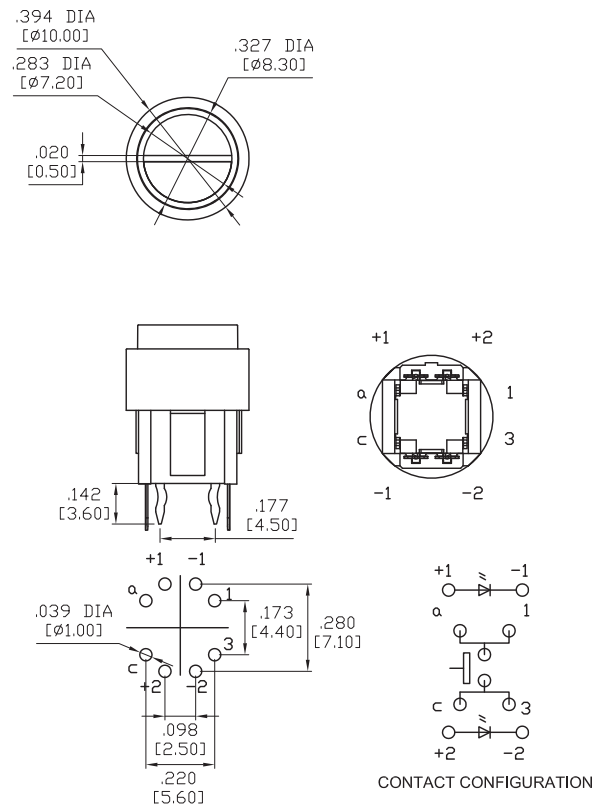
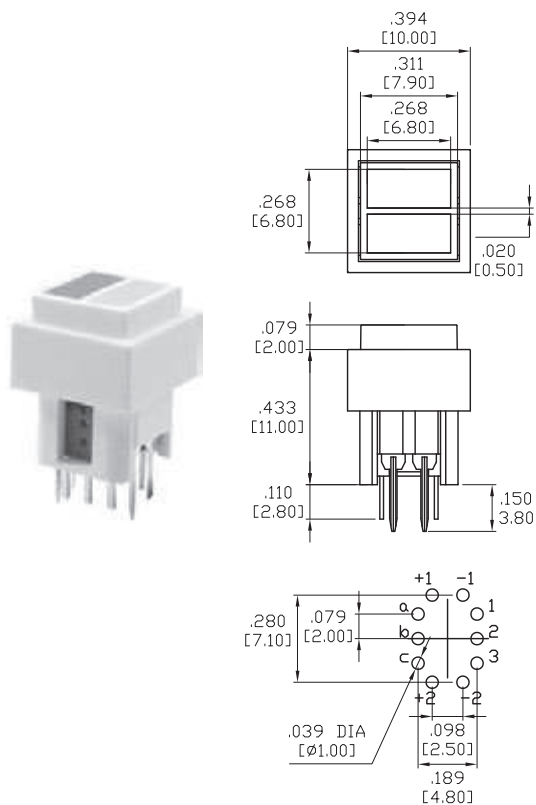
CAP: PC or ABS.
CAP LENS: PC.
HOUSING: PA.
CONTACT: PBS Ag plated (LPA-M/A).
ACT DOME: SUS with Ag plating (LPA-T).
LED TERMINAL: PBS with Au plated.
TERMINAL: Brass Ag plated.

Specifications and Dimensions subject to change

LPA-M MOMENTARY

LPA-A ALTERNATE

LPA-T TACTILE



Drawing Scale: 2 / 1

HOUSING & COLOR OPTIONS

Code	Housing Model
A	Square
B	Round

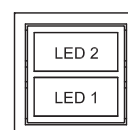
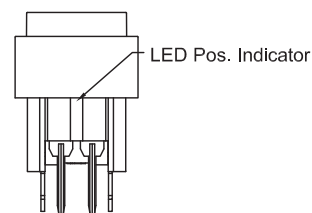
CAP & COLOR OPTIONS

Code	CAP Model	
F		With LED
G		With LED

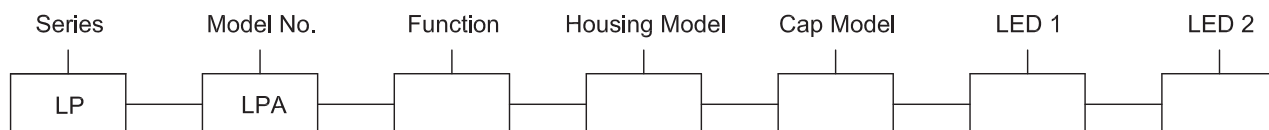
LED COLORS

Code	LED Color
R	Red
G	Green
Y	Yellow
B	Blue
W	White

Code	LED Color
0	Without LED



HOW TO ORDER



T - Tactile
M - Momentary
A - Alternate

SPECIFICATIONS:

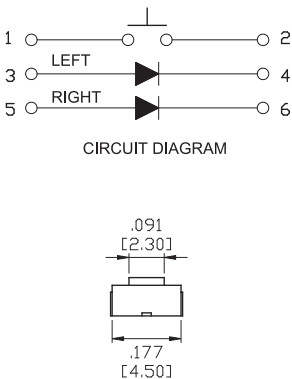
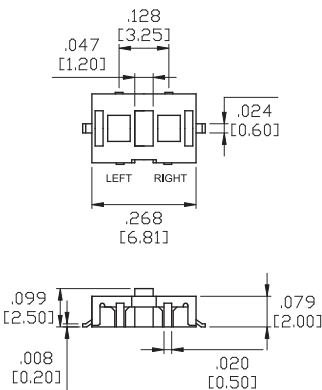
CONTACT RATING: 12VDC, 50mA max. 1VDC, 10uA min.
ELECTRICAL LIFE: 30,000 cycles.
CONTACT RESISTANCE: 500m-ohms max.
INSULATION RESISTANCE: 100VDC 100M-ohms min.
OPERATING FORCE: 160+75/-30 gf.
OPERATING TEMPERATURE: -20°C ~ +70°C.
FUNCTION: Momentary action.
CONTACT ARRANGEMENT: SPST, N.O.
IR SOLDERING: 240°C for 3sec. max.
PACKAGING: 2,900pcs per tape reel.

MATERIALS:

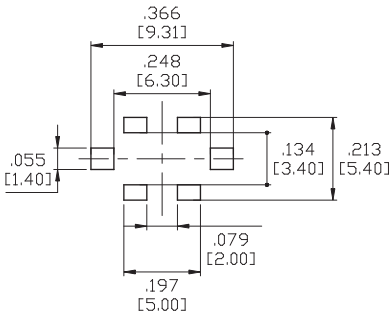
COVER: PA9T + GF.
ACTUATOR: LCP + GF.
BASE FRAME: LCP + GF.
TERMINAL: Silver plating.

Specifications and Dimensions subject to change

LP14



SURFACE MOUNTING

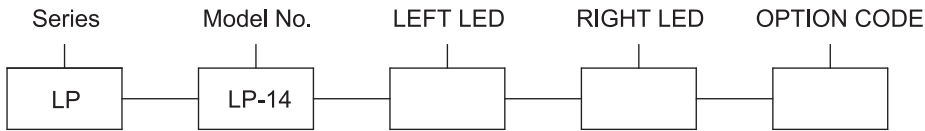


LED COLORS

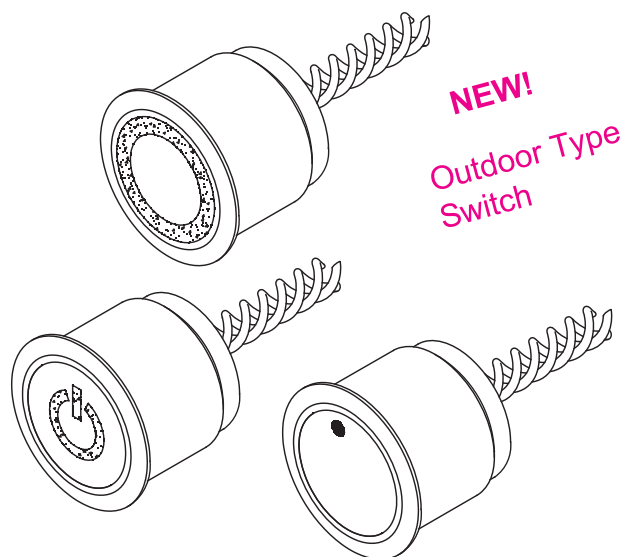
Code	LED Color
R	Red
G	Green
Y	Yellow
B	Blue
W	White

Code	LED Color
0	Without LED

HOW TO ORDER



U - Ultra LED Brightness



SPECIFICATIONS:

WORKING VOLTAGE: 5~30VDC.
 CONTACT RATING: 1.5A @ 5~30VDC.
 CONTACT RESISTANCE: 160m-ohms max.
 ELECTRICAL LIFE: 1 million cycles at full load.
 OPERATING TEMPERATURE: -40°C to +85°C.
 INSULATION RESISTANCE: 600VDC 10M-ohms min.
 ESD RESISTANCE: ± 2KV (25 contact) / ± 8KV (25 air discharge).
 IMPACT RESISTANCE PROTECTION: IK02 (PC) / IK10 (Metal).
 WATER-PROOF PROTECTION: IP68 (Without load).
 PANEL WATER-PROOF PROTECTION: IP66.
 UV RESISTANCE: UVA / UVB.

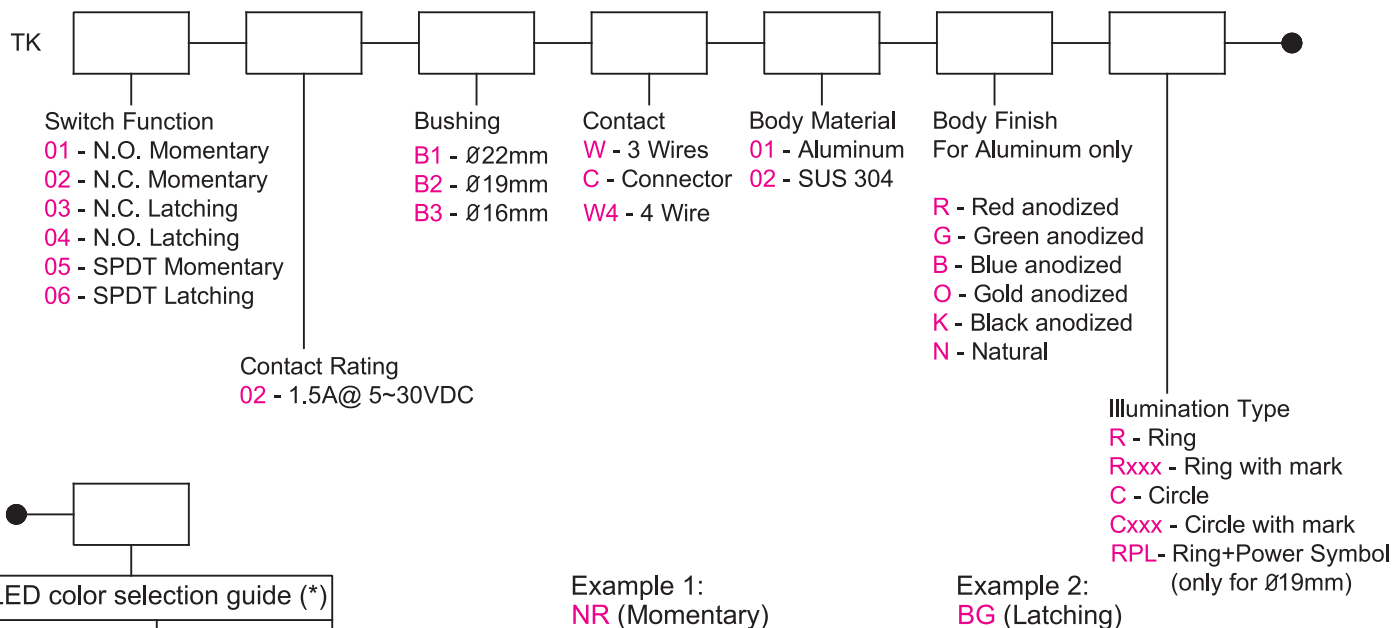
MATERIALS:

KEY: Stainless steel / Aluminum.
 LENS: PC (UL 94V-0).
 HOUSING: Stainless steel / Aluminum.
 CABLE: UL1007 22 AWG.
 TERMINAL: Brass silver plated.
 PANEL SEAL: EVA.

Specifications and Dimensions subject to change

If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



LED color selection guide (*)	
1st color	2nd color
R : Red	R : Red
G : Green	G : Green
B : Blue	B : Blue
A : Amber	A : Amber
W : White (**)	W : White (**)
N : None	N : None

(*) For example

NR : None / Red (Example 1)

BG : Blue / Green (Example 2)

(**) This is light-blue white

Example 1:
NR (Momentary)

No.	Behavior	Color
0	Power ON	None
1	Touch	Red
2	Release Touch	None
3	Loop No.1	

Example 2:
BG (Latching)

No.	Behavior	Color
0	Power ON	Blue
1	Touch	Green
2	Release Touch	Green
3	Touch	Blue
4	Release Touch	Blue
5	Loop No.1	

SWITCH FUNCTIONS

※ Power ON Status

	Non-Illuminated	1 LED		2 LED
NO - MOM				
NC - MOM				
NC - NO Latching				
NO - NC Latching				
SPDT Momentary				
SPDT Latching				

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

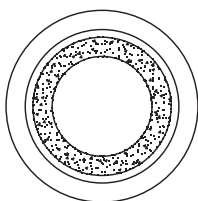
Touch Key

Miscellaneous

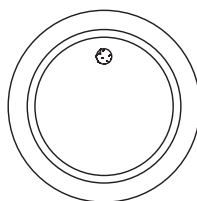
ILLUMINATION TYPES

Mark options Ordering Code									
1	2	3	4	5	6	7	8	9	10
001	002	003	004	005	006	007	008	009	010
					OK	POWER	STOP	ON	OFF
011	012	013	014	015	016	017	018	019	020
021	022	023	024	025	026	027	028	029	030

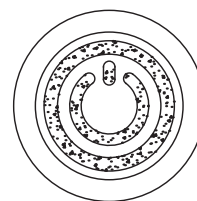
Illuminated Ring



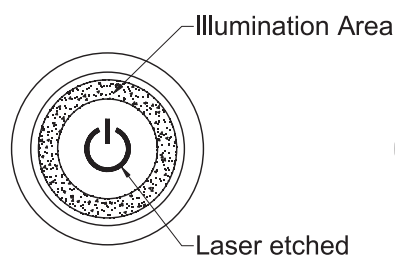
Illuminated Circle



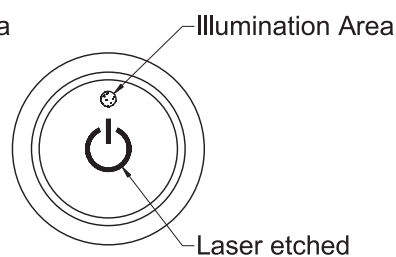
Illuminated Ring+Power Symbol



* Example of Ring / Circle type with mark



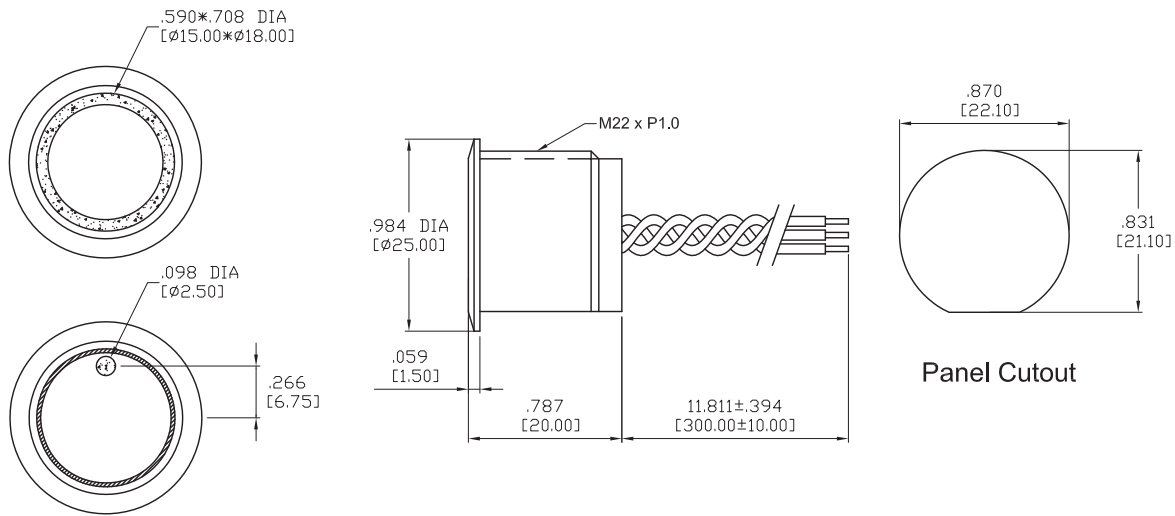
Part Code: R011



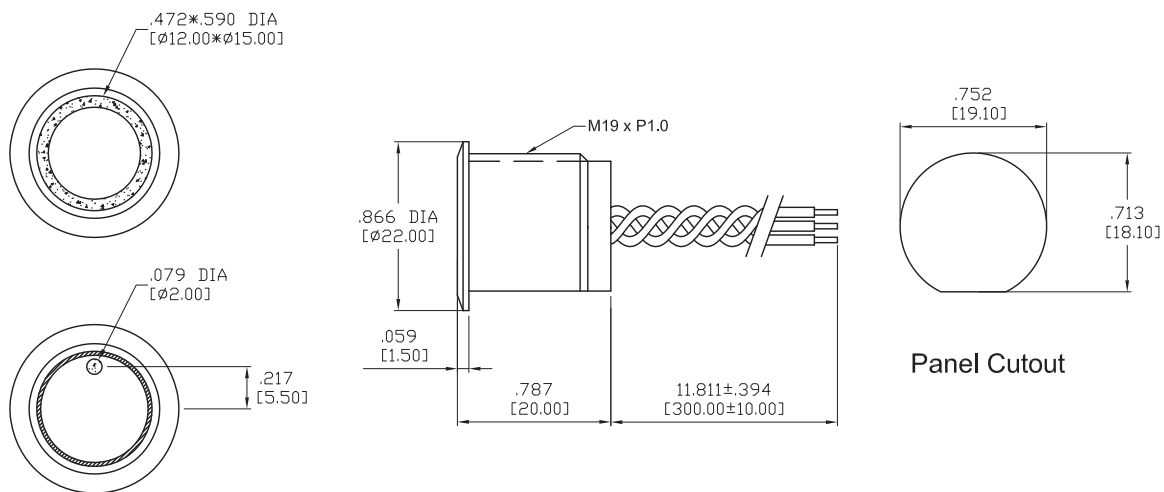
Part Code: C011

* Please consult factory for a customized illumination option.

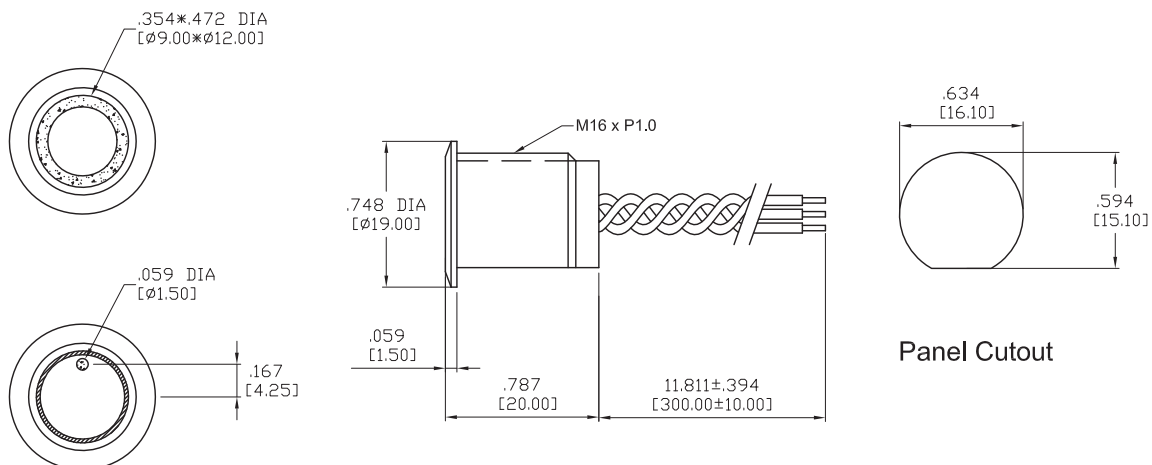
Ø22mm Mounting



Ø19mm Mounting



Ø16mm Mounting



Toggle

Rocker

Slide

Pushbutton

AV

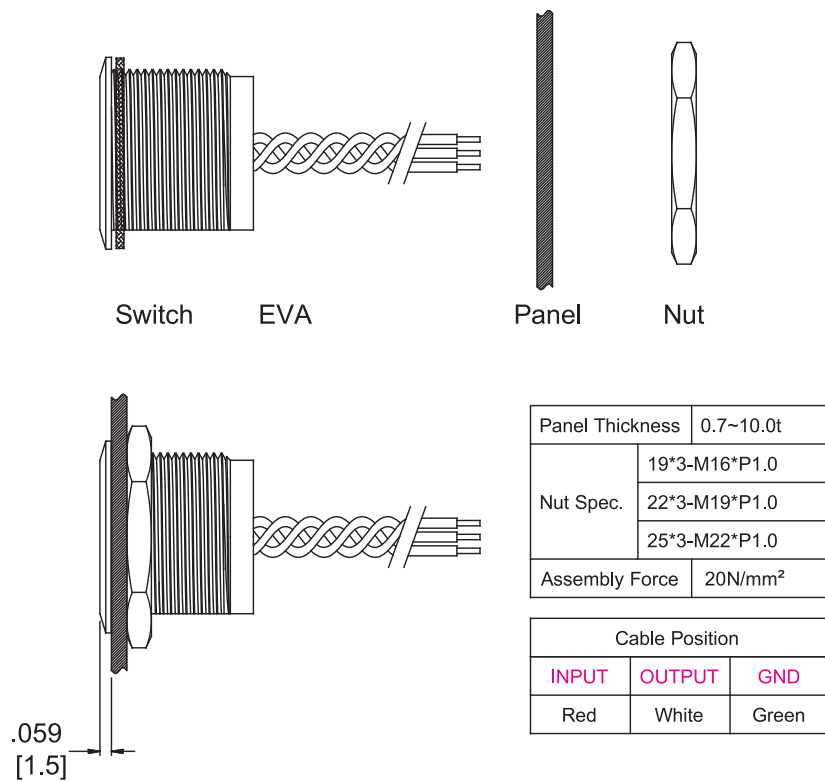
Rotary

Tact

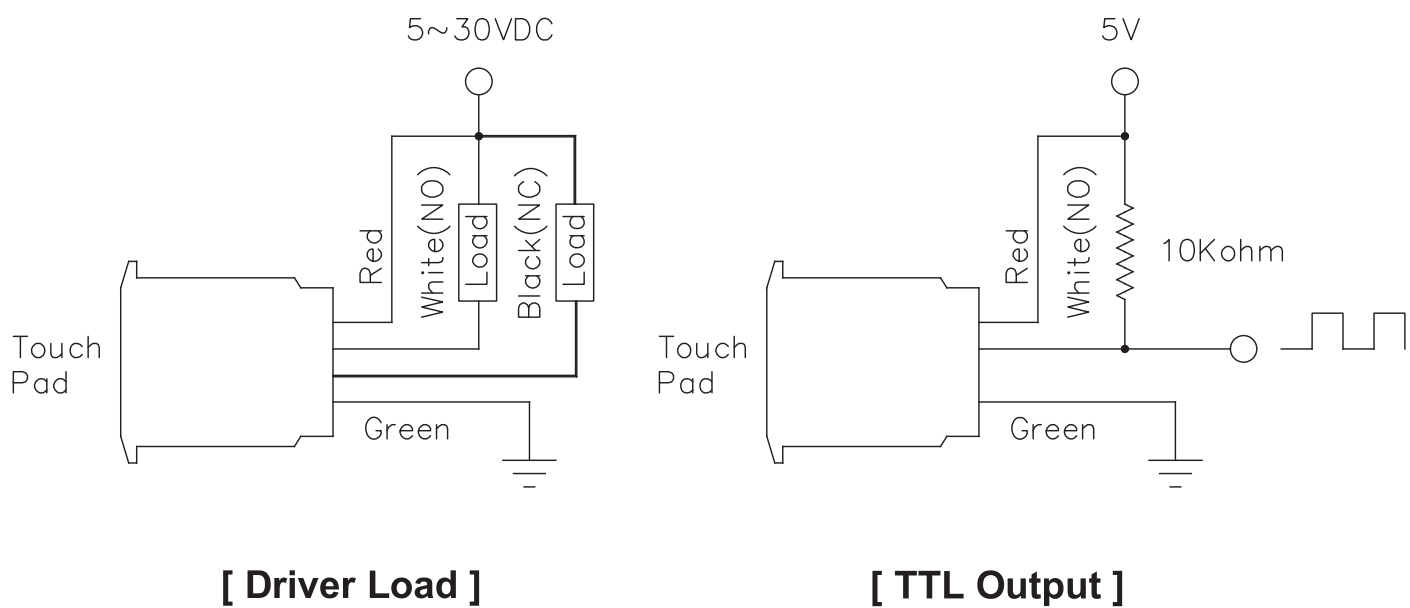
Touch Key

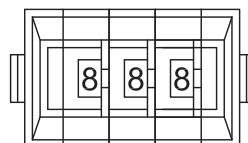
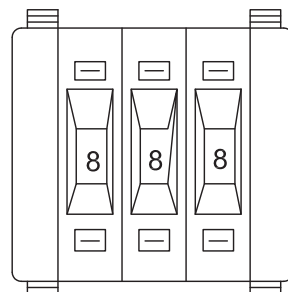
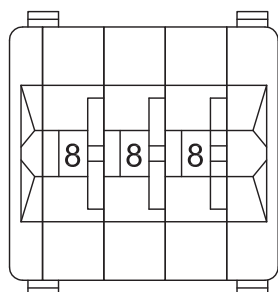
Miscellaneous

Assembly Drawing



Application





SPECIFICATIONS:

ELECTRICAL CAPACITY:

- a. Operating Voltage: 50VAC/28VDC maximum.
- b. Switching Current: 100mA maximum.
- c. Carrying Current: 1A maximum (500mA max. for small size series).

Contact Resistance: (Per Method 307 of MIL-STD-202)
200m Ω maximum.

INSULATION RESISTANCE: (Per Method 302 of Mil-STD-202).

- a. Between common terminal and any output: 10M Ω minimum.
- b. Between each output and non-current-carrying part: 1,000M Ω minimum.

DIELECTRIC STRENGTH: (Per Method 301 of MIL-STD-202).

- a. Between common terminal and any output: 800VAC 1 min.
- b. Between each output and non-current-carrying part: 1,000VAC 1 min.

OPERATING TEMPERATURE: -20°C to +65°C.

Life:

- a. Mechanical: 200,000 detent operations.
- b. Electrical: 100,000 detent operations.

MATERIALS:

HOUSING, BLANKS END CAPS, WHEELS, PUSHKEY: Thermoplastic.

MOVING CONTACTS: Precious metal on phosphor bronze.

PRINTED CIRCUIT BOARDS: Hard gold plated over nickel plated on 0.79mm thickness epoxy laminate.

Toggle

Rocker

Slide

Pushbutton

AV

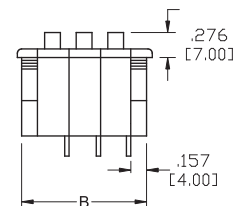
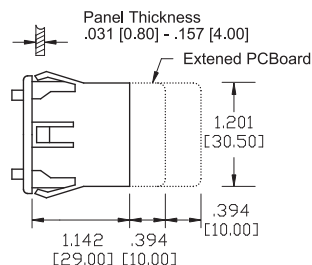
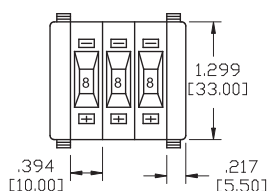
Rotary

Tact

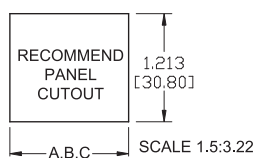
Touch Key

Miscellaneous

PF21



PANEL MOUNTING



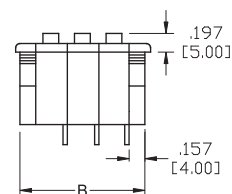
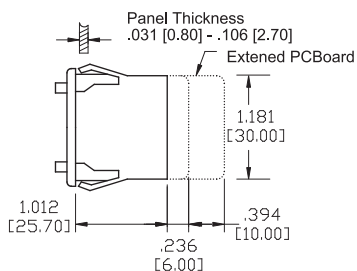
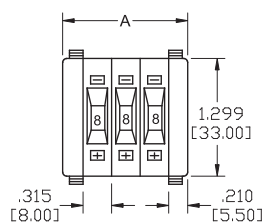
$$A = 10.00(.394) * N + 11.00(.433)$$

$$B = 10.00(.394) * N + 8.00(.315)$$

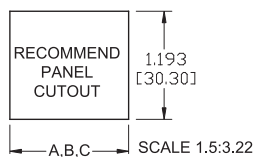
$$C = 10.00(.394) * N + 8.30(.327)$$

N = Number of Sections

PF31



PANEL MOUNTING



$$A = 8.00(.315) * N + 11.00(.433)$$

$$B = 8.00(.315) * N + 8.00(.315)$$

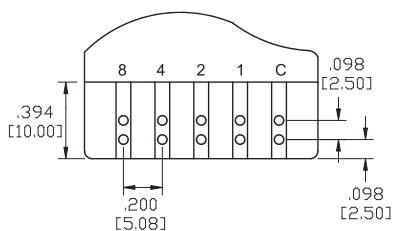
$$C = 8.00(.315) * N + 8.30(.327)$$

N = Number of Sections

TERMINATION OPTIONS

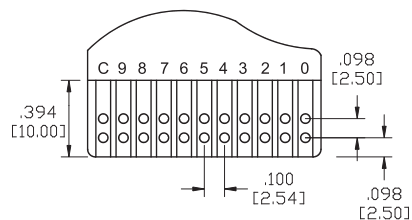
M1

BCD



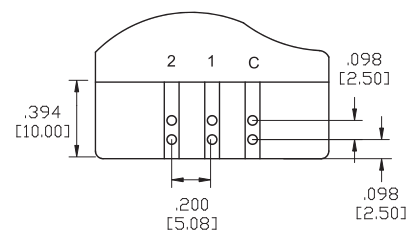
M2

DECIMAL

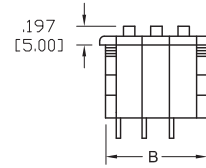
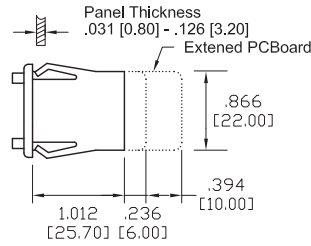
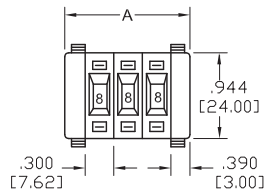


M3

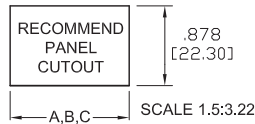
REPEATING



PF44



PANEL MOUNTING



$$A = 7.62(.300) * N + 6.00(.236)$$

$$B = 7.62(.300) * N + 3.00(.118)$$

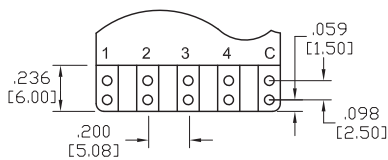
$$C = 7.62(.300) * N + 3.30(.130)$$

N = Number of Sections

TERMINATION OPTIONS

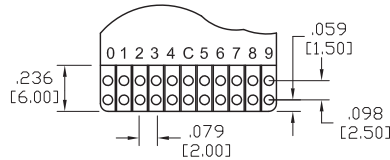
M1

BCD



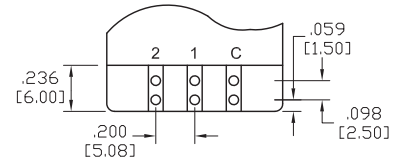
M2

DECIMAL

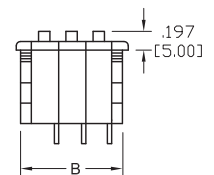
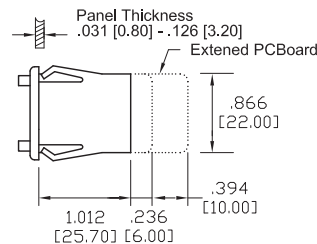
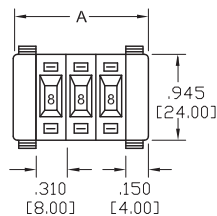


M3

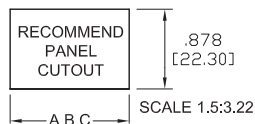
REPEATING



PF49



PANEL MOUNTING



$$A = 8.00(.315) * N + 11.00(.433)$$

$$B = 8.00(.315) * N + 8.00(.315)$$

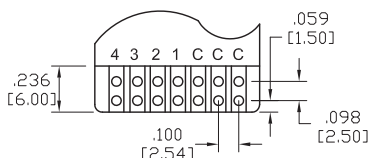
$$C = 8.00(.315) * N + 8.30(.327)$$

N = Number of Sections

TERMINATION OPTIONS

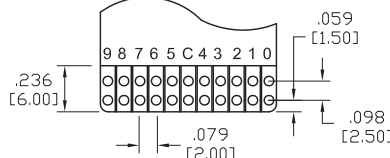
M1

BCD



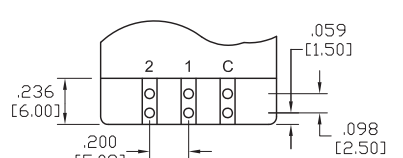
M2

DECIMAL

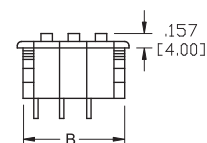
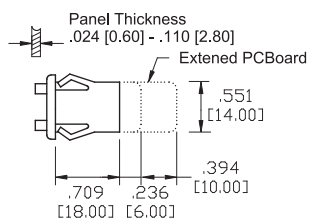
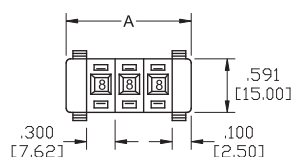


M3

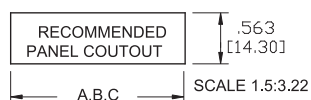
REPEATING



PF52



PANEL MOUNTING



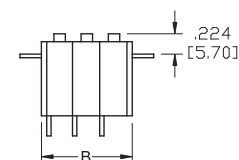
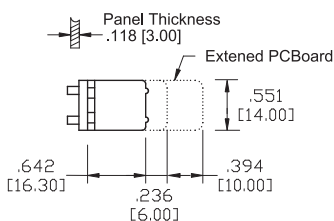
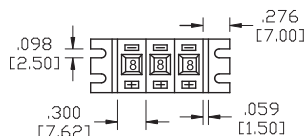
$$A = 7.62(.300) * N + 5.00(.197)$$

$$B = 7.62(.300) * N + 3.00(.118)$$

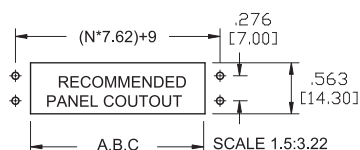
$$C = 7.62(.300) * N + 3.30(.130)$$

N = Number of Sections

PR52



PANEL MOUNTING



$$A = 7.62(.300) * N + 15.00(.591)$$

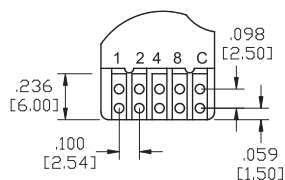
$$B = 7.62(.300) * N + 3.00(.118)$$

$$C = 7.62(.300) * N + 3.30(.130)$$

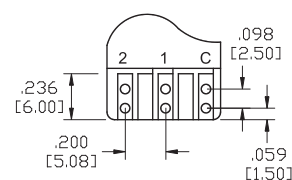
N = Number of Sections

TERMINATION OPTIONS

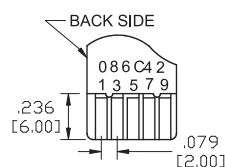
M1 BCD



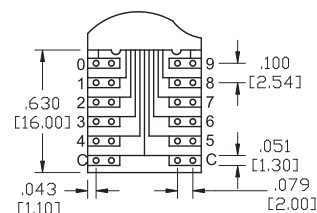
M2 REPEATING



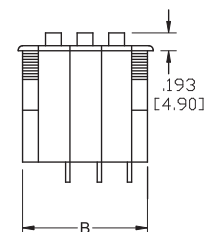
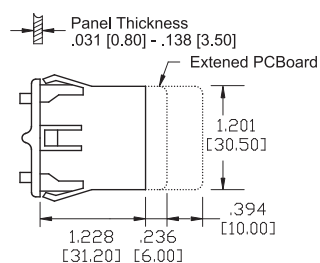
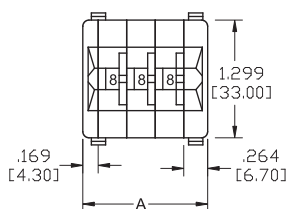
M3 DOUBLE SIDED PCB DECIMAL



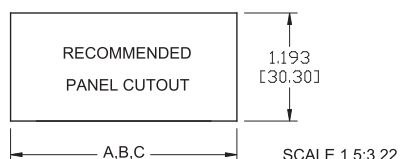
M4 DECIMAL



TF31



PANEL MOUNTING



$$A = 8.00(.315) * N + 11.00(.433)$$

$$B = 8.00(.315) * N + 8.00(.315)$$

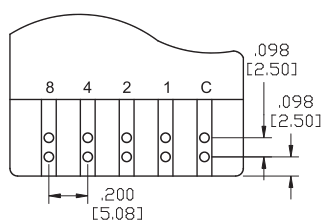
$$C = 8.00(.315) * N + 8.30(.327)$$

N = Number of Sections

TERMINATION OPTIONS

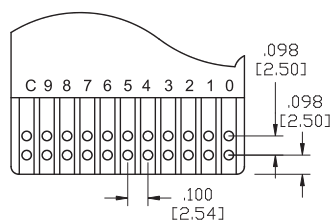
M1

BCD



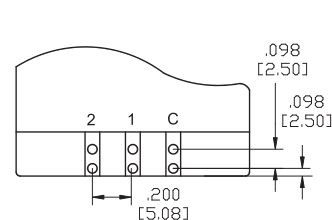
M2

DECIMAL

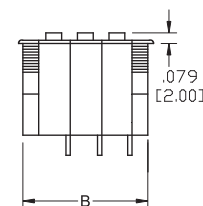
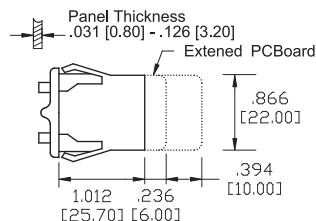
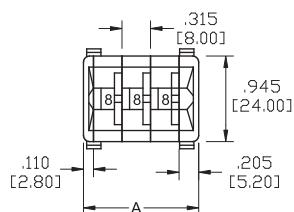


M3

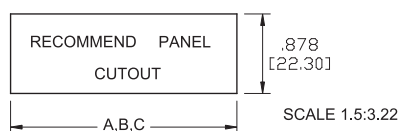
REPEATING



TF41



PANEL MOUNTING



$$A = 8.00(.315) * N + 8.00(.315)$$

$$B = 8.00(.315) * N + 6.00(.236)$$

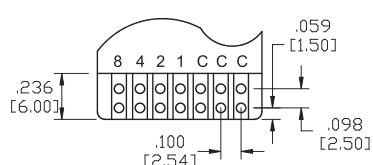
$$C = 8.00(.315) * N + 6.30(.248)$$

N = Number of Sections

TERMINATION OPTIONS

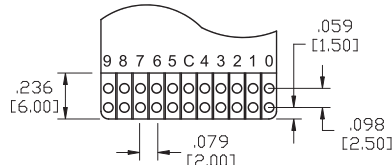
M1

BCD



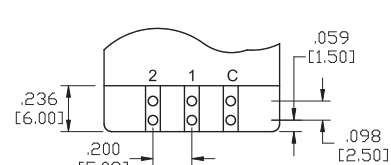
M2

DECIMAL

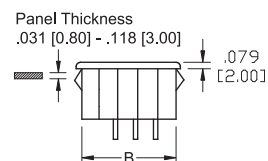
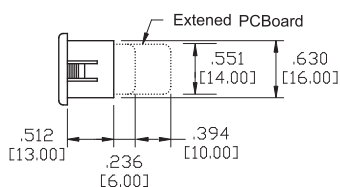
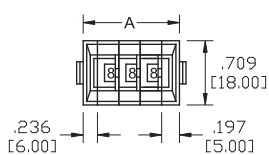


M3

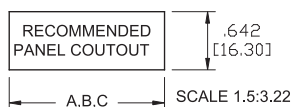
REPEATING



TF51



PANEL MOUNTING



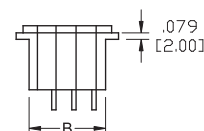
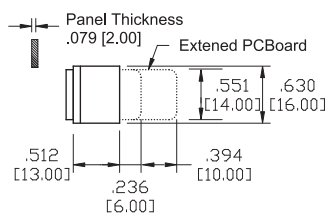
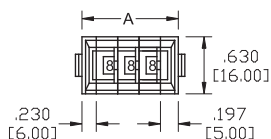
$$A = 6.00(.236) * N + 10.00 \text{ or } 8.00(.394 \text{ or } .315)$$

$$B = 6.00(.236) * N + 8.00 \text{ or } 6.00(.315 \text{ or } .236)$$

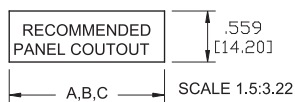
$$C = 6.00(.236) * N + 8.30 \text{ or } 6.30(.327 \text{ or } .248)$$

N = Number of Sections

TR51



PANEL MOUNTING



$$A = 6.00(.236) * N + 8.00(.315)$$

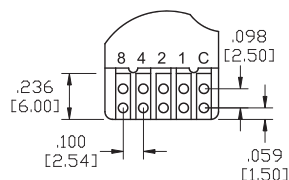
$$B = 6.00(.236) * N + 6.00(.236)$$

$$C = 6.00(.236) * N + 6.30(.248)$$

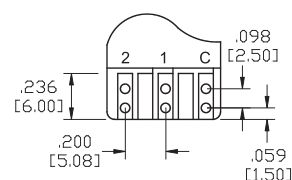
N = Number of Sections

TERMINATION OPTIONS

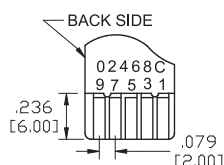
M1 BCD



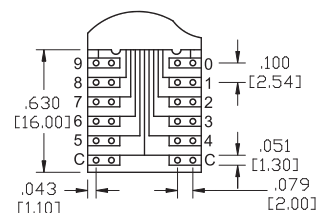
M2 REPEATING



M3 DOUBLE SIDED PCB DECIMAL

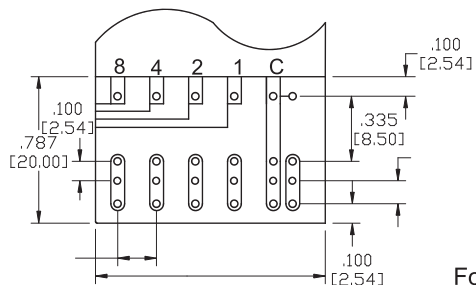


M4 DECIMAL



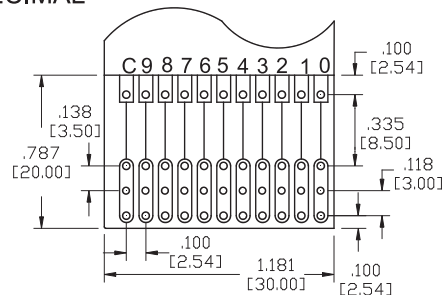
TERMINATION OPTIONS

M4 BCD

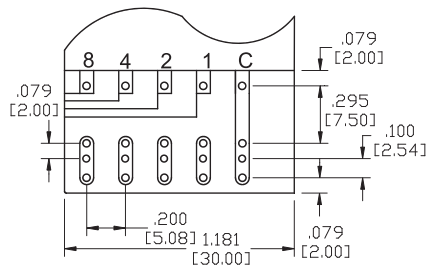


For PF21 Only

M5 DECIMAL

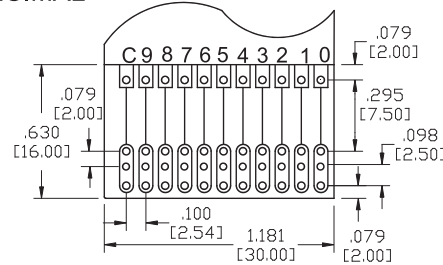


M4 BCD

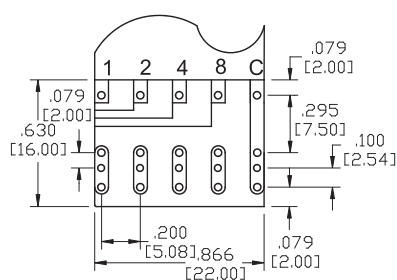


For PF31 TF31 Only

M5 DECIMAL

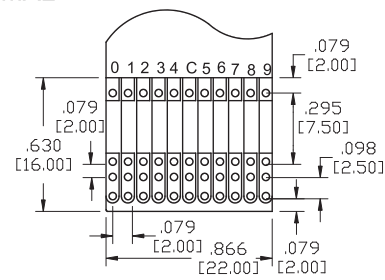


M4 BCD

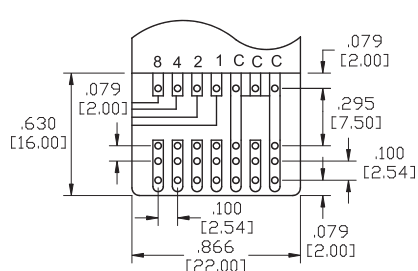


For PF44 Only

M5 DECIMAL

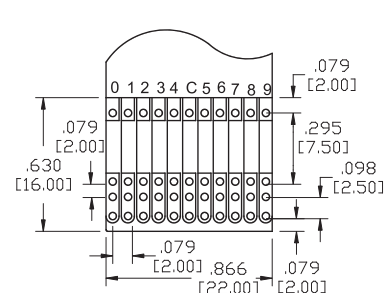


M4 BCD

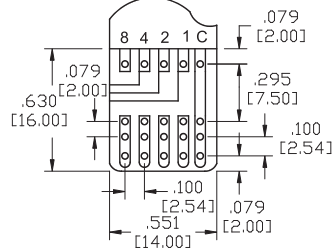


For PF49 TF41 Only

M5 DECIMAL

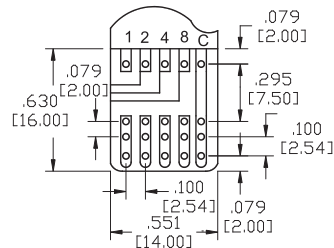


M5 BCD



For TR51 TF51 Only

M5 BCD



For PF52 PR52 Only

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous

FUNCTION CODES

10

BCD-7 POSITION

WHEEL	C connected to terminals			
	1	2	4	C
0				●
1	●			●
2		●		●
3	●	●		●
4			●	●
5	●		●	●
6		●	●	●

11

BCD-8 POSITION

WHEEL	C connected to terminals			
	1	2	4	C
0				●
1	●			●
2		●		●
3	●	●		●
4			●	●
5	●		●	●
6		●	●	●
7	●	●	●	●

12

BCD-10 POSITION

WHEEL	C connected to terminals				
	1	2	4	8	C
0					●
1	●				●
2		●			●
3	●	●			●
4			●		●
5	●		●		●
6		●	●		●
7	●	●	●		●
8				●	●
9	●			●	●

13

BCD-16 POSITION

WHEEL	C connected to terminals				
	1	2	4	8	C
0					●
1	●				●
2		●			●
3	●	●			●
4			●		●
5	●		●		●
6		●	●		●
7	●	●	●		●
8				●	●
9	●			●	●
10		●		●	●
11	●	●		●	●
12			●	●	●
13	●		●	●	●
14		●	●	●	●
15	●	●	●	●	●

14

BCD-16 POSITION

WHEEL	C connected to terminals				
	1	2	4	8	C
0					●
1	●				●
2		●			●
3	●	●			●
4			●		●
5	●		●		●
6		●	●		●
7	●	●	●		●
8				●	●
9	●			●	●
A		●		●	●
B	●	●		●	●
C			●	●	●
D	●		●	●	●
E		●	●	●	●
F	●	●	●	●	●

22

DECIMAL-10 POSITION

WHEEL	C connected to terminals										
	0	1	2	3	4	5	6	7	8	9	C
0	●										●
1		●									●
2			●								●
3				●							●
4					●						●
5						●					●
6							●				●
7								●			●
8									●		●
9										●	●

31

BCD-10-COMPLEMENT POS.

WHEEL	C connected to terminals				
	1	2	4	8	C
0	●	●	●	●	●
1		●	●	●	●
2	●		●	●	●
3		●		●	●
4	●	●		●	●
5		●		●	●
6	●			●	●
7				●	●
8	●	●	●		●
9		●	●		●

51

+/- REPEATING

WHEEL	C connected to terminals		
	1	2	C
+	●		●
-		●	●
+	●		●
-		●	●
+	●		●
-		●	●
+	●		●
-		●	●
+	●		●
-		●	●

52

0/1 REPEATING

WHEEL	C connected to terminals		
	1	2	C
0	●		●
1		●	●
0	●		●
1		●	●
0	●		●
1		●	●
0	●		●
1		●	●
0	●		●
1		●	●

53

0/5 REPEATING

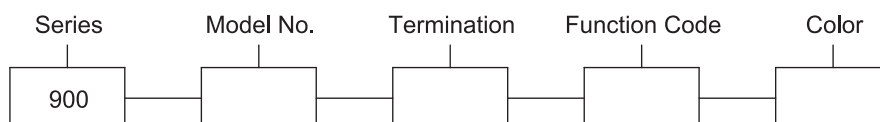
WHEEL	C connected to terminals		
	1	2	C
0	●		●
5		●	●
0	●		●
5		●	●
0	●		●
5		●	●
0	●		●
5		●	●
0	●		●
5		●	●

COLOR OPTIONS

Colors	No.	1	2	3	4	5	6	7	8	9	0
Parts											
Housing		B	B	B	G	G	G	I	I	I	
Wheel		B	B	R	B	B	R	B	B	R	
Character		W	W	W	W	W	W	W	W	W	
Push key		B	I	B	B	G	B	I	B	I	

B: Black
G: Gray
I: Ivory
R: Red
W: White

HOW TO ORDER

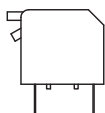
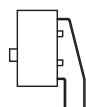
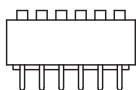


SPECIFICATIONS:

NON-SWITCHING RATING: 100mA, 50VDC.
 SWITCHING RATING: 25mA, 24VDC.
 CONTACT RESISTANCE: 50mΩ max. initial.
 ELECTRICAL LIFE: 2,000 operations.
 INSULATION RESISTANCE: 500VDC 1minute±1sec. 100MΩ min.
 DIELECTRIC STRENGTH: 500VAC for 1minute.
 OPERATING TEMPERATURE: -20°C to +70°C
 SOLDERING TEMPERATURE: 260°C for 5±1sec.

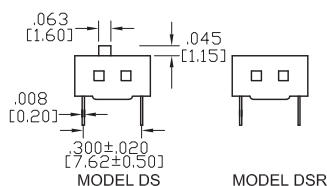
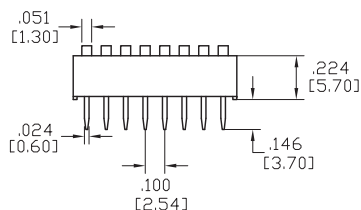
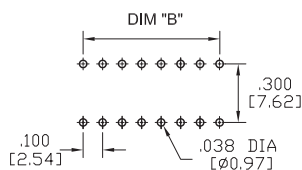
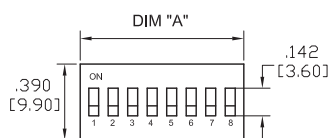
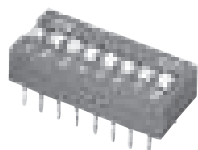
MATERIALS:

COVER: PBT, UL 94V-0, red standard.
 ACTUATOR: PBT, UL 94V-0, white standard.
 TERMINAL: Phosphor bronze, gold plated.
 CONTACT: Phosphor bronze, gold plated.
 BASE: PBT, UL 94V-0, black standard.
 TAPE: Blended silicone and rubber.



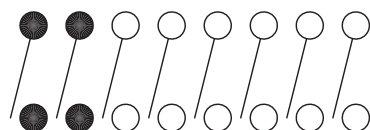
Specifications and Dimensions subject to change

DS(R)

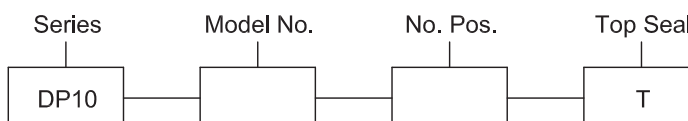


MODEL-POS. NO.	DIM "A"	DIM "B"
DS(R)-02	.239 [6.08]	.100 [2.54]
DS(R)-03	.351 [8.92]	.200 [5.08]
DS(R)-04	.439 [11.16]	.300 [7.62]
DS(R)-05	.539 [13.70]	.400 [10.16]
DS(R)-06	.639 [16.24]	.500 [12.70]
DS(R)-07	.751 [19.08]	.600 [15.24]
DS(R)-08	.839 [21.32]	.700 [17.78]
DS(R)-09	.951 [24.16]	.800 [20.32]
DS(R)-10	1.039 [26.40]	.900 [22.86]
DS(R)-12	1.239 [31.48]	1.100 [27.94]

SCHEMATIC



HOW TO ORDER



Toggle

Rocker

Slide

Pushbutton

AV

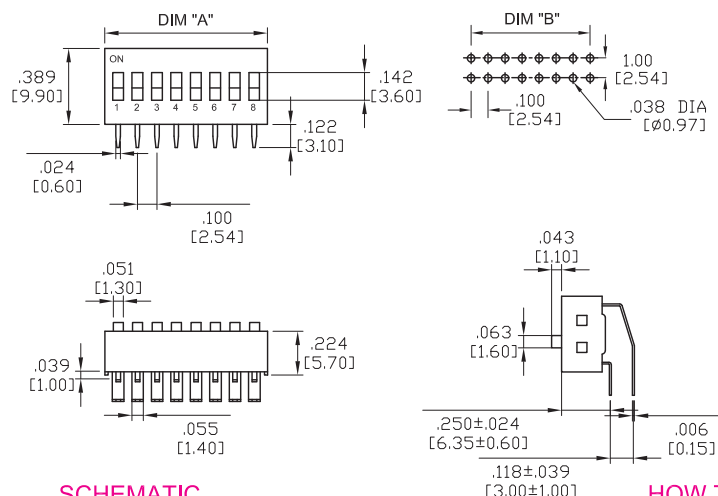
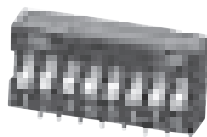
Rotary

Tact

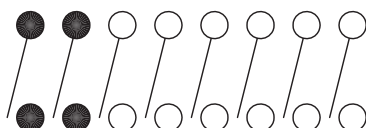
Touch Key

Miscellaneous

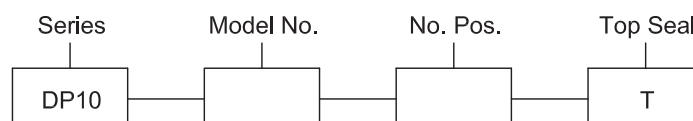
DA



SCHEMATIC

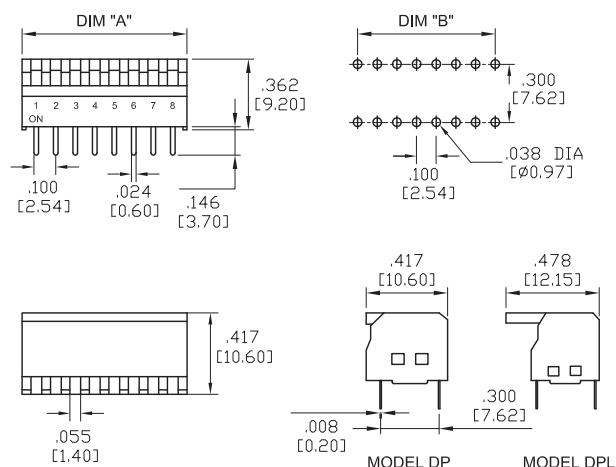
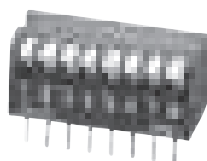


HOW TO ORDER

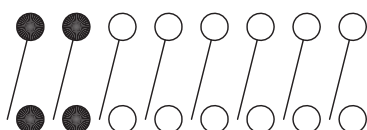


MODEL-POS. NO.	DIM "A"	DIM "B"
DA-02	.239 [6.08]	.100 [2.54]
DA-03	.351 [8.92]	.200 [5.08]
DA-04	.439 [11.16]	.300 [7.62]
DA-05	.539 [13.70]	.400 [10.16]
DA-06	.639 [16.24]	.500 [12.70]
DA-07	.751 [19.08]	.600 [15.24]
DA-08	.839 [21.32]	.700 [17.78]
DA-09	.951 [24.16]	.800 [20.32]
DA-10	1.039 [26.40]	.900 [22.86]
DA-12	1.239 [31.48]	1.100 [27.94]

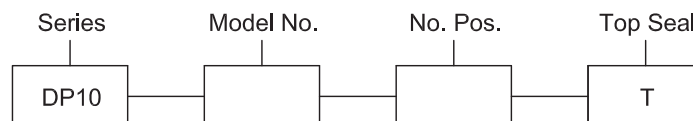
DP(L)



SCHEMATIC

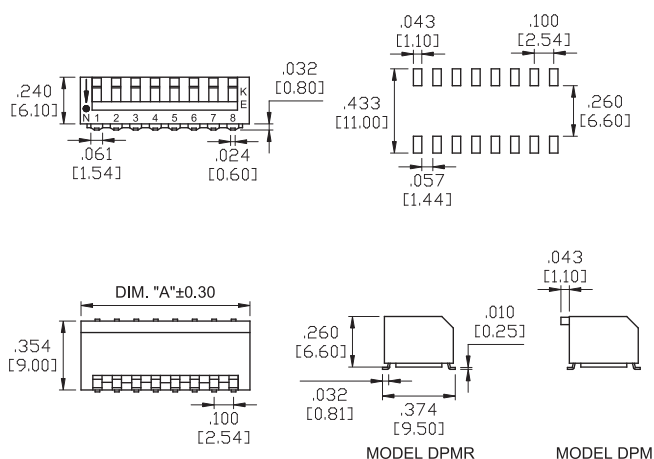
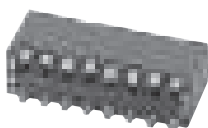


HOW TO ORDER



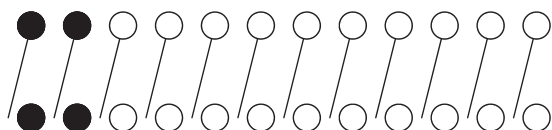
MODEL-POS. NO.	DIM "A"	DIM "B"
DP(L)-02	.246 [6.26]	.100 [2.54]
DP(L)-03	.357 [9.06]	.200 [5.08]
DP(L)-04	.446 [11.34]	.300 [7.62]
DP(L)-05	.546 [13.88]	.400 [10.16]
DP(L)-06	.646 [16.42]	.500 [12.70]
DP(L)-08	.846 [21.50]	.600 [15.24]
DP(L)-10	1.046 [26.58]	.700 [17.78]
DP(L)-12	1.239 [31.48]	.800 [20.32]

DPM(R)

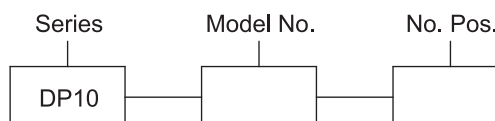


MODEL-POS. NO.	DIM "A"	DIM "B"
DPM(R)-02	.255 [6.48]	.100 [2.54]
DPM(R)-03	.355 [9.02]	.200 [5.08]
DPM(R)-04	.455 [11.56]	.300 [7.62]
DPM(R)-05	.555 [14.10]	.400 [10.16]
DPM(R)-06	.655 [16.64]	.500 [12.70]
DPM(R)-07	.755 [19.18]	.600 [15.24]
DPM(R)-08	.855 [21.72]	.700 [17.78]
DPM(R)-09	.955 [24.26]	.800 [20.32]
DPM(R)-10	1.055 [26.80]	.900 [22.86]
DPM(R)-12	1.255 [31.88]	1.100 [27.94]

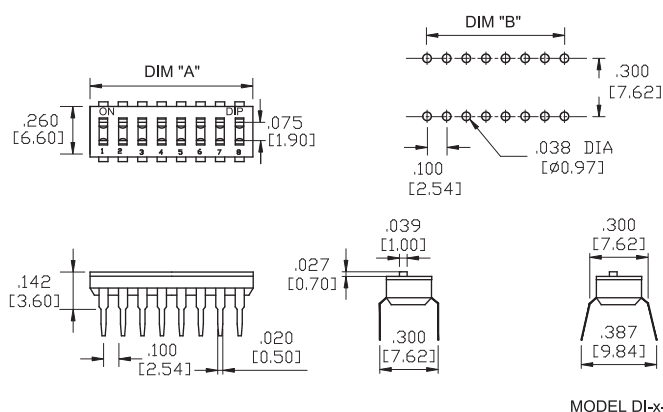
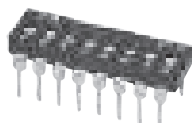
SCHEMATIC



HOW TO ORDER



DI(R)



MODEL-POS. NO.	DIM "A"	DIM "B"
DI(R)-01(H)(S)	.137 [3.48]	NONE
DI(R)-02(H)(S)	.237 [6.02]	.100 [2.54]
DI(R)-03(H)(S)	.337 [8.56]	.200 [5.08]
DI(R)-04(H)(S)	.437 [11.10]	.300 [7.62]
DI(R)-05(H)(S)	.537 [13.64]	.400 [10.16]
DI(R)-06(H)(S)	.637 [16.18]	.500 [12.70]
DI(R)-07(H)(S)	.737 [18.72]	.600 [15.24]
DI(R)-08(H)(S)	.837 [21.26]	.700 [17.78]
DI(R)-09(H)(S)	.937 [23.80]	.800 [20.32]
DI(R)-10(H)(S)	1.037 [26.34]	.900 [22.86]
DI(R)-12(H)(S)	1.237 [31.42]	1.100 [27.94]



MODEL DI-x-S

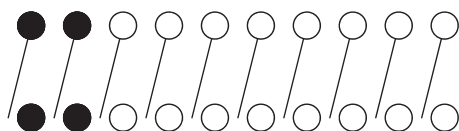


MODEL DIR-x-H

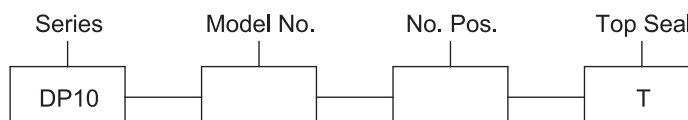


MODEL DIR-x-S

SCHEMATIC

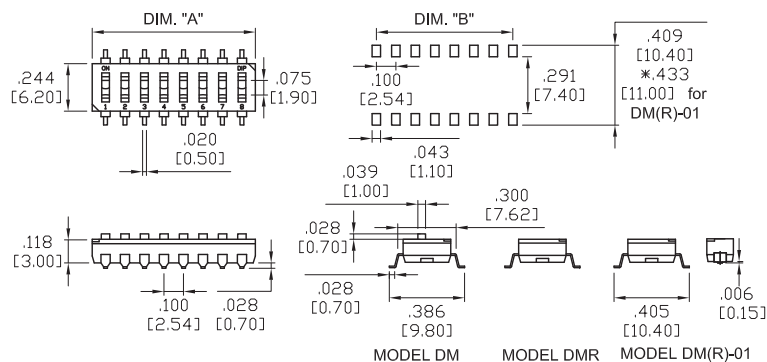


HOW TO ORDER



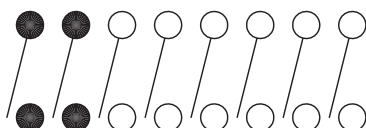
* Top seal is not available for raised actuator

DM(R)

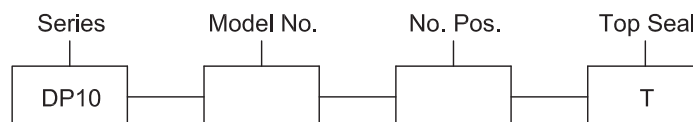


MODEL-POS. NO.	DIM "A"	DIM "B"
DM(R)-01	.137 [3.48]	NONE
DM(R)-02	.237 [6.02]	.100 [2.54]
DM(R)-03	.337 [8.56]	.200 [5.08]
DM(R)-04	.437 [11.10]	.300 [7.62]
DM(R)-05	.537 [13.64]	.400 [10.16]
DM(R)-06	.637 [16.18]	.500 [12.70]
DM(R)-07	.737 [18.72]	.600 [15.24]
DM(R)-08	.837 [21.26]	.700 [17.78]
DM(R)-09	.937 [23.80]	.800 [20.32]
DM(R)-10	1.037 [26.34]	.900 [22.86]
DM(R)-12	1.237 [31.42]	1.100 [27.94]

SCHEMATIC

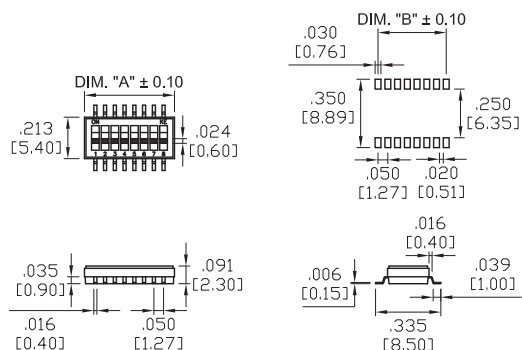
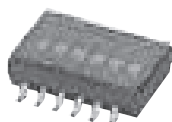


HOW TO ORDER



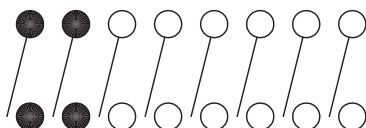
* Top seal is not available for raised actuator

DH

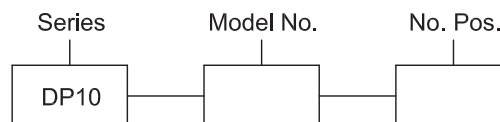


MODEL-POS. NO.	DIM "A"	DIM "B"
DH-02	.162 [4.12]	.050 [1.27]
DH-04	.262 [6.66]	.150 [3.81]
DH-06	.362 [9.20]	.250 [6.35]
DH-08	.462 [11.74]	.350 [8.89]
DH-10	.562 [14.28]	.450 [11.43]

SCHEMATIC

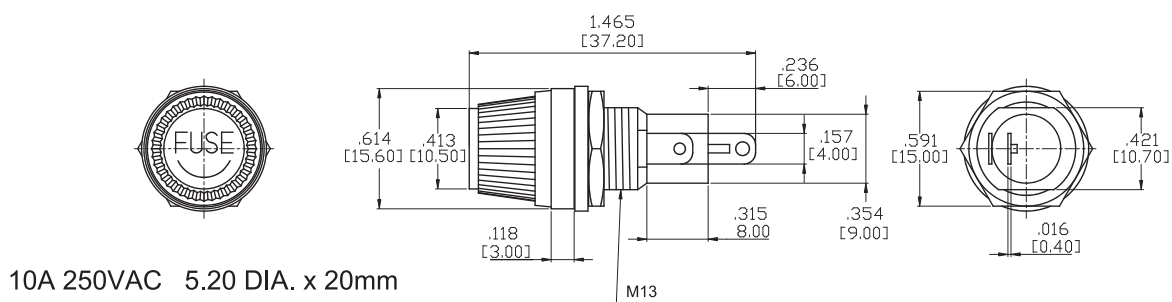


HOW TO ORDER

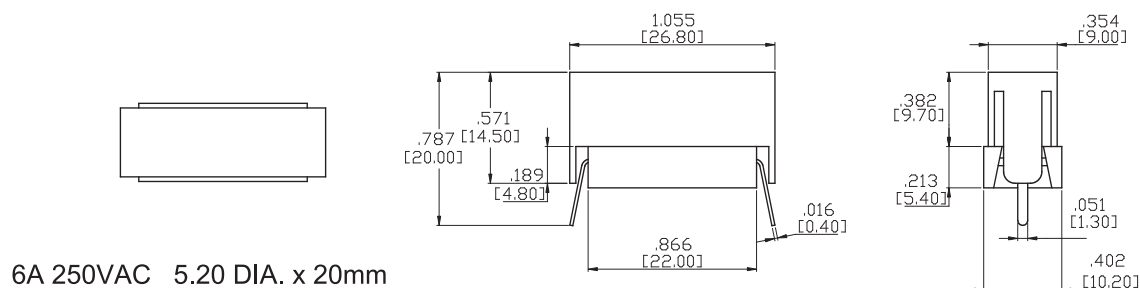


* "Blank" - with top seal ; "N" - Without top sea

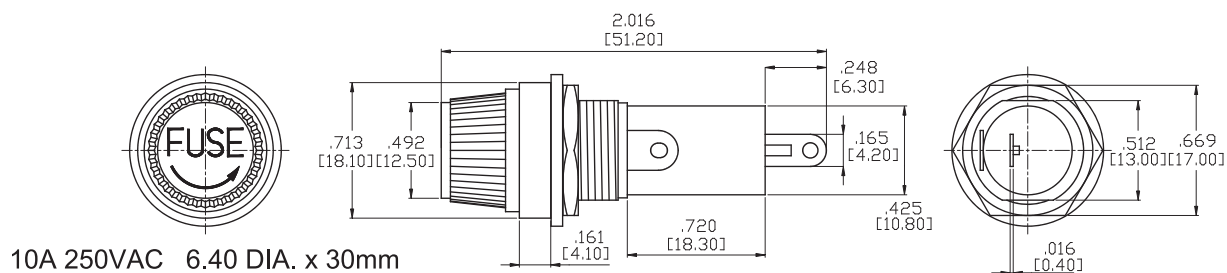
R22-0111



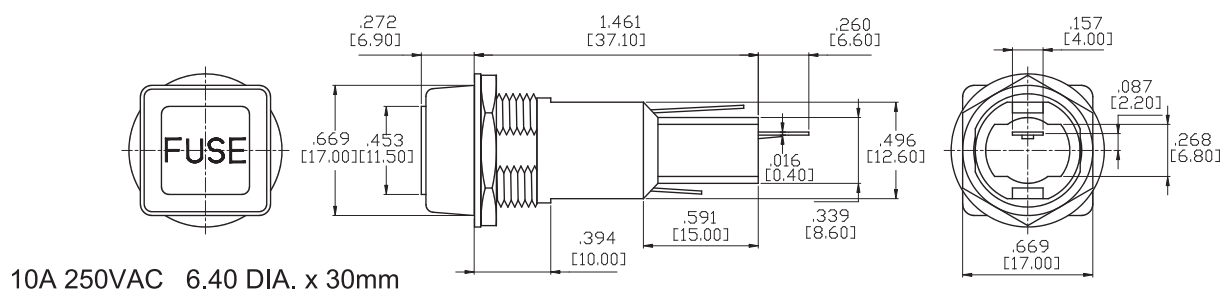
R22-0112



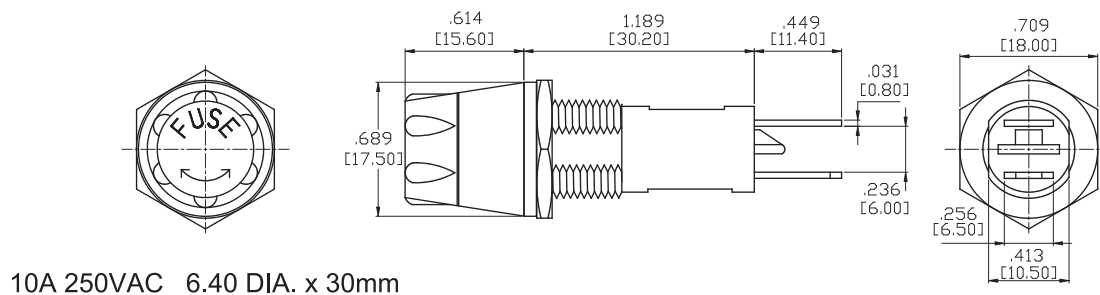
R22-0113



R22-0114



R22-0115



RATING: DC 3V 50uA-Dc 5V 10mA.

OPERATING TEMPERATURE: -20°C to +70°C.

OPERATING FORCE: 0.3N (31gf).

RESISTANCE TO SOLDERING HEAT: Manual soldering 300°C 3 sec.

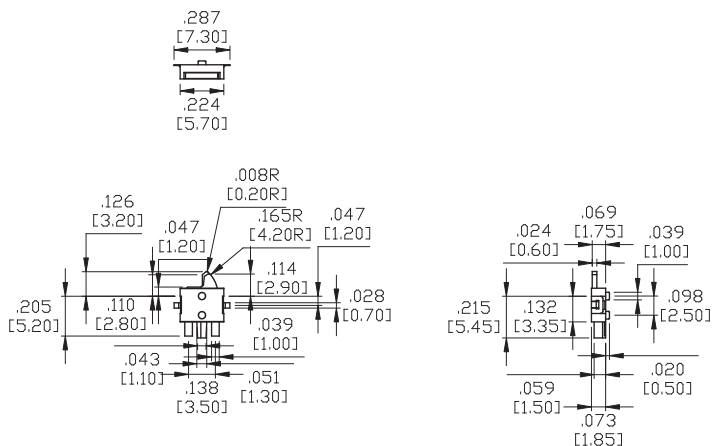
Reflow soldering 250°C 20 sec max.

CONTACT RESISTANCE(Initial performance/ After lifetime): 500m-ohms max. /1-ohms max.

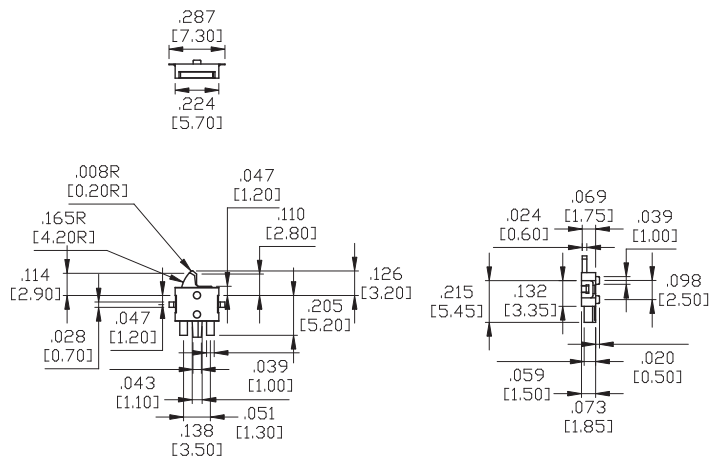
INSULATION RESISTANCE: More than 100M-ohms at 100VDC.

WITHSTANDING VOLTAGE: 100VAC, 1 minute.
OPERATING LIFE(WITH LOAD): 100,000 cycles

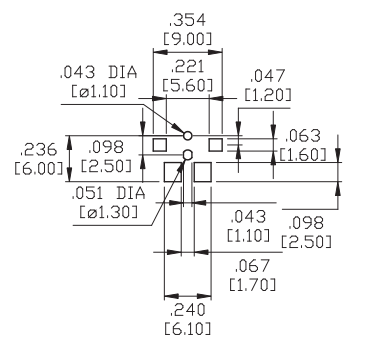
12MTL



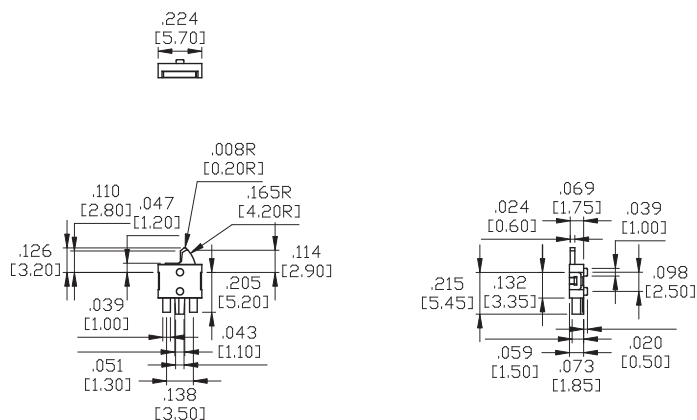
12MTR



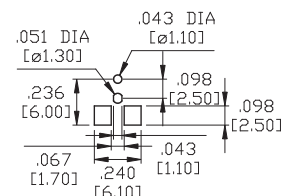
REFLOW PATTERN



12NTL

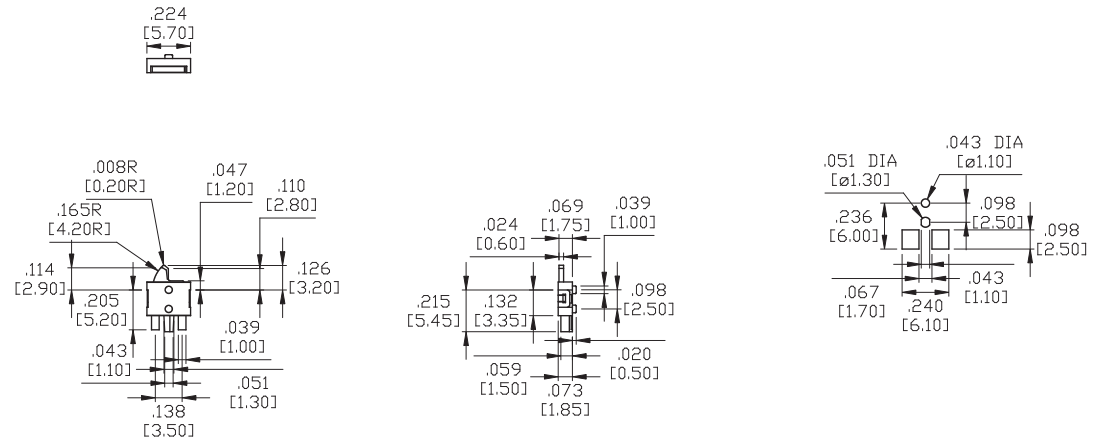


REFLOW PATTERN

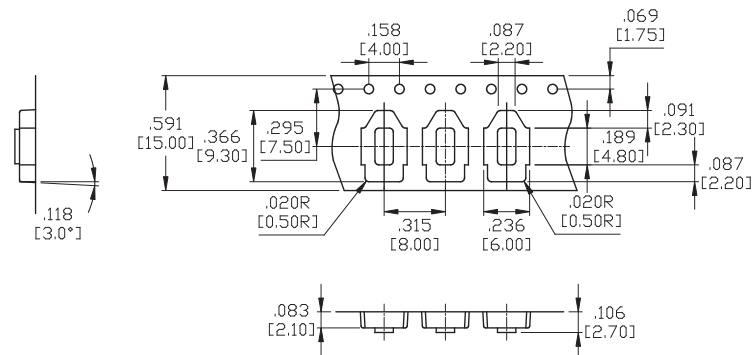


12NTR

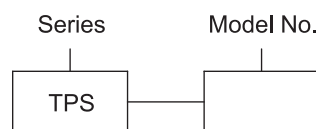
REFLOW PATTERN



REEL TAPING



HOW TO ORDER



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous

SPECIFICATIONS:

RATING: 30VDC 500mA.
 OPERATING FORCE: 50gf max.
 LIFE: 100,000 cycles min.
 CONTACT RESISTANCE: 100m-ohms max (initial).
 INSULATION RESISTANCE: 100M-ohms min (500VDC).
 DIELECTRIC STRENGTH: 250VAC 1 min.
 OPERATING TEMPERATURE: -15°C to +70°C.
 AMBIENT HUMIDITY: 35%~85%RH.

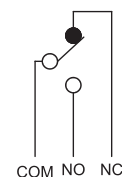
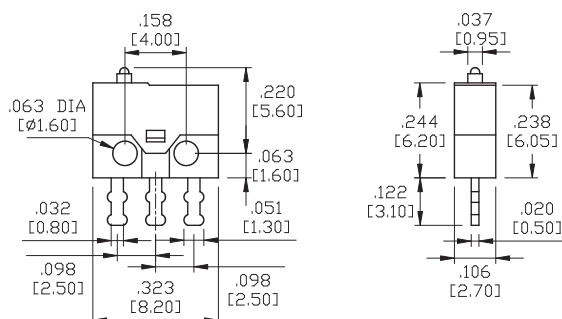
MATERIALS:

BODY: PBT.
 COVER: POM.
 LEVER: POM or SUS.
 BUTTON: POM.
 CONTACT: BeCu+Ag.
 TERMINAL: Silver+Ag.

Specifications and Dimensions subject to change

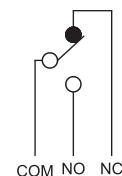
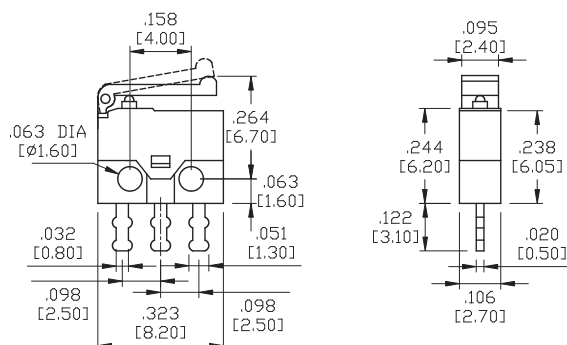
SSM-00

SCHEMATIC



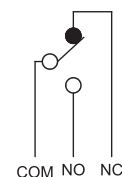
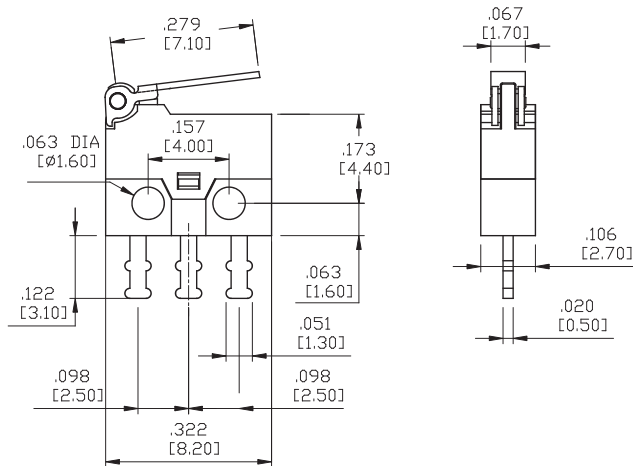
SSM-01

SCHEMATIC



SSM-02

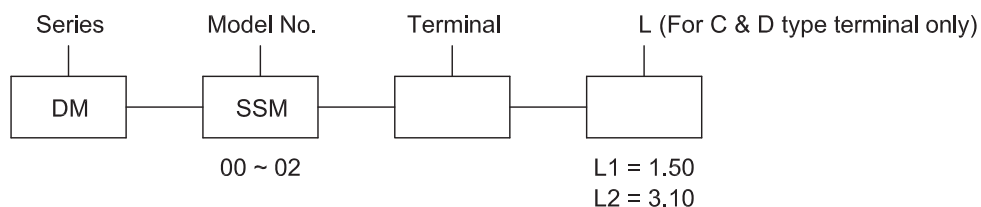
SCHEMATIC



TERMINATION OPTIONS

P TYPE	C TYPE	D TYPE

HOW TO ORDER

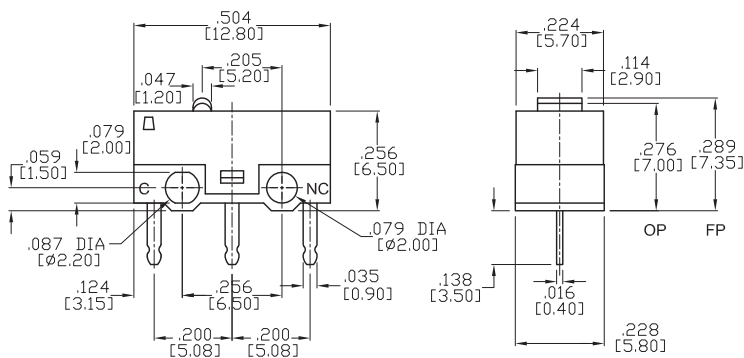
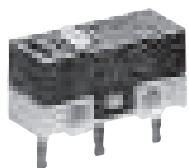


SPECIFICATIONS:

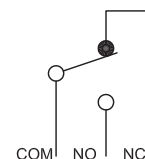
RATING: AC125V 1A, (OPTIONAL AC125V @ 3A, 0.1A @ 250VAC).
 INSULATION RESISTANCE: >100M-ohms DC500V.
 DIELECTRIC STRENGTH: AC500V 1 min.
 CONTACT RESISTANCE: <50m-ohms.
 SOLDERING TEMPERATURE: 225°C max. 5 sec.
 MECHANICAL LIFE: 1,000,000 cycles.
 ELECTRICAL LIFE: 30,000 cycles.
 OPERATING TEMPERATURE: -25°C to +65°C.
 AMBIENT HUMIDITY: <85% RH.

Specifications and Dimensions subject to change

DM-00

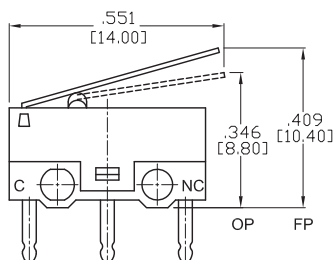


SCHEMATIC

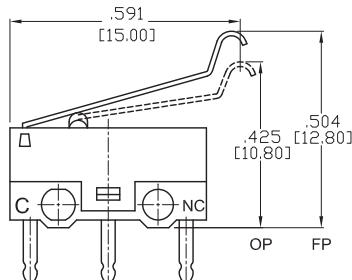


LEVER OPTIONS

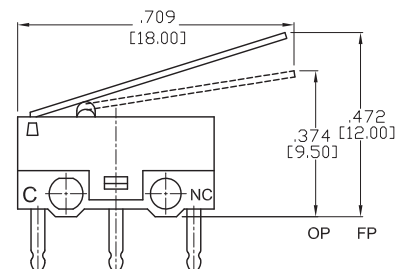
DM-01



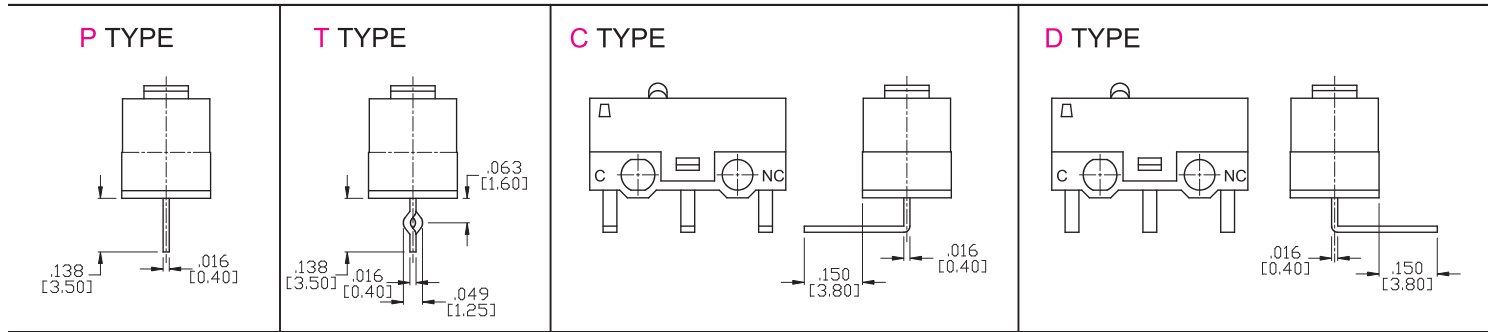
DM-02



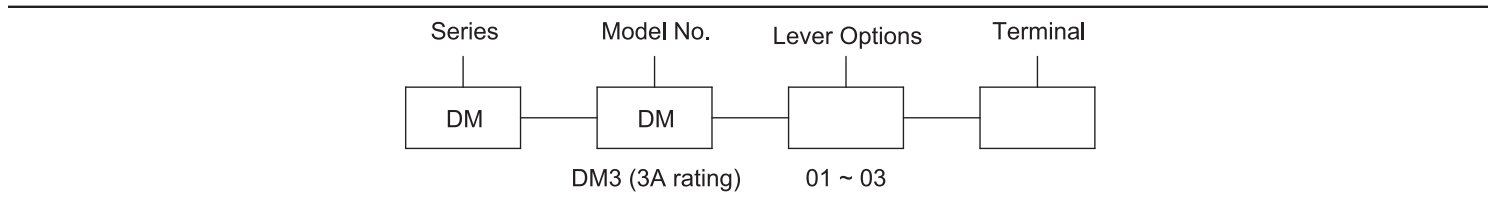
DM-03



TERMINATION OPTIONS



HOW TO ORDER

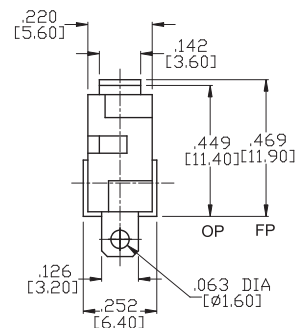
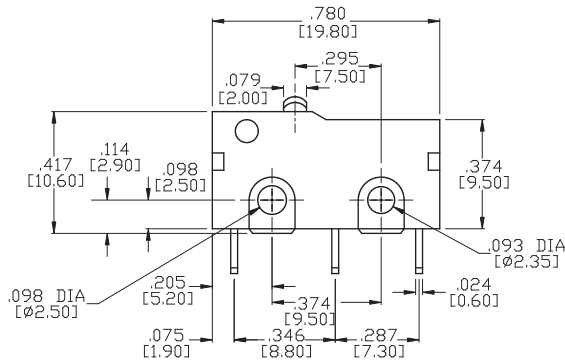


SPECIFICATIONS:

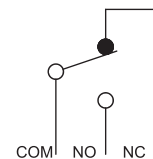
RATING: AC 125V 3A (OPTIONAL AC125V @ 5A).
 INSULATION RESISTANCE: >100M-ohms DC500V.
 DIELECTRIC STRENGTH: AC1000V 1 min.
 CONTACT RESISTANCE: <50m-ohms.
 SOLDERING TEMPERATURE: 225°C max. 5 sec.
 MECHANICAL LIFE: 1,000,000 cycles.
 ELECTRICAL LIFE: 200,000 cycles.
 OPERATING TEMPERATURE: -25°C to +80°C.
 AMBIENT HUMIDITY: <85% RH.

Specifications and Dimensions subject to change

SM-00



SCHEMATIC



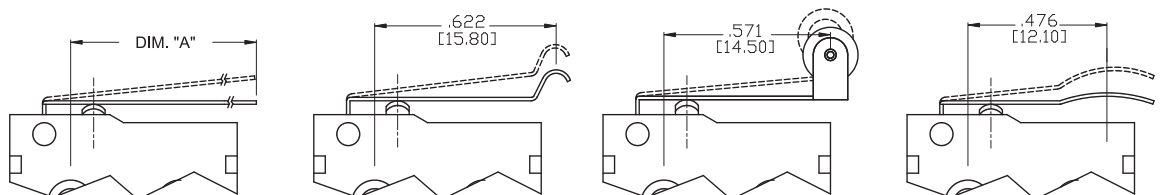
LEVER OPTIONS

SM-04

SM-05

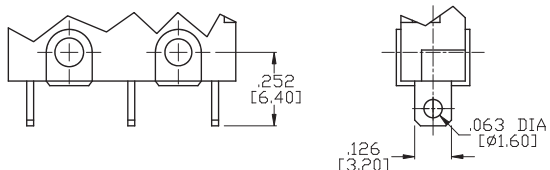
SM-06

Model No.	DIM. "A"
SM-01	.571 [14.50]
SM-02	.650 [16.50]
SM-03	.890 [22.60]
SM-07	1.685 [42.80]

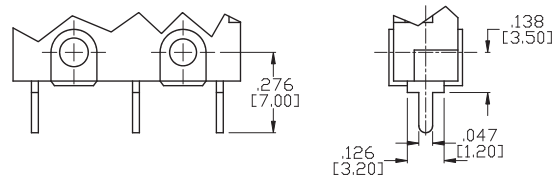


TERMINATION OPTIONS

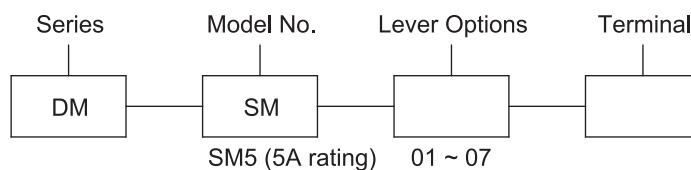
M1



M2



HOW TO ORDER

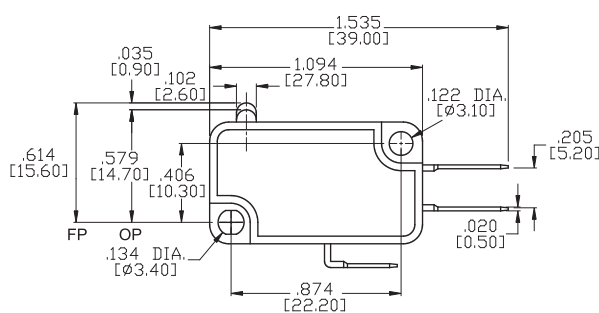


SPECIFICATIONS:

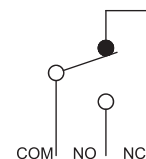
RATING: AC125V 3A (OPTIONAL 5A @ 125VAC, 0.1A @ 250VAC).
 INSULATION RESISTANCE: >100M-ohms DC500V.
 DIELECTRIC STRENGTH: AC1000V 1 min.
 CONTACT RESISTANCE: <100m-ohms.
 SOLDERING TEMPERATURE: 225°C max. 5 sec.
 MECHANICAL LIFE: 5,000,000 cycles.
 ELECTRICAL LIFE: 200,000 cycles.
 OPERATING TEMPERATURE: -25°C to +80°C.
 AMBIENT HUMIDITY: <85% RH.

Specifications and Dimensions subject to change

VM-00



SCHEMATIC



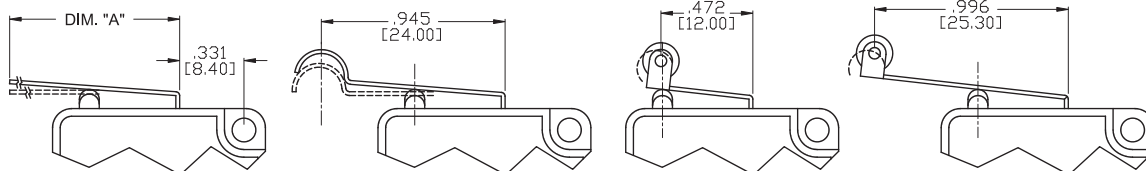
LEVER OPTIONS

VM-04

VM-05

VM-06

Model No.	DIM. "A"
VM-01	.531 [13.50]
VM-02	1.071 [27.20]
VM-03	2.012 [51.10]



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

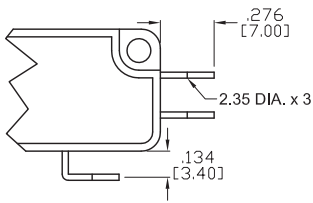
Tact

Touch Key

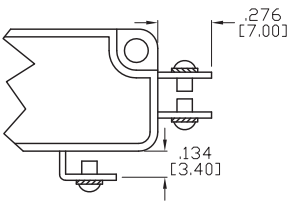
Miscellaneous

TERMINATION OPTIONS

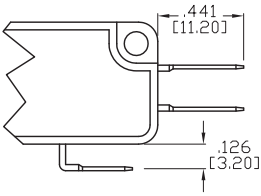
A TYPE



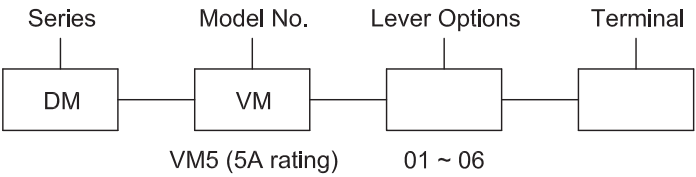
B TYPE



C TYPE (QUICK CONNECT .187 series)



HOW TO ORDER



DESCRIPTIONS:

Zinc alloy die cast housing and cylinder, chrome plated.
 Zinc alloy keys, chrome plated.
 Silver plated contacts and terminals.
 S102 2 Positions(off-on)2 Terminals.
 S103 2 Positions(on-on)4 Terminals.
 S104 3 Positions(off-on-on)4 Terminals.
 1 Combination available.

SPECIFICATIONS:

CONTACT RATING: 1A 125VAC, 0.5A 250VAC.
 CONTACT RESISTANCE: 10m-ohms max.
 INSULATION RESISTANCE: 200M-ohms min.
 DIELECTRIC STRENGTH: 1,000VAC 1 min.

KEY-PULL FIGURES:

- -Off Position.
- I -Indicates key-pull.
- -Indicates No key-pull.



Fig. 1

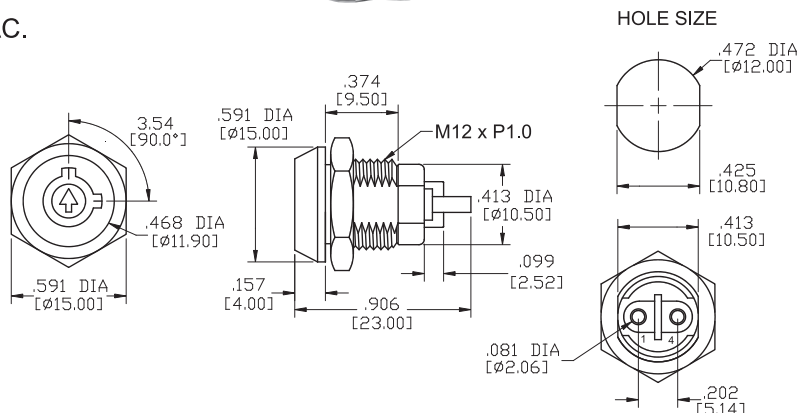


Fig. 2



Fig. 3

Fig. No.	Lock Number	Pole	Positions	Terminals	Key Pulls	Turn	Off On	Type
1	S102-2	1	2	2	2	90°	Off On	SPST
2	S103	1	2	4	2	90°	On On	SPDT
3	S104	1	3	4	3	45°-0°-90°	Off On On	SPDT



DESCRIPTIONS:

Zinc alloy die cast housing and cylinder, chrome plated.
 Zinc alloy keys, chrome plated.
 Silver plated contacts and terminals.
 S106 2 Positions(off-on)2 Terminals.
 S116 2 Positions(on-on)4 Terminals.
 200 Combinations available.

SPECIFICATIONS:

CONTACT RATING: 1A 125VAC, 0.5A 250VAC.
 CONTACT RESISTANCE: 10m-ohms max.
 INSULATION RESISTANCE: 200M-ohms min.
 DIELECTRIC STRENGTH: 1,000VAC 1min.

KEY-PULL FIGURES:

- -Off Position.
- I -Indicates key-pull.
- -Indicates No key-pull.



Fig. 1



Fig. 2

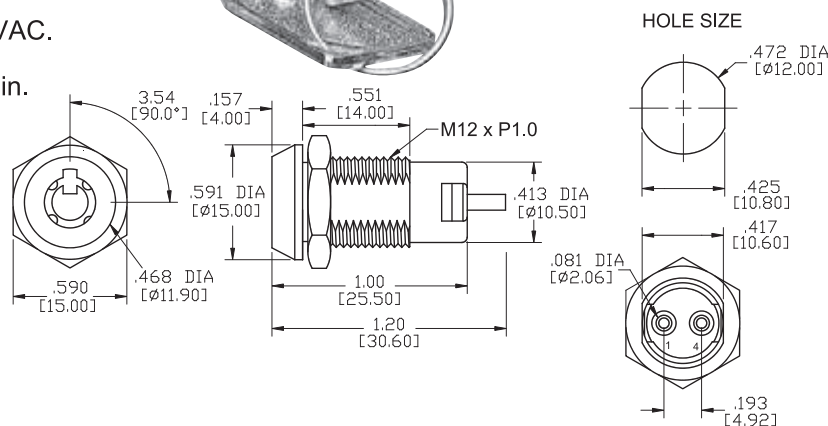


Fig. 3



Fig. 4

Fig. No.	Lock Number	Pole	Positions	Terminals	Key Pulls	Turn	Off On	Type
1	S106-1	1	2	2	1	90°	Off On	SPST
2	S106-2	1	2	2	2	90°	Off On	SPST
3	S116-1	1	2	4	1	90°	On On	SPDT
4	S116-2	1	2	4	2	90°	On On	SPDT



DESCRIPTIONS:

Zinc alloy die cast housing and cylinder, chrome plated.
Brass keys, nickel plated.
Silver plated contacts and terminals.
2 positions (off-on).
S109B key may be withdrawn in one or both positions.
20 Combinations available.

SPECIFICATIONS:

CONTACT RATING: 1A 125VAC, 0.5A 250VAC.
CONTACT RESISTANCE: 10m-ohms max.
INSULATION RESISTANCE: 200M-ohms min.
DIELECTRIC STRENGTH: 1,000VAC 1 min.

KEY-PULL FIGURES:

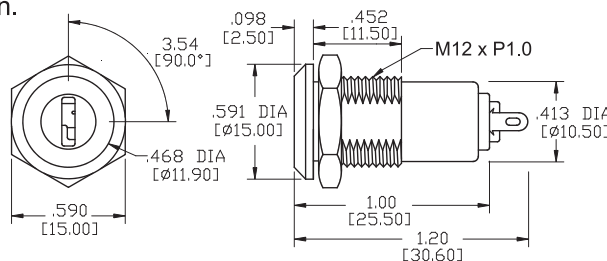
- -Off Position
- I -Indicates key-pull
- -Indicates No key-pull



Fig. 1



Fig. 2



HOLE SIZE

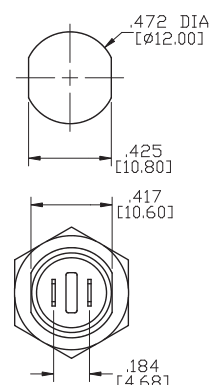


Fig. No.	Lock Number	Pole	Positions	Terminals	Key Pulls	Turn		Type
1	S1091B-1	1	2	2	1	90°	Off On	SPST
2	S1091B-2	1	2	2	2	90°	Off On	SPST

DESCRIPTIONS:

Zinc alloy die cast housing, chrome plated.
Brass key nickel plated, with plastic cap.
Silver plated contacts and terminals.
S331 2 Positions(on-on)60° index 3 Terminals.
S332 2 Positions(off-on)60° index 2 Terminals.
S333 3 Positions(off-on-on)60° index 3 Terminals.
10 Combinations available.

SPECIFICATIONS:

CONTACT RATING: 1A 125VAC, 0.5A 250VAC.
CONTACT RESISTANCE: 10m-ohms max.
INSULATION RESISTANCE: 200M-ohms min.
DIELECTRIC STRENGTH: 1,000VAC 1 min.

KEY-PULL FIGURES:

- -Off Position
- I -Indicates key-pull
- -Indicates No key-pull



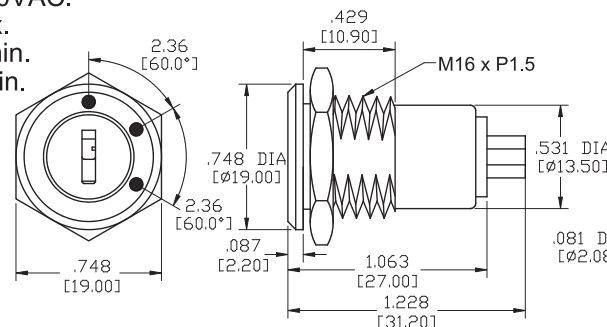
Fig. 1



Fig. 2



Fig. 3



HOLE SIZE

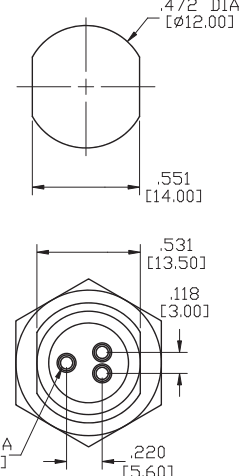


Fig. No.	Lock Number	Pole	Positions	Terminals	Key Pulls	Turn		Type
1	S331	1	2	3	2	60°	On On	SPDT
2	S332	1	2	2	2	60°	Off On	SPST
3	S333	1	3	3	3	120°	Off On On	SPDT

DESCRIPTIONS:

C510 Brass housing and cylinder chrome plated.
C510Z Zinc alloy die cast housing and cylinder chrome plated.
Steel made tubular keys, nickel plated.
Four sizes available.
Used for: Cabinets, vending machines, cash boxes, mail boxes, computer, phone exchanger door, etc.
50,000 Combinations available.



KEY-PULL FIGURES:

- -Off Position
- I -Indicates key-pull
- -Indicates No key-pull

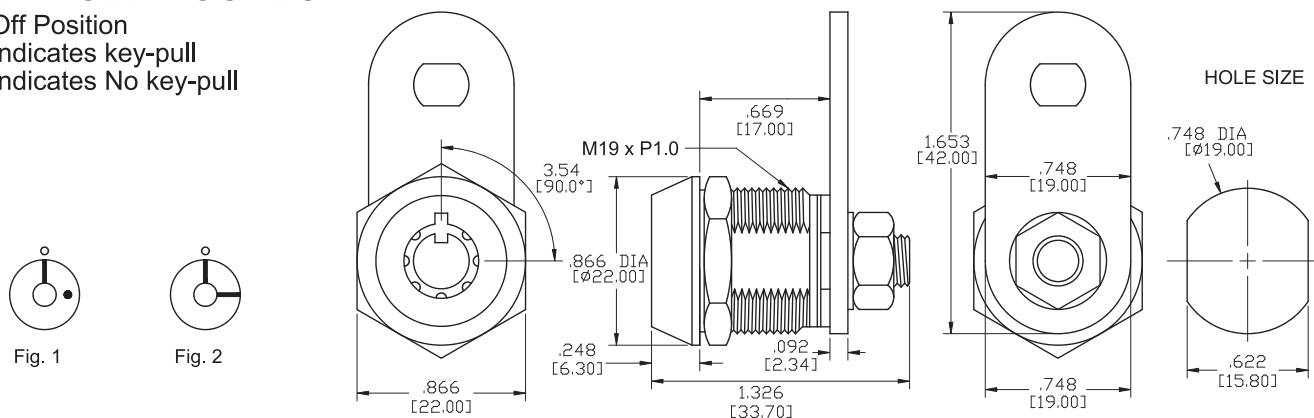


Fig. No.	Lock Number	Positions	Key Pulls	Turn
1	C510-1	2	1	90°
2	C510-2	2	2	90°

DESCRIPTIONS:

Zinc alloy die cast housing and cylinder, chrome plated.
Brass key, nickel plated.
Various cam configurations available.
20 Combinations available.



KEY-PULL FIGURES:

- -Off Position
- I -Indicates key-pull
- -Indicates No key-pull

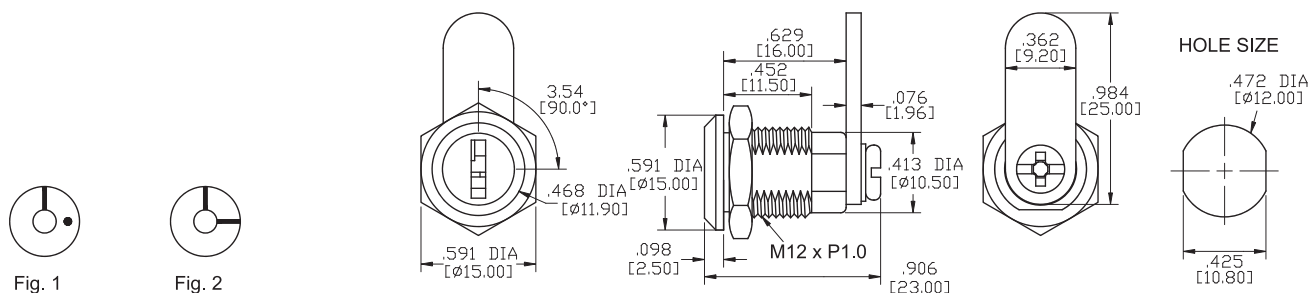
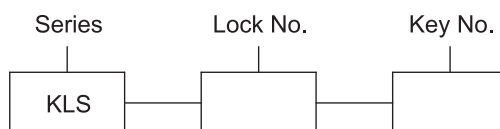


Fig. No.	Lock Number	Positions	Key Pulls	Turn
1	C1091-1	2	1	90°
2	C1091-2	2	2	90°

HOW TO ORDER

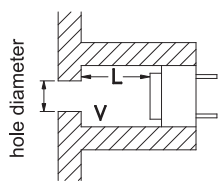


* Key number must be specified when ordering, otherwise random number will be supplied.

Specifications and Dimensions subject to change

HELMHOLTZ RESONATOR:

For increasing sound pressure level and/or modifying resonant frequency. It is possible to increase the sound pressure level at a certain frequency. An appropriate resonator is provided for an acoustic transducer as illustrated below. The resonant frequency is determined by the equation given below, through a slight adjustment is necessary to add volume enclosed within the transducer.

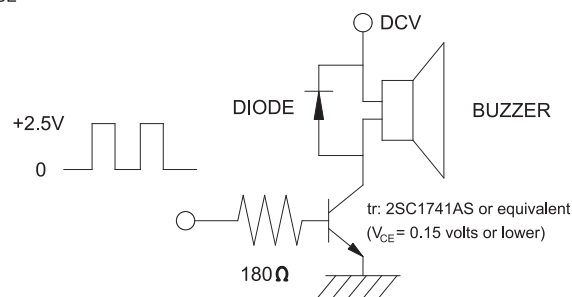


Formula:
$$f = \frac{CD}{4} \sqrt{\frac{1}{\pi V(L+0.75D)}}$$

f: frequency(Hz)
 V: Resonance volume(m³)
 D: Hole diameter(m)
 L: Hole length(m)
 C: Speed of sound(334 m/sec 20°C)
 C=331.5+0.607Ø
 Ø: Temperature(°C)

MEASURING CIRCUIT:

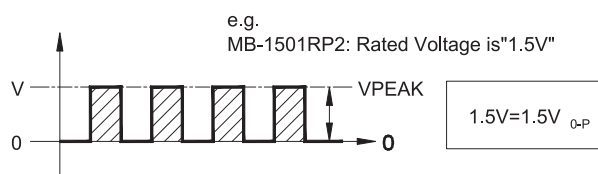
Our standard circuit for measurement is as shown below:
 ($V_{CE} = 0.15$ volts or lower)



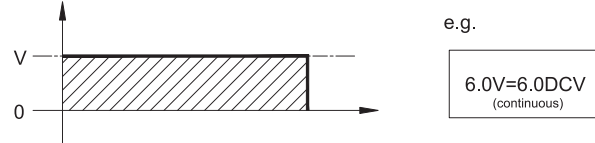
RATED VOLTAGES:

The term "Rated Voltage" in the specification of MEGA's transducers and buzzer are described as

- For Miniature Audio Transducers(External Drive Circuitry)



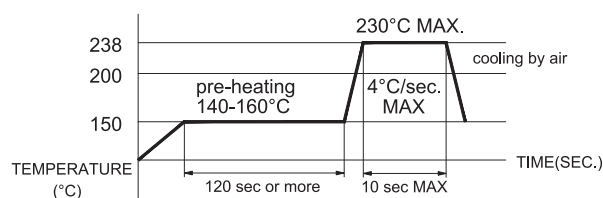
- For Miniature Audio Transducers and Low Pitched Sound Buzzers (Self-Contained Drive Circuitry)



TEMPERATURE PROFILE FOR REFLOWABLE TRANSDUCERS:

Reference standard: EIAJ ED-4702

1. Recommendable reflow soldering condition is as follow.
 (Reflow soldering is two times)
 Note: It is requested that 2nd reflow soldering should be executed after heat of product goes down to normal temperature.
2. Manual soldering
 Soldering iron temperature: °C, within 10 seconds.



RELIABILITY:

	TEST ITEM	TEST METHOD	TEST PERIOD
1	High temperature storage test	+70°C, free load	96 Hr.
2	Low temperature storage test	-30°C, free load	96 Hr.
3	Thermal shock test	-30 to +70°C, each cycle 30 min.	100 cycles
4	Standard condition life test	standard test circuit, 1.5V 1/2 DUTY, PEAK Hz.	96 Hr.
5	Anti-humidity operating test	+60°C, 90% RH, rated load	96 Hr.
6	Vibration test	10-55 Hz, 5G, X,Y,Z direction	each direction 2 Hr.
7	Drop test	1. 120cm,X,Y,Z, direction 2. with 75g case, 30cm, 6 face	1. 10 times 2. 10 times
8	Solder heat withstanding test	260 ± 5°C 10 sec. or less by manual solder	
9	Terminal force test	pulling force 10Kg	10 times

STANDARD TEST CONDITION:

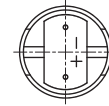
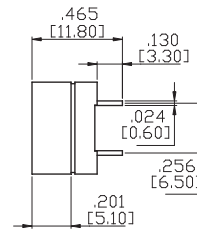
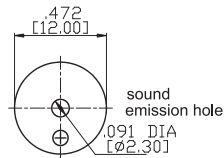
Normal temperature	+5°C to +35°C
Normal humidity	45 to 85%RH
Normal atmospheric pressure	860 to 1060 hpa

REMARK: When a doubt has arisen as to judgment, conditions must be at 20 ± 2°C, 60 to 70%RH and 860 to 1060 hpa.

REMARK:

1. No significant change shall occur both in appearance and in structure after reliability test.
2. Change in sound pressure level should be within the range of ±5dB after reliability test.
3. No abnormality both in operation and in tone quality is allowed after reliability test.
4. Specification and dimensions subject to change.

MB-11



SPECIFICATIONS

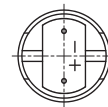
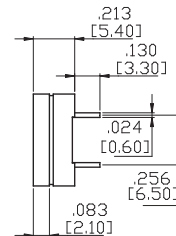
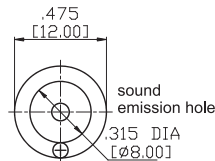
TYPE		MB-11P	MB-111P
RATED VOLTAGE (V)		1.5	1.5
#CURRENT CONSUMPTION (mA)		MAX 35	MAX 20
COIL RESISTANCE (Ohms)		16 ± 2.4	42 ± 6.3
#SOUND PRESSURE LEVEL (dB)		85	85
RESONANCE FREQUENCY (Hz)		2048	2048
OPERATING VOTAGE (V)		max. 2	max. 2
OPERATING TEMPERATURE (°C)		-20 to +60	-20 to +60
STORAGE TEMPERATURE (°C)		-30 to +70	-30 to +70
WEIGHT (g)		2	2

FEATURES:

COMPACT, RICH SOUND

#VALUE APPLYING RATED VOLTAGE.(2048Hz, 1/2 DUTY CYCLE,SQUARE WAVE)

MB-11PS



SPECIFICATIONS

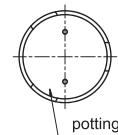
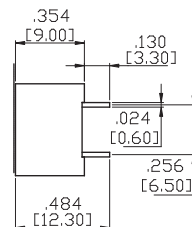
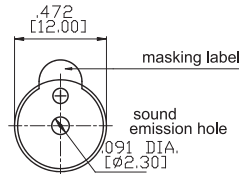
TYPE		MB-11PS
RATED VOLTAGE (V)		1.5
#CURRENT CONSUMPTION (mA)		MAX 35
COIL RESISTANCE (Ohms)		16 ± 4.5
#SOUND PRESSURE LEVEL (dB)		70
RESONANCE FREQUENCY (Hz)		2048
OPERATING VOTAGE (V)		max. 2
OPERATING TEMPERATURE (°C)		-20 to +60
STORAGE TEMPERATURE (°C)		-30 to +70
WEIGHT (g)		2

FEATURES:

COMPACT, RICH SOUND

#VALUE APPLYING RATED VOLTAGE.(2048Hz, 1/2 DUTY CYCLE,SQUARE WAVE)

MB-120



SPECIFICATIONS

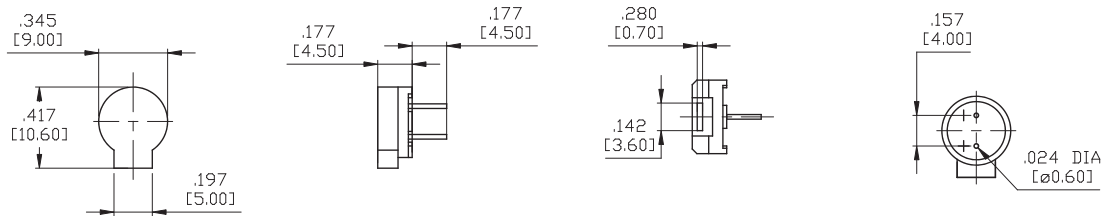
TYPE		MB-1201	MB-1205
RATED VOLTAGE (V)		1.5	1.5
#CURRENT CONSUMPTION (mA)		MAX 35	MAX 20
COIL RESISTANCE (Ohms)		16 ± 3	40 ± 6
#SOUND PRESSURE LEVEL (dB)		85	85
RESONANCE FREQUENCY (Hz)		2800	2400
OPERATING VOTAGE (V)		max. 2	max. 2
OPERATING TEMPERATURE (°C)		-30 to +70	-30 to +70
STORAGE TEMPERATURE (°C)		-40 to +85	-40 to +85
WEIGHT (g)		2	2

FEATURES:

COMPACT, RICH SOUND

#VALUE APPLYING RATED VOLTAGE.(2400Hz, 1/2 DUTY CYCLE,SQUARE WAVE)

MB-1501RP



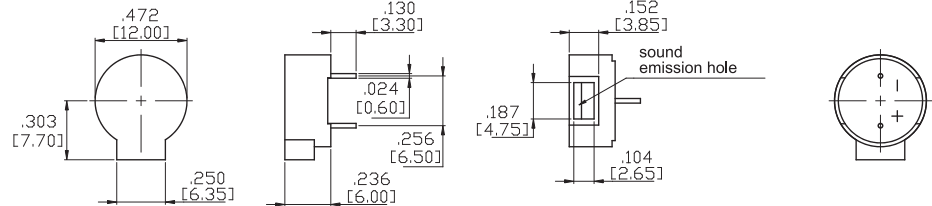
SPECIFICATIONS

TYPE		MN-1501RP
RATED VOLTAGE (V)		1.5
#CURRENT CONSUMPTION (mA)		MAX 80
COIL RESISTANCE (Ohms)		6.0 ± 1
#SOUND PRESSURE LEVEL (dB)		85
RESONANCE FREQUENCY (Hz)		2730
OPERATING VOTAGE (V)		1.0 to 2.0
OPERATING TEMPERATURE (°C)		-20 to +60
STORAGE TEMPERATURE (°C)		-30 to +70
WEIGHT (g)		0.6

FEATURES:

Low profile, small (Ø9.0*4.5) design.

MB-RP/A



SPECIFICATIONS

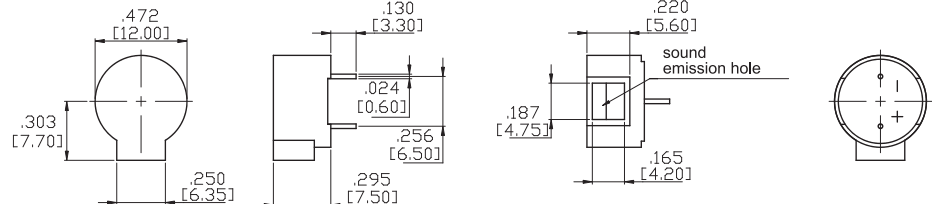
TYPE		MB-RP/A
RATED VOLTAGE (V)		1.5
#CURRENT CONSUMPTION (mA)		MAX 80
COIL RESISTANCE (Ohms)		5.0 ± 1
#SOUND PRESSURE LEVEL (dB)		85
RESONANCE FREQUENCY (Hz)		2730
OPERATING VOTAGE (V)		max. 2
OPERATING TEMPERATURE (°C)		-20 to +60
STORAGE TEMPERATURE (°C)		-30 to +70
WEIGHT (g)		2

FEATURES:

Side sound port, high output sound pressure level, small and low profile design.

#VALUE APPLYING RATED VOLTAGE.(2731Hz, 1/2 DUTY CYCLE, SQUARE WAVE)

MB-RP/B



SPECIFICATIONS

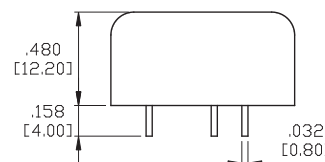
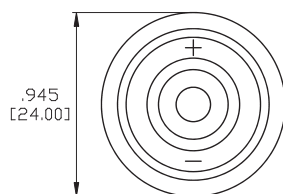
TYPE		MB-RP/B
RATED VOLTAGE (V)		1.5
#CURRENT CONSUMPTION (mA)		MAX 70
COIL RESISTANCE (Ohms)		6.5 ± 1
#SOUND PRESSURE LEVEL (dB)		85
RESONANCE FREQUENCY (Hz)		2730
OPERATING VOTAGE (V)		max. 2
OPERATING TEMPERATURE (°C)		-20 to +60
STORAGE TEMPERATURE (°C)		-30 to +70
WEIGHT (g)		2

FEATURES:

Side sound port, high output sound pressure level, small and low profile design.

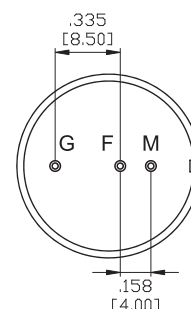
#VALUE APPLYING RATED VOLTAGE.(2731Hz, 1/2 DUTY CYCLE, SQUARE WAVE)

KPE-123

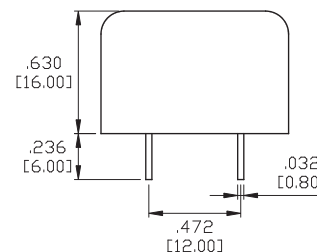
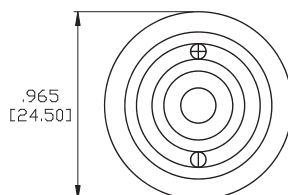


SPECIFICATIONS

TYPE		KPE-123
RATED VOLTAGE (V)		12
#CURRENT CONSUMPTION (mA)		MAX 8
#SOUND PRESSURE LEVEL (dB)		82
RESONANCE FREQUENCY (Hz)		3.0±0.5
OPERATING VOTAGE (V)		3 to 28
OPERATING TEMPERATURE (°C)		-30 to +85
STORAGE TEMPERATURE (°C)		-40 to +95
WEIGHT (g)		3.4
tone		CONTINUOUS
MATERIAL		ABS (BLACK)

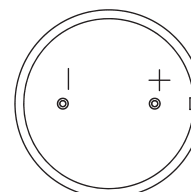


KPE-203

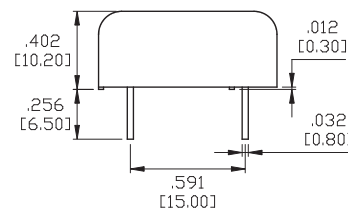
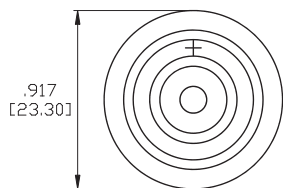


SPECIFICATIONS

TYPE		KPE-203
RATED VOLTAGE (V)		12
CURRENT CONSUMPTION (mA)		MAX 9
SOUND PRESSURE LEVEL (dB)		88
RESONANCE FREQUENCY (Hz)		3.4±0.5
OPERATING VOTAGE (V)		3 to 20
OPERATING TEMPERATURE (°C)		-30 to +85
STORAGE TEMPERATURE (°C)		-40 to +95
WEIGHT (g)		85
tone		CONTINUOUS
MATERIAL		ABS (BLACK)

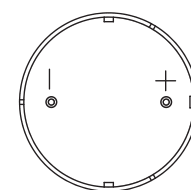


KPE-222

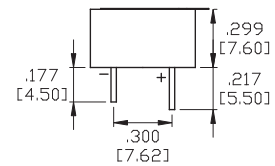
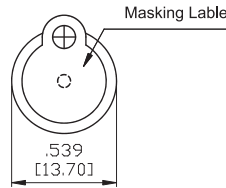


SPECIFICATIONS

TYPE		KPE-222
RATED VOLTAGE (V)		12
CURRENT CONSUMPTION (mA)		MAX 13
SOUND PRESSURE LEVEL (dB)		75
RESONANCE FREQUENCY (Hz)		3.2±0.5
OPERATING VOTAGE (V)		3 to 20
OPERATING TEMPERATURE (°C)		-30 to +85
STORAGE TEMPERATURE (°C)		-40 to +95
WEIGHT (g)		85
tone		CONTINUOUS
MATERIAL		ABS (BLACK)

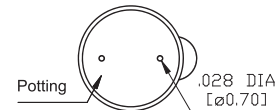


KPE-242

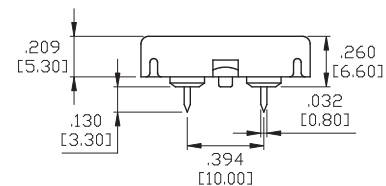
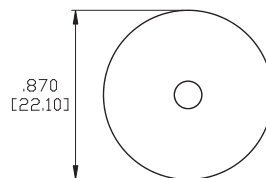


SPECIFICATIONS

TYPE		KPE-242
RATED VOLTAGE (V)		12
CURRENT CONSUMPTION (mA)		MAX 7
SOUND PRESSURE LEVEL (dB)		70
RESONANCE FREQUENCY (Hz)		4.1±0.5
OPERATING VOTAGE (V)		3 to 16
OPERATING TEMPERATURE (°C)		-20 to +70
STORAGE TEMPERATURE (°C)		-30 to +80
WEIGHT (g)		1
tone		CONTINUOUS
MATERIAL		ABS (BLACK)

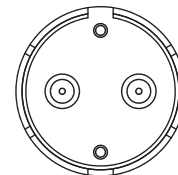


KPE-813

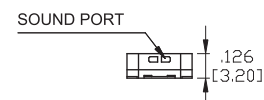
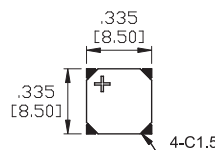


SPECIFICATIONS

TYPE		KPE-813
ELECTROSTATIC CAPACITY (pF)		12,000±30%
CURRENT CONSUMPTION (mA)		MAX 6
SOUND PRESSURE LEVEL (dB)		84
OPERATING VOTAGE (V)		MAX 30
OPERATING TEMPERATURE (°C)		-30 to +85
STORAGE TEMPERATURE (°C)		-40 to +95
WEIGHT (g)		2.54
MATERIAL		ABS (BLACK)



KSS-J4B20

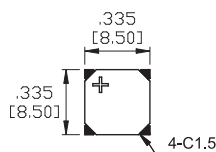


SPECIFICATIONS

TYPE		KSS-J4B20
RATED VOLTAGE (V)		3.6
MEAN CURRENT (mA)		MAX 80
SOUND OUTPUT (dB)		90
RATED FREQUENCY (Hz)		2730
OPERATING VOTAGE (V)		3.0 to 5.0
COIL RESISTANCE (Ohms)		20±3
COIL IMPEDANCE (Ohms)		32.0
OPERATING TEMPERATURE (°C)		-30 to +70
STORAGE TEMPERATURE (°C)		-40 to +85
WEIGHT (g)		0.7
MATERIAL		L.C.P (WHITE)

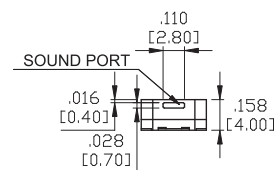


KSS-74B20-T/R

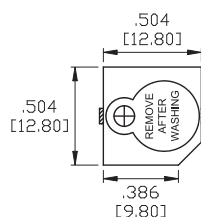


SPECIFICATIONS

TYPE		KSS-74B20-T/R
RATED VOLTAGE (V)		3.6
MEAN CURRENT (mA)		MAX 80
SOUND OUTPUT (dB)		90
RATED FREQUENCY (Hz)		2730
OPERATING VOTAGE (V)		3.0 to 5.0
COIL RESISTANCE (Ohms)		20±3
COIL IMPEDANCE (Ohms)		32.0
OPERATING TEMPERATURE (°C)		-30 to +70
STORAGE TEMPERATURE (°C)		-40 to +85
WEIGHT (g)		0.7
MATERIAL		L.C.P (WHITE)

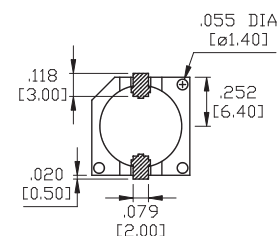
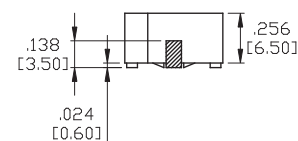


KT-1205

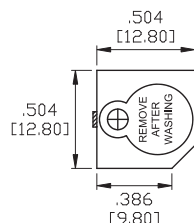


SPECIFICATIONS

TYPE		KT-1205
RATED VOLTAGE (V)		5
MEAN CURRENT (mA)		MAX 40
SOUND OUTPUT (dB)		87
RATED FREQUENCY (Hz)		2,400
OPERATING VOTAGE (V)		3.0 to 8.0
COIL RESISTANCE (Ohms)		45.0±6.7
COIL IMPEDANCE (Ohms)		90.0
OPERATING TEMPERATURE (°C)		-30 to +70
STORAGE TEMPERATURE (°C)		-40 to +85
WEIGHT (g)		2
MATERIAL		PPS (GRAY)

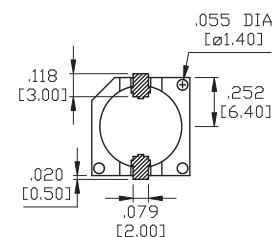
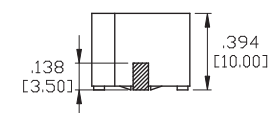


KT-1212C

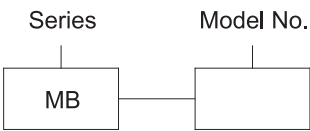


SPECIFICATIONS

TYPE		KT-1212C
RATED VOLTAGE (V)		12
MEAN CURRENT (mA)		MAX 30
SOUND OUTPUT (dB)		85
RATED FREQUENCY (Hz)		2,400±300
OPERATING VOTAGE (V)		8.0 to 15.0
OPERATING TEMPERATURE (°C)		-30 to +70
STORAGE TEMPERATURE (°C)		-40 to +85
WEIGHT (g)		2
MATERIAL		PPS (GRAY)



HOW TO ORDER



Toggle
Rocker
Slide
Pushbutton
AV
Rotary
Tact
Touch Key
Miscellaneous

SPECIFICATIONS:

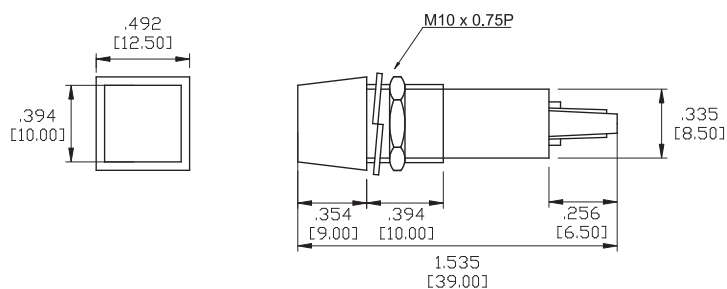
INSULATION RESISTANCE: 100M Ω min. @ 500VDC.
 DIELECTRIC STRENGTH: 200VAC min. for 1 minute.
 OPERATING TEMPERATURE: -25°C to +70°C.
 PULL FORCE BETWEEN TERMINAL & BASE:
 (a) Normal type 2kgf for 1 minute.
 (b) Sealed type 5kgf for 1 minute.
 PULL FORCE BETWEEN BASE & BODY:
 (a) Normal type 2kgf for 1 minute.
 (b) Sealed type 5kgf for 1 minute.
 HAND SOLDERING: 350 $\pm$ 5°C for 3sec. max.

MATERIALS:

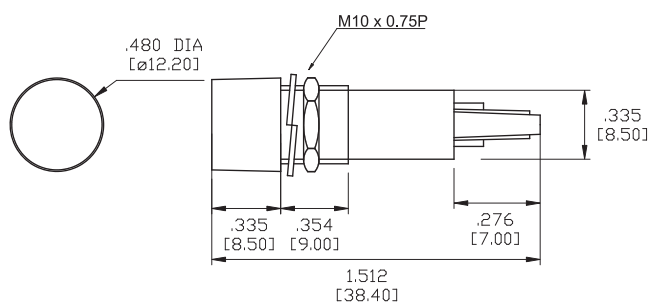
BODY: Polycarbonate UL 94V-0 or Acrylic.
 BASE: Glass fiber polyamide, UL 94V-0.
 ILLUMINANT: Neon lamp or LED.
 TERMINAL: Copper alloy, tin plated over nickel.
 WASHER: Polyamide, UL 94V-0 or iron hoop.
 NUT: M10x0.75P or M15x1P iron.

Specifications and Dimensions subject to change

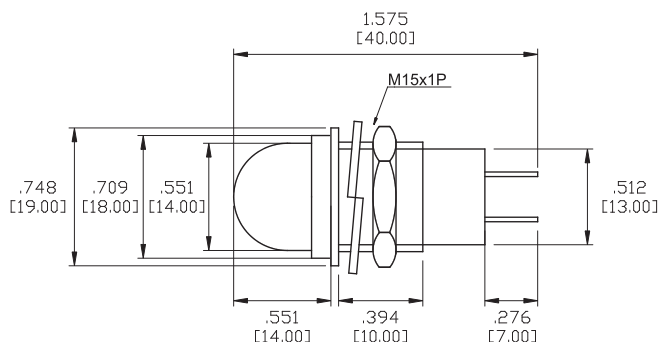
NI-01



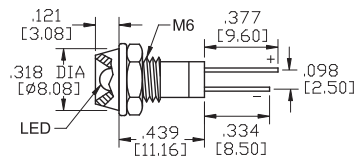
NI-02



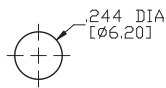
NI-03



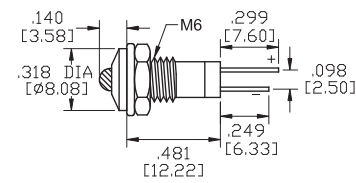
L-602 LED INDICATOR LIGHT W/O Resistor 2V



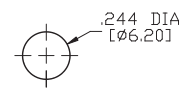
PANEL MOUNTING



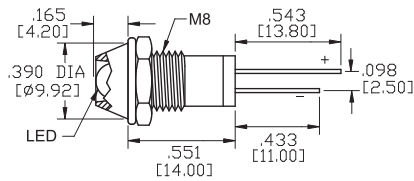
L-605 LED INDICATOR LIGHT W/O Resistor 2V



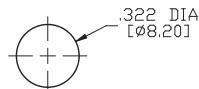
PANEL MOUNTING



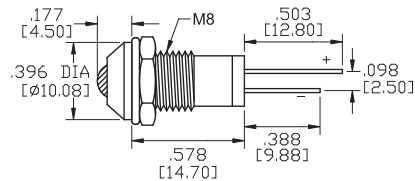
L-607 LED INDICATOR LIGHT W/O Resistor 2V



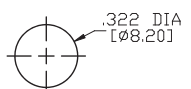
PANEL MOUNTING



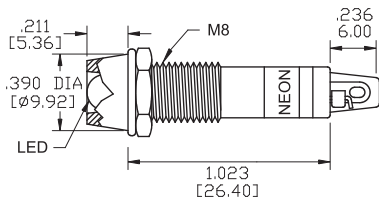
L-610 LED INDICATOR LIGHT W/O Resistor 2V



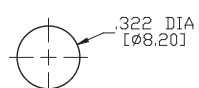
PANEL MOUNTING



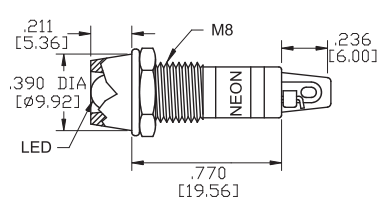
N-701 NEON / N-701L LED INDICATOR LIGHT W Resistor 120V 220V / W Resistor 6V 12V 24V



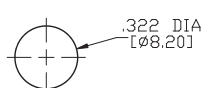
PANEL MOUNTING



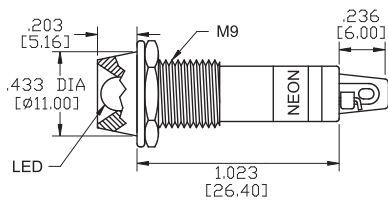
N-702 NEON / N-702P PILOT INDICATOR LIGHT W Resistor 120V 220V / W Resistor 6V 12V 24V



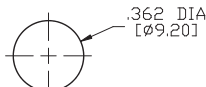
PANEL MOUNTING



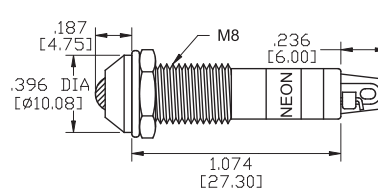
N-703 NEON INDICATOR LIGHT W Resistor 120V 220V



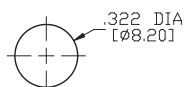
PANEL MOUNTING



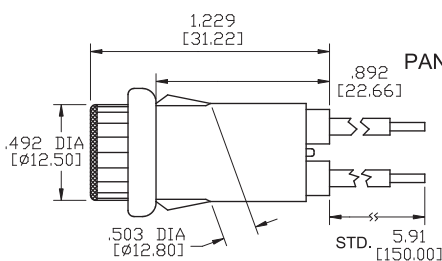
N-705 NEON / N-705L LED INDICATOR LIGHT W Resistor 120V 220V / W Resistor 6V 12V 24V



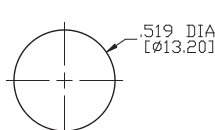
PANEL MOUNTING



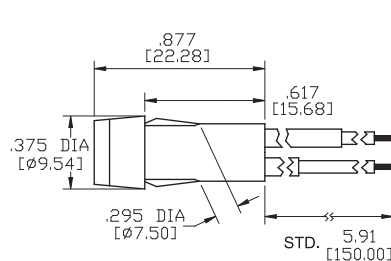
N-301 INDICATOR LIGHT W Resistor 120V 220V



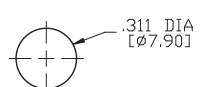
PANEL MOUNTING



N-381 INDICATOR LIGHT W Resistor 120V 220V



PANEL MOUNTING



Toggle

Rocker

Slide

Pushbutton

AV

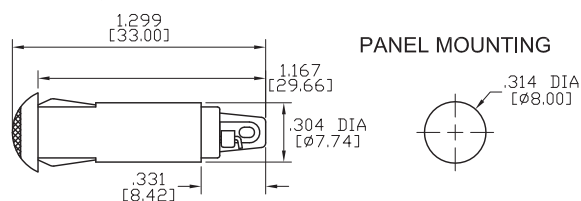
Rotary

Tact

Touch Key

Miscellaneous

N-369 INDICATOR LIGHT W Resistor 120V 220V



LED & LAMP COLOR OPTIONS

LED Colors

Code	Color
1	Red
2	Orange
3	Green
4	Yellow
5	Blue
6	White

Lamp Colors

Code	Color
1	Red
2	Orange
3	Green
4	Amber
5	Blue
6	White

VOLTAGE OPTIONS

Code No.	Voltage	Indicator Lights						
		L-6xx	N-7xx	N-7xxL	N-7xxP	N-3xx	LI-xx	NI-xx
1	2V	●						
2	6V			●	●			
3	12V			●	●		●	
4	24V			●	●		●	
5	120V		●			●		●
6	220V		●			●		●
7	5V						●	
8	48V				●			
9	100V		●			●		●
10	240V		●			●		●

● :AVAILABLE

HOW TO ORDER

