










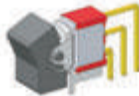











Toggle Switches

| | | |
|---|--|-----------|
|  | 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

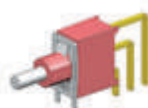
Pushbutton Switches



Series 700

Snap-Acting

P.106 ~ 111



Series 700A

Sealed Snap-Acting

P.112 ~ 116



Series 700L

Alternate Acting

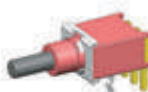
P.117 ~ 123



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 KR SAM
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

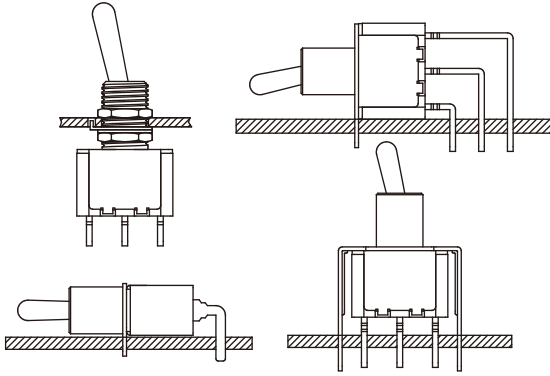
Indicator Lights P.294 ~ 296

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: 1,500V 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.
 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

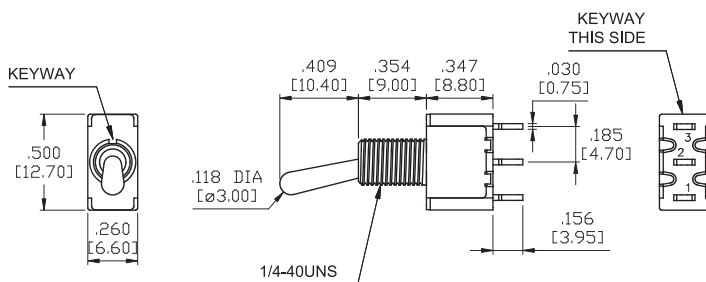
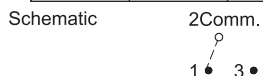
| | | | | |
|--|--|---|--|---|
| <p>100</p> <p>Switch Function</p> <p>SP-1 On-None-On SP-2 On-None-(On) SP-3 On-Off-On SP-4 (On)-Off-(On) SP-5 On-Off-(On) DP-1 On-None-On DP-2 On-None-(On) DP-3 On-Off-On DP-4 (On)-Off-(On) DP-5 On-Off-(On) DP-6 On-On-On DP-7 (On)-On-(On) DP-8 On-On-(On) DP-9 None-On-(On) 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) 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) 4P-6 On-On-On 4P-7 (On)-On-(On) 4P-8 On-On-(On)</p> | <p>Actuator</p> <p>T1 10.40 (.409") high T2 5.40 (.213") high T3 14.20 (.559") high T4 16.50 (.650") high T5 21.40 (.843") high T6 Flatted, 12.10 (.476") high T7 11.70 (.461") high, 15/32 bushing P7 T7 anti-rotation T8 17.50 (.689") high, 15/32 bushing P8 T8 anti-rotation T9 Plastic, 17.20 (.677") high T0 Round, 10.60 (.417") high TA Locking lever, 15.60 (.614") high TI Locking lever, 13.80 (.543") high TL Locking lever, 14.56 (.573") high</p> <p>Cap Type</p> <p>0 No Cap 1 T1 Plastic, 10.60 (.417") high 2 T2 Plastic, 7.60 (.299") 3 E1 Rubber hood, 13.00 (.512") high 4 YE1A Rubber hood, 24.50, (.965") high</p> | <p>Cap Color</p> <p>0 No color required 1 White 2 Black 3 Red 4 Orange 5 Yellow 6 Green 7 Blue 8 Brown 9 Gray</p> <p>Bushing</p> <p>B1 9.00 (.354") high, keyway B2 B1 unthreaded B3 7.10 (.280") high, keyway B4 B3 unthreaded B5 7.50 (.295") high, flat B6 8.00 (.315") high, keyway B7 9.60 (.378") high, flat B8 9.00 (.354") high, metric, keyway B9 Splash proof, 7.50 (.295") high BL Locking type, 9.60 (.378") high</p> | <p>Contact Material</p> <p>Q Silver P Silver (tin plated term.) R Gold K Gold (tin plated term.) G Silver (gold over silver term.)</p> <p>Termination</p> <p>M1 Solder lug M2 PC thru-hole M3 Quick connect M5-1 Wire wrap, 19.05 (.750") long M5-2 Wire wrap, 24.48 (.964") long M5-3 Wire wrap, 10.80 (.425") long M5-4 Wire wrap, 26.97 (1.062") long M6 Right angle, PC thru-hole M61 Right angle, snap-in M7 Vertical, right angle PC thru-hole M71 Vertical, right angle snap-in VS2 Vertical mount, 11.70 (.461") high VS21 Vertical mount, snap-in 11.70 (.461") high VS3 Vertical mount, 16.00 (.630") high VS31 Vertical mount, snap-in 16.00 (.630") high VS4 Vertical mount, 11.70 (.461") high VS41 Vertical mount, snap-in 11.70 (.461") high VS5 Vertical mount, 16.00 (.630") high VS51 Vertical mount, snap-in 16.00 (.630") high</p> | <p>Seal</p> <p>E Epoxy 0 W/O Epoxy</p> |
|--|--|---|--|---|

Note:
No cap type required for T9 actuator

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 |

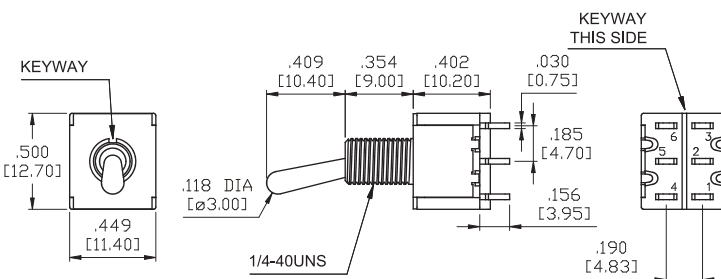
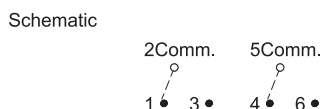


DPDT

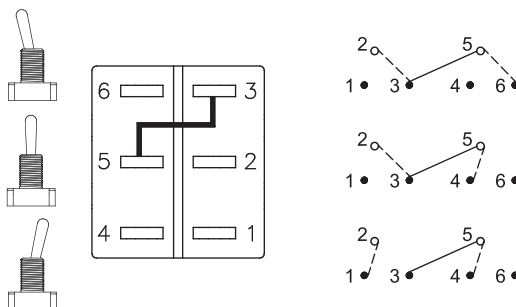


| Model No. | Switching Position | | |
|-------------|--------------------|------|---------|
| | | | |
| DP-1 | ON | NONE | ON |
| DP-2 | ON | NONE | (ON) |
| DP-3 | ON | OFF | ON |
| DP-4 | (ON) | OFF | (ON) |
| DP-5 | ON | OFF | (ON) |
| Term. Comm. | 2-3,5-6 | OPEN | 2-1,5-4 |

| 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 |



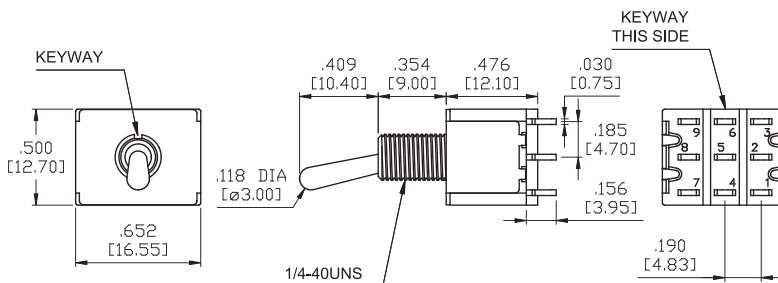
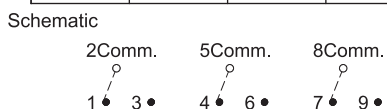
WIRING FOR ON-ON-ON (3-WAY) FUNCTION



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 |



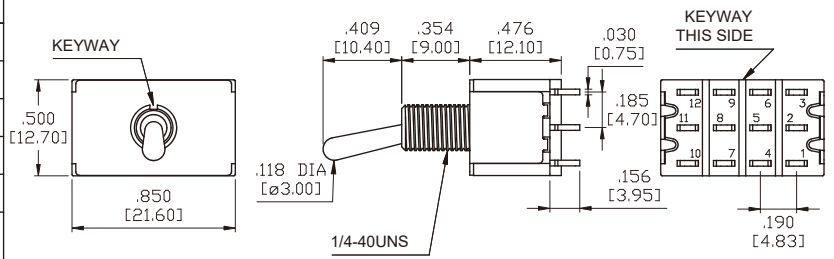
Toggle
Rocker
Slide
Pushbutton
AV
Rotary
Tact
Touch Key
Miscellaneous

4PDT

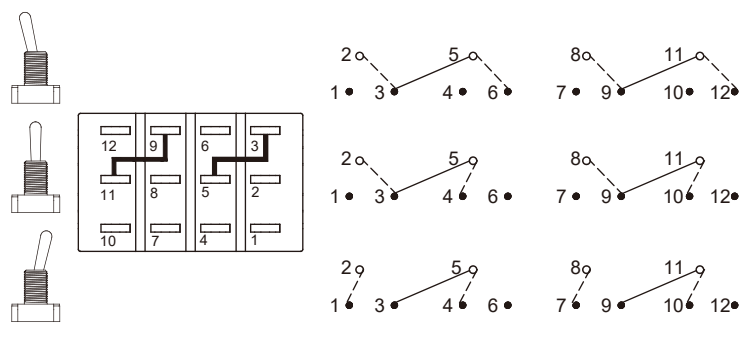


| Model No. | Switching Position | | |
|-------------|-------------------------|------|-------------------------|
| 4P-1 | ON | NONE | ON |
| 4P-2 | ON | NONE | (ON) |
| 4P-3 | ON | OFF | ON |
| 4P-4 | (ON) | OFF | (ON) |
| 4P-5 | ON | OFF | (ON) |
| Term. Comm. | 2-3,5-6 8-9 11-12 | OPEN | 2-1,5-4 8-7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

| Model No. | Switching Position | | |
|-------------|-------------------------|-------------------------|-------------------------|
| 4P-6 | ON | ON | ON |
| 4P-7 | (ON) | ON | (ON) |
| 4P-8 | ON | ON | (ON) |
| 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

| T1 | T2 | T3 | T4 | T5 | | | | | | | | | | | | | | | | | | | | | |
|--|--|--|-----------------------|--|-----|-------|---|-------|---|-------------|---|-----|---|--------|---|--------|---|-------|---|------|---|-------|---|------|---------------|
| T6 | T7 P7 ANTI-ROTATION | T8 P8 ANTI-ROTATION | T9 PLASTIC | <table border="1"> <thead> <tr> <th>NO.</th> <th>COLOR</th> </tr> </thead> <tbody> <tr><td>1</td><td>White</td></tr> <tr><td>2</td><td>Black(std.)</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> </tbody> </table> | NO. | COLOR | 1 | White | 2 | Black(std.) | 3 | Red | 4 | Orange | 5 | Yellow | 6 | Green | 7 | Blue | 8 | Brown | 9 | Gray | T0 |
| NO. | COLOR | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | White | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Black(std.) | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Red | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Orange | | | | | | | | | | | | | | | | | | | | | | | | |
| 5 | Yellow | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Green | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | Blue | | | | | | | | | | | | | | | | | | | | | | | | |
| 8 | Brown | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | Gray | | | | | | | | | | | | | | | | | | | | | | | | |
| LOCKING LEVER TA <p>FOR SP-1,DP-1 3P-1,4P-1 ONLY</p> <p>FOR SP-3,DP-3 3P-3,4P-3 ONLY</p> | LOCKING LEVER TI <p>FOR SP-1,DP-1 3P-1,4P-1 ONLY</p> <p>FOR SP-3,DP-3 3P-3,4P-3 ONLY</p> | LOCKING LEVER TL <p>FOR SP-1,DP-1 3P-1,4P-1 ONLY</p> <p>FOR SP-3,DP-3 3P-3,4P-3 ONLY</p> | | | | | | | | | | | | | | | | | | | | | | | |

* T6 must configure with a stand-off bushing.

* For T7,P7,T8,P8 bushing code is not required.

* Actuator length shown for T1 ~ T5 and T9 ~ T0 is with B1 bushing.

BUSHING OPTIONS

| | | | |
|--|--|---------------------------------|-------------------------------------|
| <p>B1 THD B2 NON-THD</p> | <p>B3 THD B4 NON-THD</p> | <p>B5 HIGH TORQUE</p> | <p>B6 HIGH TORQUE</p> |
| <p>B7 LONG</p> | <p>B8 METRIC</p> | <p>B9 SPLASH-PROOF</p> | <p>BL LOCKING LEVER</p> |
| <p>BA THD For T6</p> | | <p>BB NON-THD For T6</p> | <p>BE HIGH TORQUE For T6</p> |

PANEL MOUNTING

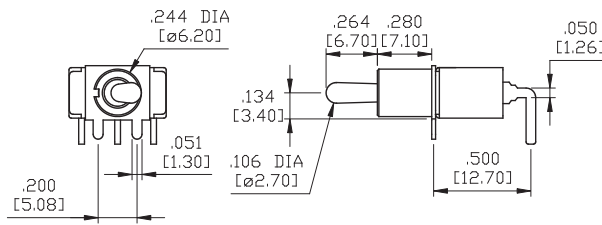
| | |
|--------------------------------|----------------------------------|
| <p>1/4 INCH BUSHING</p> | <p>15/32 INCH BUSHING</p> |
|--------------------------------|----------------------------------|

TERMINATION OPTIONS

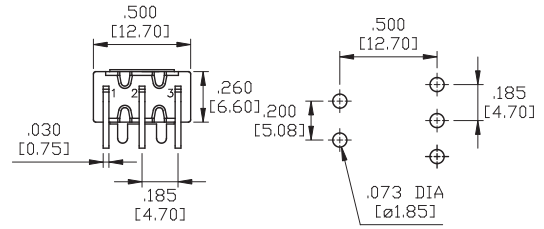
| <p>M1 STD. SOLDER LUG</p> | <p>M2 PC THRU-HOLE</p> | <p>M3 QUICK CONNECT</p> | <p>M5 WIRE WRAP</p> <table border="1" data-bbox="1270 1757 1517 1985"> <thead> <tr> <th>OPTION CODE</th> <th>DIM.'A'</th> </tr> </thead> <tbody> <tr> <td>M5-1</td> <td>.750 [19.05]</td> </tr> <tr> <td>M5-2</td> <td>.964 [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> </tbody> </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

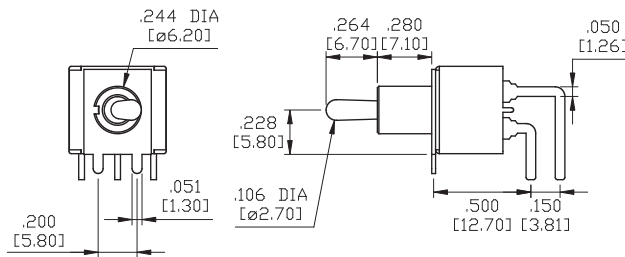


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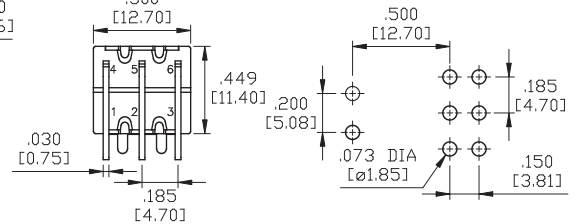


SPDT

M6

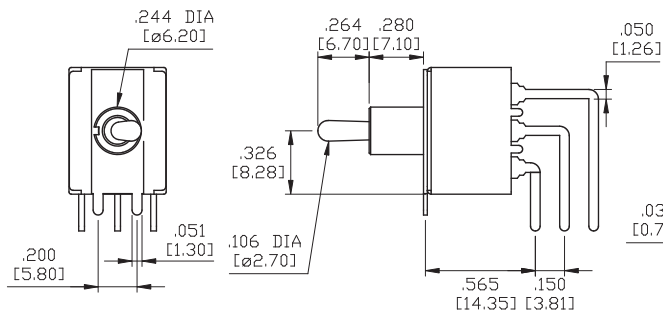
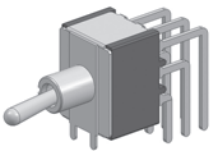


P.C.MOUNTING

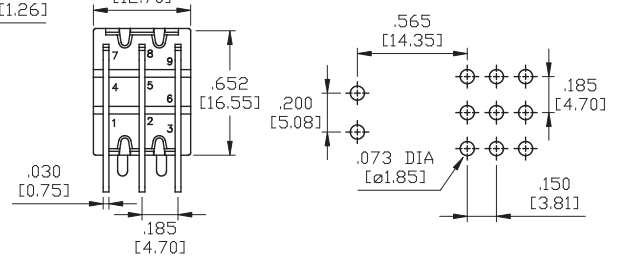


DPDT

M6

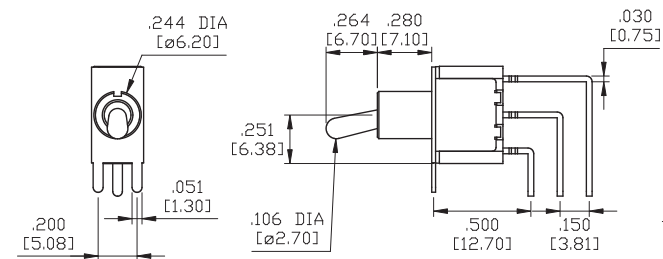
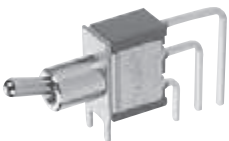


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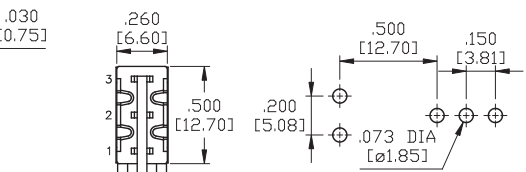


3PDT

M7

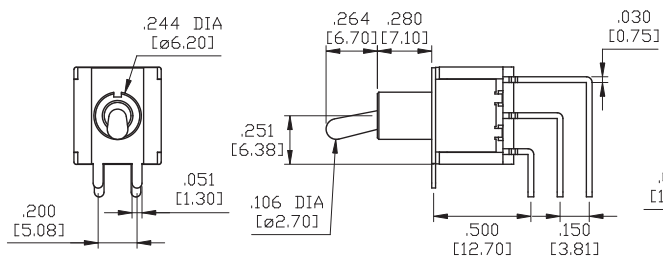
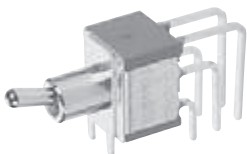


P.C.MOUNTING

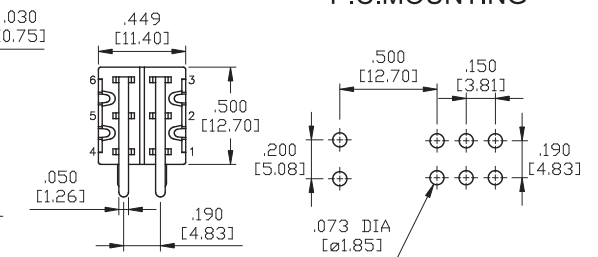


SPDT

M7



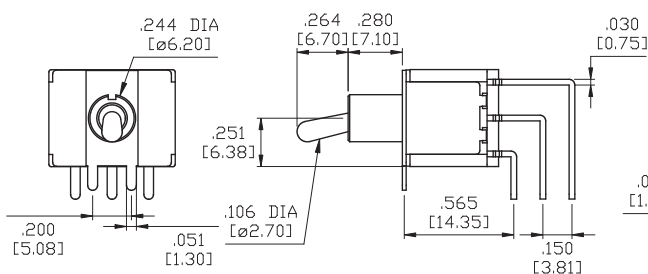
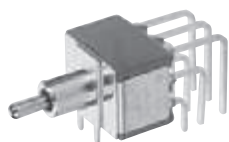
P.C.MOUNTING



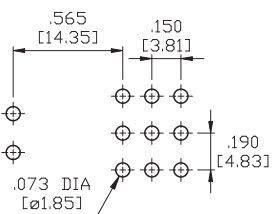
DPDT

TERMINATION OPTIONS

M7

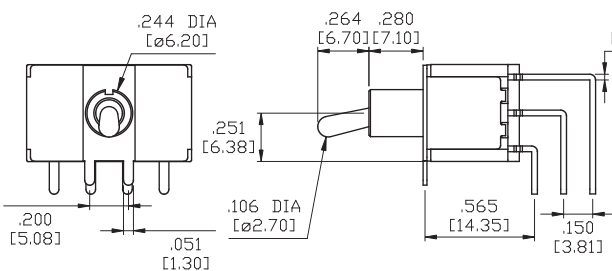
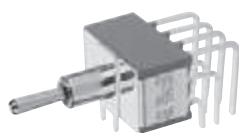


P.C.MOUNTING

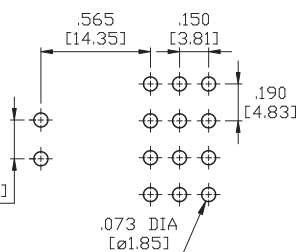


3PDT

M7

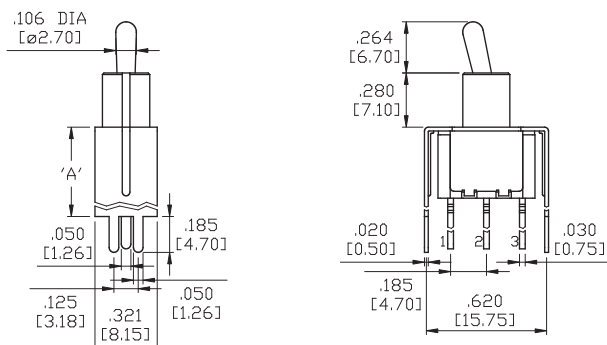
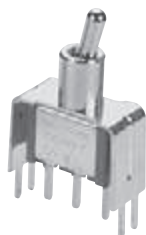


P.C.MOUNTING

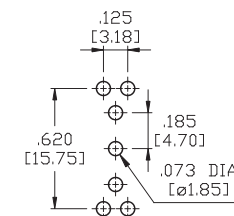


4PDT

VS2-VS3

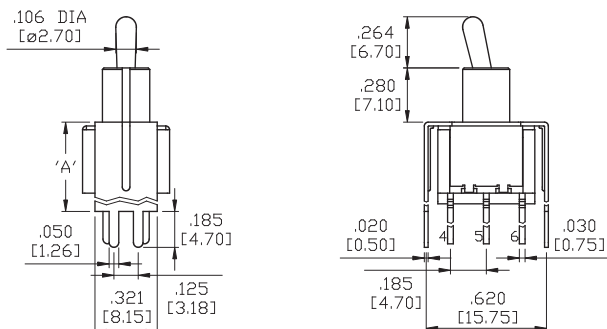


P.C.MOUNTING

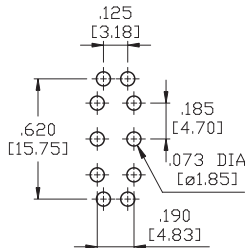


SPDT

VS2-VS3

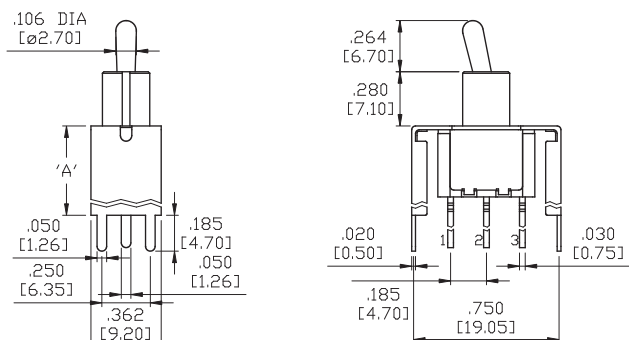


P.C.MOUNTING

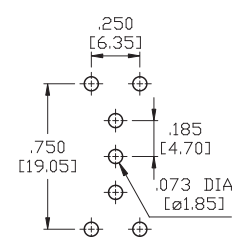


DPDT

VS4-VS5



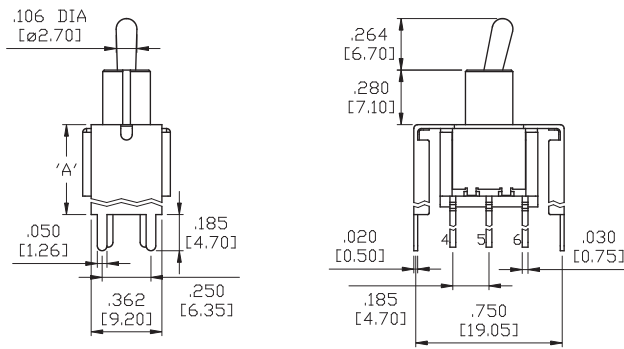
P.C.MOUNTING



SPDT

TERMINATION OPTIONS

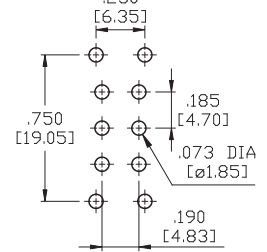
VS4-VS5



DPDT

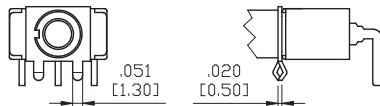
| OPTION CODE | DIM.'A' |
|-------------|--------------|
| VS4 | .461 [11.70] |
| VS5 | .630 [16.00] |

P.C.MOUNTING

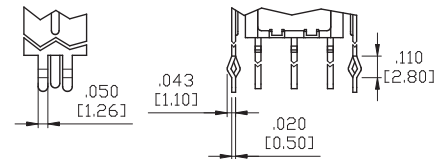


SNAP-IN TERMINATION OPTIONS

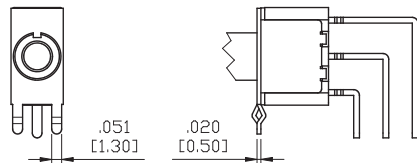
M61 (AVAILABLE WITH SPDT AND DPDT)



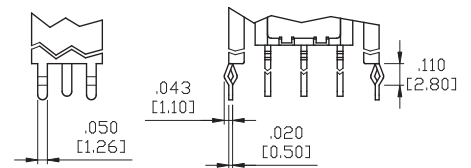
VS21,VS31



M71 (AVAILABLE WITH SPDT AND DPDT)



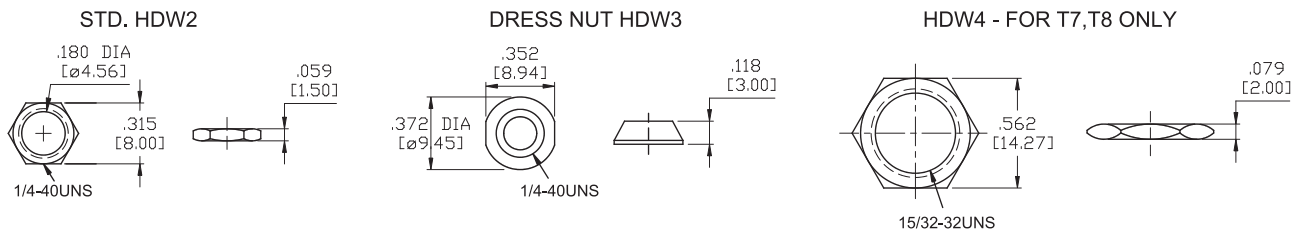
VS41,VS51



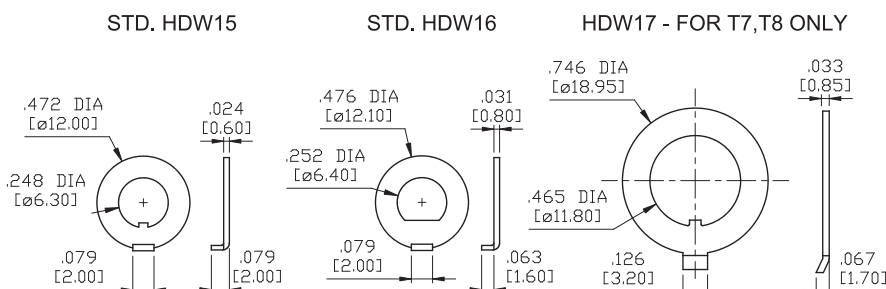
* PC Mounting for M61,M71,VS21,VS31,VS41,VS51 refer to M6,M7,VS2,VS3,VS4,VS5 respectively.

HARDWARE

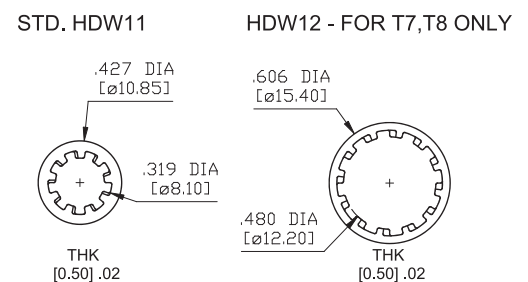
NUT



LOCKING RING



LOCK WASHER



TOGGLE CAPS

T1 ACTUATOR CAP



* MATERIAL: PVC.

T2 ACTUATOR CAP



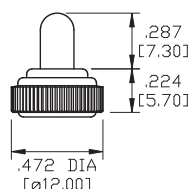
* MATERIAL: PVC.

T9 ACTUATOR GLOSS PLASTIC



* MATERIAL: ABS.

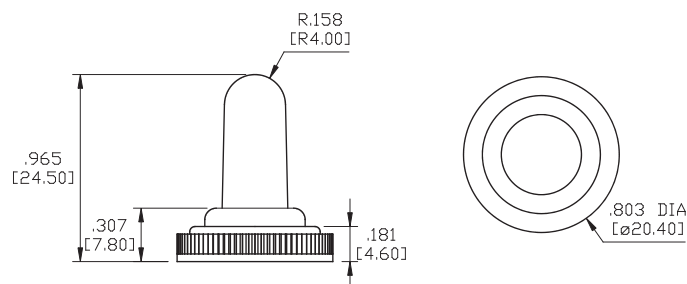
E1 RUBBER HOOD



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

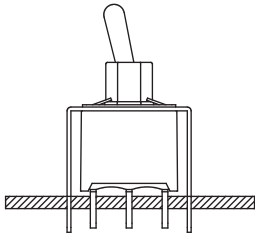
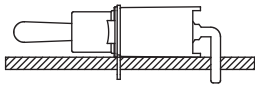
* 6Amps (Movable Contact: coin silver, silver plated) available to model ON-NONE-ON without UL approval

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:

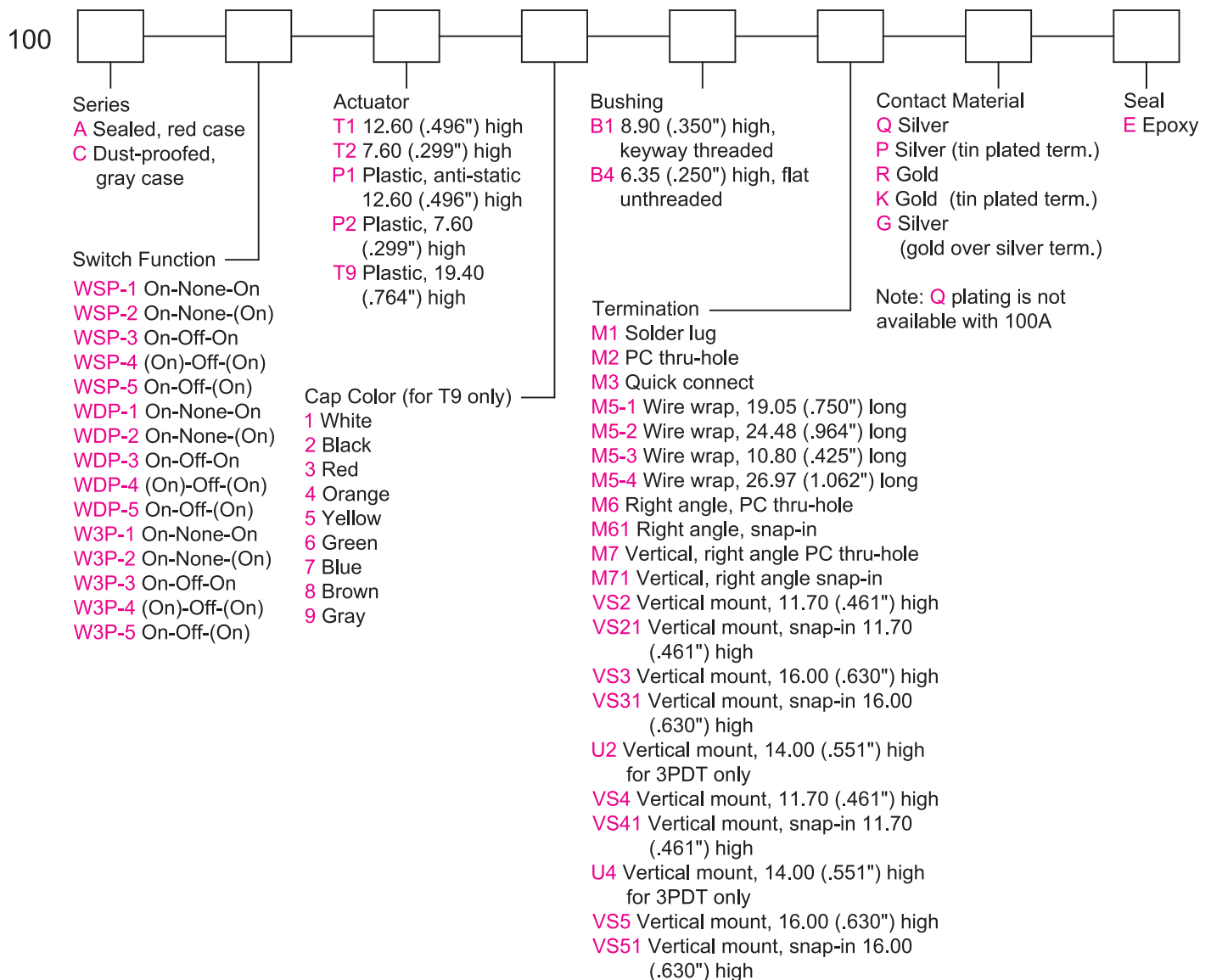
CASE & BUSHING: PA9T or FR52, flame retardant, heat stabilized (UL94V-0).
 ACTUATOR: Brass chrome plated, internal o-ring sealed (100A).
 ACTUATOR: Brass chrome plated (100C).
 SWITCH SUPPORT: Brass, tin plated.
 TERMINAL SEAL: Epoxy.



Specifications and Dimensions subject to change

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

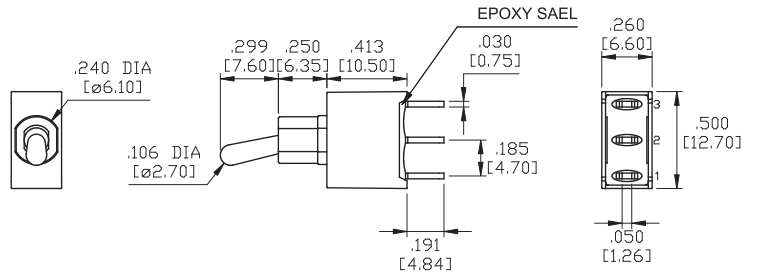
HOW TO ORDER SYSTEM



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 |

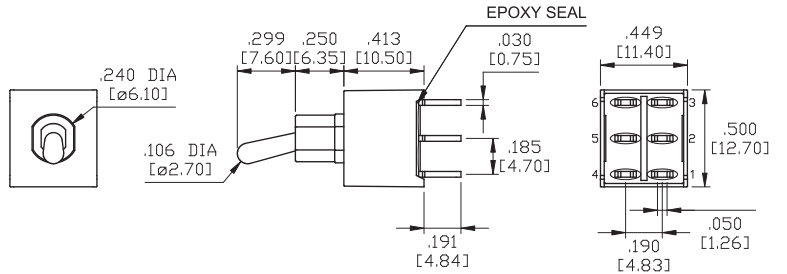
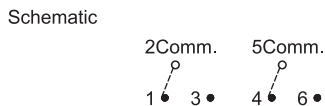


DPDT

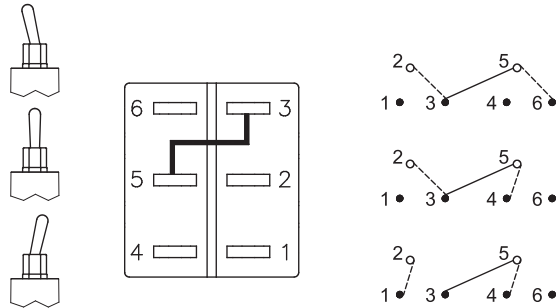


| Model No. | Switching Position | | |
|-------------|--------------------|------|---------|
| | | | |
| WDP-1 | ON | NONE | ON |
| WDP-2 | ON | NONE | (ON) |
| WDP-3 | ON | OFF | ON |
| WDP-4 | (ON) | OFF | (ON) |
| WDP-5 | ON | OFF | (ON) |
| Term. Comm. | 2-3,5-6 | OPEN | 2-1,5-4 |

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



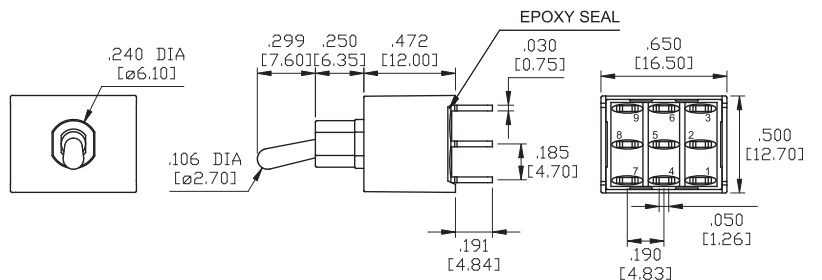
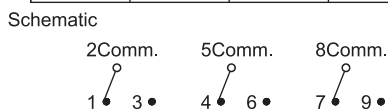
WIRING FOR ON-ON-ON (3-WAY) FUNCTION



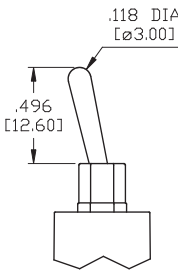
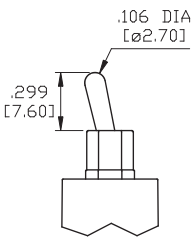
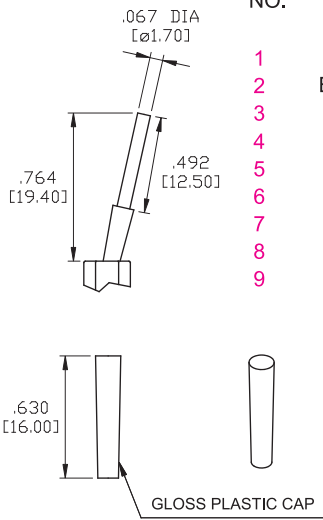
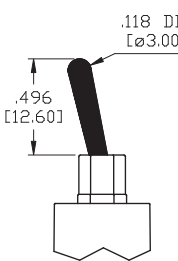
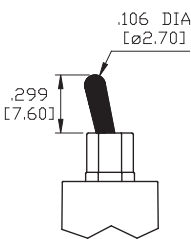
3PDT



| 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 |



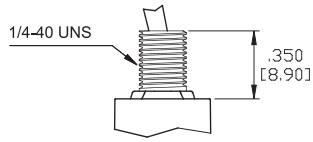
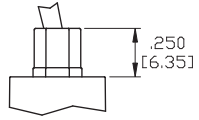
ACTUATOR OPTIONS

| <p>T1</p>  | <p>T2</p>  | <p>T9 WITH PLASTIC CAP</p>  <table border="1" data-bbox="1313 312 1495 614"> <thead> <tr> <th>NO.</th> <th>COLOR</th> </tr> </thead> <tbody> <tr><td>1</td><td>White</td></tr> <tr><td>2</td><td>Black(std.)</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> </tbody> </table> <p>GLOSS PLASTIC CAP</p> | NO. | COLOR | 1 | White | 2 | Black(std.) | 3 | Red | 4 | Orange | 5 | Yellow | 6 | Green | 7 | Blue | 8 | Brown | 9 | Gray |
|---|---|---|-----|-------|---|-------|---|-------------|---|-----|---|--------|---|--------|---|-------|---|------|---|-------|---|------|
| NO. | COLOR | | | | | | | | | | | | | | | | | | | | | |
| 1 | White | | | | | | | | | | | | | | | | | | | | | |
| 2 | Black(std.) | | | | | | | | | | | | | | | | | | | | | |
| 3 | Red | | | | | | | | | | | | | | | | | | | | | |
| 4 | Orange | | | | | | | | | | | | | | | | | | | | | |
| 5 | Yellow | | | | | | | | | | | | | | | | | | | | | |
| 6 | Green | | | | | | | | | | | | | | | | | | | | | |
| 7 | Blue | | | | | | | | | | | | | | | | | | | | | |
| 8 | Brown | | | | | | | | | | | | | | | | | | | | | |
| 9 | Gray | | | | | | | | | | | | | | | | | | | | | |
| <p>P1 PLASTIC TOGGLE</p>  | <p>P2 PLASTIC TOGGLE</p>  | | | | | | | | | | | | | | | | | | | | | |

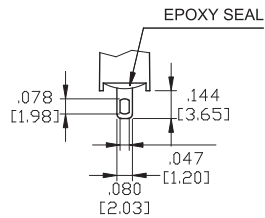
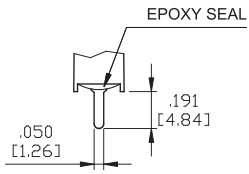
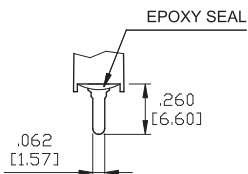
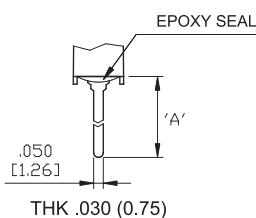
* Subtract 2.20mm (.087") from actuator height for B1 bushing

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

BUSHING OPTIONS

| | |
|--|--|
| <p>B1</p>  | <p>B4</p>  |
|--|--|

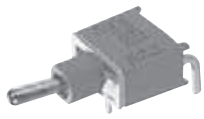
TERMINATION OPTIONS

| <p>M1 STD. SOLDER LUG</p>  <p>THK .030 [0.75]</p> | <p>M2 PC THRU-HOLE</p>  <p>THK .030 [0.75]</p> | <p>M3 QUICK CONNECT</p>  <p>THK .030 [0.75]</p> | <p>M5 WIRE WRAP</p>  <p>THK .030 (0.75)</p> <table border="1" data-bbox="1255 1778 1503 2015"> <thead> <tr> <th>OPTION CODE</th> <th>DIM.'A'</th> </tr> </thead> <tbody> <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> </tbody> </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] | | | | | | | | | | | | |

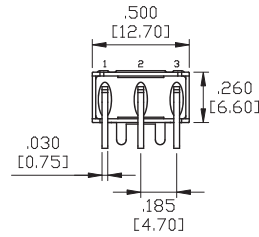
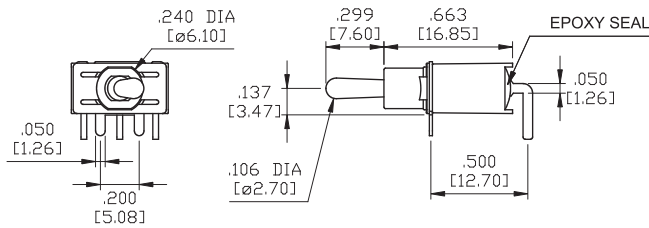
Toggle
Rocker
Slide
Pushbutton
AV
Rotary
Tact
Touch Key
Miscellaneous

TERMINATION OPTIONS

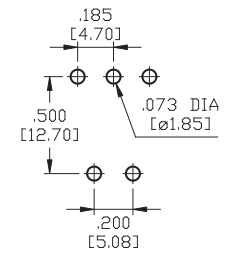
M6



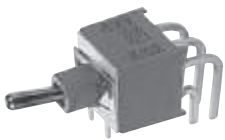
SPDT



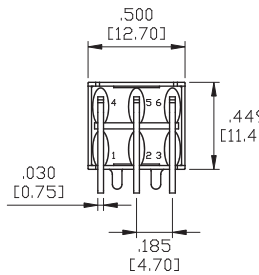
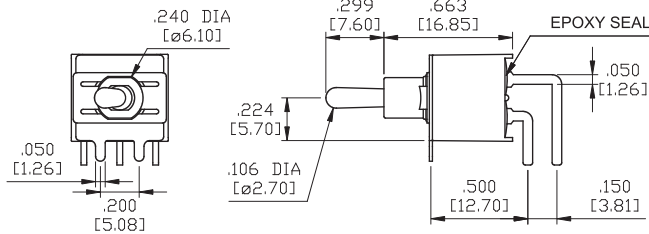
P.C.MOUNTING



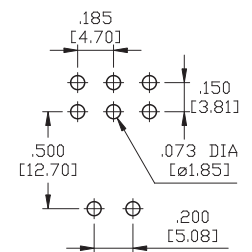
M6



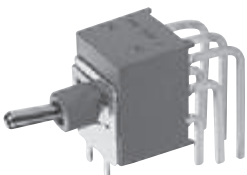
DPDT



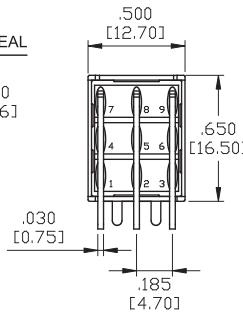
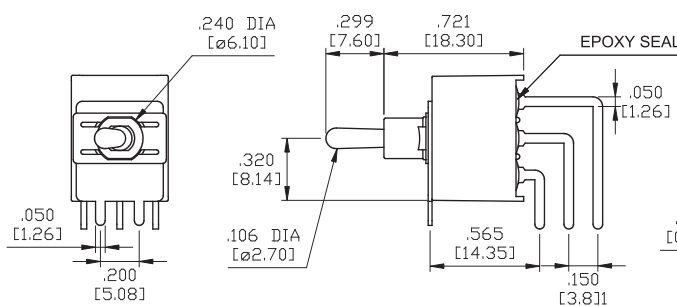
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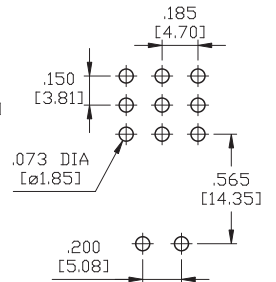
M6



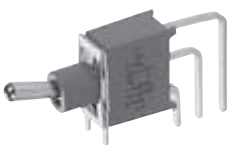
3PDT



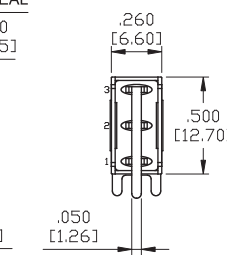
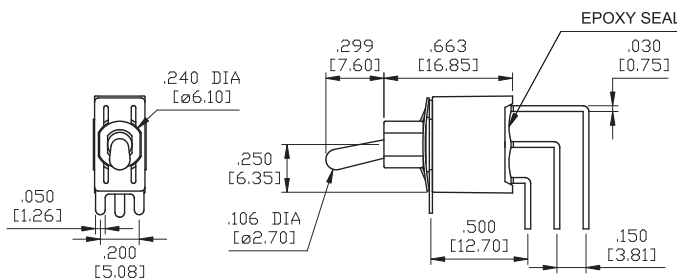
P.C.MOUNTING



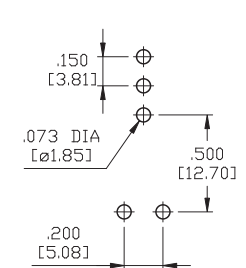
M7



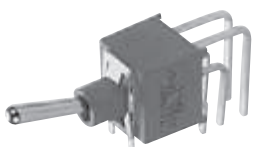
SPDT



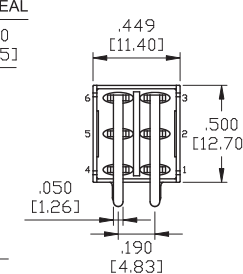
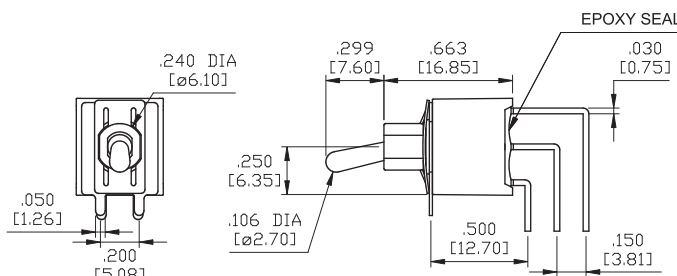
P.C.MOUNTING



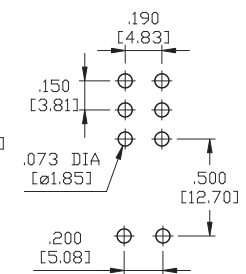
M7



DPDT

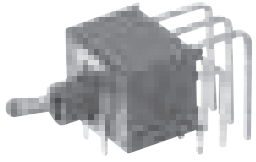


P.C.MOUNTING

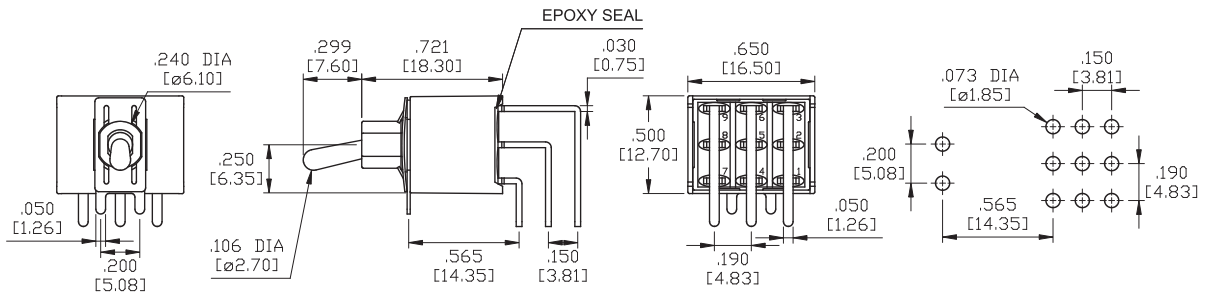


TERMINATION OPTIONS

M7

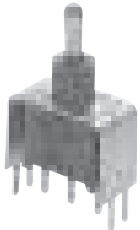


3PDT

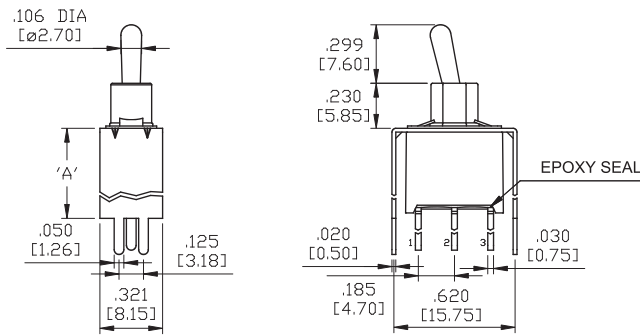


P.C.MOUNTING

VS2-VS3

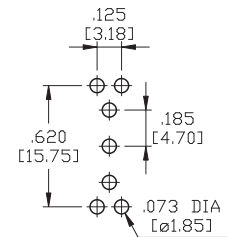


SPDT



P.C.MOUNTING

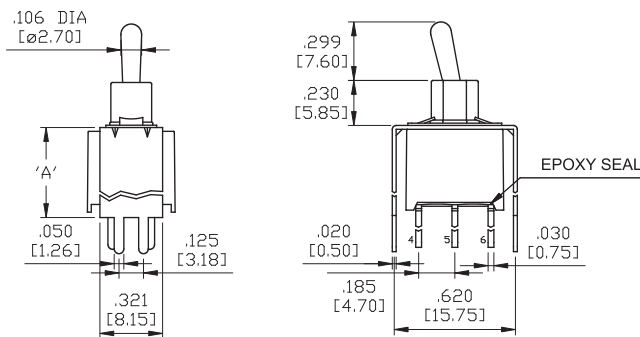
| OPTION CODE | DIM.'A' |
|-------------|--------------|
| VS2 | .461 [11.70] |
| VS3 | .630 [16.00] |



VS2-VS3

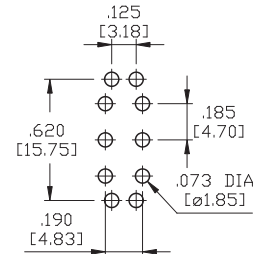


DPDT



P.C.MOUNTING

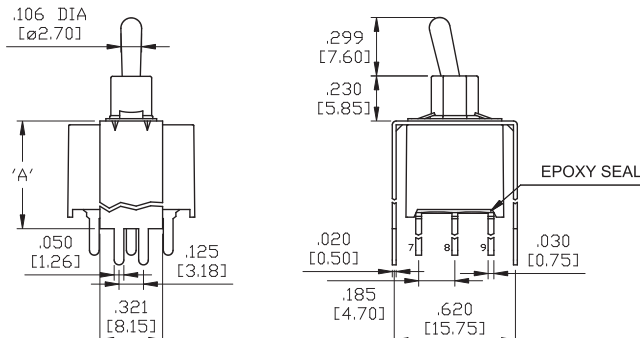
| OPTION CODE | DIM.'A' |
|-------------|--------------|
| VS2 | .461 [11.70] |
| VS3 | .630 [16.00] |



U2-VS3

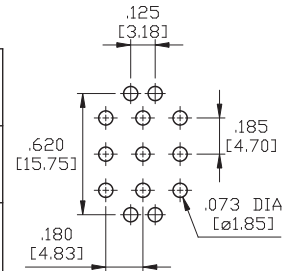


3PDT



P.C.MOUNTING

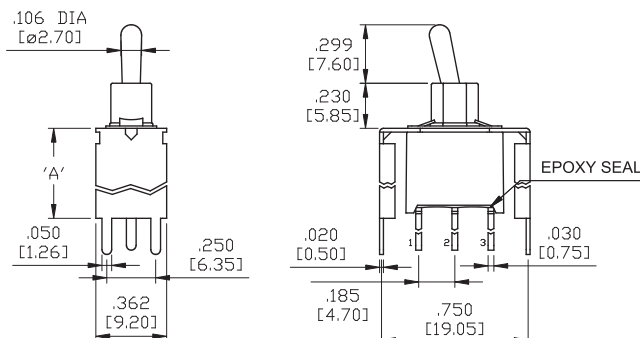
| OPTION CODE | DIM.'A' |
|-------------|--------------|
| U2 | .551 [14.00] |
| VS3 | .630 [16.00] |



VS4-VS5

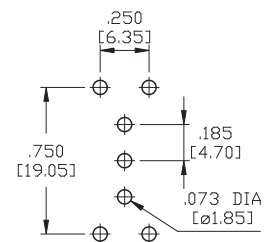


SPDT



P.C.MOUNTING

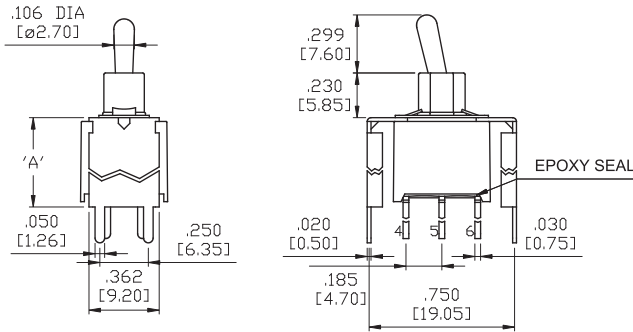
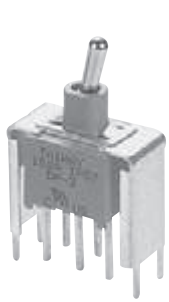
| OPTION CODE | DIM.'A' |
|-------------|--------------|
| VS4 | .461 [11.70] |
| VS5 | .630 [16.00] |



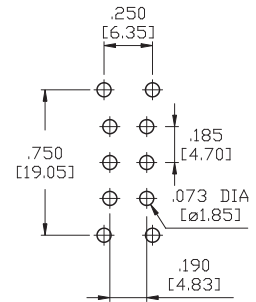
TERMINATION OPTIONS

VS4-VS5

P.C.MOUNTING



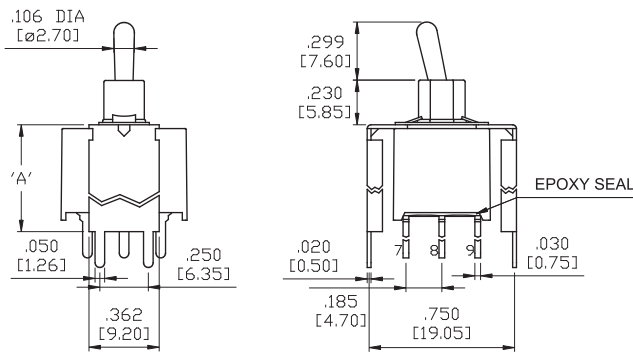
| OPTION CODE | DIM.'A' |
|-------------|--------------|
| VS4 | .461 [11.70] |
| VS5 | .630 [16.00] |



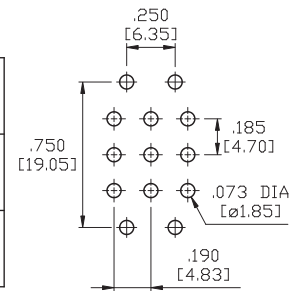
DPDT

U4-VS5

P.C.MOUNTING



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

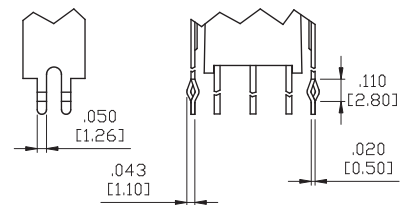
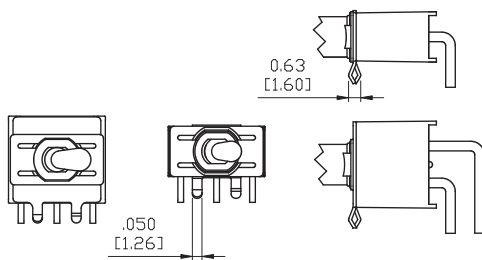


3PDT

SNAP-IN TERMINATION OPTIONS

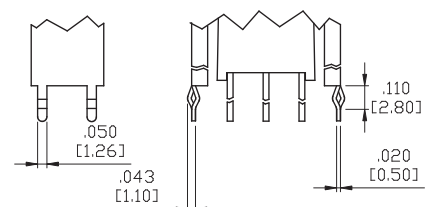
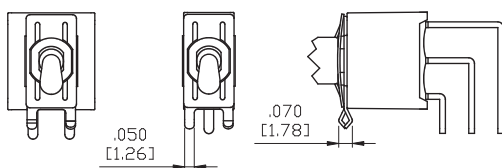
M61

VS21,VS31



M71

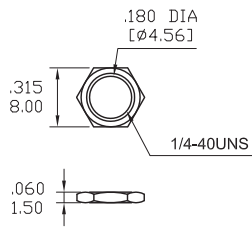
VS41,VS51



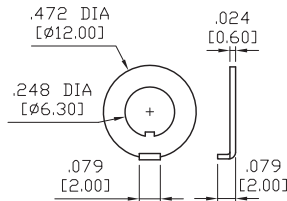
* PC Mounting for M61,M71,VS21,VS31,VS41,VS51 refer to M6,M7,VS2,VS3,VS4,VS5 respectively.

HARDWARE

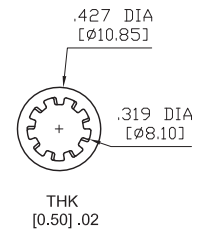
NUT



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.

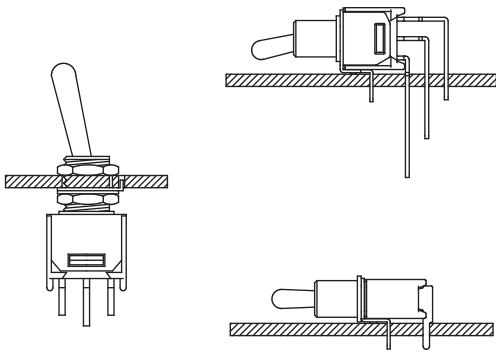
* P, K not available with M1 and M3 terminals.
 * 6Amps (Movable Contact: coin silver, silver plated) available to model ON-NONE-ON without UL approval
 * IP67 protection for 100A series only.

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:

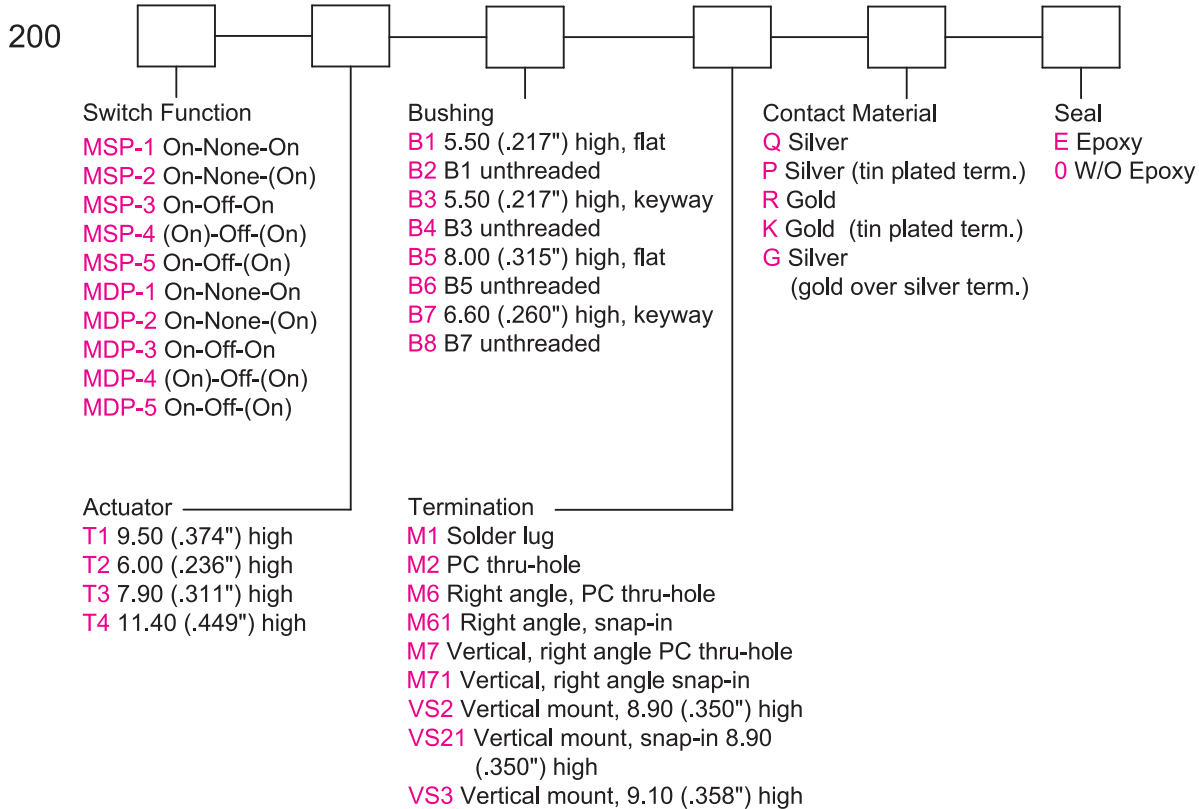
CASE: Diallyl phthalate (DAP)(UL 94V-0).
 TOGGLE HANDLE: Brass, chrome plated.
 BUSHING: Brass, nickel plated.
 HOUSING: Stainless steel.
 SWITCH SUPPORT: Brass, tin plated.
 TERMINAL SEAL: Epoxy.



Specifications and Dimensions subject to change

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

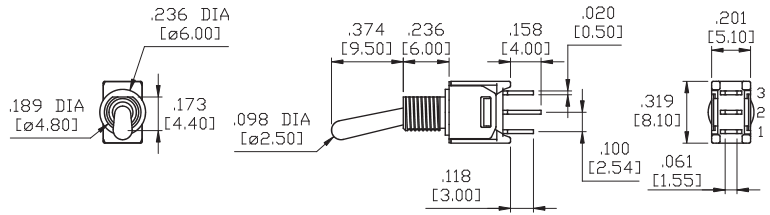
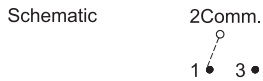
HOW TO ORDER SYSTEM



SPDT



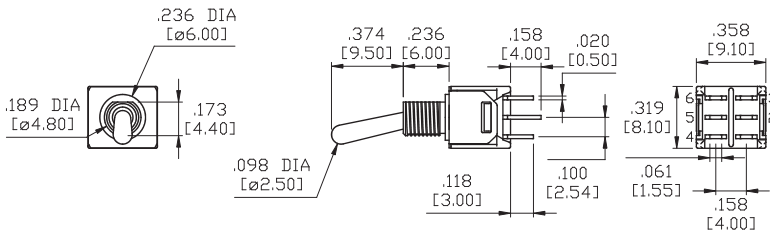
| Model No. | Switching Position | | |
|-------------|--------------------|------|------|
| | | | |
| MSP-1 | ON | NONE | ON |
| MSP-2 | ON | NONE | (ON) |
| MSP-3 | ON | OFF | ON |
| MSP-4 | (ON) | OFF | (ON) |
| MSP-5 | ON | OFF | (ON) |
| Term. Comm. | 2-3 | OPEN | 2-1 |



DPDT

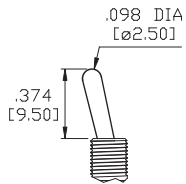


| Model No. | Switching Position | | |
|-------------|--------------------|------|---------|
| | | | |
| MDP-1 | ON | NONE | ON |
| MDP-2 | ON | NONE | (ON) |
| MDP-3 | ON | OFF | ON |
| MDP-4 | (ON) | OFF | (ON) |
| MDP-5 | ON | OFF | (ON) |
| Term. Comm. | 2-3,5-6 | OPEN | 2-1,5-4 |

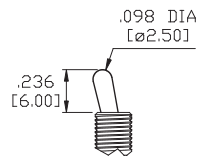


ACTUATOR OPTIONS

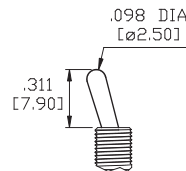
T1



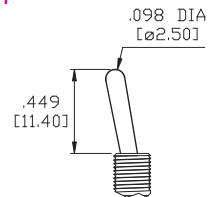
T2



T3



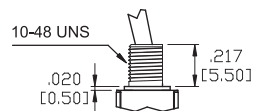
T4



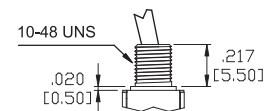
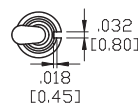
* Actuator length shown above is with B1 bushing M1 and M2 terminals.
* please consult us for detailed spec on specific item.

BUSHING OPTIONS

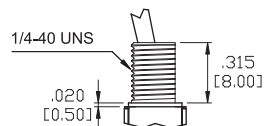
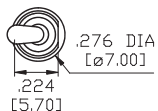
B1 THD
B2 NON-THD



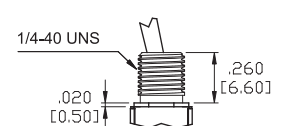
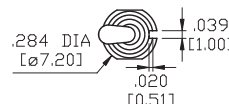
B3 THD
B4 NON-THD



B5 THD
B6 NON-THD

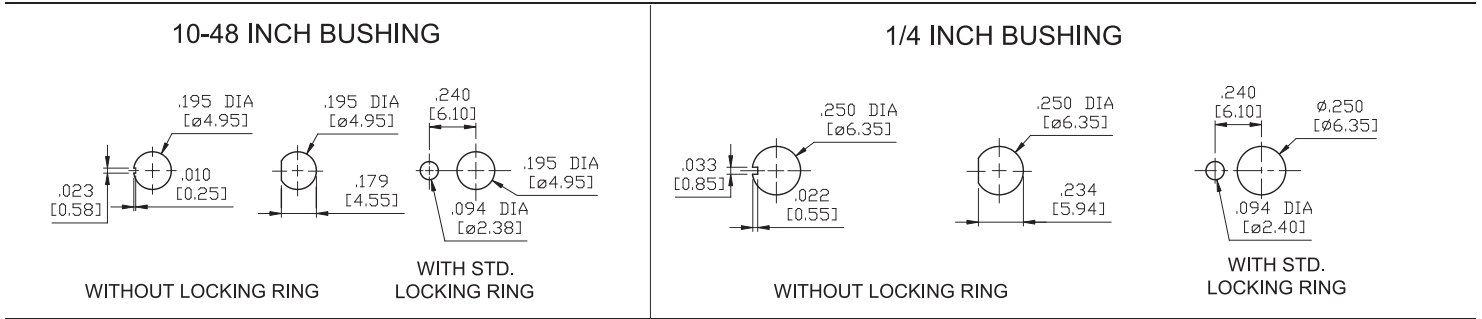


B7 THD
B8 NON-THD

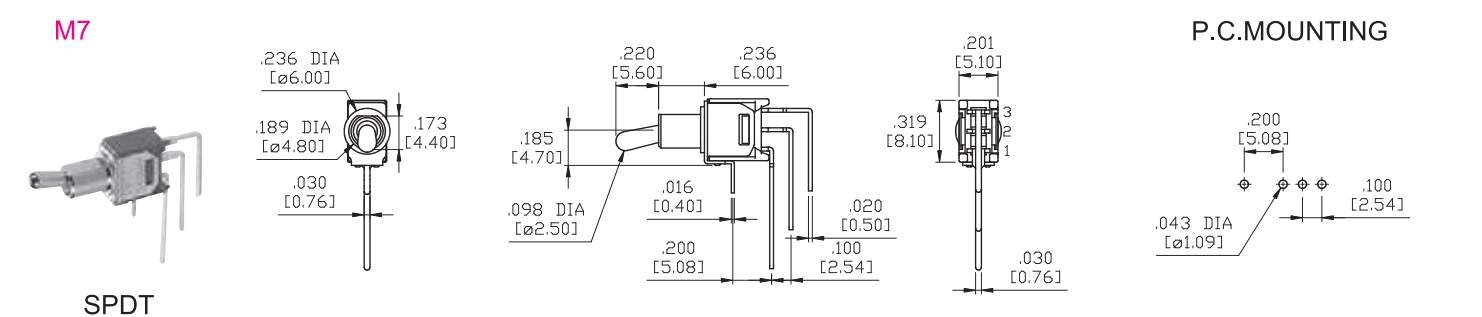
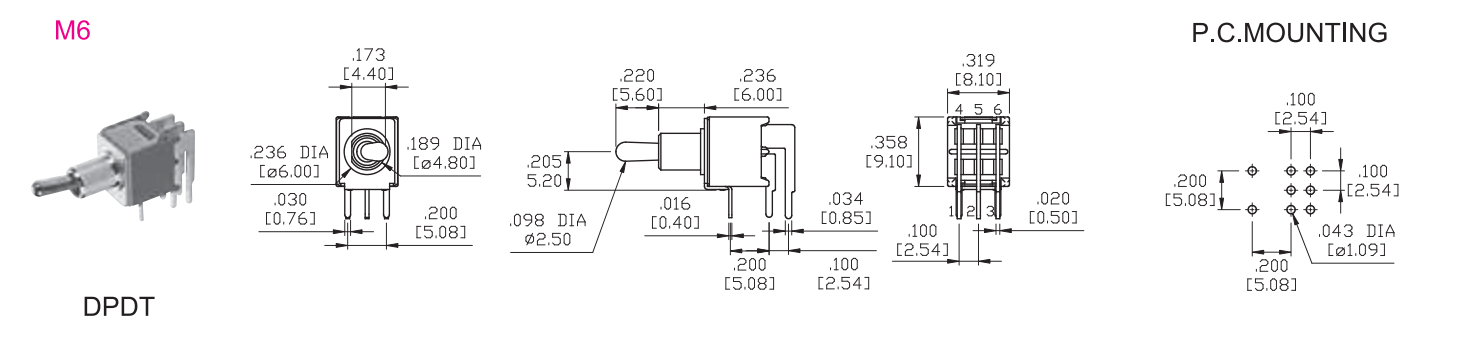
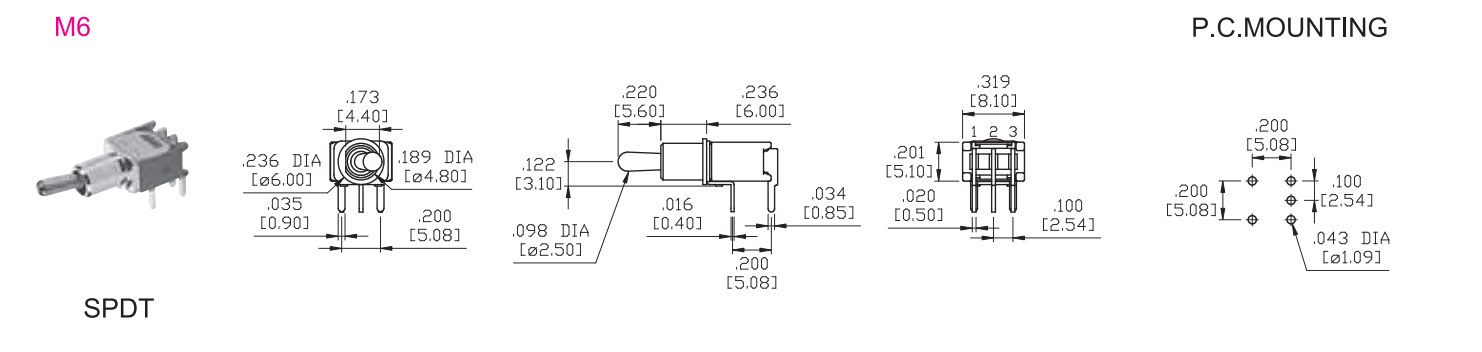
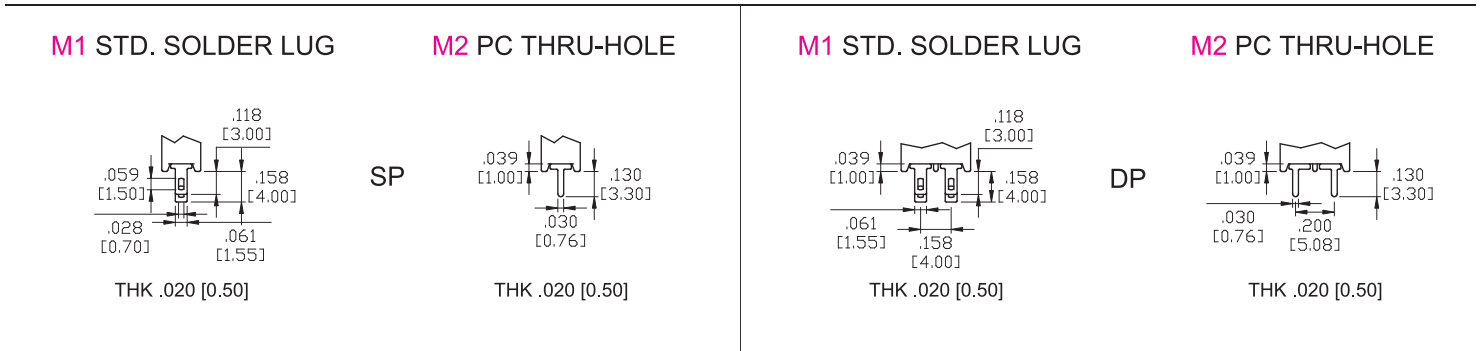


Toggle
Rocker
Slide
Pushbutton
AV
Rotary
Tact
Touch Key
Miscellaneous

PANEL MOUNTING

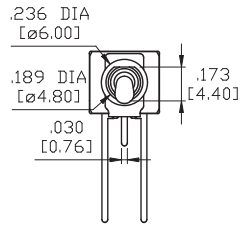


TERMINATION OPTIONS

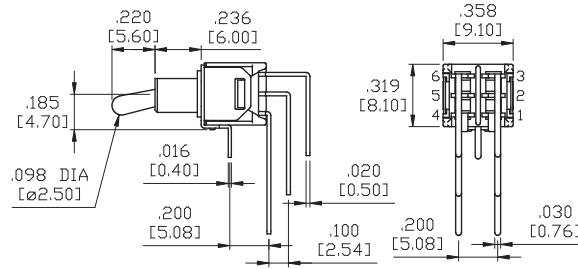


TERMINATION OPTIONS

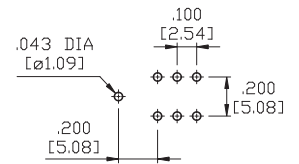
M7



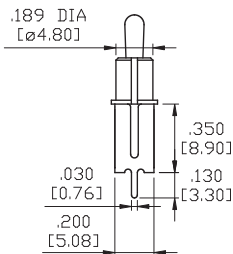
DPDT



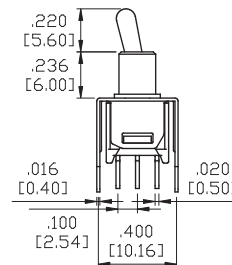
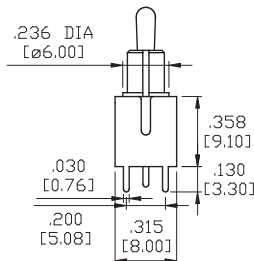
P.C.MOUNTING



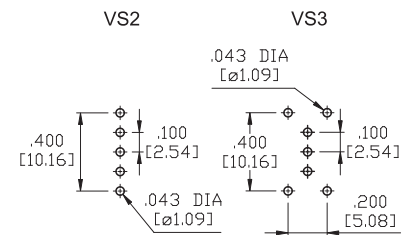
VS2-VS3



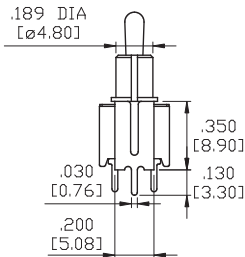
SPDT



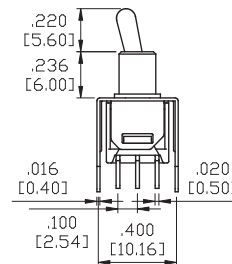
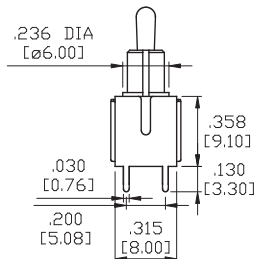
P.C.MOUNTING



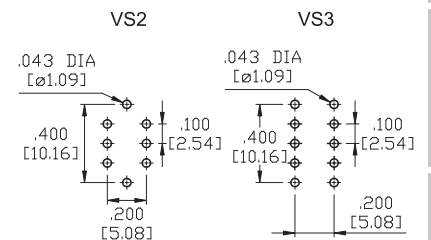
VS2-VS3



DPDT

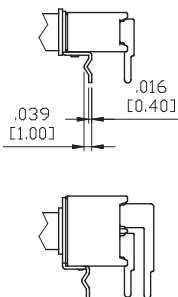


P.C.MOUNTING

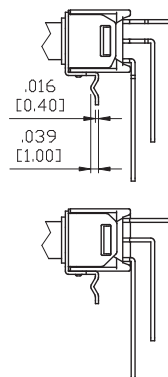


SNAP-IN TERMINATION OPTIONS

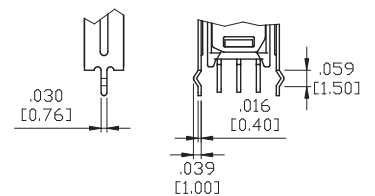
M61



M71



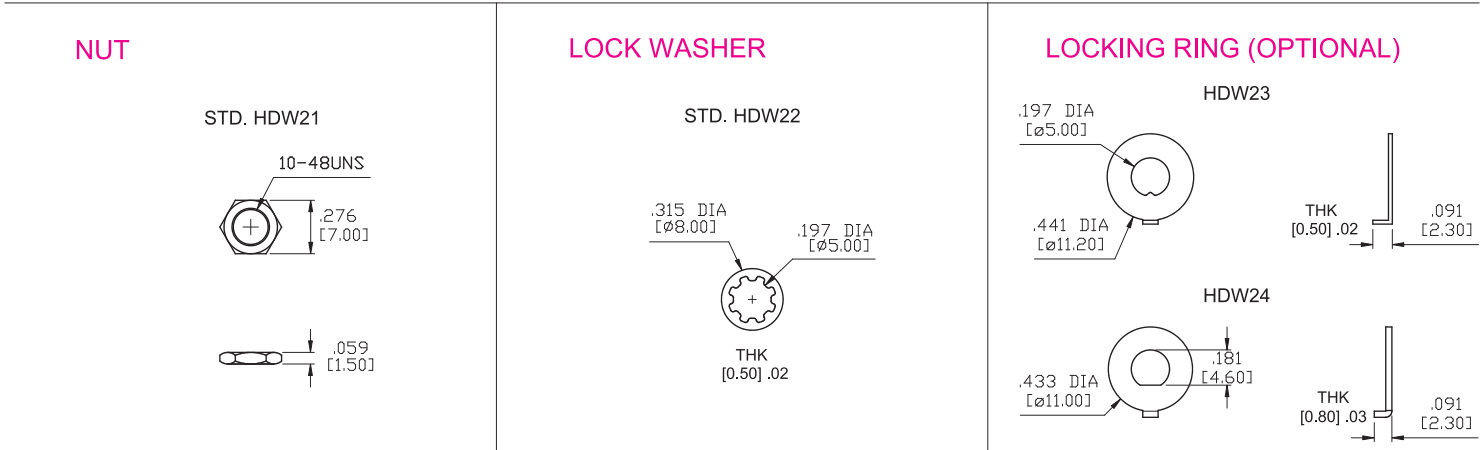
VS21



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

Toggle
Rocker
Slide
Pushbutton
AV
Rotary
Tact
Touch Key
Miscellaneous

HARDWARE

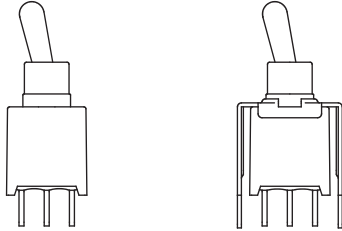
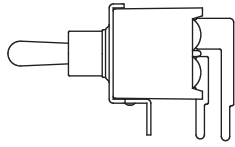


CONTACT MATERIAL OPTIONS

| 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.

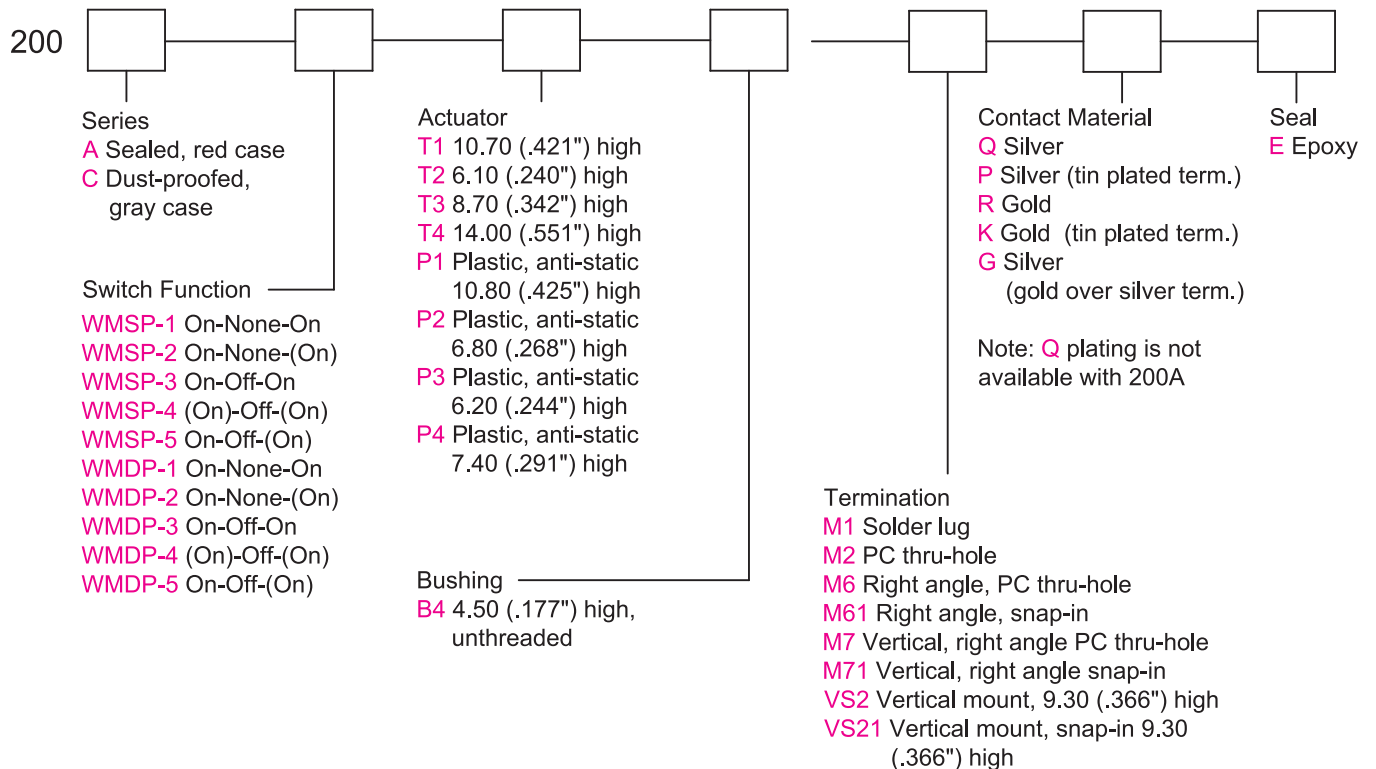
MATERIALS:

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

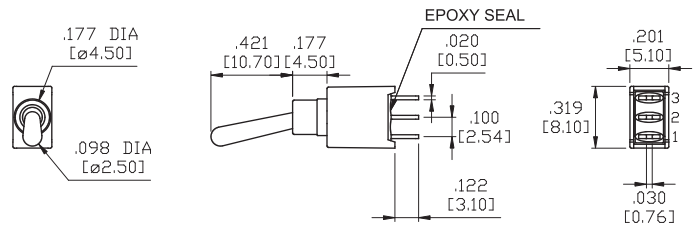


SPDT



| 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

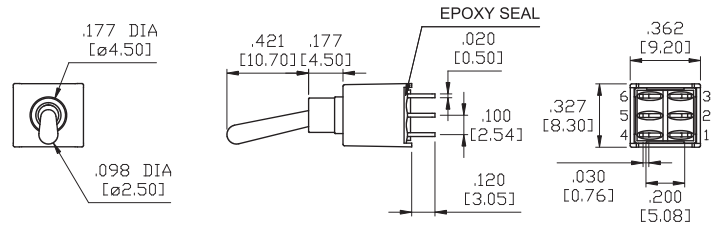
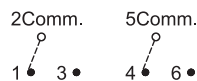


DPDT



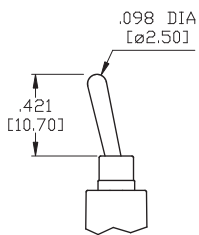
| Model No. | Switching Position | | |
|-------------|--------------------|------|---------|
| | | | |
| WMDP-1 | ON | NONE | ON |
| WMDP-2 | ON | NONE | (ON) |
| WMDP-3 | ON | OFF | ON |
| WMDP-4 | (ON) | OFF | (ON) |
| WMDP-5 | ON | OFF | (ON) |
| Term. Comm. | 2-3,5-6 | OPEN | 2-1,5-4 |

Schematic

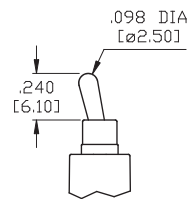


ACTUATOR OPTIONS

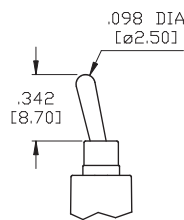
T1



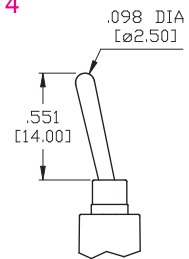
T2



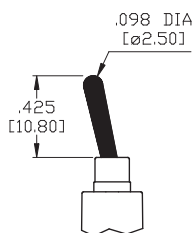
T3



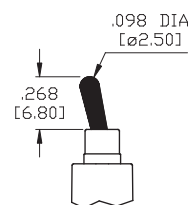
T4



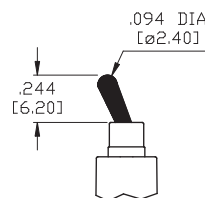
P1 PLASTIC TOGGLE



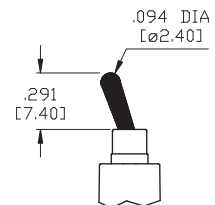
P2 PLASTIC TOGGLE



P3 PLASTIC TOGGLE



P4 PLASTIC TOGGLE



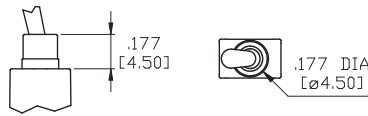
* Actuator length shown above is with B4 bushing.
* Please consult us for detailed spec on specific item.

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



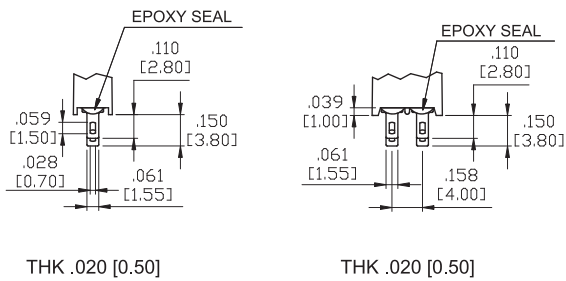
BUSHING OPTIONS

B4

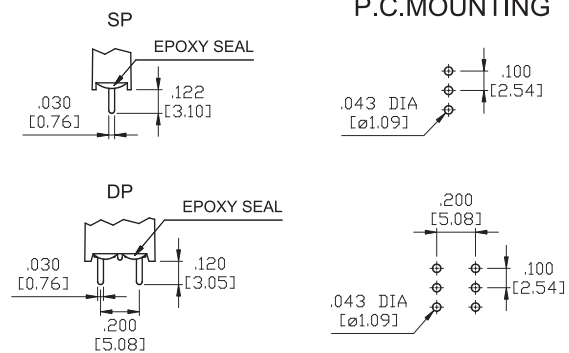


TERMINATION OPTIONS

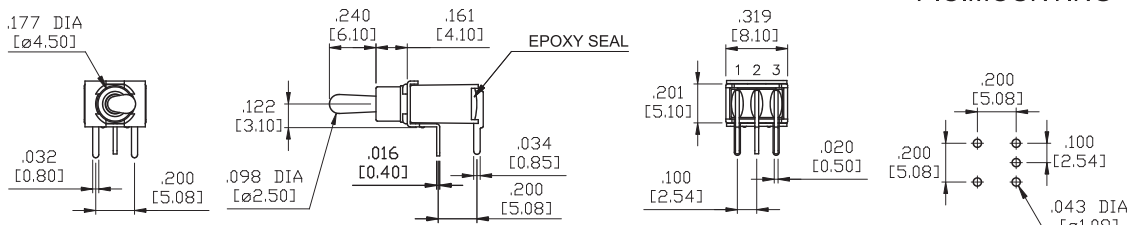
M1 STD. SOLDER LUG



M2 PC THRU-HOLE

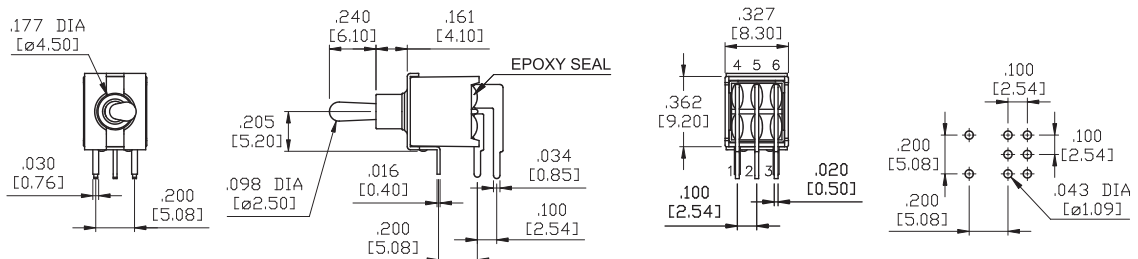


M6



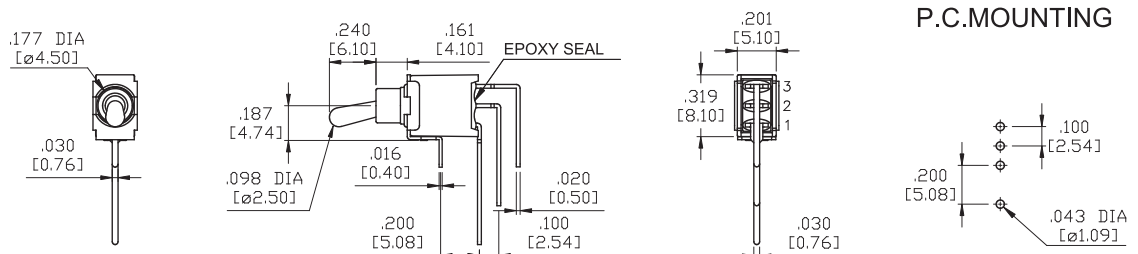
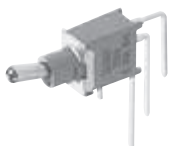
SPDT

M6



DPDT

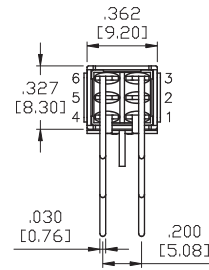
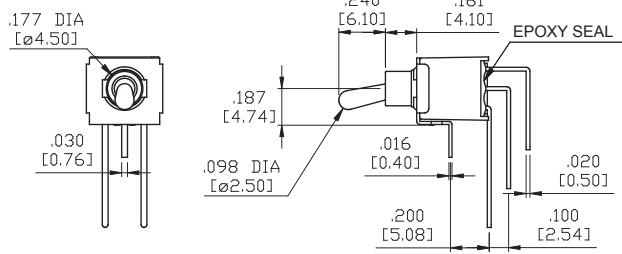
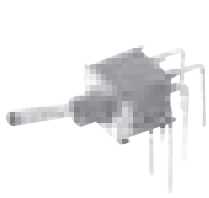
M7



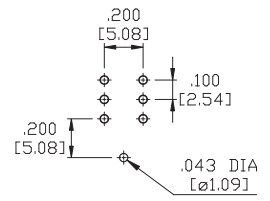
SPDT

TERMINATION OPTIONS

M7

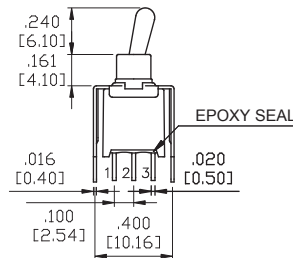
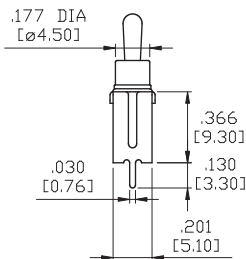


P.C.MOUNTING

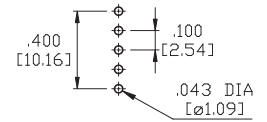


DPDT

VS2

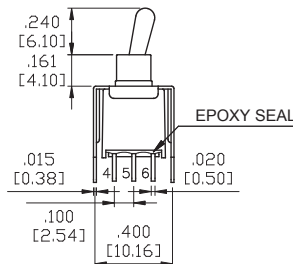
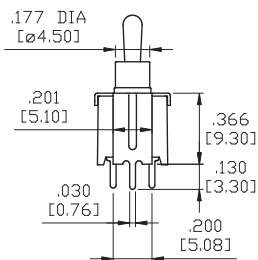


P.C.MOUNTING

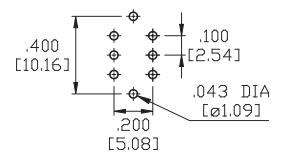


SPDT

VS2



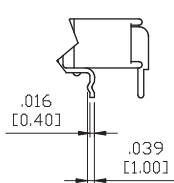
P.C.MOUNTING



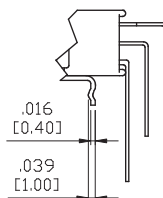
DPDT

SNAP-IN TERMINATION OPTIONS

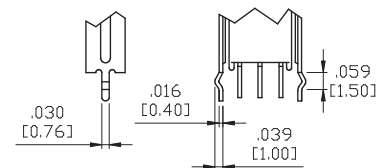
M61



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.

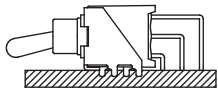
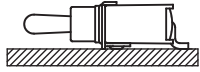
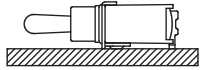
* IP67 protection for 200A series only.

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:

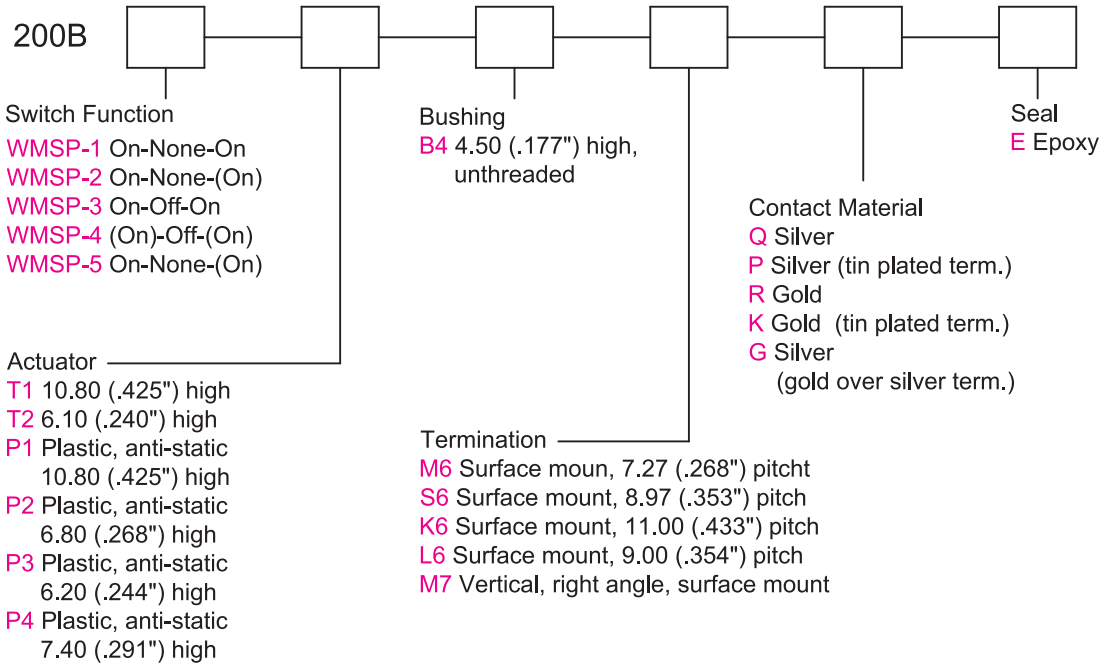
CASE & BUSHING: PA46 or FR52, flame retardant, heat stabilized(UL 94V-0).
 ACTUATOR: Brass, chrome plated, internal o-ring sealed (std).
 ESD TOGGLE: Nylon46+carbon fiber (ESD resistance 9000VDC)
 SWITCH SUPPORT: Brass (or Phosphor bronze), tin plated.
 TERMINAL SEAL: Epoxy.



Specifications and Dimensions subject to change

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

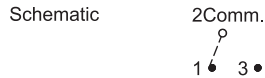
HOW TO ORDER SYSTEM



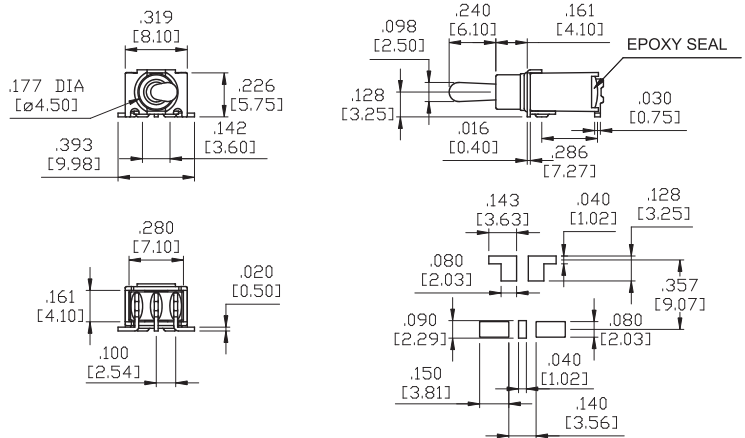
M6



| 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 |



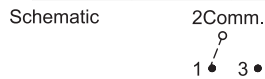
SPDT



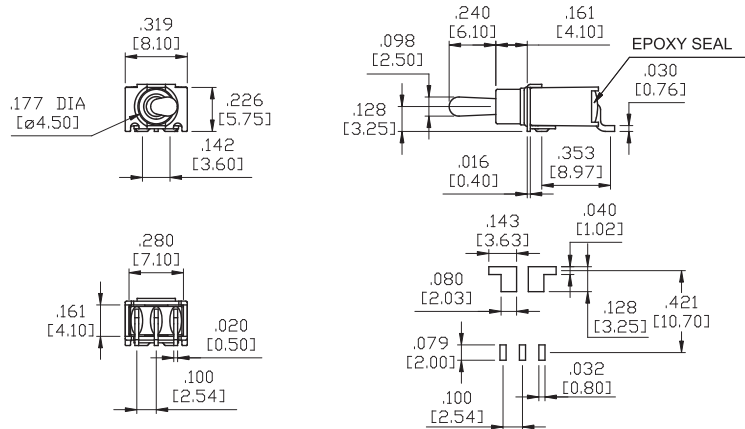
S6



| 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 |



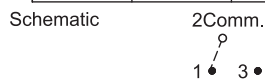
SPDT



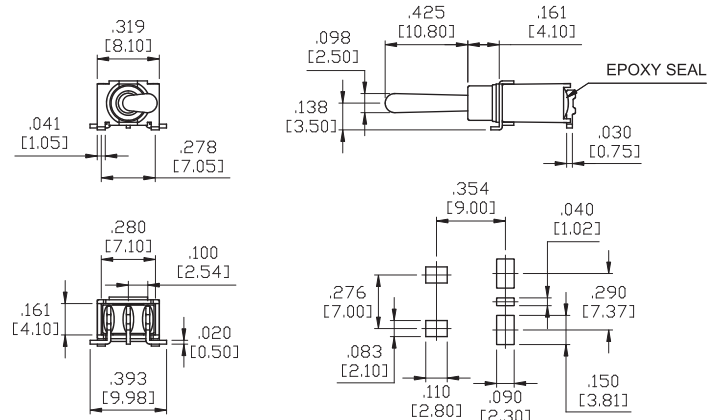
L6



| 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 |



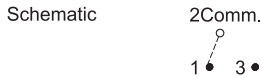
SPDT



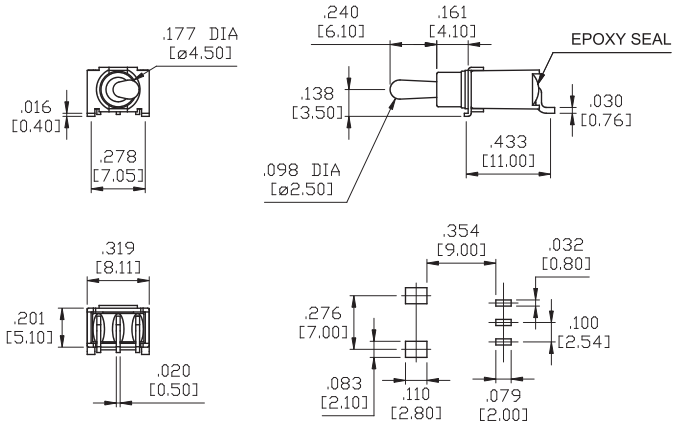
K6



| 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 |



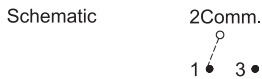
SPDT



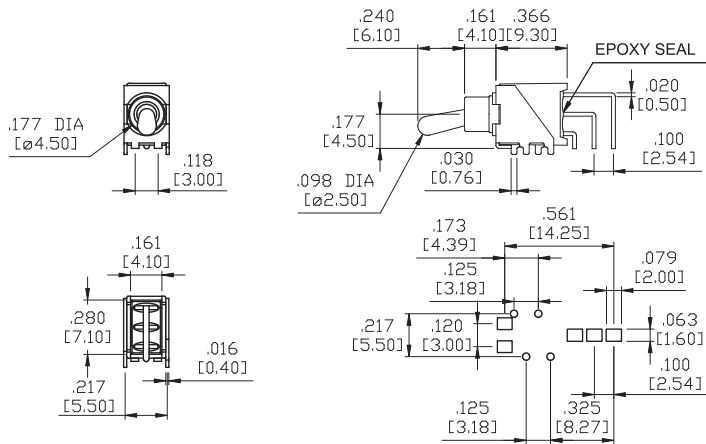
M7



| 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 |

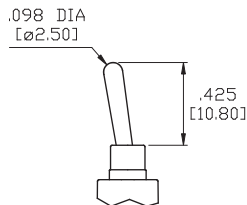


SPDT



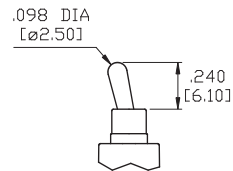
ACTUATOR OPTIONS

T1

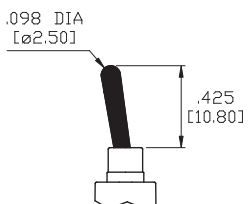


* Available with L6, S6, K6, M7 terminals only.

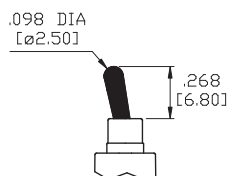
T2



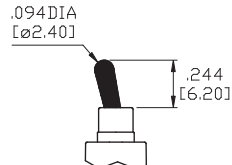
P1 PLASTIC TOGGLE



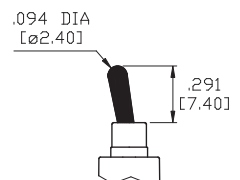
P2 PLASTIC TOGGLE



P3 PLASTIC TOGGLE

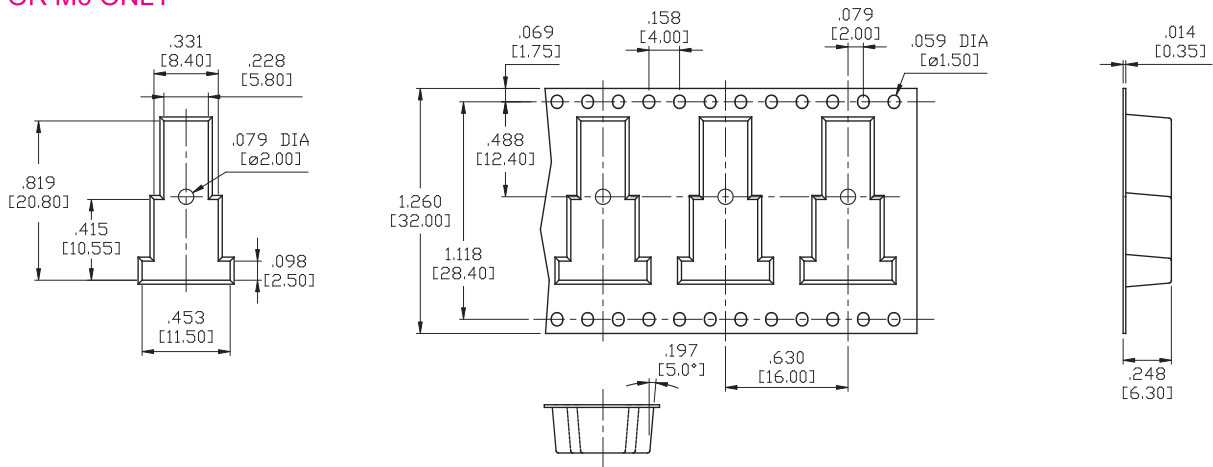


P4 PLASTIC TOGGLE

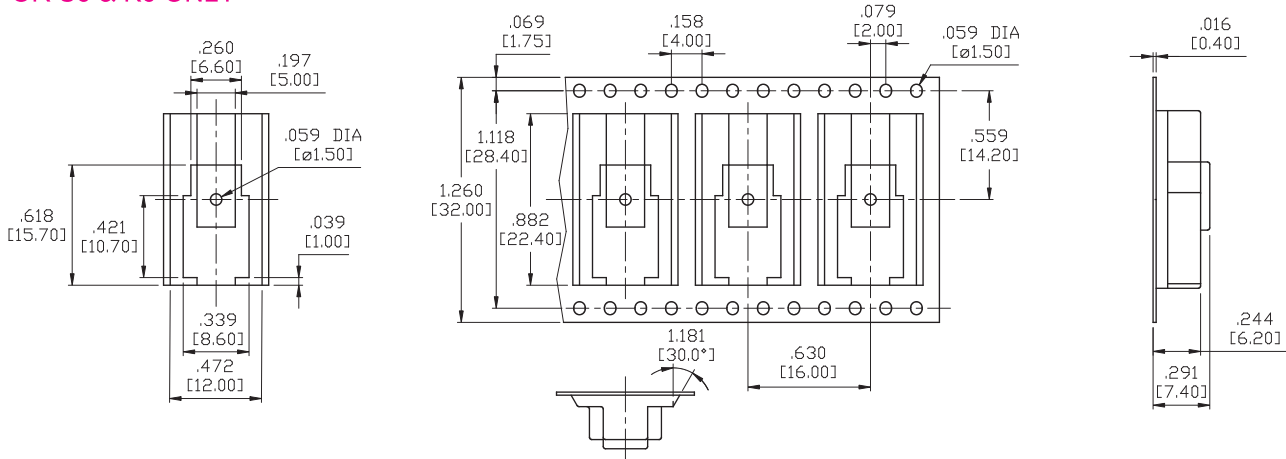


REEL TAPING

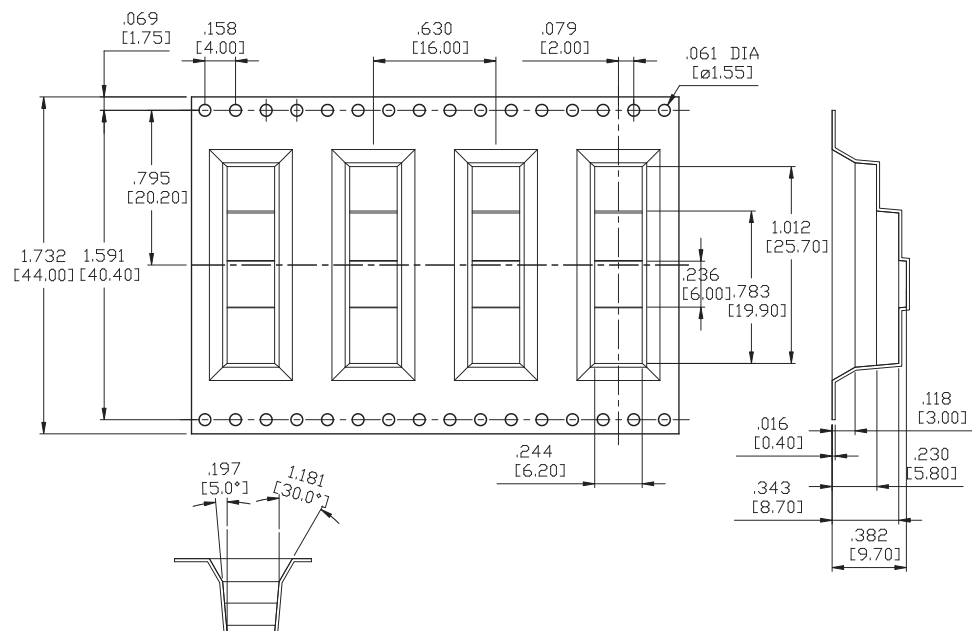
FOR M6 ONLY



FOR S6 & K6 ONLY

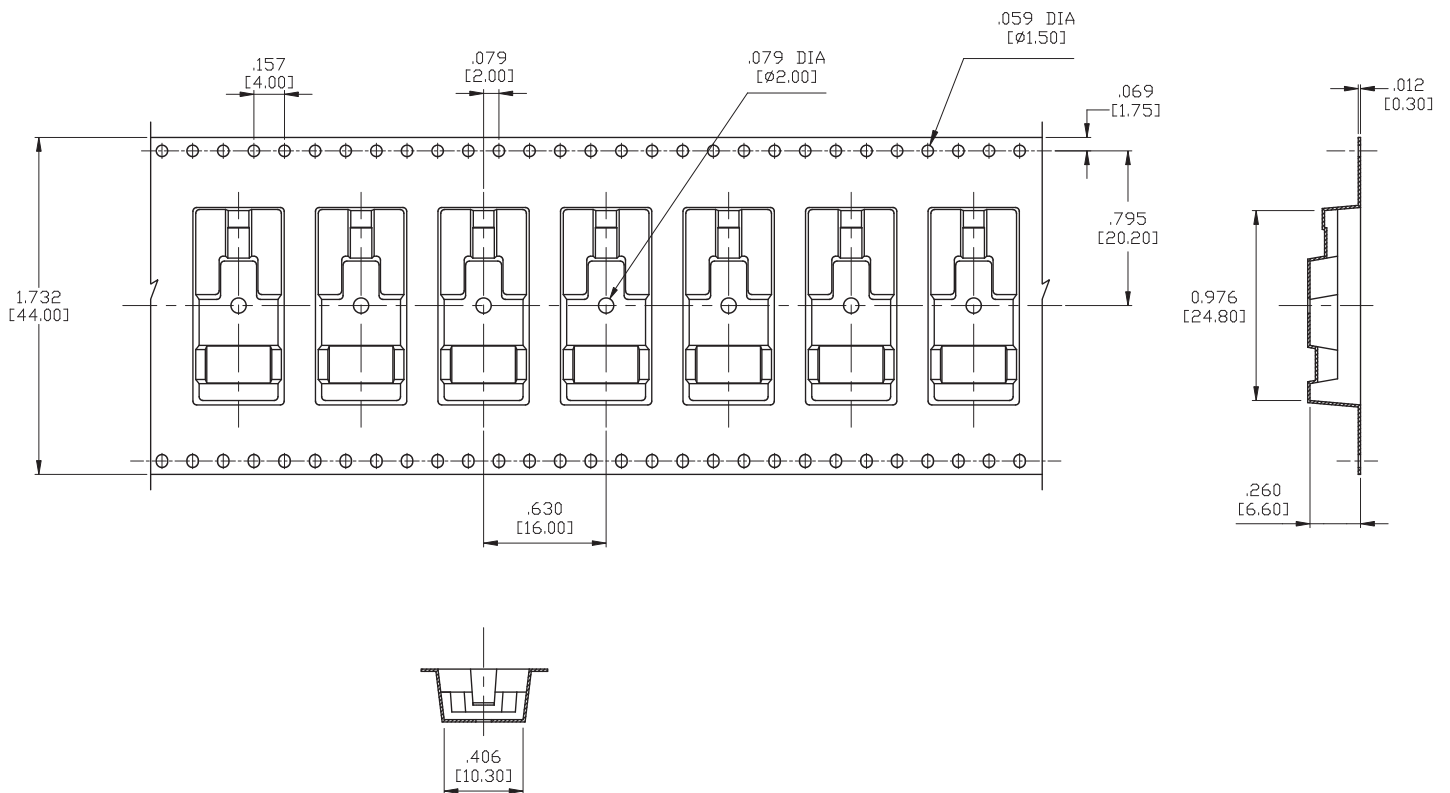


FOR M7 ONLY



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.

Toggle

Rocker

Slide

Pushbutton

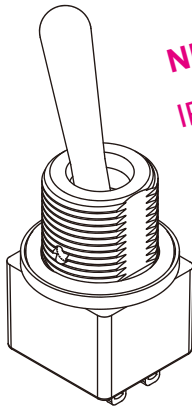
AV

Rotary

Tact

Touch Key

Miscellaneous



NEW !
IP 67 Protection

SPECIFICATIONS:

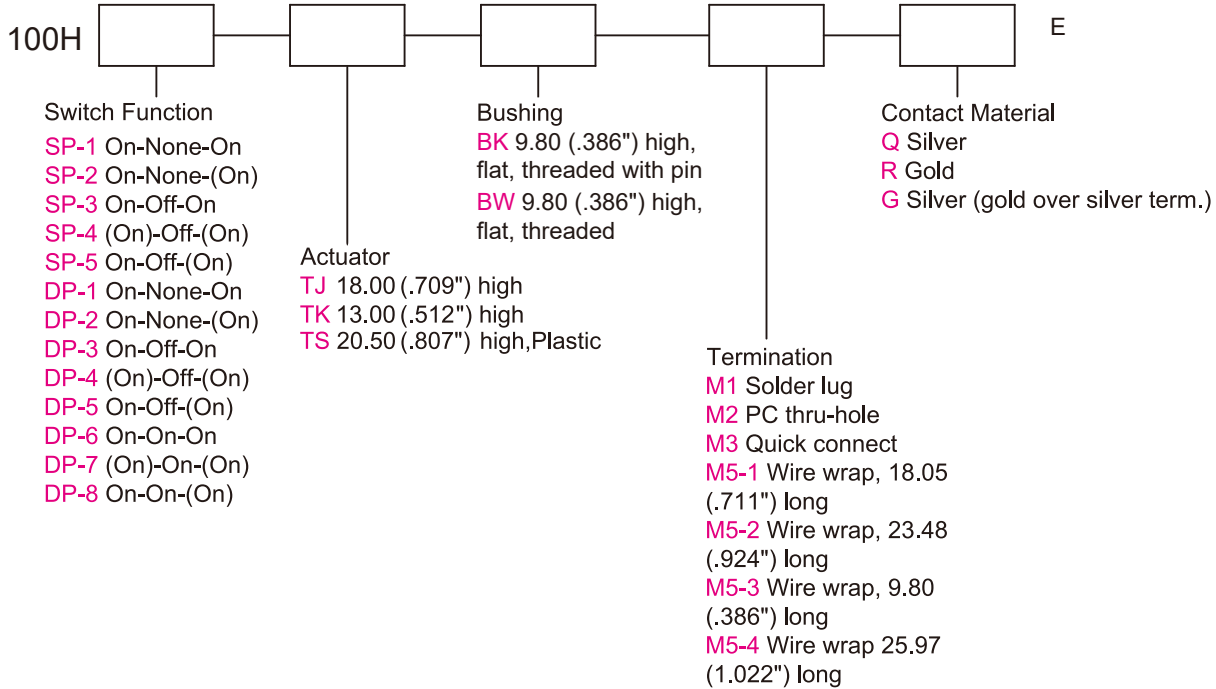
CONTACT RATING: Refer to "Contact Material Options" for more info.
 ELECTRICAL LIFE: Min. 50,000 make-and-break cycles at full load.
 CONTACT RESISTANCE: 10m-ohms max. initial @2-4VDC
 100mA for both silver and gold plated contacts.
 INSULATION RESISTANCE: 1,000M-ohms min.
 DIELECTRIC STRENGTH: 1,500VAC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

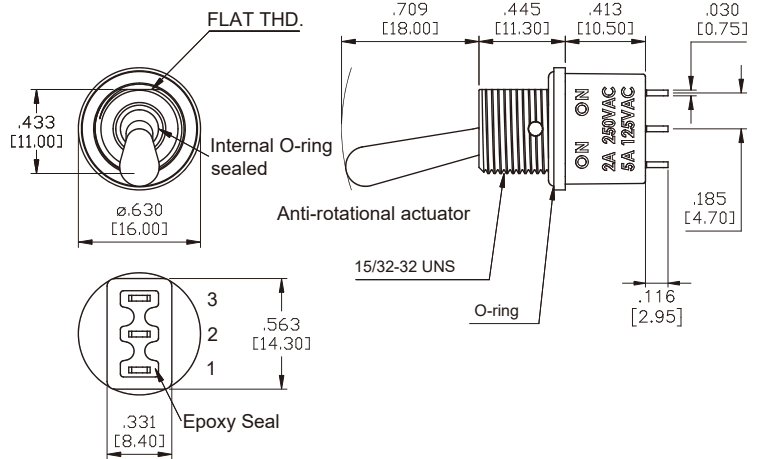


SPDT



| 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

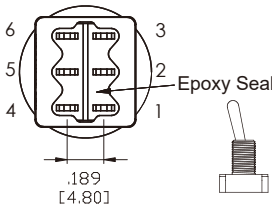
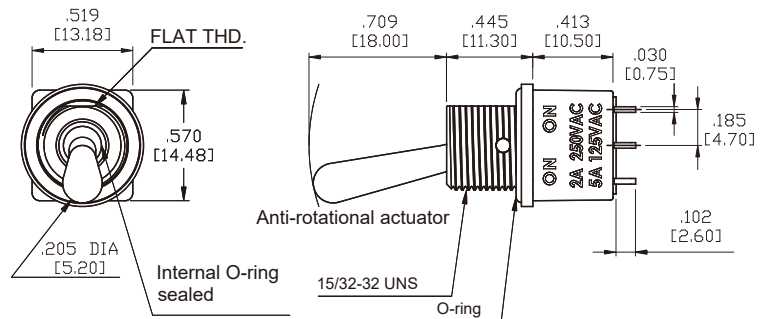
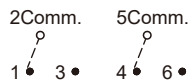


DPDT

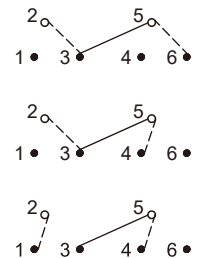
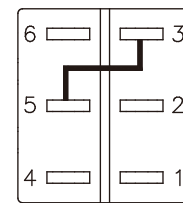


| Model No. | Switching Position | | |
|-------------|--------------------|------|---------|
| | | | |
| DP-1 | ON | NONE | ON |
| DP-2 | ON | NONE | (ON) |
| DP-3 | ON | OFF | ON |
| DP-4 | (ON) | OFF | (ON) |
| DP-5 | ON | OFF | (ON) |
| Term. Comm. | 2-3,5-6 | OPEN | 2-1,5-4 |

Schematic

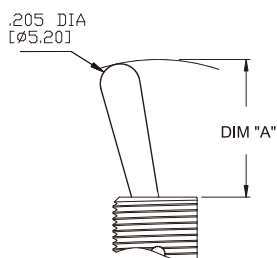


WIRING FOR ON-ON-ON (3-WAY) FUNCTION



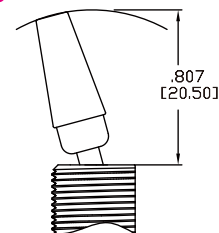
ACTUATOR OPTIONS

TJ&TK



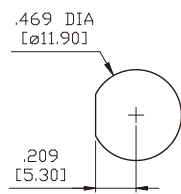
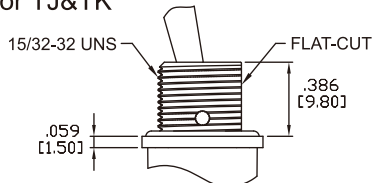
| OPTION CODE | DIM. "A" |
|-------------|--------------|
| TJ | .709 [18.00] |
| TK | .512 [13.00] |

TS

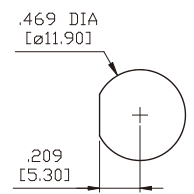
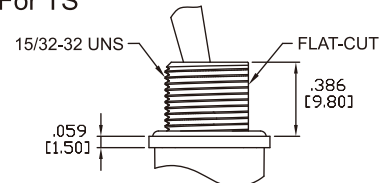


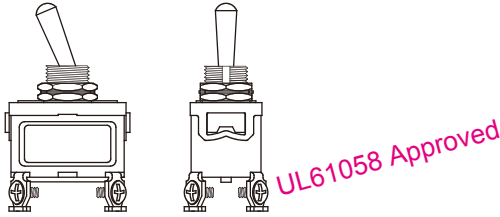
BUSHING OPTION & MOUNTING

BK For TJ&TK



BW For TS



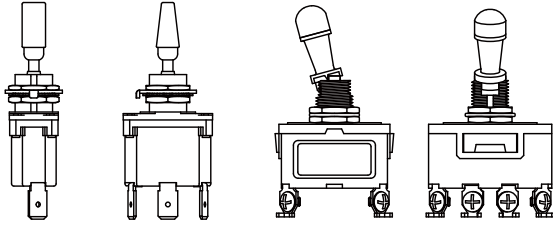


SPECIFICATIONS:

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

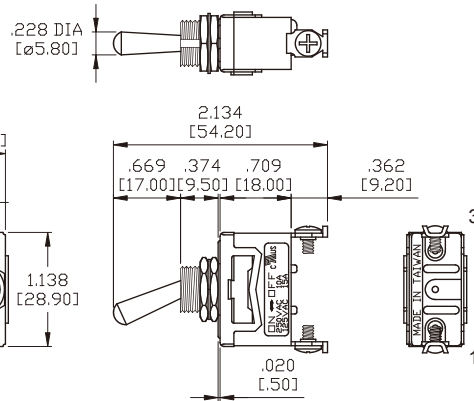


| Model No. | Switching Position | | |
|-------------|--------------------|------|------|
| | 2P-1 | ON | NONE |
| 2P-A | MOM | NONE | OFF |
| Term. Comm. | 1-3 | OPEN | OPEN |

Schematic



Switching Plate (ON-OFF etc.) available



SPDT

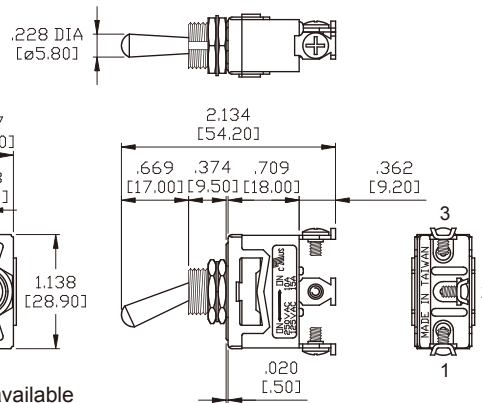


| Model No. | Switching Position | | |
|-------------|--------------------|------|------|
| | SP-1 | ON | NONE |
| SP-A | MOM | NONE | ON |
| SP-3 | ON | OFF | ON |
| SP-4 | MOM | OFF | MOM |
| SP-T | MOM | OFF | ON |
| Term. Comm. | 2-3 | OPEN | 2-1 |

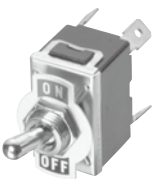
Schematic



Switching Plate (ON-ON etc.) available



DPST

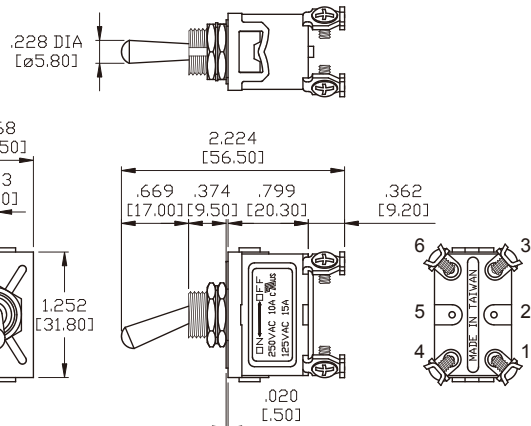


| Model No. | Switching Position | | |
|-------------|--------------------|------|------|
| | FP-1 | ON | NONE |
| FP-A | MOM | NONE | OFF |
| Term. Comm. | 1-3, 4-6 | OPEN | OPEN |

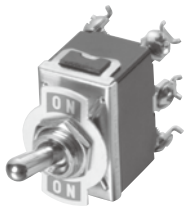
Schematic



Switching Plate (ON-OFF etc.) available

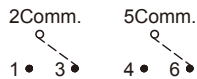


DPDT

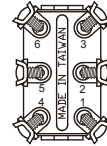
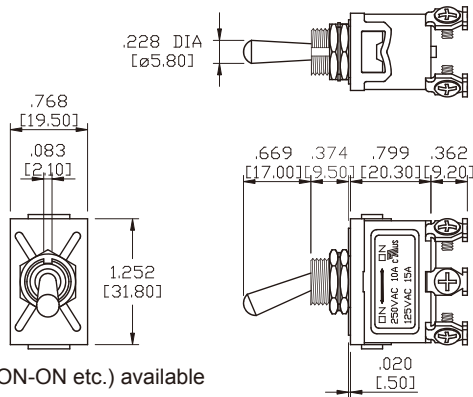


| Model No. | Switching Position | | |
|-------------|--------------------|------|----------|
| DP-1 | ON | NONE | ON |
| DP-A | MOM | NONE | ON |
| DP-3 | ON | OFF | ON |
| DP-4 | MOM | OFF | MOM |
| DP-T | MOM | OFF | ON |
| Term. Comm. | 2-3, 5-6 | OPEN | 2-1, 5-4 |

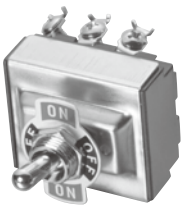
Schematic



Switching Plate (ON-ON etc.) available



3PDT

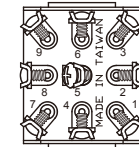
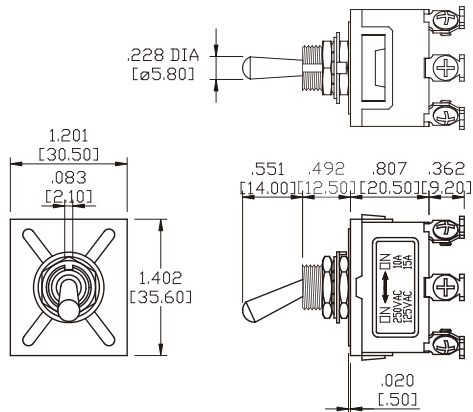


| Model No. | Switching Position | | |
|-------------|--------------------|------|-----------------|
| 3P-1 | ON | NONE | ON |
| 3P-3 | ON | OFF | ON |
| 3P-4 | MOM | OFF | MOM |
| Term. Comm. | 2-1, 5-4 8-7 | OPEN | 2-3, 5-6 8-9 |

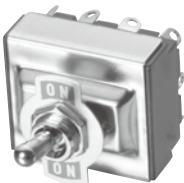
Schematic



Switching Plate (ON-ON etc.) available

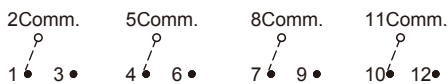


4PDT

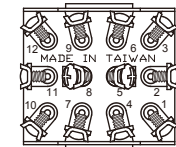
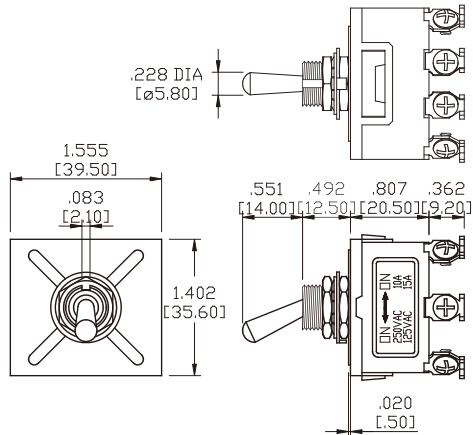


| Model No. | Switching Position | | |
|-------------|--------------------------|------|--------------------------|
| 4P-1 | ON | NONE | ON |
| 4P-3 | ON | OFF | ON |
| 4P-4 | MOM | OFF | MOM |
| Term. Comm. | 2-1, 5-4 8-7 11-10 | OPEN | 2-3, 5-6 8-9 11-12 |

Schematic

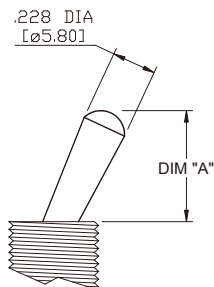


Switching Plate (ON-ON etc.) available



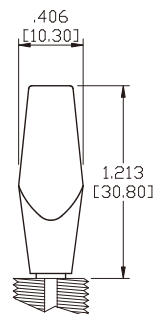
ACTUATOR OPTIONS

| 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] |



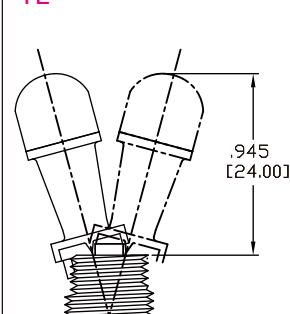
Actuator length shown for A1~A5 is with B2 bushing

P1



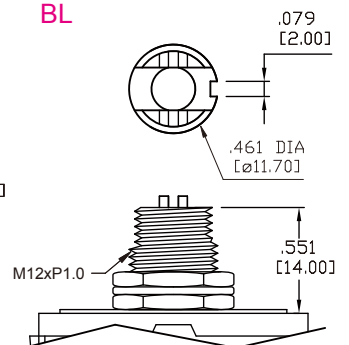
Only available with B3 bushing

TL

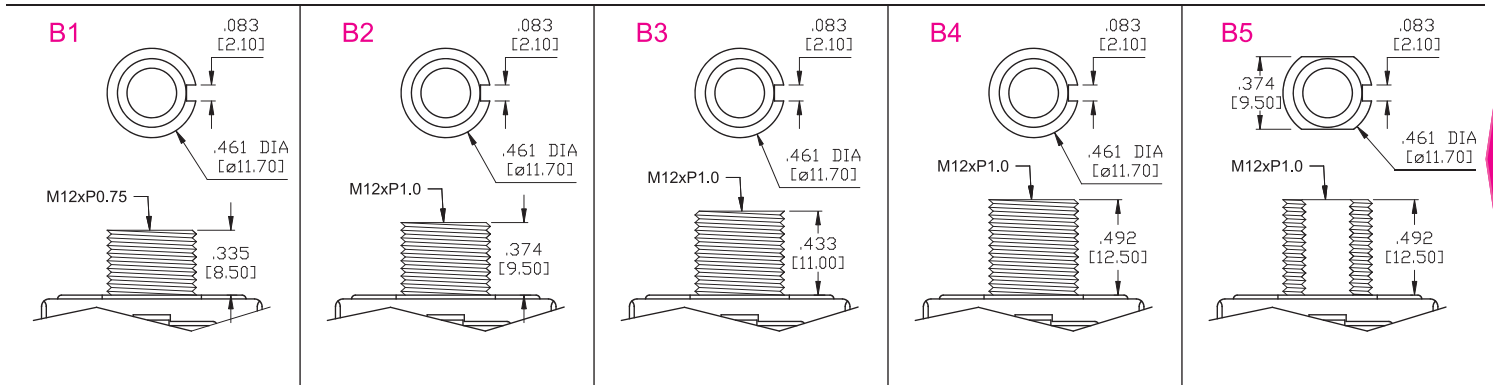


Only available with BL bushing

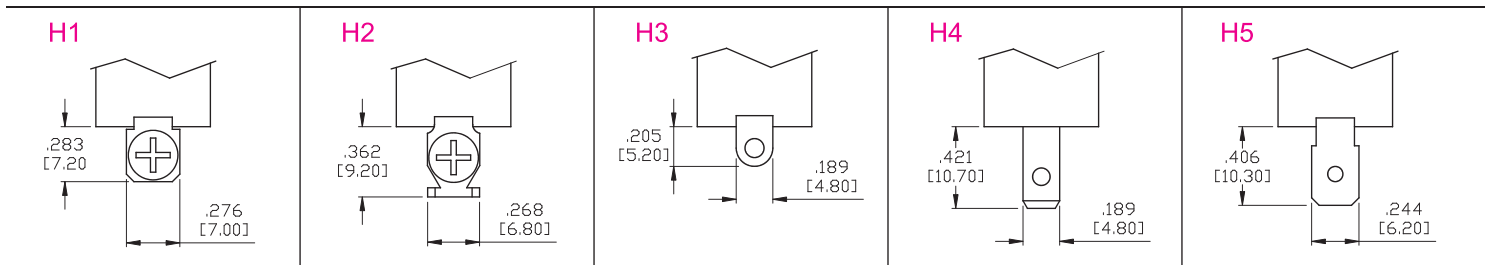
BL



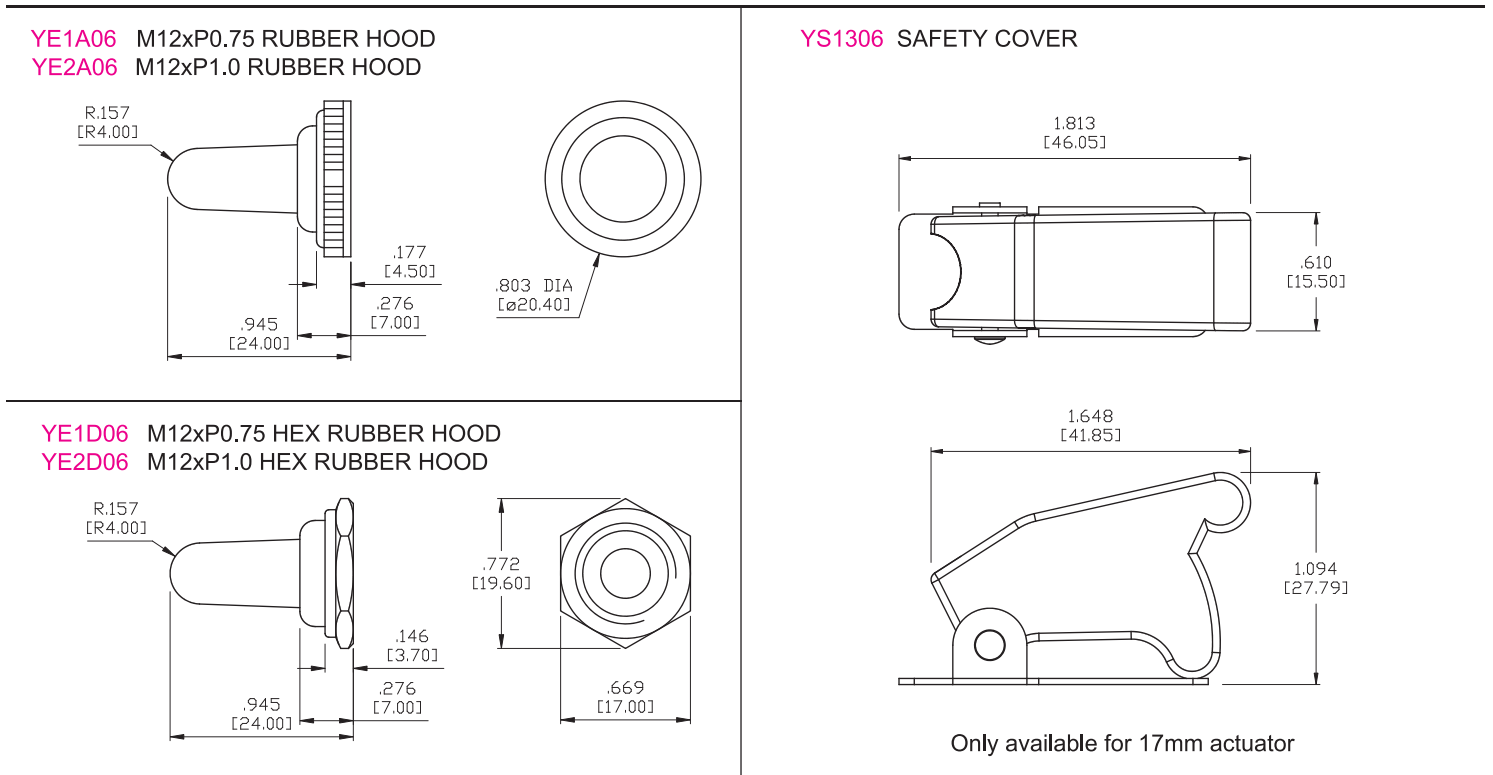
BUSHING OPTIONS



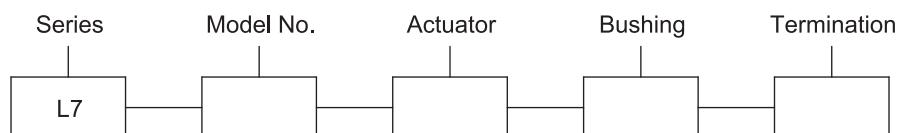
TERMINATION OPTIONS



OPTIONAL TOGGLE CAPS

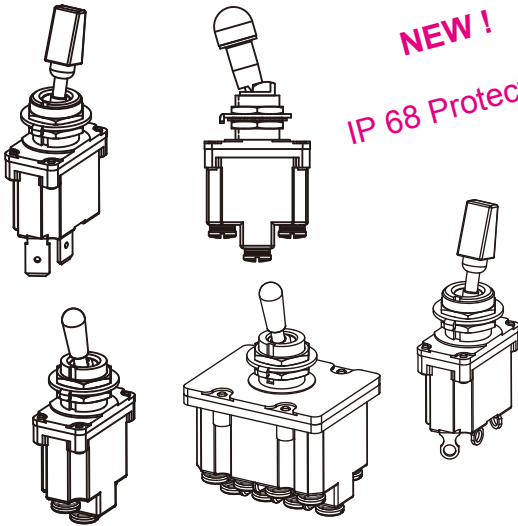


HOW TO ORDER



Specifications and Dimensions subject to change

Toggle
Rocker
Slide
Pushbutton
AV
Rotary
Tact
Touch Key
Miscellaneous



NEW !
IP 68 Protection

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.

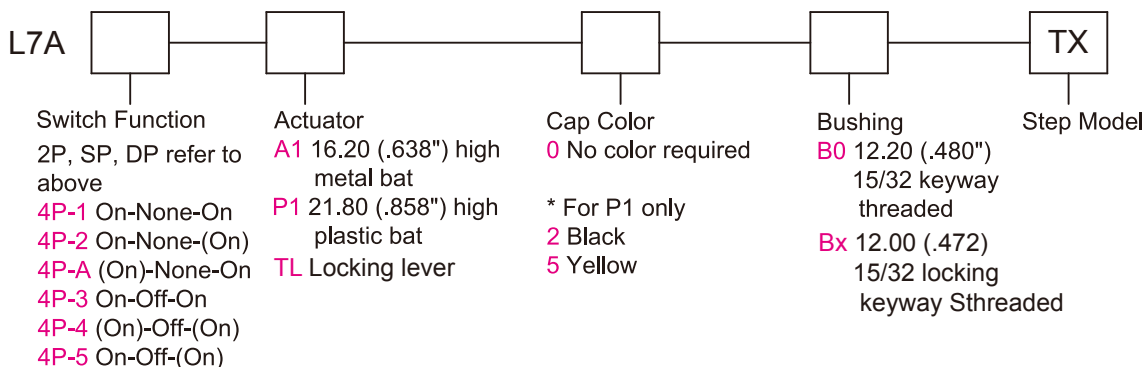
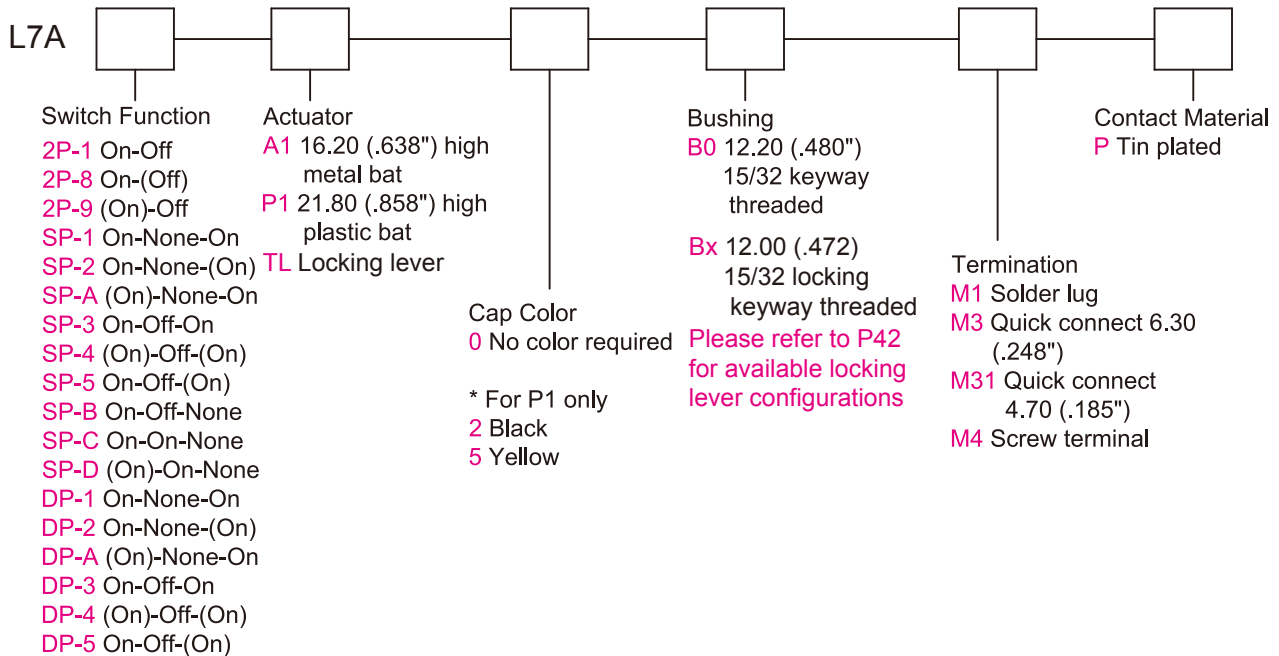
MATERIALS:

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



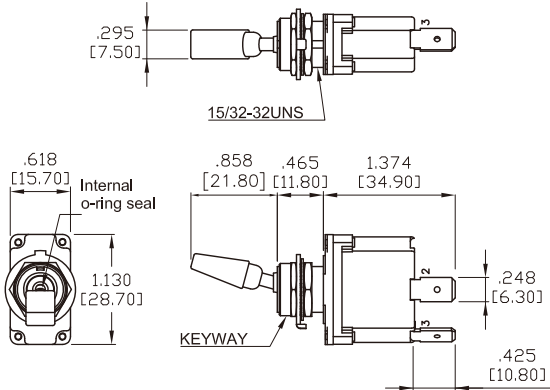
SPST



| 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 |

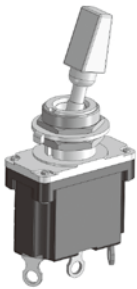
Schematic



Remark:

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

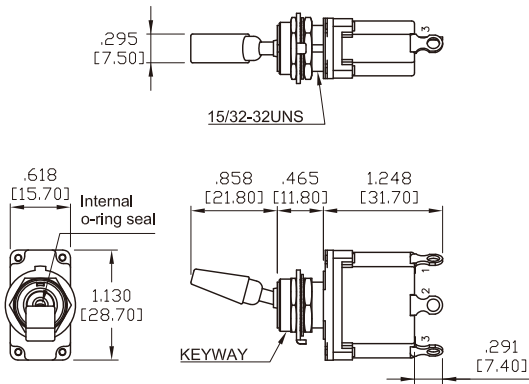
SPDT



| 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 |

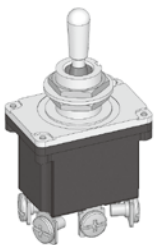
Schematic



Remark:

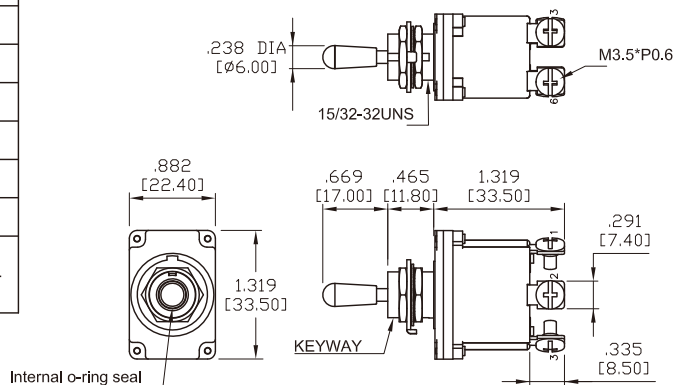
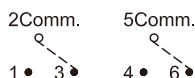
For SP-C, SP-D models, the switch becomes 2-position with center being one extreme position.

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



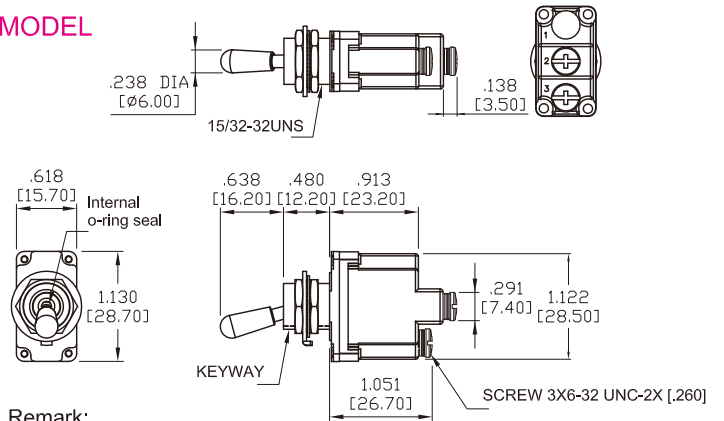
| Model No. | Switching Position | | |
|-------------|--------------------|------|-------|
| 2P-1 | ON | NONE | OFF |
| 2P-8 | ON | NONE | (OFF) |
| 2P-9 | (ON) | NONE | OFF |
| Term. Comm. | 2-3 | N/A | OPEN |

| 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



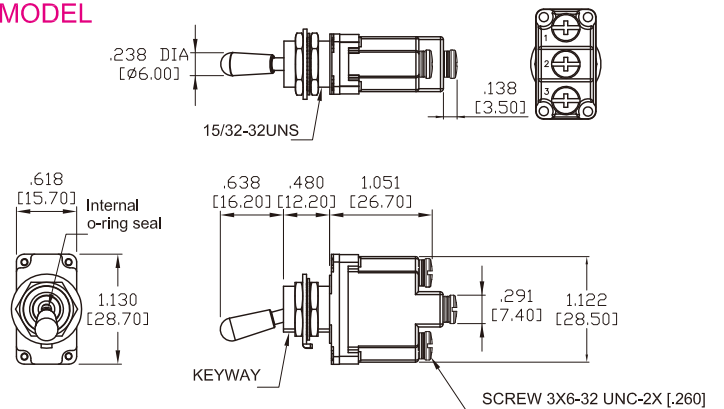
| Model No. | Switching Position | | |
|-------------|--------------------|------|------|
| SP-1 | ON | NONE | ON |
| SP-2 | ON | NONE | (ON) |
| SP-A | (ON) | NONE | ON |
| SP-3 | ON | OFF | ON |
| SP-4 | (ON) | OFF | (ON) |
| SP-5 | ON | OFF | (ON) |
| Term. Comm. | 2-3 | OPEN | 2-1 |

| 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:

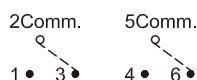
For SP-C, SP-D models, the switch becomes 2-position with center being one extreme position.

DPDT

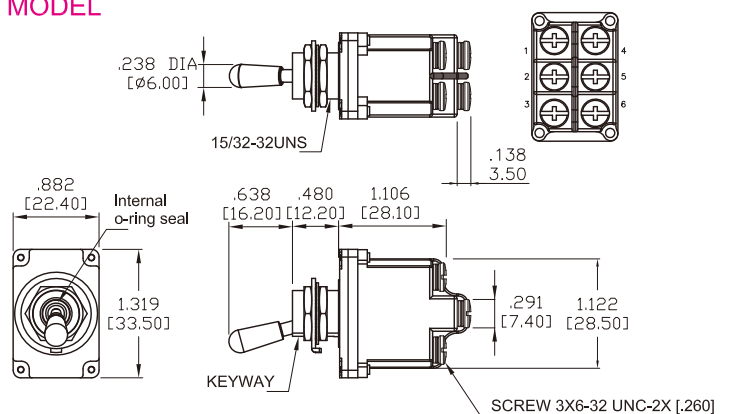


| Model No. | Switching Position | | |
|-------------|--------------------|------|----------|
| DP-1 | ON | NONE | ON |
| DP-2 | ON | NONE | (ON) |
| DP-A | (ON) | NONE | ON |
| DP-3 | ON | OFF | ON |
| DP-4 | (ON) | OFF | (ON) |
| DP-5 | ON | OFF | (ON) |
| Term. Comm. | 2-3, 5-6 | OPEN | 2-1, 5-4 |

Schematic



STEP MODEL

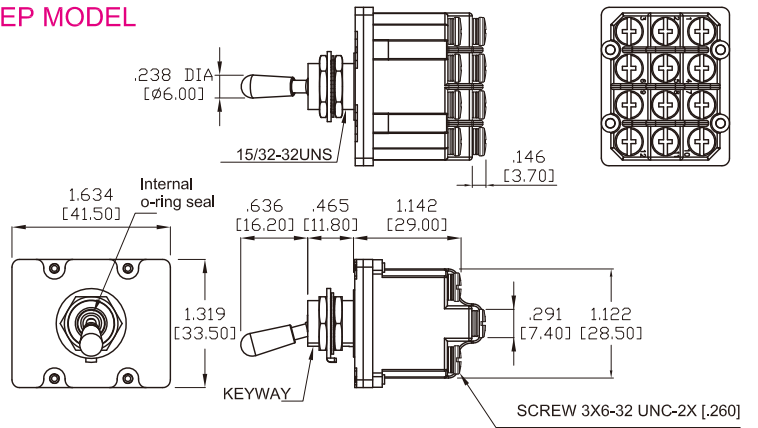


4PDT

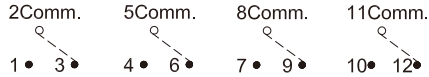


| Model No. | Switching Position | | |
|-------------|------------------------|------|------------------------|
| 4P-1 | ON | NONE | ON |
| 4P-2 | ON | NONE | (ON) |
| 4P-A | (ON) | NONE | ON |
| 4P-3 | ON | OFF | ON |
| 4P-4 | (ON) | OFF | (ON) |
| 4P-5 | ON | OFF | (ON) |
| Term. Comm. | 2-3, 5-6 8-9,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

STEP MODEL

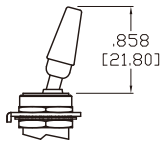


Schematic



ACTUATOR OPTIONS

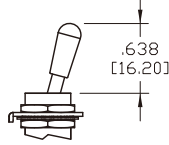
P1



| Cap Color | |
|-----------|--------|
| 2 | Black |
| 5 | Yellow |

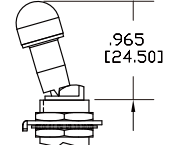
MATERIAL: Nylon 6/6

A1



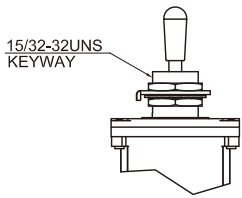
MATERIAL: Brass nickel plated

TL

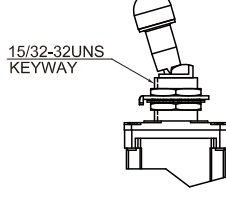


BUSHING OPTION

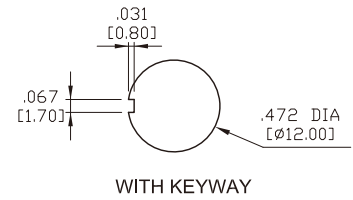
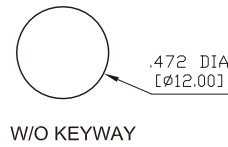
B0



Bx

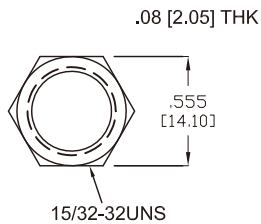


PANEL MOUNTING

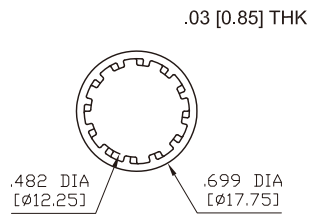


HARDWARE

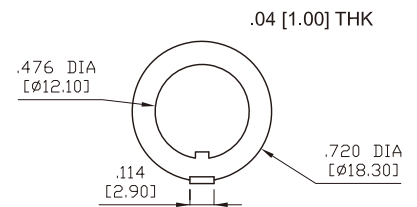
NUT



WASHER

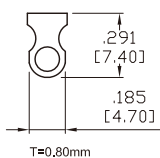


LOCKING RING

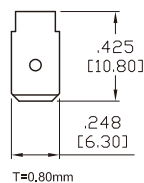


TERMINATION OPTIONS

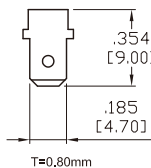
M1



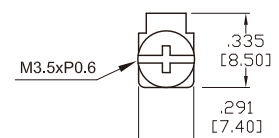
M3
















M31

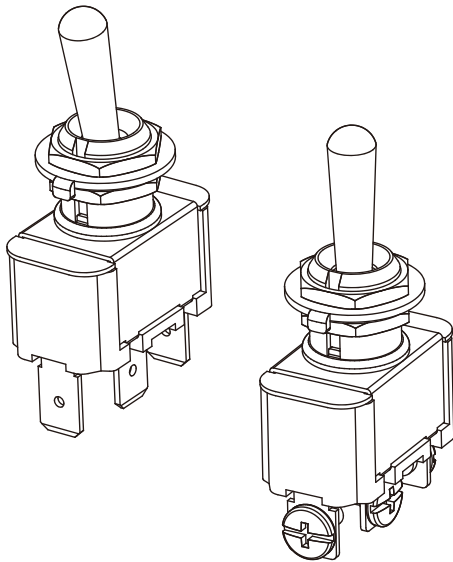


M4



| 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

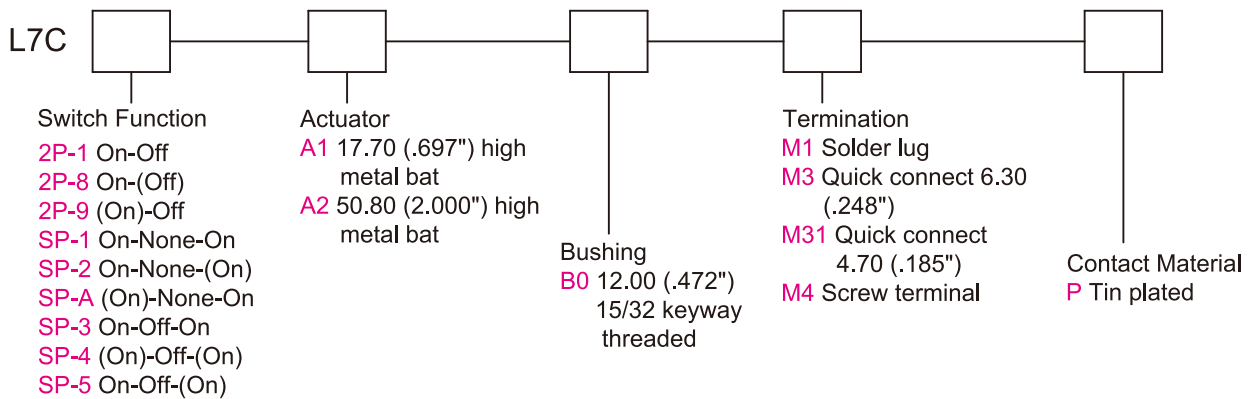
MATERIALS:

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

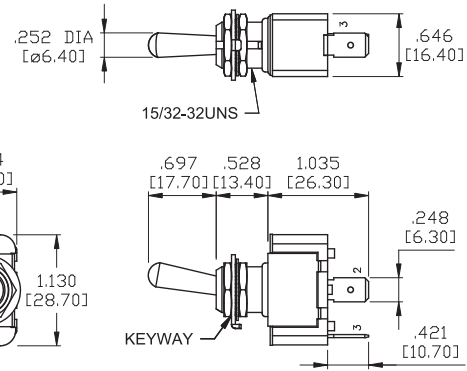


SPST



| 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

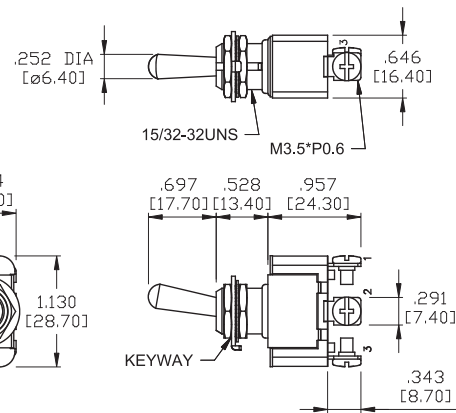


SPDT



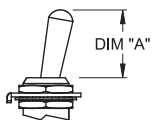
| Model No. | Switching Position | | |
|-------------|--------------------|------|------|
| SP-1 | ON | NONE | ON |
| SP-2 | ON | NONE | (ON) |
| SP-A | (ON) | NONE | ON |
| SP-3 | ON | OFF | ON |
| SP-4 | (ON) | OFF | (ON) |
| SP-5 | ON | OFF | (ON) |
| Term. Comm. | 2-3 | OPEN | 2-1 |

Schematic



ACTUATOR OPTIONS

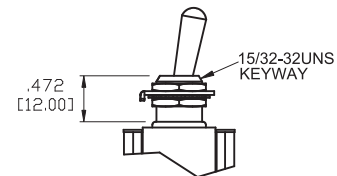
A1



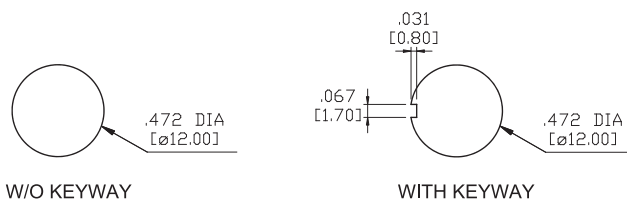
| OPTION CODE | DIM "A" |
|-------------|---------------|
| 1 | .697 [17.70] |
| 2 | 2.000 [50.80] |

BUSHING OPTIONS

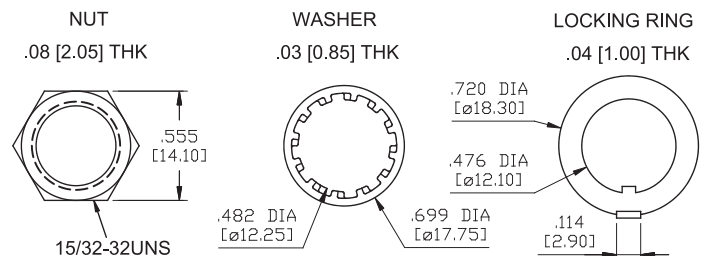
B0



PANEL MOUNTING

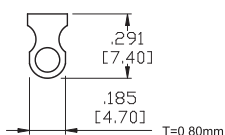


HARDWARE

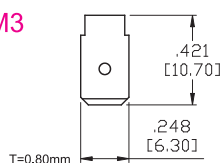


TERMINATION OPTIONS

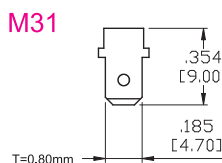
M1



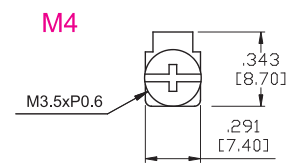
M3

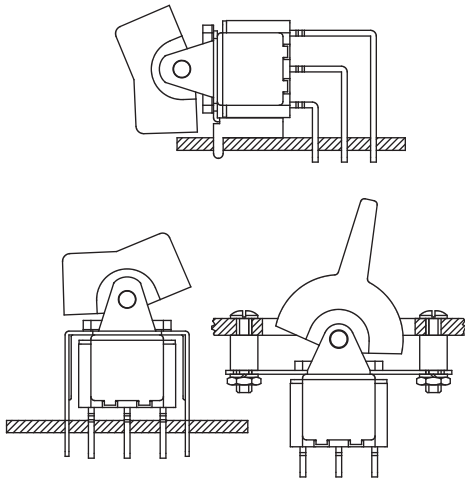


M31



M4





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.

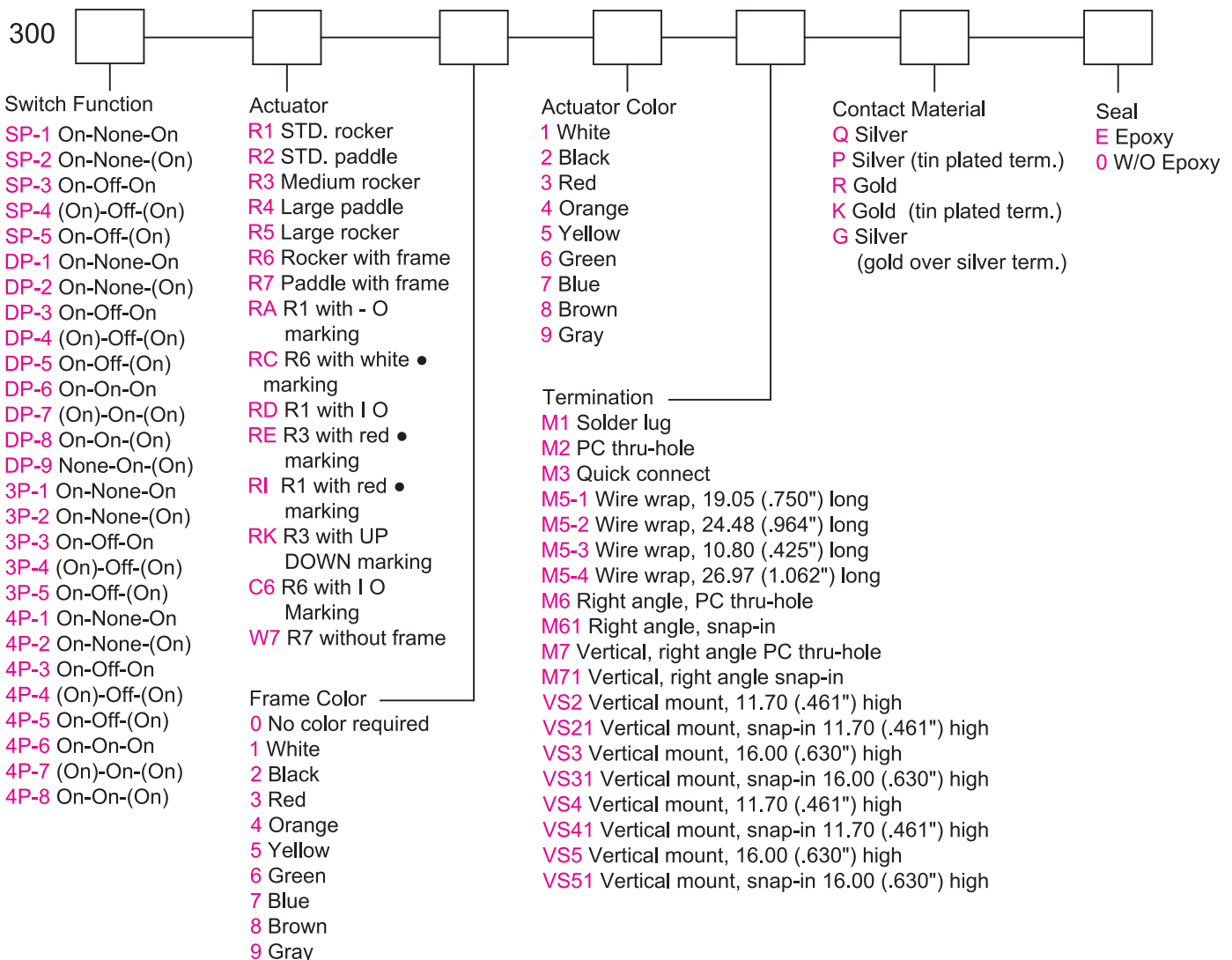
MATERIALS:

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.

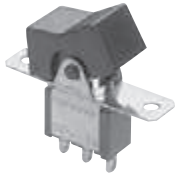
HOW TO ORDER SYSTEM



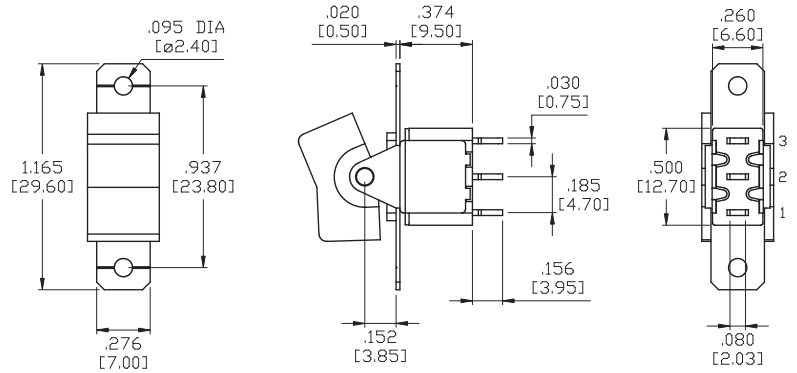
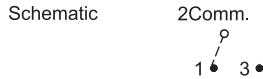
Series 300

Miniature Rocker & Paddle Switches

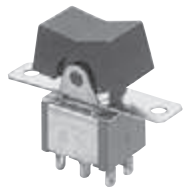
SPDT



| 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 |

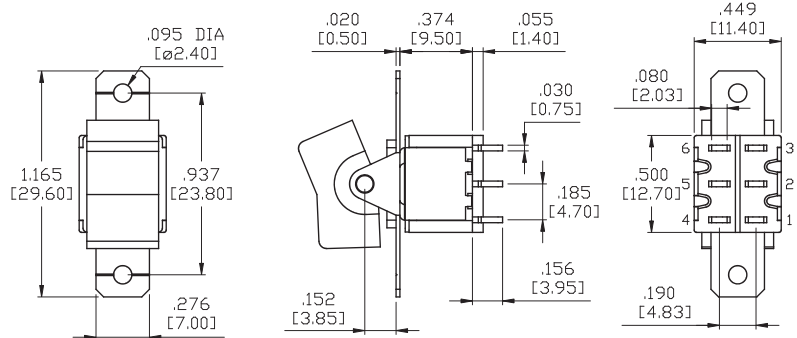
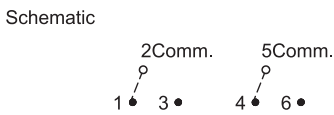


DPDT

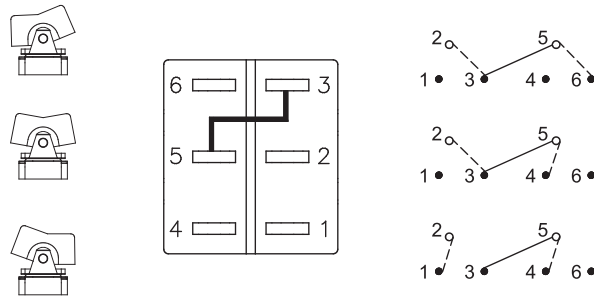


| Model No. | Switching Position | | |
|-------------|--------------------|------|---------|
| | | | |
| DP-1 | ON | NONE | ON |
| DP-2 | ON | NONE | (ON) |
| DP-3 | ON | OFF | ON |
| DP-4 | (ON) | OFF | (ON) |
| DP-5 | ON | OFF | (ON) |
| Term. Comm. | 2-3,5-6 | OPEN | 2-1,5-4 |

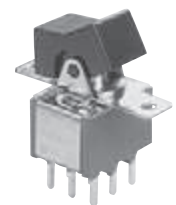
| Model No. | Switching Position | | |
|-------------|--------------------|---------|---------|
| | | | |
| DP-6 | ON | ON | ON |
| DP-7 | (ON) | ON | (ON) |
| DP-8 | ON | ON | (ON) |
| DP-9 | OFF | ON | (ON) |
| Term. Comm. | 2-3,5-6 | 2-3,5-4 | 2-1,5-4 |



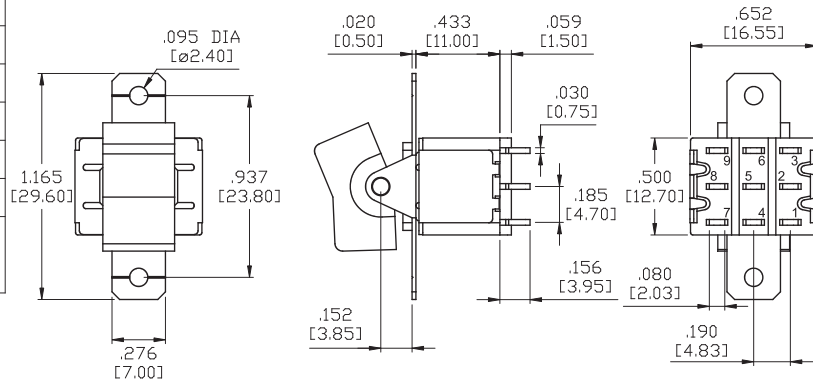
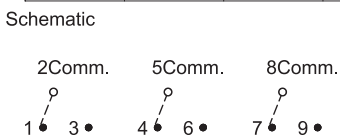
WIRING FOR ON-ON-ON (3-WAY) FUNCTION



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 |

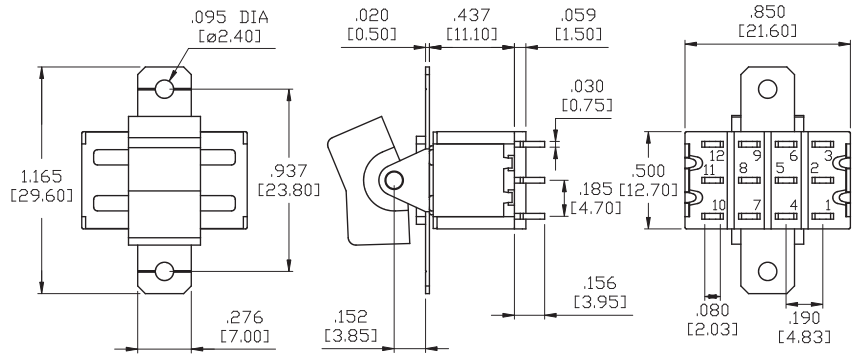


4PDT

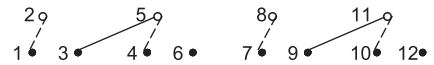
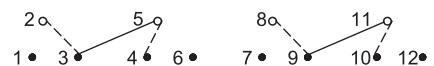
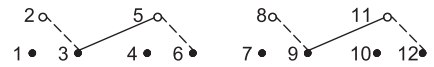
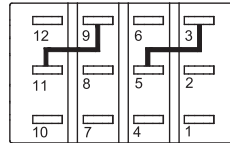


| Model No. | Switching Position | | |
|-------------|--------------------------|------|--------------------------|
| 4P-1 | ON | NONE | ON |
| 4P-2 | ON | NONE | (ON) |
| 4P-3 | ON | OFF | ON |
| 4P-4 | (ON) | OFF | (ON) |
| 4P-5 | ON | OFF | (ON) |
| Term. Comm. | 2-3,5-6 8-9, 11-12 | OPEN | 2-1,5-4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

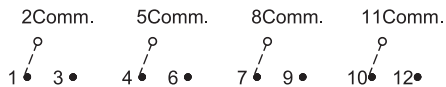
| Model No. | Switching Position | | |
|-------------|--------------------------|--------------------------|--------------------------|
| 4P-6 | ON | ON | ON |
| 4P-7 | (ON) | ON | (ON) |
| 4P-8 | ON | ON | (ON) |
| 4P-9 | OFF | ON | (ON) |
| Term. Comm. | 2-3,5-6 8-9, 11-12 | 2-3,5-4 8-9, 11-10 | 2-1,5-4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



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

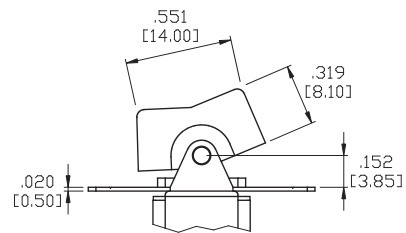
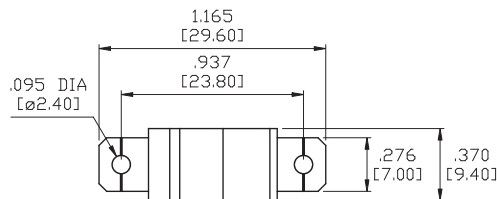


Schematic

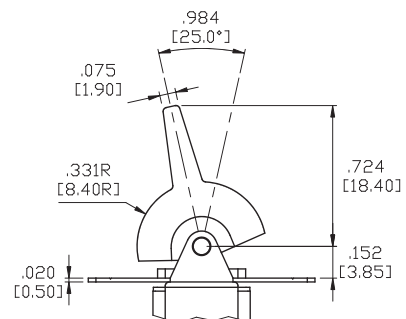
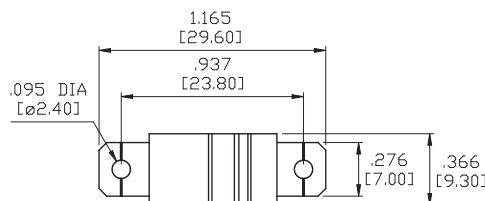


ACTUATOR OPTIONS FOR PANEL REAR MOUNT

R1

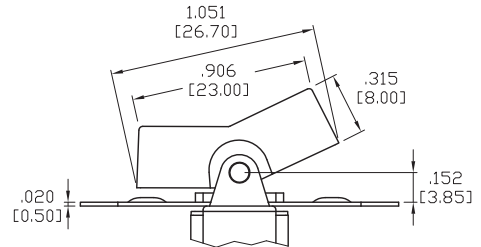
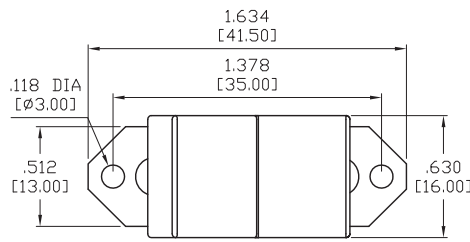


R2

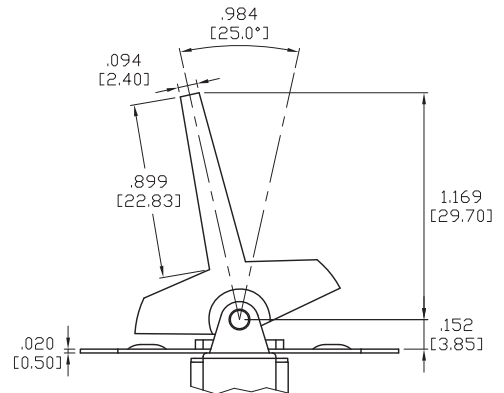
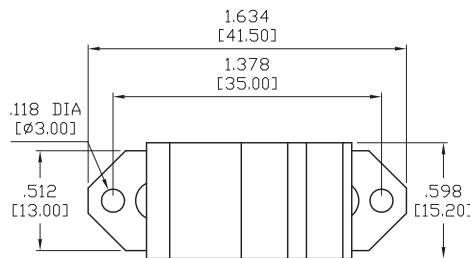
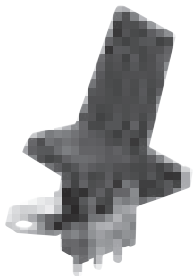


ACTUATOR OPTIONS FOR PANEL REAR MOUNT

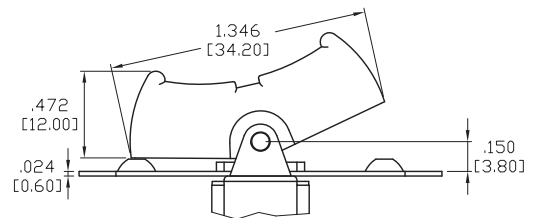
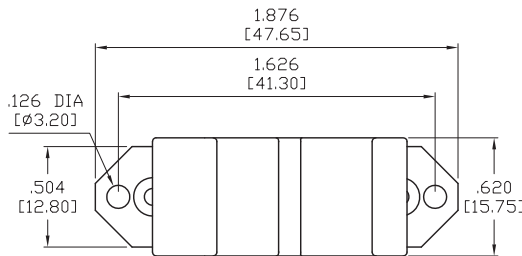
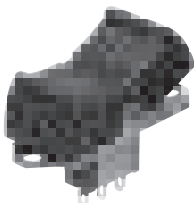
R3



R4

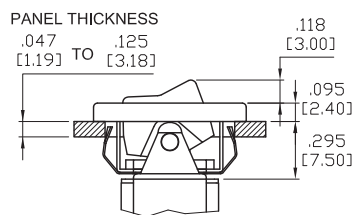
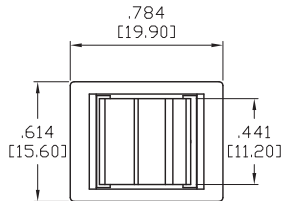


R5

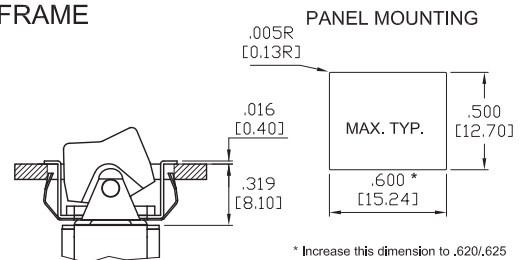
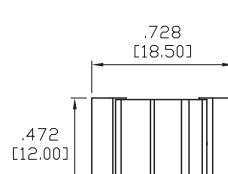


ACTUATOR OPTIONS FOR SNAP-IN FRONT MOUNT

R6

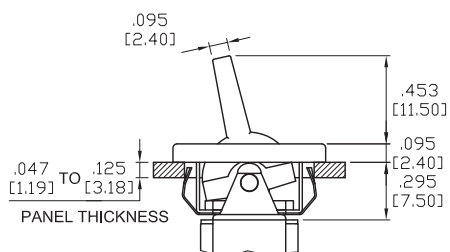
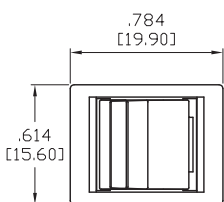


R6 WITHOUT FRAME

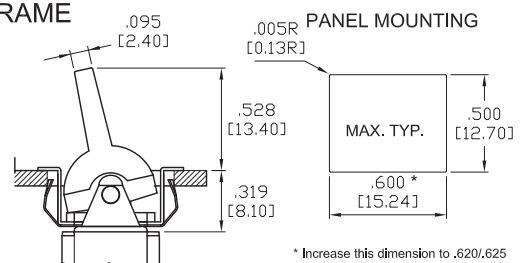
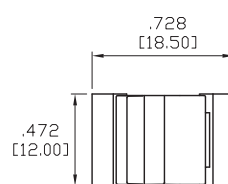


* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

R7



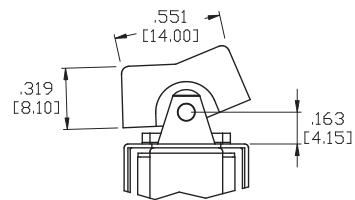
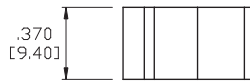
R7 WITHOUT FRAME



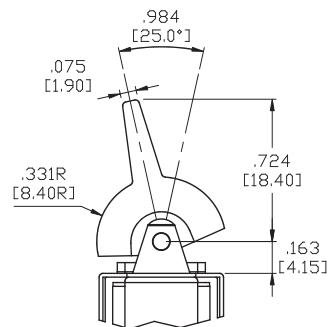
* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

ACTUATOR OPTIONS FOR P.C. MOUNT

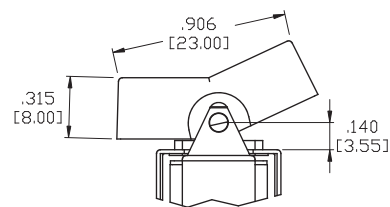
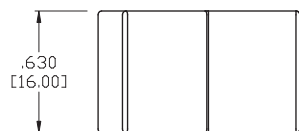
R1



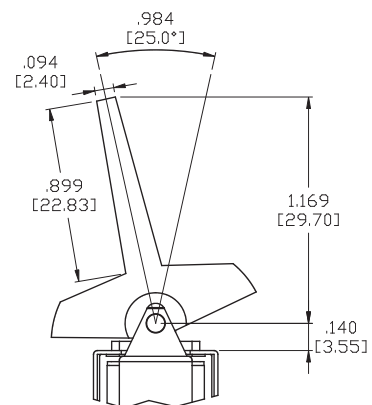
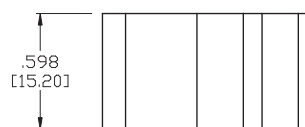
R2



R3

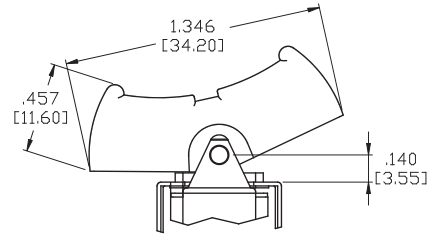
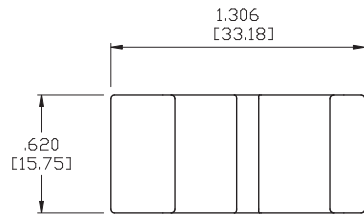


R4

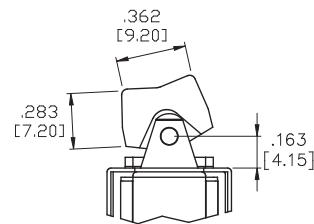
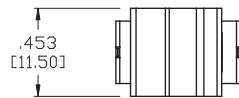
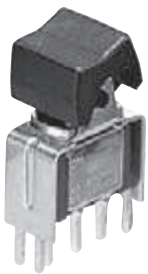


ACTUATOR OPTIONS FOR P.C. MOUNT

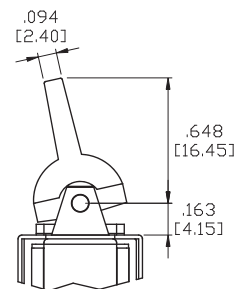
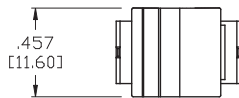
R5



R6

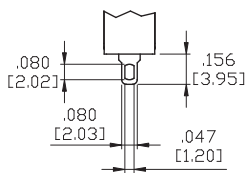


R7



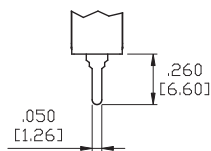
TERMINATION OPTIONS

M1 STD. SOLDER LUG



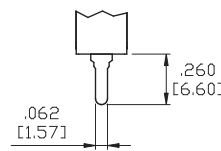
THK .030 [0.75]

M2 PC THRU-HOLE



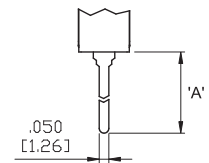
THK .030 [0.75]

M3 QUICK CONNECT



THK .030 [0.75]

M5 WIRE WRAP



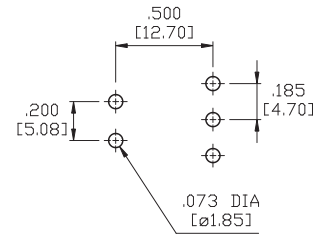
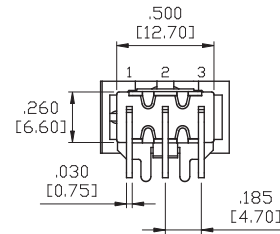
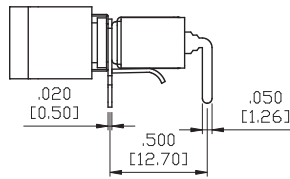
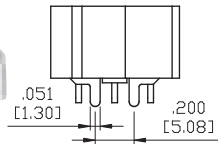
THK .030 [0.75]

| 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] |

TERMINATION OPTIONS

M6

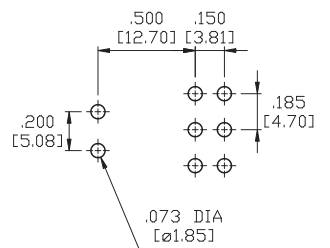
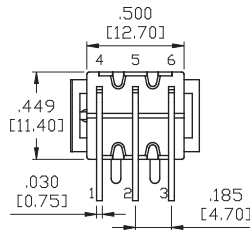
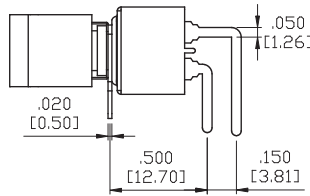
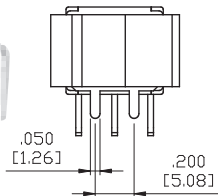
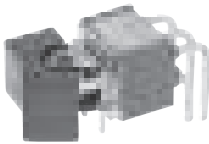
P.C.MOUNTING



SPDT

M6

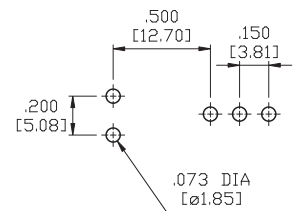
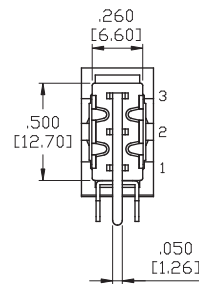
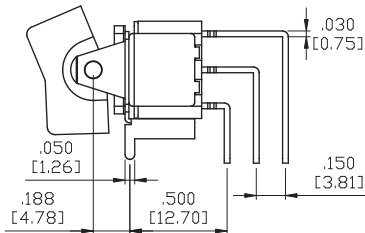
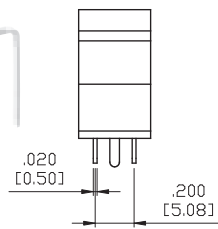
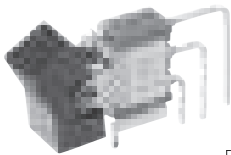
P.C.MOUNTING



DPDT

M7

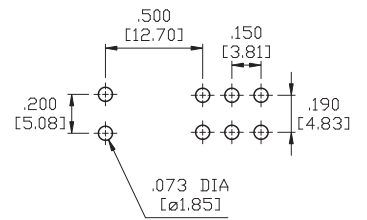
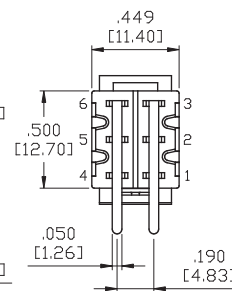
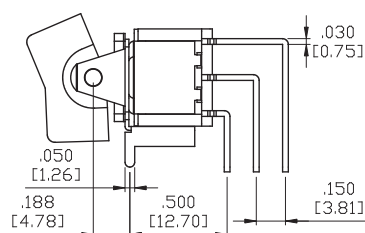
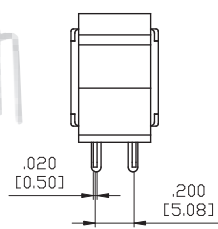
P.C.MOUNTING



SPDT

M7

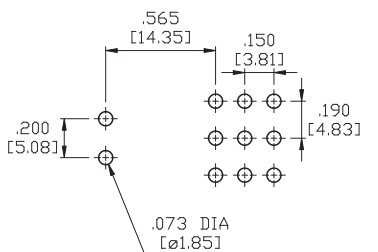
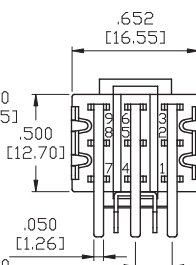
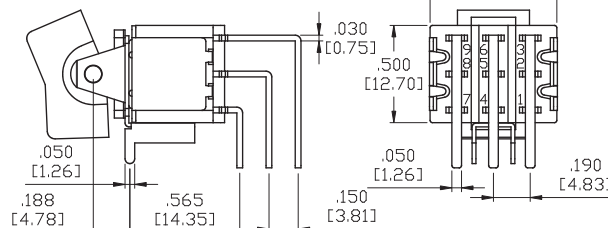
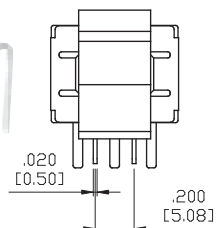
P.C.MOUNTING



DPDT

M7

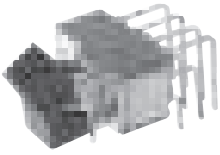
P.C.MOUNTING



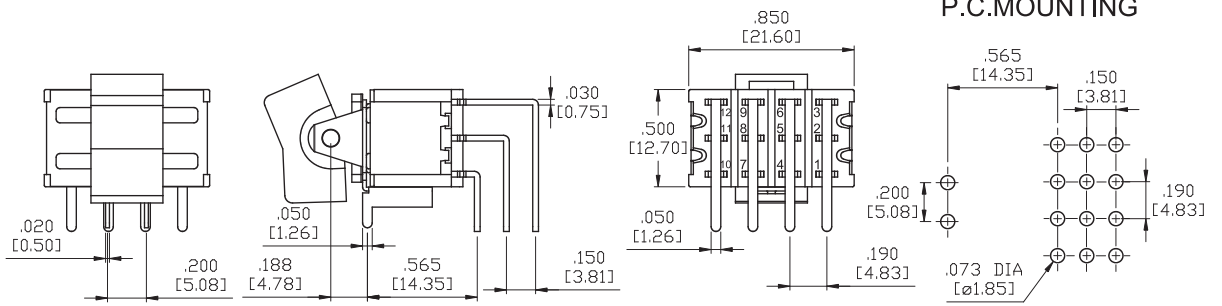
3PDT

TERMINATION OPTIONS

M7



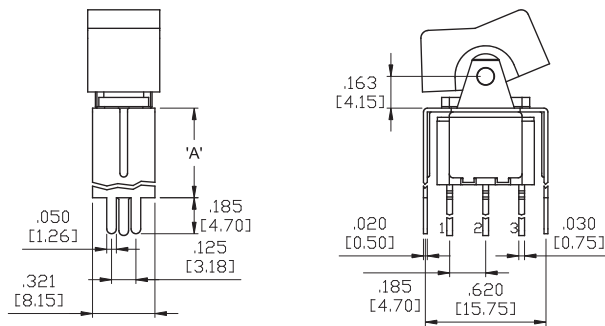
4PDT



VS2-VS3

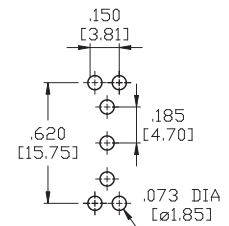


SPDT



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

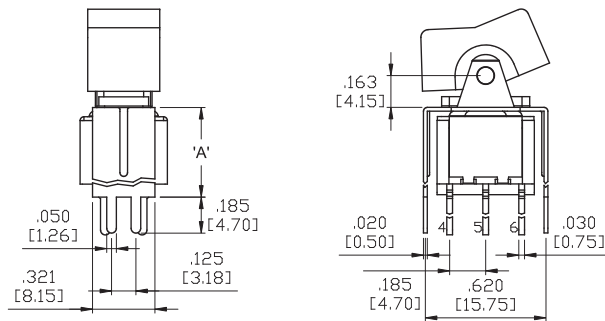
P.C. MOUNTING



VS2-VS3

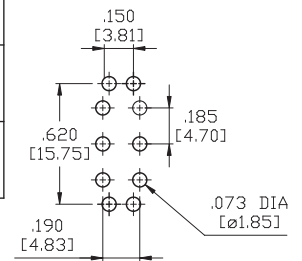


DPDT



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

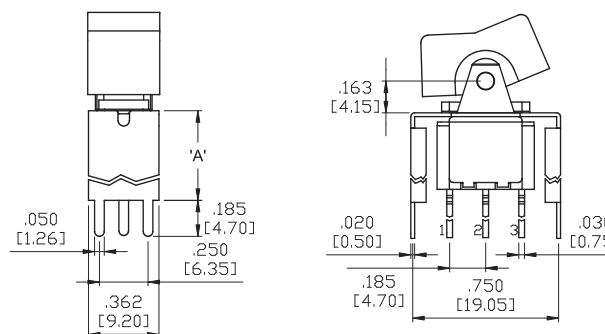
P.C. MOUNTING



VS4-VS5

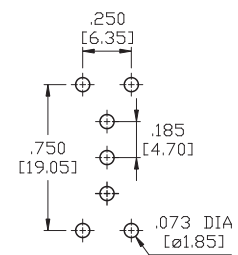


SPDT



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

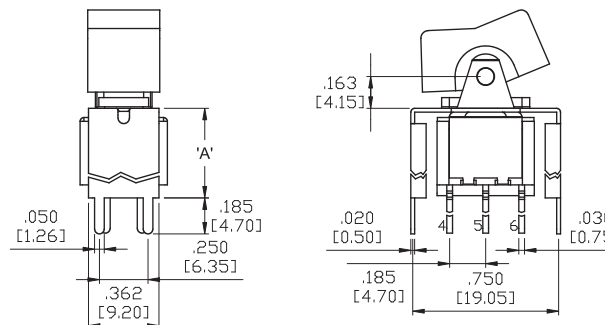
P.C. MOUNTING



VS4-VS5

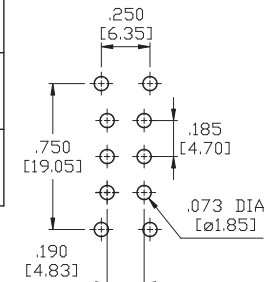


DPDT



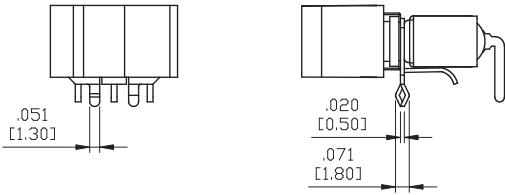
| OPTION CODE | DIM.'A' |
|-------------|--------------|
| VS4 | .461 [11.70] |
| VS5 | .630 [16.00] |

P.C. MOUNTING

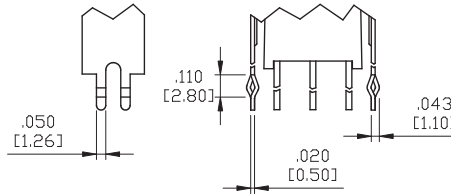


SNAP-IN TERMINATION OPTIONS

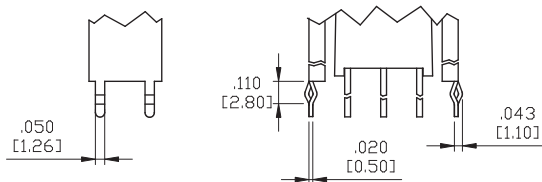
M61



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

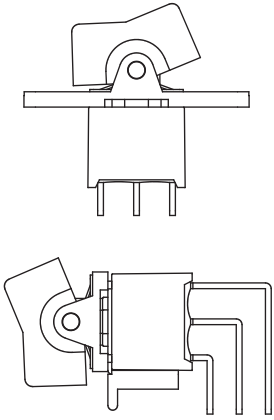
Series 300A/C (Sealed) Miniature Rocker & Paddle Switches

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:

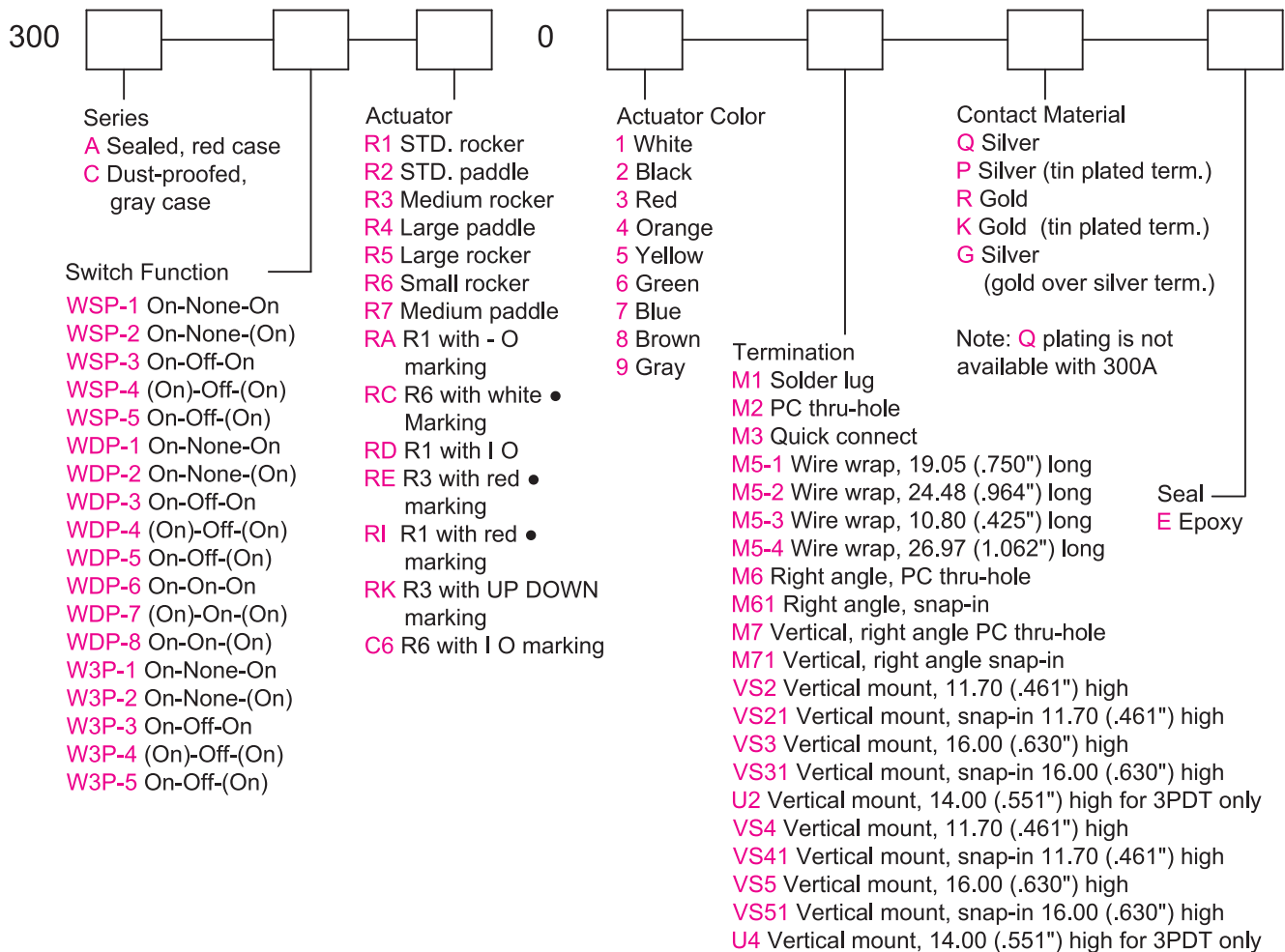
CASE & BUSHING: PA9T or FR52, flame retardant, heat stabilized (UL 94V-0).
 ACTUATOR: Nylon, black std, internal o-ring sealed (300A).
 ACTUATOR: Nylon, black std (300C).
 PANEL REAR MOUNT: Nylon, black std.
 SWITCH SUPPORT: Brass, tin plated.
 ACTUATOR PIVOT & MOUNTING BRACKET: Nylon, black std.
 ACTUATOR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



Specifications and Dimensions subject to change

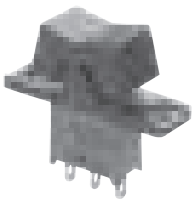
If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



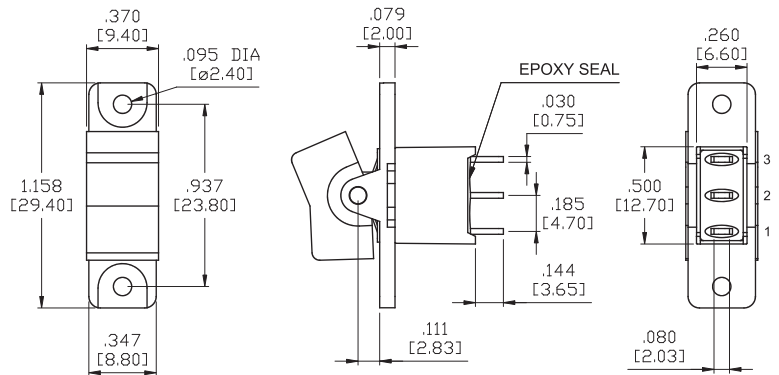
Series 300A/C (Sealed) Miniature Rocker & Paddle Switches

SPDT

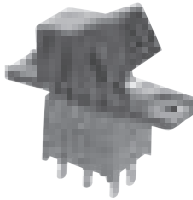


| Model No. | Switching Position | | |
|-------------|--------------------|------|------|
| | | | |
| WSP-1 | ON | NONE | ON |
| WSP-2 | ON | NONE | (ON) |
| WSP-3 | ON | OFF | ON |
| WSP-4 | (ON) | OFF | (ON) |
| WSP-5 | ON | OFF | (ON) |
| Term. Comm. | 2-3 | OPEN | 2-1 |

Schematic

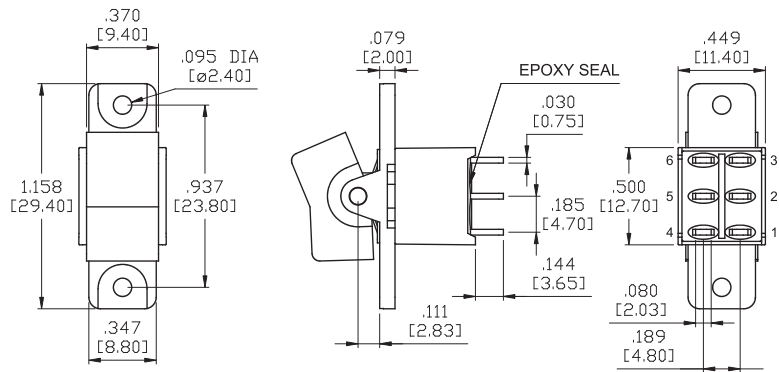
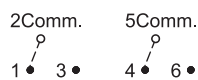


DPDT

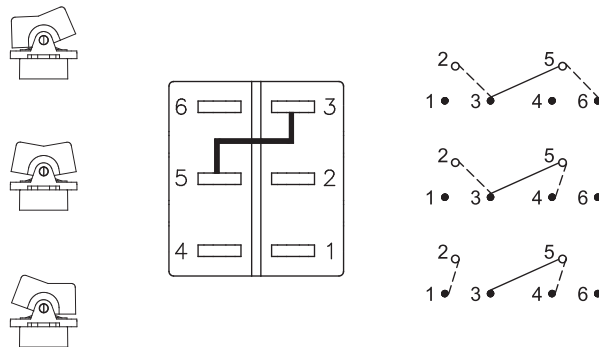


| Model No. | Switching Position | | |
|-------------|--------------------|------|---------|
| | | | |
| WDP-1 | ON | NONE | ON |
| WDP-2 | ON | NONE | (ON) |
| WDP-3 | ON | OFF | ON |
| WDP-4 | (ON) | OFF | (ON) |
| WDP-5 | ON | OFF | (ON) |
| Term. Comm. | 2-3,5-6 | OPEN | 2-1,5-4 |

Schematic



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

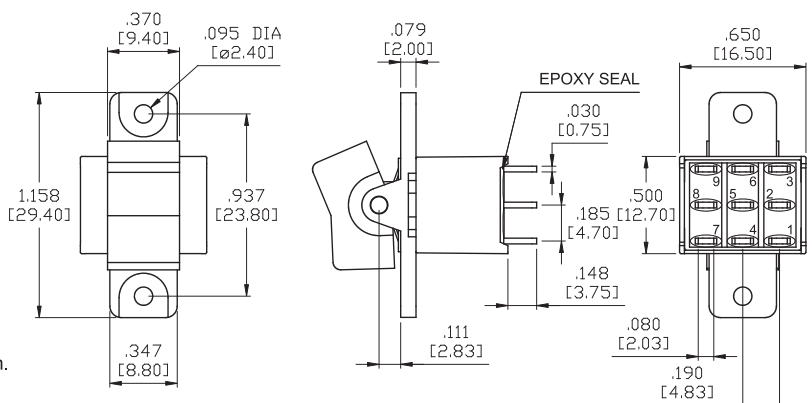


3PDT



| 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 |

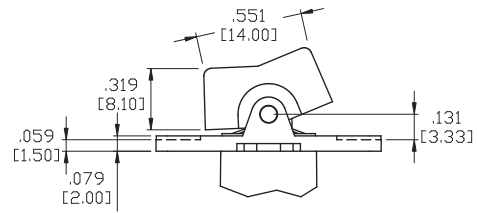
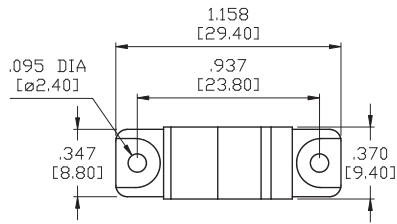
Schematic



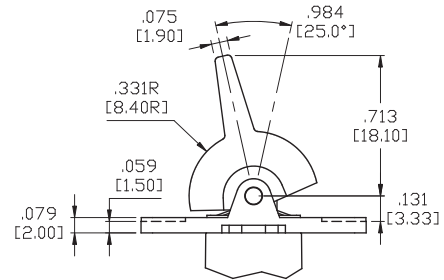
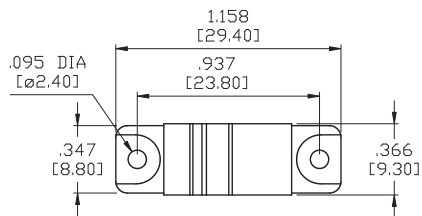
Series 300A/C (Sealed) Miniature Rocker & Paddle Switches

ACTUATOR OPTIONS FOR PANEL REAR MOUNT

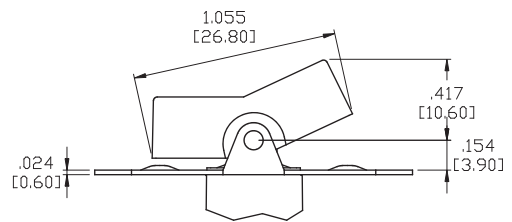
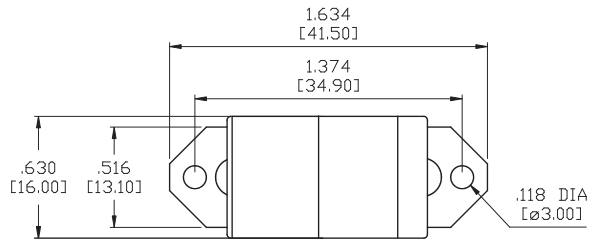
R1



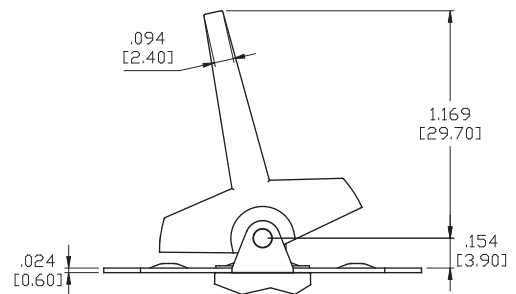
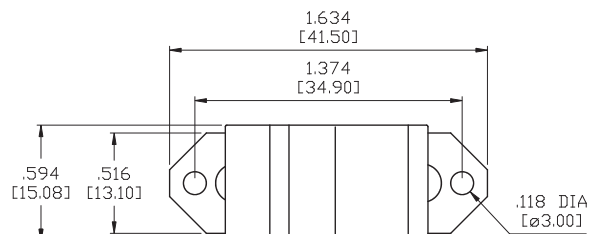
R2



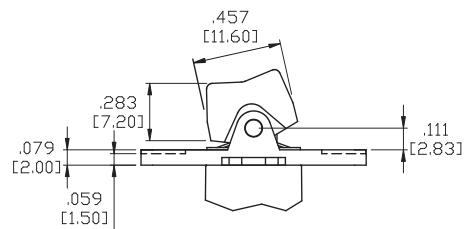
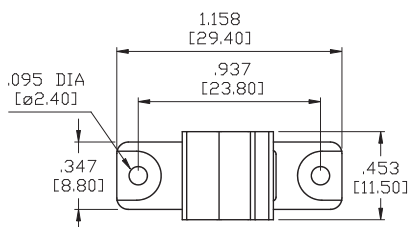
R3



R4



R6



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

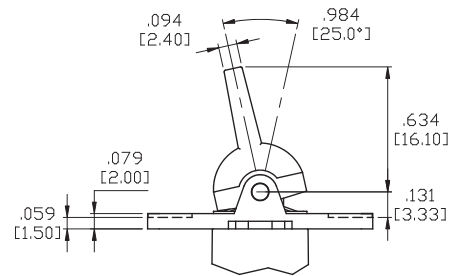
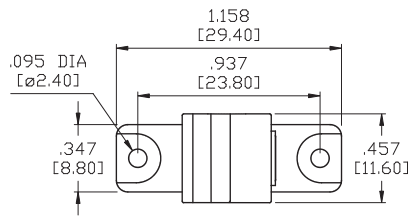
Touch Key

Miscellaneous

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

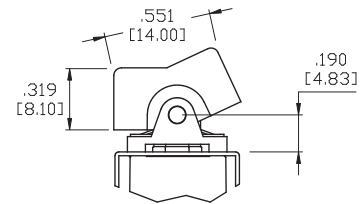
ACTUATOR OPTIONS FOR PANEL REAR MOUNT

R7

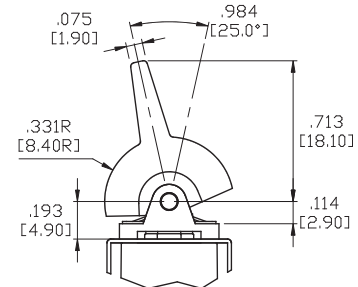


ACTUATOR OPTIONS FOR P.C MOUNT

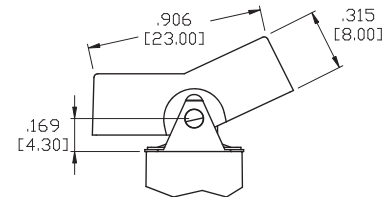
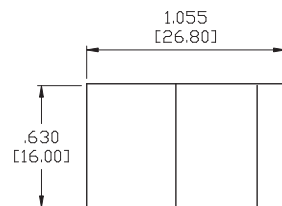
R1



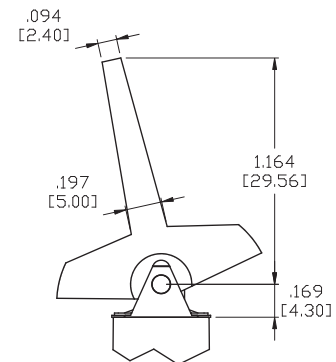
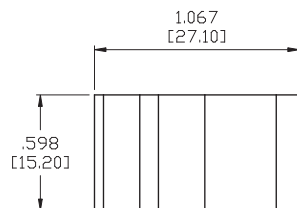
R2



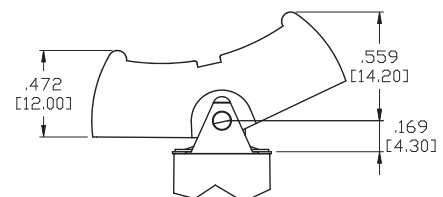
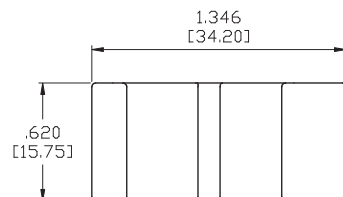
R3



R4



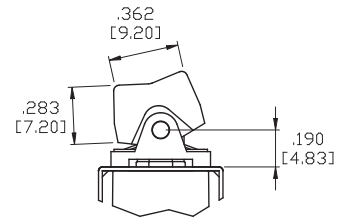
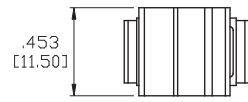
R5



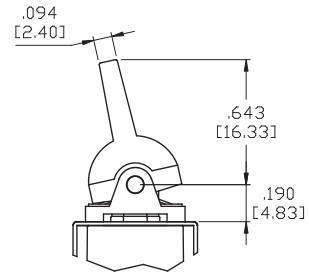
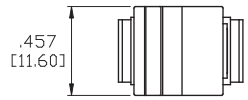
Series 300A/C (Sealed) Miniature Rocker & Paddle Switches

ACTUATOR OPTIONS FOR P.C MOUNT

R6

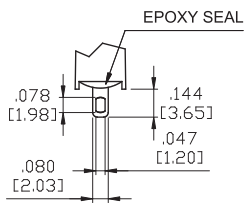


R7



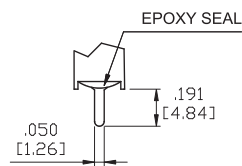
TERMINATION OPTIONS

M1 STD. SOLDER LUG



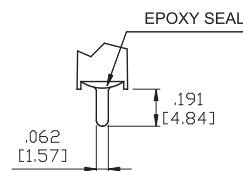
THK .030 [0.75]

M2 PC THRU-HOLE



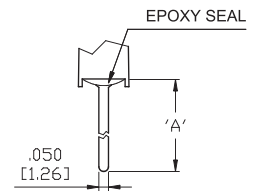
THK .030 [0.75]

M3 QUICK CONNECT



THK .030 [0.75]

M5 WIRE WRAP



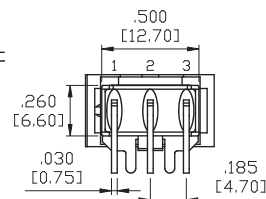
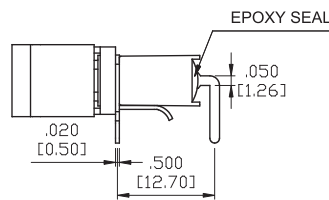
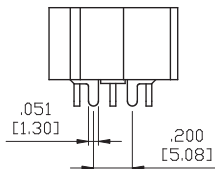
THK .030 [0.75]

| 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] |

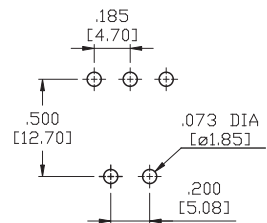
M6



SPDT



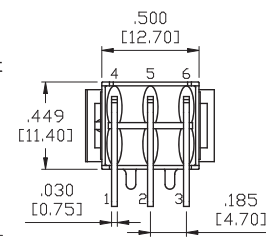
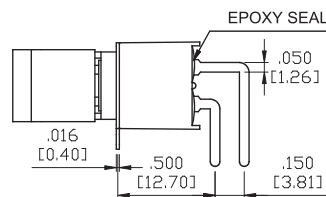
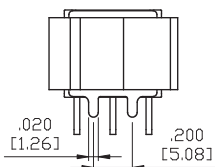
P.C.MOUNTING



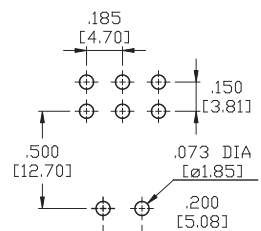
M6



DPDT



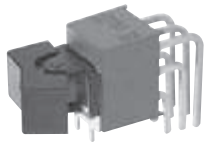
P.C.MOUNTING



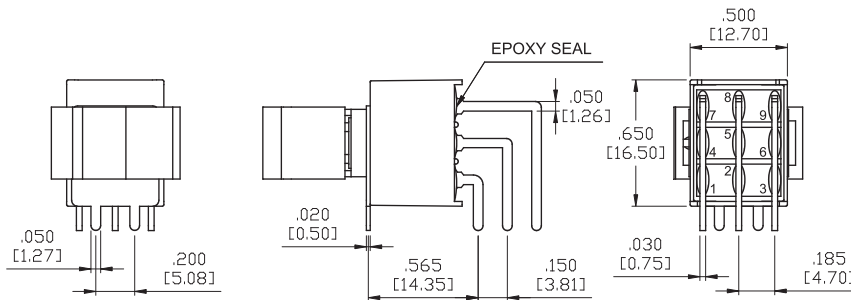
Series 300A/C (Sealed) Miniature Rocker & Paddle Switches

TERMINATION OPTIONS

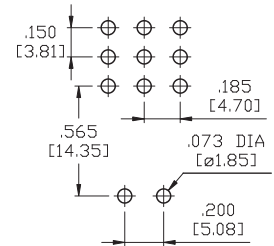
M6



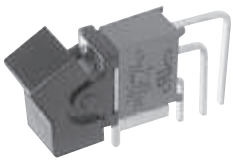
3PDT



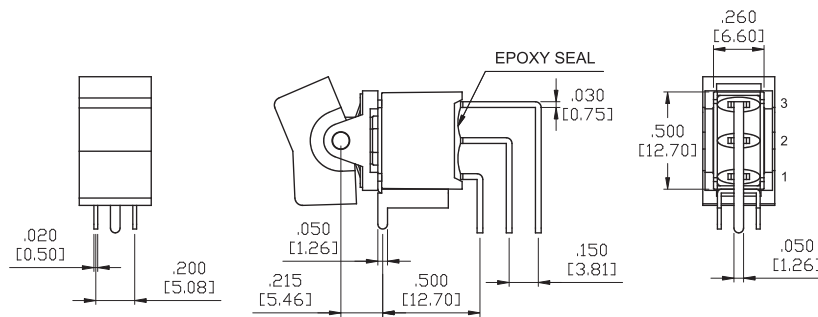
P.C.MOUNTING



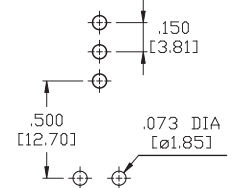
M7



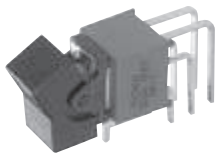
SPDT



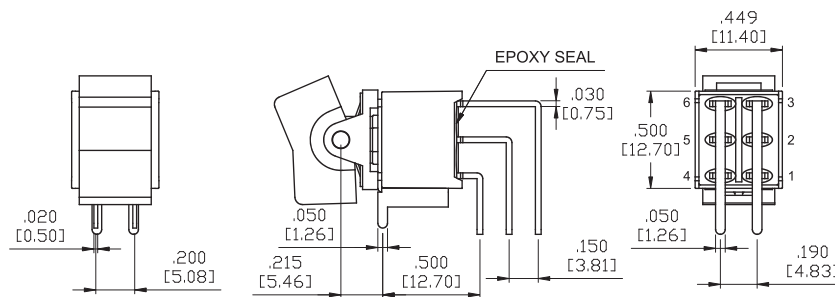
P.C.MOUNTING



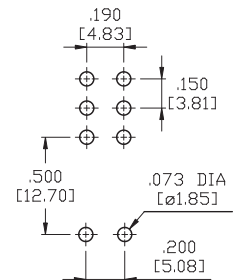
M7



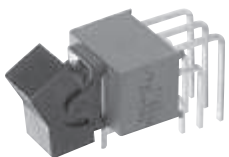
DPDT



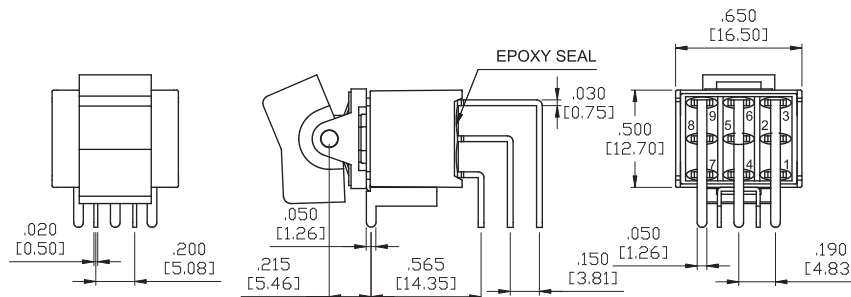
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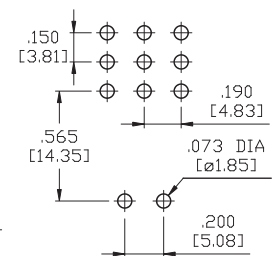
M7



3PDT



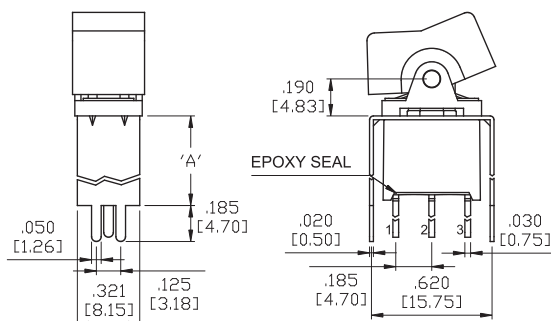
P.C.MOUNTING



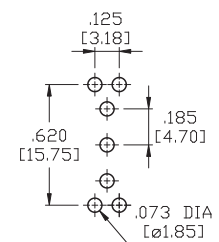
VS2-VS3



SPDT



P.C.MOUNTING



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

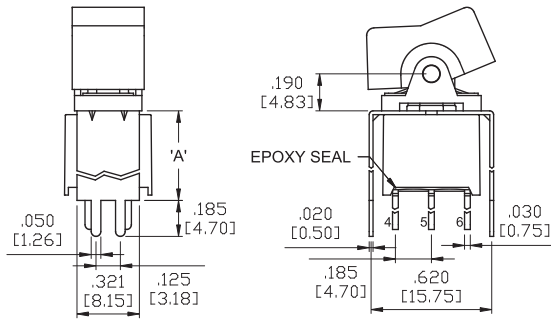
Series 300A/C (Sealed) Miniature Rocker & Paddle Switches

TERMINATION OPTIONS

VS2-VS3

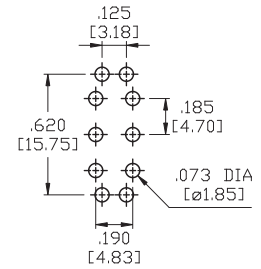


DPDT



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

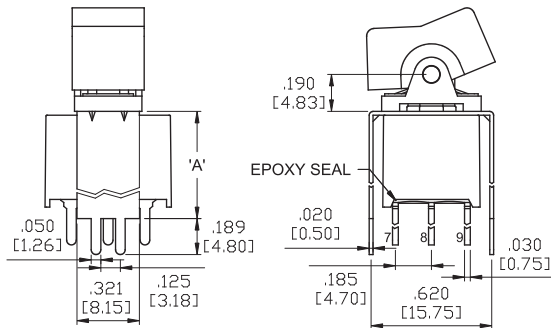
P.C.MOUNTING



U2-VS3

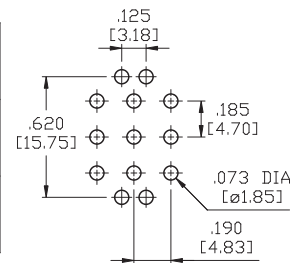


3PDT

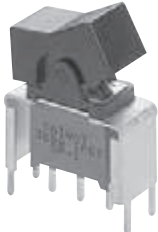


| OPTION CODE | DIM.'A' |
|-------------|--------------|
| U2 | .551 [14.00] |
| VS3 | .630 [16.00] |

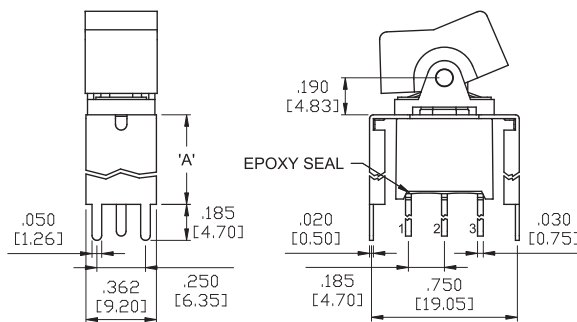
P.C.MOUNTING



VS4-VS5

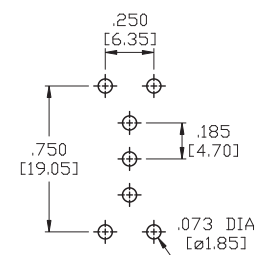


SPDT



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

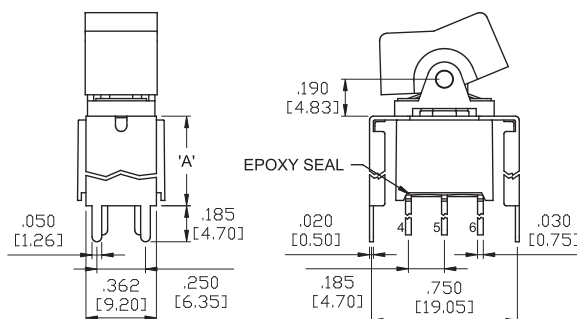
P.C.MOUNTING



VS4-VS5

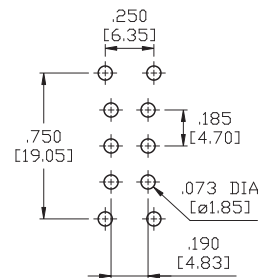


DPDT



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

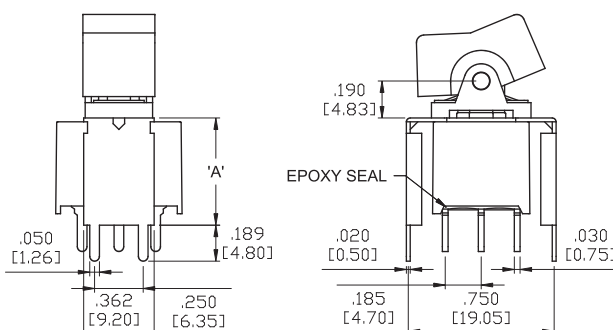
P.C.MOUNTING



U4-VS5

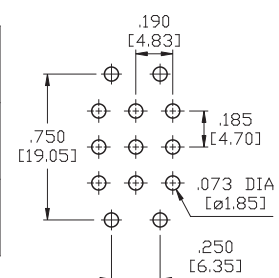


3PDT



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

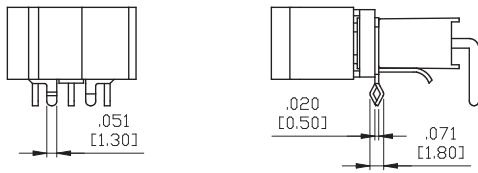
P.C.MOUNTING



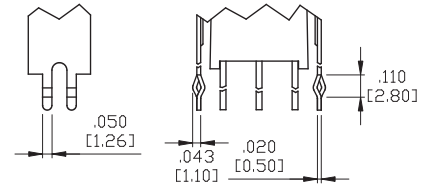
Series 300A/C (Sealed) Miniature Rocker & Paddle Switches

SNAP-IN TERMINATION OPTIONS

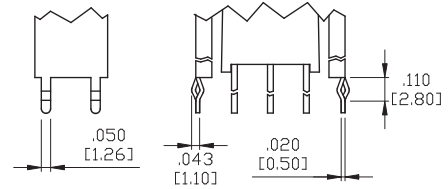
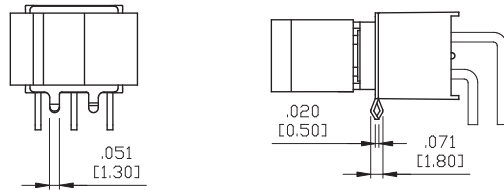
M61



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 | | |

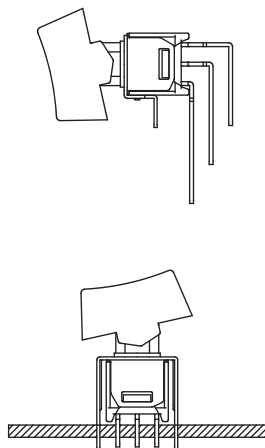
* Standard G plating for sealed product.

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.

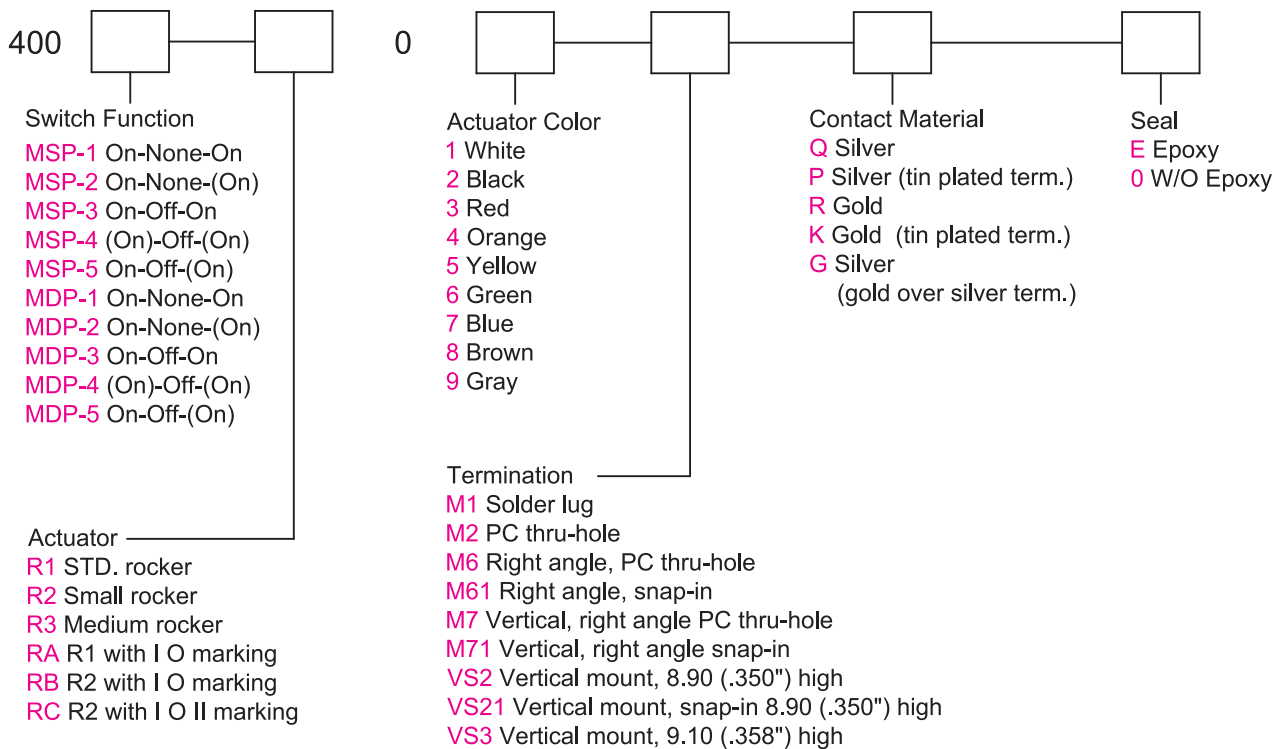
MATERIALS:

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

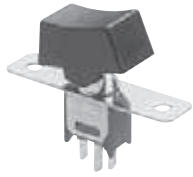


Toggle
 Rocker
 Slide
 Pushbutton
 AV
 Rotary
 Tact
 Touch Key
 Miscellaneous

Series 400

Sub-Miniature Rocker Switches

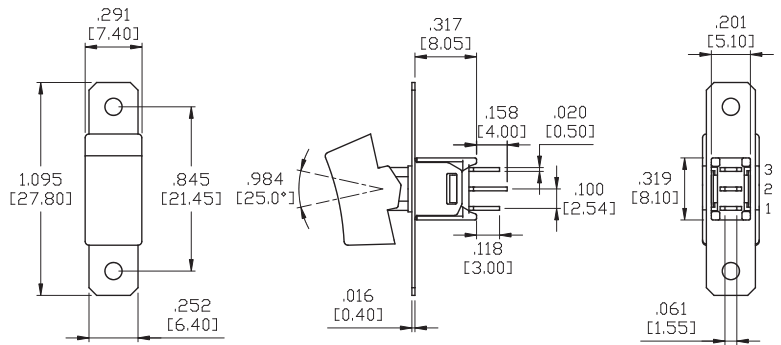
SPDT



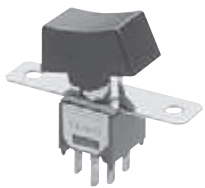
| Model No. | Switching Position | | |
|-------------|--------------------|------|------|
| MSP-1 | ON | NONE | ON |
| MSP-2 | ON | NONE | (ON) |
| MSP-3 | ON | OFF | ON |
| MSP-4 | (ON) | OFF | (ON) |
| MSP-5 | ON | OFF | (ON) |
| TERM. COMM. | 2-3 | OPEN | 2-1 |

Schematic

2Comm.



DPDT

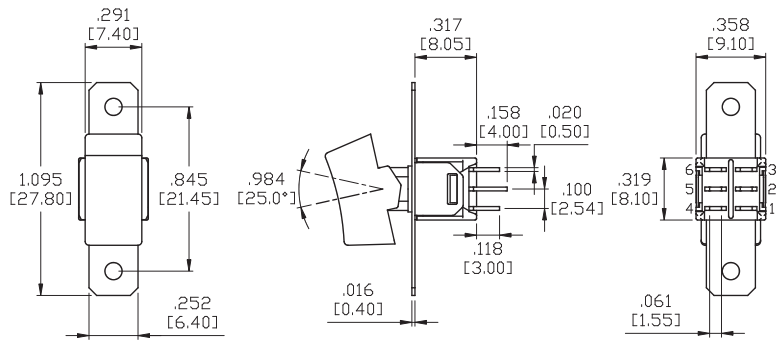


| Model No. | Switching Position | | |
|-------------|--------------------|------|---------|
| MDP-1 | ON | NONE | ON |
| MDP-2 | ON | NONE | (ON) |
| MDP-3 | ON | OFF | ON |
| MDP-4 | (ON) | OFF | (ON) |
| MDP-5 | ON | OFF | (ON) |
| TERM. COMM. | 2-3,5-6 | OPEN | 2-1,5-4 |

Schematic

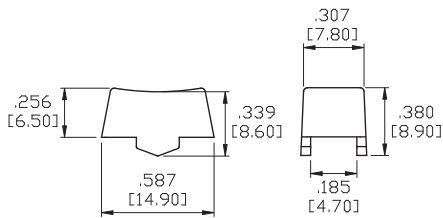
2Comm.

5Comm.

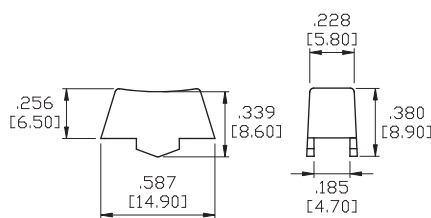


ACTUATOR OPTIONS

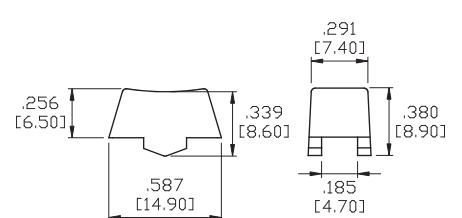
R1



R2

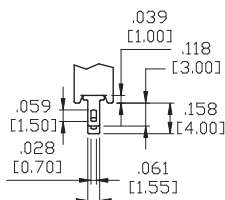


R3

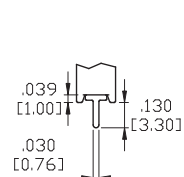


TERMINATION OPTIONS

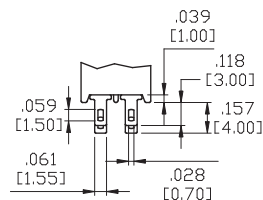
M1 STD. SOLDER LUG



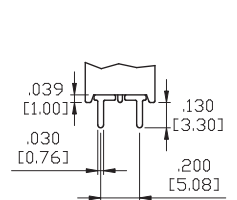
M2 PC THRU-HOLE



M1 STD. SOLDER LUG



M2 PC THRU-HOLE

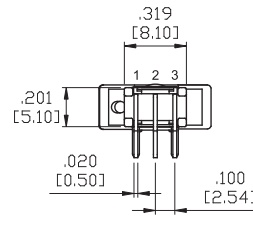
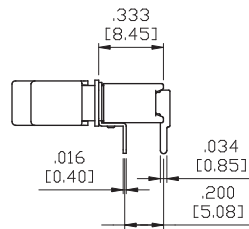
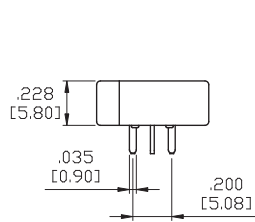


SP

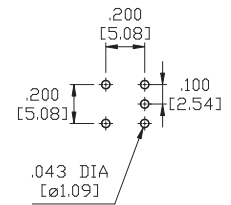
DP

TERMINATION OPTIONS

M6

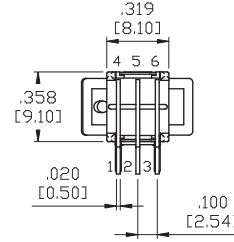
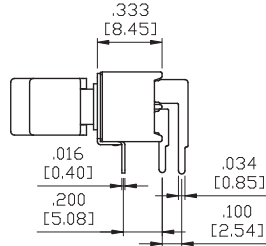
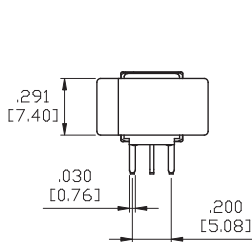
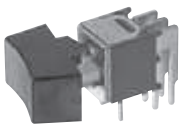


P.C.MOUNTING

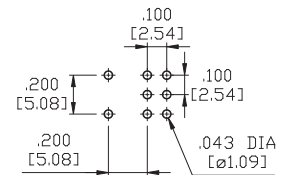


SPDT

M6

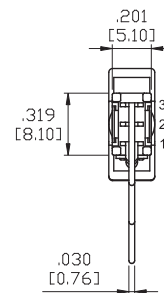
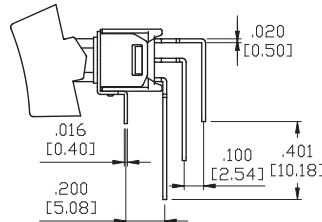
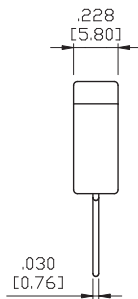
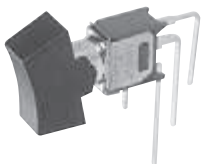


P.C.MOUNTING

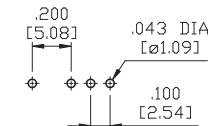


DPDT

M7

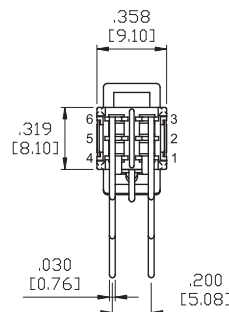
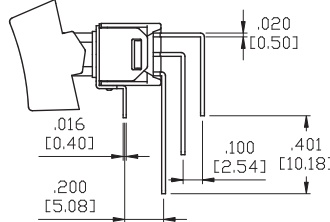
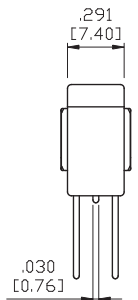
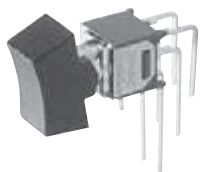


P.C.MOUNTING

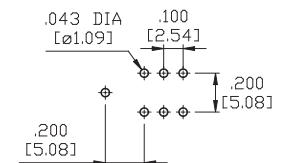


SPDT

M7

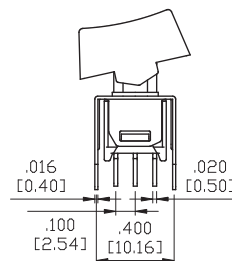
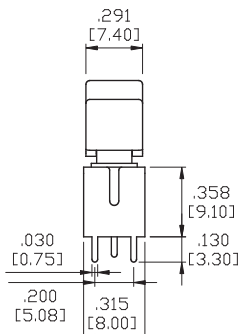
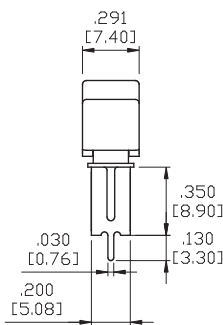


P.C.MOUNTING

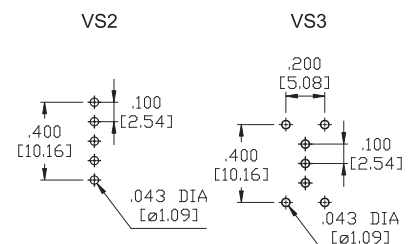


DPDT

VS2-VS3



P.C.MOUNTING



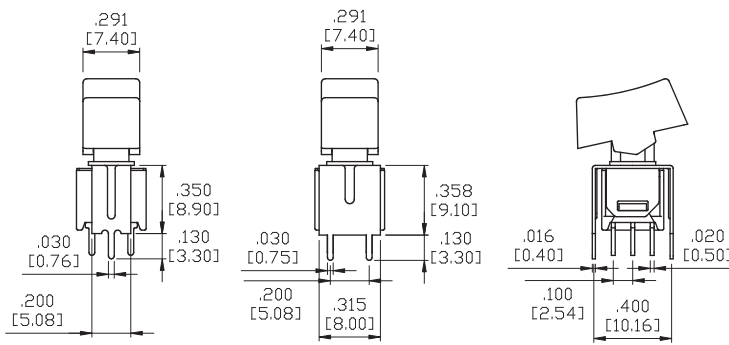
SPDT

TERMINATION OPTIONS

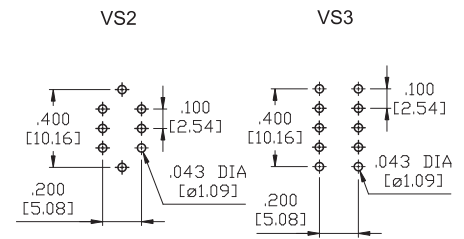
VS2-VS3



DPDT



P.C.MOUNTING

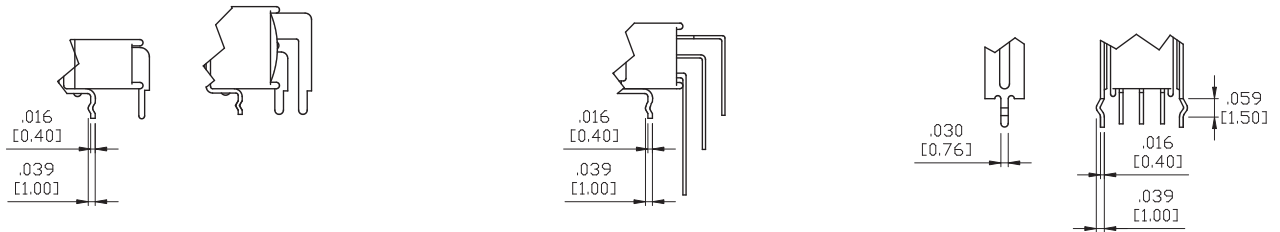


SNAP-IN TERMINATION OPTIONS

M61

M71

VS21



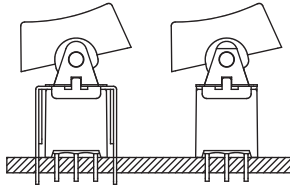
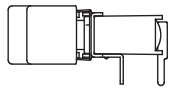
* PC Mounting for M61,M71,VS21 refer to M6,M7,VS2 respectively.

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.

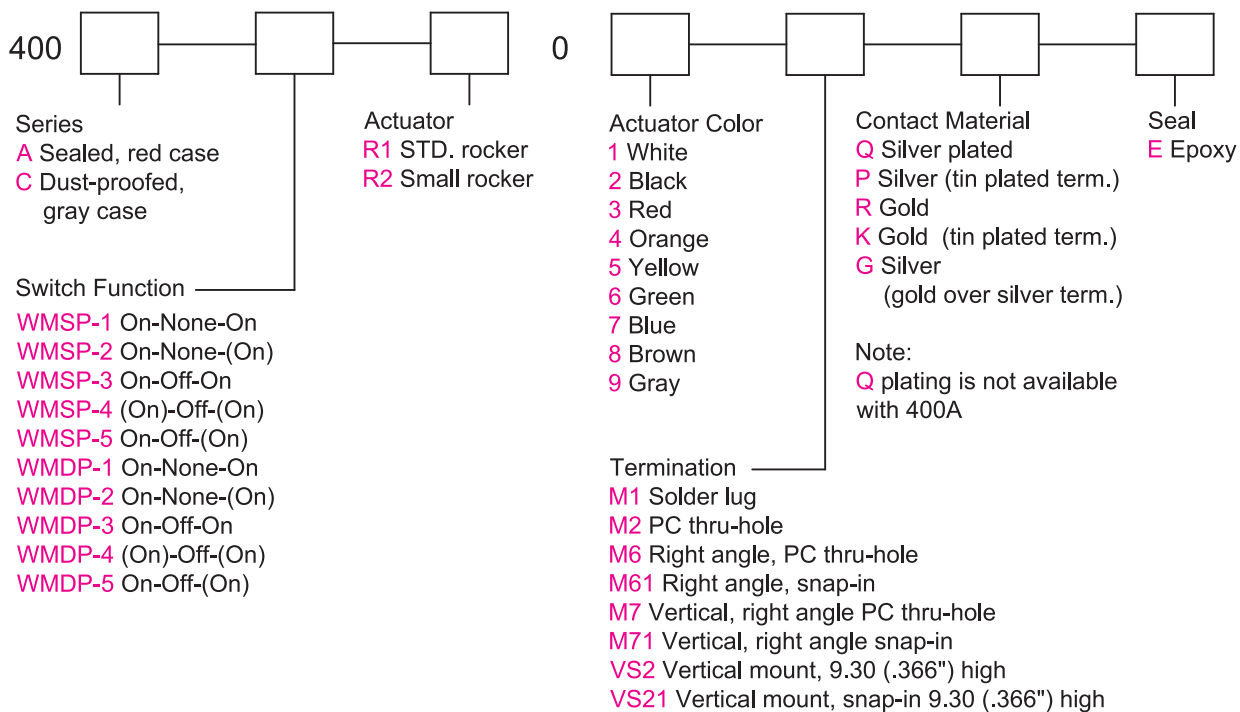
MATERIALS:

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

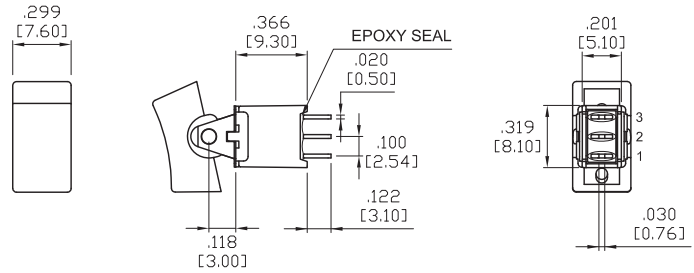
(Sealed) Sub-Miniature Rocker Switches

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.
 1 3•

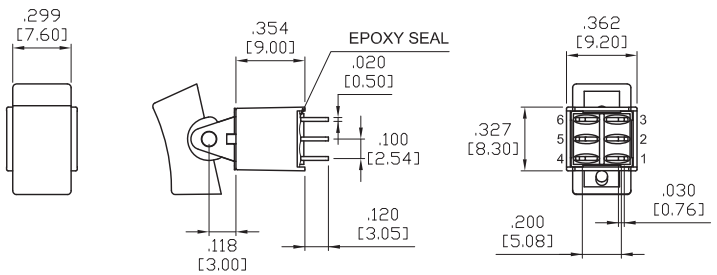


DPDT



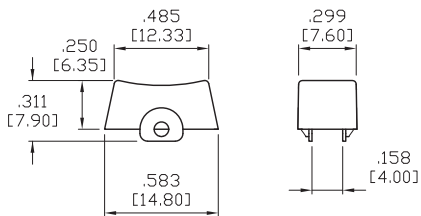
| Model No. | Switching Position | | |
|-------------|--------------------|------|---------|
| WMDP-1 | ON | NONE | ON |
| WMDP-2 | ON | NONE | (ON) |
| WMDP-3 | ON | OFF | ON |
| WMDP-4 | (ON) | OFF | (ON) |
| WMDP-5 | ON | OFF | (ON) |
| Term. Comm. | 2-3,5-6 | OPEN | 2-1,5-4 |

Schematic 2Comm. 5Comm.
 1 3• 4 6•

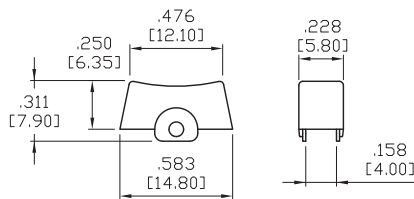


ACTUATOR OPTIONS

R1



R2

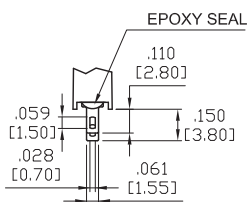


| ACTUATOR COLORS | |
|-----------------|--------------|
| 1 | White |
| 2 | Black (std.) |
| 3 | Red |
| 4 | Orange |
| 5 | Yellow |
| 6 | Green |
| 7 | Blue |
| 8 | Brown |
| 9 | Gray |

TERMINATION OPTIONS

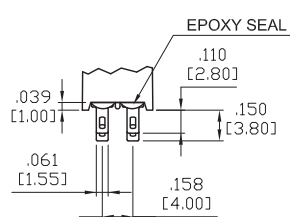
M1 STD. SOLDER LUG

SP



THK .020 [0.50]

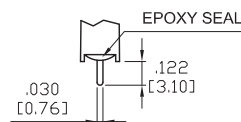
DP



THK .020 [0.50]

M2 PC THRU-HOLE

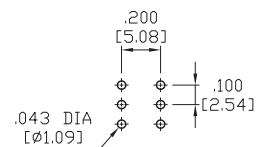
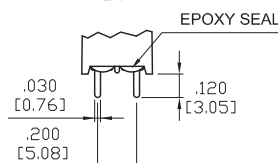
SP



P.C.MOUNTING

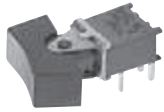


DP

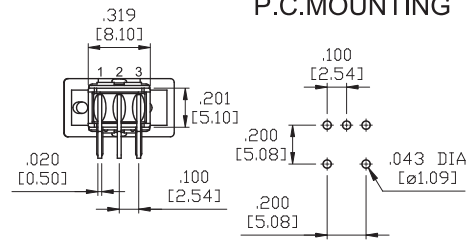
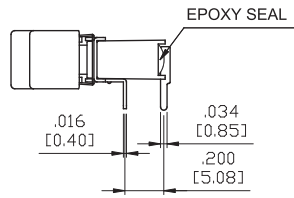
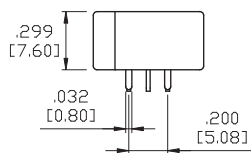


TERMINATION OPTIONS

M6

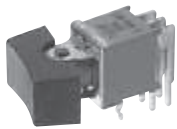


SPDT

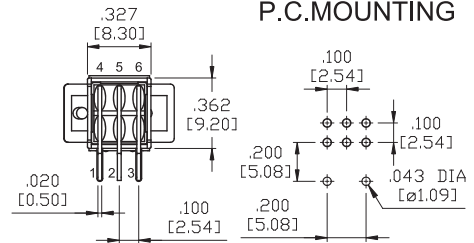
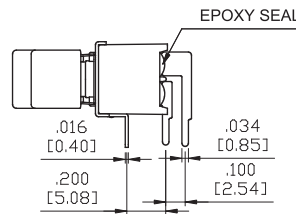
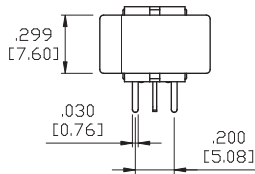


P.C.MOUNTING

M6

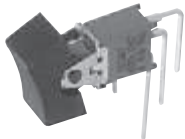


DPDT

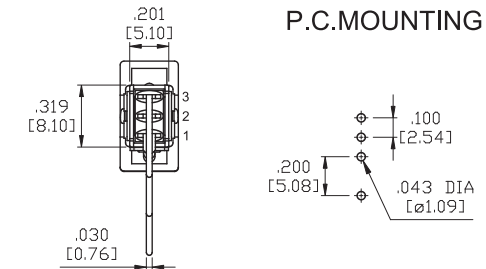
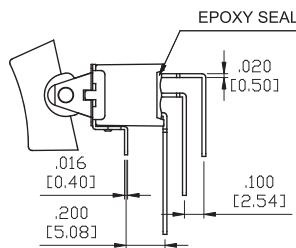
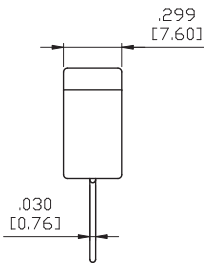


P.C.MOUNTING

M7

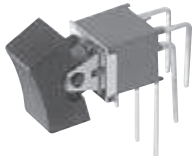


SPDT

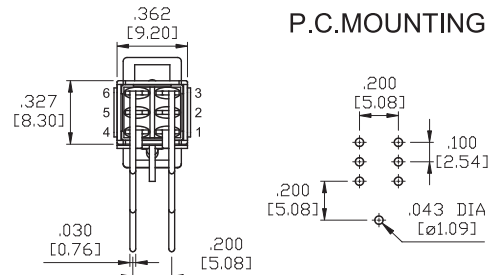
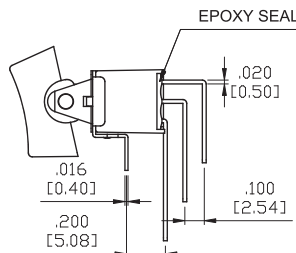
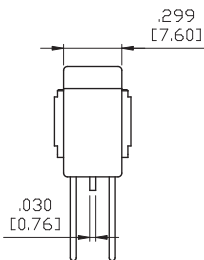


P.C.MOUNTING

M7



DPDT

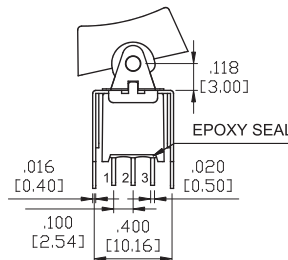
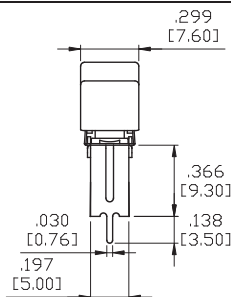


P.C.MOUNTING

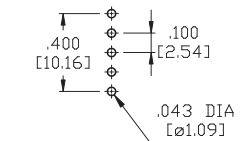
VS2



SPDT



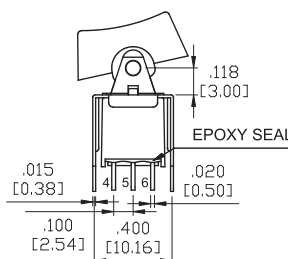
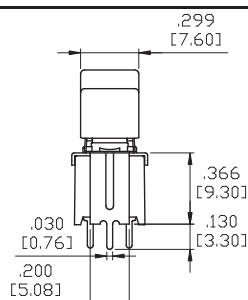
P.C.MOUNTING



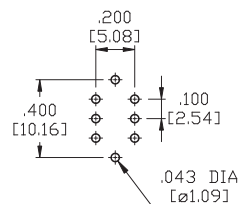
VS2



DPDT

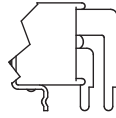
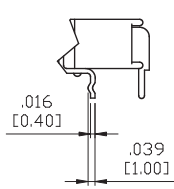


P.C.MOUNTING

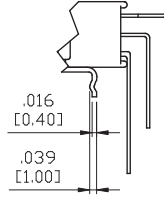


SNAP-IN TERMINATION OPTIONS

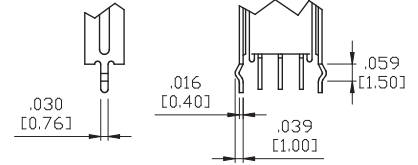
M61



M71



VS21



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

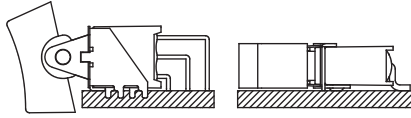
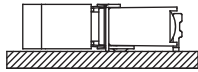
CONTACT MATERIAL OPTIONS

| Coding | Contact Material | Terminal Plating | Rating | Agency Approvals |
|--------|---------------------|--|---|------------------|
| 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.

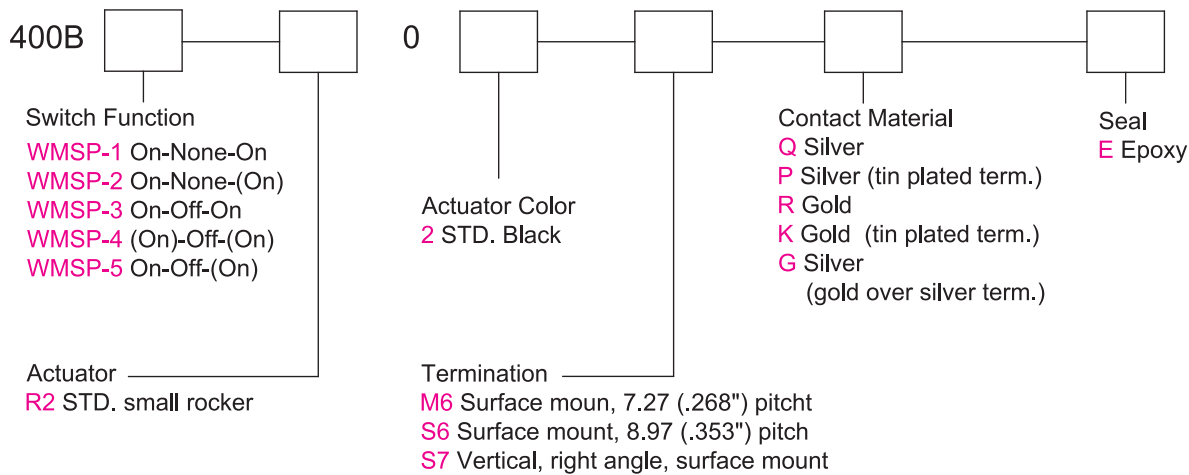
MATERIALS:

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



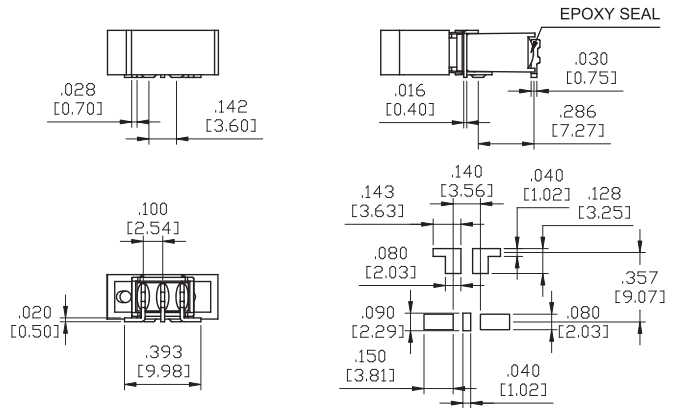
M6



| 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.

SPDT



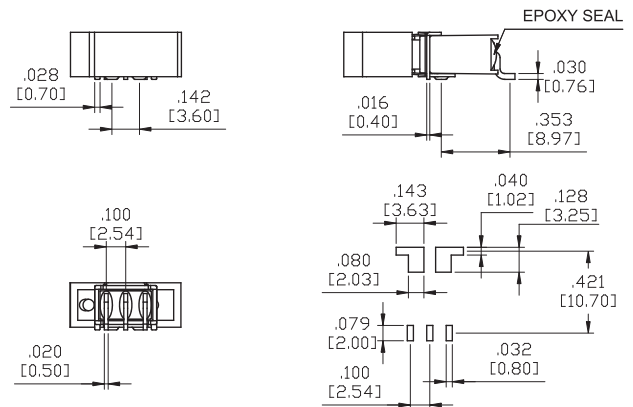
S6



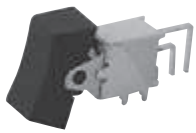
| Model No. | Switching Position | | |
|-------------|--------------------|------|------|
| WMSP-1 | ON | NONE | ON |
| WMSP-2 | ON | NONE | (ON) |
| WMSP-3 | ON | OFF | ON |
| WMSP-4 | (ON) | OFF | (ON) |
| WMSP-5 | ON | OFF | (ON) |
| Term. Comm. | 2-3 | OPEN | 2-1 |

Schematic 2Comm.

SPDT



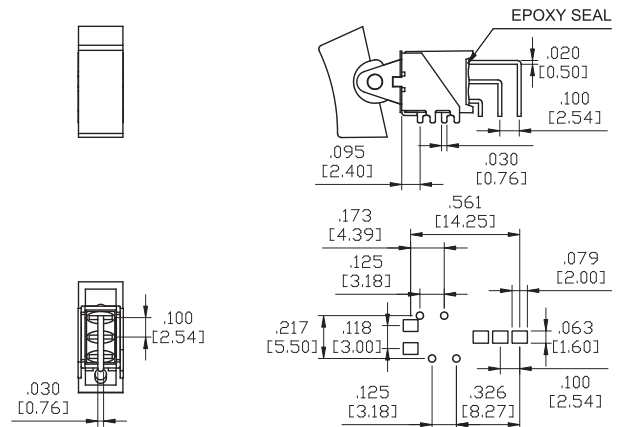
S7



| 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 |

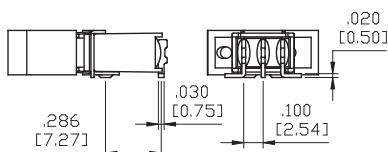
Schematic 2Comm.

SPDT

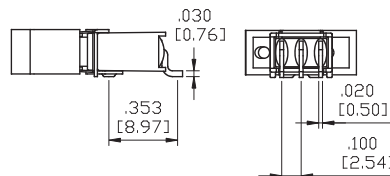


TERMINATION OPTIONS

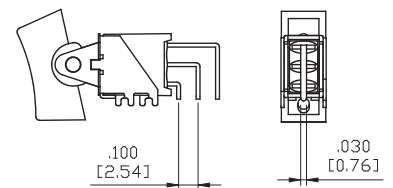
M6



S6

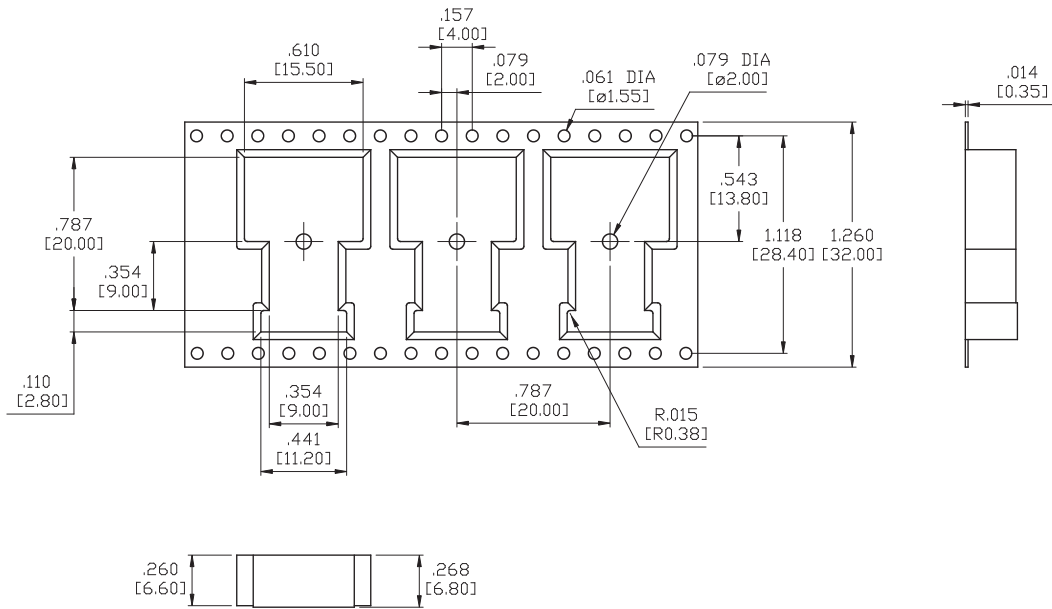


S7

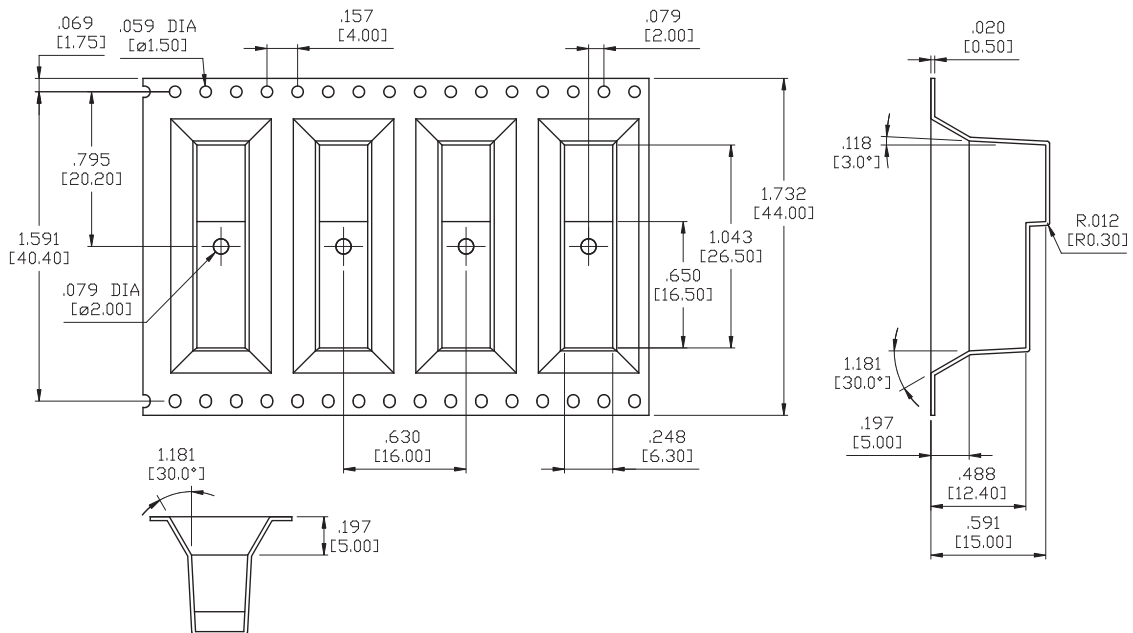


REEL TAPING

FOR M6,S6 ONLY



FOR S7 ONLY



- Toggle
- Rocker
- Slide
- Pushbutton
- AV
- Rotary
- Tact
- Touch Key
- Miscellaneous

REEL TAPING

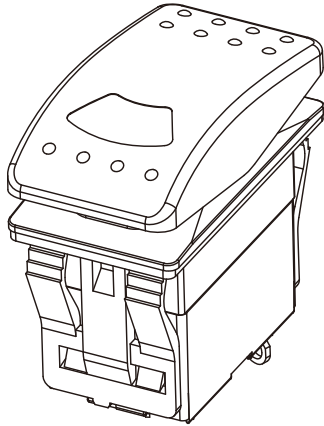
| REEL INFORMATION | |
|-------------------|----------------|
| OUTSIDE DIAMETER | 12.99 [330.00] |
| PILOT HOLE | .502 [13.00] |
| QUANTITY PER REEL | 400 |

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.

NEW !



SPECIFICATIONS:

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

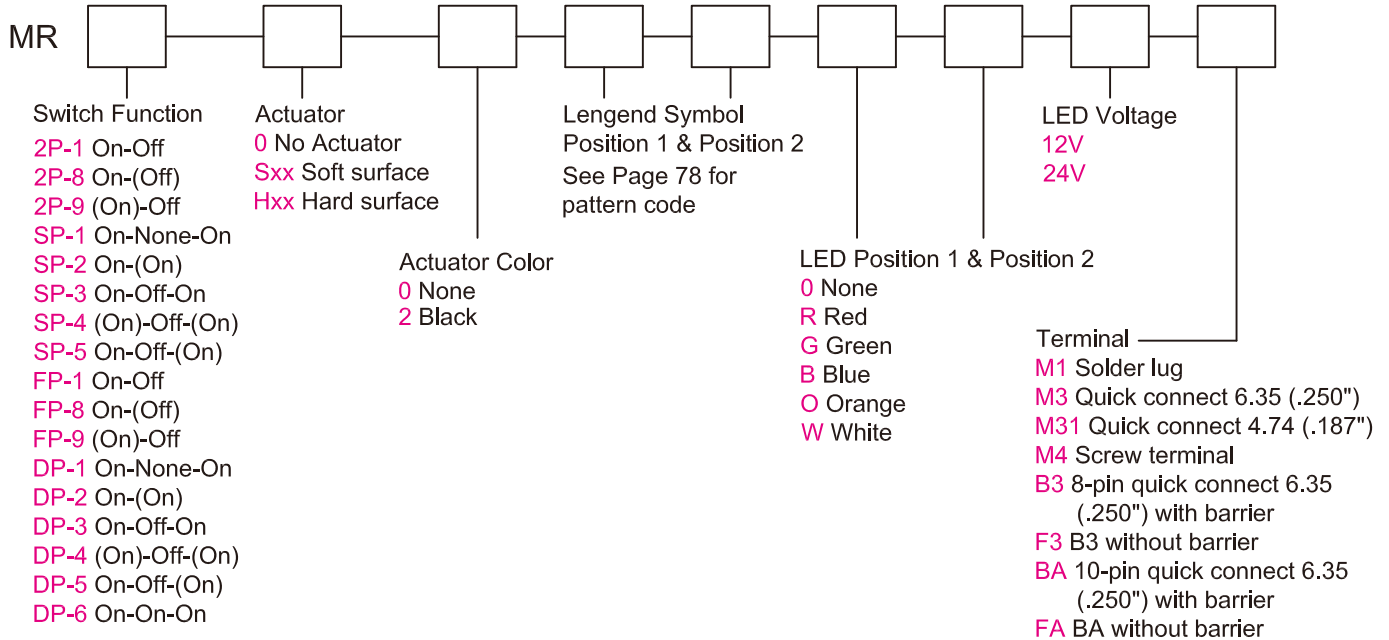
MATERIALS:

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.

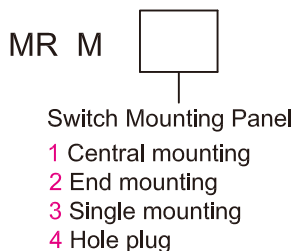
Specifications and Dimensions subject to change

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

HOW TO ORDER SYSTEM

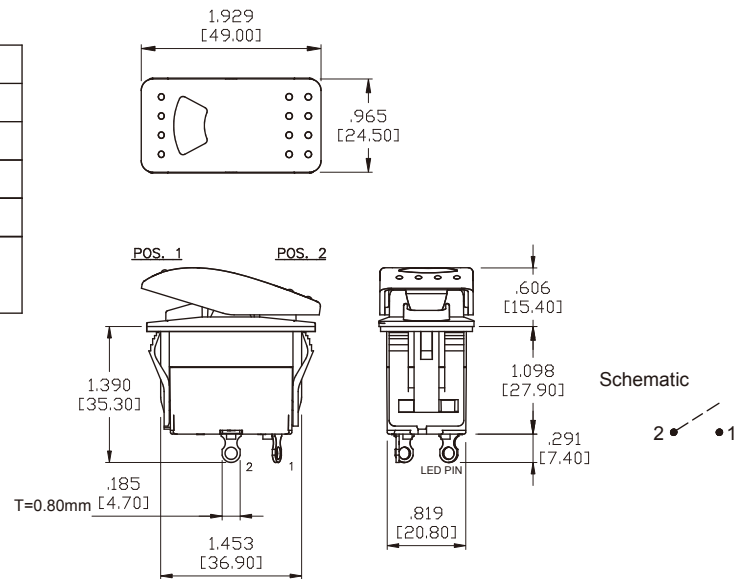


To order attachable mounting panel, please specify series name followed by the word "M" and the panel option.



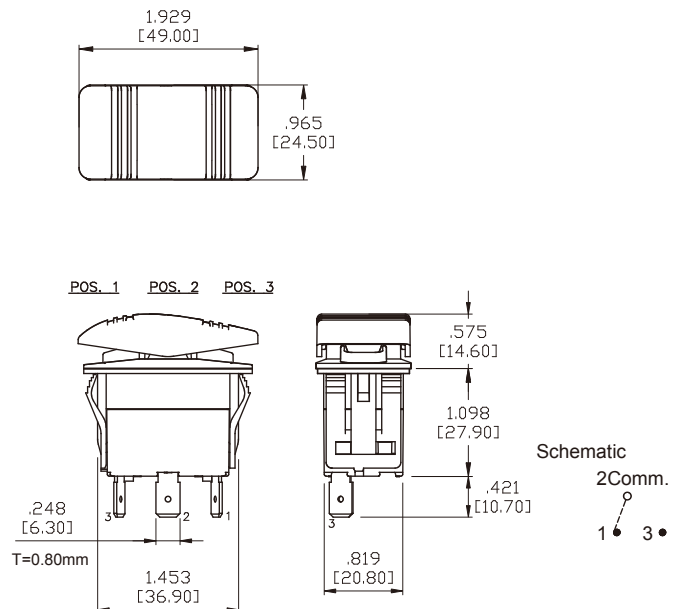
SPST

| 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

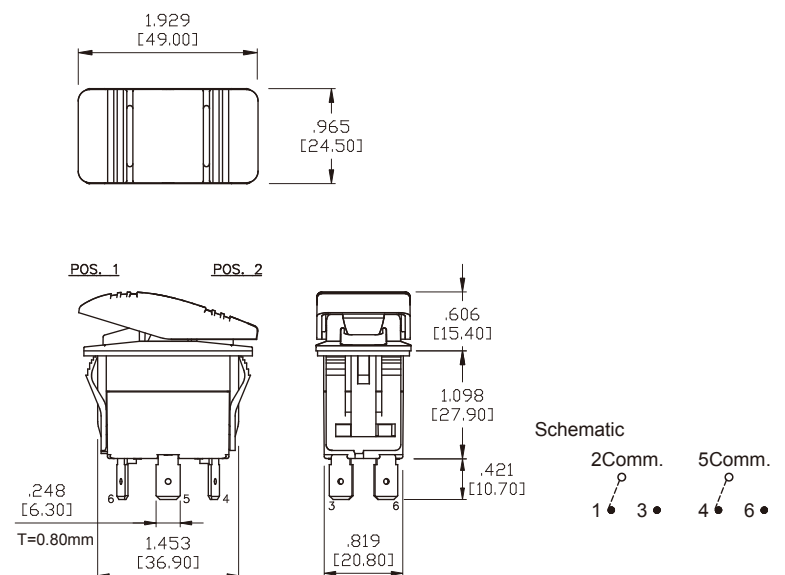
| Model No. | Switching Position | | |
|-------------|--------------------|--------|--------|
| | POS. 1 | POS. 2 | POS. 3 |
| SP-1 | ON | NONE | ON |
| SP-2 | ON | NONE | (ON) |
| SP-3 | ON | OFF | ON |
| SP-4 | (ON) | OFF | (ON) |
| SP-5 | ON | OFF | (ON) |
| Term. Comm. | 2-1 | OPEN | 2-3 |



DPDT

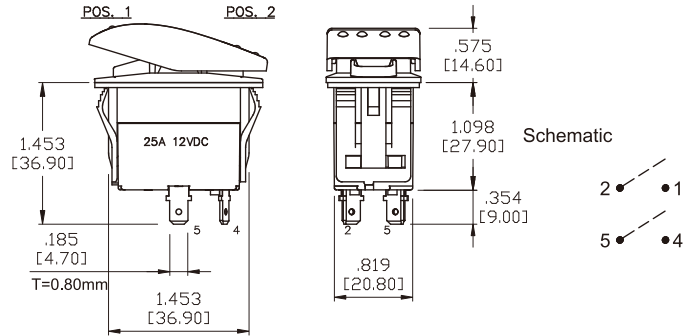
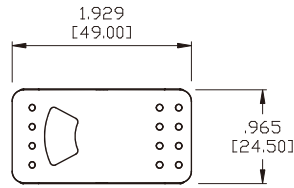
| Model No. | Switching Position | | |
|-------------|--------------------|--------|---------|
| | POS. 1 | POS. 2 | POS. 3 |
| DP-1 | ON | NONE | ON |
| DP-2 | ON | NONE | (ON) |
| DP-3 | ON | OFF | ON |
| DP-4 | (ON) | OFF | (ON) |
| DP-5 | ON | OFF | (ON) |
| Term. Comm. | 2-1,5-4 | OPEN | 2-3,5-6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

| 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 |

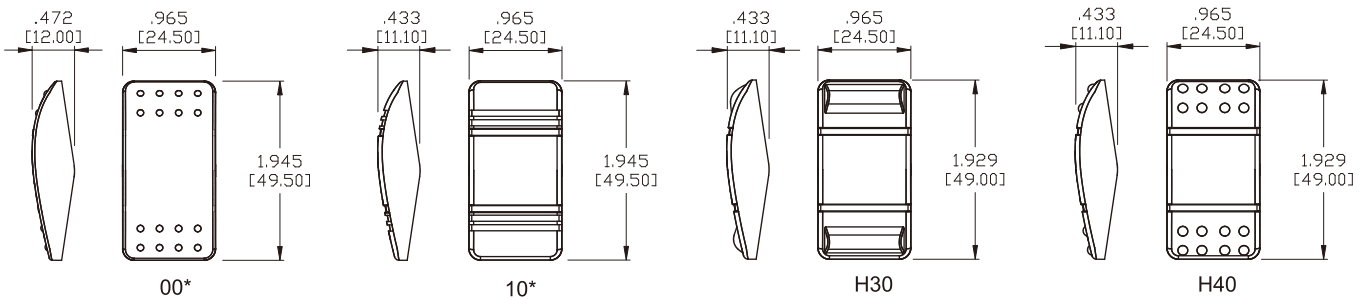


DPST

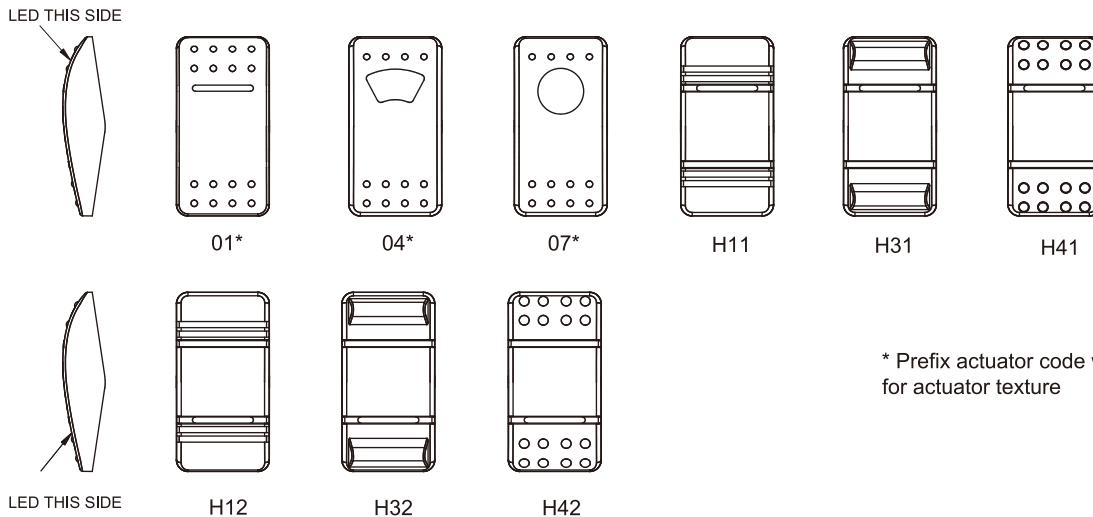
| Model No. | Switching Position | | |
|-------------|--------------------|------|--------|
| | POS. 1 | | POS. 2 |
| FP-1 | ON | NONE | OFF |
| FP-8 | ON | NONE | (OFF) |
| FP-9 | (ON) | NONE | OFF |
| Term. Comm. | 2-1,5-4 | N/A | OPEN |



ACTUATOR OPTIONS

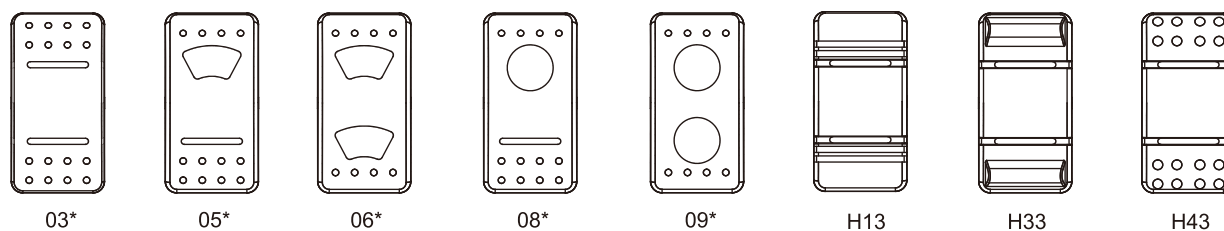


ACTUATOR WITH SINGLE LED OPTIONS



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

ACTUATOR WITH DUEL LED OPTIONS



* 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

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

SWITCH MOUNTING PANEL OPTIONS

| Code | Description |
|------|------------------|
| 1 | Central mounting |
| 2 | End mounting |
| 3 | Single mounting |
| 4 | Hole plug |

$(\text{Block Number}-1) \times 1.075 + 1.441$
 $(\text{Block Number}-1) \times [27.30] + [36.60]$

2.362 [60.00]

Multi Block



















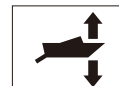



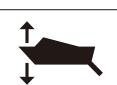






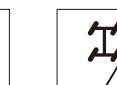





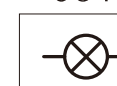




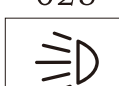

















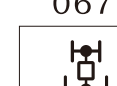

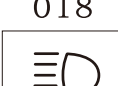











PANEL CUTOUT

For switch only

For switch with single mounting panel

For switch with multi mounting panel

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:

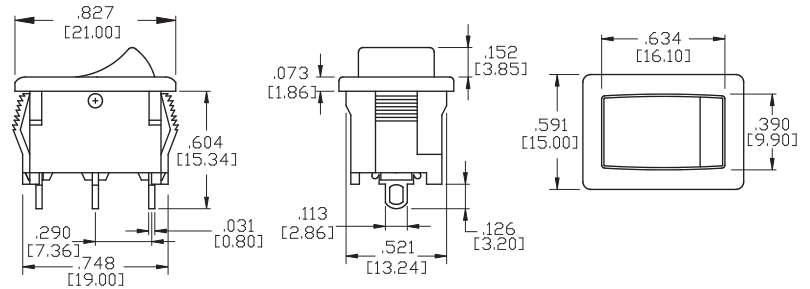
HOUSING: 66 Nylon(UL 94V-2).
 ACTUATOR: 66 Nylon(UL 94V-2).
 MOVABLE CONTACTS: Copper, silver plated.
 STATIONARY CONTACTS: Copper, silver plated.
 TERMINALS: Copper, silver plated.
 CONTACT SPRING: Piano wire.

Specifications and Dimensions subject to change



SPST & SPDT

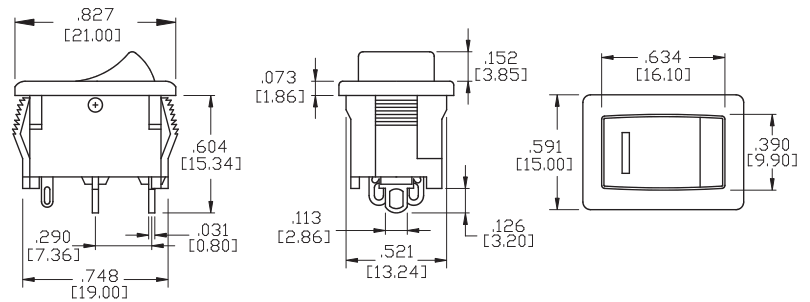
| Model No. | Type |
|-----------|---------------|
| 33A | ON-OFF |
| 33B | ON-ON |
| 33C | (ON)-OFF |
| 33D | ON-(OFF) |
| 33F | ON-OFF-ON |
| 33H | (ON)-OFF-(ON) |



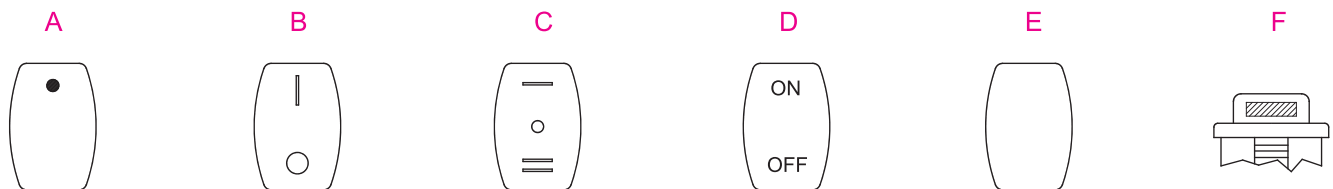
SPST

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

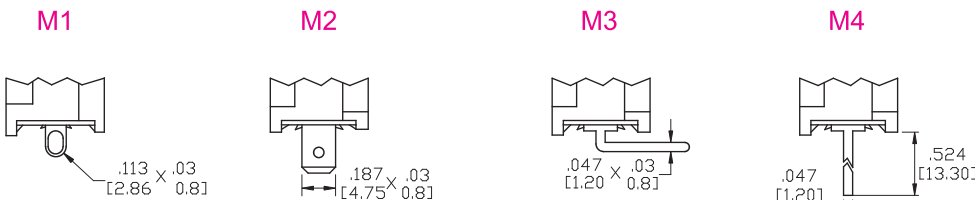
| LED Color | |
|-----------|--------|
| 1 | Red |
| 2 | Yellow |
| 3 | Green |
| 4 | Blue |



MARK OPTIONS



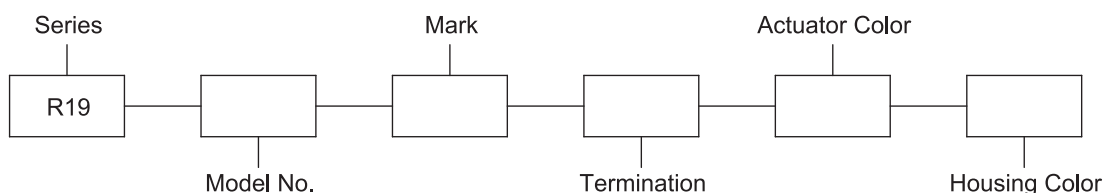
TERMINATION OPTIONS



COLOR OPTIONS

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

HOW TO ORDER



Toggle
 Rocker
 Slide
 Pushbutton
 AV
 Rotary
 Tact
 Touch Key
 Miscellaneous

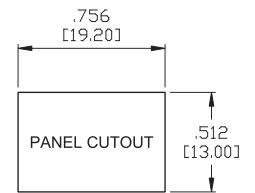
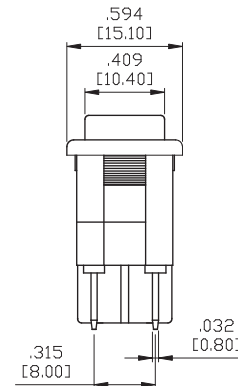
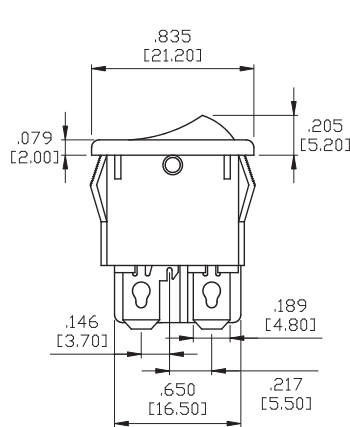
SPECIFICATIONS:

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.

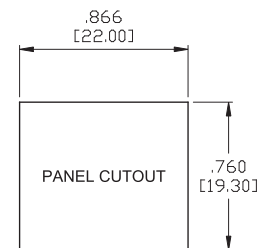
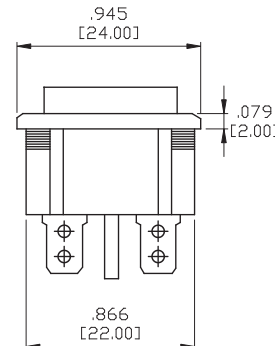
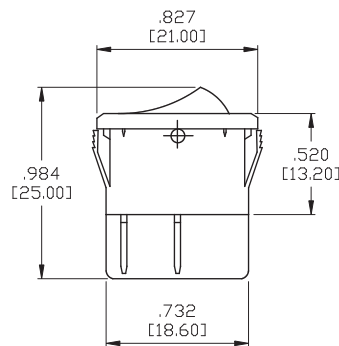
MATERIALS:

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.

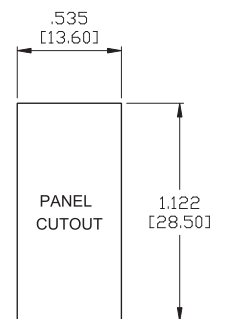
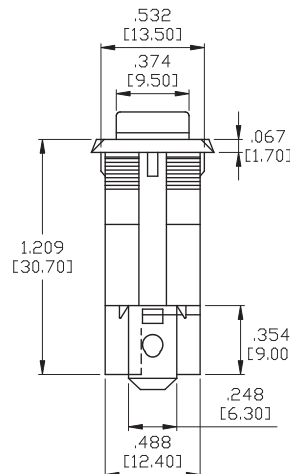
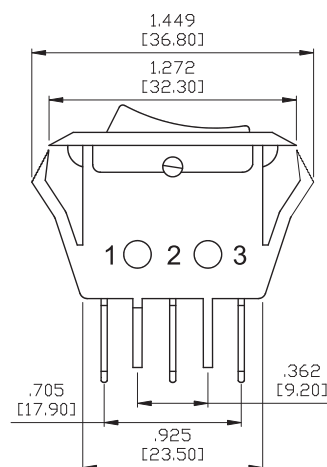
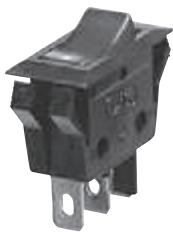
Specifications and Dimensions subject to change



| 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.

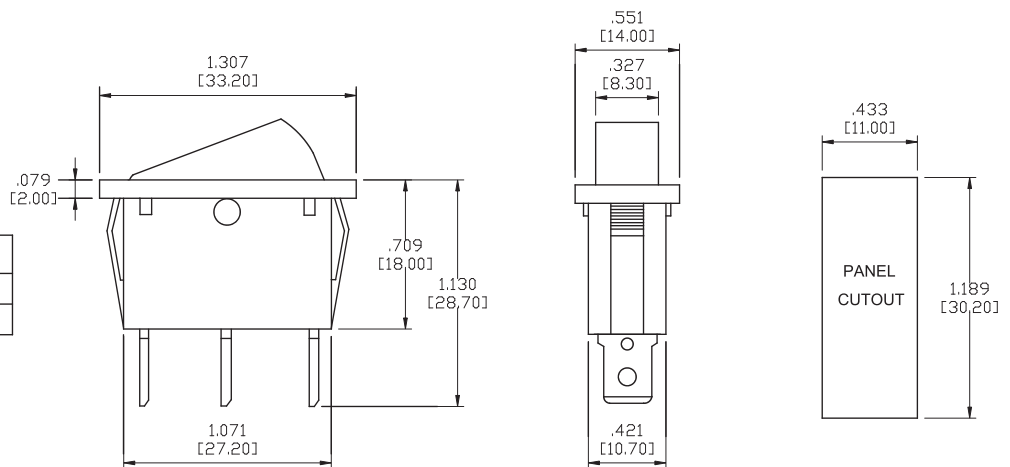
MATERIALS:

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.

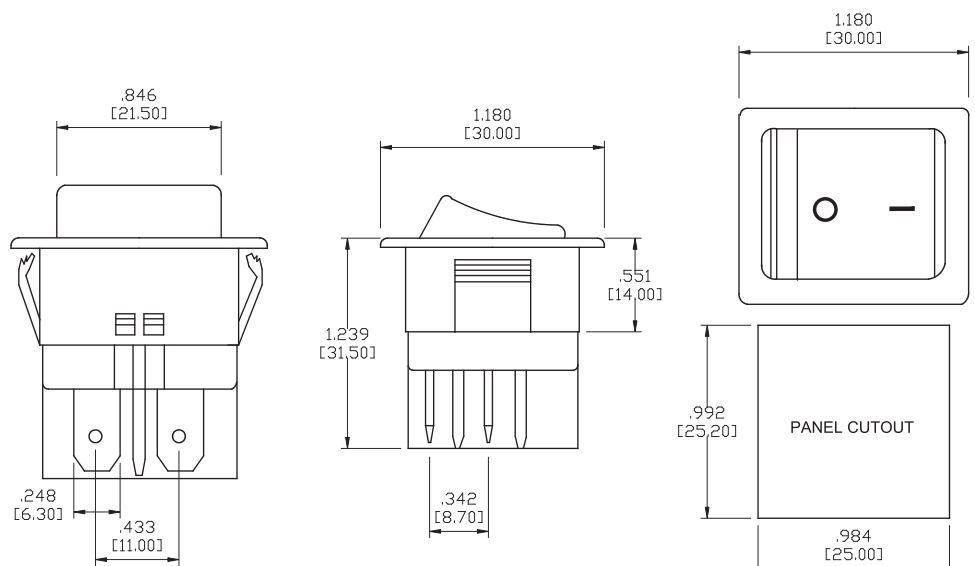
Specifications and Dimensions subject to change

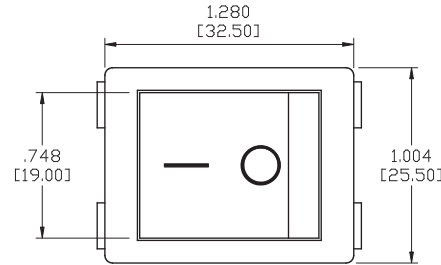
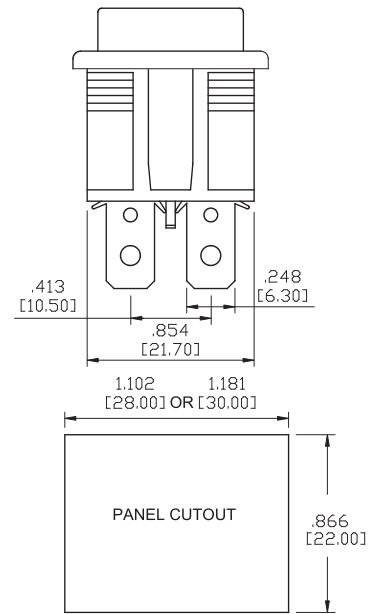
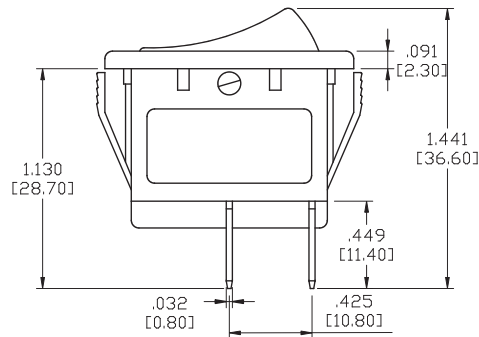


| Model No. | Type |
|-----------|------------------|
| R30-001 | SPST ILLUMINATED |
| R30-00 | SPST ON-OFF |



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





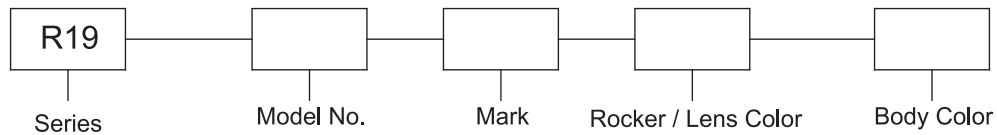
| Model No. | Type |
|-----------|------------------|
| JS-608L | DPST ILLUMINATED |
| JS-608A | DPST ON-OFF |
| JS-608B | DPDT ON-ON |
| JS-608C | DPDT ON-OFF-ON |

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



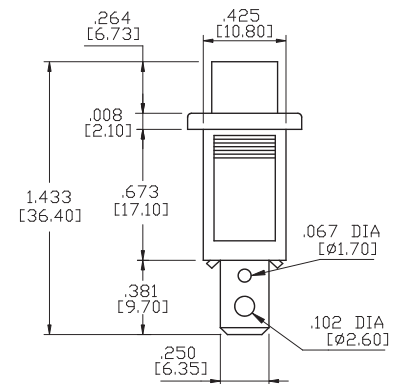
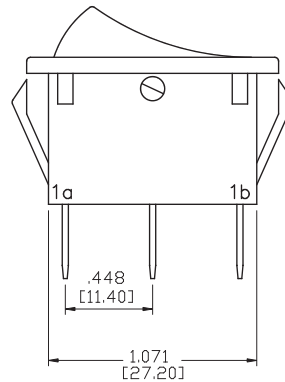
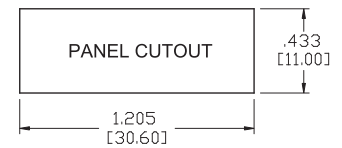
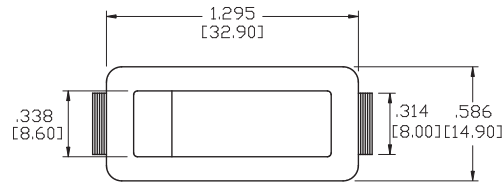
SPECIFICATIONS:

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.

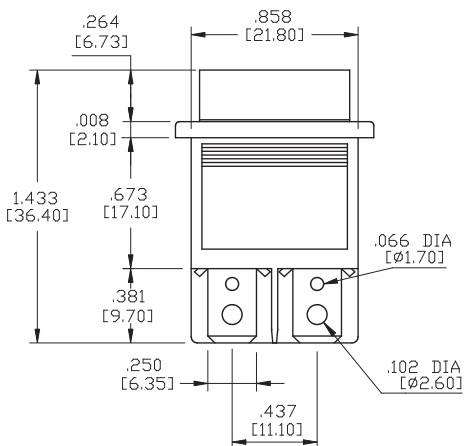
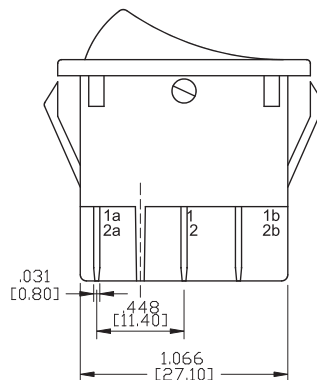
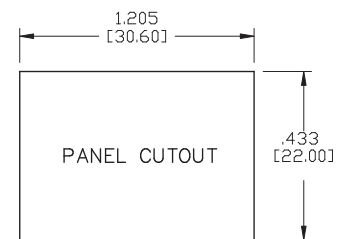
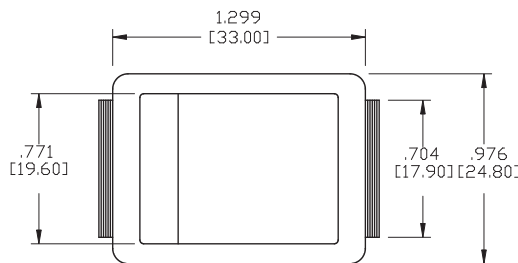
MATERIALS:

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) |

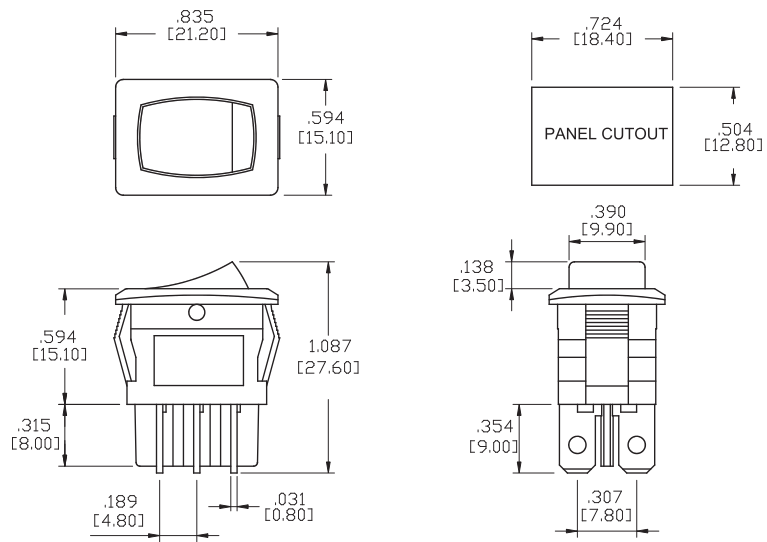
SPECIFICATIONS:

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.

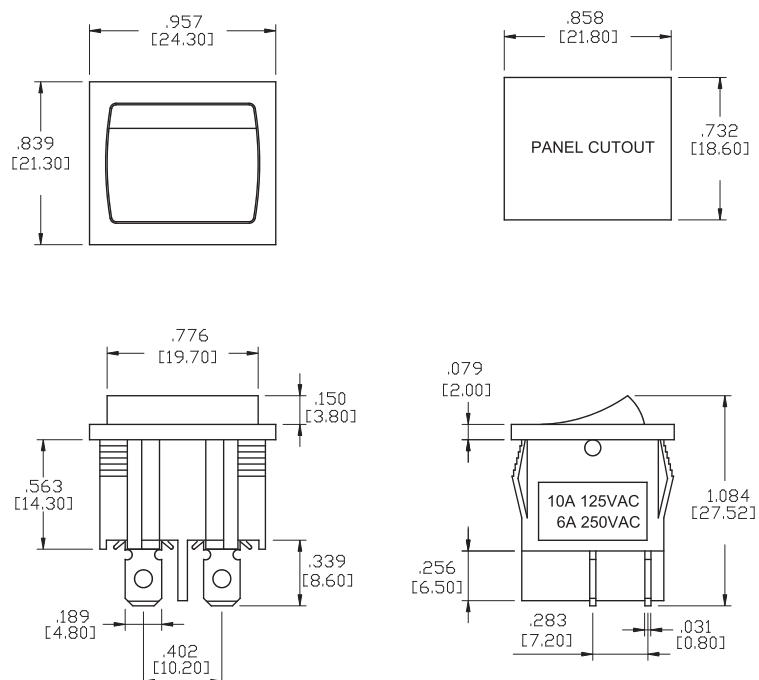
MATERIALS:

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).

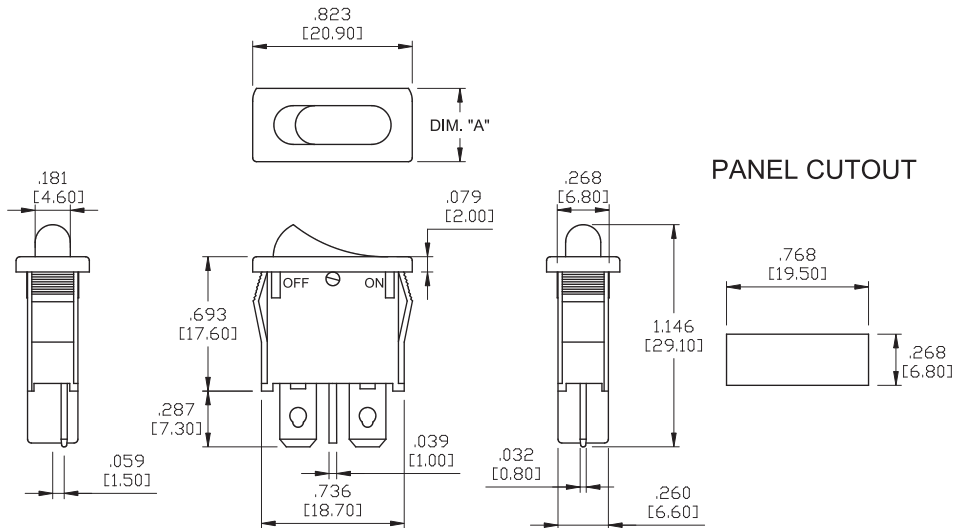
MATERIALS:

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

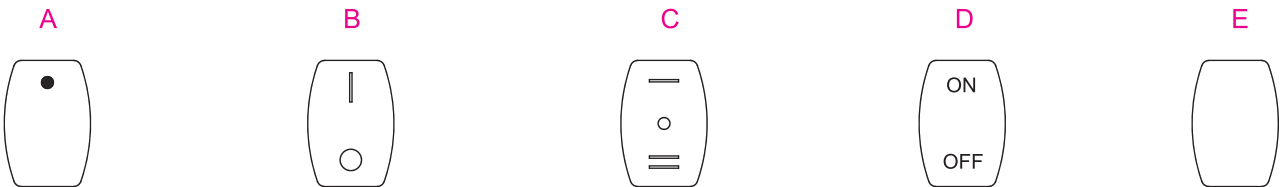
Specifications and Dimensions subject to change



| Model No. | Type | DIM. "A" |
|-----------|-------------|-------------|
| R-401A | SPDT ON-OFF | .378 [9.60] |



MARK OPTIONS

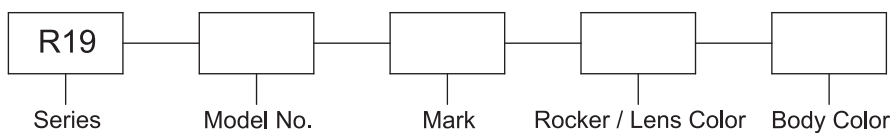


COLOR OPTIONS

| 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



Toggle
 Rocker
 Slide
 Pushbutton
 AV
 Rotary
 Tact
 Touch Key
 Miscellaneous

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.

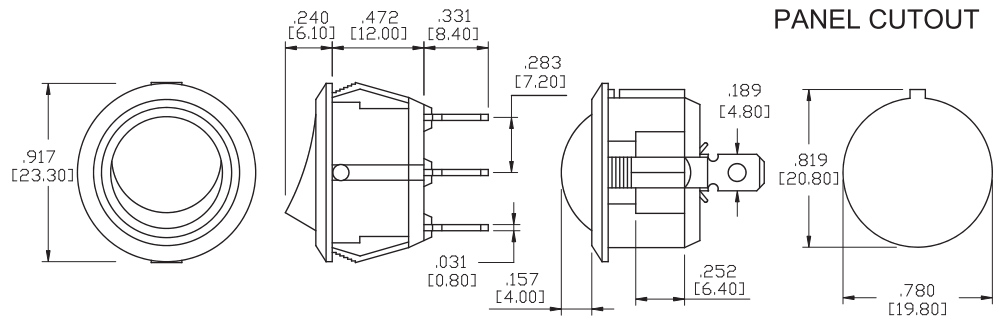
MATERIALS:

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.

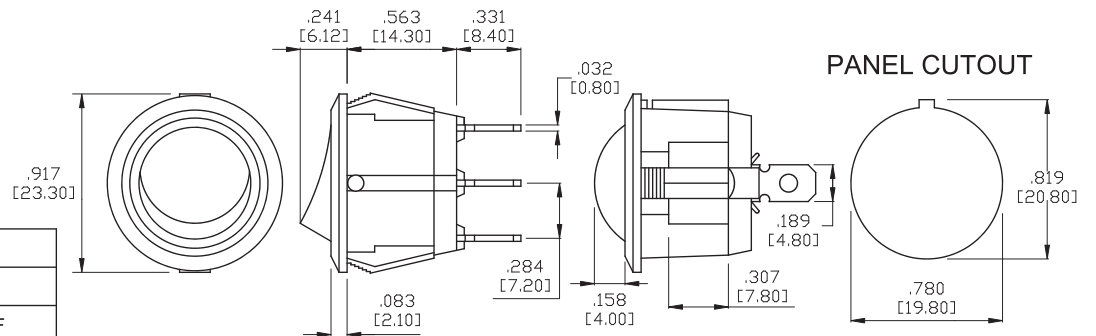
Specifications and Dimensions subject to change



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



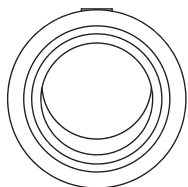
| Model No. | Type |
|-----------|---------------------------|
| R-112 | SPDT ON-ON |
| R-112A | SPST ON-OFF |
| R-112B | SPST ON-OFF (ILLUMINATED) |
| R-112C | SPDT ON-OFF-ON |
| R-112L | SPST ON-OFF (ILLUMINATED) |



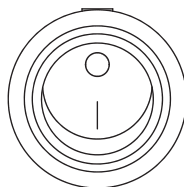
* With T3 Actuator

ACTUATOR OPTIONS

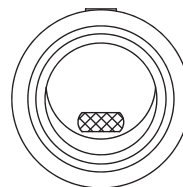
T1



T2

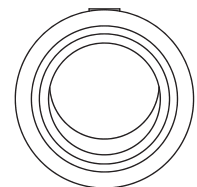


T3



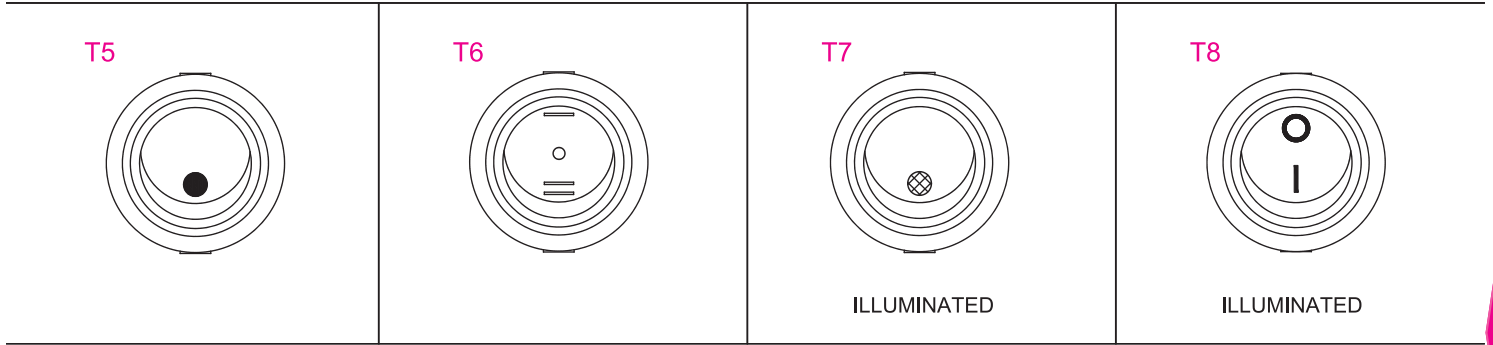
ILLUMINATED

T4



ILLUMINATED

ACTUATOR OPTIONS

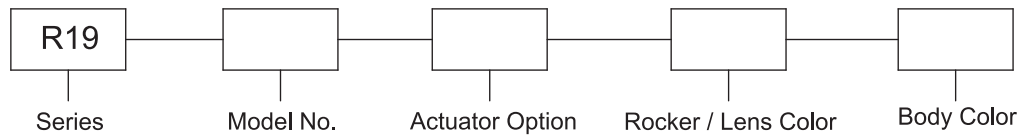


COLOR OPTIONS

| 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 |

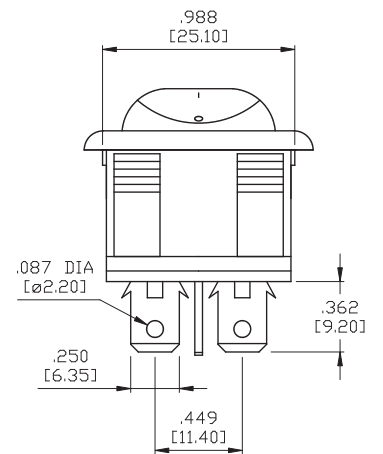
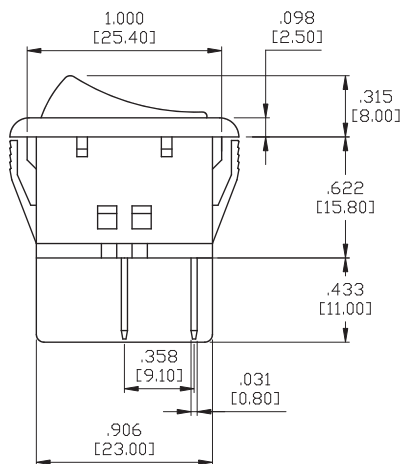
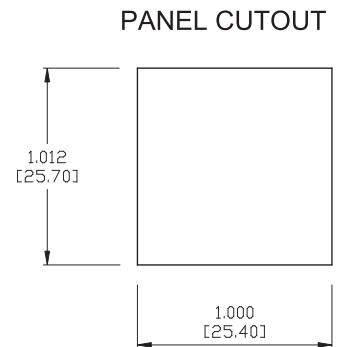
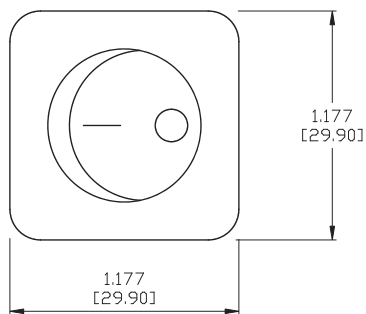
HOW TO ORDER



SPECIFICATIONS:

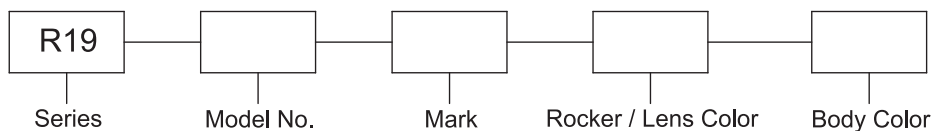
CONTACT RATING: 10A 250V AC 15A 125VAC.
 ELECTRICAL LIFE: 10,000 cycles.
 MECHANICAL LIFE: 10,000 cycles.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: DC 500V 500M-ohms min.
 DIELECTRIC STRENGTHS: AC 2,000V 1 min.
 OPERATING FORCE: 700±200gf.

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.

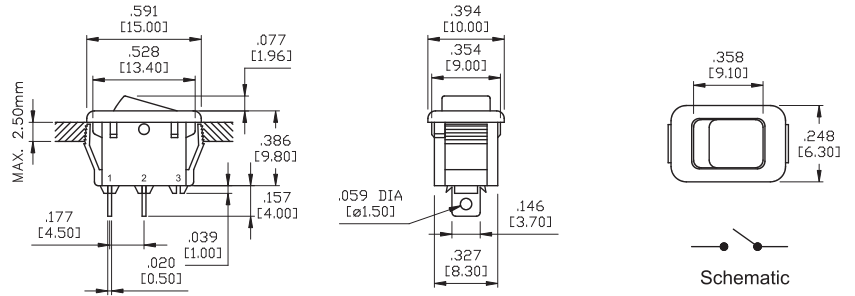
MATERIALS:

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

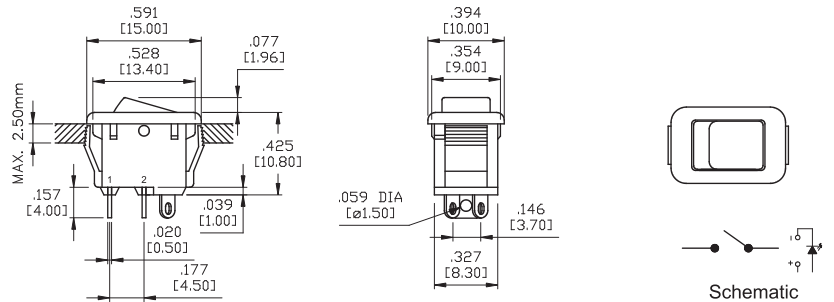


| Model No. | Type |
|-----------|----------|
| 33A | ON-OFF |
| 33B | ON-ON |
| 33C | (ON)-OFF |

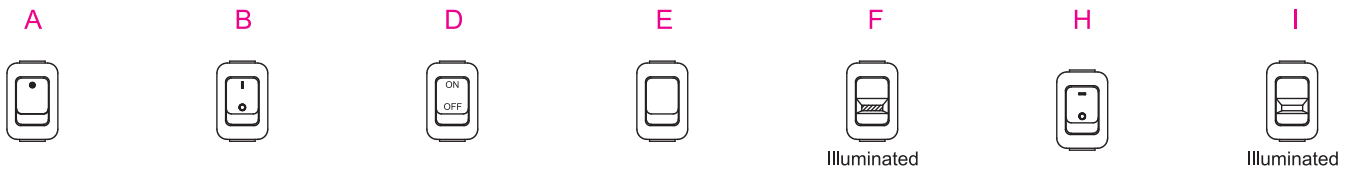


| Model No. | Type |
|-----------|--------------|
| 33E | ON-OFF W/LED |

| LED Color | |
|-----------|--------|
| 6 | Red |
| 7 | Orange |
| 8 | Green |

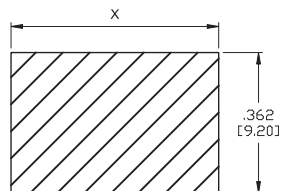


MARK OPTIONS



PANEL MOUNTING

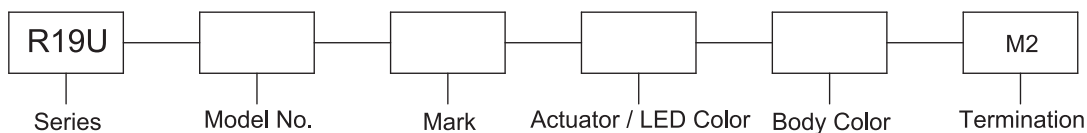
| | X Cutout Dimension | Panel Thickness |
|---|--------------------------------|-----------------|
| A | .535 [13.60] +0.00 -0.10 | 0.75~1.25 |
| B | .539 [13.70] +0.00 -0.10 | 1.25~2.00 |
| C | .543 [13.80] +0.00 -0.10 | 2.00~2.50 |



COLOR OPTIONS

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

HOW TO ORDER



Toggle
 Rocker
 Slide
 Pushbutton
 AV
 Rotary
 Tact
 Touch Key
 Miscellaneous

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.

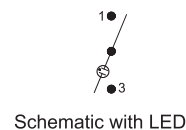
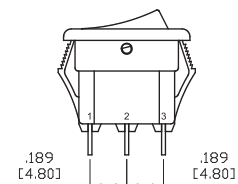
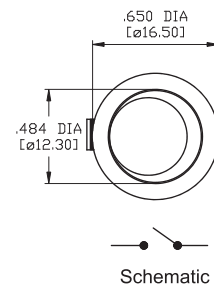
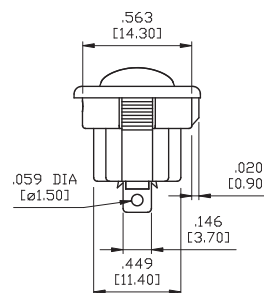
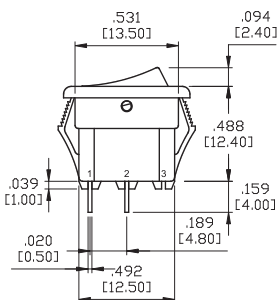
Specifications and Dimensions subject to change



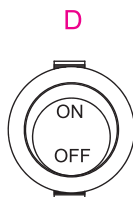
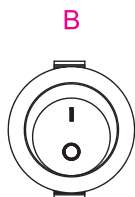
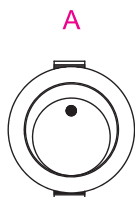
| Model No. | Type |
|-----------|--------------|
| R112 | ON-ON |
| R112A | ON-OFF |
| R112B | ON-OFF W/LED |

| Lamp Color | |
|------------|--------|
| 6 | Red |
| 7 | Orange |
| 8 | Green |

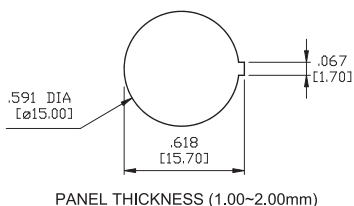
* R112B Only



MARK OPTIONS



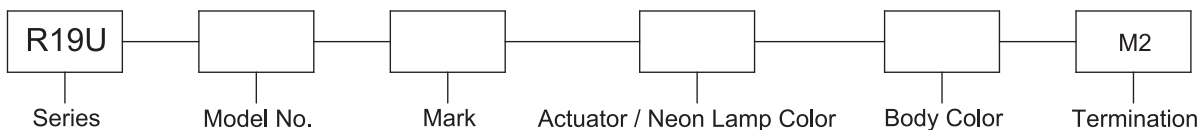
PANEL MOUNTING



COLOR OPTIONS

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

HOW TO ORDER



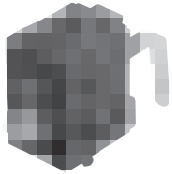
SPECIFICATIONS:

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.

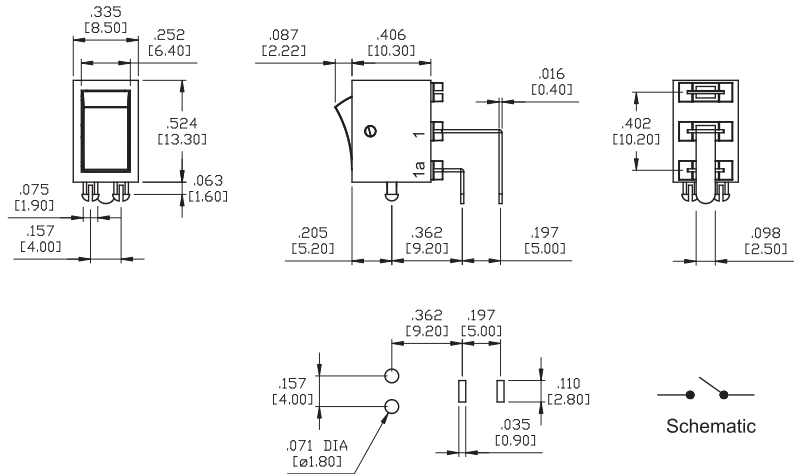
MATERIALS:

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 |

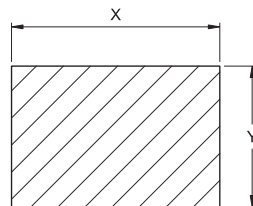


MARK OPTIONS



PANEL MOUNTING

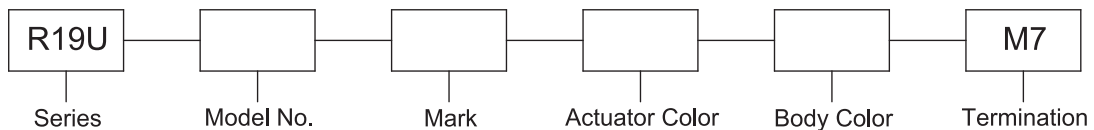
| X Cutout Dimension | Y Cutout Dimension |
|-------------------------|-----------------------|
| .528-.543 [13.40-13.80] | .338-.354 [8.60-9.00] |



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



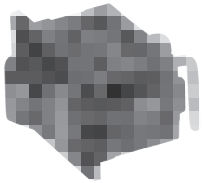
SPECIFICATIONS:

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.

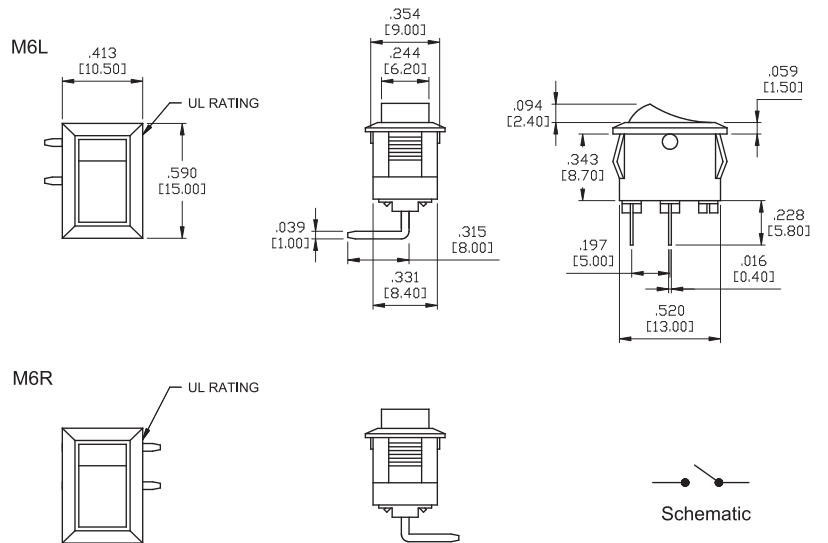
MATERIALS:

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

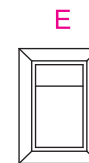
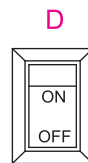
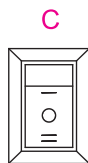
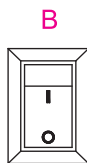
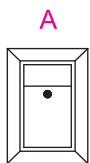
Specifications and Dimensions subject to change



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

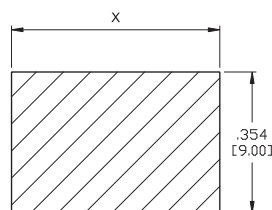


MARK OPTIONS



PANEL MOUNTING

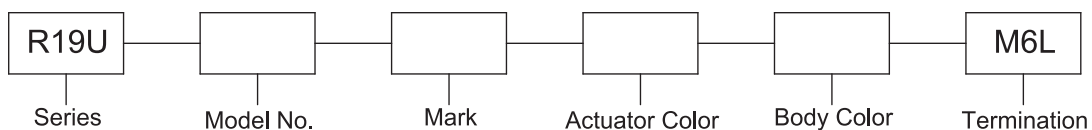
| | X Cutout Dimension | Panel Thickness |
|---|--|-----------------|
| A | .547 [13.90] ^{+0.00} / _{-0.10} | 0.75~1.25 |
| B | .555 [14.10] ^{+0.00} / _{-0.10} | 1.25~2.00 |
| C | .563 [14.30] ^{+0.00} / _{-0.10} | 2.00~3.00 |



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.

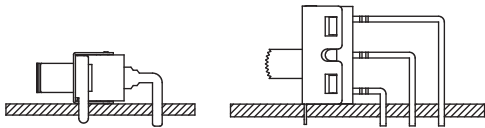
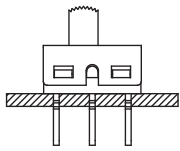
MATERIALS:

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

HOUSING: Stainless Steel.

SLIDE HANDLE: Nylon 6, black standard.

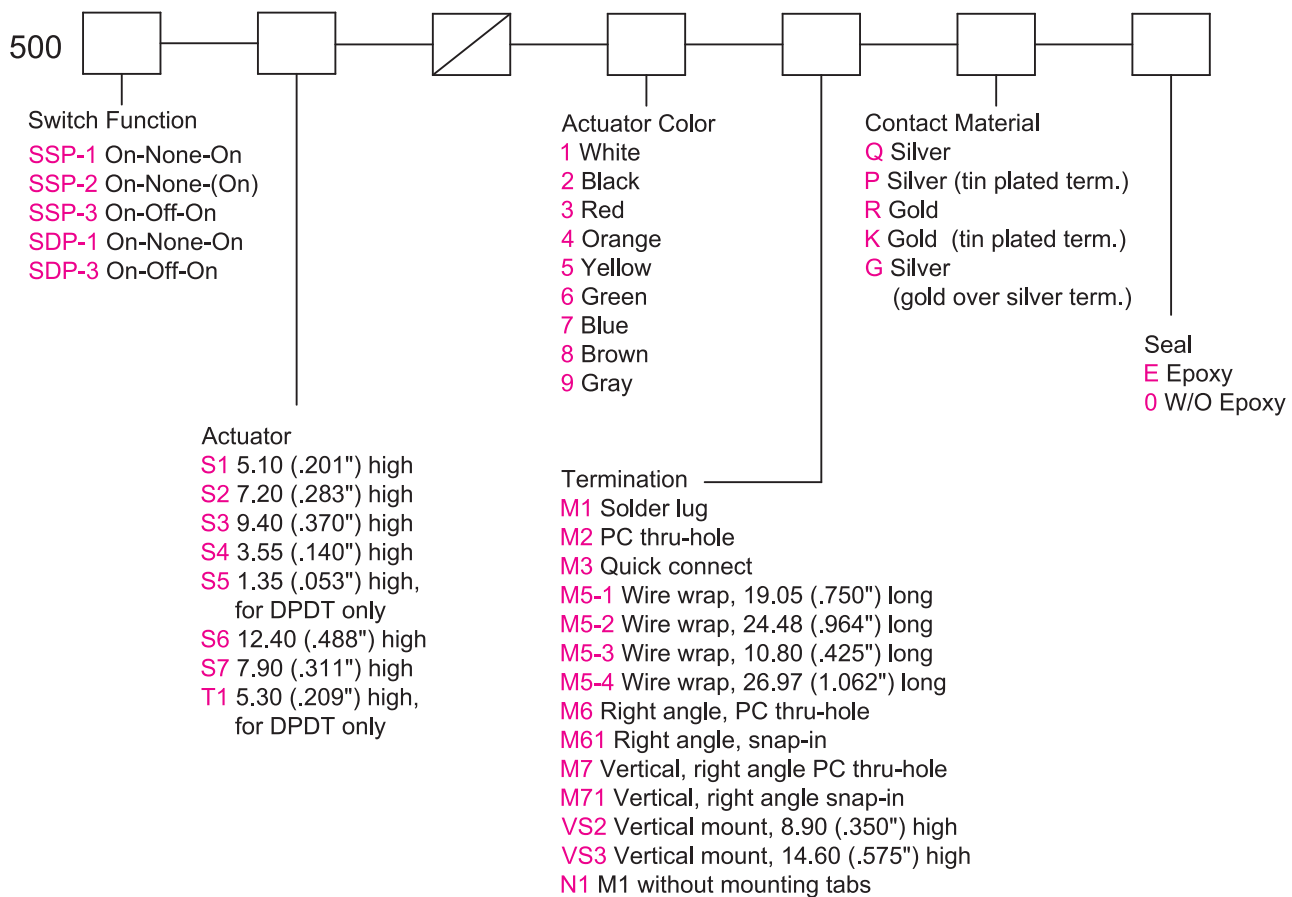
TERMINAL SEAL: Epoxy.



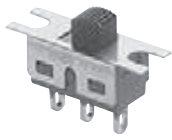
Specifications and Dimensions subject to change

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

HOW TO ORDER SYSTEM

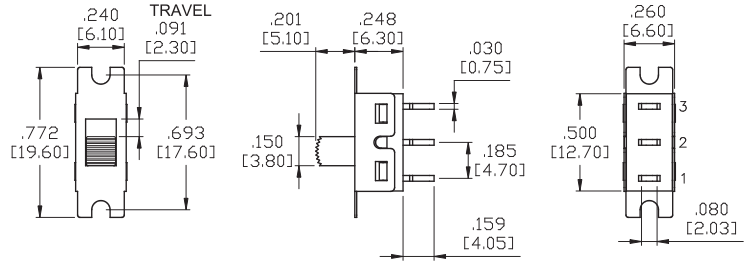


SPDT

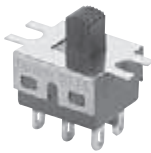


| Model No. | Switching Position | | |
|-------------|--------------------|------|------|
| | | | |
| SSP-1 | ON | NONE | ON |
| SSP-2 | ON | NONE | (ON) |
| SSP-3 | ON | OFF | ON |
| Term. Comm. | 2-1 | OPEN | 2-3 |

Schematic

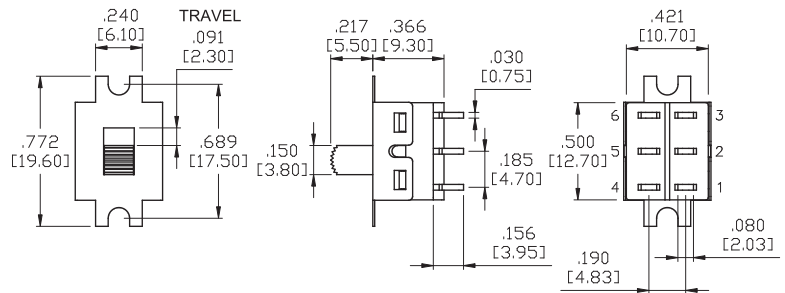
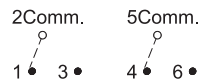


DPDT



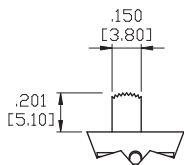
| Model No. | Switching Position | | |
|-------------|--------------------|------|------------|
| | | | |
| SDP-1 | ON | NONE | ON |
| SDP-3 | ON | OFF | ON |
| Term. Comm. | 2-1 5-4 | OPEN | 2-3 5-6 |

Schematic



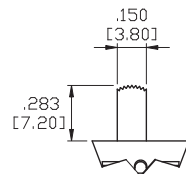
ACTUATOR OPTIONS

S1



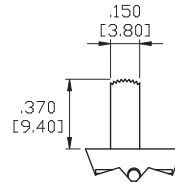
* Add 0.40 (.016) from actuator height for DPDT-M1 and M2 model.

S2



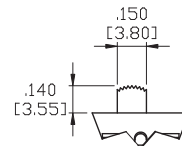
* Add 0.20 (.008) from actuator height for DPDT-M1 and M2 model.

S3



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

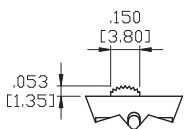
S4



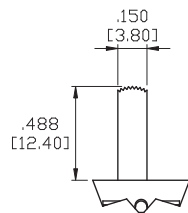
* Add 0.40 (.016) from actuator height for DPDT-M1 and M2 model.

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

S5 FOR DPDT ONLY

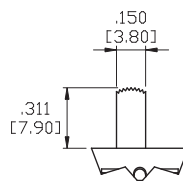


S6



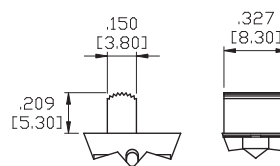
* Add 0.70 (.028) from actuator height for DPDT-M1 and M2 model.

S7



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

T1 FOR DPDT ONLY



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

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



TERMINATION OPTIONS

| <p>M1 STD. SOLDER LUG</p> <p>THK .030 [0.75]</p> <p>* Standard with Mounting Tabs.</p> | <p>M2 PC THRU-HOLE</p> <p>THK .030 [0.75]</p> | <p>M3 QUICK CONNECT</p> <p>THK .030 [0.75]</p> | <p>M5 WIRE WRAP</p> <p>THK .030 [0.75]</p> <table border="1"> <thead> <tr> <th>OPTION CODE</th> <th>DIM.'A'</th> </tr> </thead> <tbody> <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> </tbody> </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 WITHOUT MOUNTING TABS

N1

SPDT

N1

DPDT

M6

SPDT

P.C.MOUNTING

M6

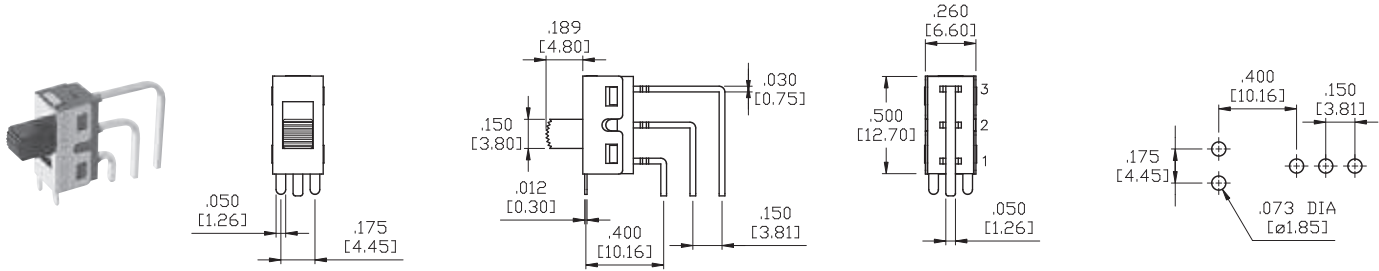
DPDT

P.C.MOUNTING

TERMINATION OPTIONS WITHOUT MOUNTING TABS

M7

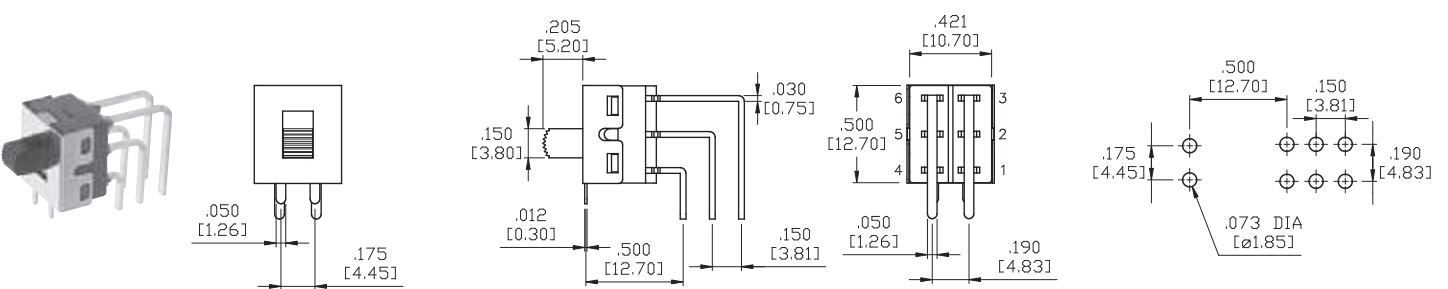
P.C.MOUNTING



SPDT

M7

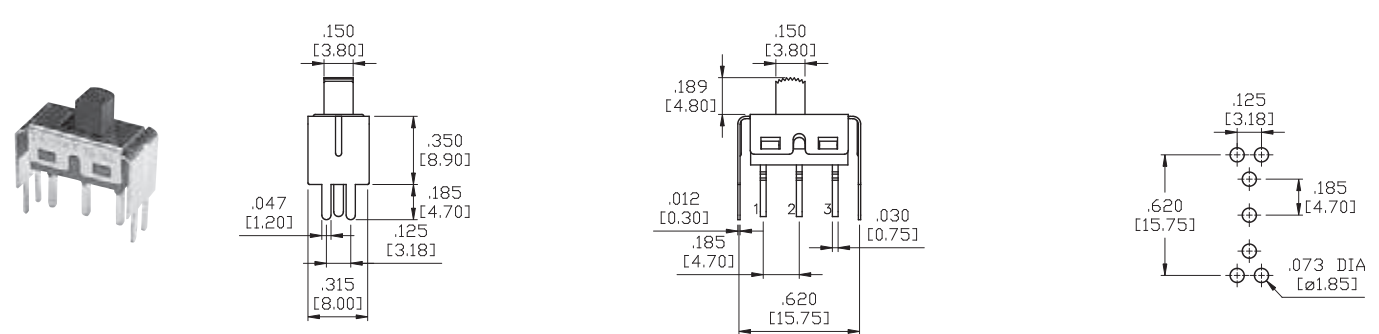
P.C.MOUNTING



DPDT

VS-2

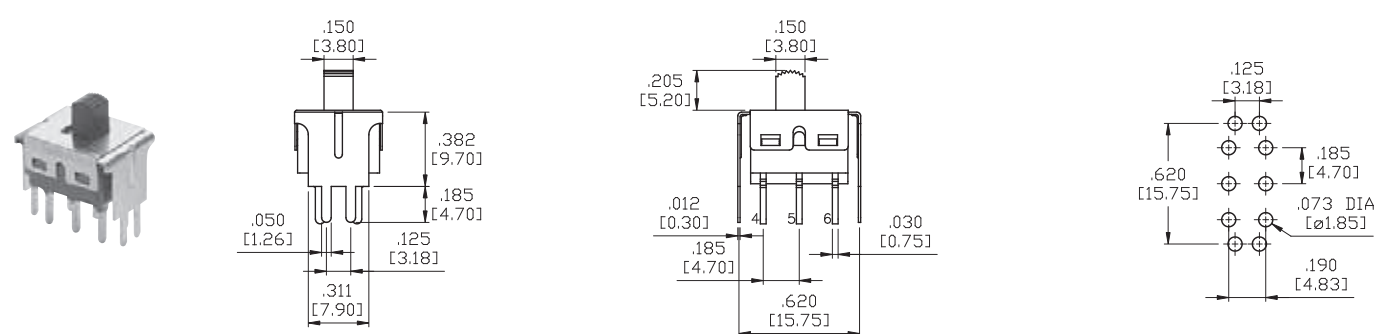
P.C.MOUNTING



SPDT

VS-2

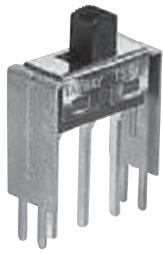
P.C.MOUNTING



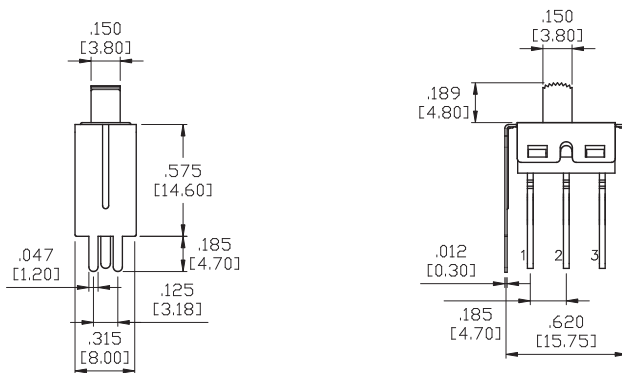
DPDT

TERMINATION OPTIONS WITHOUT MOUNTING TABS

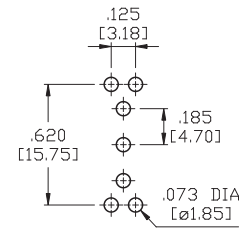
VS-3



SPDT



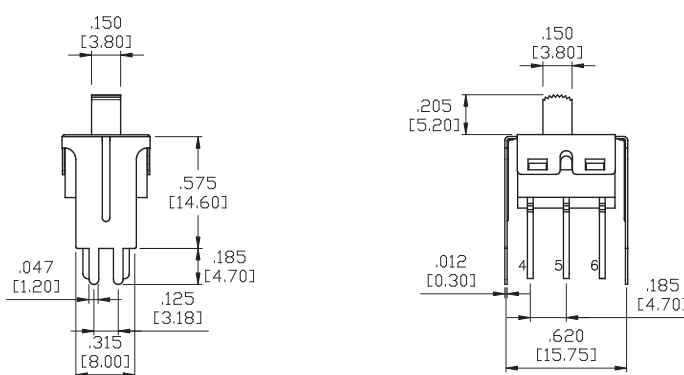
P.C.MOUNTING



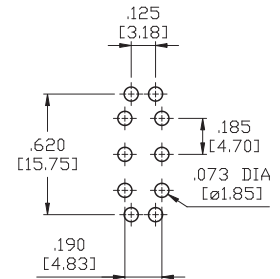
VS-3



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 | |

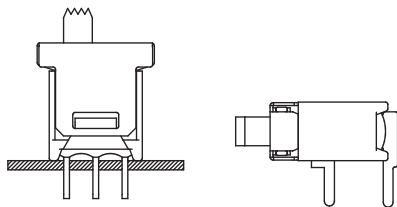
1. Movable Contact / Terminals: Copper alloy, silver plated.
2. Movable Contact: Copper alloy with gold plated over nickel plated.
3. Terminals: Silver plated with outer layer in gold plating.
4. Terminals: Copper alloy, with gold plated over nickel plated.
5. Outer Terminals: Copper alloy with pure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



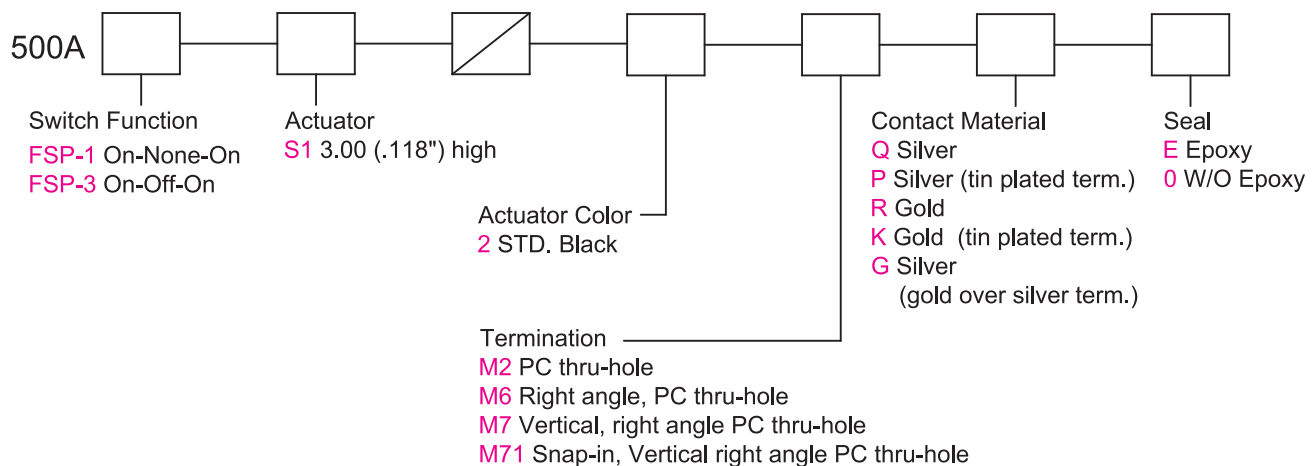
MATERIALS:

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



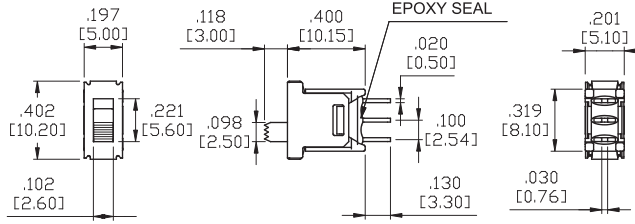
M2

P.C.MOUNTING



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

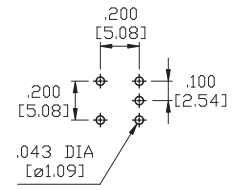
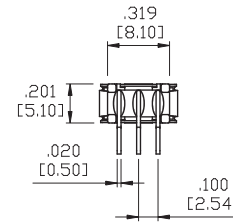
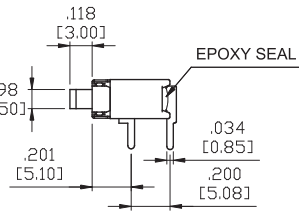
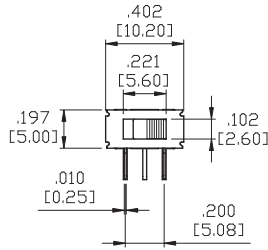
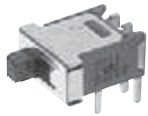
Schematic



SPDT

M6

P.C.MOUNTING

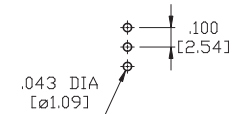
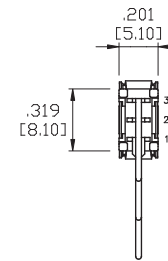
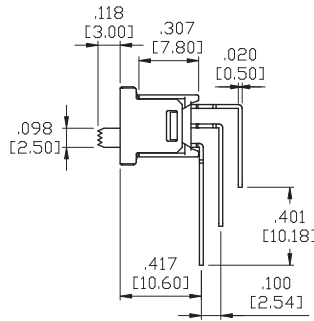
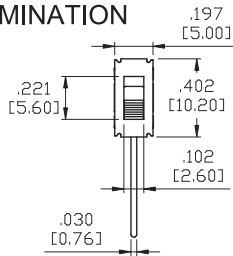


SPDT

M7

M71 SNAP-IN TERMINATION

P.C.MOUNTING



SPDT

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.

Toggle
Rocker
Slide
Pushbutton
AV
Rotary
Tact
Touch Key
Miscellaneous

SPECIFICATIONS:

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

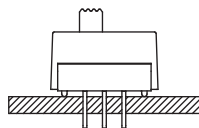
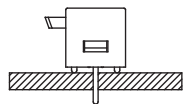
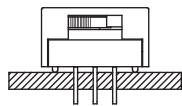
CONTACT RESISTANCE: 10mΩ max.

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.

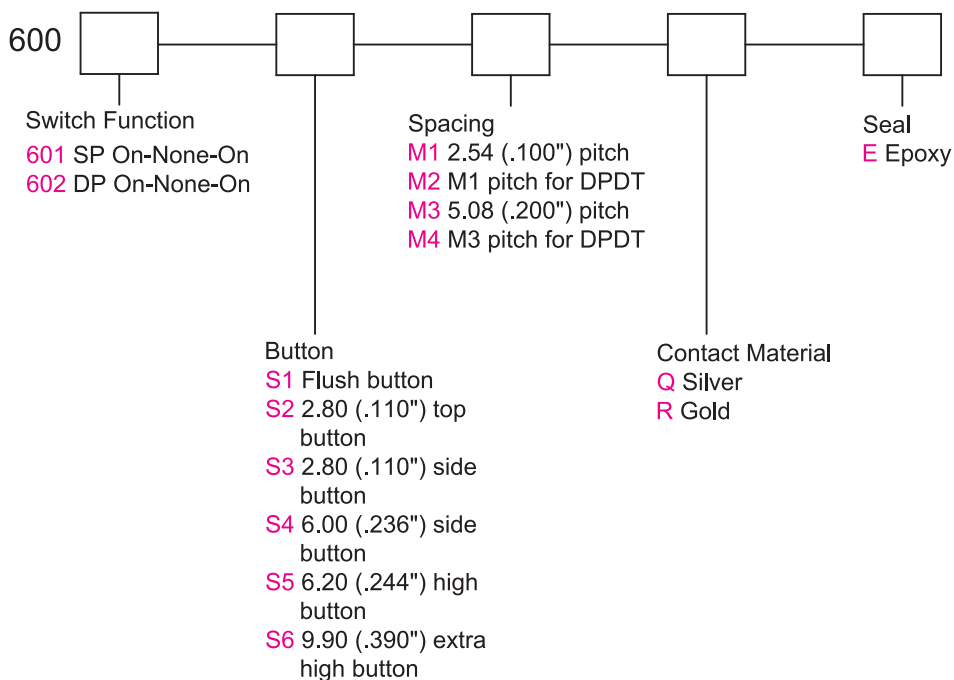
SLIDE HANDLE: PBT.

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



Series 600

Miniature Slide Switches For P.C.Board

Toggle
Rocker
Slide
Pushbutton
AV
Rotary
Tact
Touch Key
Miscellaneous

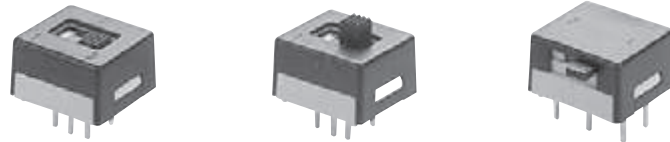
SPDT

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



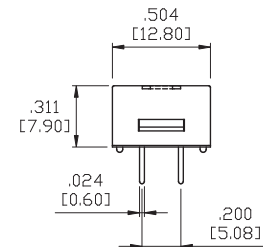
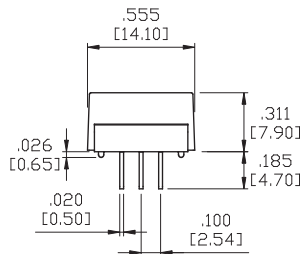
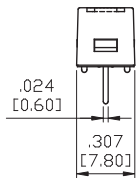
DPDT

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

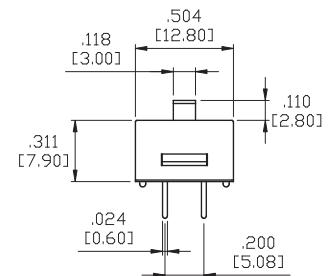
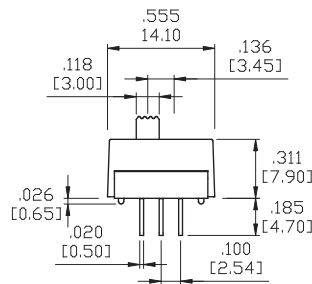
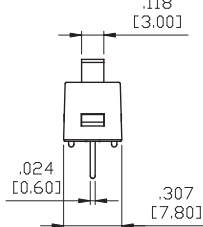


BUTTON OPTIONS

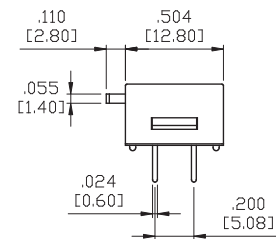
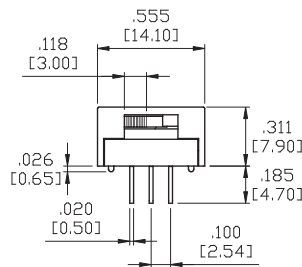
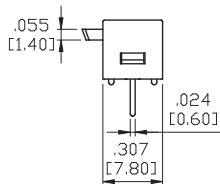
S1 FLUSH BUTTON



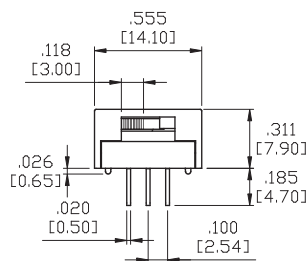
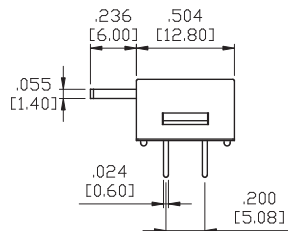
S2 TOP BUTTON



S3 SIDE BUTTON

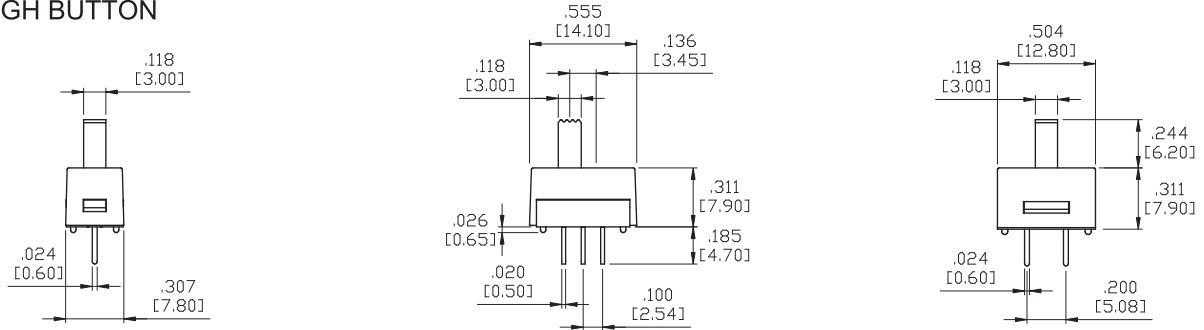


S4 SIDE BUTTON (DPDT ONLY)

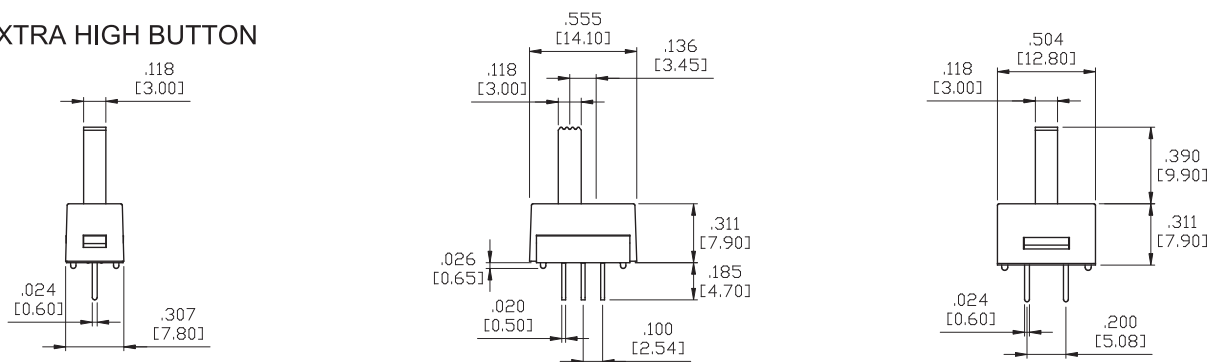


BUTTON OPTIONS

S5 HIGH BUTTON

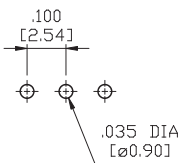


S6 EXTRA HIGH BUTTON

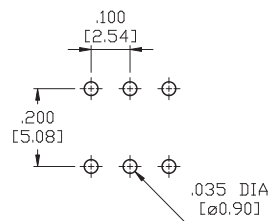


SPACING OPTIONS

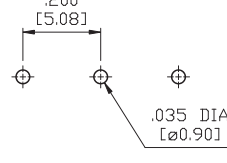
M1



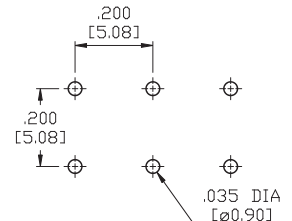
M2



M3



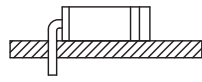
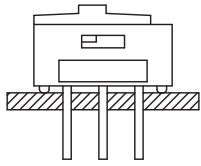
M4



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: 30mΩ max.
 MECHANICAL LIFE: 1,000 cycles.
 INSULATION RESISTANCE: 500MΩ min. at 500VDC.

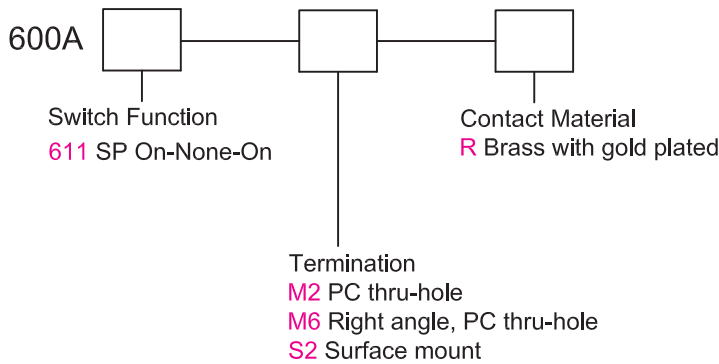
MATERIALS:

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

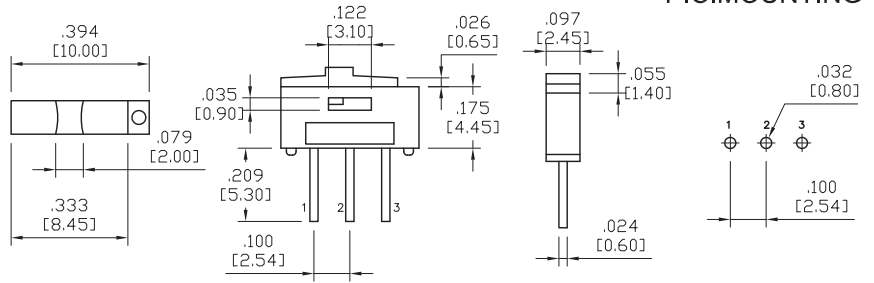
Low Power Slide Switches

M2

P.C.MOUNTING



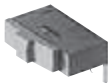
| Model No. | Switching Position | | |
|-------------|--------------------|------|-----|
| | | | |
| 611 | ON | NONE | ON |
| Term. Comm. | 2-1 | OPEN | 2-3 |



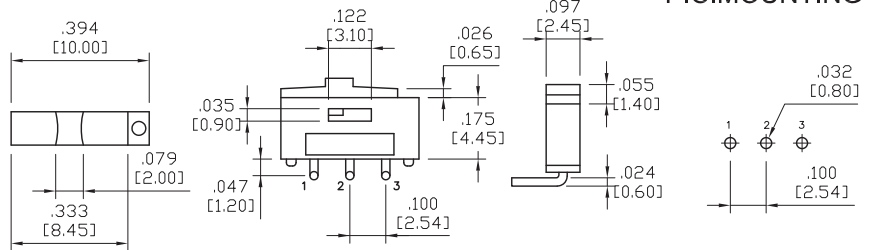
SPDT

M6

P.C.MOUNTING



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

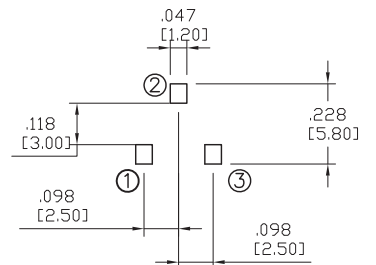
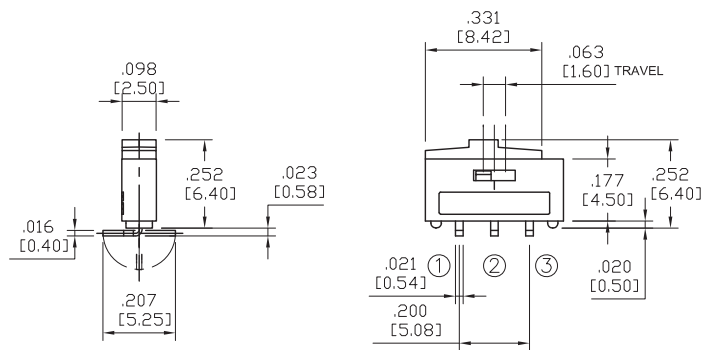
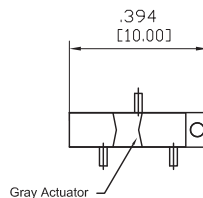


SPDT

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 | |

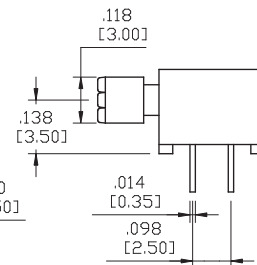
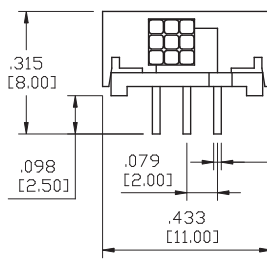
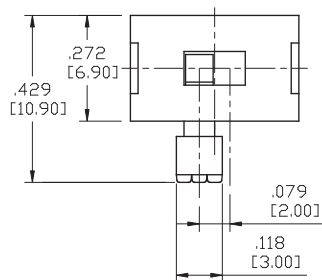
SPECIFICATIONS:

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.

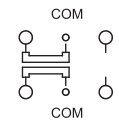
MECHANICAL LIFE: 30,000 cycles.
 ELECTRICAL LIFE: 10,000 cycles.
 OPERATING TEMPERATURE: -20°C to +70°C.
 AMBIENT HUMIDITY: <85%RH.
 OPERATING FORCE: 200±150gf.

Specifications and Dimensions subject to change

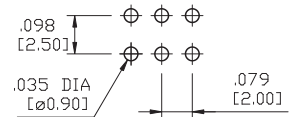
01P-22



SCHEMATIC



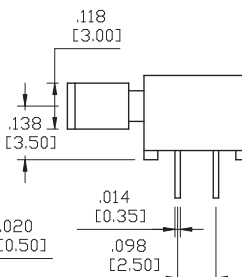
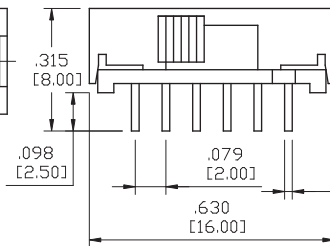
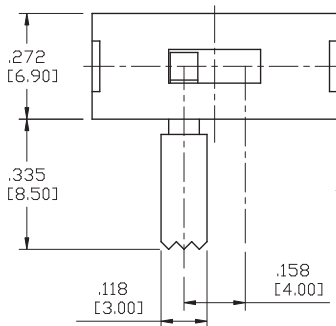
P.C.B. MOUNTING



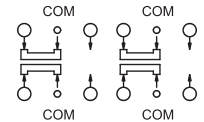
2P2T

Drawing Scale: 2 / 1

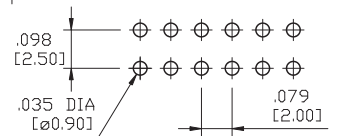
03P-42



SCHEMATIC



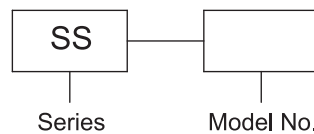
P.C.B. MOUNTING



4P2T

Drawing Scale: 2 / 1

HOW TO ORDER



SPECIFICATIONS:

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

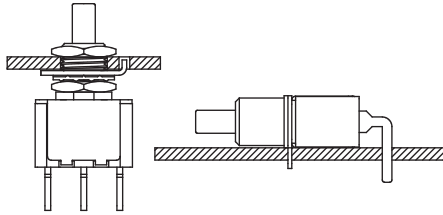
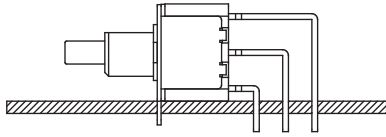
ELECTRICAL LIFE: 50,000 make and break cycles at full load.

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.

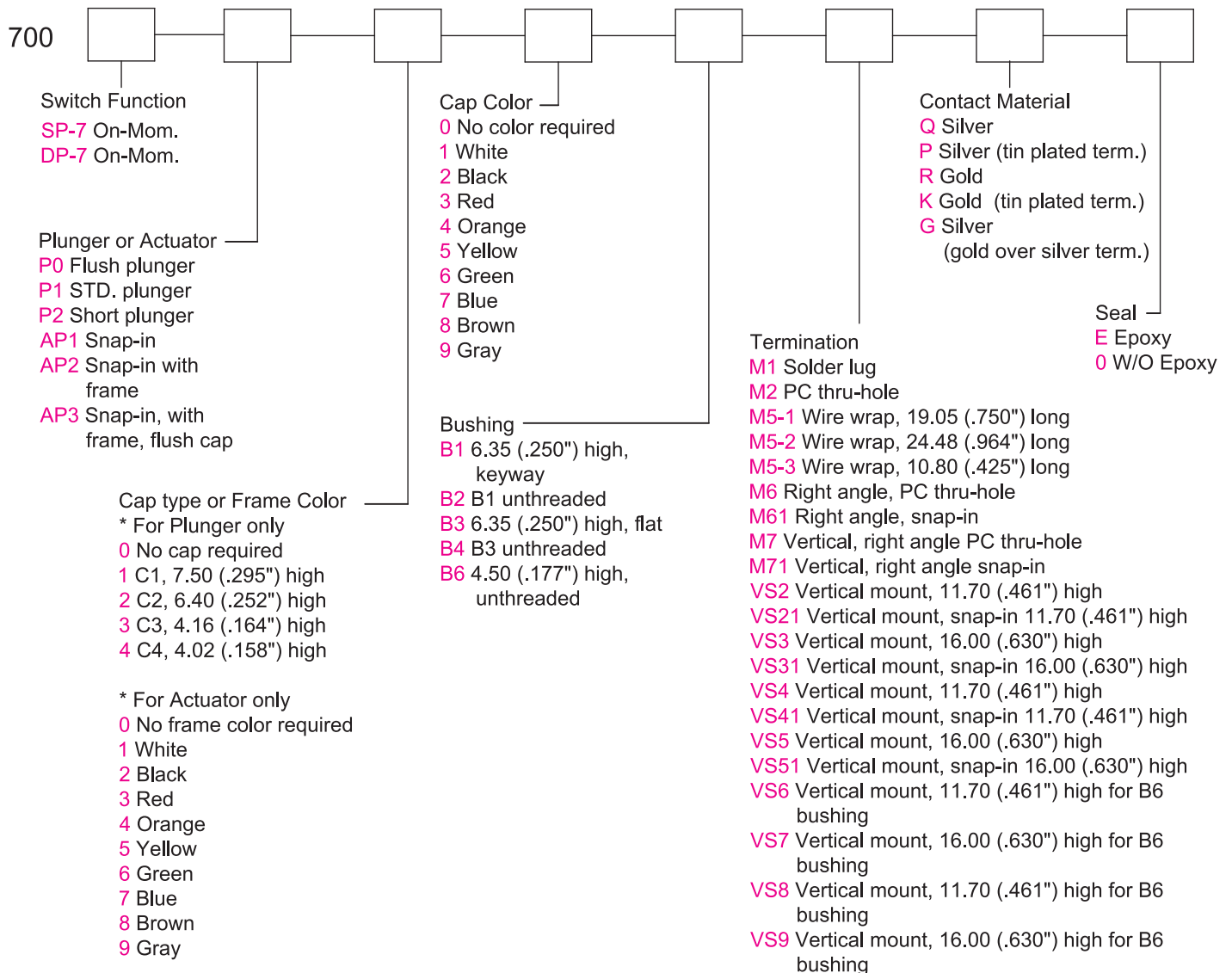
HOUSING: Stainless steel.

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

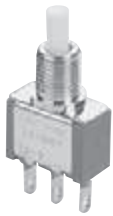


Series 700

Snap-Acting Pushbutton Switches

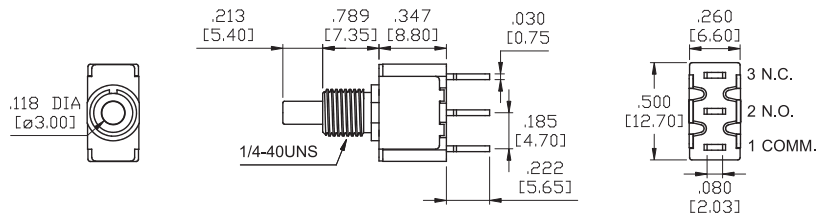
Toggle
Rocker
Slide
Pushbutton
AV
Rotary
Tact
Touch Key
Miscellaneous

SPDT



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

Schematic

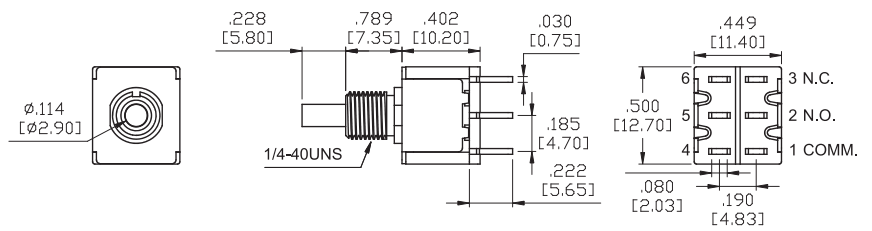
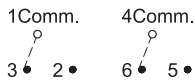


DPDT



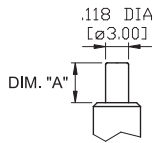
| Model No. | Type | |
|-------------|---------|---------|
| DP-7 | ON | MOM |
| Term. Comm. | 1-3,4-6 | 1-2,4-5 |

Schematic



PLUNGER OPTIONS

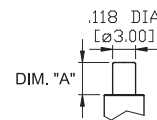
FOR B1,B2,B3,B4 ONLY



| 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

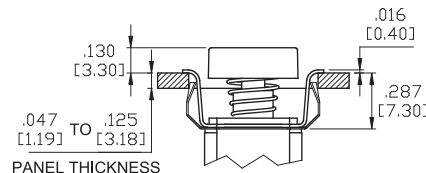
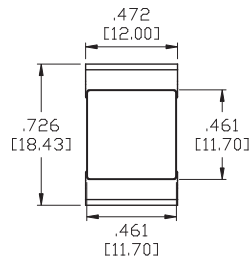
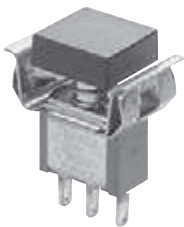


| OPTION CODE | DIM. "A" |
|-------------|-------------|
| P1 | .157 [4.00] |
| P2 | .106 [2.70] |

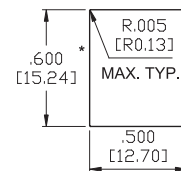
* Plunger length shown with SPDT model.

ACTUATOR OPTIONS FOR SNAP-IN FRONT MOUNT

AP1

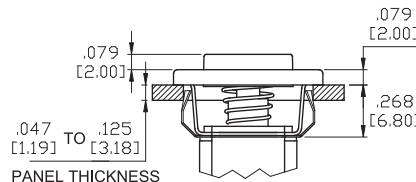
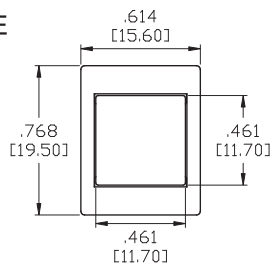
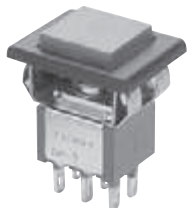


PANEL MOUNTING

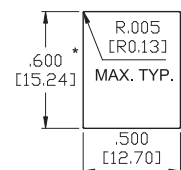


* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

AP2 WITH FRAME

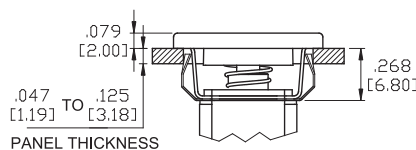
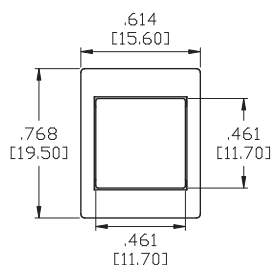


PANEL MOUNTING



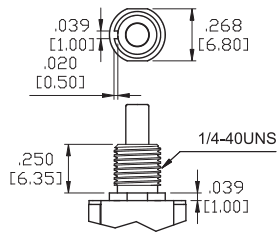
* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

AP3 FLUSH CAP

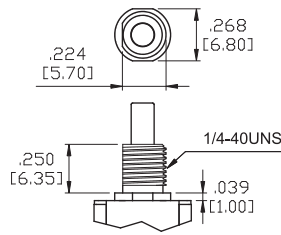


BUSHING OPTIONS

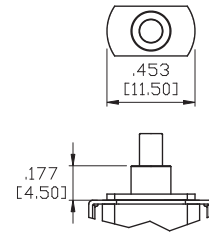
B1 THD STD
B2 NON-THD



B3 THD STD
B4 NON-THD

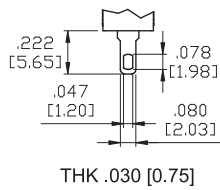


B6 NON-THD
(FOR TERMINATION OPTIONS VS6-VS9 ONLY)

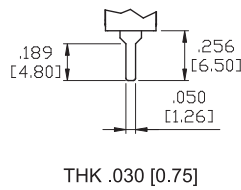


TERMINATION OPTIONS

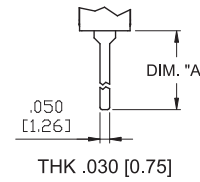
M1 STD. SOLDER LUG



M2 PC THRU-HOLE

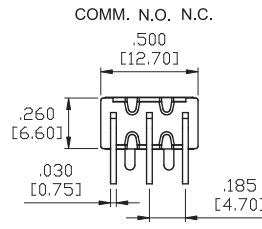
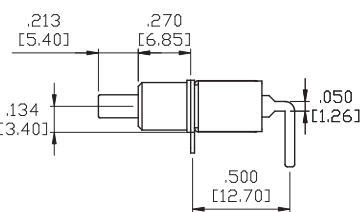
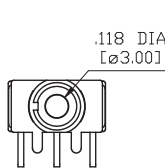


M5 WIRE WRAP

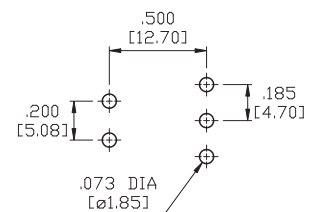


| OPTION CODE | DIM. "A" |
|-------------|--------------|
| M5-1 | .750 [19.05] |
| M5-2 | .964 [24.48] |
| M5-3 | .425 [10.80] |

M6

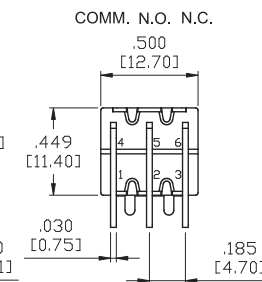
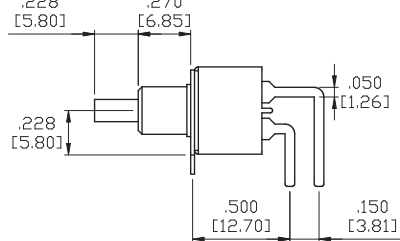
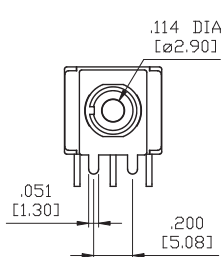


P.C.MOUNTING

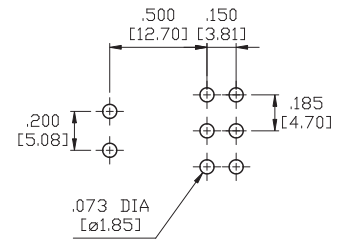


SPDT

M6

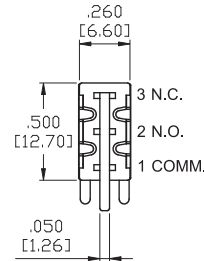
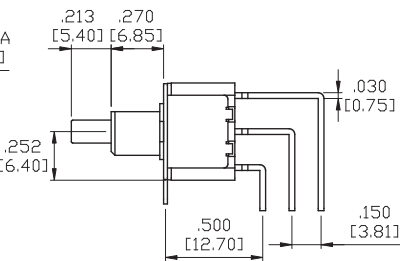
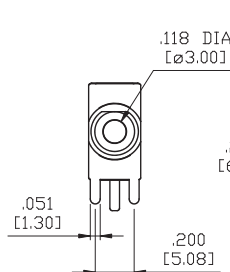
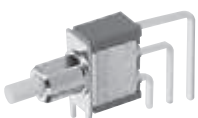


P.C.MOUNTING

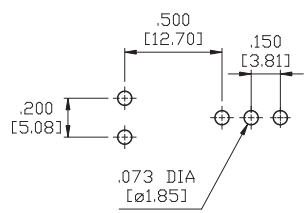


DPDT

M7



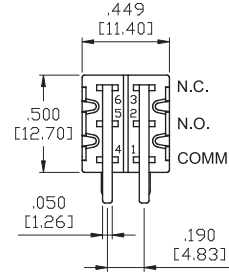
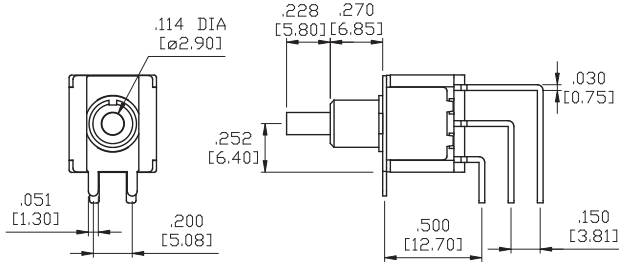
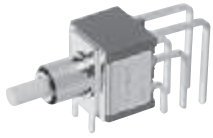
P.C.MOUNTING



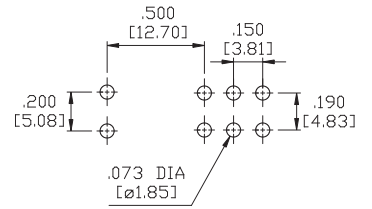
SPDT

TERMINATION OPTIONS

M7

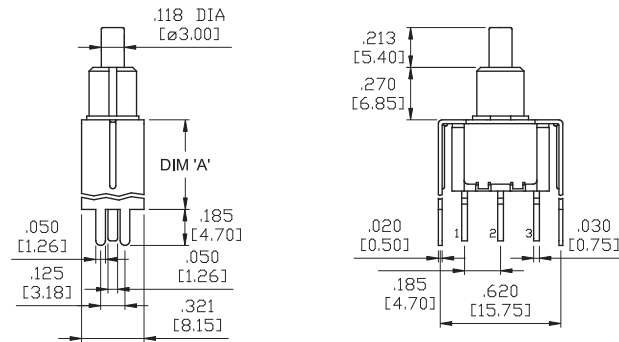
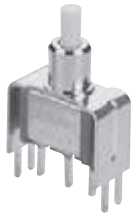


P.C.MOUNTING



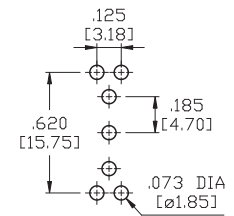
DPDT

VS2-VS3



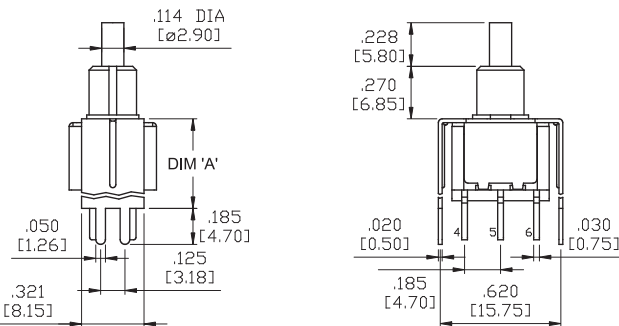
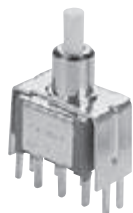
| OPTION CODE | DIM.'A' |
|-------------|--------------|
| VS2 | .461 [11.70] |
| VS3 | .630 [16.00] |

P.C.MOUNTING



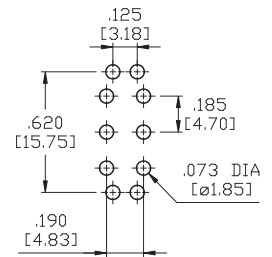
SPDT

VS2-VS3



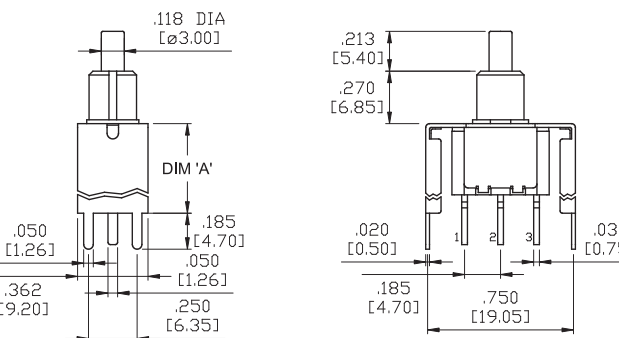
| OPTION CODE | DIM.'A' |
|-------------|--------------|
| VS2 | .461 [11.70] |
| VS3 | .630 [16.00] |

P.C.MOUNTING



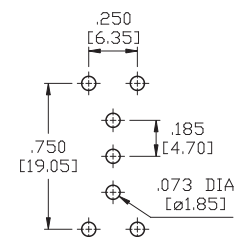
DPDT

VS4-VS5



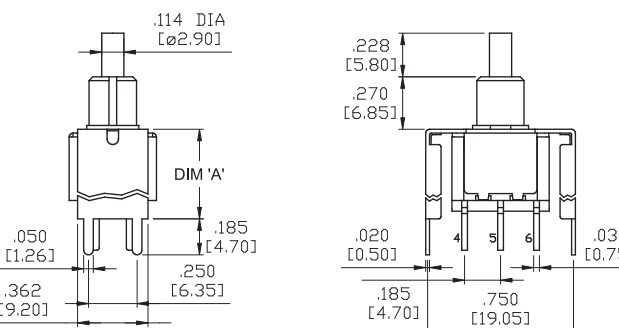
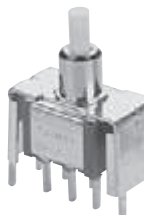
| OPTION CODE | DIM.'A' |
|-------------|--------------|
| VS4 | .461 [11.70] |
| VS5 | .630 [16.00] |

P.C.MOUNTING



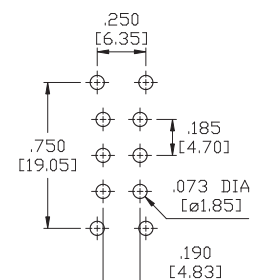
SPDT

VS4-VS5



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

P.C.MOUNTING



DPDT

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

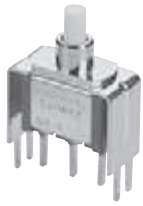
Touch Key

Miscellaneous

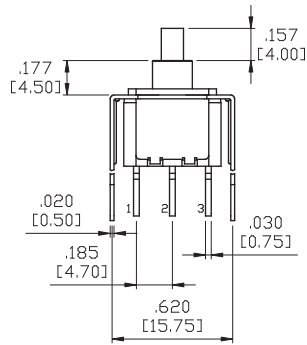
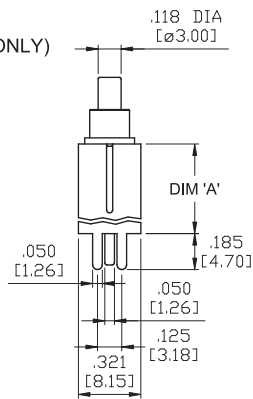
TERMINATION OPTIONS

P.C.MOUNTING

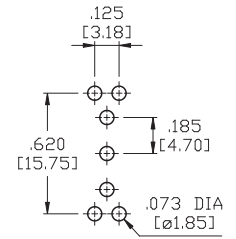
VS6-VS7
(FOR B6 BUSHING ONLY)



SPDT

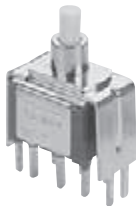


| OPTION CODE | DIM.'A' |
|-------------|--------------|
| VS6 | .461 [11.70] |
| VS7 | .630 [16.00] |

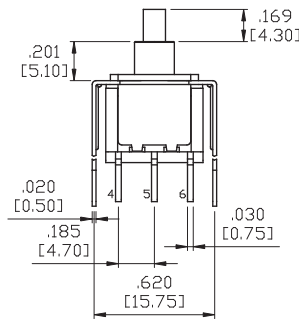
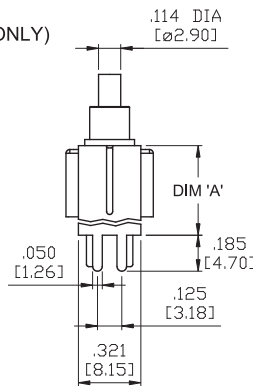


P.C.MOUNTING

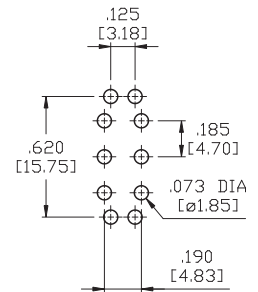
VS6-VS7
(FOR B6 BUSHING ONLY)



DPDT

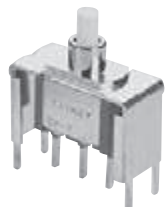


| OPTION CODE | DIM.'A' |
|-------------|--------------|
| VS6 | .461 [11.70] |
| VS7 | .630 [16.00] |

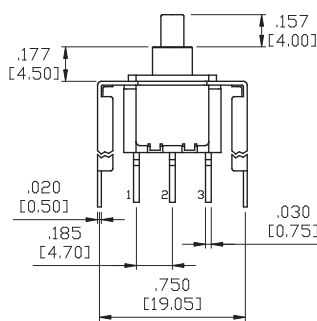
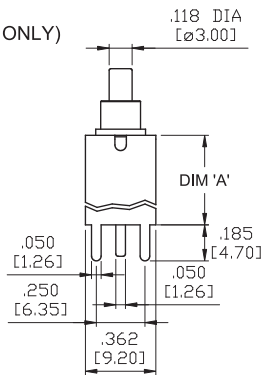


P.C.MOUNTING

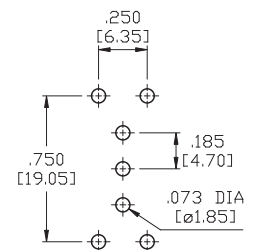
VS8-VS9
(FOR B6 BUSHING ONLY)



SPDT

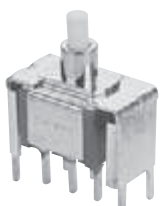


| OPTION CODE | DIM.'A' |
|-------------|--------------|
| VS8 | .461 [11.70] |
| VS9 | .630 [16.00] |

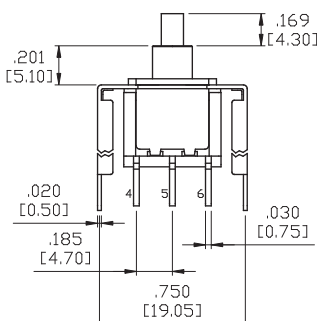
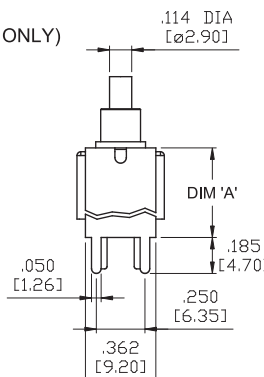


P.C.MOUNTING

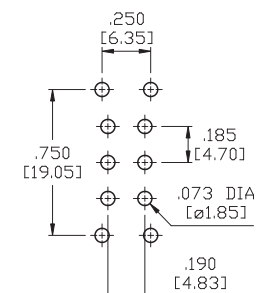
VS8-VS9
(FOR B6 BUSHING ONLY)



DPDT

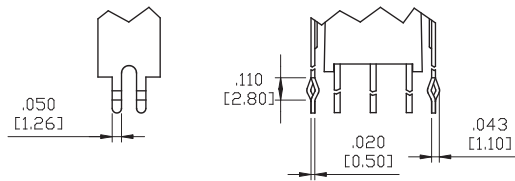


| OPTION CODE | DIM.'A' |
|-------------|--------------|
| VS8 | .461 [11.70] |
| VS9 | .630 [16.00] |

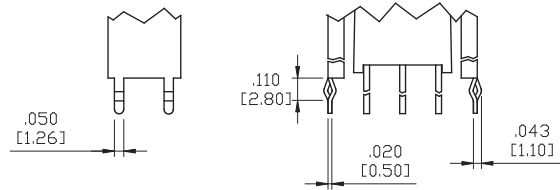


SNAP-IN TERMINATION OPTIONS

VS21,VS31



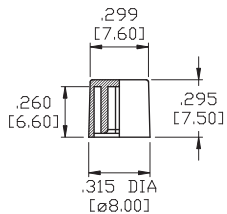
VS41,VS51



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

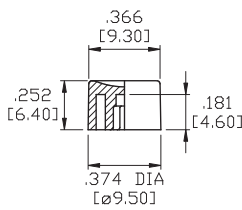
PLUNGER CAPS

C1



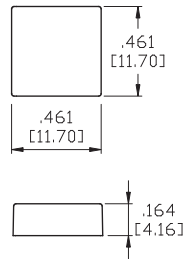
* MATERIAL: ABS.

C2



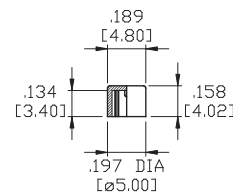
* MATERIAL: ABS.

C3



* MATERIAL: ABS.

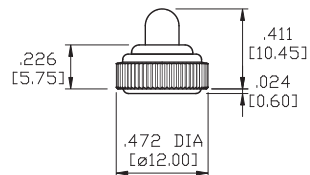
C4



* 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.

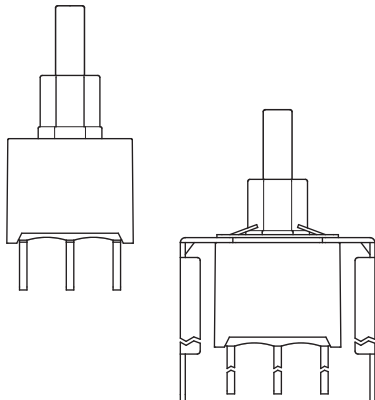
CONTACT MATERIAL OPTIONS

| 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.



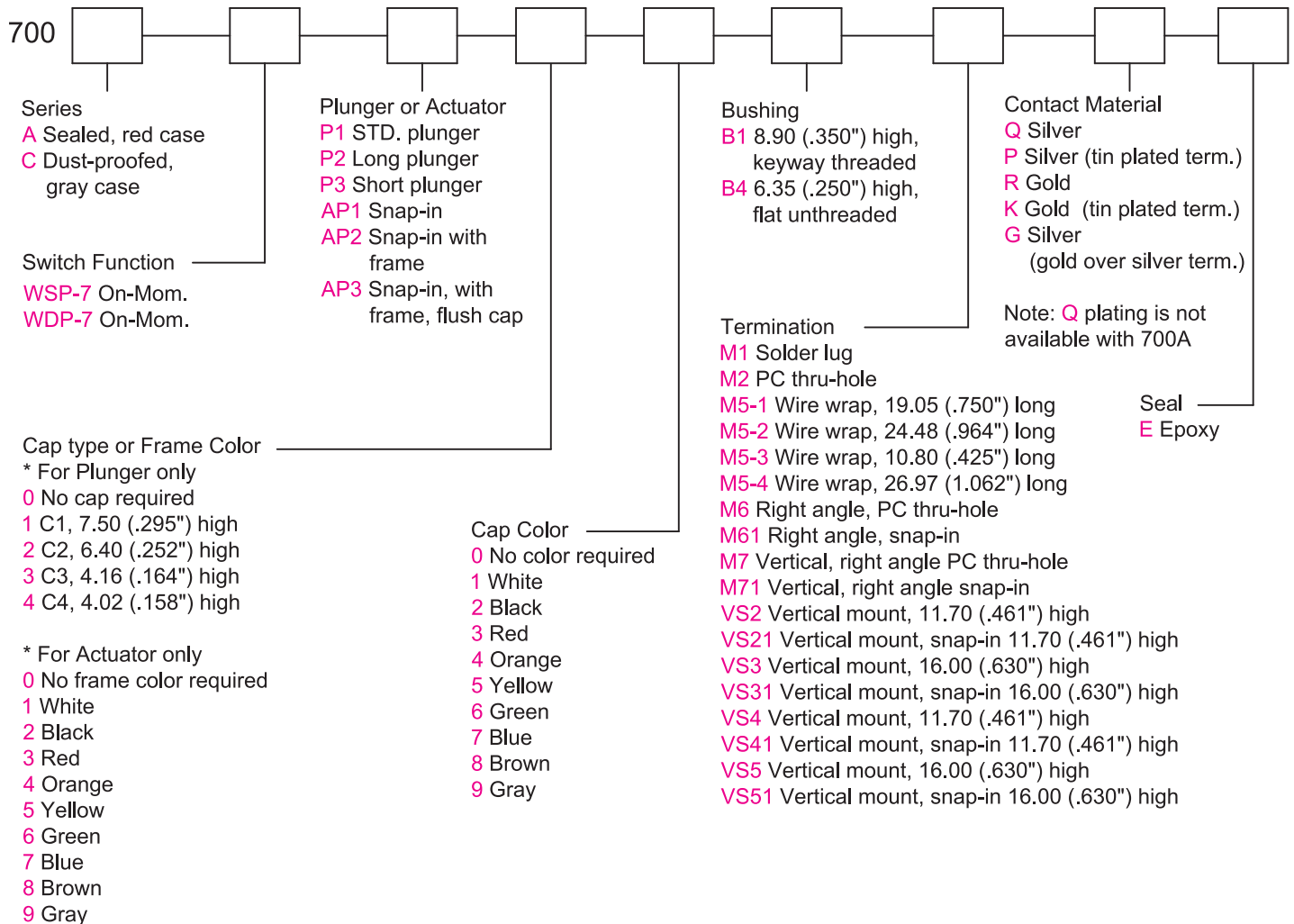
MATERIALS:

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

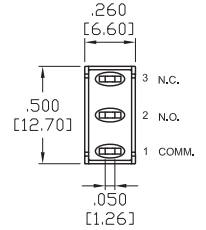
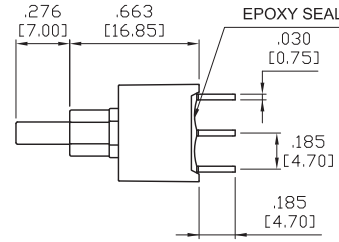
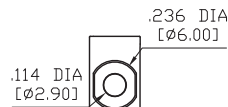
(Sealed) Snap-Acting Pushbutton Switches

SPDT



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

Schematic

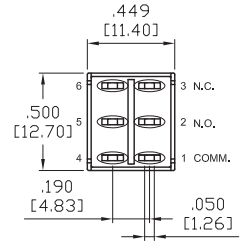
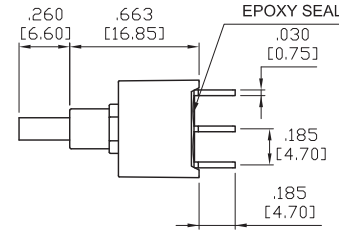
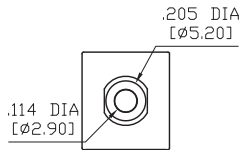
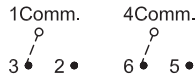


DPDT



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

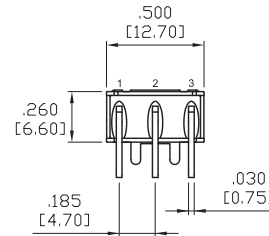
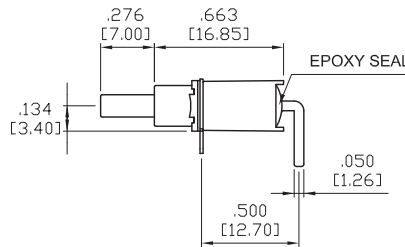
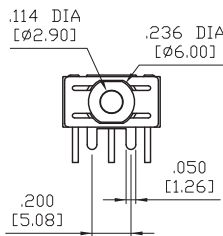
Schematic



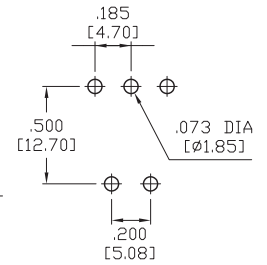
M6



SPDT



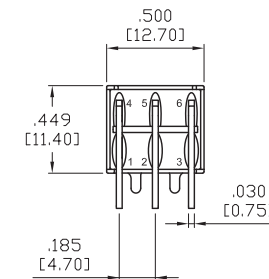
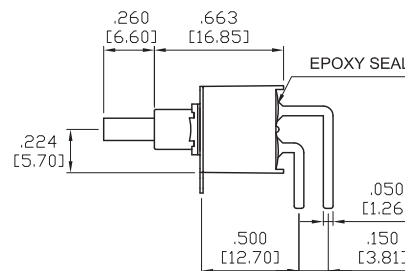
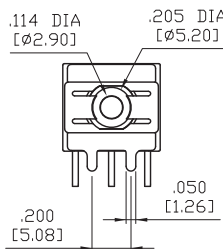
P.C.MOUNTING



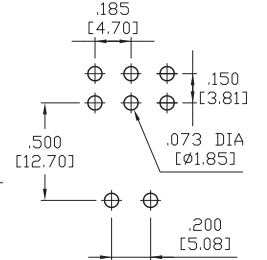
M6



DPDT

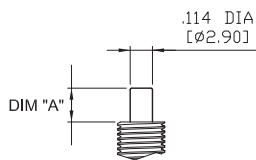


P.C.MOUNTING



PLUNGER OPTIONS

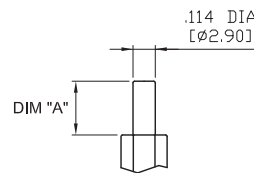
FOR B1 BUSHING



| 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

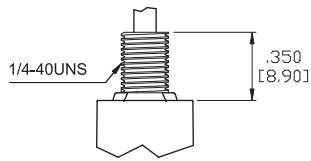


| OPTION CODE | DIM. "A" |
|-------------|-------------|
| P1 | .276 [7.00] |
| P2 | .323 [8.20] |
| P3 | .193 [4.90] |

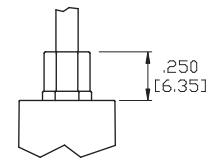
* Plunger length shown with SPDT model

BUSHING OPTIONS

B1

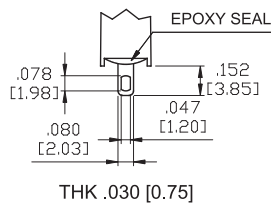


B4

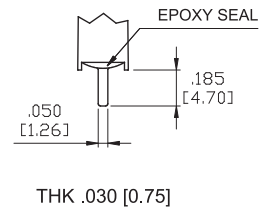


TERMINATION OPTIONS

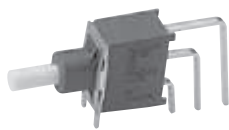
M1



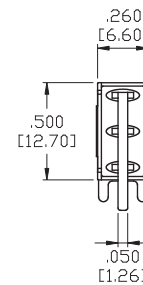
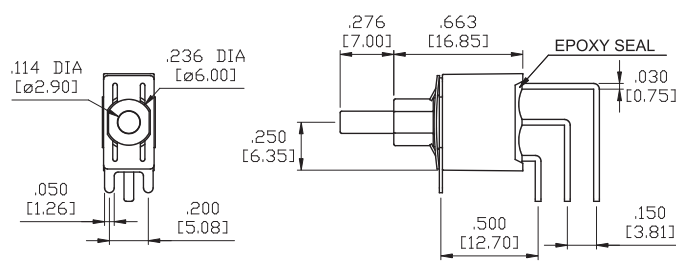
M2



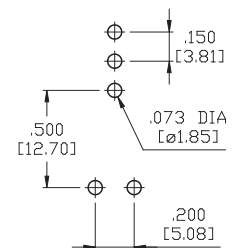
M7



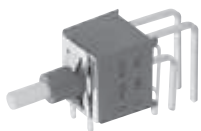
SPDT



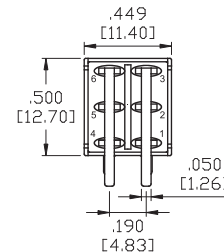
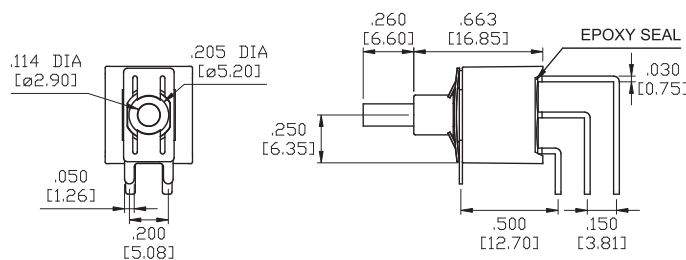
P.C.MOUNTING



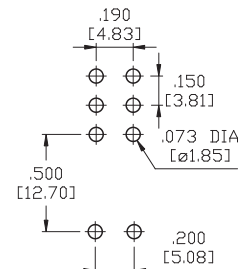
M7



DPDT



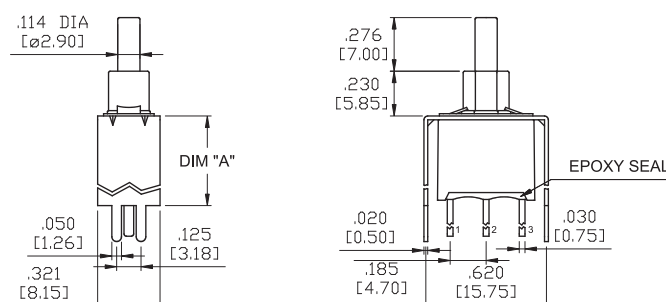
P.C.MOUNTING



VS2-VS3

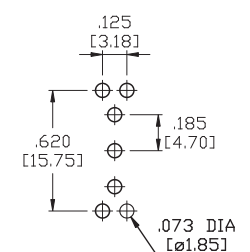


SPDT



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

P.C.MOUNTING

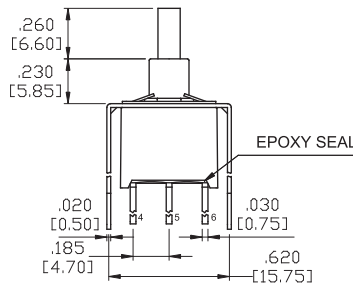
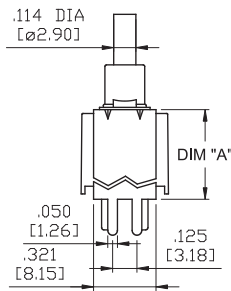


TERMINATION OPTIONS

VS2-VS3

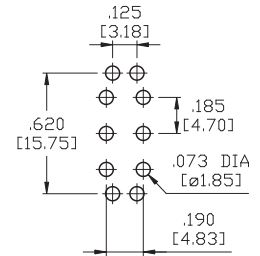


DPDT

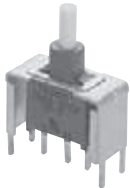


| OPTION CODE | DIM.'A' |
|-------------|--------------|
| VS2 | .461 [11.70] |
| VS3 | .630 [16.00] |

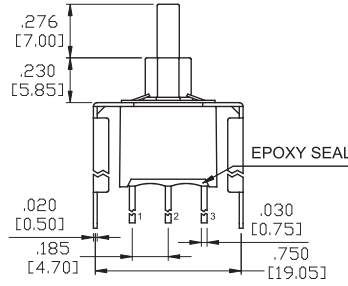
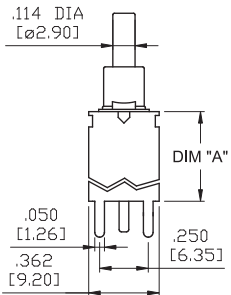
P.C.MOUNTING



VS4-VS5

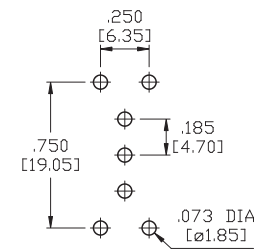


SPDT



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

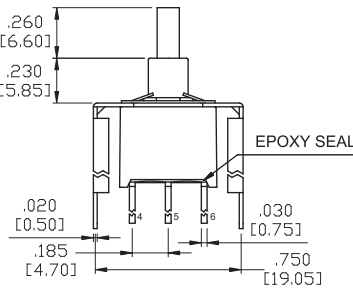
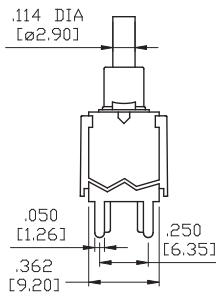
P.C.MOUNTING



VS4-VS5

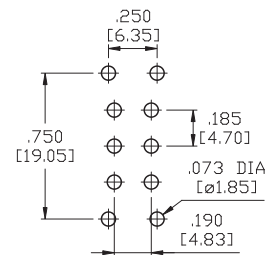


DPDT



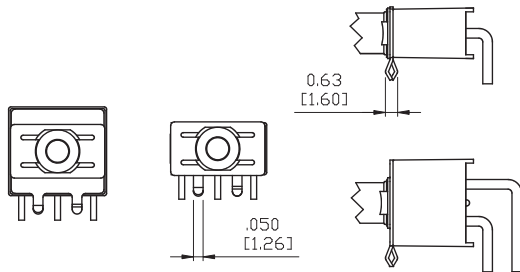
| OPTION CODE | DIM.'A' |
|-------------|--------------|
| VS4 | .461 [11.70] |
| VS5 | .630 [16.00] |

P.C.MOUNTING

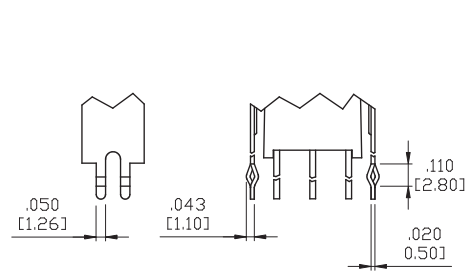


SNAP-IN TERMINATION OPTIONS

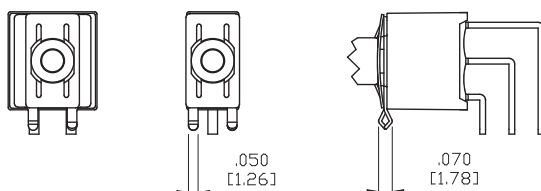
M61



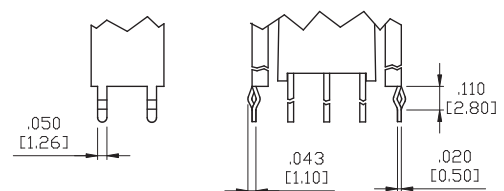
VS21,VS31



M71



VS41,VS51



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

PLUNGER CAPS

| C1 | C2 | C3 | C4 | CAP AND FRAME COLORS | | | | | | | | | | | | | | | | | | | | |
|-------------------------|-------------------------|-------------------------|-------------------------|---|----------------------|--|---|-------|---|-------|---|-----|---|--------|---|--------|---|-------|---|------|---|-------|---|------|
| <p>* MATERIAL: ABS.</p> | <p>* MATERIAL: ABS.</p> | <p>* MATERIAL: ABS.</p> | <p>* MATERIAL: ABS.</p> | <table border="1"> <thead> <tr> <th colspan="2">CAP AND FRAME COLORS</th> </tr> </thead> <tbody> <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> </tbody> </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 | | | | | | | | | | | | | | | | | | | | | | | |

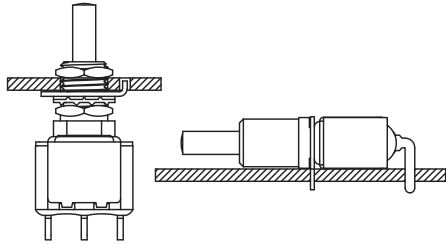
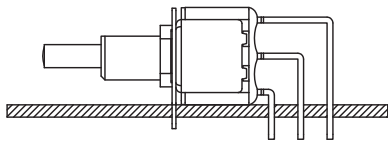
CONTACT MATERIAL OPTIONS

| 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.

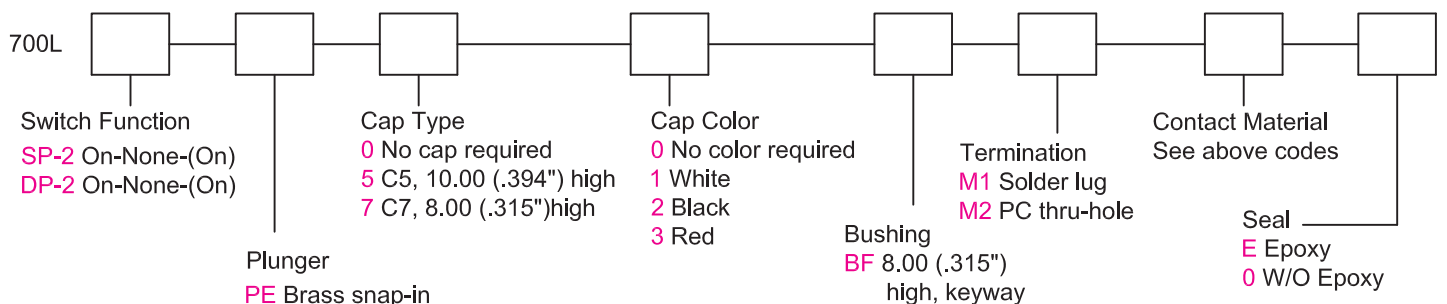
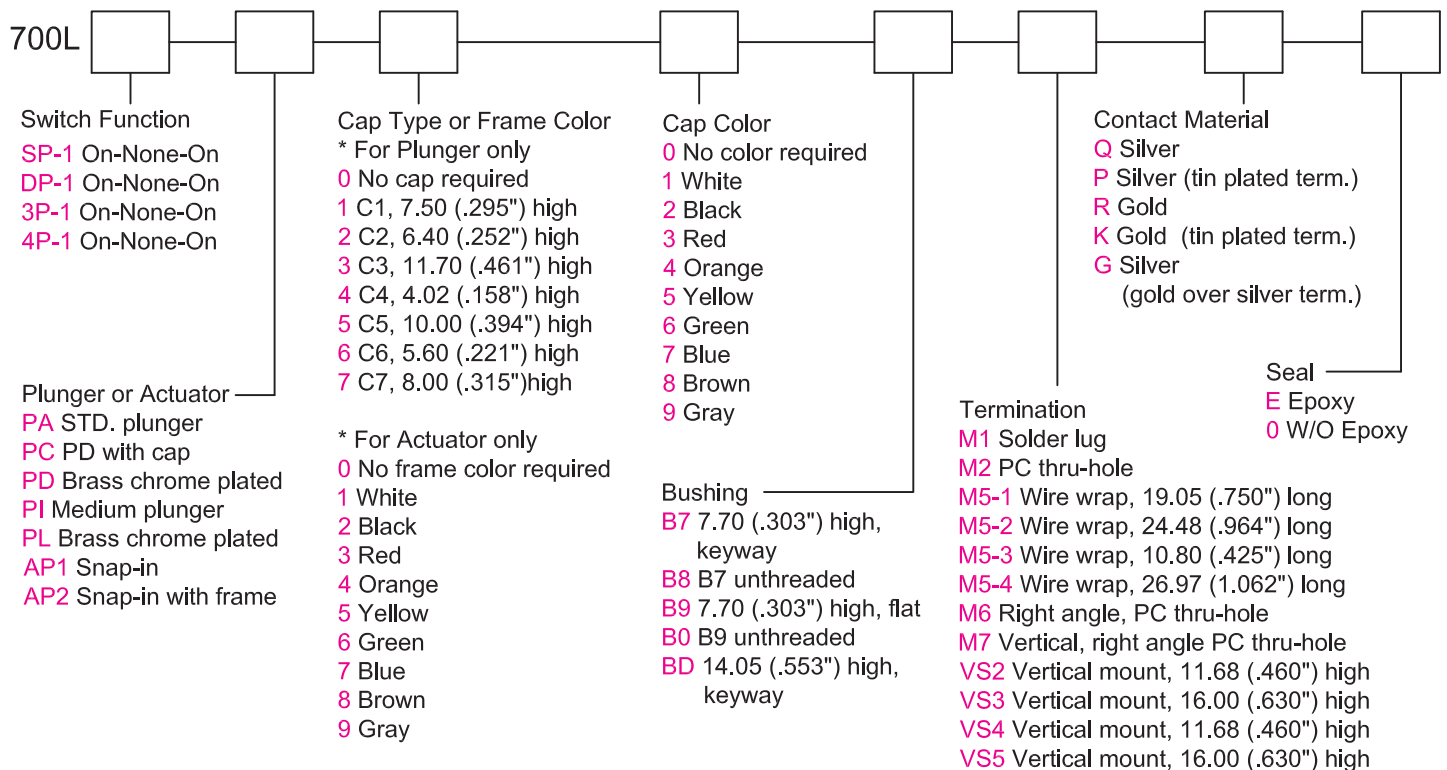
MATERIALS:

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



Series 700L

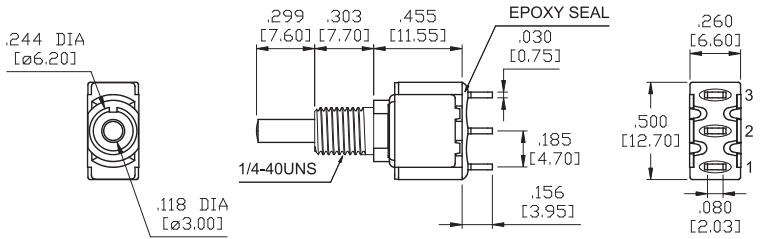
Alternate Acting Pushbutton Switches

SPDT

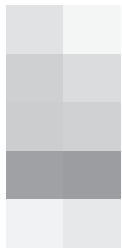


| Model No. | Switching Position | | |
|-------------|--------------------|------|-----|
| SP-1 | ON | NONE | ON |
| Term. Comm. | 2-3 | OPEN | 2-1 |

Schematic

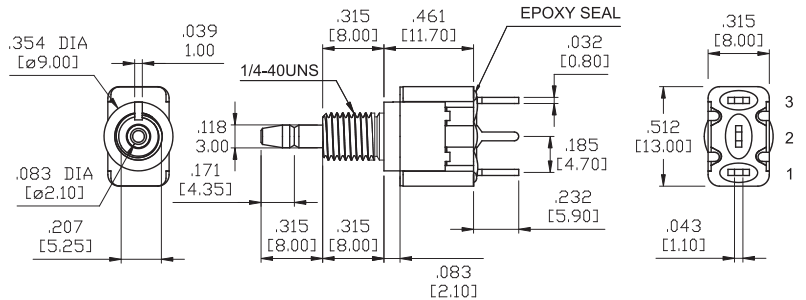


SPDT



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

Schematic

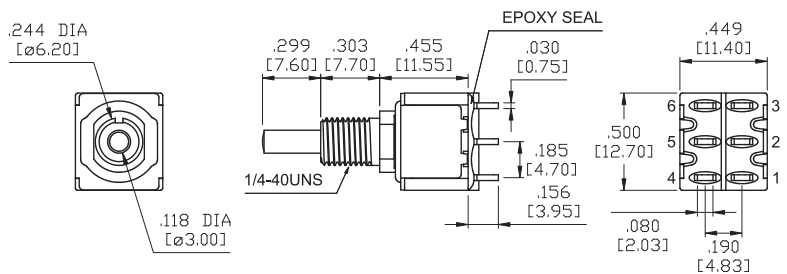
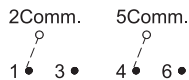


DPDT

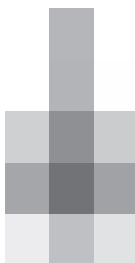


| Model No. | Switching Position | | |
|-------------|--------------------|------|---------|
| DP-1 | ON | NONE | ON |
| Term. Comm. | 2-3,5-6 | OPEN | 2-1,5-4 |

Schematic

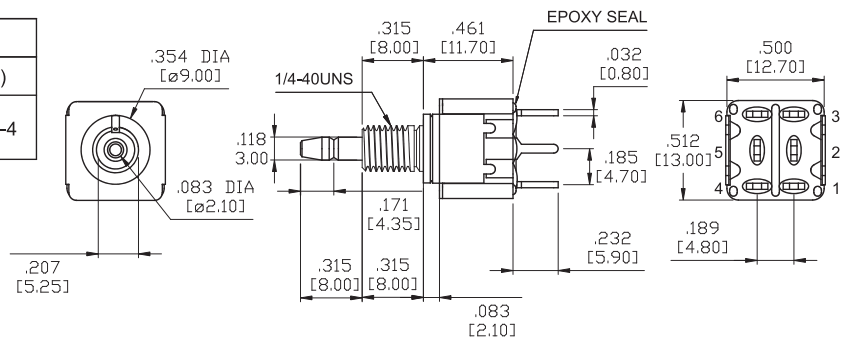
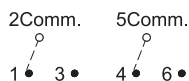


DPDT



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

Schematic

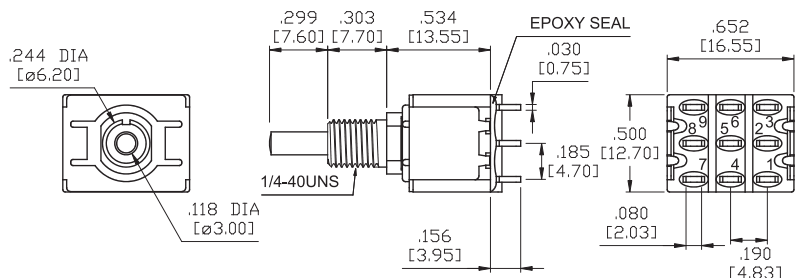


3PDT



| 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

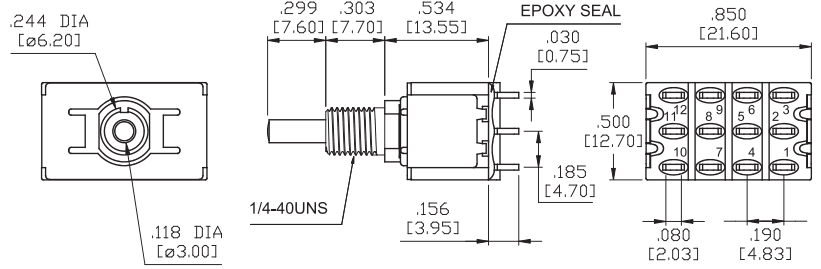
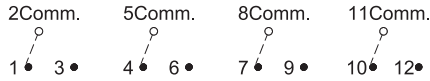
Alternate Acting Pushbutton Switches

4PDT



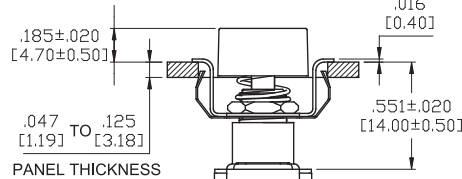
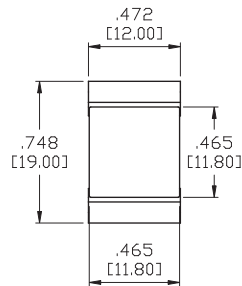
| Model No. | Switching Position | | |
|-------------|-------------------------|------|-------------------------|
| 4P-1 | ON | NONE | ON |
| Term. Comm. | 2-3,5-6 8-9 11-12 | OPEN | 2-1,5-4 8-7 11-10 |

Schematic

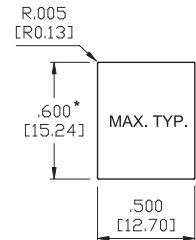


ACTUATOR OPTIONS FOR SNAP-IN FRONT MOUNT

AP1

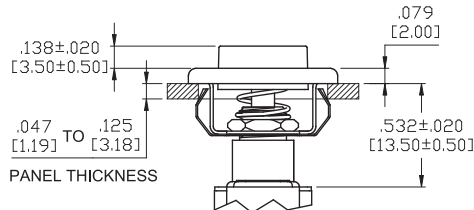
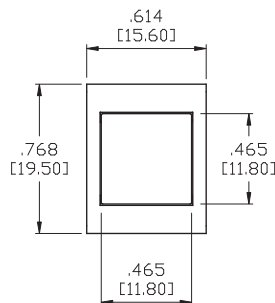


PANEL MOUNTING

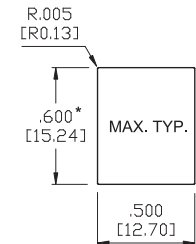


* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

AP2 WITH FRAME

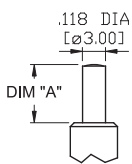


PANEL MOUNTING



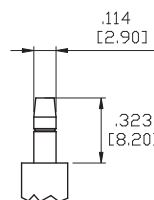
* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

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



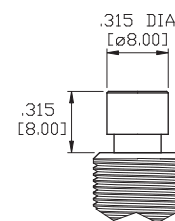
| OPTION CODE | DIM "A" |
|-------------|-------------|
| PA | .299 [7.60] |
| PI | .244 [6.20] |

PL



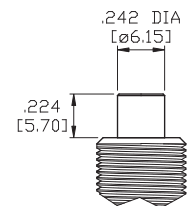
* Plunger material: Brass Nickel Plated

PC



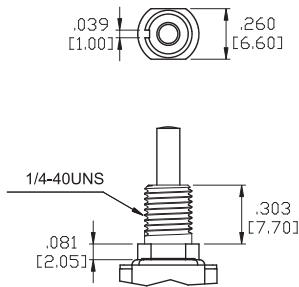
* Plunger material: Brass Chrome Plated
* PC,PD must configure with BD bushing

PD

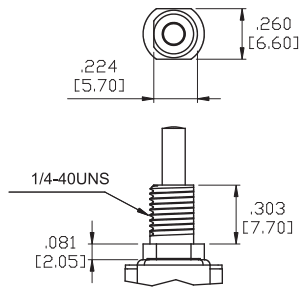


BUSHING OPTIONS (SP-1 & DP-1 MODEL)

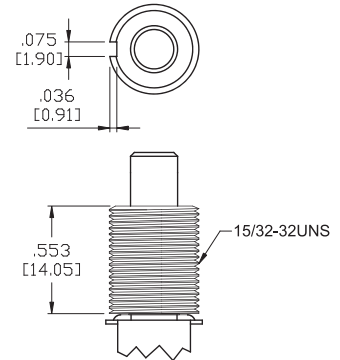
B7 THD STD
B8 NON-THD



B9 THD STD
B0 NON-THD

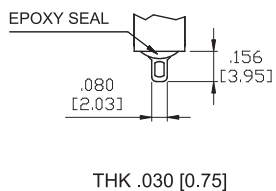


BD THD STD

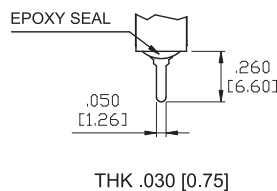


TERMINATION OPTIONS (SP-1 & DP-1 MODEL)

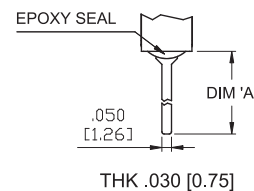
M1 STD. SOLDER LUG



M2 PC-THRU HOLE

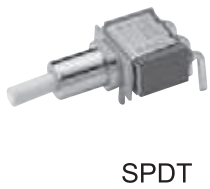


M5 WIRE WRAP

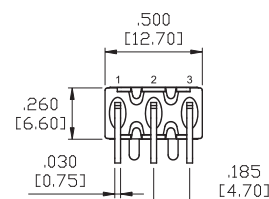
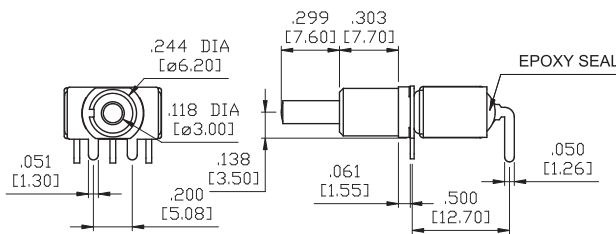


| OPTION CODE | DIM.'A' |
|-------------|---------------|
| M5-1 | .750 [19.05] |
| M5-2 | .964 [24.48] |
| M5-3 | .425 [10.80] |
| M5-4 | 1.062 [26.97] |

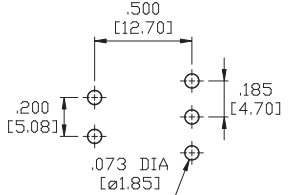
M6



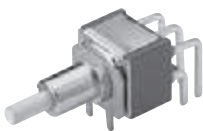
SPDT



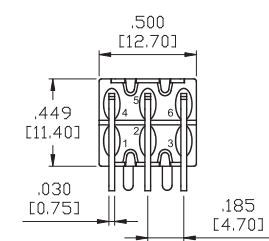
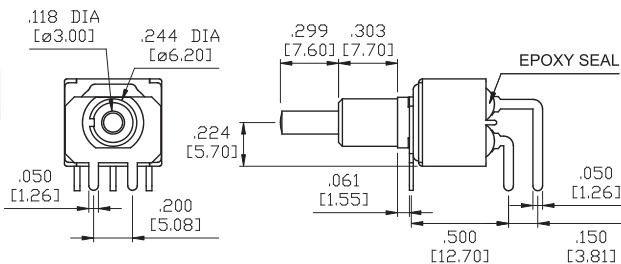
P.C.MOUNTING



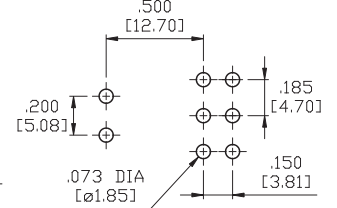
M6



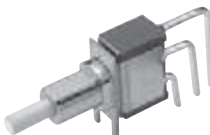
DPDT



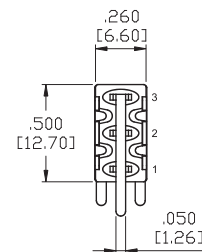
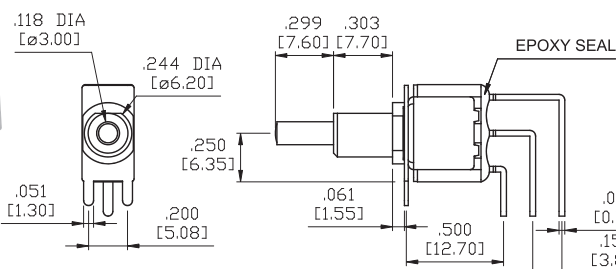
P.C.MOUNTING



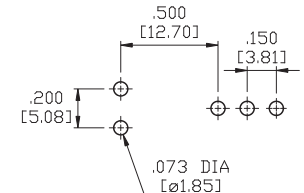
M7



SPDT



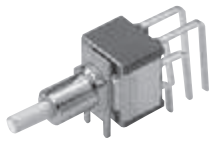
P.C.MOUNTING



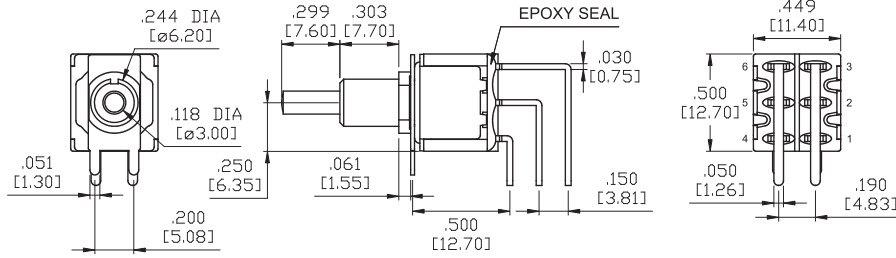
Series 700L

Alternate Acting Pushbutton Switches

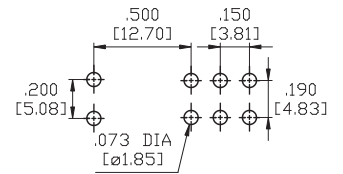
M7



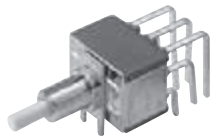
DPDT



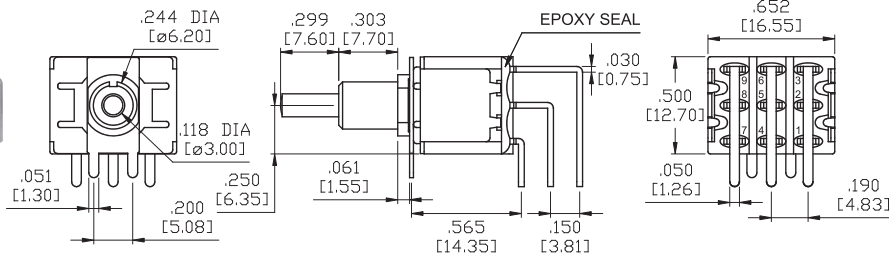
P.C.MOUNTING



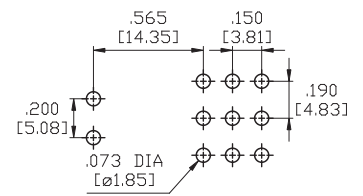
M7



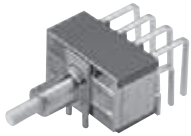
3PDT



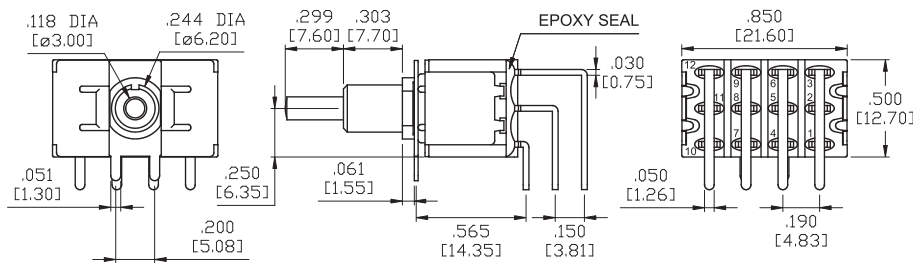
P.C.MOUNTING



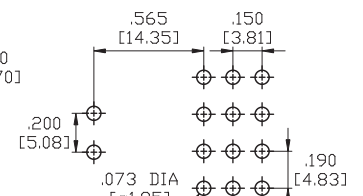
M7



4PDT



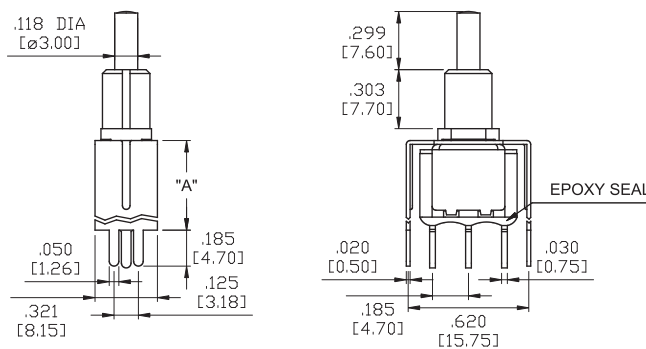
P.C.MOUNTING



VS2-VS3

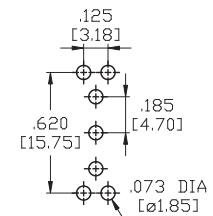


SPDT



P.C.MOUNTING

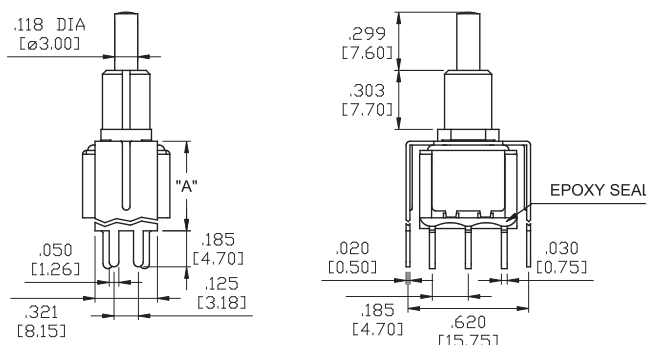
| OPTION CODE | DIM.'A' |
|-------------|--------------|
| VS2 | .461 [11.70] |
| VS3 | .630 [16.00] |



VS2-VS3

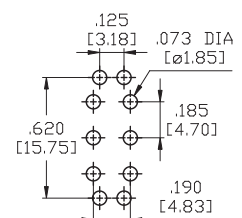


DPDT



P.C.MOUNTING

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



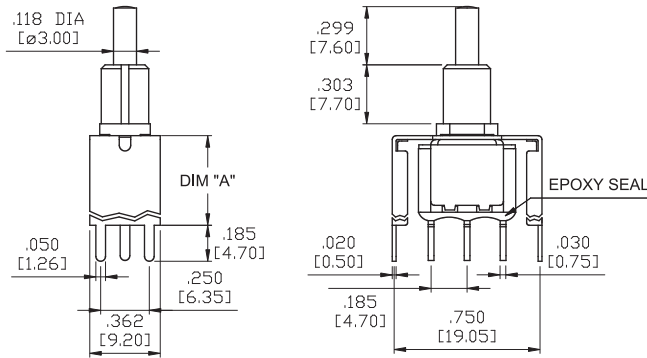
Series 700L

Alternate Acting Pushbutton Switches

VS4-VS5

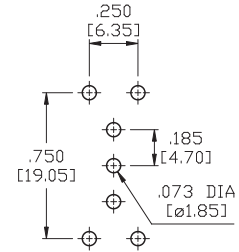


SPDT



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

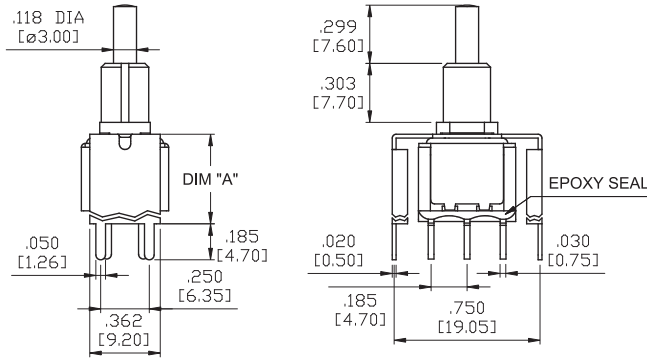
P.C.MOUNTING



VS4-VS5

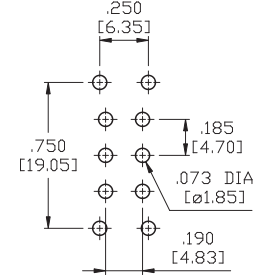


DPDT



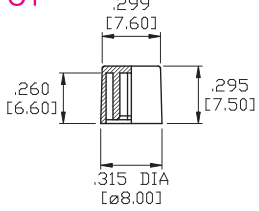
| OPTION CODE | DIM.'A' |
|-------------|--------------|
| VS4 | .461 [11.70] |
| VS5 | .630 [16.00] |

P.C.MOUNTING

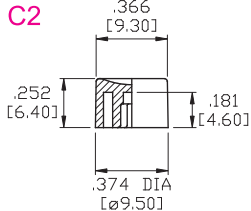


PLUNGER CAPS

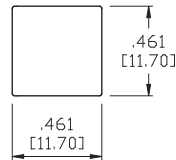
C1



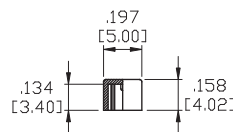
C2



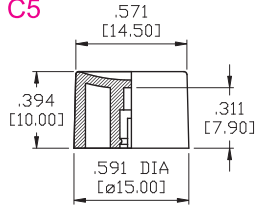
C3



C4

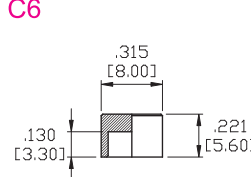


C5



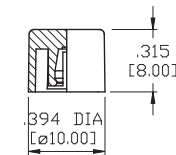
For PL plunger only

C6



For PD plunger only

C7



For PL plunger only

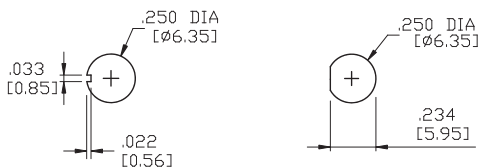
CAP AND FRAME COLORS

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

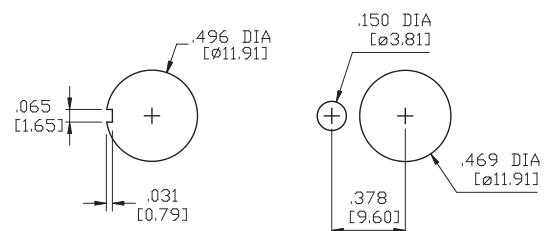
MATERIAL: ABS for C1~C5.
MATERIAL: Brass for C6
Chrome or nickel plated.

PANEL MOUNTING

1/4 INCH BUSHING

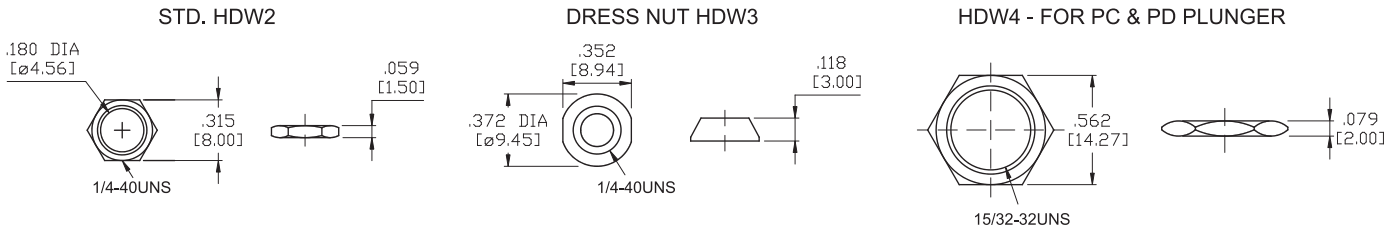


15/32 INCH BUSHING

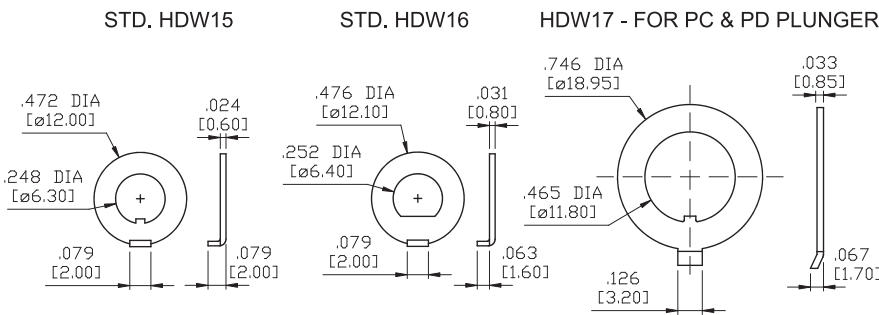


HARDWARE

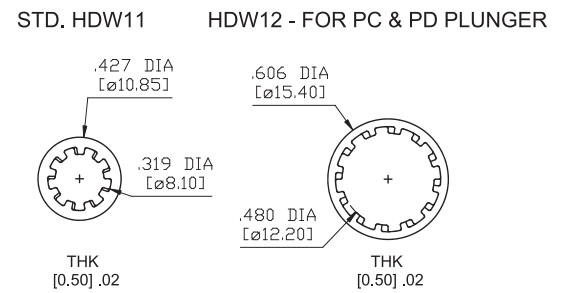
NUT



LOCKING RING



LOCK WASHER

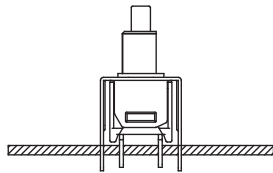
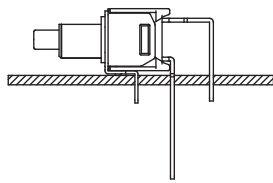


CONTACT MATERIAL OPTIONS

| 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.

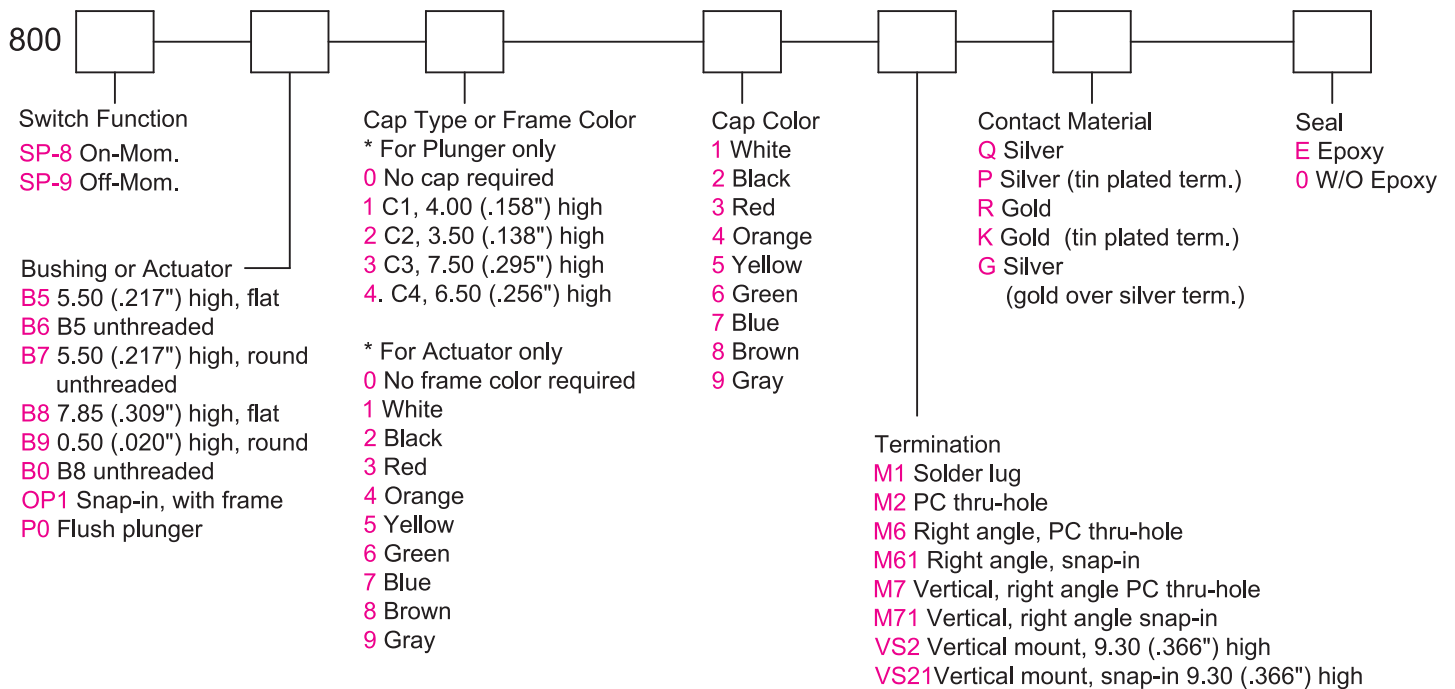
MATERIALS:

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

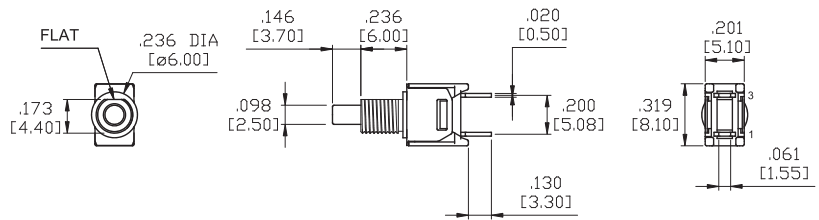


SPST



| Model No. | Type | |
|-----------|------|-----|
| SP-9 | OFF | MOM |

Schematic

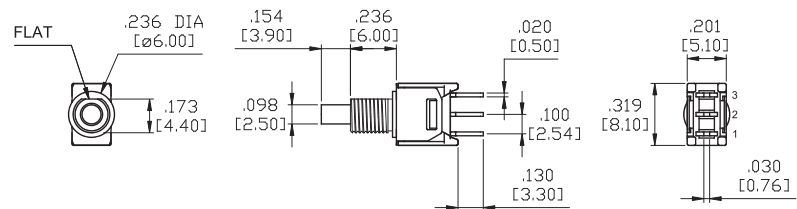
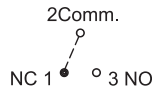


SPDT



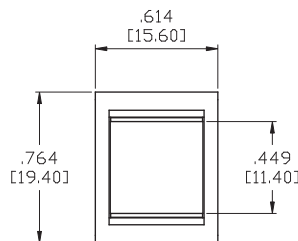
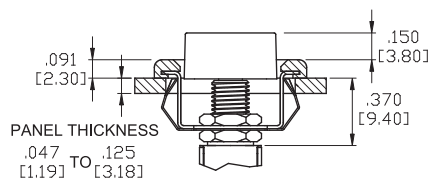
| Model No. | Type | |
|-------------|------|-----|
| SP-8 | ON | MOM |
| Term. Comm. | 2-1 | 2-3 |

Schematic

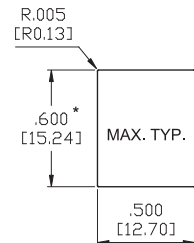


ACTUATOR OPTIONS FOR SNAP-IN FRONT MOUNT

OP1

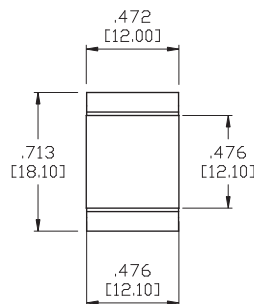
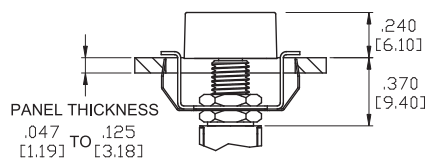


PANEL MOUNTING

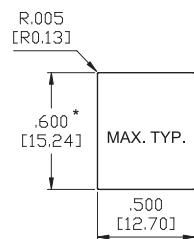


* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

OP1 WITHOUT FRAME

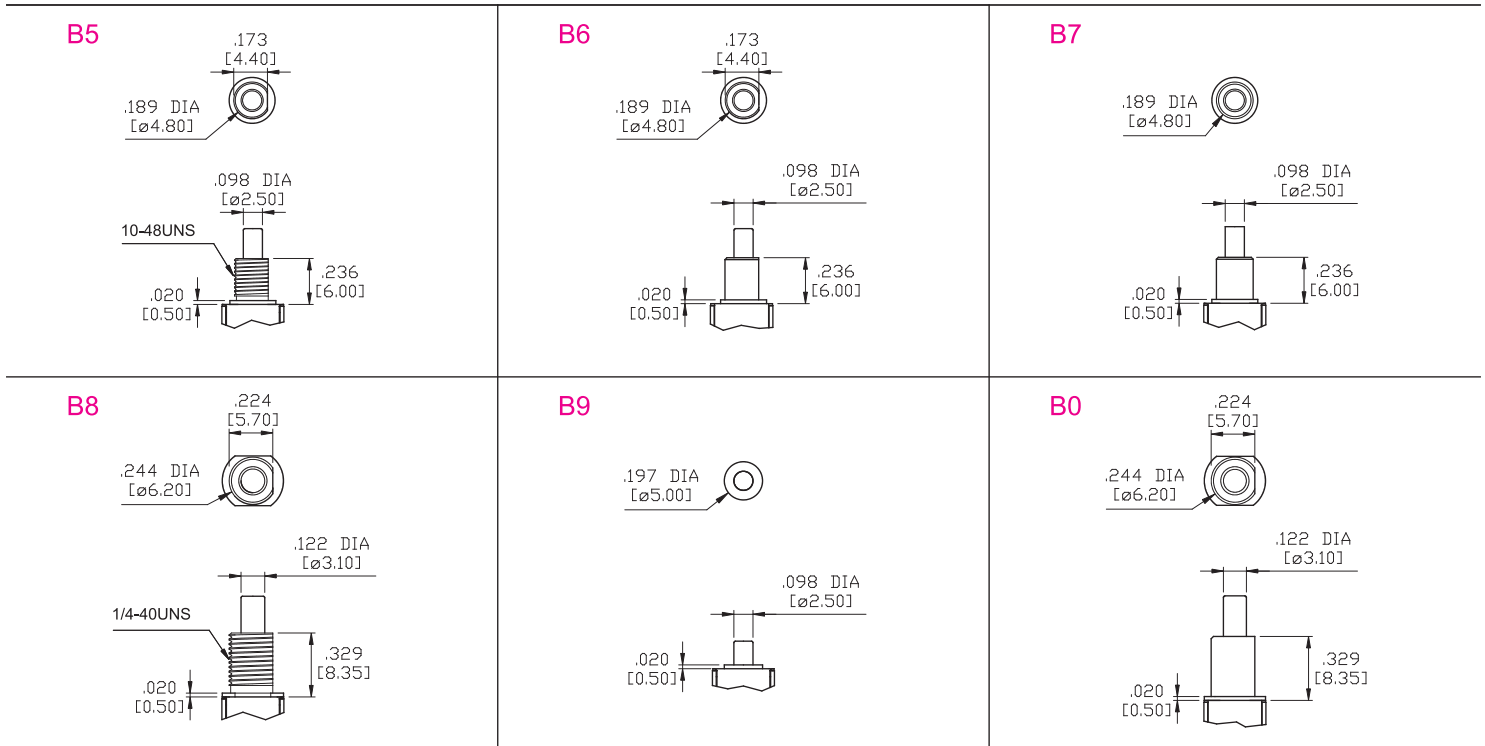


PANEL MOUNTING

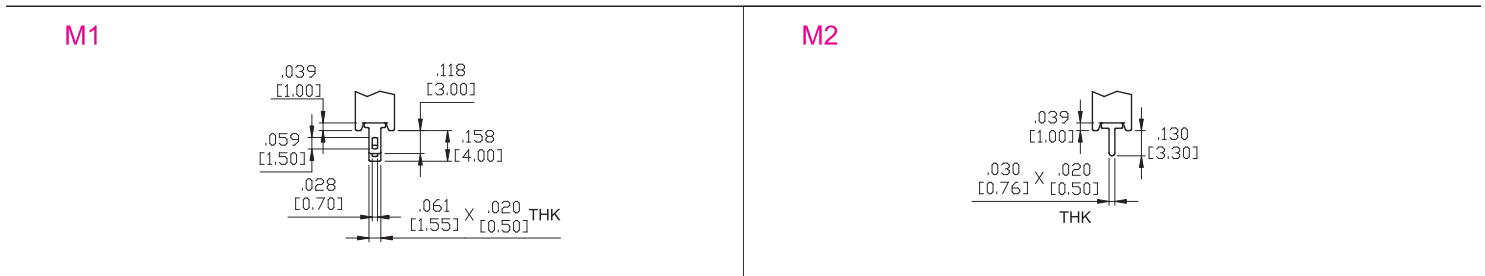


* Increase this dimension to .620/.625 [15.75/15.88] for .091/.125 [2.31/3.18] thk. panels.

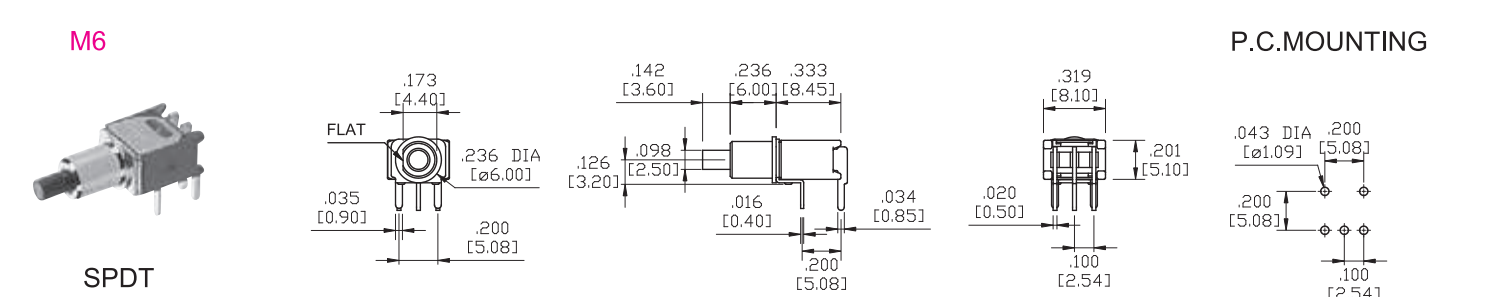
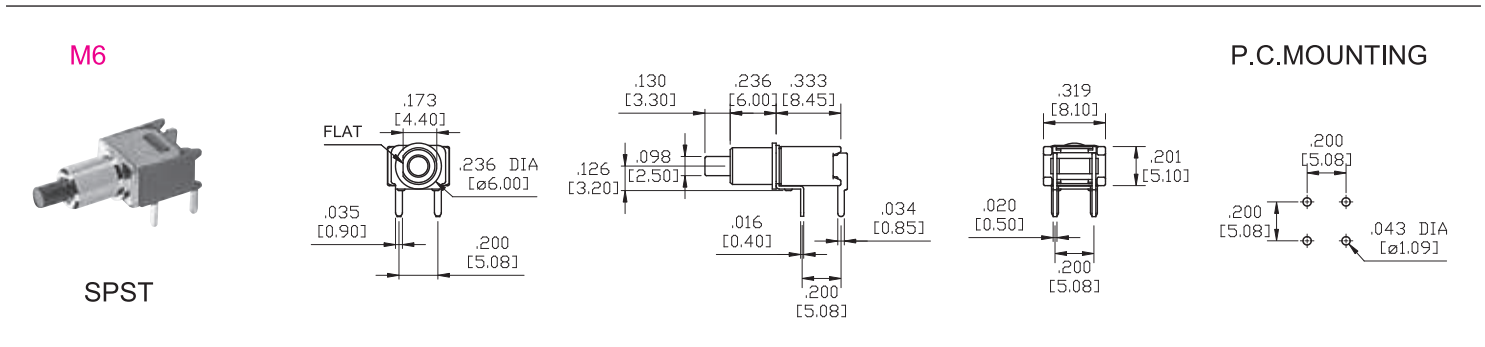
BUSHING OPTIONS



TERMINATION OPTIONS



TERMINATION OPTIONS



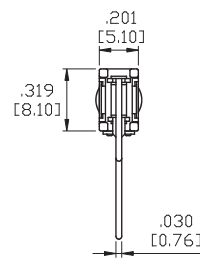
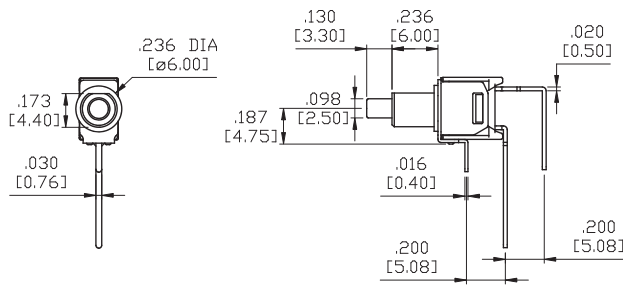
TERMINATION OPTIONS

Toggle
Rocker
Slide
Pushbutton
AV
Rotary
Tact
Touch Key
Miscellaneous

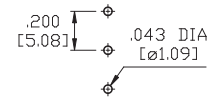
M7



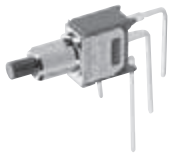
SPST



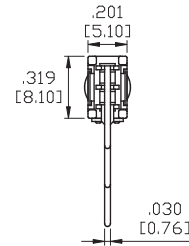
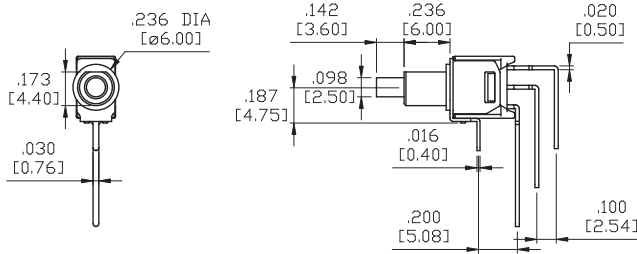
P.C.MOUNTING



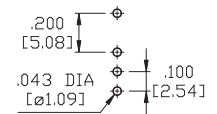
M7



SPDT



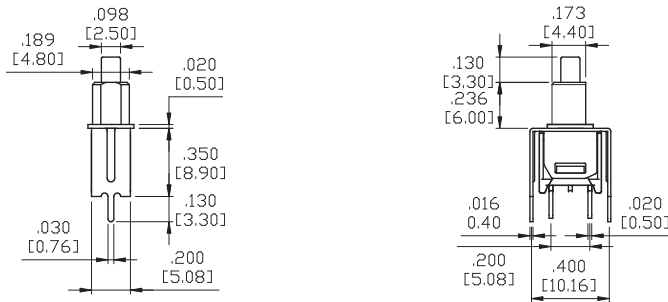
P.C.MOUNTING



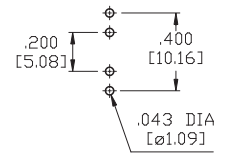
VS2



SPST



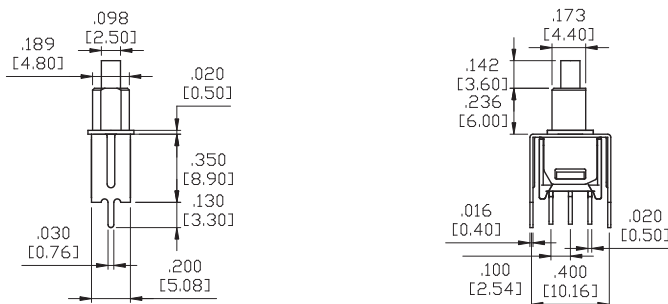
P.C.MOUNTING



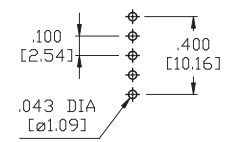
VS2



SPDT

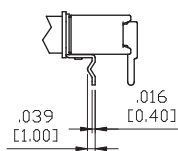


P.C.MOUNTING

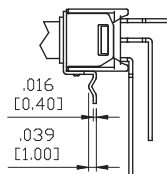


SNAP-IN TERMINATION OPTIONS

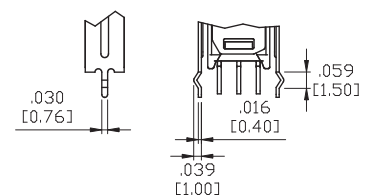
M61



M71



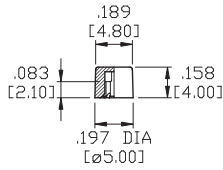
VS21



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

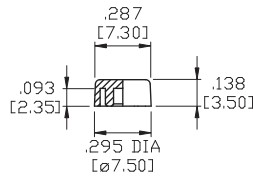
PLUNGER CAPS

C1



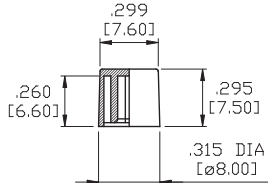
* MATERIAL: ABS.

C2



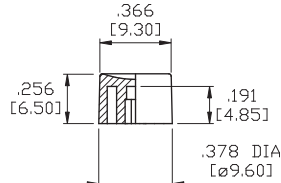
* MATERIAL: ABS.

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 |

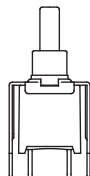
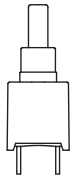
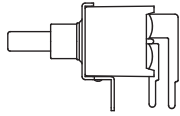
* C3 & C4 cap is only for plunger with B8 and B0 bushing.

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.

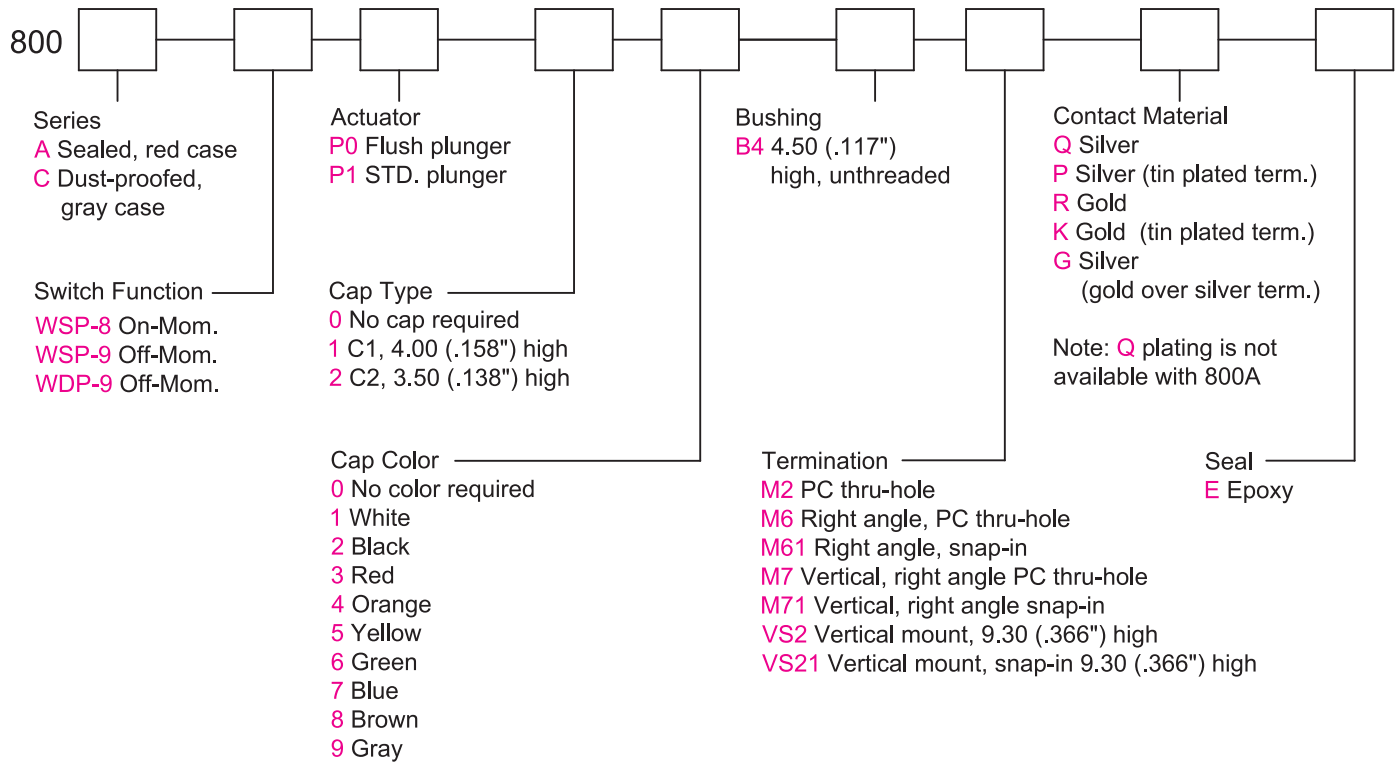
MATERIALS:

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

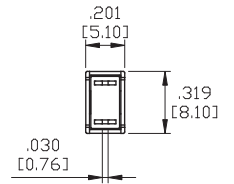
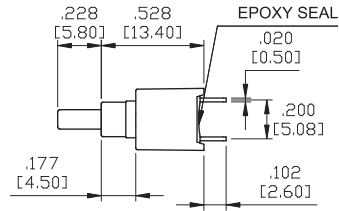
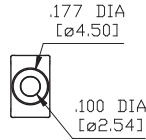
(Sealed) Sub-Miniature Pushbutton Switches

SPST



| Model No. | Type | |
|-----------|------|-----|
| WSP-9 | OFF | MOM |

Schematic

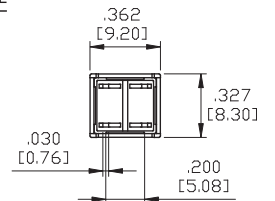
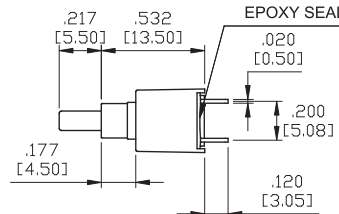
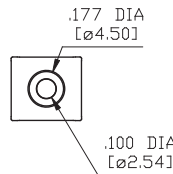
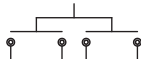


DPST



| Model No. | Type | |
|-----------|------|-----|
| WDP-9 | OFF | MOM |

Schematic

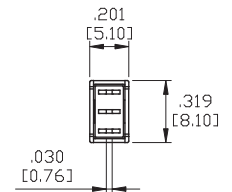
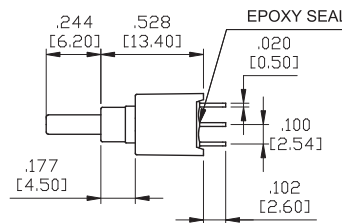
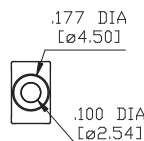
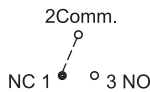


SPDT



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

Schematic

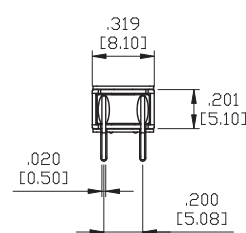
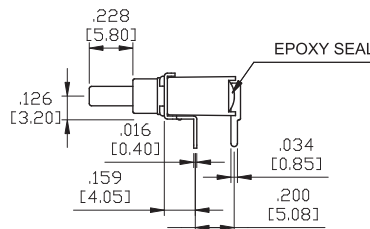
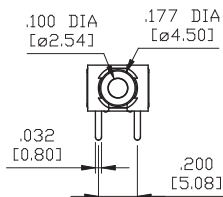


TERMINATION OPTIONS

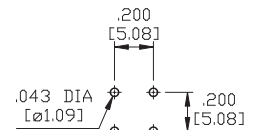
M6



SPST



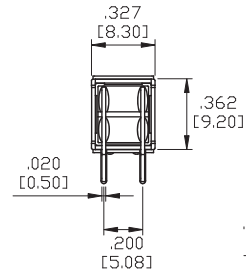
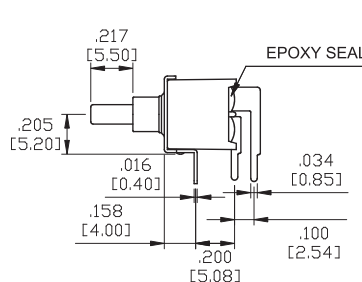
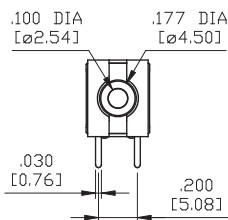
P.C.MOUNTING



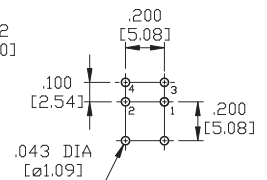
M6



DPST



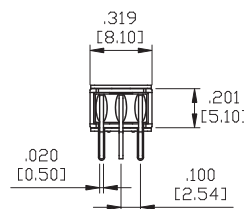
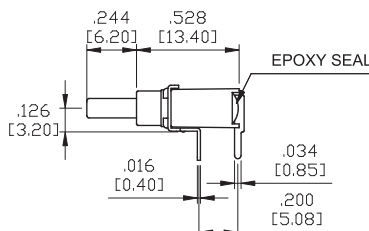
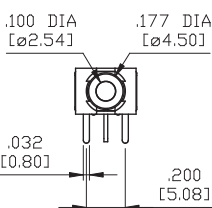
P.C.MOUNTING



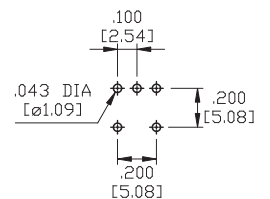
M6



SPDT



P.C.MOUNTING

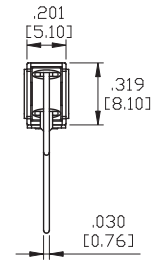
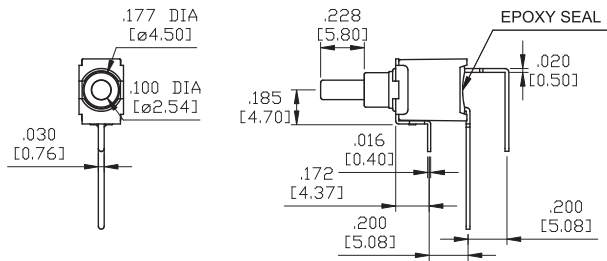


TERMINATION OPTIONS

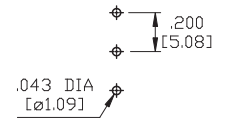
M7



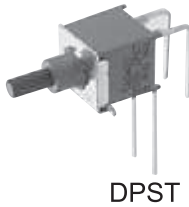
SPST



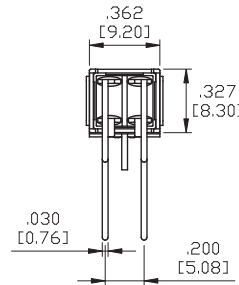
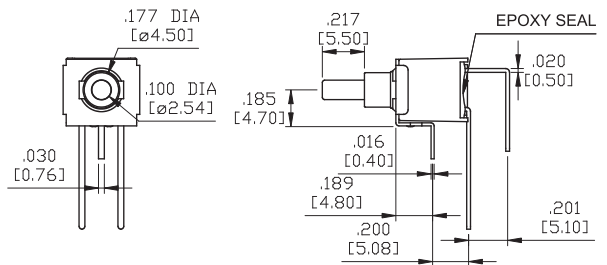
P.C.MOUNTING



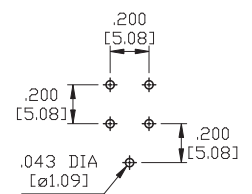
M7



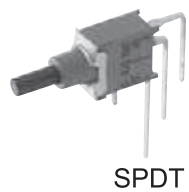
DPST



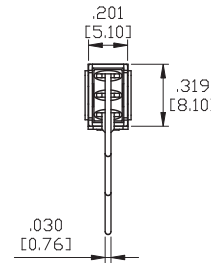
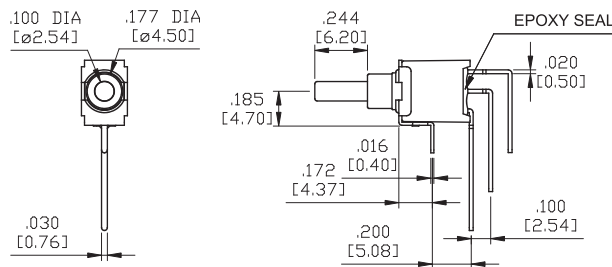
P.C.MOUNTING



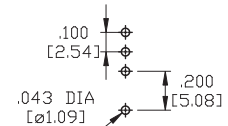
M7



SPDT



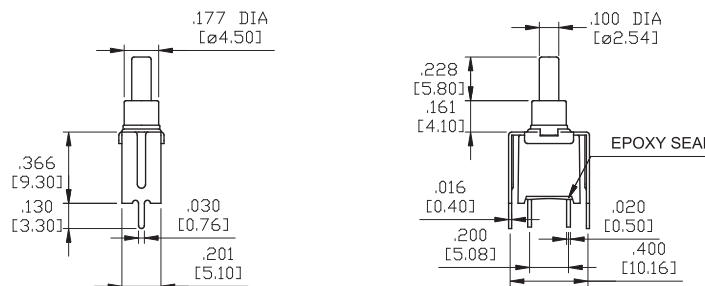
P.C.MOUNTING



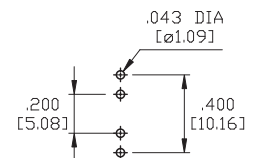
VS-2



SPST



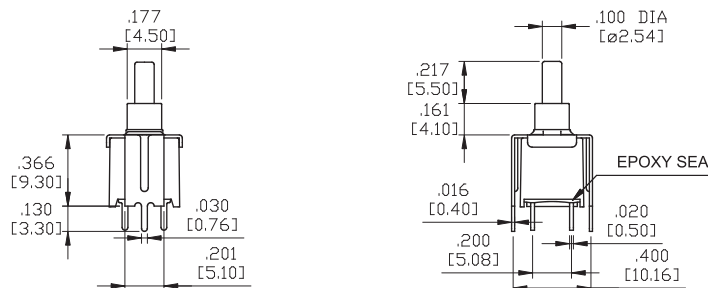
P.C.MOUNTING



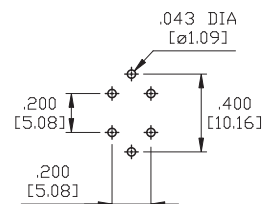
VS-2



DPST



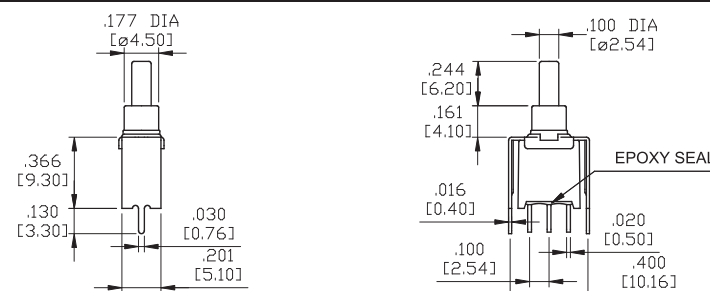
P.C.MOUNTING



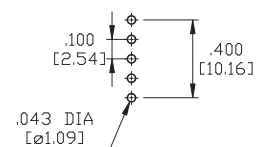
VS2



SPDT



P.C.MOUNTING



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

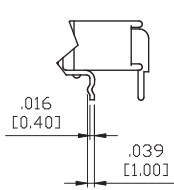
Touch Key

Miscellaneous

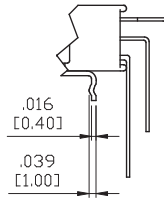
Series 800A/C (Sealed) Sub-Miniature Pushbutton Switches

SNAP-IN TERMINATION OPTIONS

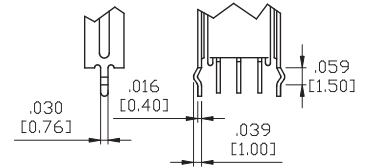
M61



M71



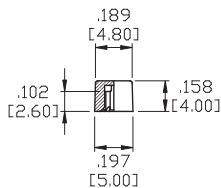
VS21



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

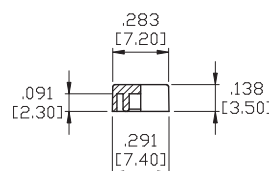
PLUNGER CAPS

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 | | |

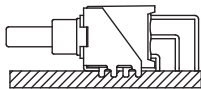
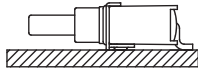
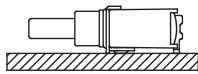
CONTACT MATERIAL OPTIONS

| 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.

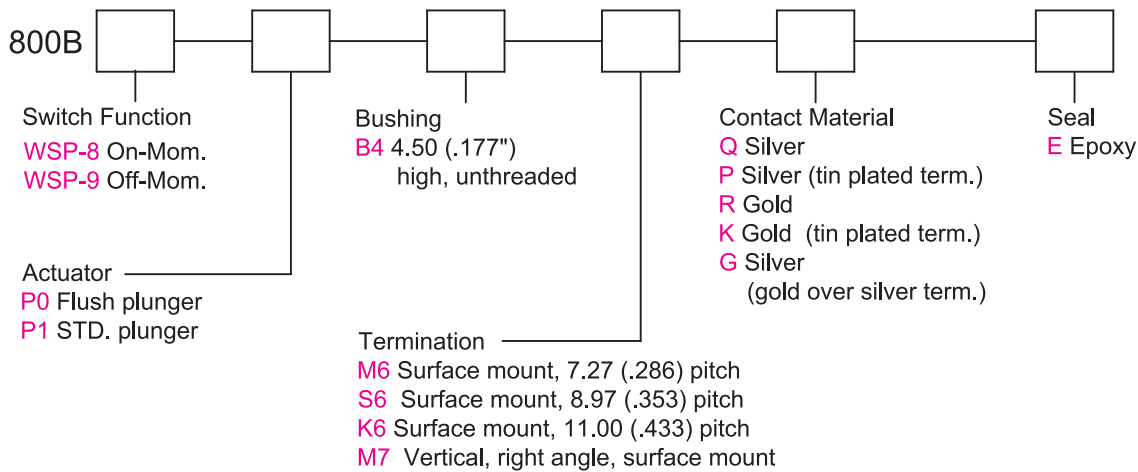
MATERIALS:

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

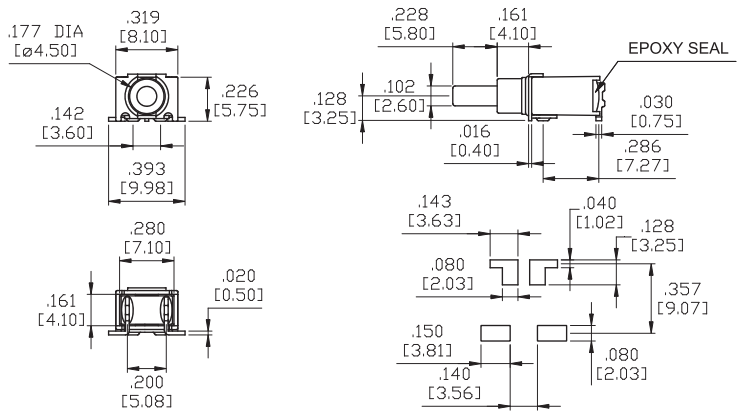


| Model No. | Type | |
|-----------|------|-----|
| WSP-9 | OFF | MOM |

Schematic



SPST

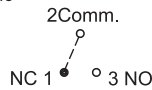


M6

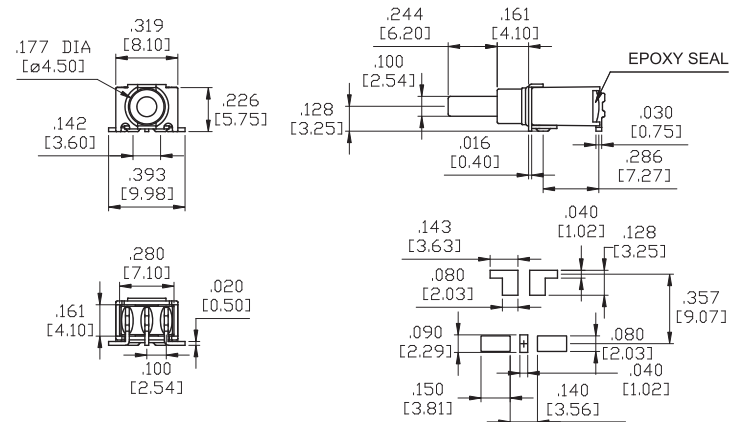


| Model No. | Type | |
|-------------|------|-----|
| WSP-8 | ON | MOM |
| Term. Comm. | 2-1 | 2-3 |

Schematic



SPDT



S6

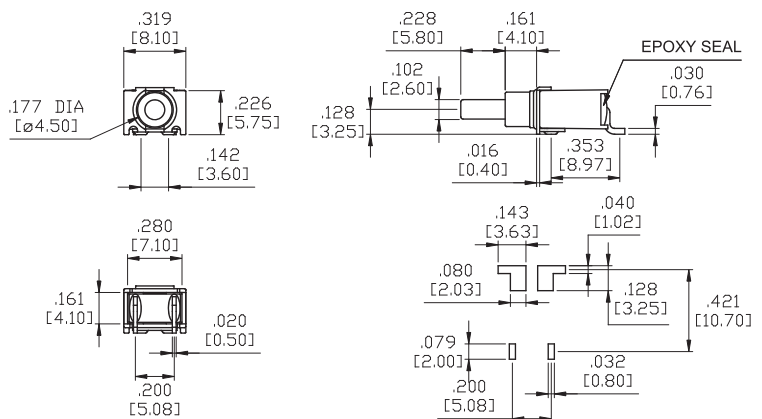


| Model No. | Type | |
|-----------|------|-----|
| WSP-9 | OFF | MOM |

Schematic



SPST

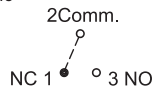


S6

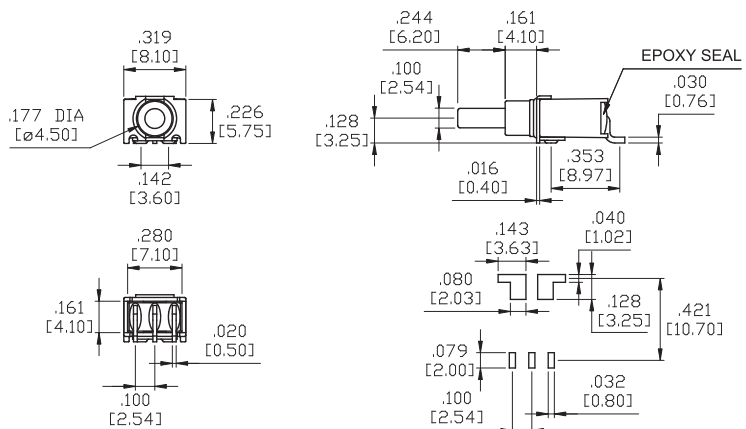


| Model No. | Type | |
|-------------|------|-----|
| WSP-8 | ON | MOM |
| Term. Comm. | 2-1 | 2-3 |

Schematic



SPDT



K6

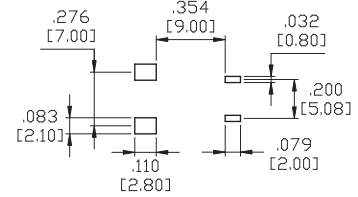
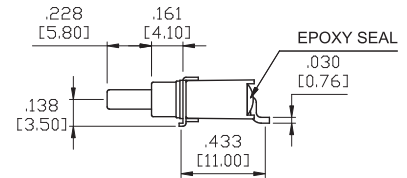
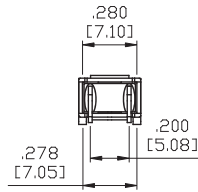
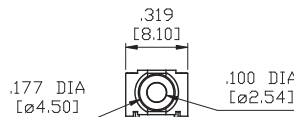


| Model No. | Type | |
|-----------|------|-----|
| WSP-9 | OFF | MOM |

Schematic



SPST

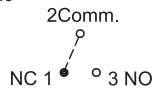


K6

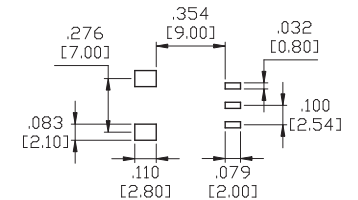
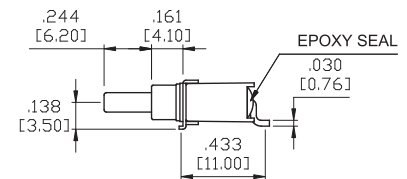
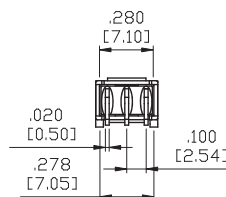
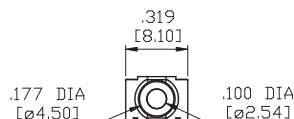


| Model No. | Type | |
|-------------|------|-----|
| WSP-8 | ON | MOM |
| Term. Comm. | 2-1 | 2-3 |

Schematic



SPDT



M7

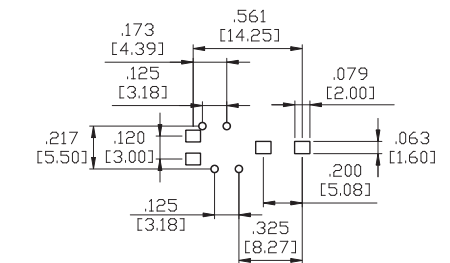
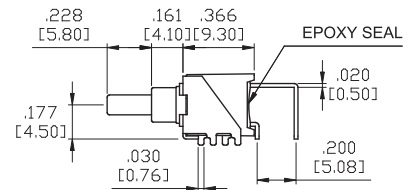
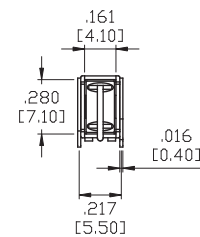
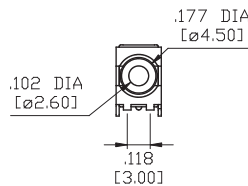


| Model No. | Type | |
|-----------|------|-----|
| WSP-9 | OFF | MOM |

Schematic



SPST



M7

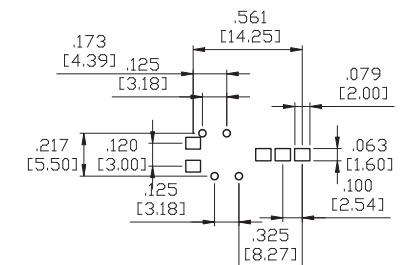
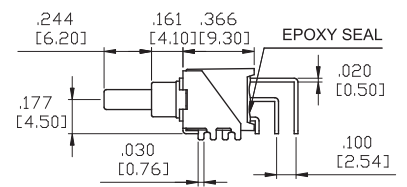
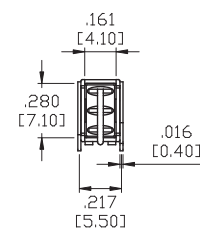
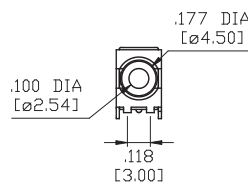


| Model No. | Type | |
|-------------|------|-----|
| WSP-8 | ON | MOM |
| Term. Comm. | 2-1 | 2-3 |

Schematic

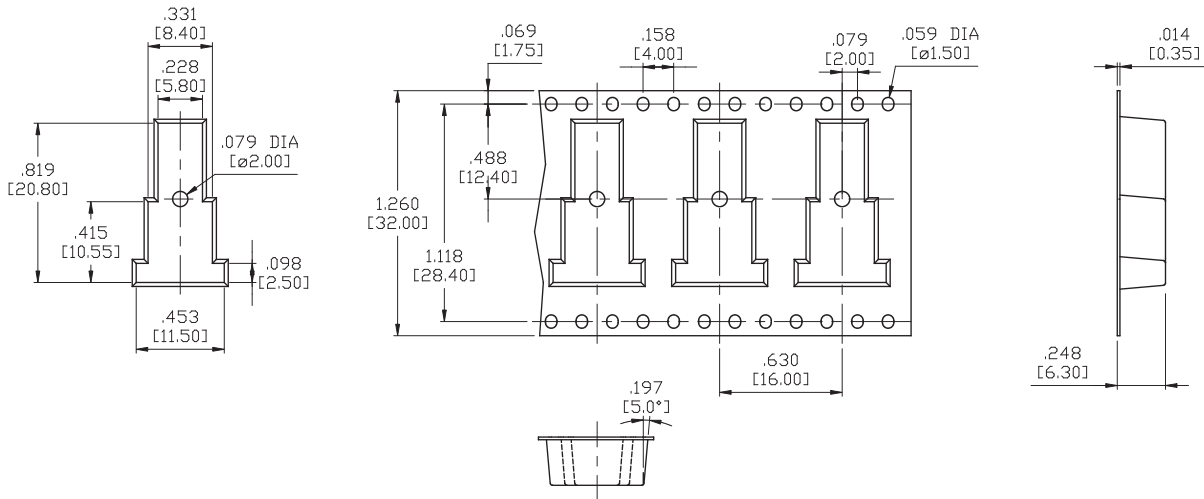


SPDT

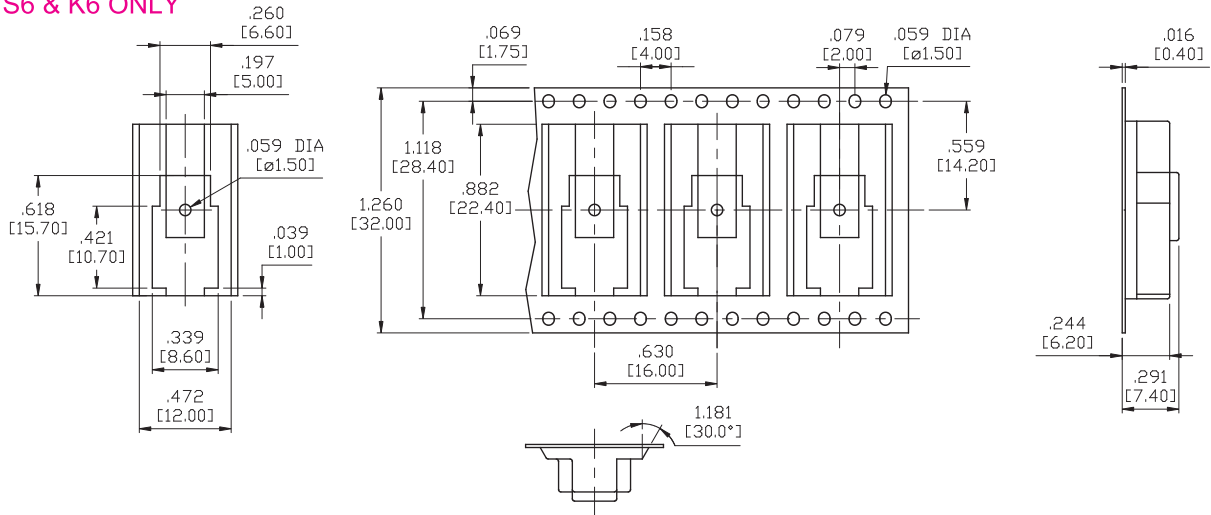


REEL TAPING

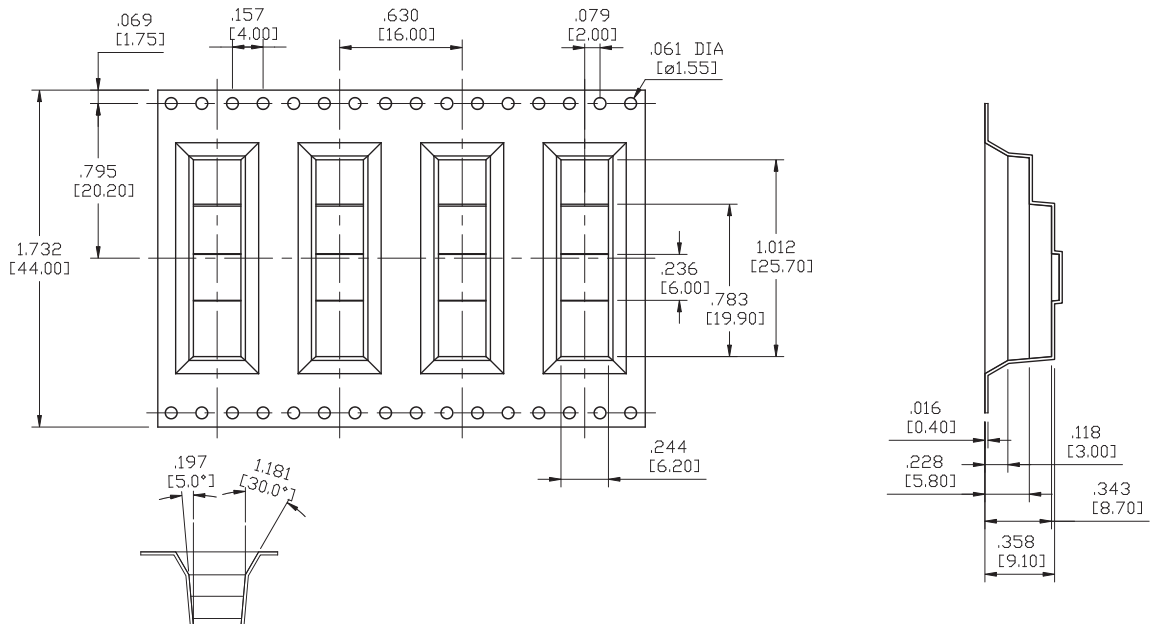
FOR M6 ONLY



FOR S6 & K6 ONLY



FOR M7 ONLY



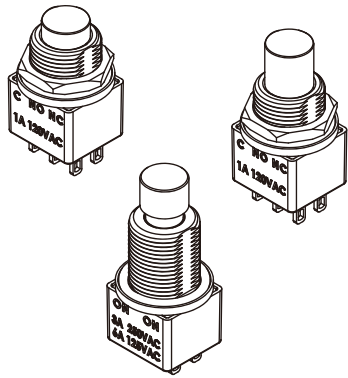
REEL TAPING

| 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:

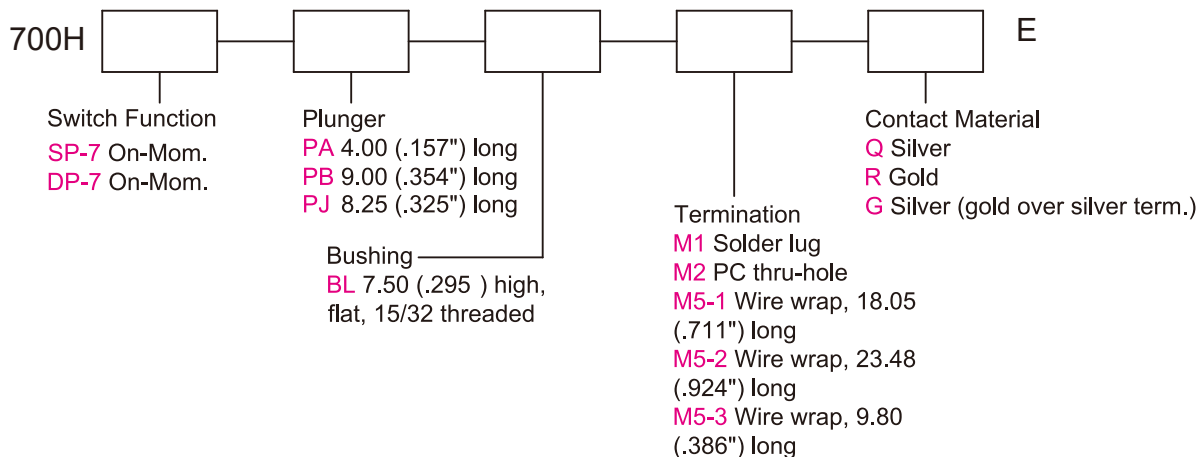
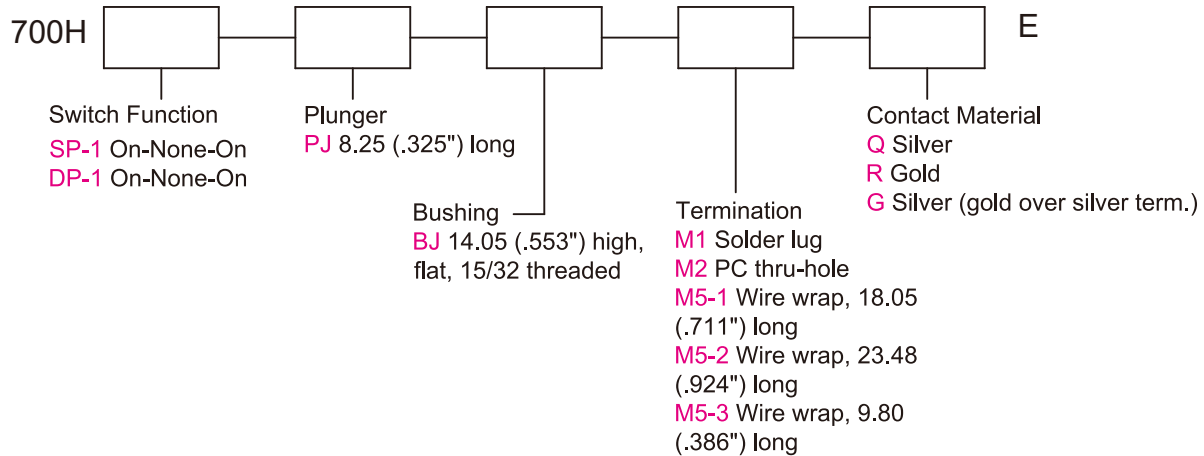
CONTACT RATING: Refer to "Contact Material Options" for more info.
 ELECTRICAL LIFE: Min. 50,000 make-and-break cycles at full load.
 CONTACT RESISTANCE: 10m-ohms max. initial @2-4VDC
 100mA for both silver and gold plated contacts.
 INSULATION RESISTANCE: 1,000M-ohms min.
 DIELECTRIC STRENGTH: 1,500VAC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

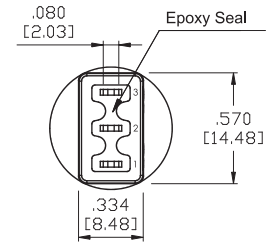
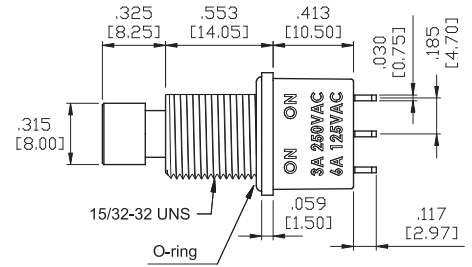
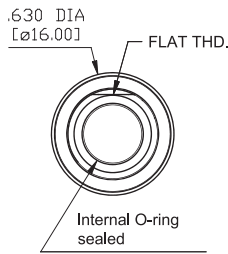
Toggle
Rocker
Slide
Pushbutton
AV
Rotary
Tact
Touch Key
Miscellaneous

SPDT



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

Schematic

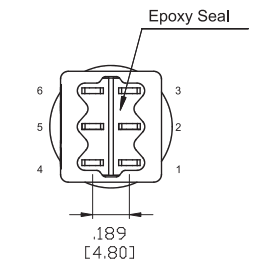
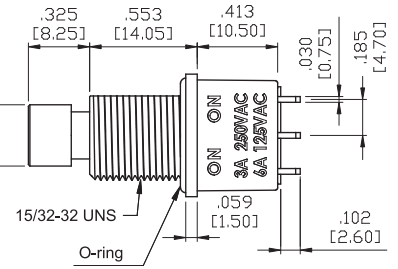
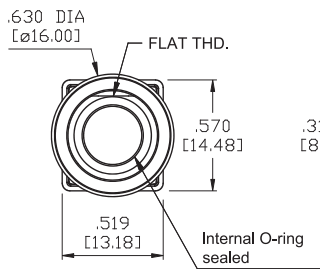
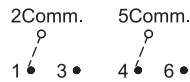


DPDT



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

Schematic

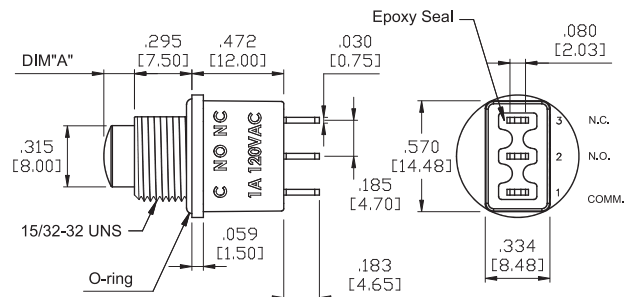
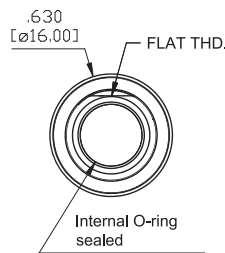


SPDT



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

Schematic



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

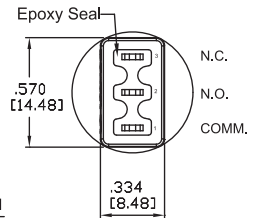
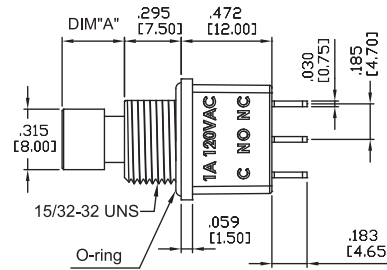
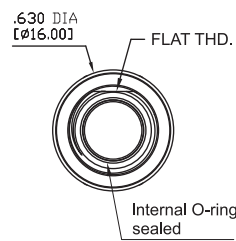
SPDT

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

Schematic



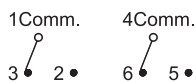
| OPTION CODE | DIM. "A" |
|-------------|-------------|
| PJ | .325 [8.25] |



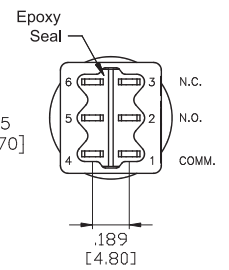
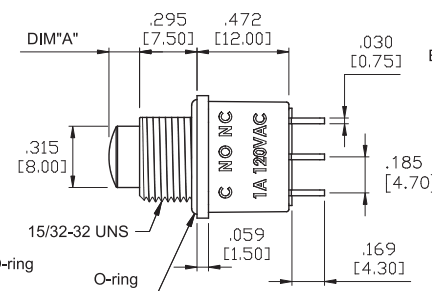
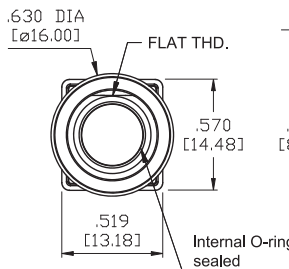
DPDT

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

Schematic



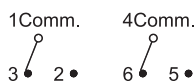
| OPTION CODE | DIM. "A" |
|-------------|-------------|
| PA | .157 [4.00] |
| PB | .354 [9.00] |



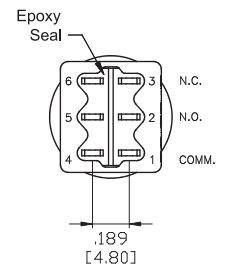
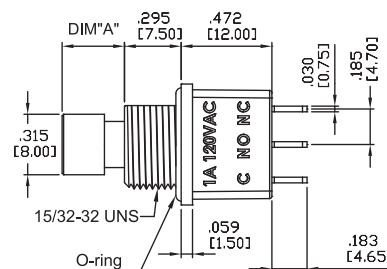
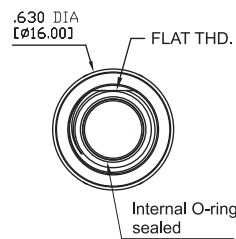
DPDT

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

Schematic

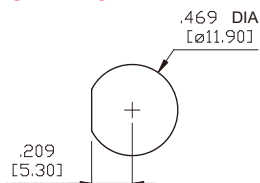


| OPTION CODE | DIM. "A" |
|-------------|-------------|
| PJ | .325 [8.25] |



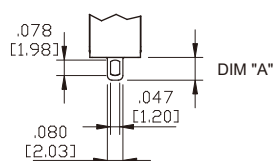
PANEL MOUNTING

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



TERMINATION OPTIONS

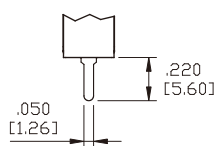
M1 STD. SOLDER LUG



THK .030 [0.75]

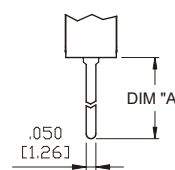
| MODEL | DIM "A" |
|-------|-------------|
| DP-1 | .116 [2.95] |
| DP-7 | .183 [4.65] |

M2 PC THRU-HOLE



THK .030 [0.75]

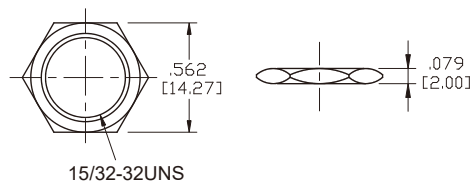
M5 WIRE WRAP



THK .030 [0.75]

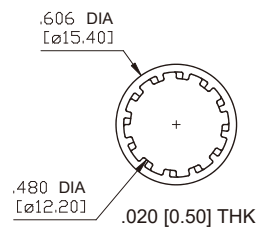
| OPTION CODE | DIM "A" |
|-------------|--------------|
| M5-1 | .711 [18.05] |
| M5-2 | .924 [23.48] |
| M5-3 | .386 [9.80] |

NUT





15/32-32UNS

LOCK WASHER



CONTACT MATERIAL OPTIONS

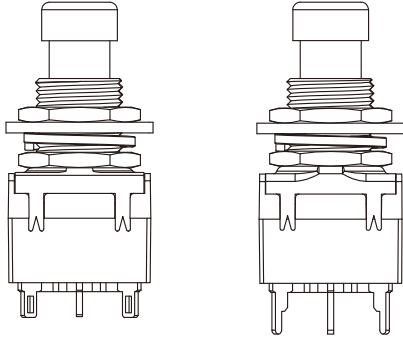
| Coding | Contact Material | Terminal Plating | Rating | Agency Approvals |
|--------|---------------------|-------------------------------|--|--|
| Q | Silver ¹ | Silver plated ¹ | (DP-1) 6Amps @ 125VAC or 28VDC 3Amps @ 250VAC (DP-7) 1Amps @ 120VAC or 38VDC |  IP68 |
| R | Gold ² | Gold plated ⁴ | 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 |  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

NEW !



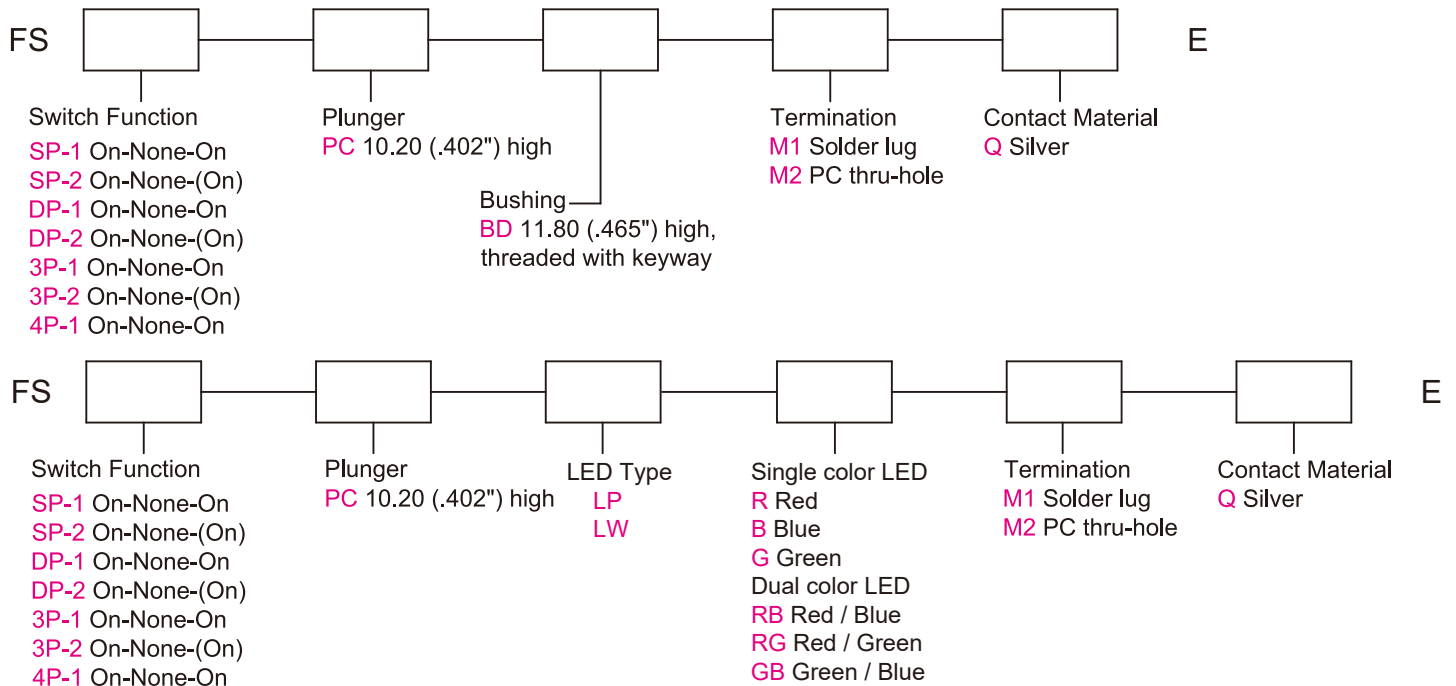
MATERIALS:

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.

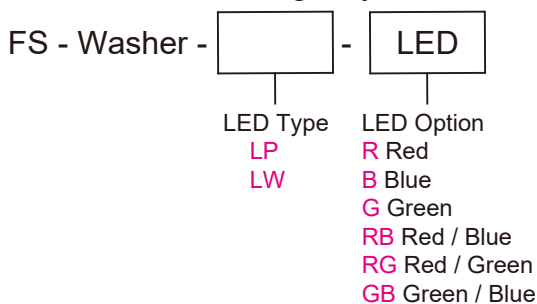
Specifications and Dimensions subject to change

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

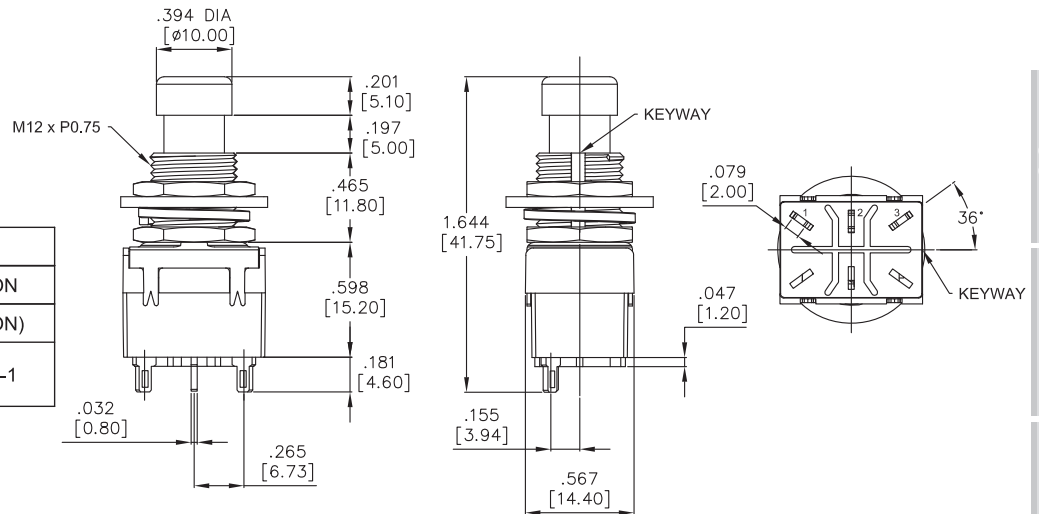


SPDT



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

Schematic

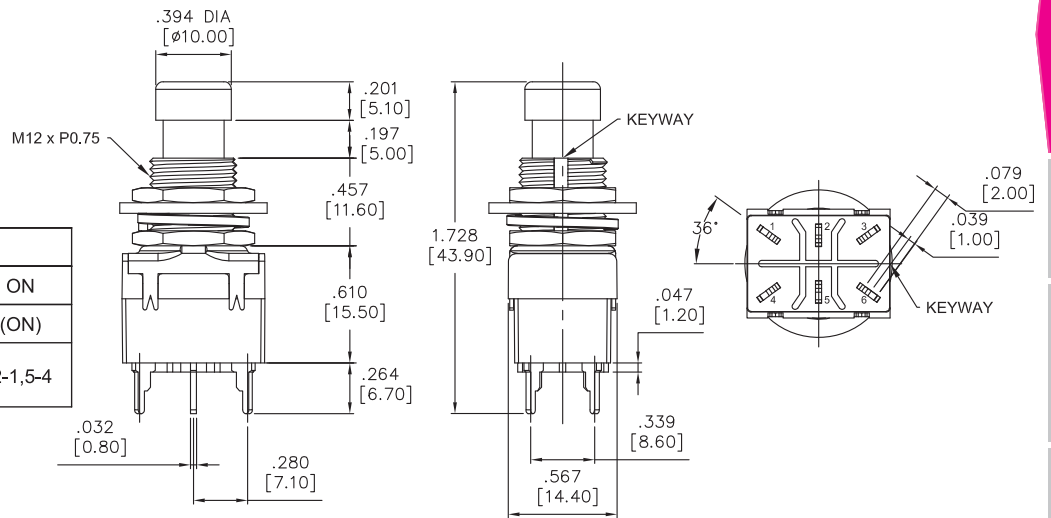
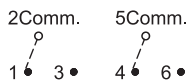


DPDT



| 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

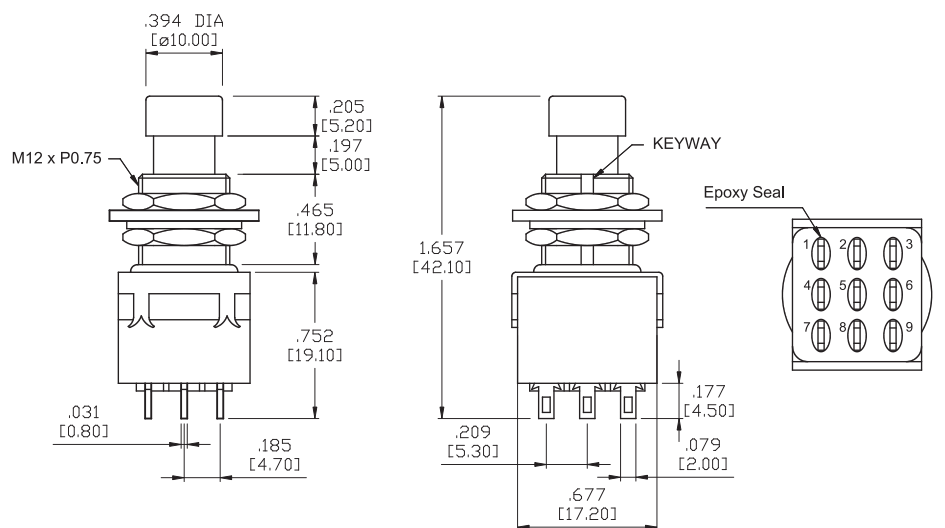
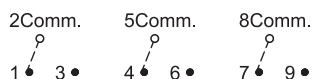


3PDT



| 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 |

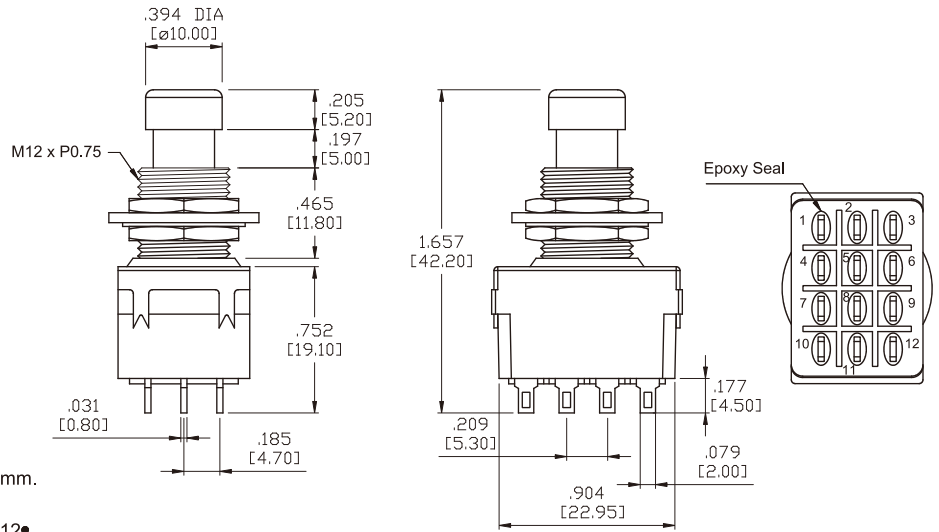
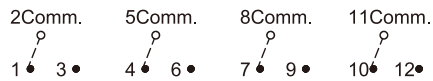
Schematic



4PDT

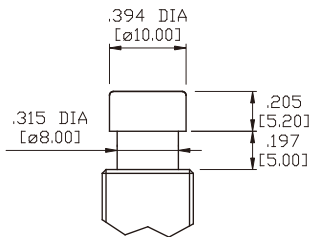
| Model No. | Switching Position | | |
|-------------|----------------------|------|----------------------|
| 4P-1 | ON | NONE | ON |
| Term. Comm. | 2-3,5-6 8-9,11-12 | OPEN | 2-1,5-4 8-7,11-10 |

Schematic

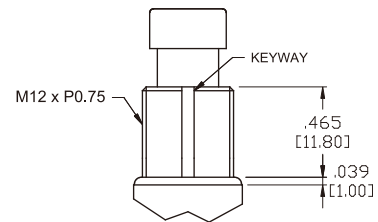


PLUNGER & BUSHING OPTIONS

PC

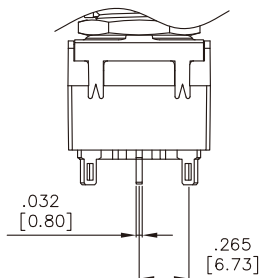


BD

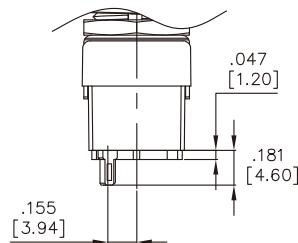


TERMINATION OPTIONS

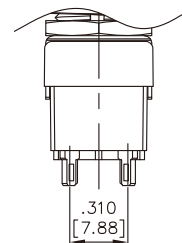
M1



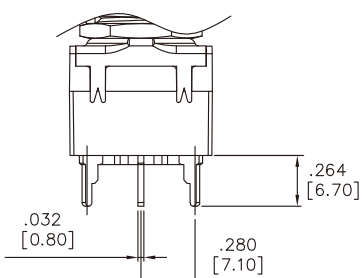
SP



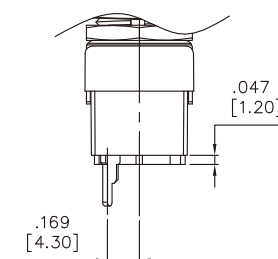
DP



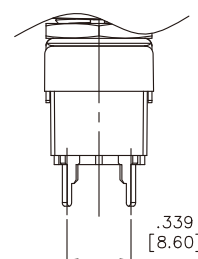
M2



SP

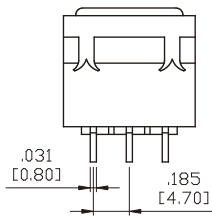


DP

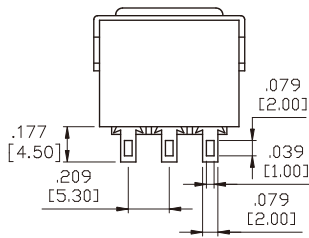


TERMINATION OPTIONS

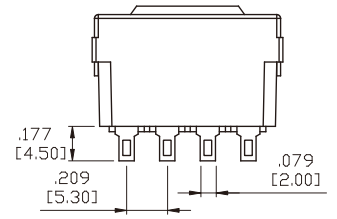
M1



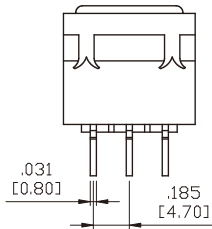
3P



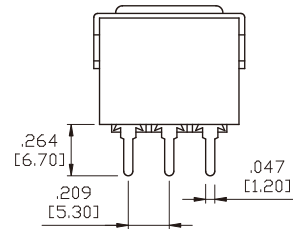
4P



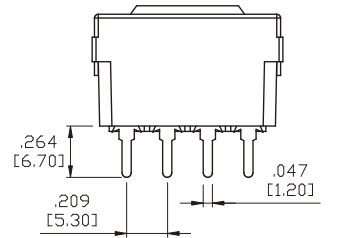
M2



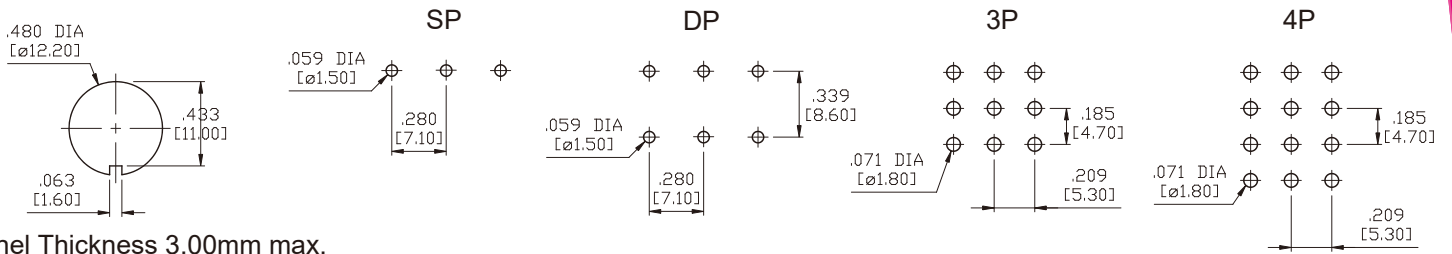
3P



4P



PANEL & PC MOUNTING



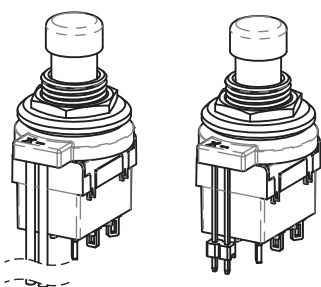
Panel Thickness 3.00mm max.

LED TYPE & MOUNTING

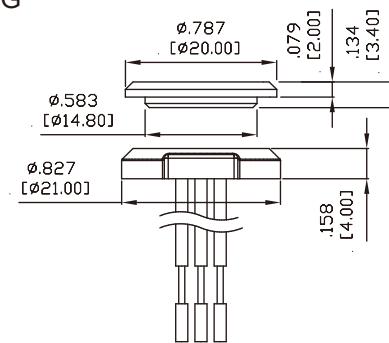
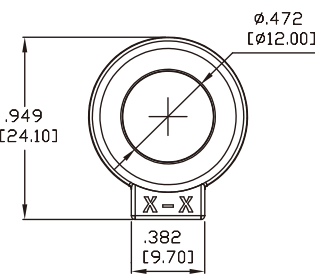
SINGLE COLOR LED

LW

LP



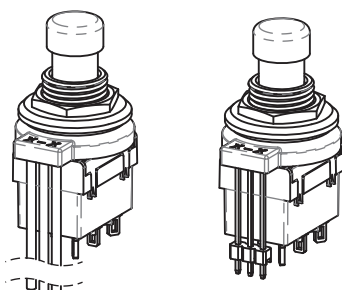
DIMENSIONS OF THE LED RING



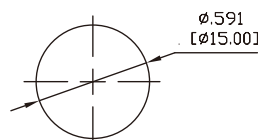
DUAL COLOR LED

LW

LP

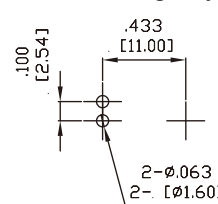


Mounting Cut-out

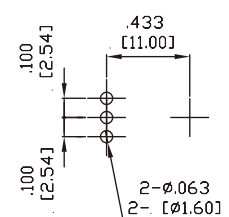


Panel Thickness:
0.8mm Min.
3.0mm Max.

Single Color
PCB Mounting Layout



Dual 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).

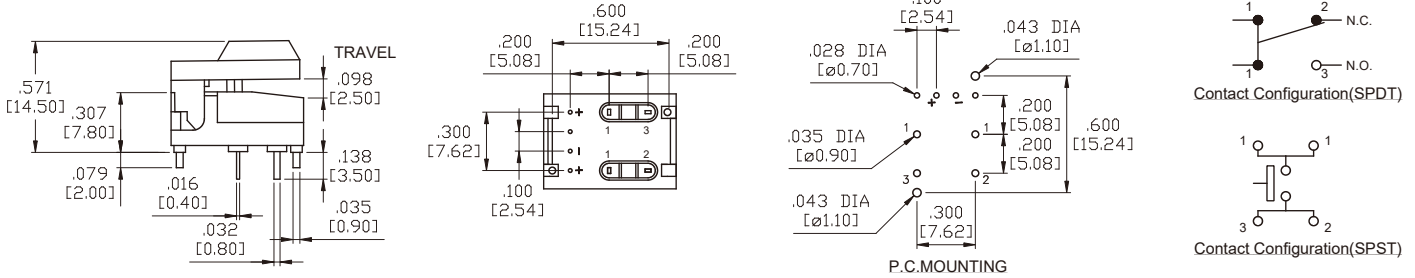
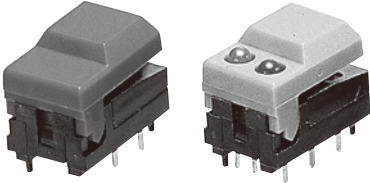
ELECTRICAL LIFE: 100,000 operations min. (Rated voltage and current).

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

| | | |
|------------------|------------------|------------------|
| <p>A0</p> | <p>A1</p> | <p>A2</p> |
| <p>B0</p> | <p>B1</p> | <p>B2</p> |

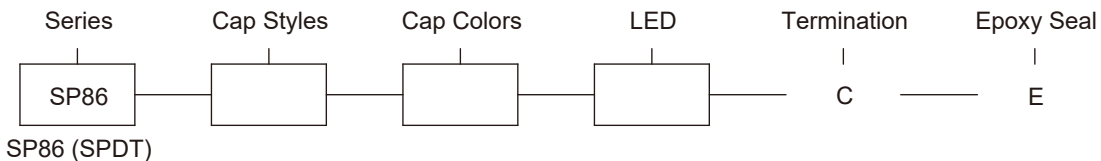
CAP COLORS

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

LED COLORS

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

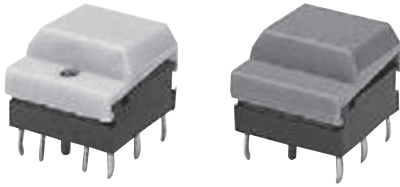
HOW TO ORDER



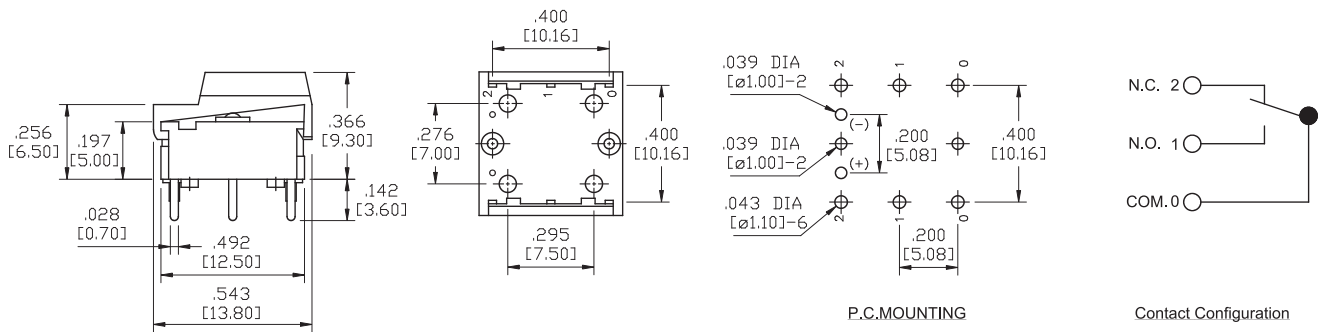
Specifications and Dimensions subject to change

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

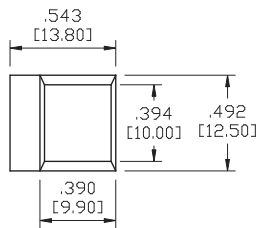


Specifications and Dimensions subject to change

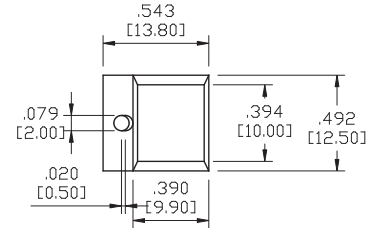


CAP STYLES

A0



A1



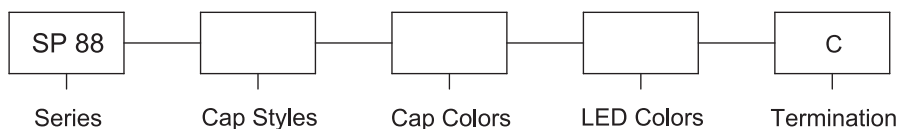
CAP COLORS

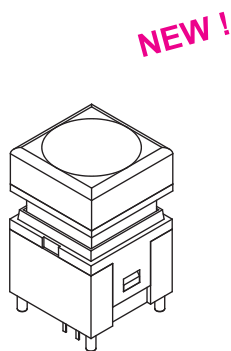
1=RED 5=BLACK
 2=YELLOW 7=BLUE
 3=GREEN 8=Brown
 4=WHITE

LED COLORS

1=RED
 2=YELLOW
 3=GREEN

HOW TO ORDER





SPECIFICATIONS:

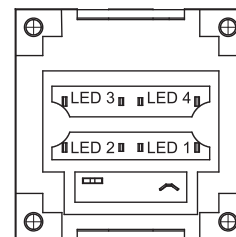
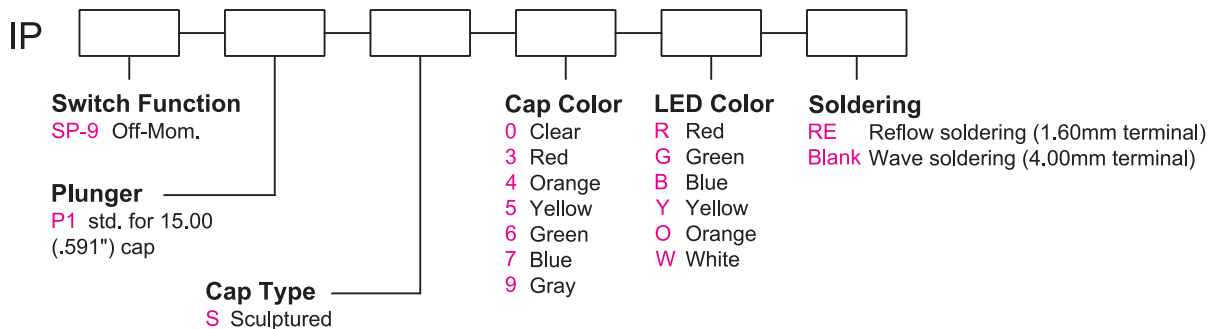
CONTACT RATING: 100mA @ 12VDC (resistive load).
 ELECTRICAL LIFE: 500,000 cycles min.
 CONTACT RESISTANCE: 200m-ohms max. initial.
 INSULATION RESISTANCE: 100M-ohms @ 250VDC min.
 DIELECTRIC STRENGTH: 1,500V RMS @ sea level for 1 minute.
 ACTUATION FORCE: 1.9N max.
 TRAVEL: Pretravel 2.90mm (.114"), 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



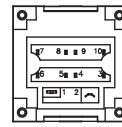
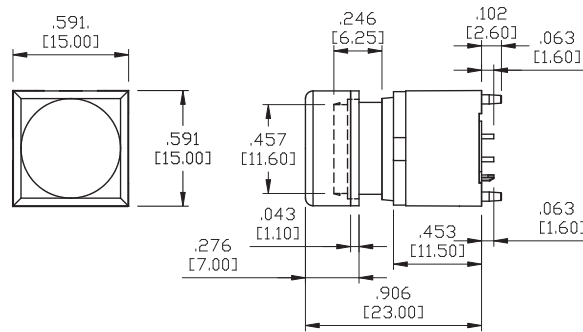
BOTTOM VIEW

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

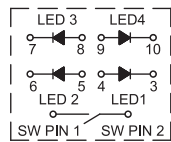
Specifications and Dimensions subject to change

NON-TACTILE

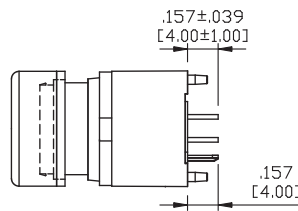


P/N: IP-SP9-P1-S0-xxxx-RE

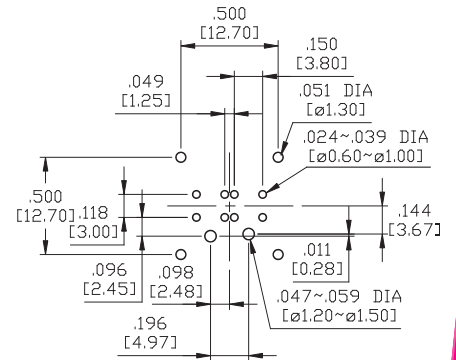
| Model No. | Type | |
|-----------|------|-----|
| SP-9 | OFF | MOM |



Schematic (BOTTOM VIEW)



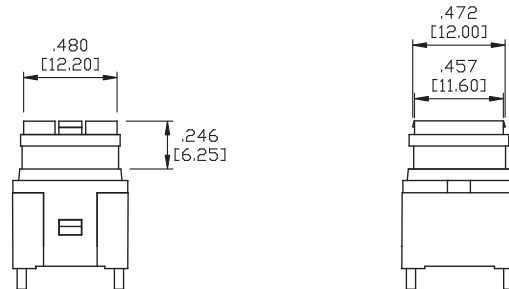
P/N: IP-SP9-P1-S0-xxxx



P.C.B Mounting

PLUNGER OPTIONS

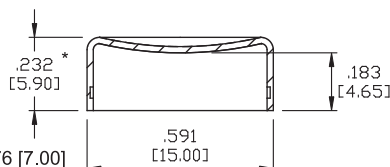
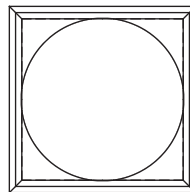
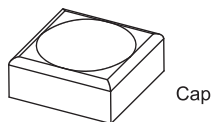
P1



* Plunger Color: White.

PLUNGER CAPS

S Sculptured Cap



| CAP 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.

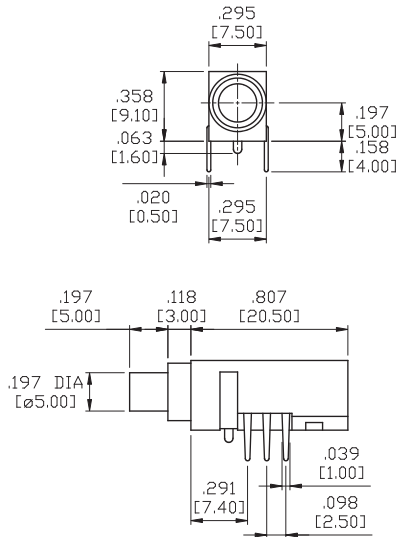
SPECIFICATIONS:

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.

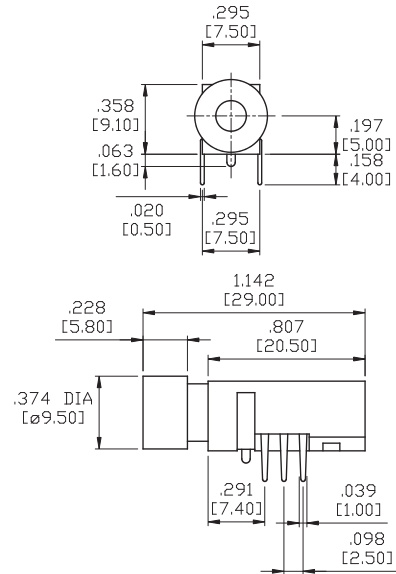
Specifications and Dimensions subject to change

Toggle
 Rocker
 Slide
 Pushbutton
 AV
 Rotary
 Tact
 Touch Key
 Miscellaneous

LS-A



LS-S



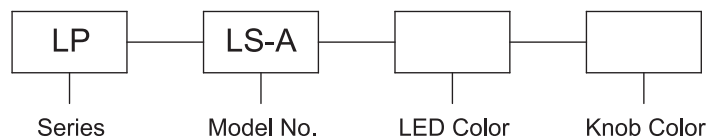
LED COLORS

| Code | LED Color |
|------|-----------|
| R | Red |
| G | Green |
| Y | Yellow |
| B | Blue |

KNOB COLORS

| Code | LED Color |
|------|-----------|
| B | Black |

HOW TO ORDER



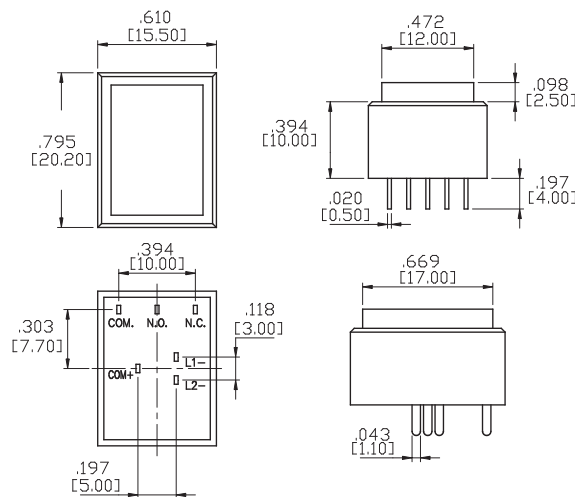
SPECIFICATIONS:

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.

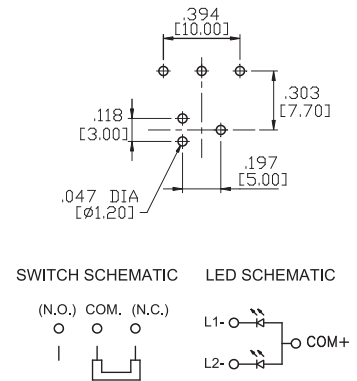
Specifications and Dimensions subject to change

WPL-25

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



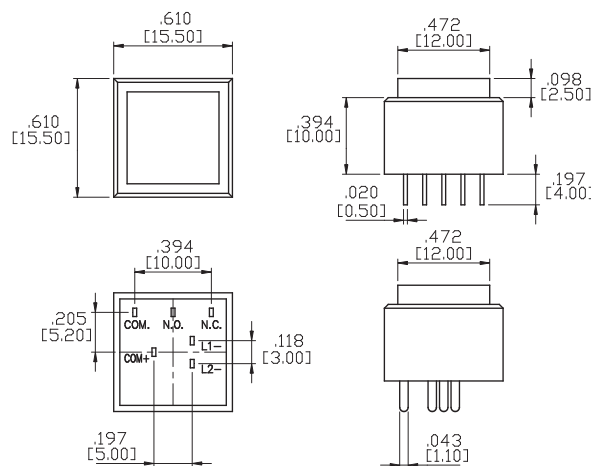
P.C.B. LAYOUT



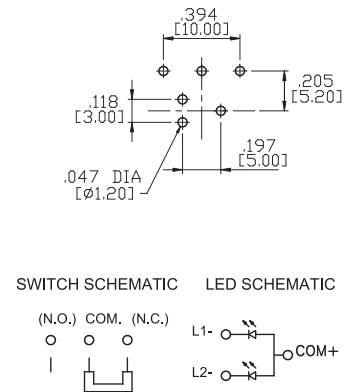
WPL-26



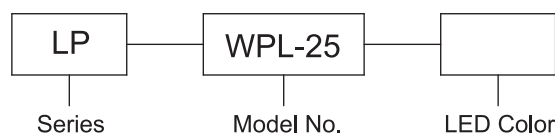
| Model No. | LED COLOR |
|-----------|-------------|
| WPL-26R | Red |
| WPL-26G | Green |
| WPL-26RG | Red / Green |



P.C.B. LAYOUT



HOW TO ORDER



SPECIFICATIONS:

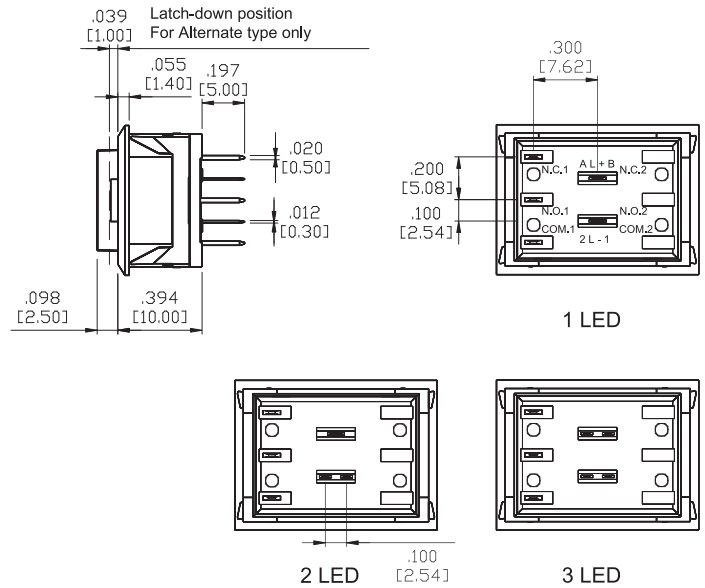
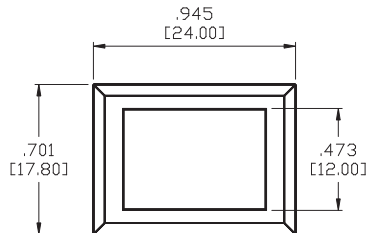
CONTACT RATING: 5A 125/250VAC.
 ELECTRICAL LIFE: 100,000 cycles with resistive load 3A 125VAC.
 CONTACT RESISTANCE: 50m-ohms max (initial).
 INSULATION RESISTANCE: 500VDC 200M-ohms min.
 DIELECTRIC STRENGTH: 1,000V RMS 50~60Hz.
 OPERATING TEMPERATURE: -25°C ~ +50°C.
 OPERATING FORCE: 190±50gf max. (SPDT).
 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.

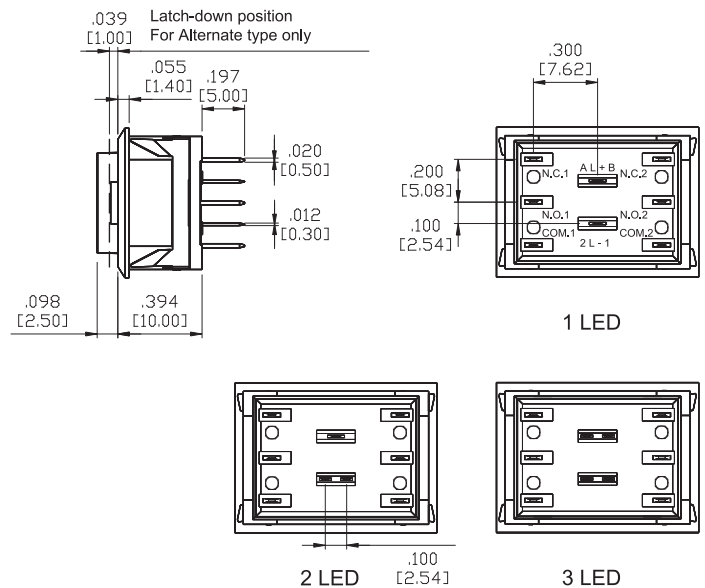
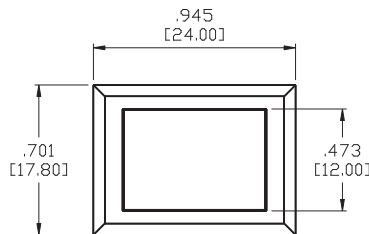
Specifications and Dimensions subject to change

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

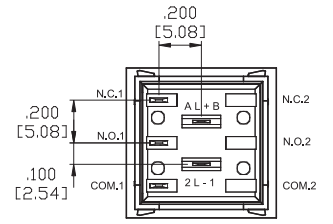
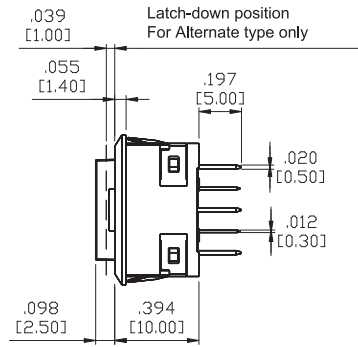
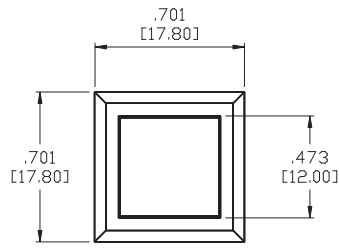


| Model No. | Type |
|-----------|-----------|
| WPL-252-M | Momentary |
| WPL-252-A | Alternate |

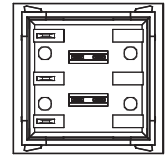
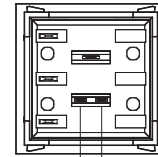
Series LP

Illuminated Pushbutton Switches

Square Snap-in Style, SPDT, Solder lug



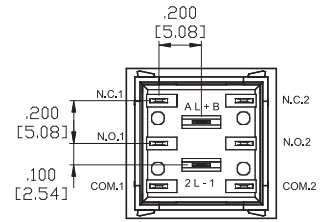
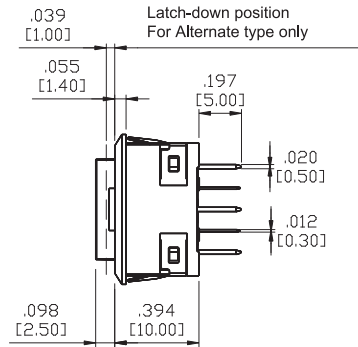
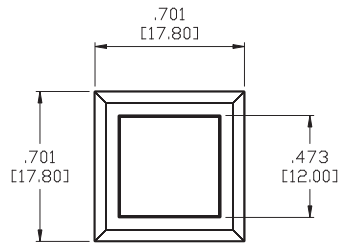
| Model No. | Type |
|-----------|-----------|
| WPL-261-M | Momentary |
| WPL-261-A | Alternate |



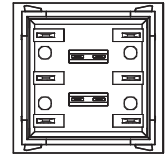
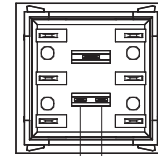
2 LED .100 [2.54]

3 LED

Square Snap-in Style, DPDT, Solder lug



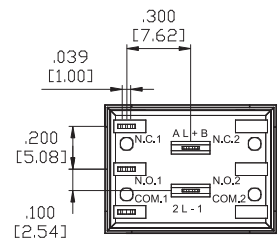
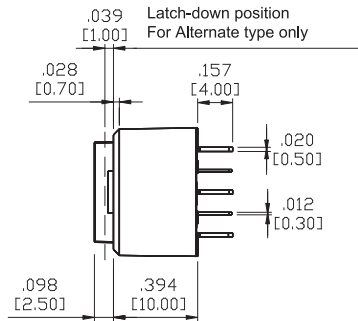
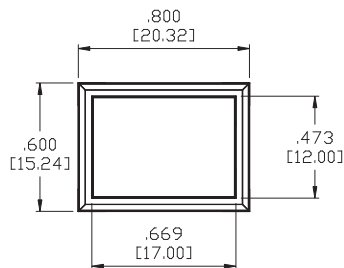
| Model No. | Type |
|-----------|-----------|
| WPL-262-M | Momentary |
| WPL-262-A | Alternate |



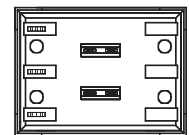
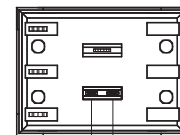
2 LED .100 [2.54]

3 LED

Rectangular Style, SPDT, PC Through-Hole



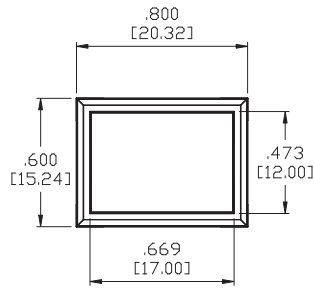
| Model No. | Type |
|-----------|-----------|
| WPL-251-M | Momentary |
| WPL-251-A | Alternate |



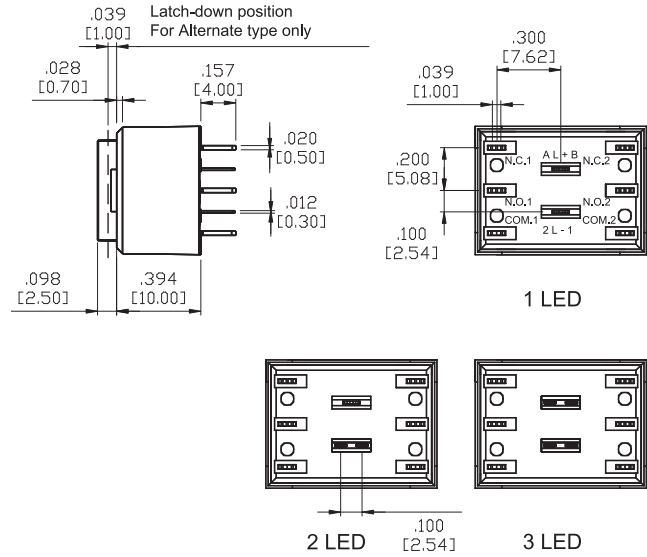
2 LED .100 [2.54]

3 LED

Rectangular Style, DPDT, PC Through-Hole

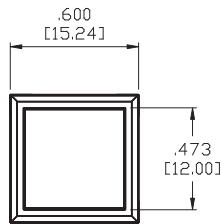


| Model No. | Type |
|-----------|-----------|
| WPL-252-M | Momentary |
| WPL-252-A | Alternate |

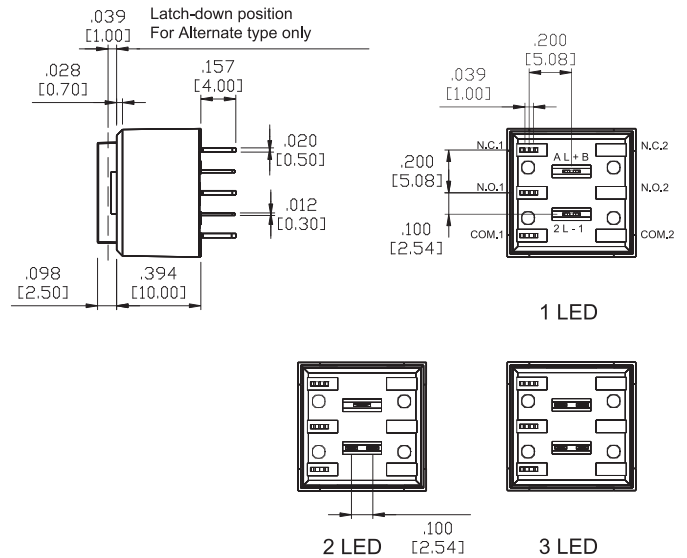


Toggle
Rocker
Slide
Pushbutton

Square Style, SPDT, PC Through-Hole

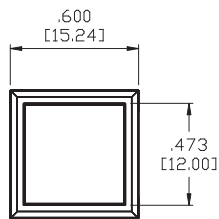


| Model No. | Type |
|-----------|-----------|
| WPL-261-M | Momentary |
| WPL-261-A | Alternate |

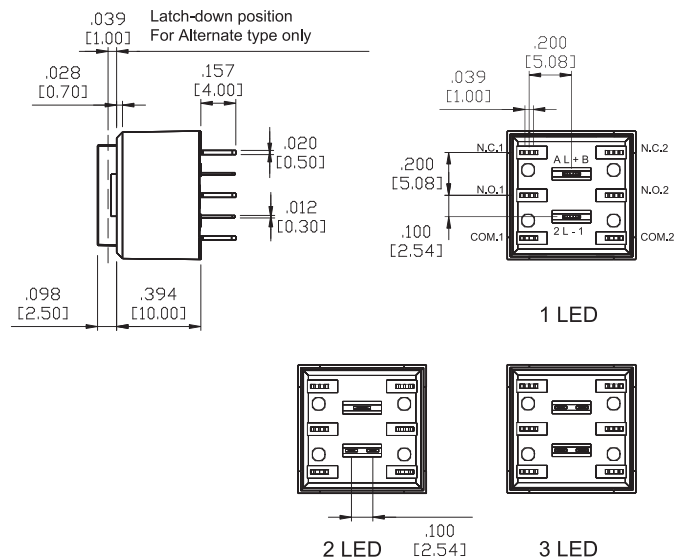


AV
Rotary
Tact

Square Style, DPDT, PC Through-Hole

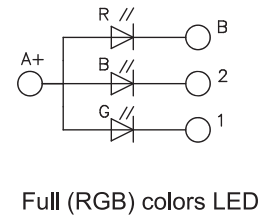
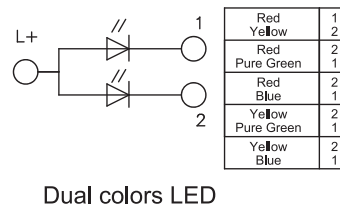
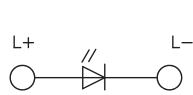
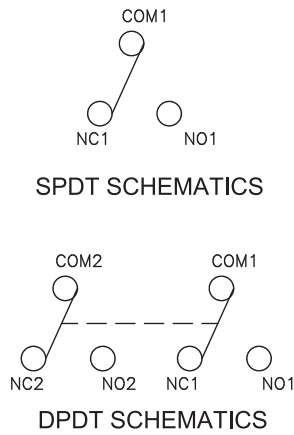


| Model No. | Type |
|-----------|-----------|
| WPL-262-M | Momentary |
| WPL-262-A | Alternate |

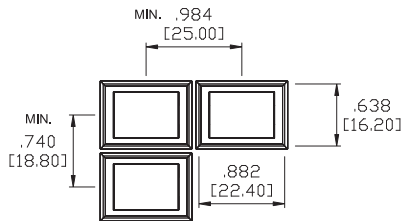


Touch Key
Miscellaneous

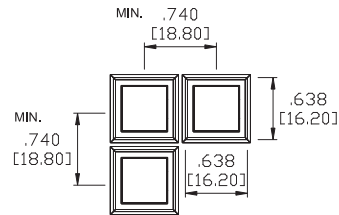
SWITCH & LED SCHEMATICS



PANEL MOUNTING (M1 TYPE)



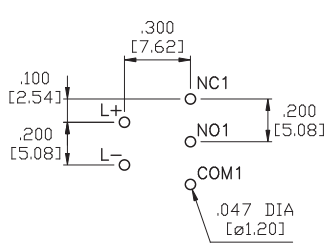
Panel Thickness: 1.0~3.2mm



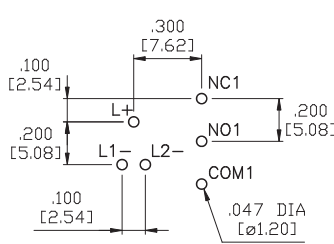
Panel Thickness: 1.0~3.2mm

PCB MOUNTING (M2 TYPE)

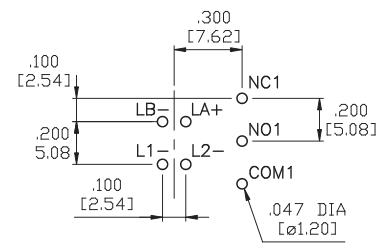
Rectangular SPDT



1 LED

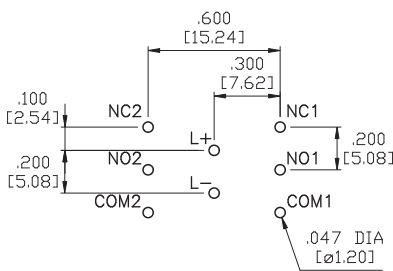


2 LEDs

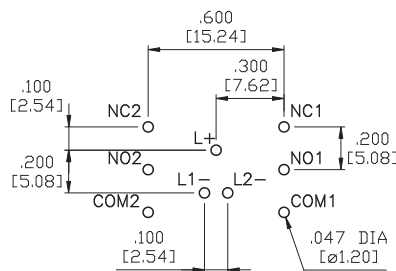


3 LEDs

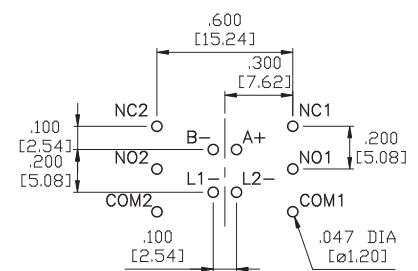
Rectangular DPDT



1 LED

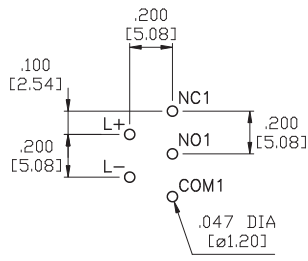


2 LEDs

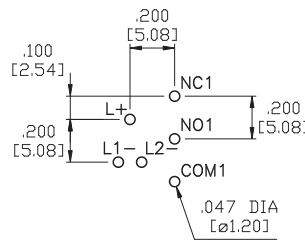


3 LEDs

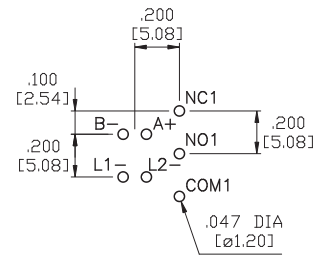
Square SPDT



1 LED

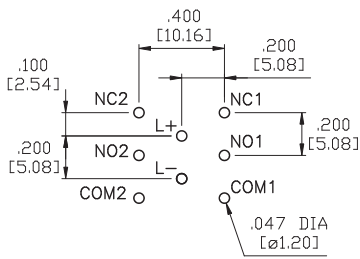


2 LEDs

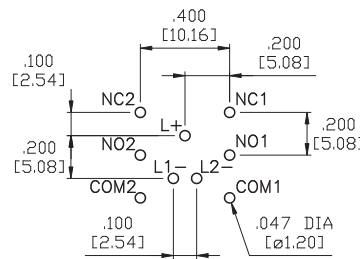


3 LEDs

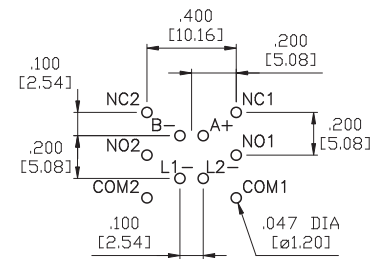
Square DPDT



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 |

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous

LED SPECIFICATIONS

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

Notes:

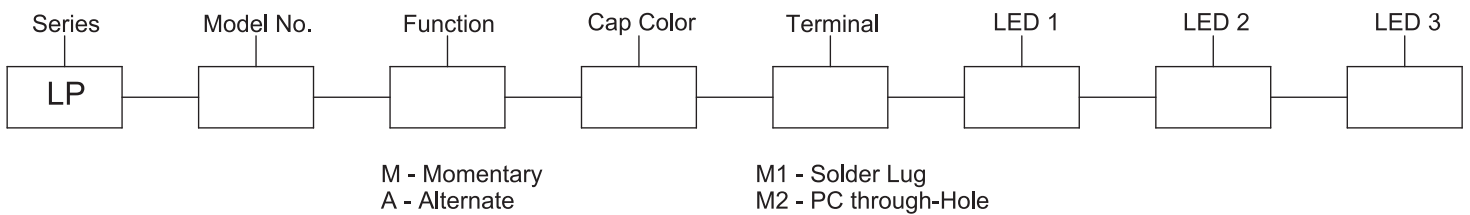
1. Chromaticity Coordinates
X=0.265 / Y=0.280
2. LED is static sensitive devices
3. LED circuit is isolated and requires external power source
4. LED is an integral part of the switch
5. Emitting color is ±20%
6. Forward voltage is ±0.1V
7. Luminous intensity is ±20%

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

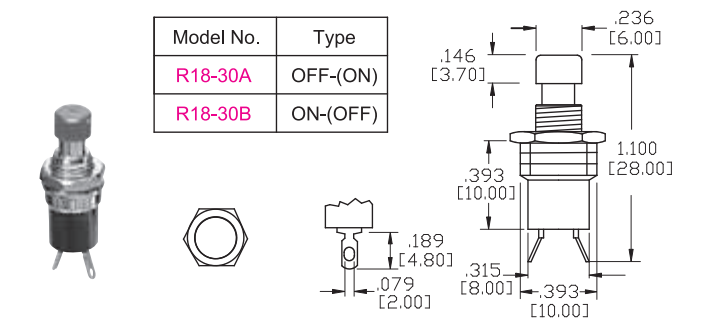
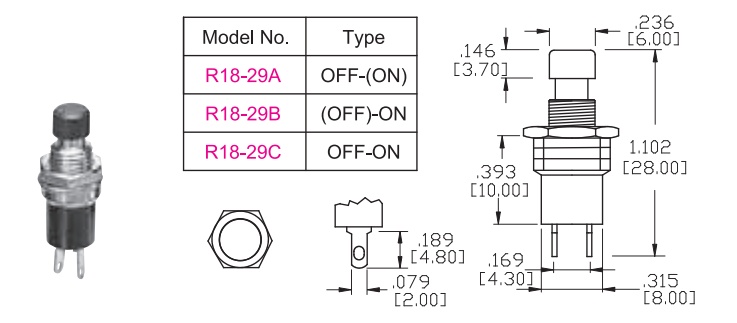
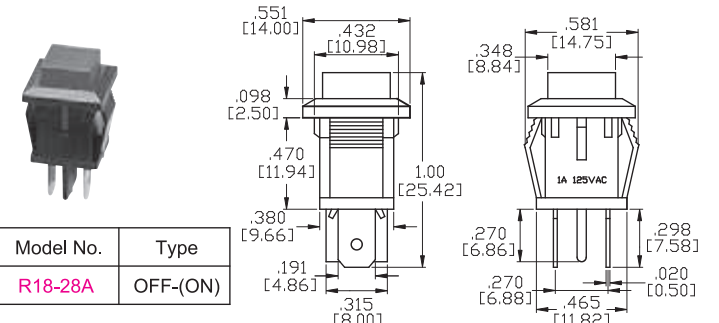
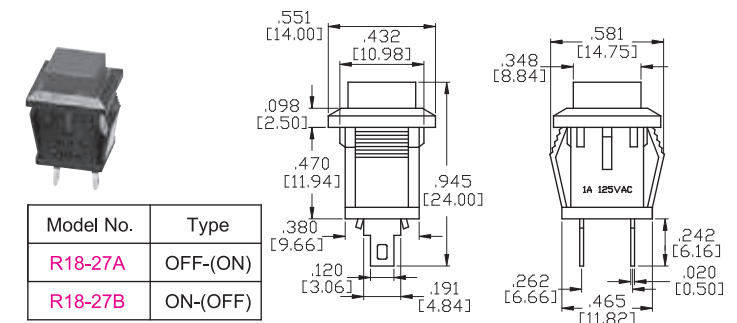
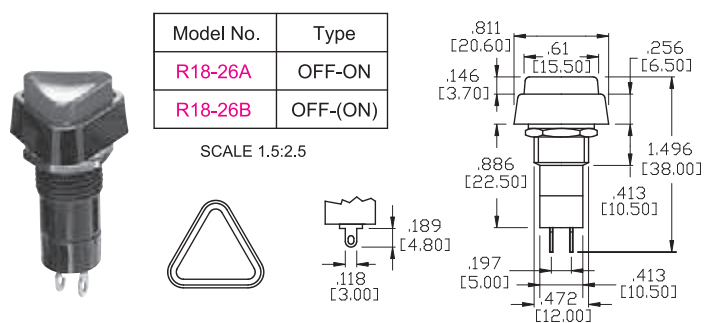
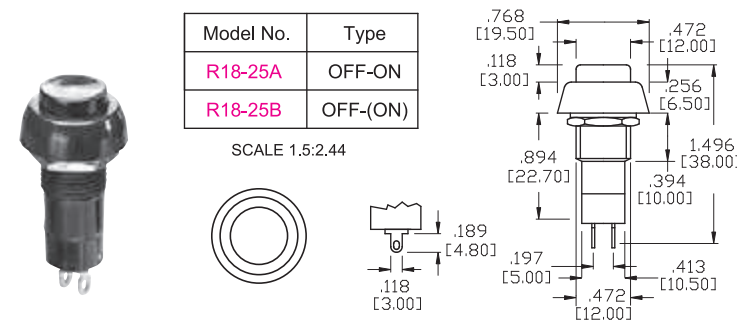
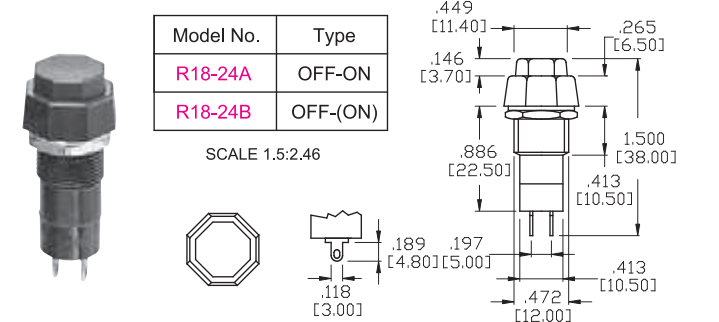
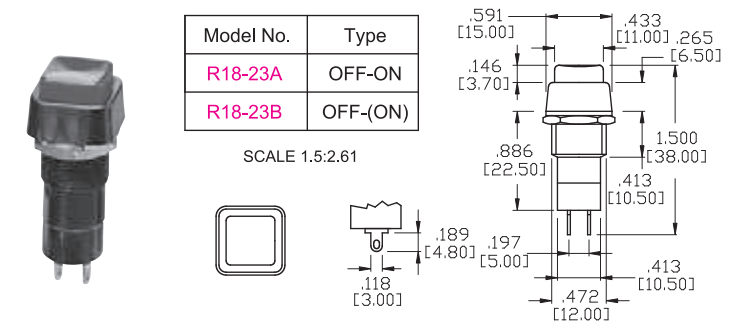
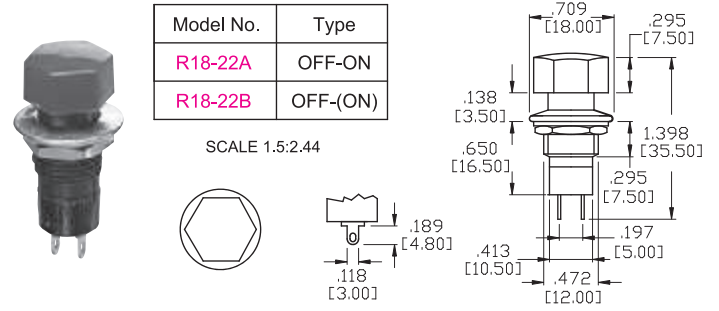
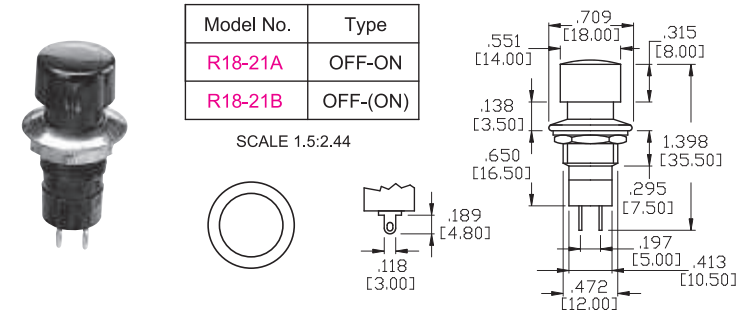


SPECIFICATIONS:

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.

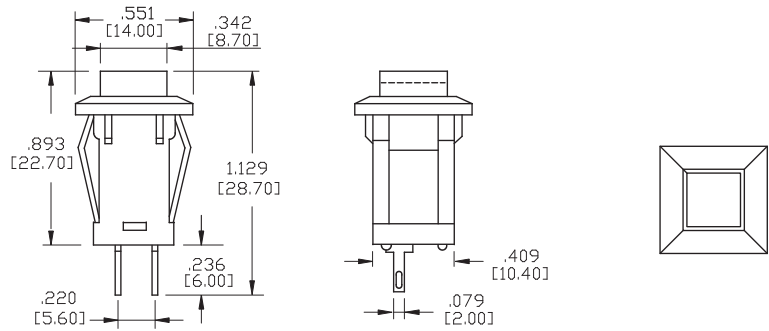
Specifications and Dimensions subject to change



Toggle
 Rocker
 Slide
 Pushbutton
 AV
 Rotary
 Tact
 Touch Key
 Miscellaneous



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



SPECIFICATIONS:

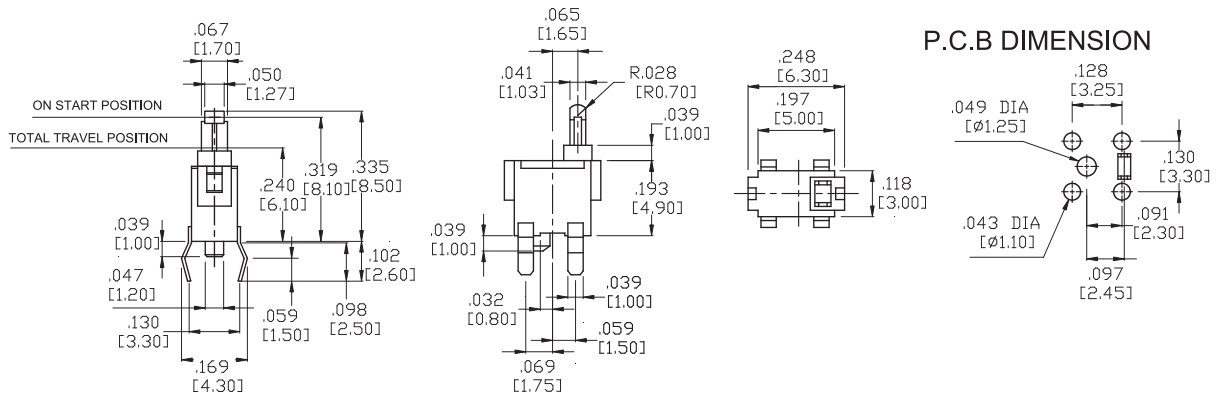
OPERATING TEMPERATURE: -10 to +60°C.
 RATING: 30V DC 0.1A.
 INSULATION RESISTANCE: 100V DC 1min 100M-ohms min.
 SOLDERING TEMPERATURE: 230°C 3sec.
 OPERATING LIFE: 50,000 cycles.

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



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.

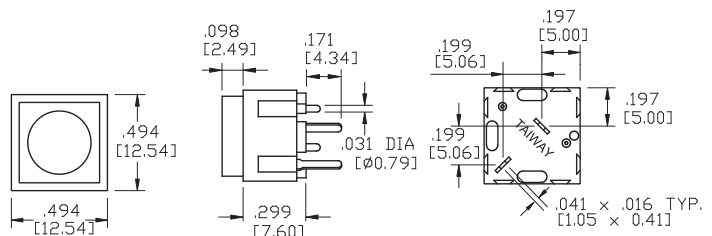
MATERIALS:

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



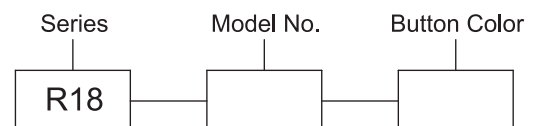
| Model No. | Type |
|-----------|---------|
| 801 | OFF-MOM |



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.

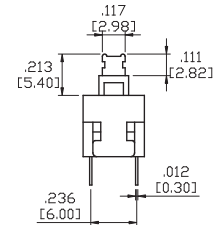
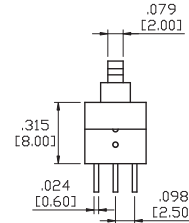
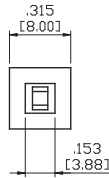
MATERIALS:

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

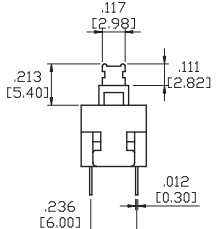
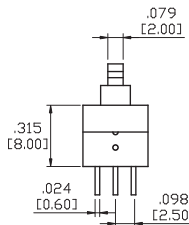
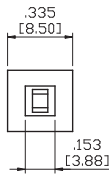
Specifications and Dimensions subject to change



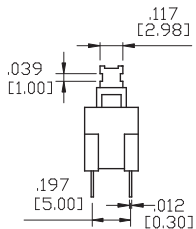
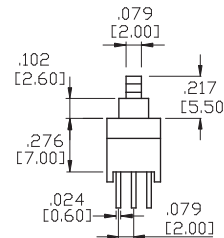
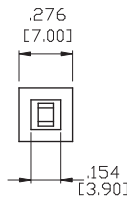
| Model No. | Type |
|-----------|--------|
| 807 | ON-MOM |
| 809 | ON-ON |



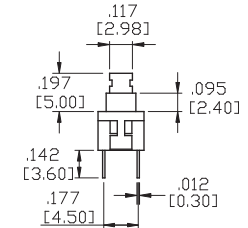
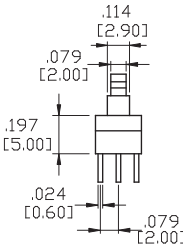
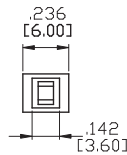
| Model No. | Type |
|-----------|--------|
| 807-1 | ON-MOM |
| 809-1 | ON-ON |



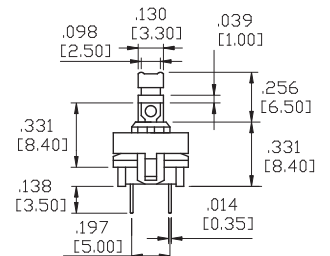
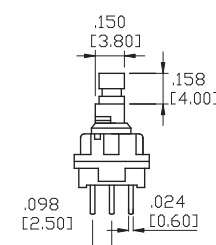
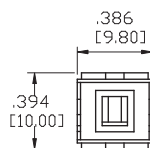
| Model No. | Type |
|-----------|--------|
| 807-2 | ON-MOM |
| 809-2 | ON-ON |

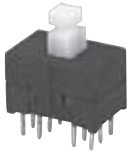


| Model No. | Type |
|-----------|--------|
| 807-3 | ON-MOM |
| 809-3 | ON-ON |

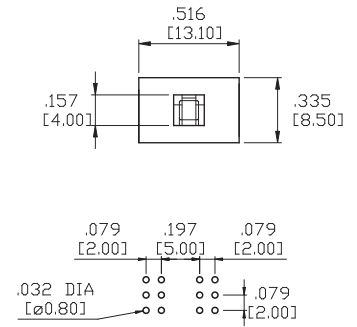
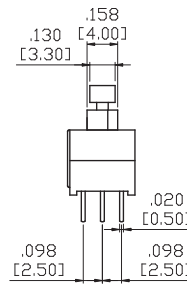
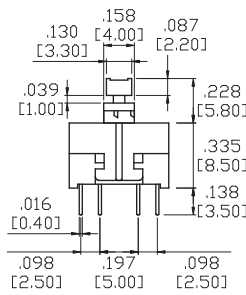


| Model No. | Type |
|-----------|--------|
| 810 | ON-MOM |
| 811 | ON-ON |





| 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:

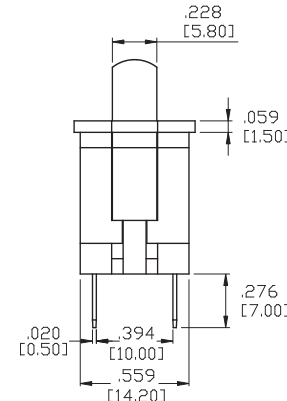
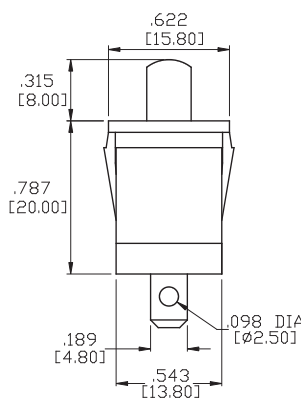
HOUSING: Nylon 6/6.
 PUSHBUTTON: Nylon 6/6.
 TERMINALS: Brass, silver plated.

Specifications and Dimensions subject to change

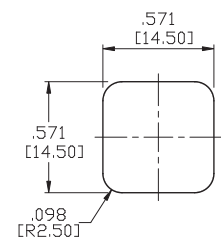
R18-504



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



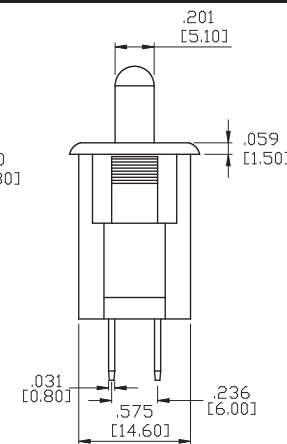
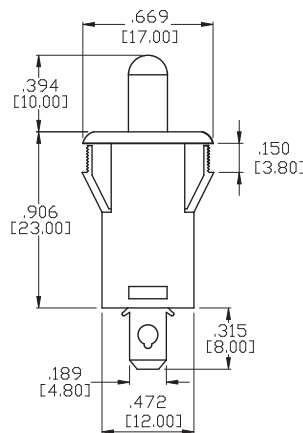
P.C.MOUNTING



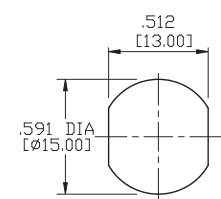
R18-505



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



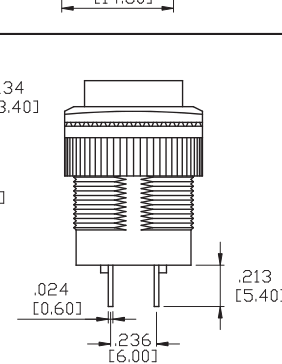
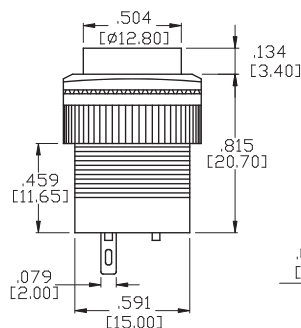
P.C.MOUNTING



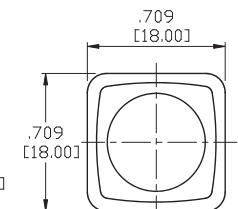
R18-508



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

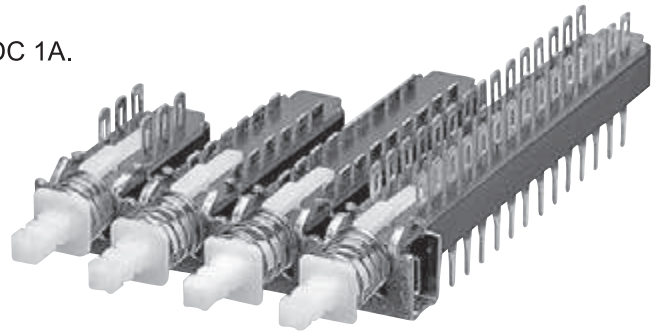


P.C.MOUNTING

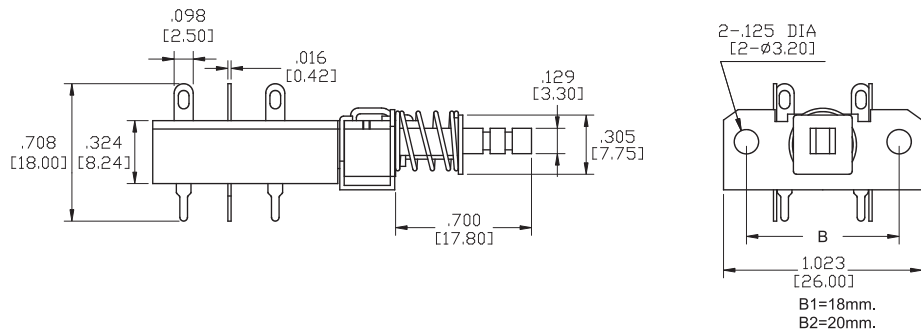
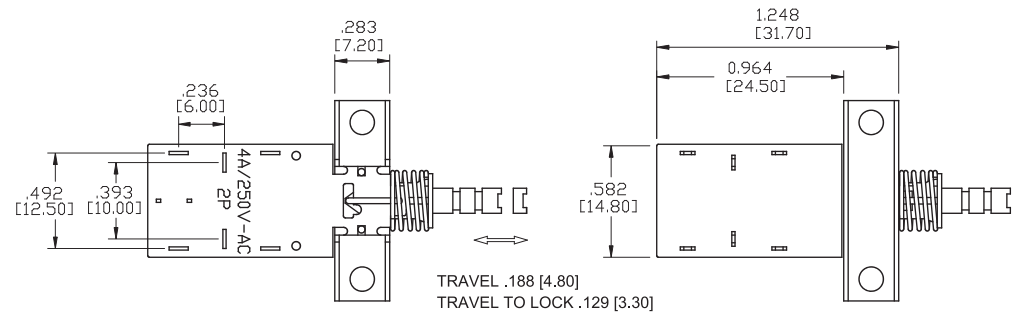
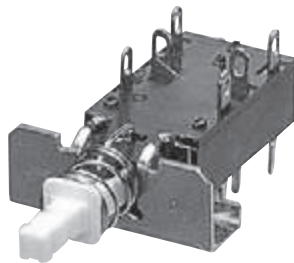


SPECIFICATIONS:

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.

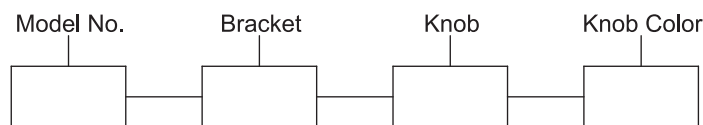


Specifications and Dimensions subject to change



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

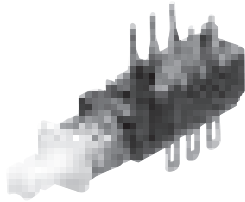
HOW TO ORDER



B0=No Bracket
 B2=20mm

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:

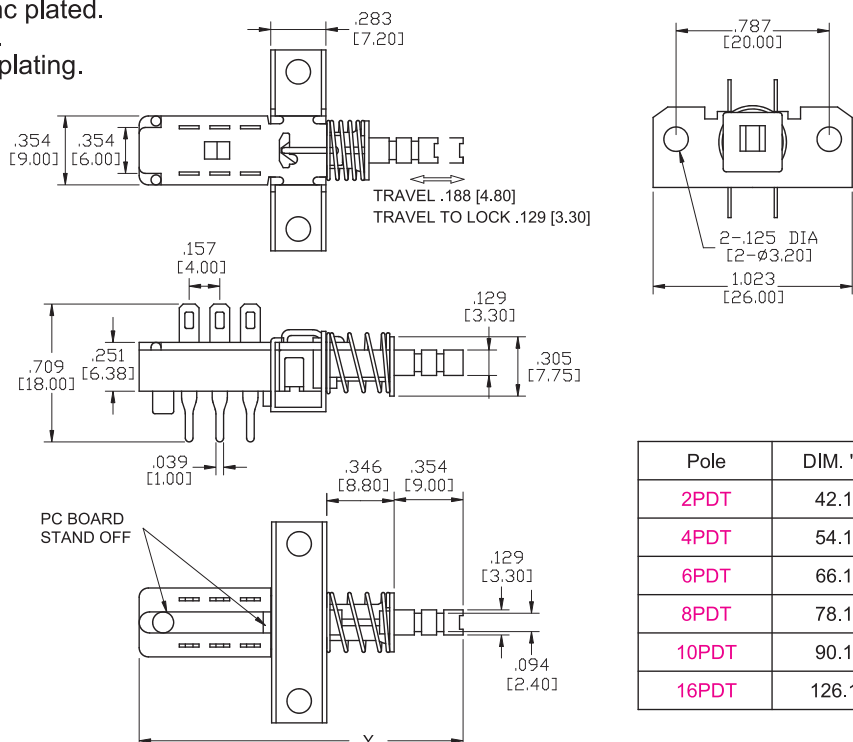
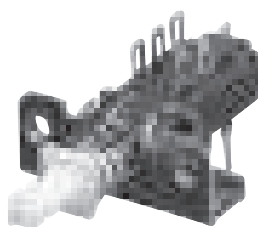
- Wiping for smooth, silent actuation stroke
- Up to 16 poles per module
- Mounting chassis
- Interlocked assemblies
- Optional terminal length
- Snap-on buttons
- Solder lugs on top for hand wiring
- Switch plunger with soldering contacts is removable from the front without disturbing electrical connections
- 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: $\geq 1 \times 10^5$.

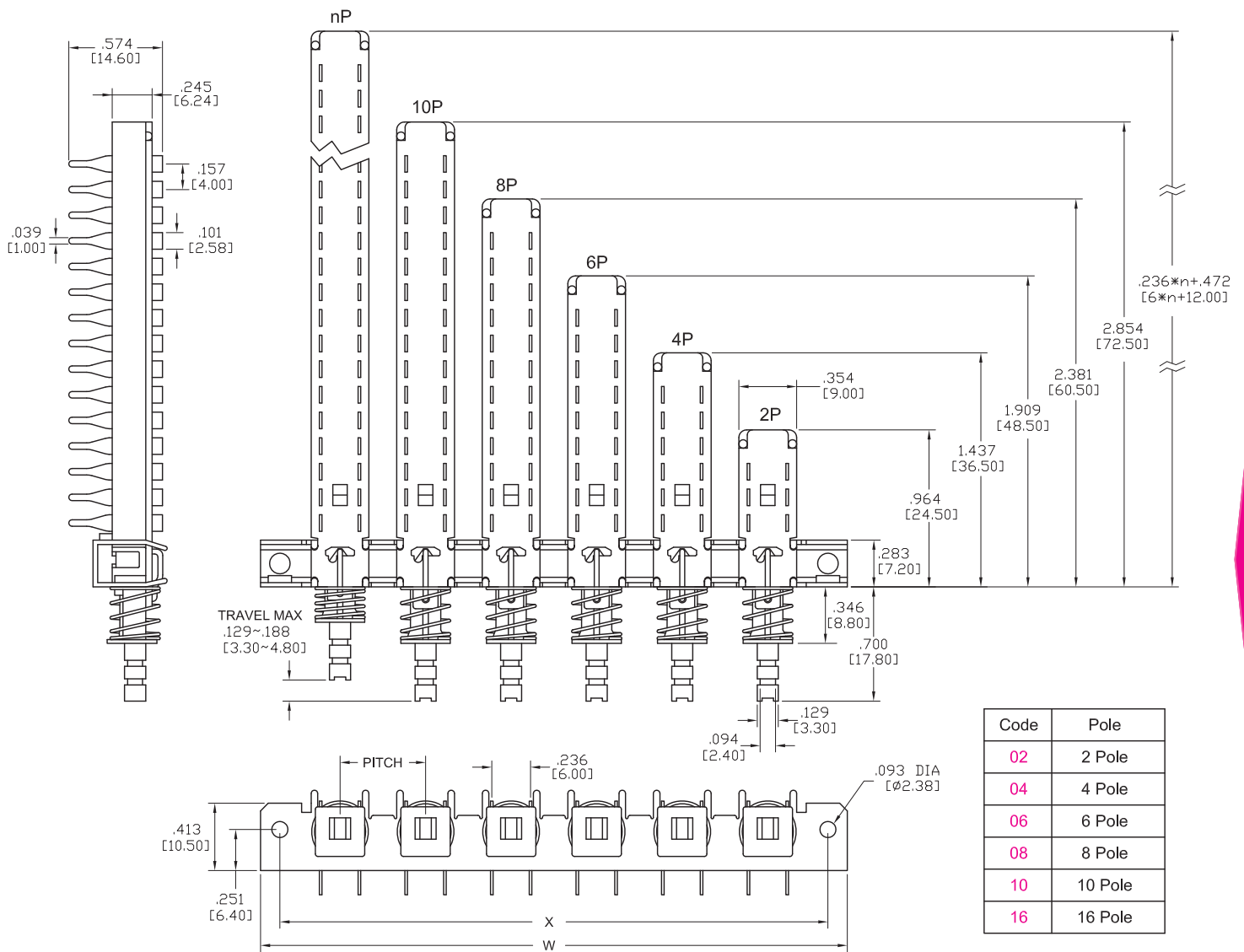
MATERIALS:

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.

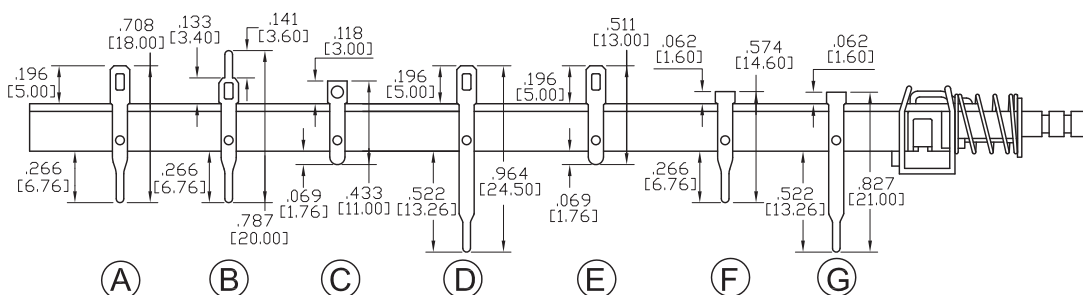


| Model No. | Type |
|-----------|--------------|
| WP-3 | Momentary |
| WP-4 | Latching |
| WP-5 | Interlocking |

POLE & PITCH & TERMINATION OPTIONS



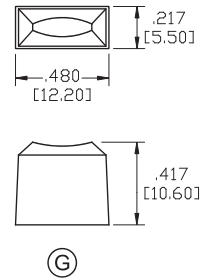
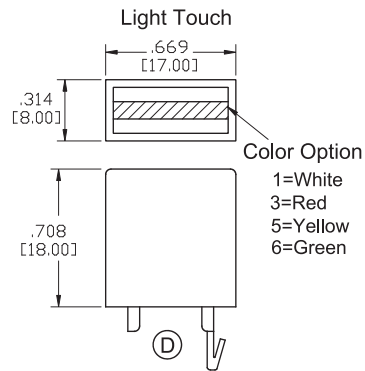
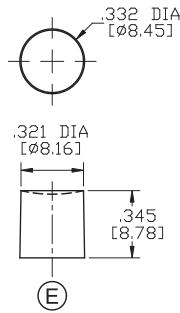
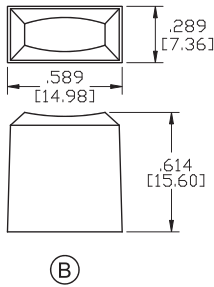
| CODE OF SWITCH NUMBER | | A | B | C | D | E | F | G | H | J | K | L | M | N | P | Q | R | S | T | U |
|-----------------------|------|---------------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| CODE 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 |



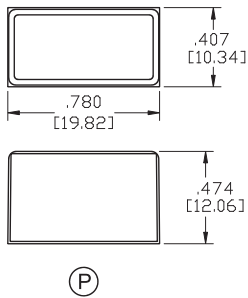
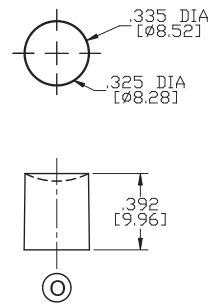
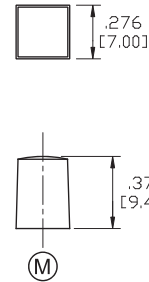
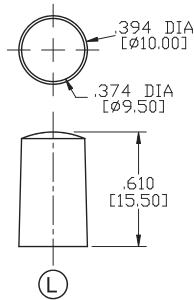
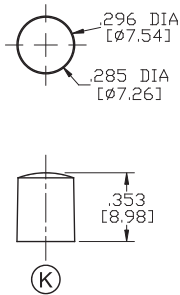
Toggle
 Rocker
 Slide
Pushbutton
 AV
 Rotary
 Tact
 Touch Key
 Miscellaneous

KNOB OPTIONS

PLASTIC CAP

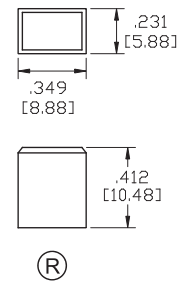
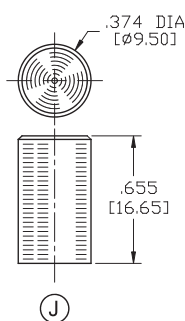
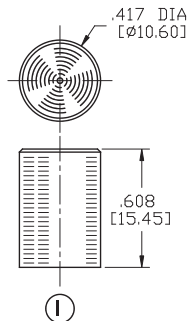
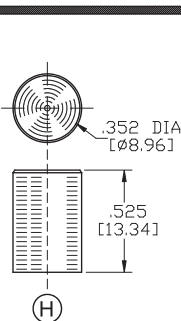


Color Option
 1=White
 3=Red
 5=Yellow
 6=Green



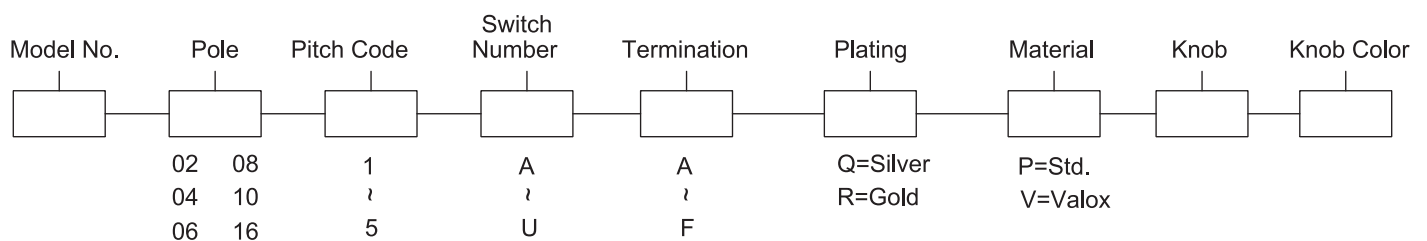
| Code | Cap Color |
|------|-----------|
| 1 | White |
| 2 | Black |
| 3 | Red |
| 4 | Chrome |
| 7 | Gray |

ALUMINUM CAP



| Code | Cap Color |
|------|-----------|
| 2 | Black |
| 4 | Chrome |
| 8 | Gold |

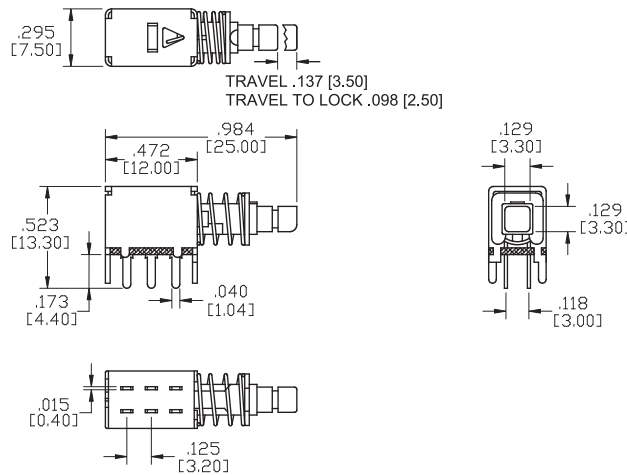
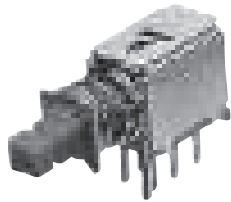
HOW TO ORDER



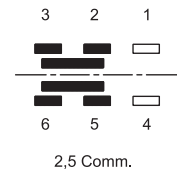
SPECIFICATIONS:

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.

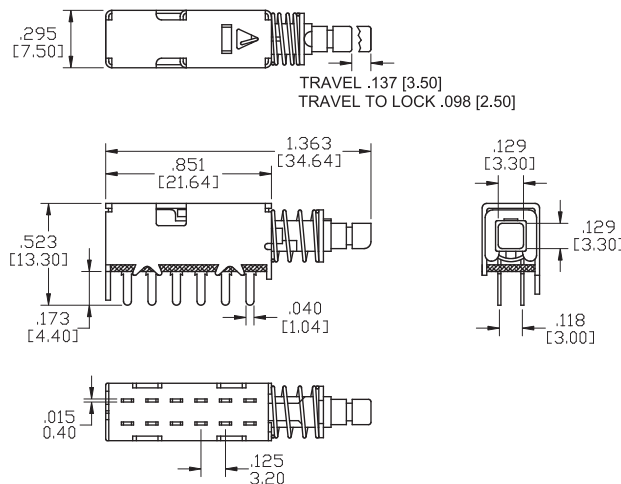
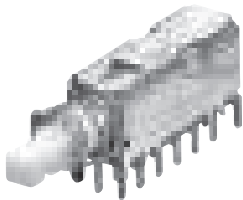
Specifications and Dimensions subject to change



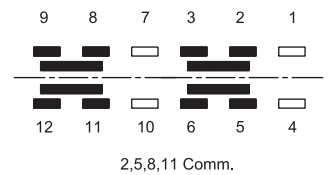
Schematic



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

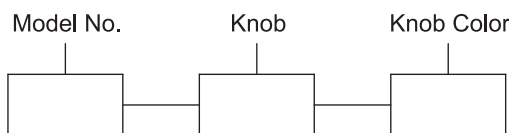


Schematic



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

HOW TO ORDER

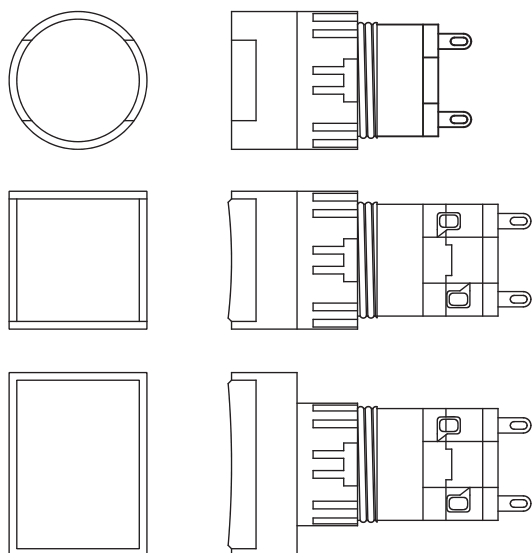


SPECIFICATIONS:

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 midget 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 | | 29 mm | black |
| SP-01 | Non-illuminated | | | red |
| DP-11 | Illuminated | | 36.5 mm | black |
| DP-01 | Non-illuminated | | | red |

ALTERNATE ACTIONS

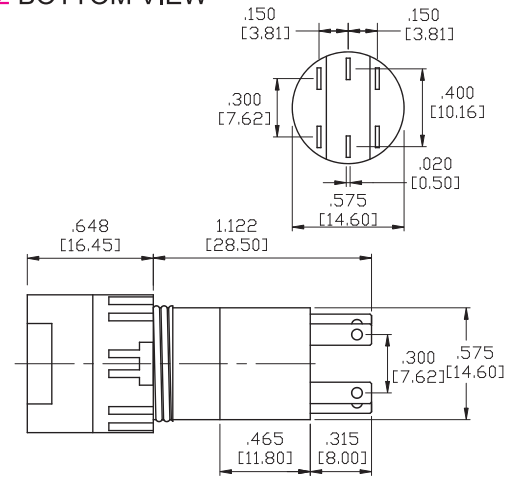
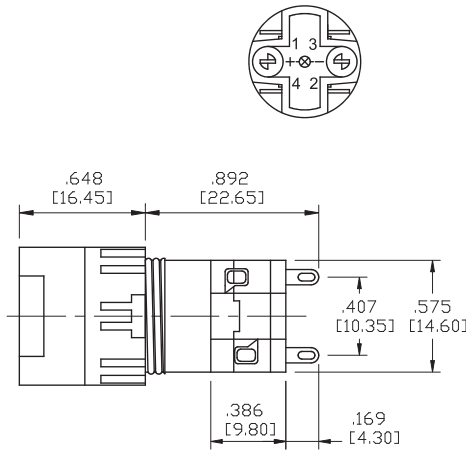
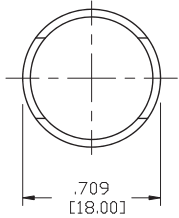
| Model No. | Type | Contact block diagram (button not depressed) | Mounting Length (A) | Case Colour |
|-----------|-----------------|--|---------------------|-------------|
| SP-22 | Illuminated | | 29 mm | black |
| SP-02 | Non-illuminated | | | red |
| DP-22 | Illuminated | | 36.5 mm | black |
|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

SHAPE & TERMINATION

ROUND

A1 BOTTOM VIEW

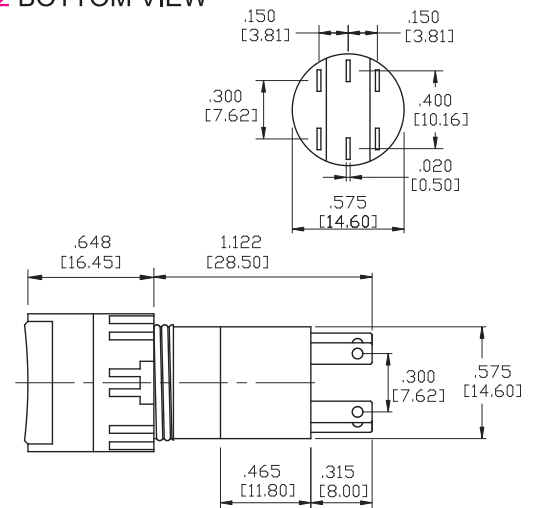
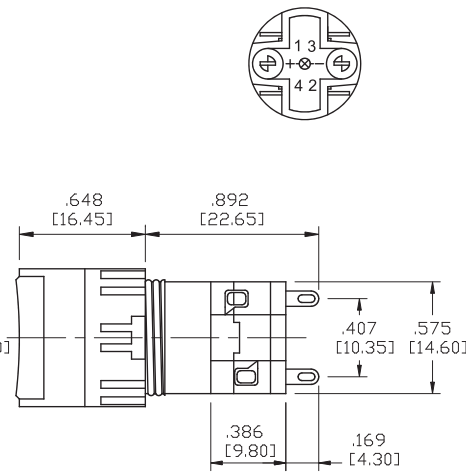
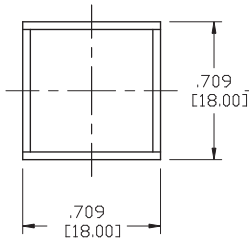
A2 BOTTOM VIEW



SQUARE

B1 BOTTOM VIEW

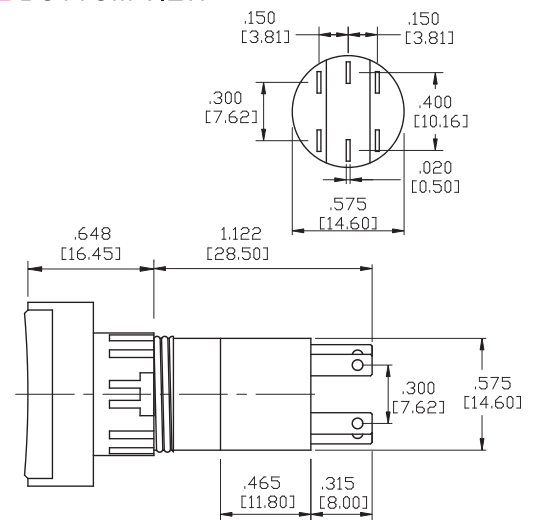
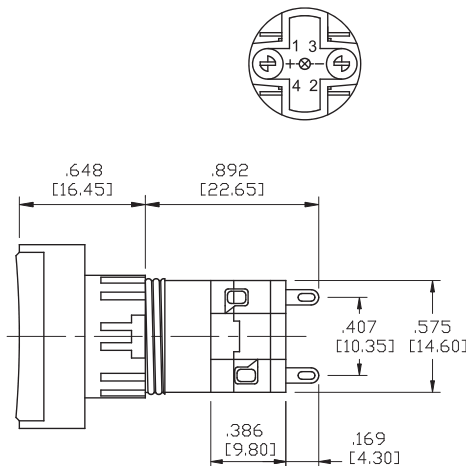
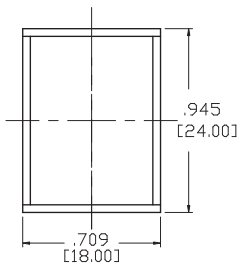
B2 BOTTOM VIEW



RECTANGULAR

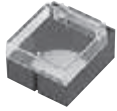
C1 BOTTOM VIEW

C2 BOTTOM VIEW

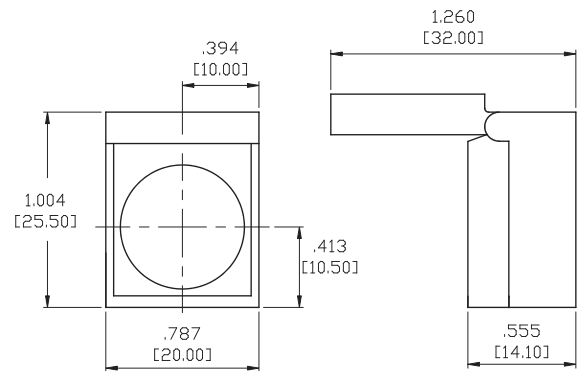


ACCESSORIES

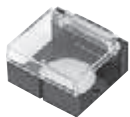
01P-200S



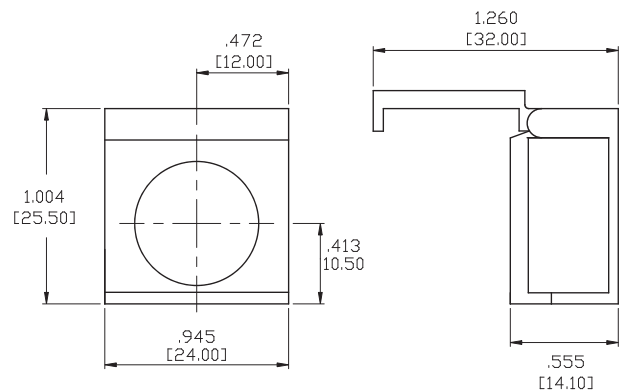
| Category | Description |
|----------------|------------------------|
| Protection Cap | For square head (90°C) |



01P-200R



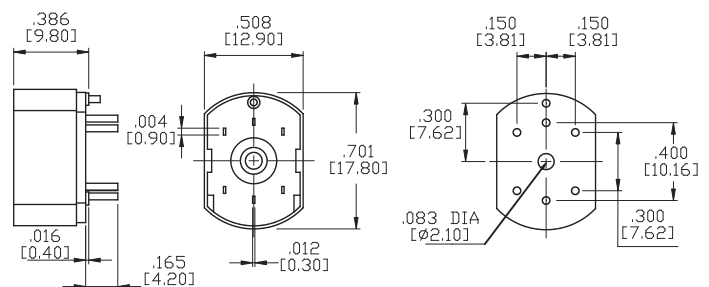
| Category | Description |
|----------------|-----------------------------|
| Protection Cap | For rectangular head (90°C) |



01P-300



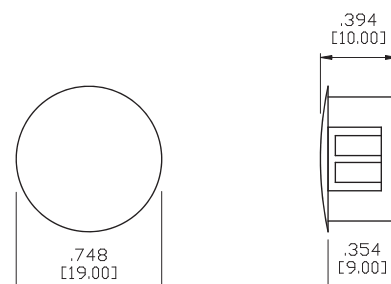
| Category | Description |
|---------------------|---|
| PCB Mounting Socket | Socket insert into PCB board is available for socket type push button switch installation |



01P-400



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



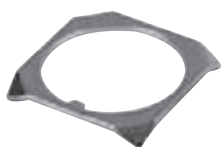
ACCESSORIES

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

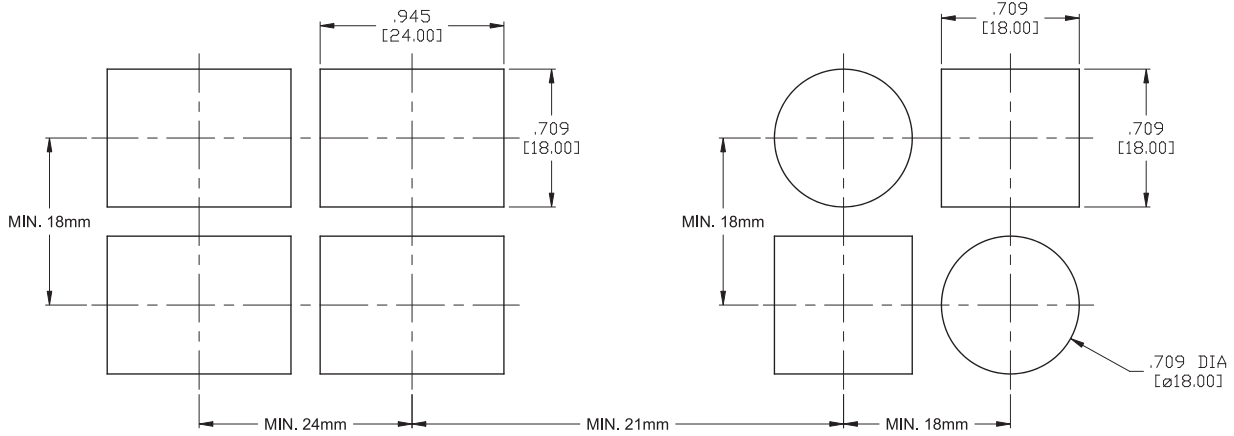
LED

F = 12V

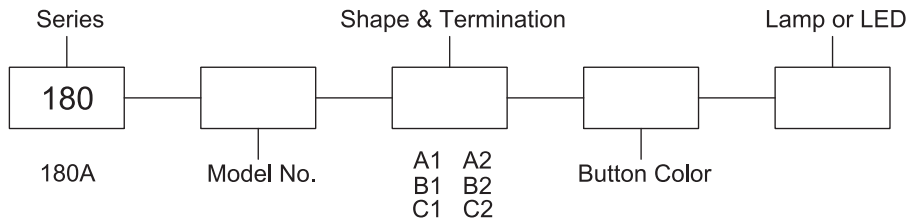
G = 24V

PANEL MOUNTINGS

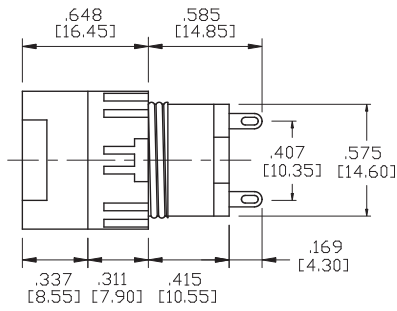
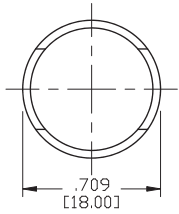
For multi-switches mounting layout



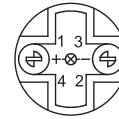
HOW TO ORDER



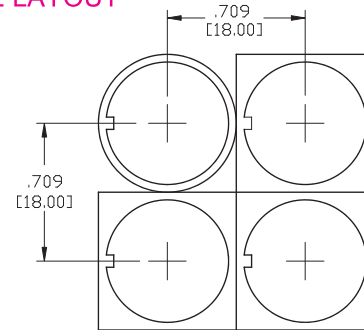
ROUND



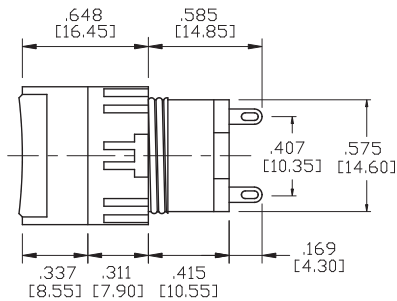
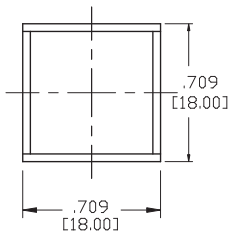
BOTTOM VIEW



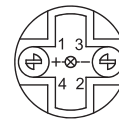
HOLE LAYOUT



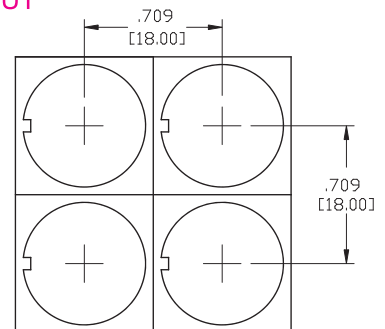
SQUARE



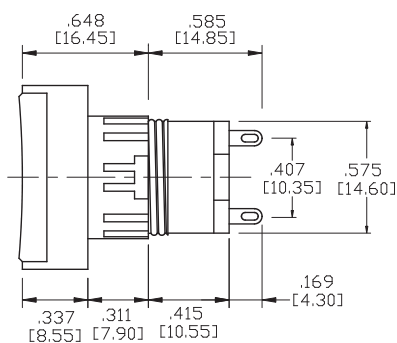
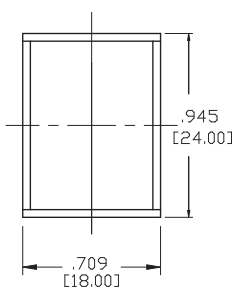
BOTTOM VIEW



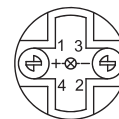
HOLE LAYOUT



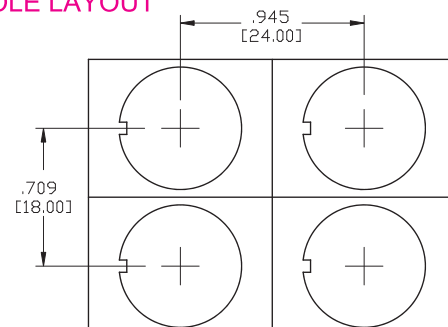
RECTANGULAR



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

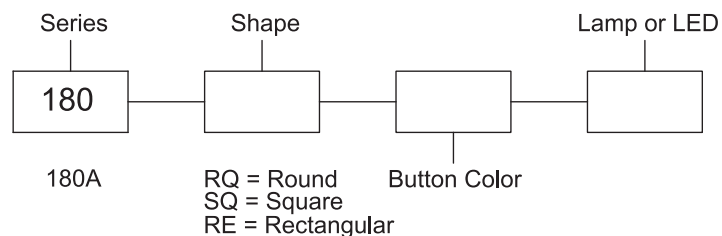
E = 24V

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

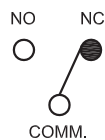
If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM

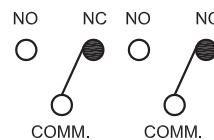
| Series | Model | Shape | Bushing | Function | Legend | LED Color | Frame Color | LED Voltage | IP Rating |
|--------|--------------------------|---|---|---|--|---|---------------------|----------------------------------|--------------|
| 180 | SP-1NO 1NC DP-2NO 2NC | A3-Round B3-Square C3-Rectangular | 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

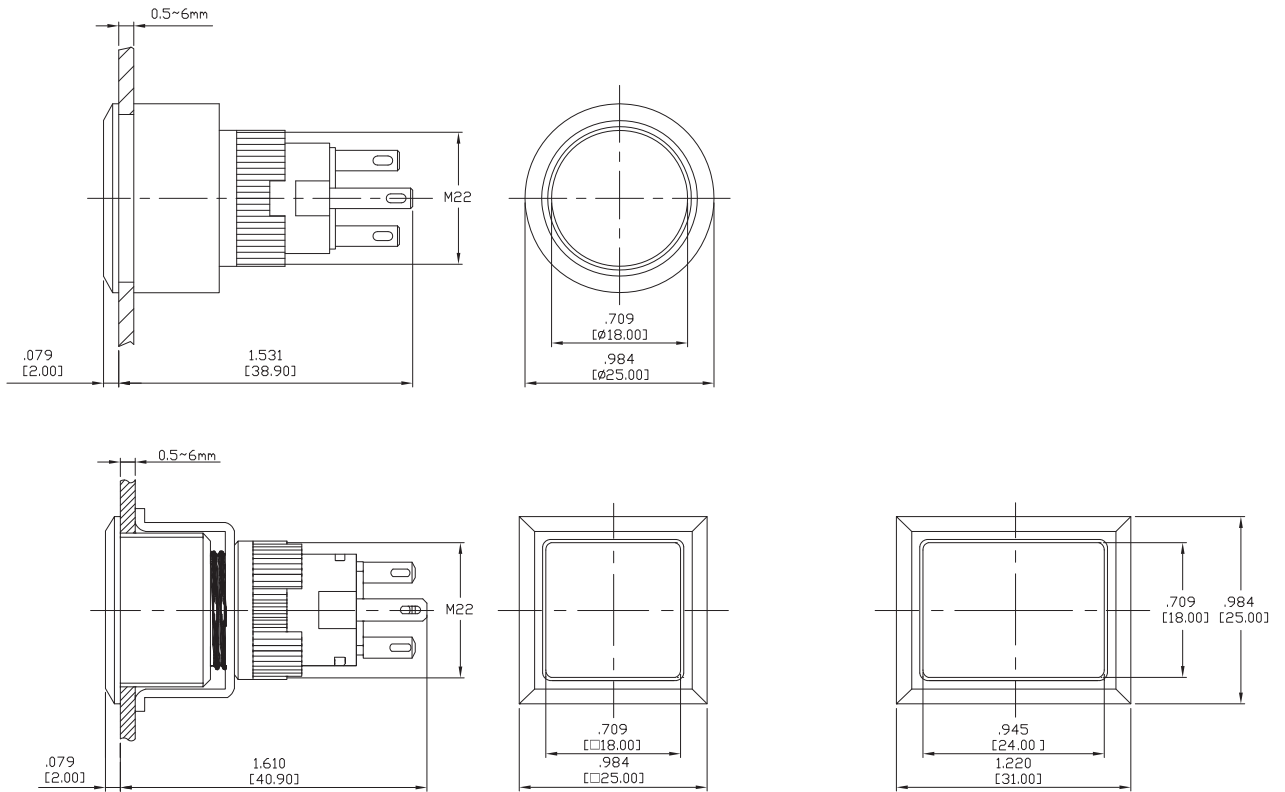


C3 Rectangular

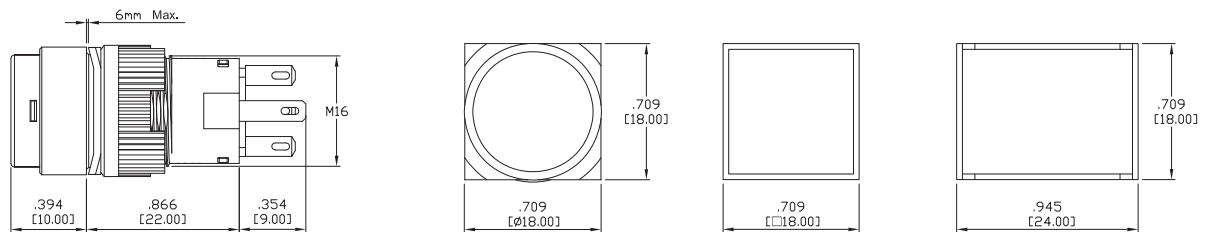


Bushing

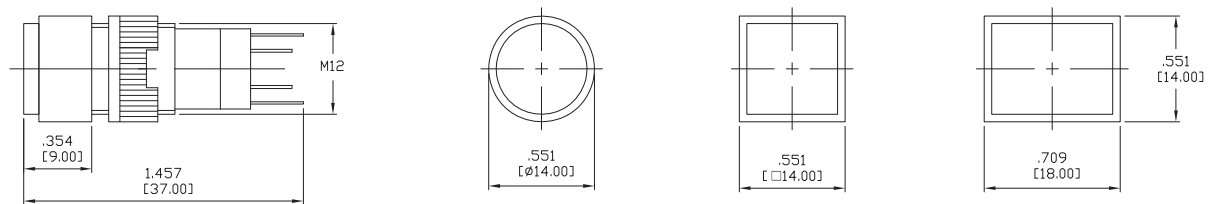
B1



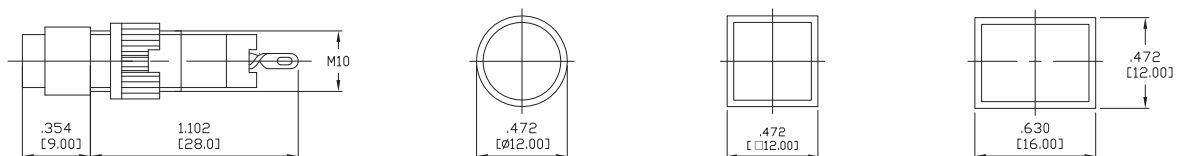
B3



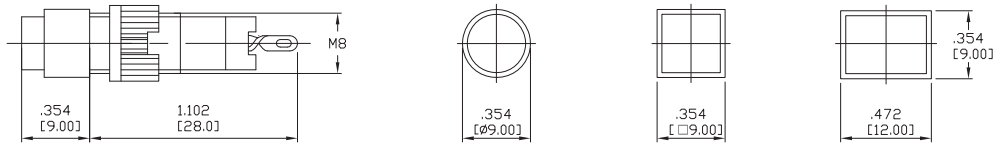
B4



B5



B6



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous



SPECIFICATIONS:

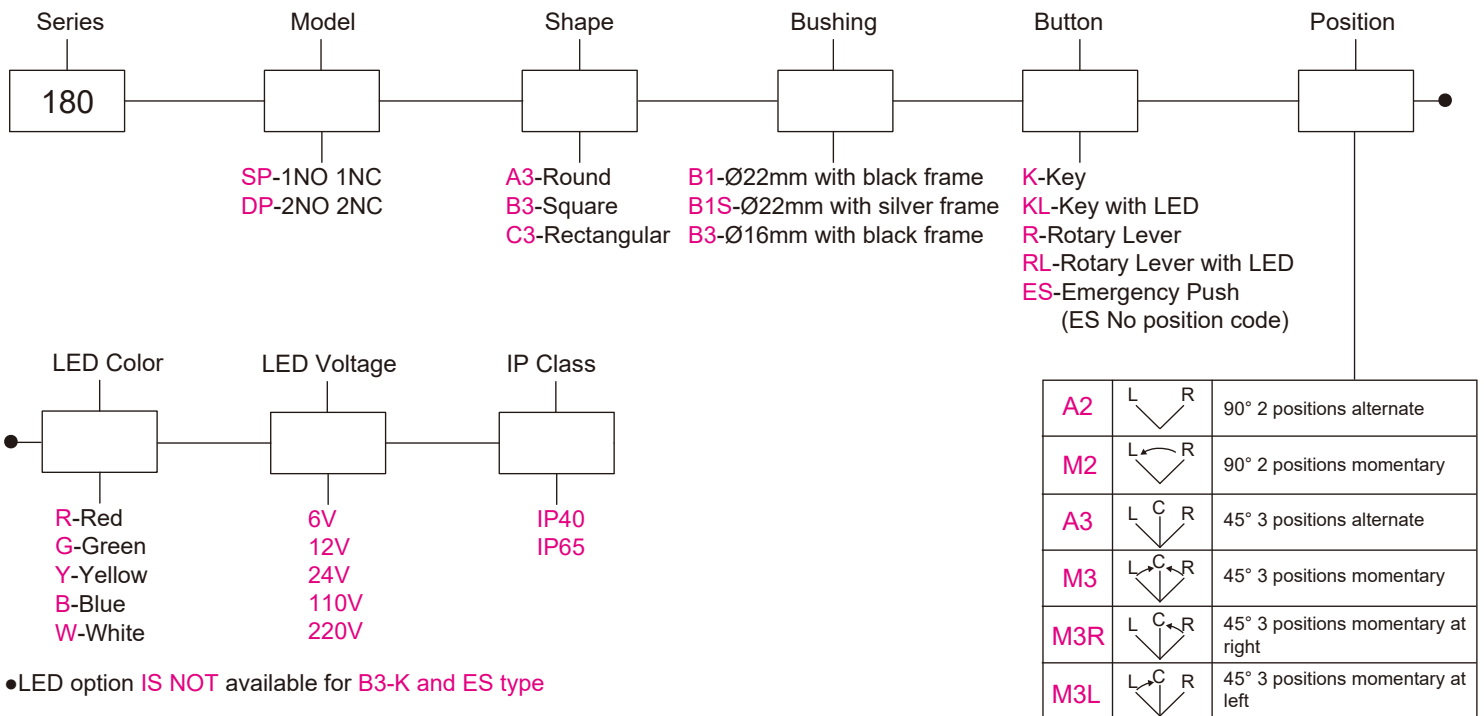
RATING: Ø22mm 0.5A 220VAC / 0.7A 24VDC
 Ø16mm 0.5A 220VAC / 0.7A 24VDC
 ELECTRICAL LIFE: 20,000 cycles.
 CONTACT RESISTANCE: 50m-ohms.
 DIELECTRIC STRENGTH: 2000VAC, 50Hz for 1 minute.
 INSULATION RESISTANCE: 100M-ohms min @ 500VDC.
 SOLDERING TEMPERATURE: 230°C for 3sec.
 OPERATING TEMPERATURE: -25°C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

FEATURES:

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

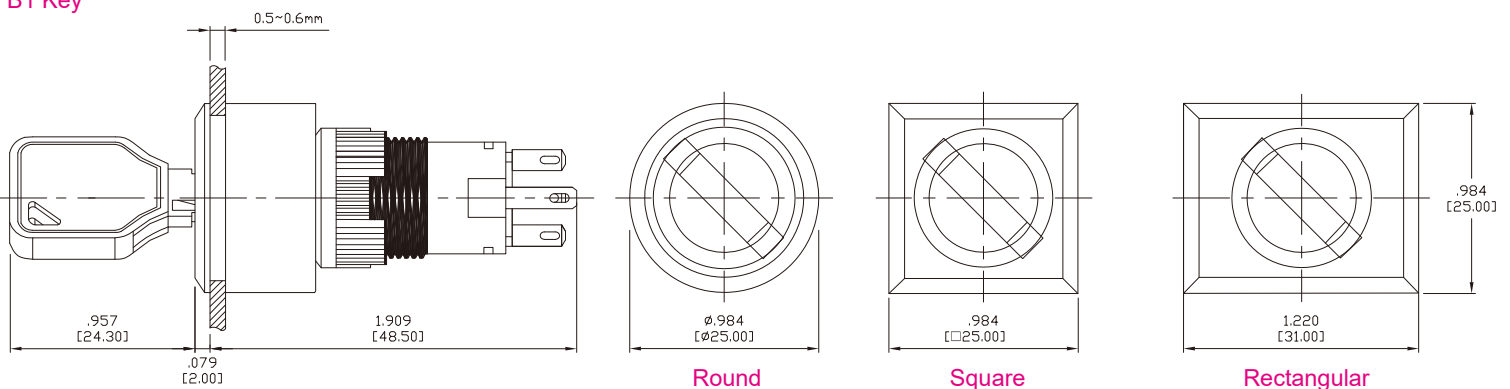
If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM

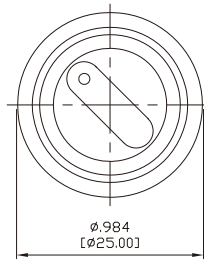
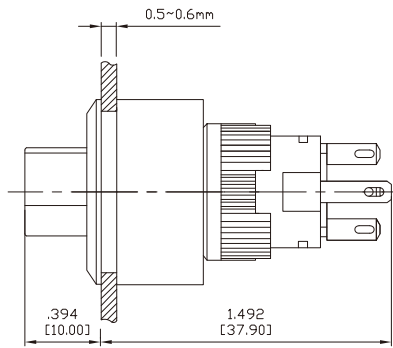


Bushing & Button

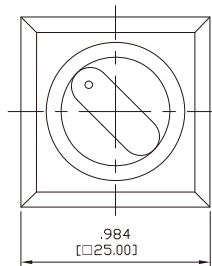
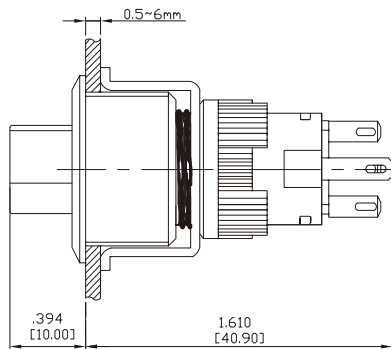
B1 Key



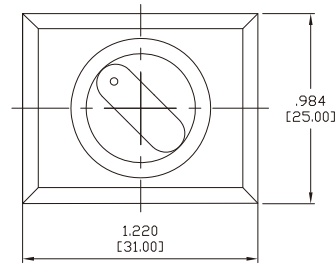
B1 Rotary Lever



Round

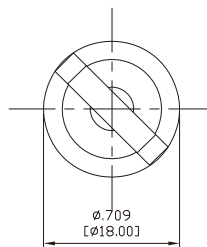
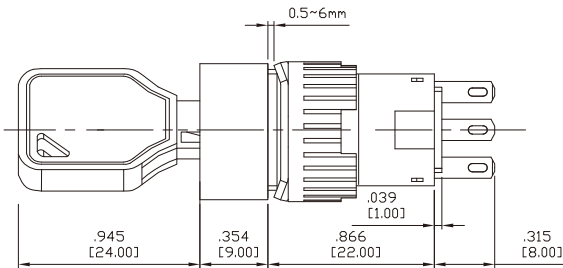


Square

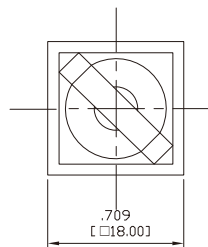


Rectangular

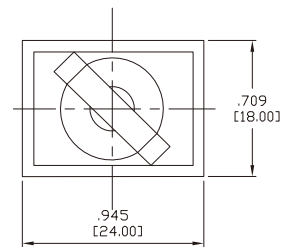
B3 Key



Round

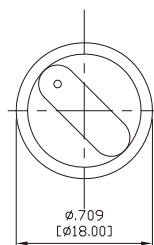
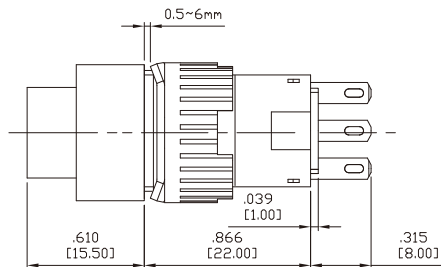


Square

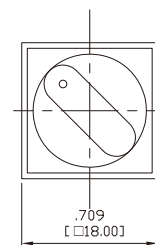


Rectangular

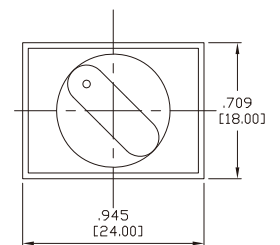
B3 Rotary Lever



Round



Square



Rectangular

Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous

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.

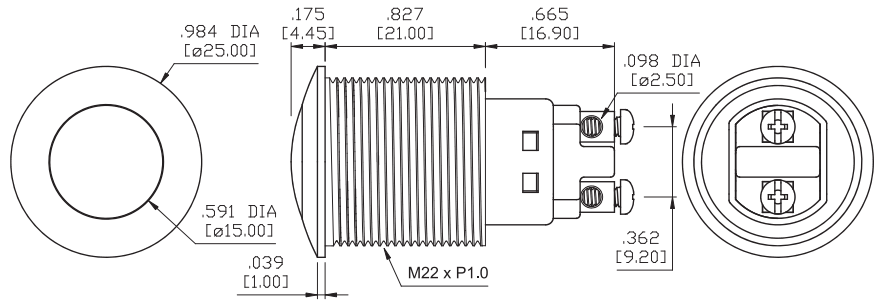
Specifications and Dimensions subject to change

SPST



| Model No. | Type | |
|-----------|------|-----|
| 01 | OFF | MOM |

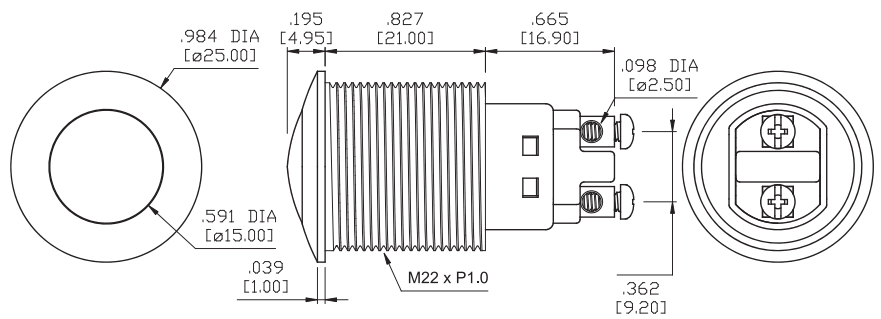
Schematic



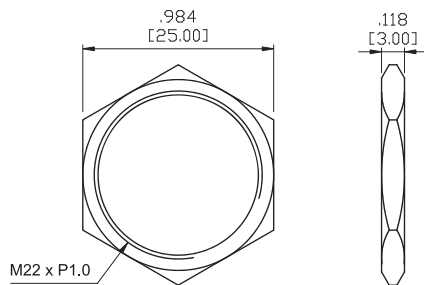
SPST IP65 Front panel protection

| Model No. | Type | |
|-----------|------|-----|
| 01 | OFF | MOM |

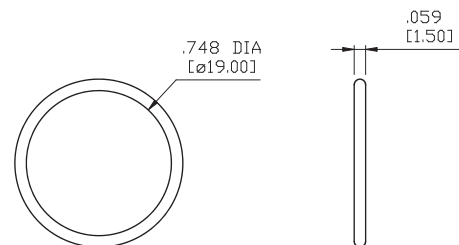
Schematic



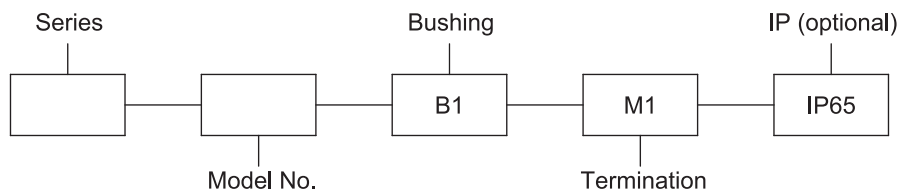
NUT



O-RING



HOW TO ORDER



SPECIFICATIONS:

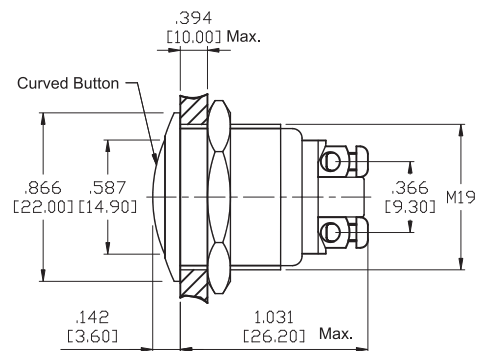
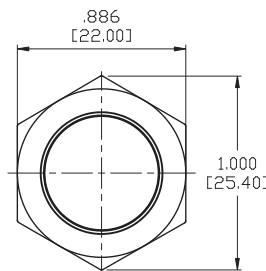
BUSHING: \varnothing 19mm, \varnothing 16mm, \varnothing 12mm
 CONTACT RATING: 2A @ 36VDC.
 ELECTRICAL LIFE: 200,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max. initial @2-4VDC.
 INSULATION RESISTANCE: 1,000M-ohms min. @ 500VDC.
 DIELECTRIC STRENGTH: 2,000V RMS 50~60Hz.
 IP CLASS: IP65 protection.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

MATERIALS:

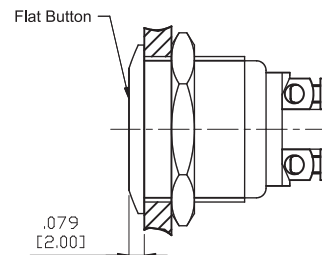
BUSHING: See Bushing Option.
 CONTACT: Silver alloy.
 BASE: PBT.
 NUT: Nickel plated brass.

Specifications and Dimensions subject to change

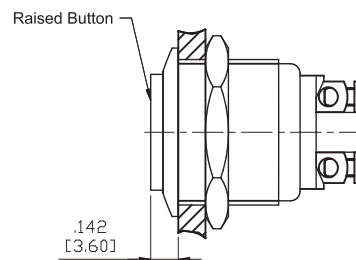
SPST \varnothing 19mm, Solder Lug



Ex. P/N: AV01-B2-M1



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



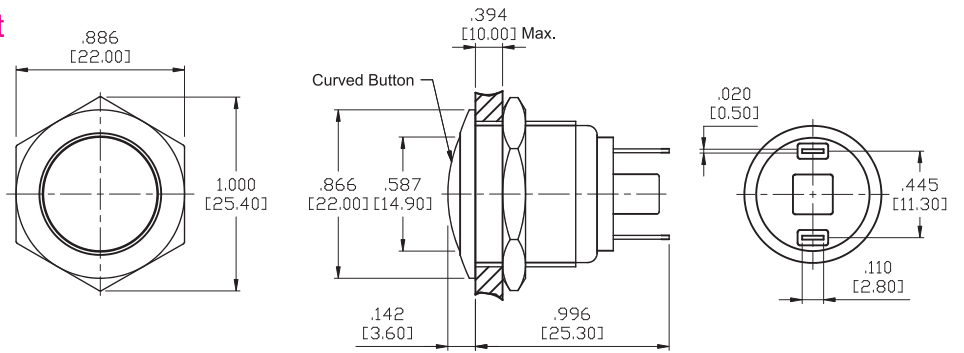
Ex. P/N: AV01-B2-M1-R

| Model No. | SPST Type | |
|-----------|-----------|-----|
| 01 | OFF | MOM |

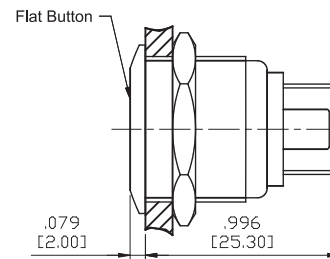
Schematic



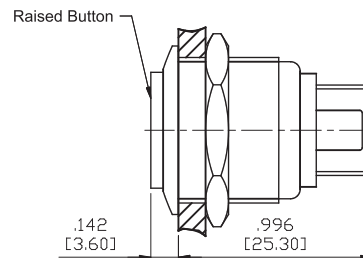
SPST ϕ 19mm, Quick Connect



Ex. P/N: AV01-B2-M3



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



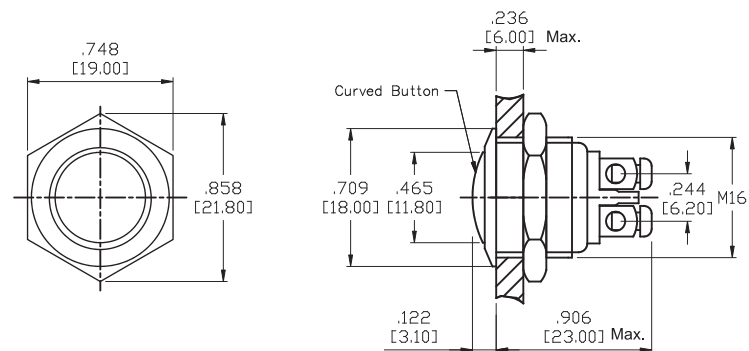
Ex. P/N: AV01-B2-M3-R

| Model No. | SPST Type | |
|-----------|-----------|-----|
| 01 | OFF | MOM |

Schematic

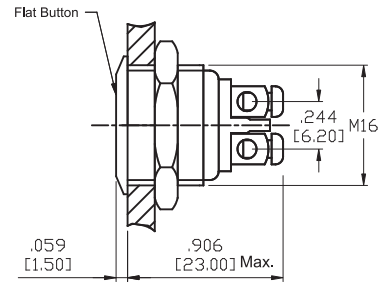
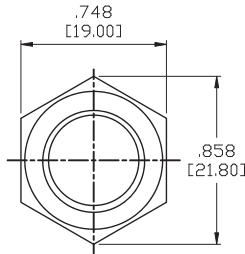


SPST ϕ 16mm, Solder Lug

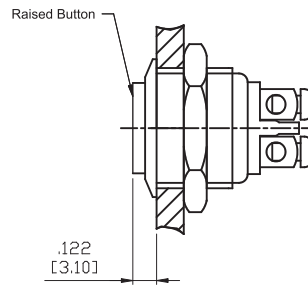


Ex. P/N: AV01-B3-M1

SPST \varnothing 16mm, Solder Lug



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



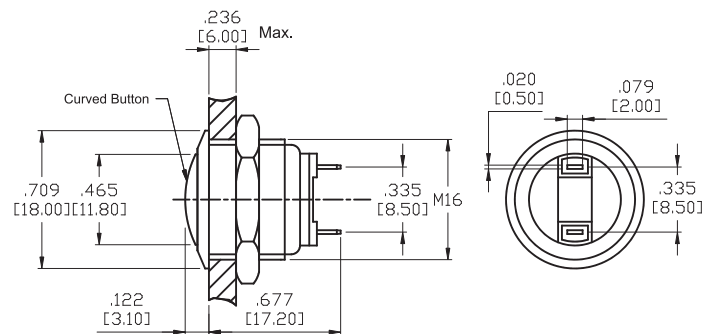
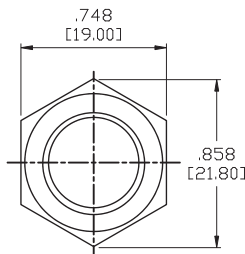
Ex. P/N: AV01-B3-M1-R

| Model No. | SPST Type | |
|-----------|-----------|-----|
| | 01 | OFF |

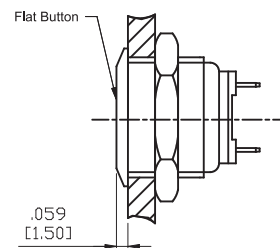
Schematic



SPST \varnothing 16mm, Quick Connect



Ex. P/N: AV01-B3-M3



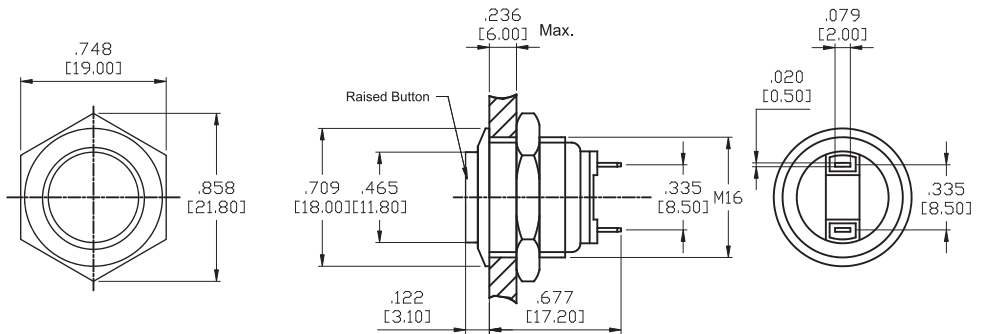
Ex. P/N: AV01-B3-M3-F

| Model No. | SPST Type | |
|-----------|-----------|-----|
| | 01 | OFF |

Schematic



SPST \varnothing 16mm, Quick Connect



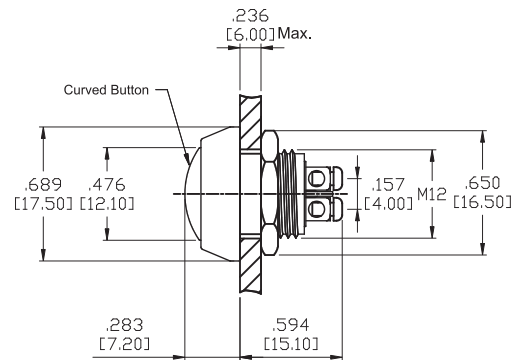
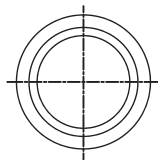
Ex. P/N: AV01-B3-M3-R

| Model No. | SPST Type | |
|-----------|-----------|-----|
| 01 | OFF | MOM |

Schematic



SPST \varnothing 12mm, Solder Lug



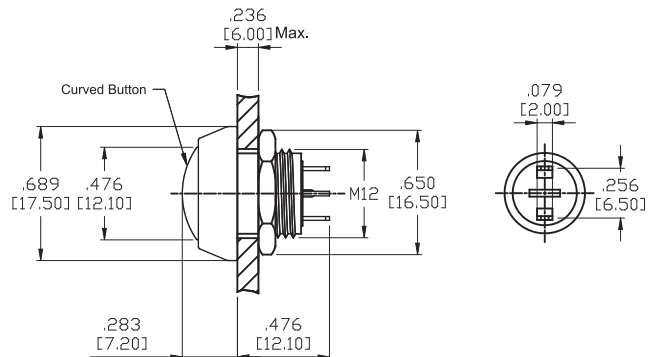
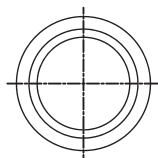
Ex. P/N: AV01-B4-M1

| 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 |

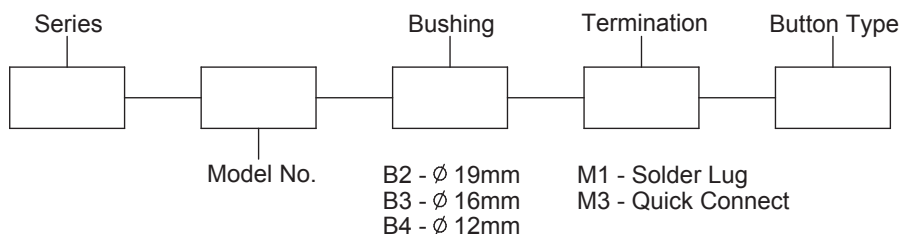
Schematic



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



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous



SPECIFICATIONS:

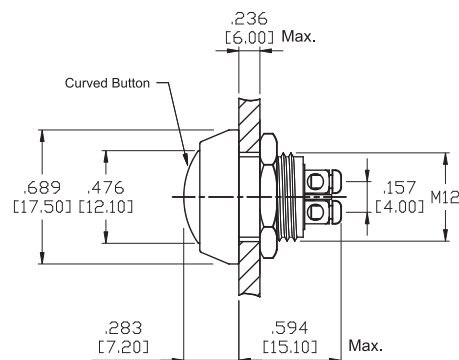
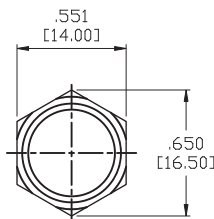
BUSHING: \varnothing 12mm.
 CONTACT RATING: 2A @ 36VDC.
 ELECTRICAL LIFE: 200,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max. initial @2-4VDC.
 INSULATION RESISTANCE: 1,000M-ohms min. @ 500VDC.
 DIELECTRIC STRENGTH: 2,000V RMS 50~60Hz.
 IP CLASS: IP65 protection.
 TORQUE: 5~14Nm max. applied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

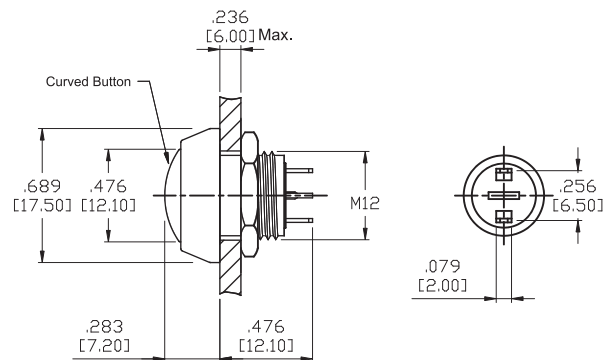
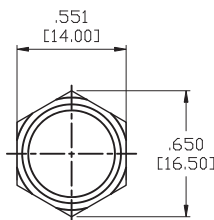
Replace "x" with button color

| 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 |

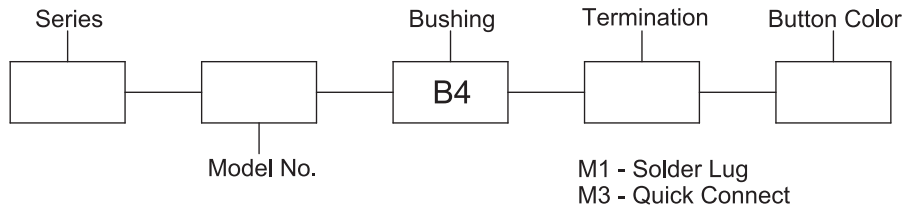
Schematic



BUTTON COLOR OPTIONS

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

HOW TO ORDER



- Toggle
- Rocker
- Slide
- Pushbutton
- AV**
- Rotary
- Tact
- Touch Key
- Miscellaneous

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:

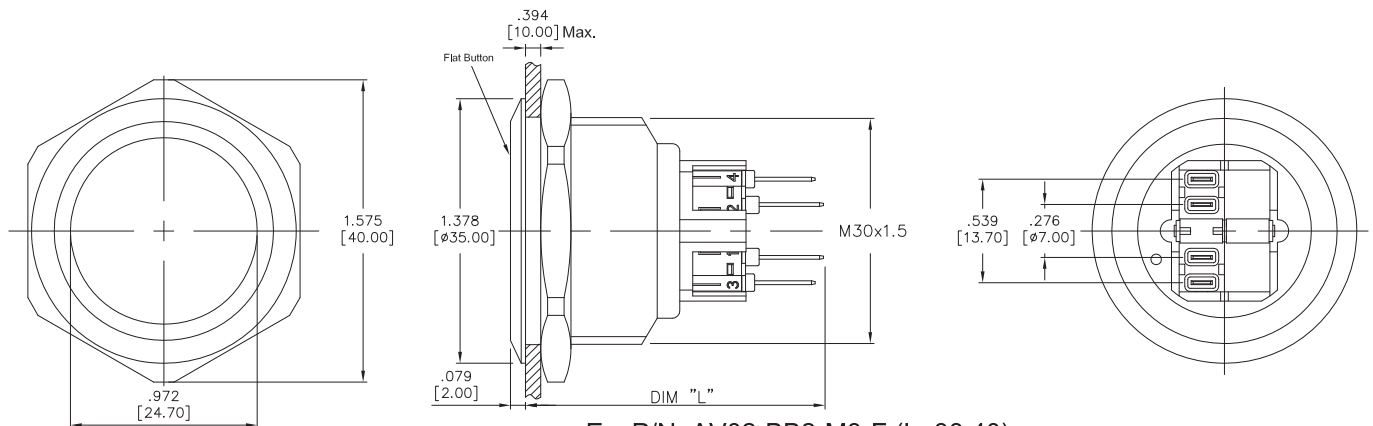
BUSHING: See Bushing Option.

CONTACT: Silver alloy.

BASE: PBT or PA.

NUT: Nickel plated brass.

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

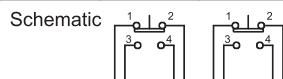
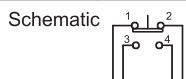


Ex. P/N: AV02-BB2-M3-F (L=38.40)

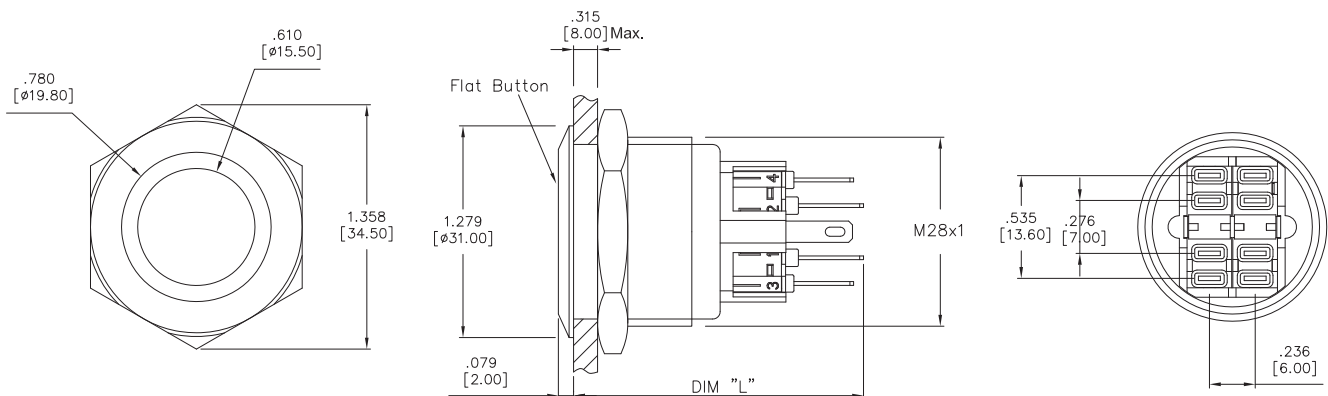
AV03-BB2-M3-F (L=40.80)

| 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

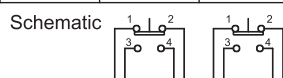
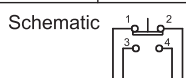


Ex. P/N: AV02-BA2-M3-F(L=38.40)

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

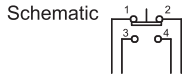
| Model No. | SPDT Type | |
|-----------|-----------|-----|
| 02 | ON | MOM |
| 03 | ON | ON |

| Model No. | DPDT Type | |
|-----------|-----------|-----|
| 12 | ON | MOM |
| 13 | ON | ON |

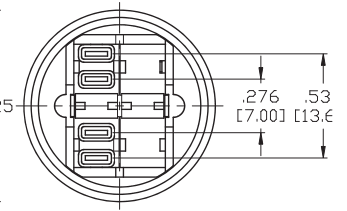
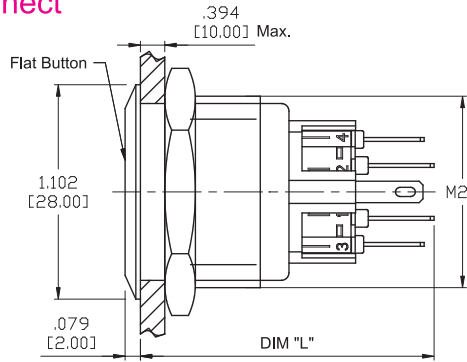
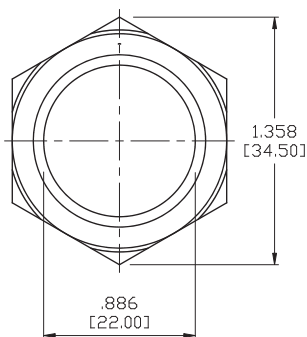
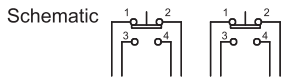


Non-latching & Latching Ø25mm, Quick Connect

| Model No. | SPDT Type | |
|-----------|-----------|-----|
| 02 | ON | MOM |
| 03 | ON | ON |



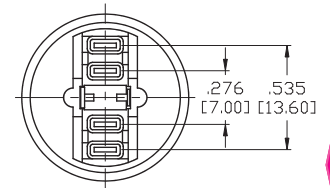
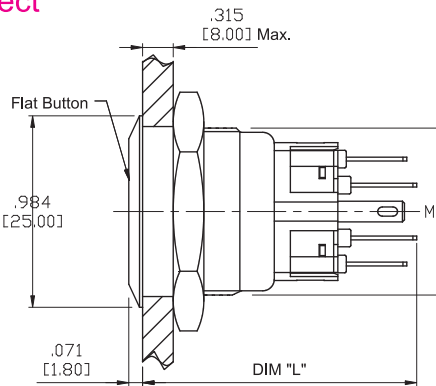
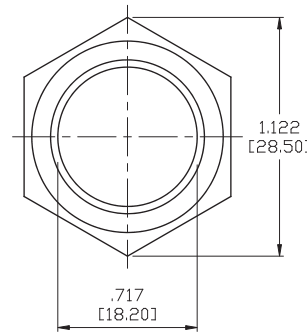
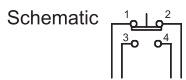
| Model No. | DPDT Type | |
|-----------|-----------|-----|
| 12 | ON | MOM |
| 13 | ON | ON |



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

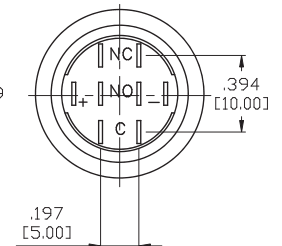
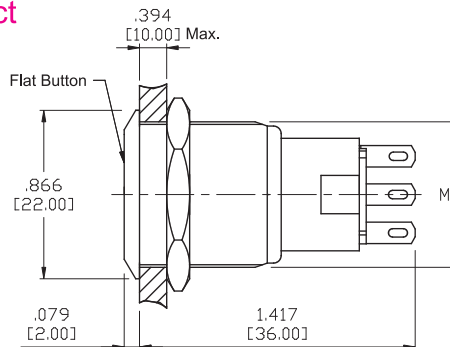
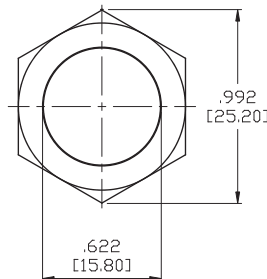
Non-latching & Latching Ø22mm, Quick Connect

| Model No. | SPDT Type | |
|-----------|-----------|-----|
| 02 | ON | MOM |
| 03 | ON | ON |



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

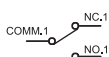
Non-latching & Latching Ø19mm, Quick Connect



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

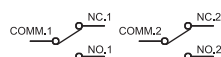
| Model No. | SPDT Type | |
|-----------|-----------|-----|
| 02 | ON | MOM |
| 03 | ON | ON |

Schematic

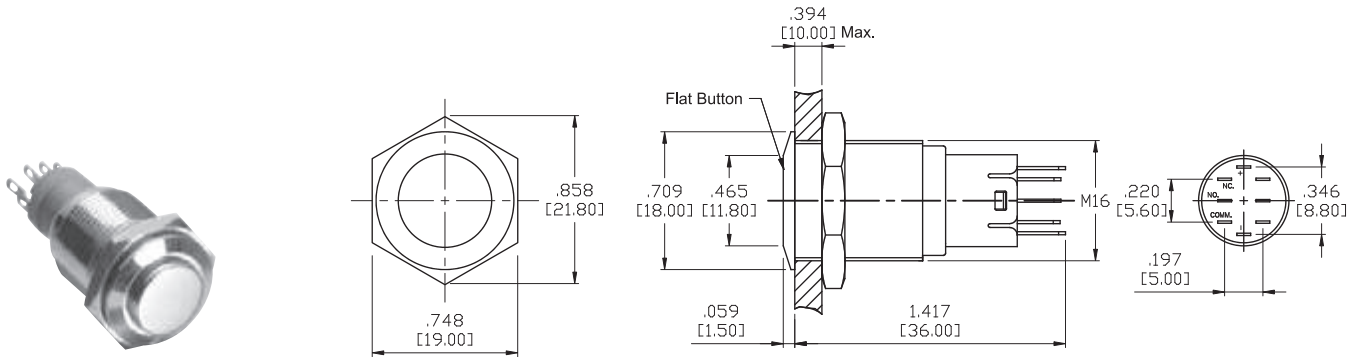


| Model No. | DPDT Type | |
|-----------|-----------|-----|
| 12 | ON | MOM |
| 13 | ON | ON |

Schematic



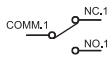
Non-latching & Latching Ø 16mm, Quick Connect



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

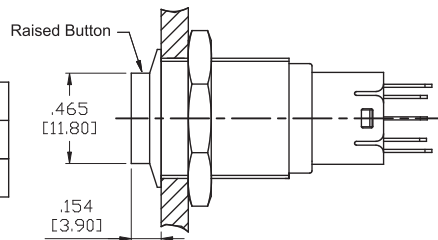
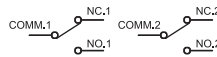
| Model No. | SPDT Type | |
|-----------|-----------|-----|
| 02 | ON | MOM |
| 03 | ON | ON |

Schematic



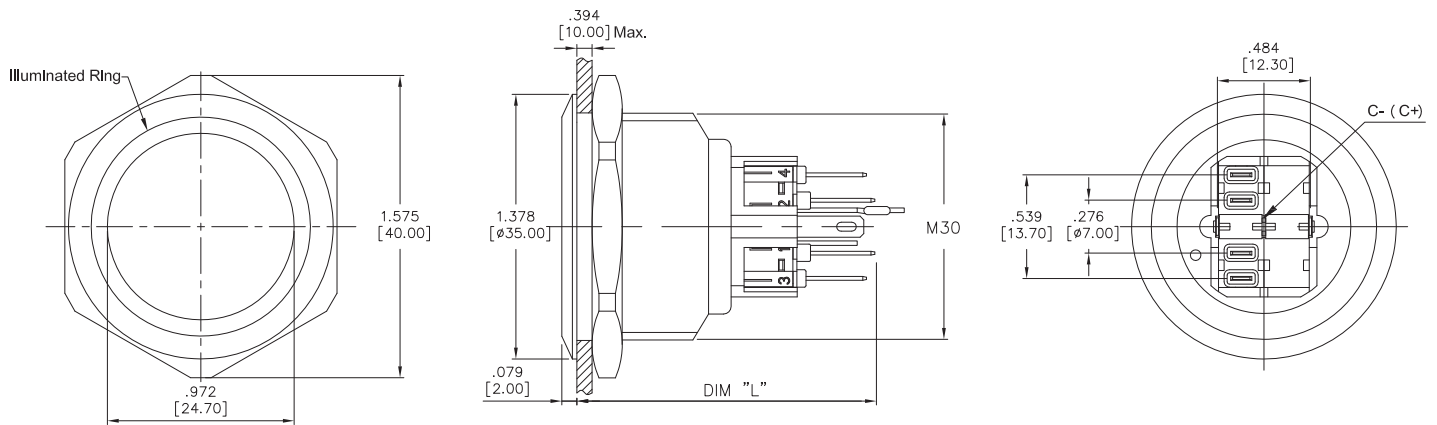
| Model No. | DPDT Type | |
|-----------|-----------|-----|
| 12 | ON | MOM |
| 13 | ON | ON |

Schematic

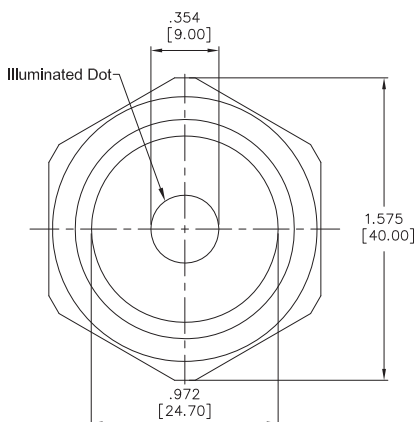


Ex. P/N: AV02-B3-M3-R & AV03-B3-M3-R

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



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



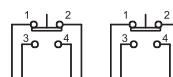
| Model No. | SPDT Type | |
|-----------|-----------|-----|
| 02L | ON | MOM |
| 03L | ON | ON |

Schematic

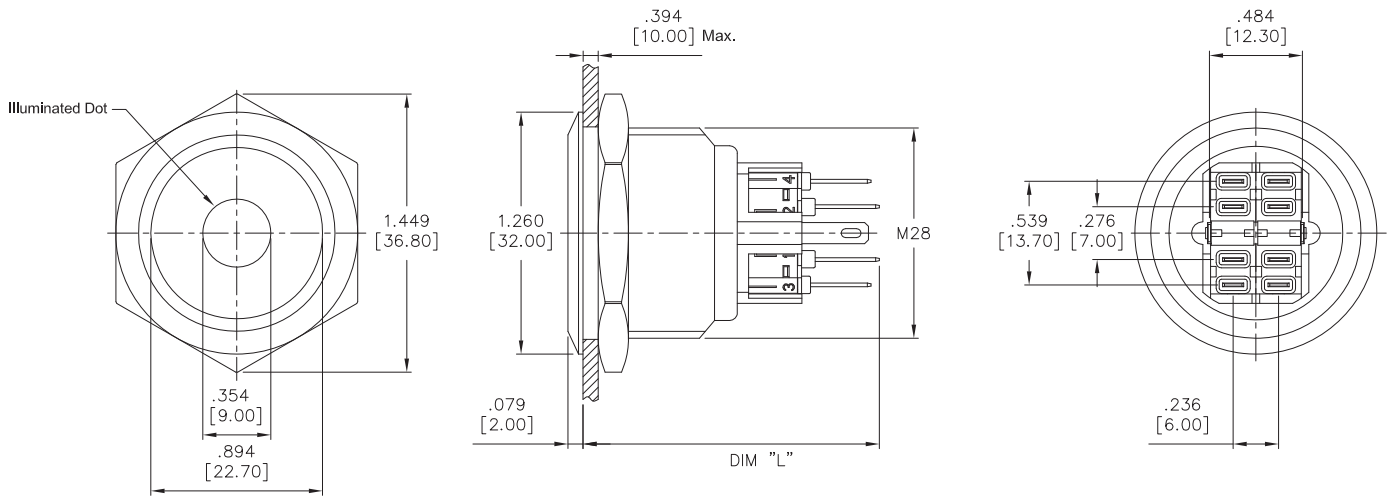


| Model No. | DPDT Type | |
|-----------|-----------|-----|
| 12L | ON | MOM |
| 13L | ON | ON |

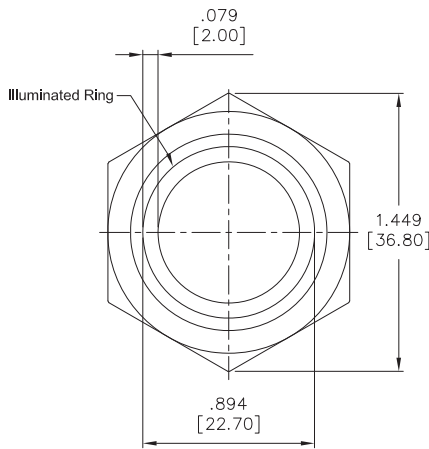
Schematic



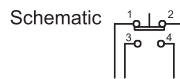
Illuminated Non-latching & Latching Ø 28mm, Quick Connect



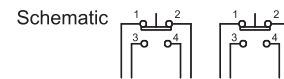
Ex. P/N: AV02L-BA2-M3-FD-x(L=38.40) Replace "x" with LED color
 AV03L-BA2-M3-FD-x (L=40.80)



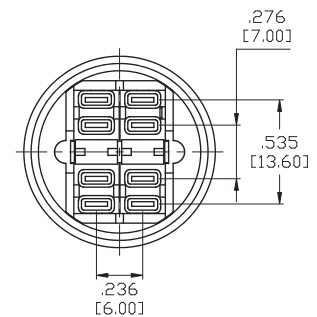
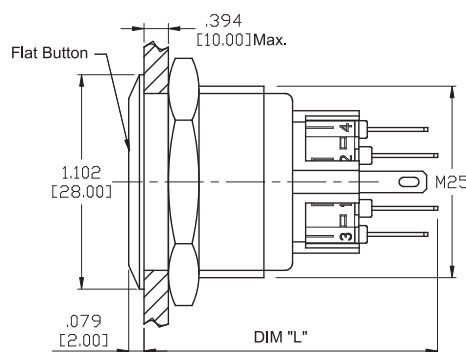
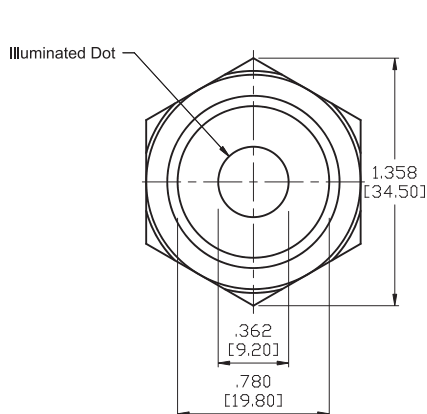
| Model No. | SPDT Type | |
|-----------|-----------|-----|
| 02L | ON | MOM |
| 03L | ON | ON |



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

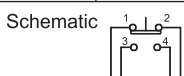


Illuminated Non-Latching & Latching Ø 25mm, Quick Connect

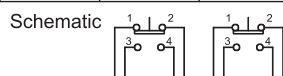


Ex. P/N: AV02L-B02-M3-FD-x (L=38.35) Replace "x" with LED color
 AV03L-B02-M3-FD-x (L=41.35)

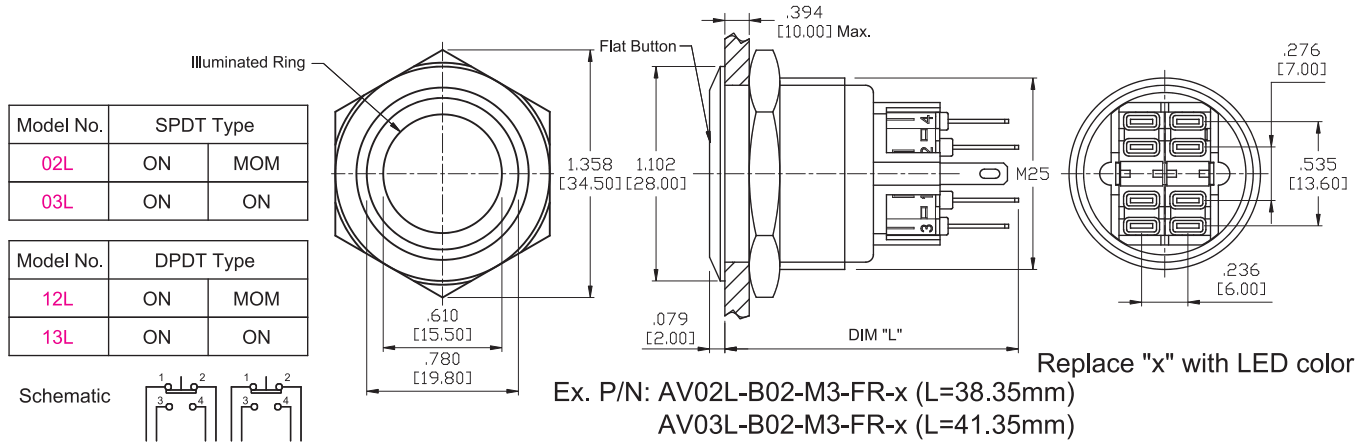
| Model No. | SPDT Type | |
|-----------|-----------|-----|
| 02L | ON | MOM |
| 03L | ON | ON |



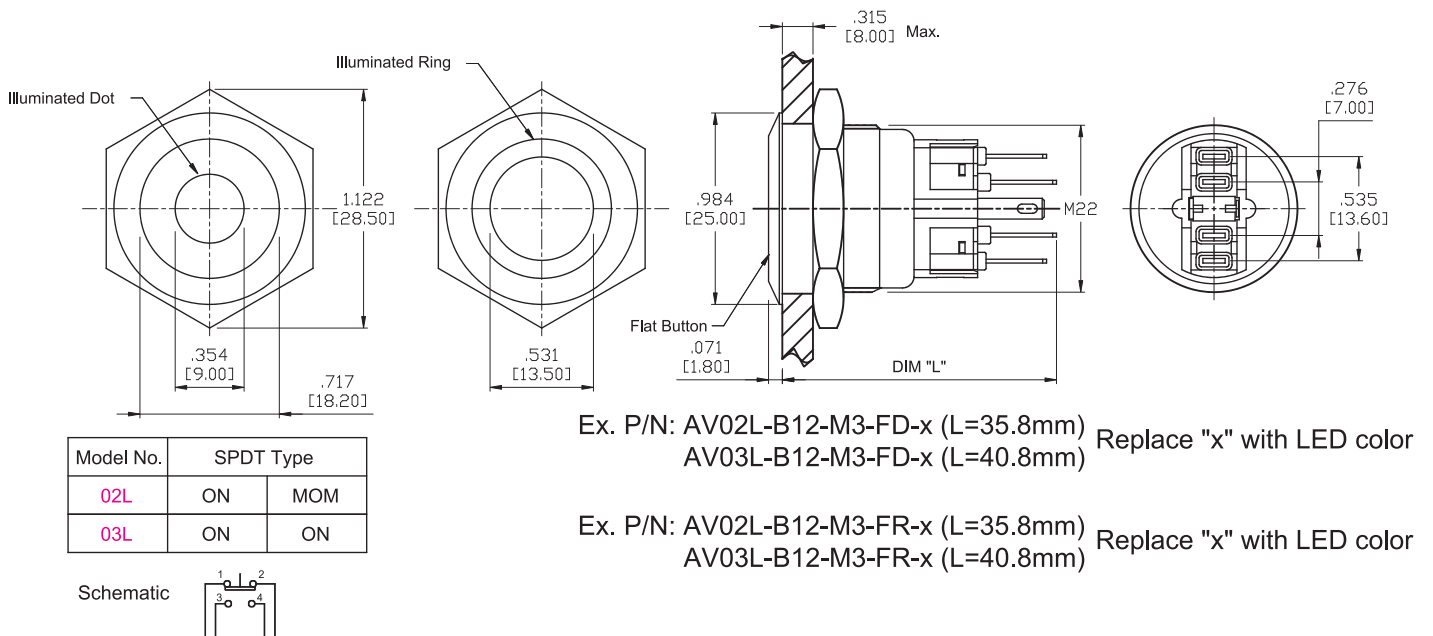
| Model No. | DPDT Type | |
|-----------|-----------|-----|
| 12L | ON | MOM |
| 13L | ON | ON |



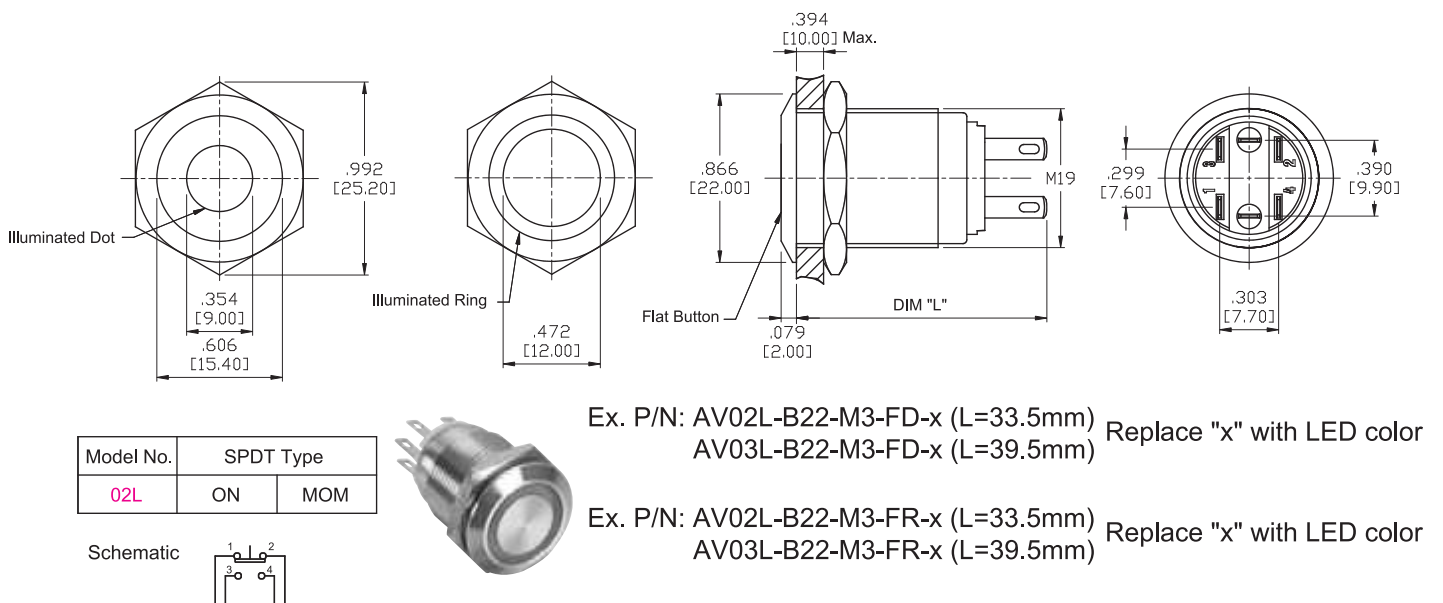
Illuminated Non-Latching & Latching Ø 25mm, Quick Connect



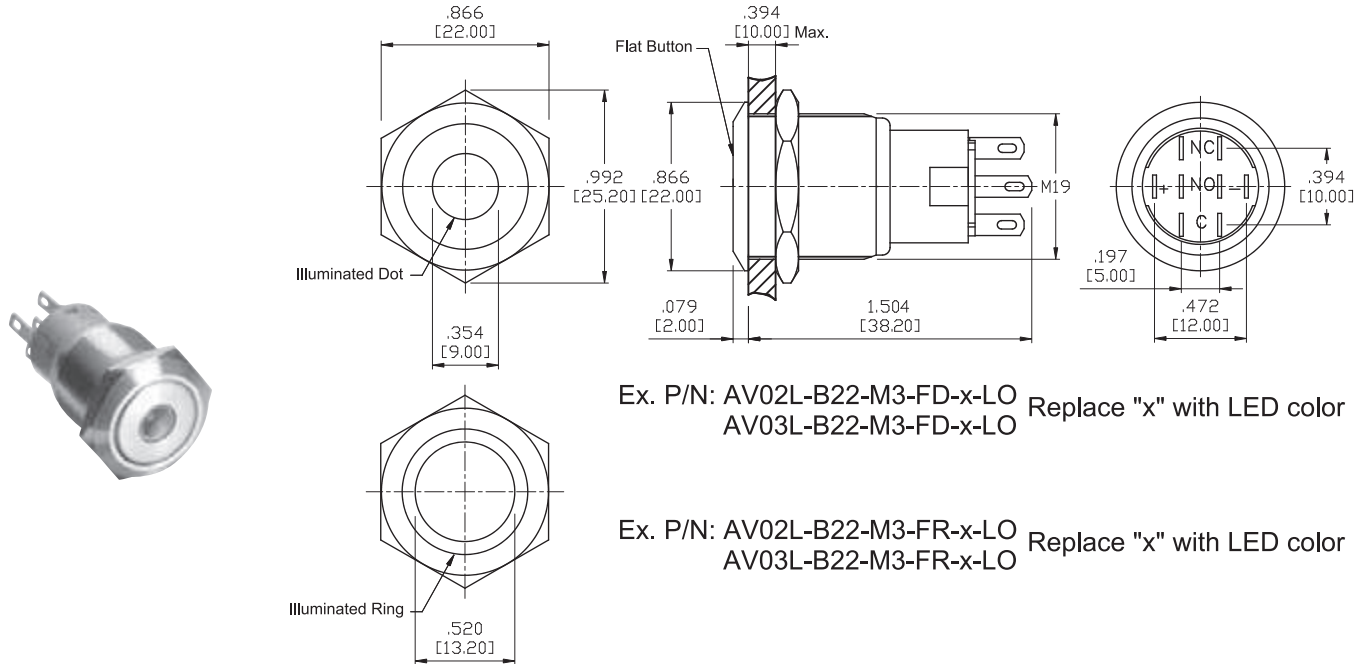
Illuminated Non-Latching & Latching Ø 22mm, Quick Connect



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



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

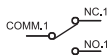


Ex. P/N: AV02L-B22-M3-FD-x-LO Replace "x" with LED color
 AV03L-B22-M3-FD-x-LO

Ex. P/N: AV02L-B22-M3-FR-x-LO Replace "x" with LED color
 AV03L-B22-M3-FR-x-LO

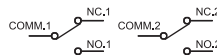
| Model No. | SPDT Type | |
|-----------|-----------|-----|
| 02L | ON | MOM |
| 03L | ON | ON |

Schematic

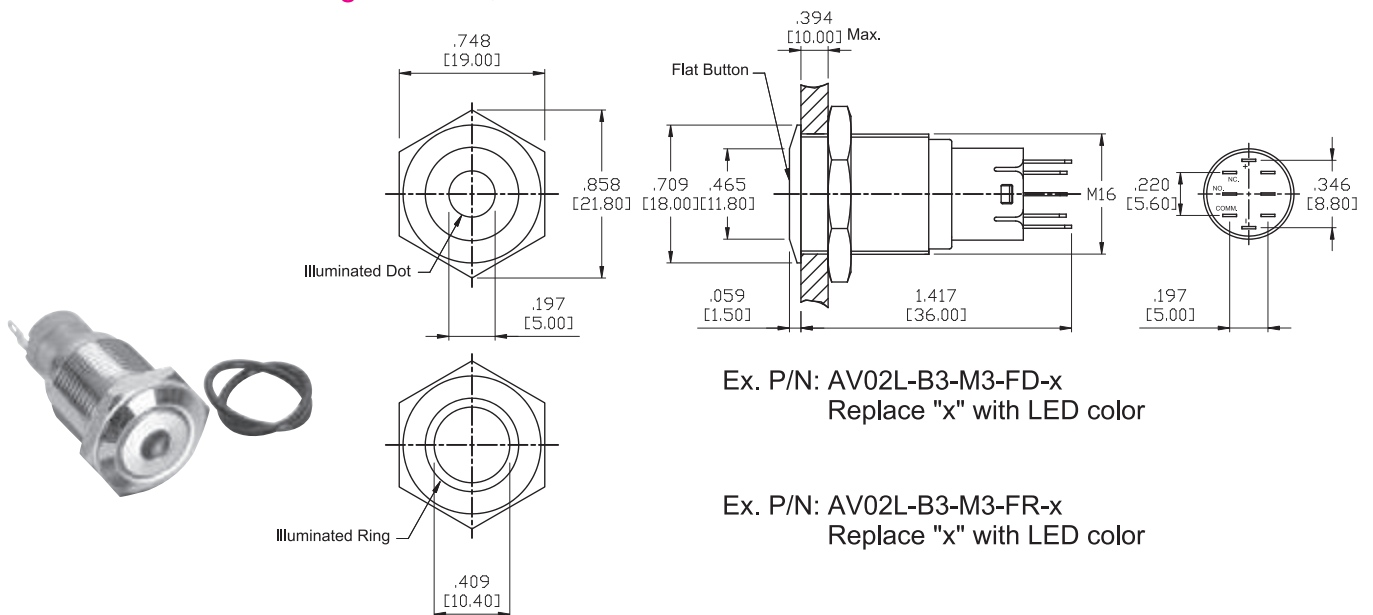


| Model No. | DPDT Type | |
|-----------|-----------|-----|
| 12L | ON | MOM |
| 13L | ON | ON |

Schematic



Illuminated Non-Latching Ø16mm, Quick Connect

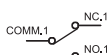


Ex. P/N: AV02L-B3-M3-FD-x
 Replace "x" with LED color

Ex. P/N: AV02L-B3-M3-FR-x
 Replace "x" with LED color

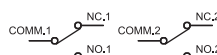
| Model No. | SPDT Type | |
|-----------|-----------|-----|
| 02L | ON | MOM |

Schematic

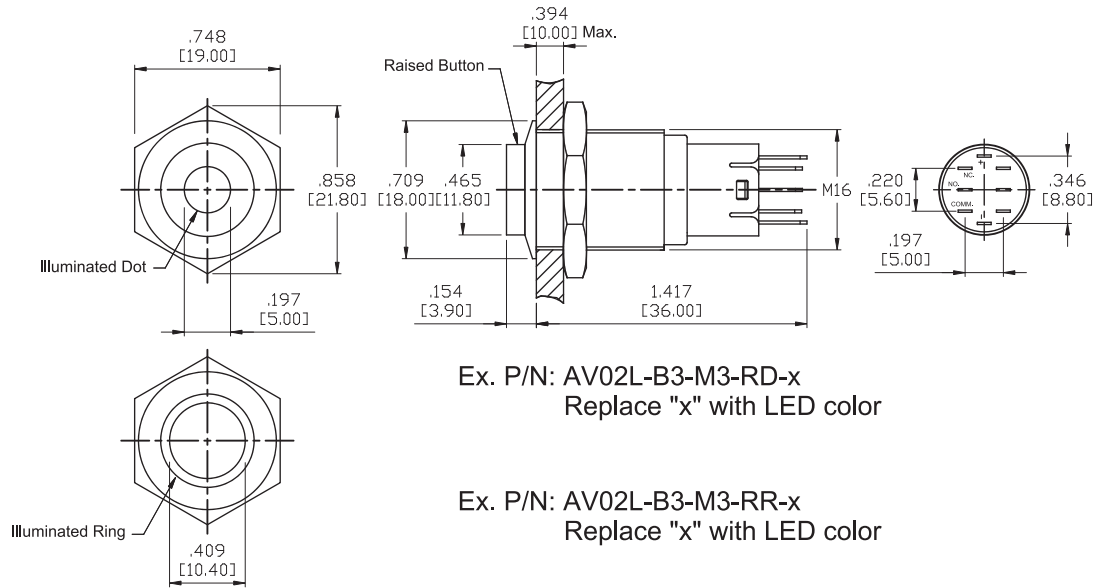


| Model No. | DPDT Type | |
|-----------|-----------|-----|
| 12L | ON | MOM |

Schematic

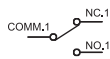


Illuminated Non-Latching Ø 16mm, Quick Connect



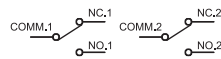
| Model No. | SPDT Type | |
|-----------|-----------|-----|
| 02L | ON | MOM |

Schematic

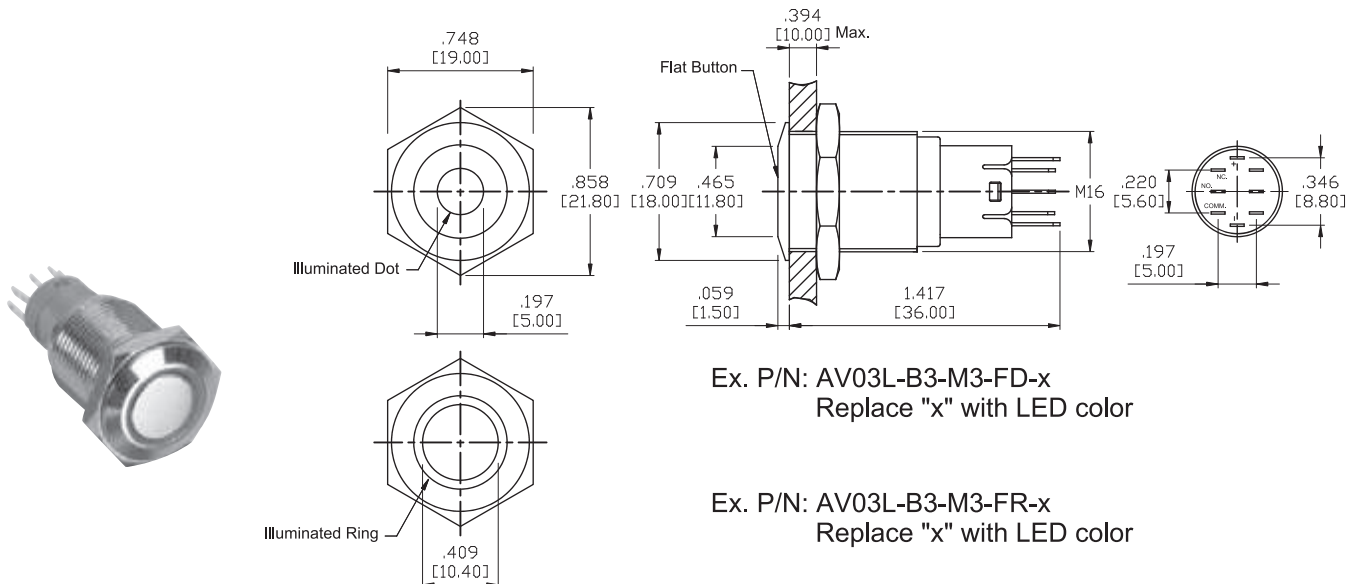


| Model No. | DPDT Type | |
|-----------|-----------|-----|
| 12L | ON | MOM |

Schematic

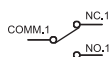


Illuminated Latching Ø16mm, Quick Connect



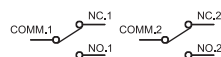
| Model No. | SPDT Type | |
|-----------|-----------|----|
| 03L | ON | ON |

Schematic

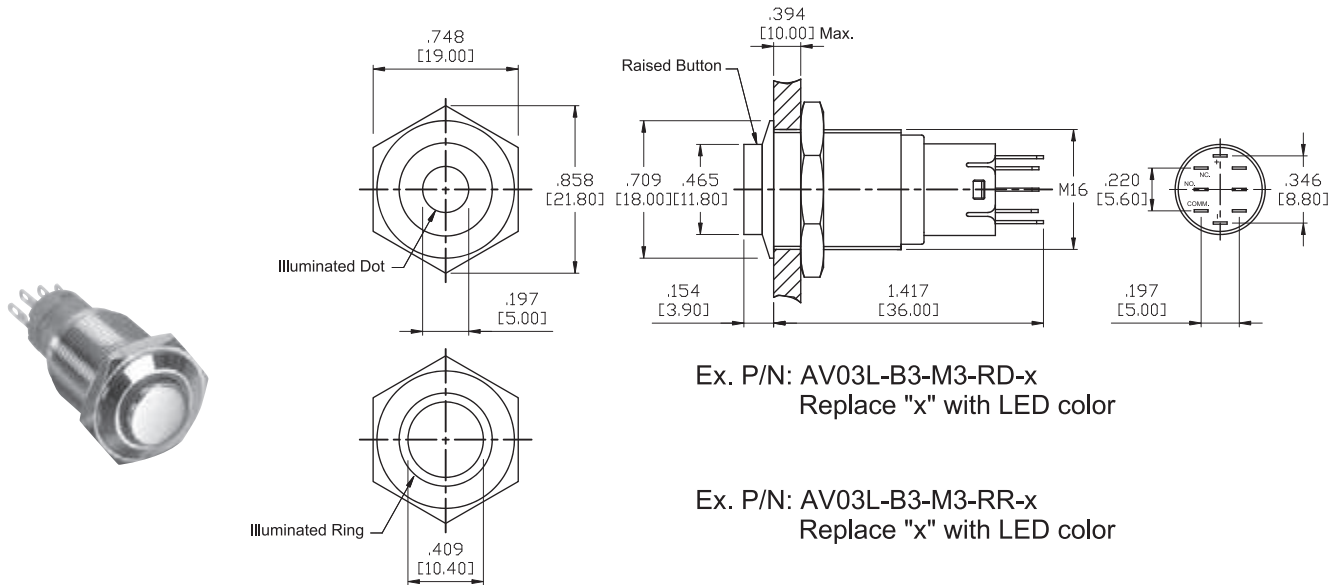


| Model No. | DPDT Type | |
|-----------|-----------|----|
| 13L | ON | ON |

Schematic

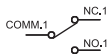


Illuminated Latching Ø16mm, Quick Connect



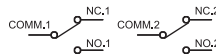
| Model No. | SPDT Type | |
|-----------|-----------|----|
| 03L | ON | ON |

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 |

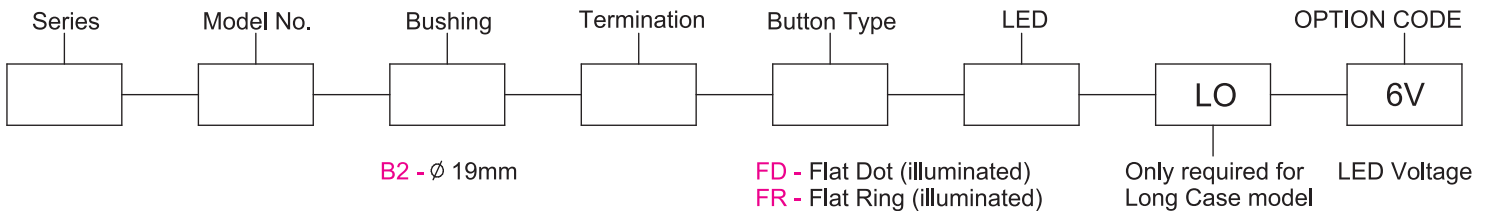
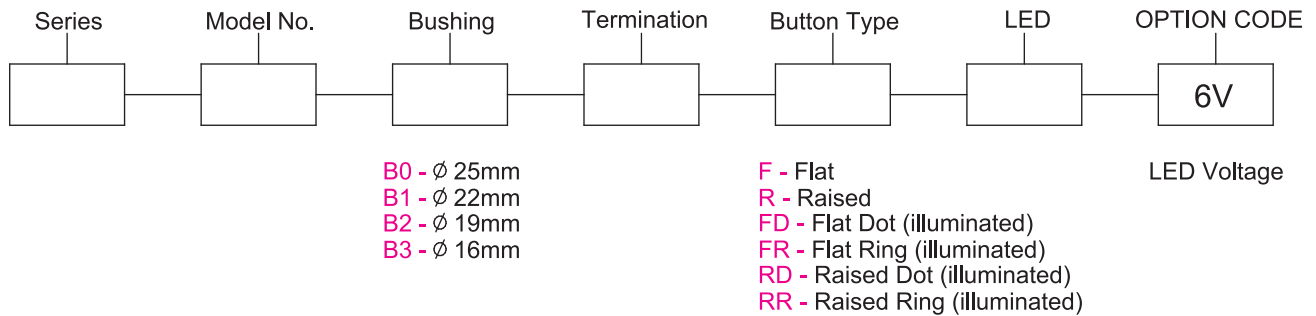
LED COLOR OPTIONS

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

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:

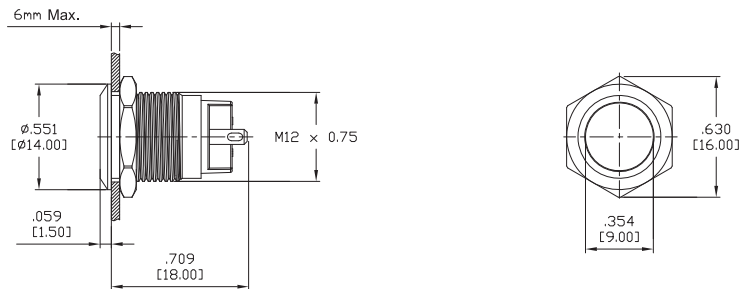
BUSHING: \varnothing 12mm.
 CONTACT RATING: 2A @ 36VDC.
 ELECTRICAL LIFE: 50,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: 1,000M-ohms min.
 DIELECTRIC STRENGTH: 1,500V RMS 50Hz.
 IP CLASS: IP67 front panel.
 TORQUE: 0.6Nm max. applied to nut
 OPERATING FORCE: 2.5~4N.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

MATERIALS:

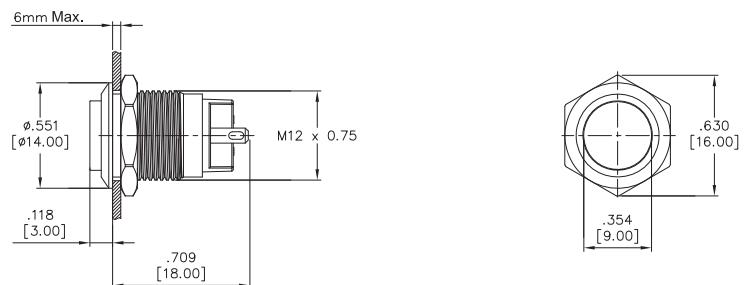
BUSHING: Stainless steel
 CONTACT: Stainless steel
 BASE: PA

Specifications and Dimensions subject to change

SPST 12mm, Flat Button



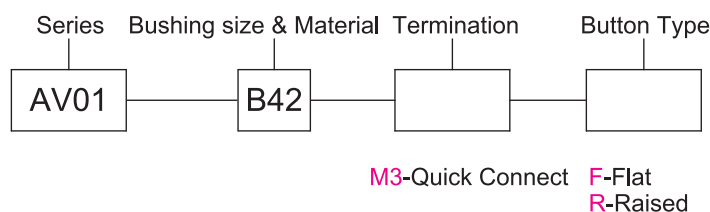
SPST 12mm, Raised Button



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:

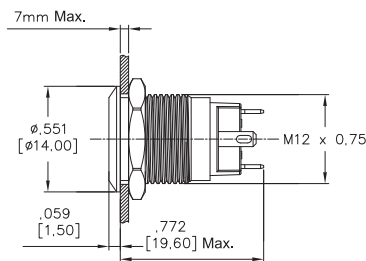
BUSHING: \varnothing 12mm.
 CONTACT RATING: 2A @ 36VDC.
 ELECTRICAL LIFE: 50,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: 1,000M-ohms min.
 DIELECTRIC STRENGTH: 1,500V RMS 50~60Hz.
 IP CLASS: IP67 front panel protection & IK08.
 TORQUE: 0.2Nm max. applied to nut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

MATERIALS:

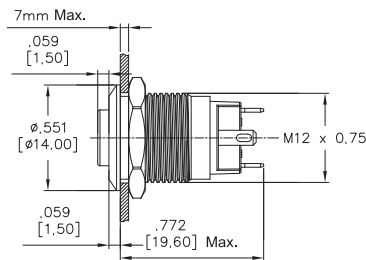
BUSHING: Stainless steel
 CONTACT: Stainless steel
 BASE: PA

Specifications and Dimensions subject to change

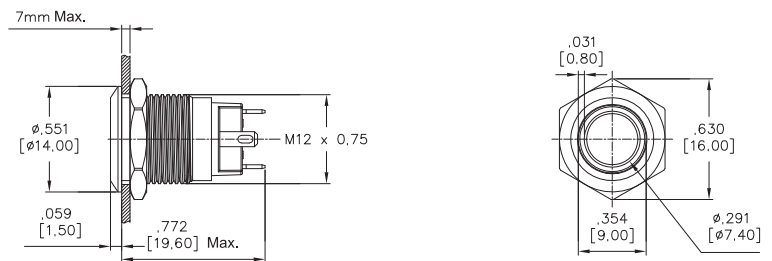
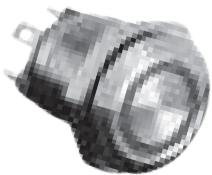
Illuminated SPST, Flat Dot Button



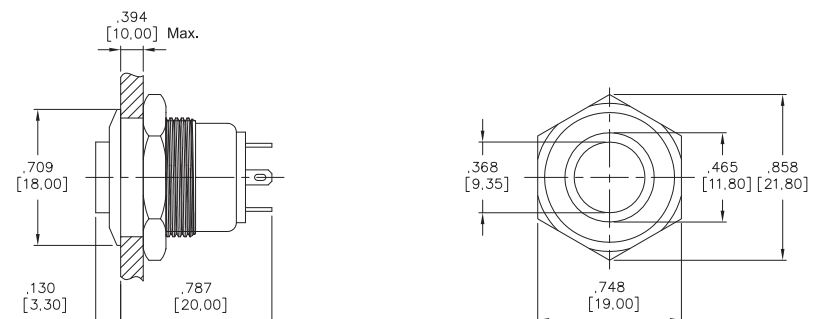
Illuminated SPST, Raised Dot Button



Illuminated SPST, Flat Ring Button



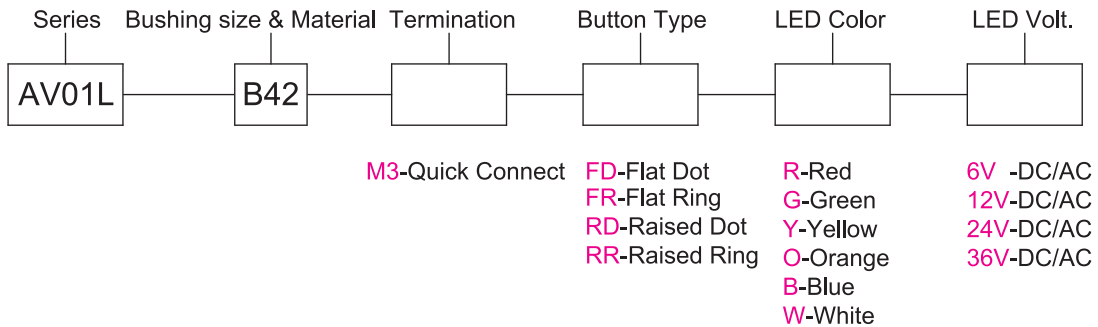
Illuminated SPST, Raised Ring Button



BUSHING & BUTTON MATERIAL OPTIONS

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

HOW TO ORDER



- Toggle
- Rocker
- Slide
- Pushbutton
- AV**
- Rotary
- Tact
- Touch Key
- Miscellaneous

SPECIFICATIONS:

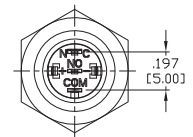
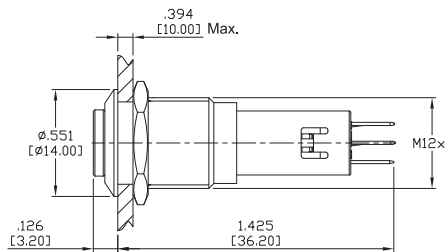
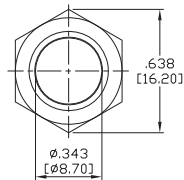
BUSHING: Ø12mm.
 CONTACT RATING: 0.5A @ 220V.
 ELECTRICAL LIFE: 50,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: 100M-ohms min.
 DIELECTRIC STRENGTH: 1,500VAC RMS 50Hz
 IP CLASS: IP40.
 TORQUE: 0.2Nm max. applied to nut
 OPERATING FORCE: 4N.
 OPERATING TEMPERATURE: -25°C~+55°C.

MATERIALS:

BUSHING: Stainless steel
 CONTACT: Stainless steel
 BASE: PA

Specifications and Dimensions subject to change

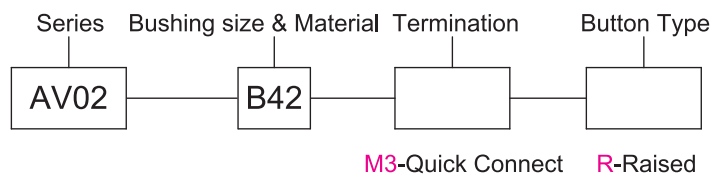
Non-latching 12mm, Quick Connect



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:

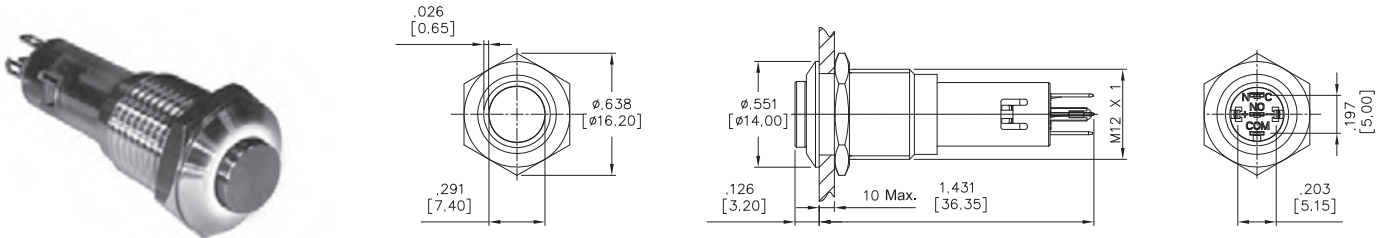
BUSHING: \varnothing 12mm.
 CONTACT RATING: 0.5A @ 220V.
 ELECTRICAL LIFE: 50,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: 100M-ohms min.
 DIELECTRIC STRENGTH: 1,500VAC RMS 50Hz
 IP CLASS: IP40.
 TORQUE: 0.2Nm max. applied to nut
 OPERATING FORCE: 4N.
 OPERATING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

MATERIALS:

BUSHING: Stainless steel
 CONTACT: Stainless steel
 BASE: PA

Specifications and Dimensions subject to change

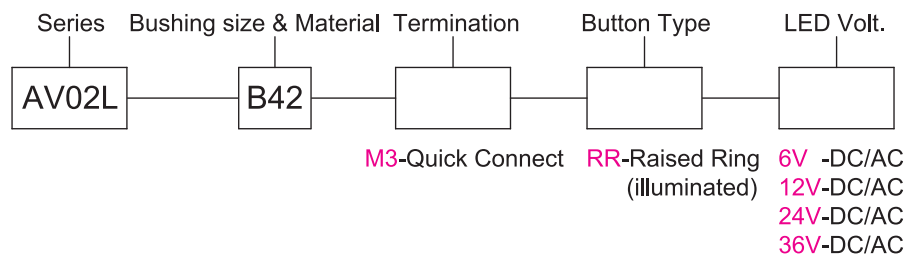
Illuminated Non-latching 12mm, Quick Connect



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:

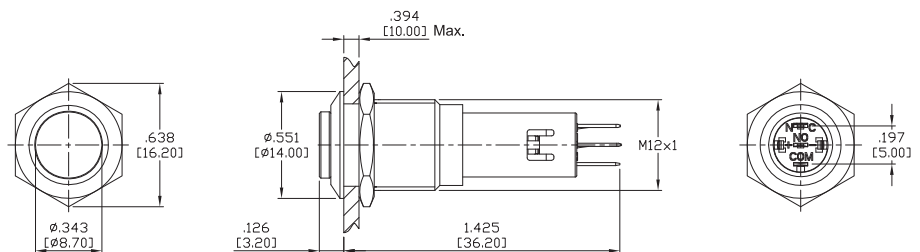
BUSHING: \varnothing 12mm.
 CONTACT RATING: 0.5A @ 220V.
 ELECTRICAL LIFE: 50,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: 100M-ohms min.
 DIELECTRIC STRENGTH: 1,500VAC RMS 50Hz
 IP CLASS: IP40.
 TORQUE: 0.2Nm max. applied to nut
 OPERATING FORCE: 4N.
 OPERATING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

MATERIALS:

BUSHING: Stainless steel
 CONTACT: Stainless steel
 BASE: PA

Specifications and Dimensions subject to change

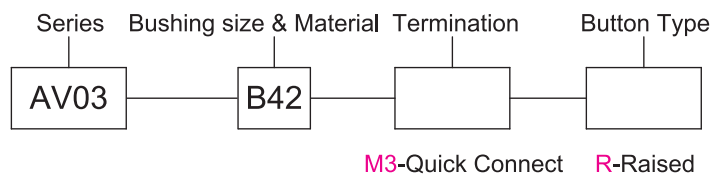
latching 12mm, Quick Connect



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:

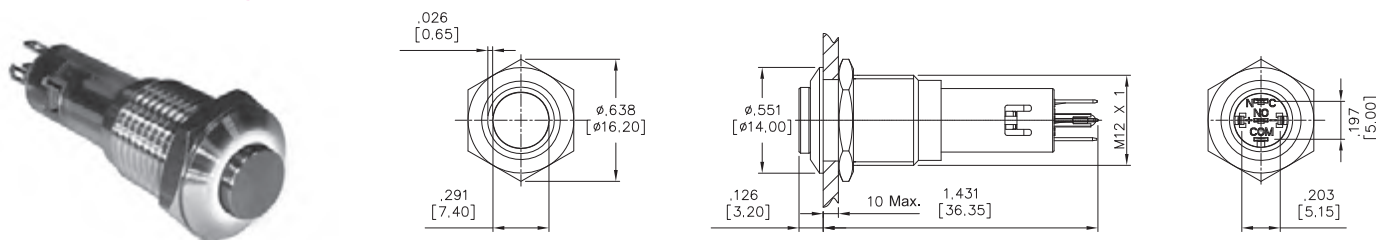
BUSHING: \varnothing 12mm.
 CONTACT RATING: 0.5A @ 220V.
 ELECTRICAL LIFE: 50,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: 100M-ohms min.
 DIELECTRIC STRENGTH: 1,500VAC RMS 50Hz
 IP CLASS: IP40.
 TORQUE: 0.2Nm max. applied to nut
 OPERATING FORCE: 4N.
 OPERATING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

MATERIALS:

BUSHING: Stainless steel
 CONTACT: Stainless steel
 BASE: PA

Specifications and Dimensions subject to change

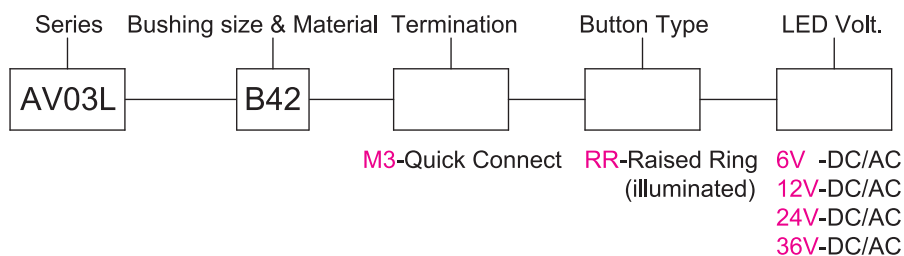
Illuminated latching 12mm, Quick Connect



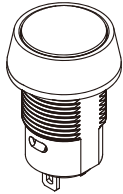
BUSHING & BUTTON MATERIAL OPTIONS

| Code | Bushing Size | Bushing & Button Material | MOQ |
|------|--------------------|---|---------|
| B42 | \varnothing 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.

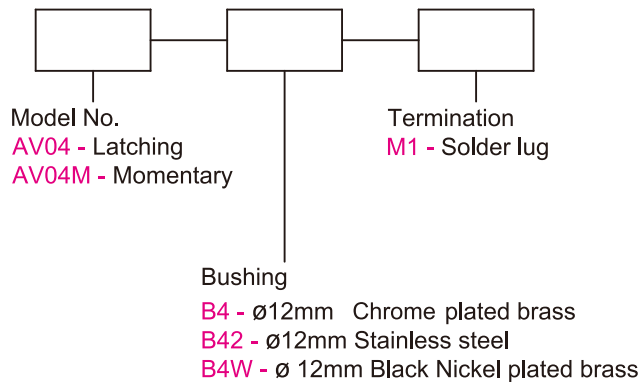
MATERIALS:

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

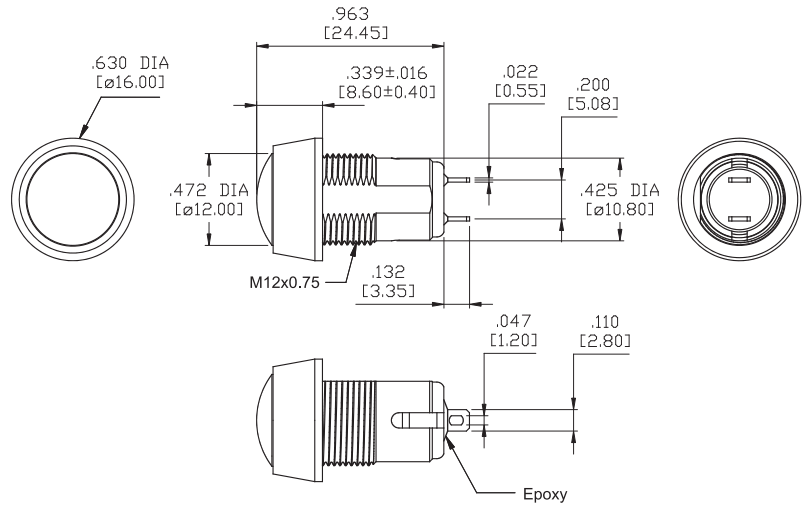


SPST



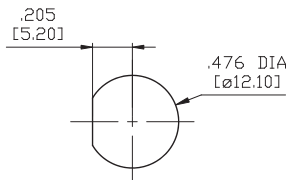
| Model No. | Switching Position | |
|-------------|--------------------|-----|
| AV04 | OFF | ON |
| AV04M | OFF | MOM |
| Term. Comm. | OPEN | 1-3 |

Schematic



PANEL MOUNTING

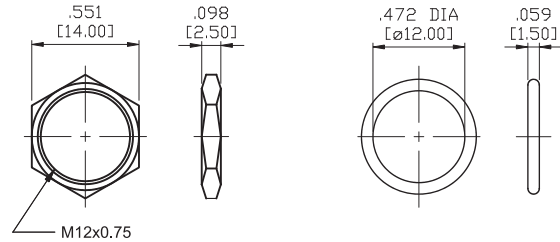
M12 x 0.75 FLAT-CUT THD. BUSHING



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:

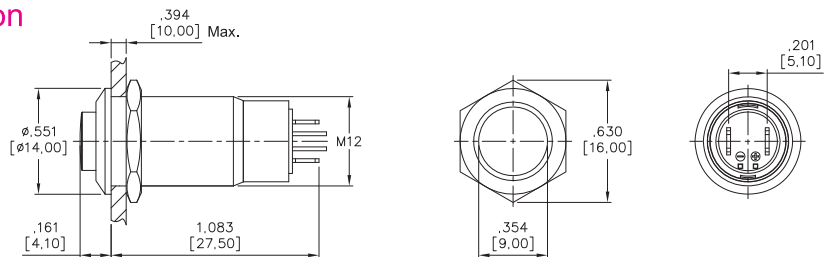
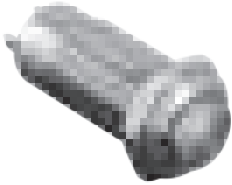
BUSHING: \varnothing 12mm.
 CONTACT RATING: 1A @ 36VDC.
 ELECTRICAL LIFE: 50,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: 1,000M-ohms min.
 DIELECTRIC STRENGTH: 1,500V RMS 50Hz.
 IP CLASS: IP40.
 SWITCH FUNCTION: OFF-ON
 TORQUE: 0.6Nm max. applied to nut
 OPERATING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

MATERIALS:

BUSHING: Stainless steel
 CONTACT: Stainless steel
 BASE: PA

Specifications and Dimensions subject to change

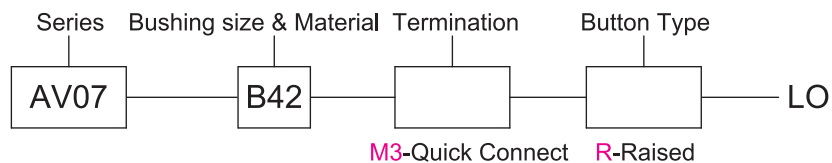
Latching SPST 12mm, Raised Button



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:

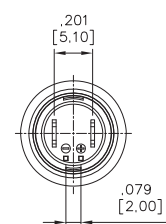
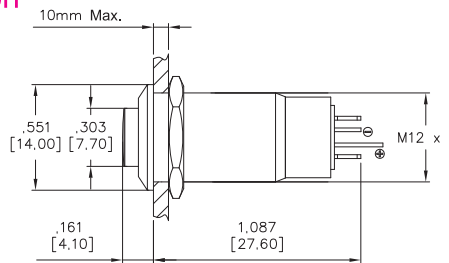
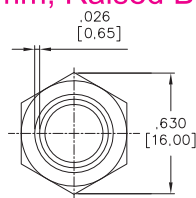
BUSHING: ϕ 12mm.
 CONTACT RATING: 1A @ 36VDC.
 ELECTRICAL LIFE: 50,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: 1,000M-ohms min.
 DIELECTRIC STRENGTH: 1,500V RMS 50~60Hz.
 IP CLASS: IP40.
 SWITCH FUNCTION: OFF-ON
 TORQUE: 0.6Nm max. applied to nut
 OPERATING FORCE: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

MATERIALS:

BUSHING: Stainless steel
 CONTACT: Stainless steel
 BASE: PA

Specifications and Dimensions subject to change

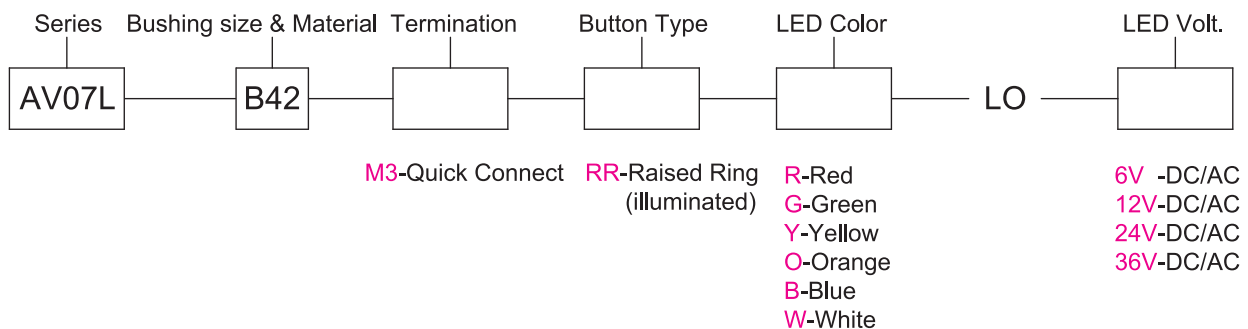
Illuminated Latching SPST 12mm, Raised Button

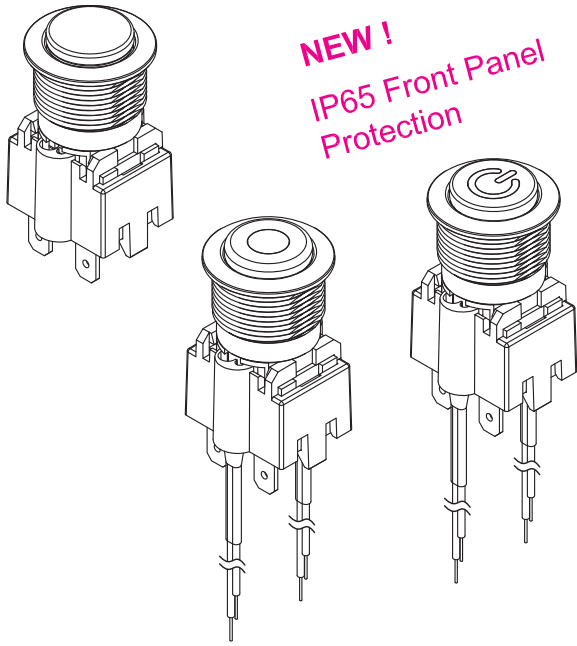


BUSHING & BUTTON MATERIAL OPTIONS

| Code | Bushing Size | Bushing & Button Material | MOQ |
|------|--------------|---|---------|
| B42 | ϕ 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.

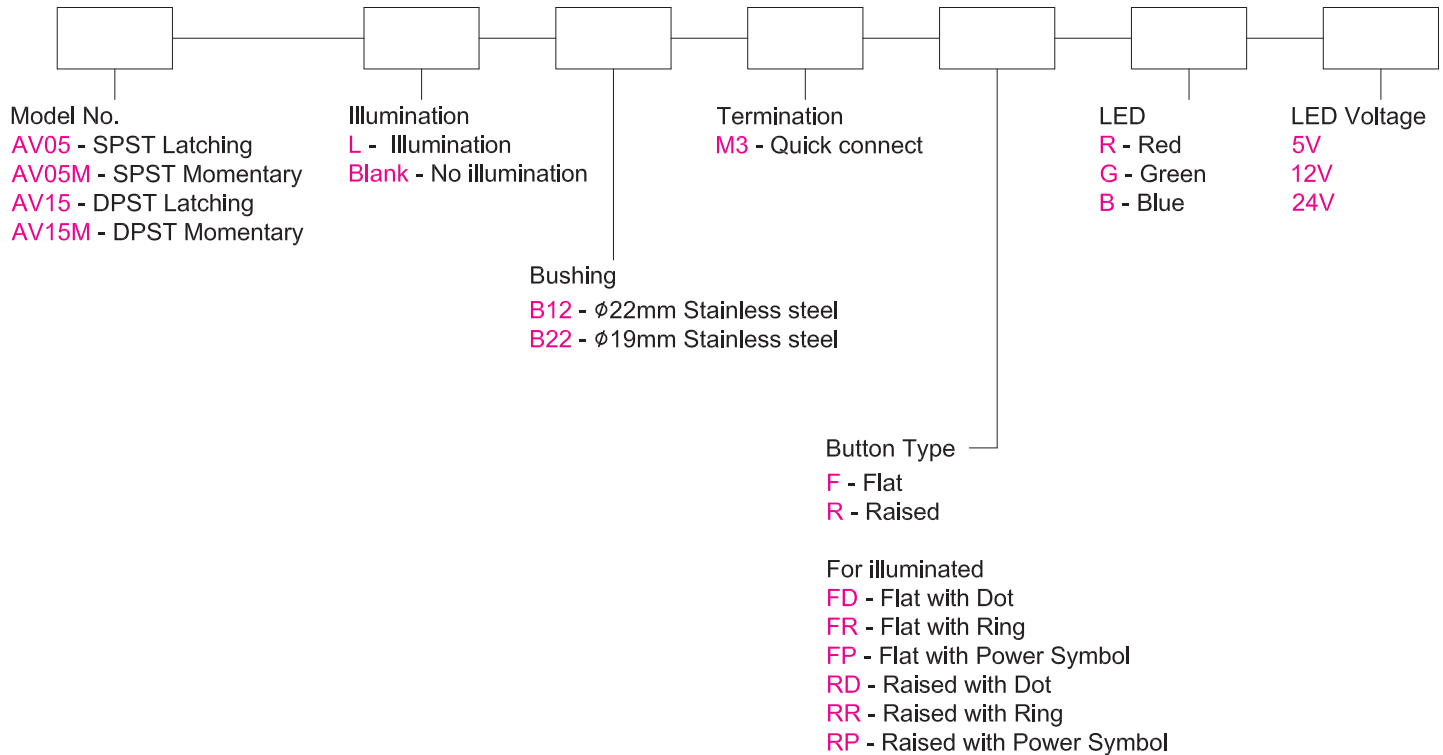
MATERIALS:

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.

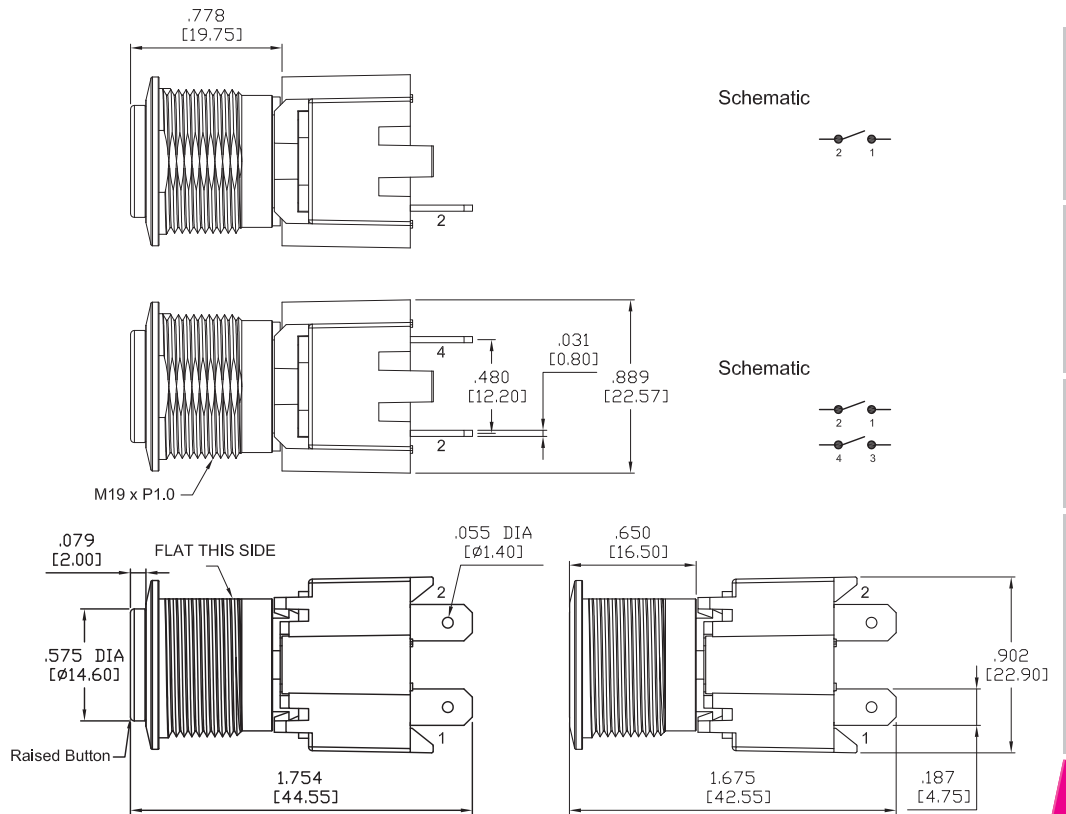
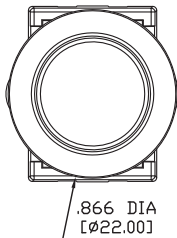
HOW TO ORDER SYSTEM



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 |

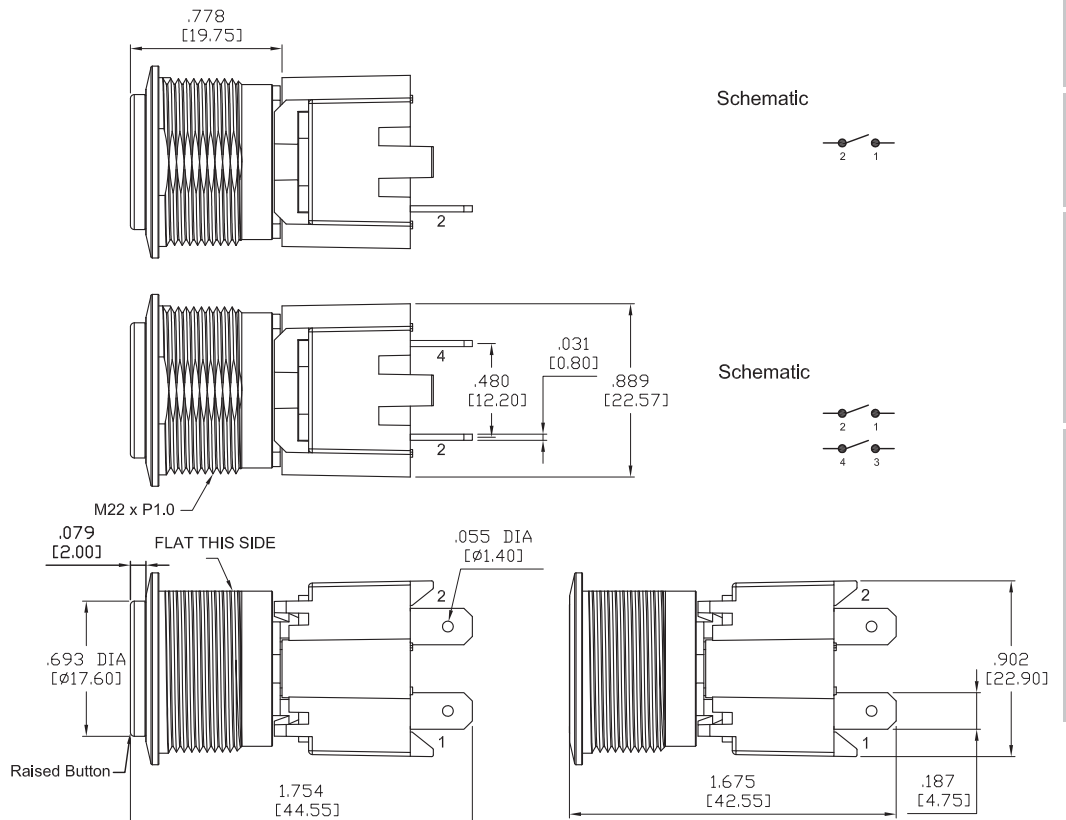
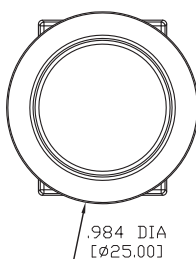


Toggle
Rocker
Slide
Pushbutton
AV

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 |

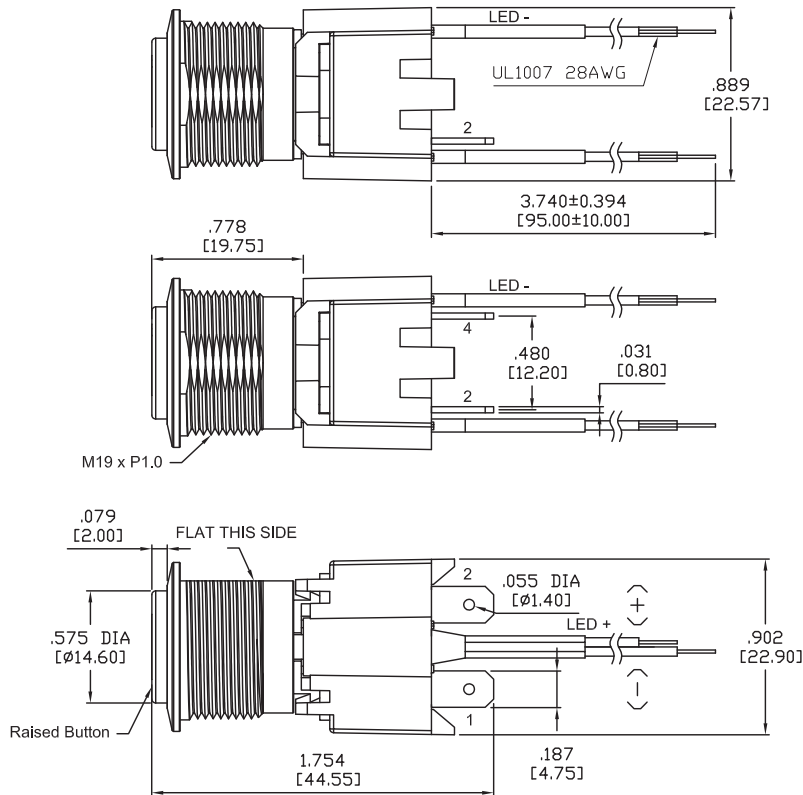
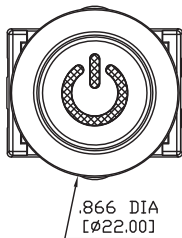


Rotary
Tact
Touch Key
Miscellaneous

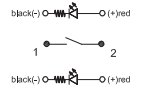
Illuminated Non-latching & Latching $\varnothing 19\text{mm}$, Quick Connect

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

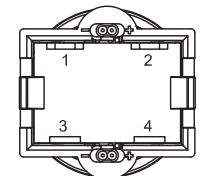
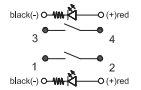
| Model No. | DPST Switching Position | |
|-------------|-------------------------|----------|
| AV15 | OFF | ON |
| AV15M | OFF | MOM |
| Term. Comm. | OPEN | 2-1, 4-3 |



Schematic



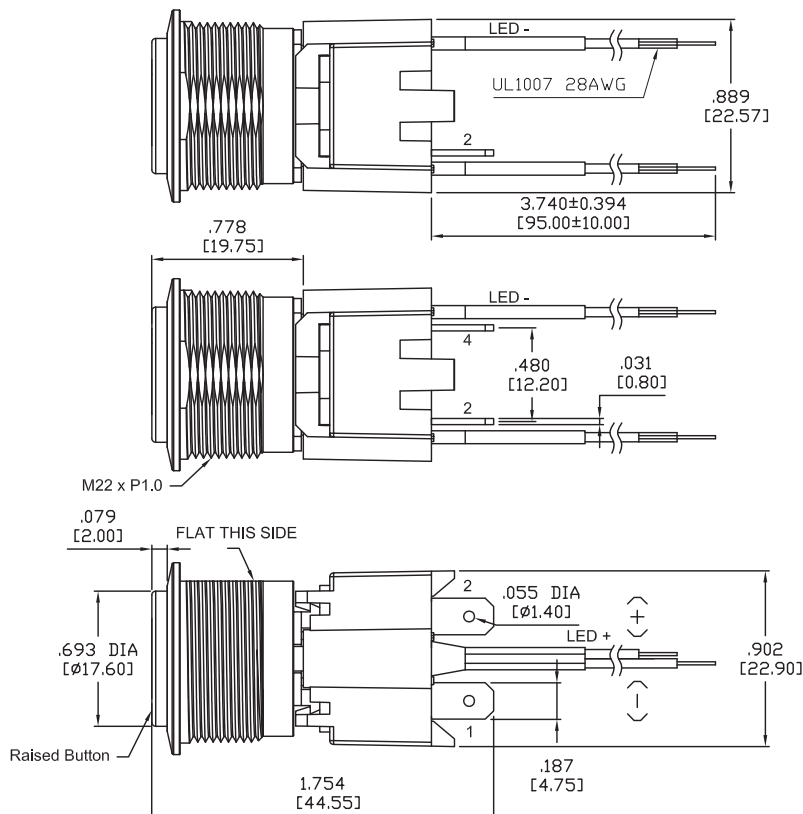
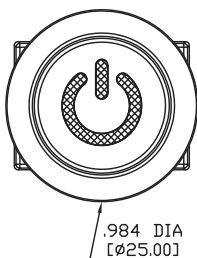
Schematic



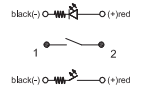
Illuminated Non-latching & Latching $\varnothing 22\text{mm}$, Quick Connect

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

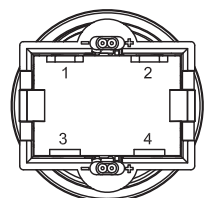
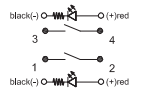
| Model No. | DPST Switching Position | |
|-------------|-------------------------|----------|
| AV15 | OFF | ON |
| AV15M | OFF | MOM |
| Term. Comm. | OPEN | 2-1, 4-3 |



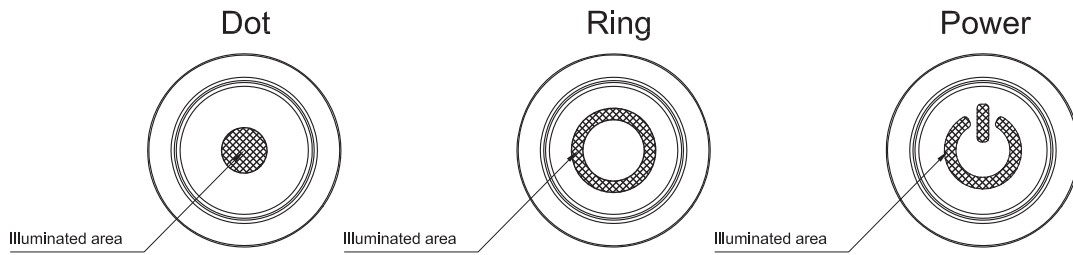
Schematic



Schematic

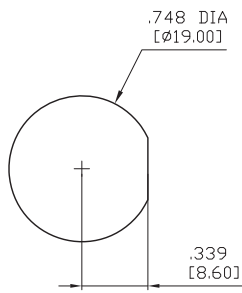


BUTTON TYPE

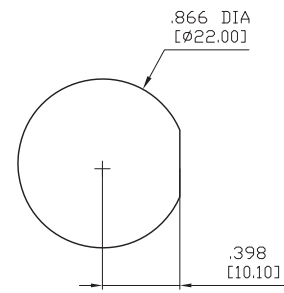


PANEL MOUNTING

M19 x 1.0 FLAT-CUT THD. BUSHING

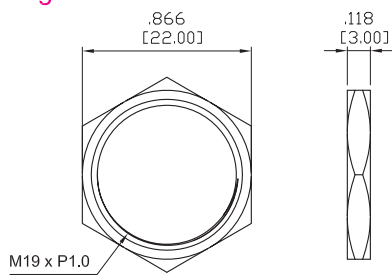


M22 x 1.0 FLAT-CUT THD. BUSHING



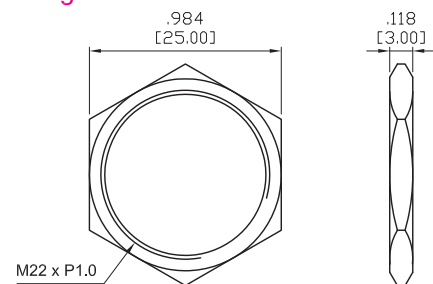
HARDWARE

M19 bushing



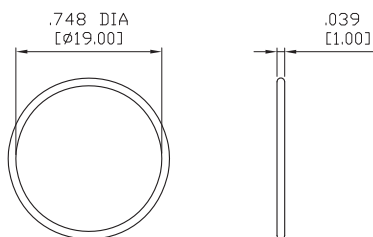
NUT

M22 bushing

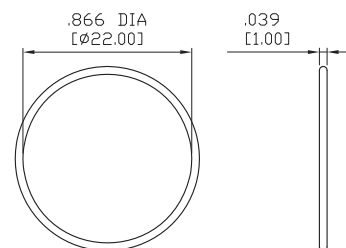


O-RING

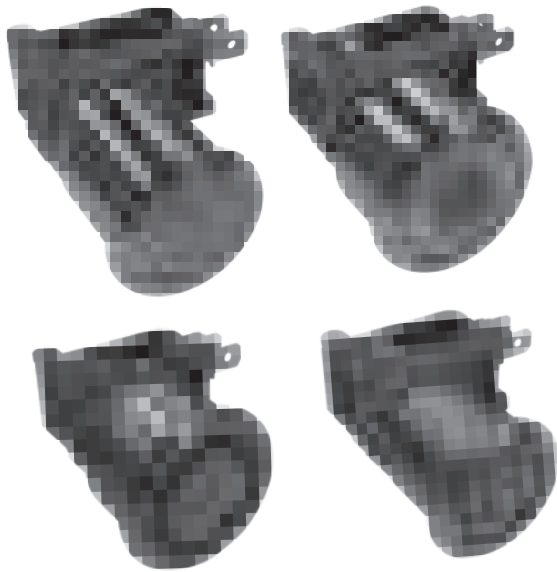
M19 bushing



M22 bushing



**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.

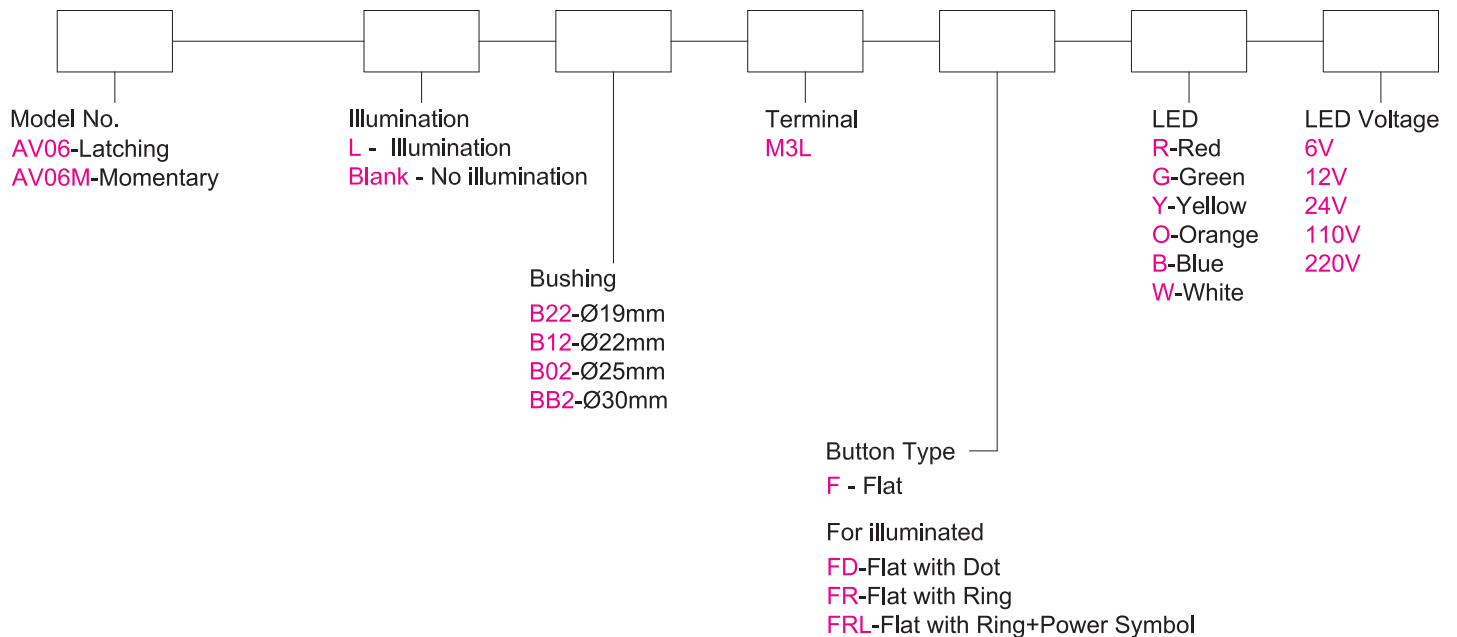
MATERIALS:

BUSHING: Stainless steel
 BODY: Stainless steel
 BASE: POM

Specifications and Dimensions subject to change

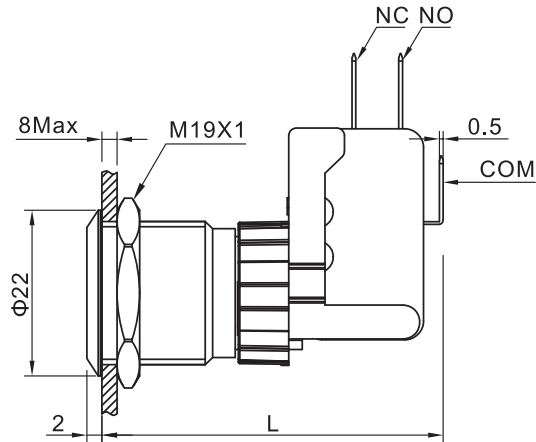
If your preferred product configuration is not shown, please contact our sales representative for custom design.

HOW TO ORDER SYSTEM



Non-Latching & Latching Ø19mm

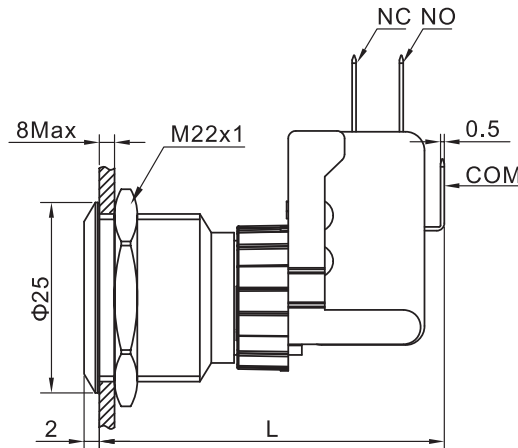
| Model No. | SPST Switching Position | |
|-----------|-------------------------|-----|
| AV06 | ON | ON |
| AV06M | ON | MOM |



Ex. P/N: AV06-B22-M3L-F (L=51.2mm)
AV06M-B22-M3L-F (L=44.9mm)

Non-Latching & Latching Ø22mm

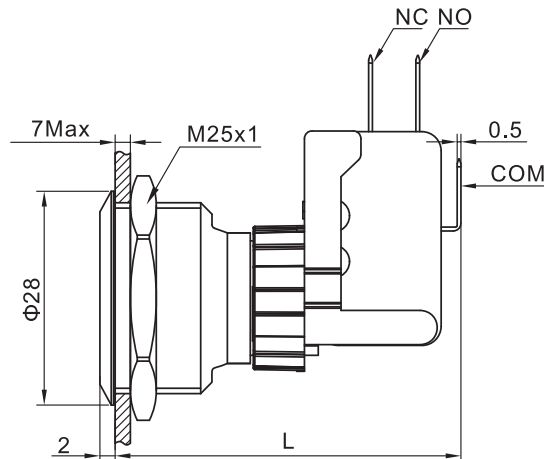
| Model No. | SPST Switching Position | |
|-----------|-------------------------|-----|
| AV06 | ON | ON |
| AV06M | ON | MOM |



Ex. P/N: AV06-B12-M3L-F (L=51.2mm)
AV06M-B12-M3L-F (L=44.9mm)

Non-Latching & Latching Ø25mm

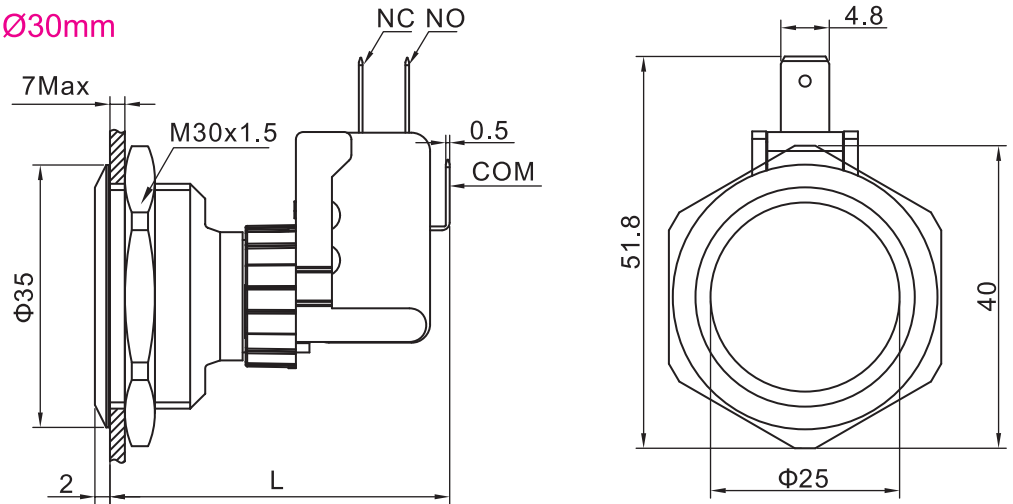
| Model No. | SPST Switching Position | |
|-----------|-------------------------|-----|
| AV06 | ON | ON |
| AV06M | ON | MOM |



Ex. P/N: AV06-B02-M3L-F (L=51.2mm)
AV06M-B02-M3L-F (L=44.9mm)

Non-Latching & Latching Ø30mm

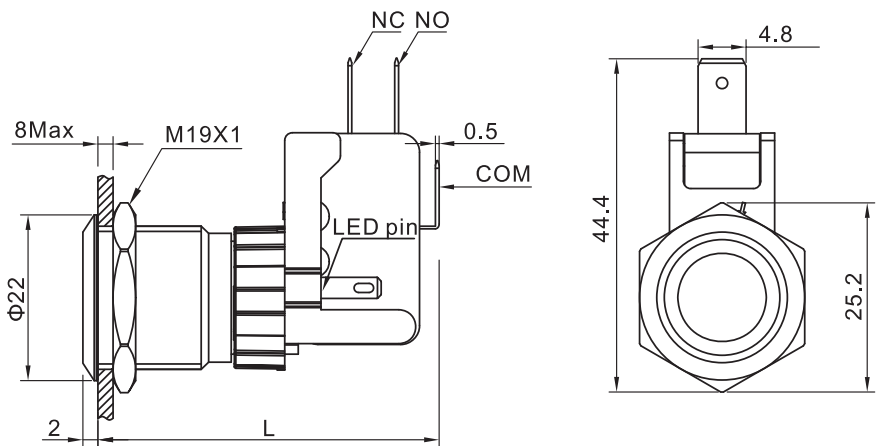
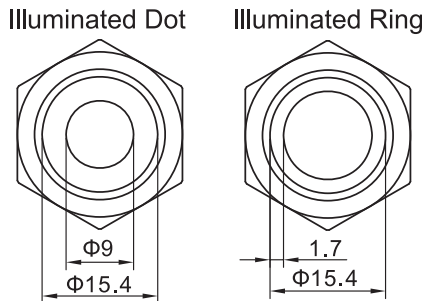
| Model No. | SPST Switching Position | |
|-----------|-------------------------|-----|
| AV06 | ON | ON |
| AV06M | ON | MOM |



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

Illuminated Non-Latching & Latching Ø19mm

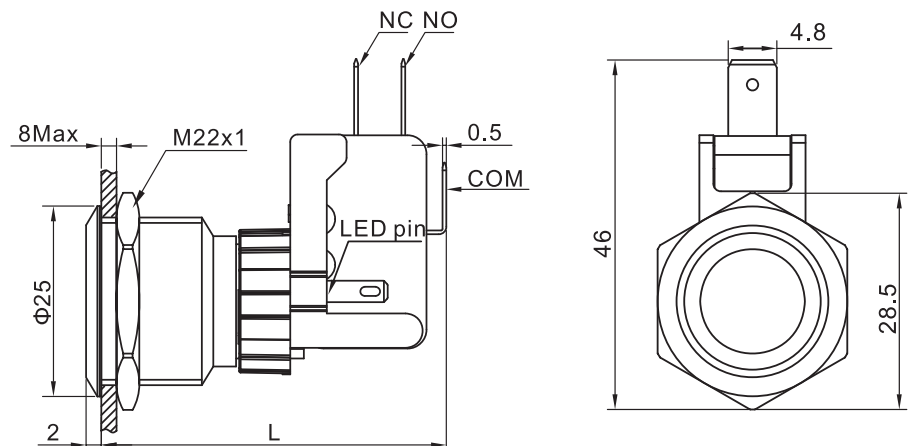
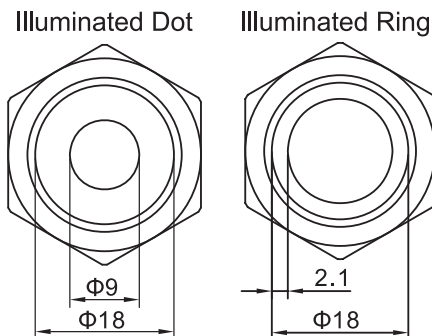
| Model No. | SPST Switching Position | |
|-----------|-------------------------|-----|
| AV06L | ON | ON |
| AV06ML | ON | MOM |



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 |

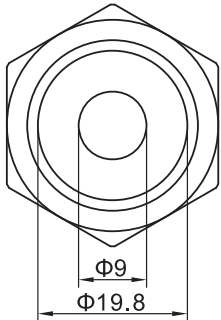


Ex. P/N: AV06L-B12-M3L-FD/FR (L=51.2mm)
AV06ML-B12-M3L-FD/FR (L=44.9mm)

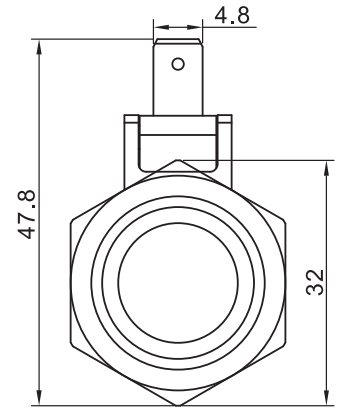
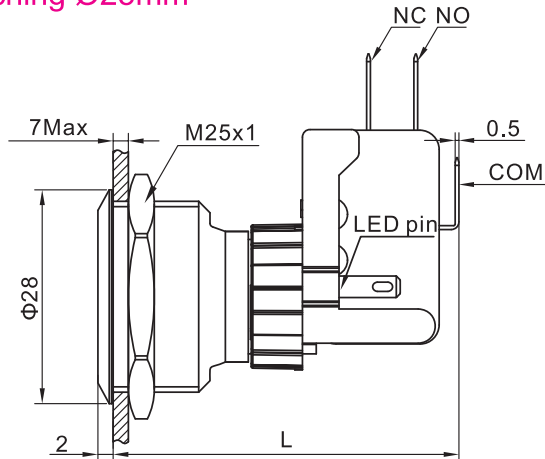
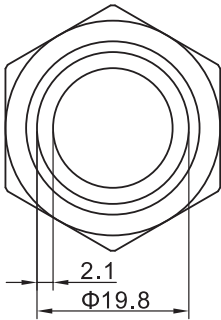
Illuminated Non-Latching & Latching Ø25mm

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

Illuminated Dot



Illuminated Ring

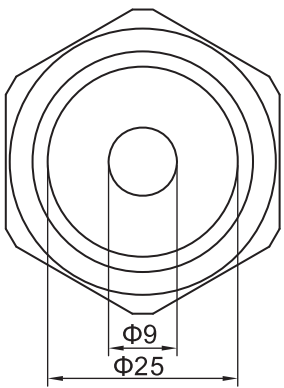


Ex. P/N: AV06L-B02-M3L-FD/FR (L=51.2mm)
AV06ML-B02-M3L-FD/FR (L=44.9mm)

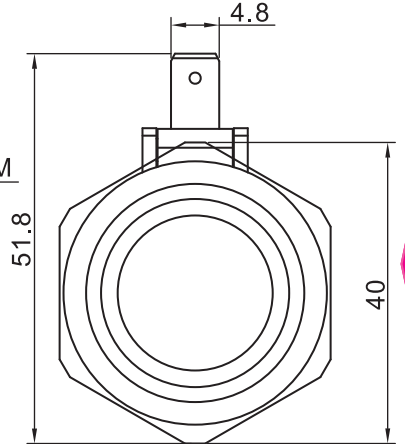
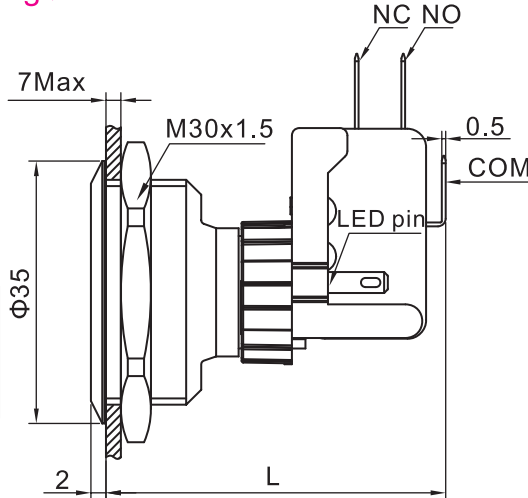
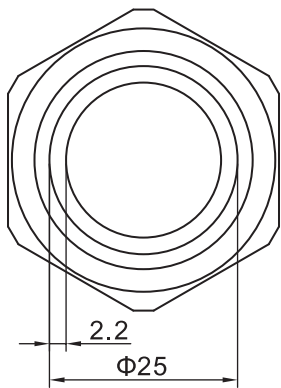
Illuminated Non-Latching & Latching Ø30mm

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

Illuminated Dot



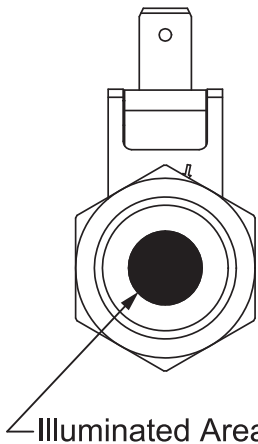
Illuminated Ring



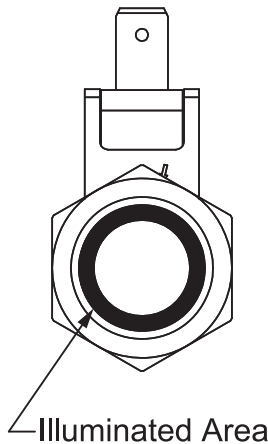
Ex. P/N: AV06L-BB2-M3L-FD/FR (L=51.2mm)
AV06ML-BB2-M3L-FD/FR (L=44.9mm)

BUTTON TYPE

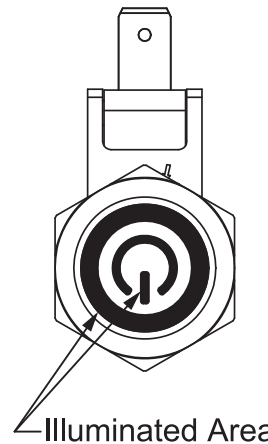
FD: Flat Dot



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:

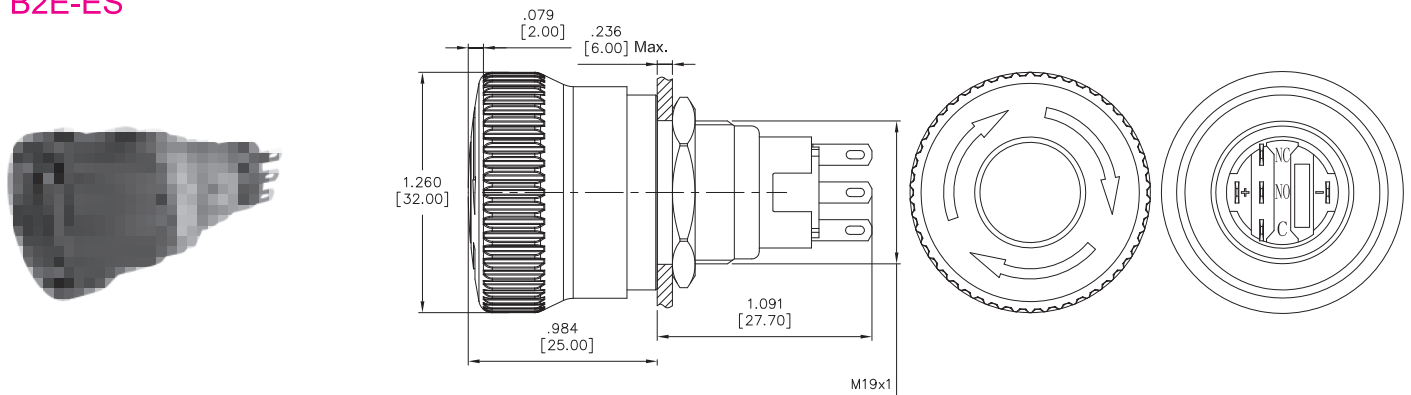
BUSHING: \varnothing 19mm, \varnothing 22mm.
 CONTACT RATING: 0.5A 220V/ 0.7A 24VDC.
 ELECTRICAL LIFE: 50,000cycles at full load.
 CONTACT RESISTANCE: 50m-ohms max.
 INSULATION RESISTANCE: 1,000M-ohms min @ 500VDC.
 DIELECTRIC STRENGTH: 2,000VAC 50~60Hz.
 IP CLASS: IP65 & IK02.
 TORQUE: 5~14Nm max. applied 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:

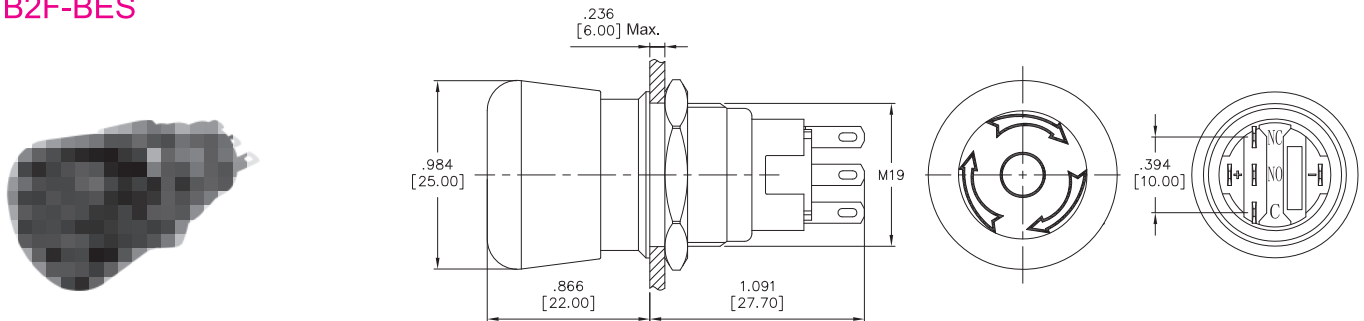
BUSHING: Please refer to Bushing & Button Material Options
 CONTACT: Stainless steel
 BASE: PBT

Specifications and Dimensions subject to change

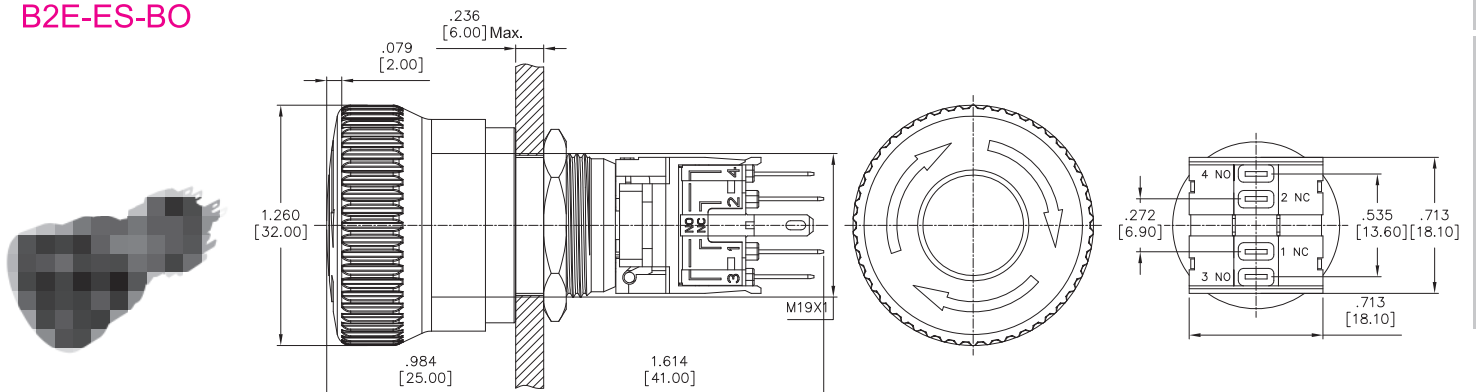
B2E-ES



B2F-BES

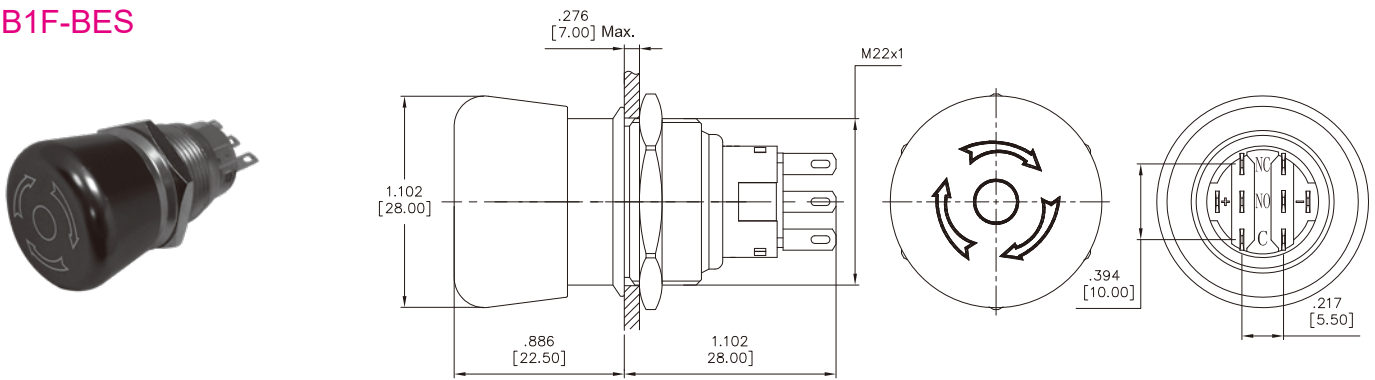


B2E-ES-BO



* BO option is not available with BES

B1F-BES

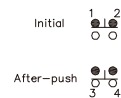


BUSHING & BUTTON MATERIAL OPTIONS

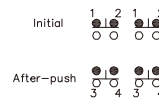
| Code | Bushing Size | Bushing & Button Material | MOQ |
|-----------|--------------|--|---------|
| B2E | ∅ 19mm | Al alloy body, red button | 100 PCS |
| B1F / B2F | ∅ 22 / 19mm | Al alloy, gold anodized body, red button | 100 PCS |

CIRCUIT DIAGRAM

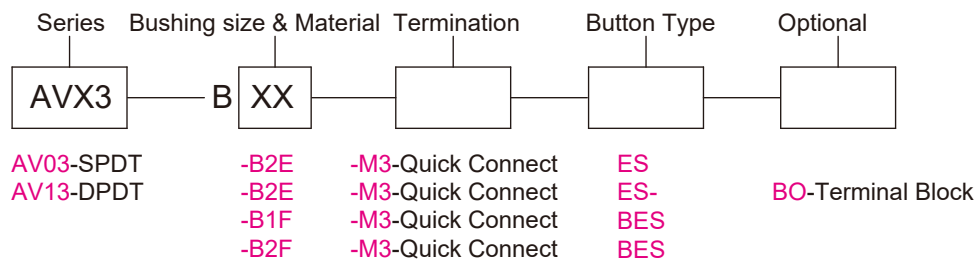
1NO1NC



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.

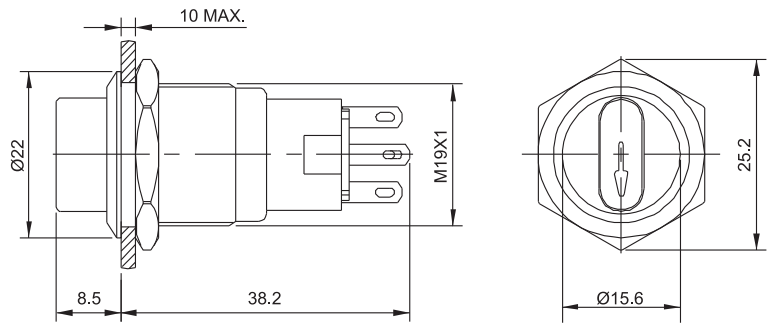
Base: PBT.

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 |

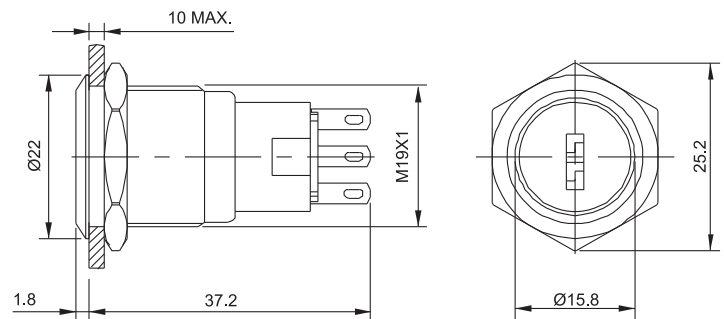


19mm, Key

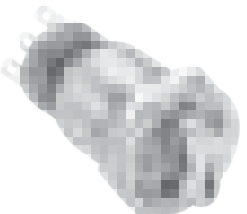


| Model No. | SPDT Type | |
|-----------|-----------|-----|
| 02 | ON | MOM |
| 03 | ON | ON |

| Model No. | DPDT Type | |
|-----------|-----------|-----|
| 12 | ON | MOM |
| 13 | ON | ON |

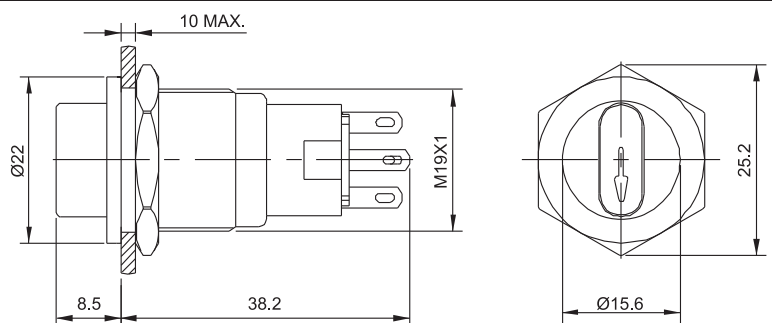


19mm, Selector with illuminated arrow

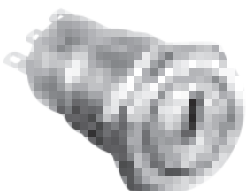


| Model No. | SPDT Type | |
|-----------|-----------|-----|
| 02L | ON | MOM |
| 03L | ON | ON |

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

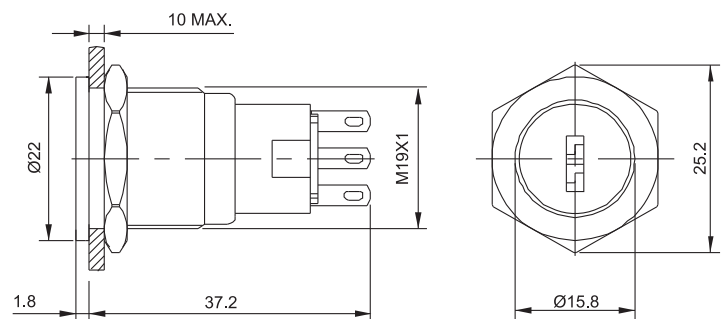


19mm, Key



| Model No. | SPDT Type | |
|-----------|-----------|-----|
| 02 | ON | MOM |
| 03 | ON | ON |

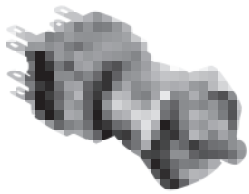
| Model No. | DPDT Type | |
|-----------|-----------|-----|
| 12 | ON | MOM |
| 13 | ON | ON |



Series AVx

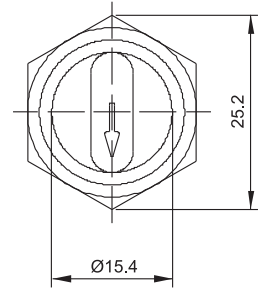
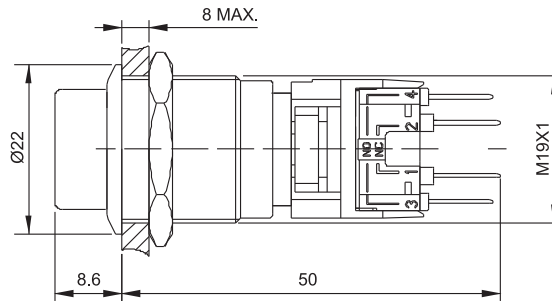
Anti-Vandal Key and Selector Switches

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 |

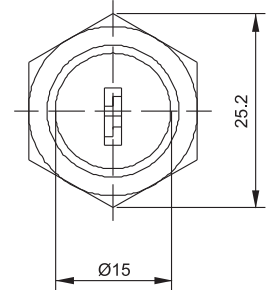
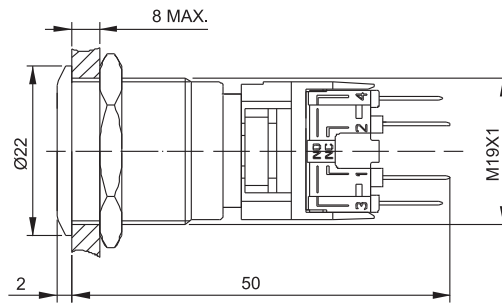


19mm, Key with Base



| Model No. | SPDT Type | |
|-----------|-----------|-----|
| 02 | ON | MOM |
| 03 | ON | ON |

| Model No. | DPDT Type | |
|-----------|-----------|-----|
| 12 | ON | MOM |
| 13 | ON | ON |

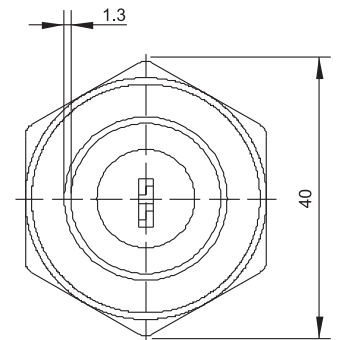
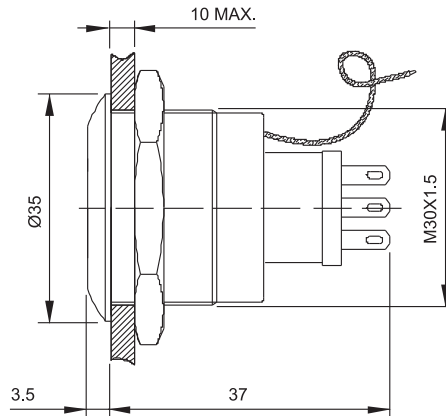


30mm, Key with illuminated ring

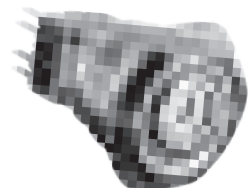


| Model No. | SPDT Type | |
|-----------|-----------|-----|
| 02L | ON | MOM |
| 03L | ON | ON |

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

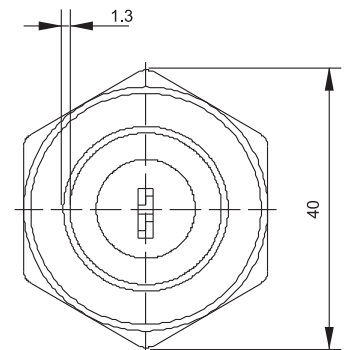
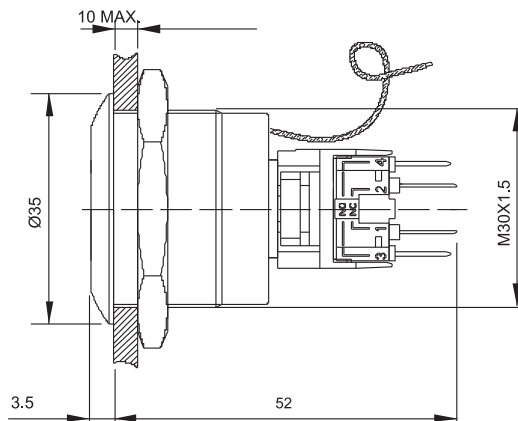


30mm, Knob with Base, illuminated ring



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

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



BUSHING & BUTTON MATERIAL OPTIONS

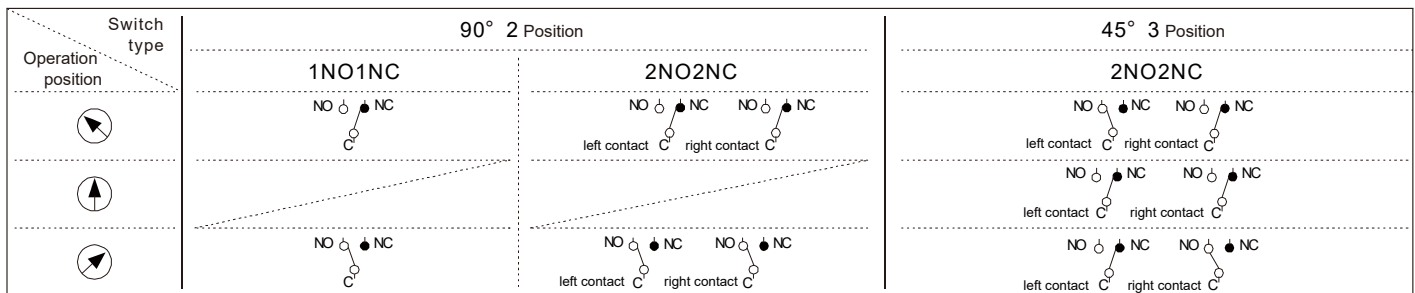
| Code | Bushing Size | Bushing & Button Material |
|------|--------------|---|
| B22 | Ø19mm | Stainless steel with varnished polished |
| BB2 | Ø30mm | Stainless steel with varnished polished |

OPTION CODE

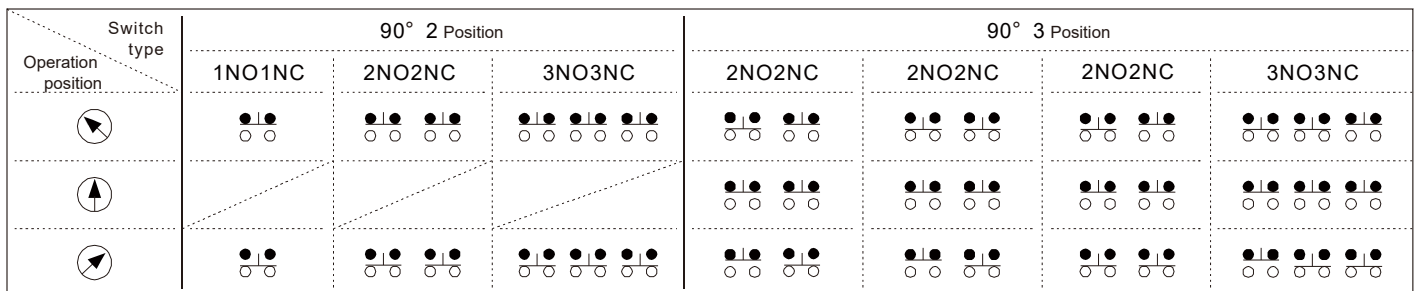
| Code | LED Voltage and Consumption |
|------|-----------------------------|
| 6V | 6V (AC/DC Compatible) 15mA |
| 12V | 12V (AC/DC Compatible) 15mA |
| 24V | 24V (AC/DC Compatible) 15mA |
| 36V | 36V (AC/DC Compatible) 15mA |
| 110V | 110V (AC/DC Compatible) 5mA |
| 220V | 220V (AC/DC Compatible) 5mA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

key and Selector operation chart

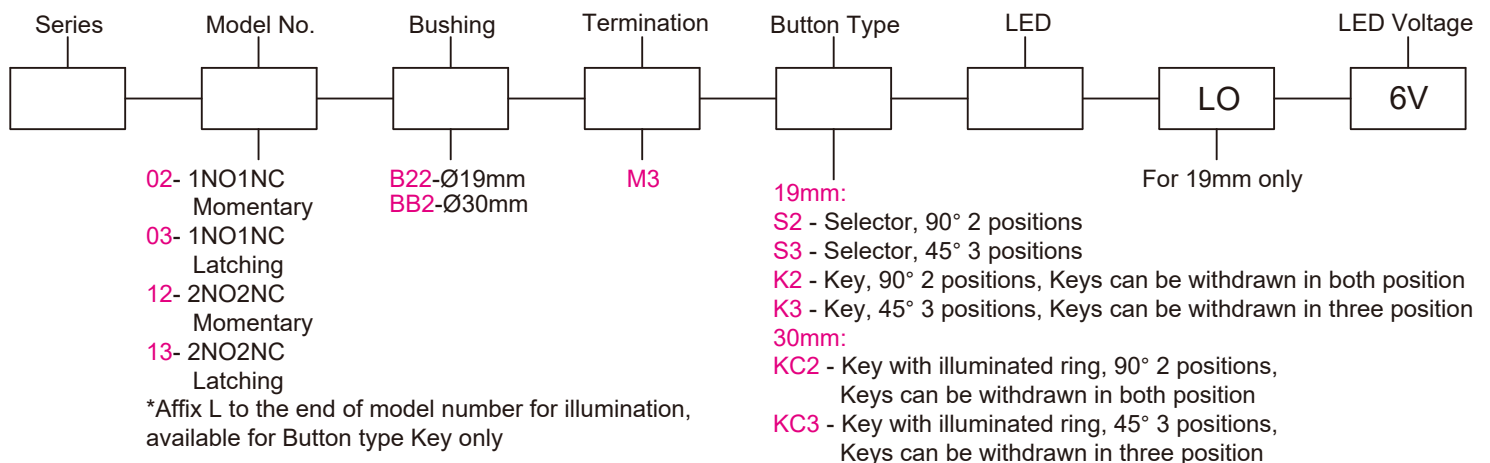
19mm & 30mm key and selector switch



19mm & 30mm key and selector switch with base



HOW TO ORDER

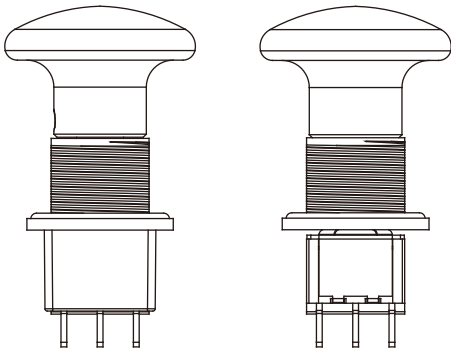


SPECIFICATIONS:

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

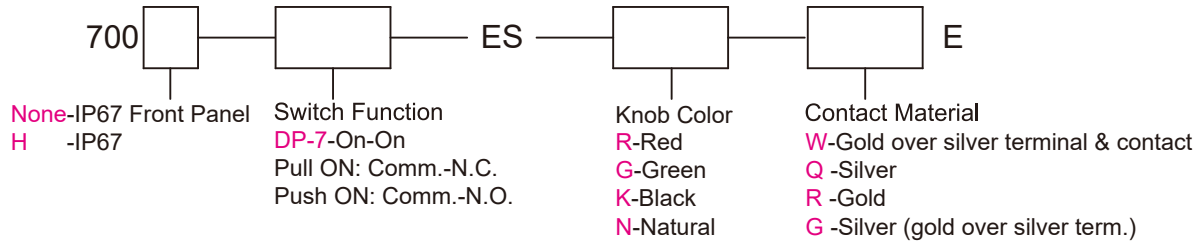
MATERIALS:

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

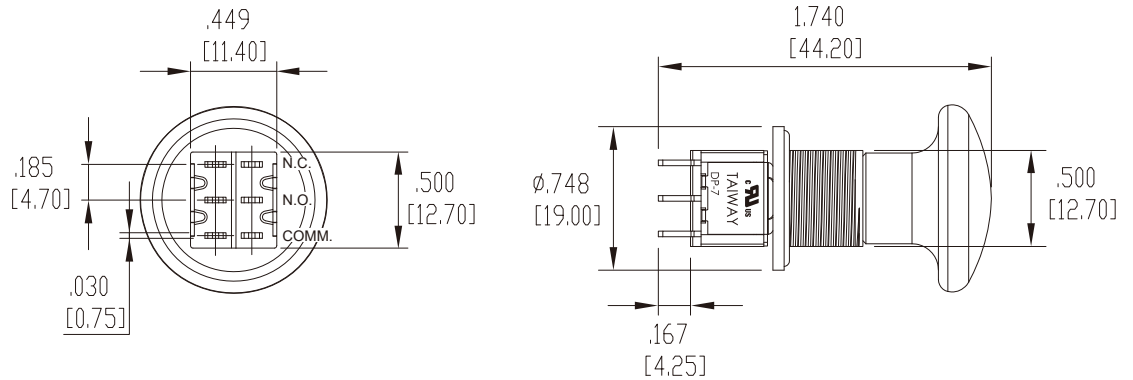


If your preferred product configuration is not shown, please contact our sales representative for custom design.

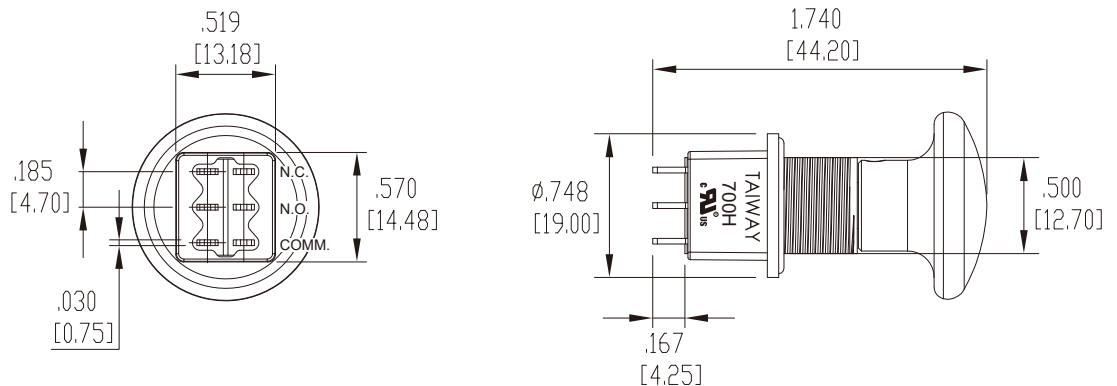
HOW TO ORDER SYSTEM



IP67 Front Panel



IP67



SPECIFICATIONS:

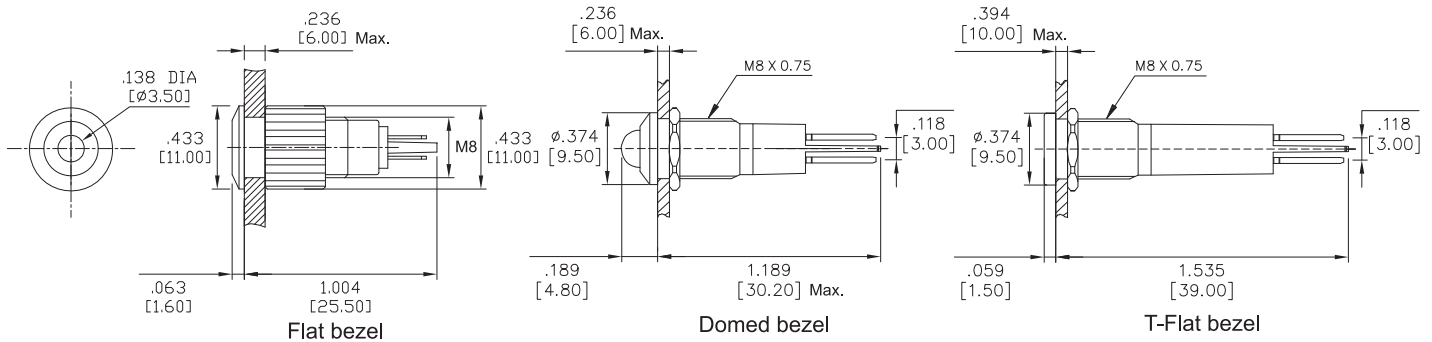
VOLTAGE RANGE: Refer to Voltage Option.
 RATED CURRENT: 15mA.
 DIELECTRIC STRENGTH: 1,100V RMS 50~60Hz.
 OPERATING TEMPERATURE: -20°C to +55°C
 IP CLASS: IP67 / IP68 front panel protection.
 TORQUE: 5~14Nm max. applied to nut.

MATERIALS:

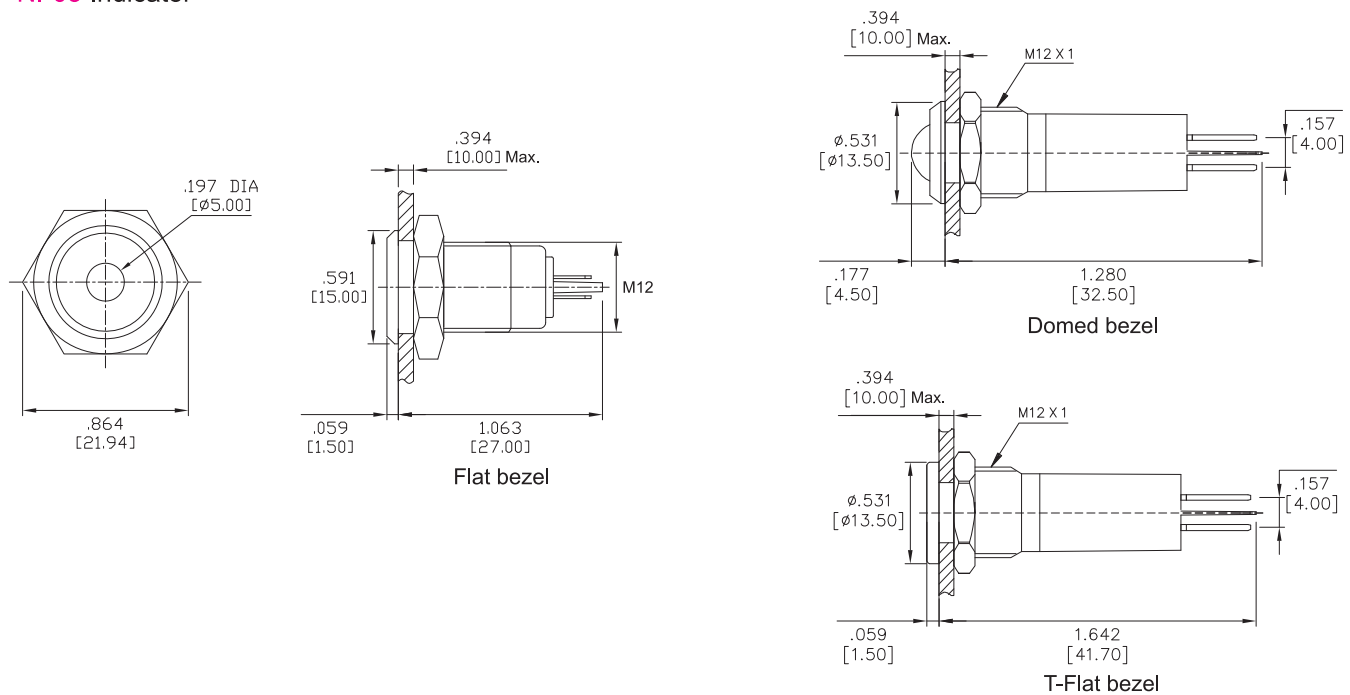
LED COVER: PC.
 BODY: Brass nickel plated, Stainless steel,
 Brass black nickel Plated
 BASE: PBT.
 ILLUMINANT: LED.

Specifications and Dimensions subject to change

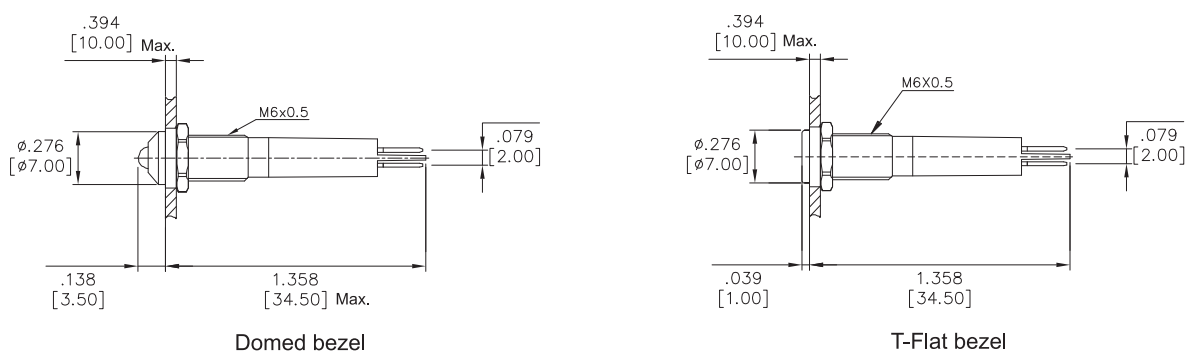
NI-04 Indicator



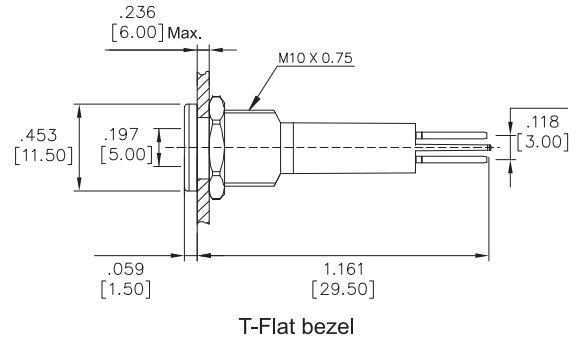
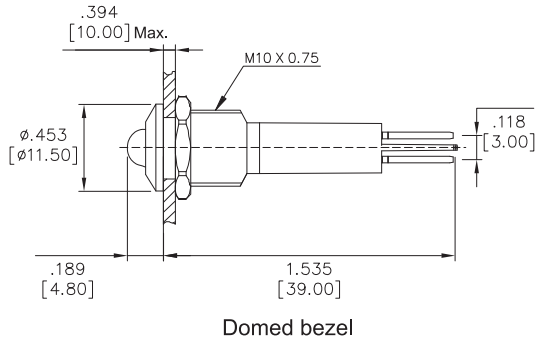
NI-05 Indicator



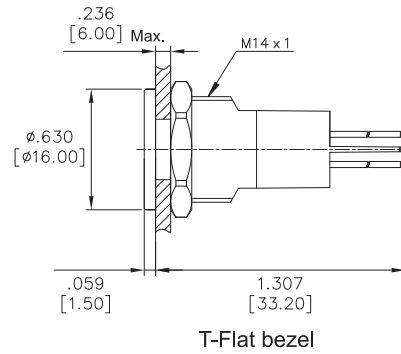
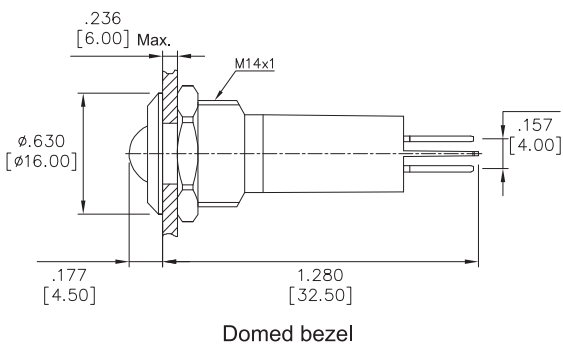
NI-06 Indicator



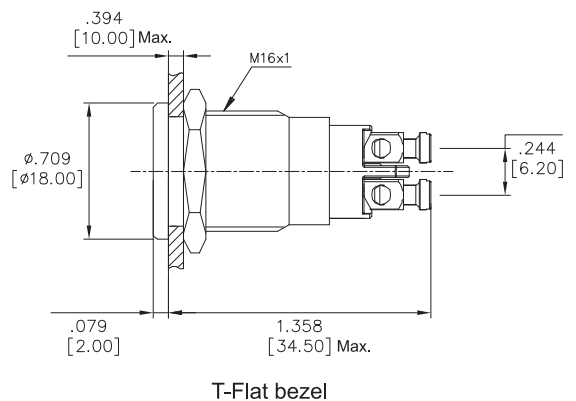
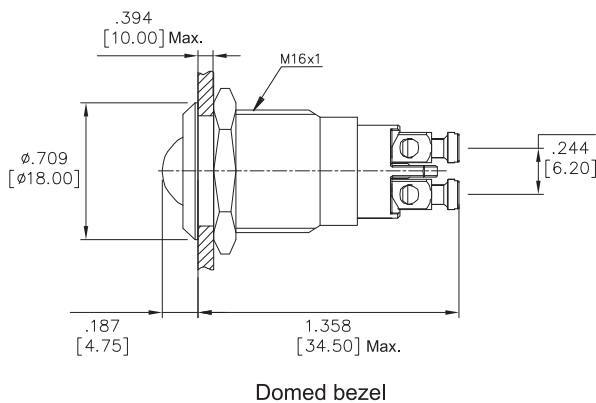
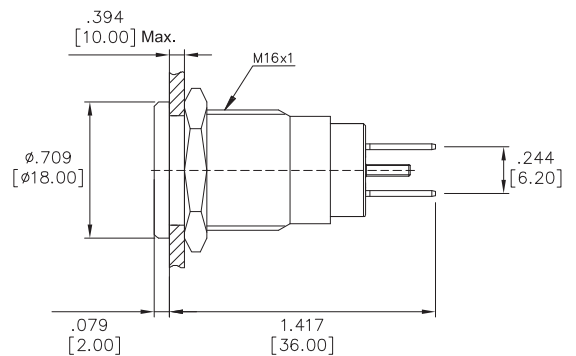
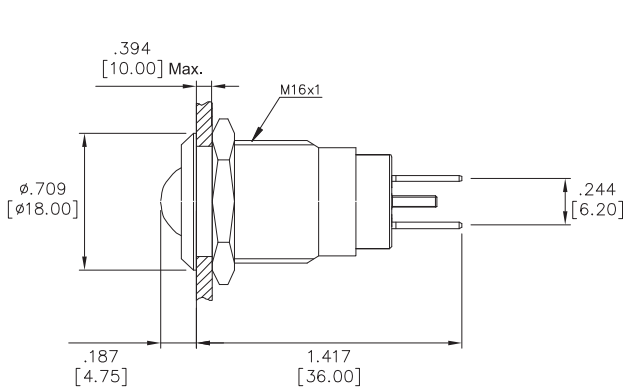
NI-10 Indicator



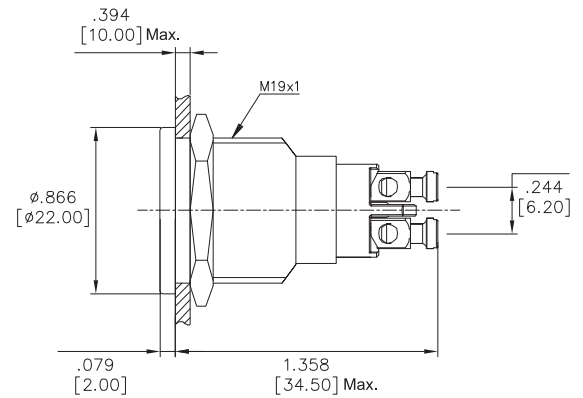
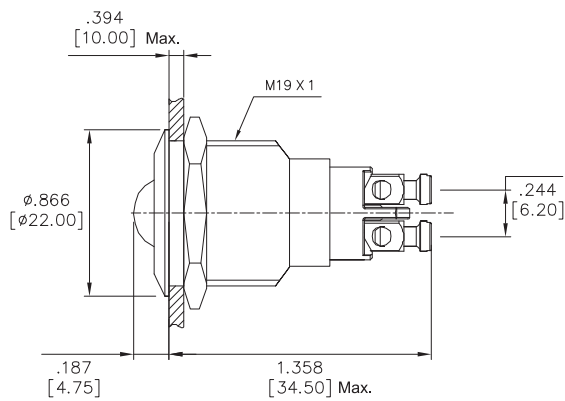
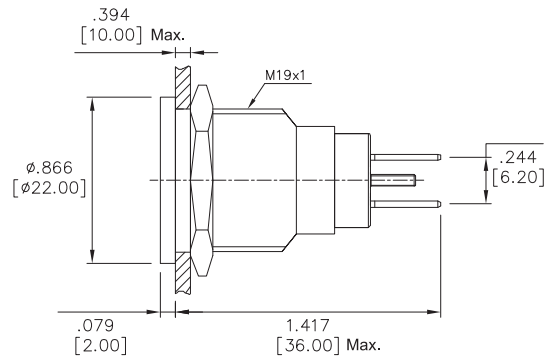
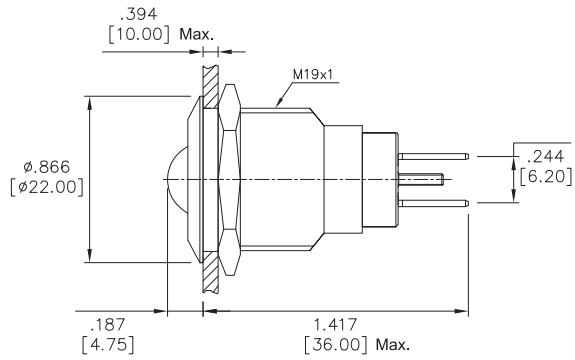
NI-14 Indicator



NI-16 Indicator



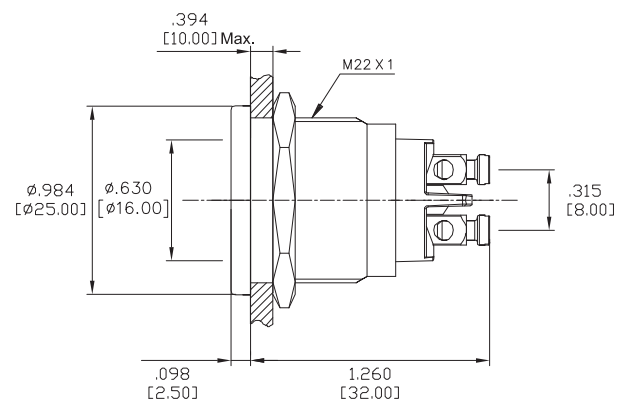
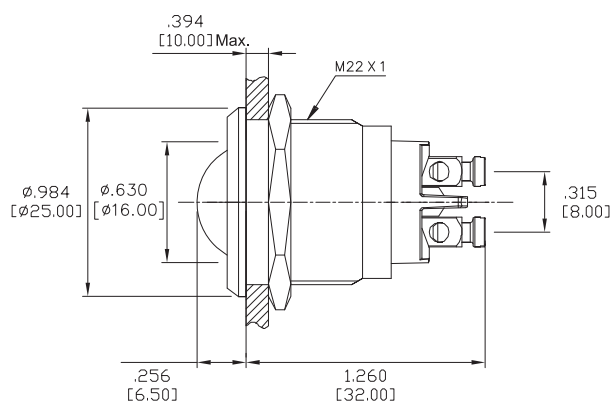
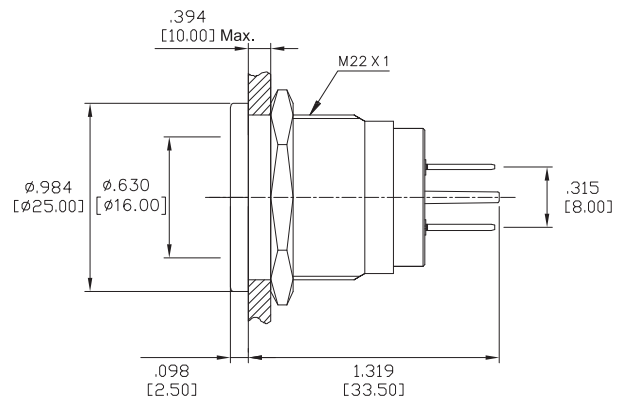
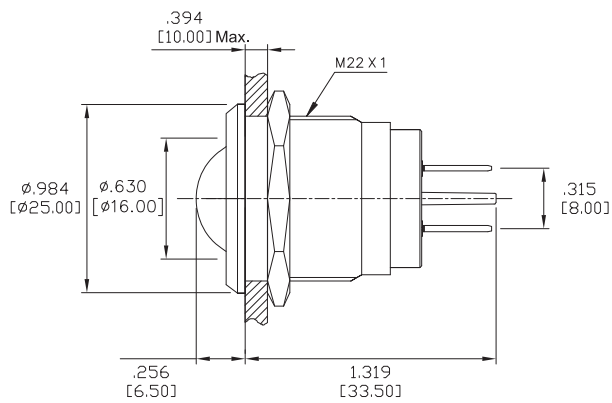
NI-19 Indicator



Domed bezel

T-Flat bezel

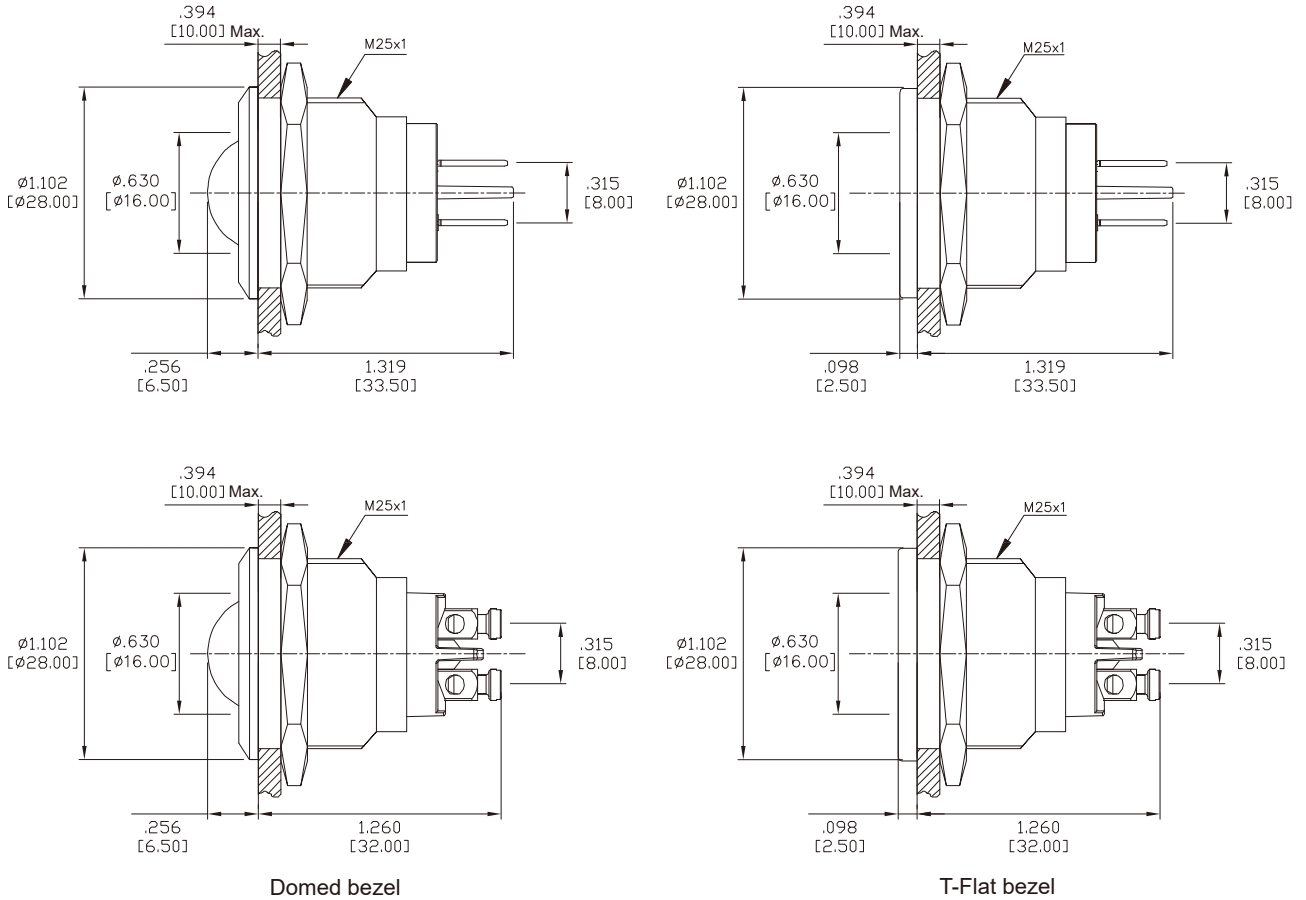
NI-22 Indicator



Domed bezel

T-Flat bezel

NI-25 Indicator



LED & VOLTAGE OPTIONS & BODY MATERIAL

LED Colors

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

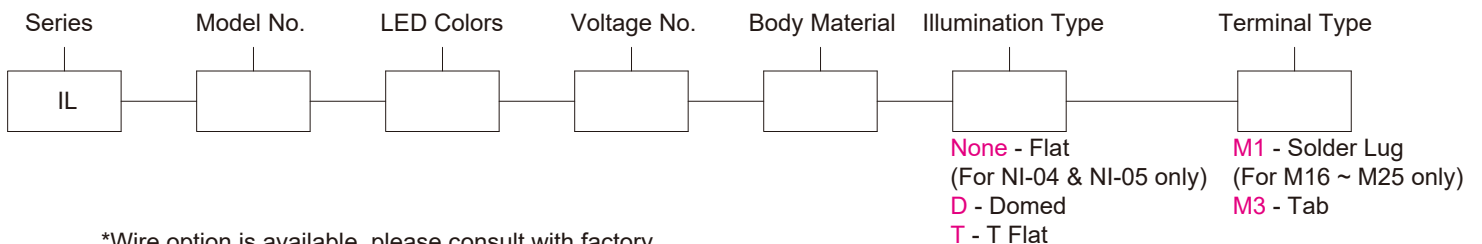
Voltage

| 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 *Not available for NI-19 · NI-22 · NI-25 |
| S | Stainless steel *Not available for NI-04 Flat type |
| K | Brass black nickel plated |

HOW TO ORDER



*Wire option is available, please consult with factory.

SPECIFICATIONS:

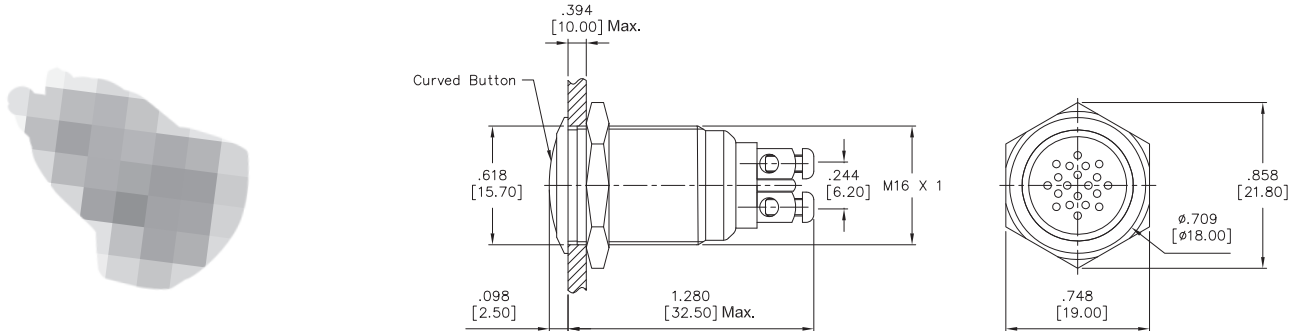
BUSHING: ϕ 16mm.
 Rated Current: Max. 30mA @ 12/24VDC.
 Sound Intensity: \geq 85dB at 0.1 meter away,
 \geq 75dB at 1 meter away.
 Dielectric Strength: 2,000V RMS 50~60Hz.
 Operating Temperature: -20°C ~ +55°C
 Protection Class: IP40 & IK04.
 Torque: 5~14Nm max. applied to nut.

MATERIALS:

Bushing & Button: Stainless steel.
 Base: PBT.

Specifications and Dimensions subject to change

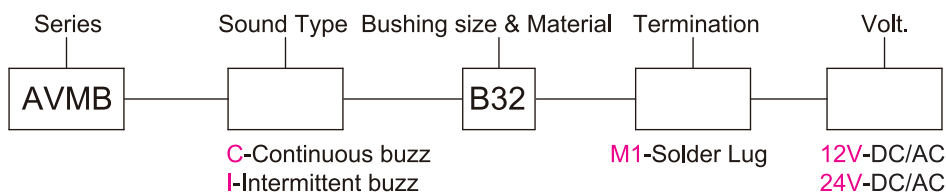
B3 ϕ 16mm



BUSHING & BUTTON MATERIAL OPTIONS

| Code | Bushing Size | Bushing & Button Material | MOQ |
|------------|--------------|---|---------|
| B32 | ϕ 16mm | Stainless steel with varnished polished | 100 PCS |

HOW TO ORDER



SPECIFICATIONS:

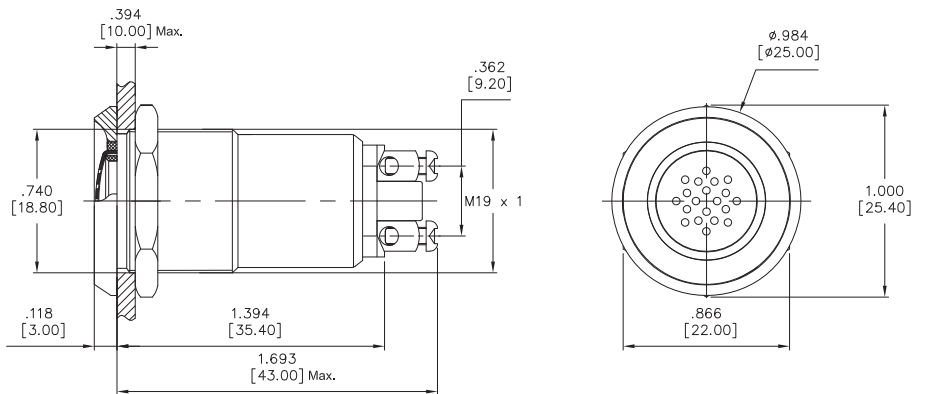
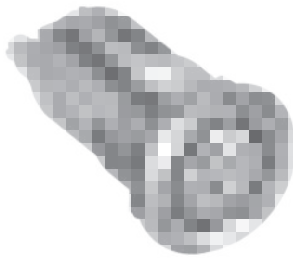
BUSHING: \varnothing 19mm.
 Rated Current: Max. 30mA @ 12/24VDC.
 Sound Type: Continuous buzz/Intermittent buzz/
 Flash Intermittent buzz.
 Sound Intensity: \geq 85dB at 0.1 meter away,
 \geq 75dB at 1 meter away.
 Dielectric Strength: 2,000V RMS 50~60Hz.
 Operating Temperature: -20°C ~ +55°C
 Protection Class: IP40 or IP50 & IK04.
 Torque: 5~14Nm max. applied to nut.

MATERIALS:

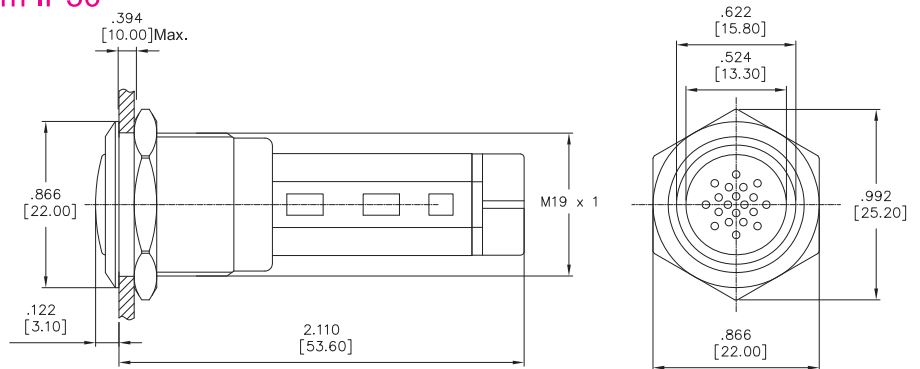
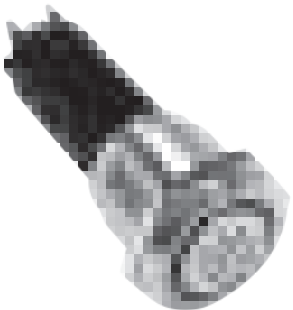
Bushing & Button: Stainless steel.
 Base: PBT.

Specifications and Dimensions subject to change

Illuminated \varnothing 19mm IP40



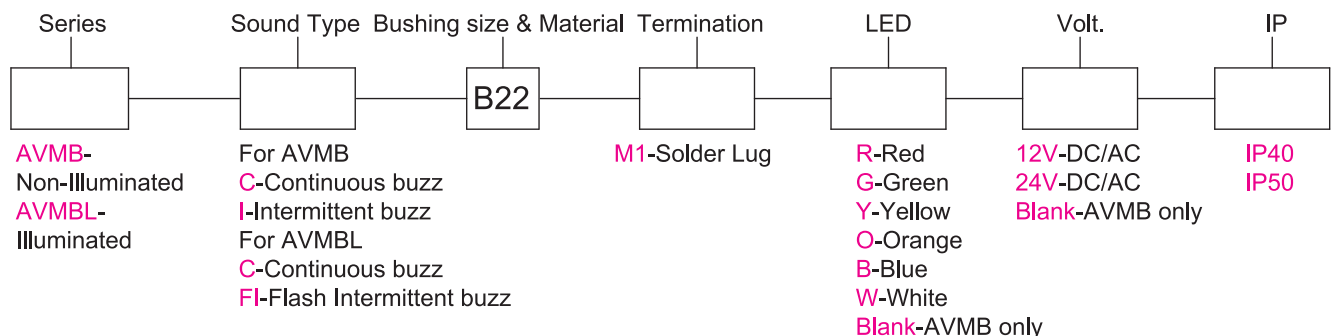
Non-Illuminated & Illuminated \varnothing 19mm IP50



BUSHING & BUTTON MATERIAL OPTIONS

| Code | Bushing Size | Bushing & Button Material | MOQ |
|------------|--------------------|---|---------|
| B22 | \varnothing 19mm | Stainless steel with varnished polished | 100 PCS |

HOW TO ORDER

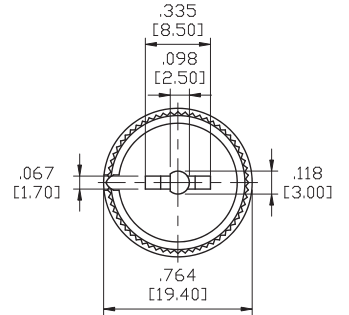
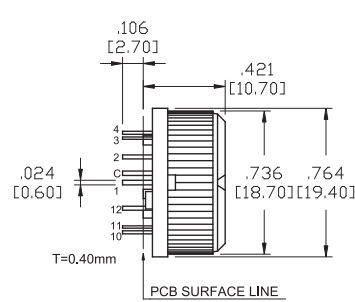
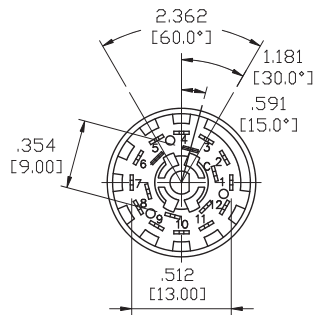
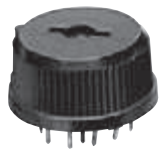


SPECIFICATIONS:

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

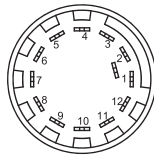
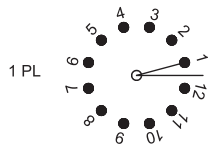
MATERIALS:

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



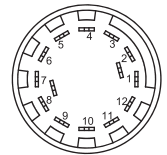
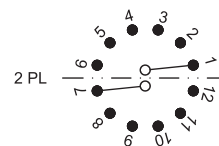
| Model No. | Switching Position |
|-----------|--------------------|
| 8405-1 | 1P-12Pos |

Schematic



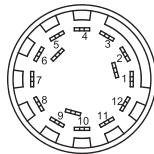
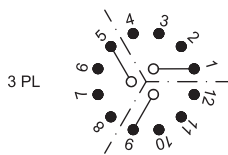
| Model No. | Switching Position |
|-----------|--------------------|
| 8405-2 | 2P-6Pos |

Schematic



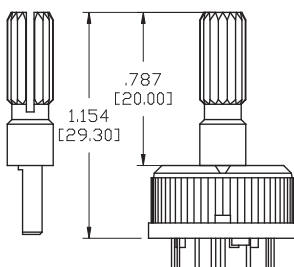
| Model No. | Switching Position |
|-----------|--------------------|
| 8405-3 | 3P-4Pos |

Schematic

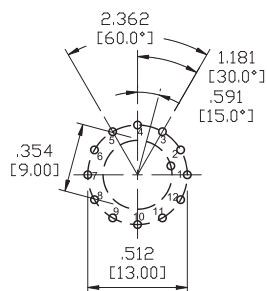


SHAFT OPTIONS

A = With Shaft
 B = Without Shaft



P.C.MOUNTING



8405-1 MODELS



8405-2 MODELS



8405-3 MODELS

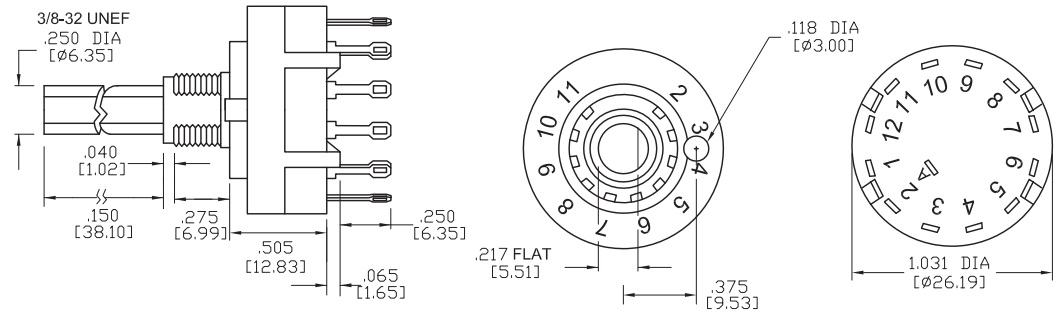
Specifications and Dimensions subject to change

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.

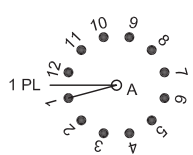
MATERIALS:

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.

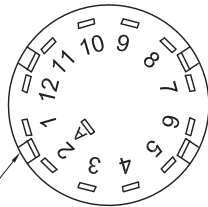


| Model No. | Switching Position |
|-----------|--------------------|
| 8404-1 | 1P-12Pos |

Schematic

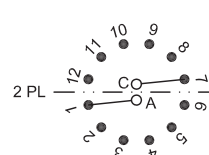


TERM. NOS. MOLDED ON HOUSING

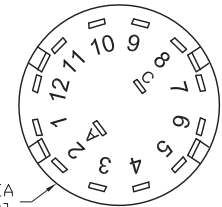


| Model No. | Switching Position |
|-----------|--------------------|
| 8404-2 | 2P-6Pos |

Schematic

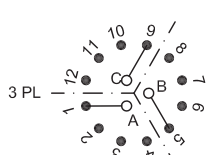


TERM. NOS. MOLDED ON HOUSING

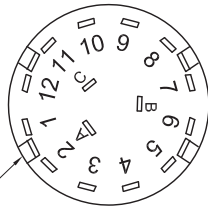


| Model No. | Switching Position |
|-----------|--------------------|
| 8404-3 | 3P-4Pos |

Schematic

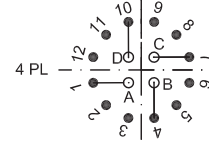


TERM. NOS. MOLDED ON HOUSING

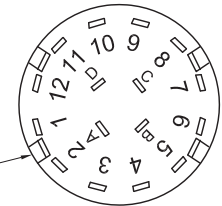


| Model No. | Switching Position |
|-----------|--------------------|
| 8404-4 | 4P-3Pos |

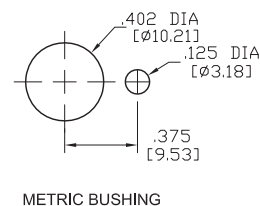
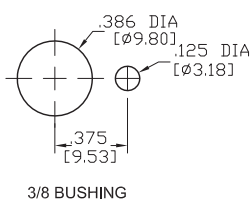
Schematic



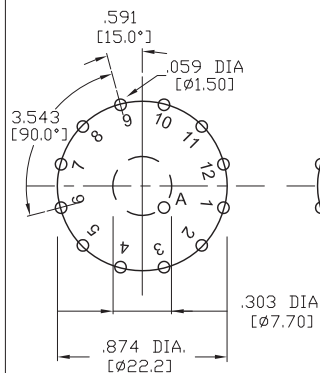
TERM. NOS. MOLDED ON HOUSING



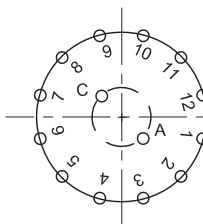
PANEL MOUNTING



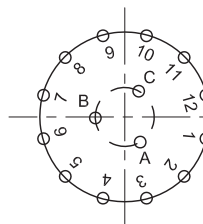
P.C.MOUNTING



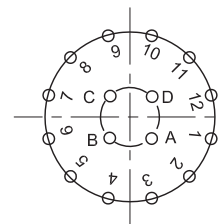
8404-1 MODELS



8404-2 MODELS



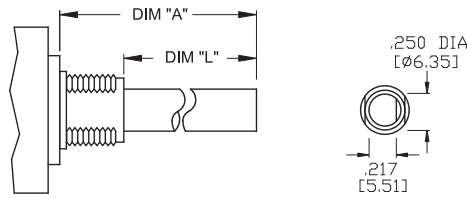
8404-3 MODELS



8404-4 MODELS

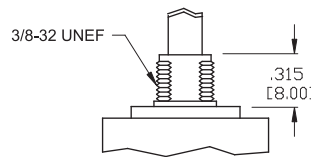
ACTUATOR OPTIONS

| 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] |



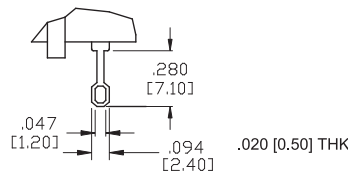
BUSHING OPTIONS

E STD.

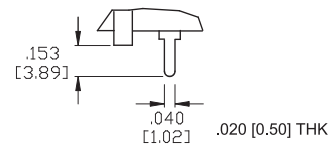


TERMINATION OPTIONS

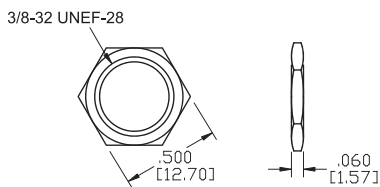
B STD.



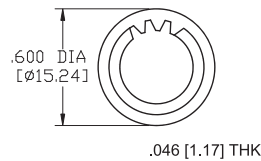
C PRINTED CIRCUIT



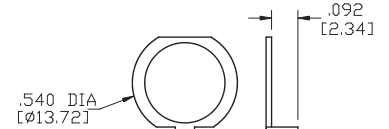
NUT



LOCK WASHER



STOP RING



CONTACT OPTIONS

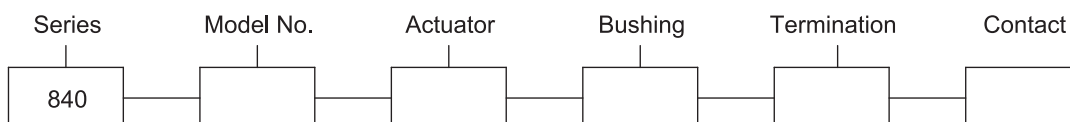
NS STD.

Non-Shorting Contacts: Break before make

SC

Shorting Contacts: Make before break

HOW TO ORDER



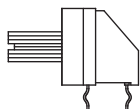


SPECIFICATIONS:

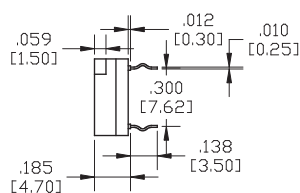
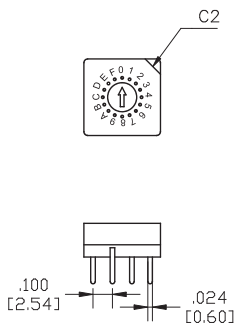
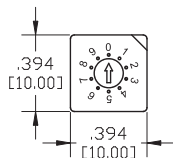
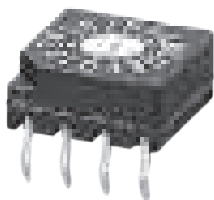
OPERATING VOLTAGE: 24V DC max.
 SWITCHING CURRENT: 100mA max. RxJ 15mA max.
 CARRYING CURRENT: 0.5A max.
 CONTACT RESISTANCE: 100mΩ max.
 INSULATION RESISTANCE: 1,000MΩ min. RxJ 100MΩ
 DIELECTRIC STRENGTH: 300VAC for 1 min.
 OPERATING TEMPERATURE: -10°C to +70°C.
 SOLDERING TEMPERATURE: 250 ± 5°C for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

MATERIALS:

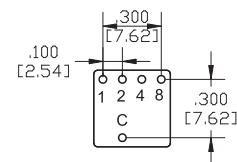
HOUSING & KNOB: Thermoplastic.
 PRINTED CIRCUIT BOARDS: Hard gold plated over nickel plated on epoxy fiberglass.
 CONTACTS & TERMINATIONS: Precious metal on phosphor bronze.



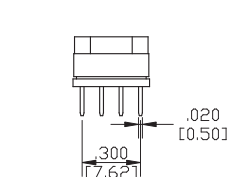
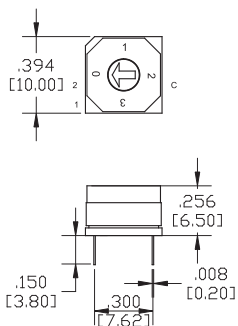
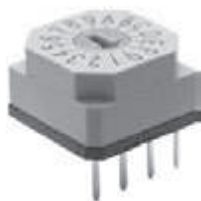
R1



P.C.MOUNTING



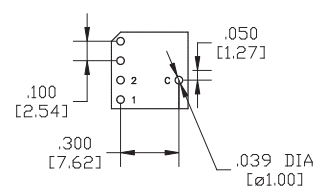
R1J



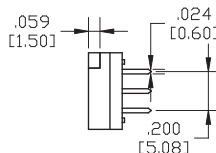
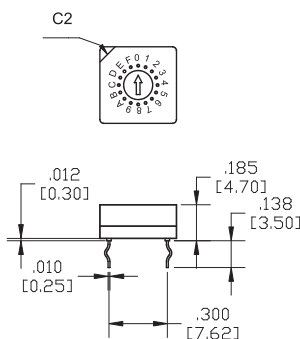
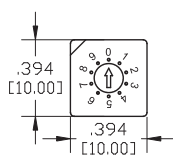
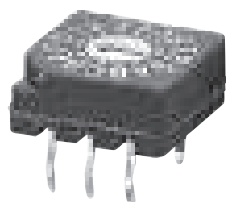
04
BCD-4 POSITION

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

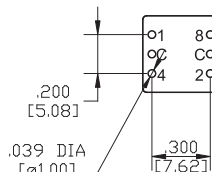
P.C.MOUNTING



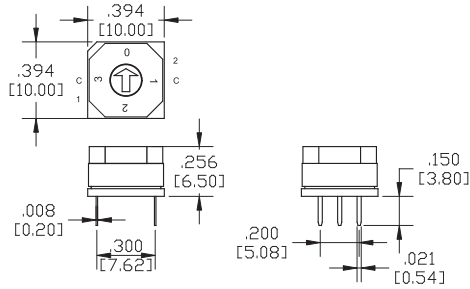
R2



P.C.MOUNTING



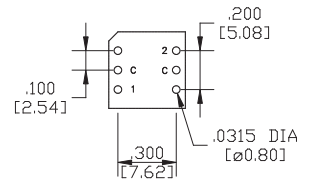
R2J



04 BCD-4 POSITION

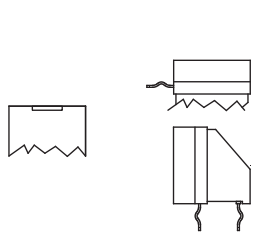
| POSITION | Common C contacted ● | | |
|----------|----------------------|---|---|
| | C | 1 | 2 |
| 0 | ● | | |
| 1 | ● | ● | |
| 2 | ● | | ● |
| 3 | ● | ● | ● |

P.C.MOUNTING

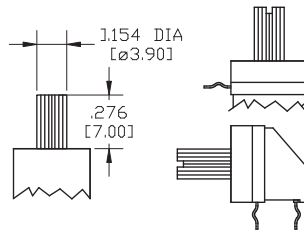


ACTUATOR OPTIONS

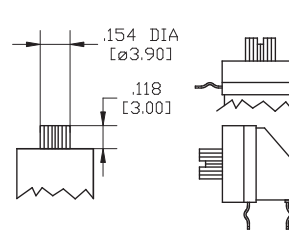
T1 FLUSH



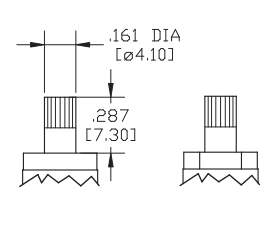
T2



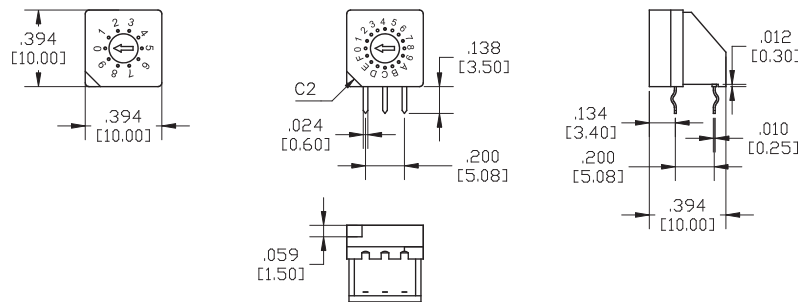
T3



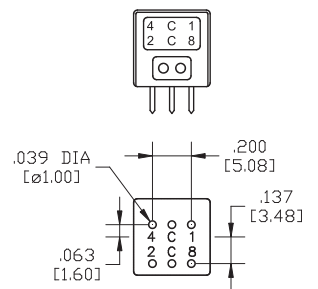
T4 (RxJ ONLY)



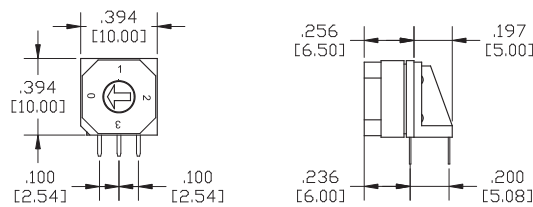
R3



P.C.MOUNTING



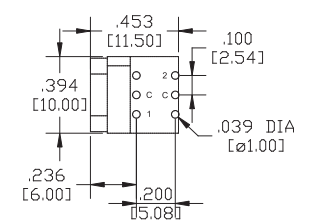
R3J



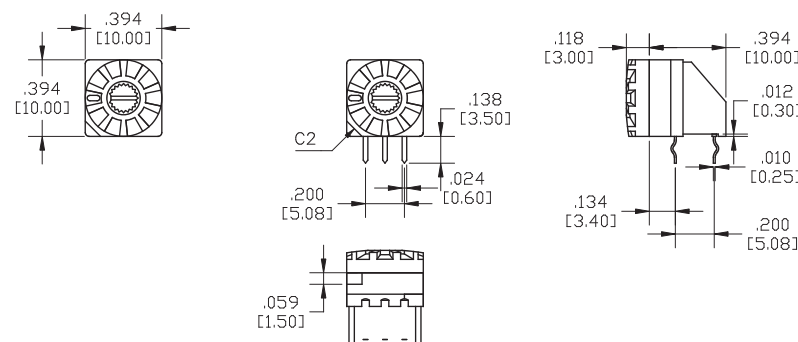
04 BCD-4 POSITION

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

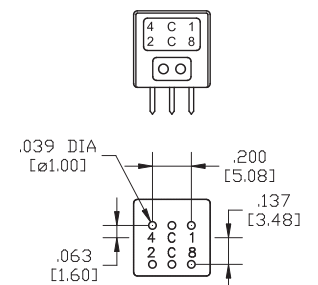
P.C.MOUNTING



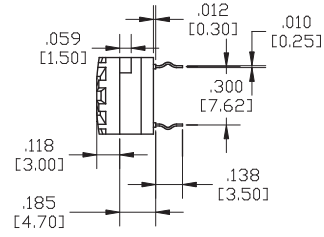
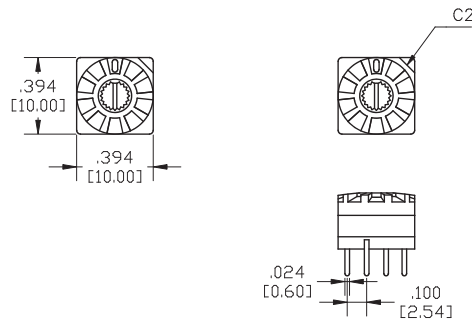
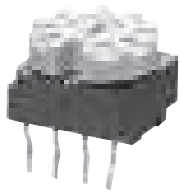
R4



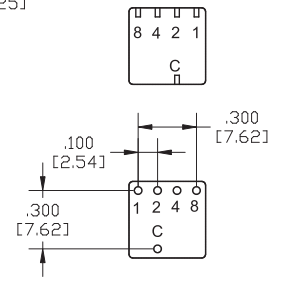
P.C.MOUNTING



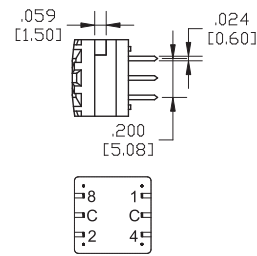
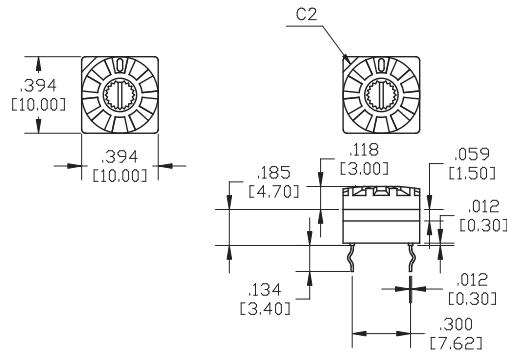
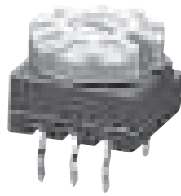
R5



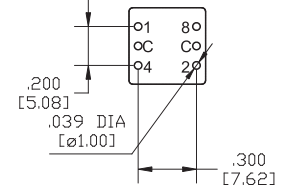
P.C.MOUNTING



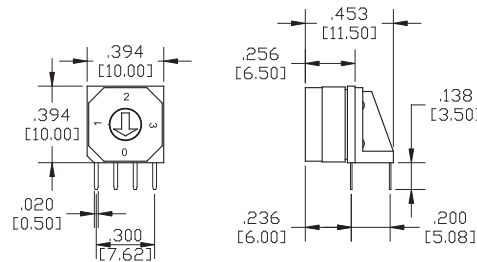
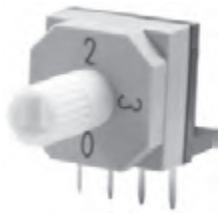
R6



P.C.MOUNTING



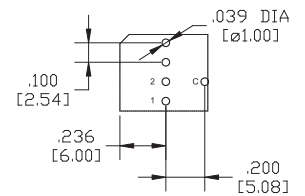
R7J



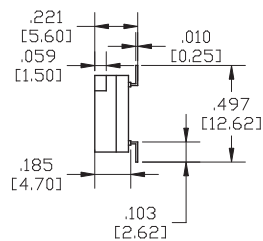
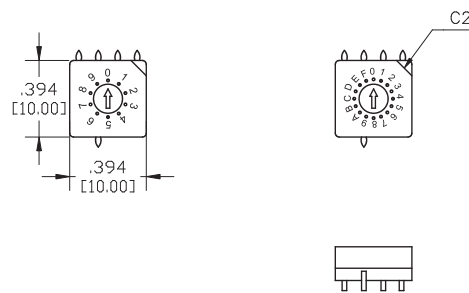
04
BCD-4 POSITION

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

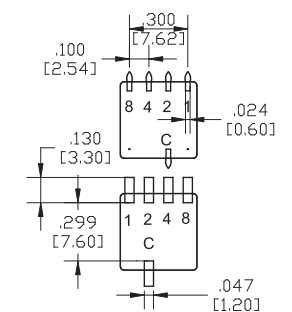
P.C.MOUNTING



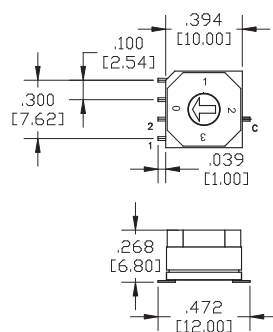
R1B



SURFACE MOUNTING



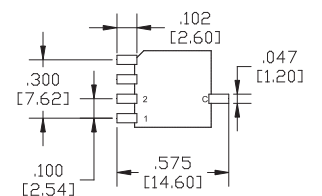
R1BJ



04
BCD-4 POSITION

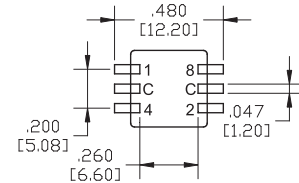
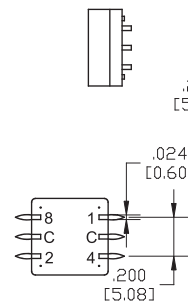
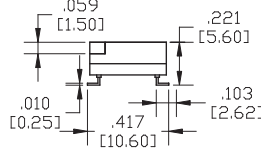
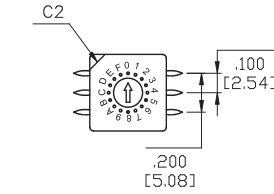
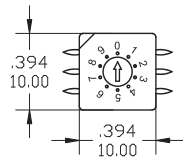
| POSITION | Common C contacted ● | | |
|----------|----------------------|---|---|
| | C | 1 | 2 |
| 0 | ● | | |
| 1 | ● | ● | |
| 2 | ● | | ● |
| 3 | ● | ● | ● |

SURFACE MOUNTING



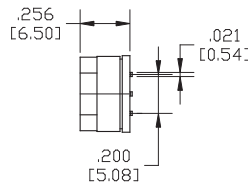
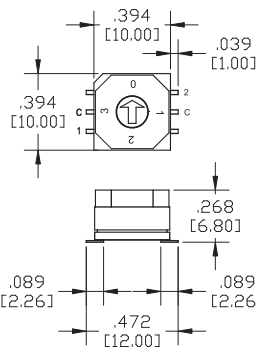
R2B

SURFACE MOUNTING



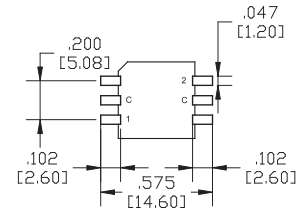
R2BJ

SURFACE MOUNTING



04 BCD-4 POSITION

| POSITION | Common C contacted ● | 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 | ● | ● | ● | | ● |
| 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 | ● | ● | ● | | ● |

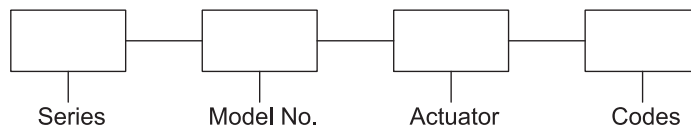
CODE NO:31 BCD COMP.-10 POS.

| 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:

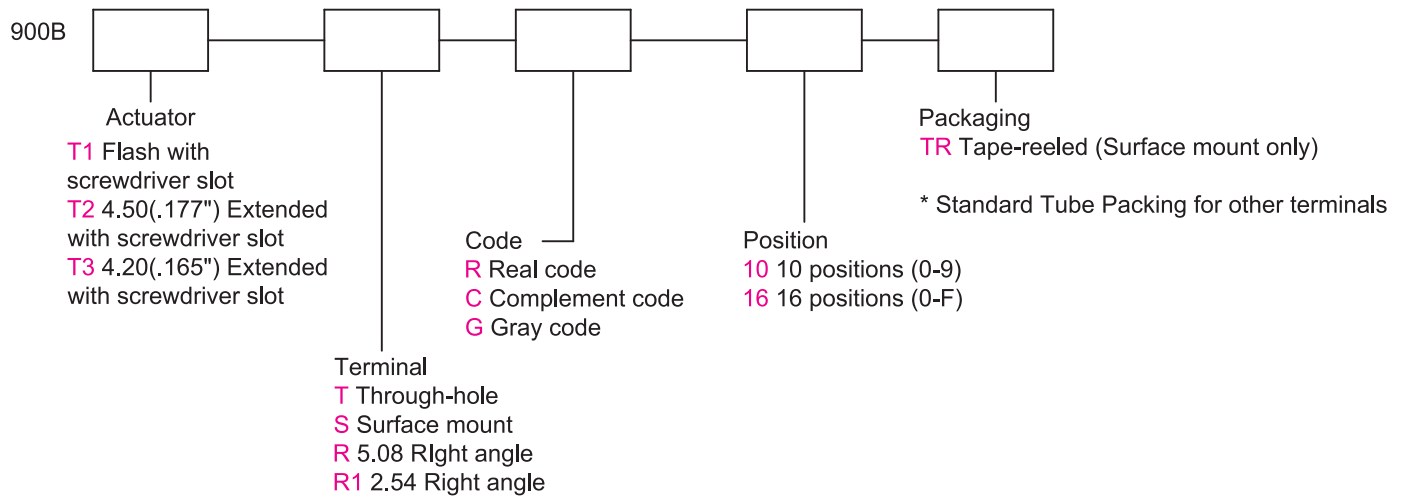
CONTACT RATING: (Non-switching)400mA 42V,
(Switching)100mA 42V.
ELECTRICAL LIFE: 25,000 make-and-break cycles at full load.
CONTACT RESISTANCE: 80m-ohms max. initial @2-4VDC
INSULATION RESISTANCE: 250VDC, 1,000M-ohms min.
DIELECTRIC STRENGTH: 250VAC for 1 minute.
OPERATING FORCE: 120±30gf.
OPERATING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



Toggle

Rocker

Slide

Pushbutton

AV

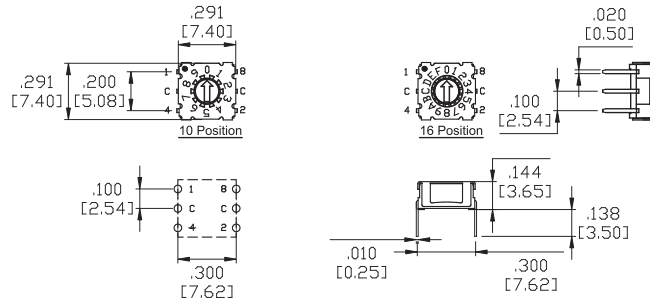
Rotary

Tact

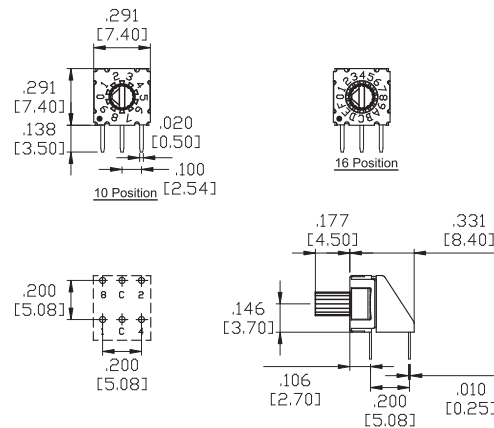
Touch Key

Miscellaneous

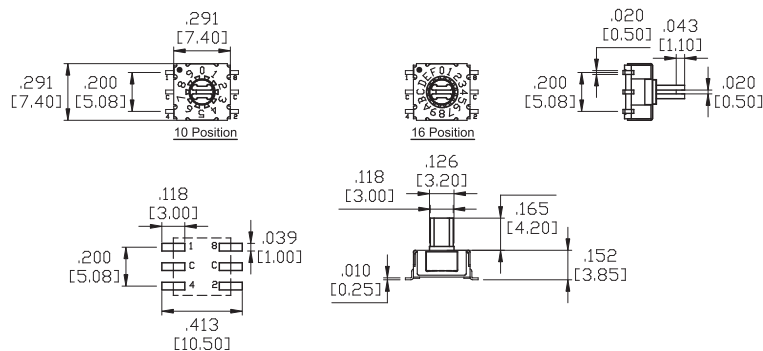
THROUGH HOLE



RIGHT ANGLE

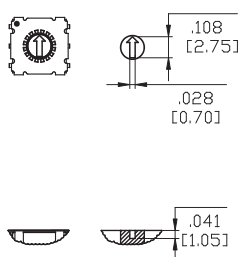


SURFACE MOUNT

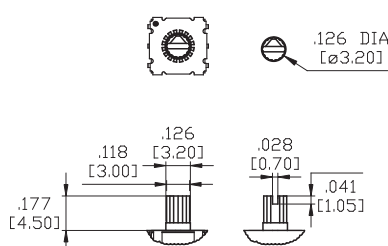


ACTUATOR OPTIONS

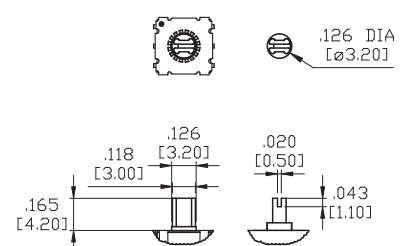
T1 FLUSH



T2 SCREWDRIVER SLOT

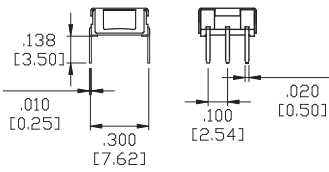


T3 SCREWDRIVER SLOT

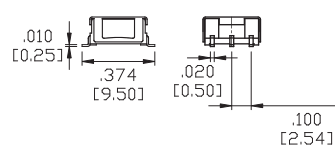


TERMINATION OPTIONS

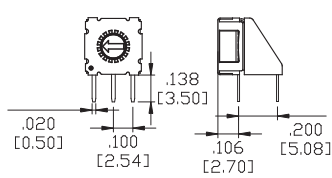
T THROUGH HOLE



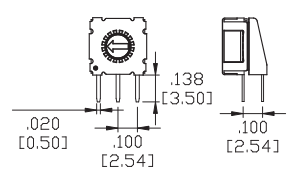
S SURFACE MOUNT



R 5.08 RIGHT ANGLE



R1 2.54 RIGHT ANGLE



CODE & POSITION OPTIONS

R REAL CODE

| Real Code | | C | 1 | 2 | 4 | 8 |
|-----------|---|---|---|---|---|---|
| 0 | • | | | | | |
| 1 | • | | | | | |
| 2 | • | | | | | |
| 3 | • | | | | | |
| 4 | • | | | | | |
| 5 | • | | | | | |
| 6 | • | | | | | |
| 7 | • | | | | | |
| 8 | • | | | | | |
| 9 | • | | | | | |

Actuator Color: Ivory

| Real Code | | C | 1 | 2 | 4 | 8 |
|-----------|---|---|---|---|---|---|
| 0 | • | | | | | |
| 1 | • | | | | | |
| 2 | • | | | | | |
| 3 | • | | | | | |
| 4 | • | | | | | |
| 5 | • | | | | | |
| 6 | • | | | | | |
| 7 | • | | | | | |
| 8 | • | | | | | |
| 9 | • | | | | | |
| A | • | | | | | |
| B | • | | | | | |
| C | • | | | | | |
| D | • | | | | | |
| E | • | | | | | |
| F | • | | | | | |

Actuator Color: Yellow

C COMPLEMENT CODE

| Complement Code | | C | 1 | 2 | 4 | 8 |
|-----------------|---|---|---|---|---|---|
| 0 | • | | | | | |
| 1 | • | | | | | |
| 2 | • | | | | | |
| 3 | • | | | | | |
| 4 | • | | | | | |
| 5 | • | | | | | |
| 6 | • | | | | | |
| 7 | • | | | | | |
| 8 | • | | | | | |
| 9 | • | | | | | |
| A | • | | | | | |
| B | • | | | | | |
| C | • | | | | | |
| D | • | | | | | |
| E | • | | | | | |
| F | • | | | | | |

Actuator Color: Red

| Complement Code | | C | 1 | 2 | 4 | 8 |
|-----------------|---|---|---|---|---|---|
| 0 | • | | | | | |
| 1 | • | | | | | |
| 2 | • | | | | | |
| 3 | • | | | | | |
| 4 | • | | | | | |
| 5 | • | | | | | |
| 6 | • | | | | | |
| 7 | • | | | | | |
| 8 | • | | | | | |
| 9 | • | | | | | |
| A | • | | | | | |
| B | • | | | | | |
| C | • | | | | | |
| D | • | | | | | |
| E | • | | | | | |
| F | • | | | | | |

Actuator Color: Blue

G Gray Code

| Gray Code | | C | 1 | 2 | 4 | 8 |
|-----------|---|---|---|---|---|---|
| 0 | • | | | | | |
| 1 | • | | | | | |
| 2 | • | | | | | |
| 3 | • | | | | | |
| 4 | • | | | | | |
| 5 | • | | | | | |
| 6 | • | | | | | |
| 7 | • | | | | | |
| 8 | • | | | | | |
| 9 | • | | | | | |

Actuator Color: Brown

| Gray Code | | C | 1 | 2 | 4 | 8 |
|-----------|---|---|---|---|---|---|
| 0 | • | | | | | |
| 1 | • | | | | | |
| 2 | • | | | | | |
| 3 | • | | | | | |
| 4 | • | | | | | |
| 5 | • | | | | | |
| 6 | • | | | | | |
| 7 | • | | | | | |
| 8 | • | | | | | |
| 9 | • | | | | | |
| A | • | | | | | |
| B | • | | | | | |
| C | • | | | | | |
| D | • | | | | | |
| E | • | | | | | |
| F | • | | | | | |

Actuator Color: Blue

10 10-POSITION

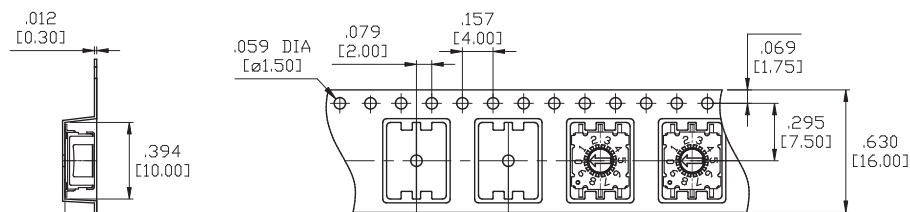


16 16-POSITION

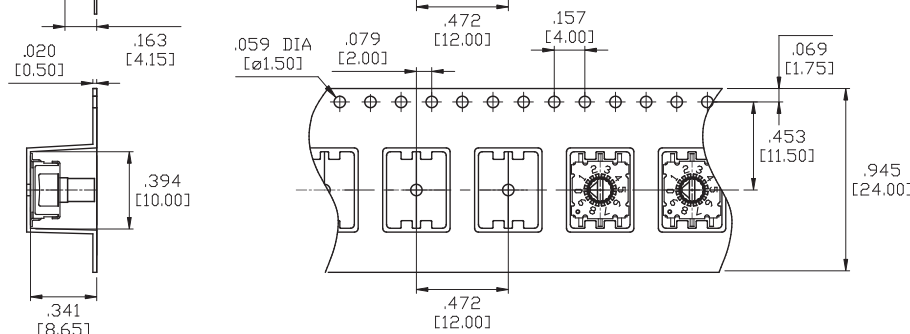


TAPE & REEL PACKING

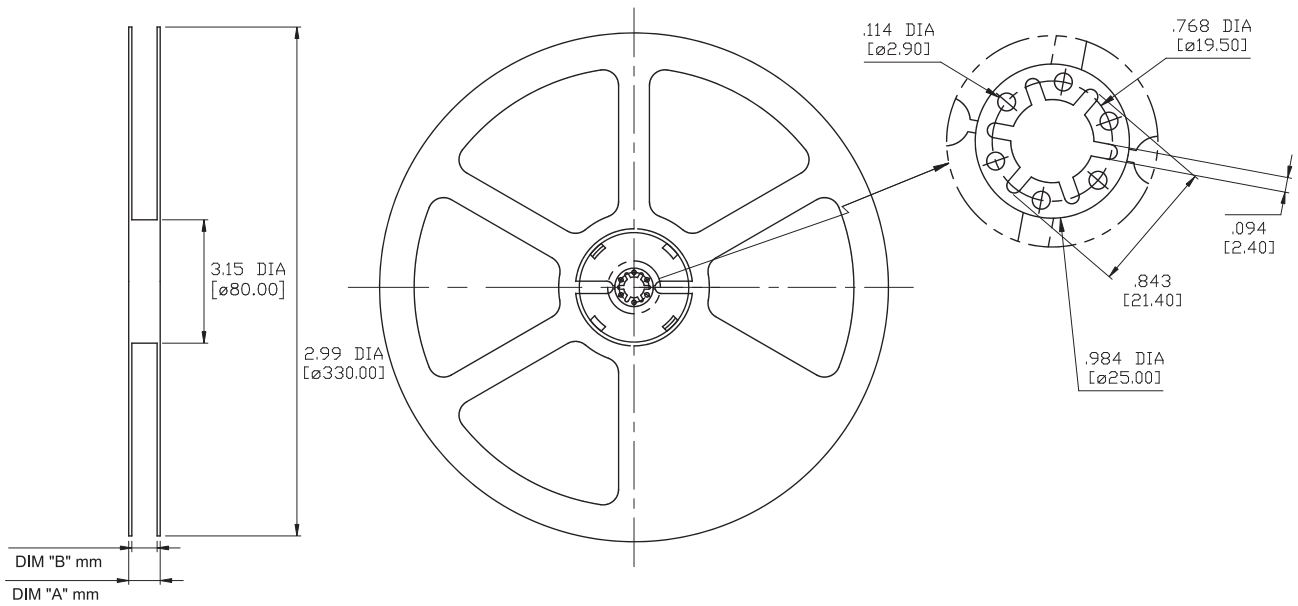
W/O ACTUATOR



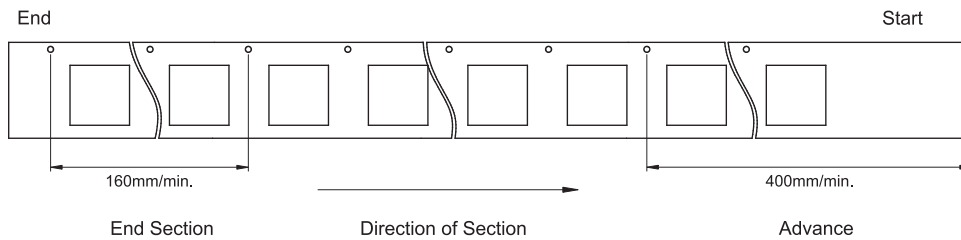
WITH ACTUATOR



TAPE & REEL PACKING



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



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.

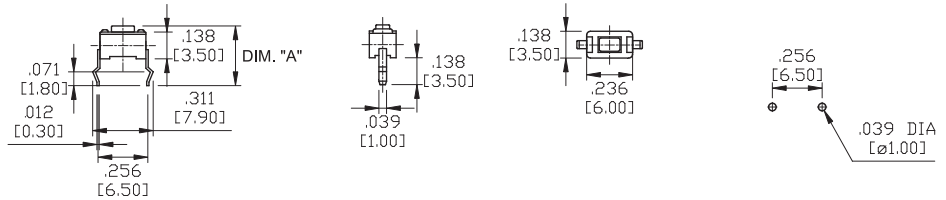
Specifications and Dimensions subject to change

KRS-0312

P.C.B. LAND PATTERN



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

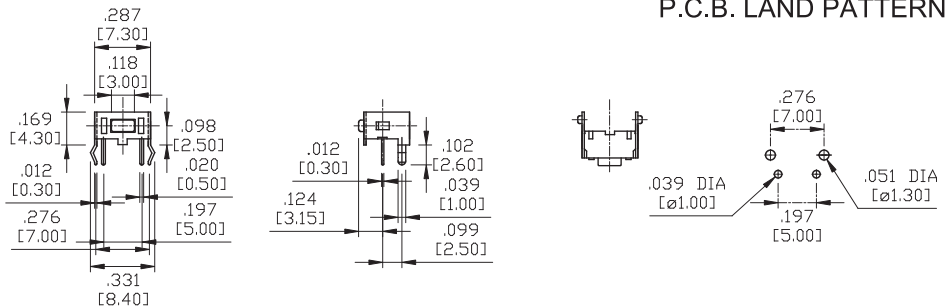


KRS-0314

P.C.B. LAND PATTERN



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

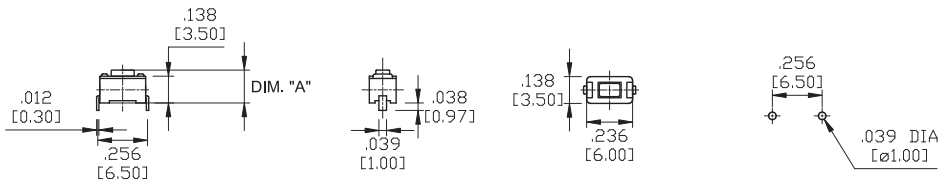


KRS-0315

P.C.B. LAND PATTERN



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

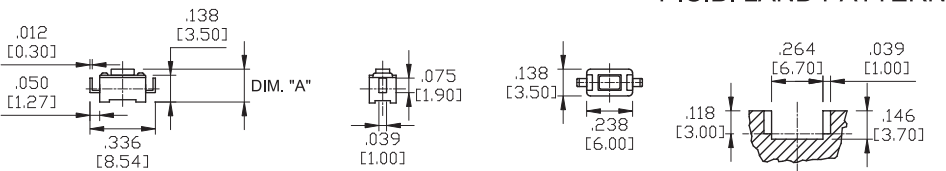


KRS-0316

P.C.B. LAND PATTERN



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

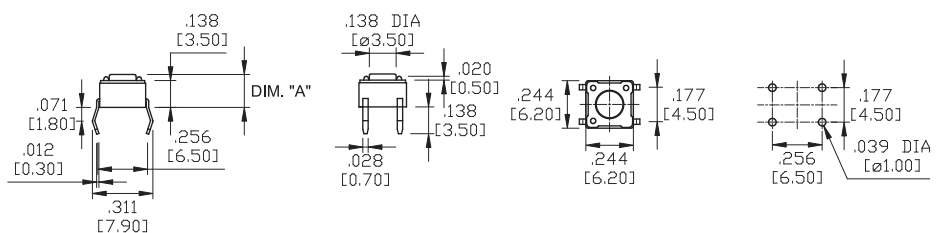


KRS-0612

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

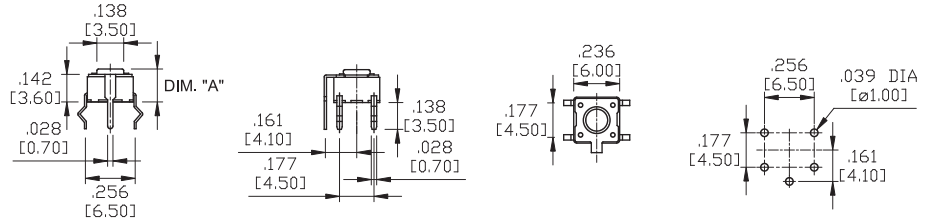
Tact Switches/Tactile Switch SMT

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] |

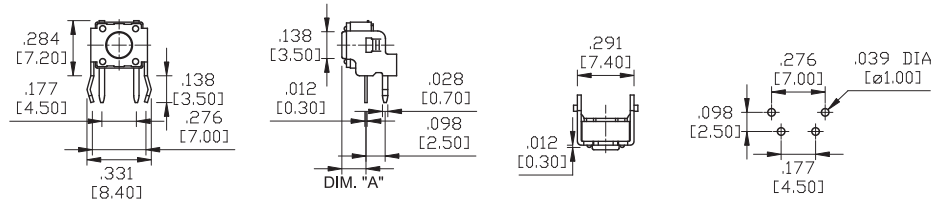


KRS-0614

P.C.B LAND PATTERN

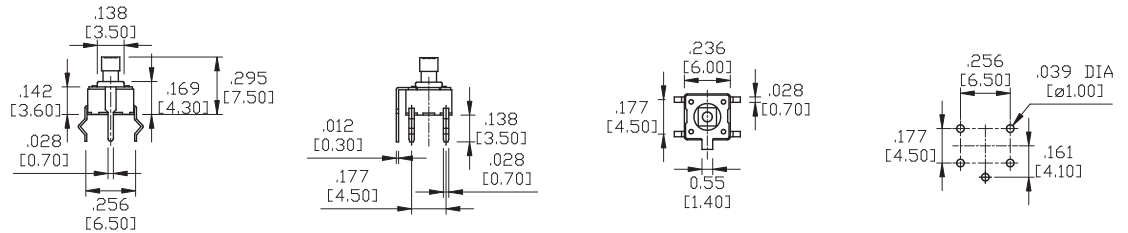


| L | DIM. "A" |
|---|--------------|
| 1 | .124 [3.15] |
| 2 | .152 [3.85] |
| 3 | .230 [5.85] |
| 5 | .329 [8.35] |
| 6 | .467 [11.85] |



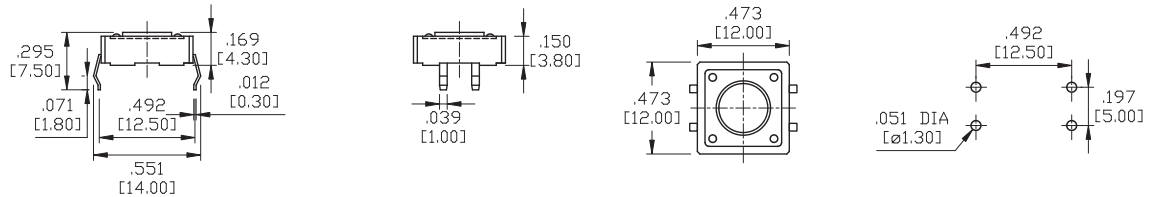
KRS-0615

P.C.B LAND PATTERN



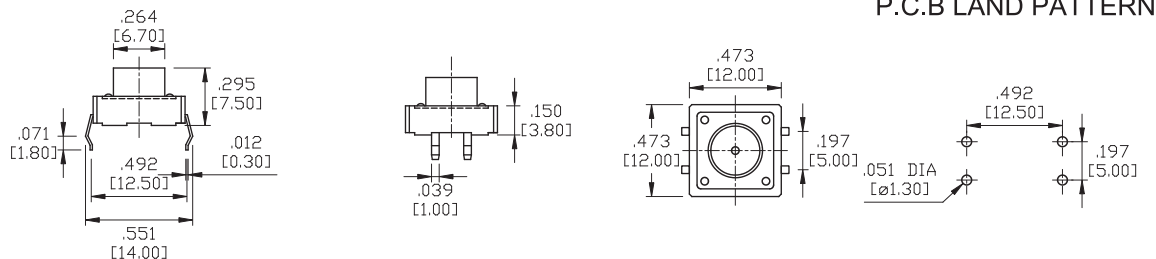
KRS-1213

P.C.B LAND PATTERN



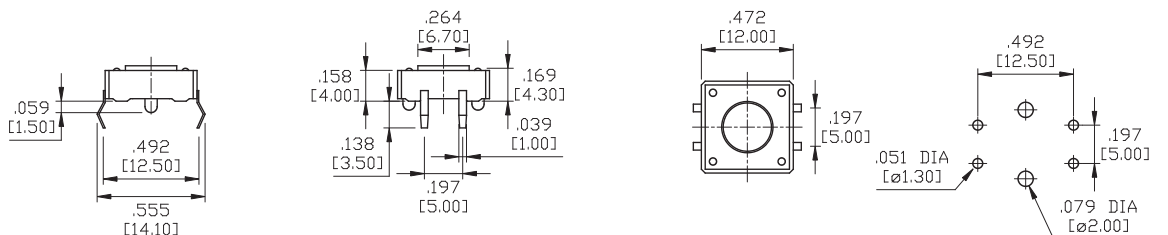
KRS-1223

P.C.B LAND PATTERN

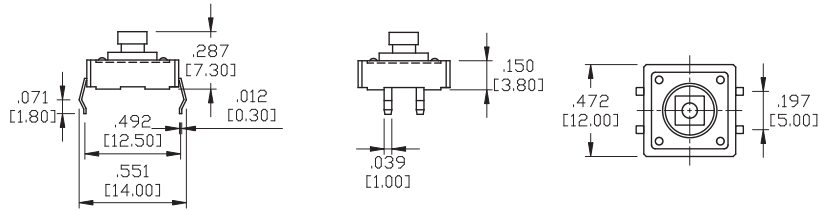
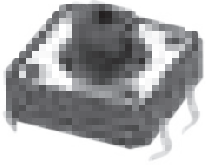


KRS-1243

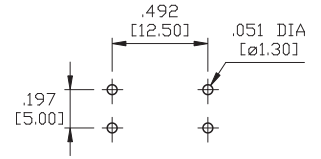
P.C.B LAND PATTERN



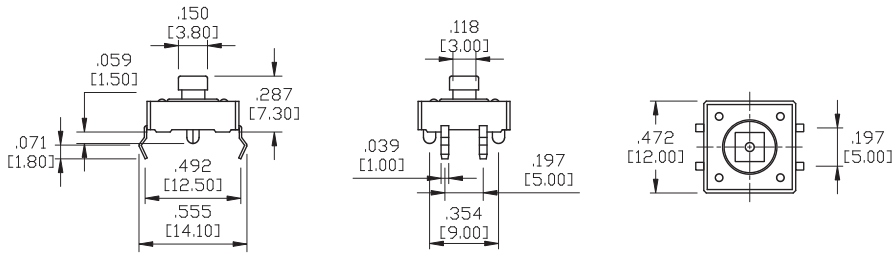
KRS-1263



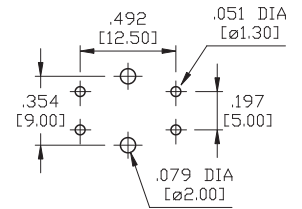
P.C.B LAND PATTERN



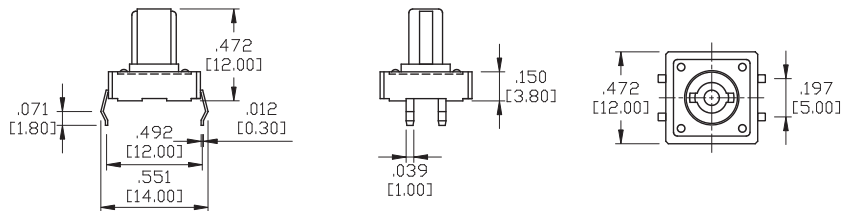
KRS-1273



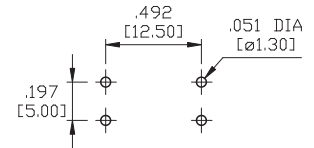
P.C.B LAND PATTERN



KRS-1283



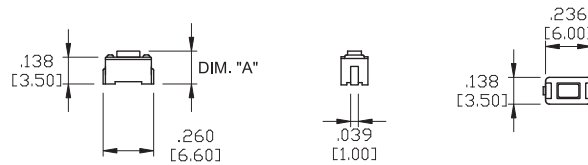
P.C.B LAND PATTERN



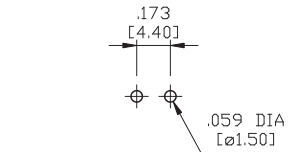
KRSM-3A



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



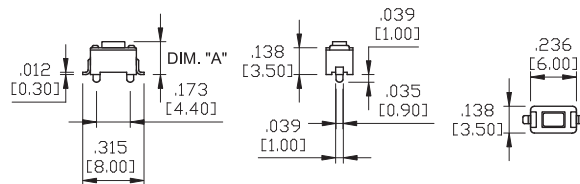
P.C.B LAND PATTERN



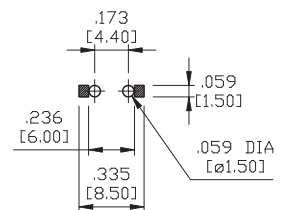
KRSM-3B



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



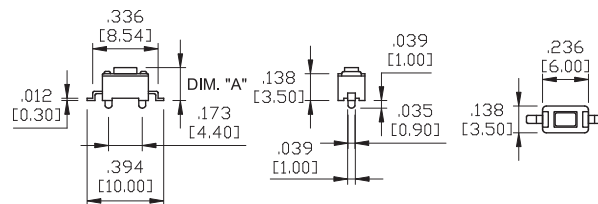
P.C.B LAND PATTERN



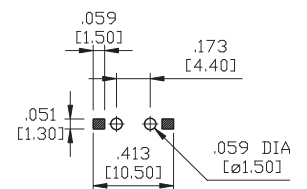
KRSM-3C



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



P.C.B LAND PATTERN



Series KRS

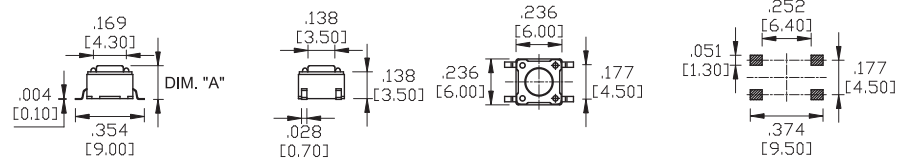
Tact Switches/Tactile Switch SMT

KRSM-6

P.C.B LAND PATTERN

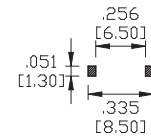
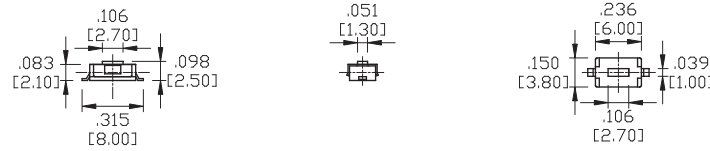


| L | DIM. "A" |
|---|-------------|
| 1 | .169 [4.30] |
| 2 | .197 [5.00] |
| 3 | .276 [7.00] |
| 4 | .287 [7.30] |
| 5 | .374 [9.50] |



KRSM-13

P.C.B LAND PATTERN

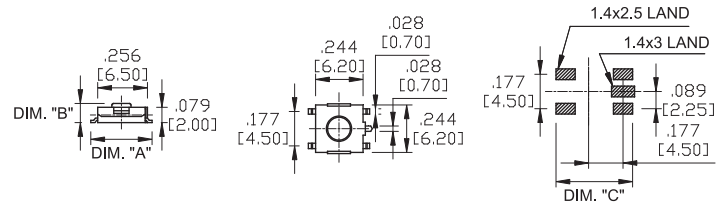


KRSM-16 □ □

P.C.B LAND PATTERN



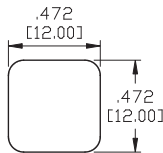
| MODEL NO. | DIM."A" | DIM."B" | DIM."C" |
|-----------|--------------|-------------|--------------|
| KRSM-1611 | .315 [8.00] | .098 [2.50] | .394 [10.00] |
| KRSM-1612 | .315 [8.00] | .122 [3.10] | .394 [10.00] |
| KRSM-1621 | .394 [10.00] | .098 [2.50] | .472 [12.00] |
| KRSM-1622 | .394 [10.00]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



CAP

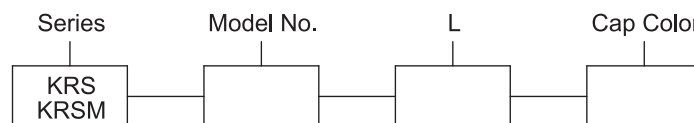
CAP COLORS

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.

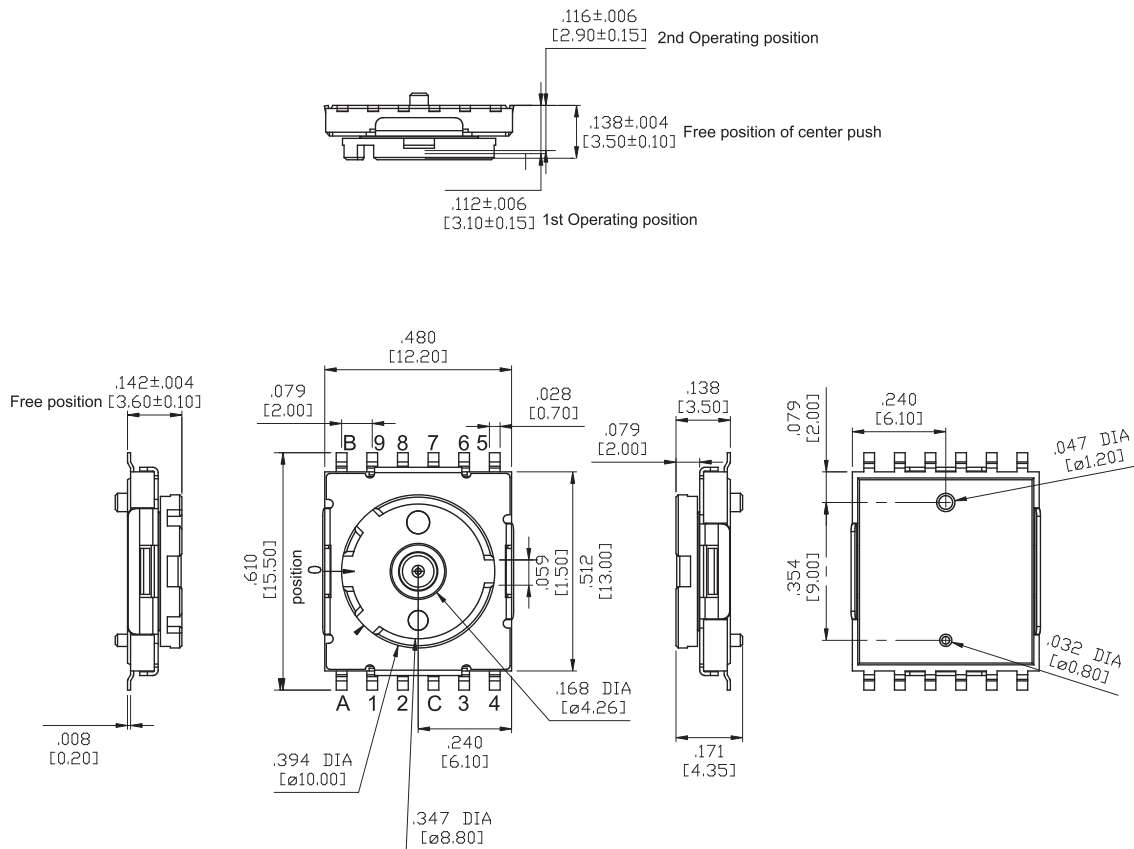
SPECIFICATIONS:

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

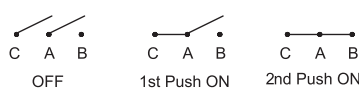


CODE: A (10 position)

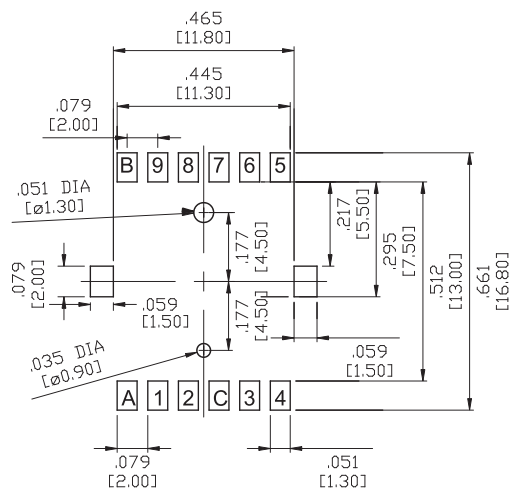
| POSITION | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | |
|----------|---|---|---|---|---|---|---|---|---|---|---|
| C | | ● | ● | ● | ● | ● | ● | ● | ● | ● | |
| 1 | | | ● | | | | | | | | |
| 2 | | | | ● | | | | | | | |
| 3 | | | | | ● | | | | | | |
| 4 | | | | | | ● | | | | | |
| 5 | | | | | | | ● | |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

The ● marks shows the "ON" position.

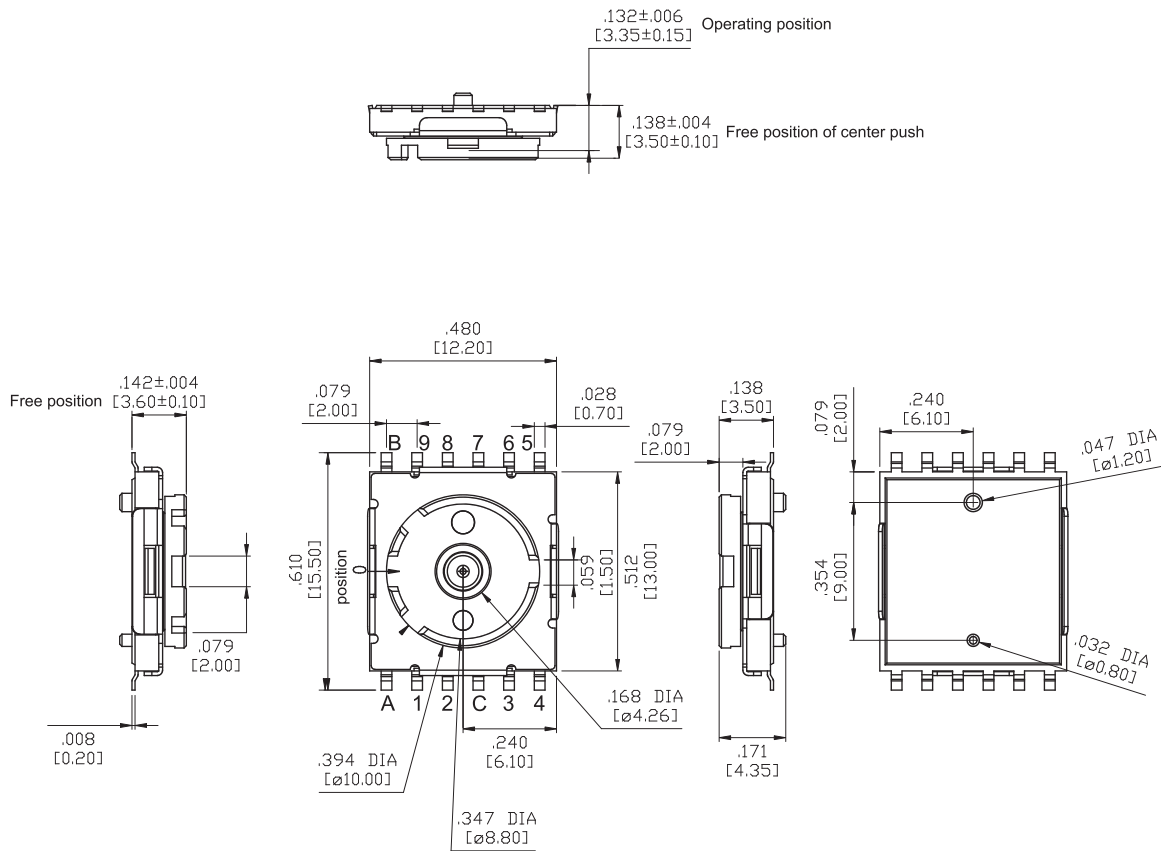
CIRCUIT DIAGRAM OF CENTER PUSH



P.C.B MOUNTING



3SC



CODE: C (10 position)
 CIRCUIT DIAGRAM OF ROTARY

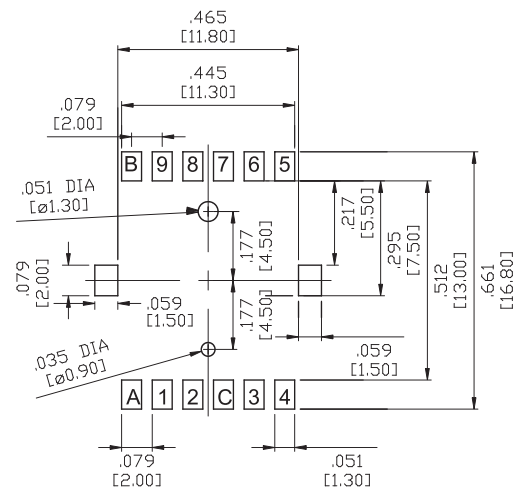
| POSITION | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|----------|---|---|---|---|---|---|---|---|---|---|
| C | | ● | ● | ● | ● | ● | ● | ● | ● | ● |
| 1 | | ● | | | | | | | | |
| 2 | | | ● | | | | | | | |
| 3 | | | | ● | | | | | | |
| 4 | | | | | ● | | | | | |
| 5 | | | | | | ● | | | | |
| 6 | | | |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

The ● marks shows the "ON" position.

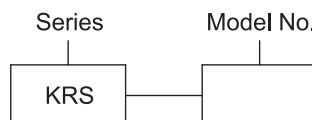
CIRCUIT DIAGRAM OF CENTER PUSH



P.C.B MOUNTING



HOW TO ORDER



SPECIFICATIONS:

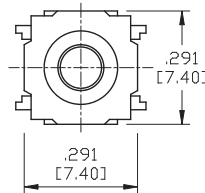
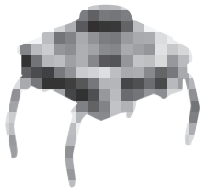
CONTACT RATING: 50mA 12VDC.
 CONTACT RESISTANCE: 100m-ohms max.
 TRAVEL: 0.25±0.10mm.
 LIFE: 100,000 cycles min.
 OPERATING FORCE: 130, 160±30, 250±50gf.

MATERIALS:

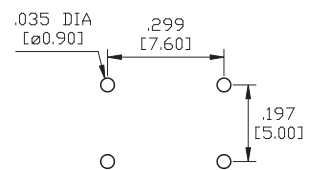
CASE & STEM: Nylon 66 G30%.
 COVER: 0.3t electrolytic tin plate (E.T).
 TERMINAL: 0.3t C2680R-EH.
 C/PLETAT: 0.06t AG-C5210R-EH.
 RUBBER: Silicon.

Specifications and Dimensions subject to change

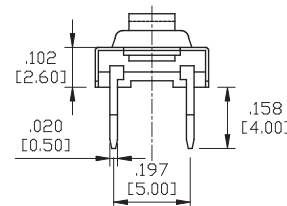
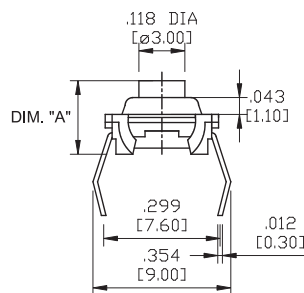
KRSS-0712



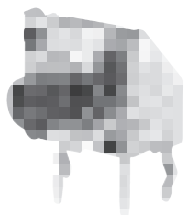
P.C.MOUNTING



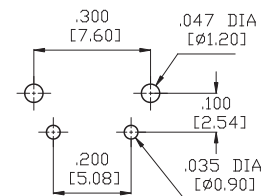
| L | DIM. "A" |
|---|--------------|
| 1 | .185 [4.70] |
| 2 | .205 [5.20] |
| 3 | .272 [6.90] |
| 4 | .394 [10.00] |



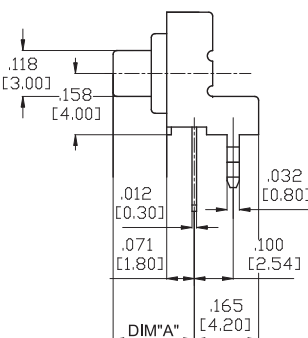
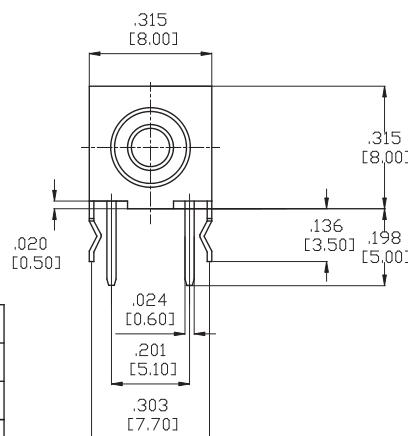
KRSS-0714



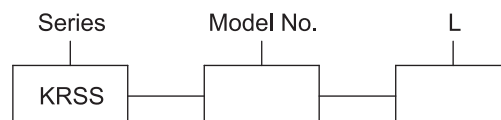
P.C.MOUNTING



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



HOW TO ORDER



SPECIFICATIONS:

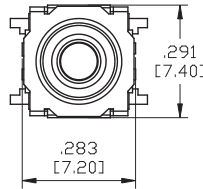
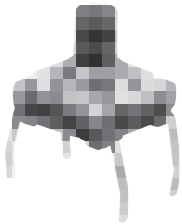
CONTACT RATING: 50mA 12VDC.
 CONTACT RESISTANCE: 30m-ohms max.
 TRAVEL: 0.30±0.10mm (0712), 0.35±0.10mm (0714).
 LIFE: 80,000 cycles min.
 OPERATING FORCE: 160±30gf (0714), 250±30gf (0712 & 0714).

MATERIALS:

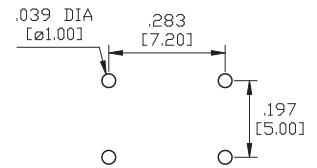
BASE & STEM: Nylon 66.
 COVER: Steel or brass.
 TERMINAL: Brass.
 CONTACT: Silver copper or stainless steel.
 O-RING: Silicon.

Specifications and Dimensions subject to change

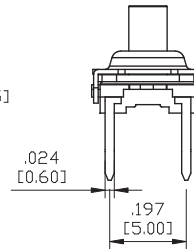
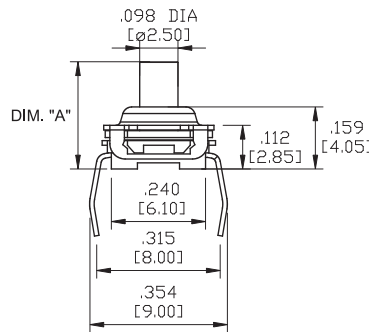
KRSA-0712



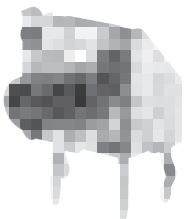
P.C.MOUNTING



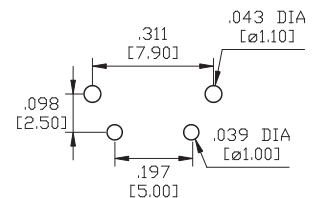
| L | DIM. "A" |
|---|-------------|
| 1 | .197 [5.00] |
| 2 | .276 [7.00] |
| 3 | .335 [8.50] |



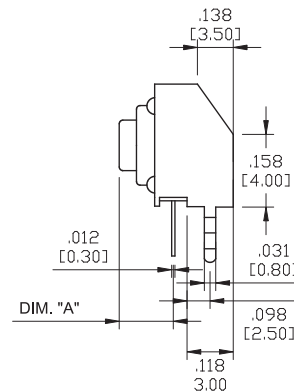
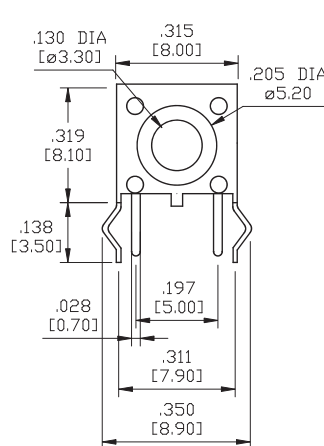
KRSA-0714



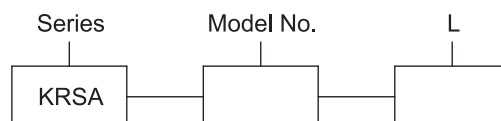
P.C.MOUNTING



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



HOW TO ORDER



SPECIFICATIONS:

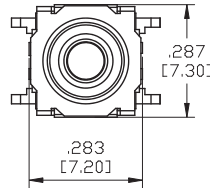
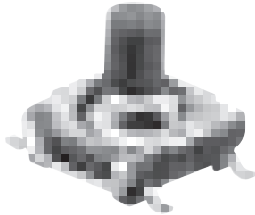
CONTACT RATING: 50mA 12VDC.
 CONTACT RESISTANCE: 30m-ohms max.
 TRAVEL: 0.30±0.10mm.
 LIFE: 80,000 cycles min.
 OPERATING FORCE: 250±30gf.

MATERIALS:

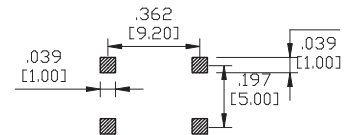
BASE & STEM: Nylon 66.
 COVER: Brass.
 TERMINAL: Brass.
 CONTACT: Silver copper.
 O-RING: Silicon.

Specifications and Dimensions subject to change

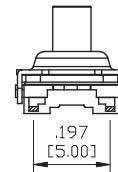
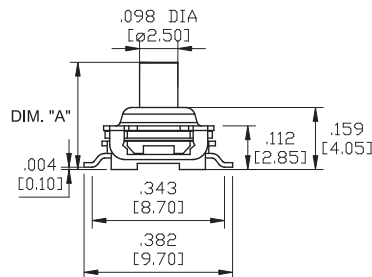
KRSAM-0712



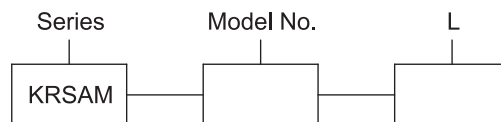
P.C.MOUNTING



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



HOW TO ORDER

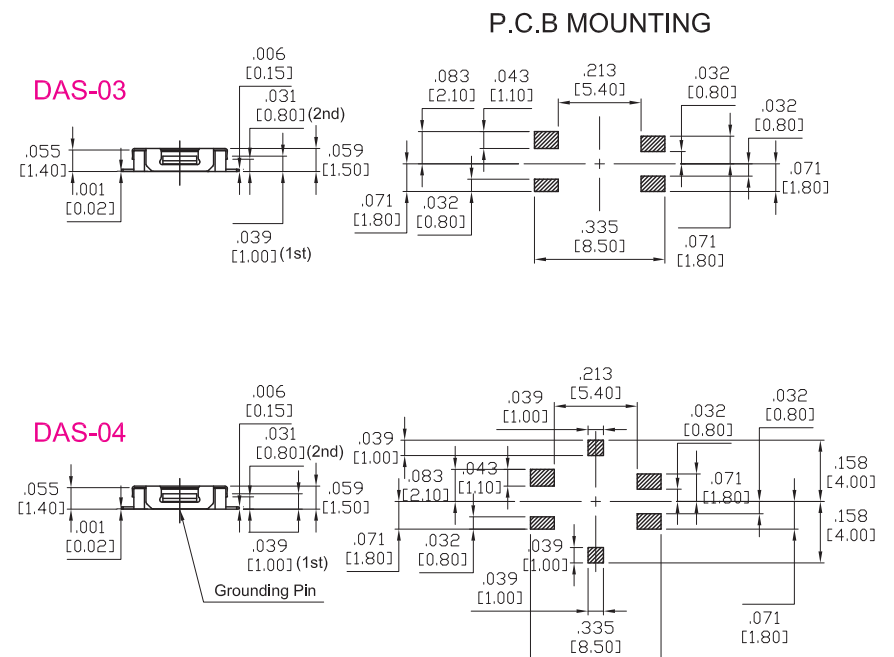
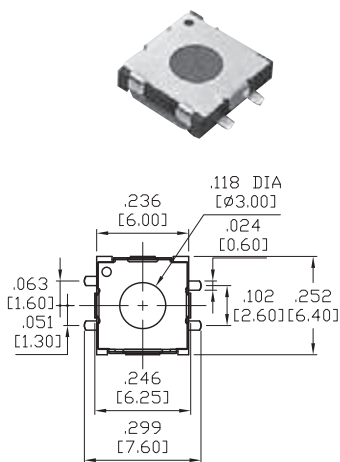
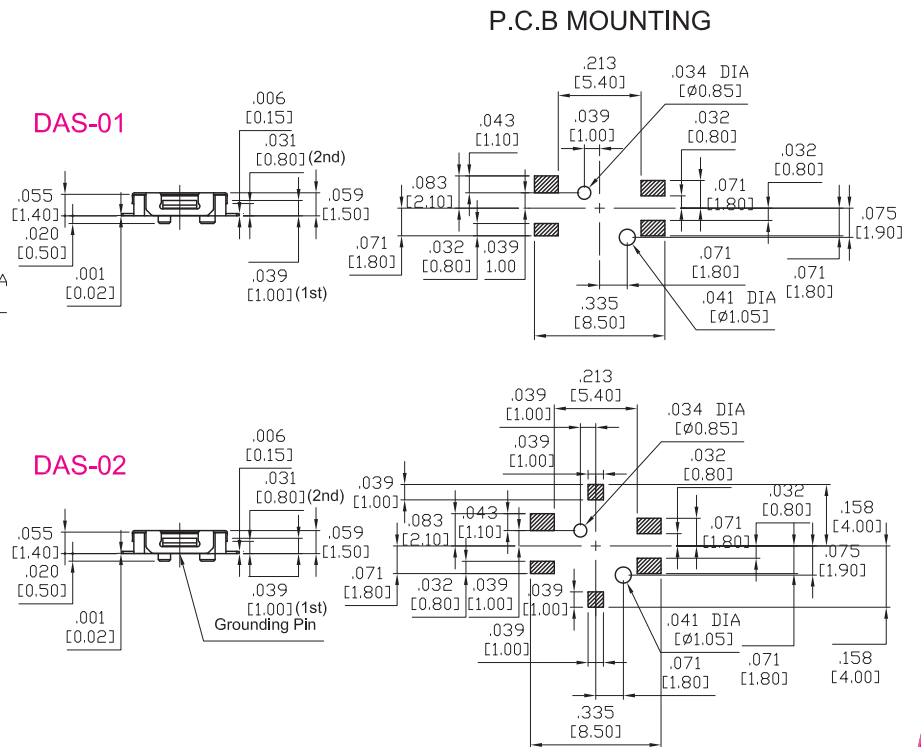
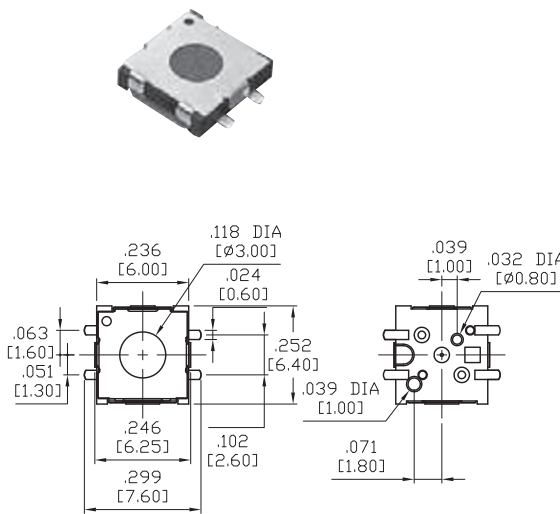


SPECIFICATIONS:

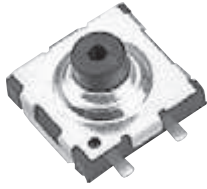
RATING: 12VDC 50mA.
 OPERATING TEMPERATURE: -20°C ~ +70°C.
 CONTACT RESISTANCE: 200m-ohms (Initial).
 INSULATION RESISTANCE: 100M-ohms MIN.
 WITHSTANDING VOLTAGE: 1 minute at 100 VAC.

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.

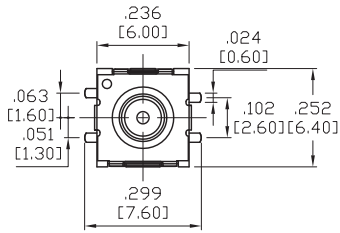
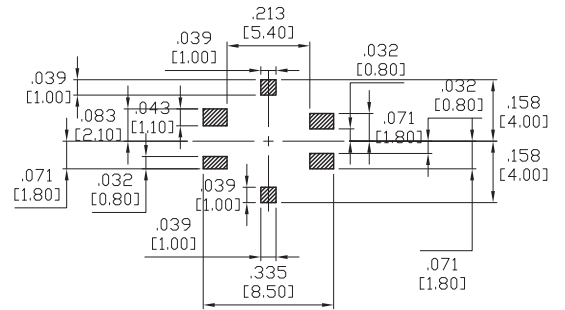
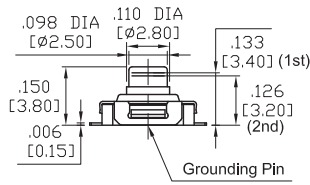
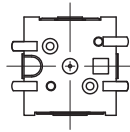
Specifications and Dimensions subject to change



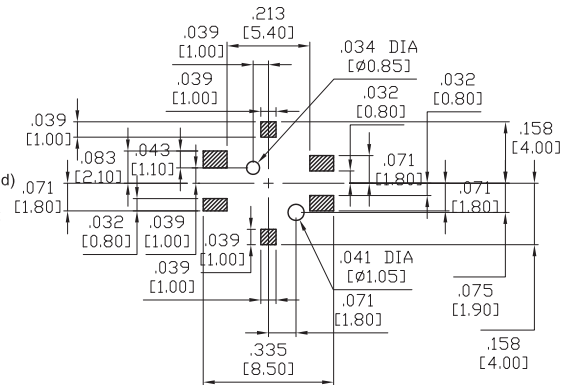
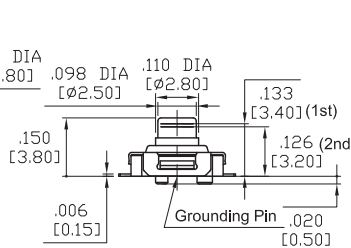
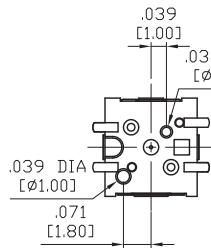
P.C.B MOUNTING



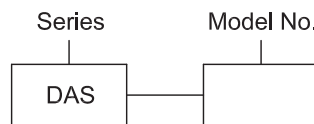
DAS-05



DAS-06



HOW TO ORDER



SPECIFICATIONS:

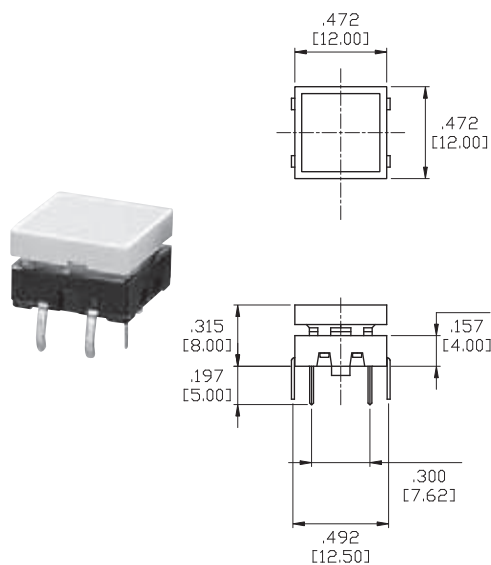
OPERATING TEMPERATURE: -25°C ~ +60°C.
 AMBIENT HUMIDITY: 85%RH max.
 CONTACT ARRANGEMENT: SPST
 CURRENT RATING: 50mA 12VDC.
 LED RATING: 20mA 6V max.
 CONTACT RESISTANCE: 100m-ohms max (initial).
 INSULATION RESISTANCE: 100M-ohms min.
 OPERATING FORCE: 300±50gf max.
 TOTAL TRAVEL: 0.30mm±0.10mm.
 OPERATING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

MATERIALS:

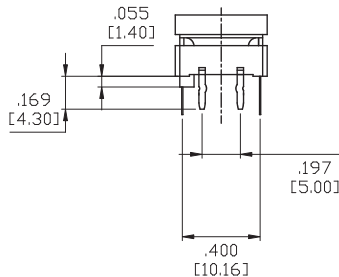
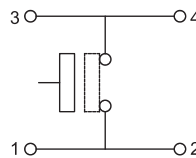
CAP: PC.
 COVER: PC.
 BASE: PA.
 HOUSING: PC.
 LAMP TERMINAL: PBS with Au plated.
 ACT DOME: PBS with Au plated.
 TERMINAL: Brass with Au plated.
 LED: Surface mount chip LED.

Specifications and Dimensions subject to change

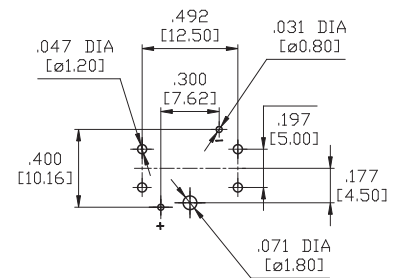
LP-12



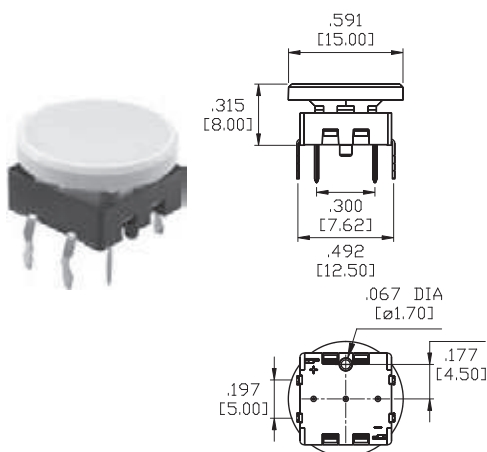
Contact Configuration



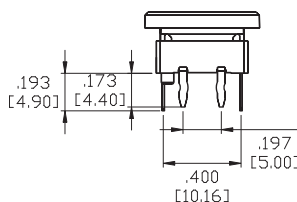
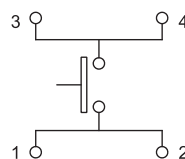
P.C.MOUNTING



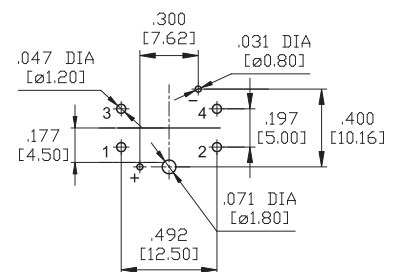
LP-12R



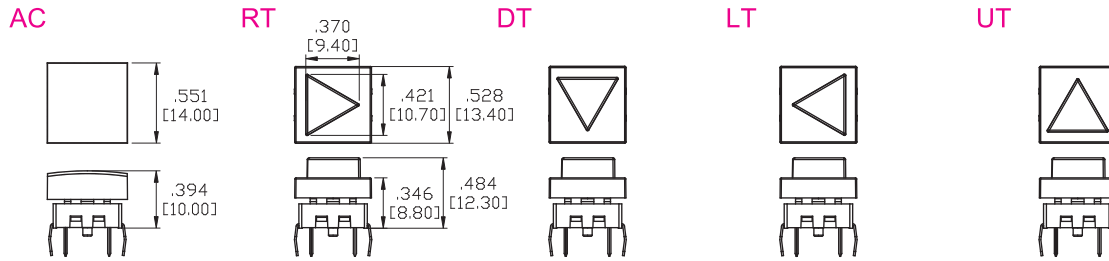
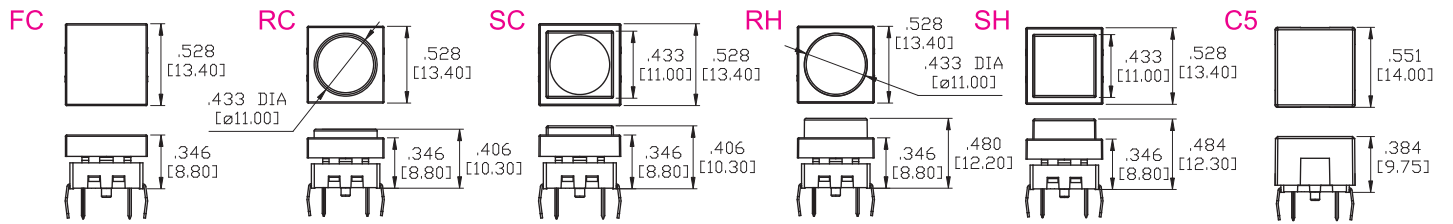
Contact Configuration



P.C.MOUNTING



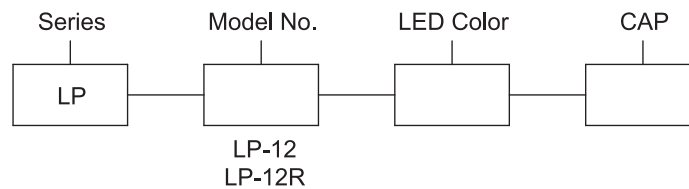
CAP OPTIONS



LED COLORS

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

HOW TO ORDER



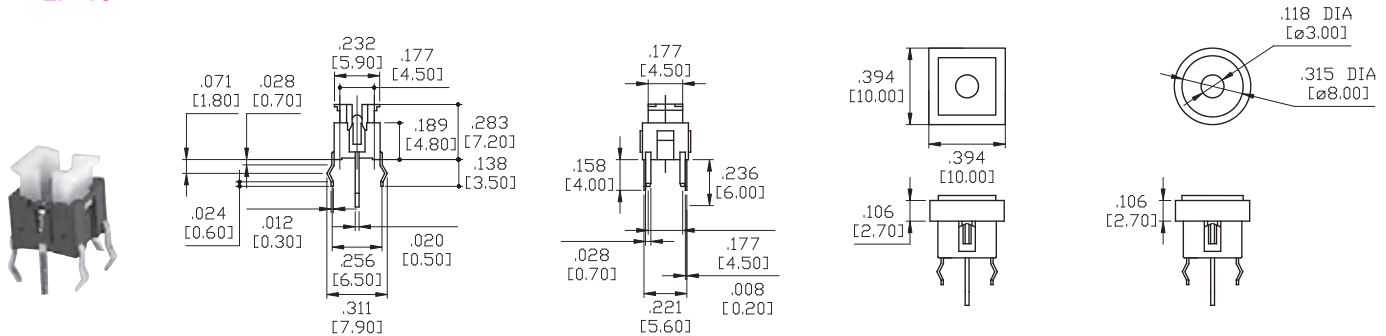
SPECIFICATIONS:

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.

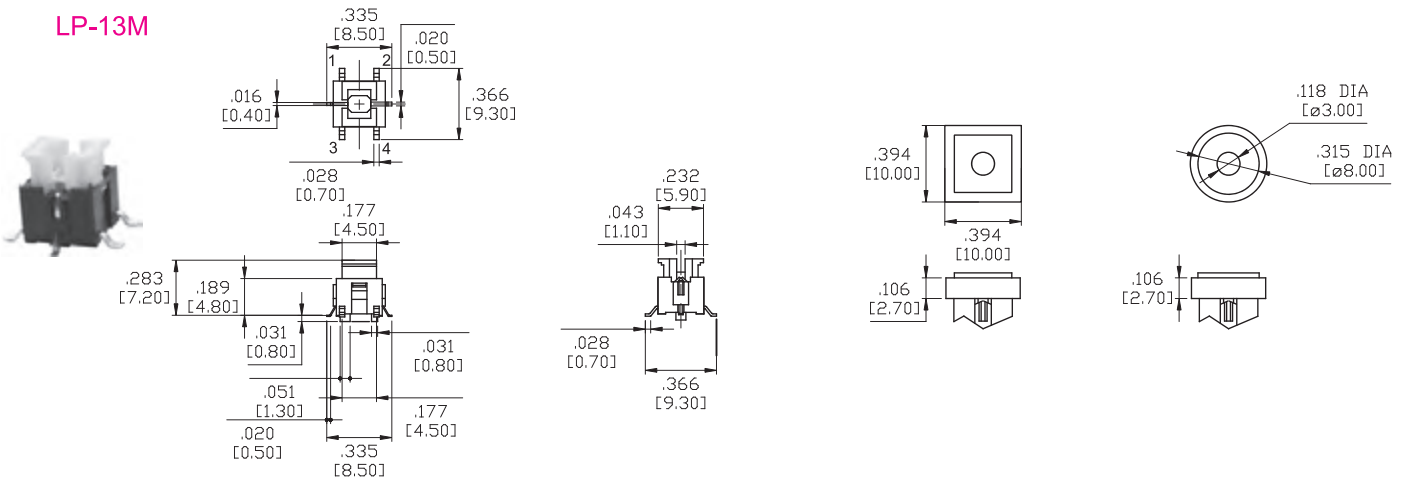
MATERIALS:

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

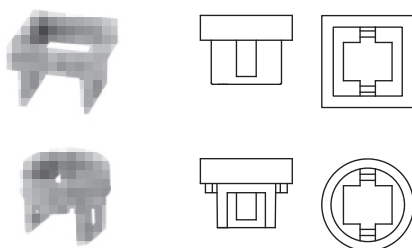
LP-13



LP-13M



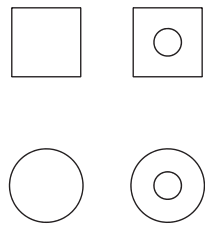
HOUSING & COLOR OPTIONS



| 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 |

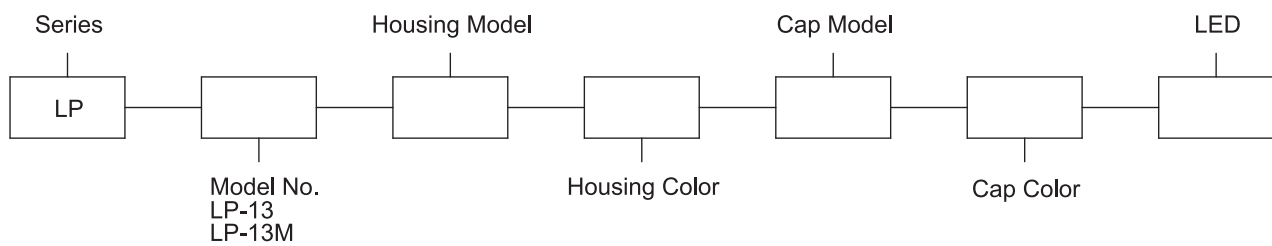
| Code | Color |
|------|-------------|
| 1 | Red |
| 2 | Green |
| 3 | Orange |
| 4 | Ivory |
| 5 | Gray |
| 6 | Black |
| 7 | Blue |
| 0 | Without CAP |

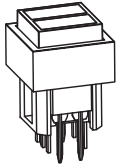
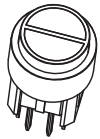
LED COLORS

| 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:

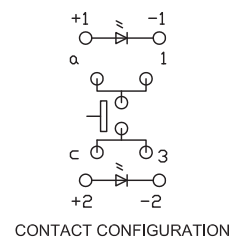
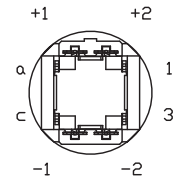
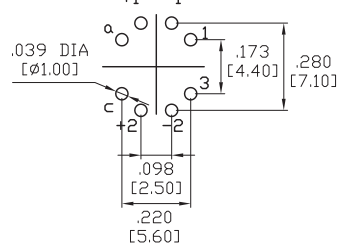
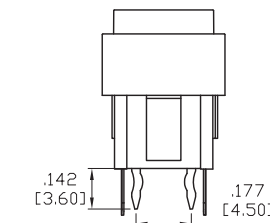
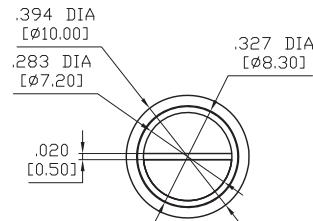
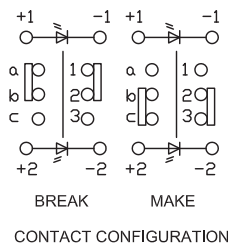
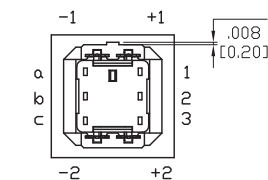
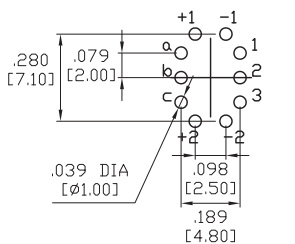
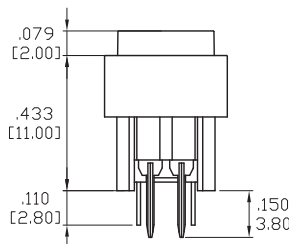
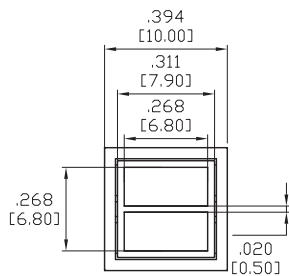
CAP: PC or ABS.
 CAP LENS: PC.
 HOUSING: PA.
 CONTACT: PBS Ag plated (LPA-M/A).
 ACT DOME: SUS with Ag plating (LPA-T).
 LED TERMINAL: PBS with Au plated.
 TERMINAL: Brass Ag plated.

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 |

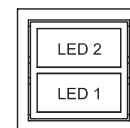
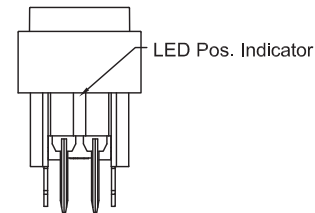
CAP & COLOR OPTIONS

| Code | CAP Model | |
|------|---|----------|
| F |  | With LED |
| G |  | With LED |

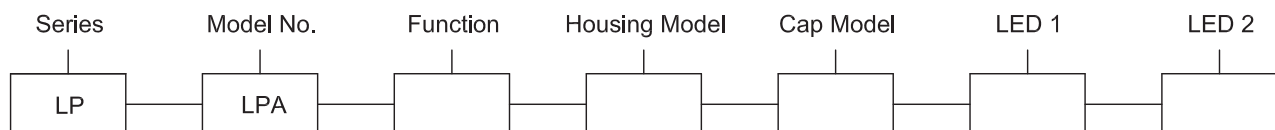
LED COLORS

| 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:

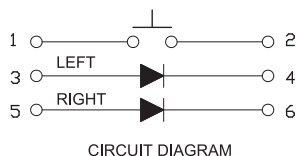
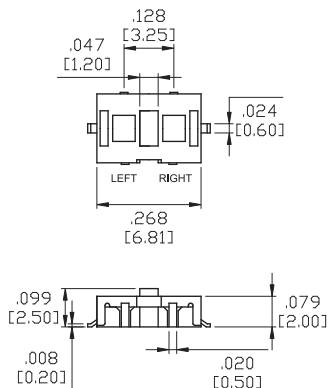
CONTACT RATING: 12VDC, 50mA max. 1VDC, 10uA min.
 ELECTRICAL LIFE: 30,000 cycles.
 CONTACT RESISTANCE: 500m-ohms max.
 INSULATION RESISTANCE: 100VDC 100M-ohms min.
 OPERATING FORCE: 160+75/-30 gf.
 OPERATING TEMPERATURE: -20°C ~ +70°C.
 FUNCTION: Momentary action.
 CONTACT ARRANGEMENT: SPST, N.O.
 IR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

MATERIALS:

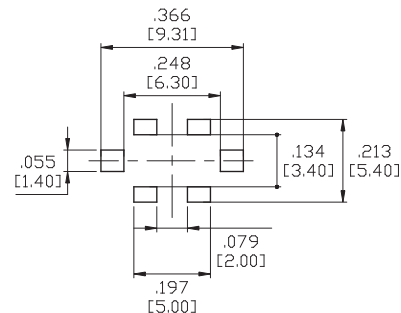
COVER: PA9T + GF.
 ACTUATOR: LCP + GF.
 BASE FRAME: LCP + GF.
 TERMINAL: Silver plating.

Specifications and Dimensions subject to change

LP14



SURFACE MOUNTING

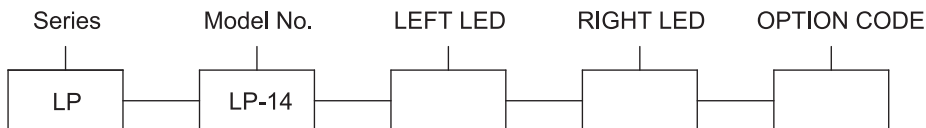


LED COLORS

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

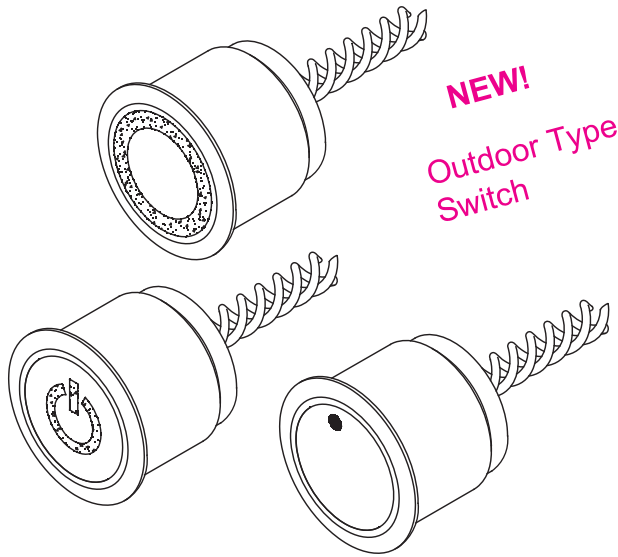
| Code | LED Color |
|------|-------------|
| 0 | Without LED |

HOW TO ORDER



U - Ultra LED Brightness

Toggle
 Rocker
 Slide
 Pushbutton
 AV
 Rotary
 Tact
 Touch Key
 Miscellaneous



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.

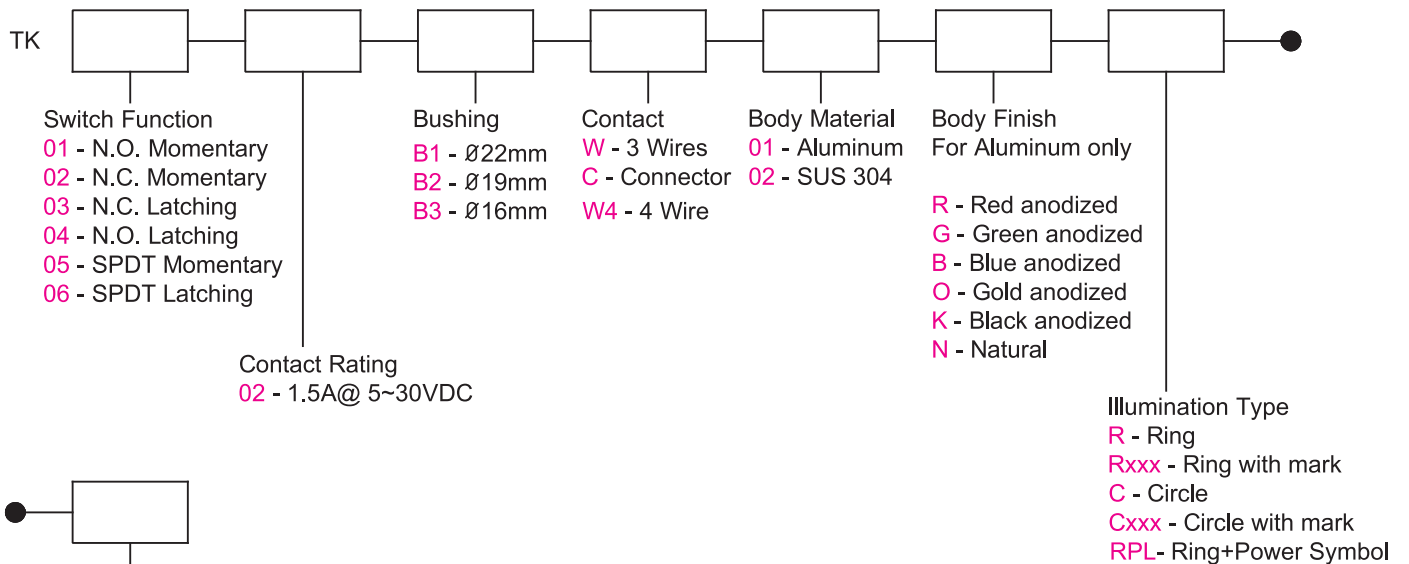
MATERIALS:

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: (only for Ø19mm)
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

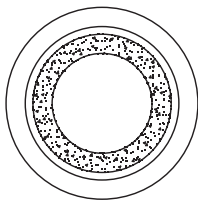
| | Non-Illuminated | 1 LED | | 2 LED |
|------------------|-----------------|-------|--|-------|
| NO - MOM | | | | |
| NC - MOM | | | | |
| NC - NO Latching | | | | |
| NO - NC Latching | | | | |
| SPDT Momentary | | | | |
| SPDT Latching | | | | |

- Toggle
- Rocker
- Slide
- Pushbutton
- AV
- Rotary
- Tact
- Touch Key
- Miscellaneous

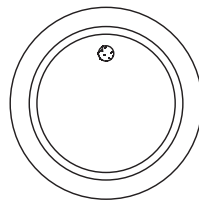
ILLUMINATION TYPES

| 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 |

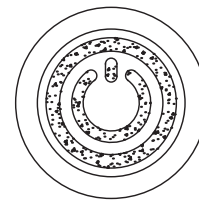
Illuminated Ring



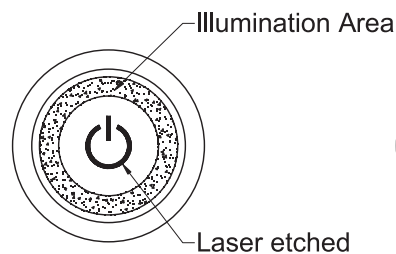
Illuminated Circle



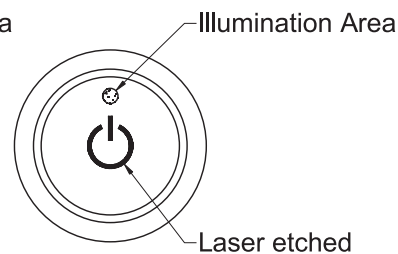
Illuminated Ring+Power Symbol



* Example of Ring / Circle type with mark



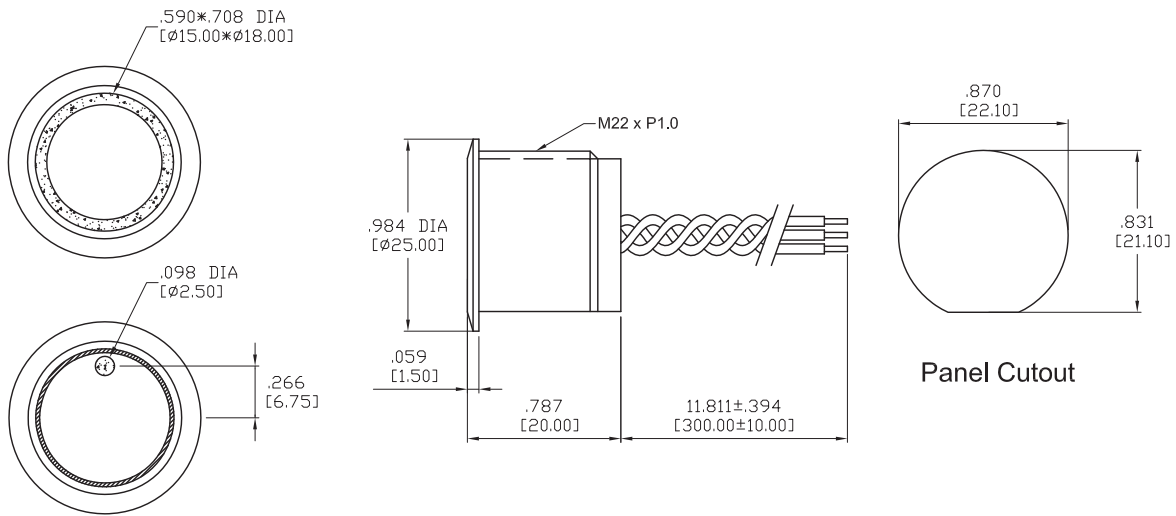
Part Code: R011



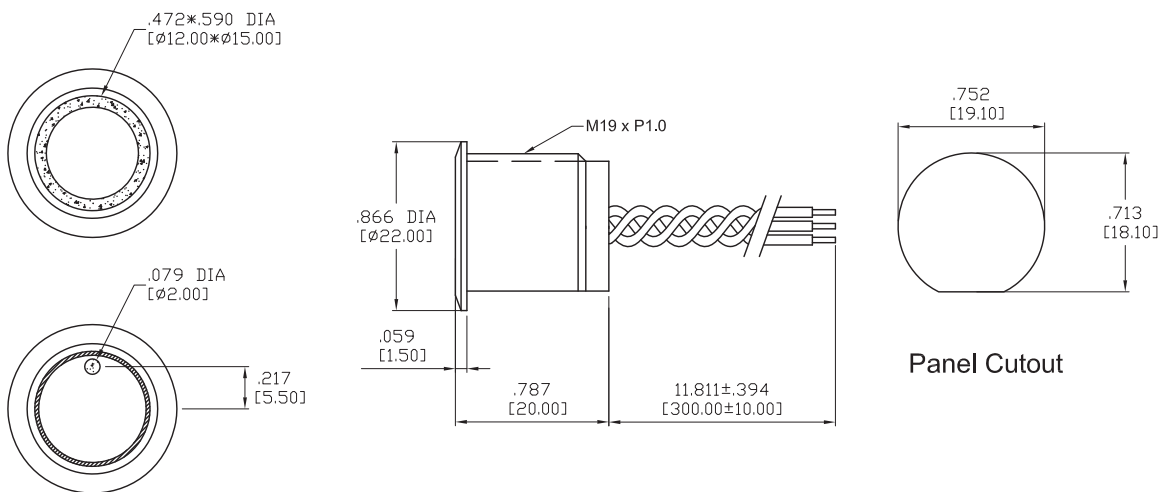
Part Code: C011

* Please consult factory for a customized illumination option.

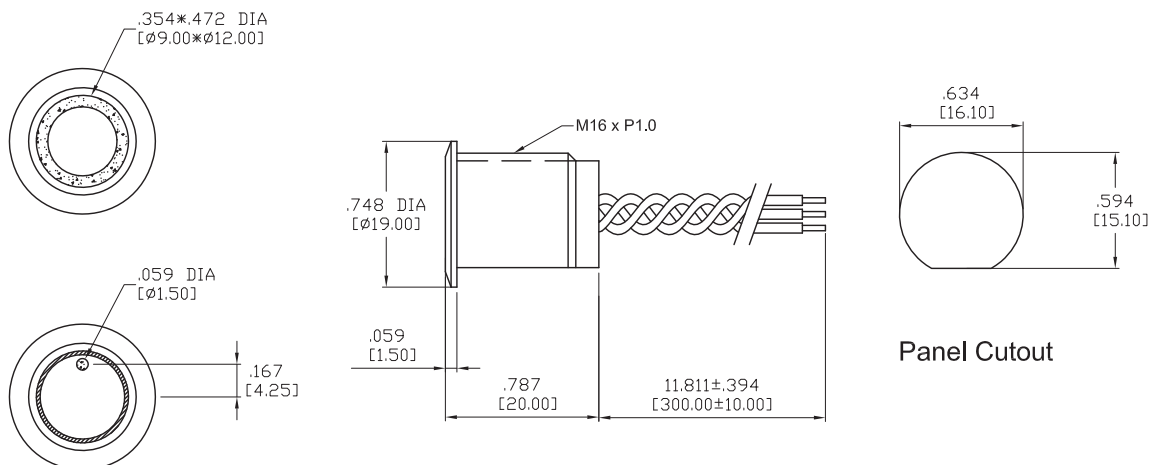
Ø22mm Mounting



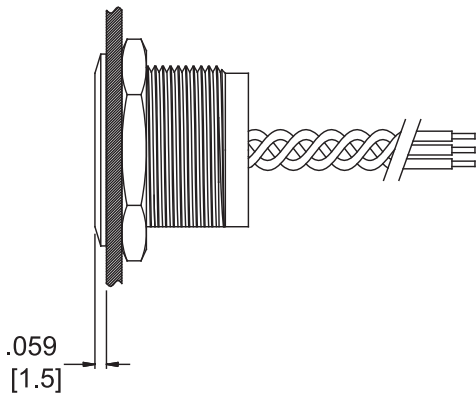
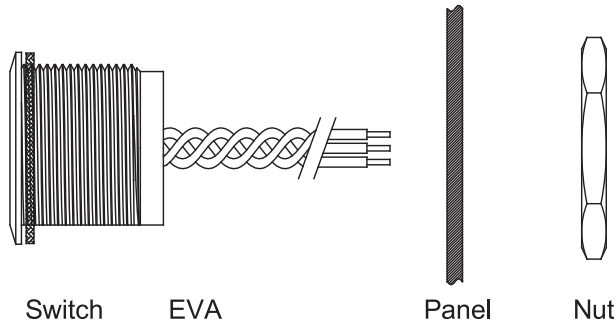
Ø19mm Mounting



Ø16mm Mounting



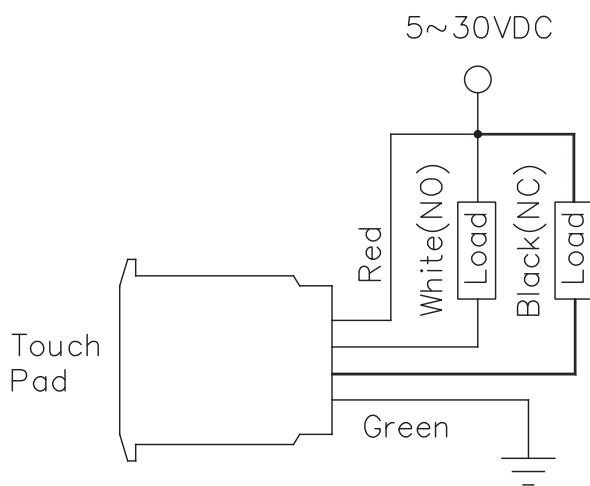
Assembly Drawing



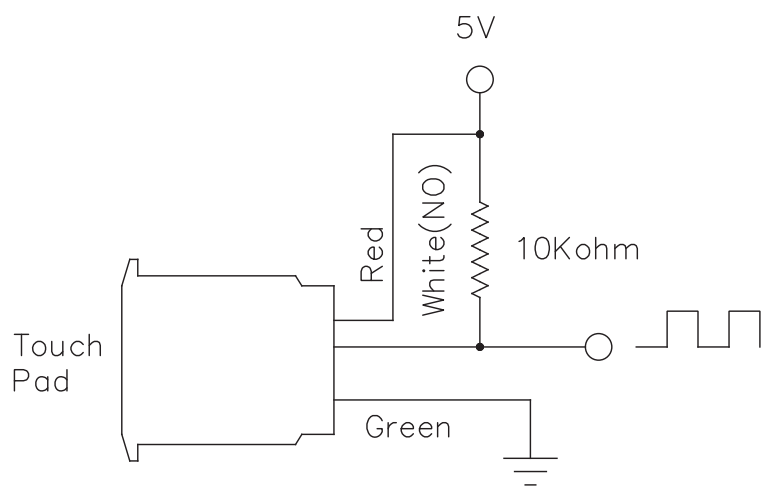
| | |
|-----------------|---------------------|
| Panel Thickness | 0.7~10.0t |
| Nut Spec. | 19*3-M16*P1.0 |
| | 22*3-M19*P1.0 |
| | 25*3-M22*P1.0 |
| Assembly Force | 20N/mm ² |

| Cable Position | | |
|----------------|--------|-------|
| INPUT | OUTPUT | GND |
| Red | White | Green |

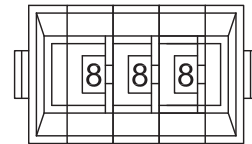
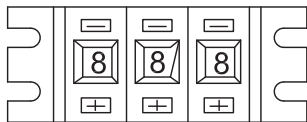
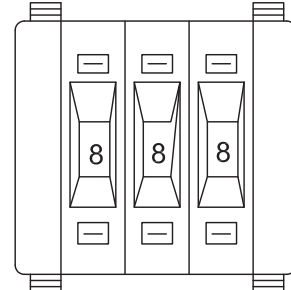
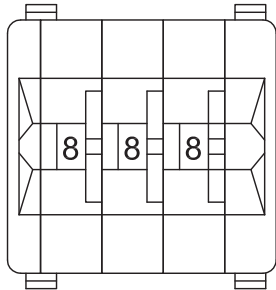
Application



[Driver Load]



[TTL Output]



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

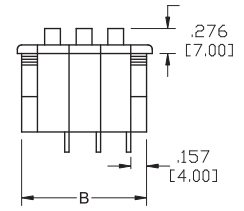
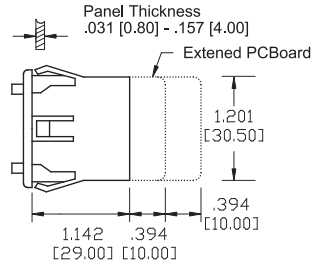
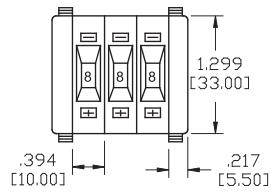
Tact

Touch Key

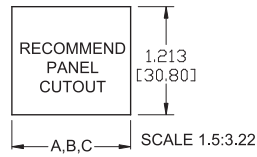
Miscellaneous

Specifications and Dimensions subject to change

PF21



PANEL MOUNTING



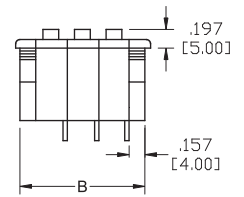
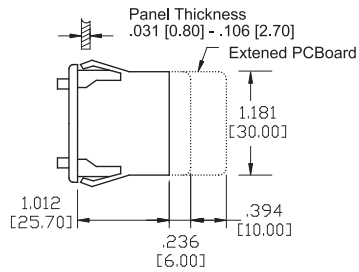
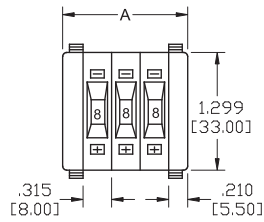
$$A = 10.00(.394) * N + 11.00(.433)$$

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

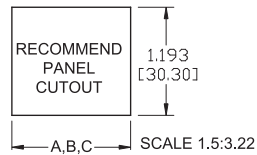
$$C = 10.00(.394) * N + 8.30(.327)$$

N = Number of Sections

PF31



PANEL MOUNTING



$$A = 8.00(.315) * N + 11.00(.433)$$

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

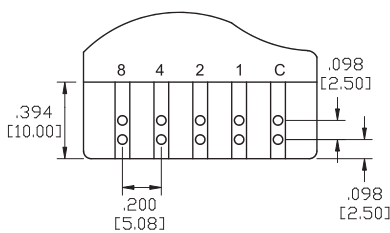
$$C = 8.00(.315) * N + 8.30(.327)$$

N = Number of Sections

TERMINATION OPTIONS

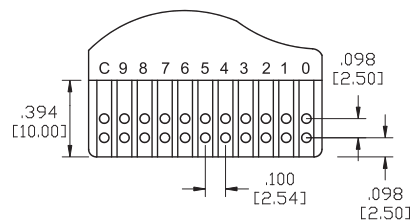
M1

BCD



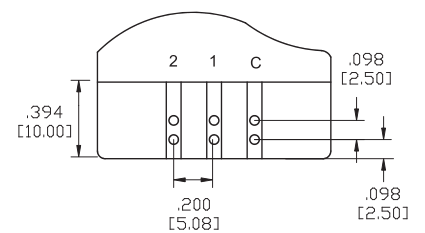
M2

DECIMAL

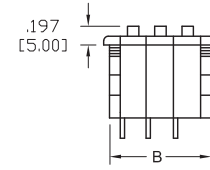
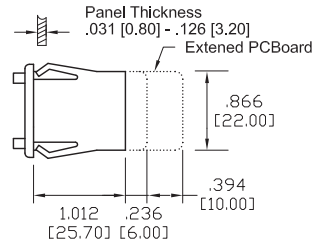
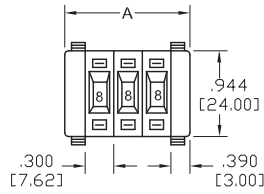


M3

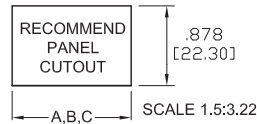
REPEATING



PF44



PANEL MOUNTING



$$A = 7.62(.300) * N + 6.00(.236)$$

$$B = 7.62(.300) * N + 3.00(.118)$$

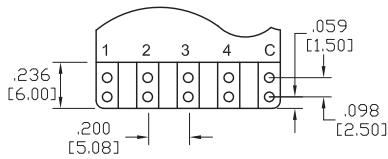
$$C = 7.62(.300) * N + 3.30(.130)$$

N = Number of Sections

TERMINATION OPTIONS

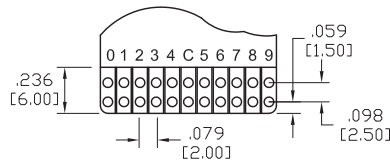
M1

BCD



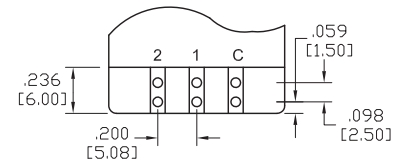
M2

DECIMAL

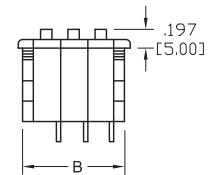
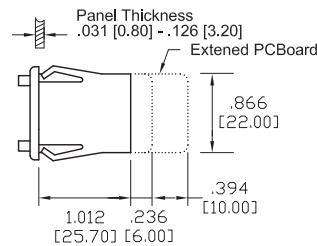
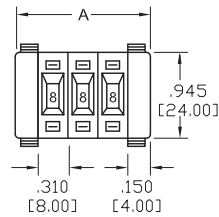


M3

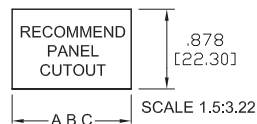
REPEATING



PF49



PANEL MOUNTING



$$A = 8.00(.315) * N + 11.00(.433)$$

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

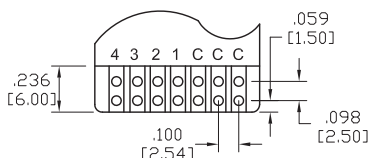
$$C = 8.00(.315) * N + 8.30(.327)$$

N = Number of Sections

TERMINATION OPTIONS

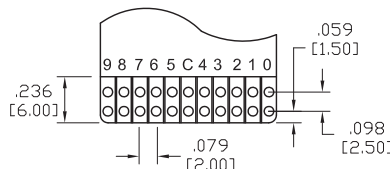
M1

BCD



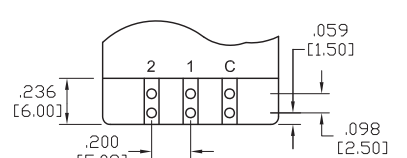
M2

DECIMAL

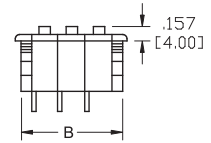
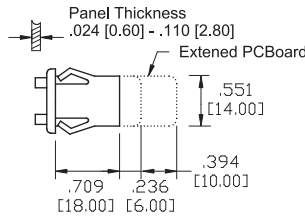
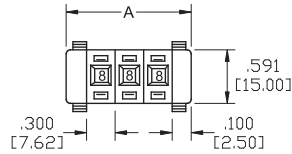


M3

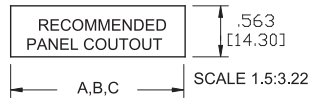
REPEATING



PF52



PANEL MOUNTING



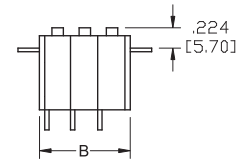
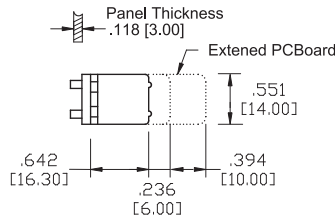
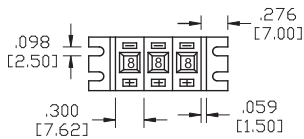
$$A = 7.62(.300) * N + 5.00(.197)$$

$$B = 7.62(.300) * N + 3.00(.118)$$

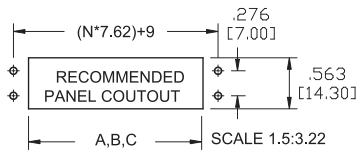
$$C = 7.62(.300) * N + 3.30(.130)$$

N = Number of Sections

PR52



PANEL MOUNTING



$$A = 7.62(.300) * N + 15.00(.591)$$

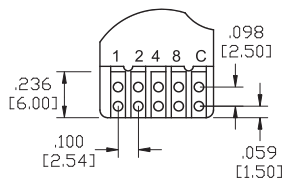
$$B = 7.62(.300) * N + 3.00(.118)$$

$$C = 7.62(.300) * N + 3.30(.130)$$

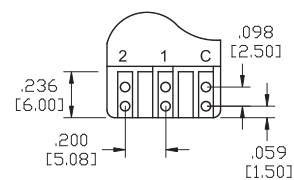
N = Number of Sections

TERMINATION OPTIONS

M1 BCD



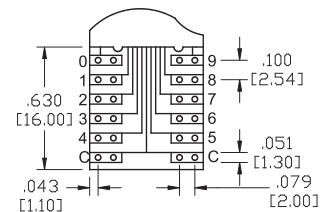
M2 REPEATING



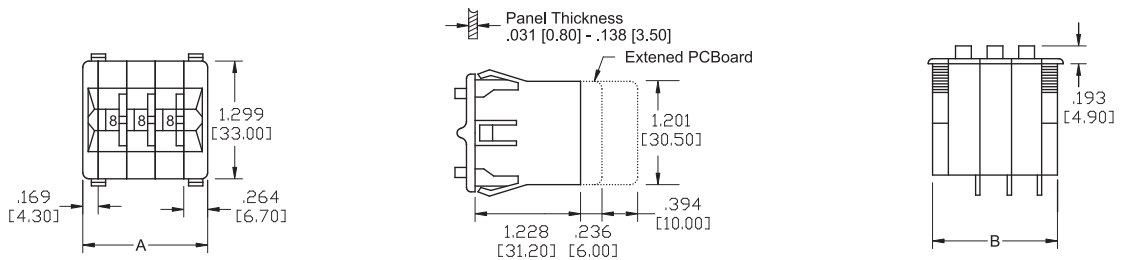
M3 DOUBLE SIDED PCB DECIMAL



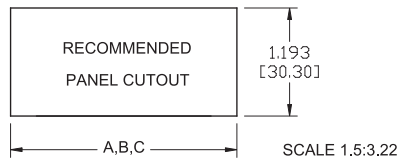
M4 DECIMAL



TF31



PANEL MOUNTING



$$A = 8.00(.315) * N + 11.00(.433)$$

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

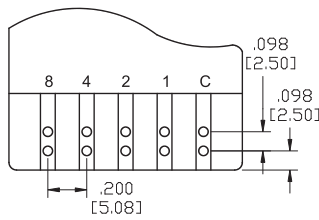
$$C = 8.00(.315) * N + 8.30(.327)$$

N = Number of Sections

TERMINATION OPTIONS

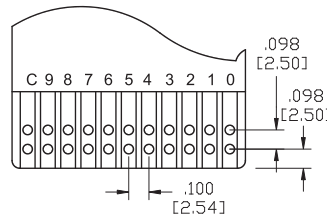
M1

BCD



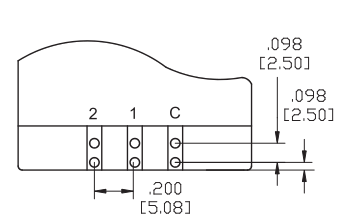
M2

DECIMAL

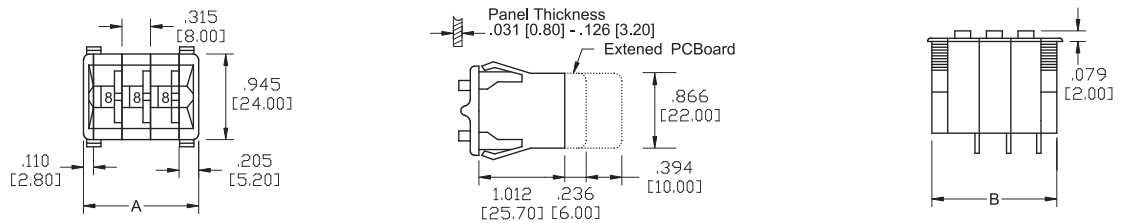


M3

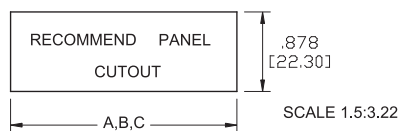
REPEATING



TF41



PANEL MOUNTING



$$A = 8.00(.315) * N + 8.00(.315)$$

$$B = 8.00(.315) * N + 6.00(.236)$$

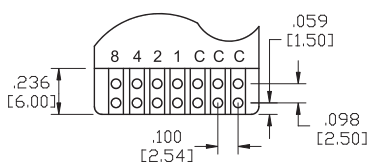
$$C = 8.00(.315) * N + 6.30(.248)$$

N = Number of Sections

TERMINATION OPTIONS

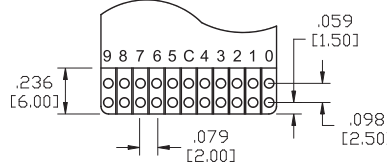
M1

BCD



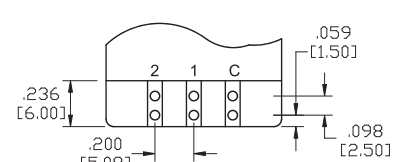
M2

DECIMAL

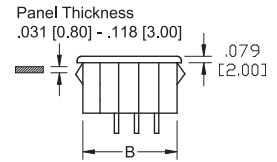
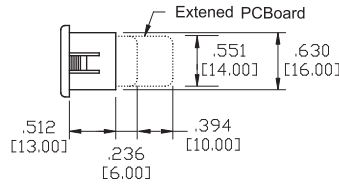
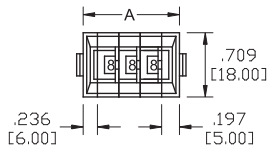


M3

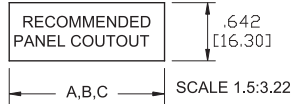
REPEATING



TF51



PANEL MOUNTING



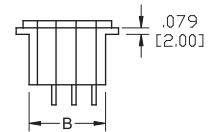
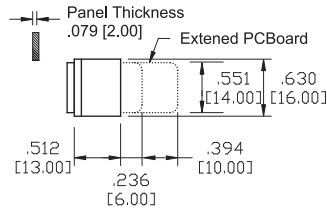
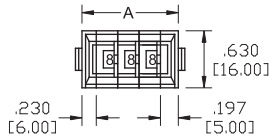
$$A = 6.00(.236) * N + 10.00 \text{ or } 8.00(.394 \text{ or } .315)$$

$$B = 6.00(.236) * N + 8.00 \text{ or } 6.00(.315 \text{ or } .236)$$

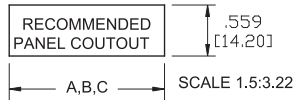
$$C = 6.00(.236) * N + 8.30 \text{ or } 6.30(.327 \text{ or } .248)$$

N = Number of Sections

TR51



PANEL MOUNTING



$$A = 6.00(.236) * N + 8.00(.315)$$

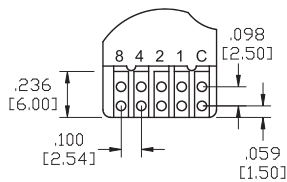
$$B = 6.00(.236) * N + 6.00(.236)$$

$$C = 6.00(.236) * N + 6.30(.248)$$

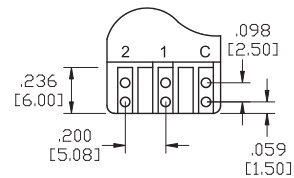
N = Number of Sections

TERMINATION OPTIONS

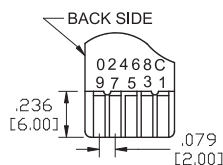
M1 BCD



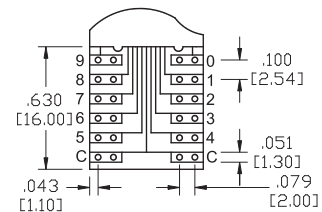
M2 REPEATING



M3 DOUBLE SIDED PCB DECIMAL

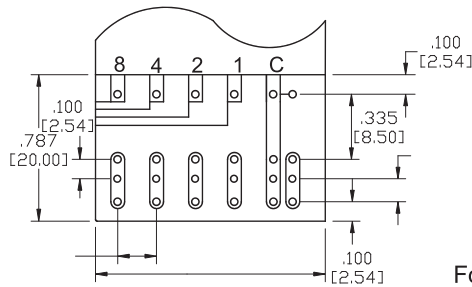


M4 DECIMAL



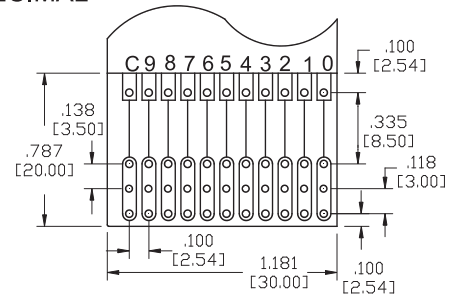
TERMINATION OPTIONS

M4 BCD

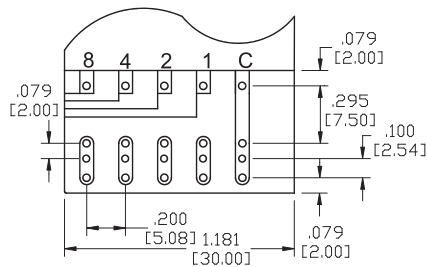


For PF21 Only

M5 DECIMAL

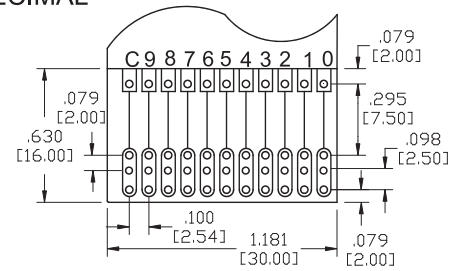


M4 BCD

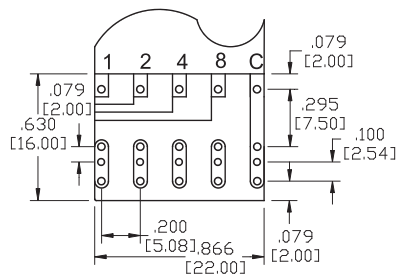


For PF31 TF31 Only

M5 DECIMAL

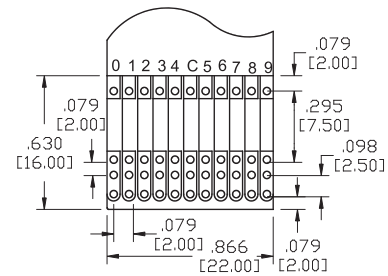


M4 BCD

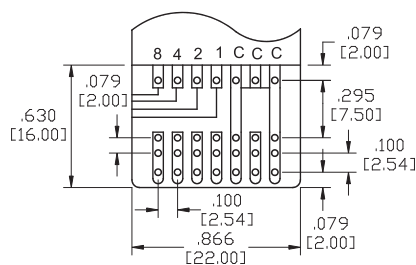


For PF44 Only

M5 DECIMAL

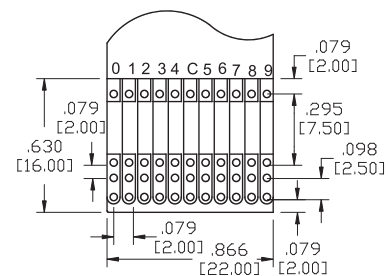


M4 BCD

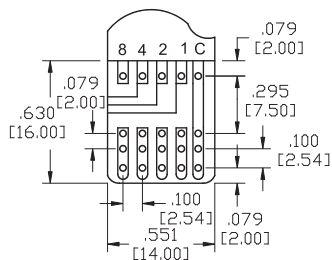


For PF49 TF41 Only

M5 DECIMAL

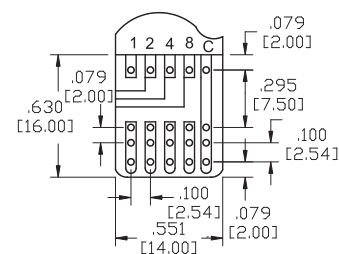


M5 BCD



For TR51 TF51 Only

M5 BCD



For PF52 PR52 Only

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

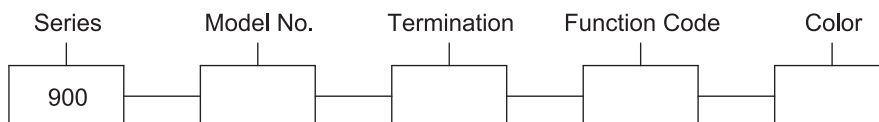
| WHEEL | C connected to terminals | | |
|-------|--------------------------|---|---|
| | 1 | 2 | C |
| 0 | ● | | ● |
| 5 | | ● | ● |
| 0 | ● | | ● |
| 5 | | ● | ● |
| 0 | ● | | ● |
| 5 | | ● | ● |
| 0 | ● | | ● |
| 5 | | ● | ● |
| 0 | ● | | ● |
| 5 | | ● | ● |

COLOR OPTIONS

| Colors / Parts | No. | | | | | | | | | |
|----------------|-----|---|---|---|---|---|---|---|---|--------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
| Housing | B | B | B | G | G | G | I | I | I | Others |
| 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 | |

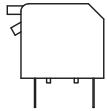
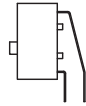
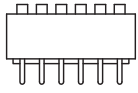
B: Black
G: Gray
I: Ivory
R: Red
W: White

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.

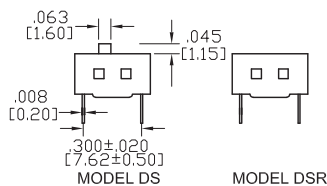
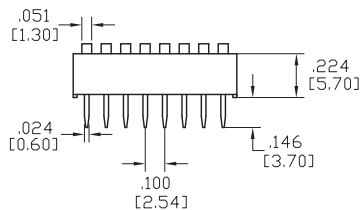
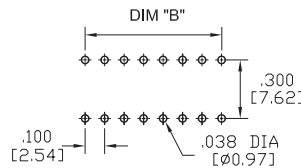
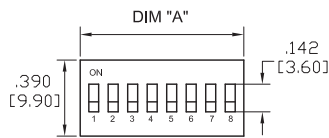
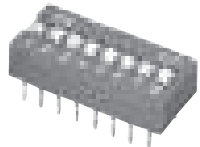


MATERIALS:

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.

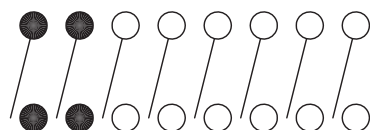
Specifications and Dimensions subject to change

DS(R)

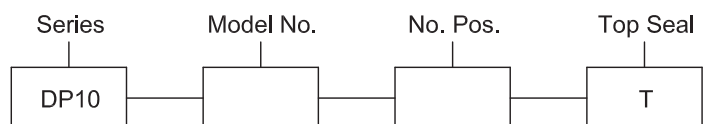


| MODEL-POS. NO. | DIM "A" | DIM "B" |
|----------------|---------------|---------------|
| DS(R)-02 | .239 [6.08] | .100 [2.54] |
| DS(R)-03 | .351 [8.92] | .200 [5.08] |
| DS(R)-04 | .439 [11.16] | .300 [7.62] |
| DS(R)-05 | .539 [13.70] | .400 [10.16] |
| DS(R)-06 | .639 [16.24] | .500 [12.70] |
| 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] |

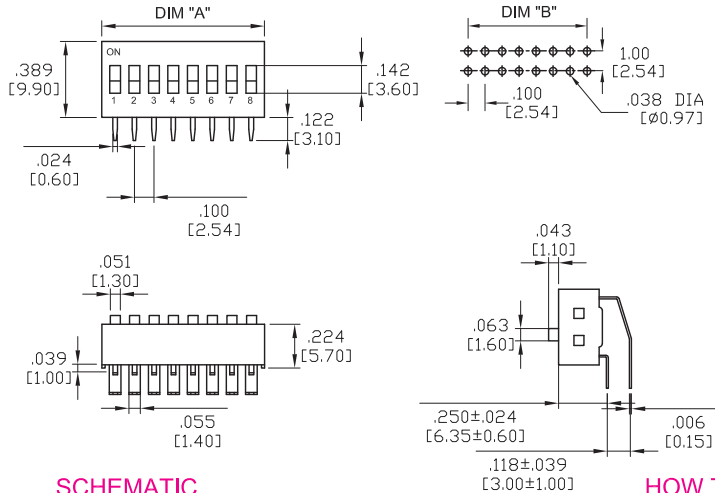
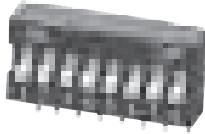
SCHEMATIC



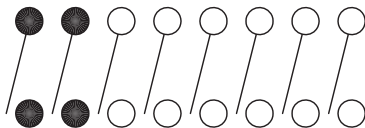
HOW TO ORDER



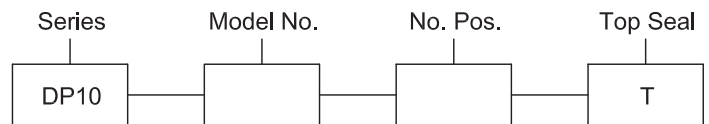
DA



SCHEMATIC

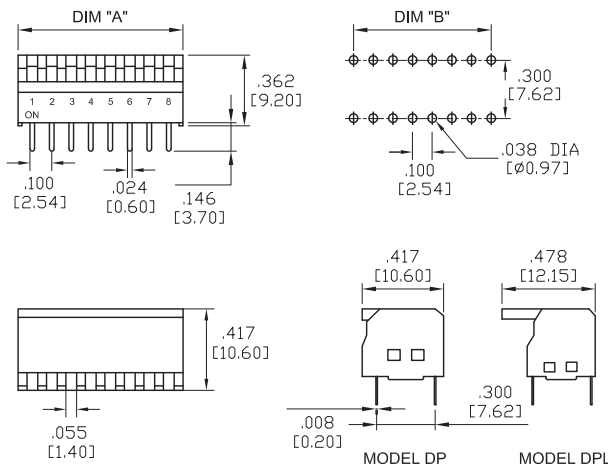
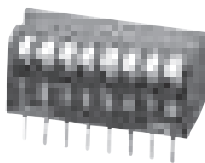


HOW TO ORDER

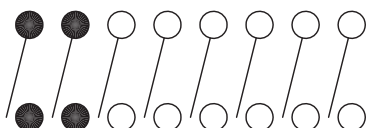


| MODEL-POS. NO. | DIM "A" | DIM "B" |
|----------------|---------------|---------------|
| DA-02 | .239 [6.08] | .100 [2.54] |
| DA-03 | .351 [8.92] | .200 [5.08] |
| DA-04 | .439 [11.16] | .300 [7.62] |
| DA-05 | .539 [13.70] | .400 [10.16] |
| DA-06 | .639 [16.24] | .500 [12.70] |
| DA-07 | .751 [19.08] | .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] |

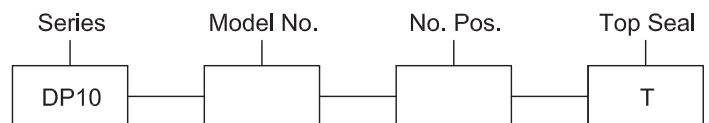
DP(L)



SCHEMATIC

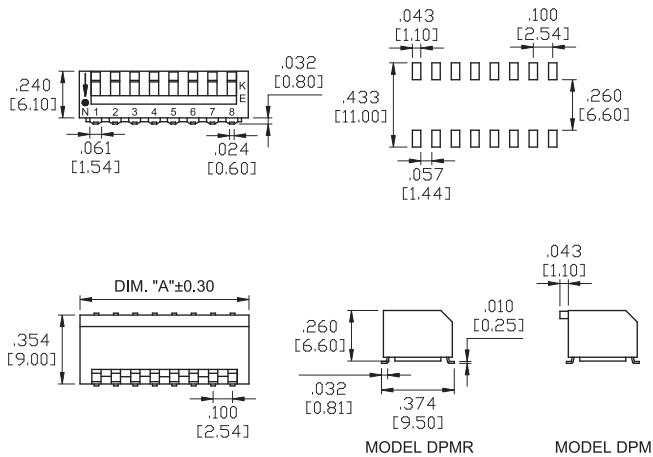
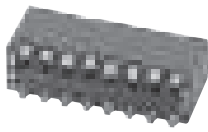


HOW TO ORDER



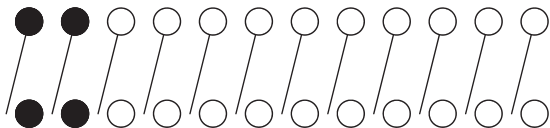
| MODEL-POS. NO. | DIM "A" | DIM "B" |
|----------------|---------------|--------------|
| DP(L)-02 | .246 [6.26] | .100 [2.54] |
| DP(L)-03 | .357 [9.06] | .200 [5.08] |
| DP(L)-04 | .446 [11.34] | .300 [7.62] |
| DP(L)-05 | .546 [13.88] | .400 [10.16] |
| DP(L)-06 | .646 [16.42] | .500 [12.70] |
| 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)

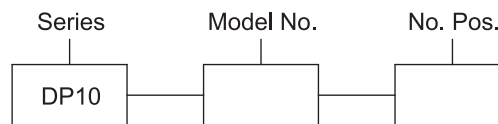


| MODEL-POS. NO. | DIM "A" | DIM "B" |
|----------------|---------------|---------------|
| DPM(R)-02 | .255 [6.48] | .100 [2.54] |
| DPM(R)-03 | .355 [9.02] | .200 [5.08] |
| DPM(R)-04 | .455 [11.56] | .300 [7.62] |
| DPM(R)-05 | .555 [14.10] | .400 [10.16] |
| DPM(R)-06 | .655 [16.64] | .500 [12.70] |
| 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] |

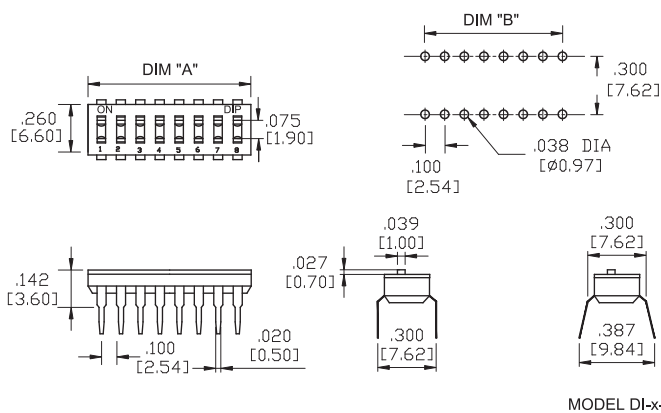
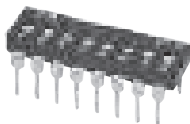
SCHEMATIC



HOW TO ORDER

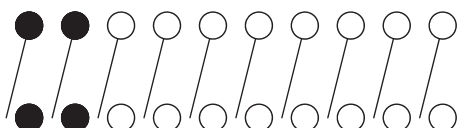


DI(R)

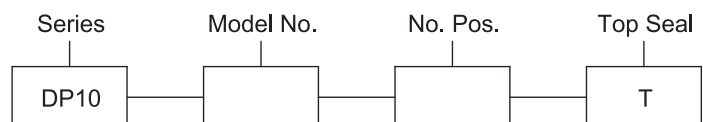


| MODEL-POS. NO. | DIM "A" | DIM "B" |
|----------------|---------------|---------------|
| DI(R)-01(H)(S) | .137 [3.48] | NONE |
| DI(R)-02(H)(S) | .237 [6.02] | .100 [2.54] |
| DI(R)-03(H)(S) | .337 [8.56] | .200 [5.08] |
| DI(R)-04(H)(S) | .437 [11.10] | .300 [7.62] |
| DI(R)-05(H)(S) | .537 [13.64] | .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] |

SCHEMATIC

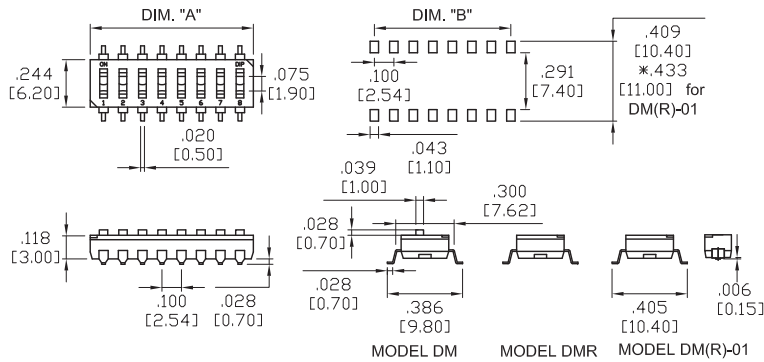


HOW TO ORDER



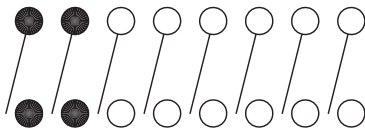
* Top seal is not available for raised actuator

DM(R)

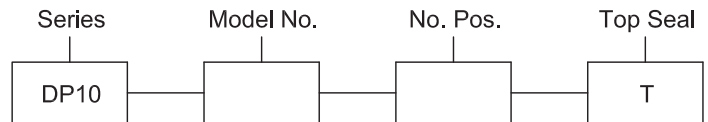


| MODEL-POS. NO. | DIM "A" | DIM "B" |
|----------------|---------------|---------------|
| DM(R)-01 | .137 [3.48] | NONE |
| DM(R)-02 | .237 [6.02] | .100 [2.54] |
| DM(R)-03 | .337 [8.56] | .200 [5.08] |
| DM(R)-04 | .437 [11.10] | .300 [7.62] |
| DM(R)-05 | .537 [13.64] | .400 [10.16] |
| DM(R)-06 | .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

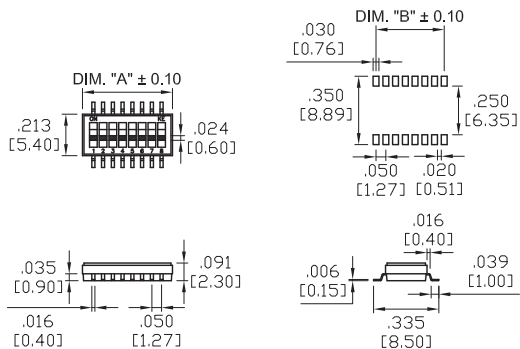
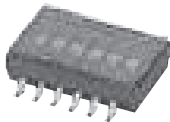


HOW TO ORDER



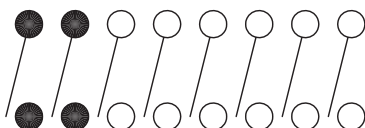
* Top seal is not available for raised actuator

DH

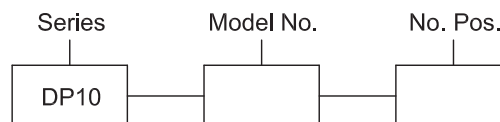


| MODEL-POS. NO. | DIM "A" | DIM "B" |
|----------------|--------------|--------------|
| DH-02 | .162 [4.12] | .050 [1.27] |
| DH-04 | .262 [6.66] | .150 [3.81] |
| DH-06 | .362 [9.20] | .250 [6.35] |
| DH-08 | .462 [11.74] | .350 [8.89] |
| DH-10 | .562 [14.28] | .450 [11.43] |

SCHEMATIC

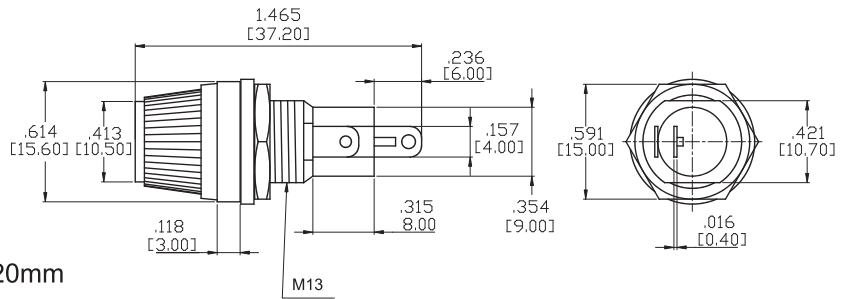


HOW TO ORDER



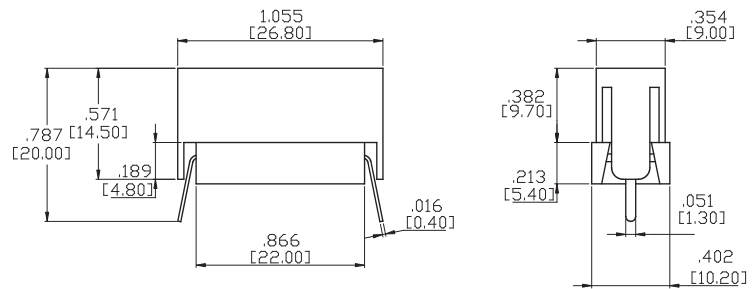
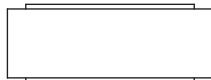
* "Blank" - with top seal ; "N" - Without top sea

R22-0111



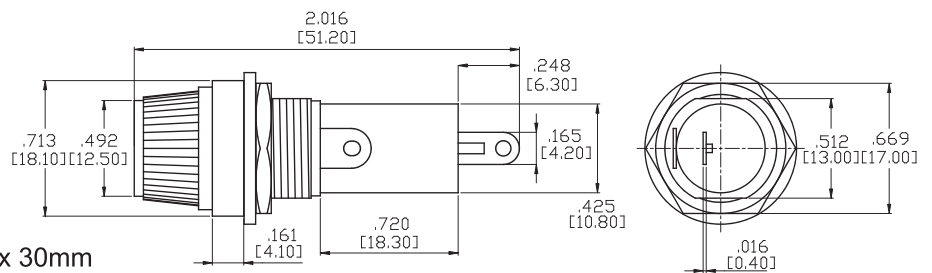
10A 250VAC 5.20 DIA. x 20mm

R22-0112



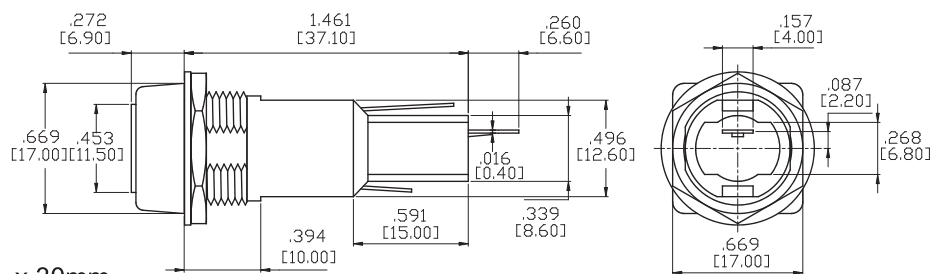
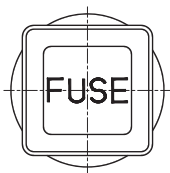
6A 250VAC 5.20 DIA. x 20mm

R22-0113



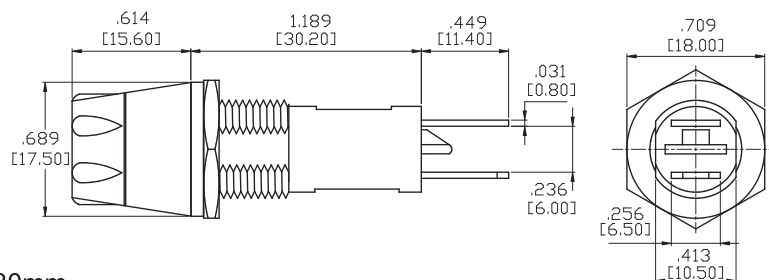
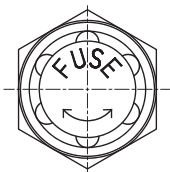
10A 250VAC 6.40 DIA. x 30mm

R22-0114



10A 250VAC 6.40 DIA. x 30mm

R22-0115



10A 250VAC 6.40 DIA. x 30mm

Specifications and Dimensions subject to change

SPECIFICATIONS:

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.

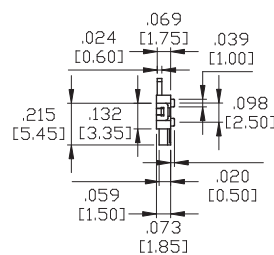
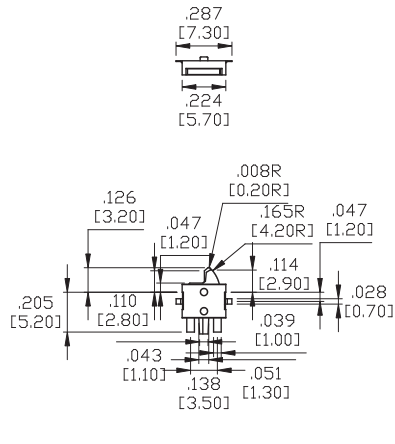
CONTACT RESISTANCE(Initial performance/ After lifetime): 500m-ohms max. /1-ohms max.

INSULATION RESISTANCE: More than 100M-ohms at 100VDC.

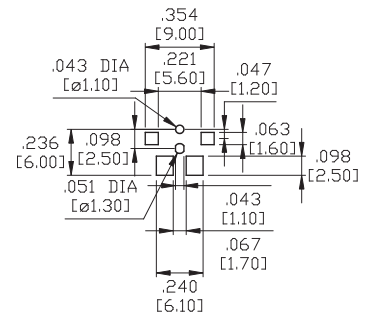
WITHSTANDING VOLTAGE: 100VAC, 1 minute.
OPERATING LIFE(WITH LOAD): 100,000 cycles.

Specifications and Dimensions subject to change

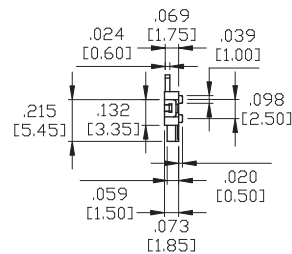
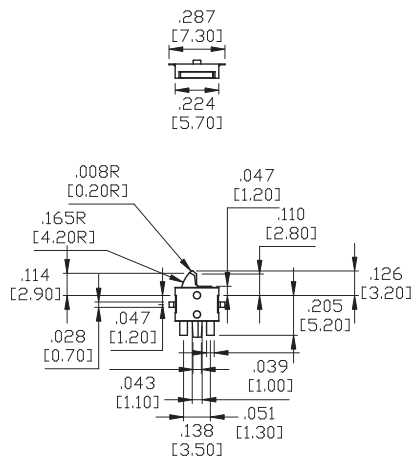
12MTL



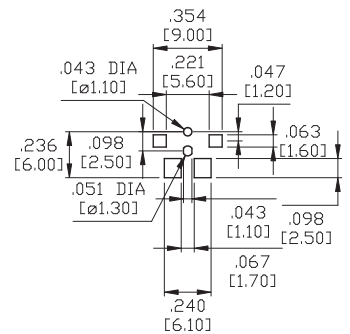
REFLOW PATTERN



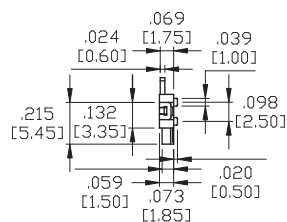
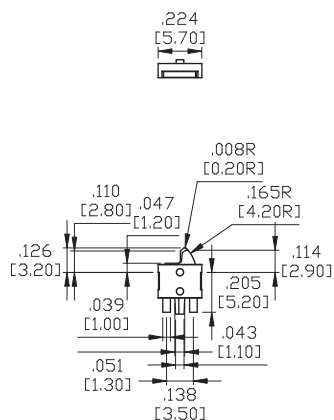
12MTR



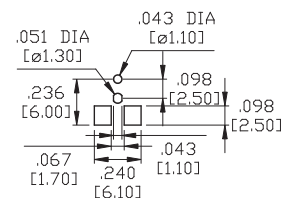
REFLOW PATTERN



12NTL

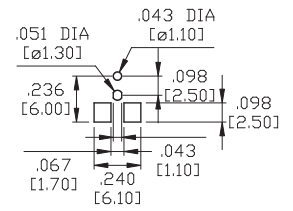
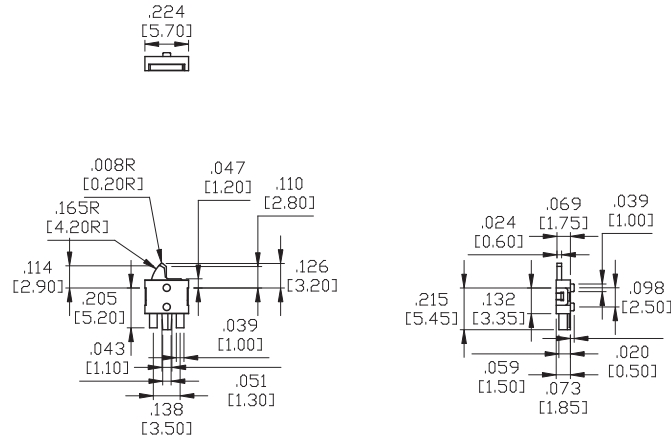


REFLOW PATTERN

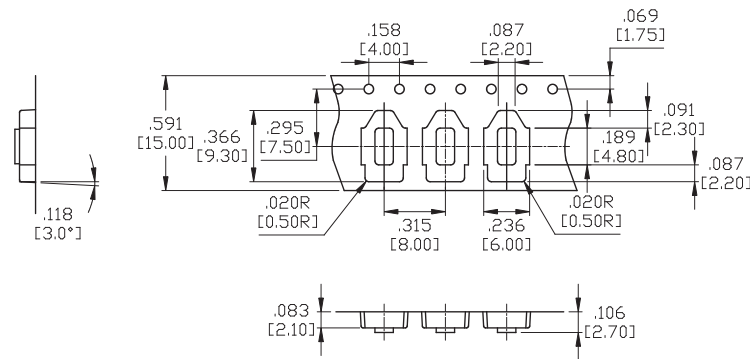


12NTR

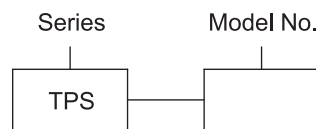
REFLOW PATTERN



REEL TAPING



HOW TO ORDER



Toggle

Rocker

Slide

Pushbutton

AV

Rotary

Tact

Touch Key

Miscellaneous

SPECIFICATIONS:

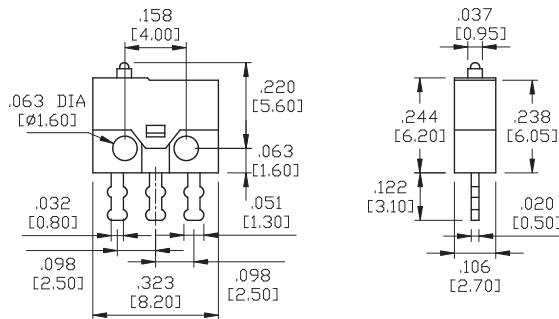
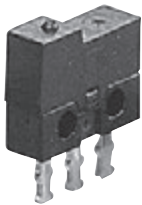
RATING: 30VDC 500mA.
 OPERATING FORCE: 50gf max.
 LIFE: 100,000 cycles min.
 CONTACT RESISTANCE: 100m-ohms max (initial).
 INSULATION RESISTANCE: 100M-ohms min (500VDC).
 DIELECTRIC STRENGTH: 250VAC 1 min.
 OPERATING TEMPERATURE: -15°C to +70°C.
 AMBIENT HUMIDITY: 35%~85%RH.

MATERIALS:

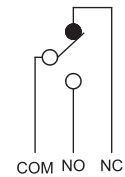
BODY: PBT.
 COVER: POM.
 LEVER: POM or SUS.
 BUTTON: POM.
 CONTACT: BeCu+Ag.
 TERMINAL: Silver+Ag.

Specifications and Dimensions subject to change

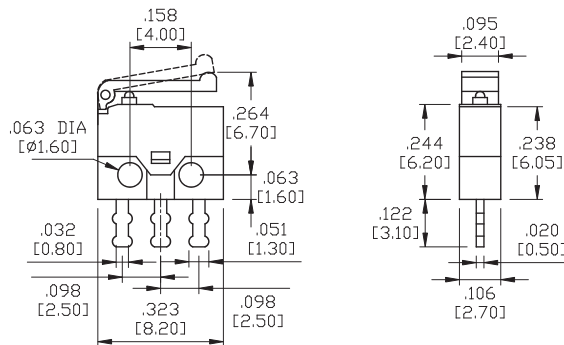
SSM-00



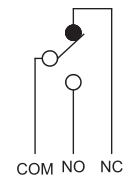
SCHEMATIC



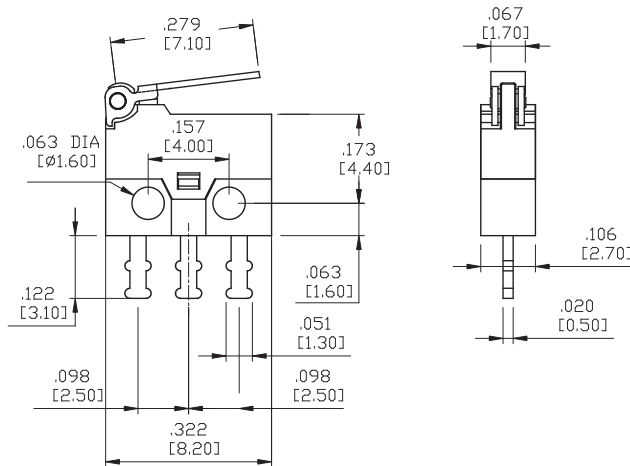
SSM-01



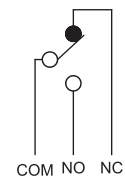
SCHEMATIC



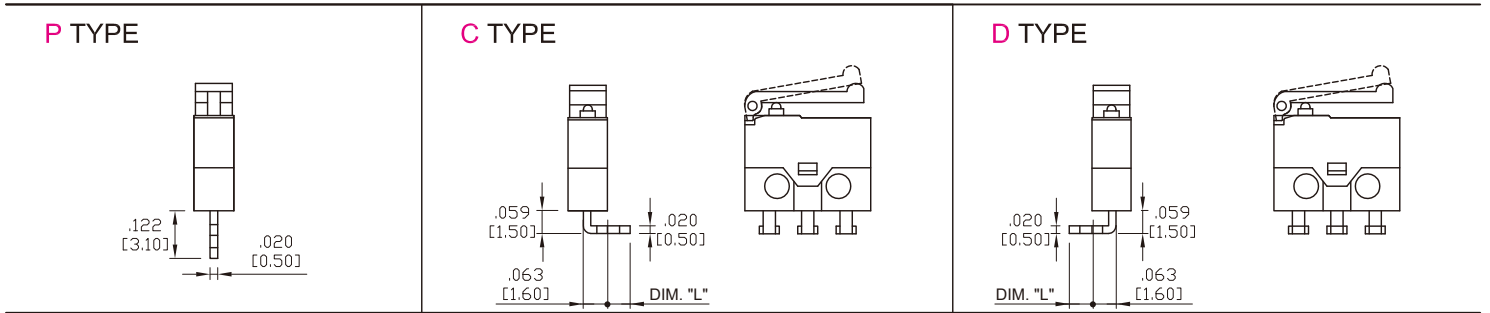
SSM-02



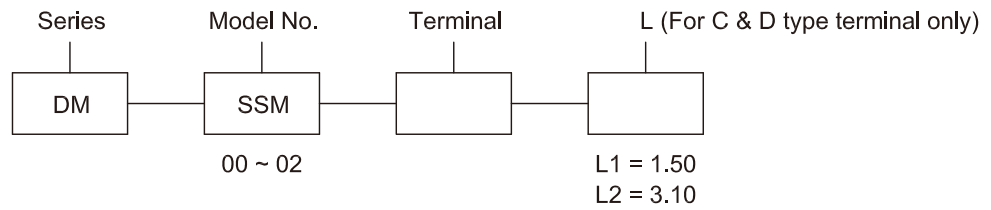
SCHEMATIC



TERMINATION OPTIONS



HOW TO ORDER



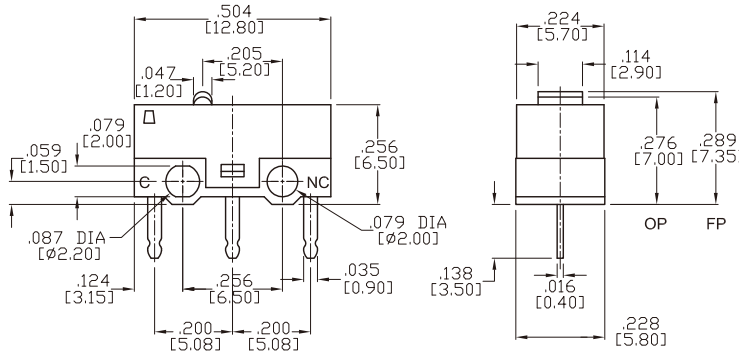
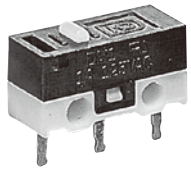
Toggle
Rocker
Slide
Pushbutton
AV
Rotary
Tact
Touch Key
Miscellaneous

SPECIFICATIONS:

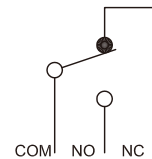
RATING: AC125V 1A, (OPTIONAL AC125V @ 3A, 0.1A @ 250VAC).
 INSULATION RESISTANCE: >100M-ohms DC500V.
 DIELECTRIC STRENGTH: AC500V 1 min.
 CONTACT RESISTANCE: <50m-ohms.
 SOLDERING TEMPERATURE: 225°C max. 5 sec.
 MECHANICAL LIFE: 1,000,000 cycles.
 ELECTRICAL LIFE: 30,000 cycles.
 OPERATING TEMPERATURE: -25°C to +65°C.
 AMBIENT HUMIDITY: <85% RH.

Specifications and Dimensions subject to change

DM-00

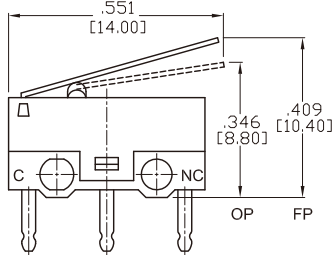


SCHEMATIC

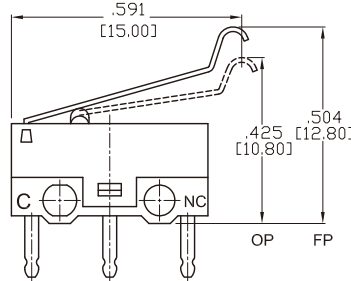


LEVER OPTIONS

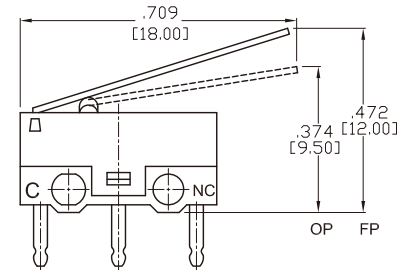
DM-01



DM-02

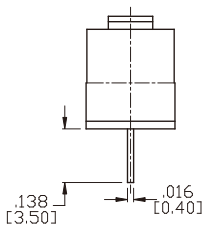


DM-03

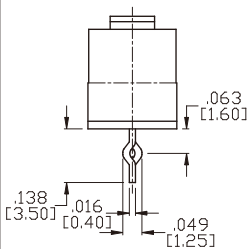


TERMINATION OPTIONS

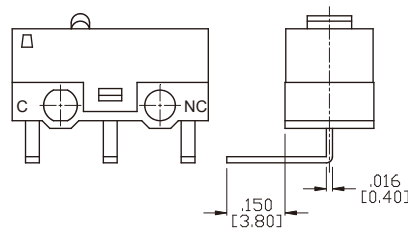
P TYPE



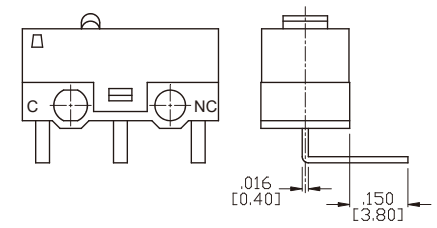
T TYPE



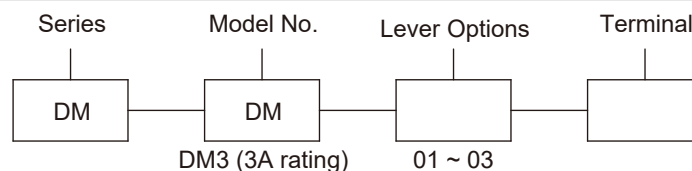
C TYPE



D TYPE



HOW TO ORDER

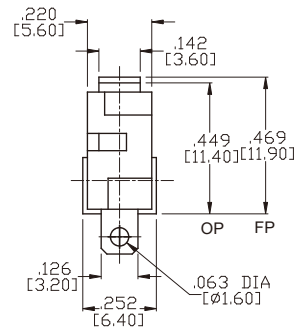
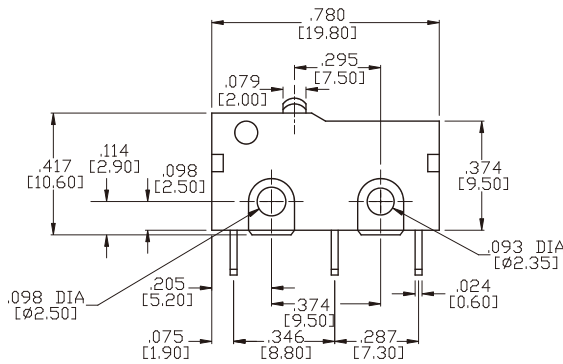
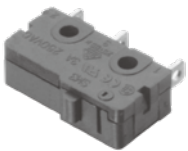


SPECIFICATIONS:

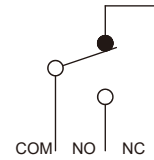
RATING: AC 125V 3A (OPTIONAL AC125V @ 5A).
 INSULATION RESISTANCE: >100M-ohms DC500V.
 DIELECTRIC STRENGTH: AC1000V 1 min.
 CONTACT RESISTANCE: <50m-ohms.
 SOLDERING TEMPERATURE: 225°C max. 5 sec.
 MECHANICAL LIFE: 1,000,000 cycles.
 ELECTRICAL LIFE: 200,000 cycles.
 OPERATING TEMPERATURE: -25°C to +80°C.
 AMBIENT HUMIDITY: <85% RH.

Specifications and Dimensions subject to change

SM-00



SCHEMATIC



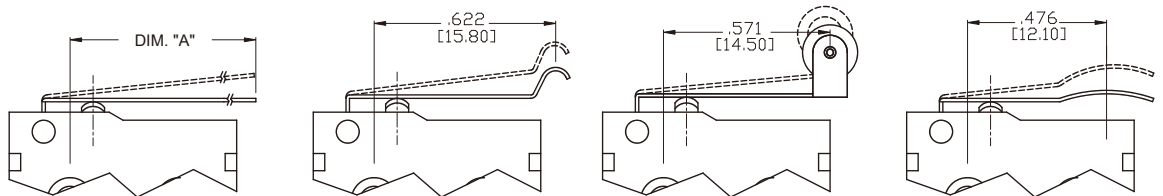
LEVER OPTIONS

SM-04

SM-05

SM-06

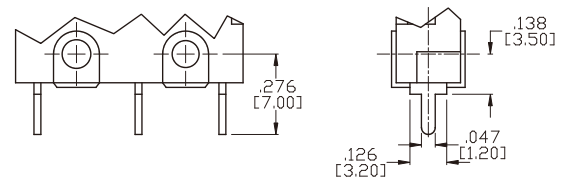
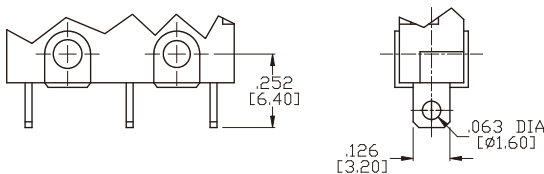
| Model No. | DIM. "A" |
|-----------|---------------|
| SM-01 | .571 [14.50] |
| SM-02 | .650 [16.50] |
| SM-03 | .890 [22.60] |
| SM-07 | 1.685 [42.80] |



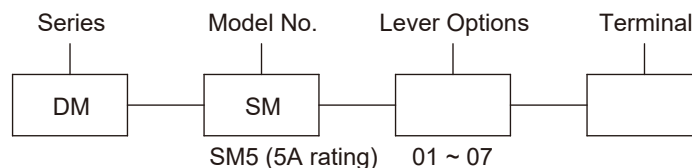
TERMINATION OPTIONS

M1

M2



HOW TO ORDER



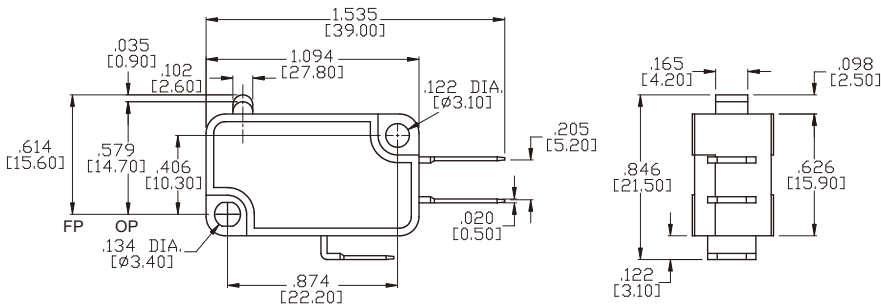
Toggle
 Rocker
 Slide
 Pushbutton
 AV
 Rotary
 Tact
 Touch Key
 Miscellaneous

SPECIFICATIONS:

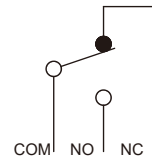
RATING: AC125V 3A (OPTIONAL 5A @ 125VAC, 0.1A @ 250VAC).
 INSULATION RESISTANCE: >100M-ohms DC500V.
 DIELECTRIC STRENGTH: AC1000V 1 min.
 CONTACT RESISTANCE: <100m-ohms.
 SOLDERING TEMPERATURE: 225°C max. 5 sec.
 MECHANICAL LIFE: 5,000,000 cycles.
 ELECTRICAL LIFE: 200,000 cycles.
 OPERATING TEMPERATURE: -25°C to +80°C.
 AMBIENT HUMIDITY: <85% RH.

Specifications and Dimensions subject to change

VM-00



SCHEMATIC



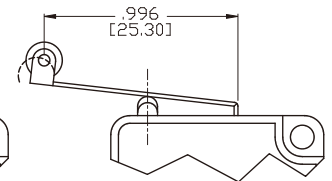
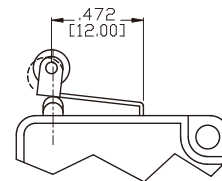
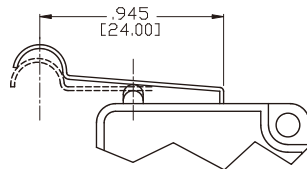
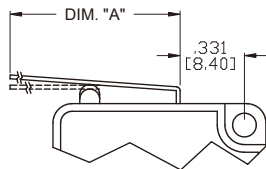
LEVER OPTIONS

VM-04

VM-05

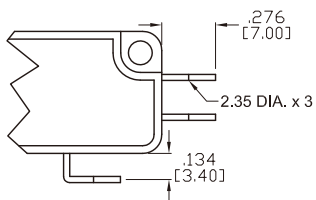
VM-06

| Model No. | DIM. "A" |
|-----------|---------------|
| VM-01 | .531 [13.50] |
| VM-02 | 1.071 [27.20] |
| VM-03 | 2.012 [51.10] |

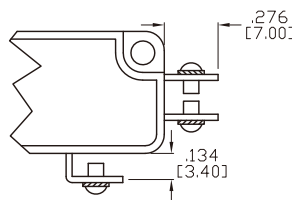


TERMINATION OPTIONS

A TYPE

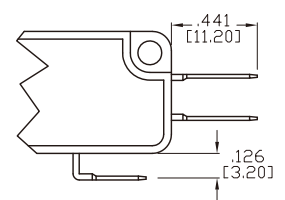


B TYPE

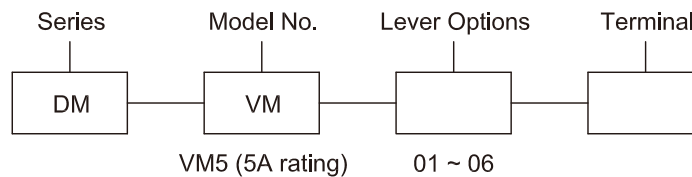


C TYPE

(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.

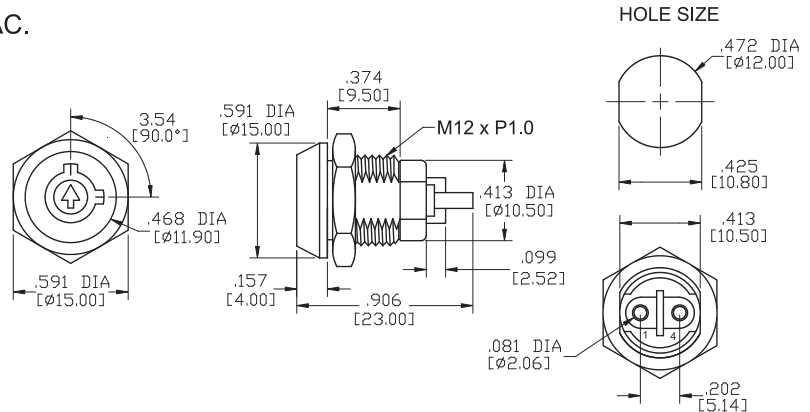


SPECIFICATIONS:

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.
- | -Indicates key-pull.
- -Indicates No key-pull.



| Fig. No. | Lock Number | Pole | Positions | Terminals | Key Pulls | Turn | ⊖ ⊕ ⊖ | 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.

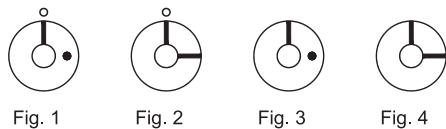
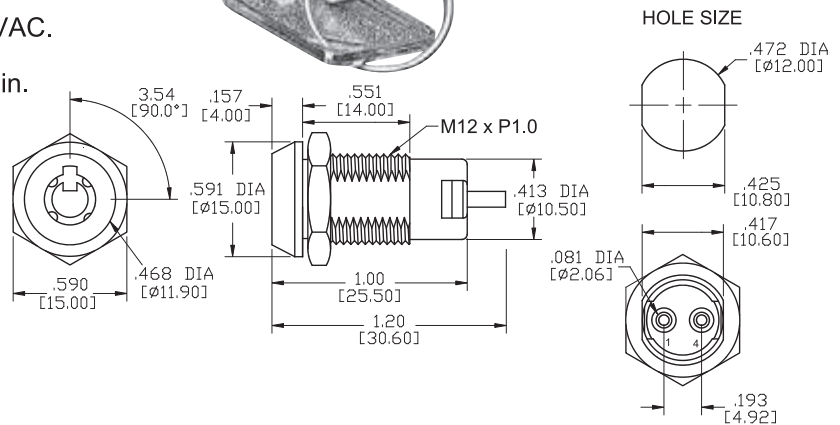


SPECIFICATIONS:

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.
- | -Indicates key-pull.
- -Indicates No key-pull.



| Fig. No. | Lock Number | Pole | Positions | Terminals | Key Pulls | Turn | ⊖ ⊕ | 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:

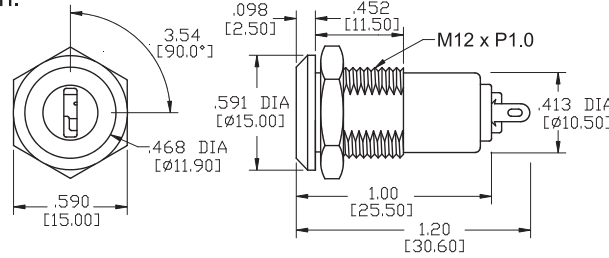
- -Off Position
- ⊏ -Indicates key-pull
- -Indicates No key-pull



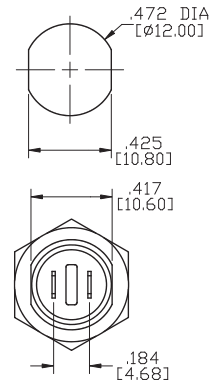
Fig. 1



Fig. 2



HOLE SIZE



| Fig. No. | Lock Number | Pole | Positions | Terminals | Key Pulls | Turn | ⊏ ⊕ ⊖ | Type |
|----------|-------------|------|-----------|-----------|-----------|------|-------|------|
| 1 | S1091B-1 | 1 | 2 | 2 | 1 | 90° | ⊏ ⊕ | SPST |
| 2 | S1091B-2 | 1 | 2 | 2 | 2 | 90° | ⊏ ⊕ | 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
- ⊏ -Indicates key-pull
- -Indicates No key-pull



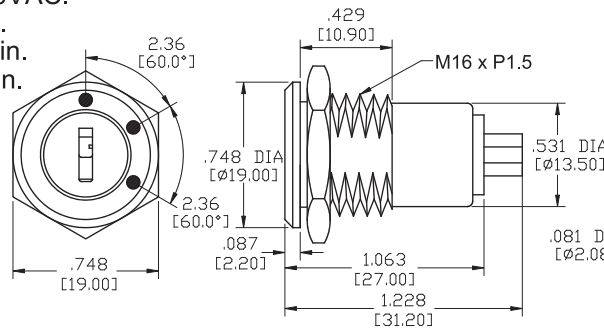
Fig. 1



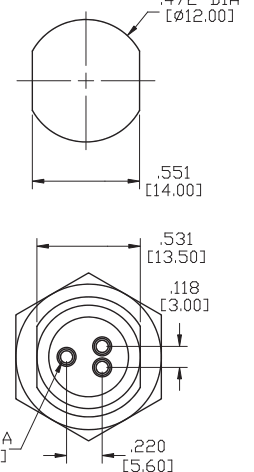
Fig. 2



Fig. 3



HOLE SIZE



| Fig. No. | Lock Number | Pole | Positions | Terminals | Key Pulls | Turn | ⊏ ⊕ ⊖ | Type |
|----------|-------------|------|-----------|-----------|-----------|------|-------|------|
| 1 | S331 | 1 | 2 | 3 | 2 | 60° | ⊏ ⊕ ⊖ | SPDT |
| 2 | S332 | 1 | 2 | 2 | 2 | 60° | ⊏ ⊕ | SPST |
| 3 | S333 | 1 | 3 | 3 | 3 | 120° | ⊏ ⊕ ⊖ | SPDT |

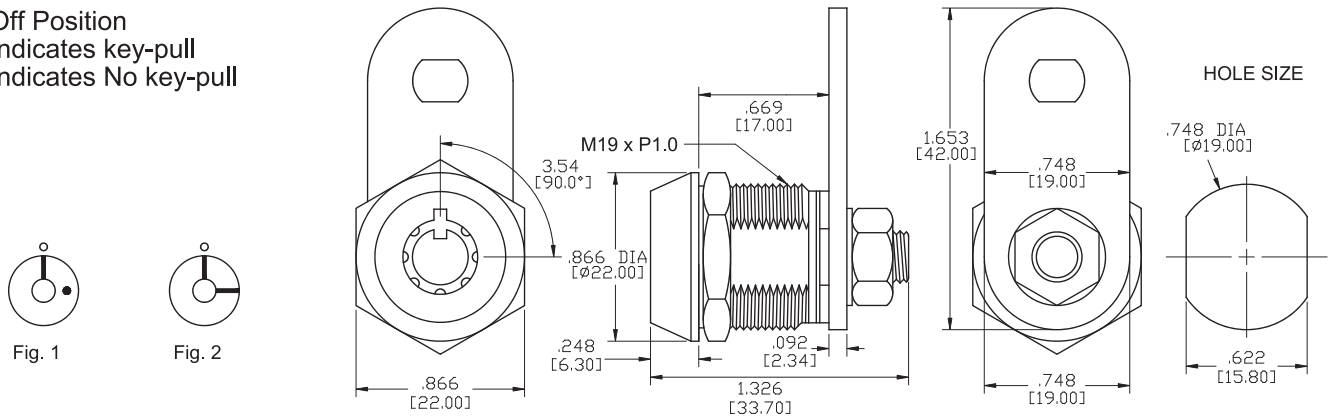
DESCRIPTIONS:

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
- | -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° |

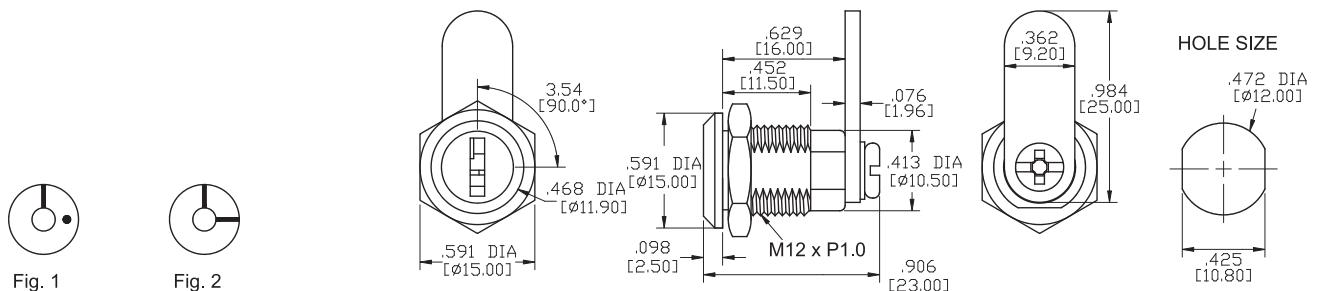
DESCRIPTIONS:

Zinc alloy die cast housing and cylinder, chrome plated.
 Brass key, nickel plated.
 Various cam configurations available.
 20 Combinations available.



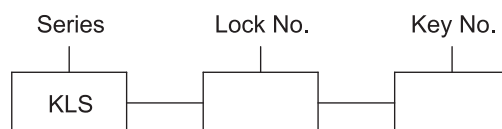
KEY-PULL FIGURES:

- -Off Position
- | -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

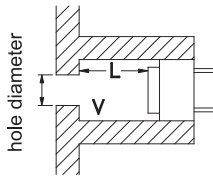


* Key number must be specified when ordering, otherwise random number will be supplied.

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.

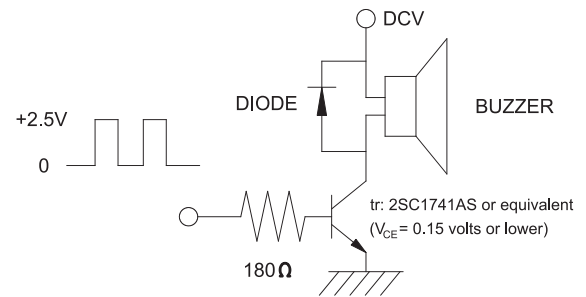


$$f = \frac{CD}{4} \sqrt{\frac{1}{\pi V(L+0.75D)}}$$

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:

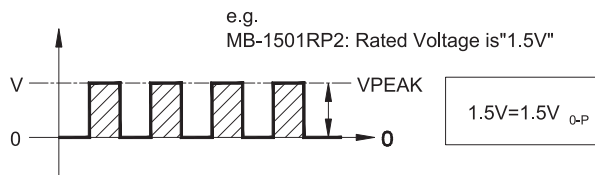
Our standard circuit for measurement is as shown below:
 (V_{CE} = 0.15 volts or lower)



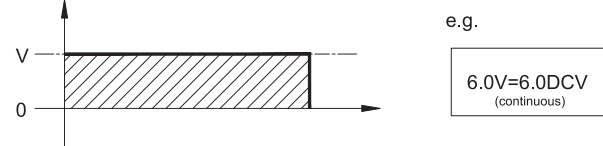
RATED VOLTAGES:

The term "Rated Voltage" in the specification of MEGA's transducers and buzzer are described as

● For Miniature Audio Transducers(External Drive Circuitry)



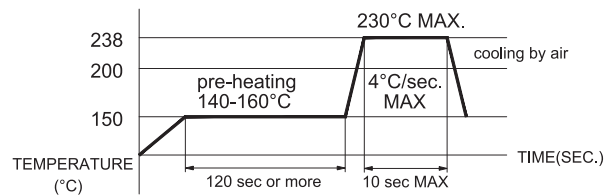
● For Miniature Audio Transducers and Low Pitched Sound Buzzers (Self-Contained Drive Circuitry)



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:

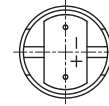
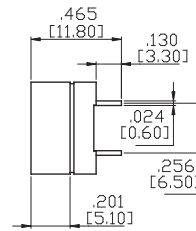
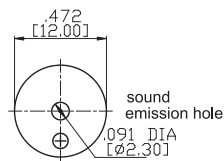
| | |
|-----------------------------|-----------------|
| Normal temperature | +5°C to +35°C |
| Normal humidity | 45 to 85%RH |
| Normal atmospheric pressure | 860 to 1060 hpa |

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

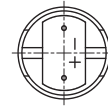
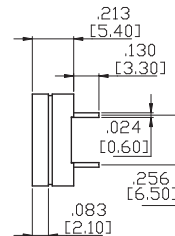
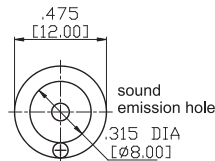
| TYPE | | MB-11P | MB-111P |
|----------------------------|--|------------|------------|
| RATED VOLTAGE (V) | | 1.5 | 1.5 |
| #CURRENT CONSUMPTION (mA) | | MAX 35 | MAX 20 |
| COIL RESISTANCE (Ohms) | | 16 ± 2.4 | 42 ± 6.3 |
| #SOUND PRESSURE LEVEL (dB) | | 85 | 85 |
| RESONANCE FREQUENCY (Hz) | | 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

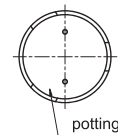
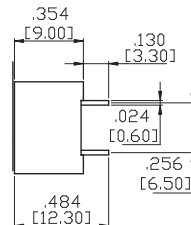
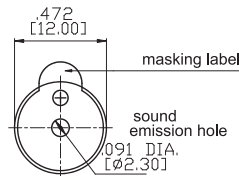
| TYPE | | MB-11PS |
|----------------------------|--|------------|
| RATED VOLTAGE (V) | | 1.5 |
| #CURRENT CONSUMPTION (mA) | | MAX 35 |
| COIL RESISTANCE (Ohms) | | 16 ± 4.5 |
| #SOUND PRESSURE LEVEL (dB) | | 70 |
| RESONANCE FREQUENCY (Hz) | | 2048 |
| OPERATING VOTAGE (V) | | max. 2 |
| OPERATING 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

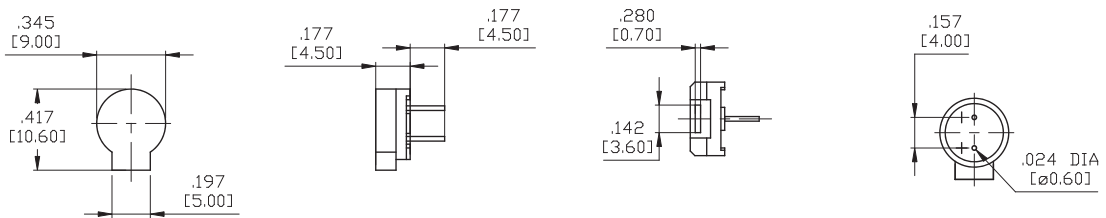
| TYPE | | MB-1201 | MB-1205 |
|----------------------------|--|------------|------------|
| RATED VOLTAGE (V) | | 1.5 | 1.5 |
| #CURRENT CONSUMPTION (mA) | | MAX 35 | MAX 20 |
| COIL RESISTANCE (Ohms) | | 16 ± 3 | 40 ± 6 |
| #SOUND PRESSURE LEVEL (dB) | | 85 | 85 |
| RESONANCE FREQUENCY (Hz) | | 2800 | 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



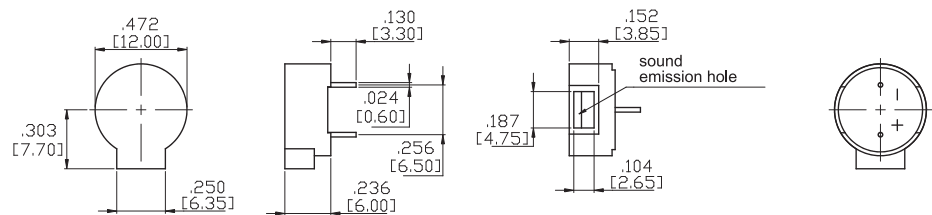
SPECIFICATIONS

| 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 (∅9.0*4.5) design.

MB-RP/A



SPECIFICATIONS

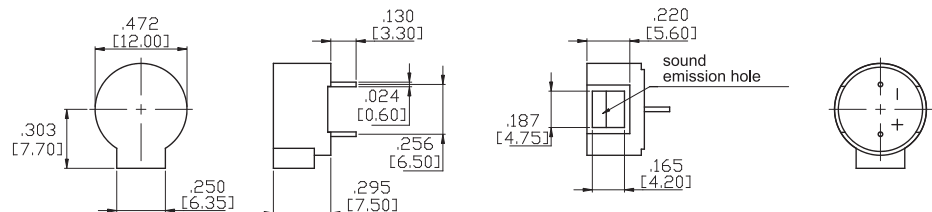
| TYPE | MB-RP/A | |
|----------------------------|---------|------------|
| RATED VOLTAGE (V) | | 1.5 |
| #CURRENT CONSUMPTION (mA) | | MAX 80 |
| COIL RESISTANCE (Ohms) | | 5.0 ± 1 |
| #SOUND PRESSURE LEVEL (dB) | | 85 |
| RESONANCE FREQUENCY (Hz) | | 2730 |
| OPERATING VOTAGE (V) | | max. 2 |
| OPERATING 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)

Toggle

Rocker

Slide

Pushbutton

AV

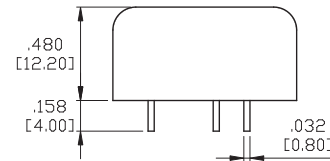
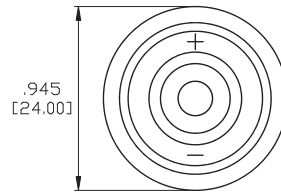
Rotary

Tact

Touch Key

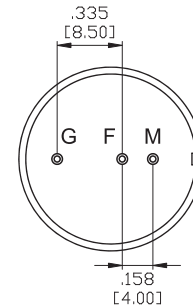
Miscellaneous

KPE-123

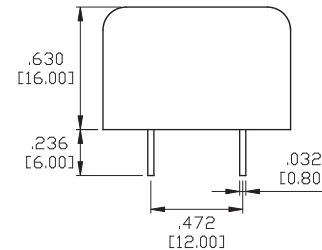
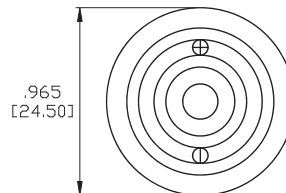


SPECIFICATIONS

| 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) |

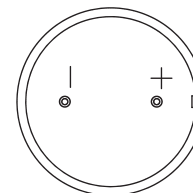


KPE-203

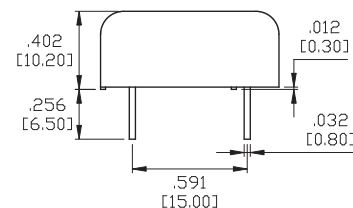
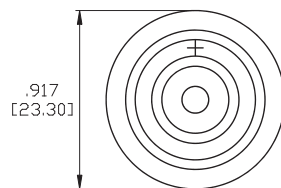


SPECIFICATIONS

| 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) |

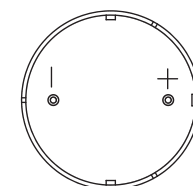


KPE-222

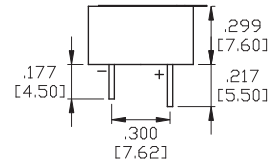
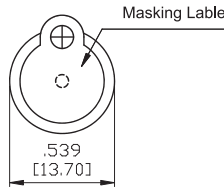


SPECIFICATIONS

| 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) |

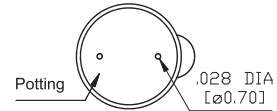


KPE-242

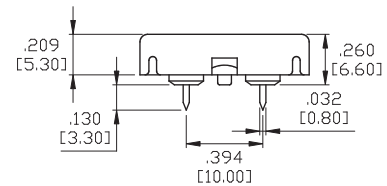
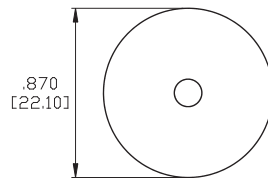


SPECIFICATIONS

| 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) | |

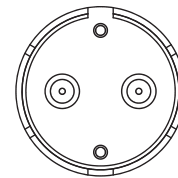


KPE-813

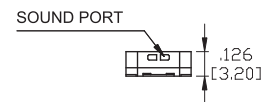
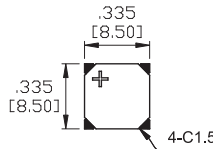


SPECIFICATIONS

| 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

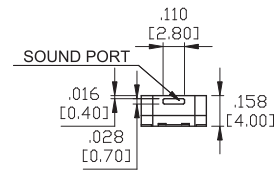
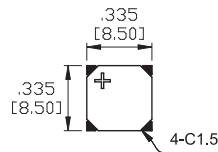


SPECIFICATIONS

| 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

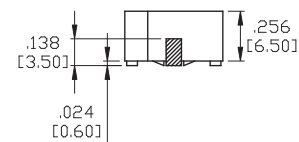
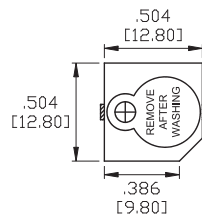


SPECIFICATIONS

| TYPE | KSS-74B20-T/R | |
|----------------------------|---------------|---------------|
| RATED VOLTAGE (V) | | 3.6 |
| MEAN CURRENT (mA) | | MAX 80 |
| SOUND OUTPUT (dB) | | 90 |
| RATED FREQUENCY (Hz) | | 2730 |
| OPERATING VOLTAGE (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) |

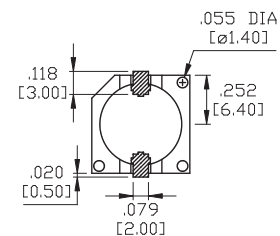


KT-1205

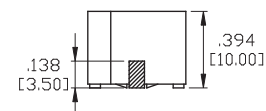
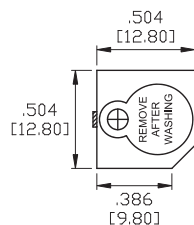


SPECIFICATIONS

| TYPE | KT-1205 | |
|----------------------------|---------|------------|
| RATED VOLTAGE (V) | | 5 |
| MEAN CURRENT (mA) | | MAX 40 |
| SOUND OUTPUT (dB) | | 87 |
| RATED FREQUENCY (Hz) | | 2,400 |
| OPERATING VOLTAGE (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) |

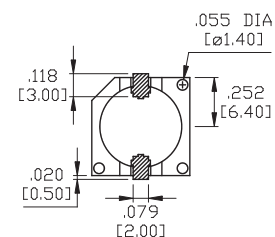


KT-1212C

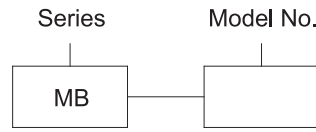


SPECIFICATIONS

| TYPE | KT-1212C | |
|----------------------------|----------|-------------|
| RATED VOLTAGE (V) | | 12 |
| MEAN CURRENT (mA) | | MAX 30 |
| SOUND OUTPUT (dB) | | 85 |
| RATED FREQUENCY (Hz) | | 2,400±300 |
| OPERATING VOLTAGE (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:

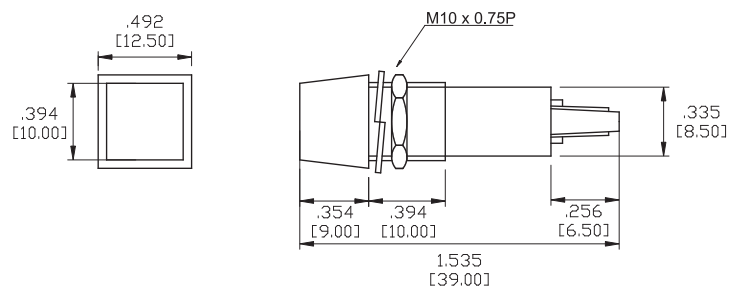
INSULATION RESISTANCE: 100MΩ min. @ 500VDC.
 DIELECTRIC STRENGTH: 200VAC min. for 1 minute.
 OPERATING TEMPERATURE: -25°C to +70°C.
 PULL FORCE BETWEEN TERMINAL & BASE:
 (a) Normal type 2kgf for 1 minute.
 (b) Sealed type 5kgf for 1 minute.
 PULL FORCE BETWEEN BASE & BODY:
 (a) Normal type 2kgf for 1 minute.
 (b) Sealed type 5kgf for 1 minute.
 HAND SOLDERING: 350±5°C for 3sec. max.

MATERIALS:

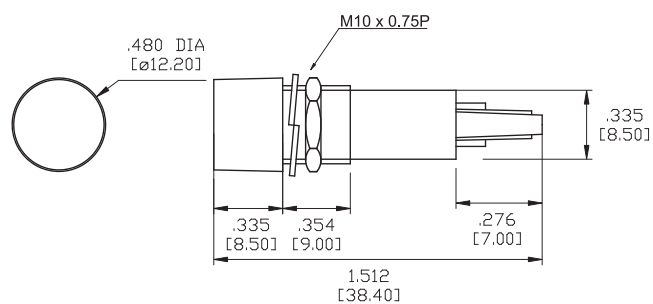
BODY: Polycarbonate UL 94V-0 or Acrylic.
 BASE: Glass fiber polyamide, UL 94V-0.
 ILLUMINANT: Neon lamp or LED.
 TERMINAL: Copper alloy, tin plated over nickel.
 WASHER: Polyamide, UL 94V-0 or iron hoop.
 NUT: M10x0.75P or M15x1P iron.

Specifications and Dimensions subject to change

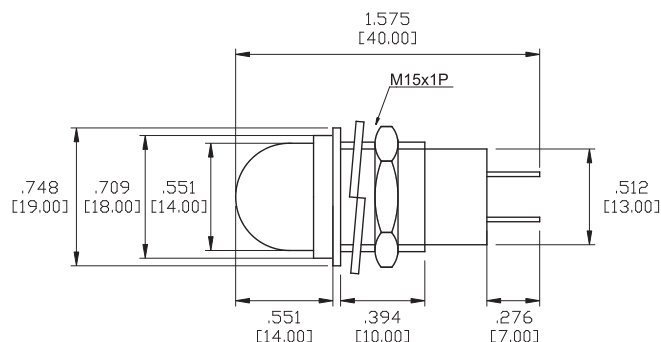
NI-01



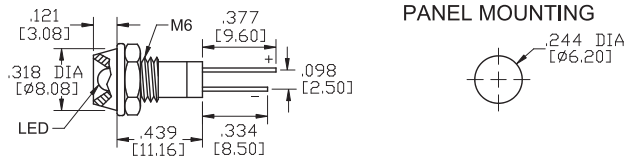
NI-02



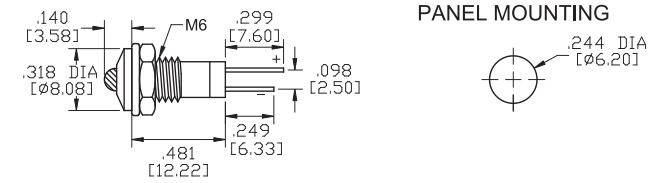
NI-03



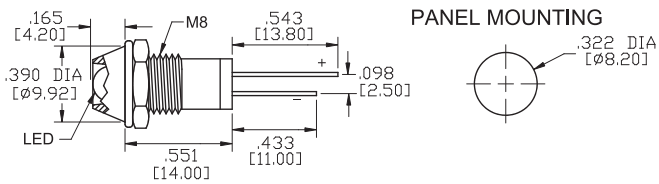
L-602 LED INDICATOR LIGHT
W/O Resistor 2V



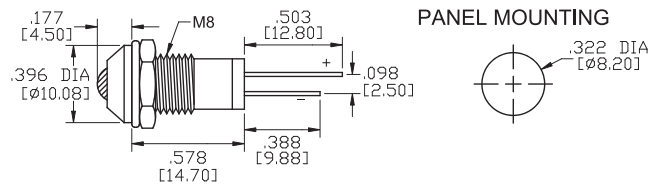
L-605 LED INDICATOR LIGHT
W/O Resistor 2V



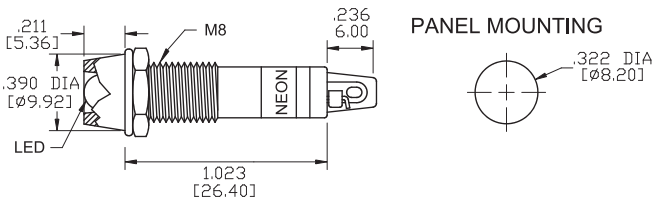
L-607 LED INDICATOR LIGHT
W/O Resistor 2V



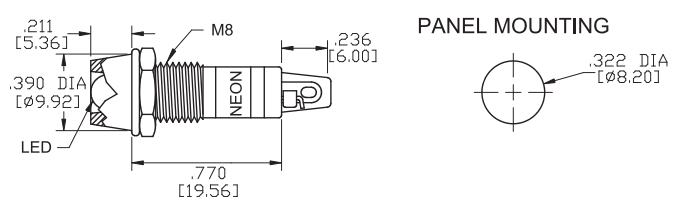
L-610 LED INDICATOR LIGHT
W/O Resistor 2V



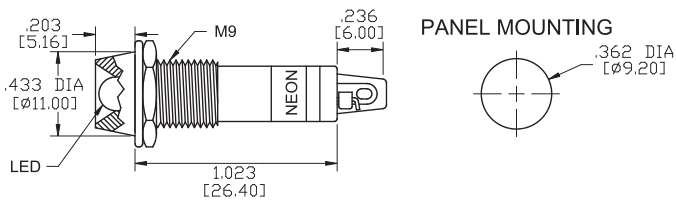
N-701 NEON / N-701L LED INDICATOR LIGHT
W Resistor 120V 220V / W Resistor 6V 12V 24V



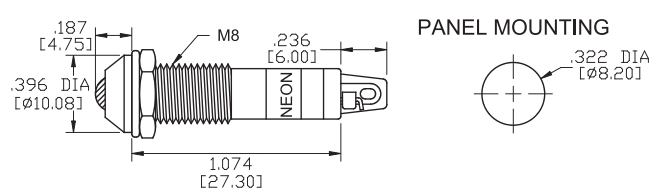
N-702 NEON / N-702P PILOT INDICATOR LIGHT
W Resistor 120V 220V / W Resistor 6V 12V 24V



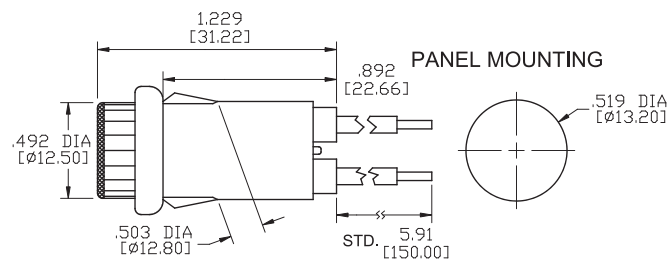
N-703 NEON INDICATOR LIGHT
W Resistor 120V 220V



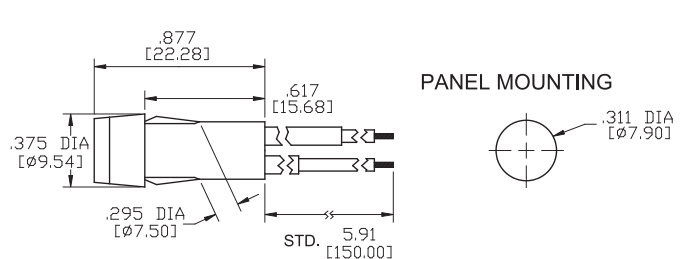
N-705 NEON / N-705L LED INDICATOR LIGHT
W Resistor 120V 220V / W Resistor 6V 12V 24V



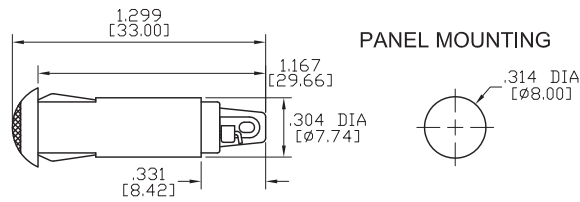
N-301 INDICATOR LIGHT
W Resistor 120V 220V



N-381 INDICATOR LIGHT
W Resistor 120V 220V



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

