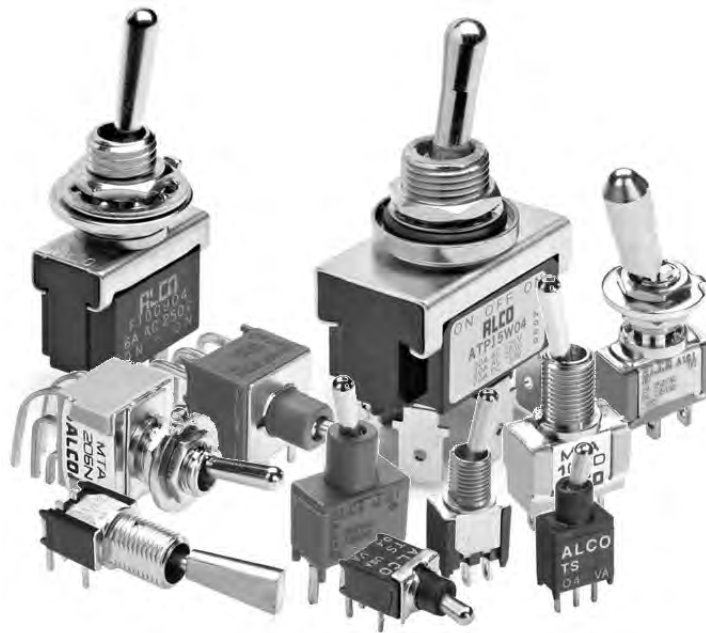


Product Range



Toggle Switches

Toggle Switches

- **Tiny Toggles:** TT and TST Series
- **Miniature Toggles:** Gemini Series and Green Series
- **Power Toggles:** F and AW Series

Main features:

- Up to 4 poles
- Wide range of different switch functions
- Gold or silver contacts
- Up to 20 A
- Sealed or unsealed versions
- Horizontal and vertical right angle versions
- Many different actuator styles
- Locking versions
- Different bushings with or with out thread
- THT and wire lug terminals
- Accessories: Boot seals, decorative mounting hardware

TST Tiny Toggle, Process Sealedpage E3



TT Tiny Toggle Switchpage E6



Product Range (Continued)



Gemini A Seriespage E15



Gemini AE Series, Sealed IP67page E26



MT Green Seriespage E32



F Series, Panel Mounting, 6Apage E43



AW Series, Panel Mounting, Waterproofpage E46



Hardware and Accessoriespage E49



Boot Sealspage E50

TST, Tiny Toggle, Process Sealed

Features

- Washable process sealed construction (Internal "O" ring)
- Compact design
- Liquid Crystal Polymer (LCP) case



Typical performance characteristics

Contact configuration spst, spdt
 Contact timing break-before-make
 Contact rating, max gold 0.4 VA @ 20 VAC/DC
 Electrical life D = 80,000 cycles (2 position)
 E = 60,000 cycles (3 position)
 F and G = 30,000 cycles (momentary 2 and 3 position)
 Contact resistance, initial max.20 mOhms
 Insulation resistance 1,000 mega Ohms @ 500 VDC
 Dielectric strength 1,000 Vrms @ sea Level
 Actuator travel 22° for D and E function
 18° for F and G function

Environmental specification

Operating temperature -30°C to +85°C
 Storage temperature -55°C to +85°C
 Solder heat resistance wave solder capable to 265°C
 Seal process sealed with internal "O" ring

Material specifications

Contacts copper or brass alloy, gold over nickel finish
 Bat brass alloy, nickel finish
 Terminals brass with gold over nickel in contact area
 tin over nickel in solder area
 Case theroplastic (LCP)
 Spring music wire zinc plated
 Support bracket steel tin plated
 Seal "O" ring rubber
 RoHS Directive 2002/95/EC compliant

| | | | | | | | | | | | | |
|------------------------|---|----------|----------|---------------------------------|----------|-----------|----------|----------|-----------|--|--|--|
| Product key | Typical product key | | | | | | | | | | | |
| | TST | 1 | 1 | D | G | RA | 1 | D | 04 | | | |
| Type | Tiny toggle, process sealed, through hole mount | | | | | | | | | | | |
| Number of Poles | 1 single pole | | | | | | | | | | | |
| Contact rating | 1 0.4VA Gold | | | | | | | | | | | |
| Function | D On None On | | | F On None (On) | | | | | | | | |
| | E On Off On | | | G (On) Off (On) | | | | | | | | |
| Plating | G Gold | | | | | | | | | | | |
| Terminals | PC printed circuit board | | | RA right angle | | | | | | | | |
| | PCV printed circuit board, w bracket | | | VRA vertical right angle | | | | | | | | |
| Actuator length | 1 .206 (5.23) | | | 4 .400 (10.16) | | | | | | | | |
| | 2 .250 (6.35) | | | | | | | | | | | |
| Bushing | D plain, not threaded | | | | | | | | | | | |
| Material | 04 RoHS compliant | | | | | | | | | | | |

TST, Tiny Toggle, Process Sealed (Continued)

Function



| Function | | | |
|-----------|------|------|------|
| D | On | None | On |
| E | On | Off | On |
| F | On | None | (On) |
| G | (On) | Off | (On) |
| Terminals | 1-2 | - | 2-3 |

Off indicates a mechanical position with no electrical connection
 (On) indicates momentary connection
 None indicates no mechanical position

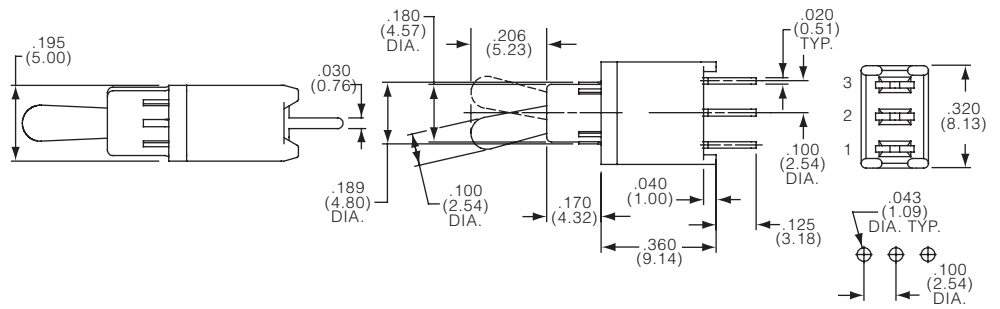
Terminations



PC printed circuit



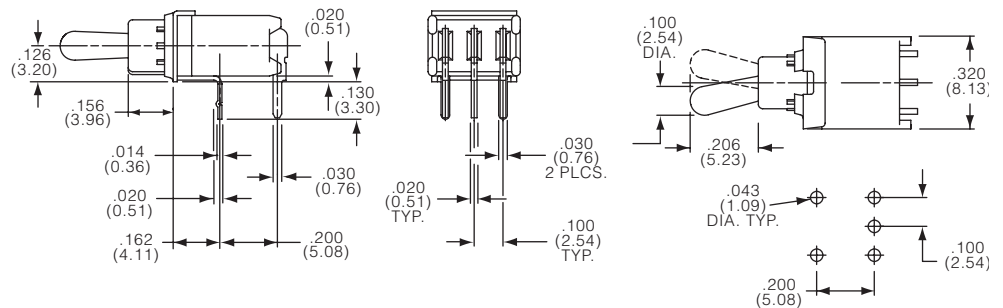
TST11DGPC1D



RA right angle



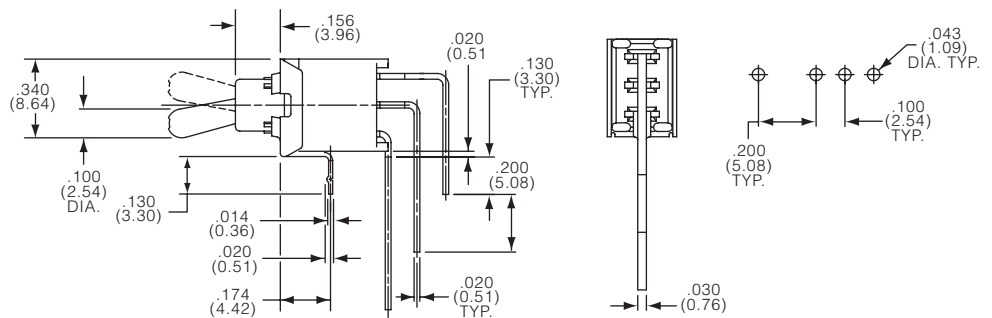
TST11DGRA1D



VRA vertical right angle



TST11DGVRA1D

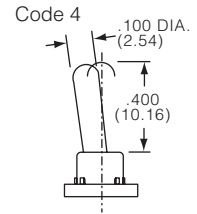
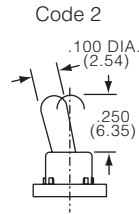
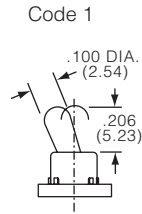


TST, Tiny Toggle, Process Sealed(Continued)

Actuator



Codes 1,2,4 actuator lengths



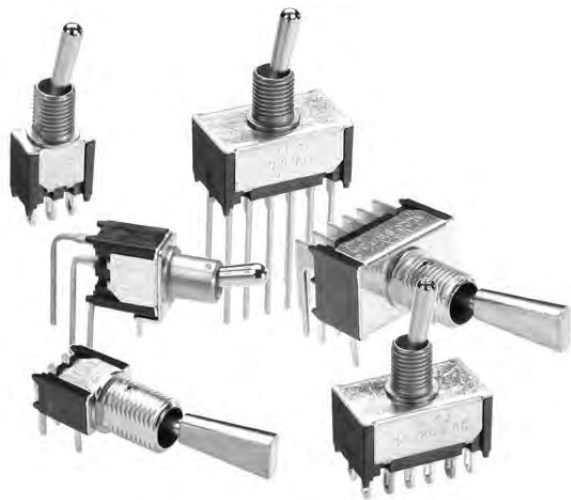
| Product key | Poles | Rating | Function | Plating | Terminals | Actuator | Bushing | Material | Part Number |
|-----------------------|--------|--------|------------|---------|---------------|--------------|----------|-----------|------------------|
| TST11DGPC1D04 | 1 pole | 0.4VA | On None On | Gold | pcb | .206 (5.23) | plain, | RoHS | 1825455-1 |
| TST11DGPCV1D04 | | | | | pcb w brack | | not | compliant | 1825455-2 |
| TST11DGRA1D04 | | | | | right angle | | threaded | | 1825455-3 |
| TST11DGVRA1D04 | | | | | vertical r.a. | | | | 1825455-4 |
| TST11EGPC4D04 | | | On Off On | | pcb | .400 (10.16) | | | 1825455-5 |

Preferred parts in bold print

TT, Tiny Toggle Switch

Features

- Compact design
- Vertical and horizontal right angle versions available



Typical performance characteristics

| | |
|-----------------------------|--|
| Contact configuration | 1, 2 and 4 pole |
| Contact timing | make before break |
| Contact rating, max | gold 0.4 VA @ 20 VDC or peak AC resistive |
| | silver (2 position): 3 A @ 125 VAC or 28 VDC resistive |
| | silver (4 position): 2 A @ 125 VAC or 28 VDC resistive |
| Electrical life | 0.4 VA: 80,000 (2 pos.), 60,000 (3 pos.) |
| | 2 A: 10,000 cycles |
| | 3 A: 20,000 cycles |
| Contact resistance, initial | max.20 mOhms |
| Insulation resistance | 1,000 MOhms @ 500 VDC |
| Dielectric strength | 1,000 Vrms @ sea Level |
| Actuator travel | 22° for D and E function |
| | 18° for F and G function |

Environmental specification

| | |
|------------------------|---|
| Operating temperature | -30°C to +85°C |
| Storage temperature | -55°C to +85°C |
| Solder heat resistance | wave solder capable to 265°C |
| Terminal Seal | single pole: epoxy, double pole: epoxy optional |
| Process Sealed | TTE version only |

Material specifications

| | |
|---------------------------|--|
| Contacts | copper or brass alloy, gold over nickel finish |
| | or silver clad copper alloy |
| Actuator | brass alloy, nickel finish or |
| | stainless steel or thermoplastic |
| Terminals | brass with gold over nickel in contact area |
| | brass alloy, gold over nickel finish |
| | or silver clad copper alloy tin over nickel in solder area |
| Case | thermoplastic |
| Bushing | brass alloy finish nickel over copper |
| Internal actuator | thermoplastic or PTFE |
| Spring | music wire zinc plated |
| Support Bracket | steel tin plated |
| RoHS Directive 2002/95/EC | compliant |

TT, Tiny Toggle Switch (Continued)

| | | | | | | | | | | | | | | | | |
|---------------------------|----------------------------------|--|--|----------|----------|----------|---|-----------|----------|-------------|-----------|--------|---|--|-------|--|
| Product key | Typical product key | | TT | 1 | 1 | D | G | PC | 9 | T1/4 | 04 | | | | | |
| Type | TT | | Tiny toggle switch | | | | | | | | | | | | | |
| Environmental seal | blank | | no seal | | | | | | | | | | | | | |
| | E | | environmental seal (splash proof), not available with actuator 7 or with terminals VRA | | | | | | | | | | | | | |
| Number of Poles | 1 | | 4 | | 4 pole | | | | | | | | | | | |
| | 2 | | double pole | | | | | | | | | | | | | |
| Contact rating | 1 | | 0.4VA Gold | | 3 | | 1 Amp, Silver with wire lug and pc terminals only | | | | | | | | | |
| Function | single pole | | 2 & 4 pole | | | | | | | | | | | | | |
| | A | | On Off | | K | | On Off | | | | | | | | | |
| | D | | On On | | N | | On On | | | | | | | | | |
| | E | | On Off On | | P | | On Off On | | | | | | | | | |
| | F | | On (On) | | R | | On (On) | | | | | | | | | |
| Plating | G | | Gold | | blank | | Silver | | | | | | | | | |
| Terminals | blank | | wire lug | | RA | | right angle | | | | | | | | | |
| | PC | | printed circuit | | VRA | | vertical right angle | | | | | | | | | |
| | | | | | WW | | wire wrap | | | | | | | | | |
| Actuator length | #10 or Unthreaded Bushing | | 1/4 Bushing | | | | | | | | | | | | | |
| | 1 | | .221 (5.61), bat | | 1 | | .125 (3.18), bat | | | | | | | | | |
| | 2 | | .296 (7.52), bat | | 2 | | .200 (5.1), bat | | | | | | | | | |
| | 3 | | .381 (9.68), bat | | 3 | | .286 (7.26), bat | | | | | | | | | |
| | 5 | | na | | 5 | | paddle | | | | | | | | | |
| | 6 | | .401 (10.19), round, colored | | 6 | | .306 (7.77), round, colored | | | | | | | | | |
| | 7 | | na | | 7 | | .457 (11.61), flat | | | | | | | | | |
| | 8 | | na | | 8 | | .567 (14.40), locking | | | | | | | | | |
| | 9 | | .516 (13.11), bat | | 9 | | .421 (10.693), bat | | | | | | | | | |
| Bushing | blank | | unthreaded | | T | | #10-48 | | T1/4 | | | 1/4-40 | | | | |
| Actuator color | for actuator code 6 only | | | | | | | | | | | | | | | |
| | 0 | | black | | 2 | | red | | 6 | | blue | | 9 | | white | |
| Material | 04 | | RoHS compliant | | | | | | | | | | | | | |

Toggle Switches

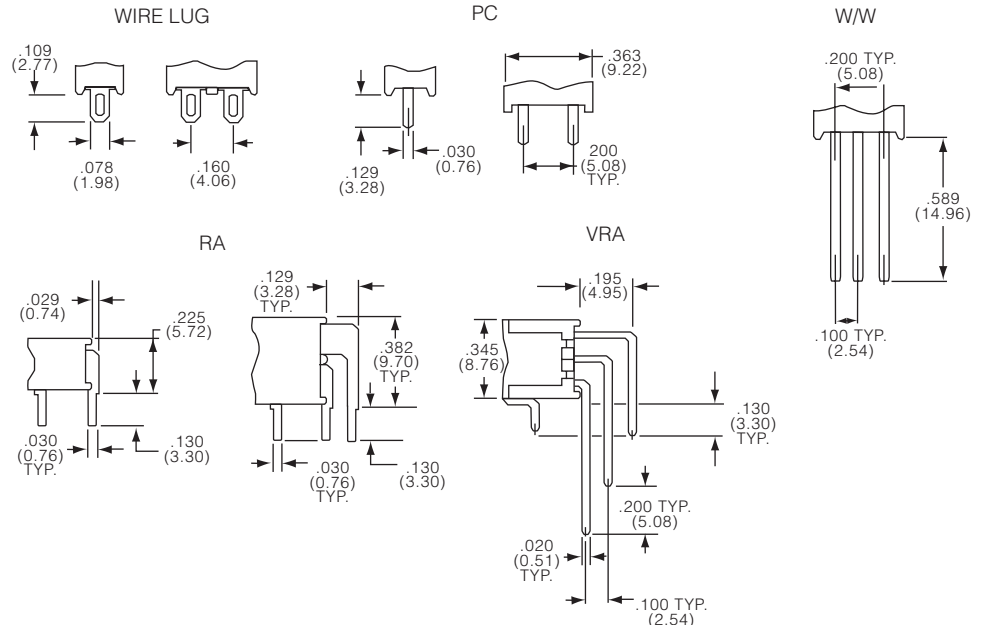


| Function | Poles | ↘ | ↓ | ↙ | ↘ | ↓ | ↙ |
|----------|---------|---------|------|------|----------|----------|----------|
| A | 1 pole | On | None | Off | 1-3 | - | - |
| D | 1 pole | On | None | On | 1-2 | - | 2-3 |
| E | | On | Off | On | 1-2 | - | 2-3 |
| F | | On | None | (On) | 1-2 | - | 2-3 |
| K | | 2 poles | On | None | Off | 1-3, 4-6 | - |
| N | 2 poles | On | None | On | 1-2, 4-5 | - | 2-3, 5-6 |
| P | | On | Off | On | 1-2, 4-5 | - | 2-3, 5-6 |
| R | | On | None | (On) | 1-2, 4-5 | - | 2-3, 5-6 |

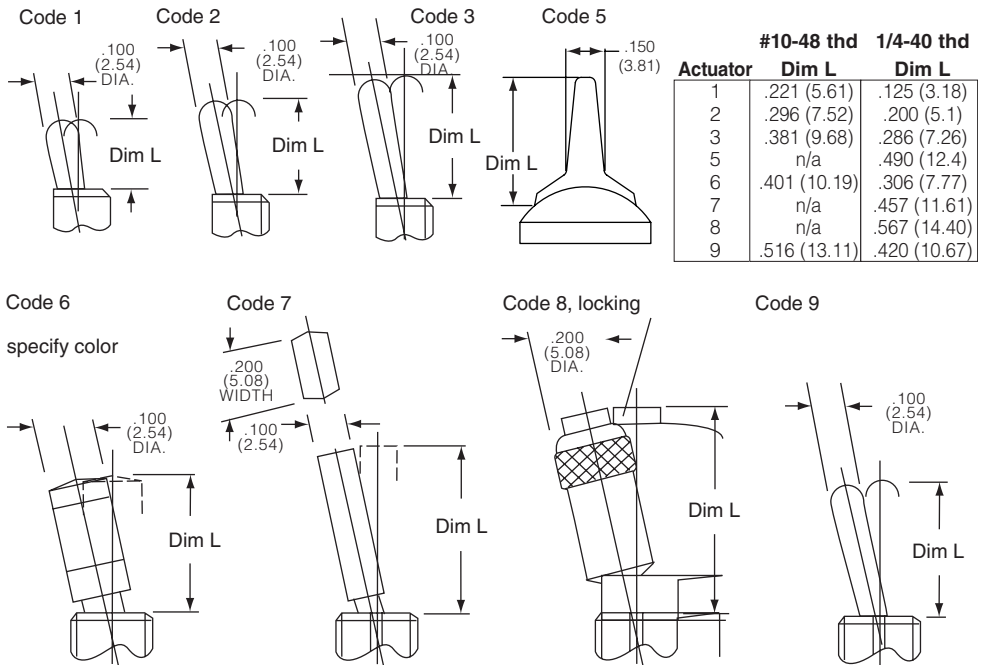
Off indicates a mechanical position with no electrical connection
 (On) indicates momentary connection
 None indicates no mechanical position

TT, Tiny Toggle Switch (Continued)

Terminals



Actuator



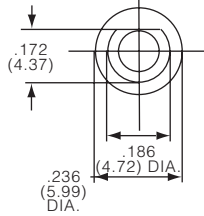
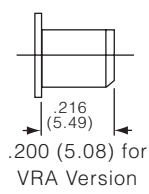
TT, Tiny Toggle Switch (Continued)

Bushing

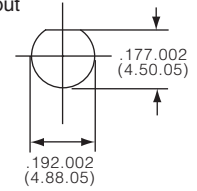


blank

unthreaded

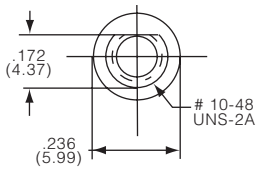
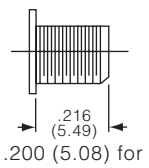


panel cutout

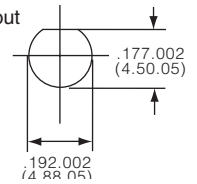


T

10-48 UNS-2A thread

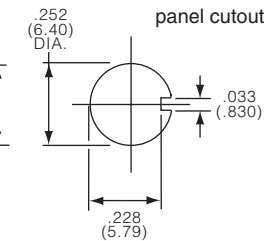
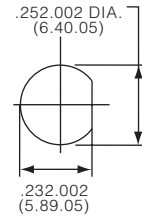
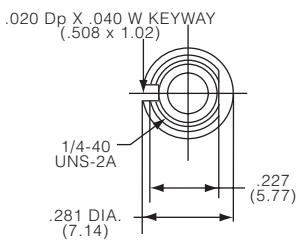
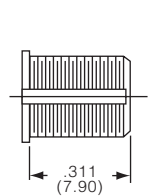


panel cutout



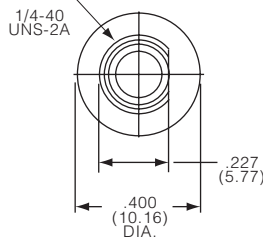
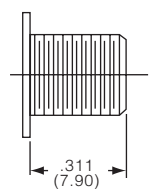
T1/4

1/4-40 UNS-2A thread for non environmental sealed version

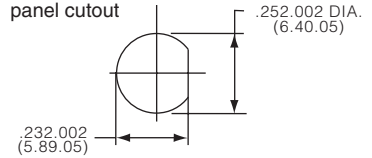


T1/4

1/4-40 UNS-2A thread for environmental sealed version



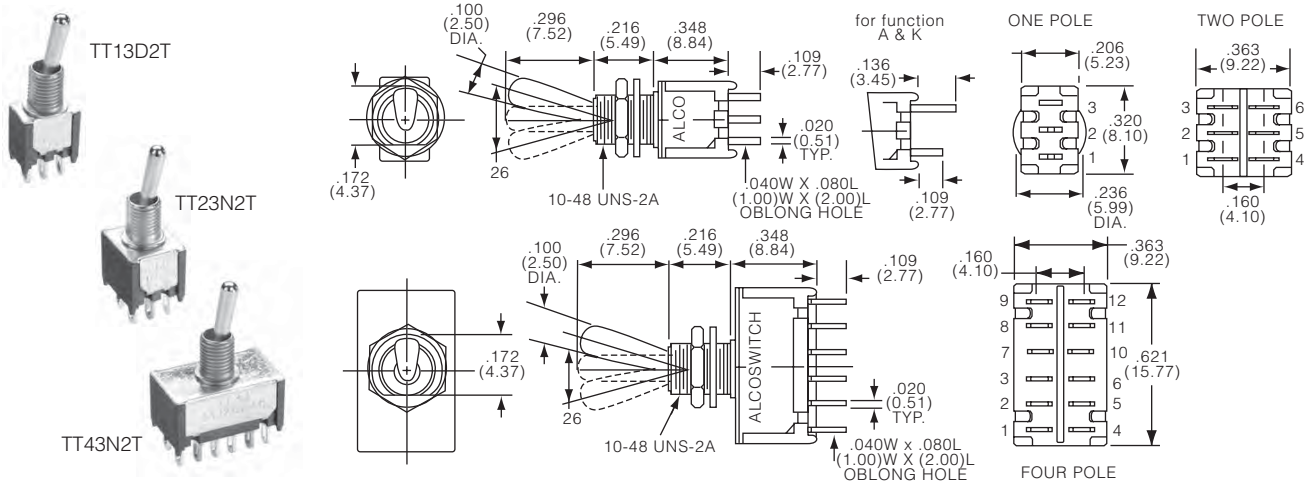
panel cutout



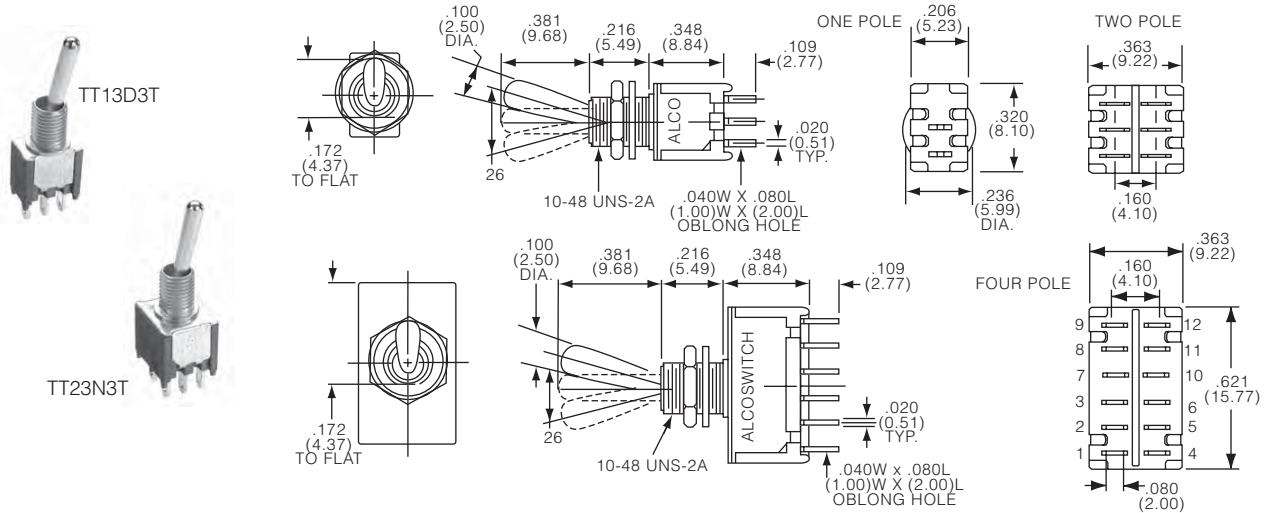
TT, Tiny Toggle Switch (Continued)

Dimensions

Series TT...2T wire lug, .296 bat toggle, 10-48 thread

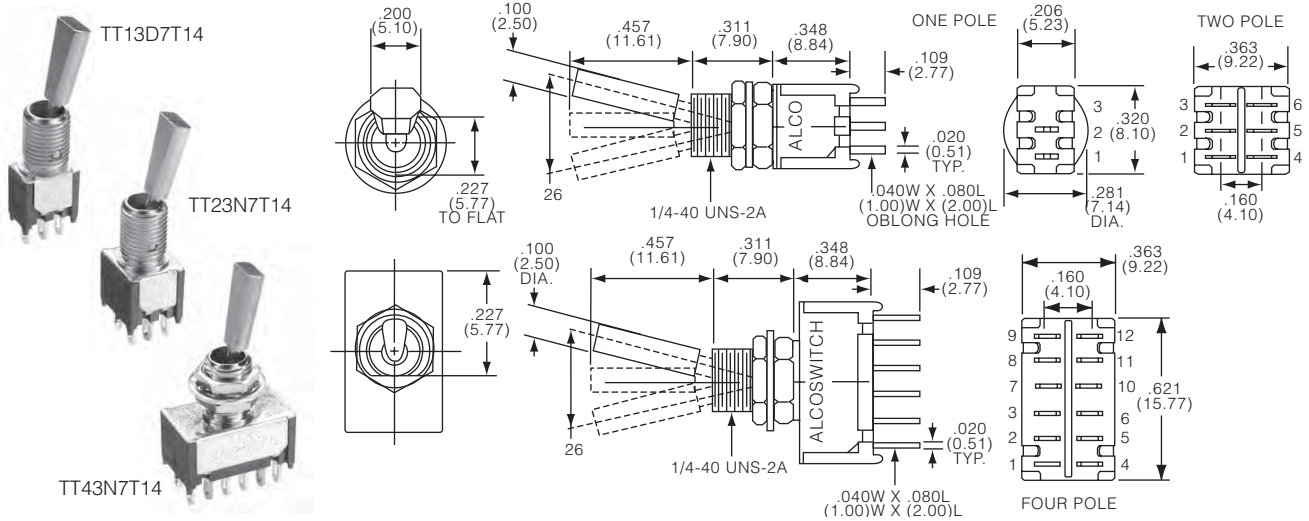


Series TT...3T wire lug, .381 bat toggle, 10-48 thread

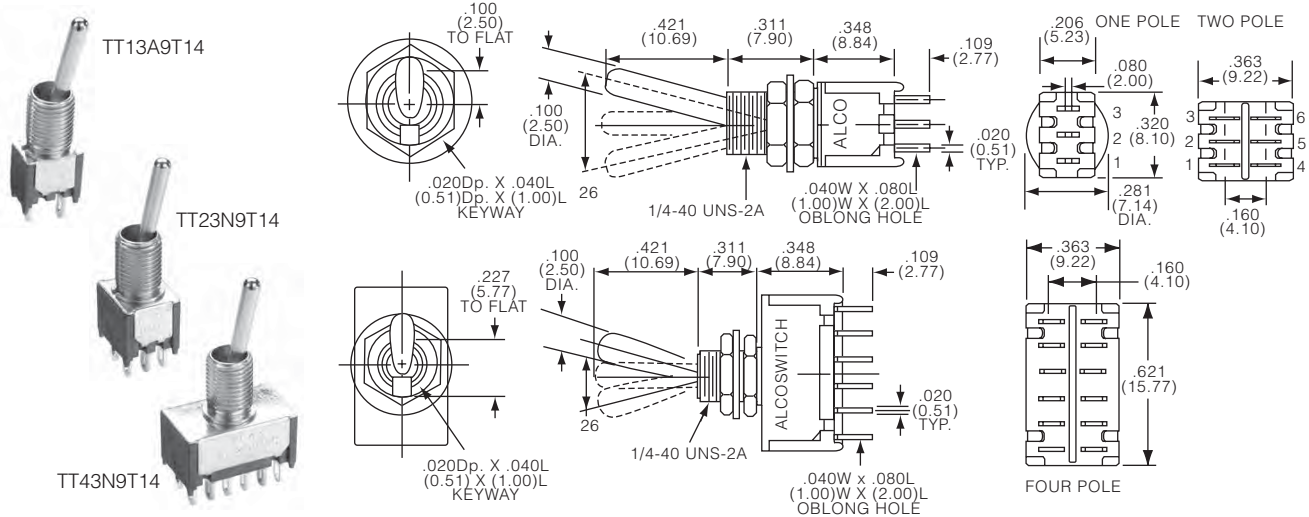


TT, Tiny Toggle Switch (Continued)

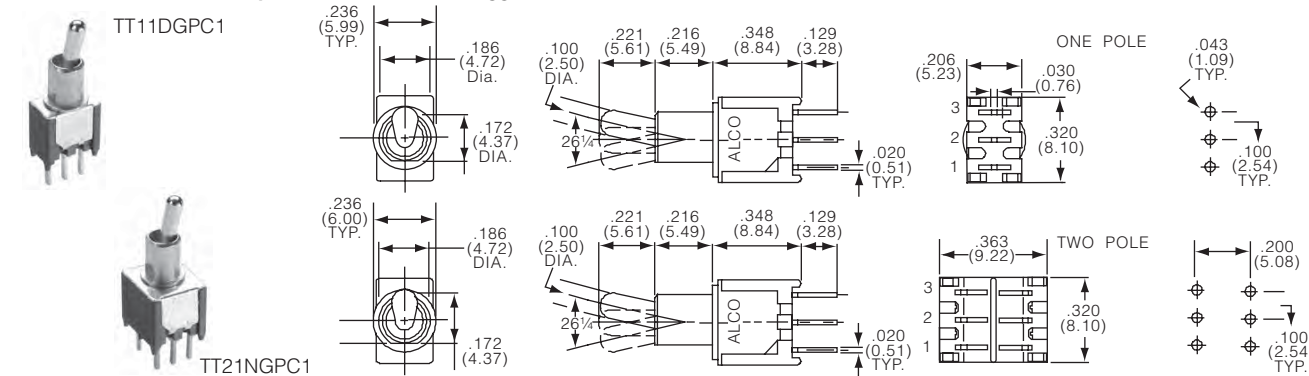
Series TT...7T1/4 wire lug, .457 flat toggle, 1/4-40 thread



Series TT...9T1/4 wire lug, .420 bat toggle, 1/4-40 thread

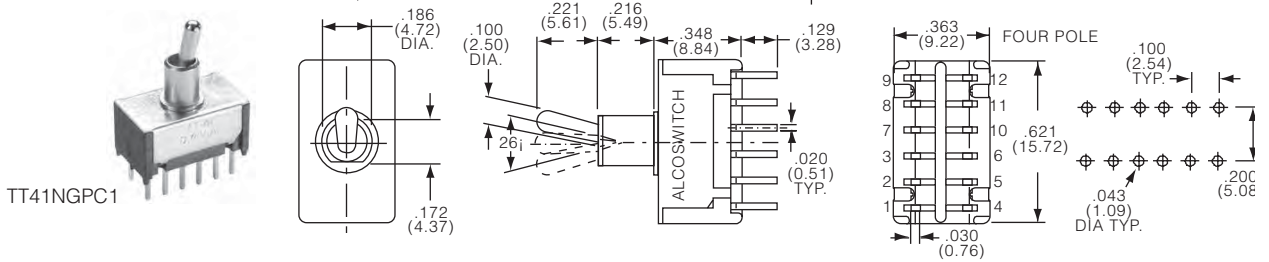


Series TT...PC1 pc terminals, .221 bat toggle, unthreaded

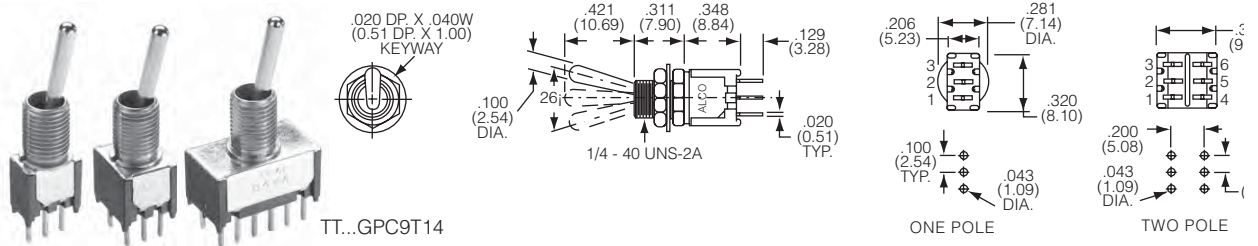


TT, Tiny Toggle Switch (Continued)

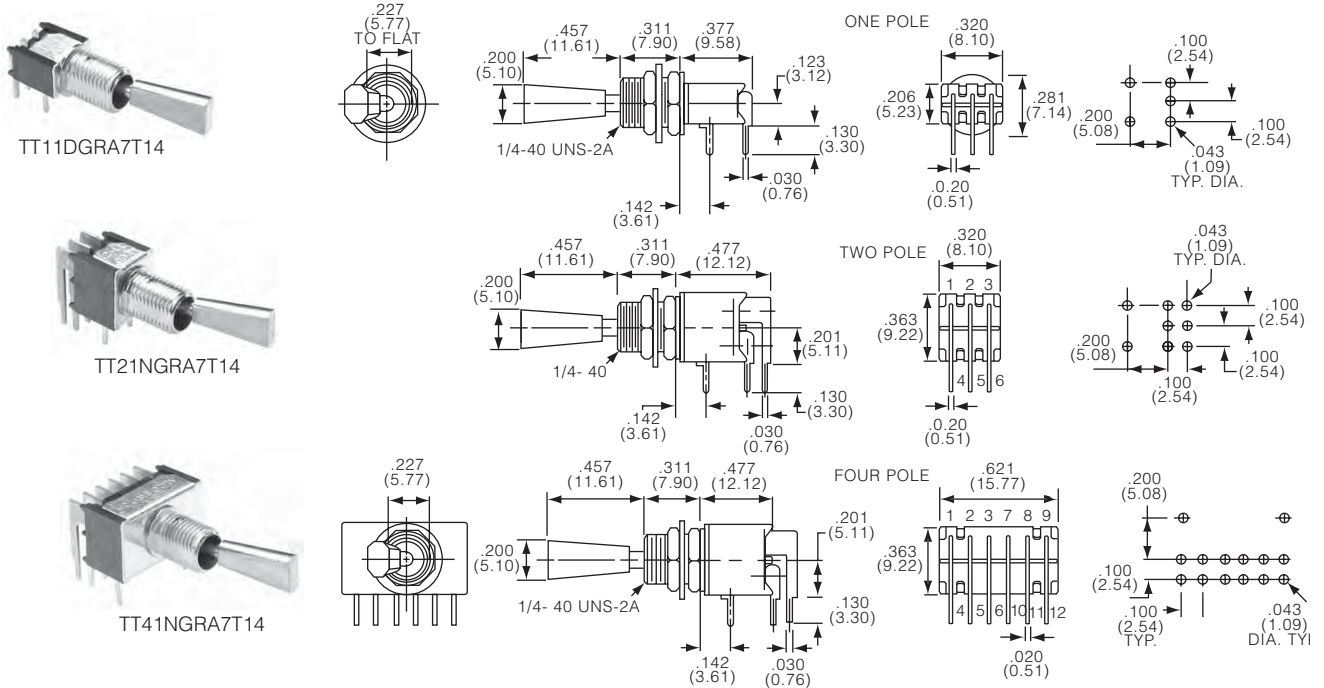
Series TT...PC1 pc terminals, .221 bat toggle, unthreaded



Series TT...PC9T1/4 pc terminals, .420 bat toggle, 1/4-40 thread

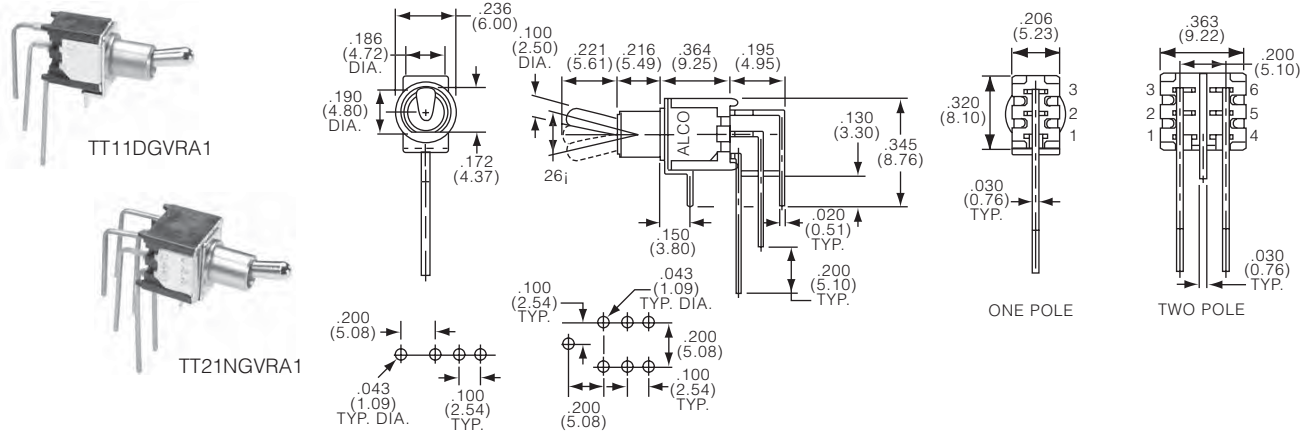


Series TT...RA7T1/4 right angle, .457 flat toggle, 1/4-40 thread

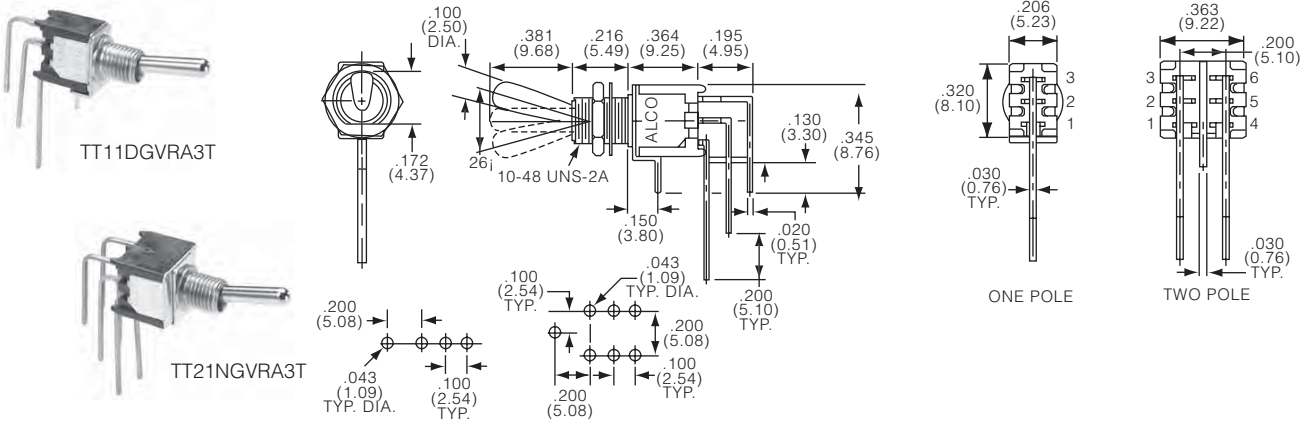


TT, Tiny Toggle Switch (Continued)

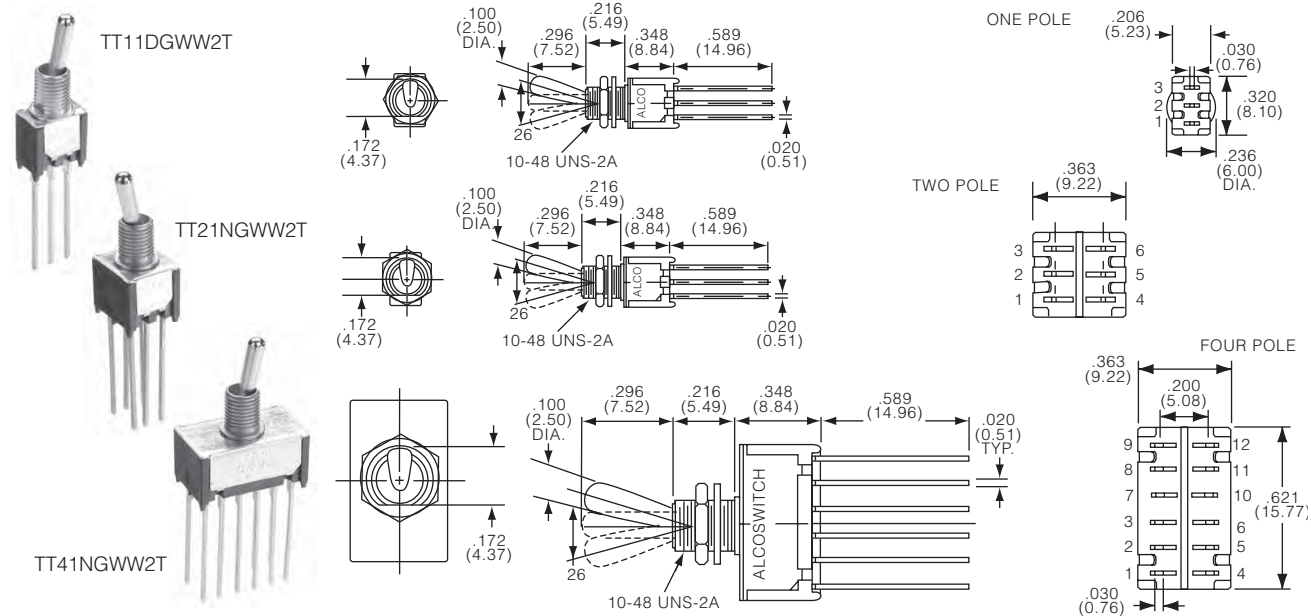
Series TT...VRA1 vertical right angle, .221 bat toggle, unthreaded



Series TT...VRA3T vertical right angle, .381 bat, 10-48 thread



Series TT...WW2T wire wrap, .296 bat toggle, 10-48 thread



TT, Tiny Toggle Switch (Continued)

Toggle Switches

| Product key | E. seal | Poles | Contacts | Function | Terminals | Act. length | Bushing | Material | Part Number |
|---------------------|---------|-------|---------------|-----------|-----------|------------------------|------------|----------------|--------------------|
| TT11AGPC104 | no | 1 | 0.4VA | On Off | pc | .221 (5.61), bat | unthreaded | RoHS compliant | 1825219-2 |
| TT11AGPC9T1/404 | | | Gold plated | | | .421 (10.69), bat | 1/4-40 | | 1-1825192-8 |
| TT11DGPC104 | | | | On On | | .221 (5.61), bat | unthreaded | | 1825219-3 |
| TT11DGPC7T1/404 | | | | | | .457 (11.61), flat | 1/4-40 | | 1825226-1 |
| TT11DGPC9T1/404 | | | | | | .421 (10.69), bat | | | 1825192-2 |
| TT11DGRA104 | | | | | right a. | .125 (3.18), bat | unthreaded | | 1825219-4 |
| TT11DGRA7T1/404 | | | | | | .457 (11.61), flat | 1/4-40 | | 1825226-2 |
| TT11DGRA9T1/404 | | | | | | .421 (10.69), bat | | | 1825192-3 |
| TT11DGVRA104 | | | | | vert r.a. | .125 (3.18), bat | unthreaded | | 1825219-5 |
| TT11DGWW2T04 | | | | | wire wrap | .200 (5.1), bat | #10-48 | | 1825222-1 |
| TT11EGPC104 | | | | On Off On | pc | .125 (3.18), bat | unthreaded | | 1825219-6 |
| TT11EGPC304 | | | | | | .286 (7.26), bat | | | 1825223-1 |
| TT11EGPC5T1/4004 | | | | | | .490 (12.45) | 1/4-40 | | 1825224-1 |
| TT11EGPC9T1/404 | | | | | | | | | 1825192-4 |
| TT11EGPCV104 | | | | | pc vert. | .125 (3.18), bat | unthreaded | | 1825219-7 |
| TT11EGRA104 | | | | | right a. | | | | 1825219-8 |
| TT11EGVRA104 | | | | | vert r.a. | | | | 1825219-9 |
| TT11EGVRA3T04 | | | | | | .286 (7.26), bat | #10-48 | | 1825223-2 |
| TT11FGRA9T1/404 | | | | (On) On | right a. | .421 (10.69), bat | 1/4-40 | | 1825192-5 |
| TT13A2T04 | | | 1 Amp | On Off | wire lug | .200 (5.1), bat | #10-48 | | 1825222-2 |
| TT13A3T04 | | | Silver plated | | | .286 (7.26), bat | | | 1825223-3 |
| TT13A6T004 | | | | | | .306 (7.77), rnd, col. | | | 1825225-1 |
| TT13A9T1/404 | | | | | | .421 (10.69), bat | 1/4-40 | | 1825192-6 |
| TT13D2T04 | | | | On On | | .200 (5.1), bat | #10-48 | | 1825222-3 |
| TT13D3T04 | | | | | | .286 (7.26), bat | | | 1825223-4 |
| TT13D7T1/404 | | | | | | .457 (11.61), flat | 1/4-40 | | 1825226-3 |
| TT13D9T1/404 | | | | | | .421 (10.69), bat | | | 1825192-7 |
| TT13E2T04 | | | | On Off On | | .200 (5.1), bat | #10-48 | | 1825222-4 |
| TT13E3T04 | | | | | | .286 (7.26), bat | | | 1825223-5 |
| TT21KGPC104 | | 2 | 0.4VA | On Off | pc | .125 (3.18), bat | unthreaded | | 1-1825219-0 |
| TT21NGPC104 | | | Gold plated | On On | | | | | 1-1825219-1 |
| TT21NGPC9T1/404 | | | | | | .421 (10.69), bat | 1/4-40 | | 1825192-8 |
| TT21NGRA104 | | | | | right a. | .125 (3.18), bat | unthreaded | | 1-1825219-2 |
| TT21NGRA7T1/404 | | | | | | .457 (11.61), flat | 1/4-40 | | 1825226-4 |
| TT21NGRA9T1/404 | | | | | | .421 (10.69), bat | | | 1825192-9 |
| TT21NGWW2T04 | | | | | wire wrap | .200 (5.1), bat | #10-48 | | 1825222-5 |
| TT23K2T04 | | | 1 Amp | On Off | wire lug | | | | 1825222-6 |
| TT23K9T1/404 | | | Silver plated | | | .421 (10.69), bat | 1/4-40 | | 1-1825192-0 |
| TT23N2T04 | | | | On On | | .200 (5.1), bat | #10-48 | | 1825222-7 |
| TT23N3T04 | | | | | | .286 (7.26), bat | | | 1825223-6 |
| TT23P3T04 | | | | On Off On | | | | | 1825223-7 |
| TT23P6T004 | | | | | | .306 (7.77), rnd, col. | | | 1825225-2 |
| TT23P8T1/404 | | | | | | .567 (14.40), locking | 1/4-40 | | 1825227-1 |
| TT41NGPC104 | | 4 | 0.4VA | On On | pc | .125 (3.18), bat | unthreaded | | 1-1825219-3 |
| TT41NGPC9T1/404 | | | Gold plated | | | .421 (10.69), bat | 1/4-40 | | 1-1825192-1 |
| TT41NGRA104 | | | | | right a. | .125 (3.18), bat | unthreaded | | 1-1825219-4 |
| TT41NGRA7T1/404 | | | | | | .457 (11.61), flat | 1/4-40 | | 1825226-5 |
| TT41NGRA9T1/404 | | | | | | .421 (10.69), bat | | | 1-1825192-2 |
| TT41NGWW2T04 | | | | | wire wrap | .200 (5.1), bat | #10-48 | | 1825222-8 |
| TT43N2T04 | | | 1 Amp | | wire lug | | | | 1825222-9 |
| TT43N9T1/404 | | | Silver | | | .421 (10.69), bat | 1/4-40 | | 1-1825192-3 |
| TTE11EG104 | yes | 1 | 0.4VA | On Off On | | .221 (5.61), bat | unthreaded | | 1825219-1 |
| TTE11EGPC9T1/4ES04 | | | 0.4VA | | pc | .421 (10.69), bat | 1/4-40 | | 1-1825192-4 |
| TTE13A9T1/404 | | | 1 Amp | On Off | wire lug | | | | 1-1825192-5 |
| TTE13D2T04 | | | Silver plated | On On | | .200 (5.1), bat | #10-48 | | 1-1825222-0 |
| TTE13D8T1/404 | | | | | | .567 (14.40), locking | 1/4-40 | | 1825227-2 |
| TTE13E8T1/404 | | | | On Off On | | | | | 1825227-3 |
| TTE23P8T1/404 | | 2 | | | | | | | 1825227-4 |
| TTE11AGPC9T1/404 | | 1 | 0.4VA | On Off | pc | .421 (10.69), bat | | | 1-1825192-7 |

Preferred parts in bold print

Gemini A Series

Features

- Gold, gold over silver or silver contacts
- Epoxy sealed terminals
- Stainless steel frame with brass tin plated solder support
- Hardware included
- Boot seals available



Typical performance characteristics

| | |
|-----------------------------|--|
| Contact configuration | 1, 2, 3, and 4 pole |
| Contact timing | Break before Make |
| Contact rating max. | gold: 0.4VA @20V AC or DC |
| | gold over silver : 5 A @ 125VAC or 28VDC resistive |
| | or 0.4VA @ 20VAC or DC or 2A @250VAC resistive |
| | silver: 5 A @ 125VAC or 28VDC resistive |
| | and 2A @ 250VAC resistive |
| Electrical life | 6000 cycles |
| Contact resistance, initial | max.10 mOhms |
| Insulation resistance | 1,000 MOhms |
| Dielectric strength | 1,000 Vrms @ sea level |
| Actuator travel | 22° for D and E function |
| | 18° for F and G function |

Environmental specification

| | |
|------------------------|-------------------------------|
| Operating temperature | -30°C to +85°C |
| Storage temperature | -30°C to +85°C |
| Solder heat resistance | wave solder capable to 265° C |
| Terminal Seal | single pole: epoxy |

Material specifications

| | |
|---------------------------|--|
| Contacts | contacts B: copper alloy finish gold over nickel |
| | contacts G: copper alloy finish gold over silver |
| | contacts Q: copper alloy finish silver |
| Actuator | brass alloy chrome |
| Terminals | contacts B: copper alloy finish gold over nickel |
| | contacts G: copper alloy finish gold over silver |
| | contacts Q: copper alloy finish silver |
| Case | thermoplastic |
| Bushing | brass alloy finish nickel |
| Internal actuator | phenolic |
| Spring | music wire |
| Support Bracket | brass tin plated |
| Seal | epoxy |
| RoHS Directive 2002/95/EC | compliant |

Toggle Switches

| | | | | | | | | | | | |
|------------------------|---|--------------------------------|--------------------------------|-----------|-----------|-------------------------|-----------|--|----------|----------|-----------|
| Product key | | Typical product key | | A | 1 | 01 | P3 | | Z | Q | 04 |
| Type | A Gemini A Series Toggles | | | | | | | | | | |
| Number of Poles | 1 single pole | 2 double pole | | | | | | | | | |
| Function | single and double pole | | | | | double pole only | | | | | |
| | 01 On-On | 11 On-On-On | | | | | | | | | |
| | 03 On-Off-On | 13 On-On-(On) | | | | | | | | | |
| | 05 (On)-Off-(On) | 15 (On)-On-(On) | | | | | | | | | |
| | 07 On-Off-(On) | | | | | | | | | | |
| | 08 On-(On) | | | | | | | | | | |
| Toggles | | | | | | | | | | | |
| S | bat long | T | large toggle & bushing (15/32) | | | | | | | | |
| K | locking | T1 | large toggle & bushing (15/32) | | | | | | | | |
| K1 | locking | L | lever | | | | | | | | |
| M | bat short | L1 | lever | | | | | | | | |
| P3 | flatted (with bushing code Y only) | L2 | lever | | | | | | | | |
| Bushing | | | | | | | | | | | |
| blank | toggles K1 &/ P3: 1/4-40 threaded .35 (8.9) long | | | | | | | | | | |
| | toggles K, T, T1: unthreaded .28 (7.1) long | | | | | | | | | | |
| CW | 1/4-40 threaded .37 (9.4) long, enviromental seals (toggles codes S & M only) | | | | | | | | | | |
| D | 1/4-40 threaded .28 (7.1) long | | | | | | | | | | |
| D9 | unthreaded .28 (7.1) long | | | | | | | | | | |
| H | 1/4-40 threaded .3 (7.6) long | | | | | | | | | | |
| | Y | 1/4-40 threaded .35 (8.9) long | | | | | | | | | |
| | Y9 | unthreaded .35 (8.9) long | | | | | | | | | |
| Terminations | | | | | | | | | | | |
| A | right angle | V30 | vertical support | W | wire wrap | | | | | | |
| AV2 | vertical right angle | V40 | vertical support | W4 | wire wrap | | | | | | |
| C | printed circuit | | | Z | wire lug | | | | | | |
| Contacts | | | | | | | | | | | |
| B | gold | G | gold over silver | Q | silver | | | | | | |
| Material | | | | | | | | | | | |
| 04 | RoHS compliant | | | | | | | | | | |

Gemini A Series (Continued)

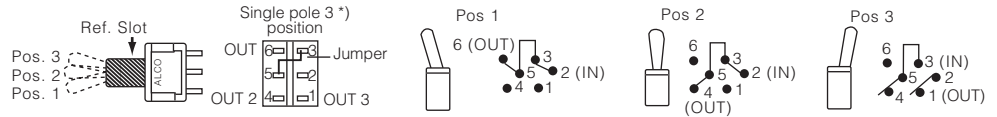
Function



| Code | Positions | ↙ | ↓ | ↘ |
|------|---------------------|----------------|----------------|----------------|
| 01 | 2 positions | On | None | On |
| 03 | 3 positions | On | Off | On |
| 05 | 3 positions | (On) | Off | (On) |
| 07 | 3 positions | (On) | Off | On |
| 08 | 2 positions | (On) | None | On |
| SPDT | Term. conn. | 1 - 2 | --- | 2 - 3 |
| DPDT | Terminals connected | 1 - 2 4 - 5 | --- | 2 - 3 5 - 6 |
| 11*) | 3 positions | On | On | On |
| 13*) | | (On) | On | On |
| 15*) | | (On) | On | (On) |
| DP3T | Terminals connected | 1 - 2 4 - 5 | 2 - 3 4 - 5 | 2 - 3 5 - 6 |

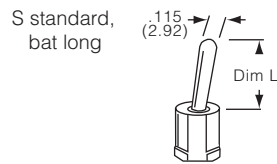
Off mechanical position, no electrical connection
 (On) momentary mechanical position and electrical connection
 None no mechanical position
 *) functions available in dual pole case only.
 **) SP3T functions achieved with external jumper installed by customer

Wiring diagram for functions 11, 13, 15

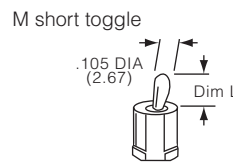


Toggle Switches

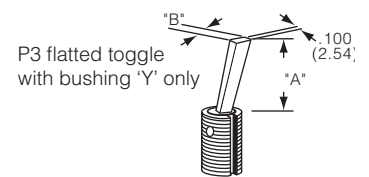
Toggles



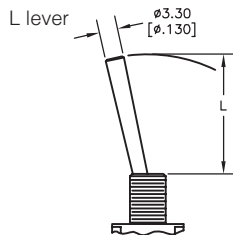
| Toggle | Bushing | Dim L |
|--------|-------------------|------------------------------|
| S | CW, H, Y D, D9 | 10.41 (.410) 12.19 (.480) |



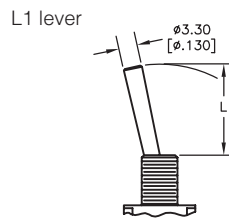
| Toggle | Bushing | Dim L |
|--------|-------------------|----------------------------|
| M | CW, H, Y D, D9 | 5.08 (.200) 6.86 (.270) |



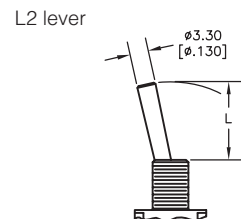
| Toggle | Dim A | Dim B |
|--------|--------------|-------------|
| P3 | 11.43 (.450) | 5.08 (.200) |



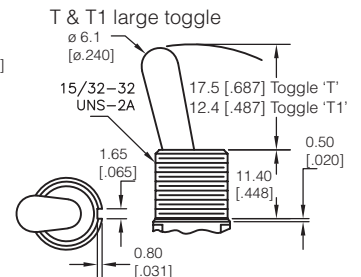
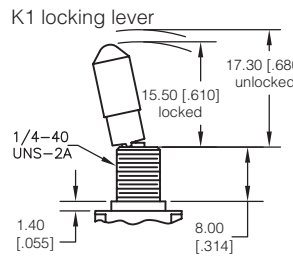
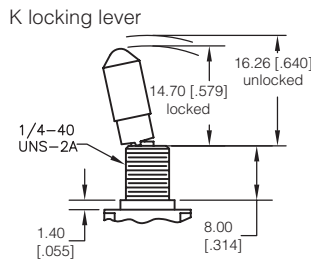
| Toggle | Bushing | Dim L |
|--------|---------------|------------------------------|
| L | H, Y D, D9 | 21.34 (.840) 23.11 (.910) |



| Toggle | Bushing | Dim L |
|--------|---------------|------------------------------|
| L1 | H, Y D, D9 | 16.26 (.640) 18.03 (.710) |



| Toggle | Bushing | Dim L |
|--------|---------------|------------------------------|
| L2 | H, Y D, D9 | 13.97 (.550) 15.75 (.620) |

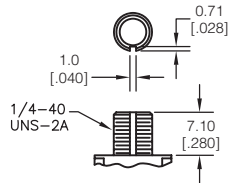


Gemini A Series (Continued)

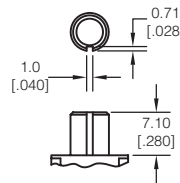
Bushings



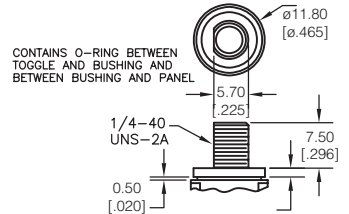
D 1/4-40 threaded



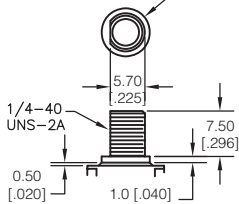
D9 unthreaded



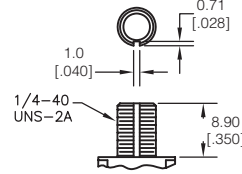
CW 1/4-40 threaded
environmental seals
(toggles codes S & M only)



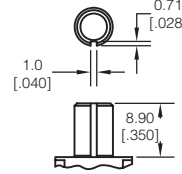
H 1/4-40 threaded



Y 1/4-40 threaded

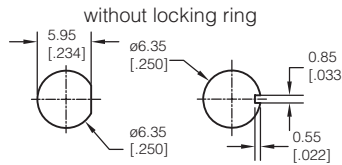


Y9 unthreaded

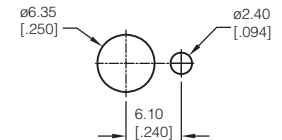


Recommended panel cut-outs

Bushing 1/4



with standard locking ring

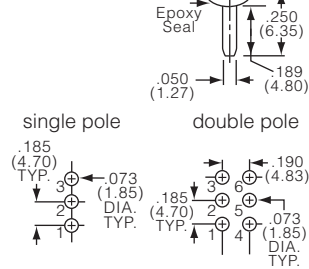


Terminals

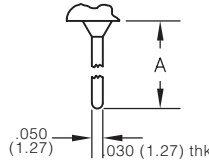


Codes C, W, W4, Z printed circuit, wire wrap and wire lug

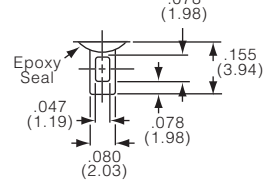
C printed circuit



W, W4 wire wrap



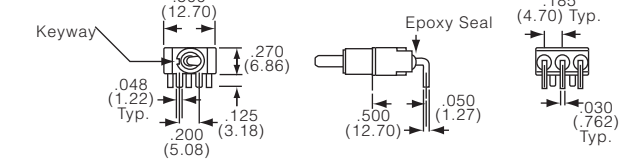
Z wire lug



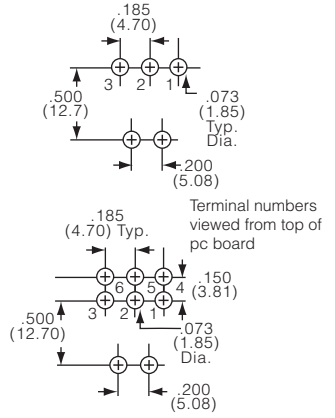
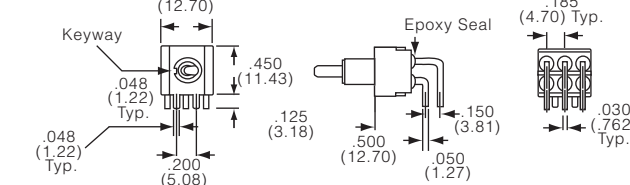
| Terminal | Dim A |
|----------|---------------|
| W | 18.69 (.736) |
| W4 | 26.98 (1.062) |

Code A right angle

single pole

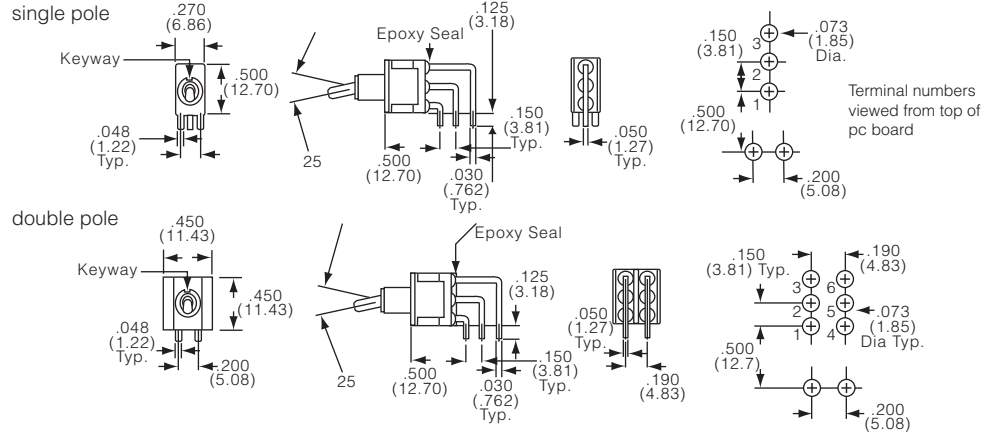


double pole

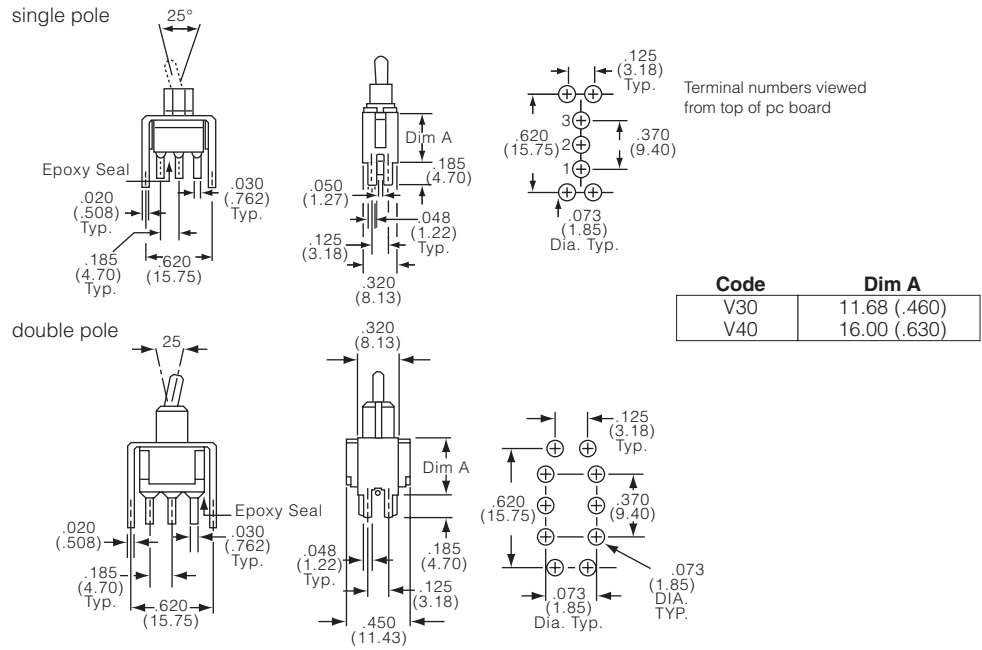


Gemini A Series (Continued)

Code AV2 vertical right angle



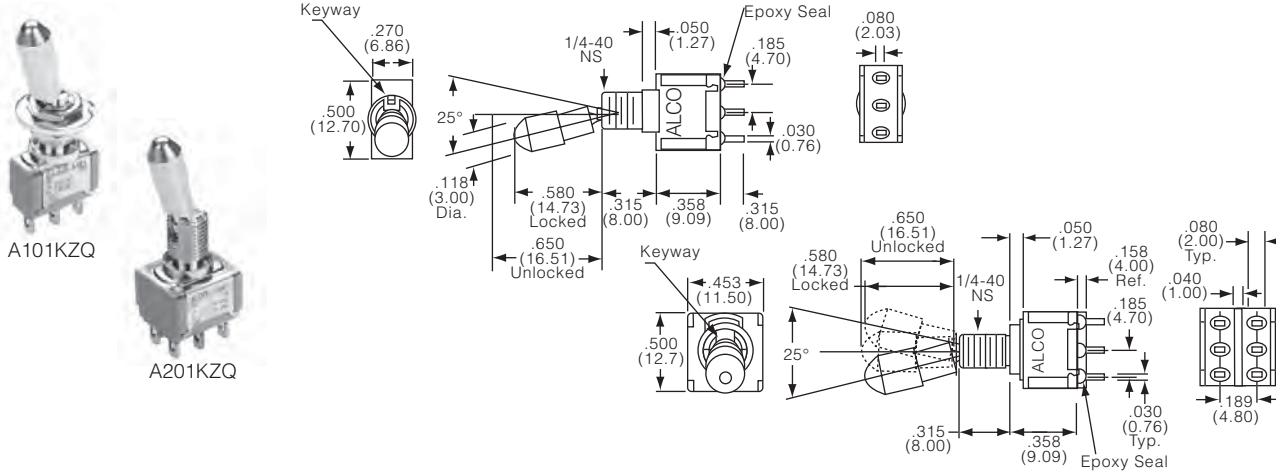
Codes V30, V40 vertical support



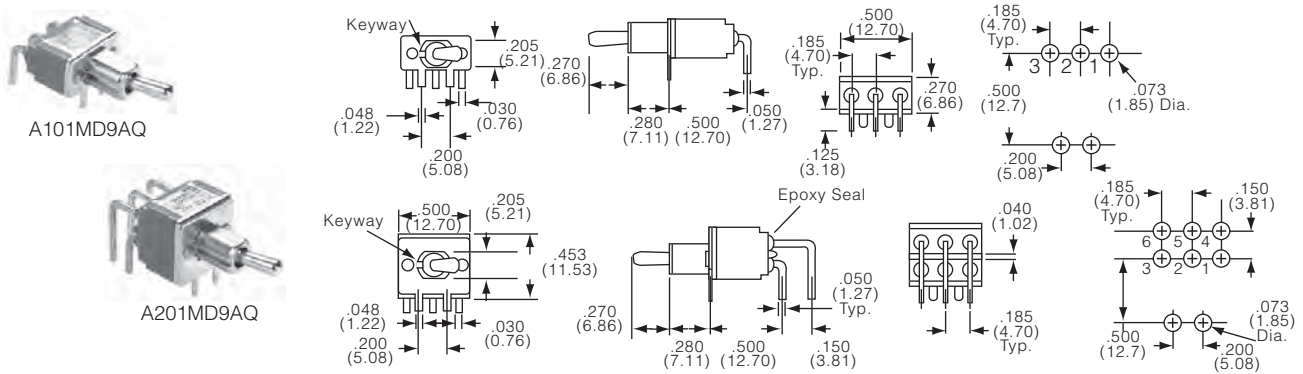
Gemini A Series (Continued)

Dimensions

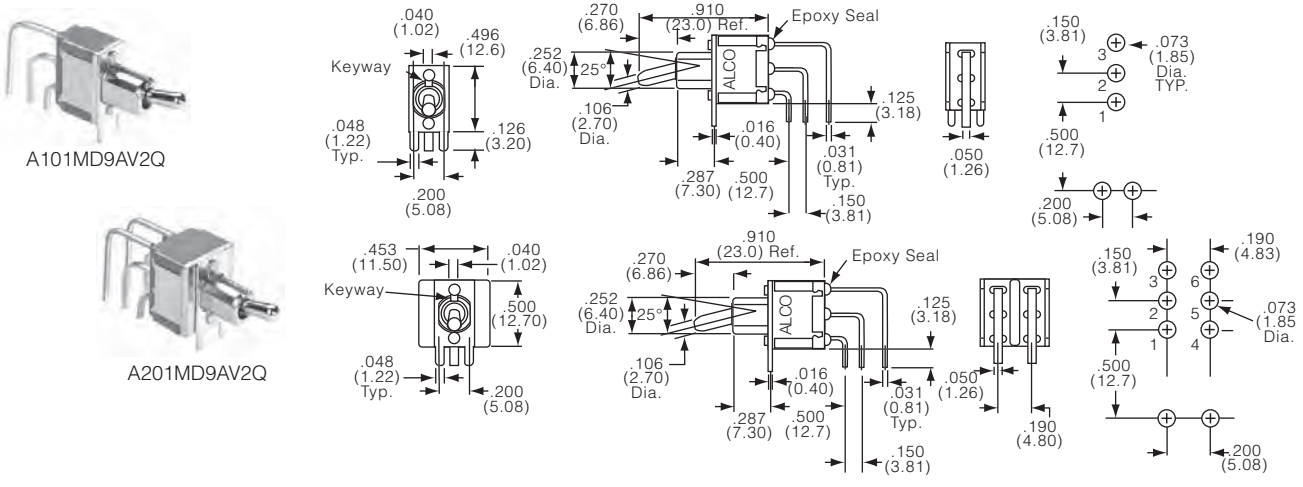
Series A...KZ locking, unthreaded, wire lug, 1 & 2 pole



Series A...MD9A short bat, unthreaded bushing, right angle, 1 & 2 pole



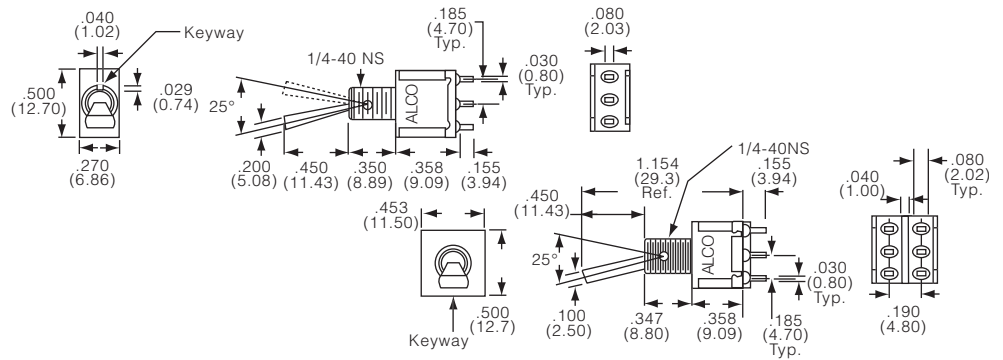
Series A...MD9AV2 short bat, unthreaded bushing, vertical right angle, 1 & 2 pole



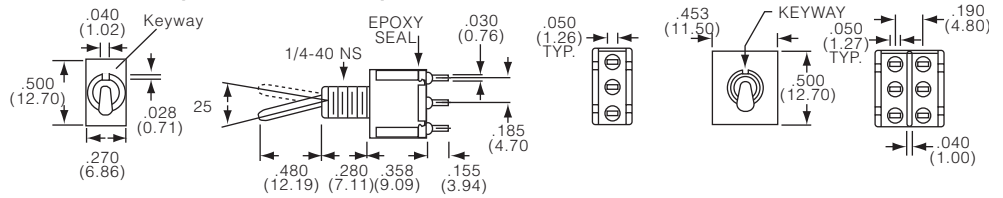
Series A...P3YZ flatted toggle, 1/4-40 threaded, wire lug, 1 & 2 pole

Toggle Switches

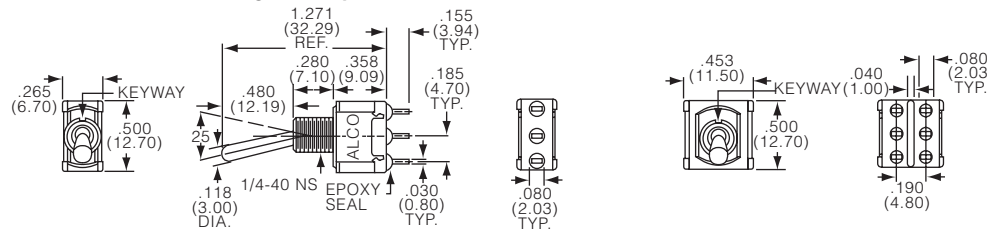
Gemini A Series (Continued)



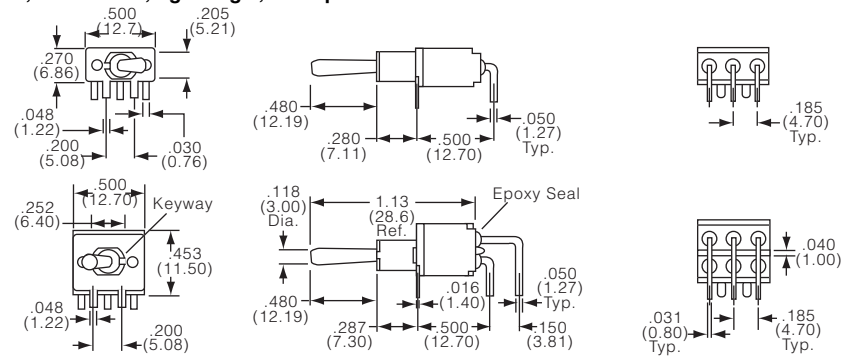
Series A...SDC long bat, 1/4-40 threaded, printed circuit, 1 & 2 pole



Series A...SDZ long bat, 1/4-40 threaded, wire lugs, 1 & 2 pole

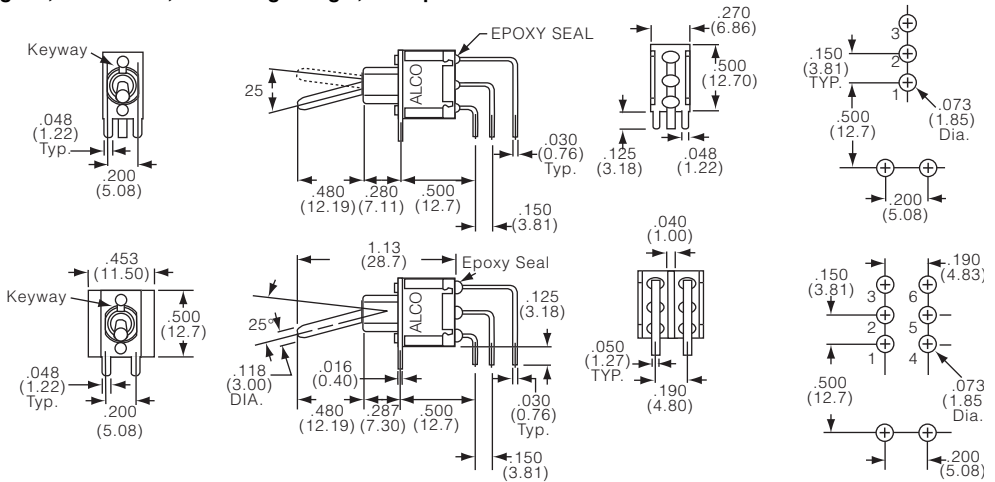
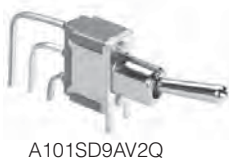


Series A...SD9A long bat, unthreaded, right angle, 1 & 2 pole

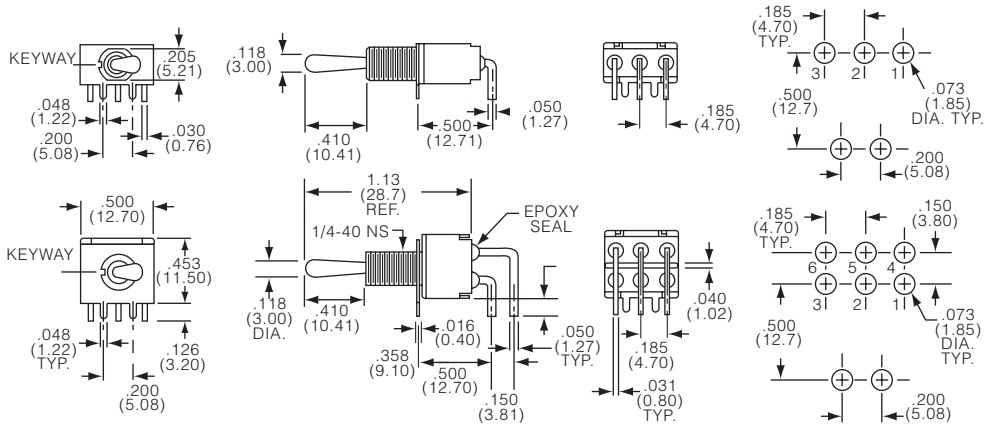


Gemini A Series (Continued)

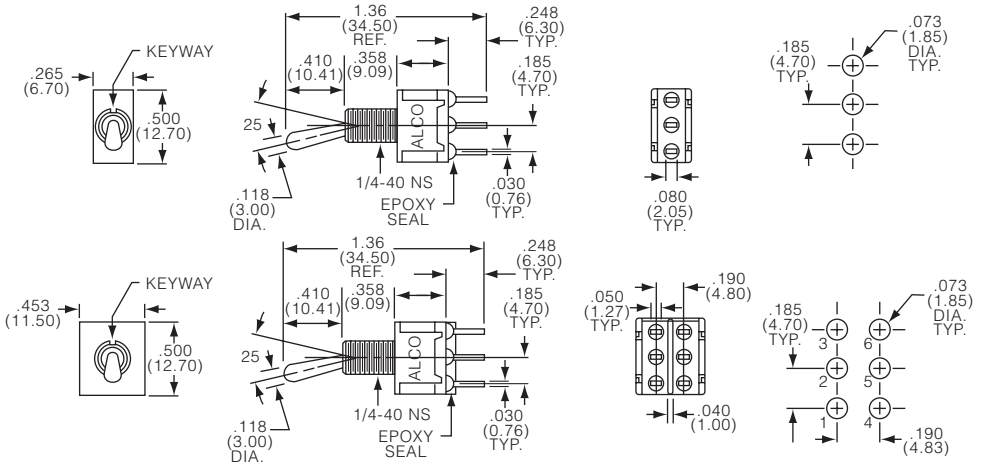
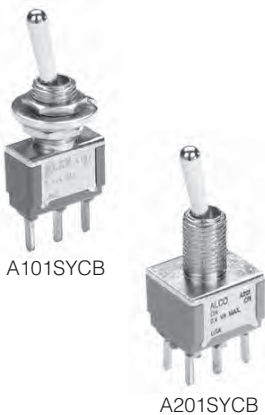
Series A...SD9AV2 long bat, unthreaded, vertical right angle, 1 & 2 pole



Series A...SYA long bat, 1/4-40 threaded, right angle, 1 & 2 pole

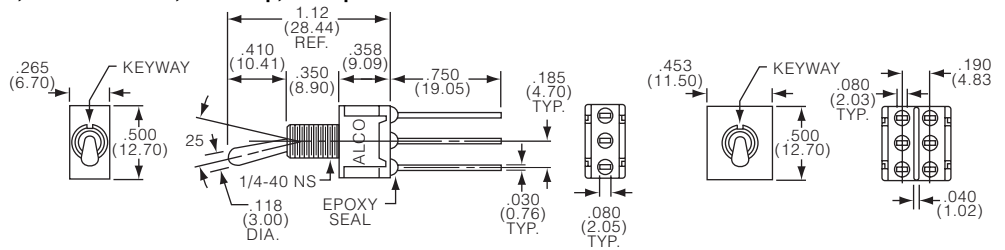


Series A...SYC long bat, 1/4-40 threaded, printed circuit, 1 & 2 pole

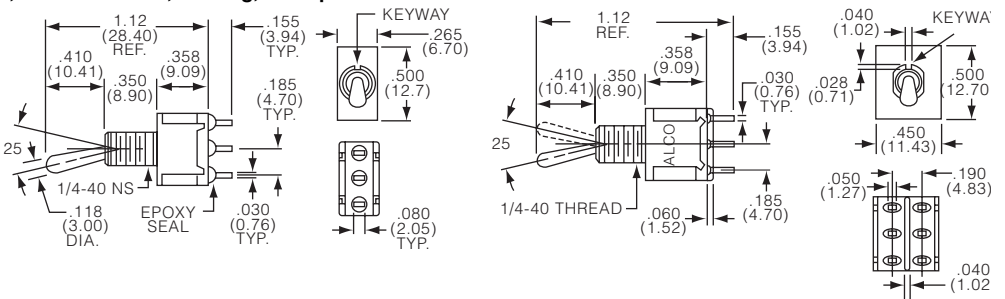


Gemini A Series (Continued)

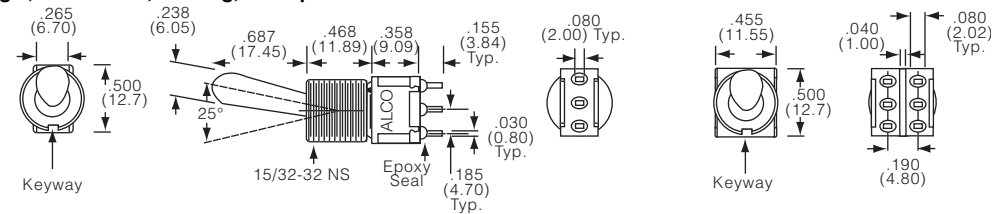
Series A...SYW long bat, 1/4-40 threaded, wire wrap, 1 & 2 pole



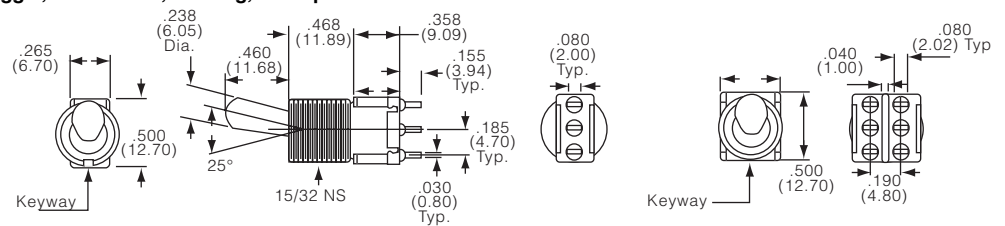
Series A...SYZ long bat, 1/4-40 threaded, wire lug, 1 & 2 pole



Series A...TZ large toggle, unthreaded, wire lug, 1 & 2 pole



Series A...T1Z large toggle, unthreaded, wire lug, 1 & 2 pole



Gemini A Series (Continued)

| Product key | Poles | Function | Toggles | Bushing | Terminations | Contacts | Material | Part Number | | | | |
|---------------------|------------|---------------------------|---------------------------|---------------------------|----------------------|---------------------------|---------------------------|-------------|----------------------|-------------|-------------|-------------|
| A101K1V30B04 | 1 | On-On | locking | 1/4-40 threaded .35 (8.9) | vertical support | gold | RoHS | 1825136-1 | | | | |
| A101KAB04 | | | | unthreaded .28 (7.1) | right angle | silver | compliant | 1825136-2 | | | | |
| A101KAQ04 | | | | | | | | | 1825136-3 | | | |
| A101KAV2Q04 | | | | | | | vertical right angle | | 2-1825136-8 | | | |
| A101KCQ04 | | | | | | | printed circuit | | 1825136-5 | | | |
| A101KD9AQ04 | | | | | | | right angle | | 1825136-6 | | | |
| A101KZQ04 | | | | | | | wire lug | | 1825136-7 | | | |
| A101L1D9V30Q04 | | | | | lever | | vertical support | | | 1825136-9 | | |
| A101L1YZB04 | | | | | | 1/4-40 threaded .35 (8.9) | wire lug | gold | 1-1825136-0 | | | |
| A101LDZQ04 | | | | | | | 1/4-40 threaded .28 (7.1) | | silver | 1-1825136-1 | | |
| A101MD9AB04 | | bat short | | unthreaded .28 (7.1) | right angle | gold | | 1-1825136-2 | | | | |
| A101MD9AG04 | Au over Ag | | | | | 1-1825136-3 | | | | | | |
| A101MD9AQ04 | silver | | | | | 1-1825136-4 | | | | | | |
| A101MD9AV2B04 | gold | | | | | 1-1825136-5 | | | | | | |
| A101MD9AV2G04 | Au over Ag | | | | | 1-1825136-6 | | | | | | |
| A101MD9AV2Q04 | silver | | | | | 1-1825136-7 | | | | | | |
| A101MD9V30B04 | gold | | | | | 1-1825136-8 | | | | | | |
| A101MDAQ04 | silver | | | | | 1-1825136-9 | | | | | | |
| A101MDAV2B04 | gold | | | | | 2-1825136-0 | | | | | | |
| A101MDCG04 | Au over Ag | | | | | 2-1825136-1 | | | | | | |
| A101MDZQ04 | silver | 2-1825136-2 | | | | | | | | | | |
| A101MYCQ04 | | 1/4-40 threaded .35 (8.9) | | | printed circuit | | | 2-1825136-3 | | | | |
| A101MYZQ04 | | | | | | wire lug | | 2-1825136-4 | | | | |
| A101P3CB04 | flatted | | | | | | printed circuit | gold | 2-1825136-6 | | | |
| A101P3YV30B04 | | | | | | vertical support | | 1825136-4 | | | | |
| A101P3ZQ04 | | | | | | | wire lug | silver | 2-1825136-7 | | | |
| A101SCWCQ004 | bat long | | | | | | 1/4-40 threaded .37 (9.4) | | printed circuit | | | 3-1825136-0 |
| A101SCWZQ04 | | | | | | | | | | wire lug | | 3-1825136-1 |
| A101SD9AB04 | | | | | | | unthreaded .28 (7.1) | | right angle | gold | 3-1825136-2 | |
| A101SD9AQ04 | | | | | | | | | | silver | 3-1825136-3 | |
| A101SD9AV2B04 | | | | | | | | | vertical right angle | gold | 3-1825136-4 | |
| A101SD9AV2Q04 | | | | | | silver | 3-1825136-5 | | | | | |
| A101SD9V30B04 | | | | | vertical support | gold | 3-1825136-6 | | | | | |
| A101SD9V30Q04 | | | | | | silver | 3-1825136-7 | | | | | |
| A101SDCCQ04 | | | 1/4-40 threaded .28 (7.1) | | printed circuit | | 3-1825136-8 | | | | | |
| A101SDZQ04 | | | | | wire lug | | 3-1825136-9 | | | | | |
| A101SHZQ04 | | | 1/4-40 threaded .3 (7.6) | | | | 4-1825136-0 | | | | | |
| A101SY9CQ04 | | | unthreaded .35 (8.9) | | printed circuit | | 4-1825136-1 | | | | | |
| A101SYAB04 | | | 1/4-40 threaded .35 (8.9) | | right angle | gold | 4-1825136-2 | | | | | |
| A101SYAQ04 | | | | | | silver | 4-1825136-3 | | | | | |
| A101SYAV2B04 | | | | | vertical right angle | gold | 1825136-8 | | | | | |
| A101SYCB04 | | | | | printed circuit | | 4-1825136-4 | | | | | |
| A101SYCQ04 | | | | | | silver | 4-1825136-5 | | | | | |
| A101SYWQ04 | | | | | wire wrap | | 4-1825136-7 | | | | | |
| A101SYZB04 | | | | | wire lug | gold | 4-1825136-8 | | | | | |
| A101SYZQ04 | | | | | | silver | 4-1825136-9 | | | | | |
| A101T1ZB04 | | On-Off-On | locking | unthreaded .28 (7.1) | | gold | | 5-1825136-2 | | | | |
| A101T1ZQ04 | silver | | | | | 5-1825136-3 | | | | | | |
| A101TCQ04 | | | | | | printed circuit | | 5-1825136-4 | | | | |
| A101TZQ04 | | | | | | wire lug | | 5-1825136-5 | | | | |
| A103KZQ04 | | | | | | | | | | | 1825137-1 | |
| A103MD9AB04 | | | | | | bat short | | | right angle | gold | | 1825137-2 |
| A103MD9AG04 | Au over Ag | | | | | | | | | 1825137-3 | | |
| A103MD9AQ04 | | | | | | | | | | silver | 1825137-4 | |
| A103MD9AV2B04 | | | | | | | | | vertical right angle | gold | 1825137-5 | |
| A103P3ZQ04 | | | | | | flatted | 1/4-40 threaded .35 (8.9) | | wire lug | silver | | 1825137-6 |
| A103SD9AQ04 | | bat long | unthreaded .28 (7.1) | right angle | | | | | | 1825137-7 | | |
| A103SD9AV2B04 | | | | | vertical right angle | gold | 1825137-8 | | | | | |
| A103SD9AV2Q04 | | | | | | silver | 1825137-9 | | | | | |
| A103SDCB04 | | | 1/4-40 threaded .28 (7.1) | | printed circuit | gold | 1-1825137-0 | | | | | |
| A103SDCCQ04 | | | | | | silver | 1-1825137-1 | | | | | |
| A103SDZQ04 | | | | | wire lug | | 1-1825137-2 | | | | | |
| A103SYAQ04 | | | 1/4-40 threaded .35 (8.9) | | right angle | | 1-1825137-3 | | | | | |
| A103SYAV2B04 | | | | | vertical right angle | gold | 2-1825136-5 | | | | | |
| A103SYAV2Q04 | | | | | | silver | 1-1825137-4 | | | | | |
| A103SYCB04 | | | | | printed circuit | gold | 1-1825137-5 | | | | | |
| A103SYCQ04 | | | | | | silver | 1-1825137-6 | | | | | |
| A103SYWB04 | | | | | wire wrap | gold | 1-1825137-7 | | | | | |
| A103SYWQ04 | | | | | right angle | silver | 1-1825137-8 | | | | | |
| A103SYZB04 | | | | | wire lug | gold | 1-1825137-9 | | | | | |
| A103SYZQ04 | | | | | | silver | 2-1825137-0 | | | | | |
| A103T1CG04 | | lg. tgl. & bushing | | unthreaded .28 (7.1) | printed circuit | Au over Ag | | 2-1825137-1 | | | | |
| A103T1ZQ04 | | | | | | wire lug | silver | 2-1825137-2 | | | | |
| A103TZQ04 | | | | | | | | | | 2-1825137-3 | | |

Preferred parts in bold print

Toggle Switches

Gemini A Series (Continued)

Toggle Switches

| Product key | Poles | Function | Toggles | Bushing | Terminations | Contacts | Material | Part Number |
|-------------------|-------|---------------|--------------------|---------------------------|---------------------------|-----------------|--------------------|-------------|
| A105MD9AB04 | 1 | (On)-Off-(On) | bat short | unthreaded .28 (7.1) | right angle | gold | RoHS compliant | 2-1825137-4 |
| A105MD9AQ04 | | | | | | silver | | 2-1825137-5 |
| A105MYV30Q04 | | | | 1/4-40 threaded .35 (8.9) | vertical support | | 2-1825137-6 | |
| A105P3CG04 | | | flatted | | printed circuit | Au over Ag | | 2-1825137-7 |
| A105P3CQ04 | | | | | | silver | 2-1825137-8 | |
| A105P3ZQ04 | | | | | wire lug | | 2-1825137-9 | |
| A105SD9AB04 | | | bat long | unthreaded .28 (7.1) | right angle | gold | 3-1825137-1 | |
| A105SD9AV2Q04 | | | | | vertical right angle | silver | | 3-1825137-2 |
| A105SD9V30B04 | | | | | vertical support | gold | 3-1825137-3 | |
| A105SYAB04 | | | | 1/4-40 threaded .35 (8.9) | right angle | | 3-1825137-4 | |
| A105SYAV2B04 | | | | | vertical right angle | | 3-1825137-5 | |
| A105SYCB04 | | | | | printed circuit | | 3-1825137-6 | |
| A105SYCQ04 | | | | | | silver | 3-1825137-7 | |
| A105SYZB04 | | | | | wire lug | gold | 3-1825137-8 | |
| A105SYZQ04 | | | | | | silver | 3-1825137-9 | |
| A105T1ZB04 | | | lg. tgl. & bushing | unthreaded .28 (7.1) | | gold | 4-1825137-0 | |
| A105T1ZQ04 | | | | | | silver | | 4-1825137-1 |
| A105TZQ04 | | | | | | | 4-1825137-2 | |
| A107KAV2Q04 | | On-Off-(On) | locking | | vertical right angle | | 4-1825137-3 | |
| A107KZB04 | | | | | wire lug | gold | 4-1825137-4 | |
| A107MD9AV2B04 | | | bat short | | vertical right angle | | 4-1825137-5 | |
| A107MD9CQ04 | | | | | printed circuit | silver | 4-1825137-6 | |
| A107MD9V30Q04 | | | | | vertical support | | 4-1825137-7 | |
| A107P3ZQ04 | | | flatted | 1/4-40 threaded .35 (8.9) | wire lug | | 4-1825137-8 | |
| A107SYAQ04 | | | bat long | | right angle | | 4-1825137-9 | |
| A107SYCB04 | | | | | printed circuit | gold | 5-1825137-0 | |
| A107SYCQ04 | | | | | | silver | 5-1825137-1 | |
| A107SYZQ04 | | | | | wire lug | | 5-1825137-2 | |
| A107TZB04 | | | lg. tgl. & bushing | unthreaded .28 (7.1) | | gold | 5-1825137-3 | |
| A108MD9AB04 | | On-(On) | bat short | | right angle | | 5-1825136-6 | |
| A108P3CQ04 | | | | flatted | 1/4-40 threaded .35 (8.9) | printed circuit | silver | 5-1825136-8 |
| A108P3ZQ04 | | | | | wire lug | | 5-1825136-9 | |
| A108SD9AQ04 | | | bat long | unthreaded .28 (7.1) | right angle | | 6-1825136-0 | |
| A108SDZQ04 | | | | | 1/4-40 threaded .28 (7.1) | wire lug | | 6-1825136-1 |
| A108SYCB04 | | | | 1/4-40 threaded .35 (8.9) | printed circuit | gold | 6-1825136-2 | |
| A108SYCQ04 | | | | | | silver | 6-1825136-3 | |
| A108SYZQ04 | | | | | wire lug | | 6-1825136-4 | |
| A201KAB04 | 2 | On-On | locking | unthreaded .28 (7.1) | right angle | gold | 1825138-1 | |
| A201KD9AQ04 | | | | | | | silver | 1825138-2 |
| A201KZQ04 | | | | | wire lug | | 1825138-3 | |
| A201L1D9V30Q04 | | | lever | | vertical support | | 1825138-5 | |
| A201MD9AB04 | | | bat short | | right angle | gold | 1825138-6 | |
| A201MD9AQ04 | | | | | | silver | 1825138-7 | |
| A201MD9AV2B04 | | | | | vertical right angle | gold | 1825138-8 | |
| A201MD9AV2Q04 | | | | | | silver | 1825138-9 | |
| A201MDAQ04 | | | | 1/4-40 threaded .28 (7.1) | right angle | | 1-1825138-0 | |
| A201MYAQ04 | | | | 1/4-40 threaded .35 (8.9) | | | 1-1825138-2 | |
| A201MYCB04 | | | | | printed circuit | gold | 1-1825138-3 | |
| A201MYZQ04 | | | | | wire lug | silver | 1-1825138-4 | |
| A201P3ZQ04 | | | flatted | | | | 1-1825138-5 | |
| A201SCWZB04 | | | bat long | 1/4-40 threaded .37 (9.4) | | gold | 1-1825138-6 | |
| A201SD9AQ04 | | | | | unthreaded .28 (7.1) | right angle | silver | 1-1825138-7 |
| A201SD9AV2Q04 | | | | | vertical right angle | | 1-1825138-8 | |
| A201SDCB04 | | | | 1/4-40 threaded .28 (7.1) | printed circuit | gold | 1-1825138-9 | |
| A201SDZQ04 | | | | | wire lug | silver | 2-1825138-0 | |
| A201SY9AB04 | | | | unthreaded .35 (8.9) | right angle | gold | 2-1825138-1 | |
| A201SYAB04 | | | | 1/4-40 threaded .35 (8.9) | | | 2-1825138-2 | |
| A201SYAQ04 | | | | | | silver | 2-1825138-3 | |
| A201SYCB04 | | | | | printed circuit | gold | 2-1825138-4 | |
| A201SYCQ04 | | | | | | silver | 2-1825138-5 | |
| A201SYWQ04 | | | | | wire wrap | | 2-1825138-6 | |
| A201SYZB04 | | | | | wire lug | gold | 2-1825138-7 | |
| A201SYZQ04 | | | | | | silver | 2-1825138-8 | |
| A201T1ZQ04 | | | lg. tgl. & bushing | unthreaded .28 (7.1) | | | 2-1825138-9 | |
| A201TZQ04 | | | | | | | | 3-1825138-1 |

Preferred parts in bold print

Gemini A Series (Continued)

| Product key | Poles | Function | Toggles | Bushing | Terminations | Contacts | Material | Part Number |
|-------------------|-------|---------------|-------------------|---------------------------|---------------------------|---------------------------|---------------------------|--------------------|
| A203KZQ04 | 2 | On-Off-On | locking | unthreaded .28 (7.1) | wire lug | silver | RoHS | 1825139-1 |
| A203MD9AB04 | | | bat short | | right angle | gold | compliant | 1825139-2 |
| A203P3AV2Q04 | | | flatted | 1/4-40 threaded .35 (8.9) | vertical right angle | silver | | 1825139-3 |
| A203P3ZQ04 | | | | | wire lug | | 1825139-4 | |
| A203SD9AV2B04 | | | bat long | unthreaded .28 (7.1) | vertical right angle | gold | | 1825139-5 |
| A203SD9AV2Q04 | | | | | | silver | 1825139-6 | |
| A203SDZQ04 | | | | 1/4-40 threaded .28 (7.1) | wire lug | | | 1825139-7 |
| A203SYCB04 | | | | | 1/4-40 threaded .35 (8.9) | printed circuit | gold | |
| A203SYCQ04 | | | | | | silver | | 1825139-9 |
| A203SYZQ04 | | | | | wire lug | | | 1-1825139-0 |
| A203T1ZQ04 | | | lg. tgl.& bushing | unthreaded .28 (7.1) | | | | 1-1825139-1 |
| A203TZQ04 | | | | | | | | 1-1825139-2 |
| A205KZB04 | | (On)-Off-(On) | locking | 1/4-40 threaded .35 (8.9) | | gold | | 1-1825139-3 |
| A205P3ZQ04 | | | flatted | | | silver | 1-1825139-4 | |
| A205SD9AB04 | | | bat long | unthreaded .28 (7.1) | right angle | gold | | 1-1825139-5 |
| A205SYCB04 | | | | | | 1/4-40 threaded .35 (8.9) | printed circuit | |
| A205SYCQ04 | | | | | | silver | | 1-1825139-7 |
| A205SYZQ04 | | | | | | wire lug | | 1-1825139-8 |
| A205T1ZQ04 | | | lg. tgl.& bushing | unthreaded .28 (7.1) | | | | 1-1825139-9 |
| A205TZQ04 | | | | | | | | 2-1825139-0 |
| A207P3ZQ04 | | On-Off-(On) | flatted | 1/4-40 threaded .35 (8.9) | | | | 2-1825139-1 |
| A207SYCB04 | | | bat long | | | printed circuit | gold | |
| A207SYCQ04 | | | | | | silver | | 2-1825139-3 |
| A207SYZQ04 | | | | | | wire lug | | 2-1825139-4 |
| A207T1ZQ04 | | | lg. tgl.& bushing | unthreaded .28 (7.1) | | | | 2-1825139-5 |
| A207TZQ04 | | | | | | | | 2-1825139-6 |
| A208KZG04 | | On-(On) | locking | 1/4-40 threaded .35 (8.9) | | Au over Ag | | 3-1825138-2 |
| A208P3ZQ04 | | | flatted | | | silver | 3-1825138-3 | |
| A208SD9AQ04 | | | bat long | unthreaded .28 (7.1) | right angle | | | 3-1825138-4 |
| A208SD9AV2Q04 | | | | | | 1/4-40 threaded .35 (8.9) | vertical right angle | |
| A208SYCB04 | | | | | printed circuit | gold | | 3-1825138-6 |
| A208SYCQ04 | | | | | | | | silver |
| A208SYZQ04 | | | | | wire lug | | | 3-1825138-8 |
| A208T1ZQ04 | | | | | | lg. tgl.& bushing | unthreaded .28 (7.1) | |
| A208TZQ04 | | | | | | | | 4-1825138-0 |
| A211KZB04 | | | | | On-On-On | locking | | gold |
| A211MD9AQ04 | | | bat short | 1/4-40 threaded .35 (8.9) | right angle | silver | | 2-1825139-8 |
| A211MYCQ04 | | | | | | | printed circuit | |
| A211P3CQ04 | | | flatted | | | | | 3-1825139-0 |
| A211P3V40G04 | | | | | | | vertical support | Au over Ag |
| A211P3ZQ04 | | | | | wire lug | silver | | 3-1825139-2 |
| A211SCWCQ004 | | | | | bat long | 1/4-40 threaded .37 (9.4) | printed circuit | |
| A211SDZQ04 | | | | 1/4-40 threaded .28 (7.1) | wire lug | | | 3-1825139-4 |
| A211SHZQ04 | | | | | 1/4-40 threaded .3 (7.6) | | | 3-1825139-5 |
| A211SY9AQ04 | | | | unthreaded .35 (8.9) | right angle | | | 3-1825139-6 |
| A211SYCQ04 | | | | | 1/4-40 threaded .35 (8.9) | printed circuit | | |
| A211SYZB04 | | | | | wire lug | gold | | 3-1825139-8 |
| A211SYZQ04 | | | | | | | | silver |
| A211T1ZQ04 | | | lg. tgl.& bushing | unthreaded .28 (7.1) | | | | 4-1825139-0 |
| A213SYZQ04 | | | | | On-On-(On) | bat long | 1/4-40 threaded .35 (8.9) | |
| A215SD9V30B04 | | (On)-On-(On) | | unthreaded .28 (7.1) | vertical support | gold | | 4-1825139-3 |
| A215SY9AQ04 | | | | | unthreaded .35 (8.9) | right angle | silver | |
| A215SYZQ04 | | | | 1/4-40 threaded .35 (8.9) | wire lug | | | 4-1825139-5 |

Preferred parts in bold print

Gemini AE Series, Sealed IP67

Features

- Meets IP 67 requirements
- Gold, gold over silver or silver contacts
- Stainless steel frame with brass tin plated solder support
- Epoxy sealed terminals



Typical performance characteristics

Contact configuration 1, 2, 3, and 4 pole
 Contact timing Break before Make
 Contact rating max. gold: 0.4VA @20V AC or DC
 gold over silver : 5 A @ 125VAC or 28VDC resistive
 or 0.4VA @ 20VAC or DC or 2A @250VAC resistive
 silver: 5 A @ 125VAC or 28VDC resistive
 and 2A @ 250VAC resistive
 Electrical life 6000 cycles
 Contact resistance, initial max.10 mOhms @ 2 to 4VDC, 100mA
 Insulation resistance min. 1,000 MOhms
 Dielectric strength 1,000 Vrms @ sea level
 Actuator travel 22° for D and E function
 18° for F and G function

Material specifications

Contacts contacts B: copper alloy finish gold over nickel
 contacts G: copper alloy finish gold over silver
 contacts Q: copper alloy finish silver
 Actuator brass alloy chrome
 Terminals contacts B: copper alloy finish gold over nickel
 contacts G: copper alloy finish gold over silver
 contacts Q: copper alloy finish silver
 Case thermoplastic
 Bushing brass alloy finish nickel
 Internal actuator phenolic
 Spring music wire
 Support bracket brass tin plated
 Seal epoxy
 RoHS Directive 2002/95/EC compliant

Environmental specification

Operating temperature -30°C to +85°C
 Storage temperature -30°C to +85°C
 Solder heat resistance wave solder capable to 265° C
 Terminal seal epoxy

Toggle Switches

| | | | | | | | | | | | |
|------------------------|-------------------------------|----------------------|------------|------------------|-------------------------|--------------|----------|-----------|--|--|--|
| Product key | Typical product key | | | | | | | | | | |
| | AE | 1 | 01 | S | D1 | C | Q | 04 | | | |
| Type | Gemini AE Series Toggles | | | | | | | | | | |
| Number of Poles | 1 | single pole | | | 2 | double pole | | | | | |
| Function | single and double pole | | | | double pole only | | | | | | |
| | 01 | On-On | | | 11 | On-On-On | | | | | |
| | 03 | On-Off-On | | | 13 | On-On-(On) | | | | | |
| | 05 | (On)-Off-(On) | | | 15 | (On)-On-(On) | | | | | |
| | 07 | On-Off-(On) | | | | | | | | | |
| | 08 | On-(On) | | | | | | | | | |
| Toggles | S | bat long | | | M | bat short | | | | | |
| Bushing | D1 | unthreaded | | | | | | | | | |
| Terminations | A | right angle | V30 | vertical support | W | wire wrap | | | | | |
| | AV2 | vertical right angle | V40 | vertical support | W4 | wire wrap | | | | | |
| | C | printed circuit | | | Z | wire lug | | | | | |
| Contacts | B | gold | | G | gold over silver | | Q | silver | | | |
| Material | 04 | RoHS compliant | | | | | | | | | |

Gemini AE Series, Sealed IP67 (Continued)

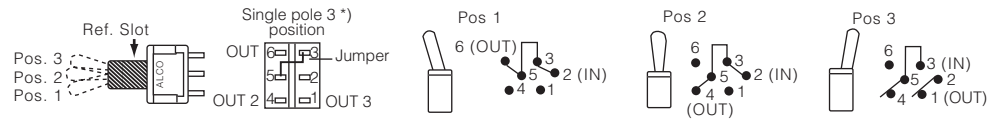
Function



| Code | Positions | ↘ | ↓ | ↙ |
|------|---------------------|----------------|----------------|----------------|
| 01 | 2 positions | On | None | On |
| 03 | 3 positions | On | Off | On |
| 05 | 3 positions | (On) | Off | (On) |
| 07 | 3 positions | (On) | Off | On |
| 08 | 2 positions | (On) | None | On |
| SPDT | Term. conn. | 1 - 2 | --- | 2 - 3 |
| DPDT | Terminals connected | 1 - 2 4 - 5 | --- | 2 - 3 5 - 6 |
| 11*) | 3 positions | On | On | On |
| 13*) | | (On) | On | On |
| 15*) | | (On) | On | (On) |
| DP3T | Terminals connected | 1 - 2 4 - 5 | 2 - 3 4 - 5 | 2 - 3 5 - 6 |

Off mechanical position, no electrical connection
 (On) momentary mechanical position and electrical connection
 None no mechanical position
 *) functions available in dual pole case only.
 **) SP3T functions achieved with external jumper installed by customer

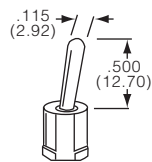
Wiring diagram for functions 11, 13, 15



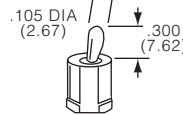
Toggles



S standard, bat long



M short toggle

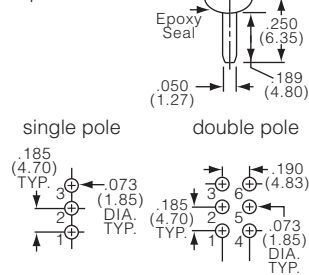


Terminals

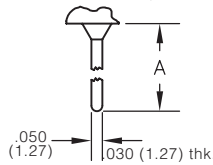


Codes C, W, W4, Z printed circuit, wire wrap and wire lug

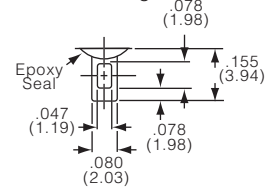
C printed circuit



W, W4 wire wrap



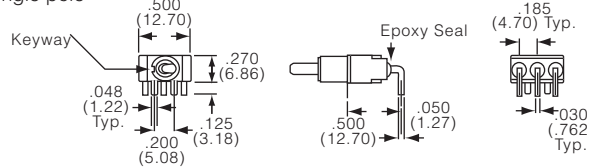
Z wire lug



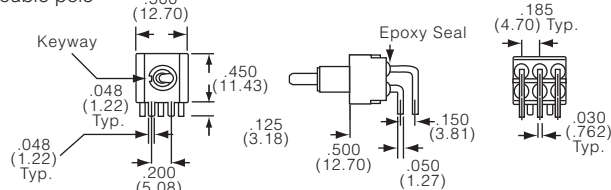
| Terminal | Dim A |
|----------|---------------|
| W | 18.69 (.736) |
| W4 | 26.98 (1.062) |

Code A right angle

single pole

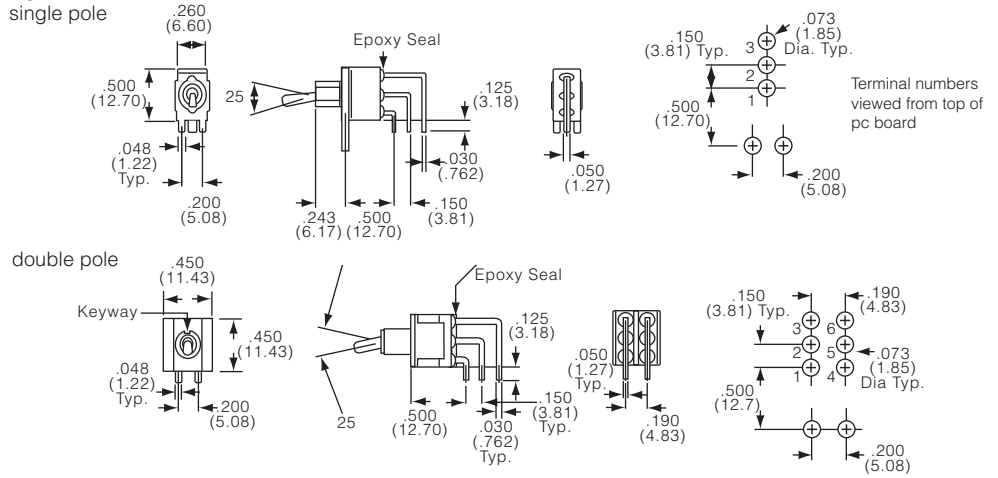


double pole

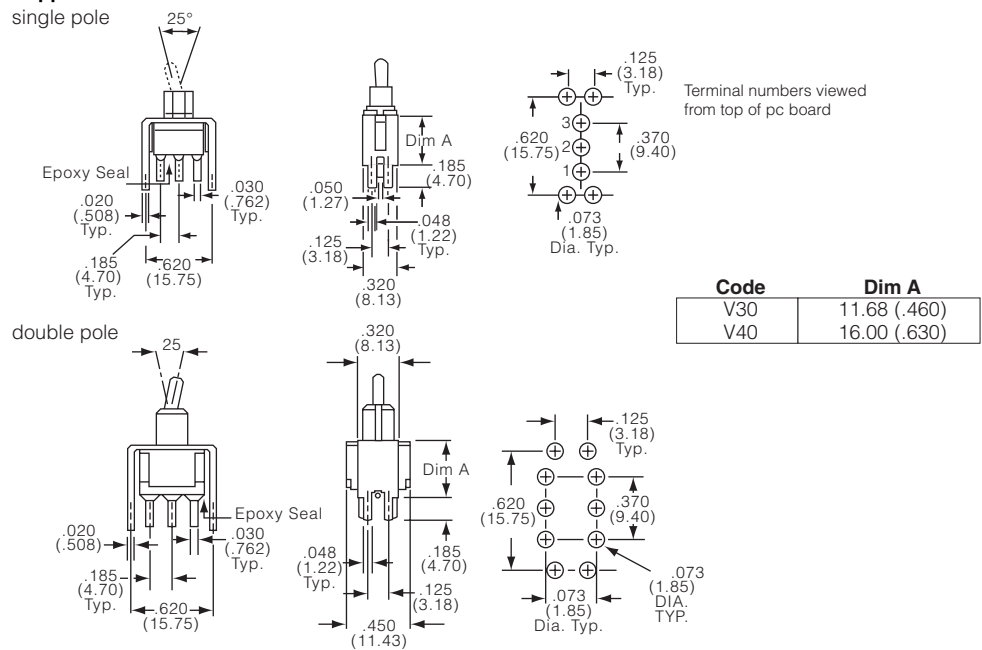


Gemini AE Series, Sealed IP67 (Continued)

Code AV2 vertical right angle



Codes V30, V40 vertical support



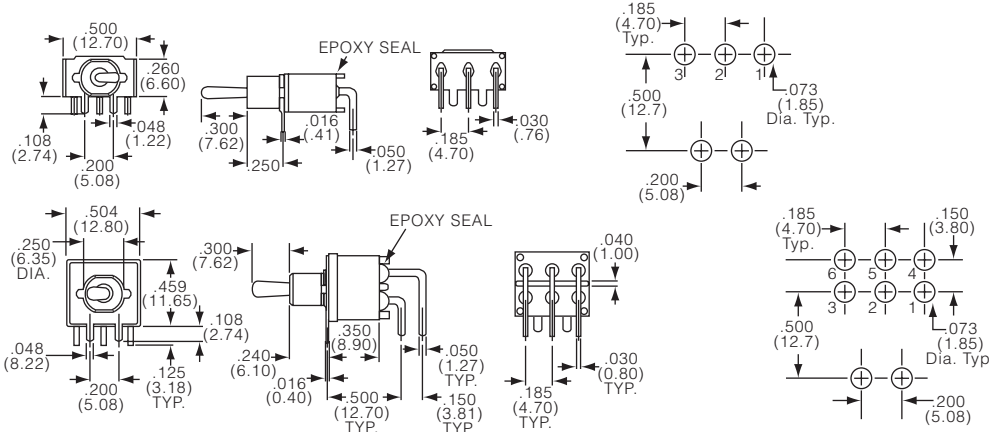
Gemini AE Series, Sealed IP67 (Continued)

Dimensions

Series AE...MD1A short bat, unthreaded, right angle, 1 & 2 pole



AE101MD1AQ



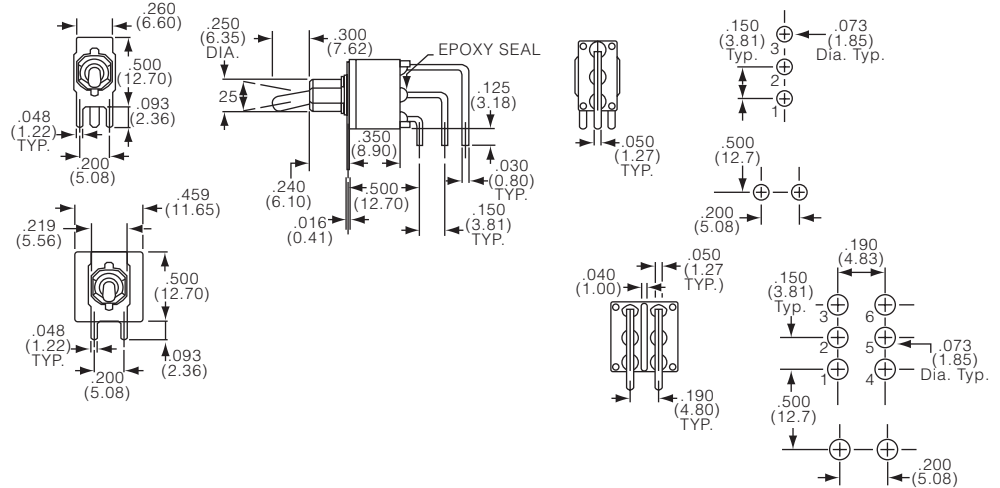
Series AE...MD1AV2 short bat, unthreaded, vertical right angle, 1 & 2 pole



AE101MD1AV2Q



AE201MD1AV2Q



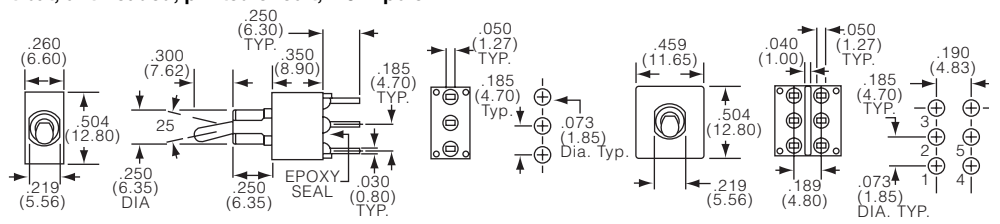
Series AE...MD1C short bat, unthreaded, printed circuit, 1 & 2 pole



AE101MD1CQ

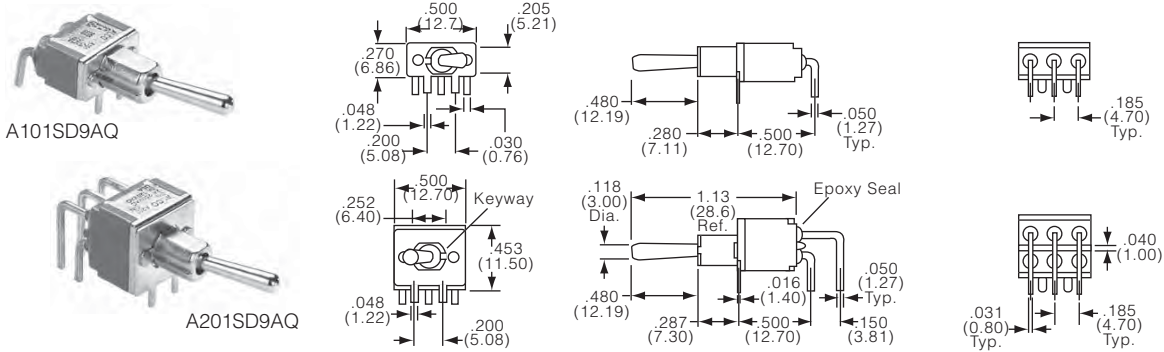


AE201MD1CQ

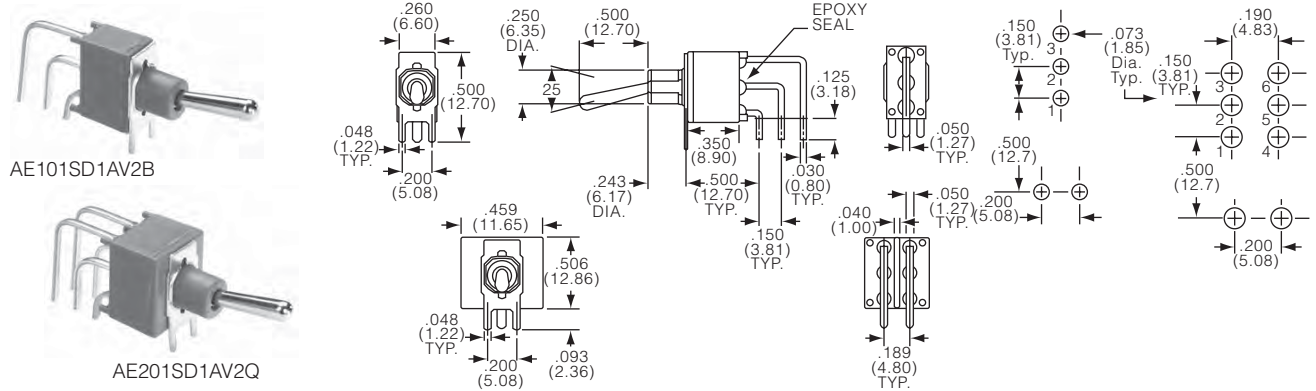


Gemini AE Series, Sealed IP67 (Continued)

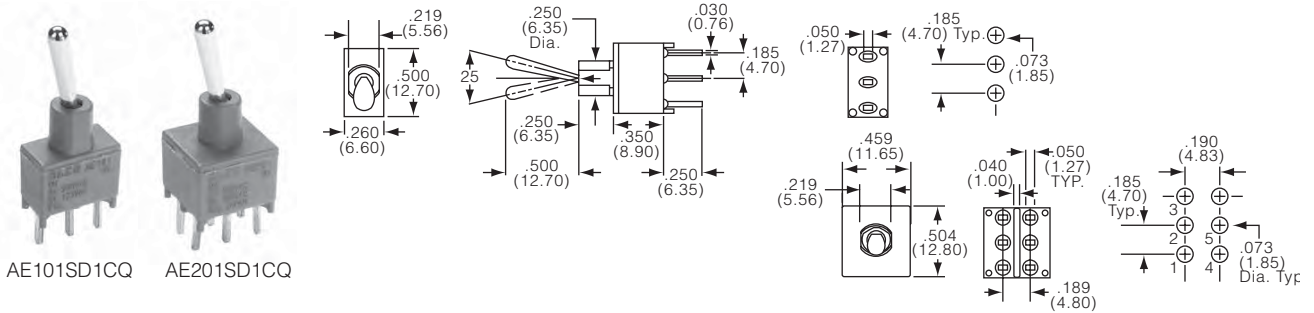
Series AE...SD1A long bat, unthreaded, right angle, 1 & 2 pole



Series AE...SD1AV2 long bat, unthreaded, vertical right angle, 1 & 2 pole



Series AE...SD1C long bat, unthreaded, printed circuit, 1 & 2 pole



Toggle Switches

Gemini AE Series, Sealed IP67 (Continued)

| Product key | Poles | Function | Toggles | Bushing | Terminations | Contacts | Material | Part Number | | | | | |
|-----------------------|----------------------|-------------|----------------------|------------------|----------------------|----------------------|----------------------|----------------------|----------------------|-------------|----------------------|--------------------|--------------------|
| AE101MD1AB04 | 1 | On-On | bat short | unthreaded | right angle | gold | RoHS | 1825142-1 | | | | | |
| AE101MD1AG04 | | | | | | Au over Ag | | 1825142-2 | | | | | |
| AE101MD1AQ04 | | | | | | silver | | 1825142-4 | | | | | |
| AE101MD1AV2B04 | | | | | | vertical right angle | | gold | 1825142-5 | | | | |
| AE101MD1AV2Q04 | | | | | | | | silver | 1825142-6 | | | | |
| AE101MD1CB04 | | | | | | printed circuit | | gold | 1825142-8 | | | | |
| AE101MD1CG04 | | | | | | | | Au over Ag | 1825142-9 | | | | |
| AE101MD1CQ04 | | | | | | silver | | 1-1825142-0 | | | | | |
| AE101MD1V30B04 | | | | | | vertical support | | gold | 1-1825142-1 | | | | |
| AE101MD1V30Q04 | | | | | | | | silver | 1-1825142-2 | | | | |
| AE101MD1W4B04 | | | | | | wire wrap | | gold | 1-1825142-3 | | | | |
| AE101MD1W4Q04 | | | | | | | | silver | 1-1825142-4 | | | | |
| AE101SD1AB04 | | | | | | | | | bat long | | right angle | gold | 1-1825142-5 |
| AE101SD1AQ04 | | | | | | | | | | | | silver | 1-1825142-6 |
| AE101SD1AV2B04 | | | | | | | | | vertical right angle | | gold | 1-1825142-8 | |
| AE101SD1AV2Q04 | | | | | | | | | | | silver | 1-1825142-9 | |
| AE101SD1CB04 | | | | | | | | | printed circuit | | gold | 2-1825142-0 | |
| AE101SD1CQ04 | | | | | | | | | | | silver | 2-1825142-1 | |
| AE101SD1V30B04 | | | | | | | | | vertical support | | gold | 2-1825142-2 | |
| AE101SD1V30Q04 | | | | | | | | | | | silver | 2-1825142-3 | |
| AE103MD1AB04 | On-Off-On | | bat short | | right angle | | gold | | 2-1825142-4 | | | | |
| AE103MD1AV2B04 | | | | | | | vertical right angle | | 2-1825142-5 | | | | |
| AE103MD1CB04 | | | printed circuit | | gold | | 2-1825142-6 | | | | | | |
| AE103MD1W4B04 | | | | | wire wrap | | 2-1825142-8 | | | | | | |
| AE103SD1AV2B04 | | | vertical right angle | | bat long | 2-1825142-9 | | | | | | | |
| AE103SD1CB04 | | | | | | printed circuit | 3-1825142-0 | | | | | | |
| AE103SD1CQ04 | | | silver | | 3-1825142-1 | | | | | | | | |
| AE103SD1V30B04 | | | vertical support | | gold | 3-1825142-3 | | | | | | | |
| AE103SD1W4B04 | | | | | wire wrap | 3-1825142-4 | | | | | | | |
| AE105MD1AB04 | | | (On)-Off-(On) | | bat short | | | right angle | gold | 3-1825142-5 | | | |
| AE105MD1AG04 | | | | | | | | | Au over Ag | 3-1825142-6 | | | |
| AE105MD1AV2B04 | | | | | | | | vertical right angle | gold | 3-1825142-7 | | | |
| AE105MD1W4B04 | wire wrap | 3-1825142-8 | | | | | | | | | | | |
| AE105SD1CB04 | printed circuit | bat long | | 3-1825142-9 | | | | | | | | | |
| AE105SD1V30B04 | | | | vertical support | | | | 4-1825142-0 | | | | | |
| AE105SD1W4B04 | wire wrap | 4-1825142-1 | | | | | | | | | | | |
| AE107MD1AV2B04 | On-Off-(On) | bat short | | | | | | | vertical right angle | gold | 4-1825142-2 | | |
| AE107SD1AB04 | | | | | | | | | | right angle | 4-1825142-3 | | |
| AE107SD1AG04 | printed circuit | bat long | | | | | | | right angle | Au over Ag | 4-1825142-4 | | |
| AE107SD1CB04 | | | | | | | | | | gold | 4-1825142-5 | | |
| AE107SD1V30B04 | vertical support | | | | | | | | vertical support | gold | 4-1825142-6 | | |
| AE108MD1AQ04 | | | right angle | | 4-1825142-7 | | | | | | | | |
| AE108MD1AV2B04 | vertical right angle | | | | vertical right angle | gold | 4-1825142-8 | | | | | | |
| AE108MD1AV2Q04 | | | | | | silver | 4-1825142-9 | | | | | | |
| AE108SD1AB04 | right angle | bat long | | | right angle | gold | 5-1825142-0 | | | | | | |
| AE108SD1AQ04 | | | | | | silver | 5-1825142-1 | | | | | | |
| AE108SD1CQ04 | printed circuit | | | | printed circuit | gold | 5-1825142-2 | | | | | | |
| AE108SD1V30B04 | vertical support | | | | | 5-1825142-4 | | | | | | | |
| AE108SD1W4B04 | wire wrap | 5-1825142-5 | | | | | | | | | | | |
| AE201MD1AB04 | 2 | On-On | bat short | | right angle | gold | | 1825143-1 | | | | | |
| AE201MD1AQ04 | | | | | | silver | | 1825143-2 | | | | | |
| AE201MD1AV2B04 | | | | | | vertical right angle | | gold | 1825143-3 | | | | |
| AE201MD1CB04 | | | | | | | | printed circuit | 1825143-4 | | | | |
| AE201MD1CQ04 | | | | | | silver | | 1825143-5 | | | | | |
| AE201MD1W4B04 | | | | | | wire wrap | | 1825143-6 | | | | | |
| AE201SD1AB04 | | | | | | right angle | | bat long | | | right angle | gold | 1825143-7 |
| AE201SD1AG04 | | | | | | | | | | | | Au over Ag | 1825143-8 |
| AE201SD1AV2B04 | | | | | | vertical right angle | | gold | 1825143-9 | | | | |
| AE201SD1CB04 | | | | | | | | printed circuit | 1-1825143-0 | | | | |
| AE201SD1CQ04 | | | | | | silver | | 1-1825143-1 | | | | | |
| AE201SD1W4B04 | | | | | | wire wrap | | 1-1825143-2 | | | | | |
| AE203MD1AB04 | | | | | | On-Off-On | | bat short | | | right angle | gold | 1-1825143-3 |
| AE203MD1AQ04 | | | | | | | | | | | | silver | 1-1825143-4 |
| AE203MD1AV2B04 | | | | | | vertical right angle | | | | | vertical right angle | gold | 1-1825143-5 |
| AE203SD1AB04 | | | | | | | | | | | | right angle | 1-1825143-6 |
| AE203SD1AV2B04 | | | | | | vertical right angle | | bat long | | | vertical right angle | gold | 1-1825143-7 |
| AE203SD1AV2Q04 | | | | | | | | | | | | silver | 1-1825143-8 |
| AE203SD1CB04 | | | | | | printed circuit | | 1-1825143-9 | | | | | |
| AE203SD1W4B04 | | | | | | wire wrap | | 2-1825143-0 | | | | | |
| AE205MD1AV2B04 | (On)-Off-(On) | bat short | | | vertical right angle | gold | 2-1825143-1 | | | | | | |
| AE205SD1CQ04 | | | | | | printed circuit | 2-1825143-2 | | | | | | |
| AE207MD1AB04 | On-Off-(On) | bat short | | | right angle | gold | 2-1825143-4 | | | | | | |
| AE208SD1W4B04 | | | | | | On-(On) | 2-1825143-5 | | | | | | |
| AE211MD1CB04 | On-On-On | bat short | | | printed circuit | gold | 2-1825143-6 | | | | | | |
| AE211MD1V30B04 | | | | | | vertical support | 2-1825143-7 | | | | | | |

Preferred parts in bold print

MT Green Series

Features

- Wire lug, PC terminals, both right angle and vertical right angle
- MTE series splashproof toggle actuator
- Entire series epoxy sealed terminals
- Actuator guards, decorative hardware, and silicone boot seals available



Typical performance characteristics

| | |
|-----------------------------|--------------------------|
| Contact configuration | SPDT, DPDT, 3PDT, 4PDT |
| Contact timing | Break-before-make |
| Contact rating max. | 6A @ 125VAC, 3A @ 250VAC |
| Contact resistance, initial | max. 10 mOhms |
| Insulation resistance | min. 1,000 MOhms |
| Dielectric strength | 1,500 Vrms @ sea level |
| Actuation force | 4 to 20 N (0.4 to 2 kgf) |
| Actuator travel | 24°~26° |

Material specifications

| | |
|---------------------------|---------------------------------|
| Contacts | copper alloy silver clad |
| Toggle | brass nickel plated |
| Terminals | copper alloy gold flash |
| Terminal seal | epoxy |
| Housing | alkyd polyester (green)UL94 V-O |
| Frame | stainless steel |
| Support Bracket | steel nickel plated |
| Spring | music wire |
| RoHS Directive 2002/95/EC | compliant |

Environmental specification

| | |
|------------------------|---|
| Operating temperature | -20°C to +80°C |
| Storage temperature | -40°C to +80°C |
| Solder heat resistance | wave solder capable to 265° C |
| Seal | epoxy sealed terminals |
| | MTE series splashproof toggle actuator O-ring |

Toggle Switches

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------------------------|---|------------|-----------------------------|---|------------------------|--------------------------------------|-----------|----------|----------|-----------|----------|-----------|---------------------|--|-----------|--|-----------|---|--------------------------------------|---|----------|---------------------------------------|----------|--|-----------|--|----------|--------------------------------|-----------|--|-----------|--|--------------|----------|---------|----------|---------|-----------|------------|----------|---------------|----------|---------------|---|--|----------|-------------|----------|-------------|--|--|
| Product key | Typical product key | | | | | | MT | A | 1 | 06 | E | PC | 04 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type | Green series toggle switches, panel mount | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Toggle & bushing | <table border="0"> <tr> <td>A</td> <td>.410 long round toggle, 1/4-40 bushing</td> </tr> <tr> <td>A8</td> <td>.410 long round toggle, 1/4-40 bushing, right angle & vertical right angle</td> </tr> <tr> <td>B</td> <td>.600 long round toggle with plastic tip, 1/4-40 bushing</td> </tr> <tr> <td>E</td> <td>.410 long round toggle, 1/4-40 bushing with O ring seal</td> </tr> <tr> <td>F</td> <td>.485 long flat toggle, 1/4-40 bushing</td> </tr> <tr> <td>G</td> <td>.452 long large diameter round toggle, 15/32 bushing</td> </tr> <tr> <td>G2</td> <td>.685 long large diameter round toggle, 15/32 bushing</td> </tr> <tr> <td>L</td> <td>locking toggle, 1/4-40 bushing</td> </tr> <tr> <td>M</td> <td>.270 long round toggle, 1/4-40 bushing</td> </tr> <tr> <td>M8</td> <td>.270 long round toggle, 1/4-40 bushing, right angle & vertical right angle</td> </tr> </table> | | | | | | | | | | | | A | .410 long round toggle, 1/4-40 bushing | A8 | .410 long round toggle, 1/4-40 bushing, right angle & vertical right angle | B | .600 long round toggle with plastic tip, 1/4-40 bushing | E | .410 long round toggle, 1/4-40 bushing with O ring seal | F | .485 long flat toggle, 1/4-40 bushing | G | .452 long large diameter round toggle, 15/32 bushing | G2 | .685 long large diameter round toggle, 15/32 bushing | L | locking toggle, 1/4-40 bushing | M | .270 long round toggle, 1/4-40 bushing | M8 | .270 long round toggle, 1/4-40 bushing, right angle & vertical right angle | | | | | | | | | | | | | | | | | | | |
| A | .410 long round toggle, 1/4-40 bushing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A8 | .410 long round toggle, 1/4-40 bushing, right angle & vertical right angle | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| B | .600 long round toggle with plastic tip, 1/4-40 bushing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E | .410 long round toggle, 1/4-40 bushing with O ring seal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F | .485 long flat toggle, 1/4-40 bushing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G | .452 long large diameter round toggle, 15/32 bushing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G2 | .685 long large diameter round toggle, 15/32 bushing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| L | locking toggle, 1/4-40 bushing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M | .270 long round toggle, 1/4-40 bushing | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| M8 | .270 long round toggle, 1/4-40 bushing, right angle & vertical right angle | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Number of Poles | <table border="0"> <tr> <td>1</td> <td>single pole</td> <td>3</td> <td>3 pole</td> </tr> <tr> <td>2</td> <td>double pole</td> <td>4</td> <td>4 pole</td> </tr> </table> | | | | | | | | | | | | 1 | single pole | 3 | 3 pole | 2 | double pole | 4 | 4 pole | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1 | single pole | 3 | 3 pole | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | double pole | 4 | 4 pole | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Toggle style | <table border="0"> <tr> <td>06</td> <td>standard</td> <td>26</td> <td>bright nickel, for toggle F</td> <td>6</td> <td>standard for toggle G2</td> </tr> </table> | | | | | | | | | | | | 06 | standard | 26 | bright nickel, for toggle F | 6 | standard for toggle G2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 06 | standard | 26 | bright nickel, for toggle F | 6 | standard for toggle G2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Function | <table border="0"> <tr> <td colspan="3">1 and 3 pole</td> <td colspan="3">2 and 4 pole</td> <td colspan="3">1 and 2 pole functionality *)</td> </tr> <tr> <td>D</td> <td>ON-ON</td> <td>N</td> <td>ON-ON</td> <td>PA</td> <td>ON-ON-ON</td> </tr> <tr> <td>E</td> <td>ON-OFF-ON</td> <td>P</td> <td>ON-OFF-ON</td> <td>SA</td> <td>(ON)-ON-(ON)</td> </tr> <tr> <td>F</td> <td>ON-(ON)</td> <td>R</td> <td>ON-(ON)</td> <td>TA</td> <td>ON-ON-(ON)</td> </tr> <tr> <td>G</td> <td>(ON)-OFF-(ON)</td> <td>S</td> <td>(ON)-OFF-(ON)</td> <td colspan="2">*) 2 and 4 pole design, internally connected for 1 and 2 pole functionality</td> </tr> <tr> <td>H</td> <td>ON-OFF-(ON)</td> <td>T</td> <td>ON-OFF-(ON)</td> <td colspan="2"></td> </tr> </table> | | | | | | | | | | | | 1 and 3 pole | | | 2 and 4 pole | | | 1 and 2 pole functionality *) | | | D | ON-ON | N | ON-ON | PA | ON-ON-ON | E | ON-OFF-ON | P | ON-OFF-ON | SA | (ON)-ON-(ON) | F | ON-(ON) | R | ON-(ON) | TA | ON-ON-(ON) | G | (ON)-OFF-(ON) | S | (ON)-OFF-(ON) | *) 2 and 4 pole design, internally connected for 1 and 2 pole functionality | | H | ON-OFF-(ON) | T | ON-OFF-(ON) | | |
| 1 and 3 pole | | | 2 and 4 pole | | | 1 and 2 pole functionality *) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | ON-ON | N | ON-ON | PA | ON-ON-ON | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E | ON-OFF-ON | P | ON-OFF-ON | SA | (ON)-ON-(ON) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F | ON-(ON) | R | ON-(ON) | TA | ON-ON-(ON) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G | (ON)-OFF-(ON) | S | (ON)-OFF-(ON) | *) 2 and 4 pole design, internally connected for 1 and 2 pole functionality | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H | ON-OFF-(ON) | T | ON-OFF-(ON) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Terminations | <table border="0"> <tr> <td>blank</td> <td>wire lug</td> <td>RA</td> <td>right angle</td> </tr> <tr> <td>PC</td> <td>printed circuit board</td> <td>VRA</td> <td>vertical right angle</td> </tr> </table> | | | | | | | | | | | | blank | wire lug | RA | right angle | PC | printed circuit board | VRA | vertical right angle | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| blank | wire lug | RA | right angle | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PC | printed circuit board | VRA | vertical right angle | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Material | 04 RoHS compliant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

MT Green Series (Continued)

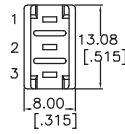
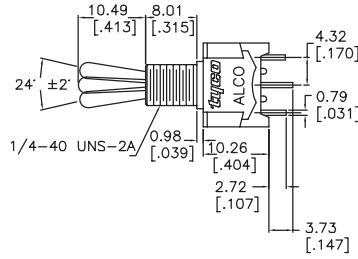
MTA



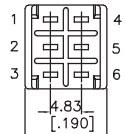
MTA1, MTA2 1 & 2 pole



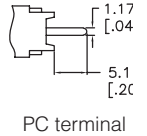
MTA106D04 MTA206NPC04



MTA106



MTA206

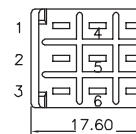
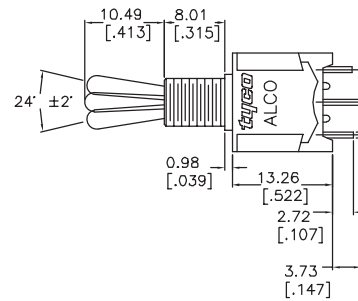


PC terminal

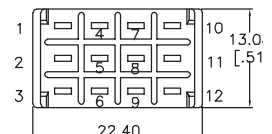
MTA3, MTA4 3 & 4 pole



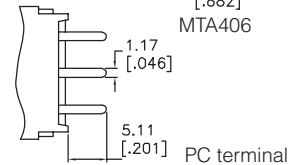
MTA306D04 MTA406NPC04



MTA306



MTA406

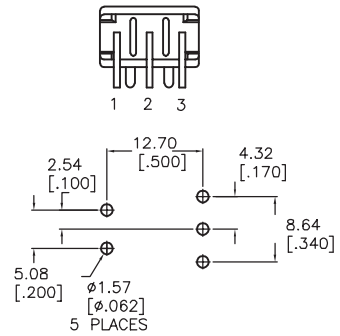
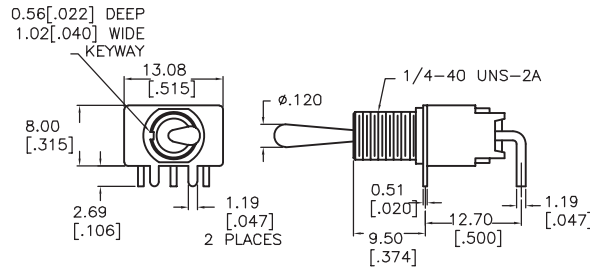


PC terminal

MTA81 RA 1pole, right angle



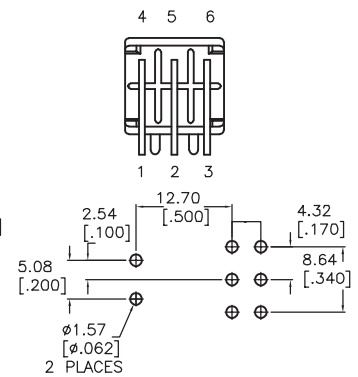
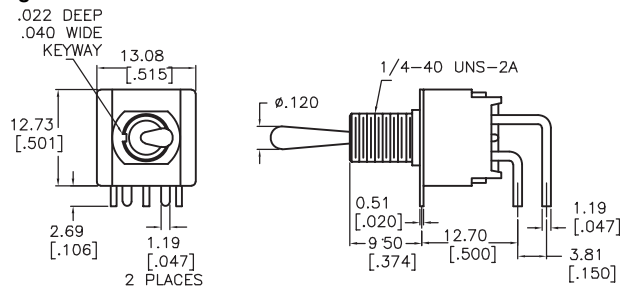
MTA8106DRA04



MTA82 RA 2pole, right angle

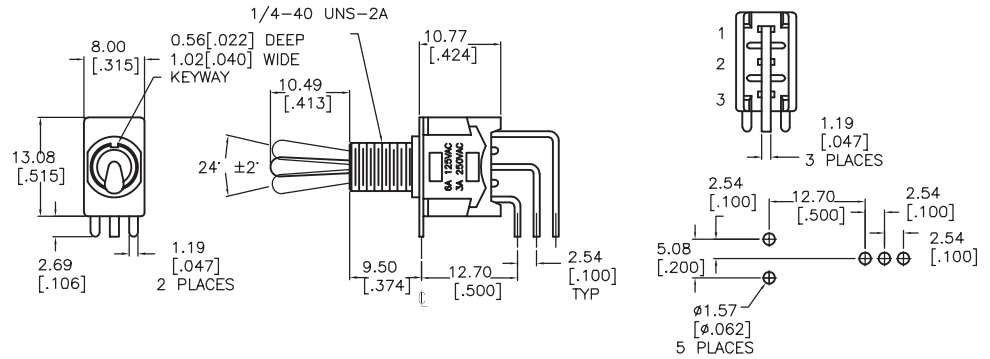


MTA8206NRA04

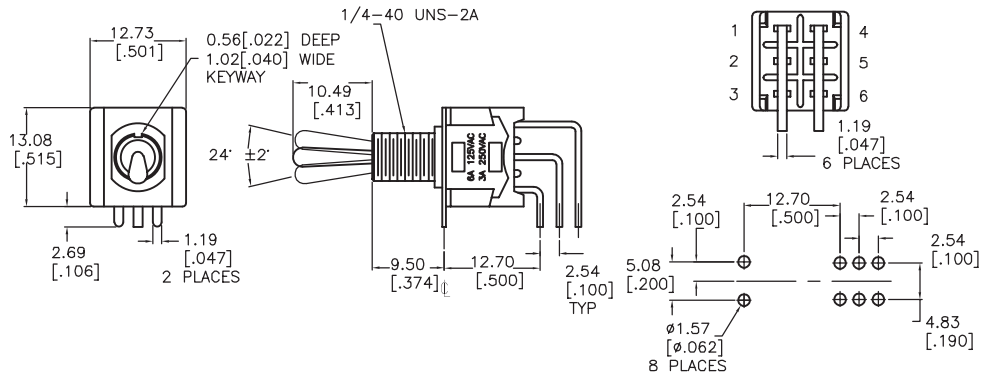


MT Green Series (Continued)

MTA81 VRA 1pole, vertical right angle



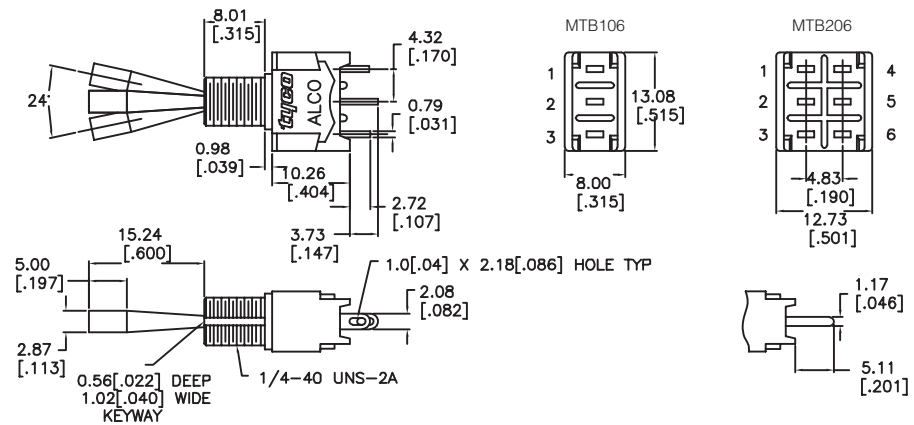
MTA82 VRA 2pole, vertical right angle



MTB

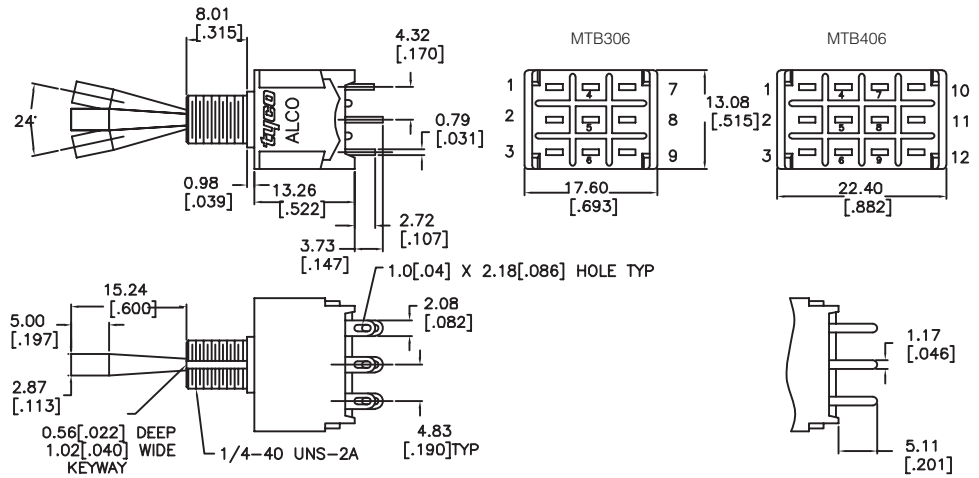


MTB1, MTB2 1 & 2 pole



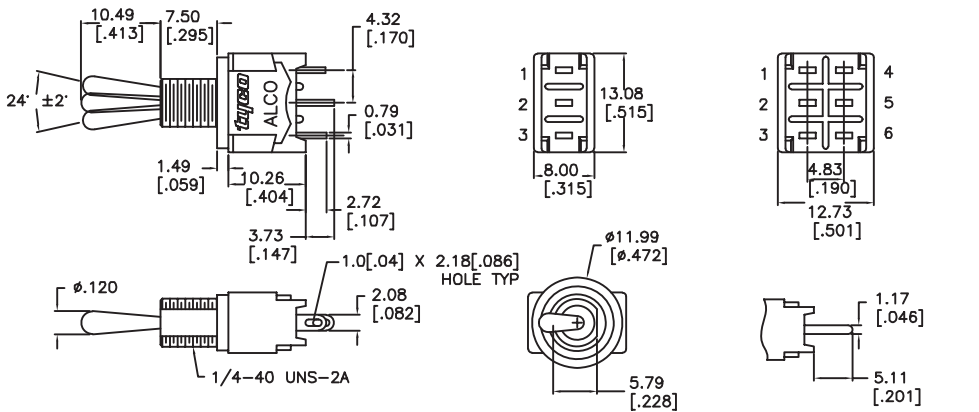
MT Green Series (Continued)

MTB3, MTB4 3 & 4 pole

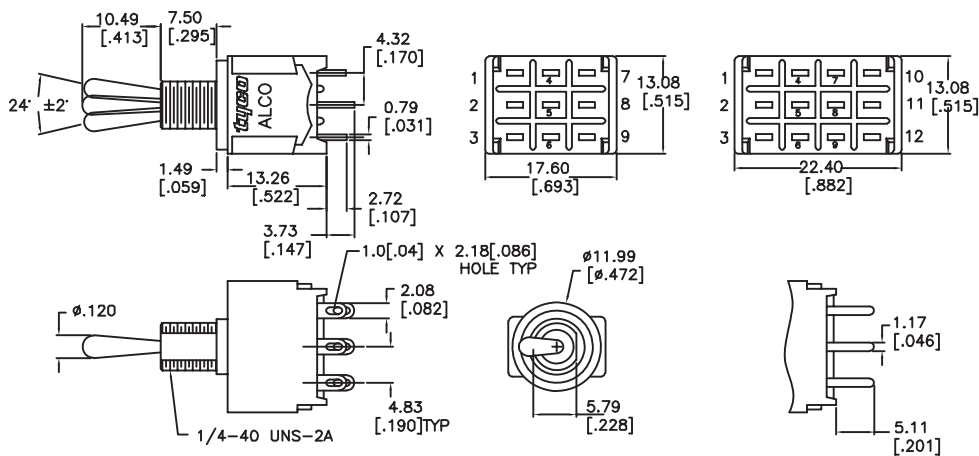


MTE

MTE1, MTE2 1 & 2 pole



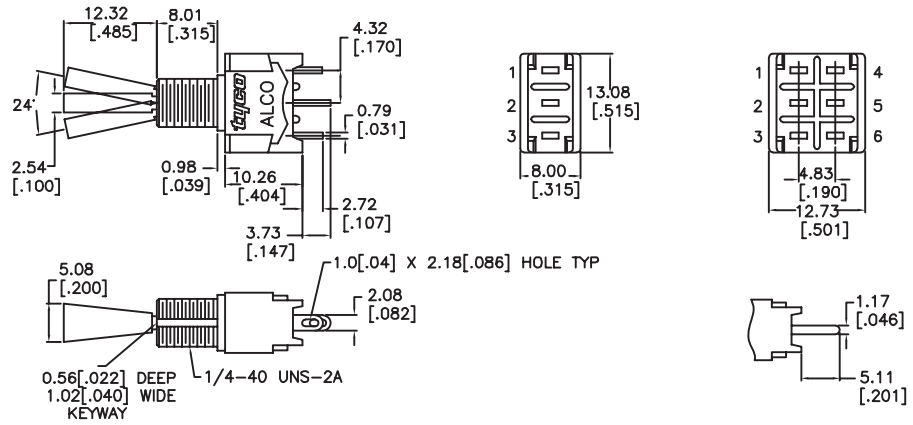
MTE3, MTE4 3 & 4 pole



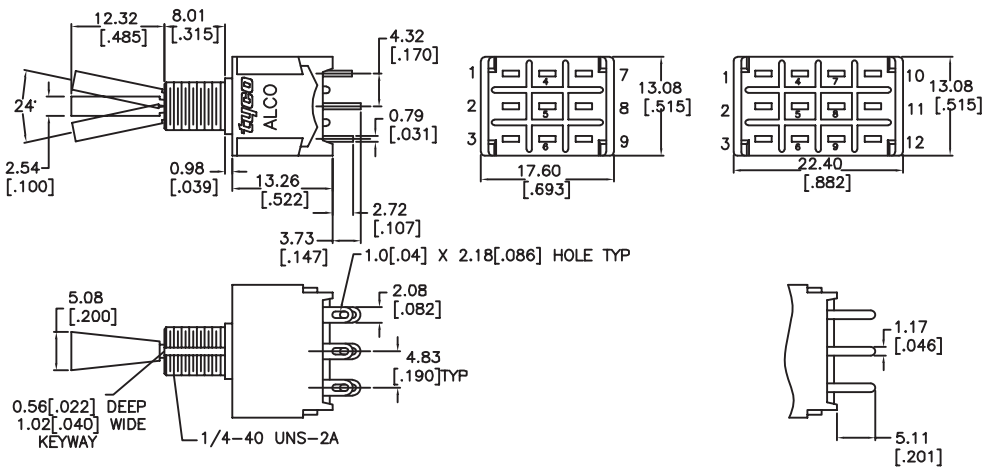
MT Green Series (Continued)

MTF

MTF1, MTF2 1 & 2 pole

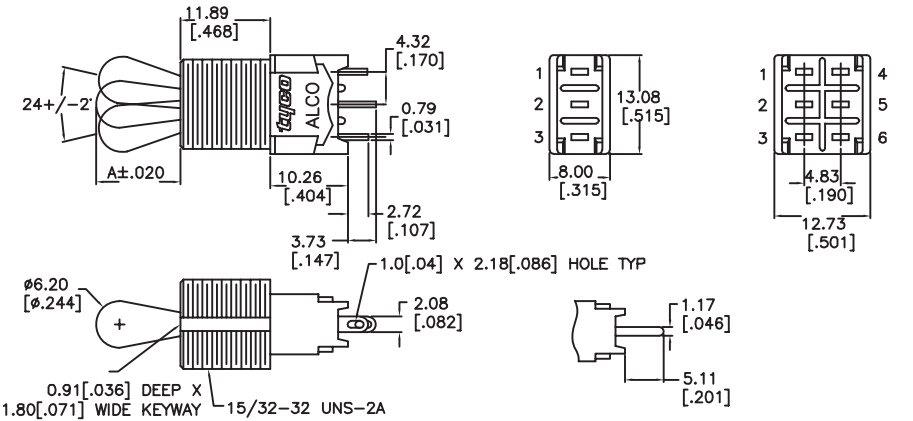


MTF3, MTF4 3 & 4 pole



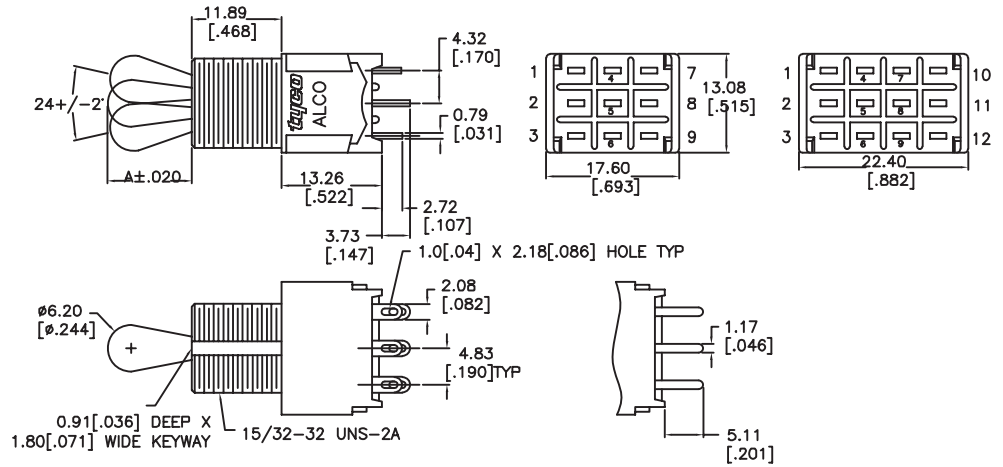
MTG

MTG1, MTG2 1 & 2 pole



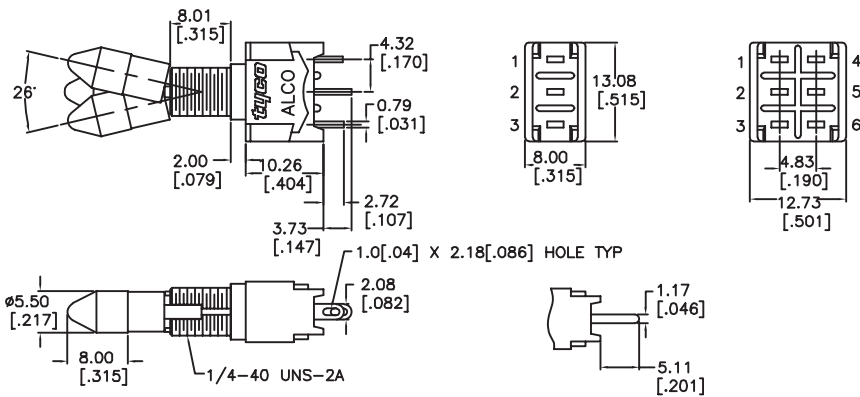
MT Green Series (Continued)

MTG3, MTG4 3 & 4 pole

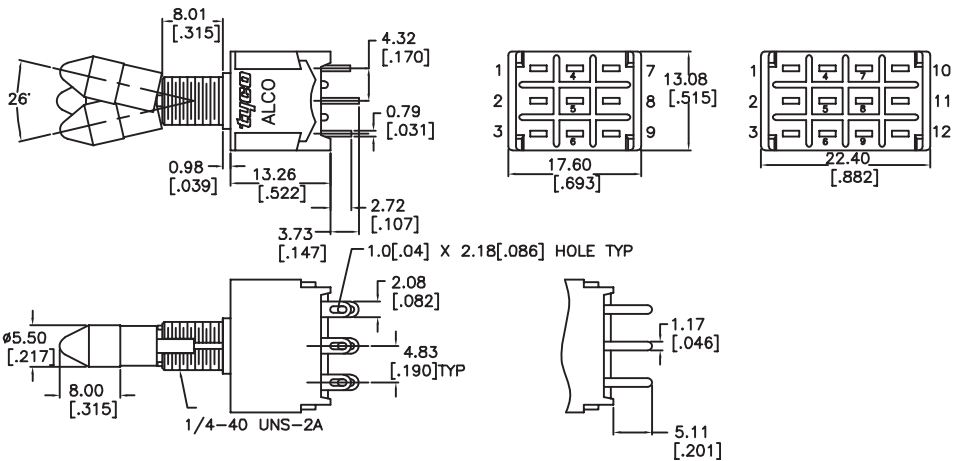


MTL

MTL1, MTL2 1 & 2 pole



MTL3, MTL4 3 & 4 pole

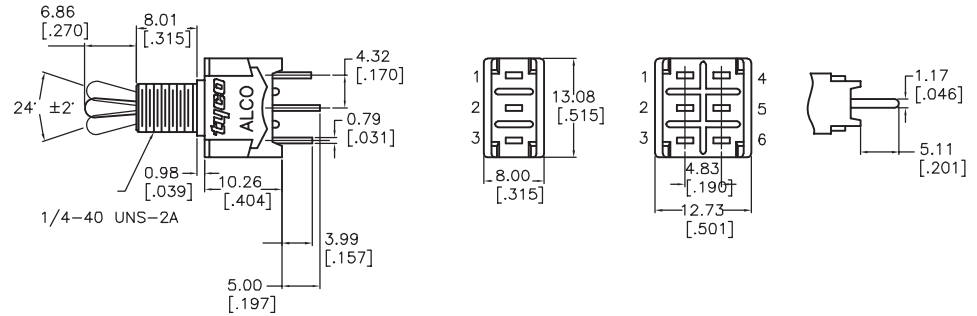


MT Green Series (Continued)

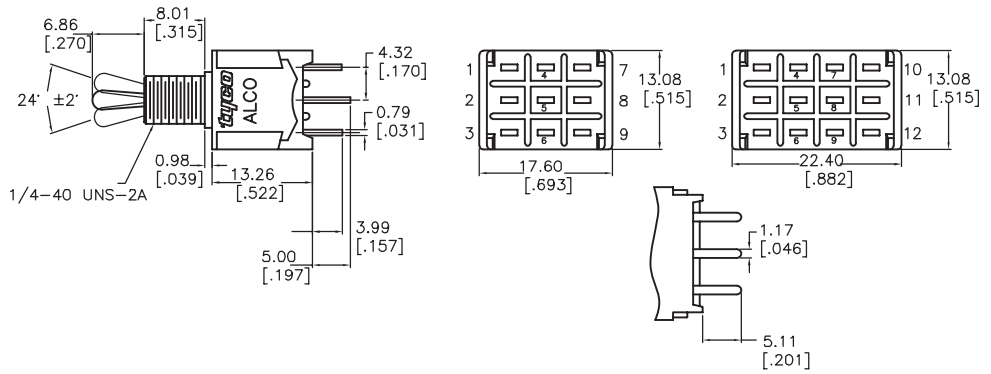
MTM



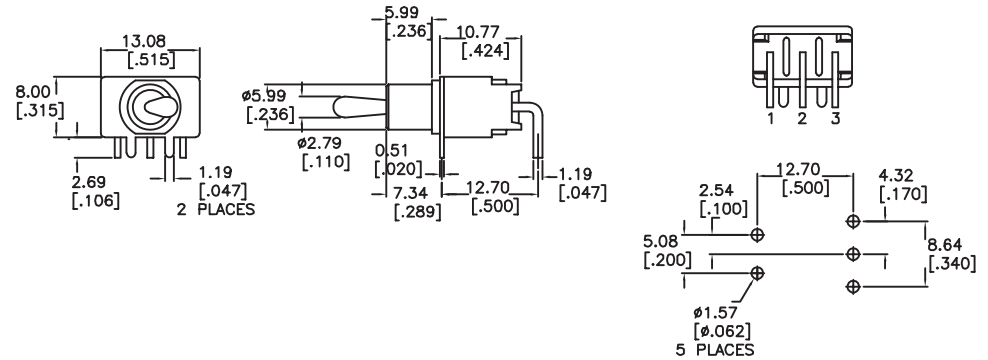
MTM1, MTM2 1 & 2 pole



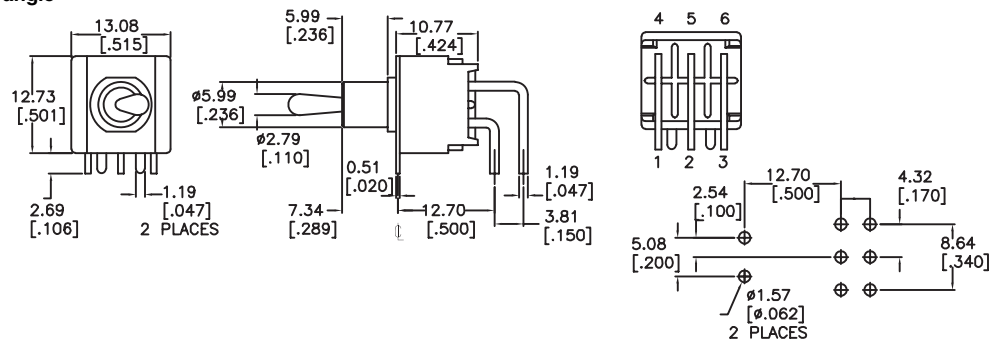
MTM3, MTM4 3 & 4 pole



MTM81 RA 1pole, right angle



MTM82 RA 2pole, right angle



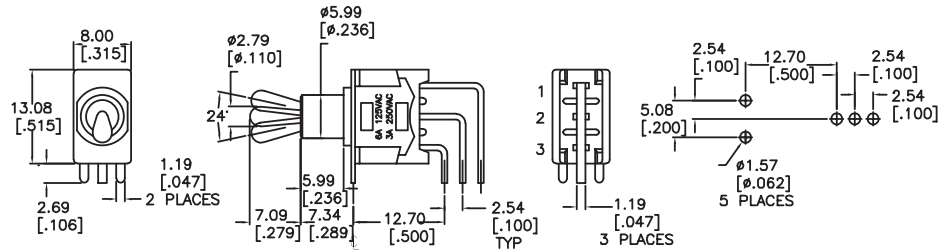
Toggle Switches

MT Green Series (Continued)

MTM81 VRA 1pole, vertical right angle



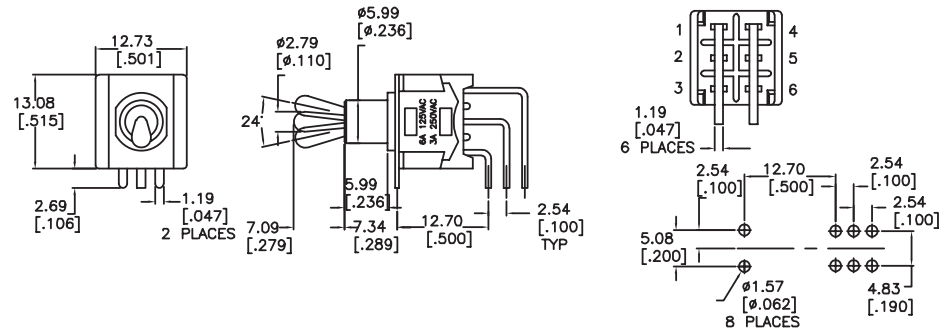
MTM8106DVRA04



MTM82 VRA 2pole, vertical right angle



MTM8206NVRA04



Function

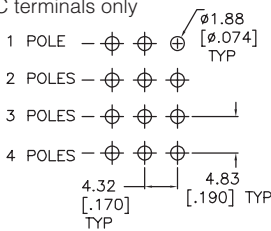


| Function | Poles | Throws | ↙ | ↓ | ↘ | ↙ | ↓ | ↘ |
|----------|-----------------|--------|------|------|------|----------------------|-----------|----------------------|
| A | 1 | 1 | On | None | Off | 2-3 | - | Off |
| D | 1 | 2 | On | None | On | 2-3 | - | 2-1 |
| D | 3 | 2 | On | None | On | 2-3, 5-6, 8-9 | - | 2-1, 5-4, 8-7 |
| E | 1 | 2 | On | Off | On | 2-3 | Off | 2-1 |
| E | 3 | 2 | On | Off | On | 2-3, 5-6, 8-9 | Off | 2-1, 5-4, 8-7 |
| F | 1 | 2 | On | None | (On) | 2-3 | - | 2-1 |
| F | 3 | 2 | On | None | (On) | 2-3, 5-6, 8-9 | - | 2-1, 5-4, 8-7 |
| G | 1 | 2 | (On) | Off | (On) | 2-3 | Off | 2-1 |
| H | 1 | 2 | On | Off | (On) | 2-3 | Off | 2-1 |
| H | 3 | 2 | On | Off | (On) | 2-3, 5-6, 8-9 | Off | 2-1, 5-4, 8-7 |
| N | 2 | 2 | On | None | On | 2-3, 5-6 | - | 2-1, 5-4 |
| N | 4 | 2 | On | None | On | 2-3, 5-6, 8-9, 11-12 | - | 2-1, 5-4, 8-7, 11-10 |
| P | 2 | 2 | On | Off | On | 2-3, 5-6 | Off | 2-1, 5-4 |
| P | 4 | 2 | On | Off | On | 2-3, 5-6, 8-9, 11-12 | Off | 2-1, 5-4, 8-7, 11-10 |
| PA | 1 ¹⁾ | 3 | On | On | On | 5-6 | 5-3 | 5-1 |
| PA | 2 ²⁾ | 3 | On | On | On | 5-6, 11-12 | 5-3, 11-9 | 5-1, 11-7 |
| R | 2 | 2 | On | None | (On) | 2-3, 5-6 | - | 2-1, 5-4 |
| S | 2 | 2 | (On) | Off | (On) | 2-3, 5-6 | Off | 2-1, 5-4 |
| SA | 1 ¹⁾ | 3 | (On) | On | (On) | 5-6 | 5-3 | 5-1 |
| T | 2 | 2 | On | Off | (On) | 2-3, 5-6 | Off | 2-1, 5-4 |
| TA | 1 ¹⁾ | 3 | On | On | (On) | 5-6 | 5-3 | 5-1 |

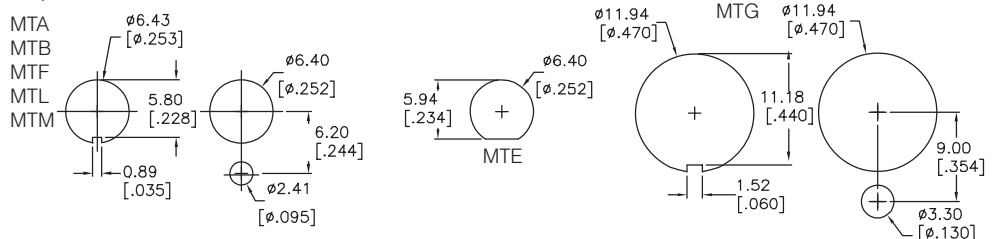
¹⁾ customer installed external jumper between terminals 1 and 4 required for 1 pole 3 throw function
²⁾ customer installed external jumpers between terminals 2 and 4 as well as between 8 and 10 required for 2 pole 3 throw function
 Off indicates a mechanical position with no electrical connection
 (On) indicates momentary connection
 None indicates no mechanical position

Mounting

PC board layout
 PC terminals only



Recommended hole layout
 to prevent rotation



MT Green Series (Continued)

Toggle Switches

| Product key | Toggle | Bushing | Poles | Terminations | Material | Part Number |
|---------------------|---------------------------|----------------|-------|---------------|----------------|--------------------|
| MTA106D04 | .410 round | 1/4-40 bushing | 1 | wire lug | RoHS compliant | 1571920-3 |
| MTA106DPC04 | | | | pc board | | 1571920-4 |
| MTA106E04 | | | | wire lug | | 1571920-5 |
| MTA106EPC04 | | | | pc board | | 1571920-6 |
| MTA106F04 | | | | wire lug | | 1571920-7 |
| MTA106FPC04 | | | | pc board | | 1571920-8 |
| MTA106G04 | | | | wire lug | | 1571920-9 |
| MTA106GPC04 | | | | pc board | | 1-1571920-0 |
| MTA106H04 | | | | wire lug | | 1-1571920-1 |
| MTA106HPC04 | | | | pc board | | 1-1571920-2 |
| MTA206N04 | | | 2 | wire lug | | 1-1571920-5 |
| MTA206NPC04 | | | | pc board | | 1-1571920-6 |
| MTA206P04 | | | | wire lug | | 1-1571920-7 |
| MTA206PA04 | | | 1 | | | 1-1571920-8 |
| MTA206PAPC04 | | | | pc board | | 1-1571920-9 |
| MTA206PPC04 | | | 2 | pc board | | 2-1571920-0 |
| MTA206R04 | | | | wire lug | | 2-1571920-1 |
| MTA206RPC04 | | | | pc board | | 2-1571920-2 |
| MTA206S04 | | | | wire lug | | 2-1571920-3 |
| MTA206SA04 | | | 1 | | | 2-1571920-4 |
| MTA206SAPC04 | | | | pc board | | 2-1571920-5 |
| MTA206SPC04 | | | 2 | | | 2-1571920-6 |
| MTA206T04 | | | | wire lug | | 2-1571920-7 |
| MTA206TA04 | | | 1 | | | 2-1571920-8 |
| MTA206TPC04 | | | 2 | pc board | | 2-1571920-9 |
| MTA306D04 | | | 3 | wire lug | | 3-1571920-0 |
| MTA306DPC04 | | | | pc board | | 3-1571920-1 |
| MTA306E04 | | | | wire lug | | 3-1571920-2 |
| MTA306EPC04 | | | | pc board | | 3-1571920-3 |
| MTA306F04 | | | | wire lug | | 3-1571920-4 |
| MTA306FFPC04 | | | | pc board | | 3-1571920-5 |
| MTA306H04 | | | | wire lug | | 3-1571920-6 |
| MTA306HPC04 | | | | pc board | | 3-1571920-7 |
| MTA406N04 | | | 4 | wire lug | | 3-1571920-8 |
| MTA406NPC04 | | | | pc board | | 3-1571920-9 |
| MTA406P04 | | | | wire lug | | 4-1571920-0 |
| MTA406PA04 | | | 2 | | | 4-1571920-1 |
| MTA406PAPC04 | | | | pc board | | 4-1571920-2 |
| MTA406PPC04 | | | 4 | | | 4-1571920-3 |
| MTA8106DGVRA04 | | | 1 | vertical r.a. | | 1571922-3 |
| MTA8106DRA04 | | | | right angle | | 1571922-4 |
| MTA8106DVRA04 | | | | vertical r.a. | | 1571922-5 |
| MTA8106EGRA04 | | | | right angle | | 1571922-6 |
| MTA8106EGVRA04 | | | | vertical r.a. | | 1571922-7 |
| MTA8106ERA04 | | | | right angle | | 1571922-8 |
| MTA8106EVRA04 | | | | vertical r.a. | | 1571922-9 |
| MTA8106FRA04 | | | | right angle | | 1-1571922-0 |
| MTA8106FVRA04 | | | | vertical r.a. | | 1-1571922-1 |
| MTA8206NRA04 | | | 2 | right angle | | 1-1571922-4 |
| MTA8206NVRA04 | | | | vertical r.a. | | 1-1571922-5 |
| MTA8206PGVRA04 | | | | | | 1-1571922-6 |
| MTA8206PRA04 | | | | right angle | | 1-1571922-7 |
| MTA8206PVRA04 | | | | vertical r.a. | | 1-1571922-8 |
| MTA8206RRA04 | | | | right angle | | 1-1571922-9 |
| MTB106D04 | .600 round, w plastic tip | 1/4-40 bushing | 1 | wire lug | | 1571923-3 |
| MTB106E04 | | | | | | 1571923-4 |
| MTB106F04 | | | | | | 1571923-5 |
| MTB106G04 | | | | | | 1571923-6 |
| MTB206N04 | | | 2 | | | 1571923-9 |
| MTB206P04 | | | | | | 1-1571923-0 |
| MTB206T04 | | | | | | 1-1571923-1 |
| MTB306D04 | | | 3 | | | 1-1571923-2 |
| MTB406N04 | | | 4 | | | 1-1571923-3 |

Preferred parts in bold print

MT Green Series (Continued)

| Product key | Toggle | Bushing | Poles | Terminations | Material | Part Number |
|------------------|------------------------|---------------------|-------|--------------|----------|--------------------|
| MTE106D04 | .410 round | 1/4-40, O-ring seal | 1 | wire lug | | 1571924-3 |
| MTE106E04 | | | | | | 1571924-4 |
| MTE106F04 | | | | | | 1571924-5 |
| MTE106G04 | | | | | | 1571924-6 |
| MTE106H04 | | | | | | 1571924-7 |
| MTE206N04 | | | 2 | | | 1-1571924-0 |
| MTE206P04 | | | | | | 1-1571924-1 |
| MTE206PA04 | | | 1 | | | 1-1571924-2 |
| MTE206R04 | | | 2 | | | 1-1571924-3 |
| MTE206S04 | | | | | | 1-1571924-4 |
| MTE206T04 | | | | | | 1-1571924-5 |
| MTE306D04 | | | 3 | | | 1-1571924-6 |
| MTE306E04 | | | | | | 1-1571924-7 |
| MTE406N04 | | | 4 | | | 1-1571924-8 |
| MTE406P04 | | | | | | 1-1571924-9 |
| MTF106D04 | .485 flat | 1/4-40 bushing | 1 | | | 1571925-3 |
| MTF106E04 | | | | | | 1571925-4 |
| MTF106F04 | | | | | | 1571925-5 |
| MTF106G04 | | | | | | 1571925-6 |
| MTF106H04 | | | | | | 1571925-7 |
| MTF126D04 | | | | | | 1-1571925-0 |
| MTF126E04 | | | | | | 1-1571925-1 |
| MTF126F04 | | | | | | 1-1571925-2 |
| MTF126G04 | | | | | | 1-1571925-3 |
| MTF206N04 | | | 2 | | | 1-1571925-6 |
| MTF206P04 | | | | | | 1-1571925-7 |
| MTF206PA04 | | | 1 | | | 1-1571925-8 |
| MTF206R04 | | | 2 | | | 1-1571925-9 |
| MTF206S04 | | | | | | 2-1571925-0 |
| MTF206SA04 | | | 1 | | | 2-1571925-1 |
| MTF206T04 | | | 2 | | | 2-1571925-2 |
| MTF226N04 | | | | | | 2-1571925-5 |
| MTF226P04 | | | | | | 2-1571925-6 |
| MTF226PA04 | | | 1 | | | 2-1571925-7 |
| MTF226R04 | | | 2 | | | 2-1571925-8 |
| MTF226S04 | | | | | | 2-1571925-9 |
| MTF226SA04 | | | 1 | | | 3-1571925-0 |
| MTF306D04 | | | 3 | | | 3-1571925-1 |
| MTF326D04 | | | | | | 3-1571925-2 |
| MTF406N04 | | | 4 | | | 3-1571925-3 |
| MTF426N04 | | | | | | 3-1571925-4 |
| MTG106D04 | .452 large diam. round | 15/32 bushing | 1 | | | 1571926-3 |
| MTG106E04 | | | | | | 1571926-4 |
| MTG106F04 | | | | | | 1571926-5 |
| MTG106G04 | | | | | | 1571926-6 |
| MTG106H04 | | | | | | 1571926-7 |
| MTG126D04 | .685 large diam. round | 15/32 bushing | | | | 1-1571926-0 |
| MTG126E04 | | | | | | 1-1571926-1 |
| MTG126G04 | | | | | | 1-1571926-2 |
| MTG206N04 | .452 large diam. round | 15/32 bushing | 2 | | | 1-1571926-5 |
| MTG206NPC04 | | | | pc board | | 1-1571926-6 |
| MTG206P04 | | | | wire lug | | 1-1571926-7 |
| MTG206PA04 | | | 1 | | | 1-1571926-8 |
| MTG206R04 | | | 2 | | | 1-1571926-9 |
| MTG206S04 | | | | | | 2-1571926-0 |
| MTG206T04 | | | | | | 2-1571926-1 |
| MTG226N04 | .685 large diam. round | 15/32 bushing | | | | 2-1571926-4 |
| MTG226P04 | | | | | | 2-1571926-5 |
| MTG226PA04 | | | 1 | | | 2-1571926-6 |
| MTG306D04 | .452 large diam. round | 15/32 bushing | 3 | | | 2-1571926-7 |
| MTG306E04 | | | | | | 2-1571926-8 |
| MTG326D04 | .685 large diam. round | 15/32 bushing | | | | 2-1571926-9 |
| MTG406N04 | .452 large diam. round | 15/32 bushing | 4 | | | 3-1571926-0 |
| MTG406P04 | | | | | | 3-1571926-1 |
| MTG426N04 | .685 large diam. round | 15/32 bushing | | | | 3-1571926-2 |

Preferred parts in bold print

MT Green Series (Continued)

| Product key | Toggle | Bushing | Poles | Terminations | Material | Part Number |
|---------------|------------|----------------|-------|---------------|----------|-------------|
| MTL106D04 | locking | 1/4-40 bushing | 1 | wire lug | | 1571927-2 |
| MTL106E04 | | | | | | 1571927-3 |
| MTL206N04 | | | 2 | | | 1571927-5 |
| MTL206NPC04 | | | | pc board | | 1571927-6 |
| MTL206P04 | | | | wire lug | | 1571927-7 |
| MTL206PA04 | | | 1 | | | 1571927-8 |
| MTL206S04 | | | 2 | | | 1571927-9 |
| MTL306D04 | | | 3 | | | 1-1571927-0 |
| MTL306E04 | | | | | | 1-1571927-1 |
| MTL406N04 | | | 4 | | | 1-1571927-2 |
| MTL406PA04 | | | 2 | | | 1-1571927-3 |
| MTM106DPC04 | .270 round | 1/4-40 bushing | 1 | pc board | | 1571921-2 |
| MTM106EPC04 | | | | | | 1571921-3 |
| MTM106FPC04 | | | | | | 1571921-4 |
| MTM206NPC04 | | | 2 | | | 1571921-6 |
| MTM206PAPC04 | | | 1 | | | 1571921-7 |
| MTM206PPC04 | | | 2 | | | 1571921-8 |
| MTM206SPC04 | | | | | | 1571921-9 |
| MTM306DPC04 | | | 3 | | | 1-1571921-0 |
| MTM406NPC04 | | | 4 | | | 1-1571921-1 |
| MTM8106DGRA04 | | | 1 | right angle | | 2-1571922-2 |
| MTM8106DRA04 | | | | | | 2-1571922-3 |
| MTM8106DVRA04 | | | | vertical r.a. | | 2-1571922-4 |
| MTM8106ERA04 | | | | right angle | | 2-1571922-5 |
| MTM8106EVRA04 | | | | vertical r.a. | | 2-1571922-6 |
| MTM8106FRA04 | | | | right angle | | 2-1571922-7 |
| MTM8206NRA04 | | | 2 | right angle | | 3-1571922-0 |
| MTM8206NVRA04 | | | | vertical r.a. | | 3-1571922-1 |
| MTM8206PRA04 | | | | right angle | | 3-1571922-2 |
| MTM8206PVRA04 | | | | vertical r.a. | | 3-1571922-3 |
| MTM8206RRA04 | | | | right angle | | 3-1571922-4 |
| MTM8206RVRA04 | | | | vertical r.a. | | 3-1571922-5 |

Toggle Switches

F Series, Power Toggle, Panel Mounting, 6A

Features

- Wide choice of toggles
- Wide range switch functions available
- Terminals are gold-flashed to prevent oxidation and for ease of soldering
- Up to 4 poles



Typical performance characteristics

Number of poles 1 to 4 pole
 Switch functions ON-ON, ON-(ON), ON-OFF-ON, ON-ON-ON,
 ON-OFF-(ON), (ON)-OFF-(ON)
 Contact rating 6 A @250 VAC, 6 A @125 VAC;
 gold contact: 0,4 VA max 20 V AC/DC
 Electrical life 25,000 to 50,000 cycles
 Mechanical life 50,000 to 100,000 cycles
 Contact resistance max 10 mOhm
 Insulation resistance min 1,000 MOhm
 Dielectric strength 1,000 VAC for 1 min
 Actuation force max 19,6 N
 Panel cut-out Ø 6,2 mm
 Standards and specs UL, CSA

Environmental specification

Operating temperature -20 to +70°C
 Storage temperature -20 to +70°C
 Vibration resistance 1,5 mm 10-55 Hz
 Shock resistance 50 g for 11±1 msec
 Terminal strength 24,5 N

Material specifications

Contacts brass silver alloy finished
 Toggle brass chromium plated
 Terminals brass plate
 Case phenol resin
 Cover steel zinc plated
 Seal rubber seal, insert molded rubber
 RoHS compliance compliant

Toggle Switches

| | | | | | | | | |
|------------------------------------|------------------------------|-----------------|-----------------------|------------------|----------|----------|----------|-----------|
| Product key | Typical product key | | F | T | D | 0 | 9 | 04 |
| Type | F Series power toggle switch | | | | | | | |
| Number of poles | blank | 1 & 2 pole | 3 | 3 poles | | | | |
| | | | 4 | 4 poles | | | | |
| Model | toggle | | | | | | | |
| Switch function & poles | 1 & 3 Pole | | 2 & 4 Pole | | | | | |
| | D | ON-ON | N | ON-ON | | | | |
| | E | ON-OFF-ON | P | ON-OFF-ON | | | | |
| | F | ON-(ON) | R | ON-(ON) | | | | |
| | G | (ON)-OFF-(ON) | S | (ON)-OFF-(ON) | | | | |
| | H | ON-OFF-(ON) | T | ON-OFF-(ON) | | | | |
| | | | PA | ON-ON-ON | | | | |
| Actuator | 0 | standard toggle | 7 | long flat toggle | | | | |
| | 5 | locking lever | | | | | | |
| Terminal type | leadwire hooking type | | | | | | | |
| Contact material | blank | silver | G | gold | | | | |
| Material | RoHS compliant | | | | | | | |

F Series, Power Toggle, Panel Mounting, 6A (Continued)

Function



Code 0 standard toggle

| Fct. | Poles | ↙ | ↓ | ↘ | ↙ | ↓ | ↘ |
|------|-------|------|------|------|----------------------|----------------------|----------------------|
| D | 1 | On | None | On | 1-2 | - | 2-3 |
| E | 1 | On | Off | On | 1-2 | Off | 2-3 |
| F | 1 | On | None | (On) | 1-2 | - | 2-3 |
| G | 1 | (On) | Off | (On) | 1-2 | Off | 2-3 |
| H | 1 | On | Off | (On) | 1-2 | Off | 2-3 |
| N | 2 | On | None | On | 1-2, 4-5 | - | 2-3, 5-6 |
| P | 2 | On | Off | On | 1-2, 4-5 | Off | 2-3, 5-6 |
| R | 2 | On | None | (On) | 1-2, 4-5 | - | 2-3, 5-6 |
| S | 2 | (On) | Off | (On) | 1-2, 4-5 | Off | 2-3, 5-6 |
| T | 2 | On | Off | (On) | 1-2, 4-5 | Off | 2-3, 5-6 |
| PA | 2 | On | On | On | 1-2, 4-5 | 2-3, 4-5 | 2-3, 5-6 |
| D | 3 | On | None | On | 1-2, 4-5, 7-8 | - | 2-3, 5-6, 8-9 |
| N | 4 | On | None | On | 1-2, 4-5, 7-8, 10-11 | - | 2-3, 5-6, 8-9, 11-12 |
| PA | 4 | On | On | On | 1-2, 4-5, 7-8, 10-11 | 2-3, 4-5, 7-8, 11-12 | 2-3, 5-6, 8-9, 11-12 |

Offi indicates a mechanical position with no electrical connection
 (On) indicates momentary connection
 None indicates no mechanical position

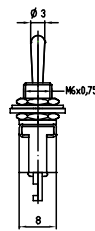
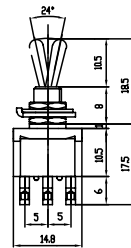
Actuator



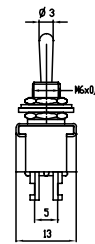
Code 0 standard toggle



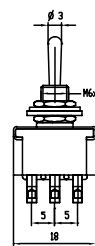
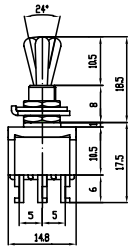
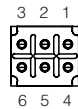
FTD0904



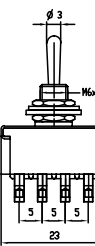
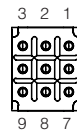
1 pole



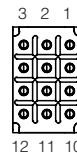
2 pole



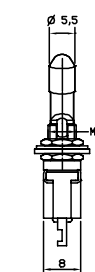
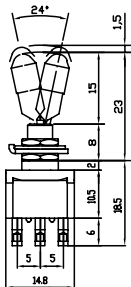
3 pole



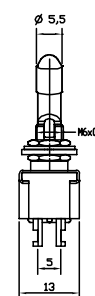
4 pole



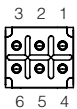
Code 5 locking lever



1 pole

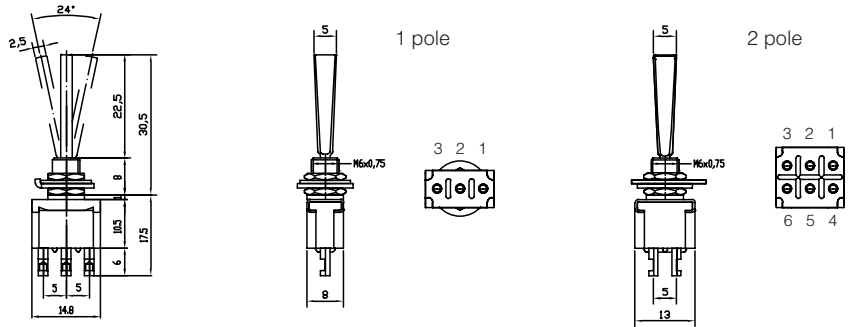


2 pole



F Series, Power Toggle, Panel Mounting, 6A (Continued)

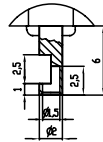
Code 7 long flat toggle



Terminal

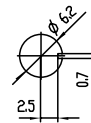


Code 9 leadwire hooking type

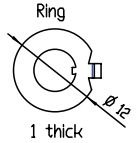


Mounting

Recommended hole layout to prevent rotation



Panel Cutout using Ring



| Product key | Poles | Switch func. | Actuator | Terminal | Contacts | Material | Part Number |
|-----------------|---------|---------------|---------------|----------|----------|-----------|--------------------|
| F3TD0904 | 3 poles | ON-ON | standard | leadwire | silver | RoHS | 2-6437630-8 |
| F4TN0904 | 4 poles | | | hooking | | compliant | 3-6437630-5 |
| F4TPA0904 | | ON-ON-ON | | type | | | 3-6437630-6 |
| FTD0904 | 1 pole | ON-ON | standard | | | | 2-6437630-0 |
| FTD09G04 | | | | | gold | | 3-6437630-4 |
| FTD5904 | | | locking lever | | silver | | 1-6437630-5 |
| FTD59G04 | | | | | gold | | 4-6437630-0 |
| FTD7904 | | | flat toggle | | silver | | 5-6437630-3 |
| FTD79G04 | | | | | gold | | 5-6437630-4 |
| FTE0904 | | ON-OFF-ON | standard | | silver | | 6-6437630-2 |
| FTE09G04 | | | | | gold | | 5-6437630-1 |
| FTE79G04 | | | flat toggle | | | | 5-6437630-8 |
| FTF0904 | | ON-(ON) | standard | | silver | | 5-6437630-7 |
| FTF09G04 | | | | | gold | | 6-6437630-3 |
| FTG0904 | | (ON)-OFF-(ON) | | | silver | | 5-6437630-5 |
| FTG09G04 | | | | | gold | | 3-6437630-8 |
| FTH0904 | | ON-OFF-(ON) | | | silver | | 4-6437630-8 |
| FTH09G04 | | | | | gold | | 6-6437630-4 |
| FTN0904 | 2 poles | ON-ON | | | silver | | 4-6437630-2 |
| FTN09G04 | | | | | gold | | 6-6437630-8 |
| FTN5904 | | | locking lever | | silver | | 3-6437630-9 |
| FTN59G04 | | | | | gold | | 6-6437630-1 |
| FTN7904 | | | flat toggle | | silver | | 5-6437630-2 |
| FTN79G04 | | | | | gold | | 5-6437630-9 |
| FTP0904 | | ON-OFF-ON | standard | | silver | | 4-6437630-6 |
| FTPA0904 | | | | | | | 4-6437630-5 |
| FTR0904 | | ON-(ON) | | | | | 4-6437630-4 |
| FTS0904 | | (ON)-OFF-(ON) | | | | | 4-6437630-3 |
| FTT0904 | | ON-OFF-(ON) | | | | | 4-6437630-1 |

Preferred parts in bold print

AW Series, Power Toggle, Panel Mounting, Waterproof

Features

- IP67 panel mounting seal
- Sleeve and Frame are sealed.
- Fixed contact molded-inserting construction
- Wide range switch functions available



Typical performance characteristics

Number of poles 1,2 and 4 pole
 Switch functions ON-OFF, ON-ON, ON-(ON),
 ON-OFF-ON, ON-OFF-(ON), (ON)-OFF-(ON)
 Contact rating 20 A @250 VAC, 20 A @125 VAC, 20 A @30 VDC
 Electrical life 20,000 cycles
 Mechanical life 40,000 cycles
 Contact resistance max 10 mOhm
 Insulation resistance min 1,000 MOhm
 Dielectric strength 1,500 VAC for 1 min
 Actuation force max 29,4 N
 Panel cut-out D-cut, 12,5 mm
 Standards and specs UL, CSA

Environmental specification

Operating temperature -20 to +70°C
 Storage temperature -20 to +70°C
 Vibration resistance 1,5 mm 10-55 Hz
 Shock resistance 50 g for 11±1 msec
 Terminal strength 24,5 N

Material specifications

Contacts brass silver alloy finished
 Toggle brass chromium plated
 Case brass plate
 Terminals phenol resin
 Cover steel zinc plated
 Seal rubber seal, insert molded rubber
 RoHS compliance compliant

Toggle Switches

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------------|--|--|--|--|--|--|---------------|--------------|----------|----------|----------|----------|----------|-----------|---------------|--|--|--|--|--|--|---------------|--|--|--|--|--|--|----------|--------|--|--|--|--|--|----------|-------|--|--|--|--|--|--|----------|-------|--|--|--|--|--|----------|-----------|--|--|--|--|--|--|----------|-----------|--|--|--|--|--|----------|---------|--|--|--|--|--|--|----------|---------|--|--|--|--|--|----------|--------------|--|--|--|--|--|--|----------|--------------|--|--|--|--|--|----------|-------------|--|--|--|--|--|--|----------|-------------|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Product key | Typical product key | | | | | | | A | W | T | T | 1 | 5 | 04 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Type | A A Series power toggle switch, 1 & 2 pole | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sealing | W water proof | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Actuator style | T toggle | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Switch function & poles | <table border="0"> <tr> <td colspan="7">1 pole</td> <td colspan="7">2 pole</td> </tr> <tr> <td>A</td><td>ON-OFF</td><td></td><td></td><td></td><td></td><td></td> <td>N</td><td>ON-ON</td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>D</td><td>ON-ON</td><td></td><td></td><td></td><td></td><td></td> <td>P</td><td>ON-OFF-ON</td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>E</td><td>ON-OFF-ON</td><td></td><td></td><td></td><td></td><td></td> <td>R</td><td>ON-(ON)</td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>F</td><td>ON-(ON)</td><td></td><td></td><td></td><td></td><td></td> <td>S</td><td>(ON)-OFF(ON)</td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>G</td><td>(ON)-OFF(ON)</td><td></td><td></td><td></td><td></td><td></td> <td>T</td><td>ON-OFF-(ON)</td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>H</td><td>ON-OFF-(ON)</td><td></td><td></td><td></td><td></td><td></td> <td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table> | | | | | | | | | | | | | | 1 pole | | | | | | | 2 pole | | | | | | | A | ON-OFF | | | | | | N | ON-ON | | | | | | | D | ON-ON | | | | | | P | ON-OFF-ON | | | | | | | E | ON-OFF-ON | | | | | | R | ON-(ON) | | | | | | | F | ON-(ON) | | | | | | S | (ON)-OFF(ON) | | | | | | | G | (ON)-OFF(ON) | | | | | | T | ON-OFF-(ON) | | | | | | | H | ON-OFF-(ON) | | | | | | | | | | | | | |
| 1 pole | | | | | | | 2 pole | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | ON-OFF | | | | | | N | ON-ON | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | ON-ON | | | | | | P | ON-OFF-ON | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| E | ON-OFF-ON | | | | | | R | ON-(ON) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F | ON-(ON) | | | | | | S | (ON)-OFF(ON) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G | (ON)-OFF(ON) | | | | | | T | ON-OFF-(ON) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H | ON-OFF-(ON) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Power rating | 1 20 A @ 125/250 VAC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Terminal type | 5 .250 quick connect terminal | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Material | 04 RoHS compliant | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

AW Series, Power Toggle, Panel Mounting, Waterproof (Continued)

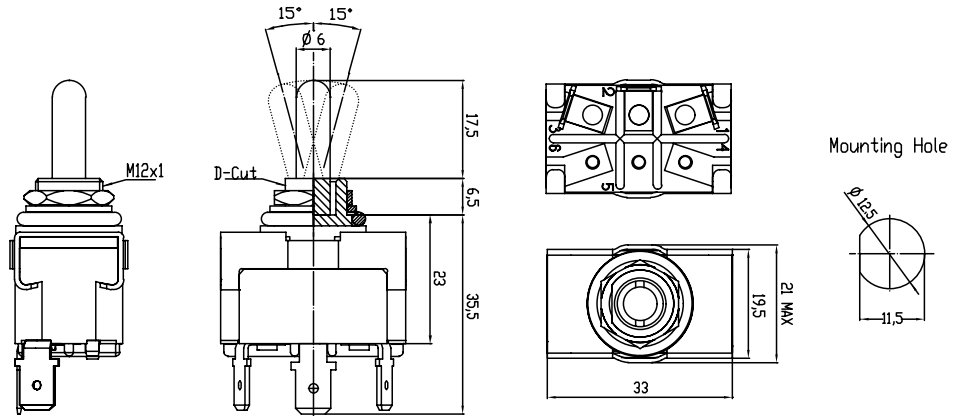
| | | | | | | | | |
|------------------------|---|----------|-----------------------|----------|----------|----------|----------|-----------|
| Product key | Typical product key | | | | | | | |
| | A | 4 | T | K | 1 | 5 | W | 04 |
| Type | A A Series power toggle switch, 4 pole | | | | | | | |
| Poles | 4 4 pole | | | | | | | |
| Actuator style | T toggle | | | | | | | |
| Switch function | K ON-OFF | | R ON-(ON) | | | | | |
| | N ON-ON | | S (ON)-OFF(ON) | | | | | |
| | P ON-OFF-ON | | | | | | | |
| Power rating | 1 20 A @ 125/250 VAC | | | | | | | |
| Terminal type | 5 .250 quick connect terminal | | | | | | | |
| Sealing | W water proof | | | | | | | |
| Material | 04 RoHS compliant | | | | | | | |

Poles

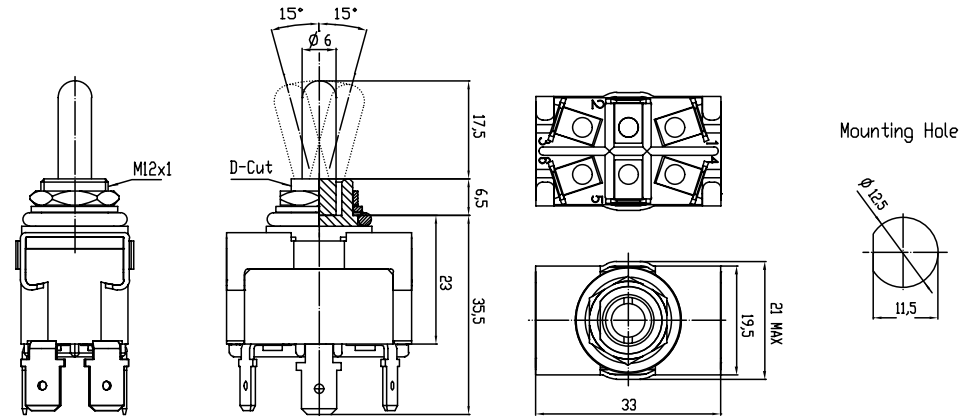
1 pole



AWTA1504

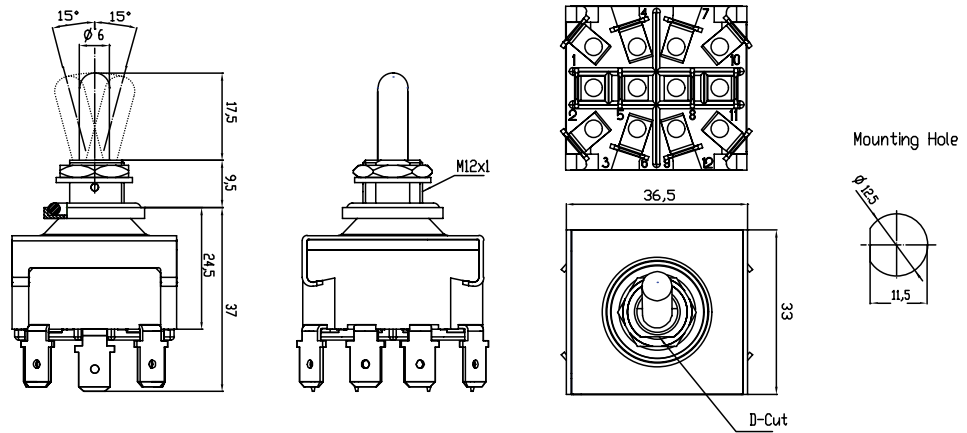


2 pole



AW Series, Power Toggle, Panel Mounting, Waterproof (Continued)

4 pole



Function

| Fct. | Poles | ↕ | ⏚ | ↕ | ↕ | ⏚ | ↕ |
|------|-------|------|------|------|----------------------|-----|----------------------|
| A | 1 | On | None | Off | 1-2 | - | Off |
| D | 1 | On | None | On | 1-2 | - | 2-3 |
| E | 1 | On | Off | On | 1-2 | Off | 2-3 |
| F | 1 | On | None | (On) | 1-2 | - | 2-3 |
| G | 1 | (On) | Off | (On) | 1-2 | Off | 2-3 |
| H | 1 | On | Off | (On) | 1-2 | Off | 2-3 |
| N | 2 | On | None | On | 1-2, 4-5 | - | 2-3, 5-6 |
| P | 2 | On | Off | On | 1-2, 4-5 | Off | 2-3, 5-6 |
| R | 2 | On | None | (On) | 1-2, 4-5 | - | 2-3, 5-6 |
| S | 2 | (On) | Off | (On) | 1-2, 4-5 | Off | 2-3, 5-6 |
| T | 2 | On | Off | (On) | 1-2, 4-5 | Off | 2-3, 5-6 |
| K | 4 | On | None | Off | 1-2, 4-5, 7-8, 10-11 | - | Off |
| N | 4 | On | None | On | 1-2, 4-5, 7-8, 10-11 | - | 2-3, 5-6, 8-9, 11-12 |
| P | 4 | On | Off | On | 1-2, 4-5, 7-8, 10-11 | Off | 2-3, 5-6, 8-9, 11-12 |
| R | 4 | On | None | (On) | 1-2, 4-5, 7-8, 10-11 | - | 2-3, 5-6, 8-9, 11-12 |
| S | 4 | (On) | Off | (On) | 1-2, 4-5, 7-8, 10-11 | Off | 2-3, 5-6, 8-9, 11-12 |

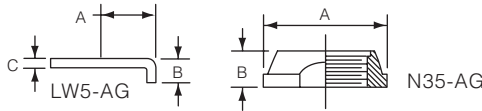
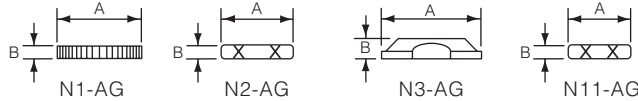
Off indicates a mechanical position with no electrical connection
 (On) indicates momentary connection
 None indicates no mechanical position

| Product key | Sealing | Poles | Switch func. | Terminal | Rating | Part Number | |
|-----------------|-------------|-------------|---------------|------------------------|--------|--------------------|--------------------|
| A4TK15W04 | water proof | 4 poles | ON-OFF | .250 | 20 A | 8-6437630-0 | |
| A4TN15W04 | | | ON-ON | quick connect terminal | | @ 125/250 VAC | 8-6437630-1 |
| A4TP15W04 | ON-OFF-ON | | | | | 8-6437630-2 | |
| A4TR15W04 | ON-(ON) | | | | | 8-6437630-3 | |
| A4TS15W04 | | | (ON)-OFF-(ON) | | | 8-6437630-4 | |
| AWTA1504 | | 1 pole | ON-OFF | | | 7-6437630-3 | |
| AWTD1504 | | | ON-ON | | | 7-6437630-0 | |
| AWTE1504 | | | ON-OFF-ON | | | 7-6437630-1 | |
| AWTF1504 | | | ON-(ON) | | | 7-6437630-4 | |
| AWTG1504 | | | (ON)-OFF-(ON) | | | 7-6437630-5 | |
| AWTH1504 | | | ON-OFF-(ON) | | | 7-6437630-6 | |
| AWTN1504 | | | 2 poles | ON-ON | | | 7-6437630-2 |
| AWTP1504 | | | | ON-OFF-ON | | | 3-6437592-9 |
| AWTR1504 | | | | ON-(ON) | | | 5-6437630-0 |
| AWTS1504 | | | | (ON)-OFF-(ON) | | | 1-6437630-1 |
| AWTT1504 | | ON-OFF-(ON) | | | | 1-6437630-0 | |

Preferred parts in bold print

Hardware and Accessories

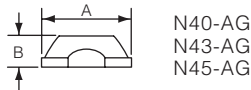
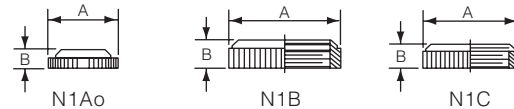
Standard and decorative mounting hardware



Fits all miniature toggle and pushbutton switches 1/4-40 and 15/32-32 bushings. N1 and N3 style nuts are recommended as styling options. Finger tighten until nut rests on mounting surface. Finally tighten with the back nut.

| Product key | Description | Diameter/Thread | Finish | Dim A | Dim B | Material | Part Number |
|--------------|-----------------|-----------------|---------------|-------------|-------------|-----------|-------------|
| N1-AG | knurled nut | 1/4-40 | bright nickel | 8.89 (.350) | 1.52 (.060) | RoHS | 1437628-7 |
| 10264-00-120 | hex nut | | | 7.87 (.310) | 1.52 (.060) | compliant | 1437561-9 |
| N304 | dress nut | | | 11.7 (.460) | 2.29 (.090) | | 1825621-1 |
| N3504 | | 15/32-32 | | 16.0 (.630) | 4.32 (.170) | | 1825621-2 |
| 11106-AG | hex nut | 1/4-48 | | 7.11 (.280) | 1.27 (.050) | | 1-1437561-2 |
| 11052 | int.lock washer | .27 | | 10.2 (.400) | 0.61 (.024) | | 1437579-1 |
| 11098 | lck washer #10 | .19 | zinc | 7.62 (.300) | 0.76 (.030) | | 1-1437561-1 |

"Perfect Fit" decorative mounting hardware



Use blind threaded nuts for ultimate appearance. Finger tighten until nut rests on mounting surface. Finally tighten with the back nut.

| Product key | Description | Diameter/Thread | Finish | Dim A | Dim B | Material | Part Number |
|-------------|-------------|-----------------|---------------|-------------|-------------|-----------|-------------|
| N1A04 | knurled nut | 1/4-40 | bright nickel | 7.87 (.310) | 2.03 (.080) | RoHS | 1825622-1 |
| N1B04 | | 15/32-32 | | 14.2 (.560) | 3.56 (.140) | compliant | 1825622-2 |
| N4004 | dress nut | 1/4-40 | matte nickel | 9.52 (.375) | 3.10 (.122) | | 1825623-1 |
| N4304 | | | bright nickel | 3.10 (.122) | 9.52 (.375) | | 1825623-2 |
| N4504 | | 15/32-32 | | 4.32 (.170) | 16.0 (.630) | | 1825623-3 |

Toggle switch, legend plate



SPA32

Constructed of .025 gauge brushed aluminum with a matte black enamel.

Easily readable and aesthetically attractive.

| Product key | Description | Diameter/Thread | Finish | Dim A | Dim B | Material | Part Number |
|-------------|-------------|-----------------|---------------|-------------|-------------|-----------|-------------|
| SPA32 | On-Off | 1/4" | clear lacquer | 9.52 (.375) | 22.4 (.880) | RoHS | 2-1437628-4 |
| SPA42 | | 15/32" | | 17.3 (.680) | 28.6 (1.12) | compliant | 2-1437628-6 |

Boot Seals

Features

- One piece design, nut over molded "bonded" to silicone boot element and 'O' ring
- Silicone rubber eliminates cure dates
- Protects against moisture, oil, dirt, dust, most solvents and some acids
- Multiple colors available



Environmental specification

Operating temperature -65°C to 265°C

Material specifications

Boot material silicone rubber
 Threaded nut material, and finish..... brass nut, black oxide finish

Toggle Switches

| | | | | | | | |
|--------------------|--|---------------------|-----|-----------|-------------|----------|-----------|
| Product key | | Typical product key | | BT | 1532 | 2 | 04 |
| Type | | | | | | | |
| B | Full boot seals | | | | | | |
| BT | Half boot seals *) | | | | | | |
| | *)Half boot recommended for maintained switch's as full boot may have tendency to pull toggle back | | | | | | |
| Nut thread | | | | | | | |
| 1048 | 10-48 UNS 2-B | | | | | | |
| 1440 | 1/4-40 UNS 2-B | | | | | | |
| 1532 | 15/32-32 UNS 2-B | | | | | | |
| Color | | | | | | | |
| 0 | black | 2 | red | 8 | gray | | |
| Material | | | | | | | |
| 04 | RoHS compliant | | | | | | |

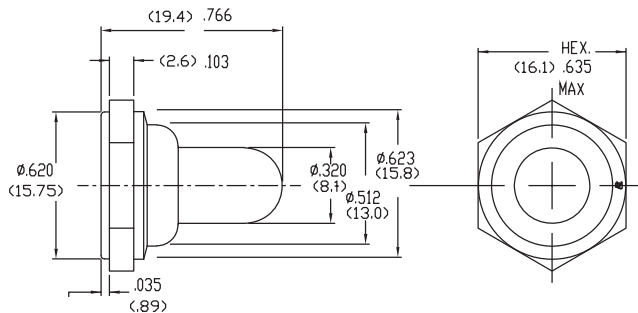
Full boots



1532 Series



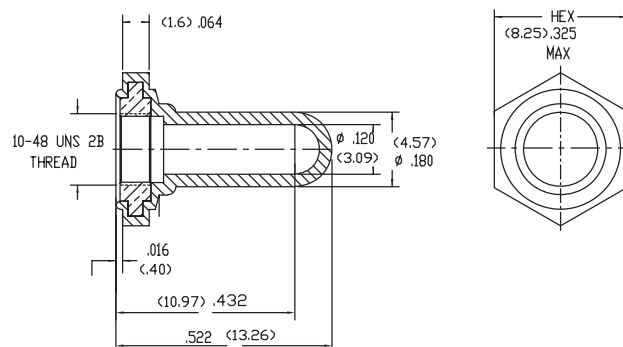
B1532004



1048 Series



B1048004

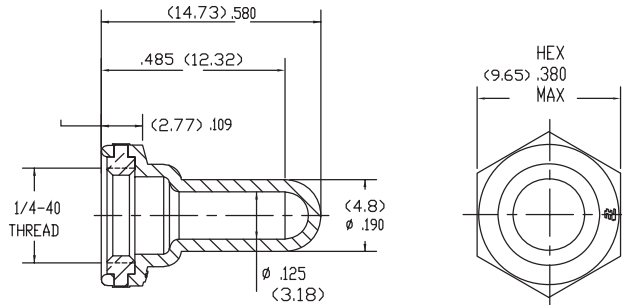


Boot Seals (Continued)

1440 Series



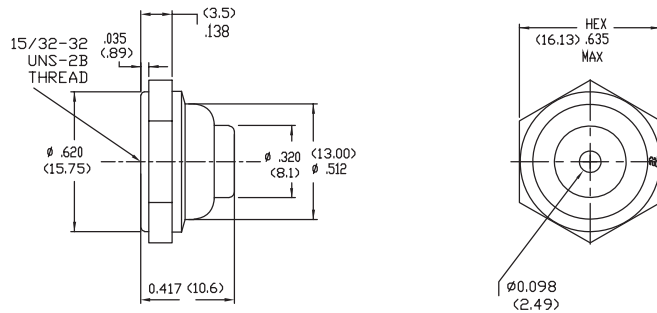
B1440004



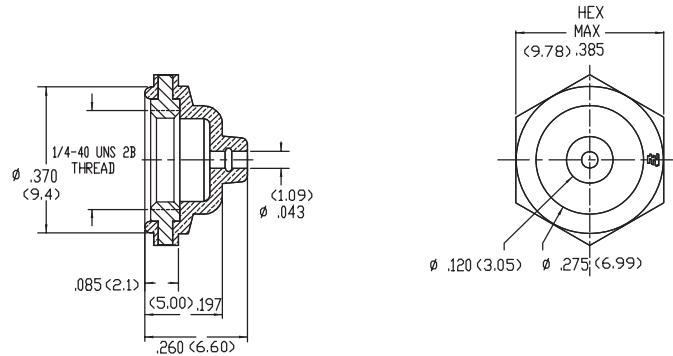
Half boots



1532 Series



1440 Series



| Product key | Used on switch type | Nut thread | Color | Material | Part Number |
|------------------|---------------------|------------------|-------|----------------|-------------|
| Full boot | | | | | |
| B1532004 | MTG | 15/32-32 UNS 2-B | black | RoHS compliant | 1825602-1 |
| B1532204 | | | red | | 1825602-2 |
| B1532804 | | | gray | | 1825602-3 |
| B1048004 | TT Series | 10-48 UNS 2-B | black | | 1825609-1 |
| B1048204 | | | red | | 1825609-2 |
| B1048804 | | | gray | | 1825609-3 |
| B1440004 | TT,MTA,Gemini | 1/4-40 UNS 2-B | black | | 1825612-1 |
| B1440204 | | | red | | 1825612-2 |
| B1440804 | | | gray | | 1825612-3 |
| Half boot | | | | | |
| BT1532004 | MTG Series | 15/32-32 UNS 2-B | black | RoHS compliant | 1825600-1 |
| BT1532204 | | | red | | 1825600-2 |
| BT1532804 | | | gray | | 1825600-3 |
| BT1440004 | TT, MTA, Gemini | 1/4-40 UNS 2-B | black | | 1825619-1 |

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