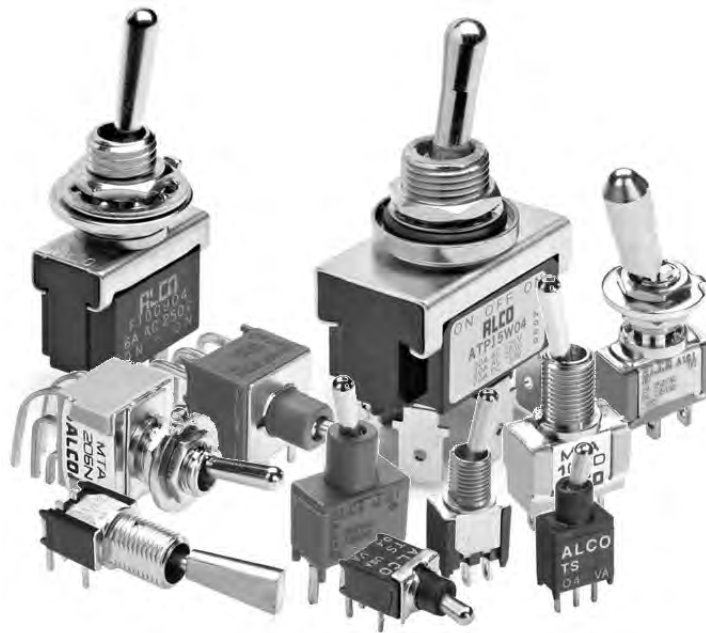


**Product Range**



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 Sealed** .....page E3



**TT Tiny Toggle Switch** .....page E6



**Product Range** (Continued)



**Gemini A Series** .....page E15



**Gemini AE Series, Sealed IP67** .....page E26



**MT Green Series** .....page E32



**F Series, Panel Mounting, 6A** .....page E43



**AW Series, Panel Mounting, Waterproof** .....page E46



**Hardware and Accessories** .....page E49



**Boot Seals** .....page 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 aArea  
 Case . . . . . theroplastic (LCP)  
 Spring . . . . . music wire zinc plated  
 Support bracket . . . . . steel tin plated  
 Seal . . . . . "O" ring rubber  
 RoHS Directive 2002/95/EC . . . . . compliant

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

Toggle Switches

**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

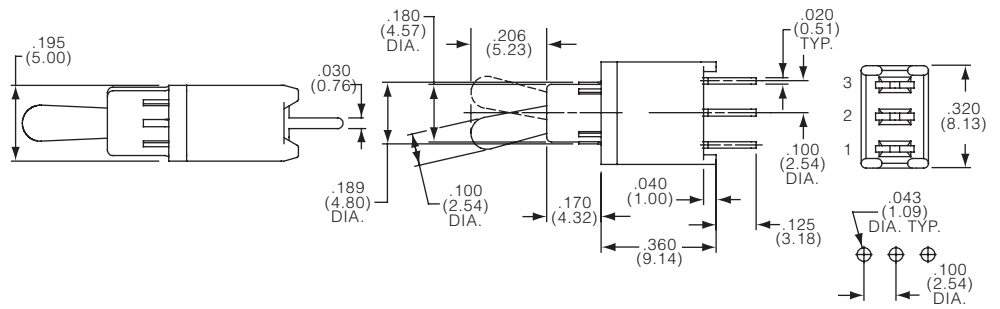
Terminations



PC printed circuit



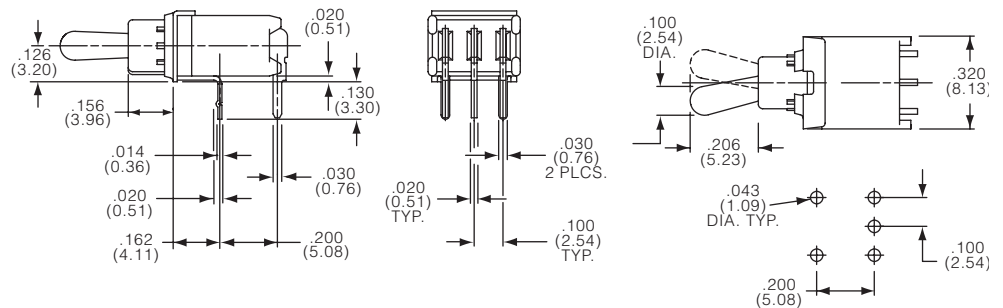
TST11DGPC1D



RA right angle



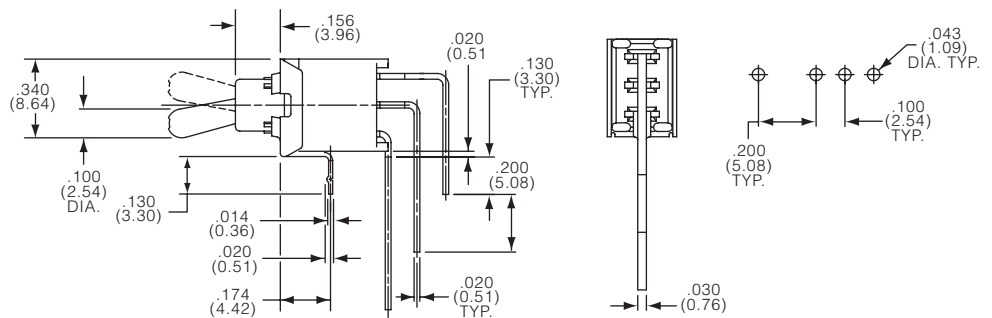
TST11DGRA1D



VRA vertical right angle



TST11DGVRA1D

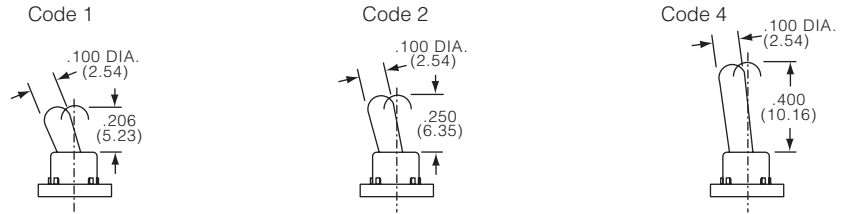


**TST, Tiny Toggle, Process Sealed**(Continued)

**Actuator**



Codes 1,2,4 actuator lengths



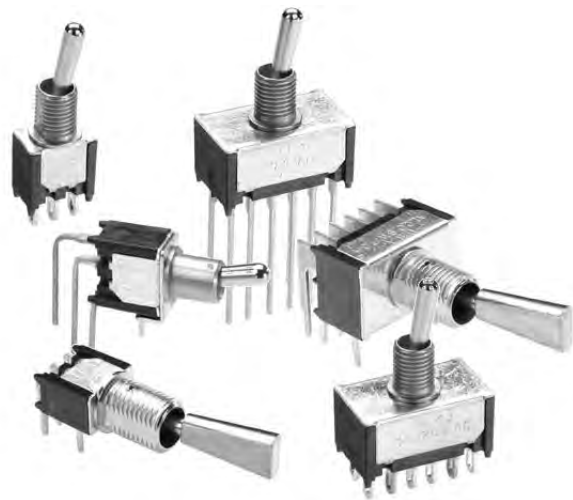
Product key	Poles	Rating	Function	Plating	Terminals	Actuator	Bushing	Material	Part Number
<b>TST11DGPC1D04</b>	1 pole	0.4VA	On None On	Gold	pcb	.206 (5.23)	plain,	RoHS	<b>1825455-1</b>
TST11DGPCV1D04					pcb w brack		not	compliant	1825455-2
<b>TST11DGRA1D04</b>					right angle		threaded		<b>1825455-3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



Toggle Switches

**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)**

<b>Product key</b>	Typical product key		<b>TT</b>	<b>1</b>	<b>1</b>	<b>D</b>	<b>G</b>	<b>PC</b>	<b>9</b>	<b>T1/4</b>	<b>04</b>					
<b>Type</b>	TT		Tiny toggle switch													
<b>Environmental seal</b>	blank		no seal													
	E		environmental seal (splash proof), not available with actuator 7 or with terminals VRA													
<b>Number of Poles</b>	1		4		4 pole											
	2		double pole													
<b>Contact rating</b>	1		0.4VA Gold		3		1 Amp, Silver with wire lug and pc terminals only									
<b>Function</b>	<b>single pole</b>		<b>2 &amp; 4 pole</b>													
	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)									
<b>Plating</b>	G		Gold		blank		Silver									
<b>Terminals</b>	blank		wire lug		RA		right angle									
	PC		printed circuit		VRA		vertical right angle									
					WW		wire wrap									
<b>Actuator length</b>	<b>#10 or Unthreaded Bushing</b>		<b>1/4 Bushing</b>													
	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									
<b>Bushing</b>	blank		unthreaded		T		#10-48		T1/4			1/4-40				
<b>Actuator color</b>	for actuator code 6 only															
	0		black		2		red		6		blue		9		white	
<b>Material</b>	04		RoHS compliant													

Toggle Switches

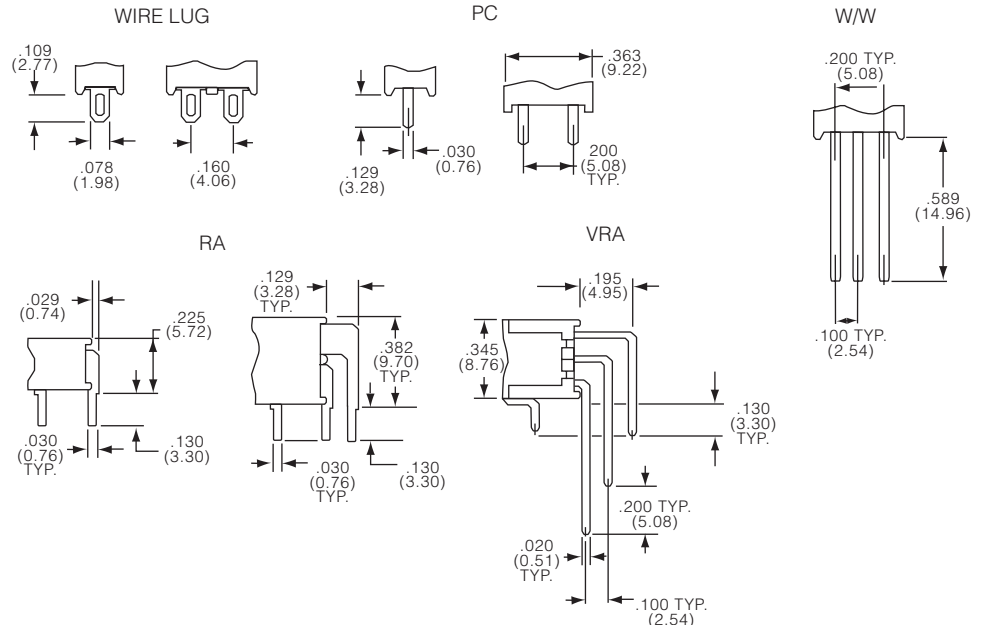
**Function**

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

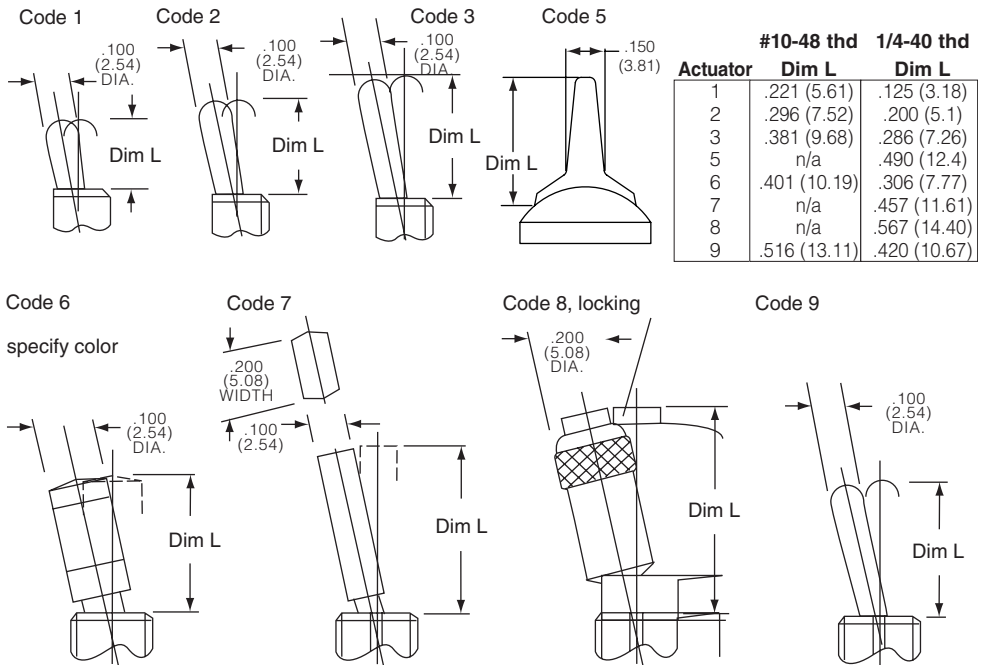
Off indicates a mechanical position with no electrical connection  
 (On) indicates momentary connection  
 None indicates no mechanical position

**TT, Tiny Toggle Switch (Continued)**

**Terminals**



**Actuator**





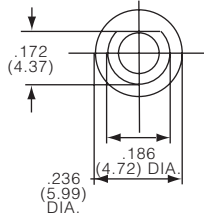
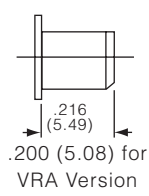
**TT, Tiny Toggle Switch (Continued)**

**Bushing**

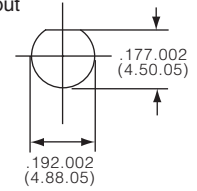


**blank**

**unthreaded**

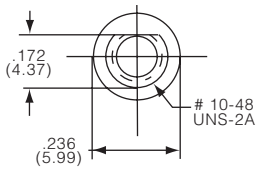
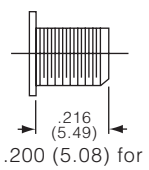


**panel cutout**

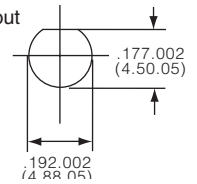


**T**

**10-48 UNS-2A thread**

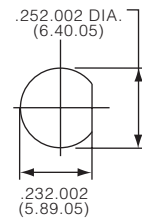
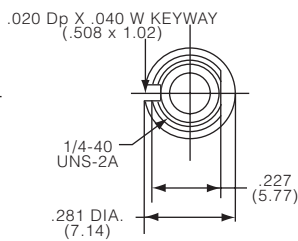
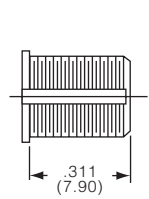


**panel cutout**

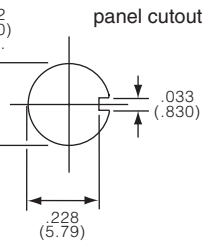


**T1/4**

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

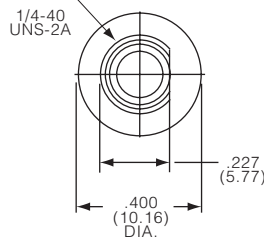
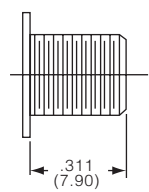


**panel cutout**

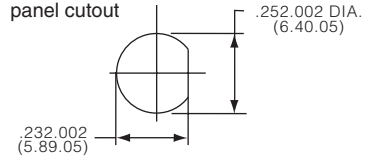


**T1/4**

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



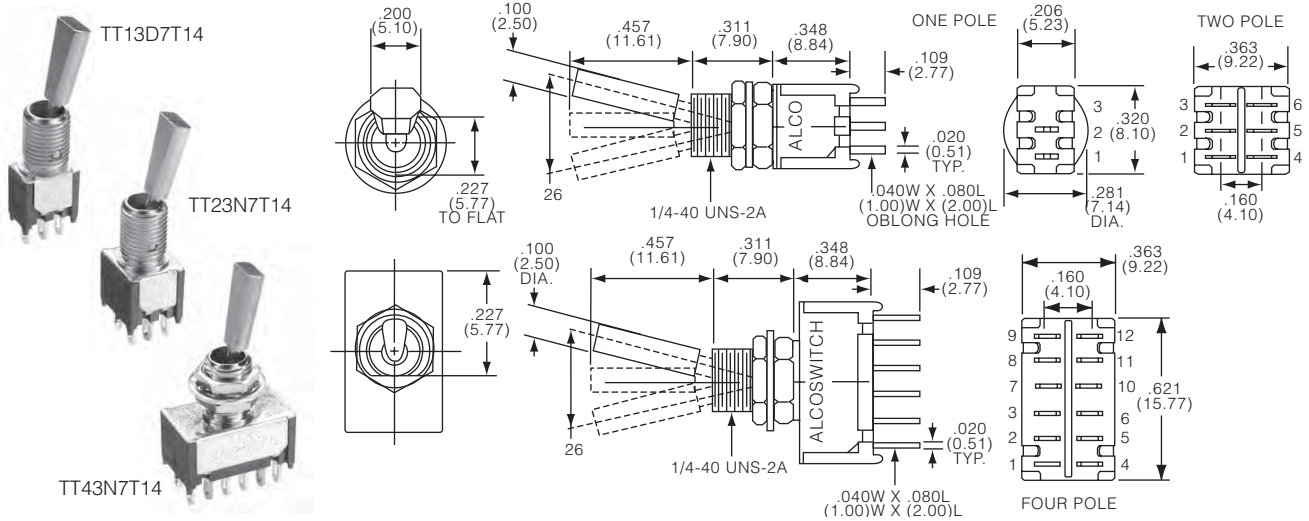
**panel cutout**



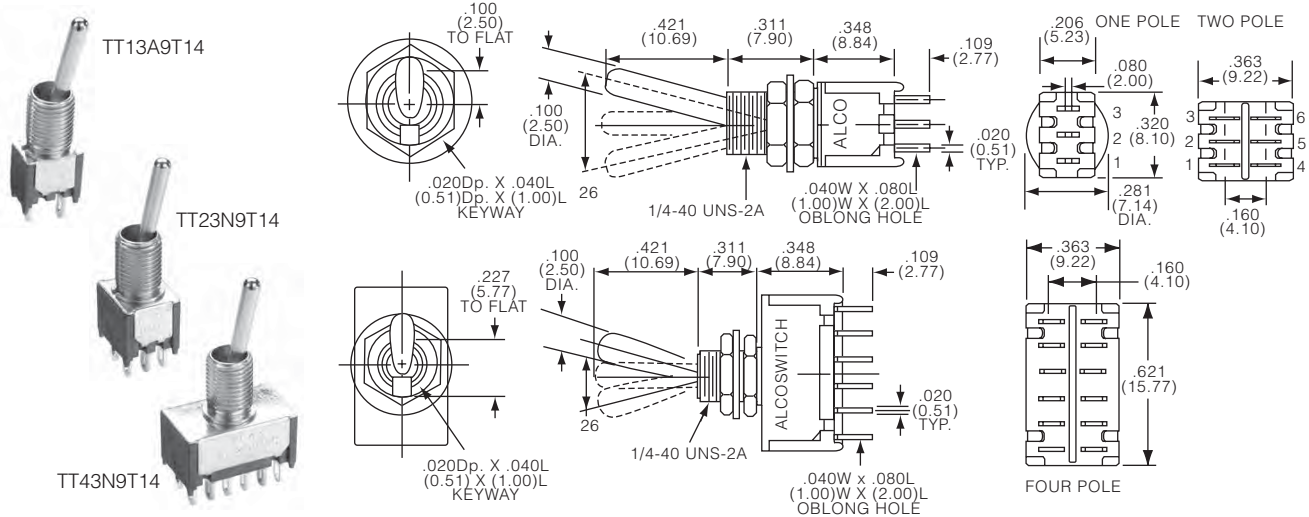


**TT, Tiny Toggle Switch (Continued)**

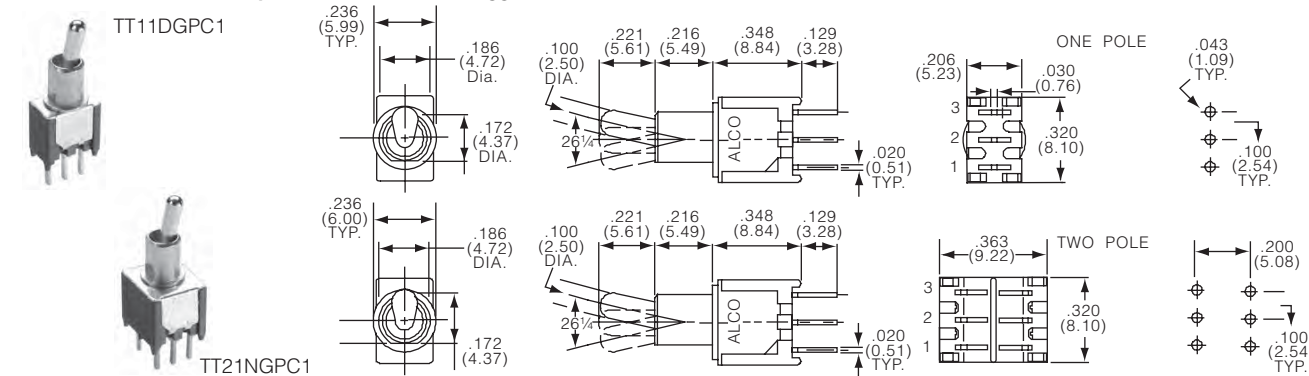
**Series TT...7T1/4 wire lug, .457 flat toggle, 1/4-40 thread**



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

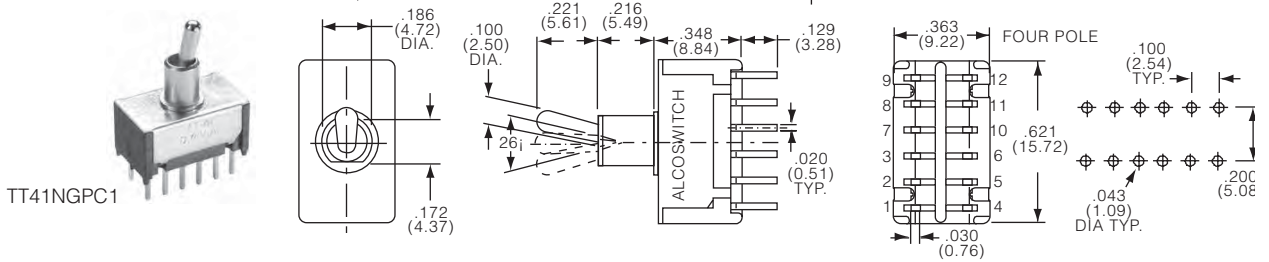


**Series TT...PC1 pc terminals, .221 bat toggle, unthreaded**

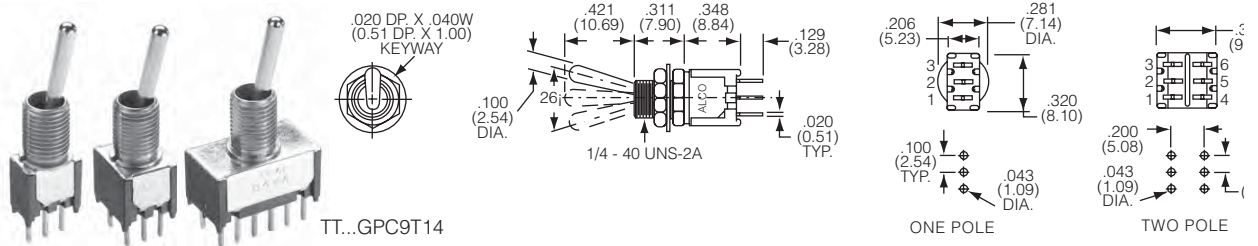


**TT, Tiny Toggle Switch (Continued)**

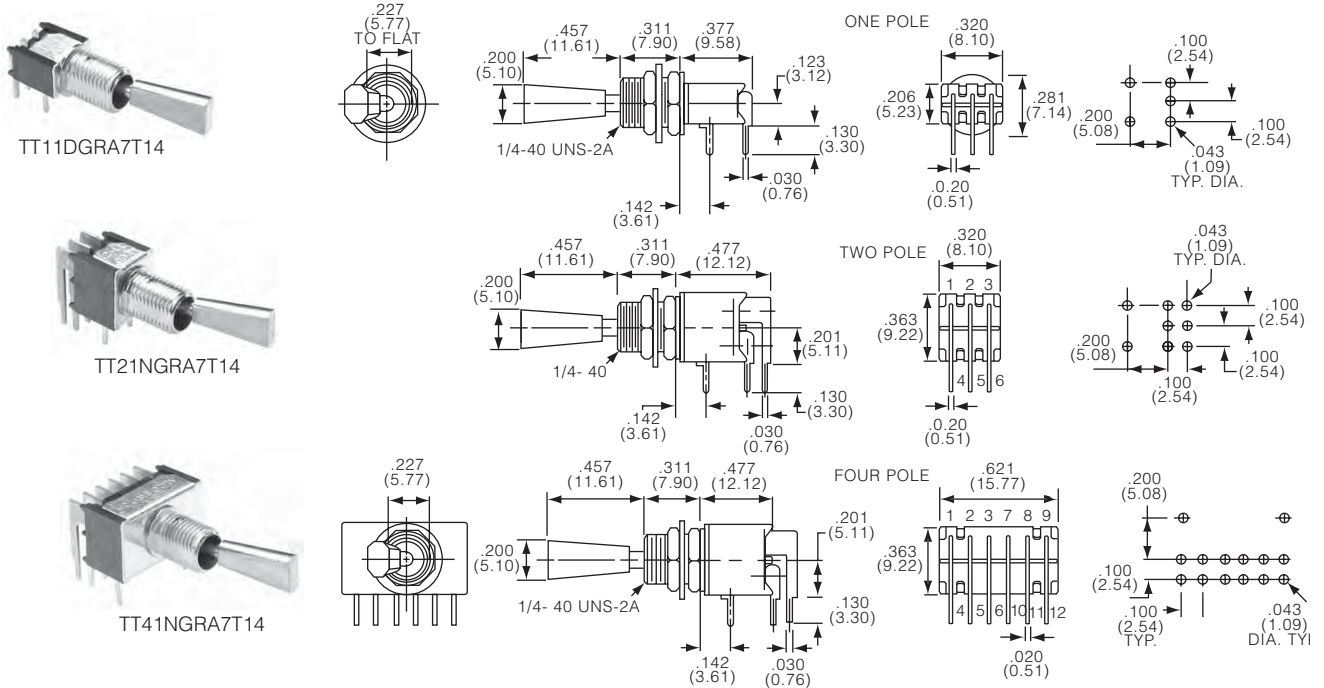
**Series TT...PC1 pc terminals, .221 bat toggle, unthreaded**



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



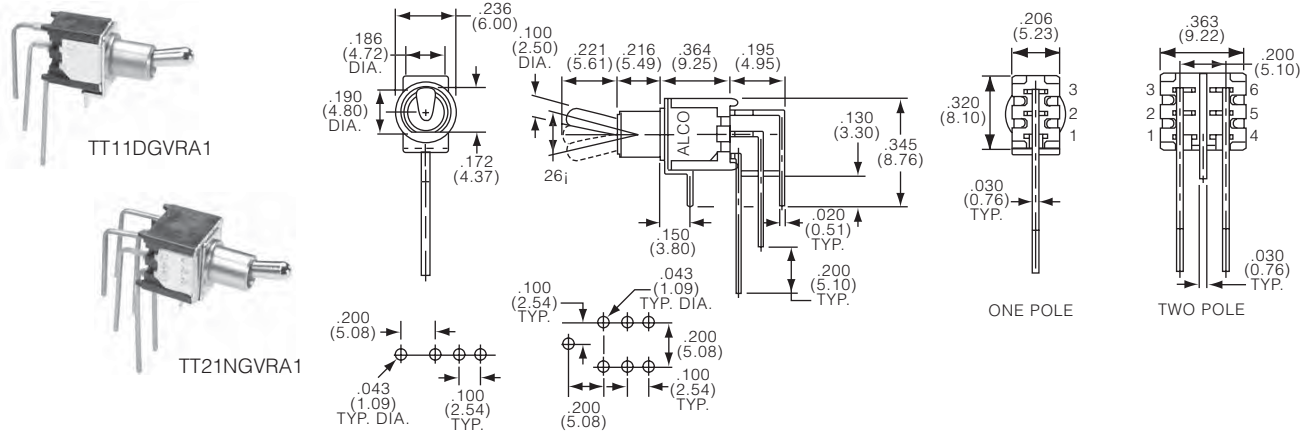
**Series TT...RA7T1/4 right angle, .457 flat toggle, 1/4-40 thread**



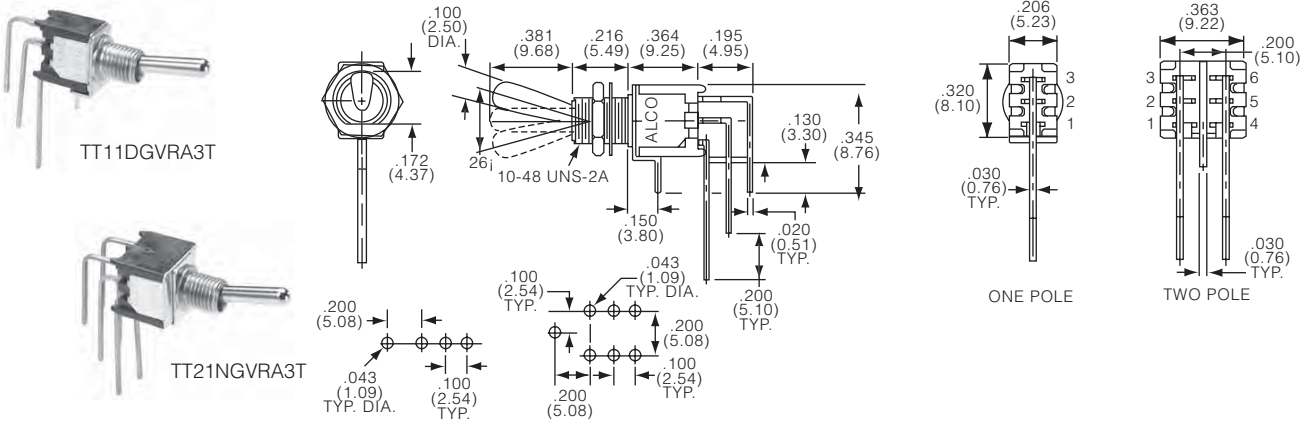
Toggle Switches

**TT, Tiny Toggle Switch (Continued)**

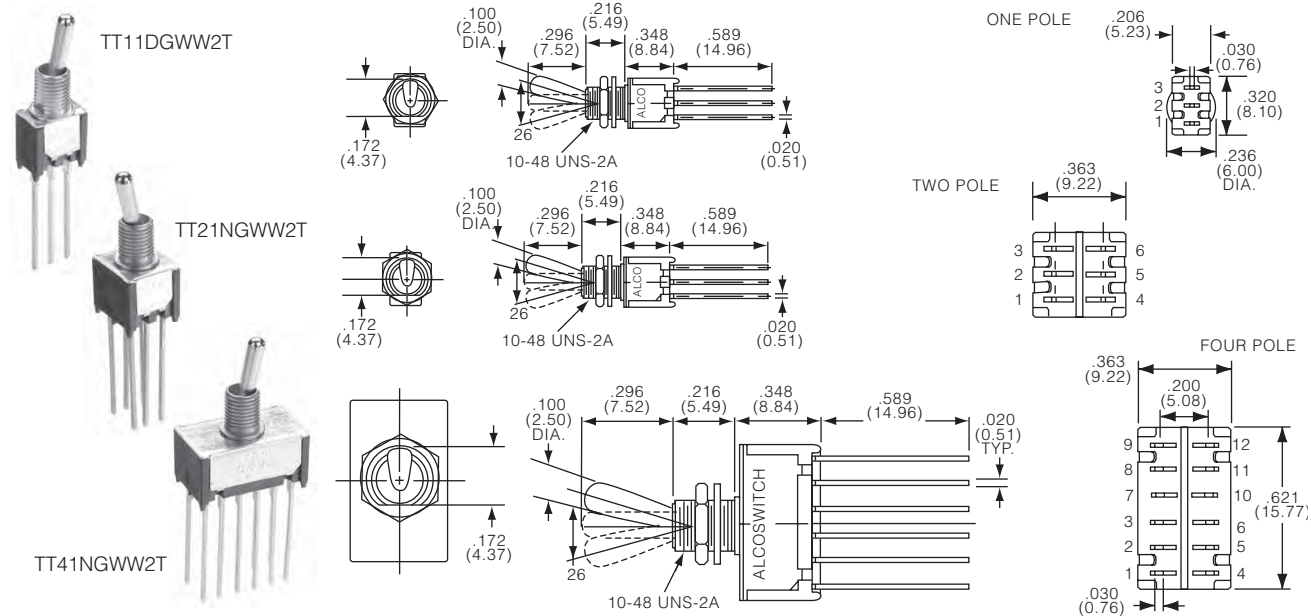
**Series TT...VRA1 vertical right angle, .221 bat toggle, unthreaded**



**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
<b>TT11AGPC104</b>	no	1	0.4VA	On Off	pc	.221 (5.61), bat	unthreaded	RoHS compliant	<b>1825219-2</b>
TT11AGPC9T1/404			Gold plated			.421 (10.69), bat	1/4-40		1-1825192-8
<b>TT11DGPC104</b>				On On		.221 (5.61), bat	unthreaded		<b>1825219-3</b>
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
<b>TT11DGVRA104</b>					vert r.a.	.125 (3.18), bat	unthreaded		<b>1825219-5</b>
TT11DGWW2T04					wire wrap	.200 (5.1), bat	#10-48		1825222-1
<b>TT11EGPC104</b>				On Off On	pc	.125 (3.18), bat	unthreaded		<b>1825219-6</b>
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
<b>TT11EGVRA104</b>					vert r.a.				<b>1825219-9</b>
TT11EGVRA3T04						.286 (7.26), bat	#10-48		1825223-2
TT11FGRA9T1/404				(On) On	right a.	.421 (10.69), bat	1/4-40		1825192-5
<b>TT13A2T04</b>			1 Amp	On Off	wire lug	.200 (5.1), bat	#10-48		<b>1825222-2</b>
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
<b>TT13D2T04</b>				On On		.200 (5.1), bat	#10-48		<b>1825222-3</b>
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
<b>TT13E2T04</b>				On Off On		.200 (5.1), bat	#10-48		<b>1825222-4</b>
TT13E3T04						.286 (7.26), bat			1825223-5
<b>TT21KGPC104</b>		2	0.4VA	On Off	pc	.125 (3.18), bat	unthreaded		<b>1-1825219-0</b>
<b>TT21NGPC104</b>			Gold plated	On On					<b>1-1825219-1</b>
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
<b>TT23K2T04</b>			1 Amp	On Off	wire lug				<b>1825222-6</b>
TT23K9T1/404			Silver plated			.421 (10.69), bat	1/4-40		1-1825192-0
<b>TT23N2T04</b>				On On		.200 (5.1), bat	#10-48		<b>1825222-7</b>
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									
		<b>A</b>	<b>1</b>	<b>01</b>	<b>P3</b>		<b>Z</b>	<b>Q</b>	<b>04</b>		
<b>Type</b>	Gemini A Series Toggles										
<b>Number of Poles</b>	<b>1</b> single pole	<b>2</b> double pole									
<b>Function</b>	<b>single and double pole</b>					<b>double pole only</b>					
	<b>01</b> On-On	<b>11</b> On-On-On									
	<b>03</b> On-Off-On	<b>13</b> On-On-(On)									
	<b>05</b> (On)-Off-(On)	<b>15</b> (On)-On-(On)									
	<b>07</b> On-Off-(On)										
	<b>08</b> On-(On)										
<b>Toggles</b>											
<b>S</b>	bat long	<b>T</b>	large toggle & bushing (15/32)								
<b>K</b>	locking	<b>T1</b>	large toggle & bushing (15/32)								
<b>K1</b>	locking	<b>L</b>	lever								
<b>M</b>	bat short	<b>L1</b>	lever								
<b>P3</b>	flatted (with bushing code Y only)	<b>L2</b>	lever								
<b>Bushing</b>											
<b>blank</b>	toggles K1 &/ P3: 1/4-40 threaded .35 (8.9) long toggles K, T, T1: unthreaded .28 (7.1) long										
<b>CW</b>	1/4-40 threaded .37 (9.4) long, enviromental seals (toggles codes S & M only)										
<b>D</b>	1/4-40 threaded .28 (7.1) long										
<b>D9</b>	unthreaded .28 (7.1) long										
<b>H</b>	1/4-40 threaded .3 (7.6) long										
		<b>Y</b>	1/4-40 threaded .35 (8.9) long								
		<b>Y9</b>	unthreaded .35 (8.9) long								
<b>Terminations</b>											
<b>A</b>	right angle	<b>V30</b>	vertical support	<b>W</b>	wire wrap						
<b>AV2</b>	vertical right angle	<b>V40</b>	vertical support	<b>W4</b>	wire wrap						
<b>C</b>	printed circuit			<b>Z</b>	wire lug						
<b>Contacts</b>											
<b>B</b>	gold	<b>G</b>	gold over silver	<b>Q</b>	silver						
<b>Material</b>											
<b>04</b>	RoHS compliant										

**Gemini A Series (Continued)**

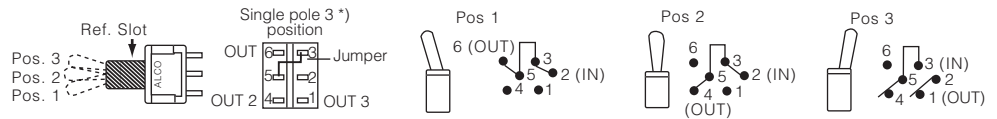
**Function**



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	2 - 3	2 - 3
**)		4 - 5	4 - 5	5 - 6

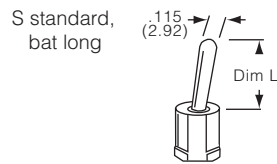
Off mechanical position, no electrical connection  
 (On) momentary mechanical position and electrical connection  
 None no mechanical position  
 \*) functions available in dual pole case only.  
 \*\*) SP3T functions achieved with external jumper installed by customer

Wiring diagram for functions 11, 13, 15

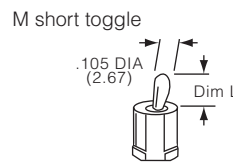


Toggle Switches

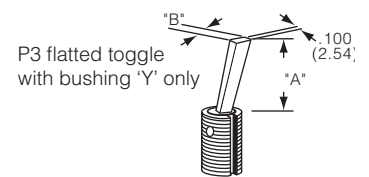
**Toggles**



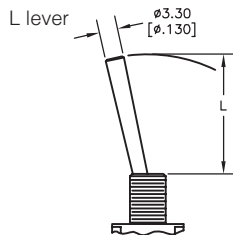
Toggle	Bushing	Dim L
S	CW, H, Y D, D9	10.41 (.410) 12.19 (.480)



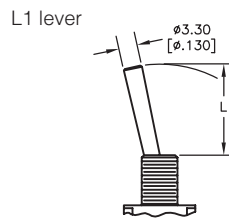
Toggle	Bushing	Dim L
M	CW, H, Y D, D9	5.08 (.200) 6.86 (.270)



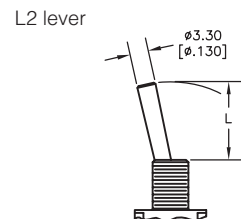
Toggle	Dim
P3	Dim A 11.43 (.450) Dim B 5.08 (.200)



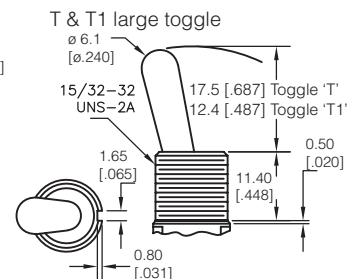
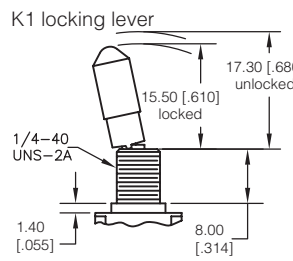
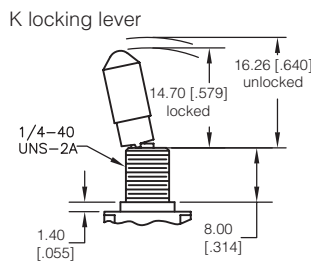
Toggle	Bushing	Dim L
L	H, Y D, D9	21.34 (.840) 23.11 (.910)



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)



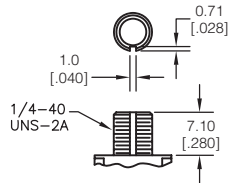


**Gemini A Series (Continued)**

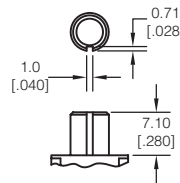
**Bushings**



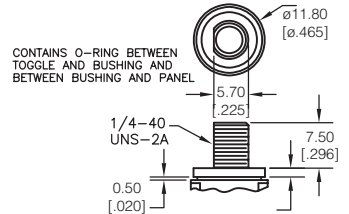
D 1/4-40 threaded



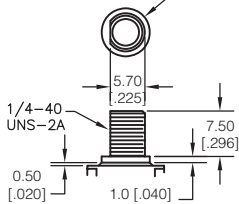
D9 unthreaded



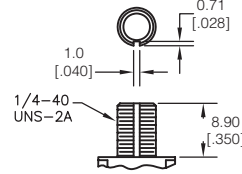
CW 1/4-40 threaded  
environmental seals  
(toggles codes S & M only)



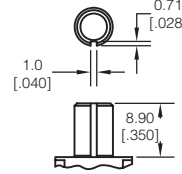
H 1/4-40 threaded



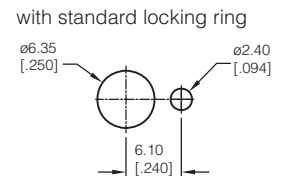
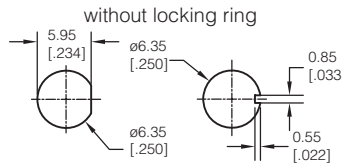
Y 1/4-40 threaded



Y9 unthreaded



Recommended panel cut-outs  
Bushing 1/4

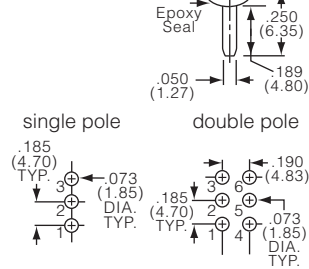


**Terminals**

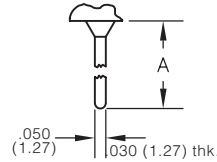


**Codes C, W, W4, Z printed circuit, wire wrap and wire lug**

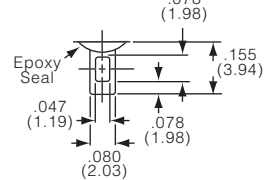
C printed circuit



W, W4 wire wrap



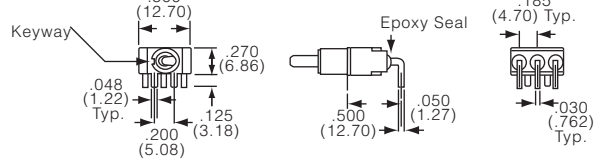
Z wire lug



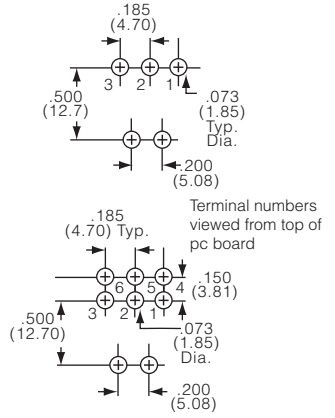
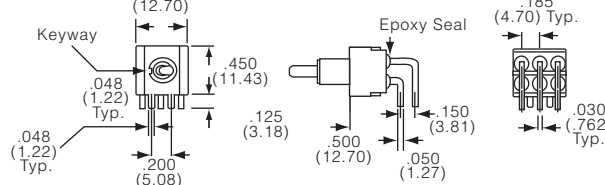
Terminal	Dim A
W	18.69 (.736)
W4	26.98 (1.062)

**Code A right angle**

single pole

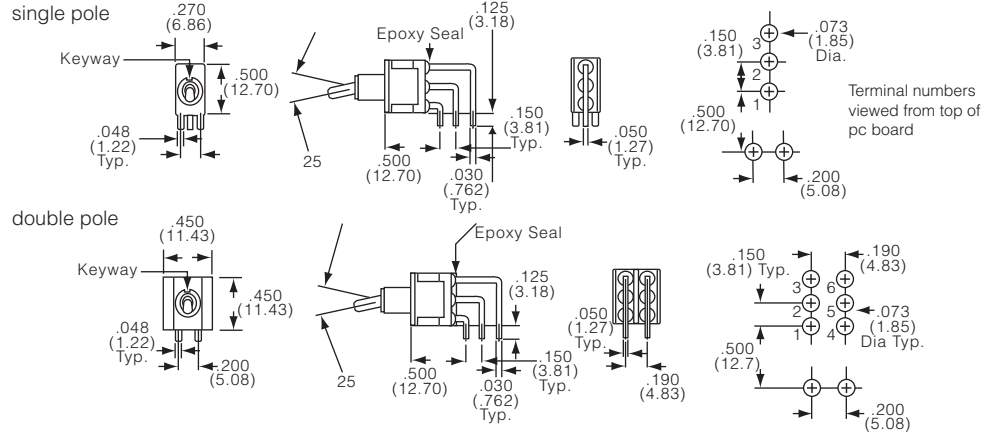


double pole

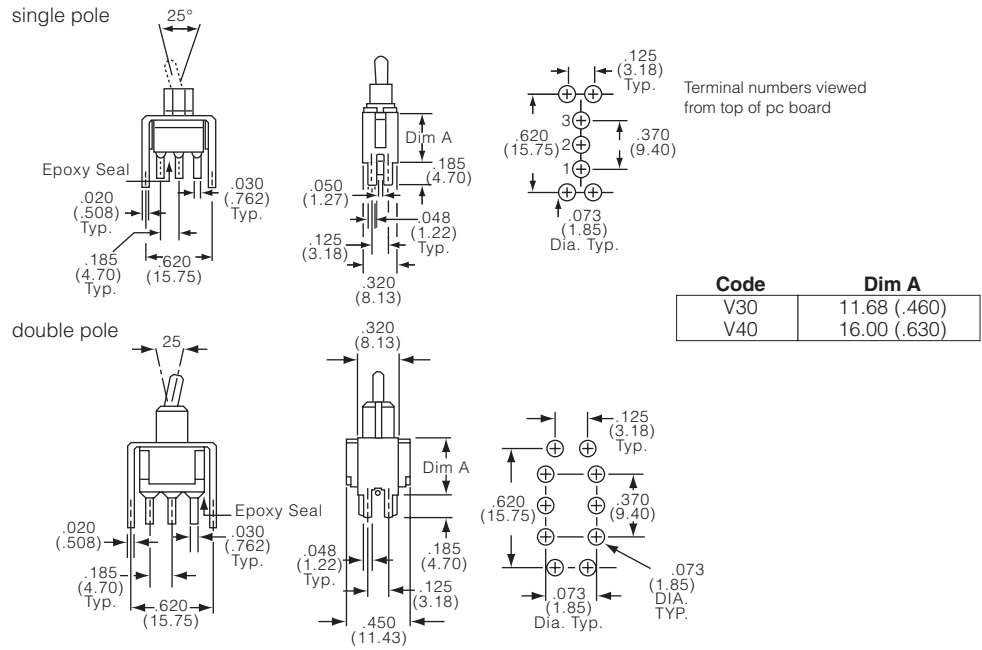


**Gemini A Series (Continued)**

**Code AV2 vertical right angle**



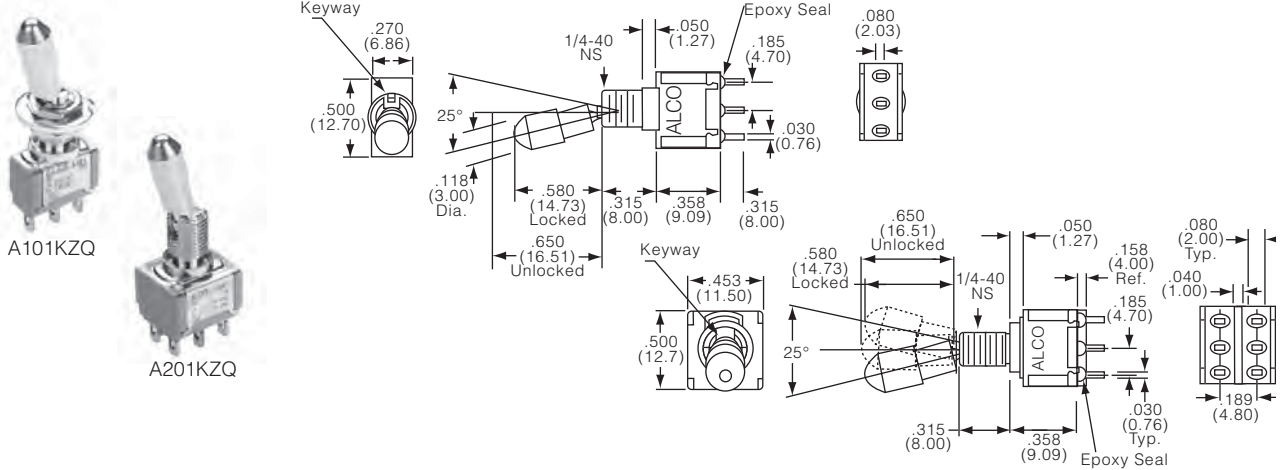
**Codes V30, V40 vertical support**



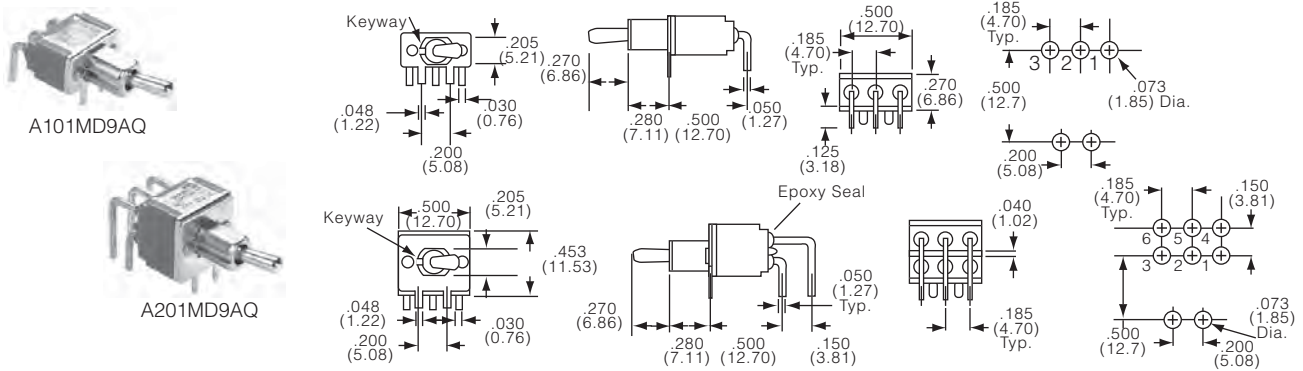
**Gemini A Series (Continued)**

**Dimensions**

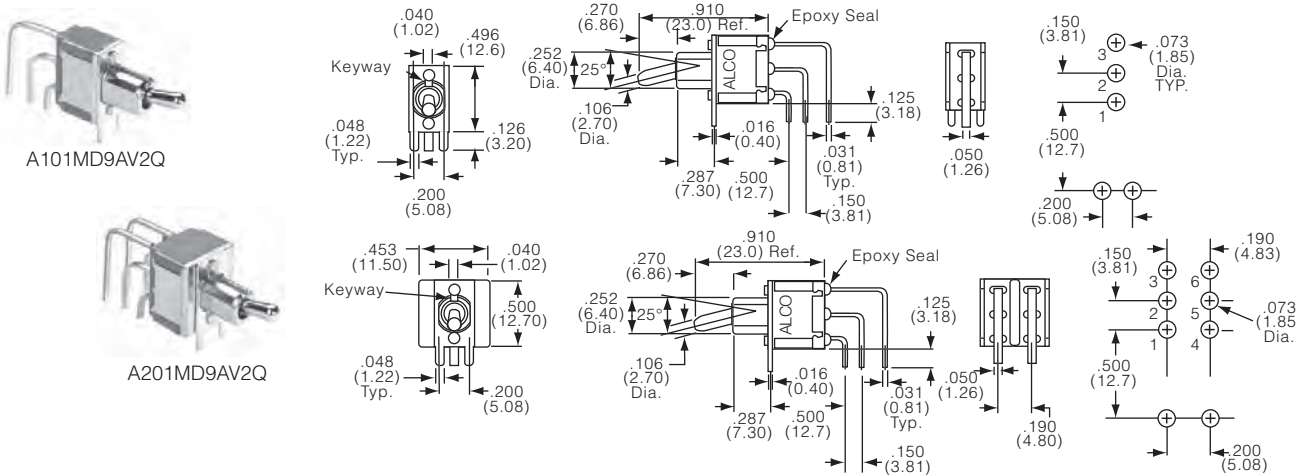
**Series A...KZ locking, unthreaded, wire lug, 1 & 2 pole**



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

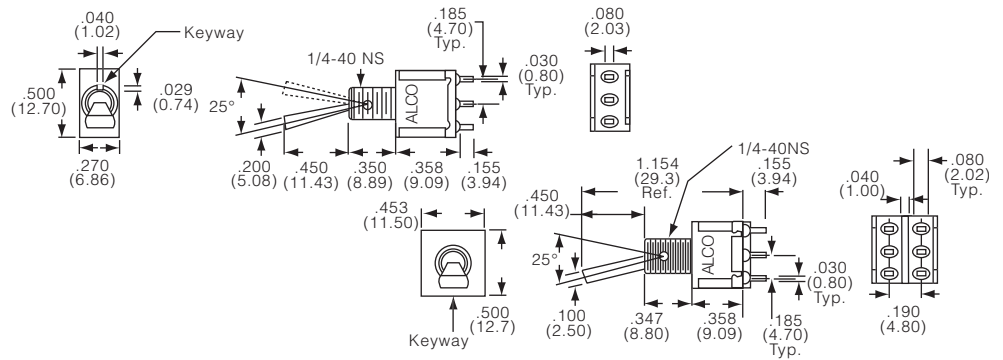


**Series A...MD9AV2 short bat, unthreaded bushing, vertical right angle, 1 & 2 pole**

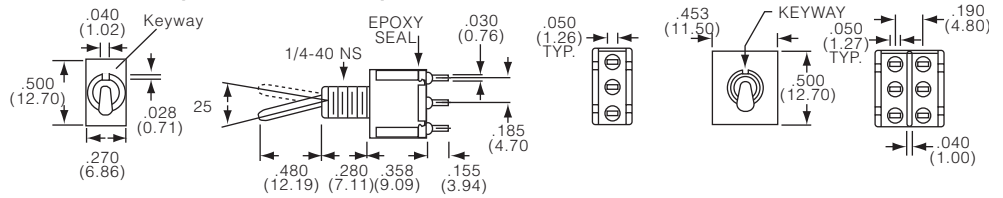


**Series A...P3YZ flatted toggle, 1/4-40 threaded, wire lug, 1 & 2 pole**

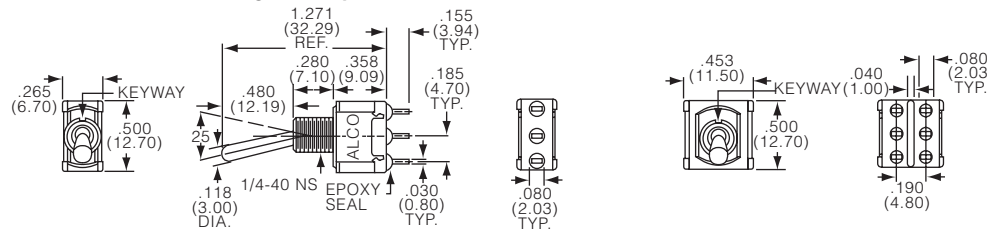
**Gemini A Series (Continued)**



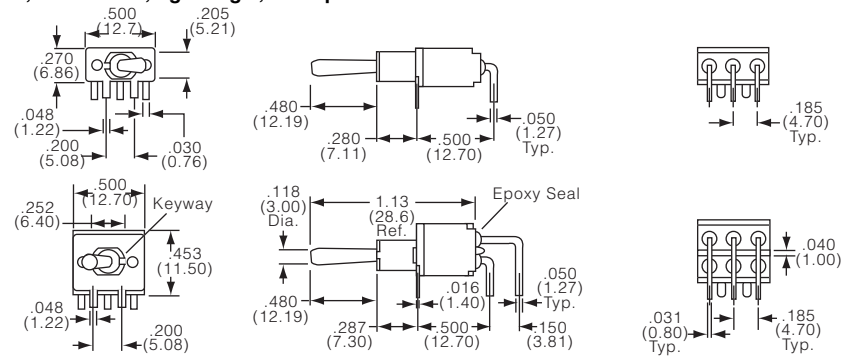
**Series A...SDC long bat, 1/4-40 threaded, printed circuit, 1 & 2 pole**



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

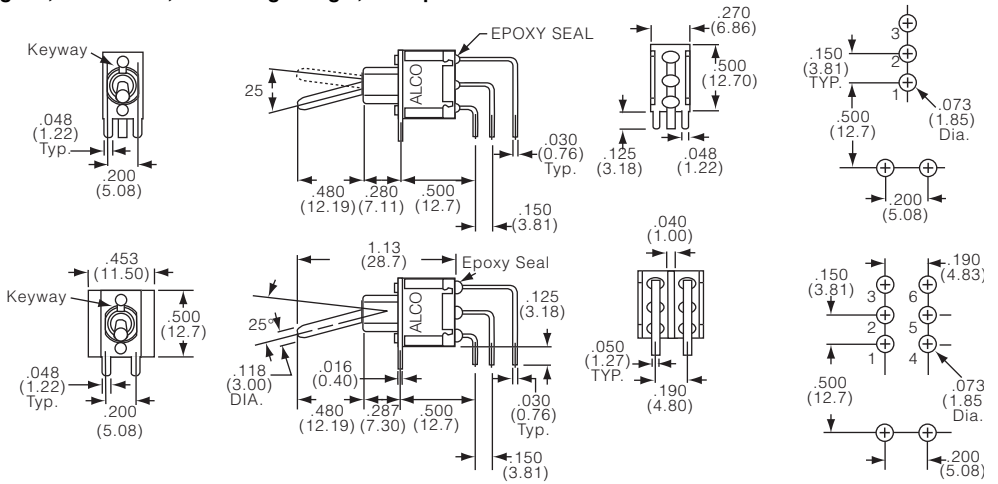
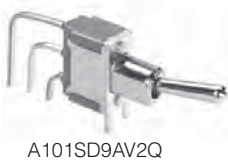


**Series A...SD9A long bat, unthreaded, right angle, 1 & 2 pole**

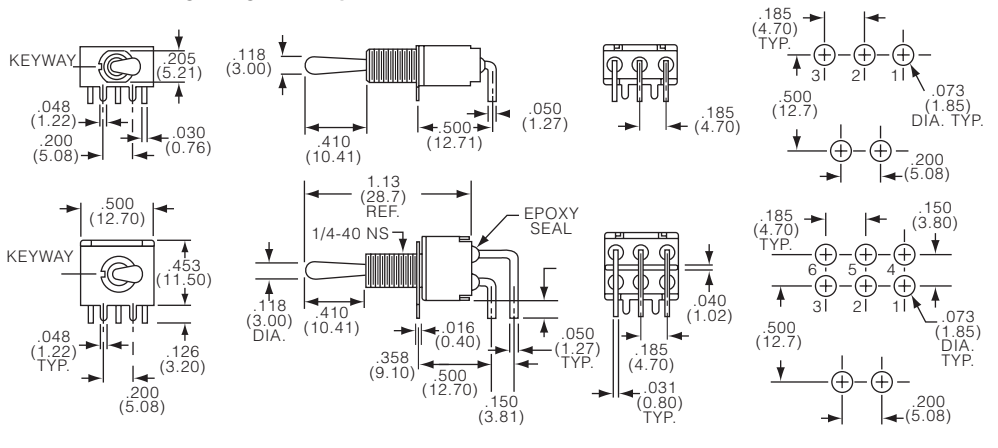


**Gemini A Series (Continued)**

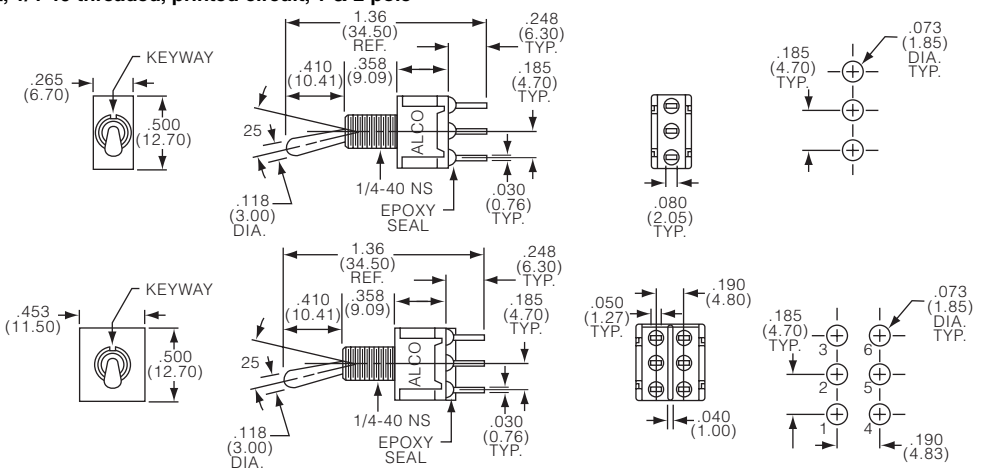
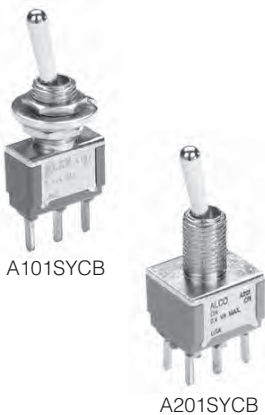
**Series A...SD9AV2 long bat, unthreaded, vertical right angle, 1 & 2 pole**



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



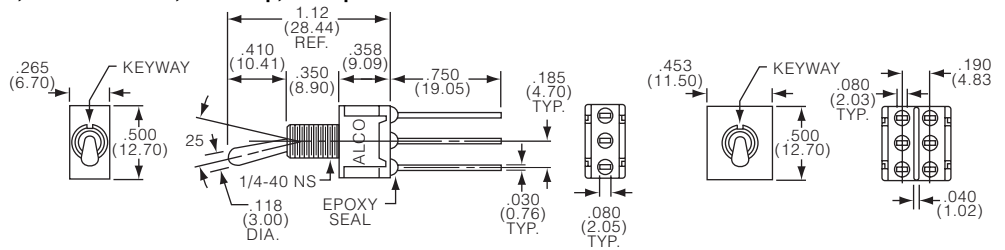
**Series A...SYC long bat, 1/4-40 threaded, printed circuit, 1 & 2 pole**



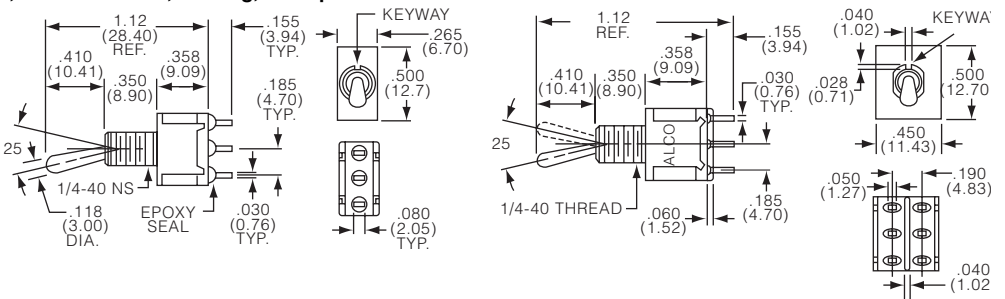
Toggle Switches

**Gemini A Series (Continued)**

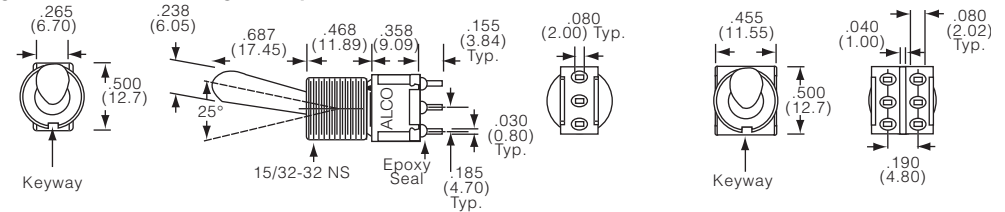
**Series A...SYW long bat, 1/4-40 threaded, wire wrap, 1 & 2 pole**



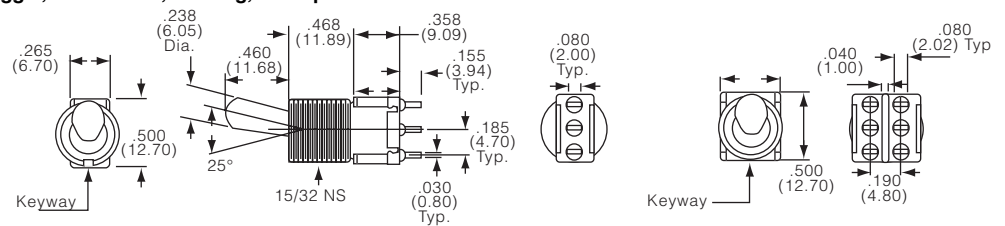
**Series A...SYZ long bat, 1/4-40 threaded, wire lug, 1 & 2 pole**



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



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



Toggle Switches

**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					vertical right angle	gold		1-1825136-5
A101MD9AV2G04						Au over Ag		1-1825136-6
A101MD9AV2Q04						silver		1-1825136-7
A101MD9V30B04					vertical support	gold		1-1825136-8
A101MDAQ04				1/4-40 threaded .28 (7.1)	right angle	silver		1-1825136-9
A101MDAV2B04					vertical right angle	gold		2-1825136-0
A101MDCG04					printed circuit	Au over Ag		2-1825136-1
A101MDZQ04					wire lug	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
<b>A101SYAV2B04</b>					vertical right angle	gold		<b>1825136-8</b>
<b>A101SYCB04</b>					printed circuit			<b>4-1825136-4</b>
<b>A101SYCQ04</b>						silver		<b>4-1825136-5</b>
A101SYWQ04					wire wrap			4-1825136-7
<b>A101SYZB04</b>					wire lug	gold		<b>4-1825136-8</b>
<b>A101SYZQ04</b>						silver		<b>4-1825136-9</b>
A101T1ZB04			lg. tgl.& bushing	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		On-Off-On	locking					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
<b>A103SYAV2B04</b>					vertical right angle	gold		<b>2-1825136-5</b>
<b>A103SYAV2Q04</b>						silver		<b>1-1825137-4</b>
<b>A103SYCB04</b>					printed circuit	gold		<b>1-1825137-5</b>
<b>A103SYCQ04</b>						silver		<b>1-1825137-6</b>
A103SYWB04					wire wrap	gold		1-1825137-7
A103SYWQ04					right angle	silver		1-1825137-8
<b>A103SYZB04</b>					wire lug	gold		<b>1-1825137-9</b>
<b>A103SYZQ04</b>						silver		<b>2-1825137-0</b>
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	Au over Ag		2-1825137-6									
A105P3CG04								printed circuit	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											1/4-40 threaded .35 (8.9)	vertical support	gold	3-1825137-3			
A105SYAB04												right angle		3-1825137-4			
A105SYAV2B04												vertical right angle		3-1825137-5			
A105SYCB04												printed circuit		3-1825137-6			
A105SYCQ04						silver	3-1825137-7										
A105SYZB04						gold	3-1825137-8										
A105SYZQ04						silver	3-1825137-9										
A105T1ZB04			lg. tgl.& bushing	unthreaded .28 (7.1)				gold									
A105T1ZQ04								silver	4-1825137-0								
A105TZQ04									4-1825137-1								
A107KAV2Q04								On-Off-(On)	locking						vertical right angle		
A107KZB04															wire lug	gold	4-1825137-3
A107MD9AV2B04										bat short					vertical right angle		
A107MD9CQ04															printed circuit	silver	4-1825137-4
A107MD9V30Q04															vertical support		4-1825137-5
A107P3ZQ04															wire lug		4-1825137-6
A107SYAQ04															right angle		4-1825137-7
A107SYCB04	printed circuit	gold	4-1825137-8														
A107SYCQ04		silver	4-1825137-9														
A107SYZQ04	wire lug		5-1825137-0														
A107TZB04	On-(On)	locking	lg. tgl.& bushing	unthreaded .28 (7.1)											gold		
A108MD9AB04															right angle		5-1825137-1
A108MD9AQ04			bat short	1/4-40 threaded .35 (8.9)	printed circuit	silver		5-1825136-6									
A108P3CQ04								flatted		5-1825136-8							
A108P3ZQ04								wire lug		5-1825136-9							
A108SD9AQ04								bat long	unthreaded .28 (7.1)	right angle		6-1825136-0					
A108SDZQ04										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
A201KD9AQ04								silver	1825138-2								
A201KZQ04	wire lug		1825138-3														
A201L1D9V30Q04	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													
A201MDA04				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
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					
A201SYAB04												2-1825138-1					
A201SYAQ04				1/4-40 threaded .35 (8.9)								2-1825138-2					
A201SYCB04												silver	2-1825138-3				
<b>A201SYCQ04</b>												printed circuit	gold	<b>2-1825138-4</b>			
<b>A201SYCQ04</b>												silver		<b>2-1825138-5</b>			
A201SYWQ04								wire wrap		2-1825138-6							
<b>A201SYZB04</b>								wire lug	gold	<b>2-1825138-7</b>							
<b>A201SYZQ04</b>								silver		<b>2-1825138-8</b>							
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
<b>A203SYCB04</b>					1/4-40 threaded .35 (8.9)	printed circuit	gold	
<b>A203SYCQ04</b>						silver		<b>1825139-9</b>
<b>A203SYZQ04</b>					wire lug			<b>1-1825139-0</b>
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		1-1825139-6
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		3-1825138-5
A208SYCB04					printed circuit	gold		3-1825138-6
A208SYCQ04						wire lug		silver
A208SYZQ04								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
<b>A211SYCQ04</b>					1/4-40 threaded .35 (8.9)	printed circuit		
A211SYZB04					wire lug	gold		3-1825139-8
<b>A211SYZQ04</b>								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	4-1825139-4
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

**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

**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

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

**Gemini AE Series, Sealed IP67 (Continued)**

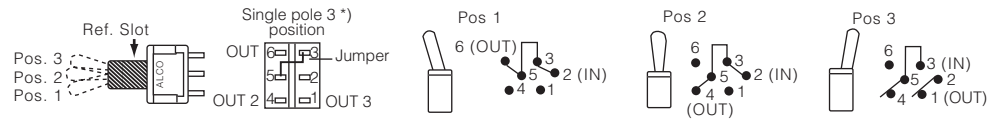
**Function**



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

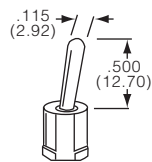
Wiring diagram for functions 11, 13, 15



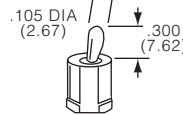
**Toggles**



S standard, bat long



M short toggle

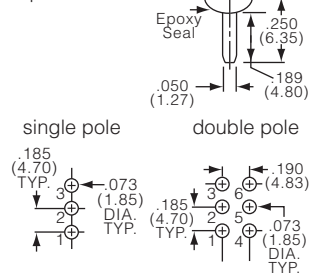


**Terminals**

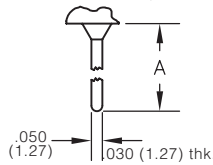


**Codes C, W, W4, Z printed circuit, wire wrap and wire lug**

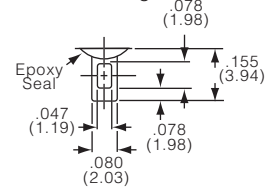
C printed circuit



W, W4 wire wrap



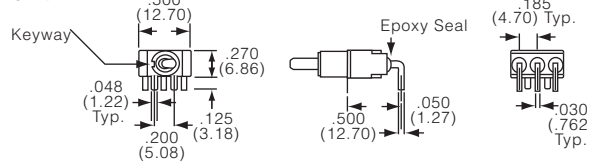
Z wire lug



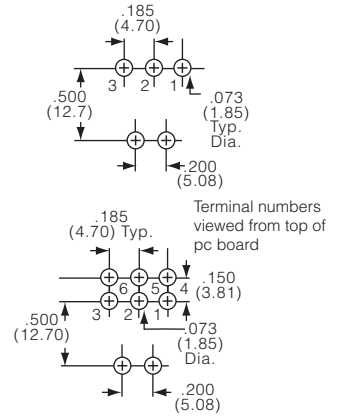
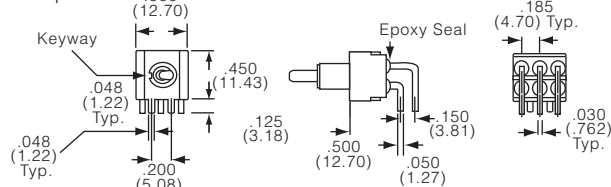
Terminal	Dim A
W	18.69 (.736)
W4	26.98 (1.062)

**Code A right angle**

single pole

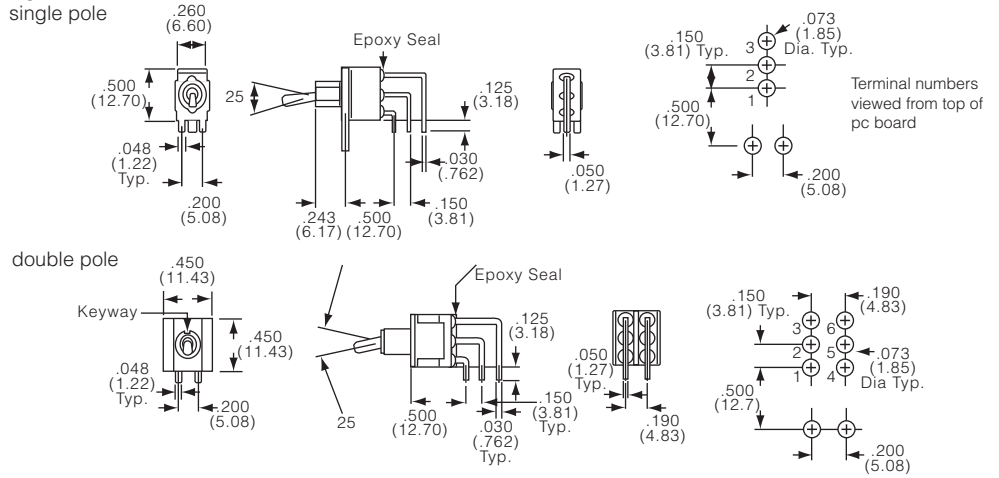


double pole

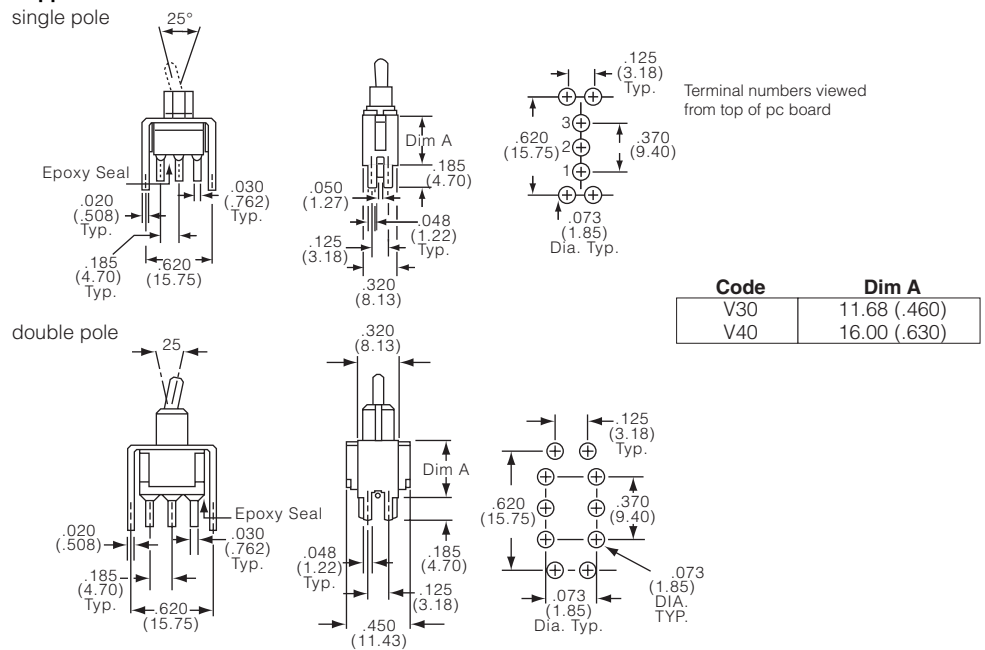


**Gemini AE Series, Sealed IP67 (Continued)**

**Code AV2 vertical right angle**



**Codes V30, V40 vertical support**



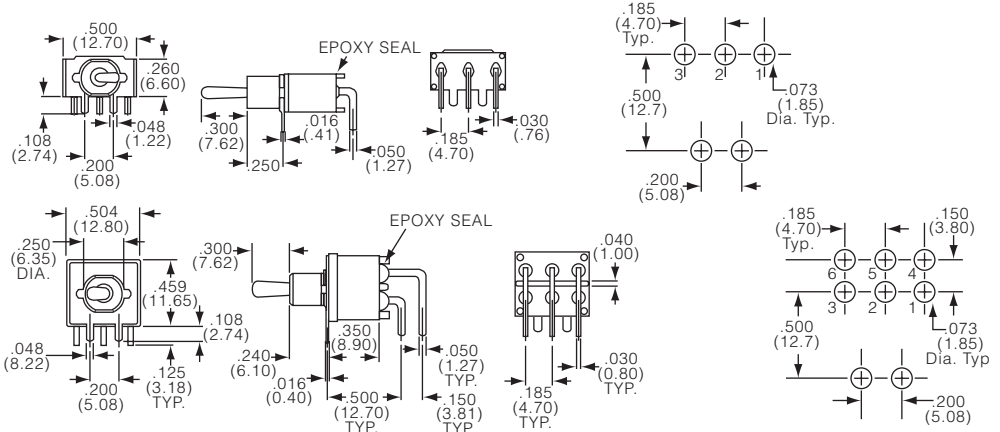
**Gemini AE Series, Sealed IP67 (Continued)**

**Dimensions**

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



AE101MD1AQ



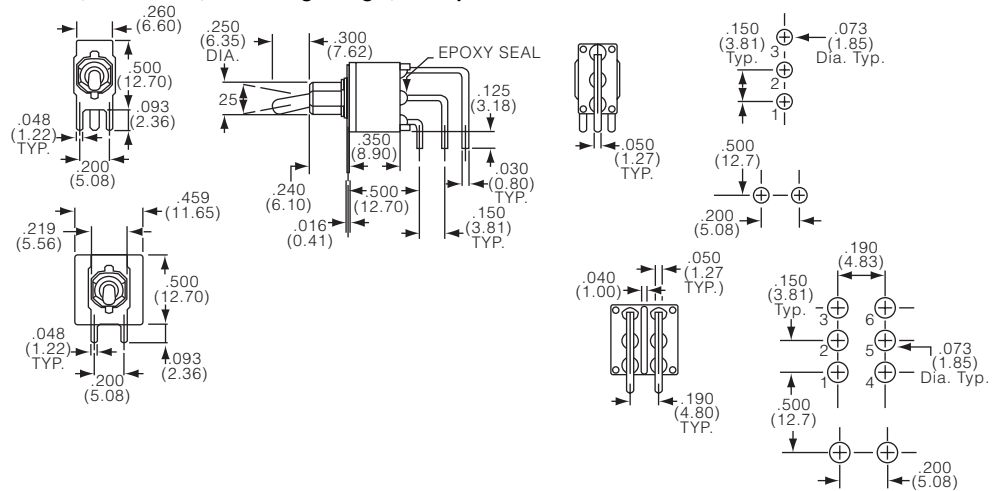
**Series AE...MD1AV2 short bat, unthreaded, vertical right angle, 1 & 2 pole**



AE101MD1AV2Q



AE201MD1AV2Q



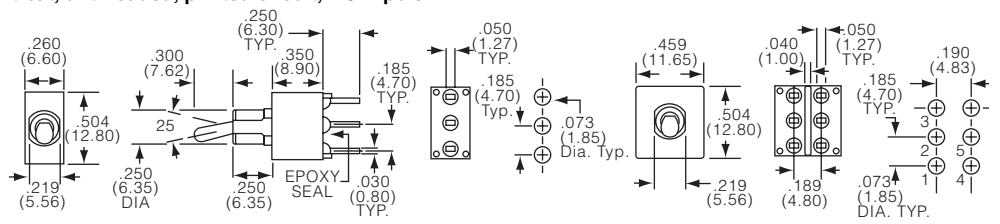
**Series AE...MD1C short bat, unthreaded, printed circuit, 1 & 2 pole**



AE101MD1CQ

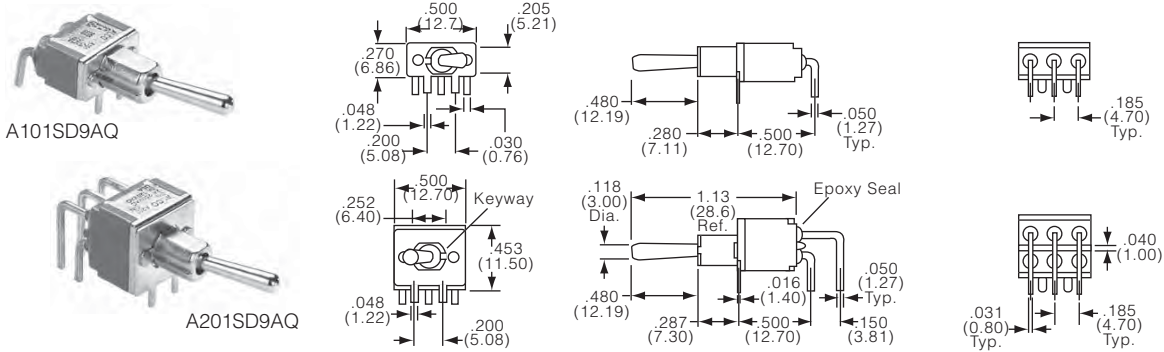


AE201MD1CQ

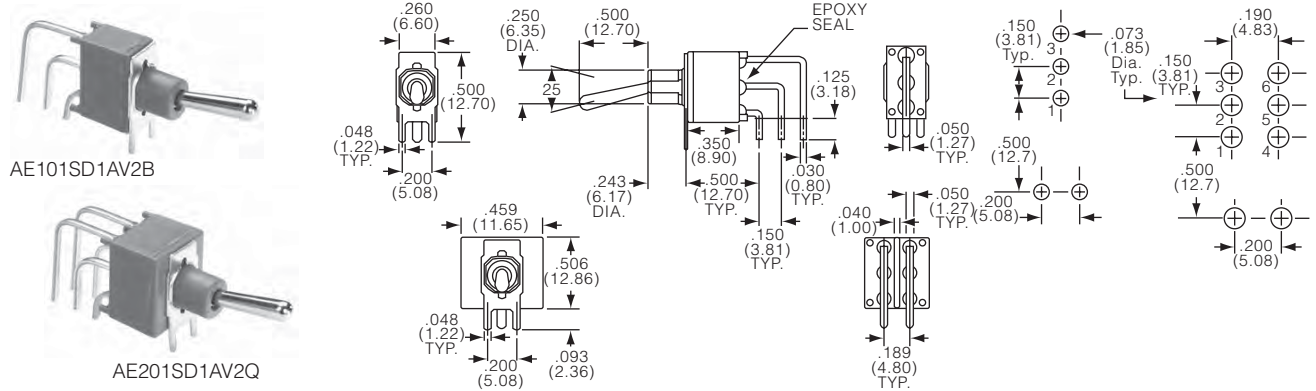


**Gemini AE Series, Sealed IP67 (Continued)**

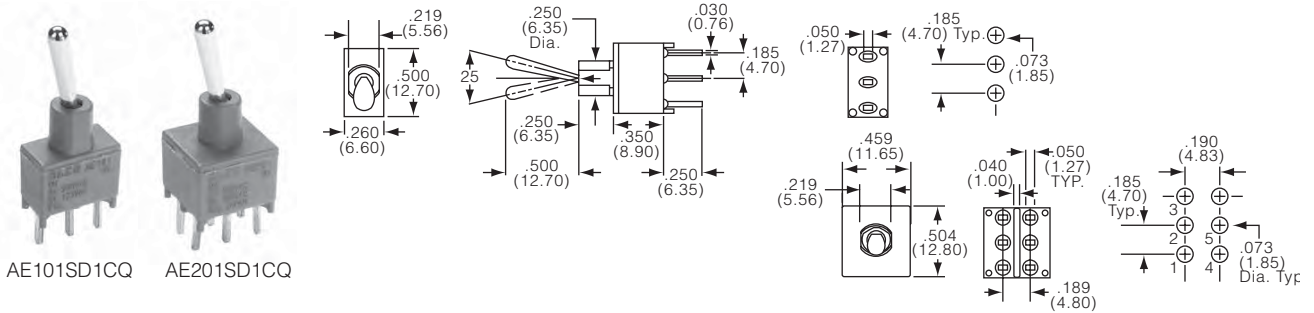
**Series AE...SD1A long bat, unthreaded, right angle, 1 & 2 pole**



**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				
<b>AE101SD1AV2B04</b>									vertical right angle		gold	<b>1-1825142-8</b>				
<b>AE101SD1AV2Q04</b>											silver	<b>1-1825142-9</b>				
<b>AE101SD1CB04</b>									printed circuit		gold	<b>2-1825142-0</b>				
<b>AE101SD1CQ04</b>											silver	<b>2-1825142-1</b>				
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				2-1825142-6									
AE103MD1W4B04					wire wrap		2-1825142-8									
<b>AE103SD1AV2B04</b>			vertical right angle		bat long	<b>2-1825142-9</b>										
<b>AE103SD1CB04</b>						printed circuit	<b>3-1825142-0</b>									
<b>AE103SD1CQ04</b>					silver	<b>3-1825142-1</b>										
AE103SD1V30B04			vertical support			3-1825142-3										
AE103SD1W4B04					wire wrap	3-1825142-4										
AE105MD1AB04			(On)-Off-(On)		bat short			right angle		3-1825142-5						
AE105MD1AG04								Au over Ag	3-1825142-6							
AE105MD1AV2B04								vertical right angle		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		4-1825142-2					
AE107SD1AB04									right angle	4-1825142-3						
AE107SD1AG04		bat long								Au over Ag	4-1825142-4					
AE107SD1CB04									printed circuit	4-1825142-5						
AE107SD1V30B04									vertical support	4-1825142-6						
AE108MD1AQ04	On-(On)	bat short			right angle	silver	4-1825142-7									
AE108MD1AV2B04					vertical right angle	4-1825142-8										
AE108MD1AV2Q04					bat long	4-1825142-9										
AE108SD1AB04						right angle	5-1825142-0									
AE108SD1AQ04					silver	5-1825142-1										
AE108SD1CQ04		printed circuit			5-1825142-2											
AE108SD1V30B04		vertical support			5-1825142-4											
AE108SD1W4B04		wire wrap			5-1825142-5											
AE201MD1AB04		2			On-On	bat short		right angle		1825143-1						
AE201MD1AQ04									silver	1825143-2						
AE201MD1AV2B04									vertical right angle	1825143-3						
AE201MD1CB04									printed circuit	1825143-4						
AE201MD1CQ04			silver	1825143-5												
AE201MD1W4B04	wire wrap		gold	1825143-6												
AE201SD1AB04	bat long									right angle		1825143-7				
AE201SD1AG04										Au over Ag	1825143-8					
<b>AE201SD1AV2B04</b>	vertical right angle		gold	<b>1825143-9</b>												
<b>AE201SD1CB04</b>			printed circuit	<b>1-1825143-0</b>												
<b>AE201SD1CQ04</b>			silver	<b>1-1825143-1</b>												
AE201SD1W4B04	wire wrap		gold	1-1825143-2												
AE203MD1AB04	On-Off-On		bat short							right angle		1-1825143-3				
AE203MD1AQ04										silver	1-1825143-4					
AE203MD1AV2B04										vertical right angle	gold	1-1825143-5				
AE203SD1AB04										bat long				right angle		1-1825143-6
<b>AE203SD1AV2B04</b>														vertical right angle	<b>1-1825143-7</b>	
<b>AE203SD1AV2Q04</b>											silver	<b>1-1825143-8</b>				
<b>AE203SD1CB04</b>										printed circuit	gold	<b>1-1825143-9</b>				
AE203SD1W4B04										wire wrap		2-1825143-0				
AE205MD1AV2B04		(On)-Off-(On)			bat short			vertical right angle			2-1825143-1					
AE205SD1CQ04								printed circuit		silver	2-1825143-2					
AE207MD1AB04		On-Off-(On)			bat short			right angle		gold	2-1825143-4					
AE208SD1W4B04								On-(On)		bat long	wire wrap		2-1825143-5			
AE211MD1CB04	On-On-On	bat short			printed circuit		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

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



**MT Green Series (Continued)**

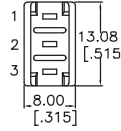
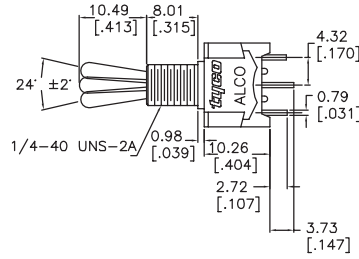
MTA



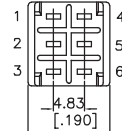
**MTA1, MTA2 1 & 2 pole**



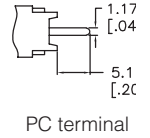
MTA106D04 MTA206NPC04



MTA106



MTA206

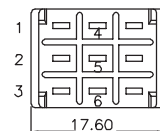
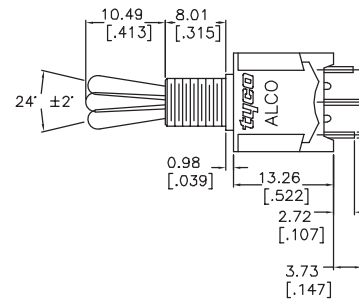


PC terminal

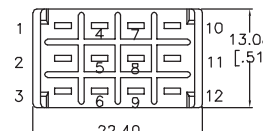
**MTA3, MTA4 3 & 4 pole**



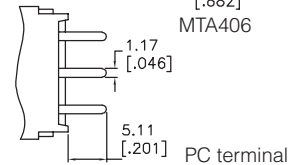
MTA306D04 MTA406NPC04



MTA306



MTA406

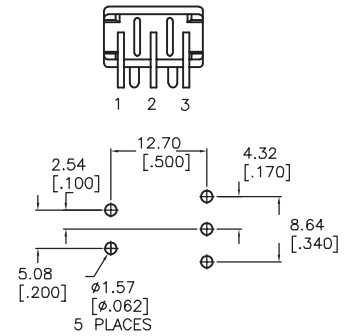
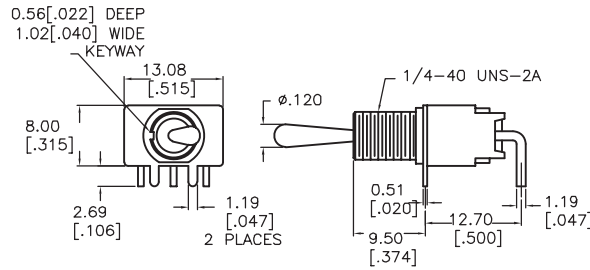


PC terminal

**MTA81 RA 1pole, right angle**



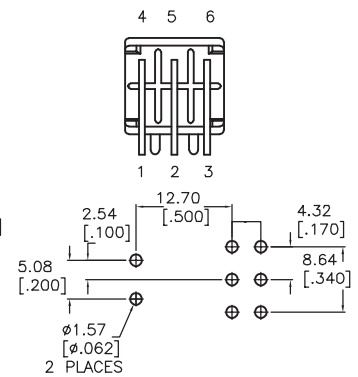
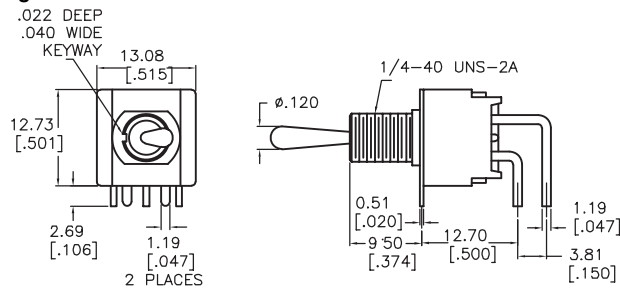
MTA8106DRA04



**MTA82 RA 2pole, right angle**



MTA8206NRA04



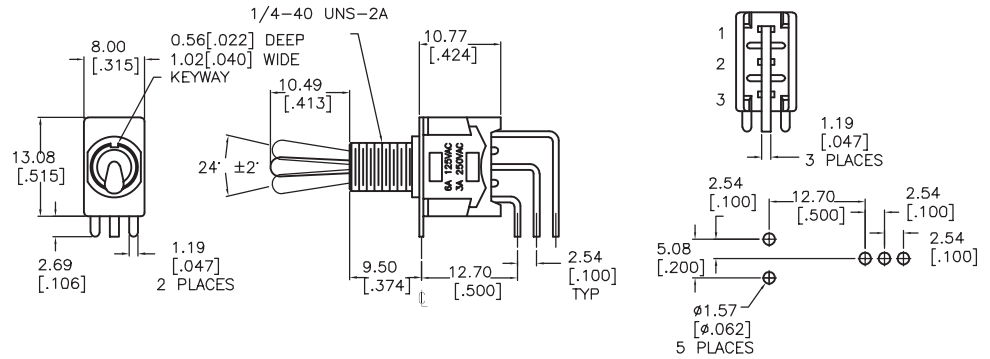
Toggle Switches

**MT Green Series (Continued)**

**MTA81 VRA 1pole, vertical right angle**



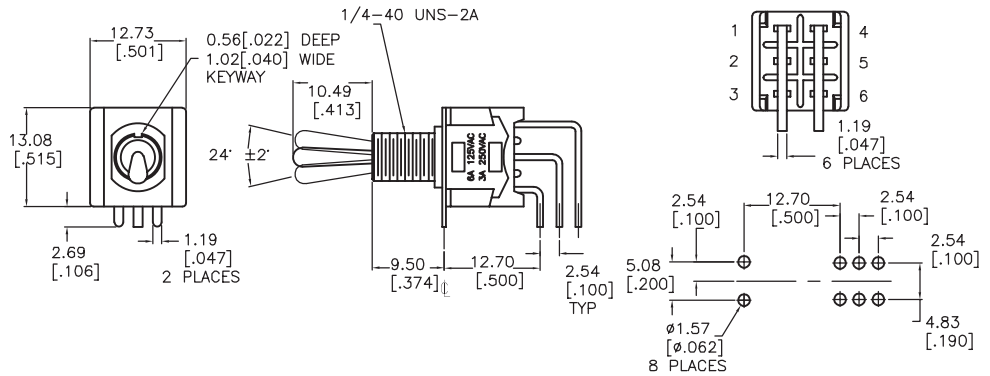
MTA8106DVRA04



**MTA82 VRA 2pole, vertical right angle**



MTA8206NVRA04



**MTB**



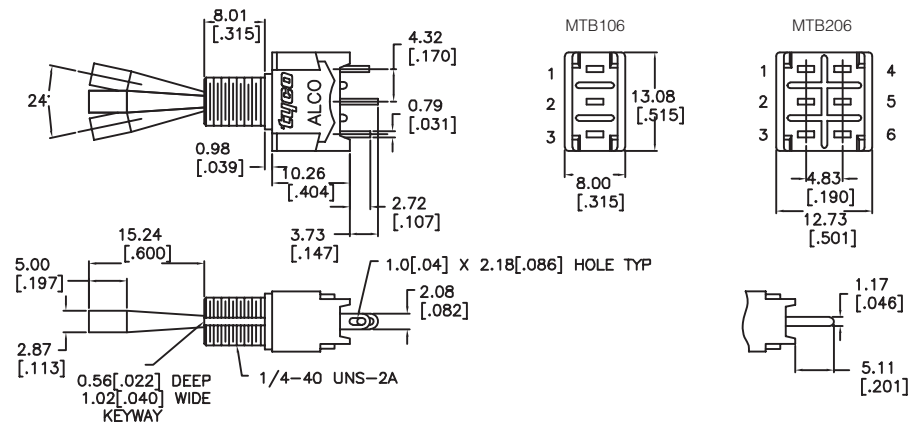
**MTB1, MTB2 1 & 2 pole**



MTB106D04

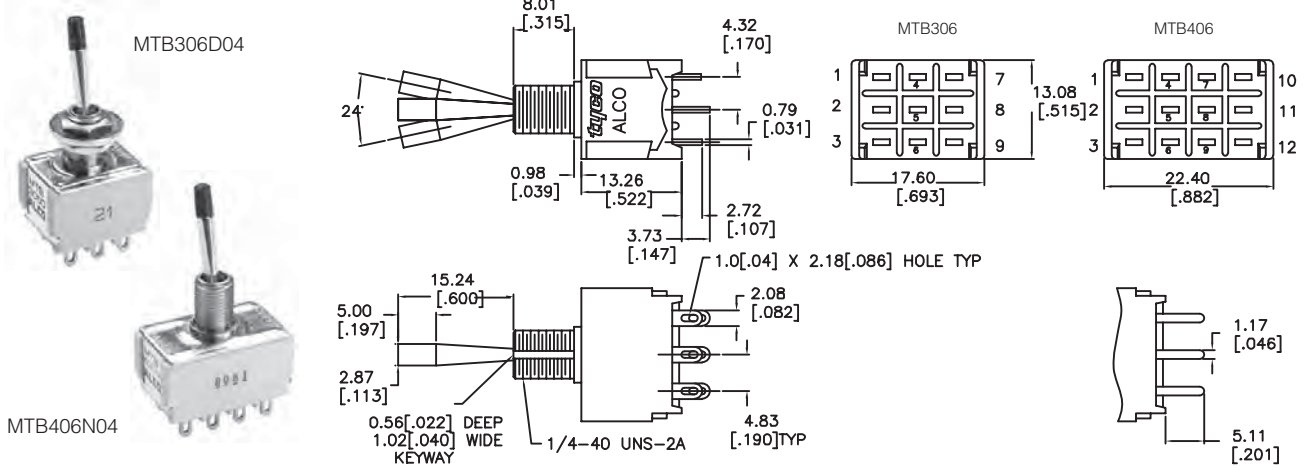


MTB206N04



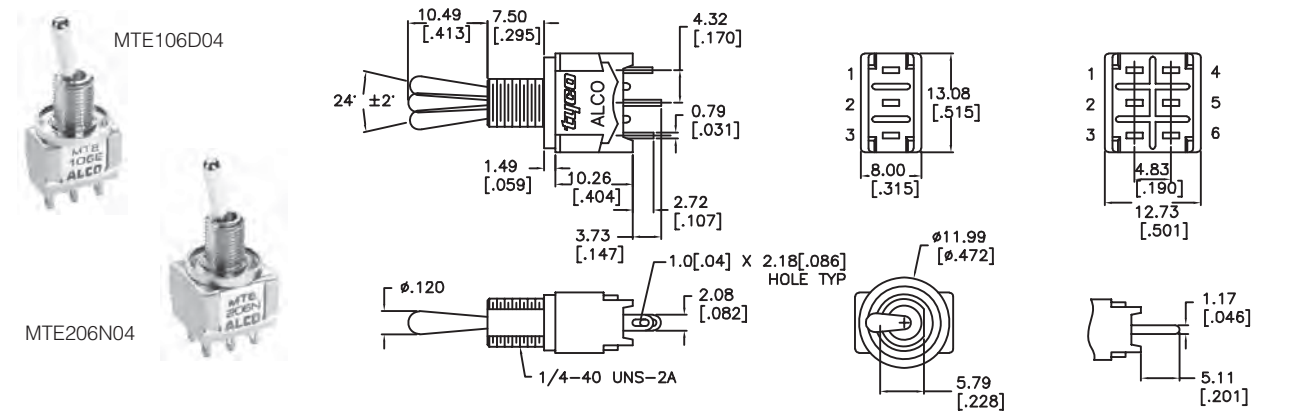
**MT Green Series (Continued)**

**MTB3, MTB4 3 & 4 pole**

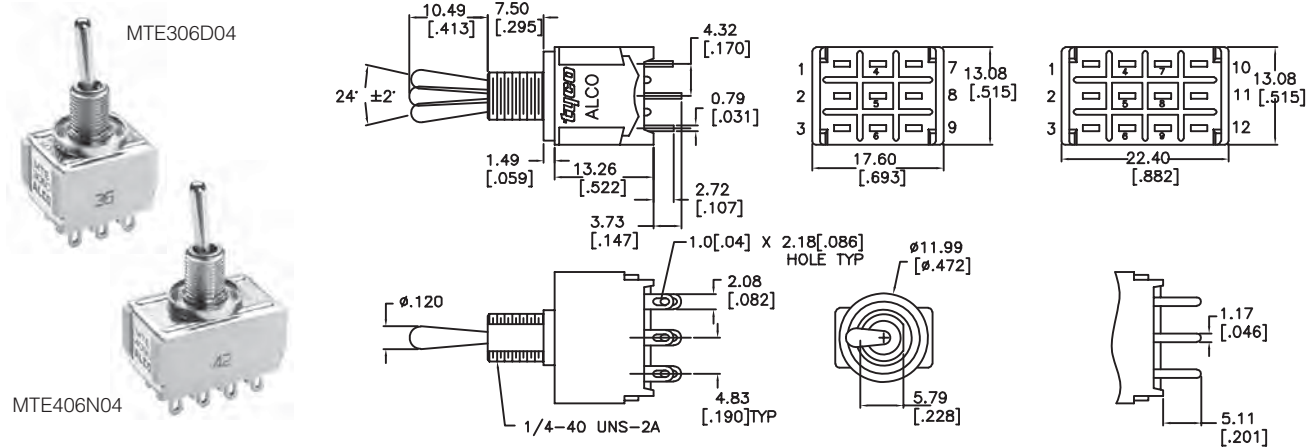


**MTE**

**MTE1, MTE2 1 & 2 pole**



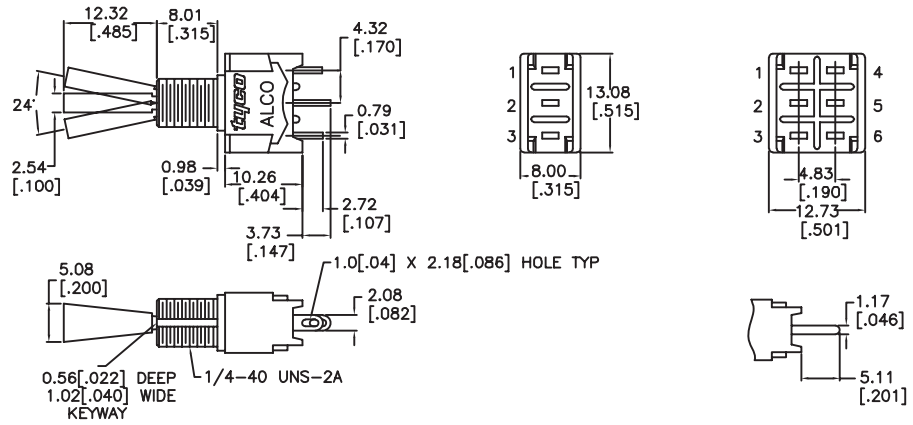
**MTE3, MTE4 3 & 4 pole**



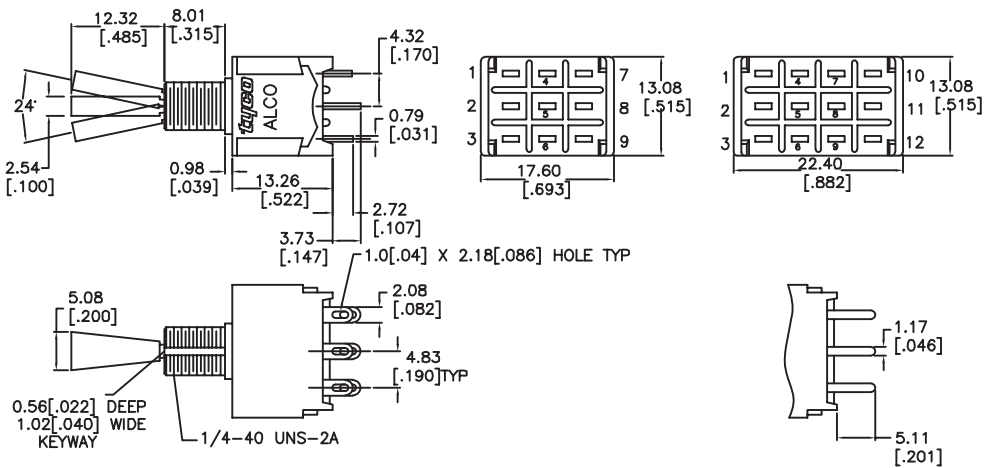
**MT Green Series** (Continued)

**MTF**

**MTF1, MTF2 1 & 2 pole**

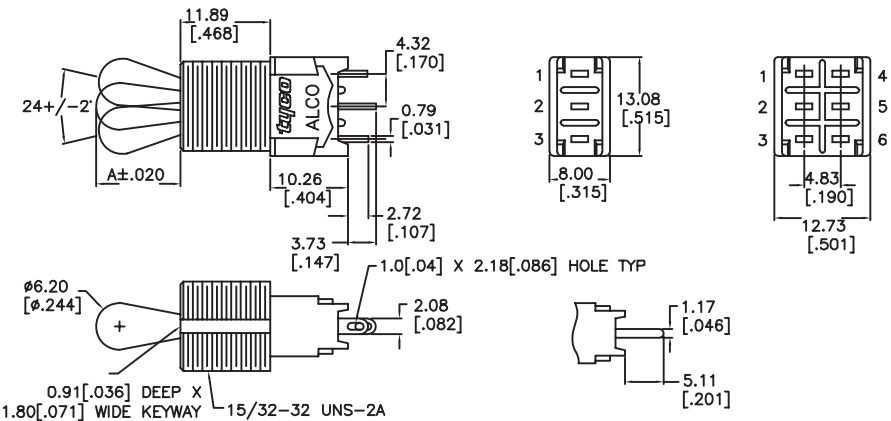


**MTF3, MTF4 3 & 4 pole**



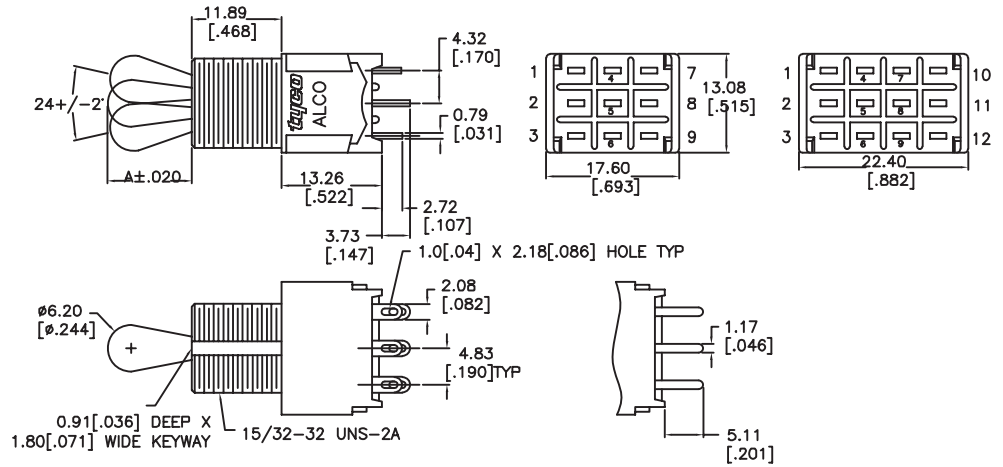
**MTG**

**MTG1, MTG2 1 & 2 pole**



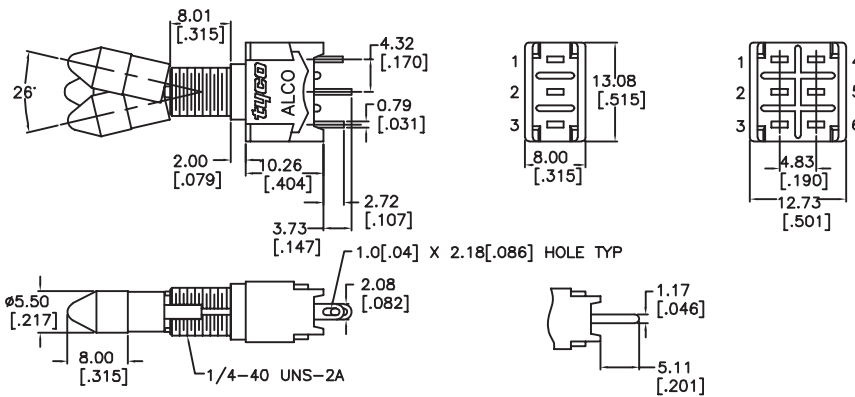
**MT Green Series (Continued)**

**MTG3, MTG4 3 & 4 pole**

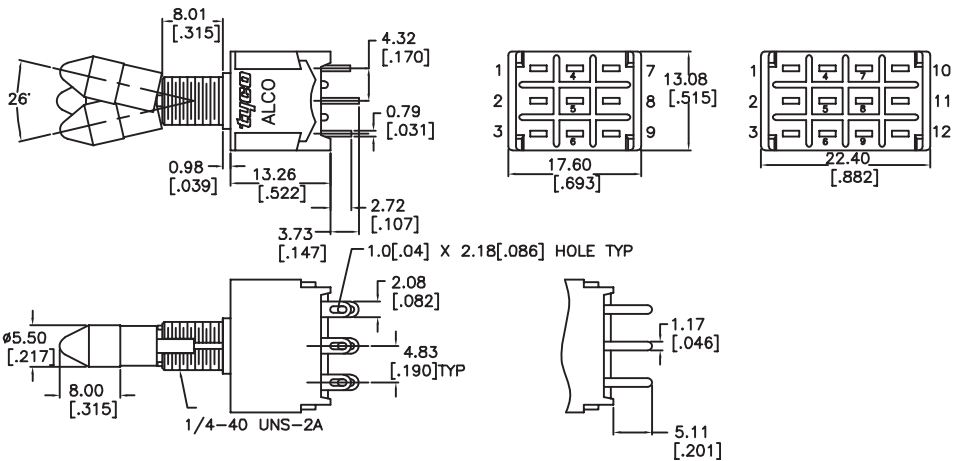


**MTL**

**MTL1, MTL2 1 & 2 pole**



**MTL3, MTL4 3 & 4 pole**

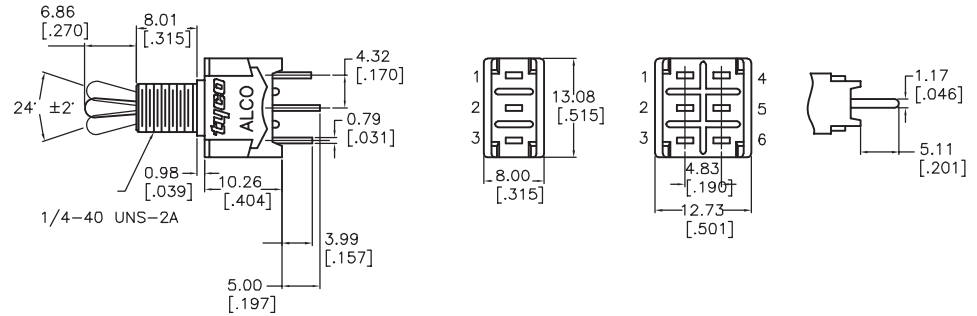


**MT Green Series** (Continued)

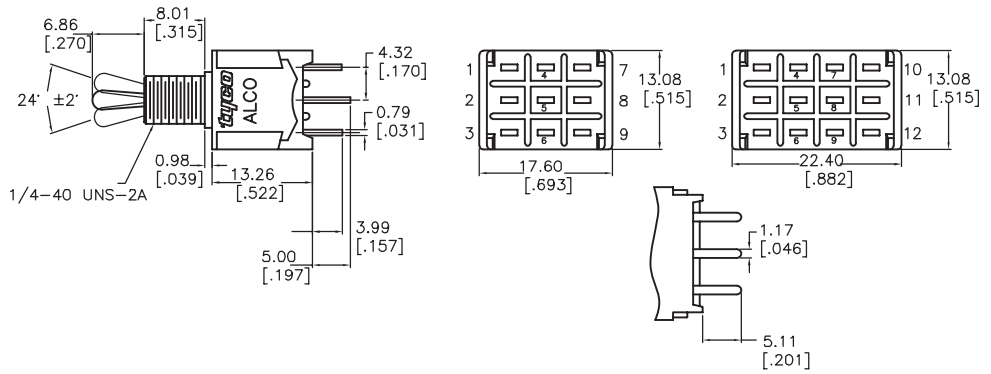
MTM



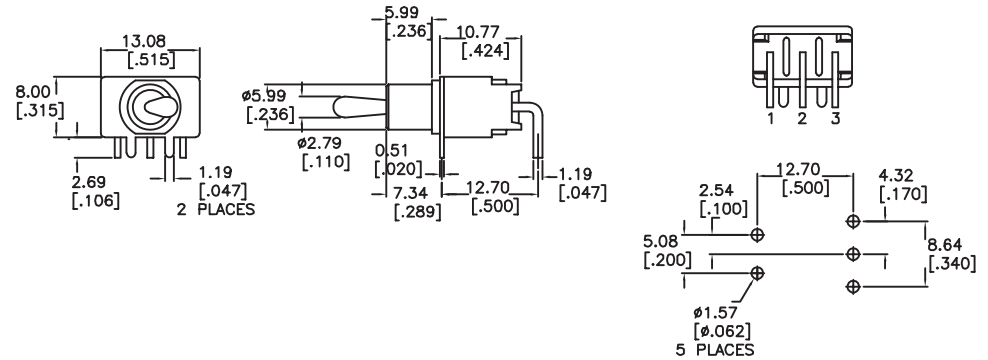
**MTM1, MTM2 1 & 2 pole**



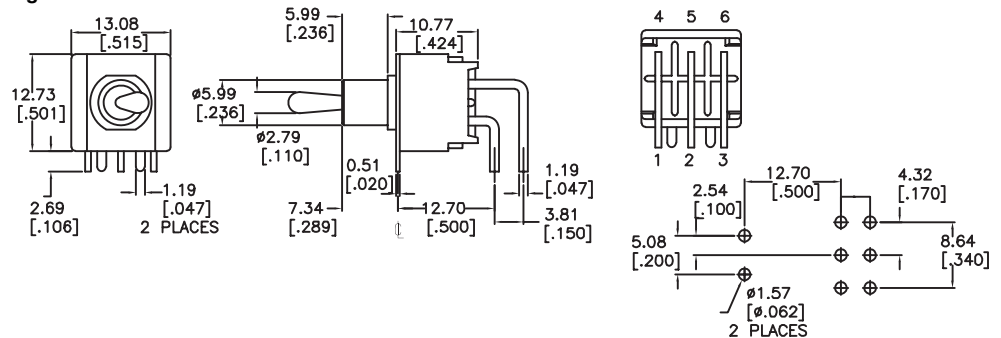
**MTM3, MTM4 3 & 4 pole**



**MTM81 RA 1pole, right angle**



**MTM82 RA 2pole, right angle**

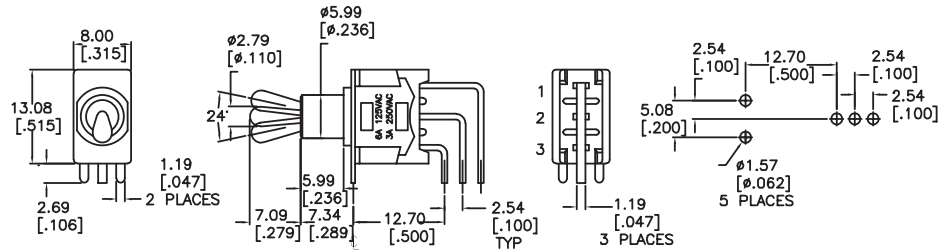


**MT Green Series (Continued)**

**MTM81 VRA 1pole, vertical right angle**



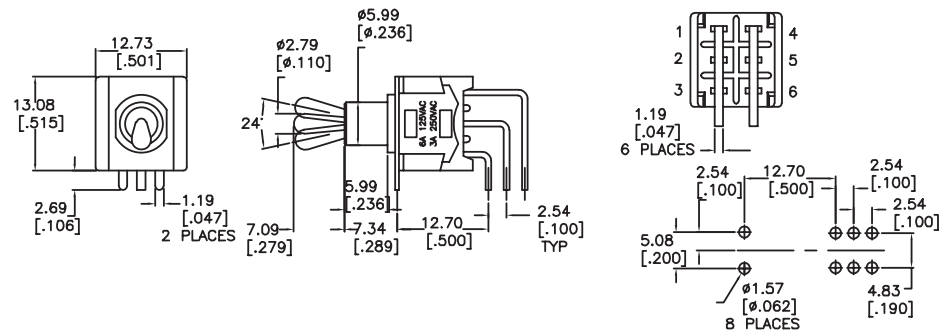
MTM8106DVRA04



**MTM82 VRA 2pole, vertical right angle**



MTM8206NVRA04



**Function**

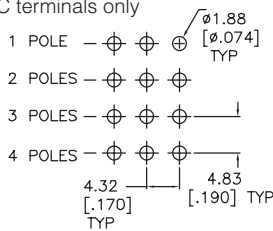


Function	Poles	Throws	↘	↓	↙	↘	↓	↙
A	1	1	On	None	Off	2-3	-	Off
D	1	2	On	None	On	2-3	-	2-1
D	3	2	On	None	On	2-3, 5-6, 8-9	-	2-1, 5-4, 8-7
E	1	2	On	Off	On	2-3	Off	2-1
E	3	2	On	Off	On	2-3, 5-6, 8-9	Off	2-1, 5-4, 8-7
F	1	2	On	None	(On)	2-3	-	2-1
F	3	2	On	None	(On)	2-3, 5-6, 8-9	-	2-1, 5-4, 8-7
G	1	2	(On)	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 <sup>1)</sup>	3	On	On	On	5-6	5-3	5-1
PA	2 <sup>2)</sup>	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 <sup>1)</sup>	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 <sup>1)</sup>	3	On	On	(On)	5-6	5-3	5-1

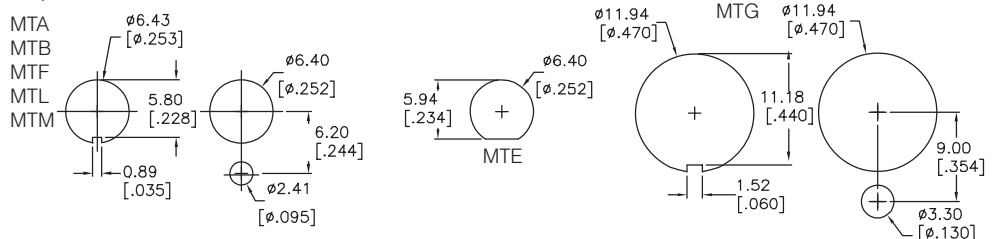
<sup>1)</sup> customer installed external jumper between terminals 1 and 4 required for 1 pole 3 throw function  
<sup>2)</sup> customer installed external jumpers between terminals 2 and 4 as well as between 8 and 10 required for 2 pole 3 throw function  
 Off indicates a mechanical position with no 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
<b>MTA306D04</b>			3	wire lug		<b>3-1571920-0</b>
<b>MTA306DPC04</b>				pc board		<b>3-1571920-1</b>
<b>MTA306E04</b>				wire lug		<b>3-1571920-2</b>
<b>MTA306EPC04</b>				pc board		<b>3-1571920-3</b>
MTA306F04				wire lug		3-1571920-4
MTA306FFPC04				pc board		3-1571920-5
MTA306H04				wire lug		3-1571920-6
MTA306HPC04				pc board		3-1571920-7
<b>MTA406N04</b>			4	wire lug		<b>3-1571920-8</b>
<b>MTA406NPC04</b>				pc board		<b>3-1571920-9</b>
<b>MTA406P04</b>				wire lug		<b>4-1571920-0</b>
MTA406PA04			2			4-1571920-1
MTA406PAPC04				pc board		4-1571920-2
<b>MTA406PPC04</b>			4			<b>4-1571920-3</b>
MTA8106DGVRA04			1	vertical r.a.		1571922-3
<b>MTA8106DRA04</b>				right angle		<b>1571922-4</b>
MTA8106DVRA04				vertical r.a.		1571922-5
MTA8106EGRA04				right angle		1571922-6
MTA8106EGVRA04				vertical r.a.		1571922-7
<b>MTA8106ERA04</b>				right angle		<b>1571922-8</b>
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
<b>MTE306D04</b>			3			<b>1-1571924-6</b>
<b>MTE306E04</b>						<b>1-1571924-7</b>
<b>MTE406N04</b>			4			<b>1-1571924-8</b>
<b>MTE406P04</b>						<b>1-1571924-9</b>
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

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

**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

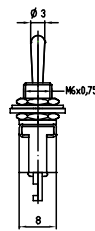
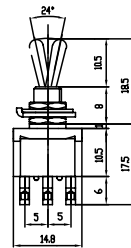
Actuator



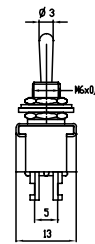
Code 0 standard toggle



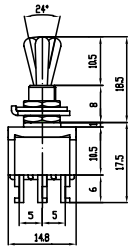
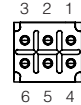
FTD0904



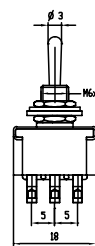
1 pole



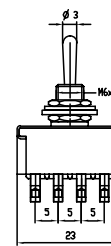
2 pole



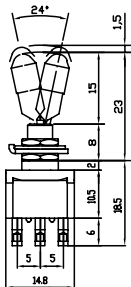
3 pole



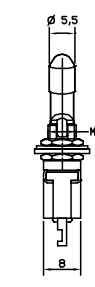
4 pole



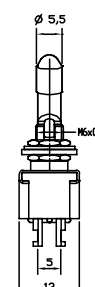
Code 5 locking lever



1 pole

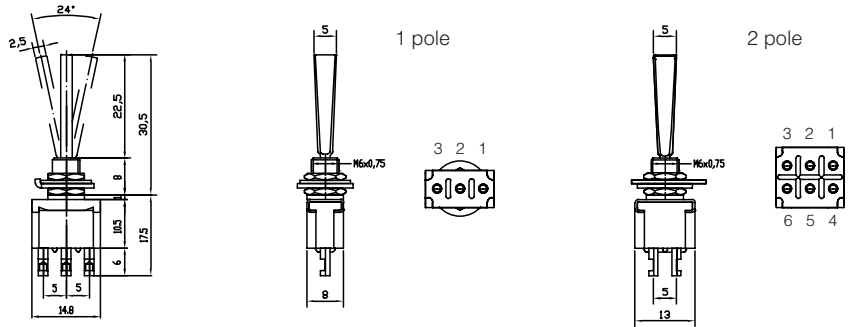


2 pole



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

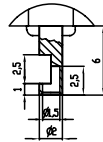
**Code 7 long flat toggle**



**Terminal**

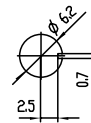


**Code 9 leadwire hooking type**

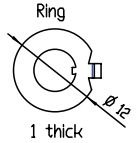


**Mounting**

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
<b>F4TN0904</b>	4 poles			hooking		compliant	<b>3-6437630-5</b>
F4TPA0904		ON-ON-ON		type			3-6437630-6
<b>FTD0904</b>	1 pole	ON-ON	standard				<b>2-6437630-0</b>
<b>FTD09G04</b>					gold		<b>3-6437630-4</b>
<b>FTD5904</b>			locking lever		silver		<b>1-6437630-5</b>
<b>FTD59G04</b>					gold		<b>4-6437630-0</b>
<b>FTD7904</b>			flat toggle		silver		<b>5-6437630-3</b>
FTD79G04					gold		5-6437630-4
<b>FTE0904</b>		ON-OFF-ON	standard		silver		<b>6-6437630-2</b>
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
<b>FTH0904</b>		ON-OFF-(ON)			silver		<b>4-6437630-8</b>
FTH09G04					gold		6-6437630-4
<b>FTN0904</b>	2 poles	ON-ON			silver		<b>4-6437630-2</b>
FTN09G04					gold		6-6437630-8
<b>FTN5904</b>			locking lever		silver		<b>3-6437630-9</b>
<b>FTN59G04</b>					gold		<b>6-6437630-1</b>
FTN7904			flat toggle		silver		5-6437630-2
FTN79G04					gold		5-6437630-9
<b>FTP0904</b>		ON-OFF-ON	standard		silver		<b>4-6437630-6</b>
<b>FTPA0904</b>							<b>4-6437630-5</b>
FTR0904		ON-(ON)					4-6437630-4
<b>FTS0904</b>		(ON)-OFF-(ON)					<b>4-6437630-3</b>
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

<b>Product key</b>	Typical product key							<b>A</b>	<b>W</b>	<b>T</b>	<b>T</b>	<b>1</b>	<b>5</b>	<b>04</b>
<b>Type</b>	<b>A</b> A Series power toggle switch, 1 & 2 pole													
<b>Sealing</b>	<b>W</b> water proof													
<b>Actuator style</b>	<b>T</b> toggle													
<b>Switch function &amp; poles</b>	<b>1 pole</b>							<b>2 pole</b>						
<b>A</b>	ON-OFF							<b>N</b> ON-ON						
<b>D</b>	ON-ON							<b>P</b> ON-OFF-ON						
<b>E</b>	ON-OFF-ON							<b>R</b> ON-(ON)						
<b>F</b>	ON-(ON)							<b>S</b> (ON)-OFF(ON)						
<b>G</b>	(ON)-OFF(ON)							<b>T</b> ON-OFF-(ON)						
<b>H</b>	ON-OFF-(ON)													
<b>Power rating</b>	<b>1</b> 20 A @ 125/250 VAC													
<b>Terminal type</b>	<b>5</b> .250 quick connect terminal													
<b>Material</b>	<b>04</b> 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

**N** ON-ON

**P** ON-OFF-ON

**R** ON-(ON)

**S** (ON)-OFF(ON)

**Power rating**

**1** 20 A @ 125/250 VAC

**Terminal type**

**5** .250 quick connect terminal

**Sealing**

**W** water proof

**Material**

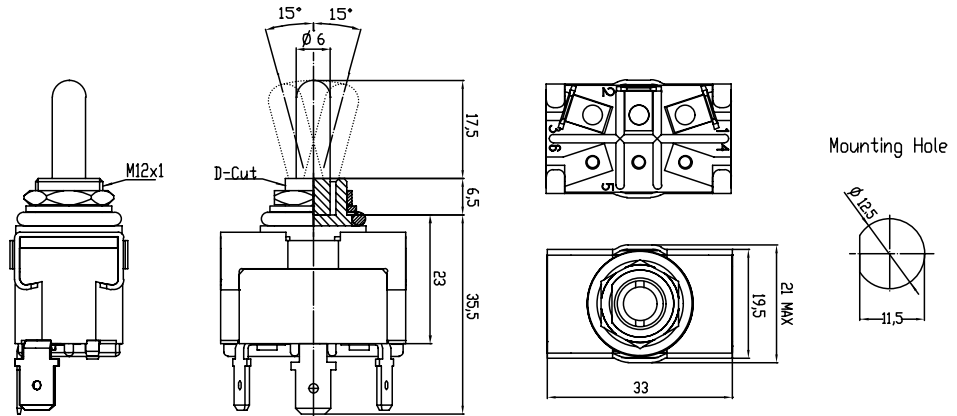
**04** RoHS compliant

**Poles**

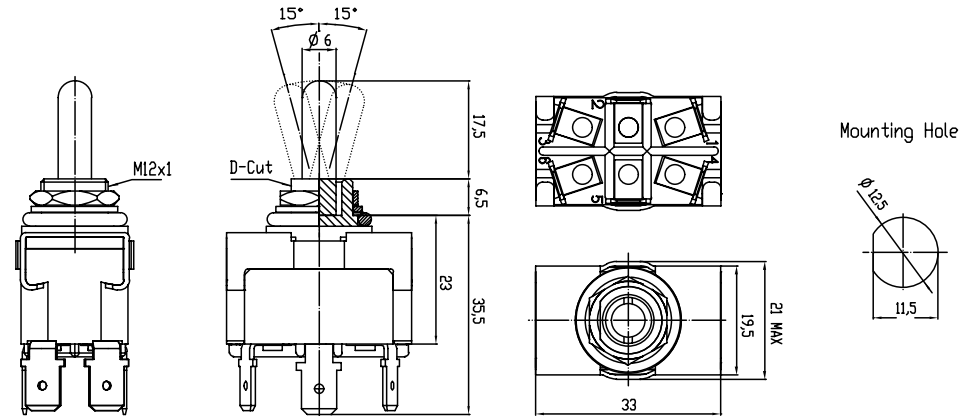
**1 pole**



AWTA1504

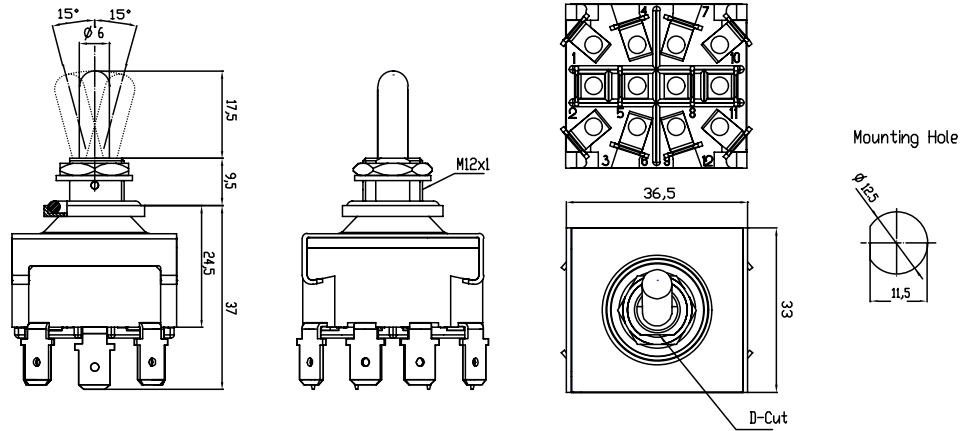


**2 pole**



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

4 pole



Toggle Switches

**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

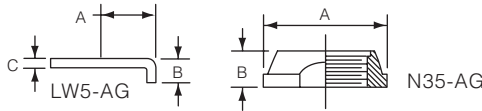
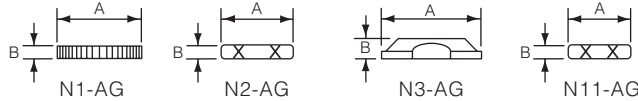
Product key	Sealing	Poles	Switch func.	Terminal	Rating	Part Number	
A4TK15W04	water proof	4 poles	ON-OFF	.250	20 A @ 125/250 VAC	8-6437630-0	
A4TN15W04			ON-ON	quick connect terminal		8-6437630-1	
A4TP15W04	ON-OFF-ON			8-6437630-2			
A4TR15W04	ON-(ON)			8-6437630-3			
A4TS15W04			(ON)-OFF-(ON)			8-6437630-4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

Preferred parts in bold print



**Hardware and Accessories**

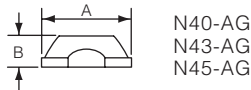
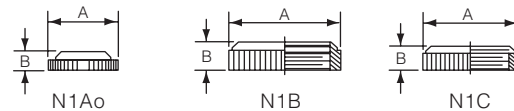
**Standard and decorative mounting hardware**



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

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

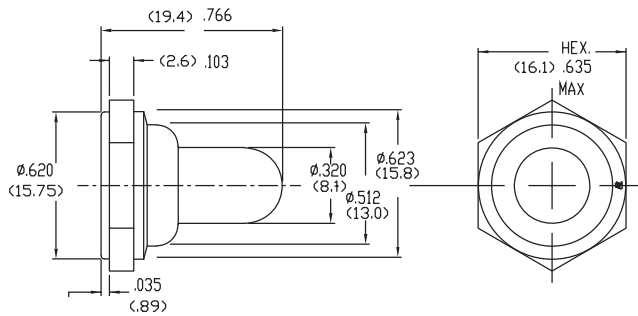
**Full boots**



**1532 Series**



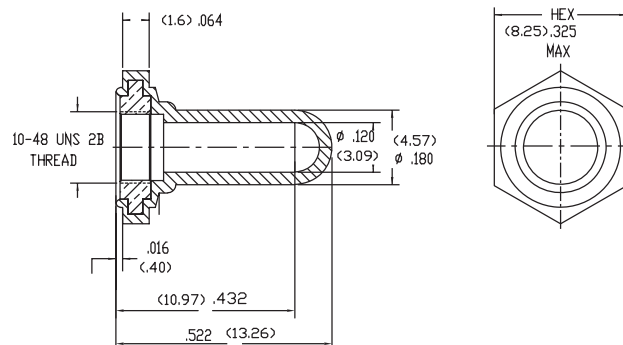
B1532004



**1048 Series**



B1048004

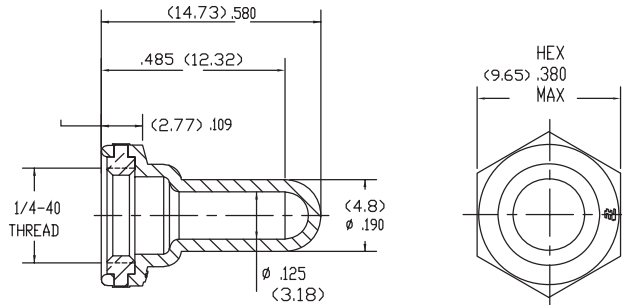


**Boot Seals (Continued)**

**1440 Series**



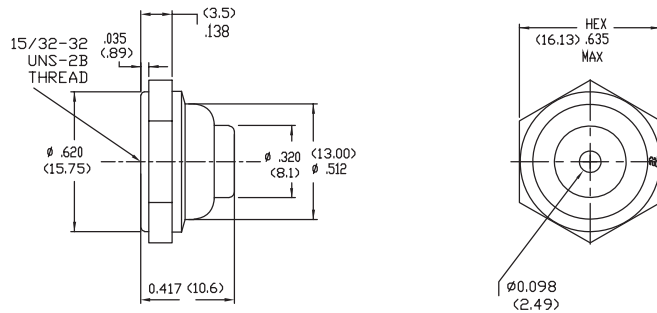
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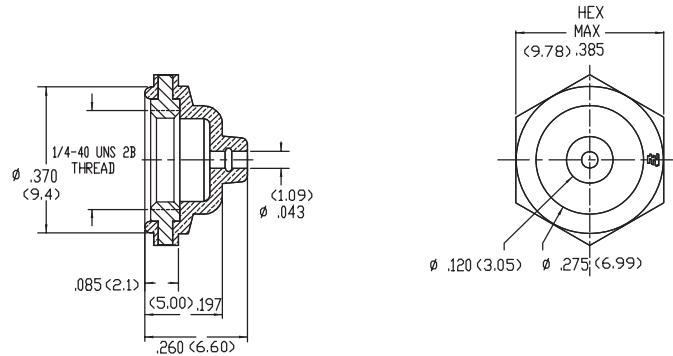
**Half boots**



**1532 Series**



**1440 Series**



Product key	Used on switch type	Nut thread	Color	Material	Part Number
<b>Full boot</b>					
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
<b>Half boot</b>					
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

