勝 特 力 材 料 886-3-5753170
胜特力电子(上海) 86-21-34970699
胜特力电子(深圳) 86-755-83298787
Http://www.100y.com.tw

Product Range



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

Catalogue No. 8-1773450-9
Issued 09/2008

Dimensions are in mm and inches and are shown for reference purposes only.

Specifications subject to change.

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

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TST, Tiny Toggle, Process Sealed

Features

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

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Http://www.100y.com.tw



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

Product key

Typical product key: **TST 1 1 D G RA 1 D 04**

Type
TST Tiny toggle, process sealed, through hole mount

Number of Poles
1 single pole

Contact rating
1 0.4VA Gold

Function
D On None On
E On Off On
F On None (On)
G (On) Off (On)

Plating
G Gold

Terminals
PC printed circuit board
PCV printed circuit board, w bracket
RA right angle
VRA vertical right angle

Actuator length
1 .206 (5.23)
2 .250 (6.35)
4 .400 (10.16)

Bushing
D plain, not threaded

Material
04 RoHS compliant

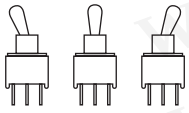
Catalogue No. 8-1773450-9
Issued 09/2008

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Specifications subject to change.

TST, Tiny Toggle, Process Sealed (Continued)

Function



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

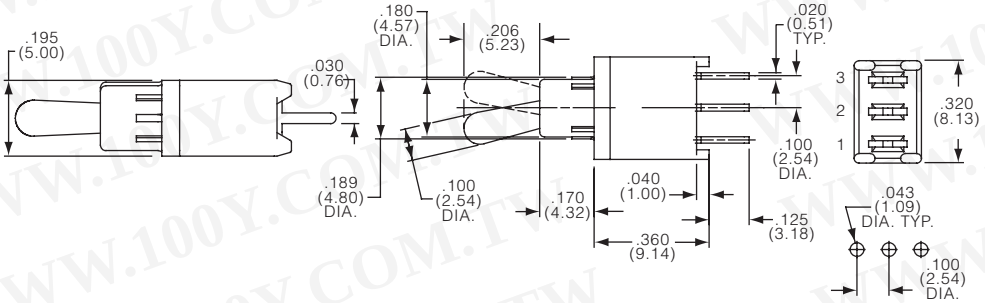
Off — indicates a mechanical position with no electrical connection
(On) — indicates momentary connection
None — indicates no mechanical position

Terminations

PC printed circuit



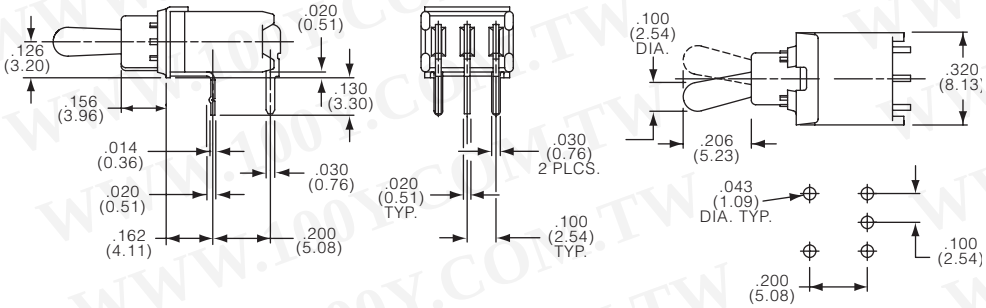
TST11DGPC1D



RA right angle



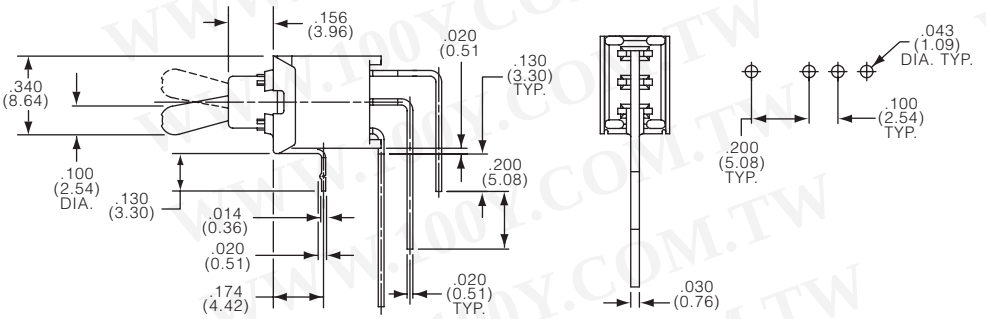
TST11DGRA1D



VRA vertical right angle



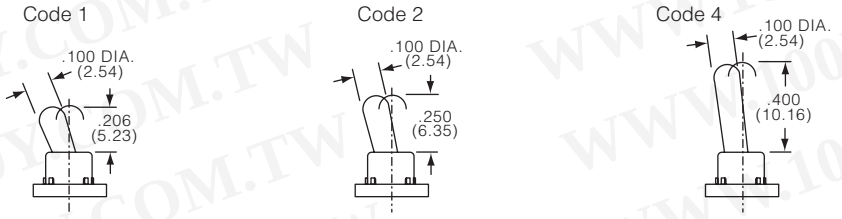
TST11DGVRA1D



TST, Tiny Toggle, Process Sealed(Continued)

Actuator

Codes 1,2,4 actuator lengths



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

Preferred parts in bold print

Catalogue No. 8-1773450-9
Issued 09/2008

Dimensions are in mm and inches and are shown for reference purposes only.

Specifications subject to change.

TT, Tiny Toggle Switch

Features

- **Compact design**
- **Vertical and horizontal right angle versions available**



Typical performance characteristics

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

Environmental specification

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

Material specifications

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

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Specifications subject to change.

TT, Tiny Toggle Switch (Continued)

Product key Typical product key **TT 1 1 D G PC 9 T1/4 04**

Type
- **TT** Tiny toggle switch

Environmental seal
- **blank** no seal
- **E** environmental seal (splash proof), not available with actuator 7 or with terminals VRA

Number of Poles
- **1** single pole
- **2** double pole
- **4** 4 pole

Contact rating
- **1** 0.4VA Gold
- **3** 1 Amp, Silver, with wire lug and pc terminals only

Function

single pole		2 & 4 pole	
A	On Off	**K**	On Off
	Versions A and K available with wire lug & pc terminals only		
D	On On	**N**	On On
E	On Off On	**P**	On Off On
F	On (On)	**R**	On (On)

Plating
- **G** Gold
- **blank** Silver

Terminals
- **blank** wire lug
- **PC** printed circuit
- **RA** right angle
- **VRA** vertical right angle
- **WW** wire wrap

Actuator length

#10 or Unthreaded Bushing		1/4 Bushing	
1	.221 (5.61), bat	**1**	.125 (3.18), bat
2	.296 (7.52), bat	**2**	.200 (5.1), bat
3	.381 (9.68), bat	**3**	.286 (7.26), bat
5	na	**5**	paddle
6	.401 (10.19), round, colored	**6**	.306 (7.77), round, colored
7	na	**7**	.457 (11.61), flat
8	na	**8**	.567 (14.40), locking
9	.516 (13.11), bat	**9**	.421 (10.693), bat

Bushing
- **blank** unthreaded
- **T** #10-48
- **T1/4** 1/4-40

Actuator color for actuator code 6 only
- **0** black
- **2** red
- **6** blue
- **9** white

Material
- **04** RoHS compliant

Function

Function	Poles	↘	⊥	↙	↘	⊥	↙
A	1 pole	On	None	Off	1-3	-	-
D		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		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

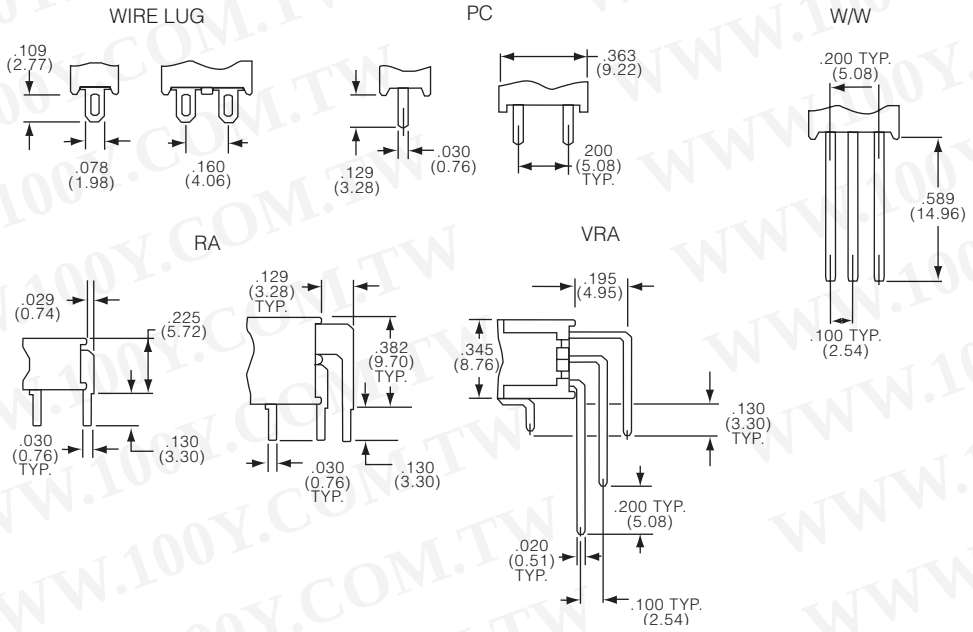
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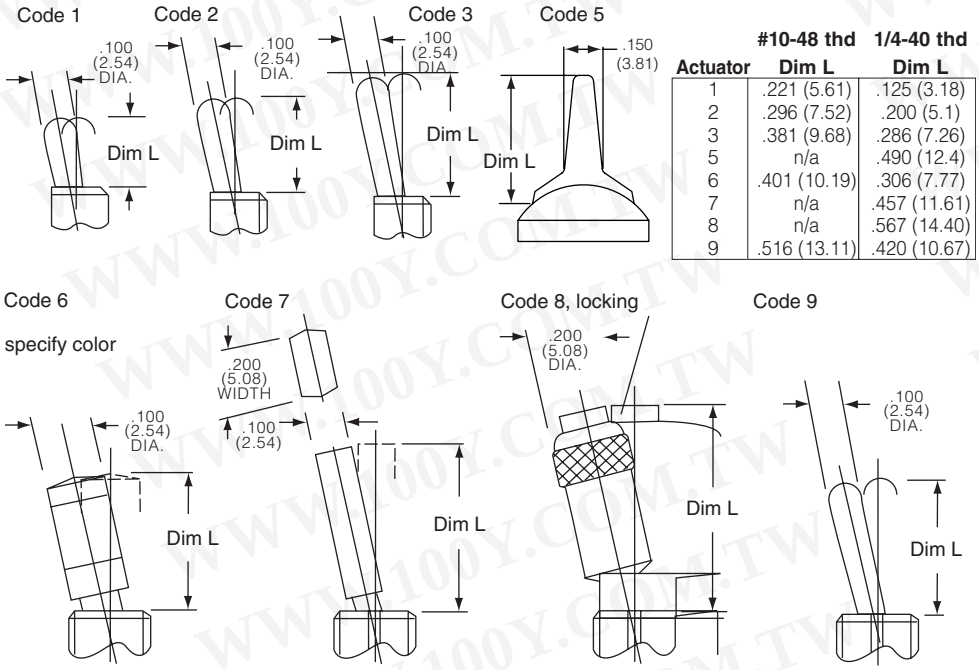
Specifications subject to change.

TT, Tiny Toggle Switch (Continued)

Terminals



Actuator

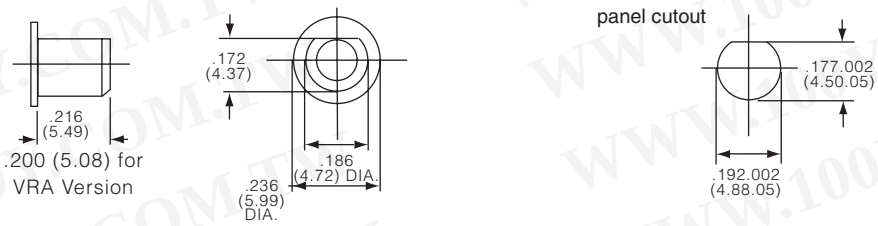


Actuator	#10-48 thd Dim L	1/4-40 thd Dim L
1	.221 (5.61)	.125 (3.18)
2	.296 (7.52)	.200 (5.1)
3	.381 (9.68)	.286 (7.26)
5	n/a	.490 (12.4)
6	.401 (10.19)	.306 (7.77)
7	n/a	.457 (11.61)
8	n/a	.567 (14.40)
9	.516 (13.11)	.420 (10.67)

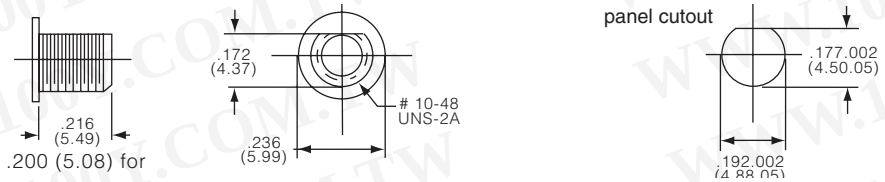
TT, Tiny Toggle Switch (Continued)

Bushing

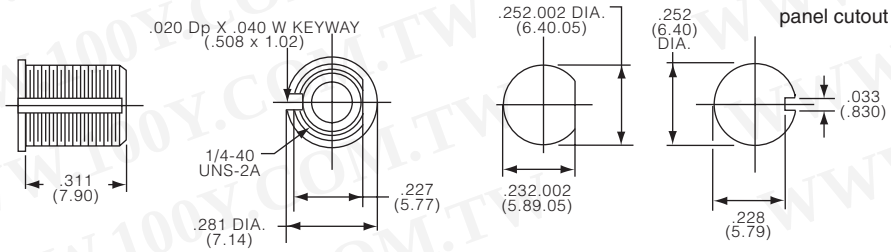
blank — **unthreaded**



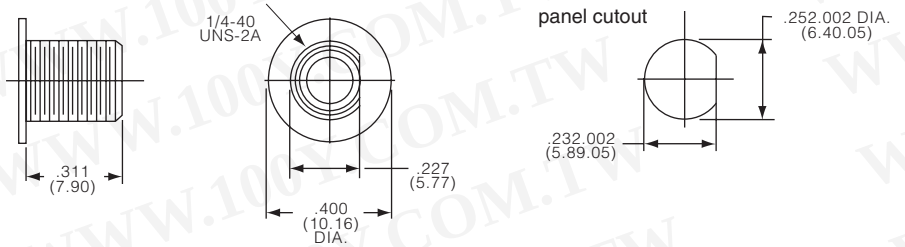
T — **10-48 UNS-2A thread**



T1/4 — **1/4-40 UNS-2A thread for non environmental sealed version**



T1/4 — **1/4-40 UNS-2A thread for environmental sealed version**



Catalogue No. 8-1773450-9
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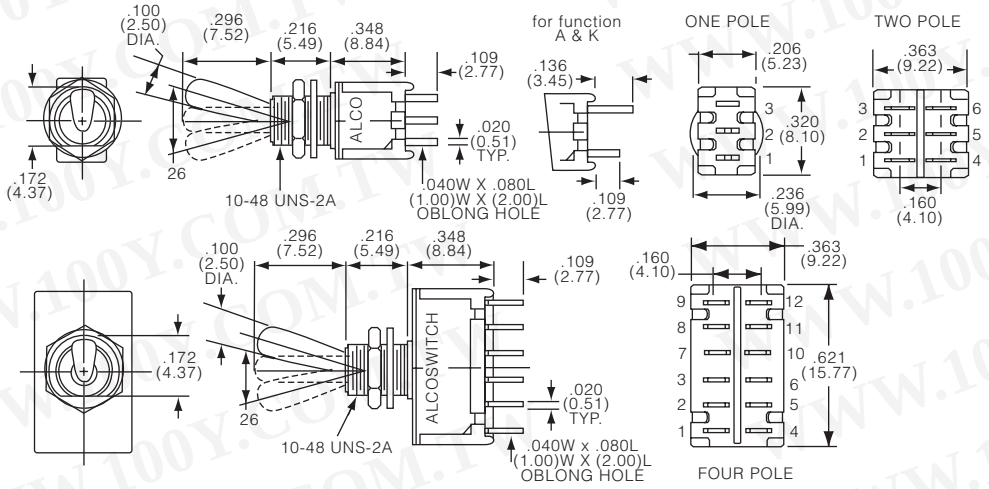
Specifications subject to change.

TT, Tiny Toggle Switch (Continued)

Dimensions

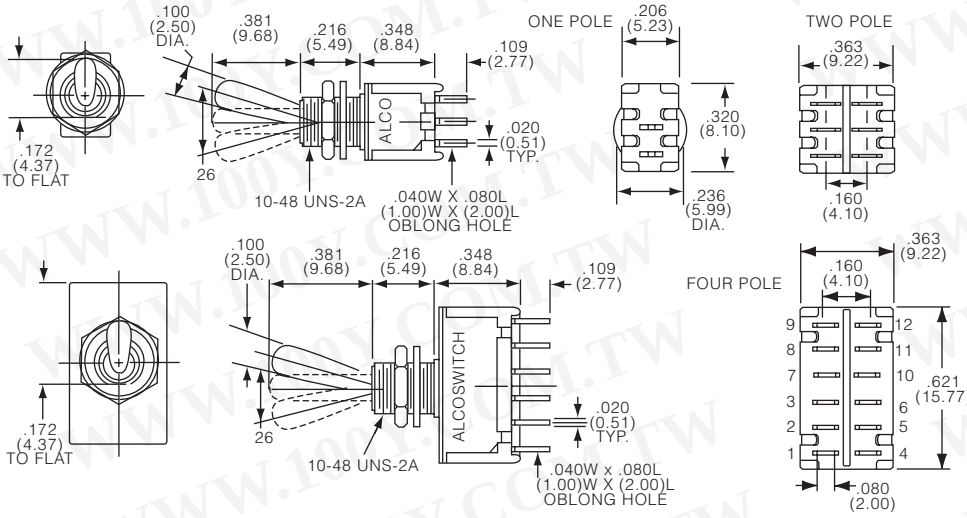
Series TT...2T **wire lug, .296 bat toggle, 10-48 thread**





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

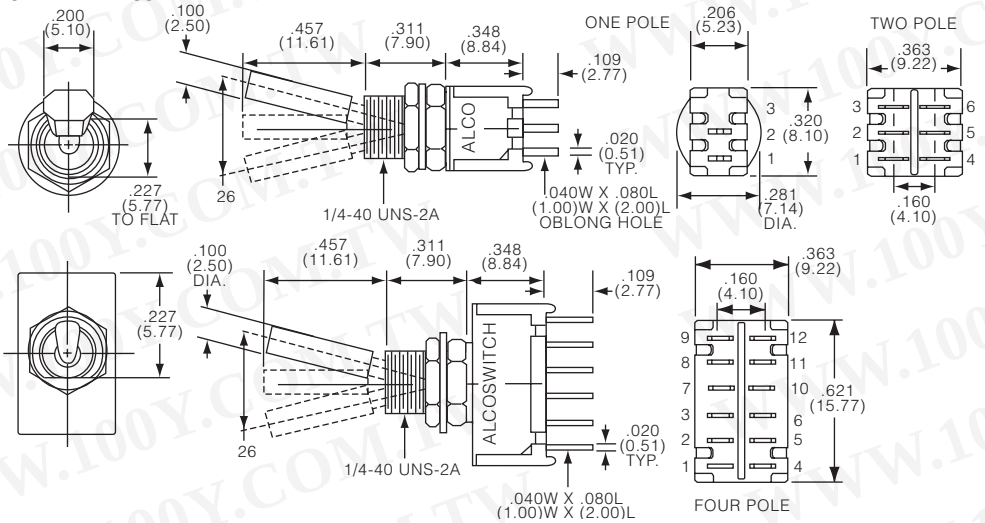




TT, Tiny Toggle Switch (Continued)

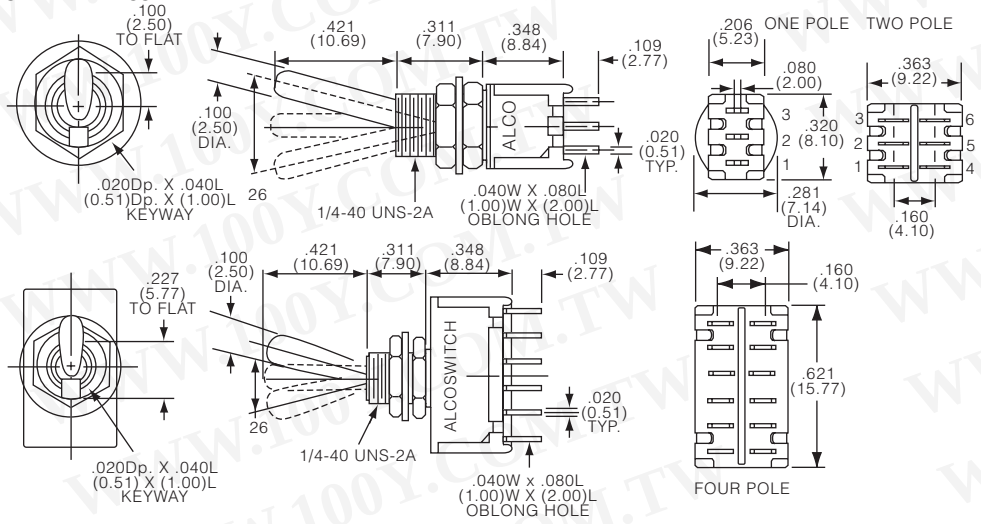
Series TT...7T1/4 wire lug, .457 flat toggle, 1/4-40 thread





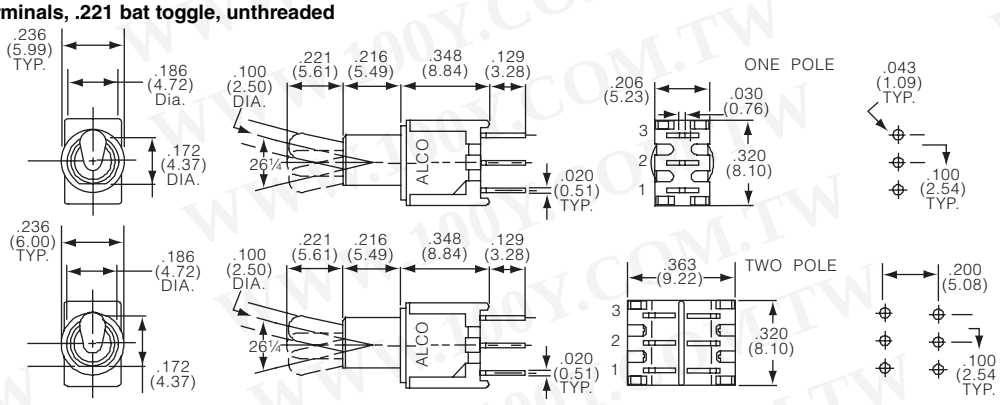
Series TT...9T1/4 wire lug, .420 bat toggle, 1/4-40 thread





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





Catalogue No. 8-1773450-9
Issued 09/2008

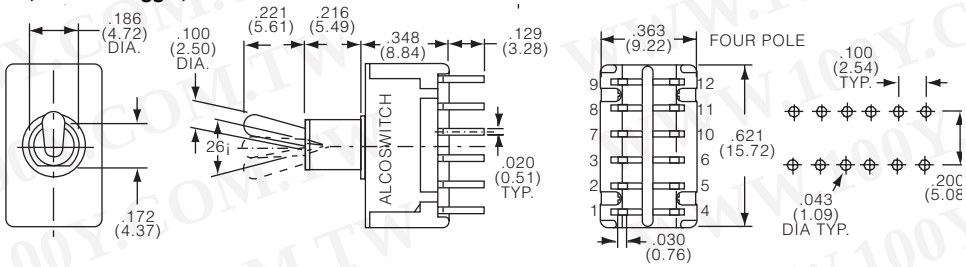
Dimensions are in mm and inches and are shown for reference purposes only.

Specifications subject to change.

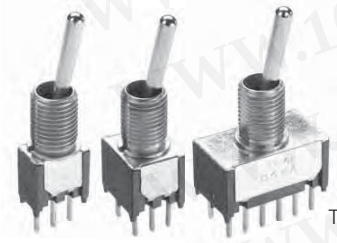
TT, Tiny Toggle Switch (Continued)

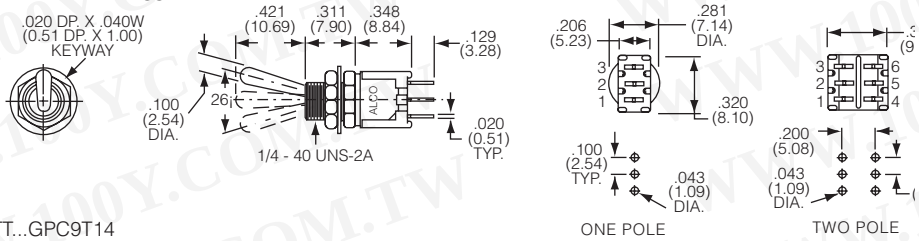
Series TT...PC1 pc terminals, .221 bat toggle, unthreaded


TT41NGPC1



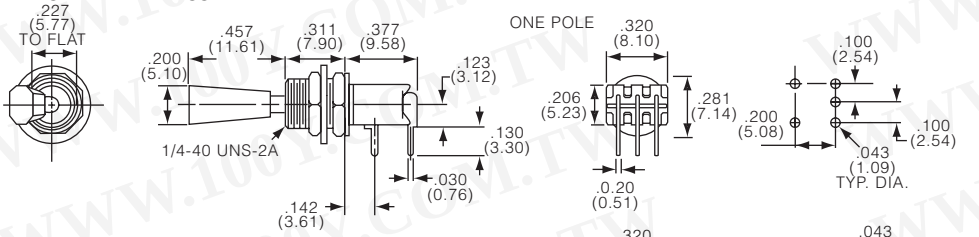
Series TT...PC9T1/4 pc terminals, .420 bat toggle, 1/4-40 thread


TT...GPC9T14

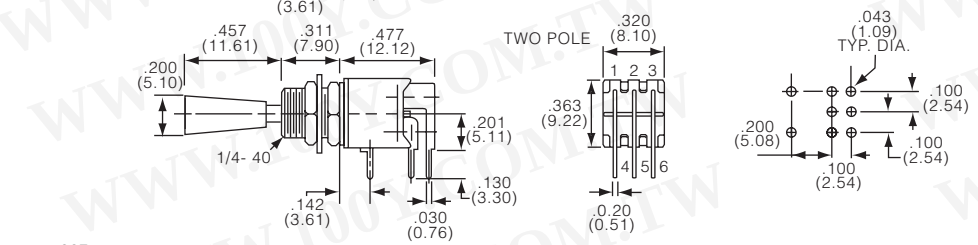


Series TT...RA7T1/4 right angle, .457 flat toggle, 1/4-40 thread

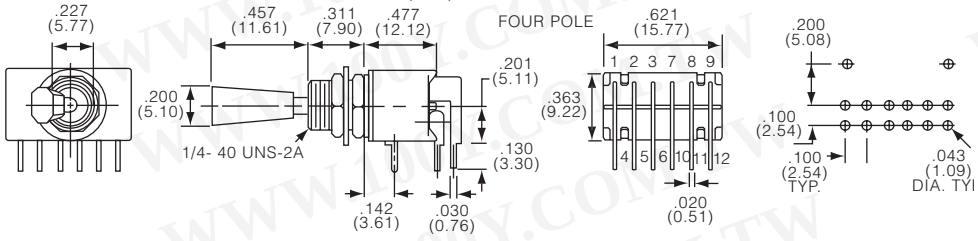

TT11DGRA7T14




TT21NGRA7T14




TT41NGRA7T14

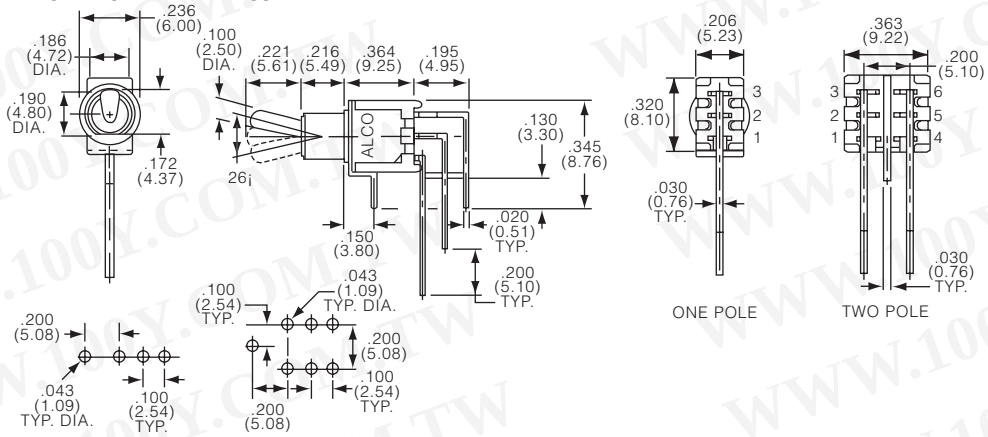


TT, Tiny Toggle Switch (Continued)

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


TT11DGVRA1

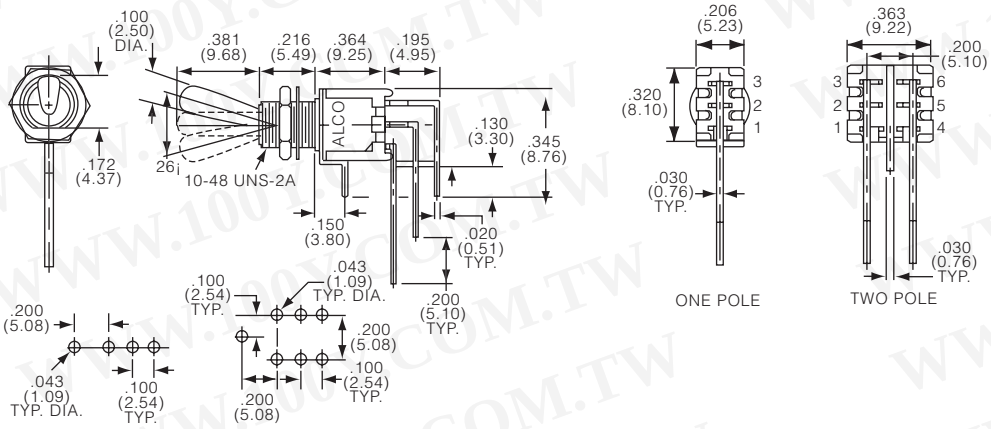

TT21NGVRA1



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

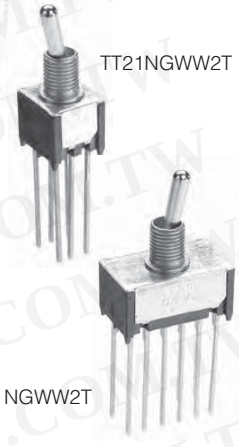

TT11DGVRA3T


TT21NGVRA3T

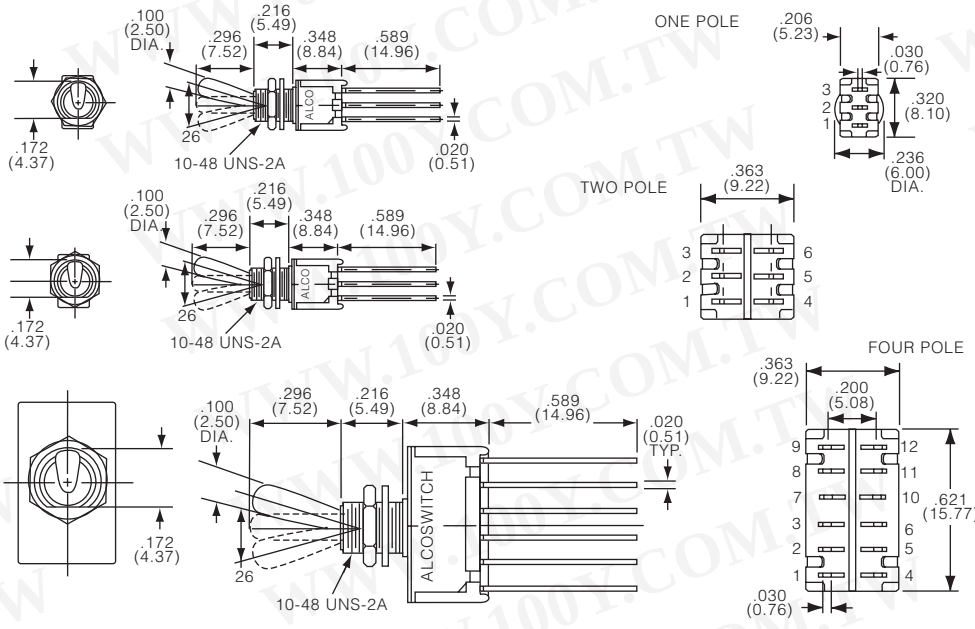


Series TT...WW2T wire wrap, .296 bat toggle, 10-48 thread


TT11DGWW2T


TT21NGWW2T

TT41NGWW2T



Catalogue No. 8-1773450-9
Issued 09/2008

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Specifications subject to change.

TT, Tiny Toggle Switch (Continued)

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

Product key

	A	1	01	P3		Z	Q	04
Typical product key								

Type
A Gemini A Series Toggles

Number of Poles
1 single pole
2 double pole

Function

single and double pole		double pole only	
01	On-On	**11**	On-On-On
03	On-Off-On	**13**	On-On-(On)
05	(On)-Off-(On)	**15**	(On)-On-(On)
07	On-Off-(On)		
08	On-(On)		

Toggles

S	bat long	**T**	large toggle & bushing (15/32)
K	locking	**T1**	large toggle & bushing (15/32)
K1	locking	**L**	lever
M	bat short	**L1**	lever
P3	flatted (with bushing code Y only)	**L2**	lever

Bushing

blank	toggles K1 &/ P3: 1/4-40 threaded .35 (8.9) long toggles K, T, T1: unthreaded .28 (7.1) long
CW	1/4-40 threaded .37 (9.4) long, enviromental seals (toggles codes S & M only)
D	1/4-40 threaded .28 (7.1) long
D9	unthreaded .28 (7.1) long
H	1/4-40 threaded .3 (7.6) long
Y	1/4-40 threaded .35 (8.9) long
Y9	unthreaded .35 (8.9) long

Terminations

A	right angle	**V30**	vertical support	**W**	wire wrap
AV2	vertical right angle	**V40**	vertical support	**W4**	wire wrap
C	printed circuit			**Z**	wire lug

Contacts

B	gold	**G**	gold over silver	**Q**	silver

Material
04 RoHS compliant

Catalogue No. 8-1773450-9
Issued 09/2008

Dimensions are in mm and inches and are shown for reference purposes only.

Specifications subject to change.

Gemini A Series (Continued)

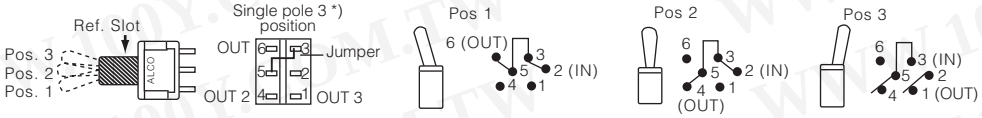
Function

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*) 13*) 15*)	3 positions	On (On) (On)	On On On	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

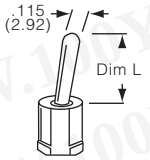
*) functions available in dual pole case only.
**) SP3T functions achieved with external jumper installed by customer

Wiring diagram for functions 11, 13, 15



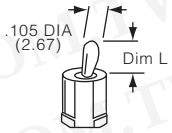
Toggles

S standard, bat long



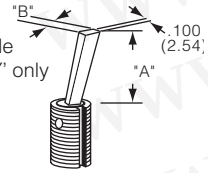
Toggle	Bushing	Dim L
S	CW, H, Y	10.41 (.410)
	D, D9	12.19 (.480)

M short toggle



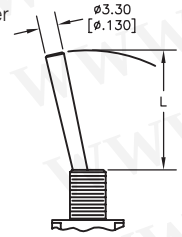
Toggle	Bushing	Dim L
M	CW, H, Y	5.08 (.200)
	D, D9	6.86 (.270)

P3 flatted toggle with bushing 'Y' only



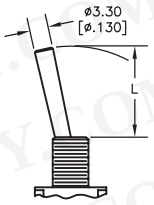
Toggle		Dim
P3	Dim A	11.43 (.450)
	Dim B	5.08 (.200)

L lever



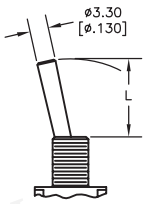
Toggle	Bushing	Dim L
L	H, Y	21.34 (.840)
	D, D9	23.11 (.910)

L1 lever



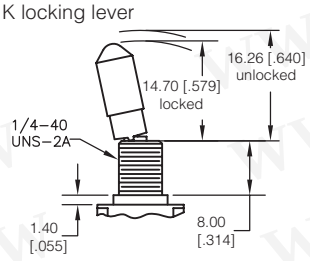
Toggle	Bushing	Dim L
L1	H, Y	16.26 (.640)
	D, D9	18.03 (.710)

L2 lever

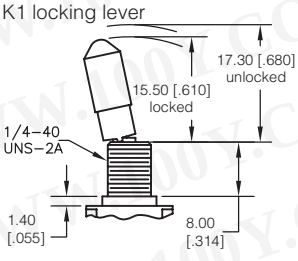


Toggle	Bushing	Dim L
L2	H, Y	13.97 (.550)
	D, D9	15.75 (.620)

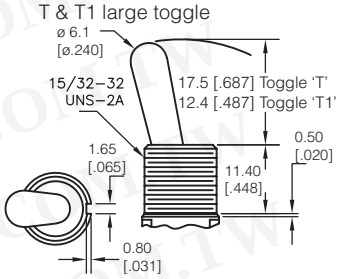
K locking lever



K1 locking lever



T & T1 large toggle



Catalogue No. 8-1773450-9
Issued 09/2008

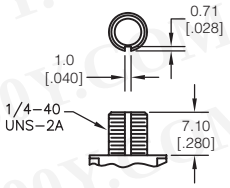
Dimensions are in mm and inches and are shown for reference purposes only.

Specifications subject to change.

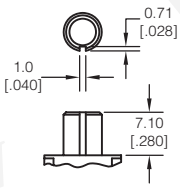
Gemini A Series (Continued)

Bushings

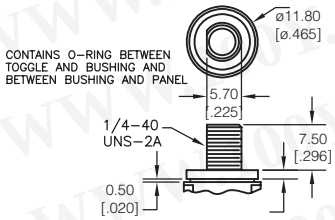
D 1/4-40 threaded



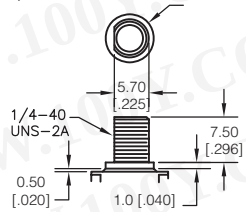
D9 unthreaded



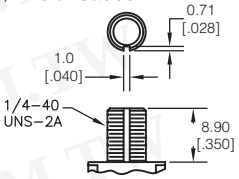
CW 1/4-40 threaded
enviromental seals
(toggles codes S & M only)



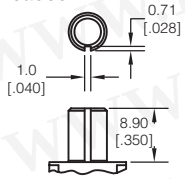
H 1/4-40 threaded



Y 1/4-40 threaded



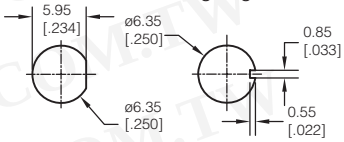
Y9 unthreaded



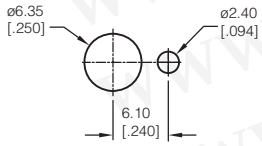
Recommended panel cut-outs

Bushing 1/4

without locking ring



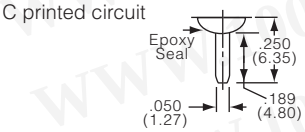
with standard locking ring



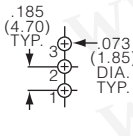
Terminals

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

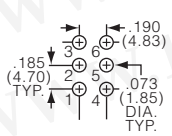
C printed circuit



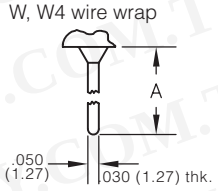
single pole



double pole

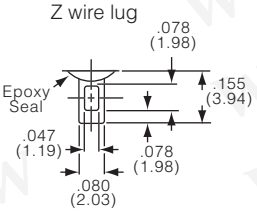


W, W4 wire wrap



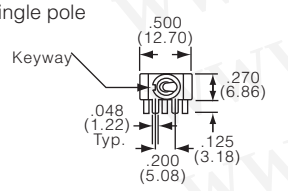
Terminal	Dim A
W	18.69 (.736)
W4	26.98 (1.062)

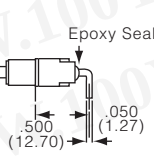
Z wire lug

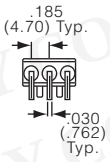


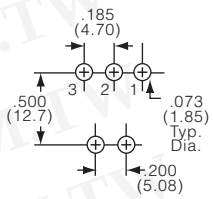
Code A right angle

single pole

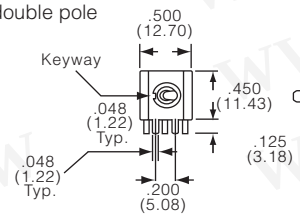


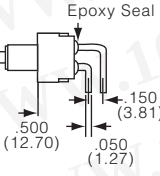


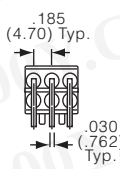


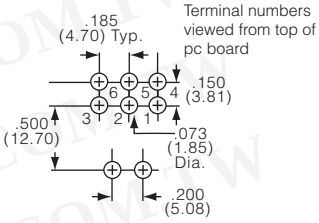


double pole









Toggle Switches

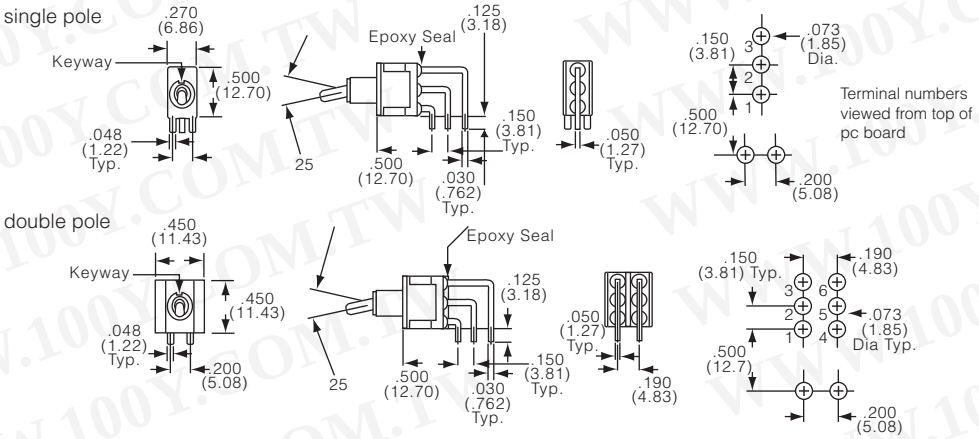
Catalogue No. 8-1773450-9
Issued 09/2008

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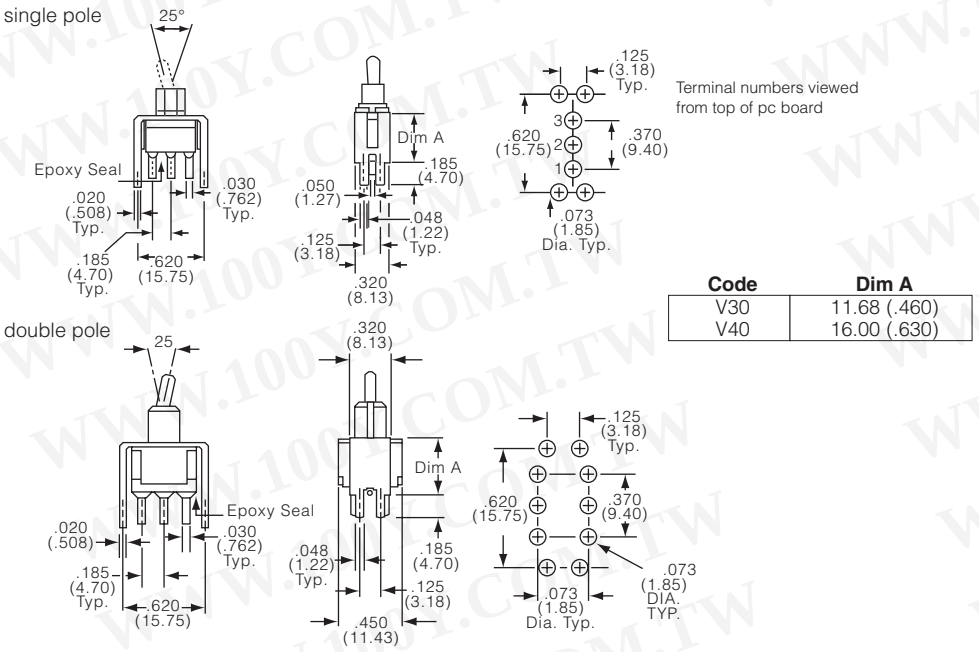
Specifications subject to change.

Gemini A Series (Continued)

Code AV2 vertical right angle



Codes V30, V40 vertical support



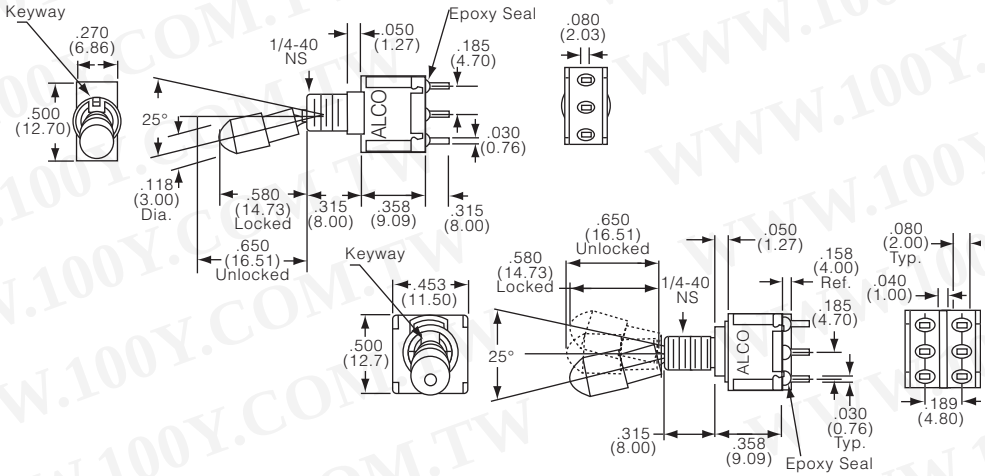
Code	Dim A
V30	11.68 (.460)
V40	16.00 (.630)

Gemini A Series (Continued)

Dimensions

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

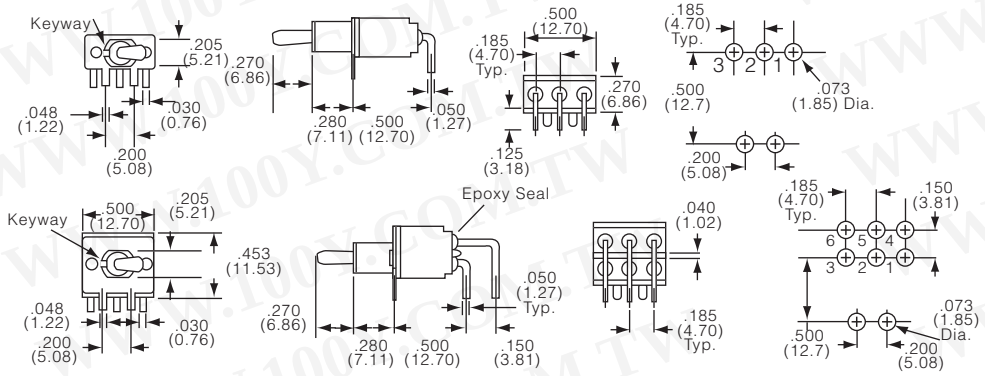




Series A...MD9A short bat, unthreaded bushing, right angle, 1 & 2 pole

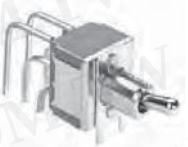


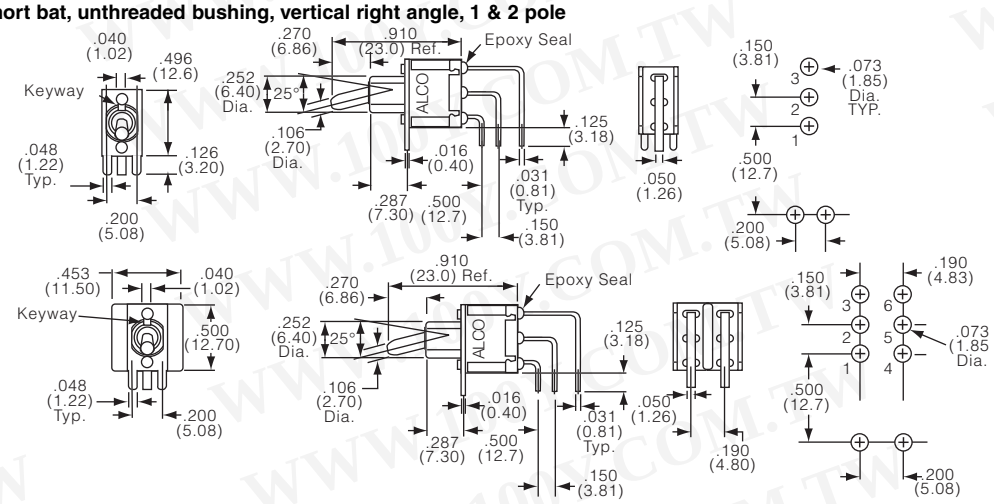




Series A...MD9AV2 short bat, unthreaded bushing, vertical right angle, 1 & 2 pole



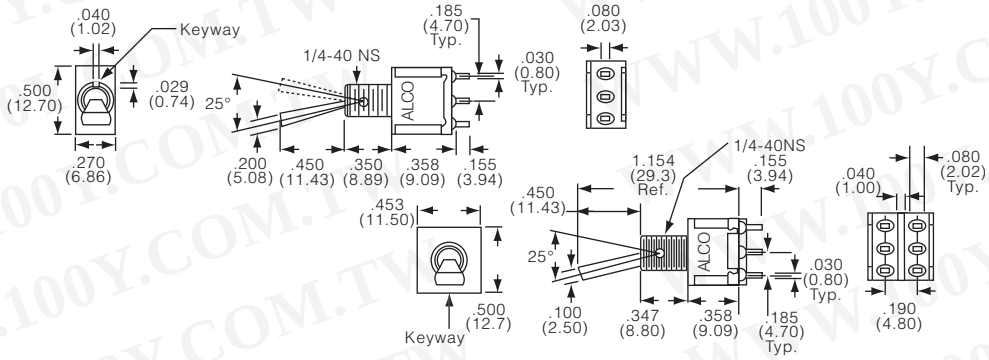




Series A...P3YZ flatted toggle, 1/4-40 threaded, wire lug, 1 & 2 pole

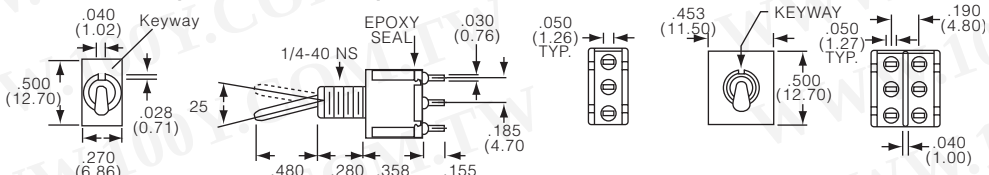
Gemini A Series (Continued)





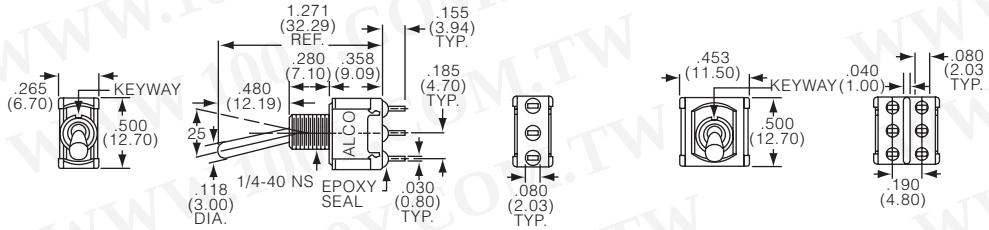
Series A...SDC long bat, 1/4-40 threaded, printed circuit, 1 & 2 pole





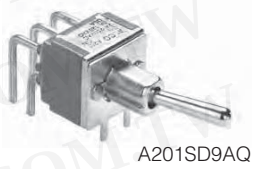
Series A...SDZ long bat, 1/40-40 threaded, wire lugs, 1 & 2 pole

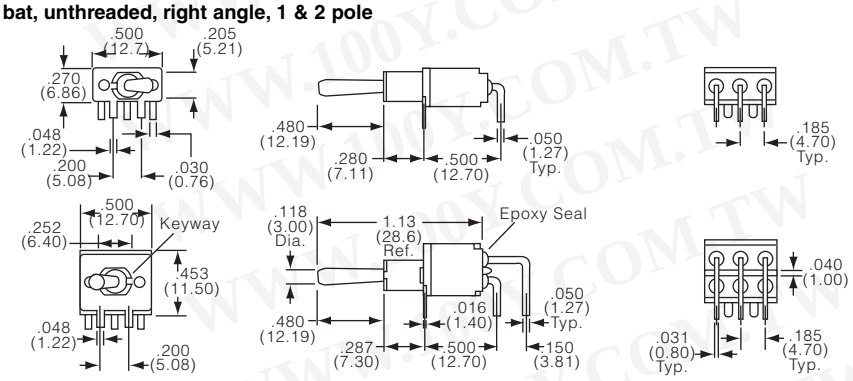




Series A...SD9A long bat, unthreaded, right angle, 1 & 2 pole

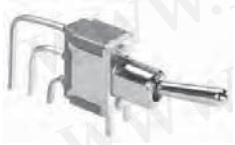






Gemini A Series (Continued)

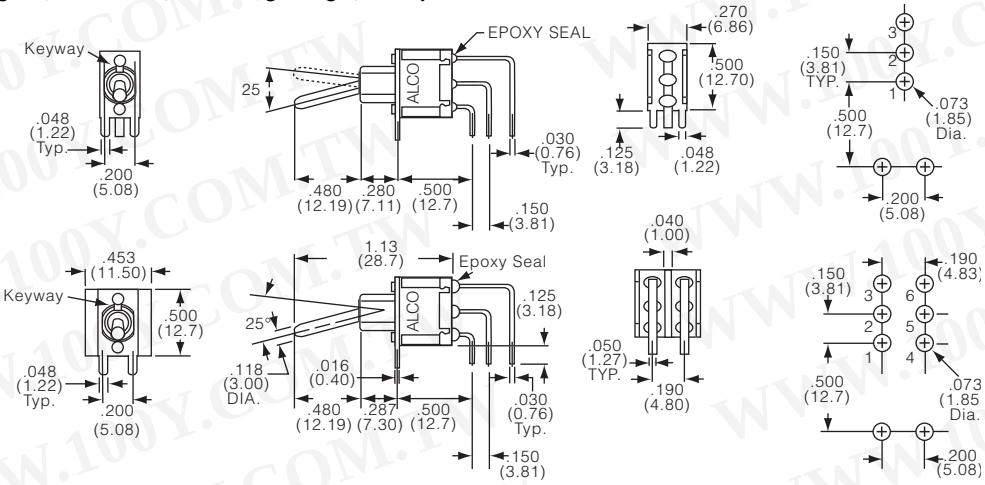
Series A...SD9AV2 long bat, unthreaded, vertical right angle, 1 & 2 pole



A101SD9AV2Q



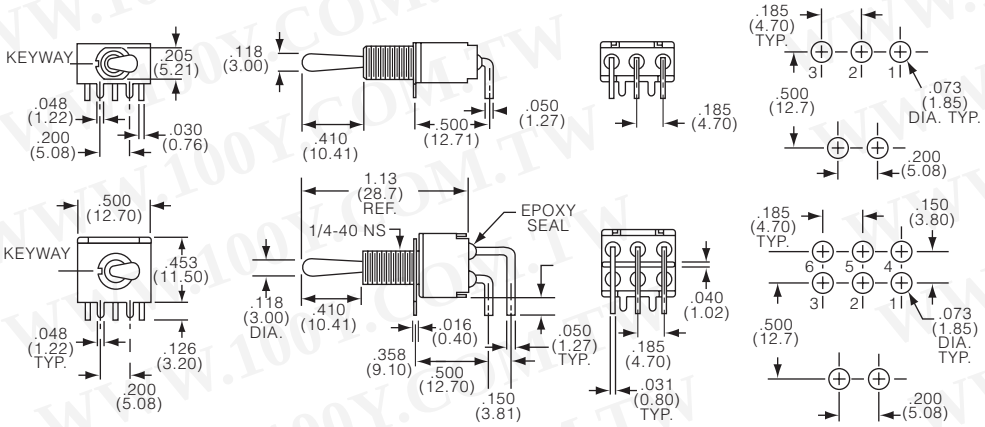
A201SD9AV2Q



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



A101SYAB



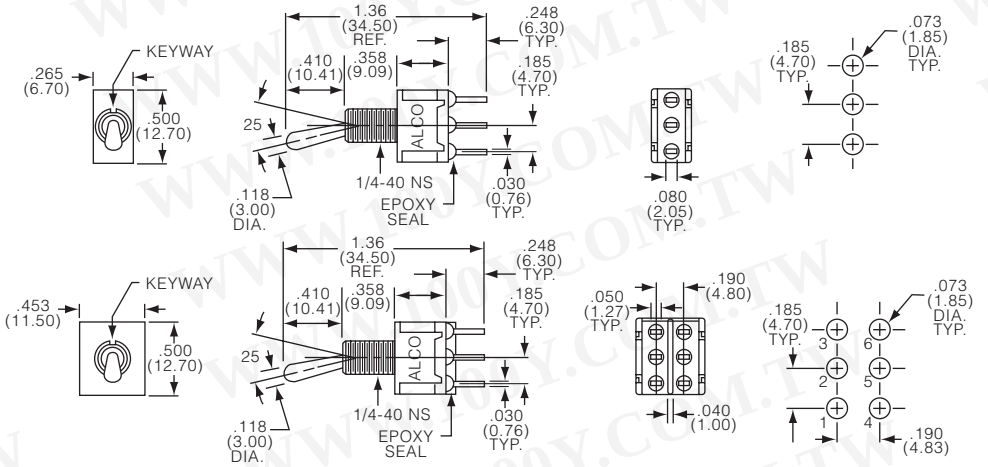
Series A...SYC long bat, 1/4-40 threaded, printed circuit, 1 & 2 pole



A101SYCB



A201SYCB



Catalogue No. 8-1773450-9
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Dimensions are in mm and inches and are shown for reference purposes only.

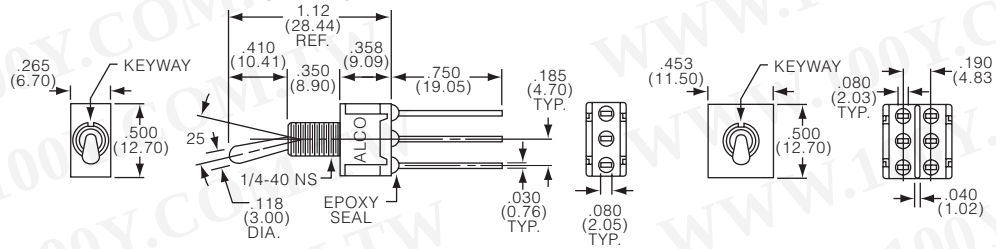
Specifications subject to change.

Gemini A Series (Continued)

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



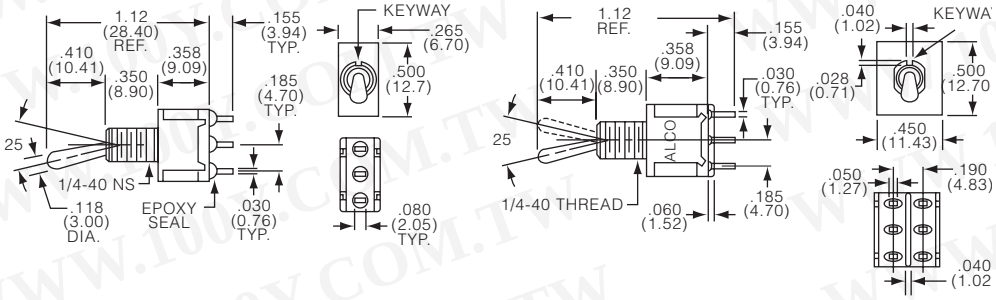
A101SYWQ A201SYWQ



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



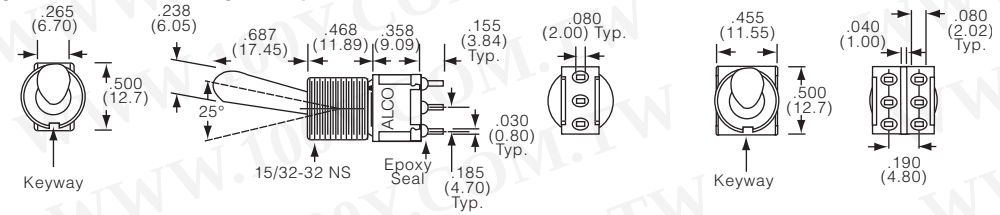
A101SYZQ A201SYZQ



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



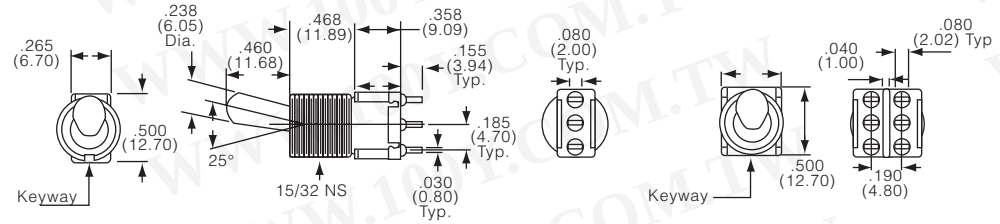
A101TZQ A201TZQ



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



A103T1ZQ A201T1ZQ



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		compliant	1825136-2
A101KAQ04						silver		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
A101SCWCQO04			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
A101SDCQ04				1/4-40 threaded .28 (7.1)	printed circuit			3-1825136-8
A101SDZQ04					wire lug			3-1825136-9
A101SHZQ04				1/4-40 threaded .3 (7.6)				4-1825136-0
A101SY9CQ04				unthreaded .35 (8.9)	printed circuit			4-1825136-1
A101SYAB04				1/4-40 threaded .35 (8.9)	right angle	gold		4-1825136-2
A101SYAQ04						silver		4-1825136-3
A101SYAV2B04					vertical right angle	gold		**1825136-8**
A101SYCB04					printed circuit			**4-1825136-4**
A101SYCQ04						silver		**4-1825136-5**
A101SYWQ04					wire wrap			4-1825136-7
A101SYZB04					wire lug	gold		**4-1825136-8**
A101SYZQ04						silver		**4-1825136-9**
A101T1ZB04			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
A103SDCQ04						silver		1-1825137-1
A103SDZQ04					wire lug			1-1825137-2
A103SYAQ04				1/4-40 threaded .35 (8.9)	right angle			1-1825137-3
A103SYAV2B04					vertical right angle	gold		**2-1825136-5**
A103SYAV2Q04						silver		**1-1825137-4**
A103SYCB04					printed circuit	gold		**1-1825137-5**
A103SYCQ04						silver		**1-1825137-6**
A103SYWB04					wire wrap	gold		1-1825137-7
A103SYWQ04					right angle	silver		1-1825137-8
A103SYZB04					wire lug	gold		**1-1825137-9**
A103SYZQ04						silver		**2-1825137-0**
A103T1CG04			lg. tgl.& bushing	unthreaded .28 (7.1)	printed circuit	Au over Ag		2-1825137-1
A103T1ZQ04					wire lug	silver		2-1825137-2
A103TZQ04								2-1825137-3

Preferred parts in bold print

Catalogue No. 8-1773450-9
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Dimensions are in mm and inches and are shown for reference purposes only.

Specifications subject to change.

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Gemini A Series (Continued)

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

Preferred parts in bold print

Gemini A Series (Continued)

Product key	Poles	Function	Toggles	Bushing	Terminations	Contacts	Material	Part Number
A203KZQ04	2	On-Off-On	locking	unthreaded .28 (7.1)	wire lug	silver	RoHS	1825139-1
A203MD9AB04			bat short		right angle	gold	compliant	1825139-2
A203P3AV2Q04			flatted	1/4-40 threaded .35 (8.9)	vertical right angle	silver		1825139-3
A203P3ZQ04					wire lug			1825139-4
A203SD9AV2B04			bat long	unthreaded .28 (7.1)	vertical right angle	gold		1825139-5
A203SD9AV2Q04						silver		1825139-6
A203SDZQ04				1/4-40 threaded .28 (7.1)	wire lug			1825139-7
A203SYCB04				1/4-40 threaded .35 (8.9)	printed circuit	gold		**1825139-8**
A203SYCQ04						silver		**1825139-9**
A203SYZQ04					wire lug			**1-1825139-0**
A203T1ZQ04			lg. tgl.& bushing	unthreaded .28 (7.1)				1-1825139-1
A203TZQ04								1-1825139-2
A205KZB04		(On)-Off-(On)	locking			gold		1-1825139-3
A205P3ZQ04			flatted	1/4-40 threaded .35 (8.9)		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		2-1825139-2
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			Au over Ag		3-1825138-2
A208P3ZQ04			flatted	1/4-40 threaded .35 (8.9)		silver		3-1825138-3
A208SD9AQ04			bat long	unthreaded .28 (7.1)	right angle			3-1825138-4
A208SD9AV2Q04					vertical right angle			3-1825138-5
A208SYCB04				1/4-40 threaded .35 (8.9)	printed circuit	gold		3-1825138-6
A208SYCQ04						silver		3-1825138-7
A208SYZQ04					wire lug			3-1825138-8
A208T1ZQ04			lg. tgl.& bushing	unthreaded .28 (7.1)				3-1825138-9
A208TZQ04								4-1825138-0
A211KZB04		On-On-On	locking			gold		2-1825139-7
A211MD9AQ04			bat short		right angle	silver		2-1825139-8
A211MYCQ04				1/4-40 threaded .35 (8.9)	printed circuit			2-1825139-9
A211P3CQ04			flatted					3-1825139-0
A211P3V40G04					vertical support	Au over Ag		3-1825139-1
A211P3ZQ04					wire lug	silver		3-1825139-2
A211SCWCQO04			bat long	1/4-40 threaded .37 (9.4)	printed circuit			3-1825139-3
A211SDZQ04				1/4-40 threaded .28 (7.1)	wire lug			3-1825139-4
A211SHZQ04				1/4-40 threaded .3 (7.6)				3-1825139-5
A211SY9AQ04				unthreaded .35 (8.9)	right angle			3-1825139-6
A211SYCQ04				1/4-40 threaded .35 (8.9)	printed circuit			**3-1825139-7**
A211SYZB04					wire lug	gold		3-1825139-8
A211SYZQ04						silver		**3-1825139-9**
A211T1ZQ04			lg. tgl.& bushing	unthreaded .28 (7.1)				4-1825139-0
A213SYZQ04		On-On-(On)	bat long	1/4-40 threaded .35 (8.9)				4-1825139-2
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

Catalogue No. 8-1773450-9
Issued 09/2008

Dimensions are in mm and inches and are shown for reference purposes only.

Specifications subject to change.

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

Product key

Typical product key: **AE 1 01 S D1 C Q 04**

Type
AE Gemini AE Series Toggles

Number of Poles
1 single pole
2 double pole

Function

single and double pole		double pole only	
01	On-On	**11**	On-On-On
03	On-Off-On	**13**	On-On-(On)
05	(On)-Off-(On)	**15**	(On)-On-(On)
07	On-Off-(On)		
08	On-(On)		

Toggles
S bat long
M bat short

Bushing
D1 unthreaded

Terminations

A	right angle	**V30**	vertical support	**W**	wire wrap
AV2	vertical right angle	**V40**	vertical support	**W4**	wire wrap
C	printed circuit			**Z**	wire lug

Contacts
B gold
G gold over silver
Q silver

Material
04 RoHS compliant

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Specifications subject to change.

Gemini AE Series, Sealed IP67 (Continued)

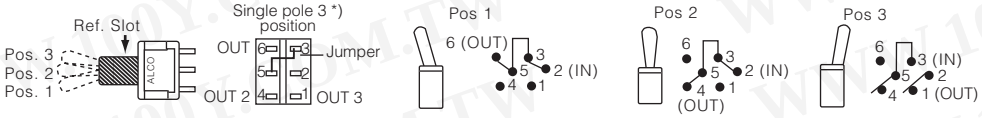
Function

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*) 13*) 15*)	3 positions	On (On) (On)	On On On	On On (On)
DP3T **)	Terminals connected	1 - 2 4 - 5	2 - 3 4 - 5	2 - 3 5 - 6

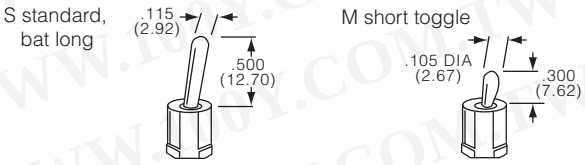
Off mechanical position, no electrical connection
(On) momentary mechanical position and electrical connection
None no mechanical position

*) functions available in dual pole case only.
**) SP3T functions achieved with external jumper installed by customer

Wiring diagram for functions 11, 13, 15

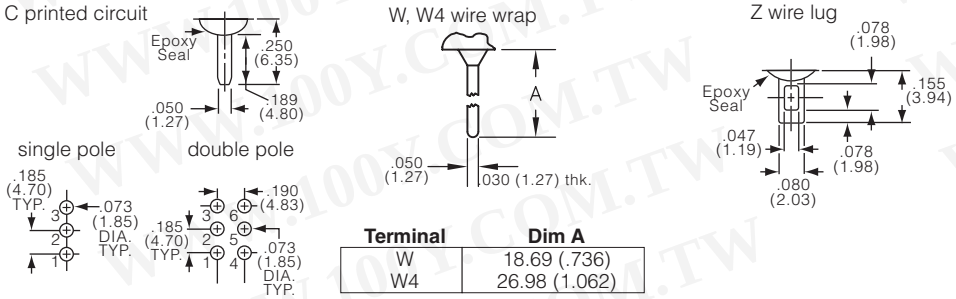


Toggles



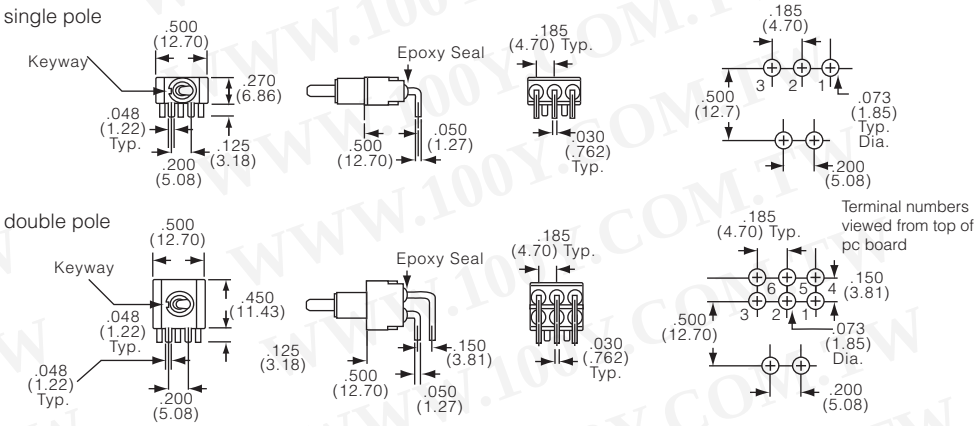
Terminals

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



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

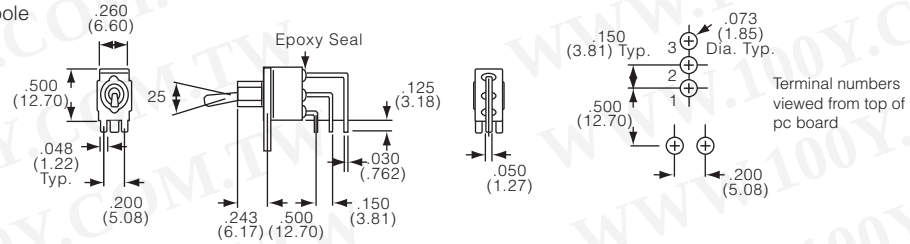
Code A right angle



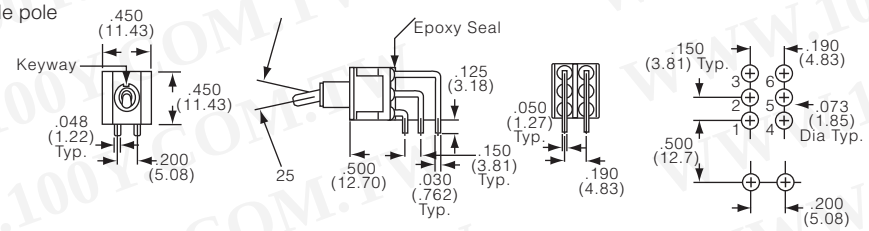
Gemini AE Series, Sealed IP67 (Continued)

Code AV2 vertical right angle

single pole

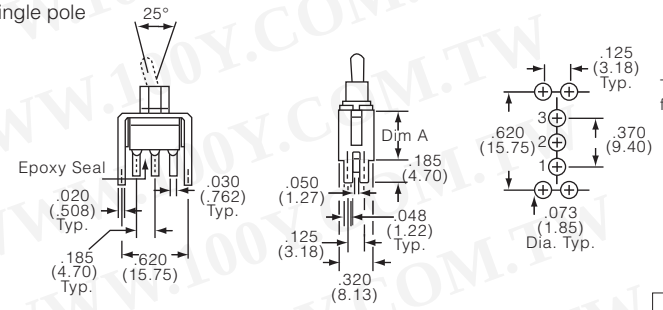


double pole



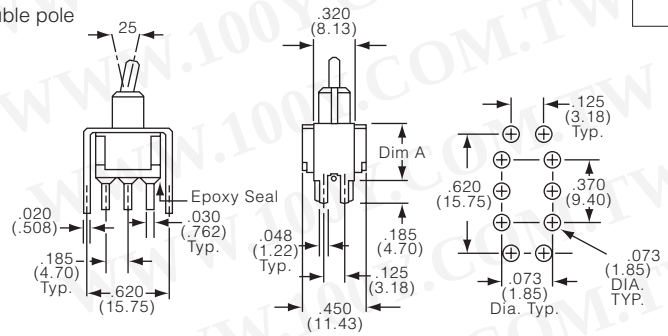
Codes V30, V40 vertical support

single pole



Code	Dim A
V30	11.68 (.460)
V40	16.00 (.630)

double pole



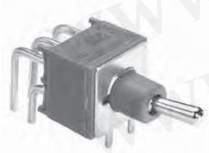
Gemini AE Series, Sealed IP67 (Continued)

Dimensions

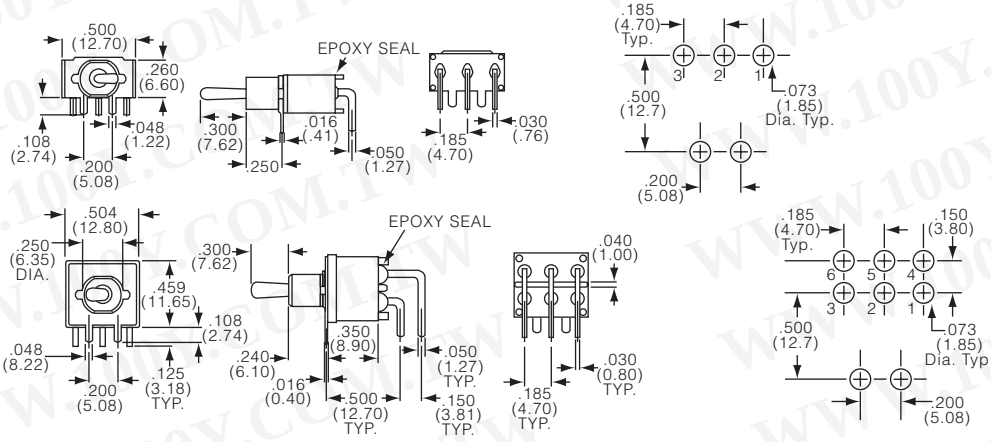
Series AE...MD1A **short bat, unthreaded, right angle, 1 & 2 pole**



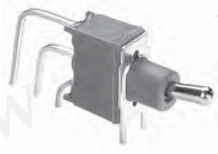
AE101MD1AQ



AE201MD1AQ



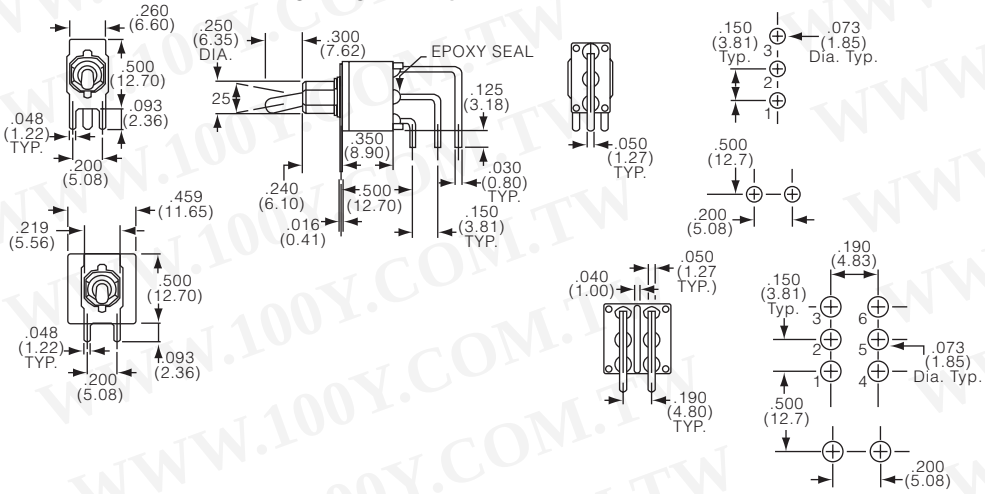
Series AE...MD1AV2 **short bat, unthreaded, vertical right angle, 1 & 2 pole**



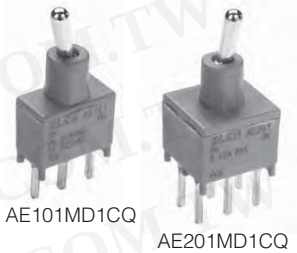
AE101MD1AV2Q



AE201MD1AV2Q

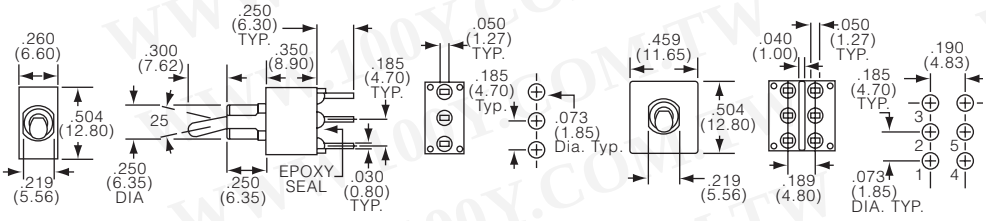


Series AE...MD1C **short bat, unthreaded, printed circuit, 1 & 2 pole**



AE101MD1CQ

AE201MD1CQ



Catalogue No. 8-1773450-9
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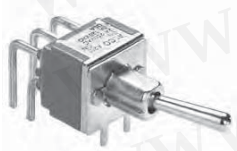
Specifications subject to change.

Gemini AE Series, Sealed IP67 (Continued)

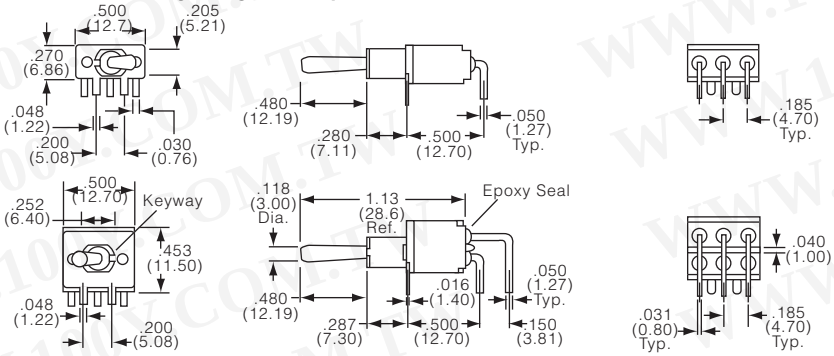
Series AE...SD1A long bat, unthreaded, right angle, 1 & 2 pole



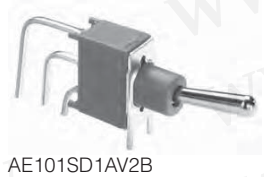
A101SD9AQ



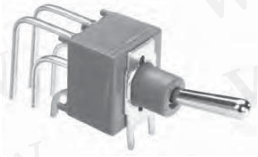
A201SD9AQ



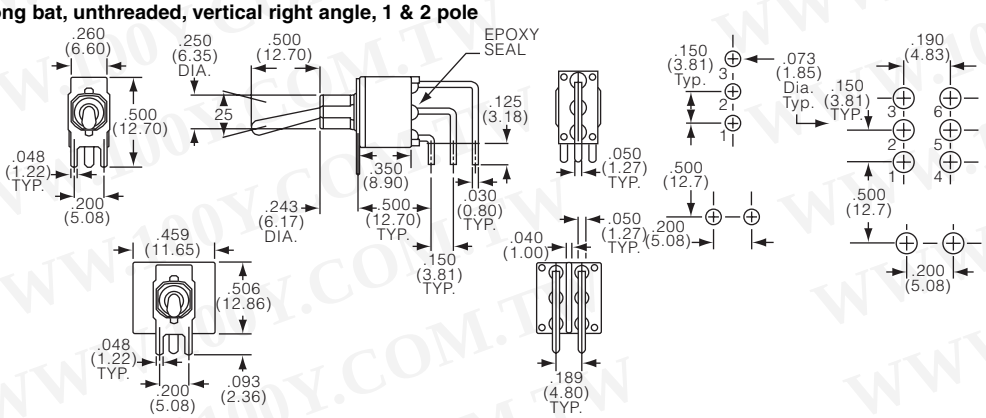
Series AE...SD1AV2 long bat, unthreaded, vertical right angle, 1 & 2 pole



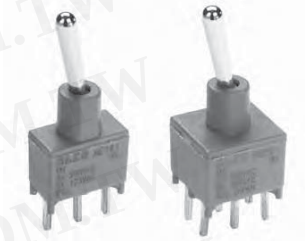
AE101SD1AV2B



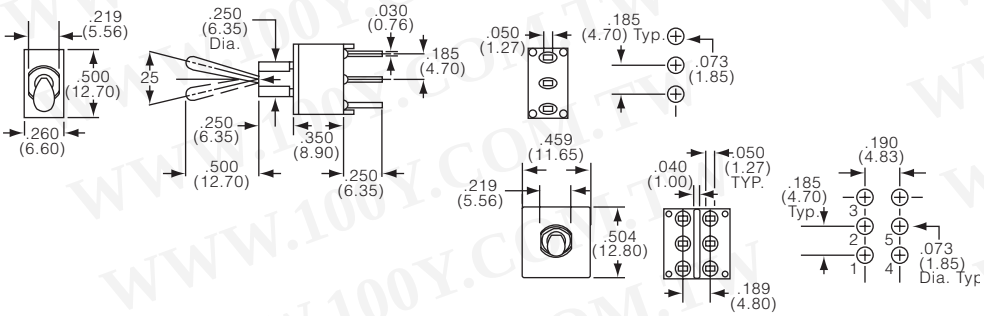
AE201SD1AV2Q



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



AE101SD1CQ AE201SD1CQ



Catalogue No. 8-1773450-9
Issued 09/2008

Dimensions are in mm and inches and are shown for reference purposes only.

Specifications subject to change.

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	compliant	1825142-2
AE101MD1AQ04						silver		1825142-4
AE101MD1AV2B04					vertical right angle	gold		1825142-5
AE101MD1AV2Q04						silver		1825142-6
AE101MD1CB04					printed circuit	gold		1825142-8
AE101MD1CG04						Au over Ag		1825142-9
AE101MD1CQ04						silver		1-1825142-0
AE101MD1V30B04					vertical support	gold		1-1825142-1
AE101MD1V30Q04						silver		1-1825142-2
AE101MD1W4B04					wire wrap	gold		1-1825142-3
AE101MD1W4Q04						silver		1-1825142-4
AE101SD1AB04			bat long		right angle	gold		1-1825142-5
AE101SD1AQ04						silver		1-1825142-6
AE101SD1AV2B04					vertical right angle	gold		**1-1825142-8**
AE101SD1AV2Q04						silver		**1-1825142-9**
AE101SD1CB04					printed circuit	gold		**2-1825142-0**
AE101SD1CQ04						silver		**2-1825142-1**
AE101SD1V30B04					vertical support	gold		2-1825142-2
AE101SD1V30Q04						silver		2-1825142-3
AE103MD1AB04		On-Off-On	bat short		right angle	gold		2-1825142-4
AE103MD1AV2B04					vertical right angle			2-1825142-5
AE103MD1CB04					printed circuit			2-1825142-6
AE103MD1W4B04					wire wrap			2-1825142-8
AE103SD1AV2B04			bat long		vertical right angle			**2-1825142-9**
AE103SD1CB04					printed circuit			**3-1825142-0**
AE103SD1CQ04						silver		**3-1825142-1**
AE103SD1V30B04					vertical support	gold		3-1825142-3
AE103SD1W4B04					wire wrap			3-1825142-4
AE105MD1AB04		(On)-Off-(On)	bat short		right angle			3-1825142-5
AE105MD1AG04						Au over Ag		3-1825142-6
AE105MD1AV2B04					vertical right angle	gold		3-1825142-7
AE105MD1W4B04					wire wrap			3-1825142-8
AE105SD1CB04			bat long		printed circuit			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			bat long		right angle			4-1825142-3
AE107SD1AG04						Au over Ag		4-1825142-4
AE107SD1CB04					printed circuit	gold		4-1825142-5
AE107SD1V30B04					vertical support			4-1825142-6
AE108MD1AQ04		On-(On)	bat short		right angle	silver		4-1825142-7
AE108MD1AV2B04					vertical right angle	gold		4-1825142-8
AE108MD1AV2Q04						silver		4-1825142-9
AE108SD1AB04			bat long		right angle	gold		5-1825142-0
AE108SD1AQ04						silver		5-1825142-1
AE108SD1CQ04					printed circuit			5-1825142-2
AE108SD1V30B04					vertical support	gold		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	gold		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
AE201SD1AV2B04					vertical right angle	gold		**1825143-9**
AE201SD1CB04					printed circuit			**1-1825143-0**
AE201SD1CQ04						silver		**1-1825143-1**
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
AE203SD1AV2B04					vertical right angle			**1-1825143-7**
AE203SD1AV2Q04						silver		**1-1825143-8**
AE203SD1CB04					printed circuit	gold		**1-1825143-9**
AE203SD1W4B04					wire wrap			2-1825143-0
AE205MD1AV2B04		(On)-Off-(On)	bat short		vertical right angle			2-1825143-1
AE205SD1CQ04			bat long		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

Catalogue No. 8-1773450-9
Issued 09/2008

Dimensions are in mm and inches and are shown for reference purposes only.

Specifications subject to change.

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°

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

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

Product key

Typical product key: **MT A 1 06 E PC 04**

Type
- **MT** Green series toggle switches, panel mount

Toggle & bushing
- **A** .410 long round toggle, 1/4-40 bushing
- **A8** .410 long round toggle, 1/4-40 bushing, right angle & vertical right angle
- **B** .600 long round toggle with plastic tip, 1/4-40 bushing
- **E** .410 long round toggle, 1/4-40 bushing with O ring seal
- **F** .485 long flat toggle, 1/4-40 bushing
- **G** .452 long large diameter round toggle, 15/32 bushing
- **G2** .685 long large diameter round toggle, 15/32 bushing
- **L** locking toggle, 1/4-40 bushing
- **M** .270 long round toggle, 1/4-40 bushing
- **M8** .270 long round toggle, 1/4-40 bushing, right angle & vertical right angle

Number of Poles
- **1** single pole
- **2** double pole
- **3** 3 pole
- **4** 4 pole

Toggle style
- **06** standard
- **26** bright nickel, for toggle F
- **6** standard for toggle G2

Function

1 and 3 pole		2 and 4 pole		1 and 2 pole functionality *)	
D	ON-ON	**N**	ON-ON	**PA**	ON-ON-ON
E	ON-OFF-ON	**P**	ON-OFF-ON	**SA**	(ON)-ON-(ON)
F	ON-(ON)	**R**	ON-(ON)	**TA**	ON-ON-(ON)
G	(ON)-OFF-(ON)	**S**	(ON)-OFF-(ON)		*) 2 and 4 pole design, internally connected for 1 and 2 pole functionality
H	ON-OFF-(ON)	**T**	ON-OFF-(ON)		

Terminations
- **blank** wire lug
- **PC** printed circuit board
- **RA** right angle
- **VRA** vertical right angle

Material
- **04** RoHS compliant

Catalogue No. 8-1773450-9
Issued 09/2008

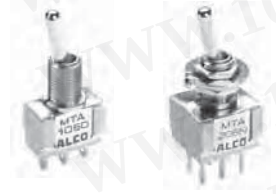
Dimensions are in mm and inches and are shown for reference purposes only.

Specifications subject to change.

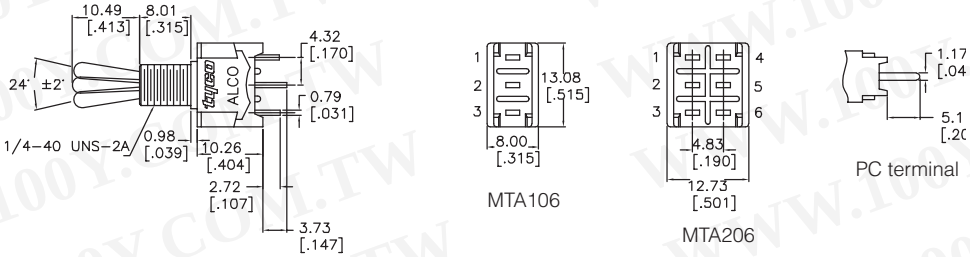
MT Green Series (Continued)

MTA

MTA1, MTA2 1 & 2 pole



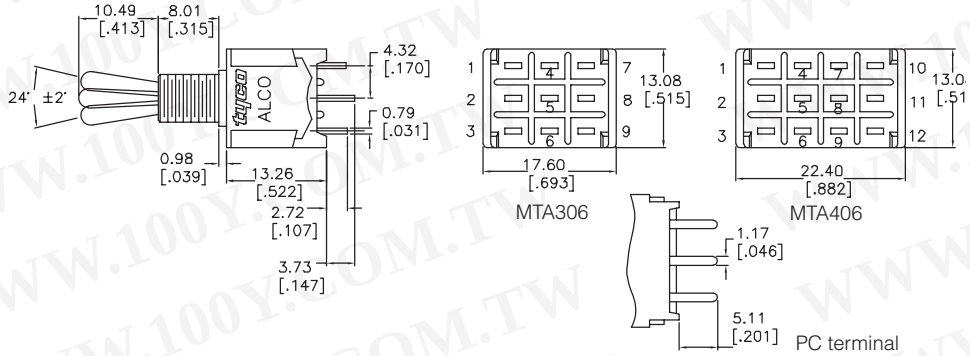
MTA106D04 MTA206NPC04



MTA3, MTA4 3 & 4 pole



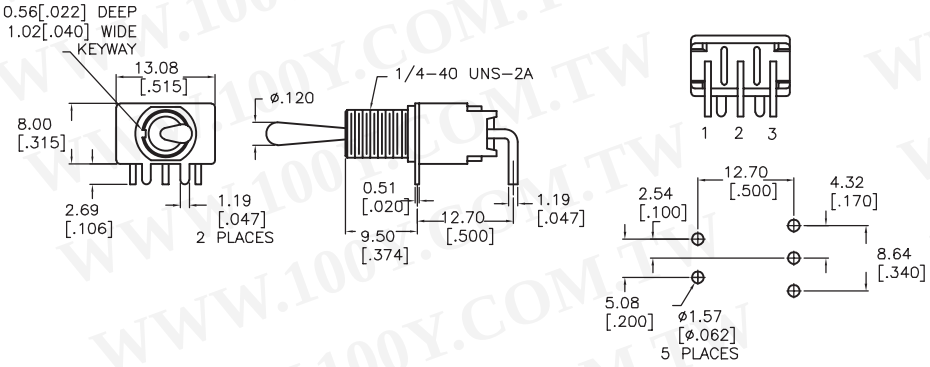
MTA306D04 MTA406NPC04



MTA81 RA 1pole, right angle



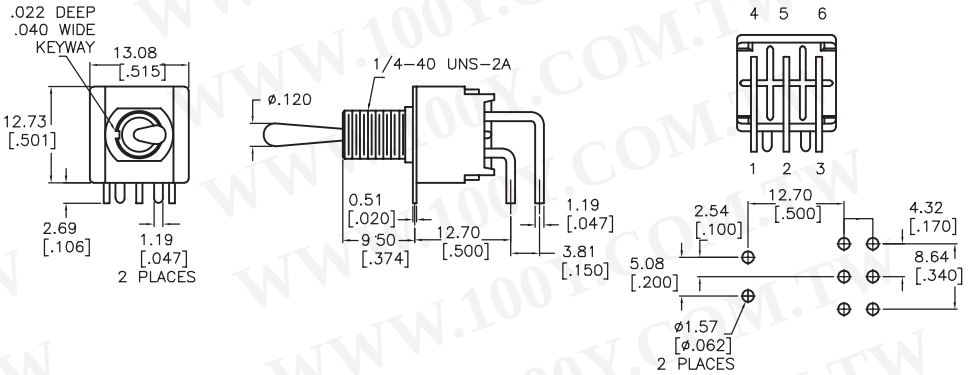
MTA8106DRA04



MTA82 RA 2pole, right angle



MTA8206NRA04



Catalogue No. 8-1773450-9
Issued 09/2008

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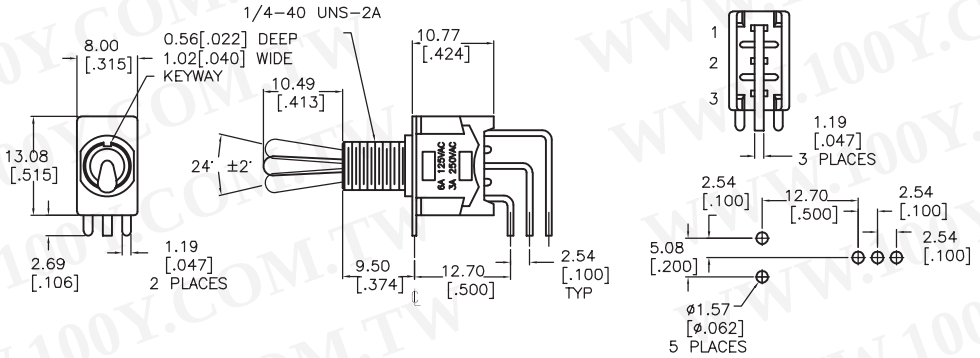
Specifications subject to change.

MT Green Series (Continued)

MTA81 VRA 1pole, vertical right angle



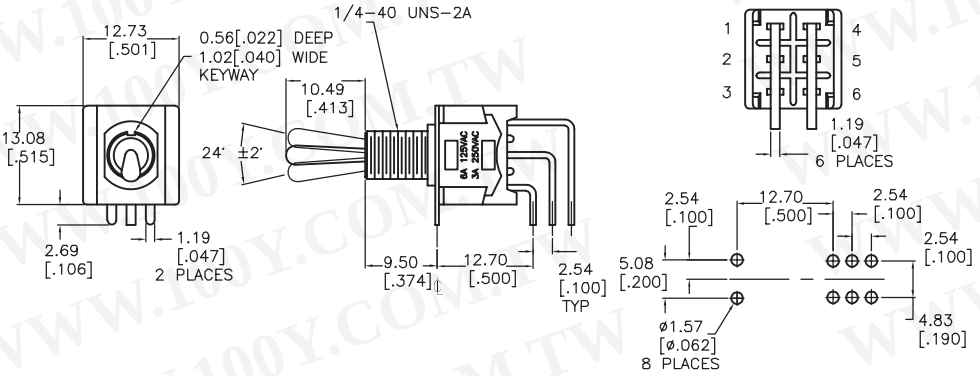
MTA8106DVRA04



MTA82 VRA 2pole, vertical right angle



MTA8206NVRA04



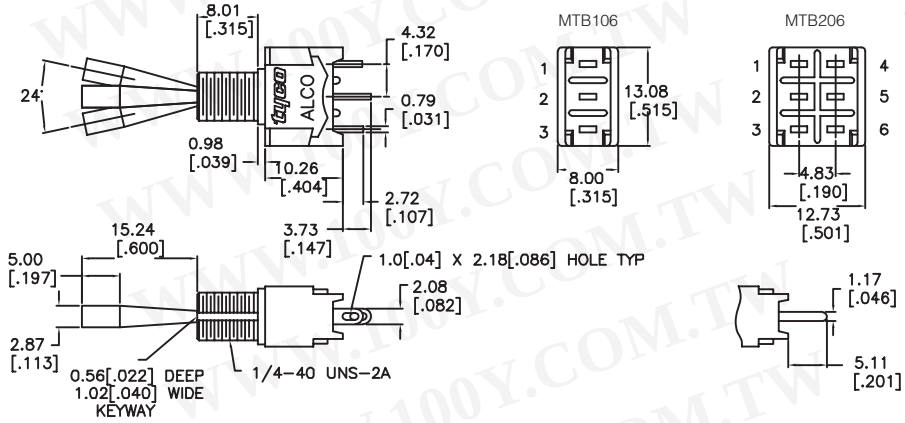
MTB

MTB1, MTB2 1 & 2 pole



MTB106D04

MTB206N04

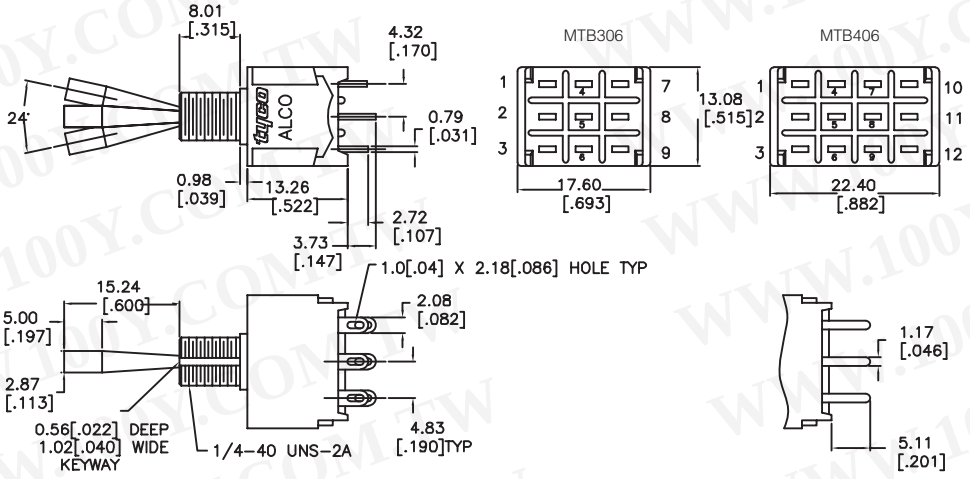


MT Green Series (Continued)

MTB3, MTB4 3 & 4 pole



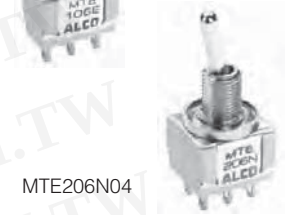


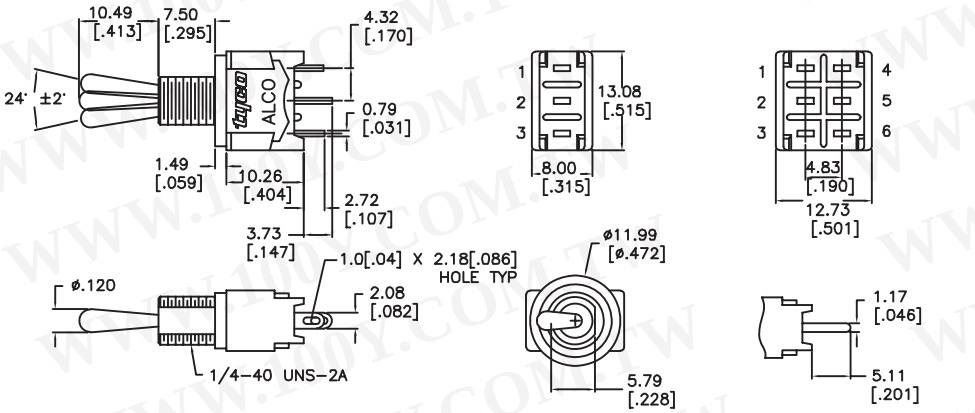


MTE

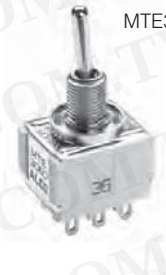
MTE1, MTE2 1 & 2 pole

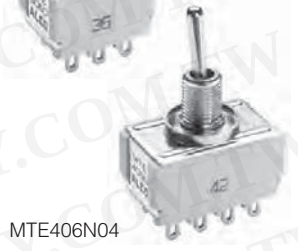


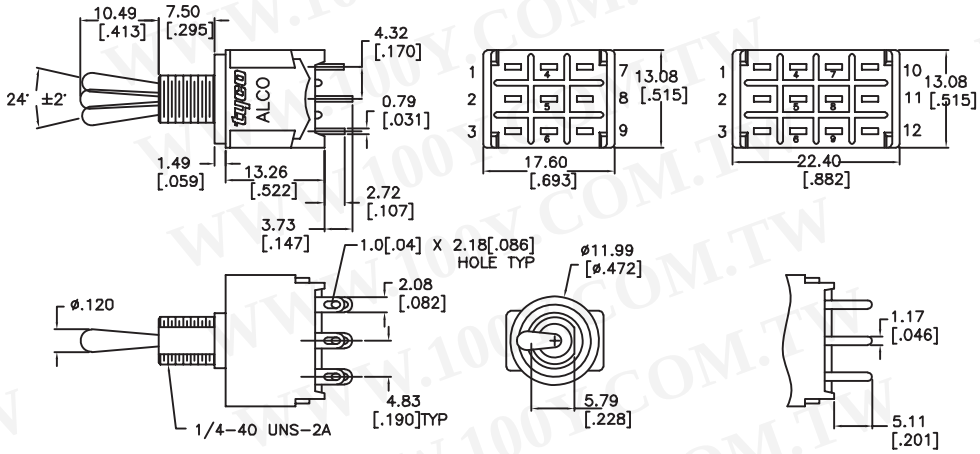




MTE3, MTE4 3 & 4 pole







Catalogue No. 8-1773450-9
Issued 09/2008

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MT Green Series (Continued)

MTF

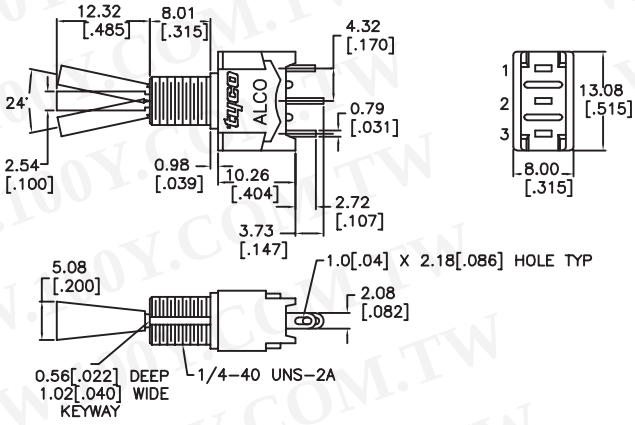
MTF1, MTF2 1 & 2 pole

MTF106D04



MTF206N04





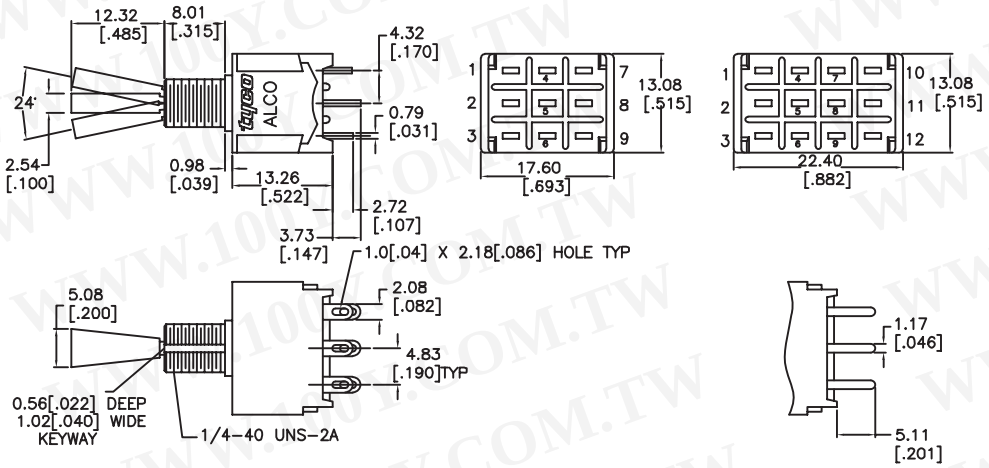
MTF3, MTF4 3 & 4 pole

MTF306D04



MTF406N04





MTG

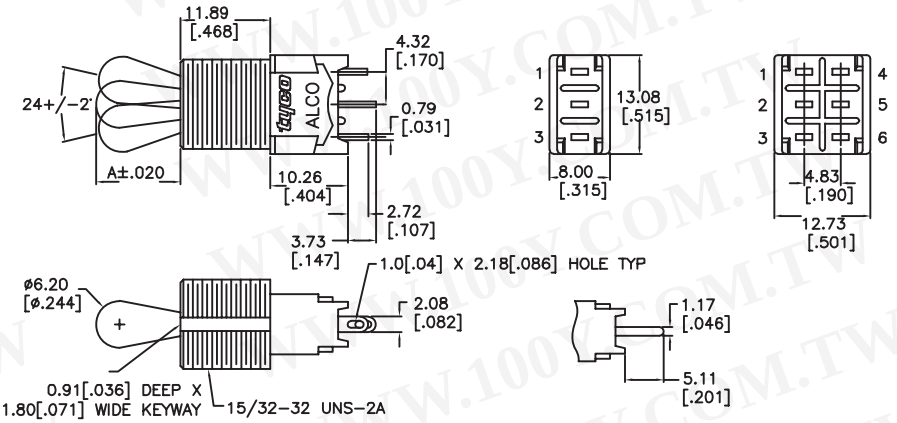
MTG1, MTG2 1 & 2 pole

MTG106D04



MTG206N04





Catalogue No. 8-1773450-9
Issued 09/2008

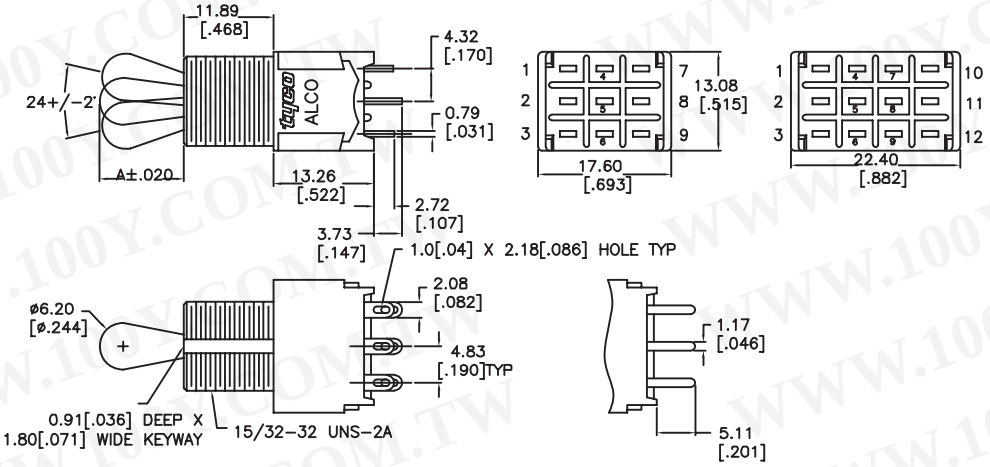
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Specifications subject to change.

MT Green Series (Continued)

MTG3, MTG4 3 & 4 pole

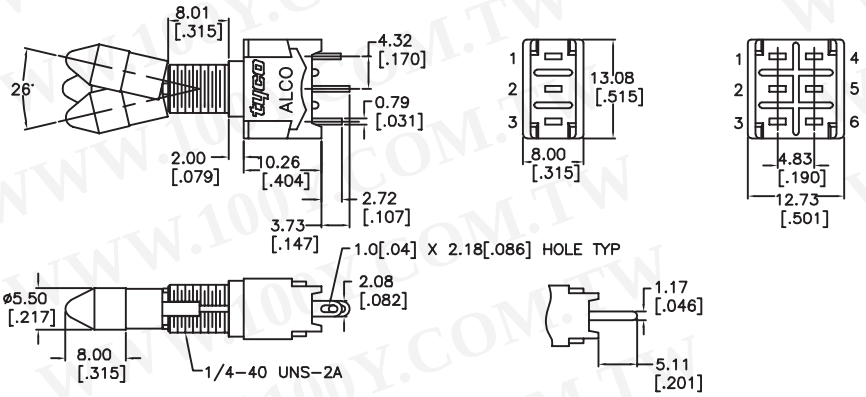




MTL

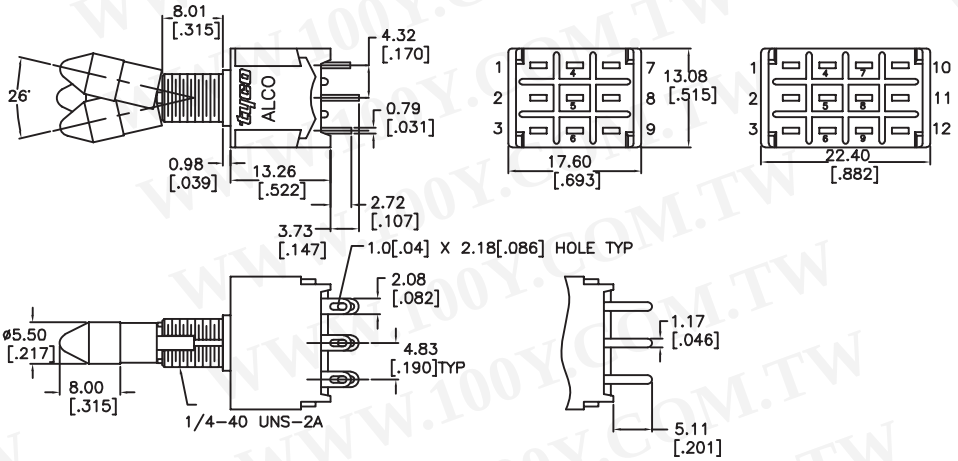
MTL1, MTL2 1 & 2 pole





MTL3, MTL4 3 & 4 pole





Catalogue No. 8-1773450-9
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MT Green Series (Continued)

MTM

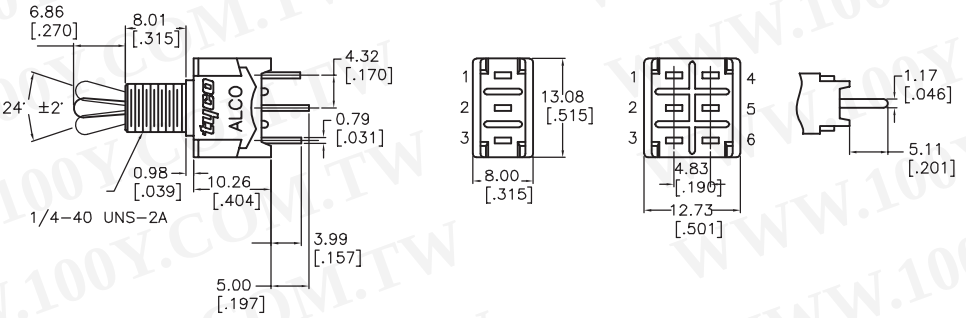
MTM1, MTM2 1 & 2 pole

MTM106DPC04



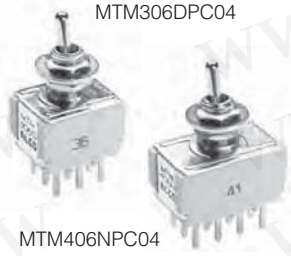


MTM206NPC04

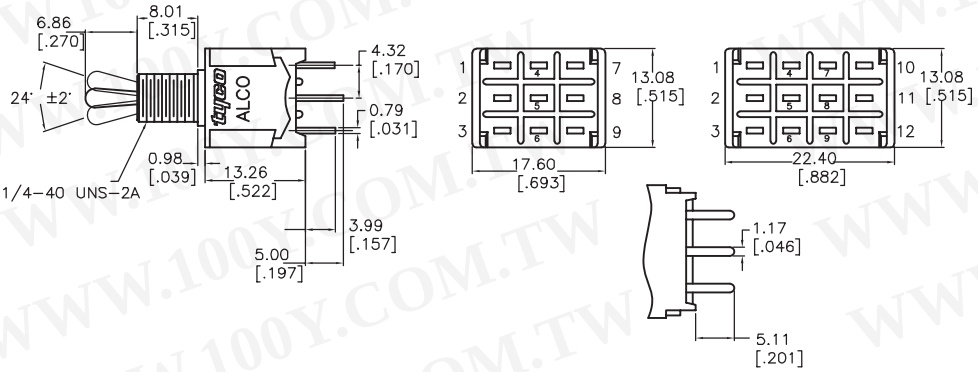


MTM3, MTM4 3 & 4 pole

MTM306DPC04



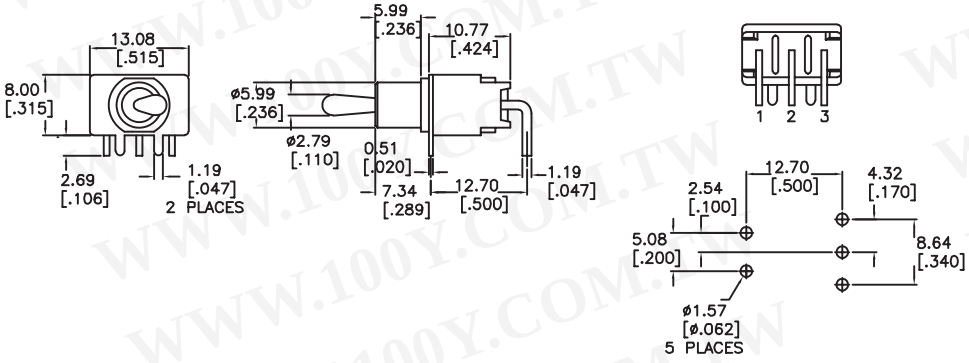
MTM406NPC04



MTM81 RA 1pole, right angle



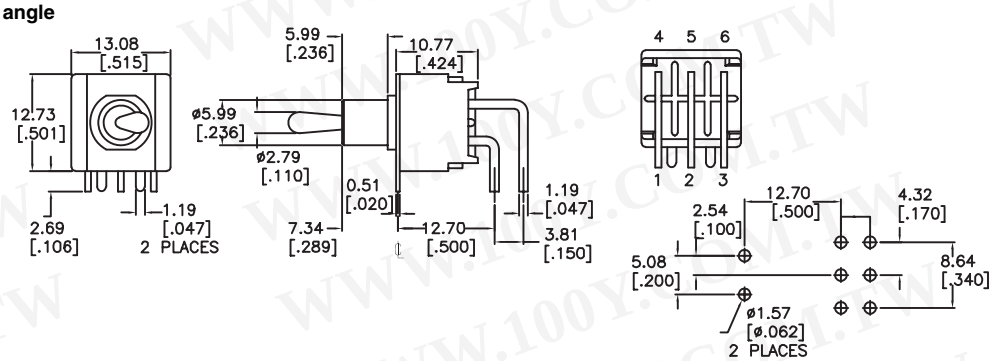
MTM8106DRA04



MTM82 RA 2pole, right angle



MTM8206NRA04



Catalogue No. 8-1773450-9
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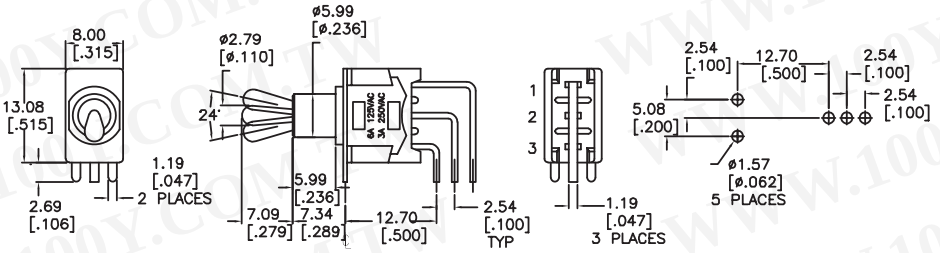
Specifications subject to change.

MT Green Series (Continued)

MTM81 VRA 1pole, vertical right angle



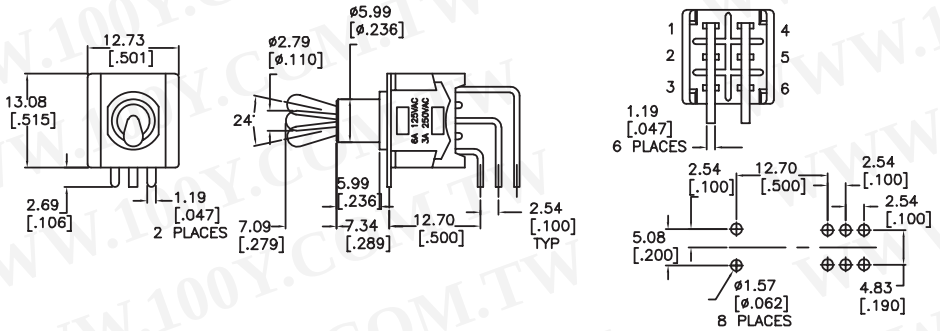
MTM8106DVRA04



MTM82 VRA 2pole, vertical right angle



MTM8206NVRA04



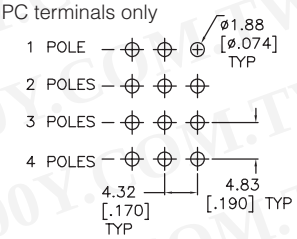
Function

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

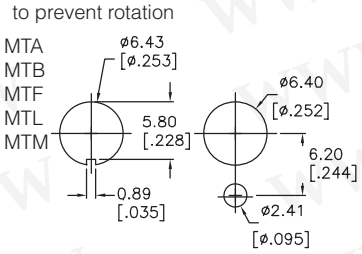
[1]) customer installed external jumper between terminals 1 and 4 required for 1 pole 3 throw function
[2]) customer installed external jumpers between terminals 2 and 4 as well as between 8 and 10 required for 2 pole 3 throw function
Off indicates a mechanical position with no electrical connection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

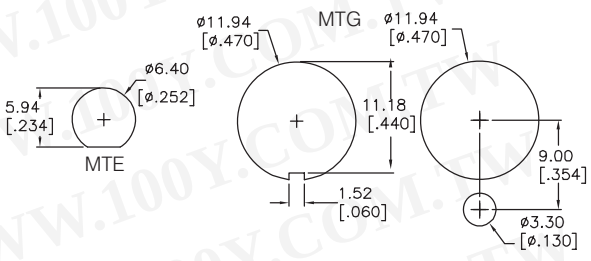
Mounting

PC board layout
PC terminals only



Recommended hole layout
to prevent rotation





Catalogue No. 8-1773450-9
Issued 09/2008

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MT Green Series (Continued)

Product key	Toggle	Bushing	Poles	Terminations	Material	Part Number
MTA106D04	.410 round	1/4-40 bushing	1	wire lug	RoHS	1571920-3
MTA106DPC04				pc board	compliant	1571920-4
MTA106E04				wire lug		1571920-5
MTA106EPC04				pc board		1571920-6
MTA106F04				wire lug		1571920-7
MTA106FPC04				pc board		1571920-8
MTA106G04				wire lug		1571920-9
MTA106GPC04				pc board		1-1571920-0
MTA106H04				wire lug		1-1571920-1
MTA106HPC04				pc board		1-1571920-2
MTA206N04			2	wire lug		1-1571920-5
MTA206NPC04				pc board		1-1571920-6
MTA206P04				wire lug		1-1571920-7
MTA206PA04			1			1-1571920-8
MTA206PAPC04				pc board		1-1571920-9
MTA206PPC04			2	pc board		2-1571920-0
MTA206R04				wire lug		2-1571920-1
MTA206RPC04				pc board		2-1571920-2
MTA206S04				wire lug		2-1571920-3
MTA206SA04			1			2-1571920-4
MTA206SAPC04				pc board		2-1571920-5
MTA206SPC04			2			2-1571920-6
MTA206T04				wire lug		2-1571920-7
MTA206TA04			1			2-1571920-8
MTA206TPC04			2	pc board		2-1571920-9
MTA306D04			3	wire lug		**3-1571920-0**
MTA306DPC04				pc board		**3-1571920-1**
MTA306E04				wire lug		**3-1571920-2**
MTA306EPC04				pc board		**3-1571920-3**
MTA306F04				wire lug		3-1571920-4
MTA306FPC04				pc board		3-1571920-5
MTA306H04				wire lug		3-1571920-6
MTA306HPC04				pc board		3-1571920-7
MTA406N04			4	wire lug		**3-1571920-8**
MTA406NPC04				pc board		**3-1571920-9**
MTA406P04				wire lug		**4-1571920-0**
MTA406PA04			2			4-1571920-1
MTA406PAPC04				pc board		4-1571920-2
MTA406PPC04			4			**4-1571920-3**
MTA8106DGVRA04			1	vertical r.a.		1571922-3
MTA8106DRA04				right angle		**1571922-4**
MTA8106DVRA04				vertical r.a.		1571922-5
MTA8106EGRA04				right angle		1571922-6
MTA8106EGVRA04				vertical r.a.		1571922-7
MTA8106ERA04				right angle		**1571922-8**
MTA8106EVRA04				vertical r.a.		1571922-9
MTA8106FRA04				right angle		1-1571922-0
MTA8106FVRA04				vertical r.a.		1-1571922-1
MTA8206NRA04			2	right angle		1-1571922-4
MTA8206NVRA04				vertical r.a.		1-1571922-5
MTA8206PGVRA04						1-1571922-6
MTA8206PRA04				right angle		1-1571922-7
MTA8206PVRA04				vertical r.a.		1-1571922-8
MTA8206RRA04				right angle		1-1571922-9
MTB106D04	.600 round, w plastic tip	1/4-40 bushing	1	wire lug		1571923-3
MTB106E04						1571923-4
MTB106F04						1571923-5
MTB106G04						1571923-6
MTB206N04			2			1571923-9
MTB206P04						1-1571923-0
MTB206T04						1-1571923-1
MTB306D04			3			1-1571923-2
MTB406N04			4			1-1571923-3

Preferred parts in bold print

MT Green Series (Continued)

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

Preferred parts in bold print

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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

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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

Product key

Typical product key: **F T D 0 9 04**

Type
- **F** F Series power toggle switch

Number of poles
- **blank** 1 & 2 pole
- **3** 3 poles
- **4** 4 poles

Model
- **T** toggle

Switch function & poles

1 & 3 Pole		2 & 4 Pole	
D	ON-ON	**N**	ON-ON
E	ON-OFF-ON	**P**	ON-OFF-ON
F	ON-(ON)	**R**	ON-(ON)
G	(ON)-OFF-(ON)	**S**	(ON)-OFF-(ON)
H	ON-OFF-(ON)	**T**	ON-OFF-(ON)
		PA	ON-ON-ON

Actuator
- **0** standard toggle
- **5** locking lever
- **7** long flat toggle

Terminal type
- **9** leadwire hooking type

Contact material
- **blank** silver
- **G** gold

Material
- **04** RoHS compliant

Catalogue No. 8-1773450-9
Issued 09/2008

Dimensions are in mm and inches and are shown for reference purposes only.

Specifications subject to change.

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

Function

Code 0 standard toggle

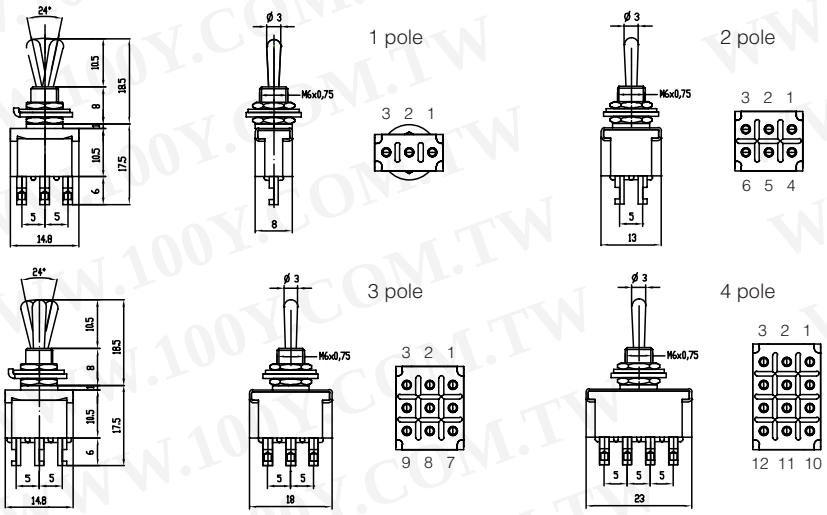
Fct.	Poles	↘	⊥	↙	↘	⊥	↙
D	1	On	None	On	1-2	-	2-3
E	1	On	Off	On	1-2	Off	2-3
F	1	On	None	(On)	1-2	-	2-3
G	1	(On)	Off	(On)	1-2	Off	2-3
H	1	On	Off	(On)	1-2	Off	2-3
N	2	On	None	On	1-2, 4-5	-	2-3, 5-6
P	2	On	Off	On	1-2, 4-5	Off	2-3, 5-6
R	2	On	None	(On)	1-2, 4-5	-	2-3, 5-6
S	2	(On)	Off	(On)	1-2, 4-5	Off	2-3, 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 ndicates a mechanical position with no electrical connection
(On) indicates momentary connection
None indicates no mechanical position

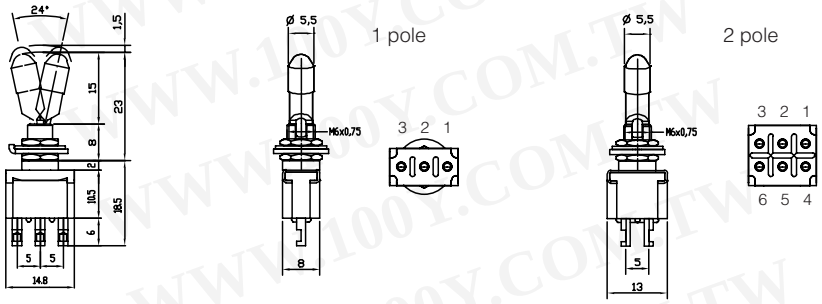
Actuator

Code 0 standard toggle


FTD0904



Code 5 locking lever



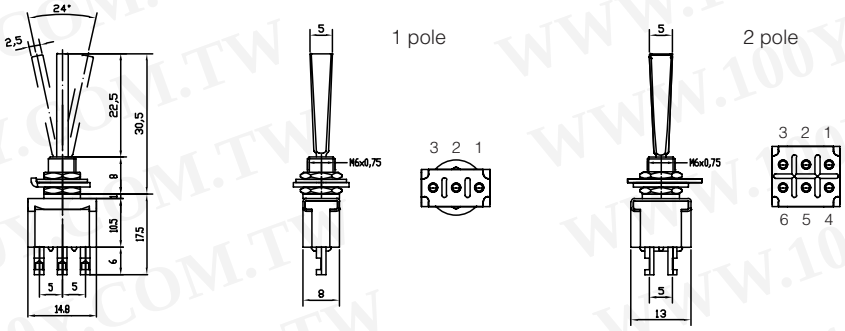
Catalogue No. 8-1773450-9
Issued 09/2008

Dimensions are in mm and inches and are shown for reference purposes only.

Specifications subject to change.

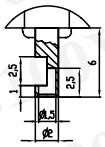
F Series, Power Toggle, Panel Mounting, 6A (Continued)

Code 7 long flat toggle



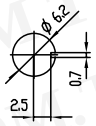
Terminal

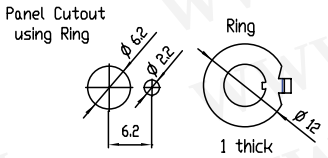
Code 9 leadwire hooking type



Mounting

Recommended hole layout to prevent rotation





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

Preferred parts in bold print

Catalogue No. 8-1773450-9
Issued 09/2008

Dimensions are in mm and inches and are shown for reference purposes only.

Specifications subject to change.

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
Terminals	brass plate
Case	phenol resin
Cover	steel zinc plated
Seal	rubber seal, insert molded rubber
RoHS compliance	compliant

Product key

Typical product key: **A W T T 1 5 04**

Type
- **A** A Series power toggle switch, 1 & 2 pole

Sealing
- **W** water proof

Actuator style
- **T** toggle

Switch function & poles

	1 pole		2 pole
A	ON-OFF	**N**	ON-ON
D	ON-ON	**P**	ON-OFF-ON
E	ON-OFF-ON	**R**	ON-(ON)
F	ON-(ON)	**S**	(ON)-OFF(ON)
G	(ON)-OFF(ON)	**T**	ON-OFF-(ON)
H	ON-OFF-(ON)		

Power rating
- **1** 20 A @ 125/250 VAC

Terminal type
- **5** .250 quick connect terminal

Material
- **04** RoHS compliant

Catalogue No. 8-1773450-9
Issued 09/2008

Dimensions are in mm and inches and are shown for reference purposes only.

Specifications subject to change.

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

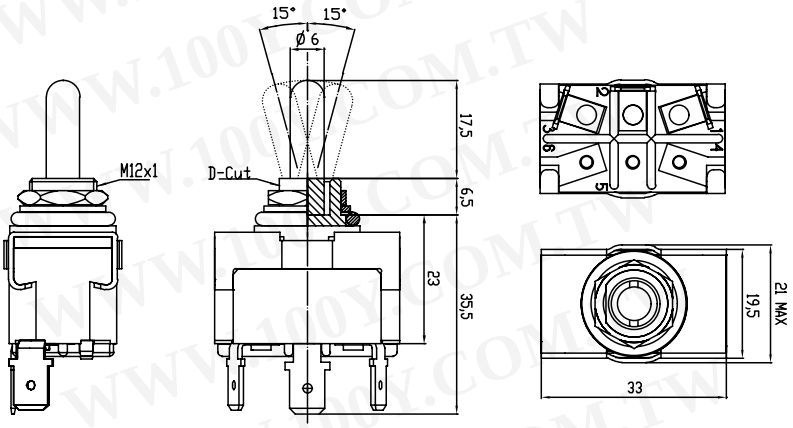
Material
04 RoHS compliant

Poles

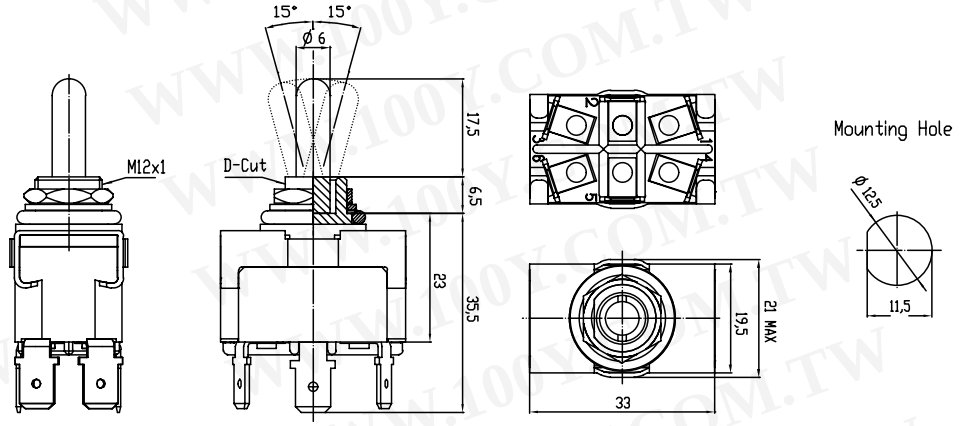
1 pole



AWTA1504



2 pole



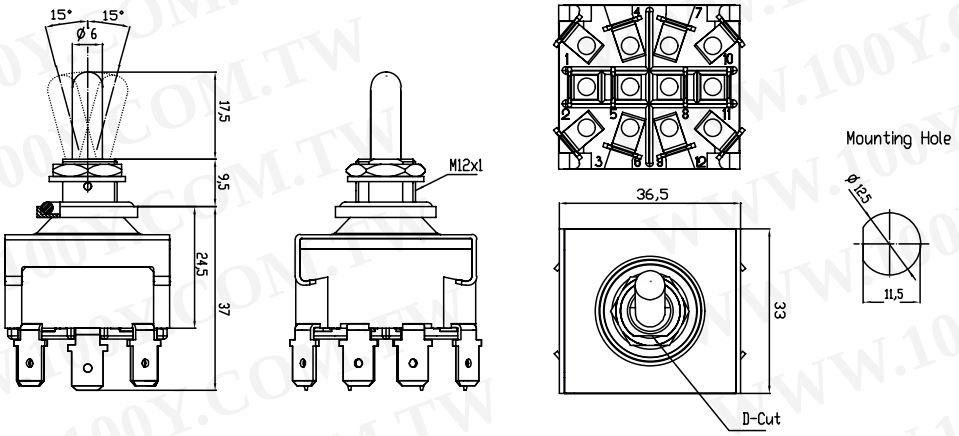
Catalogue No. 8-1773450-9
Issued 09/2008

Dimensions are in mm and inches and are shown for reference purposes only.

Specifications subject to change.

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

4 pole



Function

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

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

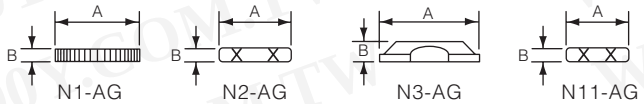
Product key	Sealing	Poles	Switch func.	Terminal	Rating	Part Number
A4TK15W04	water	4 poles	ON-OFF	.250	20 A	8-6437630-0
A4TN15W04	proof		ON-ON	quick	@ 125/250 VAC	8-6437630-1
A4TP15W04			ON-OFF-ON	connect		8-6437630-2
A4TR15W04			ON-(ON)	terminal		8-6437630-3
A4TS15W04			(ON)-OFF-(ON)			8-6437630-4
AWTA1504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

Preferred parts in bold print

Hardware and Accessories

Standard and decorative mounting hardware

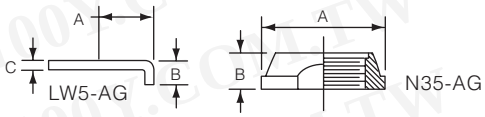




Fits all miniature toggle and pushbutton switches 1/4-40 and 15/32-32 bushings.
N1 and N3 style nuts are recommended as styling options.
Finger tighten until nut rests on mounting surface.
Finally tighten with the back nut.



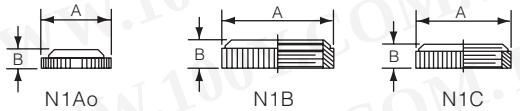




Product key	Description	Diameter/Thread	Finish	Dim A	Dim B	Material	Part Number
N1-AG	knurled nut	1/4-40	bright nickel	8.89 (.350)	1.52 (.060)	RoHS	1437628-7
10264-00-120	hex nut			7.87 (.310)	1.52 (.060)	compliant	1437561-9
N304	dress nut			11.7 (.460)	2.29 (.090)		1825621-1
N3504		15/32-32		16.0 (.630)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

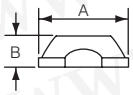
"Perfect Fit" decorative mounting hardware





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





Product key	Description	Diameter/Thread	Finish	Dim A	Dim B	Material	Part Number
N1A04	knurled nut	1/4-40	bright nicke	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 nicke	9.52 (.375)	3.10 (.122)		1825623-1
N4304			bright nicke	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

Catalogue No. 8-1773450-9
Issued 09/2008

Dimensions are in mm and inches and are shown for reference purposes only.

Specifications subject to change.

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

Product key

Typical product key: **BT 1532 2 04**

Type
- **B** Full boot seals
- **BT** Half boot seals *)

*Half boot recommended for maintained switch's as full boot may have tendency to pull toggle back

Nut thread
- **1048** 10-48 UNS 2-B
- **1440** 1/4-40 UNS 2-B
- **1532** 15/32-32 UNS 2-B

Color
- **0** black
- **2** red
- **8** gray

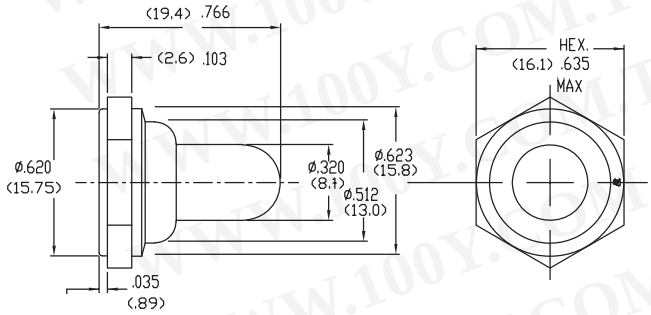
Material
- **04** RoHS compliant

Full boots

1532 Series



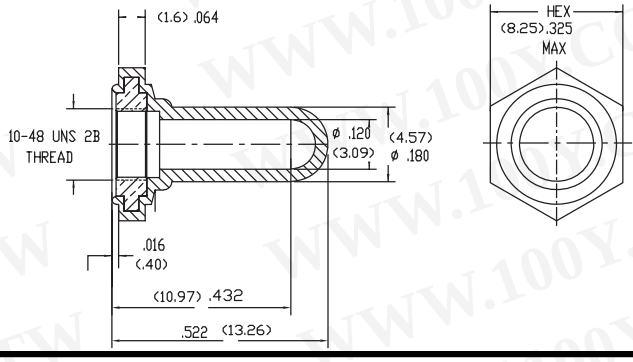
B1532004



1048 Series



B1048004



Catalogue No. 8-1773450-9
Issued 09/2008

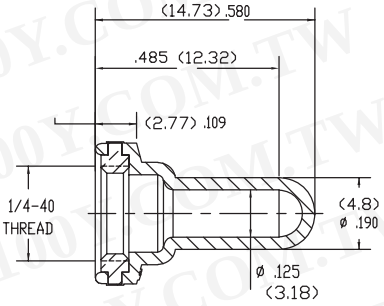
Dimensions are in mm and inches and are shown for reference purposes only.

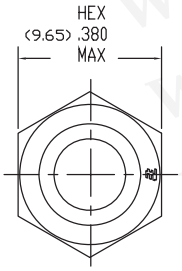
Specifications subject to change.

Boot Seals (Continued)

1440 Series

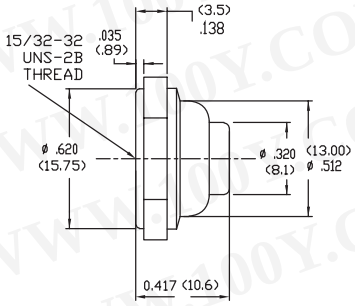

B1440004

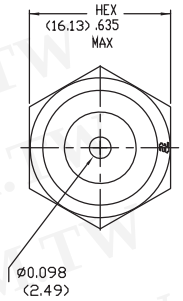




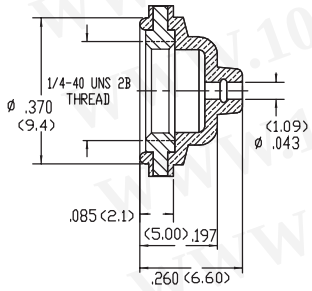
Half boots

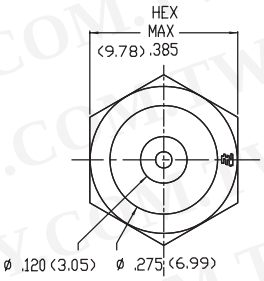
1532 Series





1440 Series





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

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Dimensions are in mm and inches and are shown for reference purposes only.

Specifications subject to change.