

# The Gemini Series "A" Series Toggles 5 Amp

Refer to Pages C32-C36 for Additional Options

## "A" SERIES DESIGN FEATURES

- Meets CSA Requirements
- Toggle – Machined brass, heavy nickel plated.
- Bushing & Frame – Rigid one-piece die cast, copper flashed, heavy nickel plated.
- Fixed Contact – Welded construction, selective placement of precious metal. (Gold or silver.)
- Movable Contact – "Captured" design eliminates possibility of displacement due to shock. (01 function.)
- Terminal Seal – Epoxy sealing of terminals is standard.
- Termination – Precious metal(or silver)/brass or copper strip with welded contact area.
- Case – DAP for electrical performance and mechanical strength, UL94VO.

## MATERIAL SPECIFICATIONS:

Contacts .....Gold/gold flash  
 Silver/tin lead  
 Case Material .....Thermoset  
 Terminal Seal .....Epoxy

## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature .....-20°C to +85°C (-4°F to +185°F)  
 Storage Temperature .....-45°C to +100°C (-49°F to +212°F)  
 Solder Heat Resistance .....See page M6-7

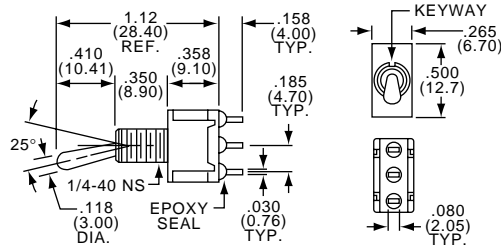
## TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating .....Gold: 0.4 VA @ 20 VAC/DC  
 Silver: 2 A @ 250 VAC: 5 A @ 125 VAC  
 Initial Contact Resistance .....30 Milliohms max.  
 Contact Timing .....Break before make  
 Insulation Resistance .....1,000 Megohms @ 500 VDC.  
 Dielectric Strength .....1,000 Volts RMS @ sea level  
 Actuation Force .....Momentary: 950 Grams max.  
 Plunger/Actuator Travel .....Maintained: 1750 Grams max. 25°  
 Life Expectancy .....30,000 Cycles

## SPDT



A101SYZQ

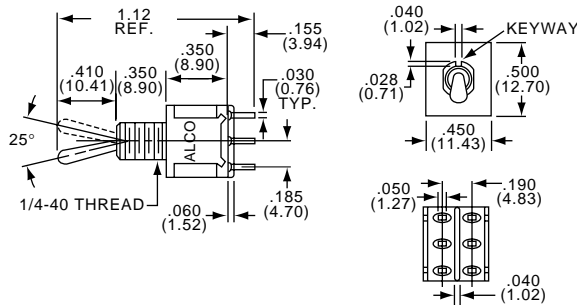


Model	Type	Act. Code	P.M8	↙	↓	↘
<b>Silver Contacts</b>						
A101SYZQ	SPDT	1		On	None	On
A103SYZQ	SPDT	5		On	Off	On
A105SYZQ	SPDT	5		(On)	Off	(On)
A107SYZQ	SPDT	5		On	Off	(On)
A108SYZQ	SPDT	1		On	None	(On)
<b>Gold Contacts</b>						
A101SYZB	SPDT	1		On	None	On
A103SYZB	SPDT	5		On	Off	On
A105SYZB	SPDT	5		(On)	Off	(On)
A107SYZB	SPDT	5		On	Off	(On)

## DPDT



A201SYZQ

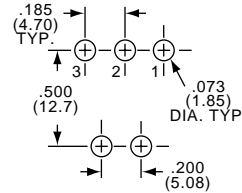
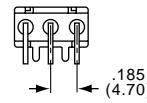
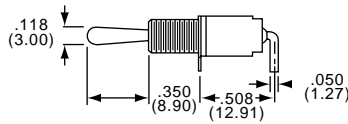
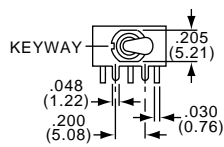


Model	Type	Act. Code	P.M8	↙	↓	↘
<b>Silver Contacts</b>						
A201SYZQ	DPDT	2		On	None	On
A203SYZQ	DPDT	6		On	Off	On
A205SYZQ	DPDT	6		(On)	Off	(On)
A207SYZQ	DPDT	6		On	Off	(On)
A208SYZQ	DPDT	2		On	None	(On)
A211SYZQ	DP3T	11		On	On	On
A213SYZQ	DP3T	11		On	On	(On)
A215SYZQ	DP3T	11		(On)	On	(On)

*"A" Series Toggles*  
*Refer to Pages C32-C36 for Additional Options*

# The Gemini Series

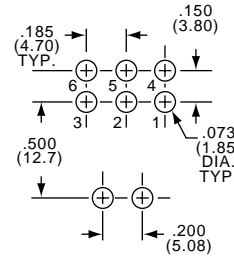
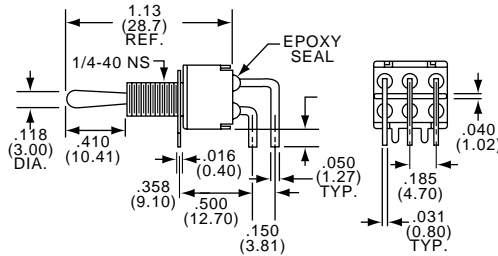
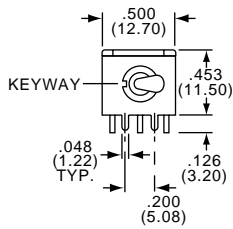
SEE PAGE C24 FOR PRODUCT SPECIFICATIONS



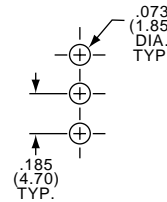
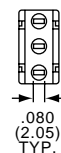
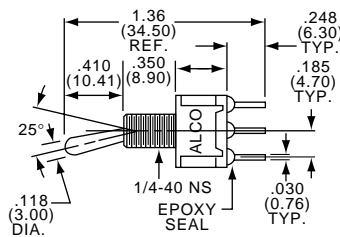
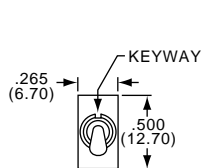
SPDT/DPDT



A101SYAB  
Horizontal Actuation



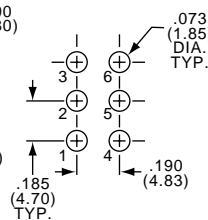
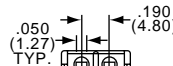
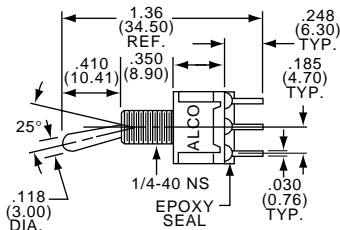
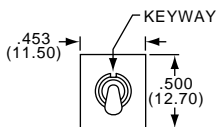
Gold Contacts Model	Type	Act. Code	P.M8			
A101SYAB	SPDT	1	On	None	On	
A103SYAB	SPDT	5	On	Off	On	
A201SYAB	DPDT	2	On	None	On	
A208SYAB	DPDT	2	On	None	(On)	



SPDT/DPDT



A101SYCB



A201SYCB

Gold Contacts Model	Type	Act. Code	P.M8			
A101SYCB	SPDT	1	On	None	On	
A103SYCB	SPDT	5	On	Off	On	
A108SYCB	SPDT	1	On	None	(On)	
A201SYCB	DPDT	2	On	None	On	
A203SYCB	DPDT	6	On	Off	On	
A208SYCB	DPDT	2	On	None	(On)	

**Need more technical information?**

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# The Gemini Series "A" Series Toggles "Wire Wrap/Wire Lug"

Refer to Pages C32-C36 for Additional Options

SEE PAGE C24 FOR PRODUCT SPECIFICATIONS

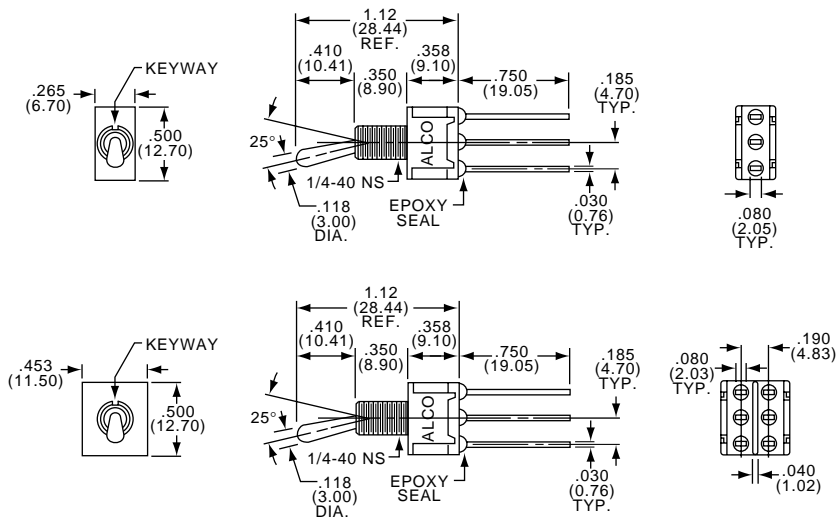
SPDT/DPDT



A101SYWQ



A201SYWQ



Model	Silver Contacts	Type	Act .	Code	P.M8	↖	⊥	↗
A101SYWQ	SPDT	1	On	None	On			
A103SYWQ	SPDT	5	On	Off	On			
A201SYWQ	DPDT	2	On	None	On			
A203SYWQ	DPDT	6	On	Off	On			

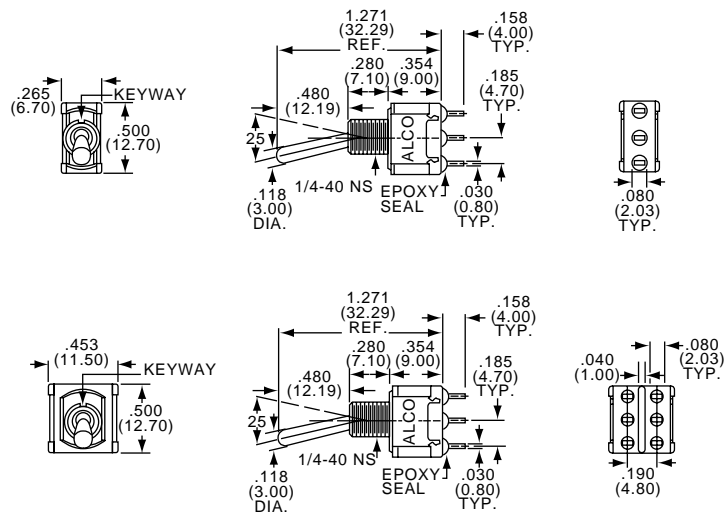
SPDT/DPDT



A101SDZQ



A201SDZQ



Model	Silver Contacts	Type	Act .	Code	P.M8	↖	⊥	↗
A101SDZQ	SPDT	1	On	None	On			
A103SDZQ	SPDT	5	On	Off	On			
A201SDZQ	DPDT	2	On	None	On			
A203SDZQ	DPDT	6	On	Off	On			

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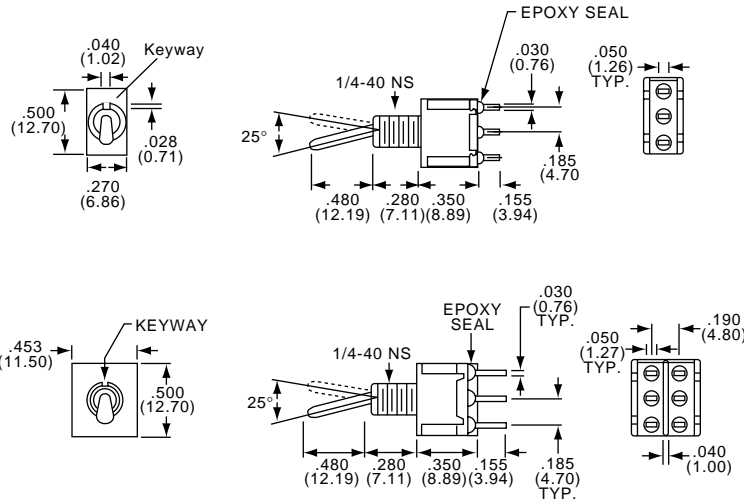
C26

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# "A" Series Toggles The Gemini Series

Refer to Pages C32-C36 for Additional Options

SEE PAGE C24 FOR PRODUCT SPECIFICATIONS



SPDT



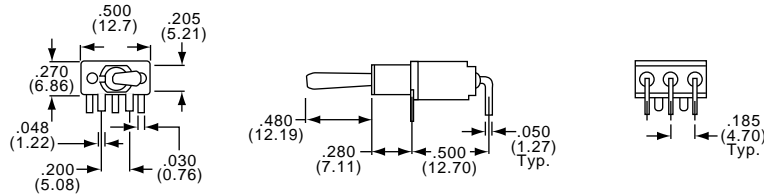
A101SDCQ

DPDT



A201SDCQ

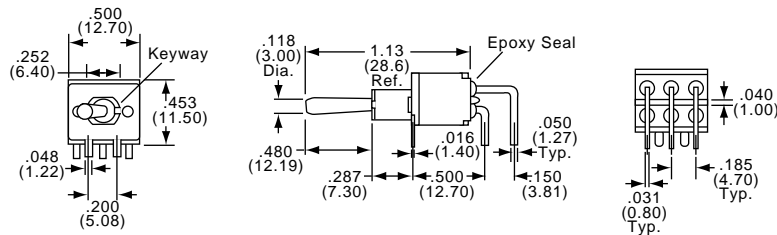
Silver Model	Contacts	Type	Act. Code	P. M8	↙	↓	↘
A101SDCQ	SPDT	1	On	None	On		
A103SDCQ	SPDT	5	On	Off	On		
A201SDCQ	DPDT	2	On	None	On		
A203SDCQ	DPDT	6	On	Off	On		
A208SDCQ	DPDT	2	On	None	(On)		



SPDT/DPDT



A101SD9AQ  
Horizontal Actuation



A201SD9AQ  
Horizontal Actuation

Silver Model	Contacts	Gold Model	Contacts	Type	Act. Code	P. M8	↙	↓	↘
A101SD9AQ	A101SD9AB	SPDT	1	On	None	On			
A103SD9AQ	A103SD9AB	SPDT	5	On	Off	On			
A108SD9AQ		SPDT	1	On	None	(On)			
A201SD9AQ	A201SD9AB	DPDT	2	On	None	On			
A208SD9AQ	A208SD9AB	DPDT	2	On	None	(On)			

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# The Gemini Series "A" Series Toggles 5 Amp "Locking Actuator"

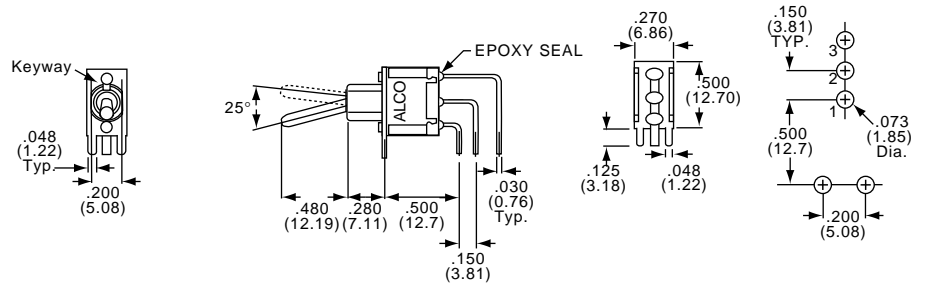
Refer to Pages C32-C36 for Additional Options

SEE PAGE C24 FOR PRODUCT SPECIFICATIONS

SPDT



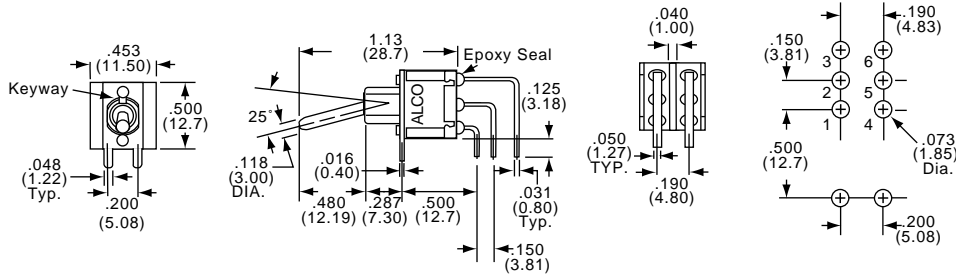
A101SD9AV2Q  
Vertical Actuation



DPDT



A201SD9AV2Q  
Vertical Actuation

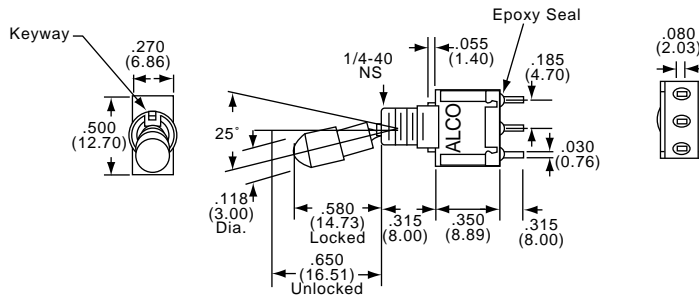


Model	Silver Contacts	Type	Act. Code	P. M8	On	None	On	Model	Silver Contacts	Type	Act. Code	P. M8	On	None	On
A101SD9AV2Q	SPDT	1	On	None	On			A201SD9AV2Q	DPDT	2	On	None	On		
A103SD9AV2Q	SPDT	5	On	Off	On			A203SD9AV2Q	DPDT	6	On	Off	On		
								A208SD9AV2Q	DPDT	2	On	None	(On)		

SPDT



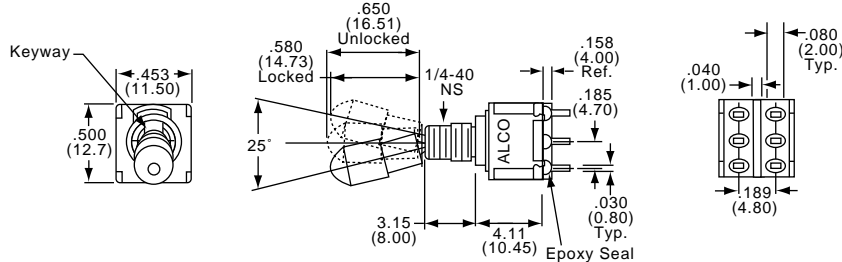
A101KZQ



DPDT



A201KZQ



Model	Silver Contacts	Type	Act. Code	P. M8	On	None	On	Model	Silver Contacts	Type	Act. Code	P. M8	On	None	On
A101KZQ	SPDT	1	On	None	On			A201KZB	A201KZQ	DPDT	2	On	None	On	
A103KZQ	SPDT	5	On	Off	On			A203KZB	A203KZQ	DPDT	6	On	Off	On	
								A205KZB	A205KZQ	DPDT	6	(On)	Off	(On)	
								A211KZB	A211KZQ	SP3T	11	On	On	On	

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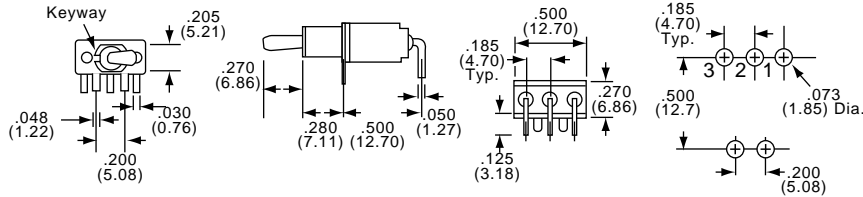
C28

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# "A" Series Toggles Right Angle The Gemini Series

Refer to Pages C32-C36 for Additional Options

SEE PAGE C24 FOR PRODUCT SPECIFICATIONS

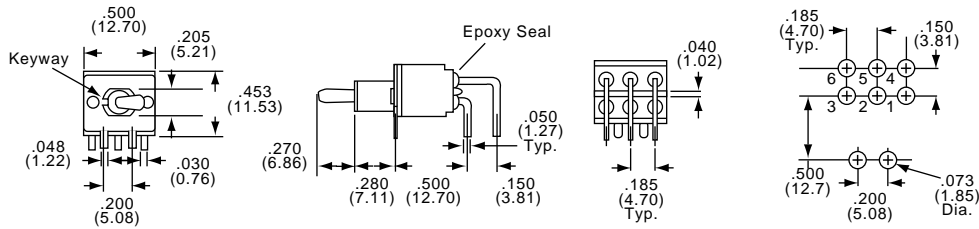


SPDT



A101MD9AQ  
Horizontal Actuation

Silver Contacts Model	Gold Contacts Model	Type	Act. Code	P. M8			
A101MD9AQ	A101MD9AB	SPDT	1		On	None	On
A103MD9AQ	A103MD9AB	SPDT	5		On	Off	On
A108MD9AQ	A108MD9AB	SPDT	1		On	None	(On)

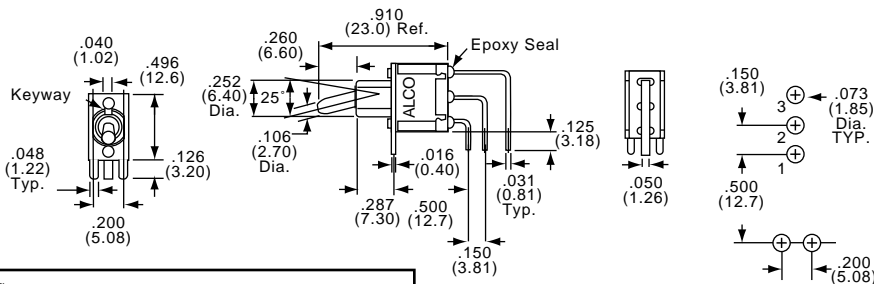


DPDT



A201MD9AQ  
Horizontal Actuation

Silver Contacts Model	Gold Contacts Model	Type	Act. Code	P. M8			
A201MD9AQ	A201MD9AB	DPDT	2		On	None	On
A203MD9AQ	A203MD9AB	DPDT	6		On	Off	On

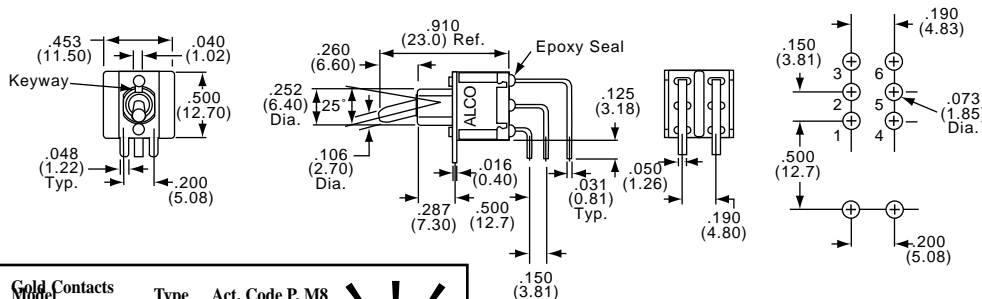


SPDT



A101MD9AV2Q  
Vertical Actuation

Silver Contacts Model	Gold Contacts Model	Type	Act. Code	P. M8			
A101MD9AV2Q	A101MD9AV2B	SPDT	1		On	None	On
A103MD9AV2Q	A103MD9AV2B	SPDT	5		On	Off	On
A108MD9AV2Q	A108MD9AV2B	SPDT	1		On	None	(On)



DPDT



A201MD9AV2AQ  
Vertical Actuation

Silver Contacts Model	Gold Contacts Model	Type	Act. Code	P. M8			
A201MD9AV2Q	A201MD9AV2B	DPDT	2		On	None	On
A203MD9AV2Q	A203MD9AV2B	DPDT	6		On	Off	On
A208MD9AV2Q	A208MD9AV2B	DPDT	2		On	None	(On)

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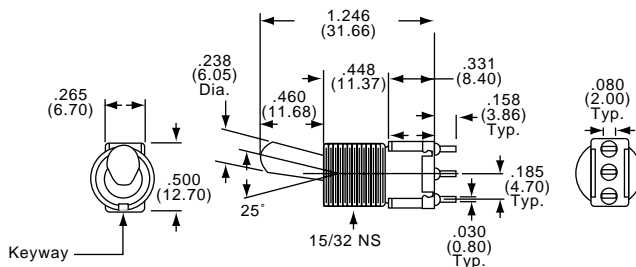


# "A" Series Toggles 15/32 Bushing The Gemini Series

Refer to Pages C32-C36 for Additional Options

SEE PAGE C24 FOR PRODUCT SPECIFICATIONS

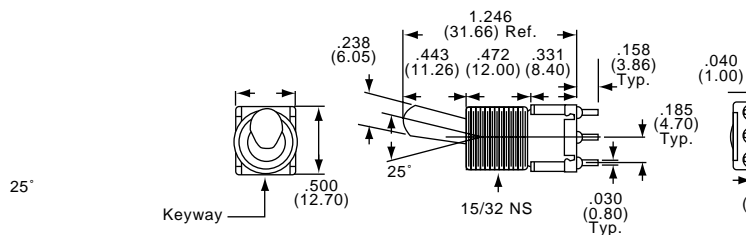
SPDT



A103T1ZQ

Model	Contacts	Type	Act. Code	P.	M8			
A101T1ZQ	SPDT	1	On	None	On			
A103T1ZQ	SPDT	5	On	Off	On			
A105T1ZQ	SPDT	5	(On)	Off	(On)			
A108T1ZQ	SPDT	1	On	None	(On)			

DPDT



A201T1ZQ

Model	Contacts	Type	Act. Code	P.	M8			
A201T1ZQ	DPDT	2	On	None	On			
A203T1ZQ	DPDT	6	On	Off	On			
A205T1ZQ	DPDT	6	(On)	Off	(On)			
A207T1ZQ	DPDT	6	On	Off	(On)			
A208T1ZQ	DPDT	2	On	None	(On)			
A211T1ZQ	SP3T	11	On	On	On			

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# The Gemini Series "A" Series Miniature Toggles

## FEATURES

Hardware supplied with threaded bushings: two hex nuts, one internal tooth lockwasher and one locking ring. (See Hardware Section for: dress nuts, plastic caps and environment boot seals.)

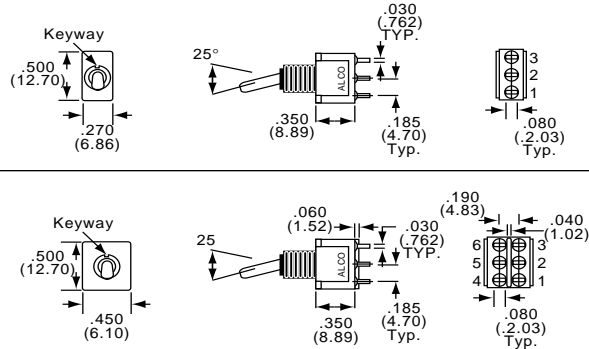
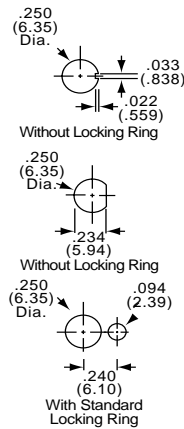
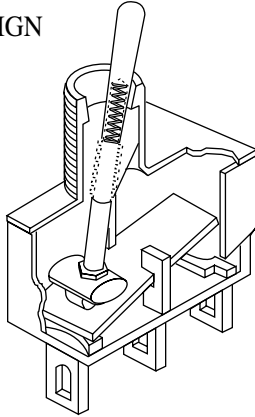
## TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating .....Silver: 2 A @ 250 VAC or 5 A @ 125 VAC  
 Gold: 0.4 VA @ 20 VAC/DC max.  
 Insulation Resistance .....1,000 Megohms min. @ 500 VDC.  
 Dielectric Strength .....1,000 Volts RMS @ sea level initial  
 Electrical Life .....30,000 Cycles

## ENVIRONMENTAL SPECIFICATIONS

Operating Temperature..... -20°C to + 85°C (-4°F to + 185°F)  
 Storage Temperature.....-45°C to + 100°C (-49°F to + 212°F)

## DESIGN



## PART NUMBERING

Model	Function	Toggle	Bushing	Terminal	Contact	K, K1: Cap Color	Option	
<b>A1</b> Single Pole		<b>S</b> Bat. Long		<b>Z</b> Wire Lug	<b>Q</b> Silver	(Nickel Standard)		
<b>A2</b> Double Pole		<b>K</b> Locking		<b>A</b> Right Angle	<b>B</b> Gold over Silver	<b>U</b> Black		
<b>01</b> On-On		<b>K1</b> Locking		<b>AV2</b> Vertical Right Angle	<b>G</b> Silver	<b>Z</b> Red		
<b>03</b> On-Off-On		<b>L</b> Lever		<b>C</b> Printed Circuit	Vertical Support			
<b>05</b> (On)-Off-(On)		<b>L1</b> Lever		<b>V30</b> Quick Connect	Bracket			
<b>07</b> On-Off-(On)		<b>L2</b> Lever		<b>V40</b> Quick Connect	Wire Wrap			
<b>08</b> On-(On)		<b>M</b> Bat. Short Flatted (with <b>Y</b> only)		<b>V60</b> Quick Connect				
<b>11</b> On-On-On	double pole only	<b>P3</b> Flatted	<b>Y</b> 1/4-40 threaded, .35" long, slotted	<b>W1</b>				
<b>13</b> On-On-(On)		<b>P4</b> Flatted (with <b>Y</b> only)	<b>Y9</b> unthreaded, .35" long	<b>W3</b>				
<b>15</b> (On)-On-(On)		<b>T</b> Large Toggle & Bushing	<b>CW</b> 1/4-40 threaded, .37" long, actuator bushing flange environmental seals	<b>D</b> Unthreaded, .28" long	<b>W4</b>			
		<b>T1</b> Large Toggle & Bushing	<b>D9</b> 1/4-40 threaded, flanged, .30" long	<b>H</b>	<b>W5</b>			
		<b>T2P</b> Large Flatted Toggle and Bushing						

Note: For surface mount termination, use the "TST" series, Page C8

**Other Options**

**N** Black finish toggle, bushing and hardware. Add "N" to end of part number, but before U.L. option.

**O** Internal O-ring environmental actuator seal. Add letter after toggle option: S,M,L,L1 & L2.

**P** Anti-Push-In/Anti rotate. Add letter after toggle S,M,L,L1 & L2

U.L.(Q or G contact only)

See pages M2-M4 for application specific indexing.

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C32

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# "A" Series Miniature Toggles The Gemini Series

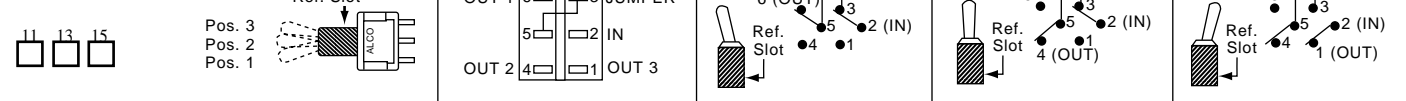
## FUNCTIONS

The following functions available in SP or DP.

<b>01</b>	2 Positions	None indicates no mechanical position		On	None	On
<b>03</b>	3 Positions			On	Off	On
<b>05</b>	3 Positions	Off indicates a mechanical position with no electrical connection.(On)		Off	(On)	
<b>07</b>	3 Positions			(On)	Off	On
<b>08</b>	2 Positions	(On) indicates momentary action.		(On)	None	On
		SPDT, connect terminals:				
		DPDT, connect terminals:				
<b>11</b>	3 Positions			On	On	On
<b>13</b>	3 Positions			(On)	On	On
<b>15</b>	3 Positions			(On)	On	(On)
Functions available in DP only			Connect terminals:			

\* SP3T functions achieved with external jumper installed by customer

### WIRING DIAGRAM FOR FUNCTIONS



### TOGGLES



Dimension "L"	Bushing	Type	Dimension "L"	Bushing	"B" Actuator	"A" Dimension
.410 (10.41) .480 (12.19)	"Y", "H", "CW" "D", "D9" "CW"		.200 (5.08)	"Y", "H"	(5.08) P3 (4.19) P4	.450 (11.43) .250 (6.35)
			.270 (6.86)	"D", "D9"		.200 .165



No bushing option needed for "T" or "T1".

No bushing option needed for "K" or "K1". "K" locking levers are used to prevent accidental switching and must be lifted up prior to actuation. Standard nickel finish. Actuator option continued on Page C34.

### Need more technical information?

Consult your Thomas & Betts sales office listed on the back cover

# The Gemini Series "A" Series Miniature Toggles "Bushing / Terminal Options"

## TOGGLES

<p><b>L</b> Lever</p>	<p><b>L1</b> Lever</p>	<p><b>L2</b> Lever</p>
<p><b>Dimension "L"</b> .840 (21.34) .910 (23.4)</p> <p><b>Bushing</b> "Y", "H" "CW" "D", "D9"</p>	<p><b>Dimension "L"</b> .640 (16.26) .710 (18.03)</p> <p><b>Bushing Type</b> "Y", "H" "CW" "D", "D9"</p>	<p><b>Dimension "L"</b> .550 (13.97) .620 (15.75)</p> <p><b>Bushing Type</b> "Y", "H", "D", "D9"</p>

## BUSHINGS

<p><b>Y</b> 1/4-40 Thread .35" long, slotted (Standard)</p>	<p><b>D9</b> Unthreaded .28" long</p> <p>Used with <b>Z, C &amp; W</b> terminations</p>	<p><b>H</b> 1/4-40 Thread Flanged, .30" long</p>
<p><b>D</b> 1/4-40 Thread .28" long, slotted</p>	<p><b>CW</b> Threaded Splashproof</p> <p>For S &amp; M Toggles</p>	<p><b>CW</b> Threaded Splashproof</p> <p>For S &amp; M Toggles</p>

## TERMINALS

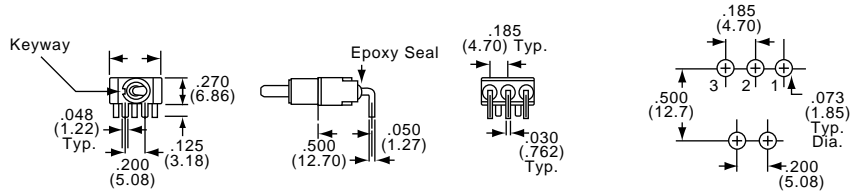
<p><b>Z</b> Wire Lug</p>	<p><b>Z</b> Quick Connect</p> <p>Mates with AMP 61454 or 60900.</p>	<p><b>W W1 W3 W4 W5</b> Wire Wrap</p> <table border="1"> <tr> <th>"A"</th> <th>W</th> <th>W1</th> <th>W3</th> <th>W4</th> <th>W5</th> </tr> <tr> <td></td> <td>.750</td> <td>.964</td> <td>.425</td> <td>1.062</td> <td>1.305</td> </tr> </table>	"A"	W	W1	W3	W4	W5		.750	.964	.425	1.062	1.305	<p><b>C</b> Printed Circuit</p> <p><b>Single pole</b> Dimensions: .073 (1.85) Dia. Typ., .185 (4.70)</p> <p><b>Double pole</b> Dimensions: .073 (1.85) Dia. Typ., .190 (4.83)</p>
"A"	W	W1	W3	W4	W5										
	.750	.964	.425	1.062	1.305										

# "A" Series Miniature Toggles The Gemini Series

## TERMINALS

**A**

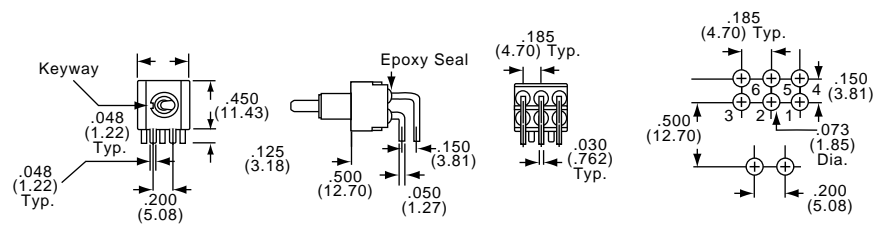
**Right Angle**  
Single Pole



Note: Terminal numbers viewed from top of P.C. boards.

**A**

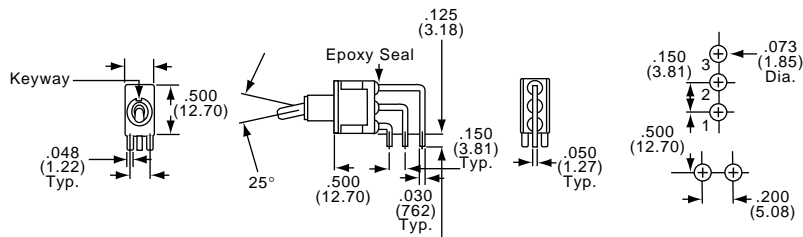
**Right Angle**  
Double Pole



Note: Terminal numbers viewed from top of P.C. boards.

**AV2**

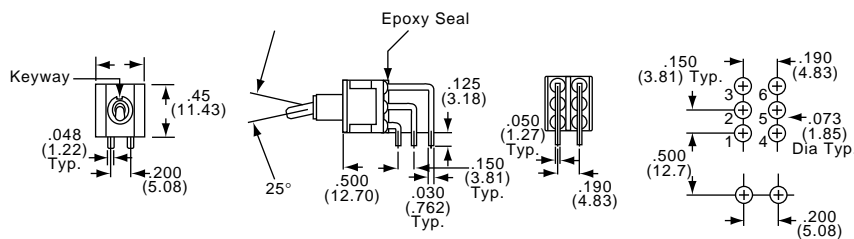
**Vertical Right Angle**  
Single Pole



Note: Terminal numbers viewed from top of P.C. boards.

**AV2**

**Vertical Right Angle**  
Double Pole



Note: Terminal numbers viewed from top of P.C. boards.

**Need more technical information?**

Consult your Thomas & Betts  
sales office listed on the back cover

C35

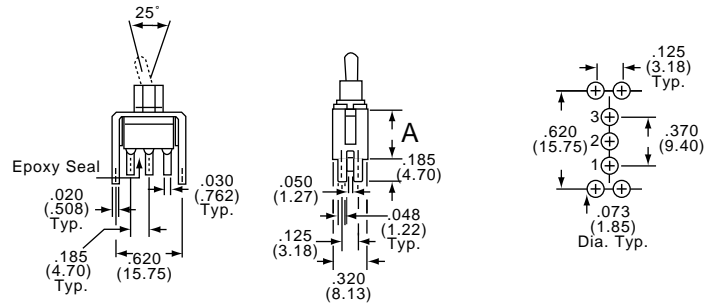
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Memphis, TN 38125  
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# The Gemini Series "A" Series Miniature Toggles "5 Amp" Terminal Options

TERMINALS NOTE: Terminal numbers viewed from top of P.C. board

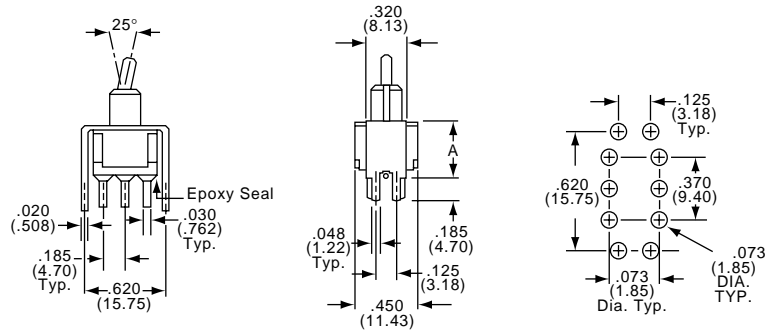
**V30 V40 V90**

Vertical Support Bracket  
Single Pole



Option Code	Dim."A"
V30	.460 (11.68)
V40	.630 (16.00)
V90	1.150 (29.21)

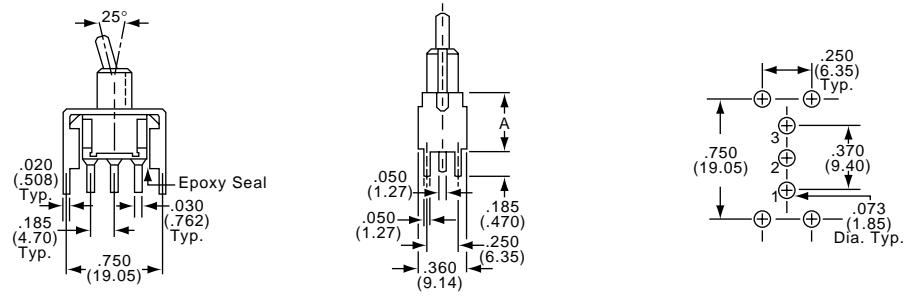
Vertical Support Bracket  
Double Pole



Option Code	Dim."A"
V30	.460 (11.68)
V40	.630 (16.00)
V90	1.150 (29.21)

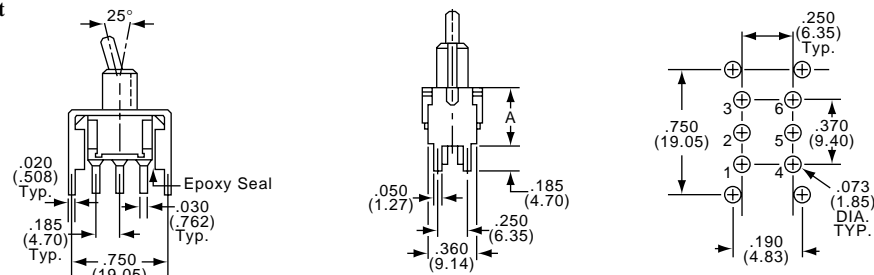
**V60 V70 V80**

Vertical Support Bracket  
Single Pole



Option Code	Dim."A"
V60	.460 (11.68)
V70	.630 (16.00)
V80	.953 (24.71)

Vertical Support Bracket  
Double Pole



Option Code	Dim."A"
V60	.460 (11.68)
V70	.630 (16.00)
V80	.953 (24.71)

## CONTACTS

**B** CONTACTS: Copper alloy with gold plate, welded button.

TERMINALS: Brass with gold plate.

ELECTRICAL RATING: 0.4 VA @ 20 VAC/DC.

**Q** CONTACTS: Copper alloy with silver, welded button.

TERMINALS: Brass with tin/lead plate.  
ELECTRICAL RATING: 5 A @ 250 VAC, 5 A @ 28 VDC.

UL/CSA RATING: 5A @ 125 VAC, 3A @ 250 VAC.  
(Specify "UL" option code)

**G** CONTACTS: Copper alloy with gold plate over silver, welded button.

TERMINALS: Brass alloy, with gold plate.

Note: This contact option can be used for low-level or power switching. If level is above, the switch is rendered usable only for power switching due to arc-removal of gold plate.

UL/CSA RATING: 5A @ 125 VAC, 3A @ 250 VAC  
(Specify "UL" option code)

ELECTRICAL RATING: 0.4 VA @ 20 VAC/DC or 5 A @ 125 VAC, 2 A @ 250 VAC, 5 A @ 28 VDC.

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C36

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