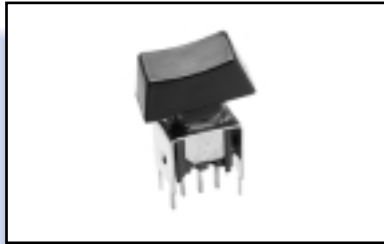




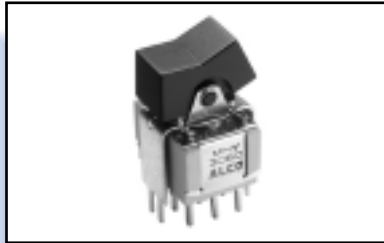
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Rockwell Automation

Rocker/Paddle Part Number Index

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(*) Specify Color Choice Where Available
 (0) Black, (2) Red, (3) Orange,
 (4) Yellow, (5) Green, (6) Blue
 (8) Gray, (9) White
 (25) Red/Green Bi-Color

TRD Series

E3

TRD Series *Rocker/Paddle • How To Order*

MATERIAL SPECIFICATIONS:

Movable Contacts Copper alloy w/silver inlay contact or gold plate
 Terminals/Fixed Contacts Copper alloy w/silver inlay contact or gold plate
 Terminal Seal Epoxy
 Housing/Beveled Frame Polyamide, black matte finish

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature -4°F to +176°F (-20°C to +80°C)
 Storage Temperature -49°F to +199°F (-45°C to +93°C)
 Solder Heat Resistance Meets MIL-STD-202, method 210

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating Silver: 3A max. @ 125 VAC, option 3
 Gold: 0.4VA max. @ 20 VDC, option 1
 Initial Contact Resistance 20 Milliohms max.
 Static Withstanding 15KV, per IEC 801-2
 Insulation Resistance 1,000 Megohms min. @ 500 VDC
 Dielectric Strength 500 Volts RMS @ sea level
 Electrical Life 2 Pos. 20K cycles @ full rated 3A load, 80K @ 0.4VA, 3 pos. 10K cycles @ full rated 3A load, 60K @ 0.4VA

***NOTICE:** Caution should be used when hand-soldering. Solder heat Resistance -550°-600°F for less than 5 seconds. Solder with the switch in the closed position.

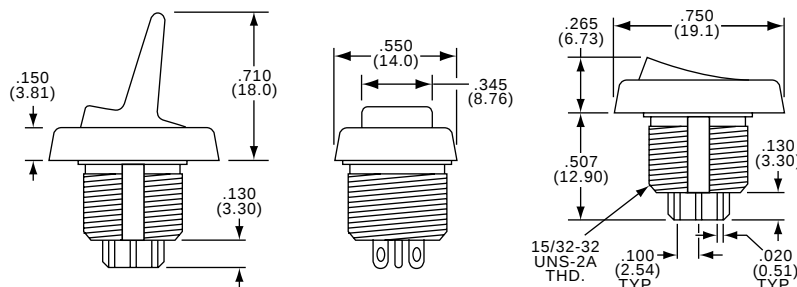
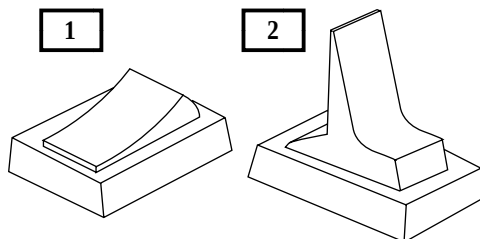
UL recognized under the Component Program of Underwriters Laboratories Inc. File #E46765

HOW TO ORDER

See pages M2-M4 for application specific indexing.

Model	Contact Rating	Function	Actuator	Actuator Color	Terminal	Mount	L.E.D. Illumin.	L.E.D. Color	*UL
TRD1 Single Pole		Single Pole	1 Rocker		WL Wire Lug	L Beveled frame adaptor		☐ None Option L	
TRD2 Double Pole			2 Paddle		WW Wire Wrap	LR Integral w/rocker (TRD 1 only)		2 red	
			0 black		QC Quick Connect			4 yellow	
			2 red		PC Printed Circuit			5 green	
			6 blue					25 bi-color red/green	
			9 yellow						
1 Gold 0.4VA		Double Pole							Functions: Silver only D, F, N, & R
3 Silver 3A									Terminations Functions only WL, WW or QC only
					☐ 15/32" round hole				
					5 1/2" square hole				

ACTUATORS



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E4

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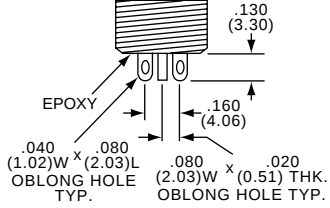
TRD Series

TERMINATIONS

(Epoxy seal standard)

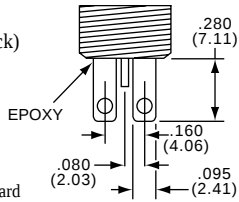
WL

Wire Lug



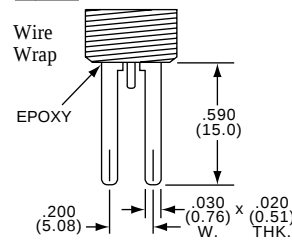
QC

Quick Connect
.110" (.020 thick)



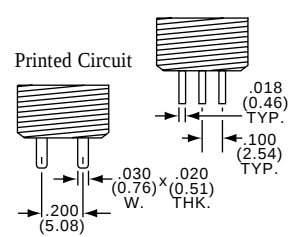
Mates with standard
.110" female connectors

Wiro



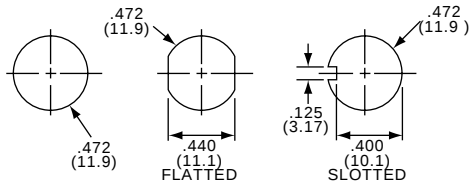
PC

Printed Circuit



15/32" HOLE STANDARD

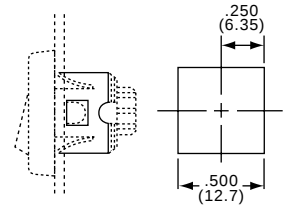
Standard TRD bushing will mount in any hole shown below.



**Recommended
panel thickness:
.030" to .250"**

One hex nut, one internal
tooth lock-washer supplied.

5 1/2" SQUARE CUTOUT SNAP-IN ADAPTOR



Recommended panel thickness:
.030" to .125"

Material: bright stainless steel
To specify adaptor separately,
use P/N **TRD10793**

CONTACTS/RATING/UL RECOGNITION

1	0.4VA Max. @ 20 VDC
---	---------------------

Movable Contact:	Copper alloy, gold plate
Fixed Contact/Terminal:	Copper alloy, gold plate

3	3A Max. @ 125 VAC
---	-------------------

Movable Contact:	Copper alloy, silver inlay
Fixed Contact/Terminal:	Copper alloy, silver inlay

UL

For contact option 3

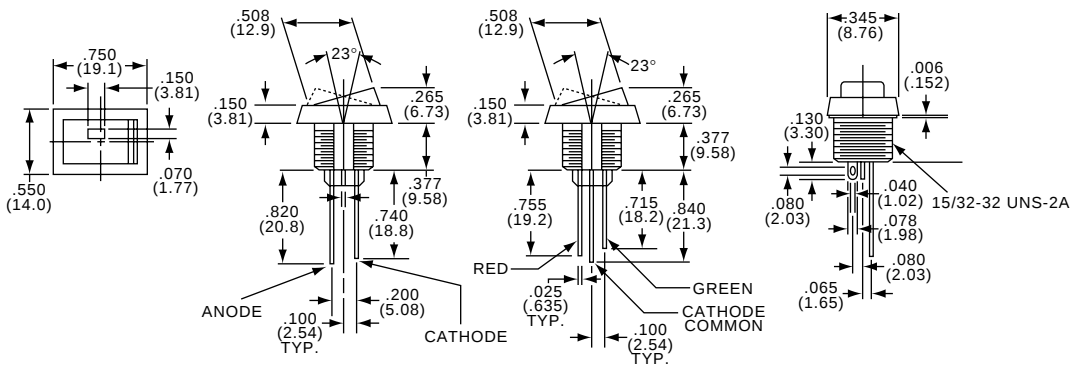
Rating: 3A, 120 VAC(Resistive)
File: E46765

Underwriters Laboratories, Inc. marking stamped under beveled frame.

L.E.D. ILLUMINATION - SINGLE AND BI-COLOR

LR

**L.E.D. Integral
(Rocker Actuator)
All SPDT functions**



Standard mounting dimensions apply, L.E.D. supplied in **2** red, **4** yellow, **5** green, or **25** red/green.

L.E.D. Specifications: Max Voltage: 2.8 VDC

Max. Forward Current: red-20mA, Yellow-25 mA, green-25 mA, red/green-40 mA.

Need more technical information?

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

Thomas & Betts

8155 T&B Blvd.

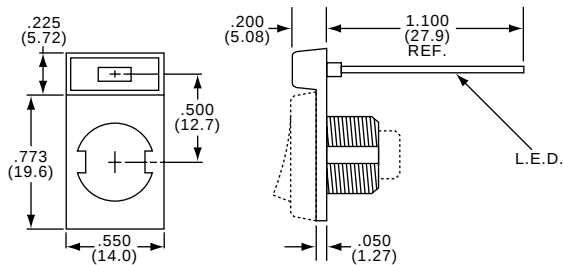
Memphis, TN 38125

(901) 252-5000 FAX (901) 252-1380

TRD Series *Rocker/Paddle • How To Order*

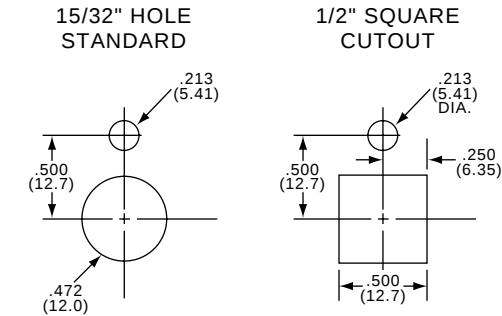
L

L.E.D. BEVELE FRAME ADAPTOR
(Accepts rectangular L.E.D.)



Material: Nylon 6/6
Color/Finish: Black, matte

MOUNTING



Recommended Panel Thickness: .030 to .220:
Recommended Panel Thickness: .030 to .095"

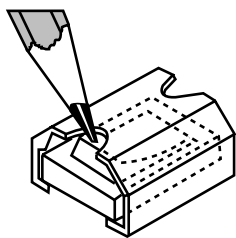
E

FUNCTIONS

Single Pole	Double Pole	123 456	123 456	123 456
☐ D	☐ N	On	None	On
☐ E	☐ P	On	Off	On
☐ F	☐ R	On	None	(On)
☐ G	☐ S	(On)	Off	(On)
☐ H	☐ T	On	Off	(On)
SPDT Terminals Connected		2-3	---	1-2
DPDT Terminals Connected		2-3 5-6	---	1-2 4-5

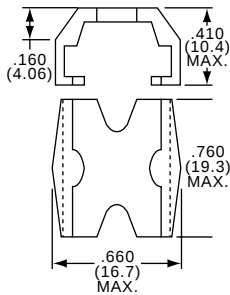
None No mechanical position
Off Mechanical position, no electrical connection
(On) Momentary mechanical position, electrical connection

SWITCH GUARD

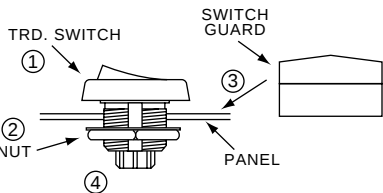


Recommended Panel Thickness:
15/32" hole standard - .030 to .220
15/32" square cutout - .030 to .095

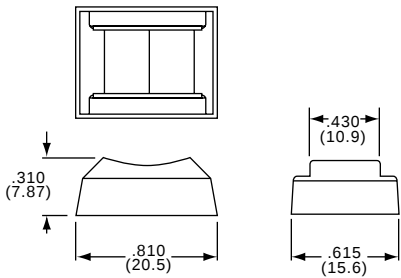
Material: Nylon 6/6 **Color/Finish:** Black matte, Specify separately, P/N TRD10979



1. Insert switch in panel.
2. Attach lockwasher and hexnut.
3. Snap switch guard onto switch.
4. Tighten hex nut.



ROCKER BOOT SEAL



To specify boot seal use P/N TRD11494

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Subminiature Rocker Vertical & Right Angle Switches/Gold Contacts Standard TR Series

MATERIAL SPECIFICATIONS:

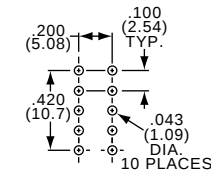
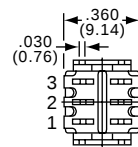
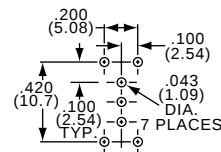
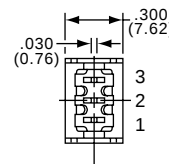
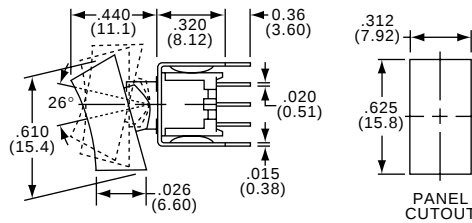
Contacts Gold over nickel
Case Material High temperature polyester UL94V-0
Terminals/Fixed Contacts Tin lead plate/gold over nickel
Terminal Seal Epoxy standard: single pole
Optional: double pole

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature -22°F to +185°F (-30°C to +85°C)
Storage Temperature -67°F to +185°F (-55°C to +85°C)

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating 0.4VA Max. @ 20 VDC or peak AC
Initial Contact Resistance 20 Milliohms max.
Contact Timing Break-before-make
Insulation Resistance 1,000 Megohms min. @ 500 VDC
Dielectric Strength 1,000 Volts RMS @ sea level
Actuator Travel 26°
Life Expectancy 80,000 Cycles



SPDT



TR11DGPCV10

DPDT

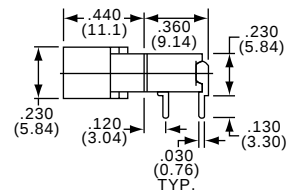
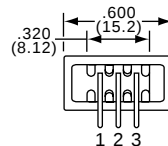
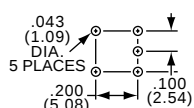
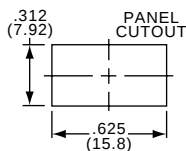


TR21NGPCV12

Model	Type	Act. Code	P. M8	On	Off	On	Contact Type
TR11DGPCV1(*)	SPDT	D		On	None	On	Gold
TR11EGPCV1(*)	SPDT	E		On	Off	On	Gold
TR21NGPCV1(*)	DPDT	N		On	None	On	Gold

(*) Specify color by adding suffix number: (0) Black, (2) Red, (6) Blue, (9) White.

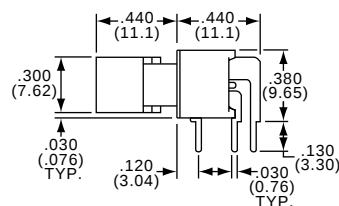
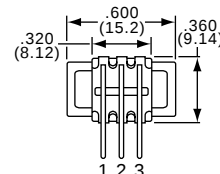
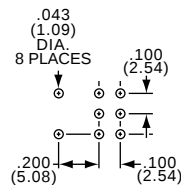
NOTE: Rocker dimensions and throw same for both TR11DGPCV1. and TR21NGPCV1.



SPDT



TR11EGRA0



DPDT



TR21PGRA0

Model	Type	Act. Code	P. M8	On	Off	On	Contact Type
TR11DGRA(*)	SPDT	D		On	None	On	Gold
TR11EGRA(*)	SPDT	E		On	Off	On	Gold
TR21NGRA(*)	DPDT	N		On	None	On	Gold
TR21PGRA(*)	DPDT	P		On	Off	On	Gold

(*) Specify color by adding suffix number: (0) Black, (2) Red, (6) Blue, (9) White.

Need more technical information?

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Memphis, TN 38125
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"A" Series Paddles
Refer to Pages E12-E17 For Additional Options

MATERIAL SPECIFICATIONS:

Contacts/Terminals	Gold/gold flash Silver/tin lead
Case Material	Thermoset 94V-0
Actuator Material	Polyamide
Terminal Seal	Epoxy

ENVIRONMENTAL SPECIFICATIONS:

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

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating Gold: .04 VA @ 20 AC/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

Actuator Travel 25°

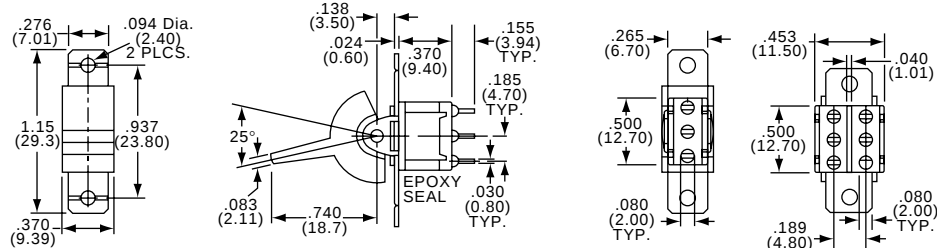
Life Expectancy 30,000 Cycles

NOTE: Part numbering sequence page E12

SPDT

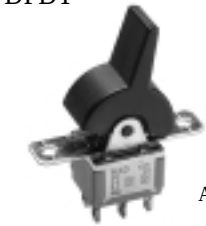


A101J2ZQO



SPDT

DPDT



A201J2ZQO

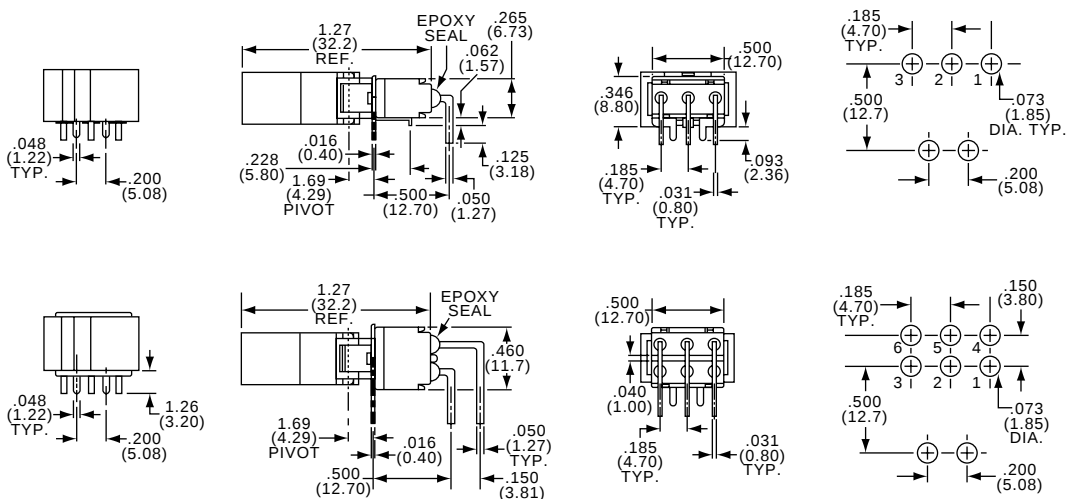
Standard Paddle Color - (Black)

Silver Contacts						Silver Contacts					
Model	Type	Act.	Code	P. M8	  	Model	Type	Act.	Code	P. M8	  
A101J2ZQ0	SPDT	1	On	None	On	A201J2ZQ0	DPDT	2	On	None	On
A103J2ZQ0	SPDT	5	On	Off	On	A203J2ZQ0	DPDT	6	On	Off	On
A105J2ZQ0	SPDT	5	(On)	Off	(On)	A205J2ZQ0	DPDT	6	(On)	Off	(On)
A107J2ZQ0	SPDT	5	On	Off	(On)	A207J2ZQ0	DPDT	6	On	Off	(On)
A108J2ZQ0	SPDT	1	On	None	(On)	A208J2ZQ0	DPDT	2	On	None	(On)

SPDT / DPDT



A201J2AQ0



Standard Paddle Color - (Black)

Silver Contacts							Silver Contacts						
Model	Type	Act. Code	P. M8				Model	Type	Act. Code	P. M8			
A101J2AQ0	SPDT	1	On	None	On		A201J2AQ0	DPDT	2	On	None	On	
A103J2AQ0	SPDT	5	On	Off	On		A203J2AQ0	DPDT	6	On	Off	On	
A105J2AQ0	SPDT	5	(On)	Off	(On)		A205J2AQ0	DPDT	6	(On)	Off	(On)	
A107J2AQ0	SPDT	5	On	Off	(On)		A207J2AQ0	DPDT	6	On	Off	(On)	
A108J2AQ0	SPDT	1	On	None	(On)		A208J2AQ0	DPDT	2	On	None	(On)	

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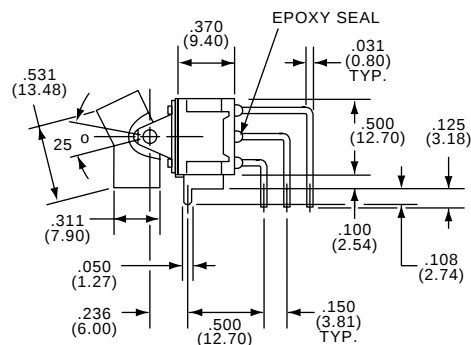
E8

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Memphis, TN 38125
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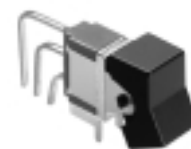
"A" Series Miniature Rockers
Refer to Page E12-E17 For Additional Options

The Gemini Series

SEE PAGE E8 FOR PRODUCT SPECIFICATIONS



SPDT



A101J1AV2Q0

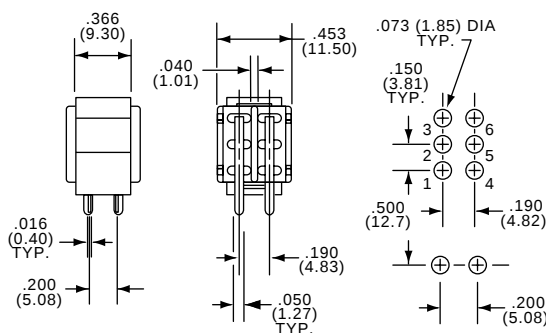
DPDT



A205J1AV2Q0

Standard Rocker Color - (Black)

Silver Contacts	Type	Act. Code	P. M8			
Model						
A101J1AV2Q0	SPDT	1	On	None	On	
A105J1AV2Q0	SPDT	5	(On)	Off	(On)	
A107J1AV2Q0	SPDT	5	On	Off	(On)	
A201J1AV2Q0	DPDT	2	On	None	On	
A205J1AV2Q0	DPDT	6	(On)	Off	(On)	
A208J1AV2Q0	DPDT	2	On	None	(On)	

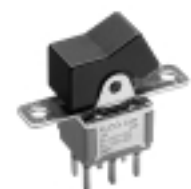


SPDT



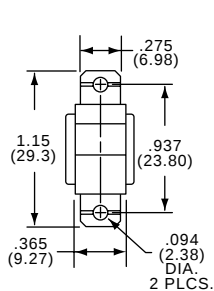
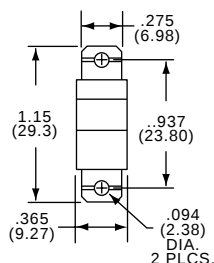
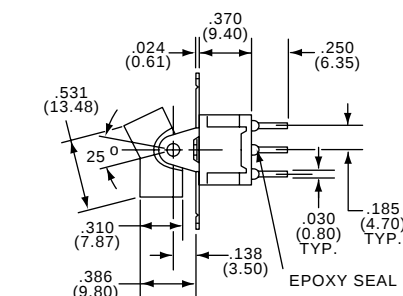
A101J1CQ0

DPDT



A201J1CQ0

Standard Rocker Color - (Black)



Silver Contacts	Type	Act. Code	P. M8			
Model						
A101J1CQ0	SPDT	1	On	None	On	
A105J1CQ0	SPDT	5	(On)	Off	(On)	
A201J1CQ0	DPDT	2	On	None	On	
A203J1CQ0	DPDT	6	On	Off	On	
A205J1CQ0	DPDT	6	(On)	Off	(On)	
A207J1CQ0	DPDT	6	On	Off	(On)	

Need more technical information?

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sales office listed on the back cover

The Gemini Series

"A" Series Miniature Rockers

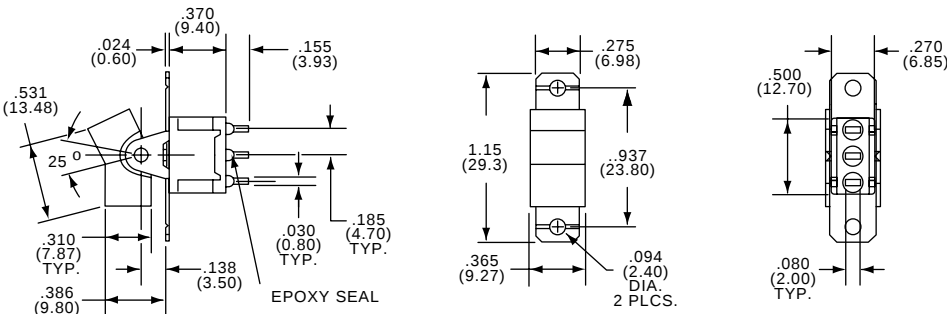
Refer to Pages E12-E17 For Additional Options

SEE PAGE E8 FOR PRODUCT SPECIFICATIONS

SPDT



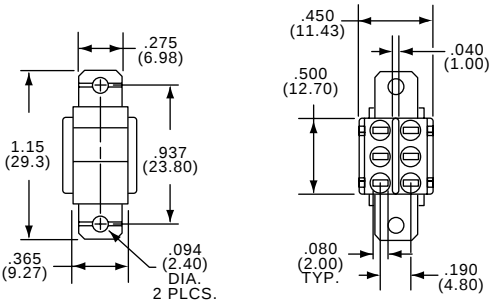
A101J1ZQ0



DPDT



A201J1ZQ0



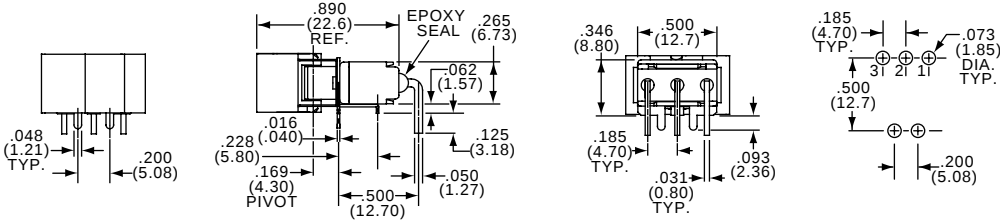
Standard Rocker Color - (Black)

Silver Contacts						Silver Contacts					
Model	Type	Act. Code.	P. M8				Model	Type	Act. Code.	P. M8	
A101J1ZQ0	SPDT	1		On	None	On	A201J1ZQ0	DPDT	2		On
A103J1ZQ0	SPDT	5		On	Off	On	A203J1ZQ0	DPDT	6		On
A105J1ZQ0	SPDT	5		(On)	Off	(On)	A205J1ZQ0	DPDT	6		(On)
A107J1ZQ0	SPDT	5		On	Off	(On)	A207J1ZQ0	DPDT	6		On
A108J1ZQ0	SPDT	1		On	None	(On)	A208J1ZQ0	DPDT	2		On

SPDT



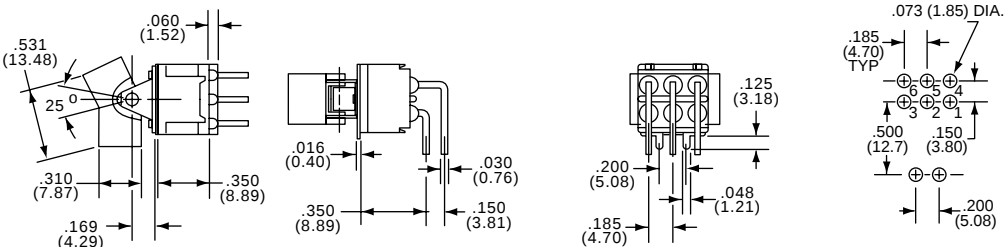
A101J1AQ0



DPDT



A201J1AQ0



Standard Rocker Color - (Black)

Silver Contacts						Silver Contacts					
Model	Type	Act. Code.	P. M8				Model	Type	Act. Code.	P. M8	
A101J1AQ0	SPDT	1		On	None	On	A201J1AQ0	DPDT	2		On
A105J1AQ0	SPDT	5		(On)	Off	(On)	A203J1AQ0	DPDT	6		On
A107J1AQ0	SPDT	5		On	Off	(On)	A205J1AQ0	DPDT	6		(On)

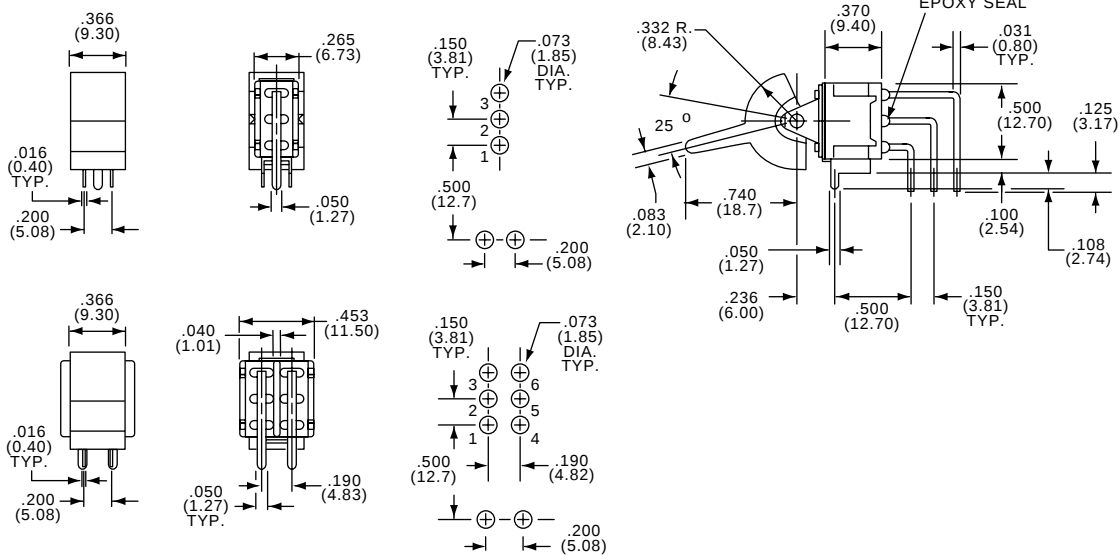
"A" Series Paddles The Gemini Series

SEE PAGE E8 FOR PRODUCT SPECIFICATIONS

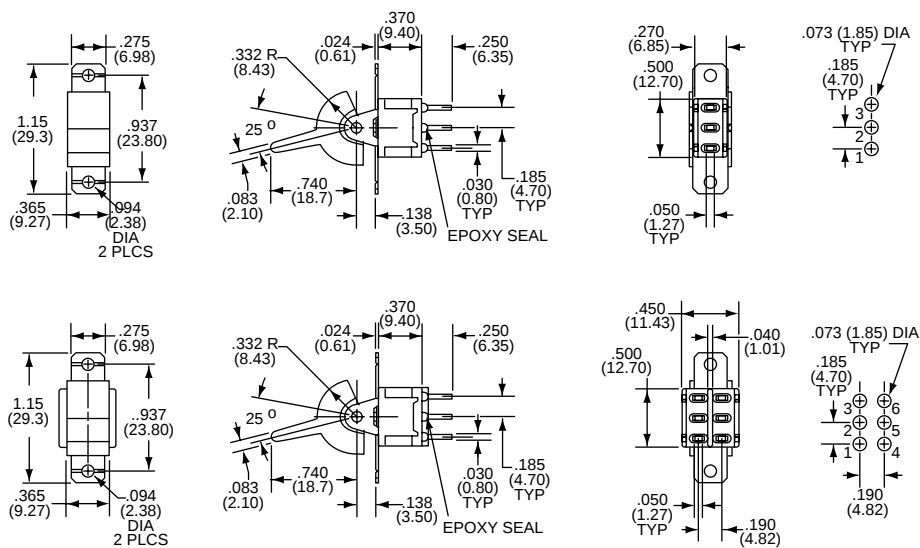
SPDT / DPDT



A105J2AV2QO



Standard Paddle Color - (Black)

[illegible]

SPDT



A105J2CQO

DPDT



A205J2CQO

Silver Contacts Model	Type	Act. Code	P. M8			
A105J2CQ0	SPDT	5	(On)	Off	(On)	
A201J2CQ0	DPDT	2	On	None	On	
A205J2CQ0	DPDT	6	(On)	Off	(On)	

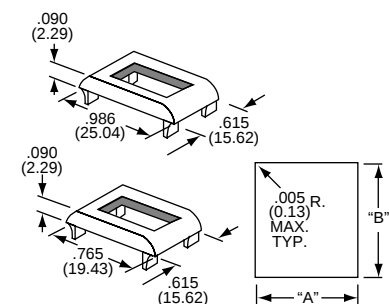
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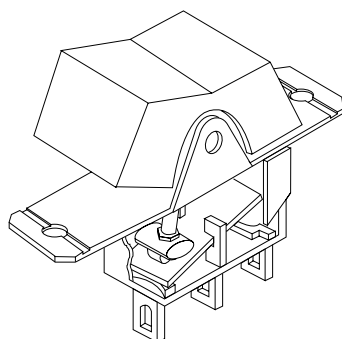
The Gemini Series "A" Series Miniature Rockers/Paddles



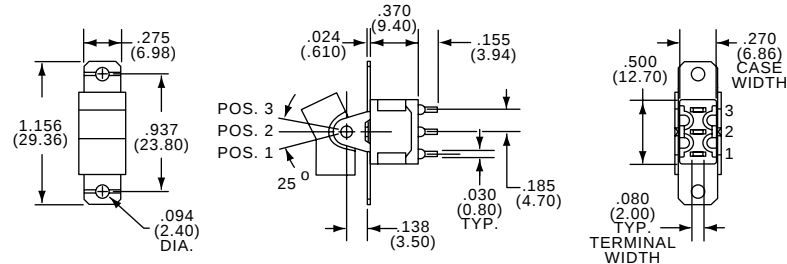
BEZELS FOR ROCKER AND PADDLE SWITCHES

Model	Panel Dimensions		(*) Specify Colors
	A	B	
B10(*)	.797-.803 (20.24)-(20.40)	.495-.505 (12.57)-(12.83)	(0) Black, (1) Brown, (2) Red, (3) Orange, (4) Yellow, (5) Green, (6) Blue, (8) Gray & (9) White
B20(*)	.595-.605 (15.11)-(15.37)	.495-.500 (12.57)-(12.70)	(0) Black, (1) Brown, (2) Red, (3) Orange, (4) Yellow, (5) Green, (6) Blue, (8) Gray & (9) White

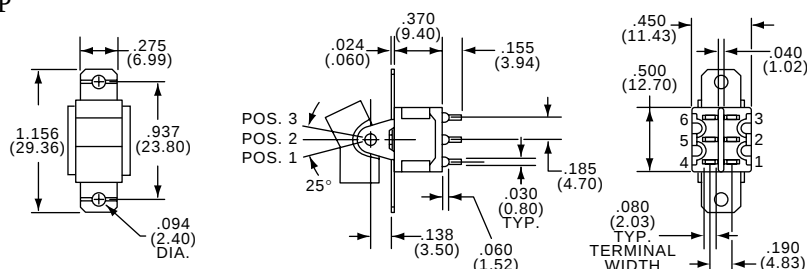
DESIGN



SP



DP



PART NUMBERING

Model	Function	Actuator	Terminal	Contact	Actuator Color	Beveled Frame Color	Option
A1 Single Pole		J1 Small	Z Wire Lug	Q Silver	0 Black (Std.)	0 Black (Std.)	UL (Q or G) contacts only
A2 Double Pole		J3 Large	A Right Angle	B Gold	1 Brown	1 Brown	
01 On-On		J15 Snap-in	AV2 Vert. Right Angle	G Gold over Silver	2 Red	2 Red	
03 On-Off-On		J16 Snap-in w/beveled frame	C Printed Circuit		3 Orange	3 Orange	
05 (On)-Off-(On)		J50 Snap-in	V5 Vertical Right Angle		4 Yellow	4 Yellow	
07 On-Off-(On)		J51 Snap-in w/beveled frame	V3 V4 V6 Vertical Support Bracket		5 Green	5 Green	
08 On-(On)		J52 Snap-in w/beveled frame LED	V7 V8 V9		6 Blue	6 Blue	
11 On-On-On		J2 Small	W W1 W3 W4 W5		8 Gray	8 Gray	
13 On-On-(On)		J4 Large	Z3 Quick Connect		9 White	9 White	
15 (On)-On-(On)		J5 Large					
		Paddle					
		J2 Small					
		J4 Large					
		J5 Large					
		J60 Snap-in					
		J61 Snap-in w/beveled frame					
		J62 Snap-in w/beveled frame & LED					

OPTIONAL:

UL recognized under the Component Program of Underwriters Laboratories Inc. File # E46765
CSA Certified File #LR65901

See pages M2-M4 for application specific indexing.

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E12

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"A" Series Miniature Rockers/Paddles The Gemini Series

FUNCTIONS

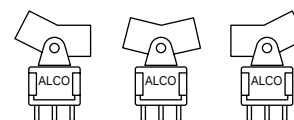
The following functions available in SP or DP.

01	2 Positions	None indicates no mechanical position
03	3 Positions	
05	3 Positions	Off indicates a mechanical position with no electrical connection.
07	3 Positions	
08	2 Positions	(On) indicates momentary action.

SPDT, connect terminals:

DPDT, connect terminals:

11	3 Positions
13	3 Positions
15	3 Positions



On None On

On Off On

(On) Off (On)

(On) Off On

(On) None On

1—2 — 2—3

1—2 — 2—3
4—5 — 5—6

On On On

(On) On On

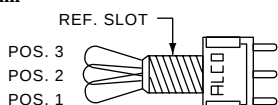
(On) On (On)

Functions available in DP only: Connect terminals:

SP3T Available in DP format only

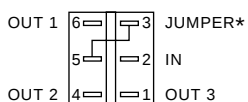
1—2 2—3 2—3
4—5 4—5 5—6

Wiring Diagram for Functions



11 **13** **15**

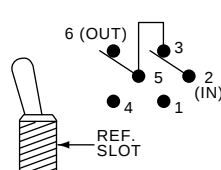
SINGLE POLE 3 POSITION



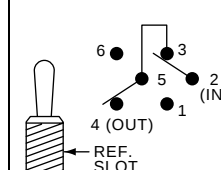
SP3T function achieved with external jumpers.

* Installed by Customer

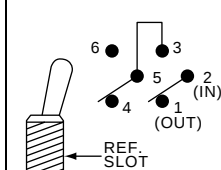
POS. 1



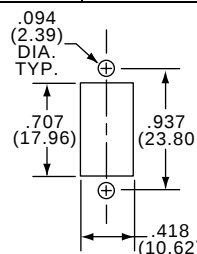
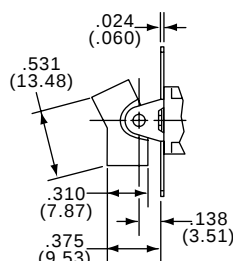
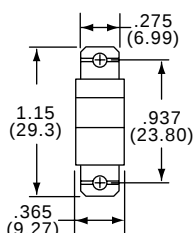
POS. 2



POS. 3

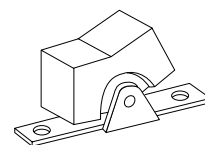


Use beveled frame B100 for enhancement (Pg.E12) when ordering with terminations other than C or Z.

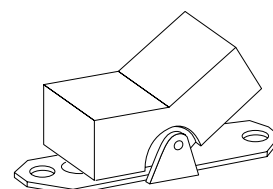


ACTUATORS

Rockers **J1**
Small



J3
Large



Need more technical information?

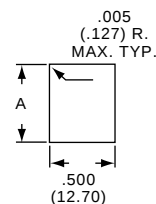
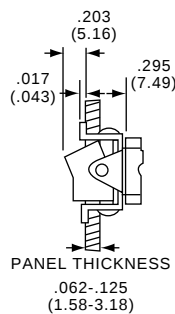
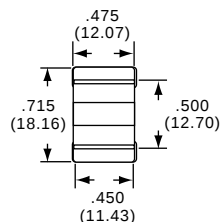
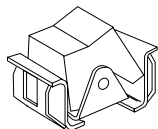
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The Gemini Series "A" Series Miniature Rockers/Paddles

ROCKER

J50

Snap-in

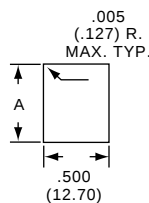
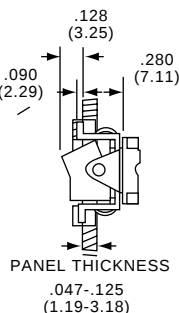
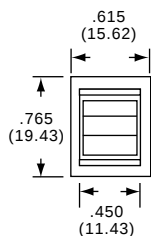
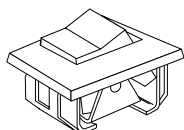


Use Beveled Frame B200 for enhancement (Pg. E12) when ordering with terminations other than C or Z.

	Panel Opening		
Panel Thickness	.062	.093	.125
"A"	.600-.605	.610-.615	.620-.625

J51

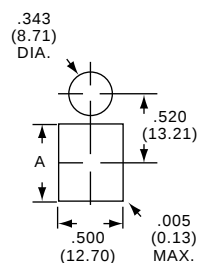
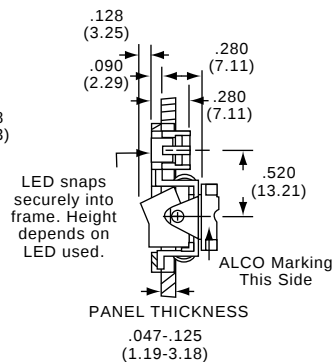
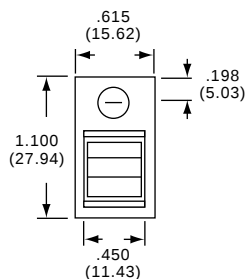
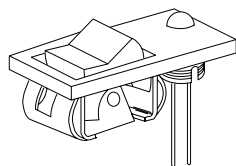
Snap-in with beveled frame



	Panel Opening		
Panel Thickness	.062	.093	.125
"A"	.600-.605	.610-.615	.620-.625

J52

Snap-in with beveled frame/L.E.D.



L.E.D. Not supplied.

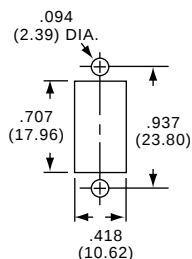
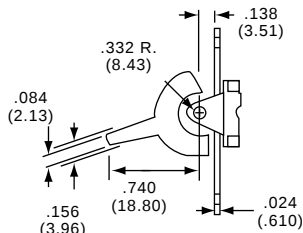
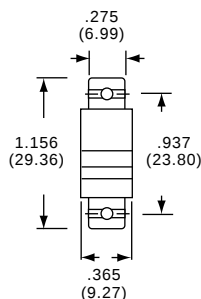
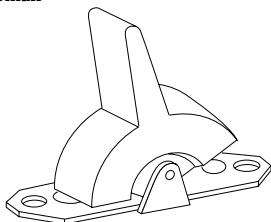
Accepts BL-17 or equivalent LED

	Panel Opening		
Panel Thickness	.062	.093	.125
"A"	.600-.605	.610-.615	.620-.625

PADDLE

J2

Small



Use Beveled frame B100 for enhancement (Pg. E12) when ordering with terminations other than C or Z.

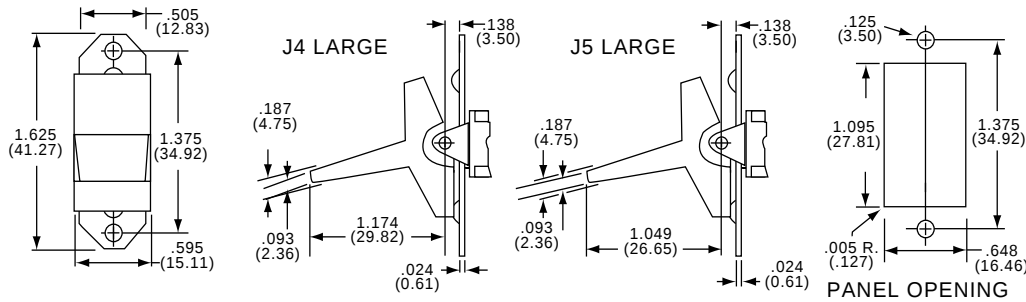
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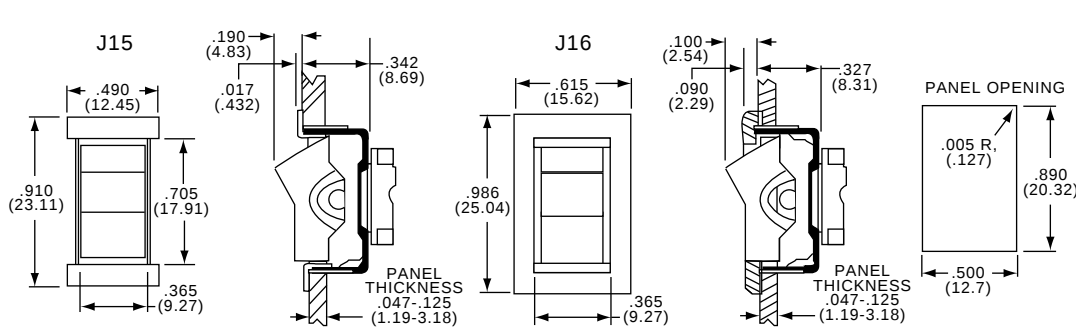
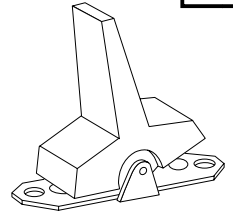
E14

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"A" Series Miniature Rockers/Paddles The Gemini Series

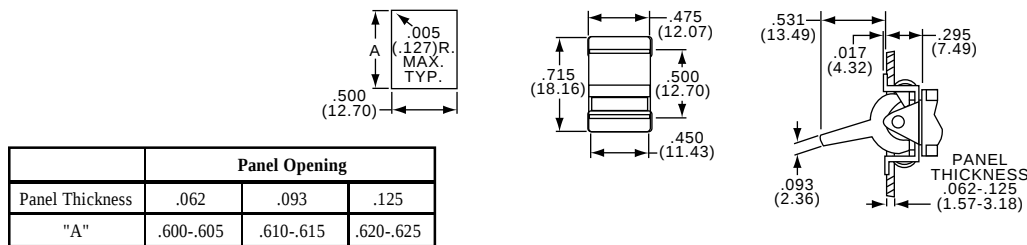
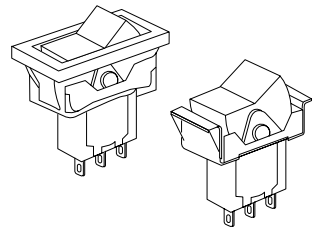


J4
J5

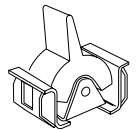


Snap-In J15

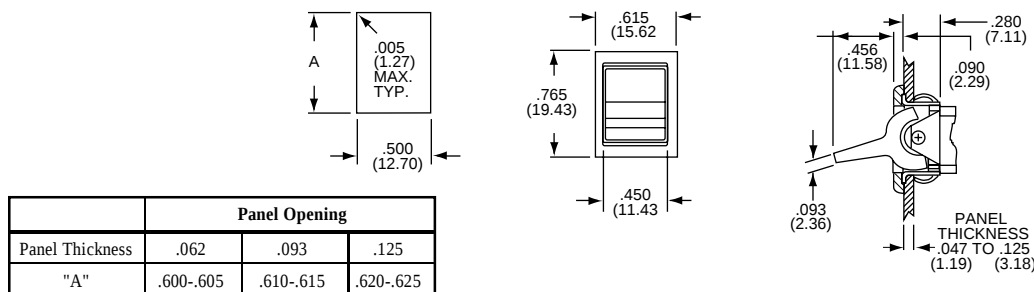
Snap-in with beveled frame J16



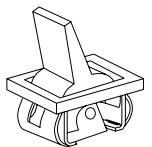
Snap-in J60



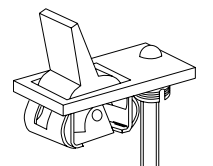
Use Beveled Frame B200 for enhancement (Pg. E12) when ordering with terminations other than C or Z.



Snap-in with beveled frame J61



Snap-in with beveled frame/LED J62



Accepts BL-17 or equivalent LED

Need more technical information?

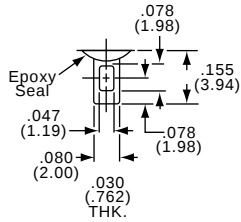
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The Gemini Series "A" Series Miniature Rockers/Paddles

TERMINALS

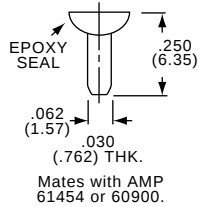
Z

Wire Lug Standard



Z3

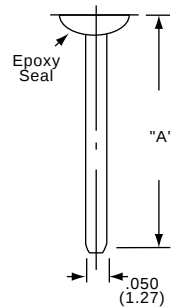
Quick Connect



W

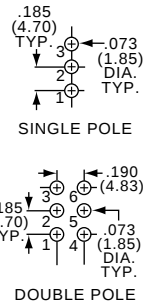
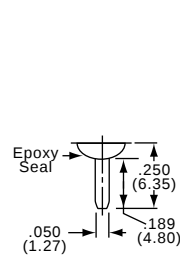
Wire Wrap

	"A"
W	.750
W1	.964
W3	.425
W4	1.062
W5	1.305



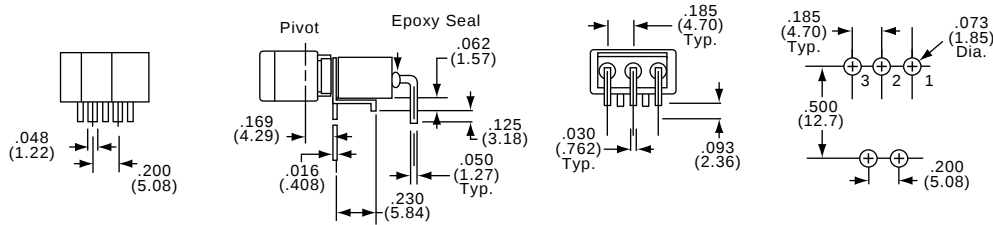
C

Printed Circuit



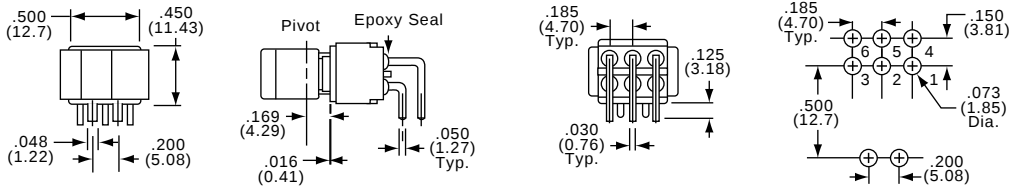
A

Right Angle
Single Pole



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

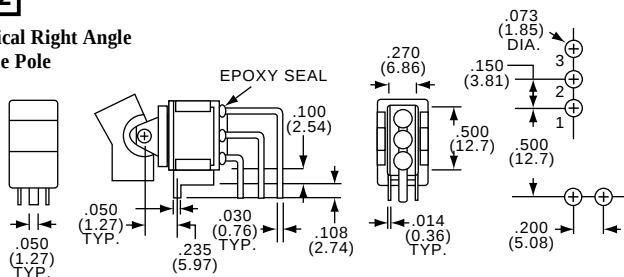
Right Angle
Double Pole



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

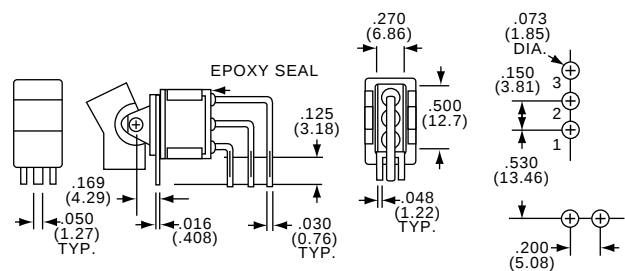
AV2

Vertical Right Angle
Single Pole

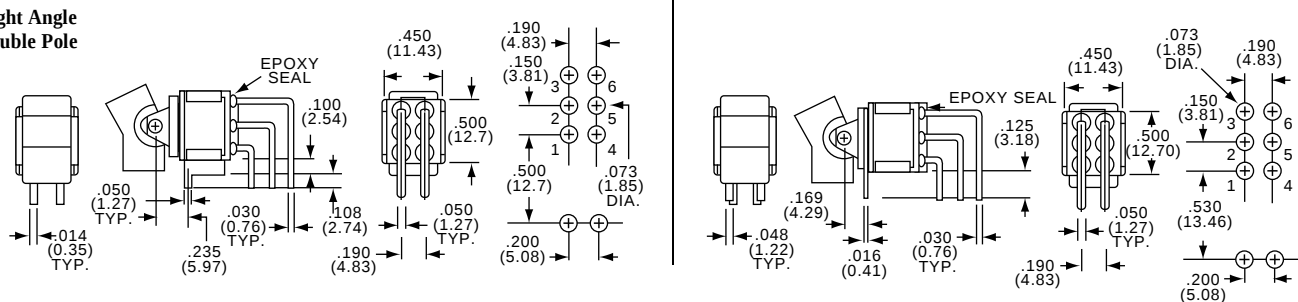


NOTE: Terminal numbers viewed from top of P.C. board.

V5



Right Angle
Double Pole



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

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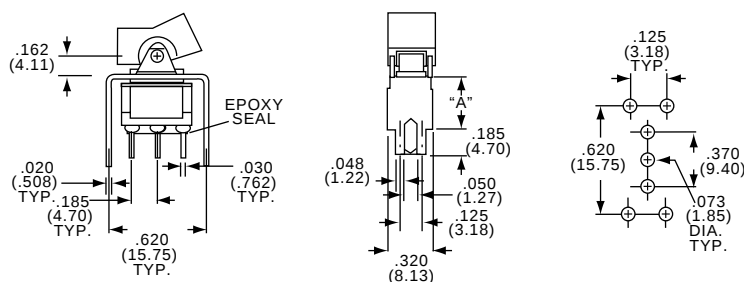
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"A" Series Miniature Rockers/Paddles The Gemini Series

V3 V4 V9

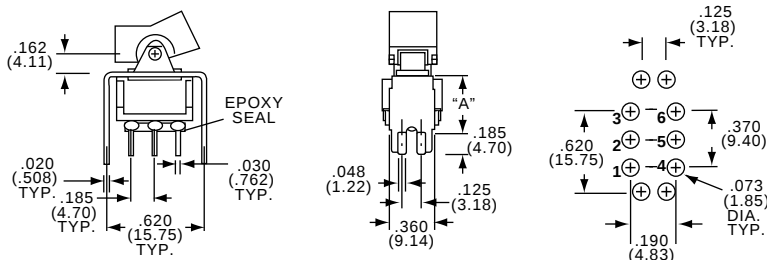
**Vertical Support Bracket
Single Pole**

Option Code	Dim. "A"
V3	.460 (11.68)
V4	.630 (16.00)
V9	1.150 (29.21)



**Vertical Support Bracket
Double Pole**

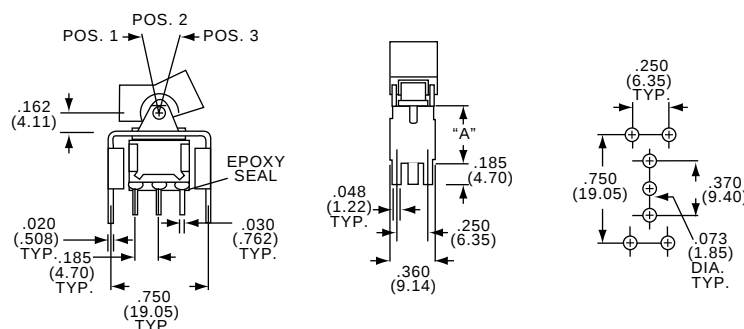
Option Code	Dim. "A"
V3	.460 (11.68)
V4	.630 (16.00)
V9	1.150 (29.21)



V6 V7 V8

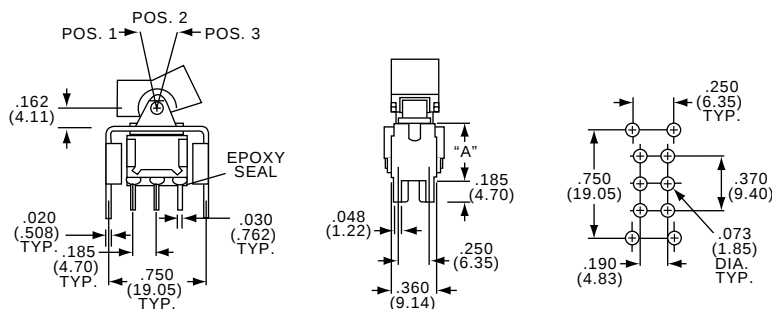
**Vertical Support Bracket
Single Pole**

Option Code	Dim. "A"
V6	.460 (11.68)
V7	.630 (16.00)
V8	.953 (24.21)



**Vertical Support Bracket
Double Pole**

Option Code	Dim. "A"
V6	.460 (11.68)
V7	.630 (16.00)
V8	.953 (24.21)



CONTACTS

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

TERMINALS: Copper alloy with gold plate.

ELECTRICAL RATING: 0.4VA @ 20 VAC/DC.

Q CONTACTS: Copper alloy with silver, welded button.

TERMINALS: Copper alloy with tin/lead plate.

ELECTRICAL RATING: 5 A @ 125 VAC, 2 A @ 250 VAC, 5 A @ 28 VDC. UL/CSA RATING: 5A @ 125 VAC, 3 @ 250 VAC (Specify "UL" option code)

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

TERMINALS: Copper alloy with gold plate.

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

Note: This contact option can be used for low-level or power switching. If level is above 0.4 VA @ 20 VAC/DC, the switch is rendered usable only for power switching due to arc-removal of gold plate.

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

Need more technical information?

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

The Gemini Series "AE" Series Washable Rockers/Paddles

MATERIAL SPECIFICATIONS:

Terminal Seal	Epoxy (standard)
Process Sealing	Seals will withstand wave soldering and various subsequent cleaning operations.
Contact/Terminals	Gold/gold flash over tin/lead
Case Material	Silver/tin lead
Actuator Material	Thermoplastic
Actuator Material	Polyamide

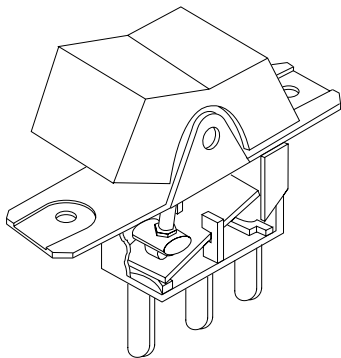
ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature	-4°F to +185°F (-20°C to +85°C)
Storage Temperature	-49°F to +212°F (-45°C to +100°C)
Meets MIL-STD-202, method 112C, Test Condition A & D	85°C.

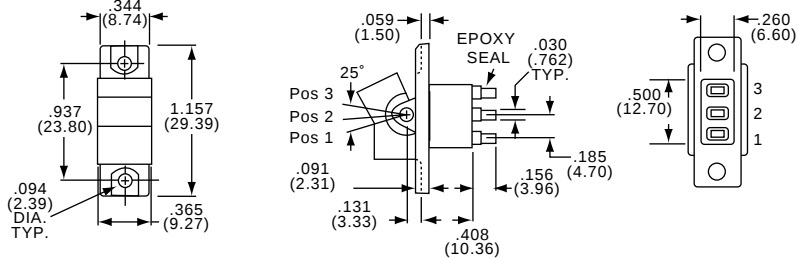
TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating	Silver: 2 A @ 250 VAC, 5 A @ 125 VAC
	Gold: 0.4 VA @ 20 VDC max.
Contact Resistance	30 Milliohms max. initial
Insulation Resistance	1,000 Megohms min. @ 500 VDC.
Dielectric Strength	1,000 Volts RMS @ sea level initial
Static Withstanding	15KV Per IEC 801-2.
Electrical Life	30,000 Cycles
Actuator Travel	25°
Contact Timing	Break before make

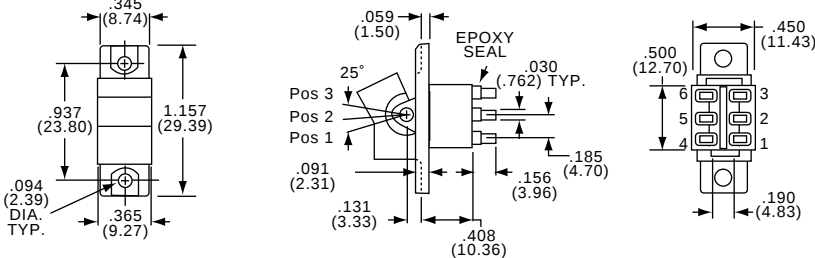
DESIGN



SP



DP



PART NUMBERING

Model	Function	Actuator	Terminal	Contact	Actuator Color	Option
AE1 Single Pole		Rocker	Z Wire Lug	B Gold	0 Black (Std.)	UL (Q or G) contacts only
AE2 Double Pole		J1 Standard	A Right Angle	Q Silver	1 Brown	
01 On-On		J50 Small	AV2 Vert. Right Angle	G Gold over Silver	2 Red	
03 On-Off-On		Paddle	C Printed Circuit		3 Orange	
05 (On)-Off-(On)		J2 Standard	V5 Vertical Right Angle		4 Yellow	
07 On-Off-(On)		J60 Small	V3 V3 Vertical Support Bracket		5 Green	
08 On-(On)			W W1 W3 W4 W5 Wire Wrap		6 Blue	
11 On-On-On			Z3 Quick Connect		8 Gray	
13 On-On-(On)					9 White	
15 (On)-On-(On)						

U.L. Available upon request

See pages M2-M4 for application specific indexing.

OPTIONAL:

UL recognized under the Component Program Underwriters Laboratories Inc. File #E46765
CSA Certified File #LR65901

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"AE" Series Washable Rockers/Paddles The Gemini Series

FUNCTIONS

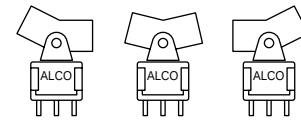
The following functions available in SP or DP.

01	2 Positions	None indicates no mechanical position
03	3 Positions	
05	3 Positions	Off indicates a mechanical position with no electrical connection.
07	3 Positions	
08	2 Positions	(On) indicates momentary action.

SPDT, connect terminals:

DPDT, connect terminals:

11	3 Positions
13	3 Positions
15	3 Positions



On None On

On Off On

(On) Off (On)

(On) Off On

(On) None On

1—2 — 2—3

1—2 — 2—3
4—5 — 5—6

On On On

(On) On On

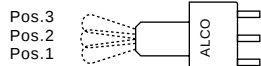
(On) On (On)

Functions available in DP only: Connect terminals:

SP3T Available in DP Format Only

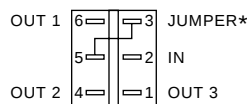
1—2 2—3 2—3
4—5 4—5 5—6

Wiring Diagrams for Functions



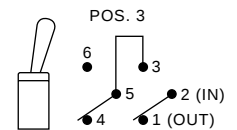
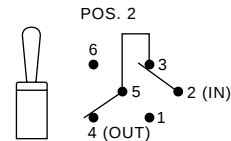
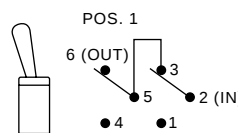
11 **13** **15**

SINGLE POLE 3 POSITION

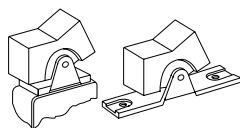


SP3T function achieved with external jumpers.

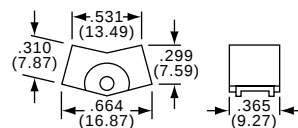
* Installed by Customer



J1 Rocker

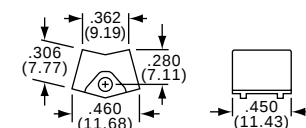


Use beveled frame B200 for enhancement (Pg. E12) when ordering with terminations other than C or Z.



Unless otherwise specified by terminal type, the panel mounting bracket will be supplied.

Use beveled frame B100 for enhancement (Pg. E12) when ordering with terminations other than C or Z.

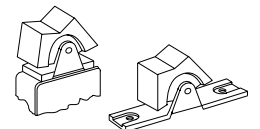


Unless otherwise specified by terminal type, the panel mounting bracket will be supplied.

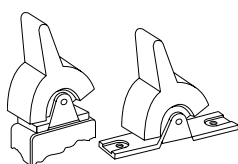
ACTUATORS

J50

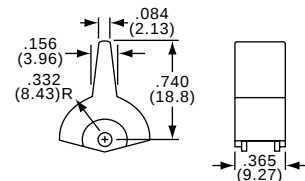
Rocker



J2 Paddle

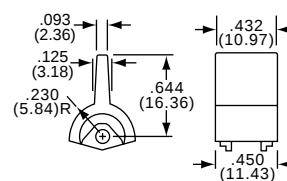


Use beveled frame B100 for enhancement (Pg. E12) when ordering with terminations other than C or Z.



Unless otherwise specified by terminal type, the panel mounting bracket will be supplied.

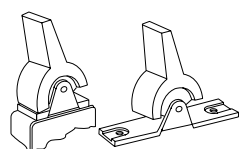
Use beveled frame B200 for enhancement (Pg. E12) when ordering with terminations other than C or Z.



Unless otherwise specified by terminal type, the panel mounting bracket will be supplied.

J60

Paddle

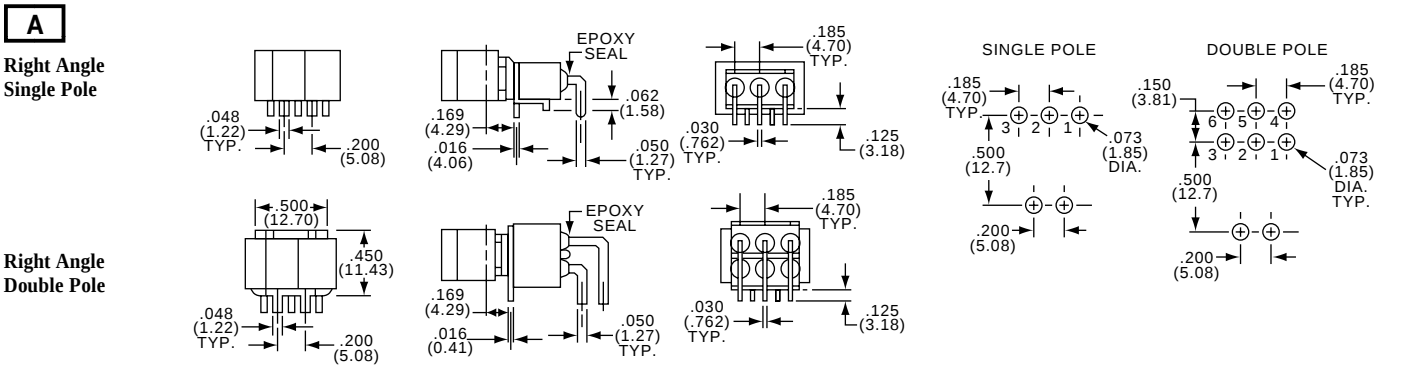
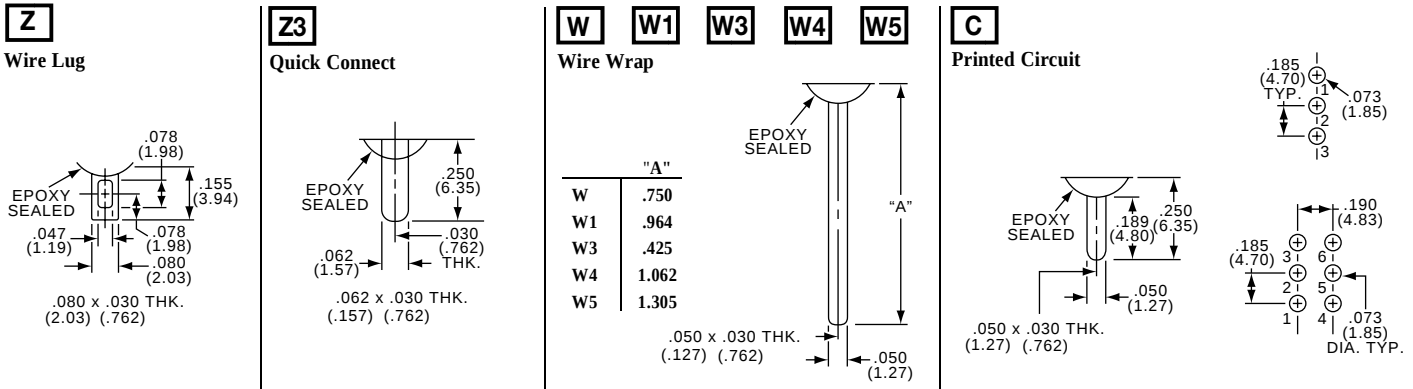


Need more technical information?

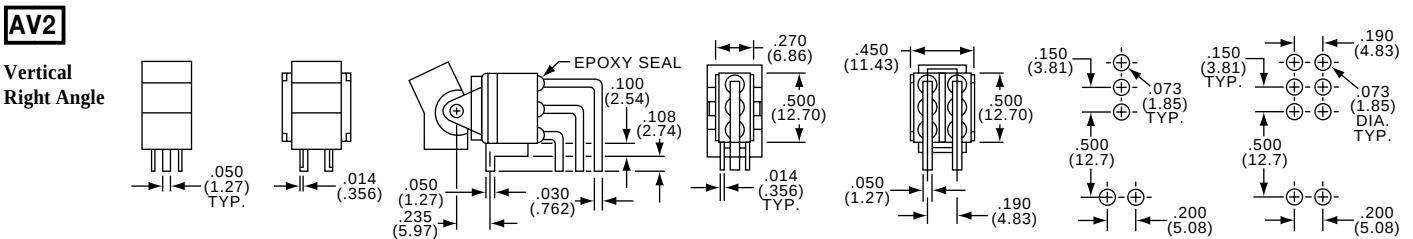
Consult your Thomas & Betts sales office listed on the back cover

The Gemini Series "AE" Series Washable Rockers/Paddles

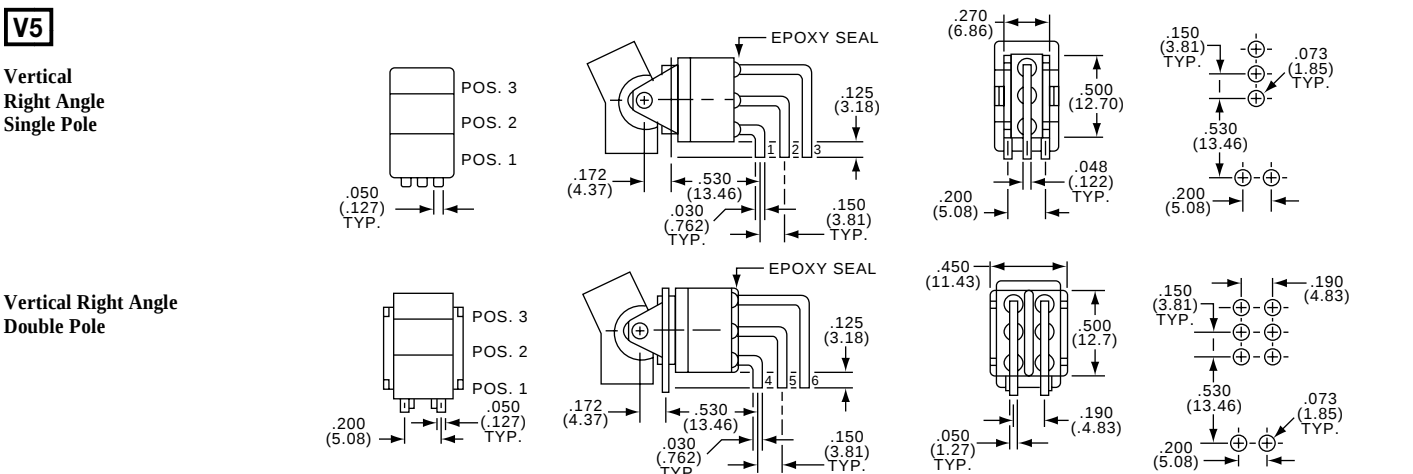
TERMINALS



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



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



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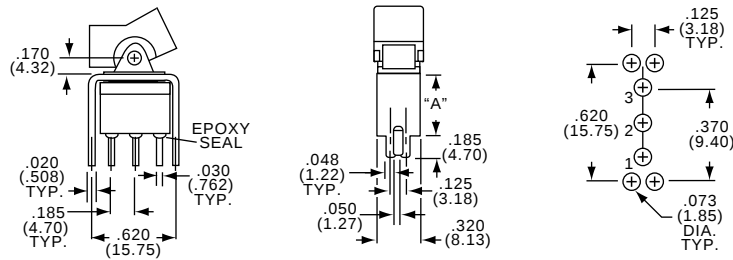
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"AE" Series Washable Rockers/Paddles The Gemini Series

V3 V4 V9

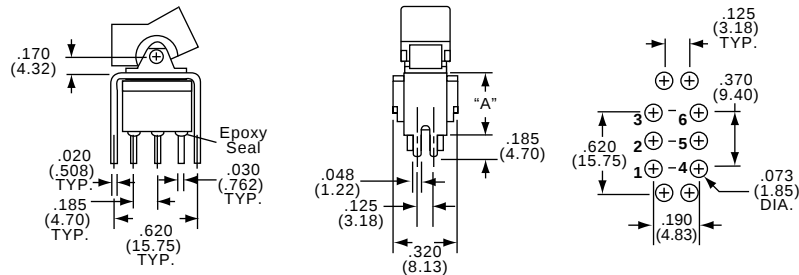
**Vertical Support Bracket
Single Pole**

Option Code	Dim."A"
V3	.460 (11.68)
V4	.630 (16.00)
V9	1.150 (29.21)



**Vertical Support Bracket
Double Pole**

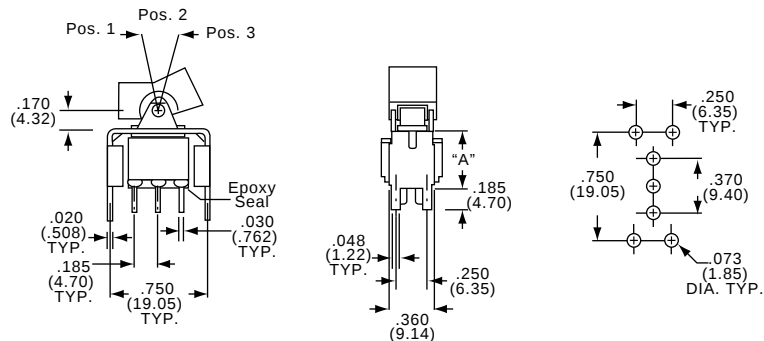
Option Code	Dim."A"
V3	.460 (11.68)
V4	.630 (16.00)
V9	1.150 (29.21)



V6 V7 V8

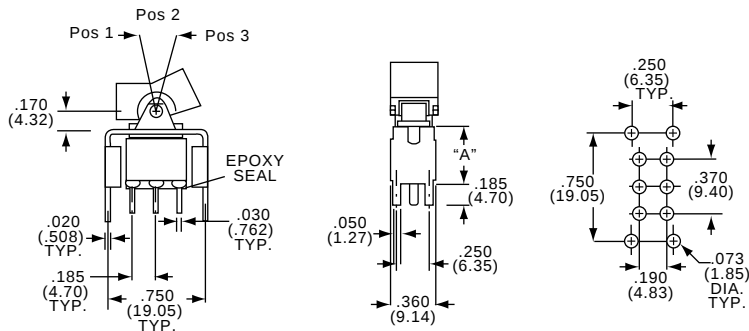
**Vertical Support Bracket
Single Pole**

Option Code	Dim."A"
V6	.460 (11.68)
V7	.630 (16.00)
V8	.953 (24.21)



**Vertical Support Bracket
Double Pole**

Option Code	Dim."A"
V6	.460 (11.68)
V7	.630 (16.00)
V8	.953 (24.21)



CONTACTS

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

TERMINALS: Copper alloy with gold plate.

ELECTRICAL RATING: 0.4VA @ 20 VAC/DC.

Q CONTACTS: Copper alloy with silver, welded button.

TERMINALS: Copper alloy with tin/lead plate.

ELECTRICAL RATING: 5 amps @ 125 VAC, 2 amps @ 250 VAC, 5 amps @ 28 VDC.

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

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

TERMINALS: Copper alloy with gold plate.

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

Note: This contact option can be used for low-level or power switching. If level is above 0.4 VA @ 20 VAC/DC, the switch is rendered usable only for power switching due to arc-removal of gold plate.

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

Need more technical information?

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

MHV Series *Mini Rocker & Paddle w/Vertical Support*



MATERIAL SPECIFICATIONS:

Contacts Gold flash over solid silver
Case Material Thermoset 94V-0
Actuator Material Polyamide
Terminals Gold flash
Terminal Seal Insert molded

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature -4°F to +176°F (-20°C to +80°C)
Storage Temperature -40°F to -176°F (-40°C to +80°C)

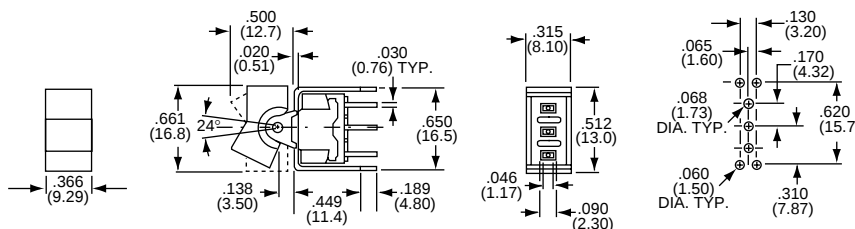
TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating 6 A @ 125 VAC, 3 A @ 250 VAC,
4 A @ 28 VDC
Initial Contact Resistance 10 Milliohms max.
Contact Timing Break-before-make
Insulation Resistance 1,000 Megohms min.
Dielectric Strength 1,500 Volts RMS @ sea level
Actuator Travel 24°
Life Expectancy Actuation Code 1 - 80,000 Cycles

SPDT



MHV106DPC10M0



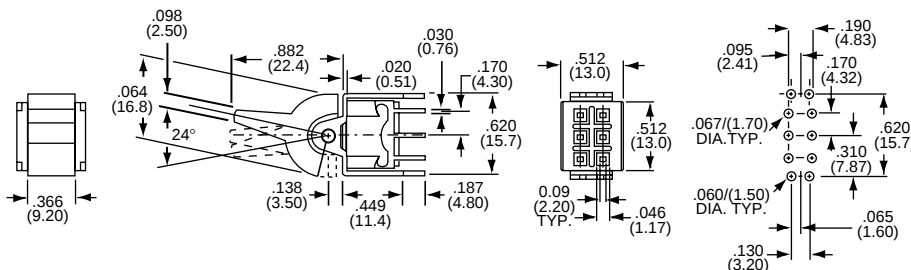
Model	Type	Act. Code	P. M8				Actuator Type
MHV106DPC10()(*)	SPDT	1		On	None	On	Rocker
MHV106FPC10()(*)	SPDT	1		On	None	(On)	Rocker
MHV206NPC10()(*)	DPDT	2		On	None	On	Rocker
MHV206RPC10()(*)	DPDT	2		On	None	(On)	Rocker

(On) indicates momentary position.
() Indicate M for Matte. Leave blank for glossy.
(*) Specify color by adding suffix number: (0) Black, (2) Red, (5) Green, (6) Blue, (8) Grey, (9) White.

DPDT



MHV206NPC20M2



Model	Type	Act. Code	P. M8				Actuator Type
MHV106DPC20()(*)	SPDT	1		On	None	On	Paddle
MHV206NPC20()(*)	DPDT	2		On	None	On	Paddle

() Indicate M for Matte. Leave blank for glossy.
(*) Specify color by adding suffix number: (0) Black, (2) Red, (5) Green, (6) Blue, (8) Grey, (9) White.

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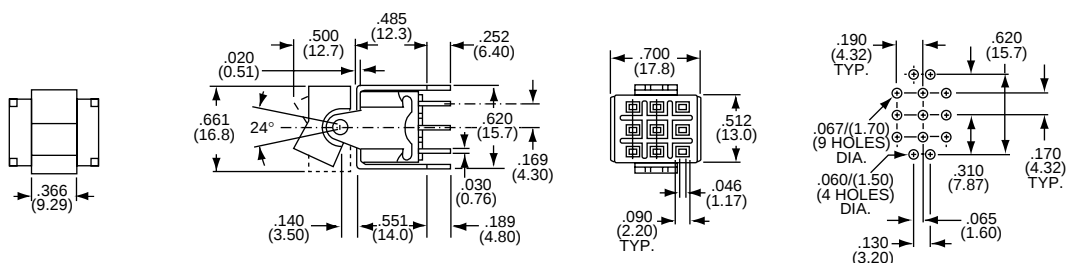
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SEE PAGE E22 FOR PRODUCT SPECIFICATIONS

3PDT

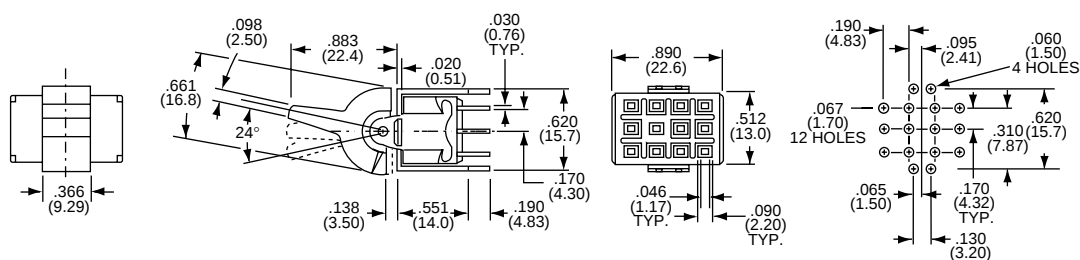


MHV30610M

Model	Type	Act. Code	P. M8				Actuator Type
MHV306DPC10()(*)	3PDT	3		On	None	On	Rocker
MHV406NPC10(*)	4PDT	4		On	None	On	Rocker

() Indicate M for Matte. Leave blank for glossy.
 (*) Specify color by adding suffix number: (0) Black, (2) Red, (5) Green, (6) Blue, (8) Grey, (9) White.

4PDT



MHV406NPC20M

Model	Type	Act. Code	P. M8				Actuator Type
MHV306DPC20()(*)	3PDT	3		On	None	On	Paddle
MHV306FPC20()(*)	3PDT	3		On	None	(On)	Paddle
MHV406NPC20(*)	4PDT	4		On	None	On	Paddle

(On) indicates momentary position.
 () Indicate M for Matte. Leave blank for glossy.
 (*) Specify color by adding suffix number: (0) Black, (2) Red, (5) Green, (6) Blue, (8) Grey, (9) White.

Need more technical information?
 Consult your Thomas & Betts
 sales office listed on the back cover

MRV Series *Rocker & Paddle w/Vertical Support*



MATERIAL SPECIFICATIONS:

Contacts Copper with gold flash over silver
 Case Material Thermoset
 Actuator Material Polycarbonate resin
 Terminals Copper with gold flash
 Terminal Seal Insert molded

ENVIRONMENTAL SPECIFICATIONS:

Operating Temperature -4°F to +176°F (-20°C to +80°C)
 Storage Temperature -40°F to +176°F (-40°C to +80°C)

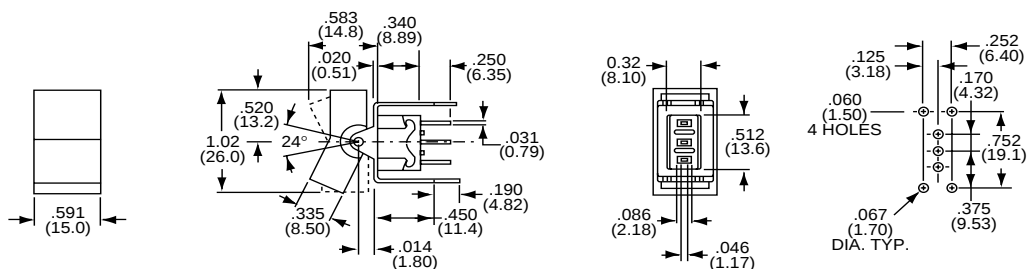
TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating 6 A @ 125 VAC, 3 A @ 250 VAC,
 4 A @ 28 VDC
 Initial Contact Resistance 10 Milliohms max.
 Contact Timing Break-before-make
 Insulation Resistance 1,000 Megohms min.
 Dielectric Strength 1,500 Volts RMS @ sea level
 Actuation Force 0.05 to 1.5 Kg.
 Actuator Travel 24°

SPDT



MRV106DPC309



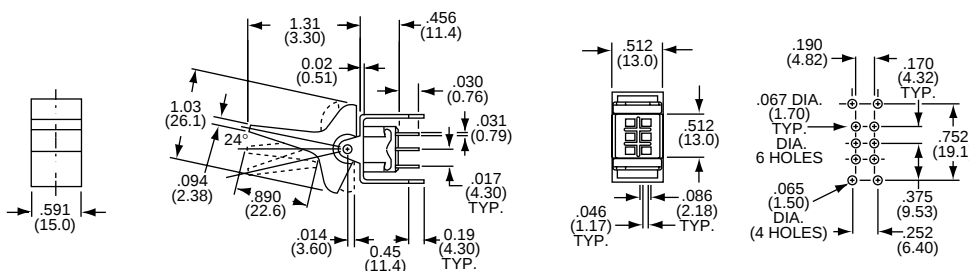
Model	Type	Act. Code	P. M8				Actuator Type
MRV106DPC30()(*)	SPDT	1	On	None	On		Rocker
MRV106FPC30()(*)	SPDT	1	On	None	(On)		Rocker
MRV206NPC30()(*)	DPDT	2	On	None	On		Rocker
MRV206PPC30()(*)	DPDT	6	On	Off	On		Rocker

(On) indicates momentary position.
 () Indicate M for Matte. Leave blank for glossy.
 (*) Specify color by adding suffix number: (0) Black, (2) Red, (3) Orange (matte paddle only), (6) Blue (matte rocker only), (8) Grey, (9) White,

DPDT



MRV206NPC40MO



Model	Type	Act. Code	P. M8				Actuator Type
MRV206PPC40()(*)	DPDT	6	On	Off	On		Paddle

() Indicate M for Matte. Leave blank for glossy.
 (*) Specify color by adding suffix number: (0) Black, (2) Red, (3) Orange (matte paddle only), (6) Blue (matte rocker only), (8) Grey, (9) White,

Thomas & Betts

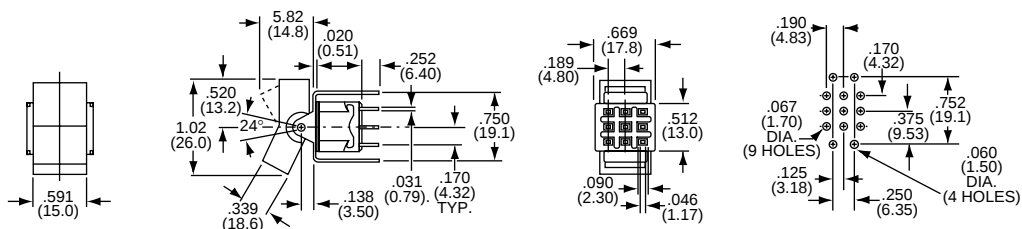
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SEE PAGE E24 FOR PRODUCT SPECIFICATIONS

3PDT

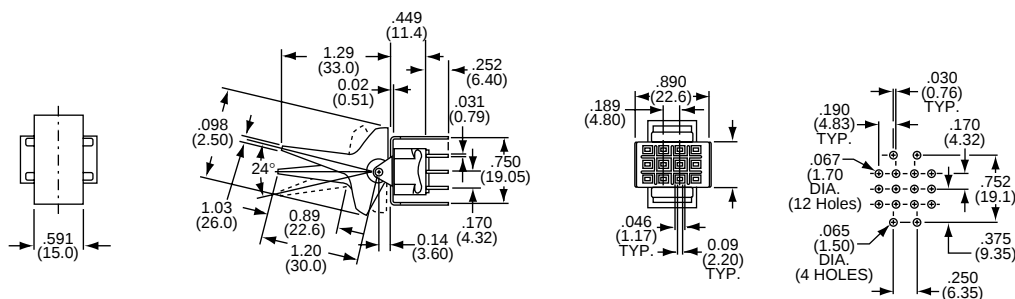


MRV306DPC30

Model	Type	Act. Code	P. M8				Actuator Type
MRV306DPC30(*)	3PDT	3		On	None	On	Rocker
MRV406NPC30(*)	4PDT	4		On	None	On	Rocker

() Indicate M for Matte Actuators. Leave blank for glossy.
 (*) Specify color by adding suffix number: (0) Black, (2) Red, (3) Orange (matte paddle only), (6) Blue (matte rocker only), (8) Grey, (9) White,

4PDT



MRV406NPC40

Model	Type	Act. Code	P. M8				Actuator Type
MRV306DPC40(*)	3PDT	3		On	None	On	Paddle
MRV406NPC40(*)	4PDT	4		On	None	On	Paddle

() Indicate M for Matte Actuators. Leave blank for glossy.
 (*) Specify color by adding suffix number: (0) Black, (2) Red, (3) Orange (matte paddle only), (6) Blue (matte rocker only), (8) Grey, (9) White,

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XR Series *Snap-Mount Rocker "10 Amp"*

MATERIAL SPECIFICATIONS:

Case: Polyamide
 Actuator: Polyamide
 Contacts: Copper alloy
 Panel Accommodations030" to .250"
 Terminals Will accept .250" quick connect or solder

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating 10 A @ 125 VAC, 5 A @ 250 VAC
 Initial Contact Resistance 50 Milliohms max.
 Insulation Resistance 1,000 Megohms min.
 Life Expectancy Over 10,000 cycles
 UL File No. #E46765 and CSA Certified File #LR 75648

Color Ordering Information

Complete your model number by adding the desired 2-digit color code number.

Color Code

Body

Rocker

00	Black	Black
02	Black	Red
09	Black	White
90	White	Black
92	White	Red
94	White	Amber

EXAMPLE:

XR110D09

Body color: Black (0)
 Lever color: White (9)

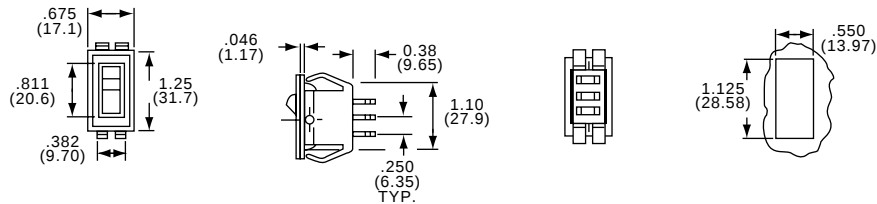
SPST/SPDT



XR110A90+ONOFF



XR110E09



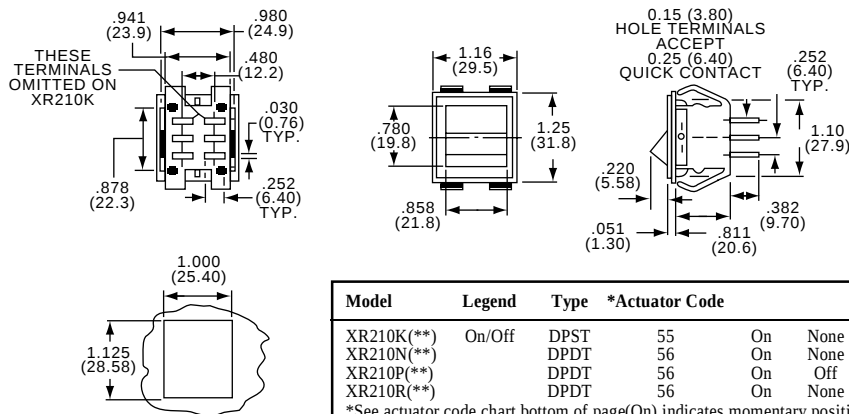
Model	Legend	Type	*Actuator Code				Color Codes			
XR110A(**)	On/Off	SPST	51	On	None	Off	00, 02, 09, 90, 92			
XR110D(**)	-01†	SPDT	52	On	None	On	00, 02, 09, 90, 92			
XR110E(**)		SPDT	52	On	Off	On	00, 02, 09, 90, 92			
XR110F(**)		SPDT	52	On	None	(On)	00, 02, 09, 90, 92			

*See actuator code chart bottom of page (On) indicates momentary position.
 (**) Specify body and lever color by adding suffix number, see color ordering information top of page.
 †01 for international bar/circle imprint.

DPST/DPDT



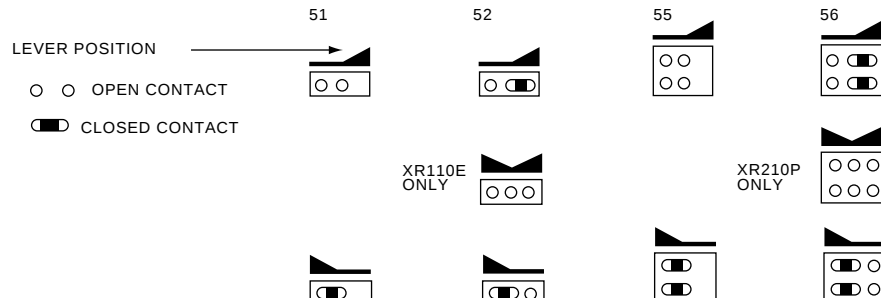
XR210K09+ONOFF



Model	Legend	Type	*Actuator Code				Color Codes			
XR210K(**)	On/Off	DPST	55	On	None	Off	00, 02, 09, 90, 92			
XR210N(**)		DPDT	56	On	None	On	00, 02, 09, 90, 92			
XR210P(**)		DPDT	56	On	Off	On	00, 02, 09, 90, 92			
XR210R(**)		DPDT	56	On	None	(On)	00, 02, 09, 90, 92			

*See actuator code chart bottom of page (On) indicates momentary position.
 (**) Specify body and lever color by adding suffix number, see color ordering information top of page.
 †01 for international bar/circle imprint.

*ACTUATION CODES



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E26

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Illuminated Rocker "Pilot Light" 10 Amp XRL Series

FEATURES:

Illuminated XRL switches offer cost savings by including a Pilot light as an integral part of each switch. Standard models have neon lamp with ballast resistor for 105-125 VAC operation. Switch mechanism has same reliable design as other XR Series models, including wiping action contacts, snap-in mounting, dual-purpose

0.250" tab terminals and rugged molded cases and actuators. Internally patterned polycarbonate lenses provide attractive appearance. XRL110 models have semi-independent lamp circuit; XRL210 models have lamp circuit completely isolated from switch circuit. U.L. Listed (File No. E46765) and C.S.A. Certified (File No. LR75648).

MATERIAL SPECIFICATIONS:

Case Polyamide
Actuator Acrylic
Contacts Copper alloy
Panel Accommodations030" to .250"
Terminals Will accept .250" quick connect or solder

TYPICAL PERFORMANCE CHARACTERISTICS:

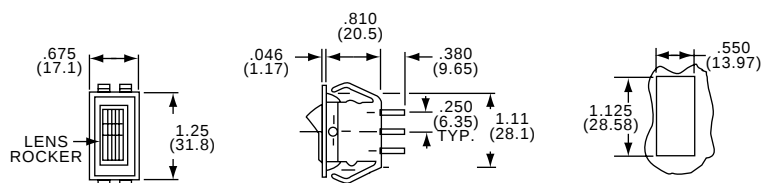
Contact Rating 10 A @ 125 VAC, 5 A @ 250 VAC
Initial Contact Resistance 50 Milliohms max.
Insulation Resistance 1,000 Megohms min.
Operation Force 15 to 50 Ounces
Life Expectancy Over 10,000 Cycles

Color Ordering Information

Complete the model Number by adding a color from the list of standard colors. XRL1 types require a 2-digit code; XRL2 types require a 3-digit code.

Color Code	Body	Rocker	Lens
02	Black	Red	
04	Black	Amber	
99	White	Clear	
004	Black	Black	Amber
024	Black	Red	Amber
094	Black	White	Amber
909	White	Black	Clear
929	White	Red	Clear
94	White	Amber	

EXAMPLE: XRL210A094
Body color: black (0) | |
Lever color: white (9) |
Lens color: amber (4)



SPST



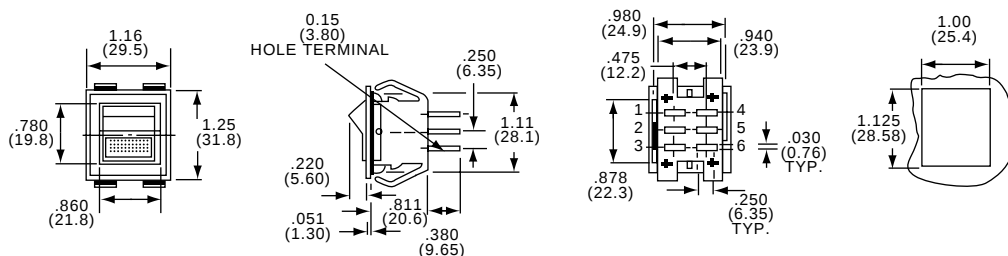
XRL110A02

Model	Type	*Actuator Code	Function	(**) Color Codes
XRL110A(**)	SPST	61	On None Off	02, 04, 94, 99

*See actuator code chart bottom of page.

(**) Specify body and lever color by adding suffix number, see color ordering information top of page.

Accepts .250 (6.41) Quick Connect



DPST



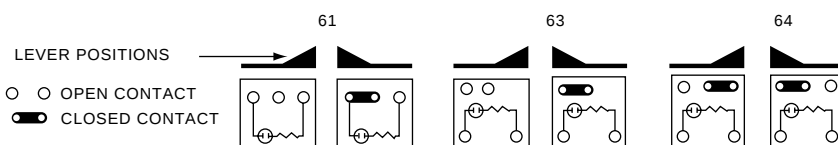
XRL210A094

Model	Type	*Actuator Code	Function	(***) Color Codes
XRL210A(***)	DPST	63	On None Off	004, 024, 094, 909, 929
XRL210D(***)	DPDT	64	On None On	004, 024, 094, 909, 929
XRL210F(***)	DPDT	64	On None (On)	004, 024, 094, 909, 929

*See actuator code chart bottom of page.

(***) Specify body and lever color by adding suffix number, see color ordering information top of page.

Accepts .250 (6.41) Quick Connect



*ACTUATION CODES

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XR116 Series “16 Amp” Power Rockers Switch

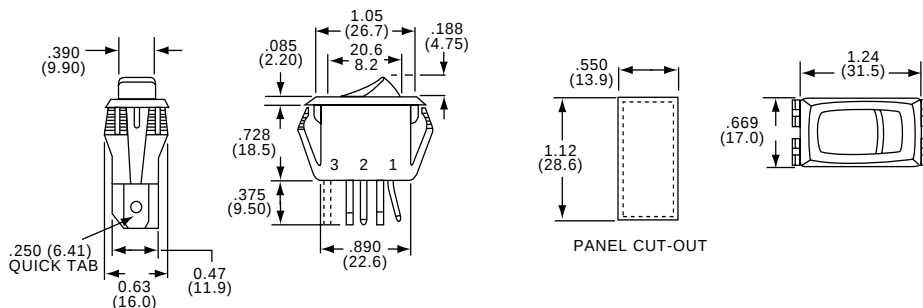
TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating 16 A @ 125 VAC (P.F. =0.75)
 10 A @ 250 VAC (P.F. =0.75)
 10 (4) @ 250 V~(V.D.E.)
 Initial Contact Resistance Under 100 milliohms.
 In-Rush Current 50 Amperes peak, max.
 Dielectric Strength 1,500 VRMS @ sea level
 Life Expectancy 50,000 Operations minimum

U.L. Listed (File No. E46765) and C.S.A. Certified
 (File No. LR75648).



XR116A09+ONOFF



SPST 16A Rocker Switches					SPST 16A Lighted Rocker Switches				
Model	Rocker	Indicator Or Imprint	Legend	Beveled Frame	Model	Rocker	Indicator Or Imprint	Legend	Beveled Frame
XR116A002	Black	Red(1)	None	Black	XRL116A02	Red	120V Neon (4)	None	Black
XR116A00+On-Off	Black	White(2)	On-Off	Black	XRL116A04	Yellow	120V Neon (4)	None	Black
XR116A02+On-Off	Red	White(2)	On-Off	Black	XRL116A09	White	120V Neon (4)	None	Black
XR116A09+On-Off	White	Black(2)	On-Off	Black					
XR116A00+01	Black	White(2)	Bar/Circle	Black	(1) Double-shot molded indicator is visible when contacts are closed. (2) Imprinted legend is hot stamped on one-color rocker. (3) Legend, and indicator visible when contacts are closed, are double-shot molded. (4) Series resistor built in. Lamp circuit is between terminals 2&3.				
XR116A02+01	Red	White(2)	Bar/Circle	Black					
XR116A09+01	White	Black(2)	Bar/Circle	Black					
XR116A002+On-Off	Black	Red(3)	On-Off	Black					
XR116A002+01	Black	Red(3)	Bar/Circle	Black					
XR116A005+01	Black	Green(1)	Bar/Circle	Black					

XRM Series “10 Amp” Mini Power Rocker Switch

TYPICAL PERFORMANCE CHARACTERISTICS:

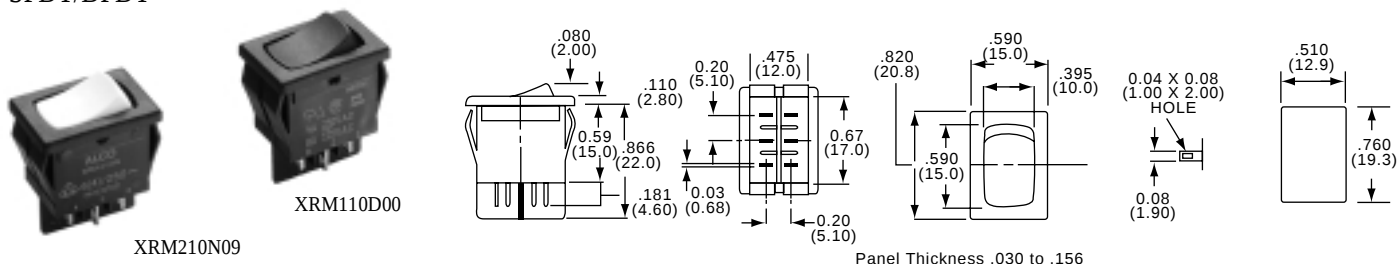
Contact Rating 10 A @ 125 VAC (resistive)
 8 A @ 125 VAC (P.F. +=0.75)
 4 A @ 250 VAC
 6 (4) A @ 250 V~(V.D.E.)
 Initial Contact Resistance Under 30 Milliohms
 Dielectric Strength 1,500 VRMS @ sea level

Model	Type	(*) Specify Color Codes		
XRM110D(*)	SPDT On On	00, 09, 90		
XRM110D(*)+01†	SPDT On On	00, 02, 09, 90		
XRM110F(*)	SPDT On (On)	00, 09, 90		
XRM210N(*)	DPDT On On	00, 09, 90		
XRM210N(*)+01†	DPDT On On	00, 02, 09, 90		
XRM210R(*)	DPDT On (On)	00, 09, 90		

(On) indicates momentary position. (*) Specify 2-digit color-code: body, then rocker.
 (†) +01 indicates bar/circle imprint. 0 = Black; 2 = Red; 9 = White.

U.L. Listed (File No. E46765) and C.S.A. Certified (File No. LR75648).

SPDT/DPDT



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E28

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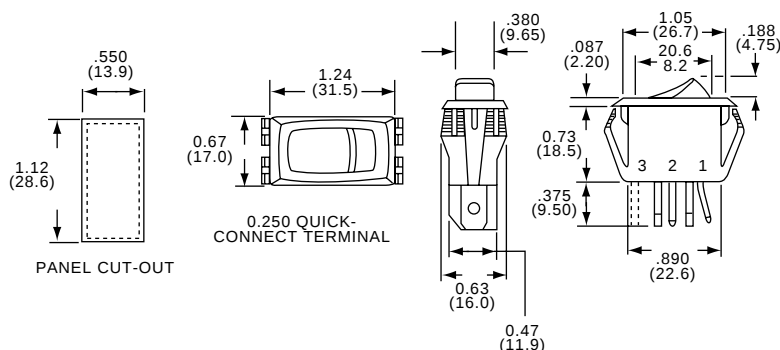
"8 Amp" Mini Power Rocker Switch Euro-Rockers

FEATURES:

XRMQ Series miniature rocker switches have the same reliable characteristics as the XRM series, but have 0.187" tab terminals. U.L., C.S.A. & VDE certifications. U.L. Listed (File No. E46765) and C.S.A. Certified (File No. LR75648).

TYPICAL PERFORMANCE CHARACTERISTICS:

Contact Rating 8 A @ 125 VAC (P.F. =0.75)
 4 A @ 250 VAC (P.F. =0.75)
 Inductive 6 (4) A @ 250 V~(V.D.E.)
 Initial Contact Resistance 50 Milliohms max.
 Insulation Resistance 100 Megohms
 Dielectric Strength 1,000 RMS @ sea level
 In-Rush Current 35 Peak amperes max.



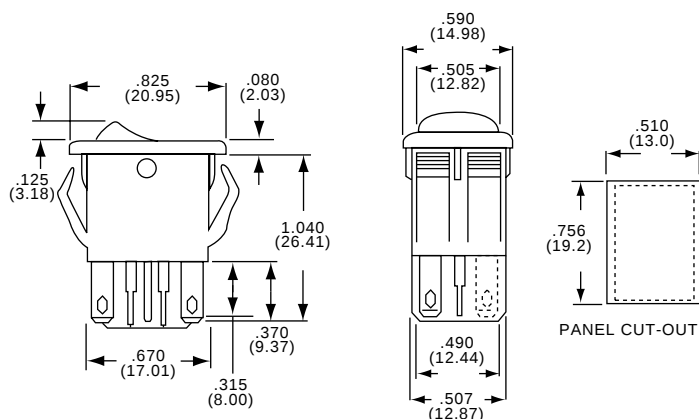
XRMQ208K005+01

Euro-Rocker switches have the preferred green ISO bar-circle legend and are V.D.E. certified in addition to UL and CSA.

Model-Legend	Type	(Body/Rocker)	(Legend)	Tab Terminal
XRMQ108A005+01	SPST	Black/Black	Green	0.187
XRMQ208K005+01	DPST	Black/Black	Green	0.187

Application Note:
 See Page E26 for Actuator Codes
 SPST Code 51 DPST Code 55

"8 Amps" Mini Power Rocker Switch XRMQ Series



XRMQ108A02

Model-Legend	Type	Body/Rocker	Legend	Model-Legend	Type	Body/Rocker	Legend
XRMQ108A00	SPST	Black/Black	None	XRMQ208K00	DPST	Black/Black	None
XRMQ108A00+01	SPST	Black/Black	White ISO	XRMQ208K00+01	DPST	Black/Black	White ISO
XRMQ108A02	SPST	Black/Red	None	XRMQ208K02	DPST	Black/Red	None
XRMQ108A02+01	SPST	Black/Red	White ISO	XRMQ208K02+01	DPST	Black/Red	White ISO
				XRMQ208K02OnOff	DPST	Black/Red	On/Off
				XRMQ208N00+01	DPDT	Black/Black	White ISO
				XRMQ208N00	DPDT	Black/Black	

Application Note:
 See Page E26 for Actuator Codes
 SPST Code 51 DPST & DPDT
 Code 55

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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
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Как с нами связаться

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Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

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