# A Series 1-4 Pole Rotary Switches

#### Features/Benefits

- Multi-pole and multi-position
- Positive detent
- Shorting & non-shorting contacts
- Panel and PCB mounting
- **RoHS Compliant**



Models Available

#### Typical Applications

- Automotive
- Major and small appliances
- Industrial equipment



#### **Specifications**

CONTACT RATING: Q contact material: Switch - 2.5 AMPS @ 125 V AC; 1 AMP @ 250 V AC; 350 mA @ 125 V DC (UL/CSA). Carry - 5 AMPS continuous. See page K-6 for additional ratings.

ELECTRICAL LIFE: Up to 15,000 make-and-break cycles at full load up to 300,000 detent operations.

CONTACT RESISTANCE: Below 20 m  $\Omega$  typ. initial @

2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: 10  $^{9}$   $\Omega$  min.

DIELECTRIC STRENGTH: 1,000 Vrms min. @ sea level. Operating and storage temp: -30° to 85°C

OPERATING & STORAGE TEMPERATURE: -30°C to 85°C

NOTE: Any models supplied with Q, B or G contact material are RoHS compliant.

NOTE: Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

#### **Materials**

HOUSING & BUSHING: Glass filled 6/6 nylon (UL 94V-0).

ACTUATOR: Glass filled 6/6 nylon (UL 94V-0).

MOVABLE CONTACTS: Q contact material: Coin silver, silver plated. See page K-6 for additional contact materials.

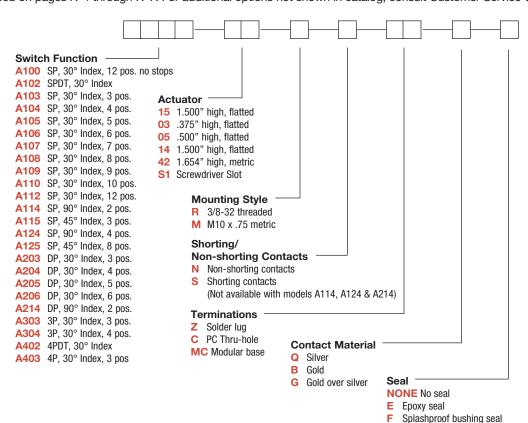
STATIONARY CONTACTS & TERMINALS: Q contact material: Brass, silver plated. See page K-6 for additional contact materials.

HARDWARE: Nut - zinc, nickel plated. Lockwasher - steel, bright zinc plated. Stop Ring - brass, nickel plated.

TERMINAL SEAL: Epoxy.

#### **Build-A-Switch**

To order, simply select desired option from each category and place in the appropriate box. Available options are shown and described on pages K-4 through K-7. For additional options not shown in catalog, consult Customer Service Center.





Dimensions are shown: Inch (mm) Specifications and dimensions subject to change

Epoxy & splashproof bushing seal

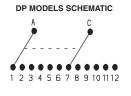
K-3

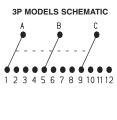
### **SWITCH FUNCTION**

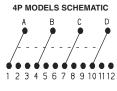
30° INDEXING					
NO. POLES	MODEL NO.	SWITCH FUNCTION	TERMINALS		
	A100	12 Position No Stops	A,1-12		
	A102	SPDT	A,1,2*		
	A103	3 Position	A,1-3*		
	A104	4 Position	A,1-4*		
	A105	5 Position	A,1-5*		
SP	A106	6 Position	A,1-6*		
	A107	7 Position	A,1-7		
	A108	8 Position	A,1-8		
	A109	9 Position	A,1-9		
	A110	10 Position	A,1-10		
	A112	12 Position	A,1-12		
	A203	3 Position	A,C,1-3,7-9		
DP	A204	4 Position	A,C,1-4,7-10		
	A205	5 Position	A,C,1-5,7-11		
	A206	6 Position	A,C,1-12		
3P	A303	3 Position	A,B,C,1-3,5-7 9-11		
35	A304	4 Position	A,B,C,1-12		

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							10		

SD MODELS SCHEMATIC







30° INDEXING						
NO. POLES	MODEL NO.	TERMINALS				
4P	A402	4PDT	A,B,C,D,1,2,4,5,7, 8,10,11			
	A403	3 Position	All Terminals			

45° INDEXING					
NO. POLES	MODEL NO.	TERMINALS			
SP	A115	3 Position	A,1,2,4*		
	A125	8 Position	A,1,2,4,5,7,8,10,11		

90° INDEXING					
NO. POLES	MODEL NO.	SWITCH FUNCTION	TERMINALS		
SP	A114	2 Position	A,1,4*		
	A124	4 Position	A,1,4,7,10		
DP	A214	2 Position	A,C,1,4,7,10		

NOTE: \* These models with 'C' or 'MC' terminations have additional terminal no. 9 as switch support only. This terminal is not connected electrically inside switch.

All models  $_{\mbox{c}}$   $_{\mbox{us}}$  with all options when ordered with 'G' or 'Q' contact material, see page K-6.



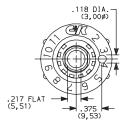
Terminal numbers molded on bottom of housing.

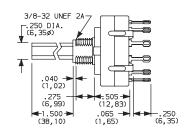
**TERMINAL NUMBERS** 

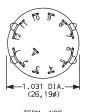


4P MODELS SP MODELS (omit terminals B, C & D) DP MODELS (omit terminals B & D)

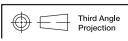
3P MODELS







TERM. NOS. MOLDED ON HOUSING



Dimensions are shown: Inch (mm) Specifications and dimensions subject to change



#### ACTUATOR -100000

15 1.500" HIGH

**03** .375" HIGH

05 .500" HIGH

14 1.500" HIGH

**42** 1.654" METRIC

\$1 SCREWDRIVER SLOT



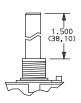


















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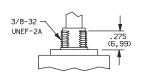


NOTE: Actuators shown in position 1, fully CCW.

### **MOUNTING STYLE**

R 3/8-32 THREAD

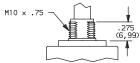
M10 x .75 METRIC

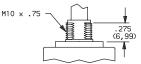


PANEL MOUNTING

3/8 IN. BUSHING

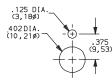
.125 DIA. (3,18ø)



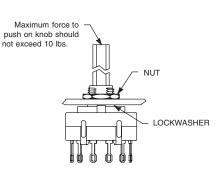




METRIC BUSHING



TYPICAL INSTALLATION



Install switch with stop ring (if used) and lockwasher in back of panel. Tighten hex nut from front of panel.

On PC mounted switches, use hex nut and lockwasher to hold stop ring in place.

Actuation torque: 8-16 oz./in. Maximum torque: 30 oz./in.

## SHORTING/NON-SHORTING CONTACTS



NON-SHORTING CONTACTS (break-before-make)

S SHORTING CONTACTS (make-before-break)

NOTE: 'S' shorting contacts are not available with A114, A124 and A214 models.



Dimensions are shown: Inch (mm) Specifications and dimensions subject to change



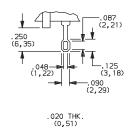
# **A Series**

# 1-4 Pole Rotary Switches

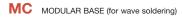
### **TERMINATIONS**

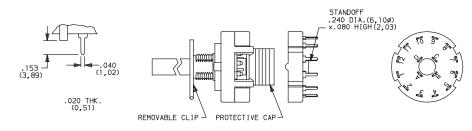


Z SOLDER LUG



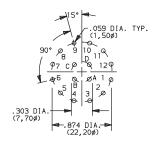
C PC THRU-HOLE



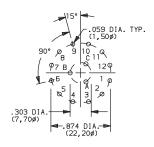


**NOTE:** Switches with 'C' or 'MC' terminations have additional terminal no. 9 as switch support only. This terminal is not connected electrically inside switch. Solder and clean switch base on PC board with other components, then snap on housing/actuator assembly. See page K-7 for installation instructions.

#### PC MOUNTING



4P MODEL SP MODEL (omit terminals B, C & D) DP MODEL (omit terminals B & D)



3P MODEL

### **CONTACT MATERIAL**



Option Code	Contact & Terminal Material	Typical Usage	Rating	Cycles
Q Silver <sup>2</sup>	Silvar2	Power	SWITCH - 2.5 AMPS @ 125 VAC; 1 AMP @ 250 VAC (UL/CSA) CARRY - 5 AMPS CONTINUOUS	6,000
	Power	SWITCH - 350 mA @ 125 VDC (UL/CSA) CARRY - 5 AMPS CONTINUOUS	15,000	
В	Gold <sup>1</sup>	Low level/ Dry circuit	0.4 VA MAX. @ 20 V AC OR DC MAX	15,000
<b>G</b> G		Low level/ Dry circuit or power	0.4 VA MAX. @ 20 V AC OR DC MAX	15,000
	Gold over silver <sup>3</sup>		SWITCH - 350 mA @ 125 VDC (UL/CSA) CARRY - 5 AMPS CONTINUOUS	15,000
		. ,	SWITCH - 2.5 AMPS @ 125 VAC; 1 AMP @ 250 VAC (UL/CSA) CARRY - 5 AMPS CONTINUOUS	6,000

<sup>\*</sup> Note: See Technical Data section of this catalog for RoHS compliant and compatible definition and specifications.

<sup>1</sup> MOVABLE CONTACTS: Copper alloy, with gold plate over nickel plate. STATIONARY CONTACTS & TERMINALS: Brass, with gold plate over nickel plate.
<sup>2</sup> MOVABLE CONTACTS: Coin silver, silver plated.

MOVABLE CONTACTS: Coin silver, silver plated.
STATIONARY CONTACTS & TERMINALS: Brass, silver plated (standard with all

termination options).

3 MOVABLE CONTACTS: Coin silver, with gold plate over nickel plate over silver plate.

STATIONARY CONTACTS & TERMINALS: Brass, with gold plate over nickel plate over silver plate.

**NOTE:** Any models supplied with Q, B or G contact material are RoHS compliant.

All models  $\ _{\mathbf{c}}\mathbf{N}^{\circ}_{\mathbf{US}}$  with all options when ordered with 'G' or 'Q' contact material.

NOTE: 'G' contact material is equivalent to both 'B' and 'Q" contact materials.



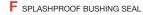
Dimensions are shown: Inch (mm) Specifications and dimensions subject to change



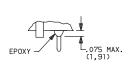
# FUNCTION ----

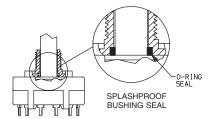












### Setting Stops on A112 and A125 Models

The number of switch positions is adjustable on A112 and A125 models only by means of a stop ring provided with each switch. The number of positions is pre-set on all other models and the stop ring is factory installed.

To set stops: Turn shaft fully counter-clockwise and insert stop ring tab in desired hole. Install lockwasher and nut to retain stop ring for both PC and panel mounting. Switch without stop ring has 12 positions.

#### Soldering, Cleaning and Assembly Instructions for 'MC' Termination Option

#### Soldering

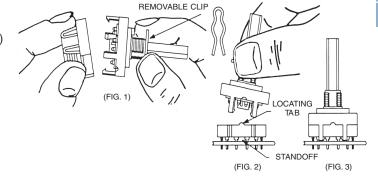
- 1. Insert switch base only into PC board.
- 2. Do not bend terminals.
- 3. Wave soldering recommended at 500F solder temperature.
- 4. Hand solder at 500F, 10 sec. max./terminal.

#### **Switch Assembly**

- 1. Hold housing/shaft assembly by housing. Remove protective cap by squeezing tabs and discard. (FIG. 1)
- 2. Do not push on switch shaft. Detent mechanism will come apart.
- 3. While holding switch housing, align locating tab on base with notch on housing and engage 4 housing latches in slots on base. (FIG. 2)
- 4. Push firmly on housing until latches snap in place.
- 5. Remove clip from shaft and discard. Assembly is complete. (FIG. 3)

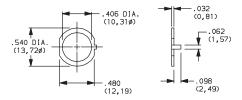
#### Cleaning

- 1. Flux clean using vapor degreaser and forced rinse or triple bath method.
- 2. Do not allow switch base to 'trap' fluids.
- Freon TMC, TF or Methylene Chloride give excellent results.



### **AVAILABLE HARDWARE**

Stop ring



# PART NO. 767B00201

Material: Brass Finish: Nickel plated



Specifications and dimensions subject to change



# **Mouser Electronics**

**Authorized Distributor** 

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### **C&K Switches:**

A20605RNZGF A11215RNCQ A11405RNZGK A40203RNZQ A20615RNCQE A10615RSZQ A10015RSCQ A11215RNCQE A20615RNCQ A12515RNZQ A11215RNZQ A20605RNZQ A20403RNZQ A30403RNZQ A11205RNCQ A10451RNZQ A10315RSZQ A20615RNZQ A30415RNZQ A40303RNCQK A40305RNCQ A10205RNZQ A10251RNZQ A10305RNCQ A10603RNCQ A10905RNCQ A11015RNZQ A11251RNCQ A11503RNCB A12542MNCQ A20314RNCQ A20403RNCQ A30405RNZQ A30415RNZQ A40303MNCQF A40315RNCQ A40315RNZQ A10003MNCQK A10003MNZGE A10003RNCQ A10015RSZQ A10042MNCB A10051RNCQ A10205RNCB A10303RSZQ A10405RNCQ A10415RSZQ A10515RSZQ A10615RNZQ A10703MNCQ A10803MNCBF A10803RNCQ A11003RNZQE A11205RNMCBK A11215MNZQE A11242MNZQ A11403RNZQK A12405MNZB A12405MNZQ A12415MNZB A12442MNZQ A12542MNZQ A12542MNZQ A12542MNZQ A20603RNCQ A30303RNCQ A30305RNZQK A20603RNCQ A1005RNCQ A10205RNZB A10215RNZQ A10315RNZQ A10315RNZQ A10315RNZQ A10303RNCB A10303RNCQ A30305RNZQK A20603RNCQE A10005RNCQ A10205RNZB A10215RNZQ A10315RNZQ A10315RNZQ A10315RNZQ A10315RNZQ A10315RNZQ A10315RNZQ A10315RNZQ A10315RNZQ A10303RNCQ A10303RNCQ A10305RNCB A10305RNCB A10305RNCQ A10305RNCQ A10403RNCQ A10403RNZQ A10403RNZQ A10403RNZQ A10403RNZQ A10403RNZQ A10403RNZQ A10403RNZQ A10405RNZQ A10405