









# Rotary Switches

## Product Selection Guide

Rotary								
Series	A	RTA	M	RTBH	RTBV	R	F	H
Switch Type	Multi-pole/ Multi-position	Multi-pole/ Multi-position	Half-inch	Right-angle Sealed	Right-angle Sealed	Rota-slide	Rota-slide	Power Rota-slide
Miniature		•					•	
Low Profile							•	
Screwdriver Slot	•	•		•	•	•	•	
Illumination								
Power								•
Maximum Current	2.5 Amps	150 mA	6 Amps			5 Amps	4 Amps	12 Amps
Momentary								
Poles	1-4	1-4	1 & 2			1 & 2	1 & 2	1 & 2
Indexing	30°, 45°, 90°		30° & 36°	15,22.5,36		36°	45° & 90°	45° & 90°
Splashproof	•		•	•	•			
Sealed			• F option	•	•			
Non-shorting/ Shorting Contacts	•		•					
Panel Mount Options								
Front Mount								
Rear Mount	•	•	•	•	•	•	•	•
PCB Mount Options								
Vertical	•	•	•		•	•	•	
Terminations								
Solder Lug	•	•	•			•	•	•
Wire Lead						•	•	•
Quick Connect								
PC	•	•	•	•	•	•	•	
Page No.	K-3	K-8	K-13	K-18	K-24	K-30	K-33	K-37



K

Rotary

# 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; 350 mA @ 125 V DC (UL/CSA). Carry - 5 AMPS continuous. See page L-6 for additional ratings.

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

**CONTACT RESISTANCE:** Below 20 m Ω typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.

**INSULATION RESISTANCE:** 10<sup>9</sup> Ω 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.

<p><b>Switch Function</b></p> <p><b>A100</b> SP, 30° Index, 12 pos. no stops</p> <p><b>A102</b> SPDT, 30° Index</p> <p><b>A103</b> SP, 30° Index, 3 pos.</p> <p><b>A104</b> SP, 30° Index, 4 pos.</p> <p><b>A105</b> SP, 30° Index, 5 pos.</p> <p><b>A106</b> SP, 30° Index, 6 pos.</p> <p><b>A107</b> SP, 30° Index, 7 pos.</p> <p><b>A108</b> SP, 30° Index, 8 pos.</p> <p><b>A109</b> SP, 30° Index, 9 pos.</p> <p><b>A110</b> SP, 30° Index, 10 pos.</p> <p><b>A112</b> SP, 30° Index, 12 pos.</p> <p><b>A114</b> SP, 90° Index, 2 pos.</p> <p><b>A115</b> SP, 45° Index, 3 pos.</p> <p><b>A124</b> SP, 90° Index, 4 pos.</p> <p><b>A125</b> SP, 45° Index, 8 pos.</p> <p><b>A203</b> DP, 30° Index, 3 pos.</p> <p><b>A204</b> DP, 30° Index, 4 pos.</p> <p><b>A205</b> DP, 30° Index, 5 pos.</p> <p><b>A206</b> DP, 30° Index, 6 pos.</p> <p><b>A214</b> DP, 90° Index, 2 pos.</p> <p><b>A303</b> 3P, 30° Index, 3 pos.</p> <p><b>A304</b> 3P, 30° Index, 4 pos.</p> <p><b>A402</b> 4PDT, 30° Index</p> <p><b>A403</b> 4P, 30° Index, 3 pos</p>	<p><b>Actuator</b></p> <p><b>15</b> 1.500" high, flatted</p> <p><b>03</b> .375" high, flatted</p> <p><b>05</b> .500" high, flatted</p> <p><b>14</b> 1.500" high, flatted</p> <p><b>42</b> 1.654" high, metric</p> <p><b>S1</b> Screwdriver Slot</p>	<p><b>Mounting Style</b></p> <p><b>R</b> 3/8-32 threaded</p> <p><b>M</b> M10 x .75 metric</p>	<p><b>Shorting/Non-shorting Contacts</b></p> <p><b>N</b> Non-shorting contacts</p> <p><b>S</b> Shorting contacts (Not available with models A114, A124 &amp; A214)</p>	<p><b>Terminations</b></p> <p><b>Z</b> Solder lug</p> <p><b>C</b> PC Thru-hole</p> <p><b>MC</b> Modular base</p>	<p><b>Contact Material</b></p> <p><b>Q</b> Silver</p> <p><b>B</b> Gold</p> <p><b>G</b> Gold over silver</p>	<p><b>Seal</b></p> <p><b>NONE</b> No seal</p> <p><b>E</b> Epoxy seal</p> <p><b>F</b> Splashproof bushing seal</p> <p><b>K</b> Epoxy &amp; splashproof bushing seal</p>
--	---	---	--	--	---	--



Dimensions are shown: mm  
Specifications and dimensions subject to change



K

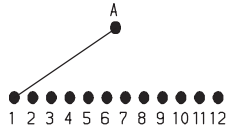
Rotary

# A Series 1-4 Pole Rotary Switches

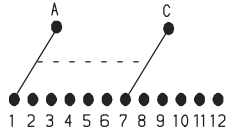
## SWITCH FUNCTION

30° INDEXING			
NO. POLES	MODEL NO.	SWITCH FUNCTION	TERMINALS
SP	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*
	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	
DP	A203	3 Position	A,C,1-3,7-9
	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
	A304	4 Position	A,B,C,1-12

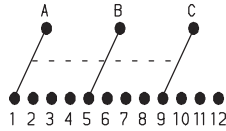
### SP MODELS SCHEMATIC



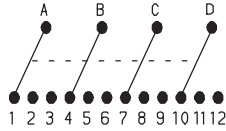
### DP MODELS SCHEMATIC



### 3P MODELS SCHEMATIC



### 4P MODELS SCHEMATIC

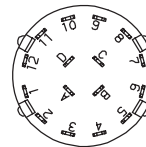


30° INDEXING			
NO. POLES	MODEL NO.	SWITCH FUNCTION	TERMINALS
4P	A402	4PDT	A,B,C,D,1,2,4,5,7, 8,10,11
	A403	3 Position	All Terminals

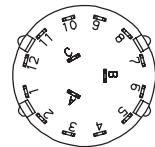
45° INDEXING			
NO. POLES	MODEL NO.	SWITCH FUNCTION	TERMINALS
SP	A115	3 Position	A,1,2,4*
	A125	8 Position	A,1,2,4,5,7,8,10,11

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

### TERMINAL NUMBERS



Terminal numbers molded on bottom of housing.

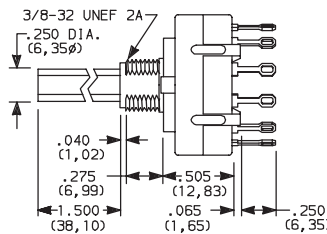
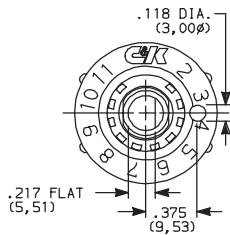


3P MODELS

**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 with all options when ordered with 'G' or 'Q' contact material, see page K-6.

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



TERM. NOS.  
MOLDED ON HOUSING



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



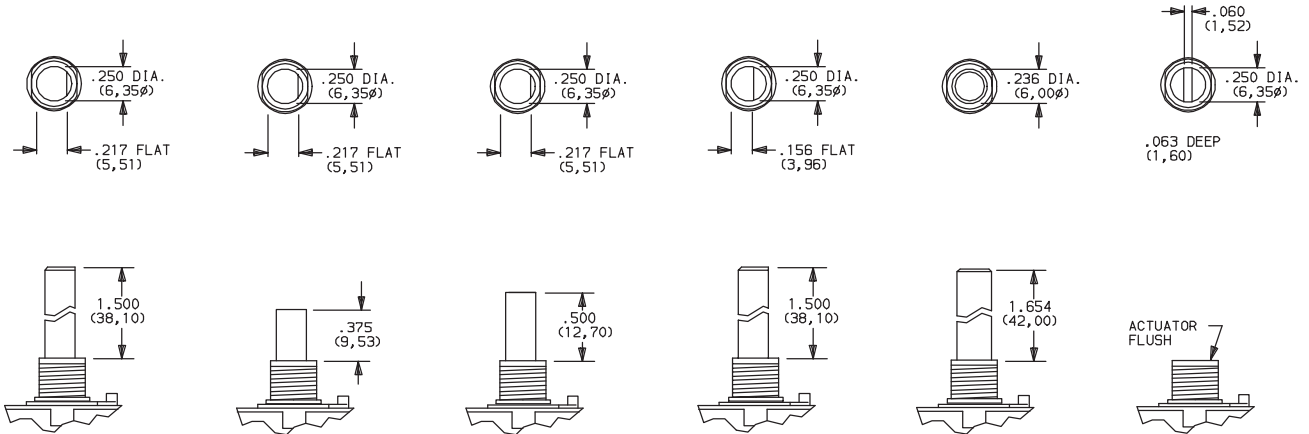
K

Rotary

# A Series 1-4 Pole Rotary Switches

## ACTUATOR

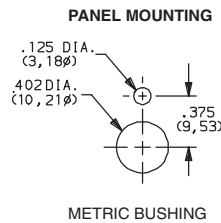
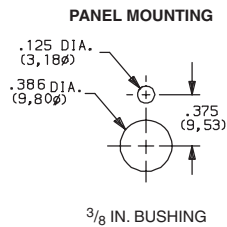
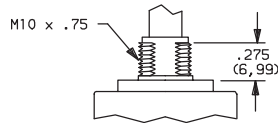
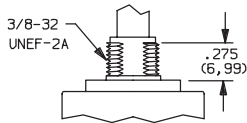
- 15** 1.500" HIGH    **03** .375" HIGH    **05** .500" HIGH    **14** 1.500" HIGH    **42** 1.654" METRIC    **S1** SCREWDRIVER SLOT



NOTE: Actuators shown in position 1, fully CCW.

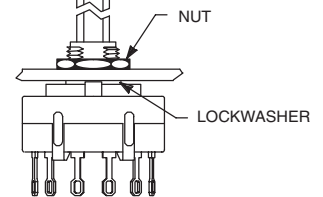
## MOUNTING STYLE

- R** 3/8-32 THREAD    **M** M10 x .75 METRIC



### TYPICAL INSTALLATION

Maximum force to push on knob should not exceed 10 in./lbs.



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

- N** 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.

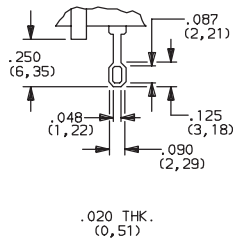


Dimensions are shown: mm  
Specifications and dimensions subject to change

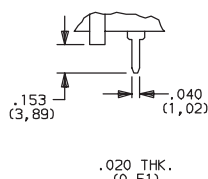
# A Series 1-4 Pole Rotary Switches

## TERMINATIONS

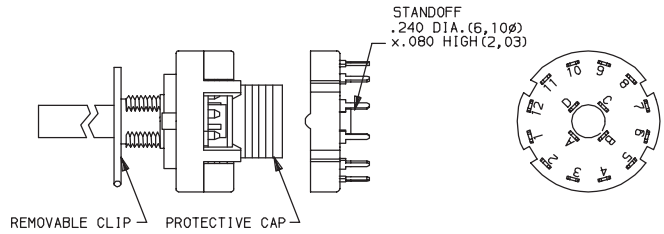
### Z SOLDER LUG



### C PC THRU-HOLE

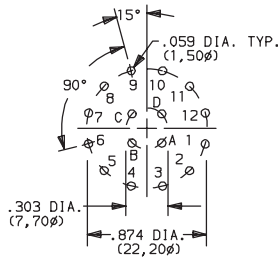


### MC MODULAR BASE (for wave soldering)

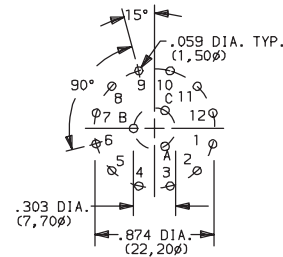


**NOTE:** Switches with 'C' or 'MC' terminations have additional terminal no. 9 as switch support only. This terminal is not connected electrically inside switch. Solder and clean switch base on PC board with other components, then snap on housing/actuator assembly. See page K-7 for installation instructions.

## PC MOUNTING



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



3P MODEL

## CONTACT MATERIAL

OPTION CODE	CONTACT AND TERMINAL MATERIAL	RATING	
Q	SILVER <sup>2</sup>	POWER	SWITCH-2.5 AMPS @ 125 V AC; 350 mA @ 125V DC (UL/CSA). CARRY-5 AMPS CONTINUOUS.
B	GOLD <sup>1</sup>	LOW LEVEL/DRY CIRCUIT	0.4 VA MAX. @ 20 V AC or DC MAX
G	GOLD OVER SILVER <sup>3</sup>	LOW LEVEL/DRY CIRCUIT OR POWER	0.4 VA MAX. @ 20 V AC or DC MAX. or SWITCH-2.5 AMPS @ 125 V AC; 350 mA @ 125 V DC (UL/CSA). CARRY-5 AMPS CONTINUOUS.

\* 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.  
STATIONARY CONTACTS & TERMINALS: Brass, silver plated (standard with all termination options).

<sup>3</sup> 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 with all options when ordered with 'G' or 'Q' contact material.

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



Third Angle  
Projection

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

# A Series 1-4 Pole Rotary Switches

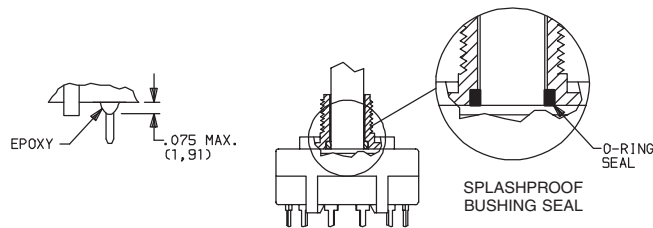
## FUNCTION

**NONE** NO SEAL

**E** EPOXY SEAL

**F** SPLASHPROOF BUSHING SEAL

**K** EPOXY & SPLASHPROOF BUSHING SEAL



### 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

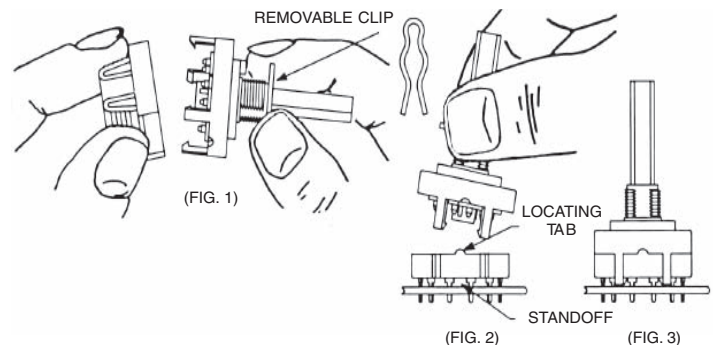
1. Insert switch base only into PC board.
2. Do not bend terminals.
3. Wave soldering recommended at 500F solder temperature.
4. Hand solder at 500F, 10 sec. max./terminal.

#### Cleaning

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

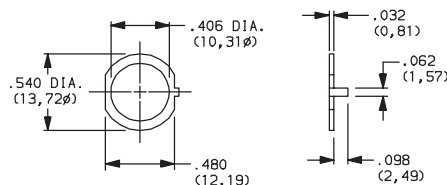
#### Switch Assembly

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)



## AVAILABLE HARDWARE

Stop ring



PART NO.  
**767B00201**

Material: Brass  
Finish: Nickel plated



Dimensions are shown: mm  
Specifications and dimensions subject to change



K

Rotary

# RTA Series

## 1-4 Poles Coded Rotary Switches



### Features/Benefits

- PCB or hand soldering versions
- Bushing mounting
- Multiple poles
- Decimal and hexadecimal codes
- Screwdriver slot or extended actuator
- RoHS Compliant

### Typical Applications

- Appliances
- Electronic alarm systems
- Medical
- Building automation
- HVAC air conditioning

### Electrical Data

	Silver	Gold
SWITCHING MODE:	BBM	BBM
MAX. SWITCHING POWER	5 VA	0.5 VA
MAX. SWITCHING CURRENT:	150 mA	20 mA
MAX. CARRYING CURRENT:	5 A	1 A
NOMINAL VOLTAGE AT 50 Hz	60 V	25 V
CONTACT RESISTANCE:	< 150 mΩ	< 150 mΩ
DIELECTRIC STRENGTH AT 50 Hz BETWEEN CONTACTS AND GROUND TERMINALS:	500 V r	500 V r
INSULATION RESISTANCE BETWEEN CONTACTS OR CONTACTS AND FRAME (500 V ⇒):	10 <sup>9</sup> Ω	10 <sup>9</sup> Ω
NO. OF OPERATIONS:	10,000	10,000
BOUNCE:	< 5 ms	< 5 ms

### Mechanical Data

MAX. NO. OF BANKS: 1.  
 OPERATING TORQUE: 5 Ncm±20%.  
 END STOP TORQUE: < 60 Ncm.  
 STOP: With/without or adjustable  
 MOUNTING: By fixed index 9.5 mm (0.374) of center, for bushing mount only

### Materials

BUSHING/HOUSING: PETP Thermoplastic  
 STATIONARY CONTACTS & TERMINALS: Nickel Plated Brass with additional plating of Gold or Silver.  
 ROTOR: Gold or Silver plated Brass or PCB.  
 CODING PLATE: PA thermoplastic  
 ACTUATOR: Polysulfon thermoplastic  
 HARDWARE: Stop pin: Aluminum. Ball & Spring: Stainless steel. Washer: PA. Nut: Brass.

### Environmental Data

OPERATING TEMPERATURE: -20°C to + 70°C    -20°C to + 70°C  
 STORAGE TEMPERATURE: -40°C to + 85°C    -40°C to + 85°C

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

### 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-9 thru K-12. For additional options not shown in catalog, consult Customer Service Center.



#### Designation

**RTA**

#### Termination

- P** With PC Thru-hole
- C** With Solder Lugs
- H** Horizontal with PC Thru-hole

#### Switch Function

- 1W12** SP, 30° Index, 12 pos. no stop
- 1W10** SP, 36° Index, 10 pos. no stop
- 1S02** SP, 30° /36° Index, 2 pos.
- 1S03** SP, 30° /36° Index, 3 pos.
- 1S04** SP, 30° /36° Index, 4 pos.
- 1S05** SP, 30° /36° Index, 5 pos.
- 1S06** SP, 30° /36° Index, 6 pos.
- 1S07** SP, 30° /36° Index, 7 pos.
- 1S08** SP, 30° /36° Index, 8 pos.
- 1S09** SP, 30° /36° Index, 9 pos.
- 1S10** SP, 30° /36° Index, 10 pos.
- 1S11** SP, 30° Index, 11 pos.
- 1S12** SP, 30° Index, 12 pos.
- 2S02** DP, 30° /36° Index, 2 pos.
- 2S03** DP, 30° /36° Index, 3 pos.
- 2S04** DP, 30° /36° Index, 4 pos.
- 2S05** DP, 30° /36° Index, 5 pos.
- 2S06** DP, 30° Index, 6 pos.
- 3S02** 3P, 30° /36° Index, 2 pos.

#### Indexing

- 2** 22.5 index (coded only)
- 3** 30° index (12 positions max.)
- 4** 36° index (10 positions max.)

- 3S03** 3P, 30° /36° Index, 3 pos.
- 4S02** 4P, 30° /36° Index, 2 pos.
- EW10** Direct + complement, 36° Index, no stop
- EW12** Direct + complement, 30° Index, no stop
- DW16** Direct, 22.5° Index, no stop
- ES\_\_** Direct + complement, 30°/36° Index, with stop (specify stop position)
- DS\_\_** Direct, 22.5° Index, with stop (specify stop position)

#### Mounting Style

- W** Without bushing
- R** 3/8-32 Threaded Bushing
- M** M10x.75 Metric Threaded Bushing
- A** 3/8-32 Threaded Bushing with Offset Bracket
- B** M10x.75 Metric Threaded Bushing with Offset Bracket

#### Contact Material

- S** Silver plated, matte-tin terminal
- P** Gold plated, matte-tin terminal

#### Actuator (max.)

- 25N** .984 (25,0) with screwdriver slot
- 50N** 1.97 (50,0) with screwdriver slot
- FLS** Flush shaft with screwdriver slot and position indicator
- 25F** .984 (25,0) Shaft with flat
- 06F** .236 (6,0) Shaft with flat

- C** 3/8-32 Threaded Bushing with Straight Bracket
- D** M10x.75 Metric Threaded Bushing with Straight Bracket



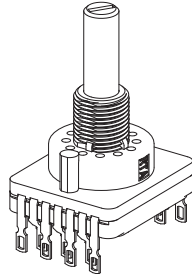
Dimensions are shown: Inch (mm)  
 Specifications and dimensions subject to change

# RTA Series 1-4 Poles Coded Rotary Switches

## DESIGNATION



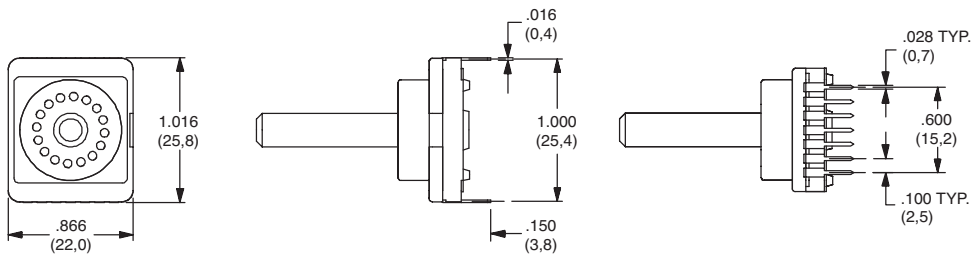
### RTA



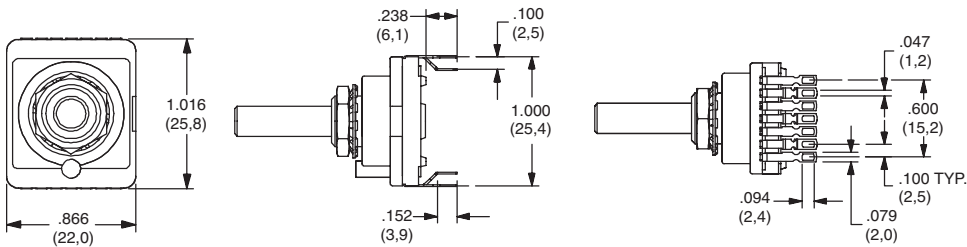
## TERMINATION



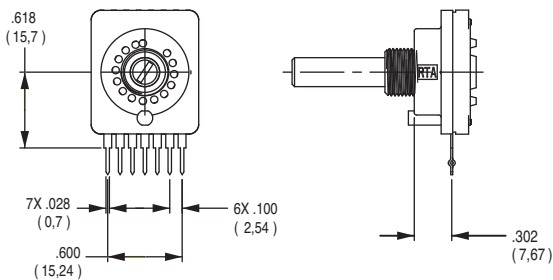
### P WITH PC PINS



### C WITH SOLDER LUGS



### H Horizontal with PC Thru-hole



Note: "H" termination only available with the following options:  
 1. With A or B mounting styles  
 2. 36° degree indexing  
 3. Up to 5 positions max

## INDEXING



- 2** 22.5 index, 16 positions max.
- 3** 30 index, 12 positions max.
- 4** 36 index, 10 positions max.

Both commons must be connected by user to ground.



Dimensions are shown: mm  
 Specifications and dimensions subject to change



K

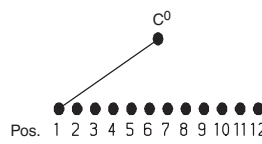
Rotary

# RTA Series 1-4 Poles Coded Rotary Switches

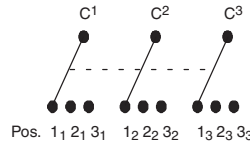
## SWITCH FUNCTION

NO. POLES	MODEL NO.	SWITCH FUNCTION	INDEX
SP	1W12	12 Positions No Stop	30°
	1W10	10 Positions No Stop	36°
	1S02	2 Positions	30°/36°
	1S03	3 Positions	30°/36°
	1S05	5 Positions	30°/36°
	1S06	6 Positions	30°/36°
	1S08	8 Positions	30°/36°
	1S09	9 Positions	30°/36°
	1S10	10 Positions	30°/36°
	1S11	11 Positions	30°
1S12	12 Positions	30°	

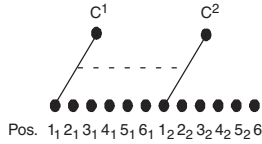
SP MODELS SCHEMATIC



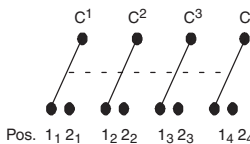
3P MODELS SCHEMATIC



DP MODELS SCHEMATIC



4P MODELS SCHEMATIC

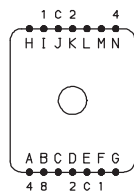


NO. POLES	MODEL NO.	SWITCH FUNCTION	INDEX
DP	2W05	5 Positions No Stop	30°/36°
	2W06	6 Positions No Stop	30°
	2S02	2 Positions	30°/36°
	2S03	3 Positions	30°/36°
	2S04	4 Positions	30°/36°
	2S05	5 Positions	30°/36°
3P	3S02	2 Positions	30°/36°
	3S03	3 Positions	30°/36°
4P	4S02	2 Positions	30°/36°

MODEL NO.	SWITCH FUNCTION	INDEX
EW10	Direct + complement, No stop	36°
EW12	Direct + complement, No stop	30°
DW16	Direct, No stop	22.5°
ES__	Direct + complement, with stop (specify stop position)	30° & 36°
DS__	Direct, with stop (specify stop position)	22.5°

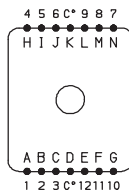
22.5°	30°	36°		Pos.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
E,J	M,N	L,N	C		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
F,I	H	D	1			•		•			•			•							•
D,K	D	B	2				•	•				•	•			•	•				•
A,N	A	I	4						•	•	•	•						•	•	•	•
B	J	J	8										•	•	•	•	•	•	•	•	•
-	C	K	1		•					•				•			•				•
-	K	H	2		•	•				•	•			•	•		•	•			•
-	B	A	4		•	•	•	•						•	•		•	•			•
-	I	C	8		•	•	•	•	•	•	•	•									•

### Indexing Option Code 2, 22.5 INDEXING ANGLE PCB LAYOUT



BCD ONLY

### Indexing Option Code 3, 30 INDEXING ANGLE PCB LAYOUT



1 POLE



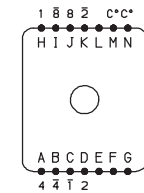
2 POLES



3 POLES

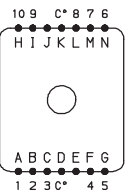


4 POLES

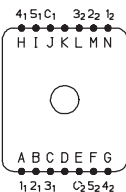


BCD + COMPLEMENTS

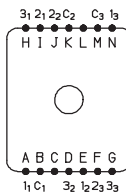
### Indexing Option Code 4, 36 INDEXING ANGLE PCB LAYOUT



1 POLE



2 POLES



3 POLES



4 POLES



BCD + COMPLEMENTS

**NOTE:** Layout view from component side.

Common terminals that are in locations A-G are not connected to common terminals that are in locations H-N. For 7-12 position output customer must tie these commons together.



Third Angle Projection

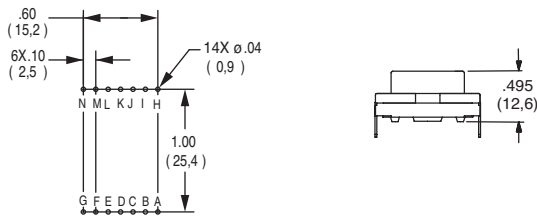
Dimensions are shown: Inch (mm)  
Specifications and dimensions subject to change



# RTA Series 1-4 Poles Coded Rotary Switches

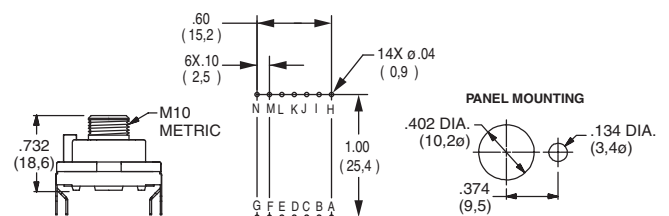
## MOUNTING STYLE

### W WITHOUT BUSHING



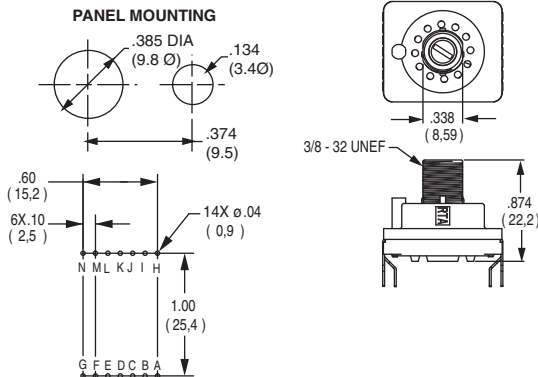
Note: W mounting style not available with H termination.

### M M10 x .75 METRIC THREADED BUSHING



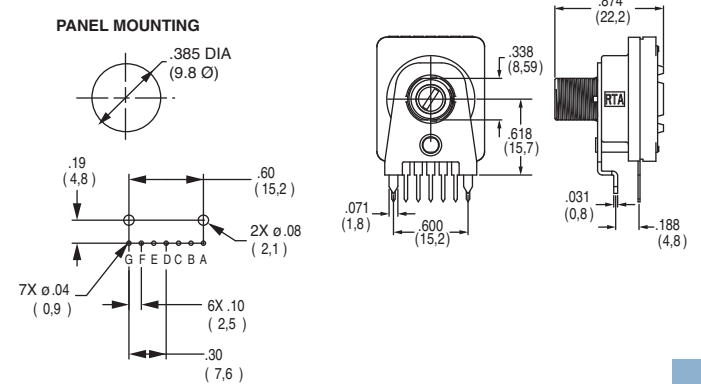
Note: M mounting style not available with H termination.

### R 3/8-32 THREADED BUSHING



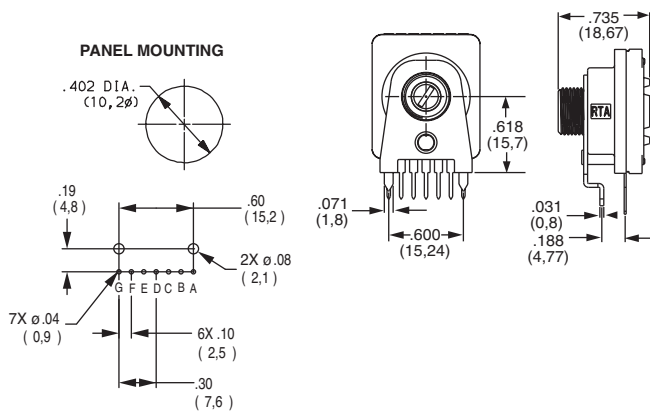
Note: R mounting style not available with H termination.

### A 3/8-32 THREADED BUSHING WITH BRACKET



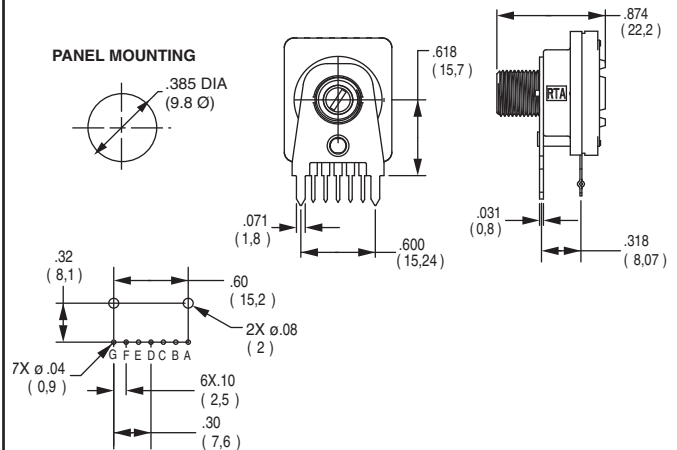
Note: A mounting style only available with H termination.

### B M10 x .75 METRIC THREADED BUSHING WITH BRACKET

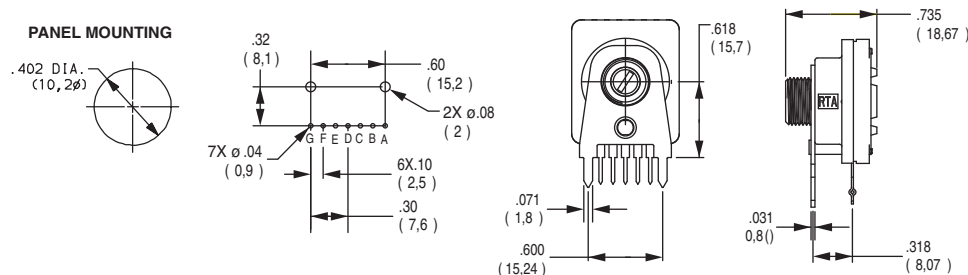


Note: B mounting style only available with H termination.

### C 3/8-32 THREADED BUSHING WITH STRAIGHT BRACKET



### D M10 x .75 METRIC THREADED BUSHING WITH STRAIGHT BRACKET



Third Angle Projection  
Dimensions are shown: mm  
Specifications and dimensions subject to change



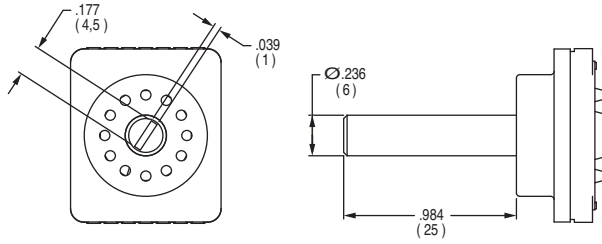
K

Rotary

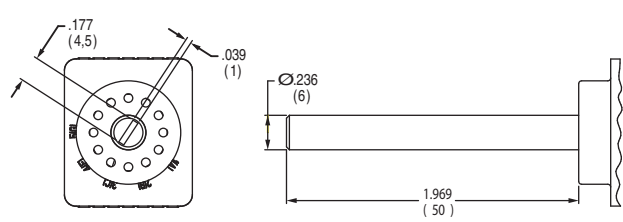
# RTA Series 1-4 Poles Coded Rotary Switches

## ACTUATOR

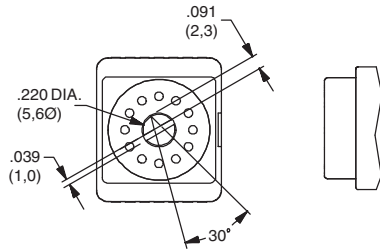
**25N** .984 (25,0) WITH SCREWDRIVER SLOT



**50N** 1.97 (50,0) WITH SCREWDRIVER SLOT

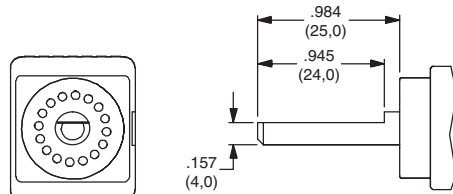


**FLS** FLUSH SHAFT WITH SCREWDRIVER SLOT AND POSITION INDICATOR



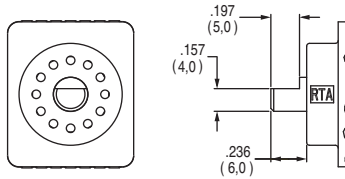
Note: only available with "W" Mounting Style

**25F** .984 (25,0) SHAFT WITH FLAT



Note: only available with "W" Mounting Style

**06F** .236 (6,0) SHAFT WITH FLAT



Note: only available with "W" Mounting Style

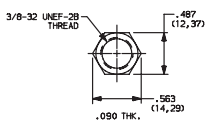
## CONTACT MATERIAL

OPTION CODE	CONTACT AND TERMINAL MATERIAL	RATING	
<b>S</b>	SILVER	LOW LEVEL/DRY CIRCUIT	SWITCH: 150 mA MAXIMUM, 60 V NOMINAL. POWER: 5 VA MAXIMUM. CARRY-5 AMPS MAXIMUM.
<b>P</b>	GOLD	LOW LEVEL/DRY CIRCUIT OR POWER	SWITCH: 20 mA MAXIMUM, 25 V NOMINAL. POWER: 0.5 VA MAXIMUM. CARRY: 1 AMP MAXIMUM.

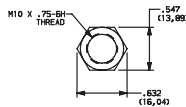
\* Note: See Technical Data section of this catalog for RoHS compliant and compatible definition and specifications.

## AVAILABLE HARDWARE

### Mounting Nuts



PART NO.  
**472706201**  
Standard



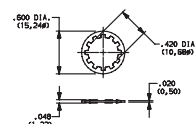
PART NO.  
**495100201**  
Metric

### Stop pins



PART NO.  
**Y200300200P**

### Lockwasher



PART NO.  
**472800202**

NOTE: Additional nuts and lockwashers available separately, see section "Technical Data and Additional Hardware".



Third Angle  
Projection



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



K

Rotary

# M Series Half-inch Rotary Switches



## Features/Benefits

- Multi-pole and multi-positions
- Panel and PCB mounting
- Stainless steel actuator
- Non-shorting contacts
- RoHS Compliant
- IP67 (F option only)

## Typical Applications

- Test equipment
- Industrial equipment
- Medical equipment



## Specifications

**CONTACT RATING:** Q contact material: Carry-6 AMPS continuous. Switch-250 mA max. @ 125 V AC or 28 DC. Non-shorting contacts standard. See page L-16 for additional ratings.

**ELECTRICAL LIFE:** 10,000 make-and-break cycles at 150 mA, 125 V AC or 28 DC.

**CONTACT RESISTANCE:** Below 20 mΩ typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.

**INSULATION RESISTANCE:** 10<sup>10</sup> Ω min.

**DIELECTRIC STRENGTH:** 600 Vrms min. @ sea level.

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

**OPERATING TORQUE:** 4-7 ounces-inches typ. initial.

**SOLDERABILITY:** Per MIL-STD-202F method 208D, or EIA RS-186E method 9 (1 hour steam aging).

**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 AND BUSHING:** Zinc alloy, bright zinc plated, with clear chromate finish.

**ACTUATOR:** Zinc alloy, nickel plated or stainless steel.

**BASE:** Diallylphthalate (DAP) or melamine phenolic, with insert molded terminals.

**ROTOR:** Glass filled polyester (UL 94V-0).

**MOVABLE CONTACTS:**  
Non-shorting: Q contact material: Copper alloy, silver plated. See page K-16 for additional contact materials.

**STATIONARY CONTACT & ALL TERMINALS:** Q contact material: Copper alloy, silver plated. All terminals insert molded. All terminals present regardless of number of switch positions. See page K-16 for additional contact materials.

**CONTACT SPRING:** Music wire, phosphate coated.

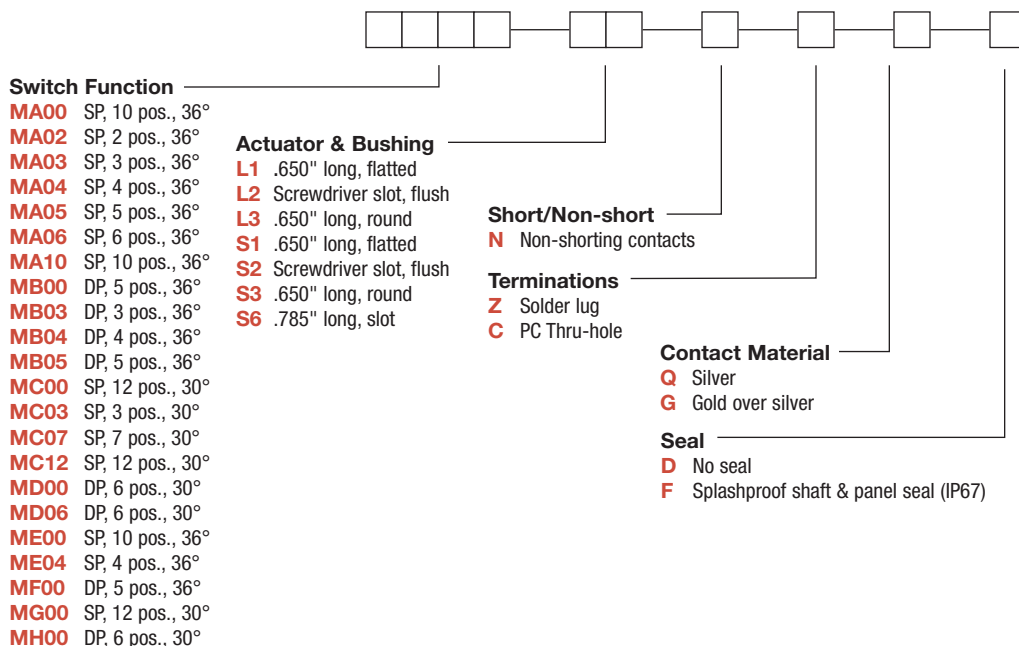
**STOP PIN:** Stainless steel.

**STOP RING:** Brass.

**HARDWARE:** Nut: Brass, nickel plated; Lockwasher: Steel, nickel plated.

## 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-14 thru K-18. For additional options not shown in catalog, consult Customer Service Center.



Dimensions are shown: mm  
Specifications and dimensions subject to change



K

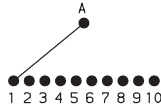
Rotary

# M Series Half-inch Rotary Switches

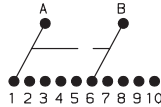
## SWITCH FUNCTION

36° INDEXING			
NO. POLES	MODEL NO. WITH STOP PINS	MODEL NO. WITH STOP RINGS	SWITCH FUNCTION
SP	<b>MA00</b>	<b>ME00</b>	10 Positions No Stops
	<b>MA02</b>	—	2 Positions
	<b>MA03</b>	—	3 Positions
	<b>MA04</b>	<b>ME04</b>	4 Positions
	<b>MA05</b>	—	5 Positions
	<b>MA06</b>	—	6 Positions
	<b>MA10</b>	—	10 Positions
DP	<b>MB00</b>	<b>MF00</b>	5 Positions No Stops
	<b>MB03</b>	—	3 Positions
	<b>MB04</b>	—	4 Positions
	<b>MB05</b>	—	5 Positions

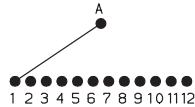
SP MODELS 36° INDEXING SCHEMATIC



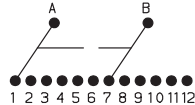
DP MODELS 36° INDEXING SCHEMATIC



SP MODELS 30° INDEXING SCHEMATIC



DP MODELS 30° INDEXING SCHEMATIC



30° INDEXING			
NO. POLES	MODEL NO. WITH STOP PINS	MODEL NO. WITH STOP RINGS	SWITCH FUNCTION
SP	<b>MC00</b>	<b>MG00</b>	12 Positions No Stops
	<b>MC03</b>	—	3 Positions
	<b>MC07</b>	—	7 Positions
DP	<b>MD00</b>	<b>MH00</b>	6 Positions No Stops
	<b>MD06</b>	—	6 Positions

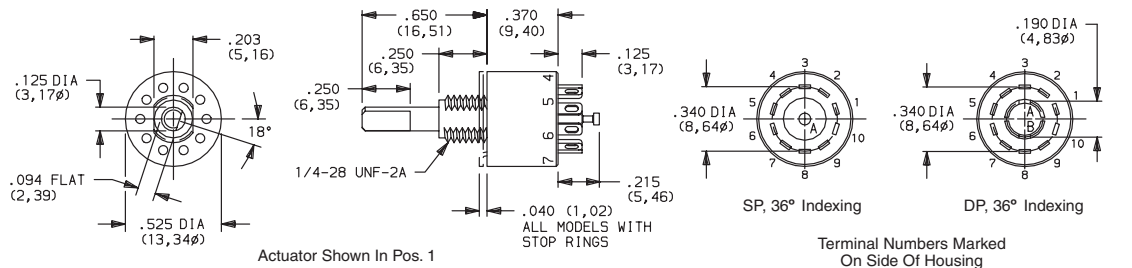


K

Rotary

All models with all options when ordered with S1-SB stainless steel actuator options.

**NOTE:** Number of positions or stops preset at factory (NOTE: MX00 models have full 360 rotation with no stops. Stop pins or stop rings supplied for user-selectable stops, see above). All terminals present regardless of number of switch positions. Hardware is available separately, see section "Technical Data and Additional Hardware".



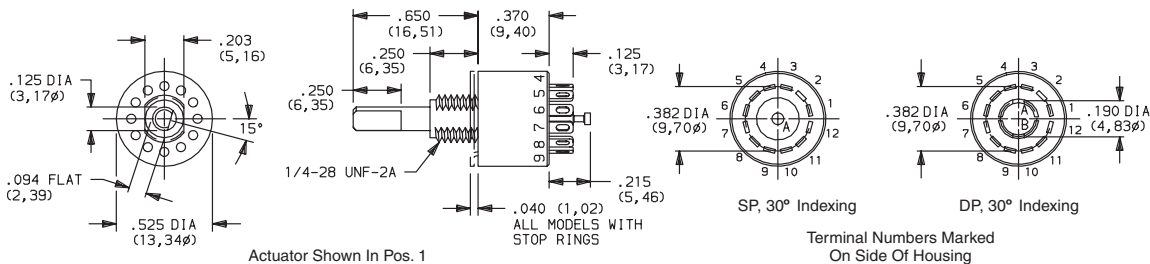
Actuator Shown In Pos. 1

SP, 36° Indexing

DP, 36° Indexing

Terminal Numbers Marked On Side Of Housing

Part number shown: MA00L1NZQD



Actuator Shown In Pos. 1

SP, 30° Indexing

DP, 30° Indexing

Terminal Numbers Marked On Side Of Housing

Part number shown: MC00L1NZQD



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

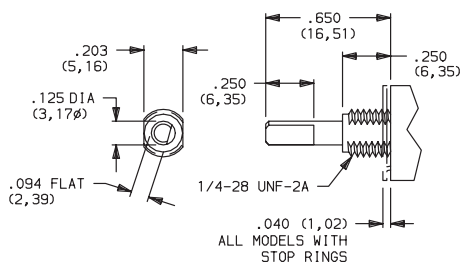


# M Series Half-inch Rotary Switches

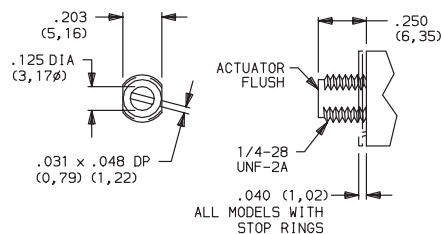
## ACTUATOR (ZINC ALLOY)



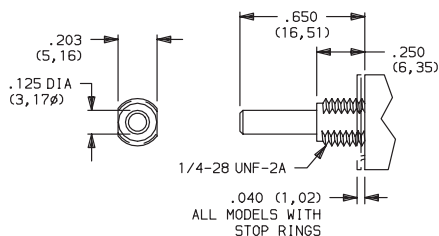
**L1** .650" LONG, FLATTED



**L2** SCREWDRIVER SLOT, FLUSH



**L3** .650" LONG, ROUND

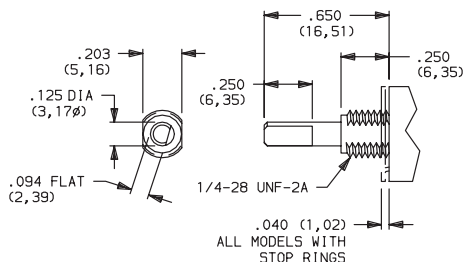


All actuators shown in pos. 1

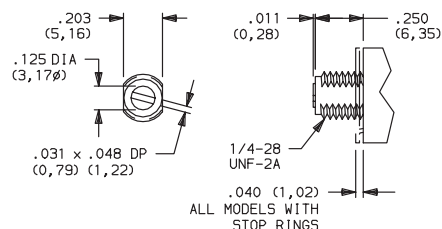
## ACTUATOR (STAINLESS STEEL)



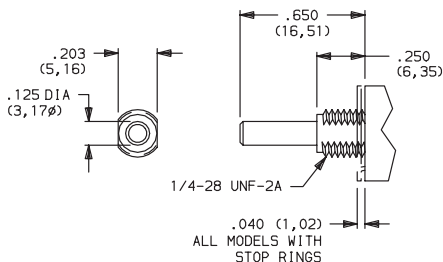
**S1** .650" LONG, FLATTED



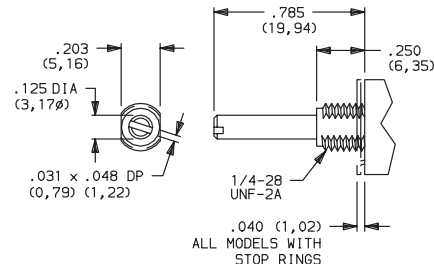
**S2** SCREWDRIVER SLOT, FLUSH



**S3** .650" LONG, ROUND



**S6** .785" LONG, SLOT



All actuators shown in pos. 1

All models UL/CSA when ordered with stainless steel actuators.



Third Angle  
Projection

Dimensions are shown: mm  
Specifications and dimensions subject to change

# M Series Half-inch Rotary Switches

## SHORTING/NON-SHORTING CONTACTS



### N NON-SHORTING CONTACTS

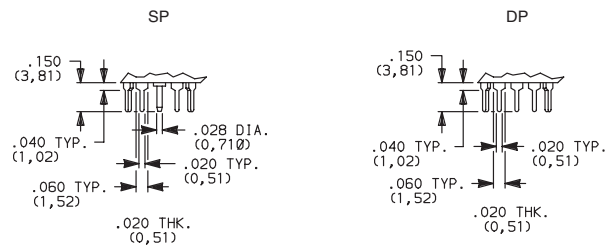
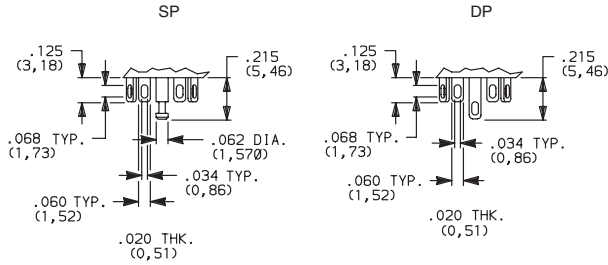
Break-before-make

## TERMINATIONS



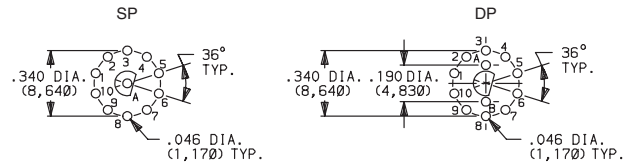
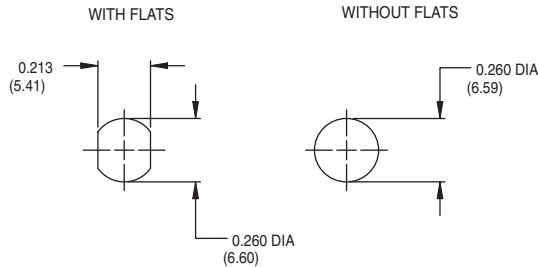
### Z SOLDER LUG

### C PC THRU-HOLE

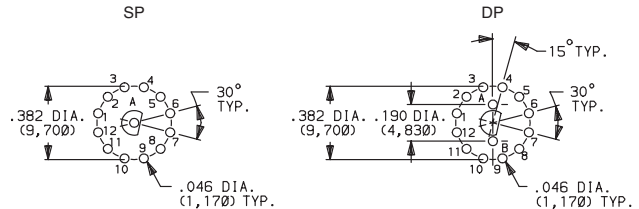


### PANEL MOUNTING

### PC MOUNTING 36° INDEXING



### PC MOUNTING 30° INDEXING



Hardware: All models, one mounting nut and lockwasher supplied standard. MA00 thru MD00 models: two stop pins and adhesive mylar washer supplied. ME00 thru MH00 models: two stop rings supplied. Hardware is available separately, see section "Technical Data and Additional Hardware".

Actuators and schematics shown in pos. 1.

**NOTE:** Q contact material standard. Terminal numbers marked on side of housing. All terminals insert molded. All terminals present regardless of number of switch positions.

## CONTACT MATERIAL



OPTION CODE	CONTACT MATERIAL	TERMINAL PLATING	RATING	
Q	SILVER <sup>1,2</sup>	SILVER <sup>2</sup>	POWER	CARRY: 6 AMPS CONTINUOUS. SWITCH: 250 mA @ 125 V AC or 28 V DC.
G	GOLD OVER SILVER <sup>3,4</sup>	GOLD <sup>4</sup>	LOW LEVEL/DRY CIRCUIT OR POWER	0.4 VA MAX. @ 20 V AC or DC MAX. or, CARRY: 6 AMPS CONTINUOUS. SWITCH: 250 mA @ 125 V AC or 28 V DC.

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

<sup>1</sup> MOVABLE CONTACTS: Non-shorting: Copper alloy, silver plated.  
Shorting: Zinc alloy, silver plated.

<sup>2</sup> STATIONARY CONTACTS & ALL TERMINALS: Copper alloy, silver plated.

<sup>3</sup> MOVABLE CONTACTS: Non-shorting: Copper alloy, with gold plate over nickel plate, over silver plate.  
Shorting: Zinc alloy, with gold plate

<sup>4</sup> STATIONARY CONTACTS & ALL TERMINALS: Copper alloy, with gold plate over nickel plate over silver plate.

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

All models  when ordered with S1-S6 stainless steel actuator options.



Third Angle Projection

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



K

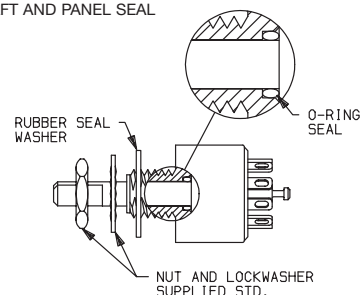
Rotary

# M Series Half-inch Rotary Switches

SEAL 

**D** NO EPOXY SEAL

**F** SPLASHPROOF SHAFT AND PANEL SEAL  
IP67 approved



## Setting Stops With Stop Pins

### MA00, MB00, MC00 & MD00 Models Only:

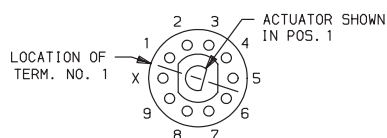
The number of switch positions or stops are adjustable by means of stop pins provided with each switch. Switches are normally shipped with stop pins and hardware in bulk, not installed. Without stop pins, switches have full 360° rotation and no stops. Note that all two pole models begin to repeat when actuated 180° or more.

To set stops, refer to figures 1 & 2. Orient switch so that terminal no. 1 is as shown. Turn actuator to position 1, using flats on bushing and terminal no. 1 as reference. Install CCW stop pin in hole designated 'X'. Install second stop pin in hole number corresponding to the number of positions desired. Note that two pole models will begin to repeat when actuated 180° or more. To retain stop pins, use adhesive mylar washer included; see figure 3.

All models except MX00 models have number of switch positions or stops pre-set at factory and are not adjustable.

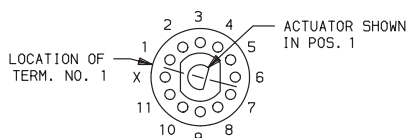
### Hardware:

Two stop pins, mounting nut, and lockwasher supplied standard.



36° Indexing Models  
Top View

Fig. 1



30° Indexing Models  
Top View

Fig. 2

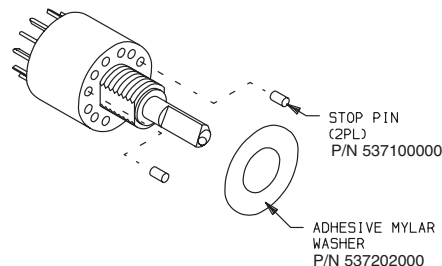


Fig. 3

## Setting Stops With Stop Rings

### ME00, MF00, MG00 & MH00 Models Only:

The number of switch positions or stops are adjustable by means of stop rings provided with each switch. These models are normally shipped with stop rings and hardware in bulk, not installed. Without stop rings, switches have full 360° rotation and no stops. Note that all two pole models begin to repeat when actuated 180° or more.

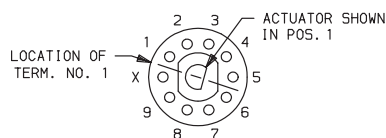
To set stops refer to figures 4 & 5. Orient switch so that terminal no. 1 is as shown. Turn actuator to pos. 1 using flats on bushing and terminal no. 1 as reference. See figure 6 and install inner stop ring with short tab in hole designated 'X'. Install outer stop ring with long tab in hole number corresponding to the number of positions desired. Note that all two pole models begin to repeat when actuated 180° or more. Use mounting nut and lockwasher to retain stop rings.

### All MEXX, MFXX, MGXX & MHXX Models (Except MX00 models):

Number of switch positions or stops are preset at factory, but are user adjustable.

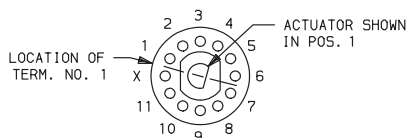
### Hardware:

Two stop rings, mounting nut and lockwasher supplied standard.



36° Indexing Models  
Top View

Fig. 4



30° Indexing Models  
Top View

Fig. 5

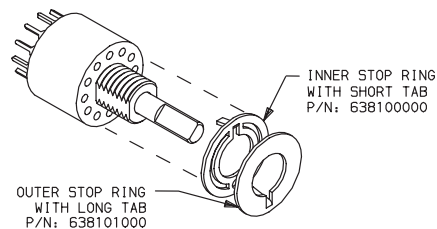


Fig. 6



Dimensions are shown: mm  
Specifications and dimensions subject to change



K

Rotary

# RTBH Series

## 1-2 Pole Coded Rotary Switches



### Features/Benefits

- **Totally sealed**
- **Detent angles, 15 , 22.5 , 30 and 36**
- **Multi pole**
- **Coding functions**
- **Robust construction**
- **RoHS Compliant**

### Typical Applications

- **Telecommunications**
- **Military**
- **Instrumentation**
- **Heavy-duty industrial equipment**

### Electrical Data

SWITCHING MODE:  
 MAX. SWITCHING POWER:  
 Max. SWITCHING CURRENT:  
 MIN. SWITCHING CURRENT:  
 MAX. CARRYING CURRENT:  
 MAX. VOLTAGE:  
 MIN. VOLTAGE:  
 BOUNCE:  
 CONTACT RESISTANCE after life:  
 DIALECTRIC STRENGTH between contacts or contacts and frame:  
 INSULATION RESISTANCE between contacts or contacts and frame:

Silver	Gold
BBM*	BBM*
5VA	0.2VA
250 mA	20 mA
10 mA	1 mA
5A	1A
25V	25V
5V	1V
<5ms	<5ms
<100mΩ	<100mΩ
500 V rms	500 V rms
>10 <sup>9</sup> Ω	>10 <sup>9</sup> Ω

### Environmental Data

OPERATING TEMPERATURE: -25°C to +70°C  
 STORAGE TEMPERATURE: -40°C to +85°C  
 TOTALLY SEALED: Immersion test acc. to MIL R22.097 F and NFC 20631/QF

\* BBM= Break Before Make (non-starting)

### Materials

HOUSING: PBT thermoplastic and PC thermoplastic  
 STATIONARY CONTACTS & TERMINALS: Nickel plated Brass aith additional Gold or Silver plating, insert molded in PBT thermoplastic.  
 ROTOR: Printed circuit, gold or silver plated.  
 ACTUATOR: Steel  
 BUSHING: Brass  
 HARDWARE: Stop pin and spring: Stainless steel  
 All models are RoHS compliant and compatible.

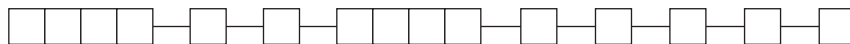
**NOTE:** Specifications and materials listed above are for switches with standard options. For information on specific and custom switches, consult Customer Service Center.

### Mechanical Data

NUMBER OF BANKS: 1 to 4  
 OPERATING TORQUE: 5 Ncm±30% (with 1 module)  
 MECHANICAL STOP RESISTANCE: >70 Ncm  
 BUSHING MOUNTING TORQUE: 100 Ncm

### 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-19 thru K-23. For additional options not shown in catalog, consult Customer Service Center.



#### Designation

**RTBH**

#### Indexing

- 1 15°/24 positions max.
- 2 22.5°/16 positions max.
- 3 30°/12 positions max.
- 4 36°/10 positions max.

#### Number of Banks\*\*

- 1 1 Bank
- 2 2 Banks
- 3 3 Banks
- 4 4 Banks

**Switch Function Number of Poles or code (binary code = B, complement = C, direct +complement = BC) (first digit), Stop (with=S, without=W), Maximum Position (third & fourth digit)**

- 1S02 SP, 02 positions with stop
- 1S03 SP, 03 positions with stop
- 1S04 SP, 04 positions with stop
- 1S05 SP, 05 positions with stop
- 1S06 SP, 06 positions with stop
- 1S07 SP, 07 positions with stop
- 1S10 SP, 10 positions with stop
- 1W10 SP, 10 positions without stop
- 1S11 SP, 11 positions with stop
- 1S12 SP, 12 positions with stop
- 1W12 SP, 12 positions without stop
- 1S14 SP, 14 positions with stop
- 1S16 SP, 16 positions with stop

- 1W16 SP, 16 positions without stop
- 1S24 SP, 24 positions with stop
- 1W24 SP, 24 positions without stop
- 2S04 DP, 4 positions with stop
- 2S05 DP, 5 positions with stop
- 2S06 DP, 6 positions with stop
- GS\_\_ Gray Code with stop (indicate position)

#### Shaft Diameter & Style\*\*\*

- N Metric shaft .236 (6,0)
- P Standard shaft .250 (6,35)

#### Seal

- A Standard bushing for panel mount
- D Sealed bushing for panel mount

#### Contact Material

- S Silver plated, matte-tin terminal
- P Gold plated, matte-tin terminal

#### Actuator Length

- Z (.984) 25 mm

#### Actuator Option Angle\*

- N None for actuators without a flat
- O 0° angle

- GW\_\_ Gray Code without stop (indicate position) only can be 10,12, 16, 24 based on indexing
- BS\_\_ Binary Code with stop (indicate position)
- BW\_\_ Binary Code without stop (indicate position) only can be 10,12, 16, 24 based on indexing
- CS\_\_ Complement with stop (indicate position)
- CW\_\_ Complement without stop (indicate position) only can be 10,12, 16, 24 based on indexing
- ES\_\_ Direct+Complement with stop (indicate position)
- EW\_\_ Direct+Complement without stop (indicate position) only can be 10,12, 16, 24 based on indexing

\* For other actuator options please contact Customer Service.

\*\* Several functions can be combined, please contact Customer Service.

\*\*\* Metric diameter shafts are only available with metric diameter bushings, standard 1.250 inch diameter shafts are only available with standard 3/8 diameter bushings.



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



# RTBH Series

## 1-2 Pole Coded Rotary Switches

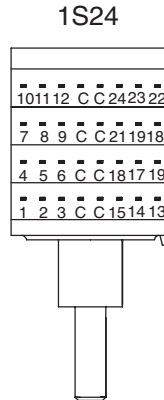
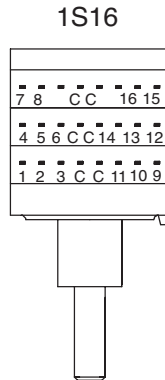
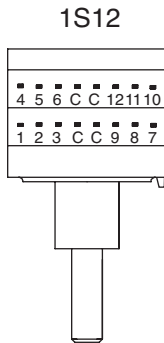
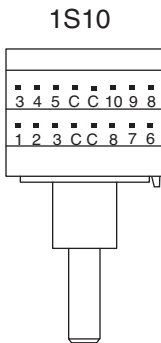
### SWITCH FUNCTION

Switch Function Number of Poles or code (binary code = B, complement = C, direct +complement = BC)  
 (first digit), Stop (with=S, without=W), Maximum Position (third & fourth digit)

- |             |                               |             |  |
|-------------|-------------------------------|-------------|--|
| <b>1S02</b> | SP, 02 positions with stop    | <b>2S04</b> | DP, 4 positions with stop  |
| <b>1S03</b> | SP, 03 positions with stop    | <b>2S05</b> | DP, 5 positions with stop  |
| <b>1S04</b> | SP, 04 positions with stop    | <b>2S06</b> | DP, 6 positions with stop  |
| <b>1S05</b> | SP, 05 positions with stop    | <b>GS__</b> | Gray Code with stop (indicate position)  |
| <b>1S06</b> | SP, 06 positions with stop    | <b>GW__</b> | Gray Code without stop (indicate position) only can be 10,12, 16, 24 based on indexing         |
| <b>1S07</b> | SP, 07 positions with stop    | <b>BS__</b> | Binary Code with stop (indicate position)  |
| <b>1S10</b> | SP, 10 positions with stop    | <b>BW__</b> | Binary Code without stop (indicate position) only can be 10,12, 16, 24 based on indexing       |
| <b>1W10</b> | SP, 10 positions without stop | <b>CS__</b> | Complement with stop (indicate position)   |
| <b>1S11</b> | SP, 11 positions with stop    | <b>CW__</b> | Complement without stop (indicate position) only can be 10,12, 16, 24 based on indexing        |
| <b>1S12</b> | SP, 12 positions with stop    | <b>ES__</b> | Direct+Complement with stop (indicate position)  |
| <b>1W12</b> | SP, 12 positions without stop | <b>EW__</b> | Direct+Complement without stop (indicate position) only can be 10,12, 16, 24 based on indexing |
| <b>1S14</b> | SP, 14 positions with stop    |             |  |
| <b>1S16</b> | SP, 16 positions with stop    |             |  |
| <b>1W16</b> | SP, 16 positions without stop |             |  |
| <b>1S24</b> | SP, 24 positions with stop    |             |  |
| <b>1W24</b> | SP, 24 positions without stop |             |  |

#### 1 Single Pole Function 1S10, 1S12, 1S16, 1S24

	C	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	●	●																								
2	●		●																							
3	●			●																						
4	●				●																					
5	●					●																				
6	●						●																			
7	●							●																		
8	●								●																	
9	●									●																
10	●										●															
11	●											●														
12	●												●													
13	●													●												
14	●														●											
15	●															●										
16	●																●									
17	●																	●								
18	●																		●							
19	●																			●						
20	●																				●					
21	●																					●				
22	●																						●			
23	●																							●		
24	●																								●	



NOTE: Switch depicted from top down onto PCB.



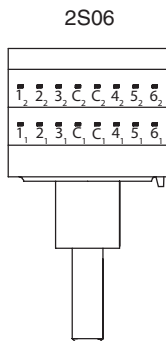
Dimensions are shown: Inch (mm)  
 Specifications and dimensions subject to change

# RTBH Series 1-2 Pole Coded Rotary Switches

## SWITCH FUNCTION

### 2 DOUBLE POLE FUNCTION

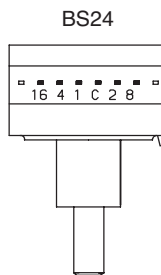
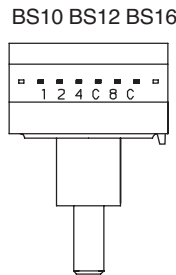
	C <sub>1</sub>	1 <sub>1</sub>	2 <sub>1</sub>	3 <sub>1</sub>	4 <sub>1</sub>	5 <sub>1</sub>	6 <sub>1</sub>	C <sub>2</sub>	1 <sub>2</sub>	2 <sub>2</sub>	3 <sub>2</sub>	4 <sub>2</sub>	5 <sub>2</sub>	6 <sub>2</sub>
1	●	●						●	●					
2	●		●					●		●				
3	●			●				●			●			
4	●				●			●				●		
5	●					●		●					●	
6	●						●	●						●



NOTE: Switch depicted from top down onto PCB.

### B BINARY DIRECT CODE

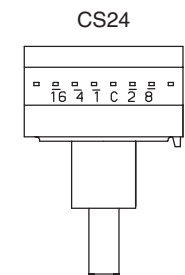
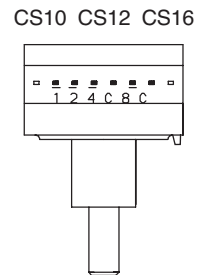
	C	1	2	4	8	16
0	●					
1	●	●				
2	●		●			
3	●	●	●			
4	●			●		
5	●	●			●	
6	●	●	●			
7	●	●	●	●		
8	●				●	
9	●	●				●
10	●	●	●			
11	●	●	●	●		
12	●			●		
13	●	●			●	
14	●	●	●			
15	●	●	●	●		
16	●					●
17	●	●				
18	●		●			
19	●	●				
20	●			●		
21	●	●			●	
22	●	●	●			
23	●	●	●	●		



NOTE: Switch depicted from top down onto PCB.

### C COMPLEMENT BINARY CODE

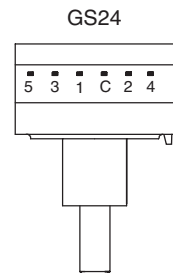
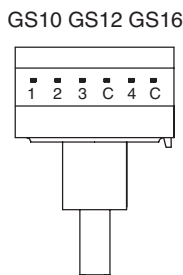
	C	1	2	4	8	16
0	●	●	●	●	●	●
1	●	●	●	●	●	●
2	●	●	●	●	●	●
3	●	●	●	●	●	●
4	●	●	●	●	●	●
5	●	●	●	●	●	●
6	●	●	●	●	●	●
7	●	●	●	●	●	●
8	●	●	●	●	●	●
9	●	●	●	●	●	●
10	●	●	●	●	●	●
11	●	●	●	●	●	●
12	●	●	●	●	●	●
13	●	●	●	●	●	●
14	●	●	●	●	●	●
15	●	●	●	●	●	●
16	●	●	●	●	●	●
17	●	●	●	●	●	●
18	●	●	●	●	●	●
19	●	●	●	●	●	●
20	●	●	●	●	●	●
21	●	●	●	●	●	●
22	●	●	●	●	●	●
23	●	●	●	●	●	●



NOTE: Switch depicted from top down onto PCB.

### G GRAY CODE

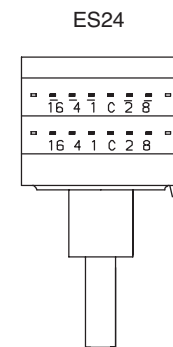
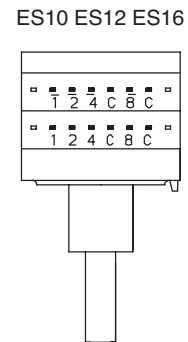
	C	1	2	3	4	5
1	●					
2	●	●				
3	●		●			
4	●	●	●			
5	●			●		
6	●	●	●	●		
7	●				●	
8	●	●	●			●
9	●			●		
10	●	●	●	●		
11	●	●	●	●	●	
12	●					●
13	●	●	●	●		
14	●	●	●	●	●	
15	●			●		
16	●				●	
17	●	●	●	●		●
18	●	●	●	●	●	
19	●					●
20	●	●	●	●		
21	●	●	●	●	●	
22	●	●	●	●	●	
23	●	●	●	●	●	
24	●					●



NOTE: Switch depicted from top down onto PCB.

### E DIRECT AND COMPLEMENT BINARY CODE

	C	1	2	4	8	16	C	1	2	4	8	16
0	●						●	●	●	●	●	●
1	●	●					●	●	●	●	●	●
2	●		●				●	●	●	●	●	●
3	●	●	●				●	●	●	●	●	●
4	●			●			●	●	●	●	●	●
5	●	●			●		●	●	●	●	●	●
6	●	●	●				●	●	●	●	●	●
7	●	●	●	●			●	●	●	●	●	●
8	●				●		●	●	●	●	●	●
9	●	●				●	●	●	●	●	●	●
10	●	●	●				●	●	●	●	●	●
11	●	●	●	●			●	●	●	●	●	●
12	●			●			●	●	●	●	●	●
13	●	●			●		●	●	●	●	●	●
14	●	●	●				●	●	●	●	●	●
15	●	●	●	●			●	●	●	●	●	●
16	●				●		●	●	●	●	●	●
17	●	●				●	●	●	●	●	●	●
18	●		●				●	●	●	●	●	●
19	●	●				●	●	●	●	●	●	●
20	●			●			●	●	●	●	●	●
21	●	●			●		●	●	●	●	●	●
22	●	●	●				●	●	●	●	●	●
23	●	●	●	●			●	●	●	●	●	●



NOTE: Switch depicted from top down onto PCB.



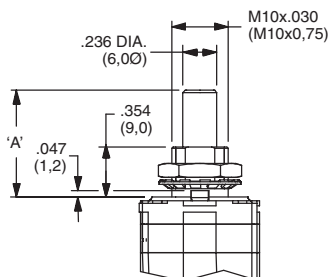
Dimensions are shown: mm  
Specifications and dimensions subject to change



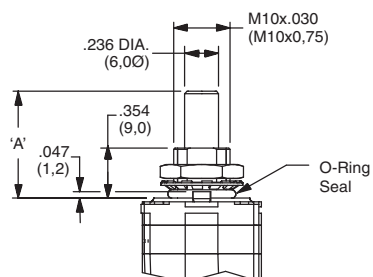
# RTBH Series 1-2 Pole Coded Rotary Switches

## SEAL

**A** STANDARD BUSHING FOR PANEL MOUNT

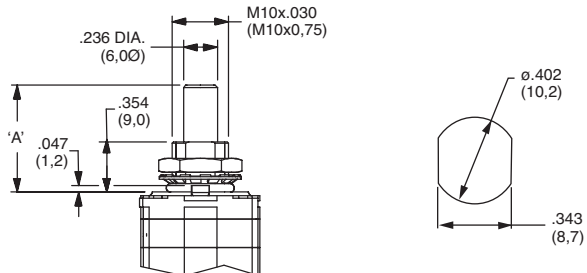


**D** SEALED BUSHING FOR PANEL MOUNT

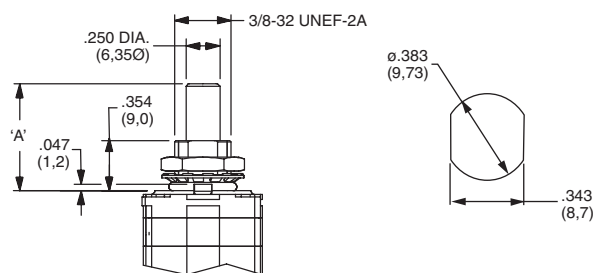


## SHAFT DIAMETER & STYLE

**N** METRIC SHAFT 0.236 (6,0)



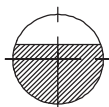
**P** STANDARD SHAFT 0.250 (6,35)



## ACTUATOR OPTION ANGLE

SHAFT WITH FLAT OPTIONS

**N (None)** FOR ACTUATORS WITHOUT A FLAT



**0** 0 ANGLE

SHAFT WITH SLOT OPTIONS



**0** (STD.) 0 ANGLE

## ACTUATOR LENGTH

**Z** (.984) 0,25 mm STANDARD SHAFT

Other lengths available by request.



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



K

Rotary

# C&K RTBH Series 1-2 Pole Coded Rotary Switches

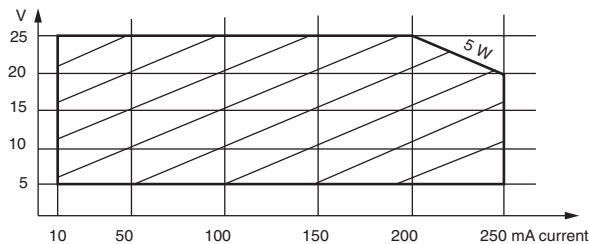
## CONTACT MATERIAL

OPTION CODE	CONTACT AND TERMINAL MATERIAL	RATING
<b>S</b>	SILVER	SWITCH: 250 mA, POWER: 5 VA; CARRY: 5 AMPS
<b>P</b>	GOLD	SWITCH: 20 mA, POWER: 0.2 VA; CARRY: 1 AMP

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

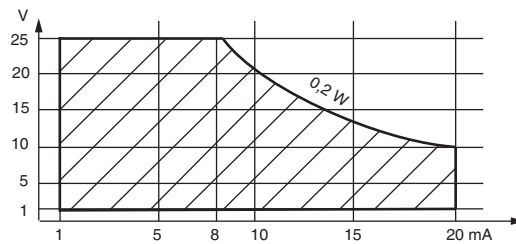
### SWITCHING POWER

**S** (SILVER CONTACTS)



Switching power: 5 W  
 Max. voltage: 25 V  
 Min. voltage: 5 V  
 Max. switching current: 250 mA  
 Min. switching current: 10 mA

**P** (GOLD CONTACTS)



Switching power: 0.2 W  
 Max. voltage: 25 V  
 Min. voltage: 1 V  
 Max. switching current: 20 mA  
 Min. switching current: 1 mA



**K**

Rotary



Dimensions are shown: mm  
 Specifications and dimensions subject to change

# RTBV Series

## 1-2 Pole Coded Rotary Switches



### Features/Benefits

- **Totally sealed**
- **Detent angles, 15 , 22.5 , 30 and 36**
- **Multi pole**
- **Coding functions**
- **Robust construction**
- **RoHS Compliant**

### Typical Applications

- **Telecommunications**
- **Military**
- **Instrumentation**
- **Heavy-duty industrial equipment**

### Electrical Data

SWITCHING MODE:  
 MAX. SWITCHING POWER:  
 MAX. SWITCHING CURRENT:  
 MIN. SWITCHING CURRENT:  
 MAX. CARRYING CURRENT:  
 MAX. VOLTAGE:  
 MIN. VOLTAGE:  
 BOUNCE:  
 CONTACT RESISTANCE after life:  
 DIALECTRIC STRENGTH between contacts or contacts and frame:  
 INSULATION RESISTANCE between contacts or contacts and frame:

### Silver

BBM\*  
 5VA  
 250 mA  
 10 mA  
 5A  
 25V  
 5V  
 <5ms  
 <100mΩ  
 500 V rms  
 >10<sup>9</sup>Ω

### Gold

BBM\*  
 0.2VA  
 20 mA  
 1 mA  
 1A  
 25V  
 1V  
 <5ms  
 <100mΩ  
 500 V rms  
 >10<sup>9</sup>Ω

### Environmental Data

OPERATING TEMPERATURE: -25<sup>o</sup>C to +70<sup>o</sup>C  
 STORAGE TEMPERATURE: -40<sup>o</sup>C to +85<sup>o</sup>C  
 TOTALLY SEALED: Immersion test acc. to MIL R22.097 F and NFC 20631/QF

\* BBM= Break Before Make (non-starting)

### Materials

HOUSING: PBT thermoplastic and PC thermoplastic  
 STATIONARY CONTACTS & TERMINALS: Nickel plated Brass with additional Gold or Silver plating, insert molded in PBT thermoplastic.  
 ROTOR: Printed circuit, gold or silver plated.  
 ACTUATOR: Steel  
 BUSHING: Brass  
 HARDWARE: Stop pin and spring: Stainless steel  
 All models are RoHS compliant and compatible.

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

### Mechanical Data

NUMBER OF BANKS: 1 to 10  
 OPERATING TORQUE: 5 Ncm±30% (with 1 module)  
 MECHANICAL STOP RESISTANCE: >70 Ncm  
 BUSHING MOUNTING TORQUE: 100 Ncm

### 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-25 thru K-29. For additional options not shown in catalog, consult Customer Service Center.



**Designation**  
**RTBV**

**Indexing**  
**1** 15°/24 positions max.  
**2** 22.5°/16 positions max.  
**3** 30°/12 positions max.  
**4** 36°/10 positions max.

**Number of Banks\*\***  
**1** 1 Bank  
**2** 2 Banks  
**3** 3 Banks  
**4** 4 Banks

**Shaft Diameter & Style\*\*\***  
**N** Metric shaft .236 (6,0)  
**P** Standard shaft .250 (6,35)

**Seal**  
**A** Standard bushing for panel mount  
**D** Sealed bushing for panel mount

**Contact Material**  
**S** Silver plated, matte-tin terminal  
**P** Gold plated, matte-tin terminal

**Actuator Length**  
**Z** (.984) 25 mm

**Actuator Option Angle\***  
**N** None for actuators without a flat  
**O** 0° angle

**Switch Function Number of Poles or code (binary code = B, complement = C, direct +complement = BC) (first digit), Stop (with=S, without=W), Maximum Position (third & fourth digit)**

**1S02** SP, 02 positions with stop  
**1S03** SP, 03 positions with stop  
**1S04** SP, 04 positions with stop  
**1S05** SP, 05 positions with stop  
**1S06** SP, 06 positions with stop  
**1S07** SP, 07 positions with stop  
**1S10** SP, 10 positions with stop  
**1W10** SP, 10 positions without stop  
**1S11** SP, 11 positions with stop  
**1S12** SP, 12 positions with stop  
**1W12** SP, 12 positions without stop

**1S14** SP, 14 positions with stop  
**1S16** SP, 16 positions with stop  
**1W16** SP, 16 positions without stop  
**1S24** SP, 24 positions with stop  
**1W24** SP, 24 positions without stop  
**2S04** DP, 4 positions with stop  
**2S05** DP, 5 positions with stop  
**2S06** DP, 6 positions with stop

**GS\_ \_** Gray Code with stop (indicate position)  
**GW\_ \_** Gray Code without stop (indicate position) only can be 10,12, 16, 24 based on indexing  
**BS\_ \_** Binary Code with stop (indicate position)  
**BW\_ \_** Binary Code without stop (indicate position) only can be 10,12, 16, 24 based on indexing  
**CS\_ \_** Complement with stop (indicate position)  
**CW\_ \_** Complement without stop (indicate position) only can be 10,12, 16, 24 based on indexing  
**ES\_ \_** Direct+Complement with stop (indicate position)  
**EW\_ \_** Direct+Complement without stop (indicate position) only can be 10,12, 16, 24 based on indexing

\* For other actuator options please contact Customer Service.  
 \*\* Several functions can be combined, please contact Customer Service.  
 \*\*\* Metric diameter shafts are only available with metric diameter bushings, standard 1.250 inch diameter shafts are only available with standard 3/8 diameter bushings.

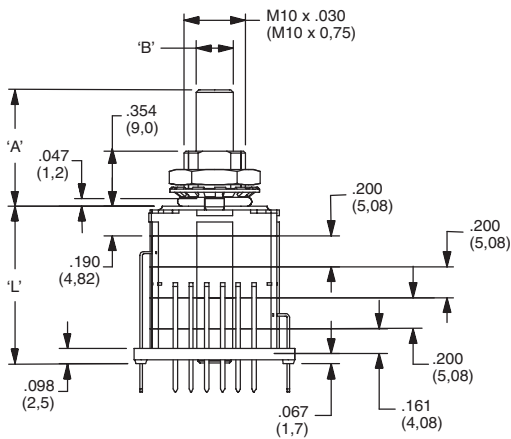
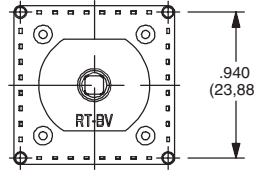
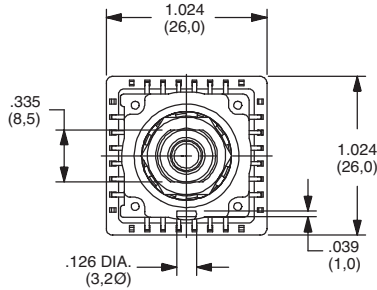


Dimensions are shown: Inch (mm)  
 Specifications and dimensions subject to change

# RTBV Series 1-2 Pole Coded Rotary Switches

DESIGNATION

## RTBV DIMENSIONAL DRAWINGS



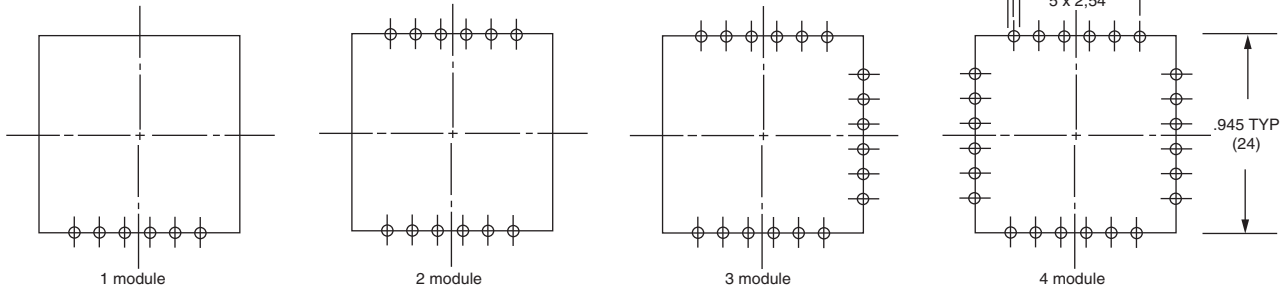
Dimensions L			
Number modules	inch	L mm	
<b>1</b>	0.419	10.65	
<b>2</b>	0.619	15.73	
<b>3</b>	0.819	20.81	
<b>4</b>	1.02	25.89	

Dimensions A	
A: (standard)	0.984 inch (25 mm)

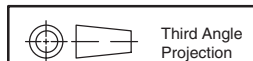
  

Dimensions B	
	0.236 or 0.250 inch (Ø6 or 6.35 mm)



INDEXING

- 1** 15° index/24 positions
- 2** 22.5° index/16 positions
- 3** 30° index/12 positions
- 4** 36° index/10 positions



Dimensions are shown: mm  
Specifications and dimensions subject to change



K

Rotary

# RTBV Series

## 1-2 Pole Coded Rotary Switches

### NUMBER OF BANKS

- 1** 1 BANK
- 2** 2 BANKS
- 3** 3 BANKS
- 4** 4 BANKS

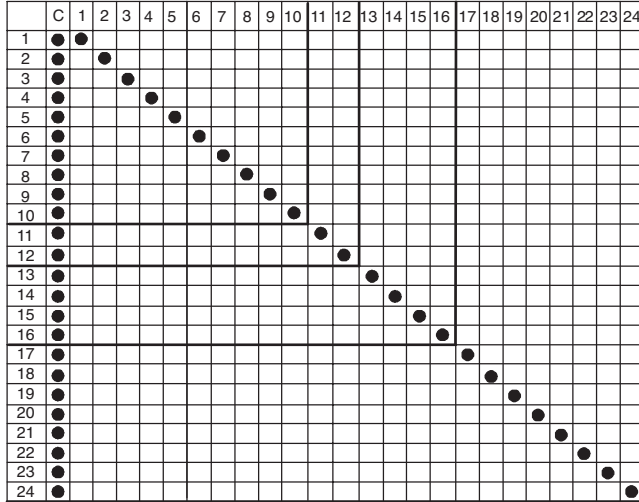
**NOTE:** Several functions can be combined. For more information consult customer service.

### SWITCH FUNCTION

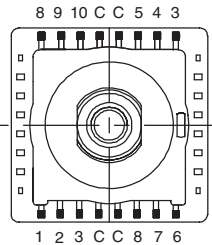
**Switch Function Number of Poles or code (binary code = B, complement = C, direct +complement = BC) (first digit), Stop (with=S, without=W), Maximum Position (third & fourth digit)**

- |   |   |
|---|---|
| <b>1S02</b> SP, 02 positions with stop    | <b>1S24</b> SP, 24 positions with stop  |
| <b>1S03</b> SP, 03 positions with stop    | <b>1W24</b> SP, 24 positions without stop   |
| <b>1S04</b> SP, 04 positions with stop    | <b>2S04</b> DP, 4 positions with stop   |
| <b>1S05</b> SP, 05 positions with stop    | <b>2S05</b> DP, 5 positions with stop   |
| <b>1S06</b> SP, 06 positions with stop    | <b>2S06</b> DP, 6 positions with stop   |
| <b>1S07</b> SP, 07 positions with stop    | <b>GS_ _</b> Gray Code with stop (indicate position)  |
| <b>1S10</b> SP, 10 positions with stop    | <b>GW_ _</b> Gray Code without stop (indicate position) only can be 10,12, 16, 24 based on indexing         |
| <b>1W10</b> SP, 10 positions without stop | <b>BS_ _</b> Binary Code with stop (indicate position)  |
| <b>1S11</b> SP, 11 positions with stop    | <b>BW_ _</b> Binary Code without stop (indicate position) only can be 10,12, 16, 24 based on indexing       |
| <b>1S12</b> SP, 12 positions with stop    | <b>CS_ _</b> Complement with stop (indicate position)   |
| <b>1W12</b> SP, 12 positions without stop | <b>CW_ _</b> Complement without stop (indicate position) only can be 10,12, 16, 24 based on indexing        |
| <b>1S14</b> SP, 14 positions with stop    | <b>ES_ _</b> Direct+Complement with stop (indicate position)  |
| <b>1S16</b> SP, 16 positions with stop    | <b>EW_ _</b> Direct+Complement without stop (indicate position) only can be 10,12, 16, 24 based on indexing |
| <b>1W16</b> SP, 16 positions without stop |   |

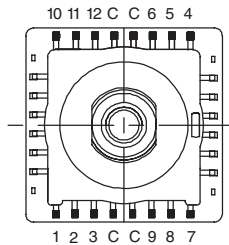
#### 1 Single Pole Function 1S10, 1S12, 1S16, 1S24



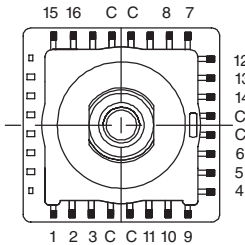
**1S10**



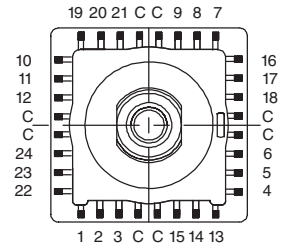
**1S12**



**1S16**



**1S24**



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



K

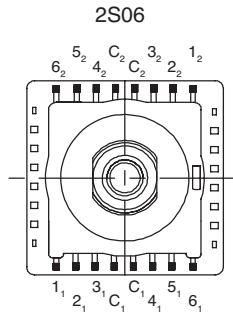
Rotary

# RTBV Series 1-2 Pole Coded Rotary Switches

## SWITCH FUNCTION

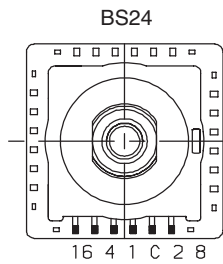
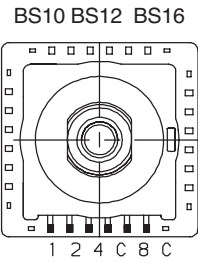
### 2 DOUBLE POLE FUNCTION

	C <sub>1</sub>	1 <sub>1</sub>	2 <sub>1</sub>	3 <sub>1</sub>	4 <sub>1</sub>	5 <sub>1</sub>	6 <sub>1</sub>	C <sub>2</sub>	1 <sub>2</sub>	2 <sub>2</sub>	3 <sub>2</sub>	4 <sub>2</sub>	5 <sub>2</sub>	6 <sub>2</sub>
1	●	●						●	●					
2	●		●					●		●				
3	●			●				●			●			
4	●				●			●				●		
5	●					●		●					●	
6	●						●	●						●



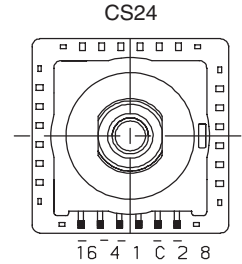
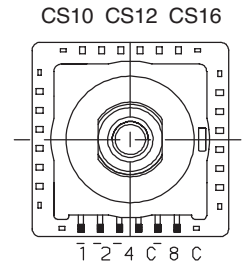
### B BINARY DIRECT CODE

	C	1	2	4	8	16
0	●	●	●	●	●	●
1	●	●	●	●	●	
2	●	●	●	●		
3	●	●	●	●		
4	●	●	●		●	
5	●	●	●			●
6	●	●	●			
7	●	●	●			
8	●	●		●		
9	●	●			●	
10	●	●				●
11	●	●				
12	●		●			
13	●		●			
14	●		●			
15	●		●			
16	●			●		
17	●				●	
18	●					●
19	●					
20	●					
21	●					
22	●					
23	●					



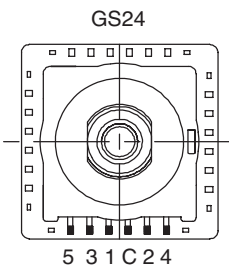
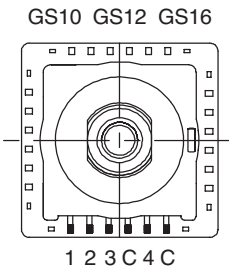
### C COMPLEMENT BINARY CODE

	c	1̄	2̄	4̄	8̄	16̄
0	●	●	●	●	●	●
1	●	●	●	●	●	
2	●	●	●	●		
3	●	●	●	●		
4	●	●	●		●	
5	●	●	●			●
6	●	●	●			
7	●	●	●			
8	●	●		●		
9	●	●			●	
10	●	●				●
11	●	●				
12	●		●			
13	●		●			
14	●		●			
15	●		●			
16	●			●		
17	●				●	
18	●					●
19	●					
20	●					
21	●					
22	●					
23	●					



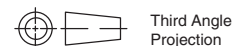
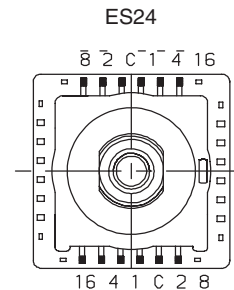
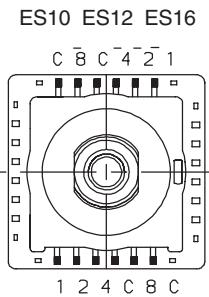
### G GRAY CODE

	C	1	2	3	4	5
1	●	●	●	●	●	●
2	●	●	●	●	●	
3	●	●	●	●	●	
4	●	●	●	●		●
5	●	●	●	●		
6	●	●	●	●		
7	●	●	●	●		
8	●	●	●		●	
9	●	●	●			●
10	●	●	●			
11	●	●	●			
12	●		●			
13	●		●			
14	●		●			
15	●		●			
16	●			●		
17	●				●	
18	●					●
19	●					
20	●					
21	●					
22	●					
23	●					
24	●					



### E DIRECT AND COMPLEMENT BINARY CODE

	C	1	2	4	8	16	c	1̄	2̄	4̄	8̄	16̄
0	●	●	●	●	●	●	●	●	●	●	●	●
1	●	●	●	●	●		●	●	●	●	●	
2	●	●	●	●			●	●	●	●		
3	●	●	●	●			●	●	●	●		
4	●	●	●		●		●	●	●		●	
5	●	●	●			●	●	●	●			●
6	●	●	●				●	●	●			
7	●	●	●				●	●	●			
8	●	●		●			●	●		●		
9	●	●			●		●	●			●	
10	●	●				●	●	●				●
11	●	●					●	●				
12	●		●				●	●				
13	●		●				●	●				
14	●		●				●	●				
15	●		●				●	●				
16	●			●			●	●				
17	●				●		●	●				
18	●					●	●	●				
19	●						●	●				
20	●						●	●				
21	●						●	●				
22	●						●	●				
23	●						●	●				



Third Angle  
Projection

Dimensions are shown: mm  
Specifications and dimensions subject to change



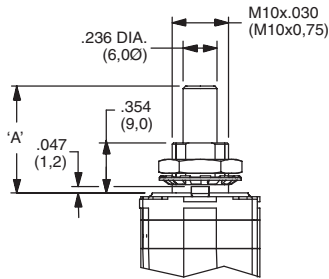
K

Rotary

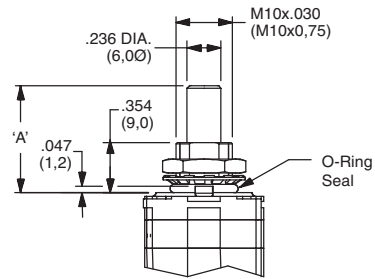
# RTBV Series 1-2 Pole Coded Rotary Switches

## SEAL

**A** STANDARD BUSHING FOR PANEL MOUNT

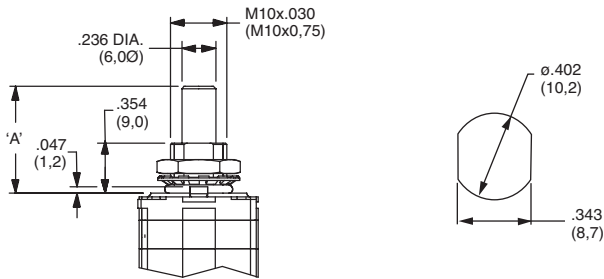


**D** SEALED BUSHING FOR PANEL MOUNT

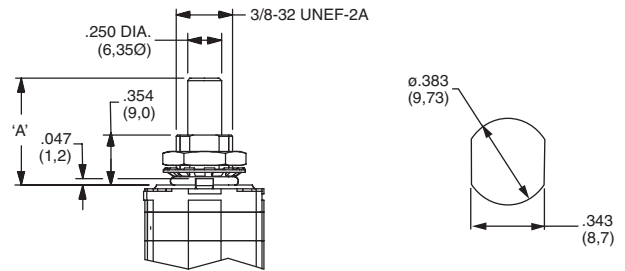


## SHAFT DIAMETER & STYLE

**N** METRIC SHAFT 0.236 (6,0)



**P** STANDARD SHAFT 0.250 (6,35)

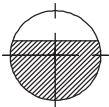


\*\*\*Note: Metric diameter shafts are only available with metric diameter bushings, standard 1.250 inch diameter shafts are only available with standard 3/8 diameter bushings.

## ACTUATOR OPTION ANGLE

SHAFT WITH FLAT OPTIONS

**N (None)** FOR ACTUATORS WITHOUT A FLAT



**0** 0 ANGLE

SHAFT WITH SLOT OPTIONS



**0** 0 ANGLE

## ACTUATOR LENGTH

**Z** (.984) 0,25 mm STANDARD SHAFT

Other lengths available by request.



Third Angle  
Projection

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



K

Rotary

# RTBV Series 1-2 Pole Coded Rotary Switches

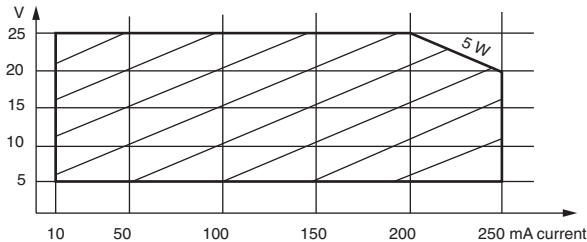
## CONTACT MATERIAL

OPTION CODE	CONTACT AND TERMINAL MATERIAL	RATING
<b>S</b>	SILVER	SWITCH: 250 mA, POWER: 5 VA; CARRY: 5 AMPS
<b>P</b>	GOLD	SWITCH: 20 mA, POWER: 0.2 VA; CARRY: 1 AMP

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

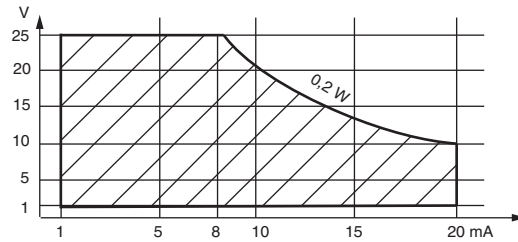
### SWITCHING POWER

**S** (SILVER CONTACTS)



Switching power: 5 W  
 Max. voltage: 25 V  
 Min. voltage: 5 V  
 Max. switching current: 250 mA  
 Min. switching current: 10 mA

**P** (GOLD CONTACTS)



Switching power: 0.2 W  
 Max. voltage: 25 V  
 Min. voltage: 1 V  
 Max. switching current: 20 mA  
 Min. switching current: 1 mA



**K**

Rotary

# R Series ROTA-SLIDE® Rotary Switches



## Features/Benefits

- Multi-pole and multi-position
- Positive detent
- Panel and PCB mounting
- Enclosed
- RoHS Compliant

## Typical Applications

- Ceiling fans
- Industrial equipment
- Portable tools



## Specifications

CONTACT RATING: Q contact material: 5 AMPS @ 125 V AC; 2.5 AMPS @ 250 V AC; 0.5 AMP @ 125 V DC; 1/8 HP @ 125 and 250 VAC (UL/CSA).

See page L-36 for additional ratings.

ELECTRICAL LIFE: 10,000 make-and-break cycles at full load.

CONTACT RESISTANCE: Below 10 m Ω typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: 10<sup>9</sup> Ω min.

DIELECTRIC STRENGTH: 1,000 Vrms min. @ sea level.

INDEXING: 36°-one contact models, 10 position max.; two contact models, 5 position max.

OPERATING & STORAGE TEMPERATURE: -30°C to 95°C

## Materials

HOUSING & BUSHING: 6/6 nylon (UL 94V-2).

ACTUATOR: 6/6 nylon (UL 94V-2).

CONTACTS & TERMINALS: Q contact material: Copper, silver plated.

See page K-36 for additional contact materials.

CONTACT SPRING: Music wire or stainless steel.

MOUNTING NUT: Steel, zinc plated.

TERMINAL SEAL: Epoxy.

**NOTE:** Any models supplied with Q or B 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.

## 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-31 and K-32. For additional options not shown in catalog, consult Customer Service Center.



### Switch Function

- R100** SP, 36° Index, 10 pos. no stops
- R103** SP, 36° Index, 3 pos.
- R104** SP, 36° Index, 4 pos.
- R108** SP, 36° Index, 8 pos.
- R203** DP, 36° Index, 3 pos.
- R204** DP, 36° Index, 4 pos.
- R205** DP, 36° Index, 5 pos.

### Actuator

- 07** .500" high with .156" flat
- 05** .375" high with .156" flat
- 15** Screwdriver slot without bushing

### Mounting Style

- RR** 3/8-32 threaded bushing
- RN** PC without bushing
- RS** PC without bushing

### Terminations

- 03** Solder lug with hole
- 01** Solder lug with notch
- 02** PC Thru-hole
- WC** Wire Lead

### Contact Material

- Q** Silver
- B** Gold

### Seal

- NONE** No seal
- E** Epoxy seal



K

Rotary



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

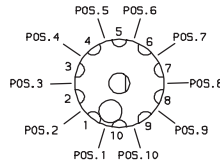
# R Series ROTA-SLIDE® Rotary Switches

## SWITCH FUNCTION



SP MODELS 36° INDEXING			
NO. POLES	MODEL NO.	SWITCH FUNCTION	TERMINALS
SP	<b>R100</b>	10 Position No Stops	All Terminals
	<b>R103</b>	3 Position	10-1-2-3
	<b>R104</b>	4 Position	10-1-2-3-4
	<b>R108</b>	8 Position	10-1-2-3-4-5-6-7-8

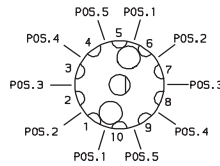
### SP MODELS 36° INDEXING SCHEMATIC



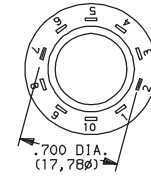
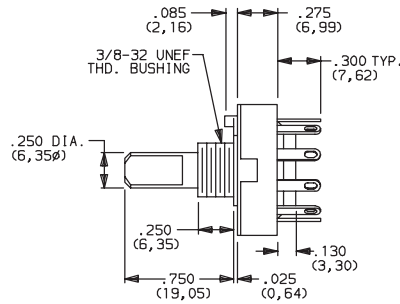
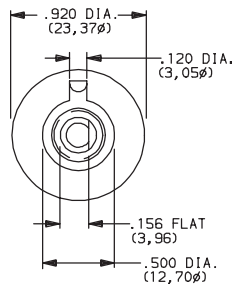
DP MODELS 36° INDEXING			
NO. POLES	MODEL NO.	SWITCH FUNCTION	TERMINALS
DP	<b>R203</b>	3 Position	10-1-2-3, 5-6-7-8
	<b>R204</b>	4 Position	All Terminals
	<b>R205</b>	5 Position	All Terminals

All models with all options when ordered with 'Q' contact material.

### DP MODELS 36° INDEXING SCHEMATIC



**NOTE:** Break-before-make contacts. Actuators and contacts are shown in position 1. No common terminal is present. Switching function is provided by movable contacts shorting adjacent pairs of stationary contacts.



TERM. NOS.  
MOLDED ON HOUSING

Part number show: R10007RR03Q

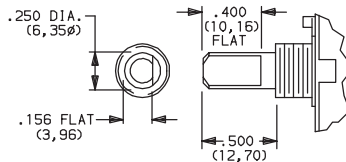
## ACTUATOR



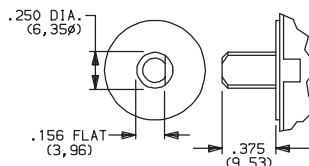
**07** .500" HIGH WITH .156" FLAT

**05** .375" HIGH WITH .156" FLAT

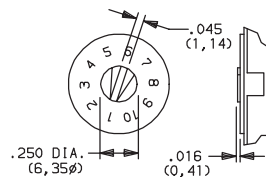
**15** SCREWDRIVER SLOT



Shown with 'RR' mounting style.  
For mounting styles without bushing,  
add .250 (6,35) to actuator length.



Shown with 'RN' mounting style.



Arrow on actuator marked red (std.).  
Shown with 'RS' mounting style.



Third Angle  
Projection

Dimensions are shown: mm  
Specifications and dimensions subject to change

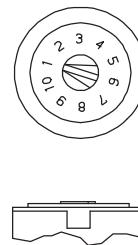
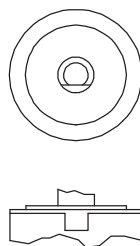
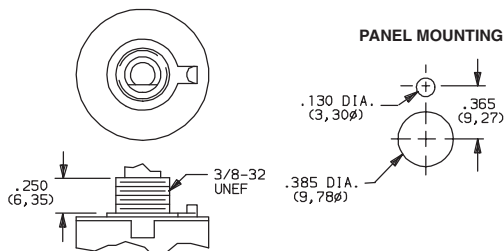
# R Series ROTA-SLIDE® Rotary Switches

## MOUNTING STYLE

**RR** 3/8-32 THREADED BUSHING

**RN** PC WITHOUT BUSHING

**RS** PC SCREWDRIVER SLOT WITHOUT BUSHING



Position numbers and characters are molded on housing.

Mounting nut included (part number 175000100).

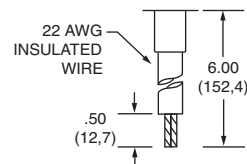
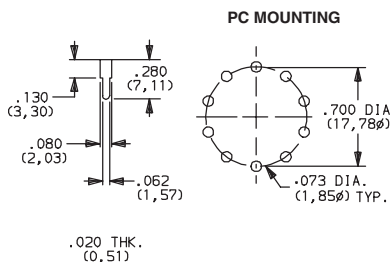
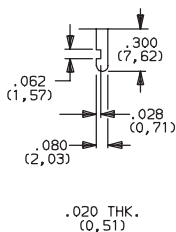
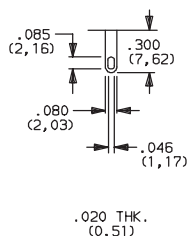
## TERMINATIONS

**03** SOLDER LUG WITH HOLE

**01** SOLDER LUG WITH NOTCH

**02** PC THRU-HOLE

**WC** WIRE LEAD



## CONTACT MATERIAL


OPTION CODE	CONTACT AND TERMINAL MATERIAL	RATING	
<b>Q</b>	SILVER <sup>2</sup>	POWER	5 AMPS @ 125 V AC; 2.5 AMPS @ 250 V AC; 0.5 AMP @ 125 V DC (UL/CSA); 1/8 HP @ 125 and 250 VAC (UL/CSA).
<b>B</b>	GOLD <sup>1</sup>	LOW LEVEL/DRY CIRCUIT	0.4 VA MAX. @ 20 V AC or DC MAX.

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

<sup>1</sup> CONTACTS & TERMINALS: Copper, with gold plate over nickel plate.

<sup>2</sup> CONTACTS & TERMINALS: Copper, silver plated. (Standard with all termination options.)

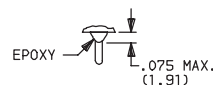
**NOTE:** Any models supplied with Q, B or G contact material are RoHS compliant.

All models  with all options when ordered with 'Q' contact material.

## SEAL

**NONE** NO SEAL

**E** EPOXY SEAL



Third Angle  
Projection

Dimensions are shown: Inch (mm)

Specifications and dimensions subject to change

**C&K**



K

Rotary

# F Series Miniature ROTA-SLIDE® Rotary Switches

## Features/Benefits

- Multi-pole and multi-position
- Panel and PCB mounting
- Positive detent
- Value added capability
- RoHS Compliant

## Typical Applications

- Small appliances
- Testing fixtures
- Safety equipment



## Specifications

CONTACT RATING: Q contact material: 4 AMPS @ 125 V AC or 28 V DC; 2 AMPS @ 250 V AC (UL/CSA). See page L-40 for additional ratings.

ELECTRICAL LIFE: 10,000 make-and-break cycles at full load.

CONTACT RESISTANCE: Below 10 m Ω typ. initial @ 2-4 V DC, 100 mA, for both silver and gold plated contacts.

INSULATION RESISTANCE: 10<sup>9</sup> Ω min.

DIELECTRIC STRENGTH: 1,000 Vrms min. @ sea level.

INDEXING: 45° or 90° -one contact models; two contact models, 4 pos. max. Models with common terminal -90°, 4 pos. max.

OPERATING & STORAGE TEMPERATURE: -30°C to 65°C

## Materials

HOUSING & BUSHING: 6/6 Nylon (UL 94V-2).

ACTUATOR: 6/6 nylon (UL 94V-2).

CONTACTS: Q contact material: Copper, silver plated. See page K-40 for additional contact materials.

TERMINALS: Q contact material: Copper, silver plated. See page K-39 for additional contact materials.

CONTACT SPRING: Music wire or stainless steel.

MOUNTING NUT: Brass, nickel plated.

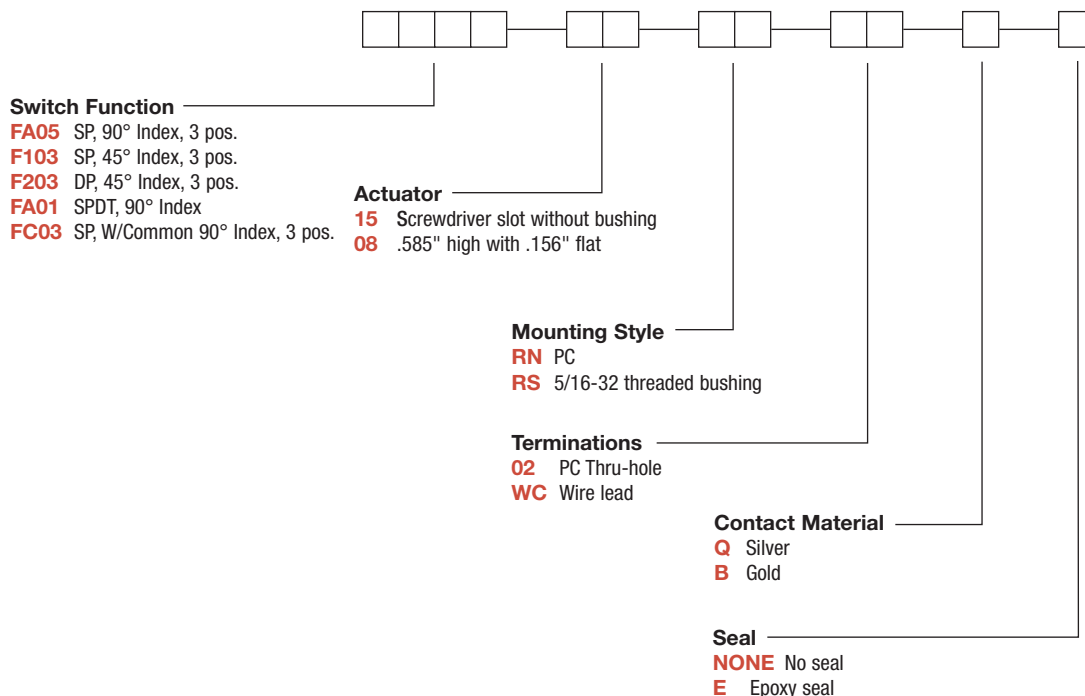
TERMINAL SEAL: Epoxy.

**NOTE:** Any models supplied with Q or B 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.

## 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-34 thru K-36. For additional options not shown in catalog, consult Customer Service Center.

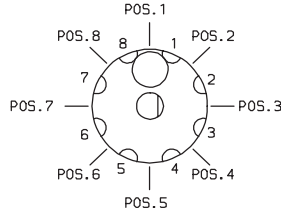


# F Series Miniature ROTA-SLIDE® Rotary Switches

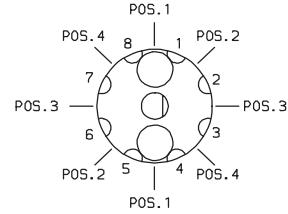
## SWITCH FUNCTION

45° INDEXING			
NO. POLES	MODEL NO.	SWITCH FUNCTION	TERMINALS
SP	<b>F103</b>	3 Position	8-1-2-3*
DP	<b>F203</b>	3 Position	All Terminals

### 45° INDEXING SCHEMATICS



F1XX MODELS



F2XX MODELS

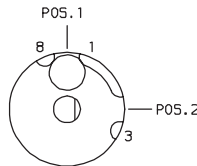
Break-before-make contacts. Terminal numbers are molded on bottom of housing. Actuators are shown in position 1.

**NOTE:** \*Switches with '02' PC terminations have additional terminal no. 5 as switch support only. This terminal is not connected electrically inside switch.

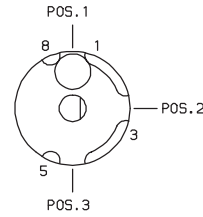
F1XX, F2XX models: No common terminal is present. Switching function is provided by movable contacts shorting adjacent pairs of stationary contacts.

90° INDEXING			
NO. POLES	MODEL NO.	SWITCH FUNCTION	TERMINALS
SP	<b>FA01</b>	SPDT	8-1-3
	<b>FA05</b>	3 Position	8-1-3-5
SP WITH COMMON	<b>FC03</b>	3 Position	C-1,C-2,C-3

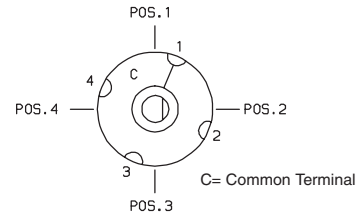
### 90° INDEXING SCHEMATICS



FA01 MODEL



FA05 MODEL



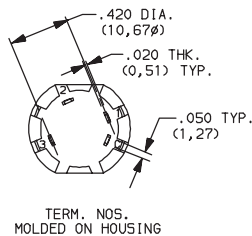
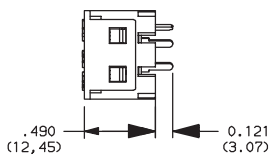
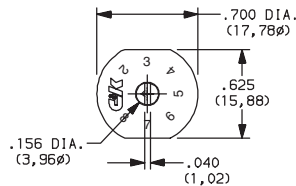
FCXX MODEL

Break-before-make contacts. Terminal numbers are molded on bottom of housing. Actuators are shown in position 1.

FCXX models: Common terminal is present.

FAXX models: No common terminal is present. Switching function is provided by movable contacts shorting adjacent pairs of stationary contacts.

**NOTE:** \*Switches with '02' PC terminations have additional terminal no. 5 as switch support only. This terminal is not connected electrically inside switch.



Part number show: FC0315RN02Q



Dimensions are shown: Inch (mm)

Specifications and dimensions subject to change



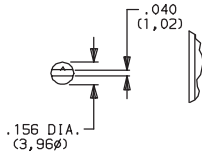
K

Rotary

# F Series Miniature ROTA-SLIDE® Rotary Switches

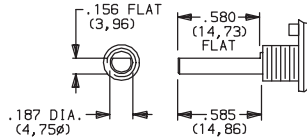
## ACTUATOR

**15** SCREWDRIVER SLOT WITHOUT BUSHING



Shown with 'RN' mounting style; not available with 'RS' mounting style or FCXX models.

**08** .585" HIGH WITH .156" FLA



Must be ordered with 'RS' mounting style.

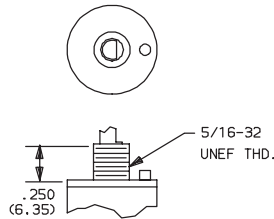
## MOUNTING STYLE

**RN** PC



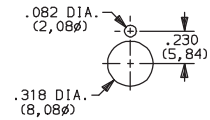
PC mount, no bushing, position numbers molded standard. Shown with '15' actuator; not available with '08' actuator or FCXX models.

**RS** 5/16-32 THREADED BUSHING



Panel mount, with 5/16 in.-32 threaded bushing. Mounting nut (P/N 175020201) included. Must be ordered with '08' actuator option.

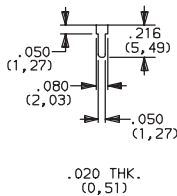
PANEL MOUNTING



5/16 IN. BUSHING

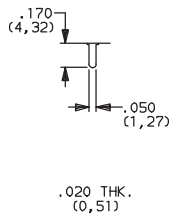
## TERMINATIONS

**02** PC THRU-HOLE



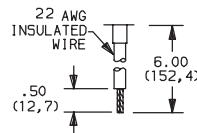
**F1XX, F2XX & FAXX Models**

**02** PC THRU-HOLE



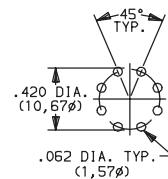
**FCXX Models**

**WC** WIRE LEAD



Black wire standard, other colors and lengths available, consult Customer Service Center. UL style 1015.

PC MOUNTING



Dimensions are shown: mm  
Specifications and dimensions subject to change



K

Rotary

# F Series Miniature ROTA-SLIDE® Rotary Switches

## CONTACT MATERIAL


OPTION CODE	CONTACT AND TERMINAL MATERIAL	RATING	
<b>Q</b>	SILVER <sup>2</sup>	POWER	4 AMPS @ 125 V AC or 28 V DC; 2 AMPS @ 250 V AC (UL/CSA).
<b>B</b>	GOLD <sup>1</sup>	LOW LEVEL/DRY CIRCUIT	0.4 VA MAX. @ 20 V AC or DC MAX.

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

<sup>1</sup> CONTACTS & TERMINALS: Copper, with gold plate over nickel plate.

<sup>2</sup> CONTACTS & TERMINALS: Copper, silver plated (standard with all termination options).

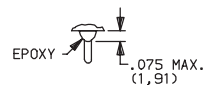
**NOTE:** Any models supplied with Q or B contact material are RoHS compliant.

All models  with all options when ordered with 'Q' contact material.

## SEAL

**NONE** NO SEAL

**E** EPOXY SEAL



Not available on FCXX models.



**K**

Rotary



Third Angle  
Projection

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

# H Series Power ROTA-SLIDE® Rotary Switches

## Features/Benefits

- Multi-pole and multi-position
- Positive detent
- Power switching up to 12 AMPS
- Value added capability
- RoHS Compliant

## Typical Applications

- Small appliances
- Industrial equipment
- Elevators



## Specifications

CONTACT RATING: 12 Amps @ 125 V AC; 6 AMPS @ 250 V AC;  
1 AMP @ 125 V DC (UL/CSA).

ELECTRICAL LIFE: 10,000 make-and-break cycles at full load.

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

DIELECTRIC STRENGTH: 1,000 Vrms min. @ sea level.

INDEXING: 45°-one contact models, 8 positions max.; two contact models, 4 positions max.

OPERATING & STORAGE TEMPERATURE: -30°C to 95°C

## Materials

HOUSING & BUSHING: 6/6 nylon (UL 94V-2).

ACTUATOR: 6/6 nylon (UL 94V-2).

CONTACTS & TERMINALS: Copper, silver plated.

CONTACT SPRING: Music wire or stainless steel.

MOUNTING NUT: Steel, zinc plated.

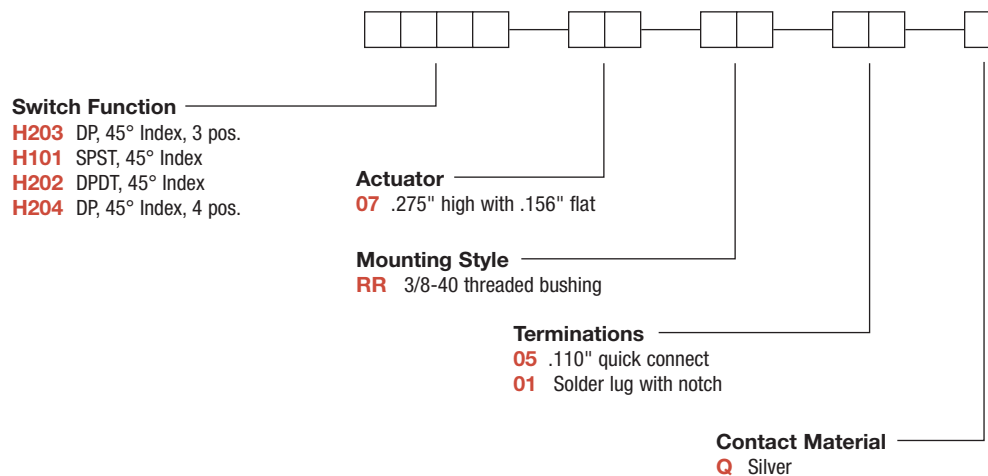
TERMINAL SEAL: Epoxy.

**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.

## 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-38 thru K-39. For additional options not shown in catalog, consult Customer Service Center.



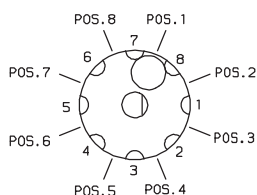
# H Series Power ROTA-SLIDE® Rotary Switches

## SWITCH FUNCTION

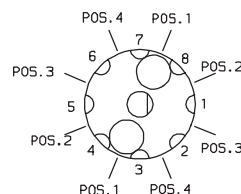
SP MODELS 45° INDEXING			
NO. POLES	MODEL NO.	SWITCH FUNCTION	TERMINALS
SP	<b>H101</b>	SPST	8-1

DP MODELS 45° INDEXING			
NO. POLES	MODEL NO.	SWITCH FUNCTION	TERMINALS
DP	<b>H202</b>	DPDT	7-8-1, 3-4-5
	<b>H203</b>	3 Position	All Terminals
	<b>H204</b>	4 Position	All Terminals

SP MODELS 45° INDEXING SCHEMATIC



DP MODELS 45° INDEXING SCHEMATIC



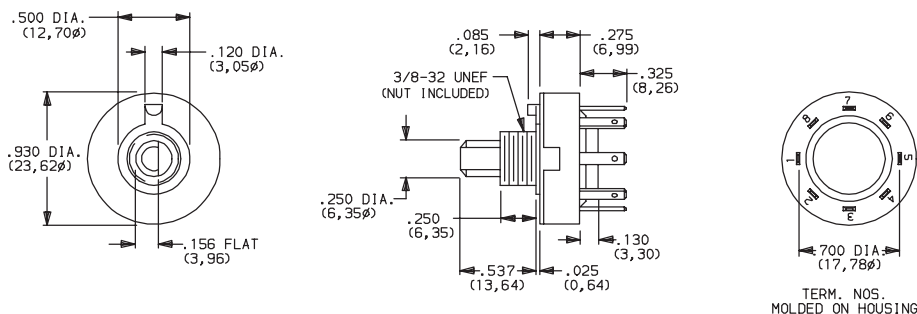
NOTE: Break-before-make contacts. Terminal numbers are molded on bottom of housing. Actuators and contacts are shown in position 1. No common terminal is present. Switching function is provided by movable contacts shorting adjacent pairs of stationary contacts.

All models with all options.



K

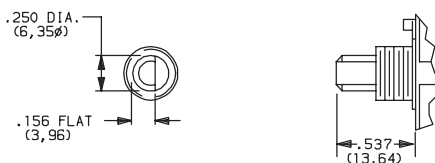
Rotary



Part number shown: H10107RR05Q

## ACTUATOR

**07** .275" HIGH WITH .156" FLAT



Third Angle Projection

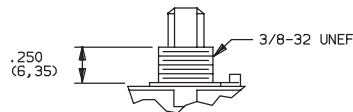
Dimensions are shown: Inch (mm)  
Specifications and dimensions subject to change



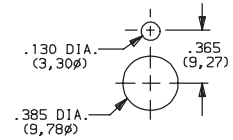
# H Series Power ROTA-SLIDE® Rotary Switches

## MOUNTING STYLE

**RR** 3/8-32 THREADED BUSHING



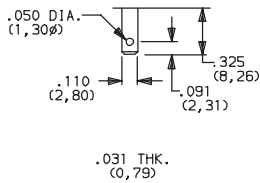
**PANEL MOUNTING**



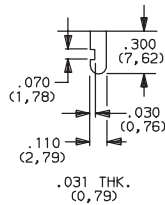
Mounting nut included (part number 175000100).

## TERMINATIONS

**05** SOLDER LUG WITH HOLE



**01** SOLDER LUG WITH NOTCH



Not available on models with 90° indexing.

## CONTACT MATERIAL

OPTION CODE	CONTACT AND TERMINAL MATERIAL	RATING	
		POWER	12 AMPS @ 125 V AC; 6 AMPS @ 250 V AC; 1 AMP @ 125 V DC.
<b>Q</b>	SILVER <sup>1</sup>		

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

<sup>1</sup> CONTACTS & TERMINALS: Copper, silver plated.

**NOTE:** Any models supplied with Q contact material are RoHS compliant.

All models   with all options.



**K**

Rotary



Dimensions are shown: mm  
Specifications and dimensions subject to change

