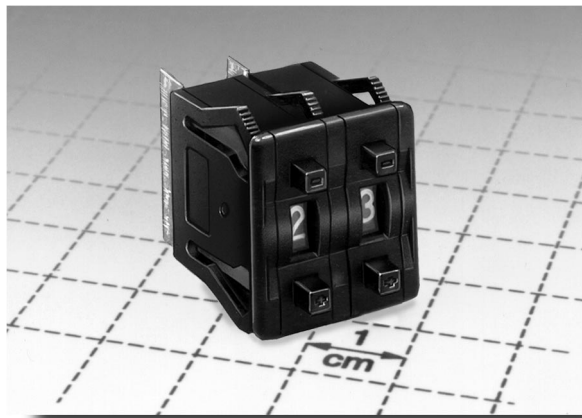


# 3P Series Miniature Pushwheel Switches



## Features/Benefits

- Snap-in front mount design for easy assembly
- 10 position models available
- Illuminated backlighting available

## Typical Applications

- Test & measurement equipment
- Industrial machinery
- Computer peripherals

## Build-A-Switch

Our easy Build-A-Switch concept allows you to mix and match options to create the switch you need. Below is a complete listing of options shown in catalog. To order, simply select desired option from each category and place in the appropriate box. Available options are shown and described on pages J-19 thru J-21. For additional options not shown in catalog, consult Customer Service Center.



Thumbwheel & Pushwheel

Typical Example: **3 P** — **4** — **2 1** — **0** — **0** — **0** — **0** —

### Series

**3P** (STD.) Miniature pushwheel

### Number of Sections

- 0** Switch section
- 1** 1 Switch section
- 2** 2 Switch sections
- 3** 3 Switch sections
- 4** 4 Switch sections

### Function Code

- 11** Decimal
- 21** BCD 1-2-4-8
- 23** Complement of BCD 1-2-4-8
- 65** SPDT repeating

### Mounting Style

- 0** Snap-in, front mount
- 3** Snap-in, front mount

### Terminations

- 0** (STD.) Short PCB
- 1** Extended PCB
- 3** Short PCB with solder pins
- 9** Any combination
- A** Extended PCB with solder pins
- L** Right angle, no components
- P** Right angle with solder pins
- W** Right angle PC board with provision for components
- Y** Right angle with solder pins

### Color/Marking/Stops

- 0** Matte black housing, gloss black wheel, white marking, black pushbutton
- 1** Matte gray housing, gloss black wheel, white marking, black pushbutton
- 9** Combination of body colors, wheel colors, marking and/or stops

### Dust Lens

- 0** (STD.) No lens
- 2** Dust lens

### Illumination

- NONE** (STD.) No illumination
- 3** Red LED
- 5** Yellow LED
- 6** Green LED

## Specifications

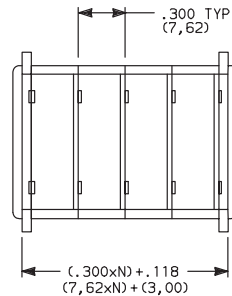
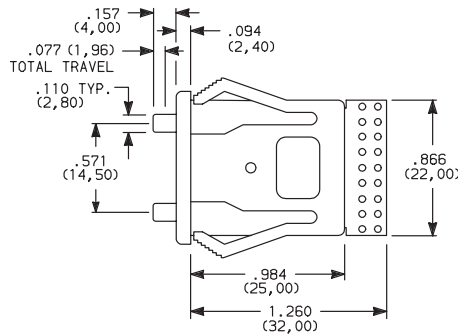
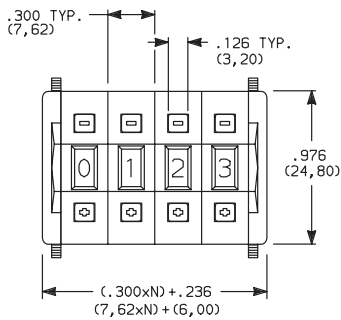
CONTACT RATING:  
 CARRY: 1 AMP continuous.  
 SWITCH: 0.4 VA max., 100 mA max., 28 V DC max.  
 OPERATING VOLTAGE: 50 mV to 28 V DC.  
 ELECTRICAL LIFE: 100,000 actuations.  
 CONTACT RESISTANCE: Below 300 milliohms typ. @  
 2-4 V DC, 100 mA.  
 INSULATION RESISTANCE: 10<sup>9</sup> ohms min. (dry).  
 DIELECTRIC STRENGTH: 500 V RMS min. @ sea level  
 between common terminal and any output.  
 OPERATING TEMPERATURE: -10°C to 65°C.

## Materials

HOUSING: Polycarbonate (UL 94V-0).  
 PUSHWHEEL: Polycarbonate (UL 94V-0).  
 PUSHBUTTON: Polycarbonate (UL 94V-0).  
 ROTOR CONTACTS: Gold over nickel over copper alloy.  
 STATOR CONTACTS: Hard gold over nickel over copper  
 on epoxy fiberglass.  
**NOTE:** Specifications and materials listed above are general specifications for switches  
 with standard options. For information on specific and custom switches, consult Customer  
 Service Center.

## SERIES

### 3P (STD.) MINIATURE PUSHWHEEL SWITCH



N = Number of sections.



3P4210000

PART NUMBER	NO. SECTIONS	NO. POSITIONS
3P4210000	4	10

## NUMBER OF SECTIONS

- 0** Switch section only, no endplates.
- 1-4** Number of switch sections in assembly, includes endplates.

NOTE: Endplates and blank sections available separately, see section L.

## FUNCTION CODE

**11** DECIMAL, SP, 10 POSITION

WHEEL	SIGNALS CONNECTED TO COMMON SIGNAL C										
	0	1	2	3	4	5	6	7	8	9	C
0	●										●
1		●									●
2			●								●
3				●							●
4					●						●
5						●					●
6							●				●
7								●			●
8									●		●
9										●	●
	2	3	4	5	6	7	8	9	10	11	12
	TERM. LOCATION										

Available Terminations: L, P, W, Y  
 See fig. 3, page J-21.

**21** BCD 1-2-4-8, 10 POSITION

WHEEL	SIGNALS CONN. TO COMM. SIG. C				
	1	2	4	8	C
0					●
1	●				●
2		●			●
3	●	●			●
4			●		●
5	●			●	●
6		●		●	●
7	●	●	●		●
8				●	●
9	●			●	●
	1	3	5	7	9
	TERM. LOCATION				

Available Terminations: A, L, P, W, Y, 0, 1, 3  
 See figs. 2 & 3, page J-21.

**23** COMPLEMENT OF BCD 1-2-4-8, 10 POSITION

WHEEL	SIGNALS CONN. TO COMM. SIG. C				
	1	2	4	8	C
0	●	●	●	●	●
1		●			●
2	●				●
3		●	●	●	●
4			●		●
5	●			●	●
6		●		●	●
7	●	●	●		●
8				●	●
9	●			●	●
	1	7	9	3	5
	TERM. LOCATION				

Available Terminations: A, L, P, W, Y, 0, 1, 3  
 See figs. 2 & 3, page J-21.

**65** SPDT REPEATING, 10 POSITION ZERO (0) AND FIVE (5) ALTERNATING

WHEEL	SIG. CONN. TO C		
	0	5	C
0	●	●	●
1		●	●
2	●	●	●
3		●	●
4	●	●	●
5		●	●
6	●	●	●
7		●	●
8	●	●	●
9		●	●
	3	5	7
	TERM. LOC.		

Available Terminations: A, L, P, W, Y, 0, 1, 3  
 See figs. 2 & 3, page J-21.

NOTE: For terminal location diagrams, see page J-21.

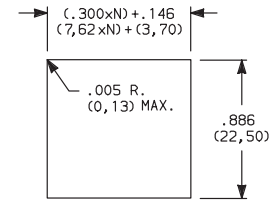
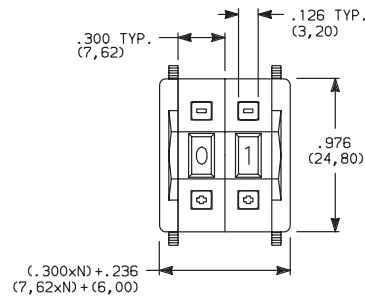
Thumbwheel & Pushwheel

# 3P Series Miniature Pushwheel Switches



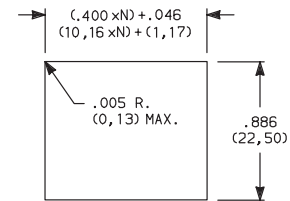
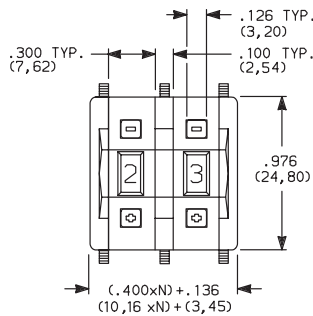
## MOUNTING STYLE

**0** SNAP-IN FRONT MOUNT,  
SECTION PITCH: .300 (7,62) EACH SECTION



N = Number of sections.  
Recommended panel thickness:  
.039 - .156  
(0,99 - 3,95)

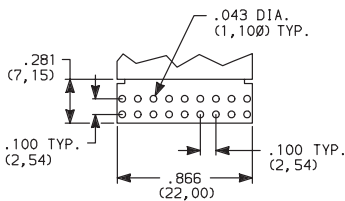
**3** SNAP-IN FRONT MOUNT WITH SPACER,  
SECTION PITCH: .400 (70,16) EACH SECTION, LAST SECTION .300 (7,62)



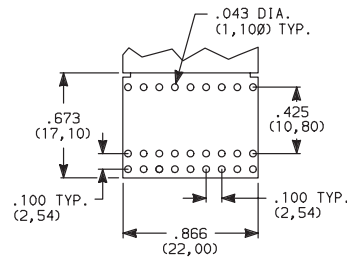
N = Number of sections.  
Recommended panel thickness:  
.039 - .156  
(0,99 - 3,95)

## TERMINATIONS

**0** (STD.) SHORT PCB

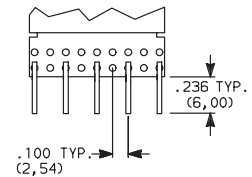


**1** EXTENDED PCB WITH PROVISION  
FOR COMPONENTS



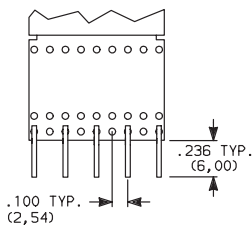
Signal traces cut, except for common(s).

**3** SHORT PCB, TYPE 0 WITH SOLDER PINS



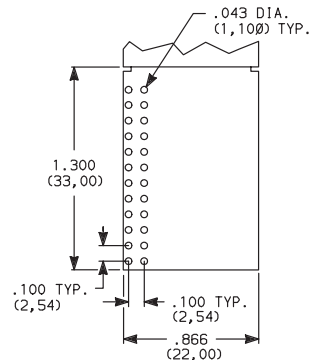
For terminal location numbers, see below.

**A** EXTENDED PCB, TYPE 1 WITH  
SOLDER PINS



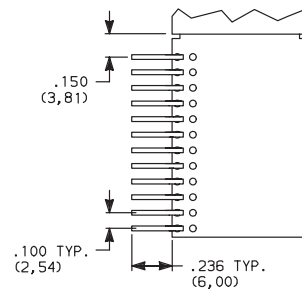
For terminal location numbers, see below.  
Signal traces cut, except for common(s).

**L** RIGHT ANGLE, NO COMPONENTS



PC Board 1/32" (0,79) thick.

**P** RIGHT ANGLE, TYPE L WITH SOLDER PINS



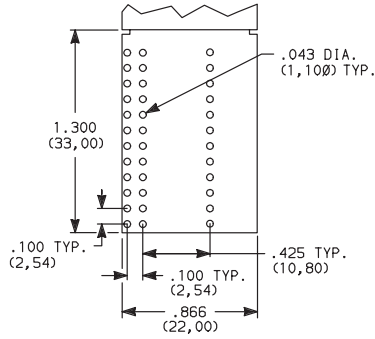
For terminal location numbers, see below.  
Unsuitable for panel mounting.

**NOTE:** All terminal holes shown may not be present for all function codes,  
consult Customer Service Center.

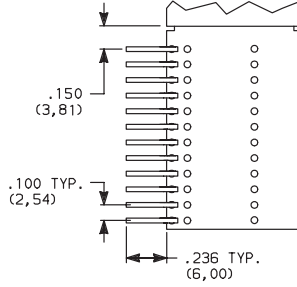
Thumbwheel & Pushwheel

## TERMINATIONS

**W** RIGHT ANGLE PCB WITH PROVISION FOR COMPONENTS



**Y** RIGHT ANGLE, TYPE WITH SOLDER PINS



**9** ANY COMBINATION OF TERMINATION CONFIGURATIONS OR SPECIAL TERMINATIONS

Specify on configuration form, page J-22 and consult Customer Service Center.

For terminal location numbers, see below.  
Unsuitable for panel mounting.

Signal traces cut, except for common(s).

PC Board 1/32" (0,79) thick.

**NOTE:** All terminal holes shown may not be present for all function codes, consult Customer Service Center.

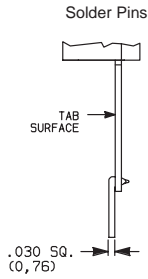


Fig. 1

### Terminal Location Numbers

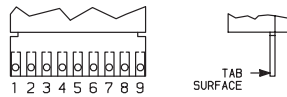


Fig. 2

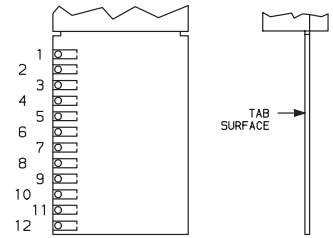


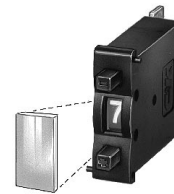
Fig. 3

## COLOR/MARKING/STOPS

- 0** (STD.) MATTE BLACK HOUSING (Gloss black wheel with white characters, black pushbuttons, no stops.)
- 1** MATTE GRAY HOUSING (Gloss black wheel with white characters, black pushbuttons, no stops.)
- 9** SPECIAL COLORS, MARKINGS FOR HOUSING OR WHEEL, STOPS (Specify on CONFIGURATION FORM, page J-22 and consult Customer Service Center).

## DUST LENS

- 0** (STD.) NO LENS
- 2** DUST LENS (Protects character face of the wheel from abrasion and dust.)



## ILLUMINATION

- NONE** (STD.) NO ILLUMINATION
- 3** RED LED
- 5** YELLOW LED
- 6** GREEN LED

**NOTE:** Internal LED illuminates wheel character for low-light visibility.

# 3P Series Miniature Pushwheel Switches



## Configuration Form

GRAY SHADED AREAS TO BE FILLED IN BY C&K.

C&K CATALOG PART NO.

**3 P**

C&K PART NUMBER

C&K PART NUMBER

COMPANY NAME \_\_\_\_\_

CUSTOMER  
PRINT  
REVISION:

ADDRESS \_\_\_\_\_ TEL.# \_\_\_\_\_

CUSTOMER CONTACT \_\_\_\_\_ DATE \_\_\_\_\_

DETAILS:

ORIGINATED BY \_\_\_\_\_ SALES REP. \_\_\_\_\_

Thumbwheel & Pushwheel

PUSHWHEEL SECTIONS	NO. OF SEC.	FUNCTION CODE — TERMINATIONS — COLOR/MARKING/STOPS/SEAL — ILLUMINATION <small>ENTER OPTION CODES IN APPROPRIATE BOXES. FUNCTION CODES INCLUDE BLANK SECTIONS (SEE CATALOG PAGE NO TAG).</small>	DESCRIBE IN APPROPRIATE ROW
<input type="checkbox"/> 1 <input type="checkbox"/>	1	3 P - <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
<input type="checkbox"/> 2 <input type="checkbox"/>	2	3 P - <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
<input type="checkbox"/> 3 <input type="checkbox"/>	3	3 P - <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
<input type="checkbox"/> 4 <input type="checkbox"/>	4	3 P - <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
<input type="checkbox"/> 5 <input type="checkbox"/>	5	3 P - <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
<input type="checkbox"/> 6 <input type="checkbox"/>	6	3 P - <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
<input type="checkbox"/> 7 <input type="checkbox"/>	7	3 P - <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
<input type="checkbox"/> 8 <input type="checkbox"/>	8	3 P - <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
<input type="checkbox"/> 9 <input type="checkbox"/>	9	3 P - <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
<input type="checkbox"/> 0 <input type="checkbox"/>	10	3 P - <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	
<input type="checkbox"/> 1 <input type="checkbox"/>	11	3 P - <input type="text"/> <input type="text"/> - <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	

QUALITY CONTROL INSTRUCTIONS

PRODUCTION APPROVAL

DATE

Q.C. APPROVAL

DATE

REV.

INITIALS

DATE

FOR SWITCHES WITH MORE THAN 11 SECTIONS, CONTINUE ON ADDITIONAL SHEETS.

SPECIAL INSTRUCTIONS OR SPECIFICATIONS:

SHEET \_\_\_\_ OF \_\_\_\_