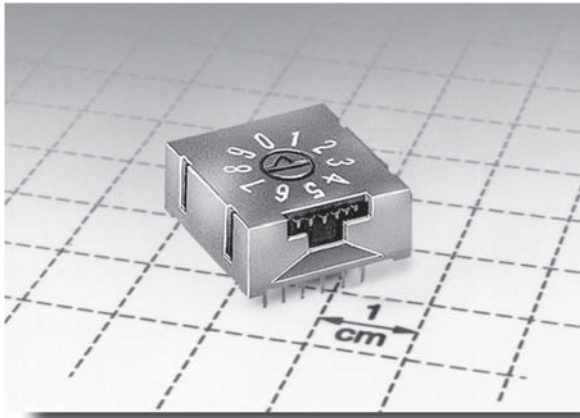


C&K 3M Series Miniature Thumbwheel Switches



Features/Benefits

- PCB mounting style for electronic applications
- Process compatible boot available for solder washing
- Multiple wheel markings available to customize application

Typical Applications

- Test & measurement equipment
- Instrumentation
- 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-29 and J-30. For additional options not shown in catalog, consult Customer Service Center.



Thumbwheel & Pushwheel

Typical Example:

Series

3M (STD.) Miniature thumbwheel switch

Function Code

11 (STD.) Decimal, SP, 10 position, CCW

12 Decimal, SP, 10 position, CW

21 BCD, SP, 10 position, CCW

22 BCD, SP, 10 position, CW

24 Complement of BCD, SP, 10 position, CW

Marking

0 (STD.) No wheel marking

1 Vertical wheel marking, terminals left

2 Vertical wheel marking, terminals right

3 Upright wheel marking, terminals down

4 Inverted wheel marking, terminals up

Seal

NONE (STD.) No seal

F Splashproof silicone rubber seal

C&K 3M Series Miniature Thumbwheel Switches

Specifications

CONTACT RATING:

CARRY: 1 AMP continuous @ 28 V DC.
SWITCH: 0.4 VA max., 100 mA max., 28 V DC max.

ELECTRICAL LIFE: 100,000 actuations.

CONTACT RESISTANCE: Below 100 milliohms typ. @
2-4 V DC, 100 mA.

INSULATION RESISTANCE: 10⁹ ohms min. (dry).

DIELECTRIC STRENGTH: 250 V RMS min. @ sea level.

OPERATING TEMPERATURE: -10°C to 65°C.

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: Glass filled polyester (PBT), flame retardant (UL 94V-0).

BASE: Glass filled nylon (UL 94V-0).

THUMBWHEEL: Glass filled polyester (PBT), flame retardant (UL 94V-0).

ROTOR CONTACTS: Hard gold over nickel over copper on epoxy fiberglass.

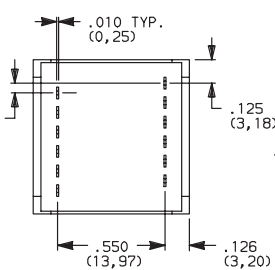
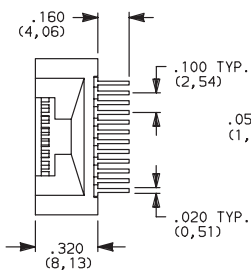
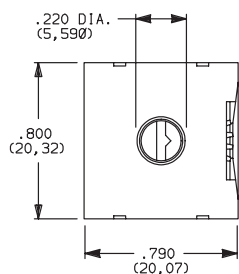
STATOR CONTACTS: Copper alloy, with gold over nickel.

TERMINALS: Solder clad over copper alloy. All terminals insert molded. All terminals present regardless of function.

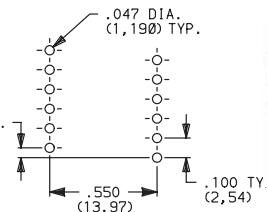
BASE SEAL: Epoxy.

SERIES

3M MINIATURE THUMBWHEEL SWITCH



PC MOUNTING



3M120

PART NUMBER	NO. POSITIONS
3M120	10

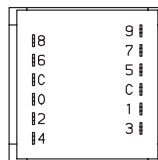
FUNCTION CODE

11 (STD.) DECIMAL, SP, 10 POSITION, CCW

12 DECIMAL, SP, 10 POSITION, CW

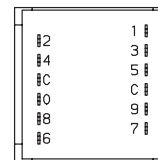
WHEEL	COMMON (C) CONNECTED TO TERMINAL INDICATED									
	0	1	2	3	4	5	6	7	8	9
0	●									
1		●								
2			●							
3				●						
4					●					
5						●				
6							●			
7								●		
8									●	
9										●

Function Code 11



Wheel opening this side.

Function Code 12



Wheel opening this side.

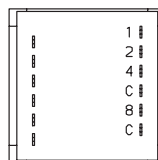
Bottom Views

21 BCD, SP, 10 POSITION, CCW

22 BCD, SP, 10 POSITION, CW

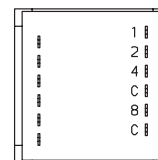
WHEEL	COMM. (C) CONN TO TERM. IND.			
	1	2	4	8
0				
1	●			
2		●		
3	●	●		
4			●	
5	●	●	●	
6		●	●	
7	●	●	●	
8				●
9	●			●

Function Code 21



Wheel opening this side.

Function Code 22



Wheel opening this side.

Bottom Views

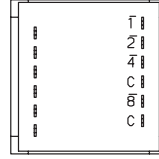
C&K 3M Series Miniature Thumbwheel Switches

FUNCTION CODE

24 COMPLEMENT OF BCD, SP, 10 POSITION, CW

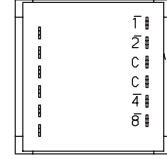
W H E E L	COMM. (C) CONN. TO TERM. IND.			
	1	2	4	8
0	●	●	●	●
1	●	●	●	●
2	●	●	●	●
3	●	●	●	●
4	●	●	●	●
5	●	●	●	●
6	●	●	●	●
7	●	●	●	●
8	●	●	●	●
9	●	●	●	●

Function Code 23



Wheel opening this side.

Function Code 24

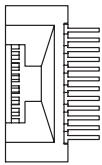


Wheel opening this side.

Bottom Views

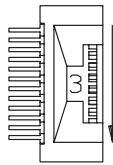
WHEEL MARKING

0 (STD.) NO WHEEL MARKING

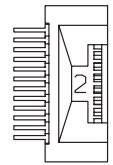


1 VERTICAL WHEEL MARKING, TERMINALS LEFT

CCW

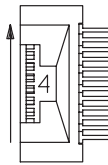


CW

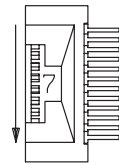


2 VERTICAL WHEEL MARKING, TERMINALS RIGHT

CCW

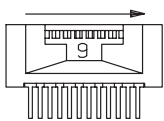


CW

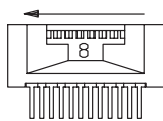


3 UPRIGHT WHEEL MARKING, TERMINALS DOWN

CCW

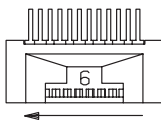


CW

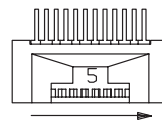


4 INVERTED WHEEL MARKING, TERMINALS UP

CCW

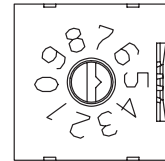


CW

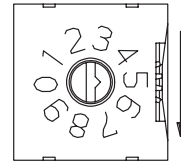


TOP MARKINGS-ALL SWITCHES

CCW



CW



SEAL

NONE (STD.) NO SEAL

F SPLASHPROOF SILICONE RUBBER SEAL AND EPOXY BASE SEAL.



NOTE: Silicone rubber seal peels off easily after installation. Epoxy base seal standard.

Thumbwheel & Pushwheel