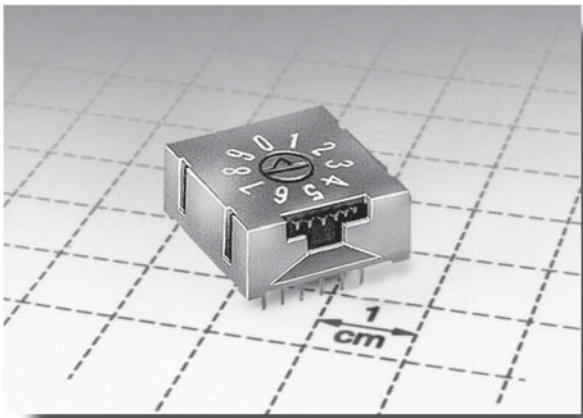


C&K 3M Series

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: 3 M — 1 2 — 0 —

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: 10^9 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.

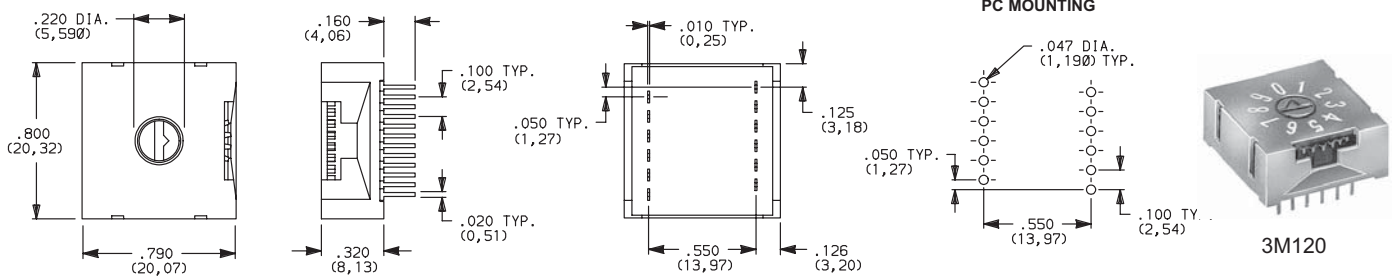
STATOR CONTACTS: Copper alloy, with gold over nickel.

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

BASE SEAL: Epoxy.

SERIES

3M MINIATURE THUMBWHEEL SWITCH

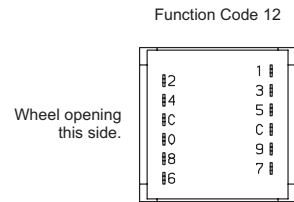
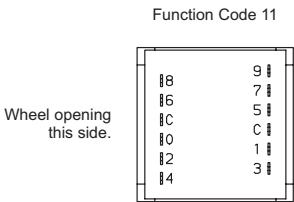


PART NUMBER	NO. POSITIONS
3M120	10

FUNCTION CODE

- 11** (STD.) DECIMAL, SP, 10 POSITION, CCW
- 12** DECIMAL, SP, 10 POSITION, CW

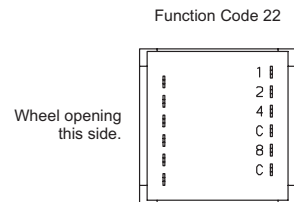
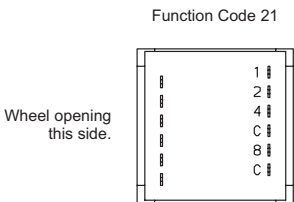
WHEEL	COMMON (C) CONNECTED TO TERMINAL INDICATED									
	0	1	2	3	4	5	6	7	8	9
0	●									
1		●								
2			●							
3				●						
4					●					
5						●				
6							●			
7								●		
8									●	
9										●



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	●			●



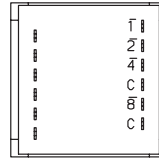
Bottom Views

Thumbwheel & Pushwheel

24 COMPLEMENT OF BCD, SP, 10 POSITION, CW

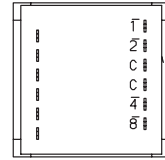
WHEEL	COMM. (C) CONN. TO TERM. IND.			
	1	2	4	8
0	●	●	●	●
1		●	●	●
2	●			●
3			●	●
4	●	●		●
5		●		●
6	●			●
7				●
8	●	●	●	
9		●	●	

Function Code 23



Wheel opening
this side.

Function Code 24



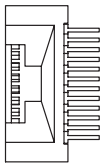
Wheel opening
this side.

Bottom Views

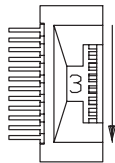
0 (STD.) NO WHEEL MARKING

1 VERTICAL WHEEL MARKING, TERMINALS LEFT

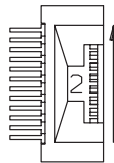
2 VERTICAL WHEEL MARKING, TERMINALS RIGHT



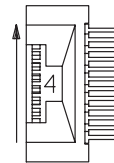
CCW



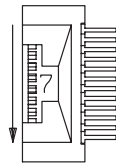
CW



CCW



CW

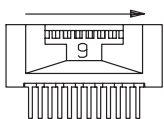


3 UPRIGHT WHEEL MARKING, TERMINALS DOWN

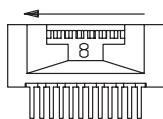
4 INVERTED WHEEL MARKING, TERMINALS UP

TOP MARKINGS-ALL SWITCHES

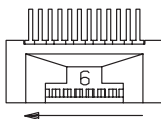
CCW



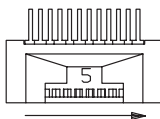
CW



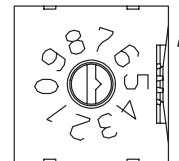
CCW



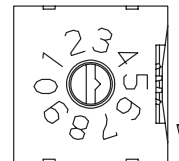
CW



CCW



CW



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.