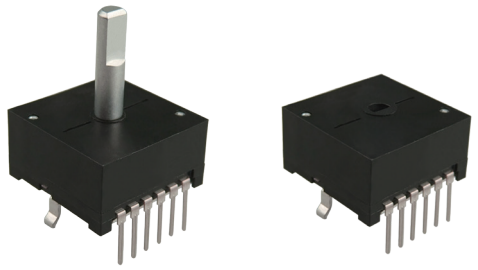
20mm Size Series Encoders

Gray Code & Knob Type

TOP-UP

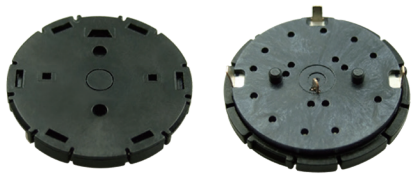


▲FEATURE
- Gray rotary encoder.
- 360°endless(Hollow shaft).

▲APPLICATIONS
- For various control in mixing consoles and electronic musical instruments.

Common Specifications

Rotational angle	Number of Positions	Detent angle	Contact resistance	Dielectric strength	Insulation resistance	Operating force	Rotational life (cycle)
360º	16	22.5º	1Ω MAX	A.C 100V 1 min	100MΩ MIN	400±100gf	15,000
360º	24	15º					



▲FEATURE
- Provides high-level operation feeling.
- With push-on switch.
- Compact and slim.
- Long life and high reliability.

▲APPLICATIONS
- Most suitable for all controls of compact andlow profile electronic equipment.
- Air conditioners, flat panel TV, remotecontrollers and various electronics.

Common Specifications

Pulse	Number of detent	Phase difference (msec)	Chattering (msec)	Sliding noise (msec)	Insulation resistance	Dielectric strength	Detent torque (gf•cm)	Rotational life(cycle)
12	24	4	5	3	100V DC 100MΩ MIN	100V AC 1 min	60 Max	100,000

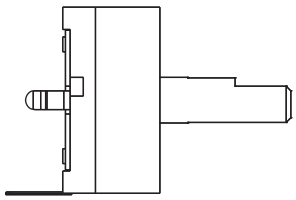
Switch Specifications

Rating	Contact resistance	Insulation resistance	Dielectric strength	Contact arrangement	Travel of switch(mm)	Operating force(gf)	Operating life(cycle)
DC 5V 10 mA	300mΩ	250V DC 100MΩ MIN	300V AC 1 min	PUSH ON	0.3	220±50	1,000,000

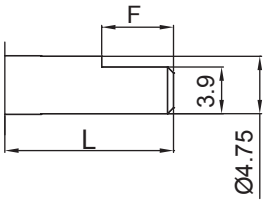
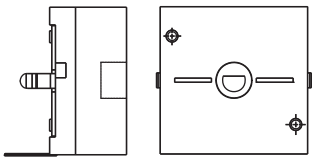
EC20 Series Code Explanation

EC20M	SD	V	F	-	D	- 14	-	F	-	16C	-	□□□
1	2	3	4		5	6		7		8		9

1. Product Lines of EC20M , EC20P
2. Switch: SD — 0.3mm
3. Vertical Type (V)
4. With Frame: "F"
5. Type of Terminal

P.C.B Type	
	Vertical D

6. Shaft Length
7. Type of Shaft

F - Type	Hollow Shaft HF
	

8. Number of Detent : 16C - 16 Detents
9. Series No.

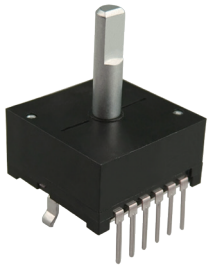
20mm Size Series Encoders

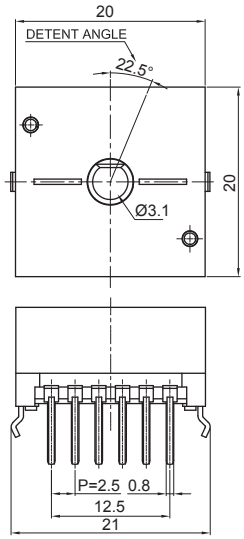
Gray Code & Knob Type

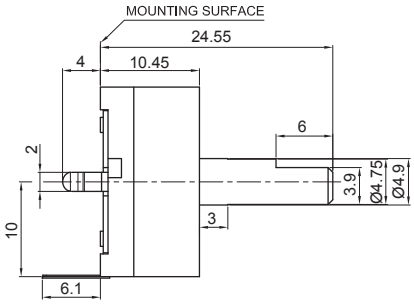
TOP-UP

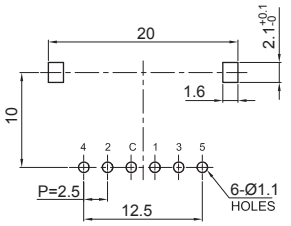
EC20MVF-D-14F

Gray Code
W/Shaft









P.C.B MOUNTING DETAIL(REFERENCE)

START POSITION
C.W ROT. →

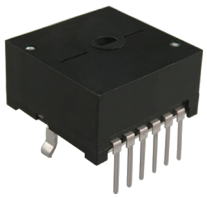
CODE

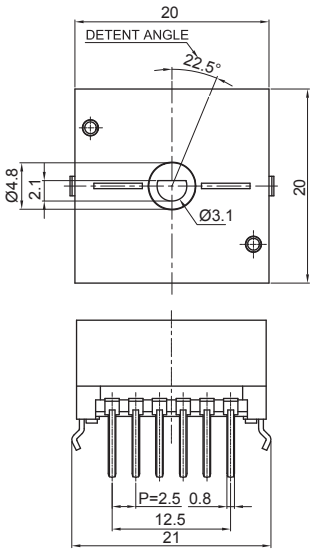
● : ON

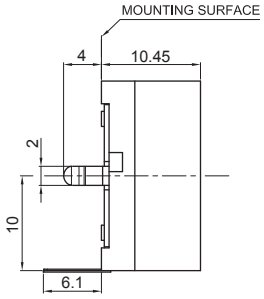
POSITION		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
TERMINAL	1		●	●			●	●			●	●			●	●			●	●			●	●	
	2			●	●	●	●					●	●	●	●					●	●	●			
	3					●	●	●	●	●	●	●	●										●	●	●
	4									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	5																	●	●	●	●	●	●	●	●

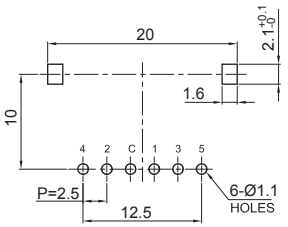
EC20MVF-D-HF

Gray Code
Hollow Shaft









P.C.B MOUNTING DETAIL(REFERENCE)

START POSITION
C.W ROT. →

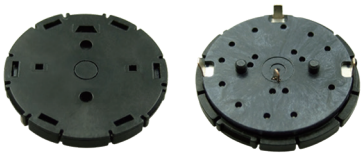
CODE

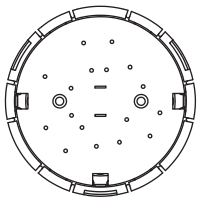
● : ON

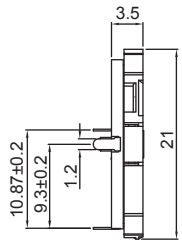
POSITION		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
TERMINAL	1		●	●			●	●			●	●			●	●			●	●			●	●	
	2			●	●	●	●					●	●	●	●					●	●	●			
	3					●	●	●	●	●	●	●	●										●	●	●
	4									●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
	5																	●	●	●	●	●	●	●	●

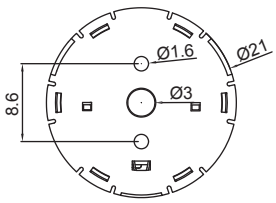
EC20PSDVF-D

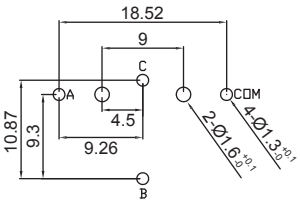
Knob Type



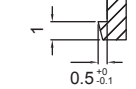


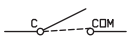


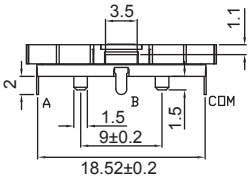




P.C.B MOUNTING DETAIL







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TOP-UP

Soldering condition

▲Manual Soldering
- Bit temperature of soldering : 300°C or less.
- Application time of soldering : within 3s.

▲Dip soldering

Preheating :
- Surface temperature of board : 100°C or less.
- Preheating time : within 1 min.

Soldering :
- Solder temperature : 260±5°C
- Immersion time : 5±1 sec.

*Apply the above soldering process for 1 or 2 times.

TOP-UP INDUSTRY CORP.

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