

# Encoders

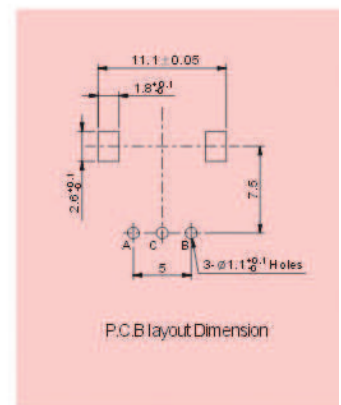
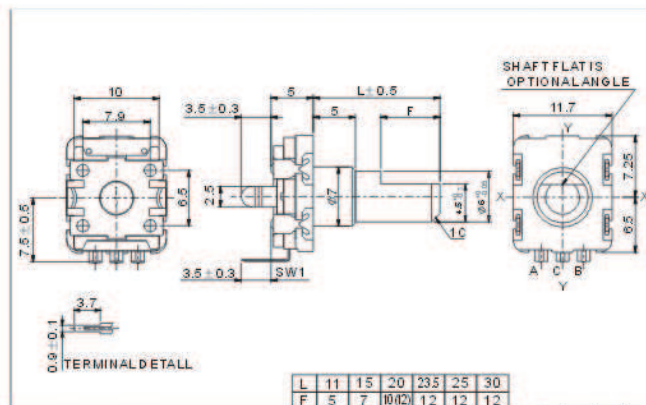
## Rotary Type Encoders

## EC85 Series

Horizontal Type, Single Unit,  
P. C. B. Terminal



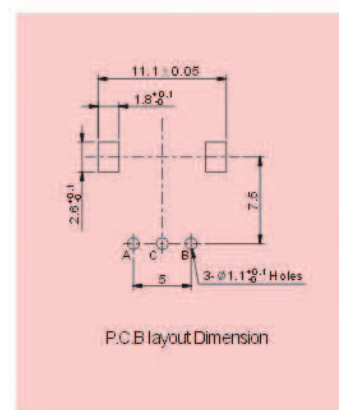
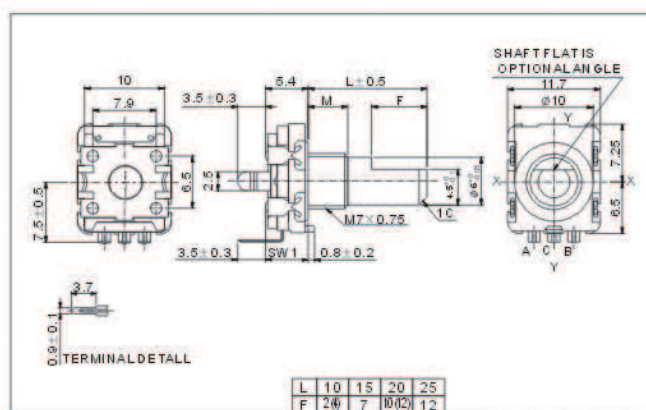
EC85N\_B\_C\_F



Horizontal Type, Single Unit,  
P. C. B. Terminal



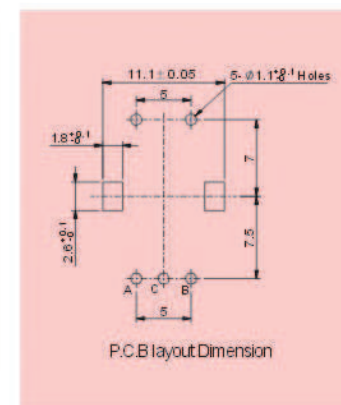
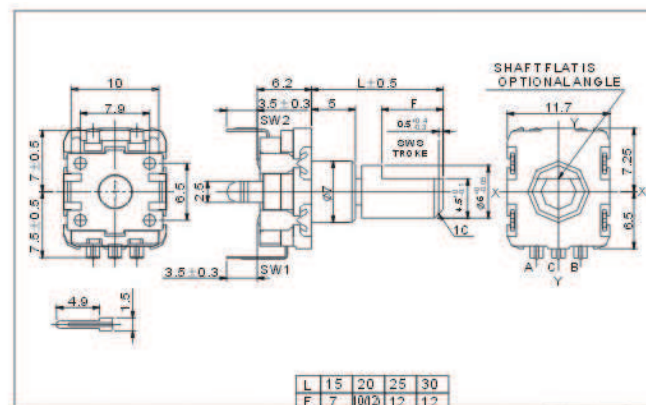
EC85N\_M\_C\_F



Horizontal Type, Single Unit  
with Switch, P. C. B. Terminal



EC85S\_B\_C\_F



### How to order:

EC85

**1** SWITCH FUNCTION:  
S With Switch  
N Without Switch

**2** OPERATION DIRECTION:  
blank Horizontal  
V Vertical

**3** LENGTH OF BUSHING:  
blank 5 mm  
7 7 mm

**4** WHORL BUSHING:  
M With whorl bushing (M7.0)  
B Without whorl bushing (Ø7.0mm)

**5** LENGTH OF SHAFT (L) :  
... See drawings

**6** DETENT:  
C With detent

**7** NO. OF PULSE  
15 15 pulses  
20 20 pulses

**8** TYPE OF SHAFT:  
F See drawings

# Encoders

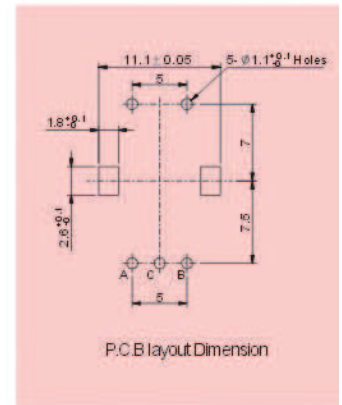
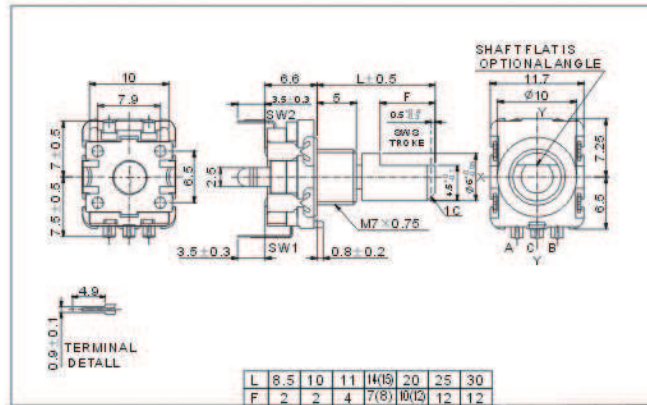
## Rotary Type Encoders

## EC85 Series

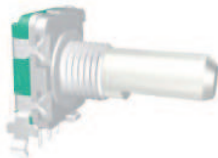
Horizontal Type, Single Unit with Switch, P. C. B. Terminal



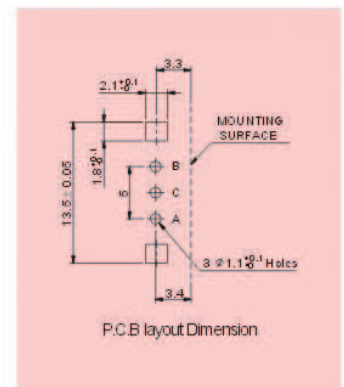
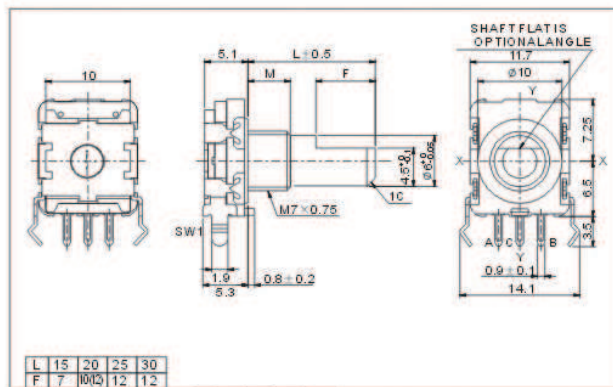
EC85S\_M\_C\_F



Vertical Type, Single Unit, P.C.B. Terminal



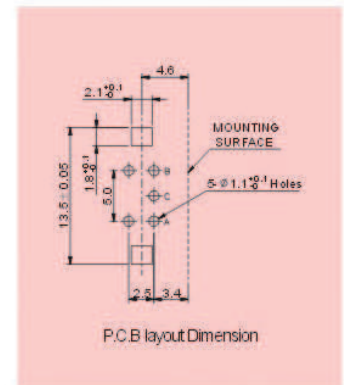
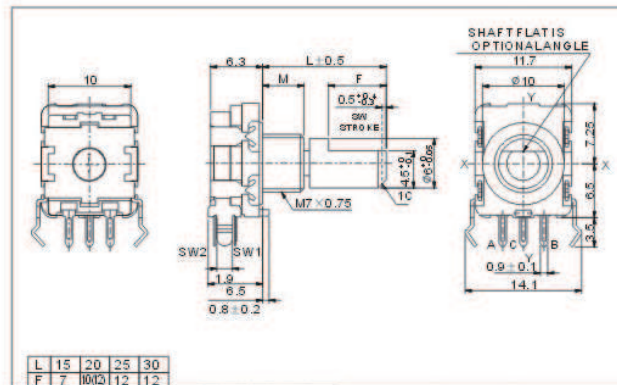
EC85NV\_M\_C\_F



Vertical Type, Single Unit, with Switch P.C.B. Terminal



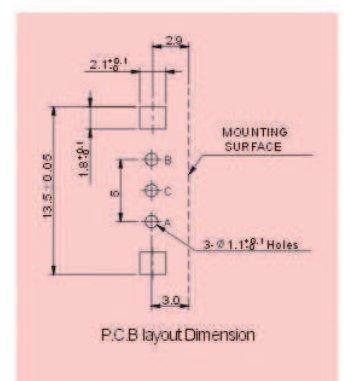
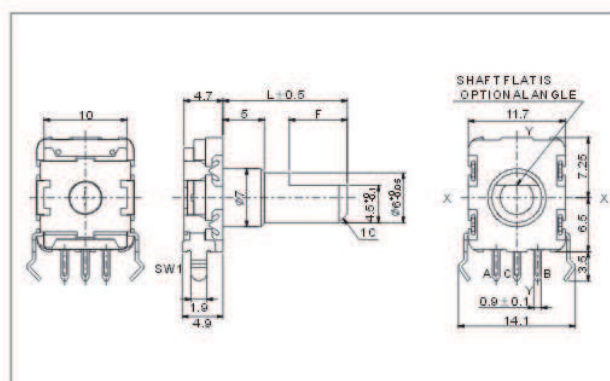
EC85SV\_M\_C\_F



Vertical Type, Single Unit, P.C.B. Terminal



EC85NV\_B\_C\_F



### Electrical characteristics

- Rated Power..... DC 5V 10mA(1mA Min)
- Fluttering.....  $T1, T3 \leq 3\text{ms}$
- Insulation Resistance..... More than  $100\text{M}\Omega$  at 250V 1mA
- Withstand voltage..... 1 minute at AC 300V 1mA
- Sliding Noise(Bounce).....  $T2 \leq 2\text{ms}$
- Phase Difference.....  $\Delta T \geq 0.08T$

### Mechanical characteristics

- Rotational Torque of Detent.....  $50\text{gf}\cdot\text{cm} \sim 180\text{gf}\cdot\text{cm}$  (at  $5 \sim 35^\circ\text{C}$ )
- Total Rotational Angle.....  $360^\circ$  Continuous
- Number and Position of Detent..... 15 Detents ( Angle:  $24^\circ \pm 3^\circ$  )
- Push-Pull Strength of shaft..... 8.0Kgf Min for 10sec.
- Bushing & nut tight strength..... 10.0Kgf.cm Min

### Durability

- Rotational Life..... 15,000 Cycles Min

### Switch characteristics

- Contact resistance.....  $100\text{m}\Omega$  Max
- Maximum ratings..... DC 5V, 10mA (1mA Min)
- Insulation resistance..... More than  $100\text{M}\Omega$  at DC 250V. 1mA
- Withstand voltage..... 1 minute at AC 300V, 1mA
- Travel.....  $0.5^{+0.4}_{-0.3}$  mm
- Operating Force.....  $550 \pm 300\text{gf}$

### Output Signal Diagram

output wave diagram

