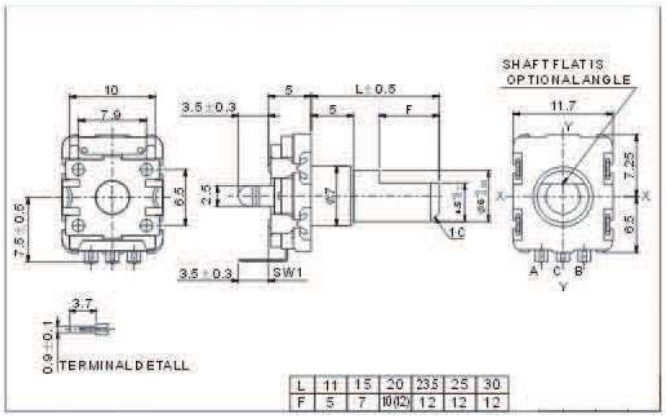
# Encoders

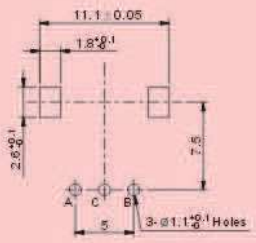
## 11mm Metal Shaft Rotary Encoders — EC85 Series

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

EC85N_B_C_F

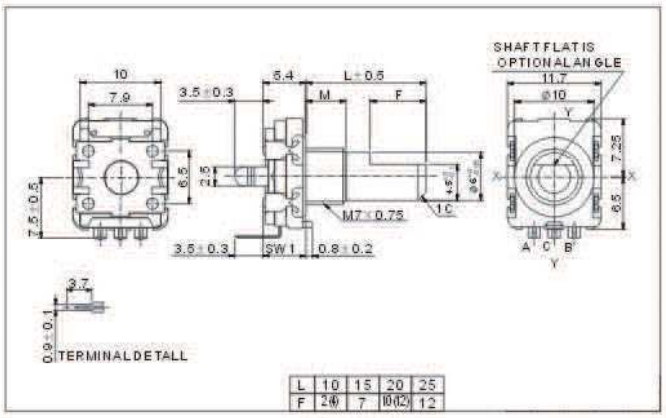



| L | 11 | 15 | 20 | 23.5 | 25 | 30 |
|---|---|---|---|---|---|---|
| F | 5 | 7 | 10(12) | 12 | 12 | 12 |

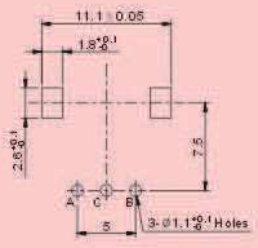



### Horizontal Type, Single Unit, P. C. B. Terminal

EC85N_M_C_F

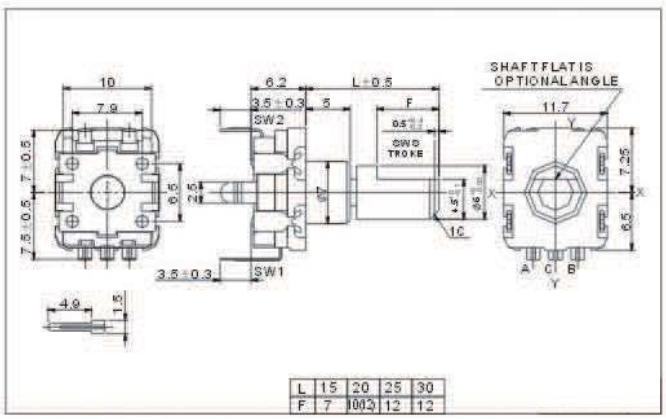



| L | 10 | 15 | 20 | 25 |
|---|---|---|---|---|
| F | 24 | 7 | 10(12) | 12 |

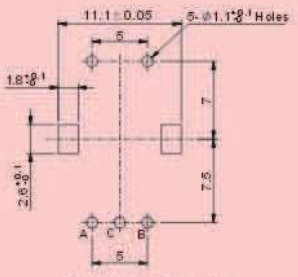



### Horizontal Type, Single Unit with Switch, P. C. B. Terminal

EC85S_B_C_F




| L | 15 | 20 | 25 | 30 |
|---|---|---|---|---|
| F | 7 | 10(12) | 12 | 12 |




## How to order:

EC85 [1] [2] [3] [4] [5] [6] [7] [8]

**[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:**

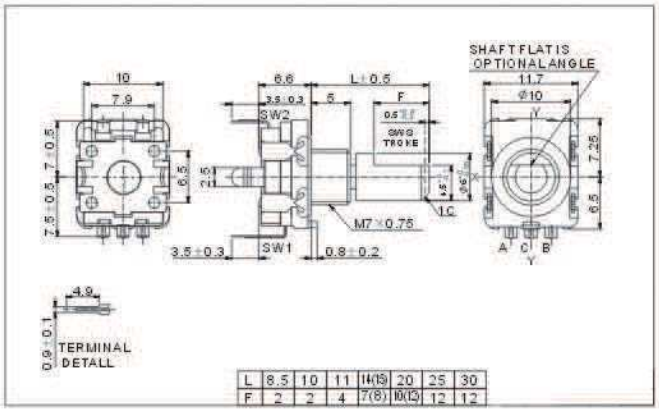
| | |
|---|---|
| F | See drawings |

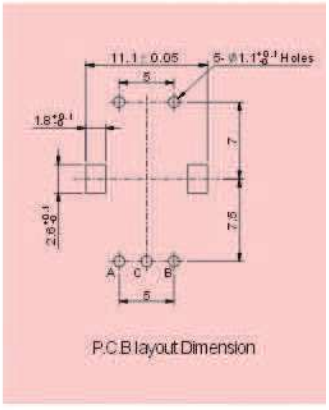
All specifications are restricted to QA test criteria.
DRW: D. L. JIN, CHK: D.F. LEE, APP: H.Z. QIU, DC: 2013-04-15. UPD: 2025-05-20.

## 11mm Metal Shaft Rotary Encoders EC85 Series

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

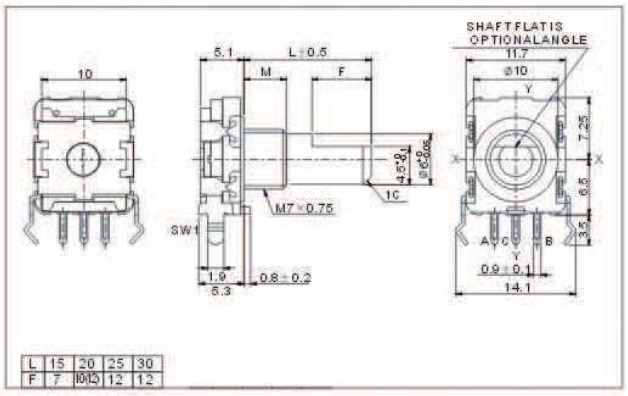
EC85S_M_C_F

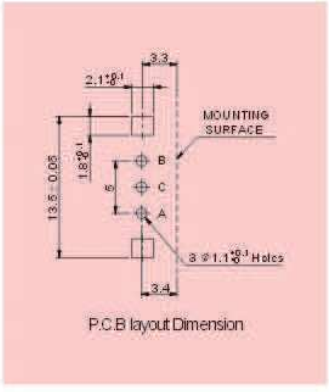



### Vertical Type, Single Unit, P.C.B. Terminal

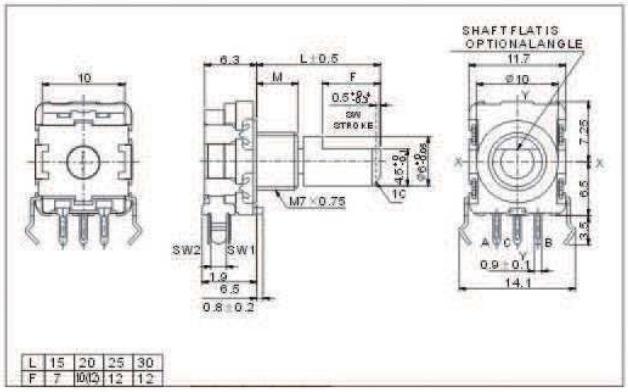
EC85NV_M_C_F

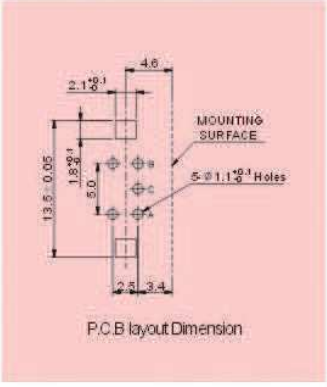



### Vertical Type, Single Unit, with Switch P.C.B. Terminal

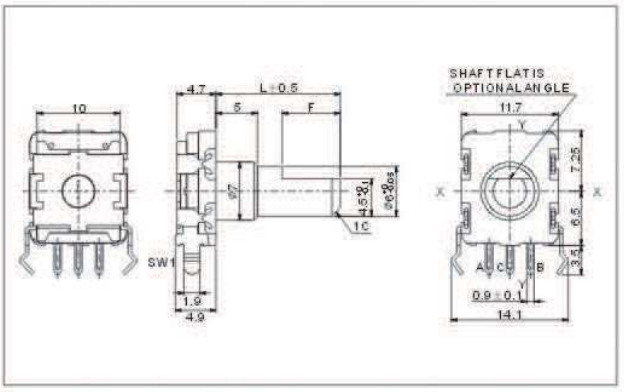
EC85SV_M_C_F

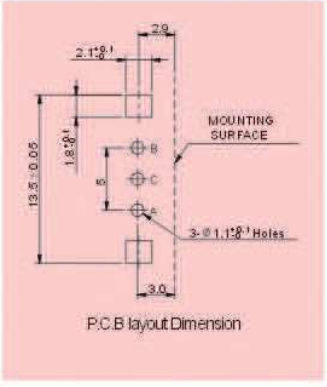



### Vertical Type, Single Unit, P.C.B. Terminal

EC85NV_B_C_F



## Electrical characteristics

- Rated Power..... DC 5V 10mA(1mA Min)
- Fluttering.....T1,T3≤3ms
- Insulation Resistance.....More than 100MΩ at 250V 1mA
- Withstand voltage.....1 minute at AC 300V 1mA
- Sliding Nosie(Bounce).....T2≤2ms
- Phase Difference.....△T≥0.08T

## Mechanical characteristics

- Rotatioal Torque of Detent.....50gf.cm~180gf.cm(at 5~35℃)
- Total Rotational Angle.....360° Continuous
- Number and Position of Detent.....15 Detents ( Angle:24°±3° )
- 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.....100mΩ Max
- Maximum ratings..... DC 5V, 10mA (1mA Min)
- Insulation resistance.....More than 100MΩ at DC 250V. 1mA
- Withstand voltage.....1 minute at AC 300V, 1mA
- Travel.....$0.5^{+0.4}_{-0.3}$ mm
- Operating Force.....550±300gf

## Output Signal Diagram

output wave diagram