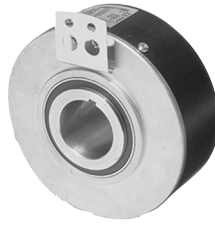


BUILT-IN TYPE

SBH Model



Large Size Model

- Shaft Can be Up to 30.
- High Resolution 10000 P/R.

Model

SBH - [] [] [] [] - [] [] [] **-30-050-00**

Resolution

| | |
|------|-----------|
| 0512 | 512 P/R |
| 1024 | 1024 P/R |
| 4096 | 4096 P/R |
| 8192 | 8192 P/R |
| 100 | 10000 P/R |

Line Driver Only

Output Mode

- No Indication : Voltage Output
- C : Open Collector Output
- D : Line Driver Output
- T : Push-Pull Output

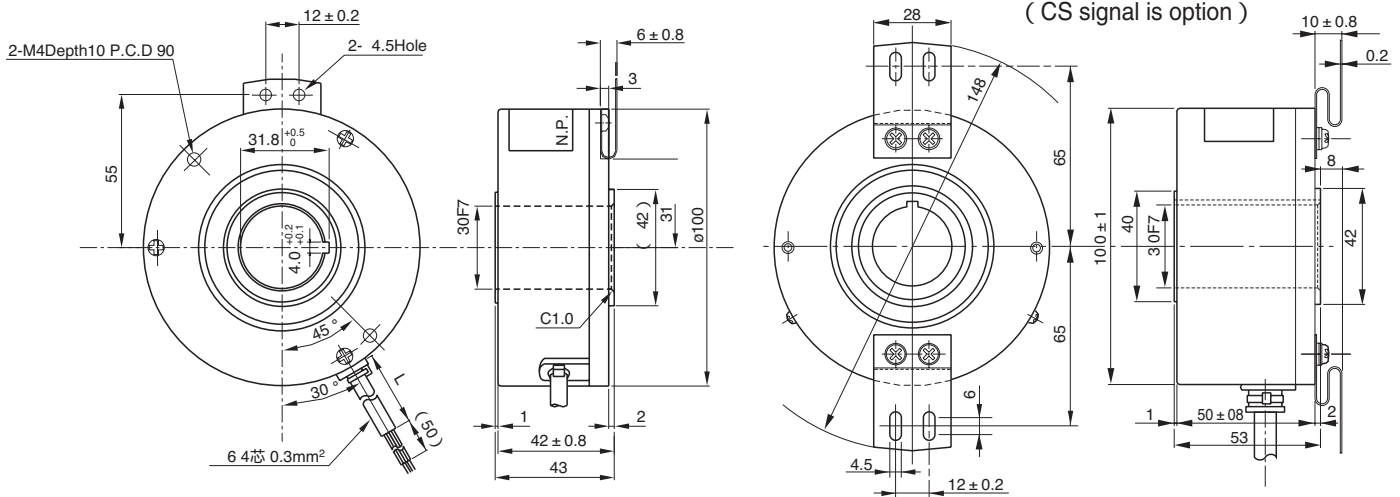
Signals

- 2 : AB90° Phase Difference
- 2M : AB90° Phase Difference + Zero Signal

External Dimension

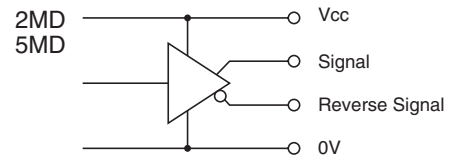
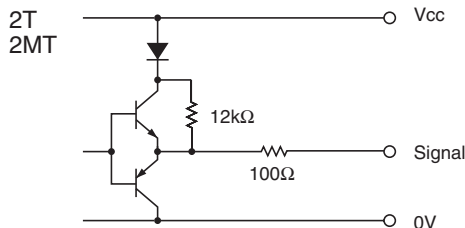
512 · 1024 P/R Version

4096 · 8192 · 10000 P/R Version
(CS signal is option)



Ask Our Sales Organization for Detailed Explanation.

Circuit of Output Signal

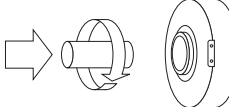


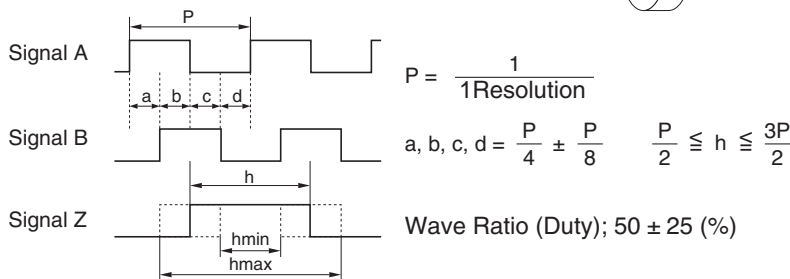
Electrical Spec.

| TYPE | | 2T | 2MT | 2MD | 2MD(4096P/R) | 5MD | 6MD |
|----------------------------|------------------|------------------------------------|-----|---------------|--------------|-----|-----|
| Supply Voltage | | DC 10.8 ~ 13.2 V | | DC 4.5~5.25 V | DC 12V ± 10% | | |
| Requirement | | 60 mA Max | | 150 mA Max | 270 mA Max | | |
| Output Voltage | "H" | Within -2.5 Power Supply Volt(VDC) | | 2.5 V or More | 3 V or More | | |
| | "L" ¹ | 3 V Max | | 0.5 V Max | 3 V Max | | |
| Maximum Output Current | | 40 mA MAX | | 20 mA MAX | 30 mA MAX | | |
| Rise & Fall Time | | 0.5 μs Max | | 200 ns Max | 400 ns Max | | |
| Maximum Frequency Response | | 150 kHz | | 200 kHz | 35 kHz | | |

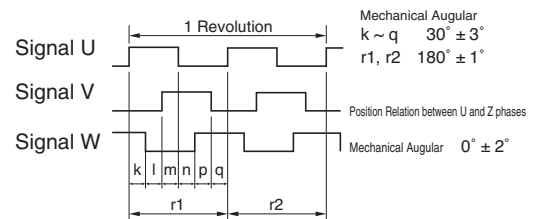
※1) at Maximum Output Current

Wave Form.

CW → Rotating Toward Clockwise Viewed from an Arrow  Rising point of A-Signal is always at one point while Z-Signal is at H-Level in CW.



When UVW phases output are 4 poles at 120°.



A B Z U V W signal are reverse signal of ABZUVW.

Electrical Connections

| 2T 2MT | Color of Lead Wire | Description |
|-----------|--------------------|--------------|
| | Red | Power Source |
| | Black | 0V Common |
| | Blue or Green | Signal A |
| | White | Signal B |
| | Yellow | Signal Z |
| | Shielding | F. G |

| 2MD 5MD | Color of Lead Wire | Description |
|------------|--------------------|--------------|
| | Red | Power Source |
| | Black | 0V Common |
| | Green | Signal A |
| | Blue | Signal A |
| | White | Signal B |
| | Gray | Signal B |
| | Yellow | Signal Z |
| | Orange | Signal Z |
| | Shielding | F. G |

Mechanical Spec.

| | 512 · 1024 P/R | 4096 · 8192 · 10000 P/R |
|----------------------|--|--|
| Starting Torque | $7.35 \times 10^{-2} \text{ N} \cdot \text{m}$ Max | $49 \times 10^{-3} \text{ N} \cdot \text{m}$ Max |
| Angular Acceleration | $1 \times 10^4 \text{ rad/s}^2$ | $1 \times 10^4 \text{ rad/s}^2$ |
| Shaft Loading | Thrust axial | 19.6N |
| | Radial | 39.2N |
| Moment of Inertia | $1.5 \times 10^{-4} \text{ kg} \cdot \text{m}^2$ | $1.8 \times 10^{-4} \text{ kg} \cdot \text{m}^2$ |
| Maximum RPM | Continuous 500r/min Instantaneous 2500r/min | 500r/min |
| Net Weight | 1kg Max | 1kg Max |

Environmental Spec.

| | |
|-----------------------|---|
| Operating Temperature | -10°C ~ +70°C |
| Storage Temperature | -20°C ~ +80°C |
| Humidity | RH 85% Max No Condensation |
| Vibration | 50 Hz / 1.5mm 2 h |
| Shock | 490m/s ² , 11ms X, Y, Z Each 3 times |