

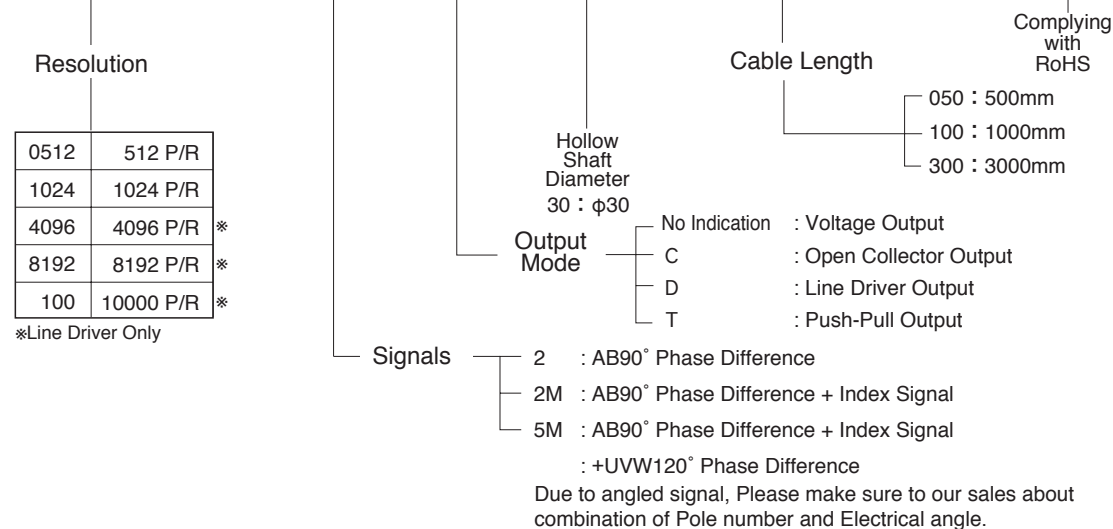
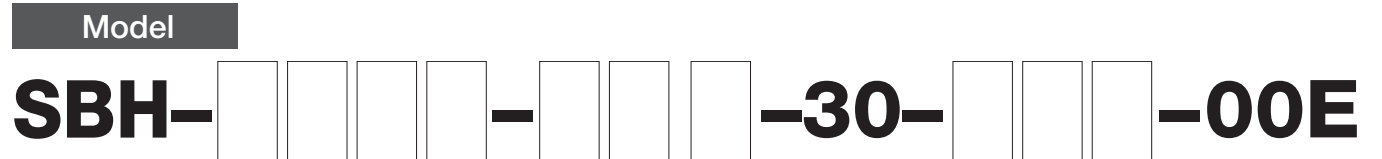
BUILT-IN TYPE

Large Size Model

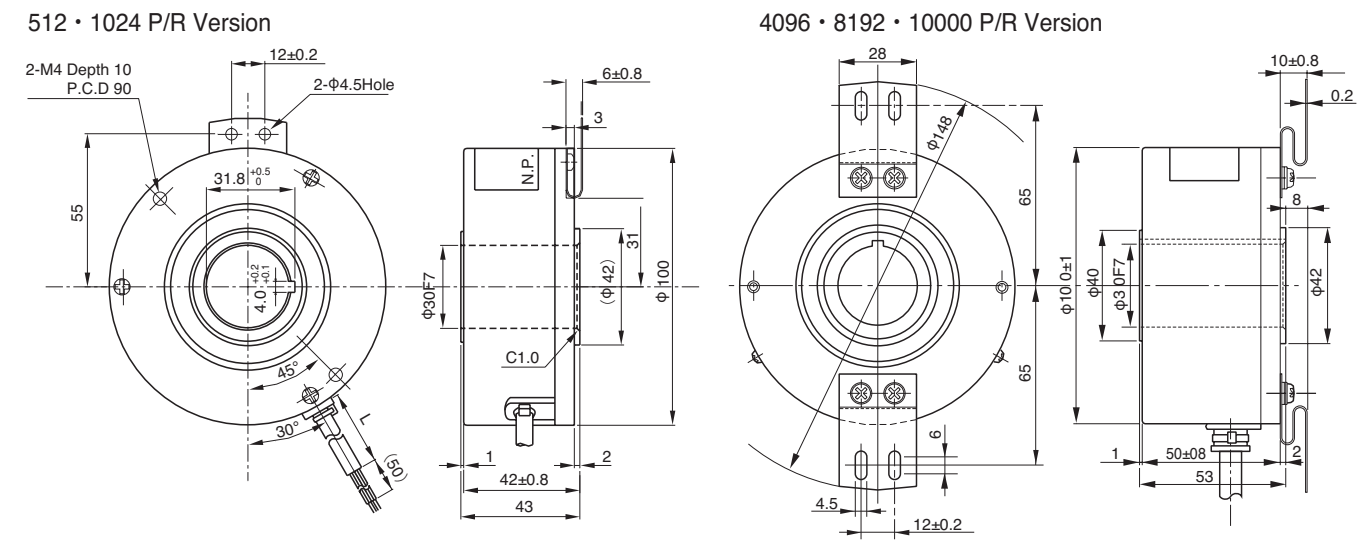
- The Largest Shaft Diameter 30mm.
- High Resolution up to 10000 P/R.



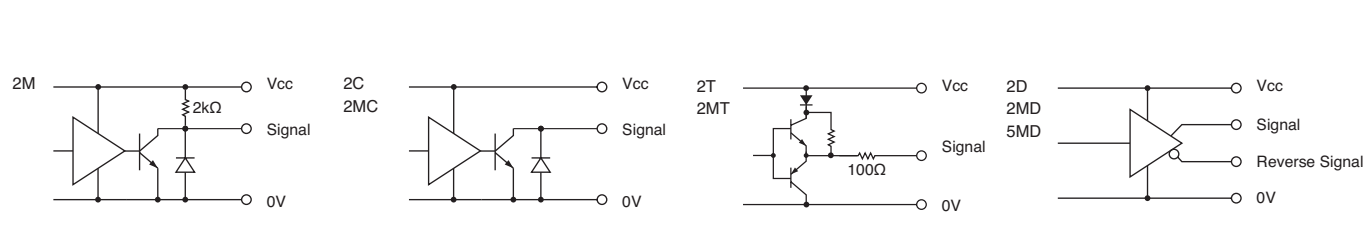
SBH Model



External Dimension



Output Circuit



Electrical Spec

TYPE	2M	2C·2MC	2T·2MT	2D·2MD	2MD(4096P/R)	5MD
Power Supply(Vcc)	DC5V±10%		DC 10.8~13.2 V	DC 4.75~5.25 V	DC 12V±10%	DC 5V±10%
Current Consumption	45 mA Max		60 mA Max	150 mA Max	270 mA Max	210 mA Max
Output Voltage	"H"	Vcc -1V Min	—	Vcc -2.5V Min	2.5 V Min	
	"L" *1	0.5V Max		3 V Max	0.5 V Max	
Maximum Sink Current	20mA		40mA	20 mA		
Rise & Fall Time	1 μs Max			200 ns Max		
Maximum Frequency Response	200kHz	150kHz	200kHz	35kHz	68.27 kHz	

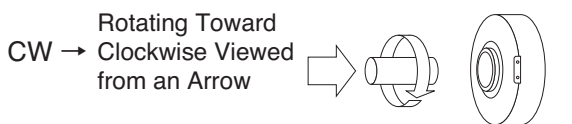
*1) at Maximum Sink Current

Electrical Connections

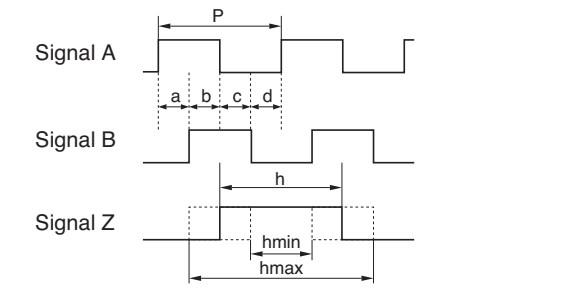
Color	Signal	Color	Signal
Red	Power Supply(Vcc)	Red	Power Supply(Vcc)
Black	0V	Black	0V
Blue or Green	Signal A	*	Signal A
White	Signal B	*	Signal A
Yellow	Signal Z	*	Signal B
Shield	F. G	*	Signal B
		*	Signal Z
		*	Signal Z
		Shield	F. G

*Contact us.

Wave Form



Rising point of A-Signal is always at one point while Z-Signal is at H-Level in CW.



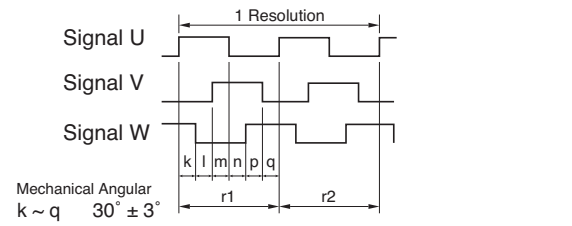
$$P = \frac{1}{\text{Resolution}}$$

$$a, b, c, d = \frac{P}{4} \pm \frac{P}{8} \quad \frac{P}{2} \leq h \leq \frac{3P}{2}$$

Wave Ratio (Duty); 50 ± 25 (%)

Only for 5M

•When UVW phases output are 4 poles at 120°.



Mechanical Angular k ~ q 30° ± 3°

r1, r2 180° ± 1°

Position Relation between U and Z phases

Mechanical Angular 0° ± 2°

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

Environmental Spec

	512 • 1024 P/R	4096•8192•10000 P/R
Starting Torque	7.35x10 ⁻² N · m Max	49x10 ⁻³ N · m Max
Angular Acceleration	1x10 ⁴ rad/s ²	
Shaft Loading	Thrust	19.6N
	Radial	9.8N
	39.2N	19.6N
Moment of Inertia	1.5x10 ⁻⁴ kg · m ²	1.8x10 ⁻⁴ kg · m ²
Maximum Permissible Speed	Continuous : 500min ⁻¹	500min ⁻¹
	Instantaneous : 2500min ⁻¹	
Net Weight(Without Cable)	1kg Max	

Environmental Spec

	512•1024 P/R	4096•8192•10000 P/R
Operating Temperature	-10°C~+70°C	
Storage Temperature	-20°C~+80°C	-20°C~+85°C
Humidity	RH 85% Max No Condensation	
Vibration	50 Hz / 1.5mm X,Y,Z Each 2h	
Shock	490m/s ² ,11ms X, Y, Z Each 3 times	