

# CB Series

## ROTARY ENCODER



- **OUTSIDE:  $\phi 38$ (Shaft  $\phi 6$ ), PCD30**
- **WIDE RANGE OF HIGH RESOLUTION MODELS**
- **HIGH RELIABILITY AND PERFORMANCE**
- **ECONOMICAL**
- **UNIVERSAL MOUNTING-FITS TO ALMOST ALL STANDARD MOUNTING DIMENSIONS**
- **SUITABLE FOR GENERAL OR INDUSTRIAL APPLICATIONS**

### MODEL SELECTION

CB -

#### OUTPUT

- C : Open Collector Output
- V : Voltage Output
- D : Line Driver Output (5VDC only)

#### SUPPLY VOLTAGE

- H : DC12 - 24V (Open Collector Output only)
- L : DC5 - 12V

#### RESOLUTION

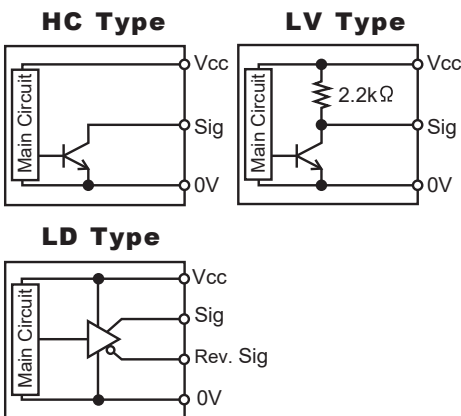
100	100 PPR
200	200 PPR
250	250 PPR
300	300 PPR
360	360 PPR

400	400 PPR
500	500 PPR
600	600 PPR
800	800 PPR

1000	1000 PPR
1024	1024 PPR
1200	1200 PPR
1500	1500 PPR

1800	1800 PPR
2000	2000 PPR
2048	2048 PPR
2500	2500 PPR

### CIRCUIT OF OUTPUT SIGNAL



### CONNECTION

Signal	COLOR OF WIRE	
	HC/LV Type	LD Type
Vcc	Brown	Brown
0V	Blue	Blue
A	Black	Black
$\bar{A}$	—	Black/Red
B	White	White
$\bar{B}$	—	White/Red
Z	Orange	Orange
$\bar{Z}$	—	Orange/Red or Orange/White

\* Braided shield in the cable is not connected with internal circuit and enclosure of the rotary encoder.

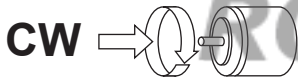
## SPECIFICATIONS

<b>ELECTRICAL</b>	Model	CB-□HC	CB-□LV	CB-□LD
	Power Supply (Ripple 3% max.)	DC12-24V±10%	DC5-12V±10%	DC5V±10%
	Current Consumption	50 mA max.		
	Output	Open Collector	Voltage	Line Driver
	Output Signal	90° Quadrature + Zero Marking		
	Output Phase	A,B,Z		A,B,Z,Ā,Ḃ,Ż
	Output Capacity	Sink Current : 35 mA max. Residual Voltage : 0.5V max.	Sink Current 20 mA max.	± 20 mA
	Max. Applied Voltage	30V max.		
	Output Voltage	—	H: Supply Voltage -1 V min. L :0.5 V max.	H :2.5 V min. L :0.5 V max.
	Max. Freq. Response	100 kHz		
	Signal Rise/Fall Time (Pull-up resistor 2.2kΩ, 1m Cable)	1 μs max.		0.1 μs max.
	Insulation Resistance	20M Ω min. (DC100V Megger)		
	Output Impedance (Voltage Output only)	—	2.2k Ω	—
	Cable Length	500 <sup>+10</sup> mm		
Outside Diameter	φ 5.1 mm			

<b>MECHANICAL</b>	Max. Speed of Shaft	6000 rpm		
	Moment of Inertia	6x10 <sup>-7</sup> kg·m <sup>2</sup> max.		
	Starting Torque	1.0x10 <sup>-3</sup> N·m max.		
	Angular Acceleration	10 <sup>5</sup> rad/s <sup>2</sup>		
	Max. Shaft Loading	Radial	25N max.	
		Axial	15N max.	
Weight	Approx. 120g (with 0.5m Cable)			

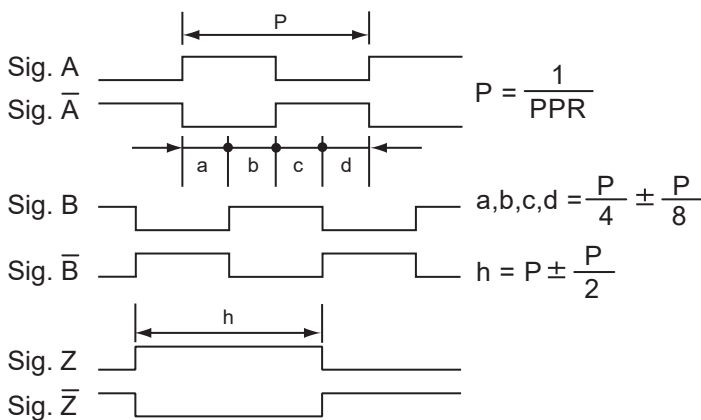
<b>ENVIRONMENTAL</b>	Operating Temperature	-10 - +70 °C (Non-Condensing, Non-Freezing)	
	Storage Temperature	-25 - +80 °C (Non-Condensing, Non-Freezing)	
	Operating Humidity	35 - 95% (Non-Condensing)	
	Vibration Resistance	10~55 Hz, Width (P-P) 1.5mm (2 hours each in X,Y,Z Direction)	
	Shock Resistance	6 ms, 980 m/s <sup>2</sup> (3 times each in X,Y,Z Direction)	
	Protection	Equivalent to IP50	

## WAVEFORM



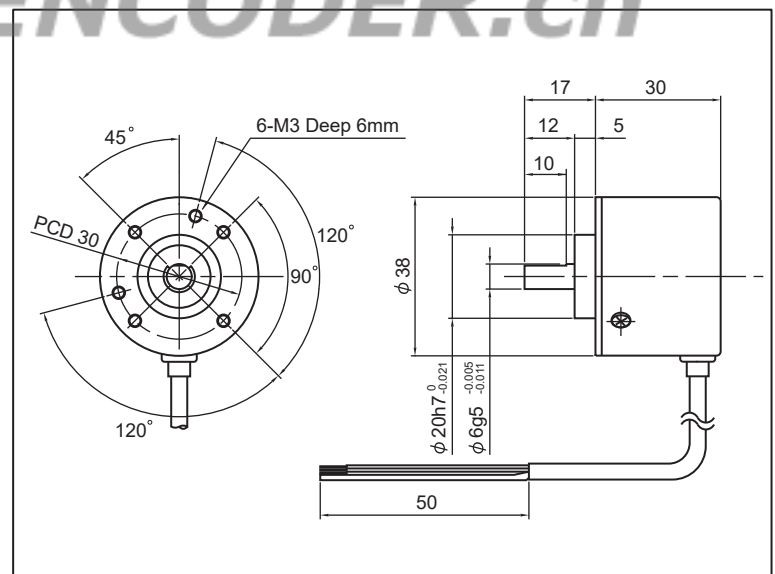
These figures show the waveforms when the shaft is rotated Clockwise (CW) when viewing towards the encoder shaft.

A pulse at Signal A should be completed within the period that Signal Z is at H-Level.



Phase  $\bar{A}, \bar{B}, \bar{Z}$  are applicable only for Type D Output.

## DIMENSIONS



\* Specifications Subject to Change Without Prior Notice  
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