SHAFT TYPE

NOC-SP Model

Mechanism for The Shaft Load Resistance (IP65)

- Standard Low Cost Versions of 10~2500 P/R and 5000 P/R, and Also The 10000 P/R Version for High Accurate Appllcation.

Model

NOC-SP □□ – 2 M □ – □□□ – □□□ – □□□

Style: S: Shaft; P: Dust-Resistant & Water-Resistant

Resolution:

10	10P/R	600	600P/R
20	20P/R	1000	1000P/R
30	30P/R	1024	1024P/R
40	40P/R	1250	1250P/R
50	50P/R	1800	1800P/R
60	60P/R	2000	2000P/R
100	100P/R	2048	2048P/R
200	200P/R	2500	2500P/R
250	250P/R	3600	3600P/R
300	300P/R	4096	4096P/R
360	360P/R	5000	5000P/R
500	500P/R	1000	10000P/

※10000 P/R(Line Driver Only)

Output Mode:
- No Indication : Voltage Output
- C : Open Collector Outpu
- HC : Open Collector Output / High Voltaget
- HCP : PNP Mode Open Collector Output / High Voltage
- HT : Push-Pull Output / High Voltage
- D : Line Driver Output Standard C-MOS
- WT : Push-Pull Output / Wide Voltage

Outer diameter shaft:
- 8 : ϕ8
- ※9525 : ϕ9.525
- ※10 : ϕ10

※ : Option

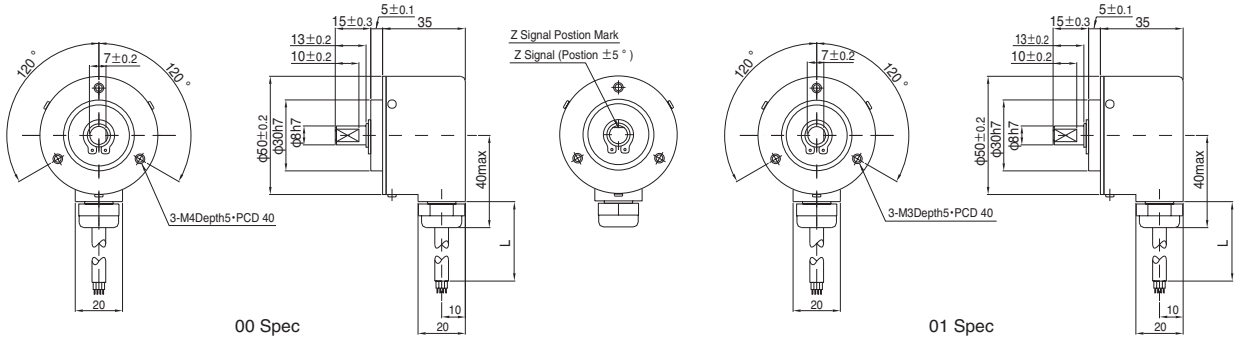
Cable Length:
- 050 : 500mm (Standard)
- 100 : 1000mm
- 300 : 3000mm

- 00: PCD40 3-M4 Depth 5
- 01: PCD40 3-M3 Depth 5

- No Indication : Other than D output
- No Indication : D output with LS
- C : D output with C-MOS

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

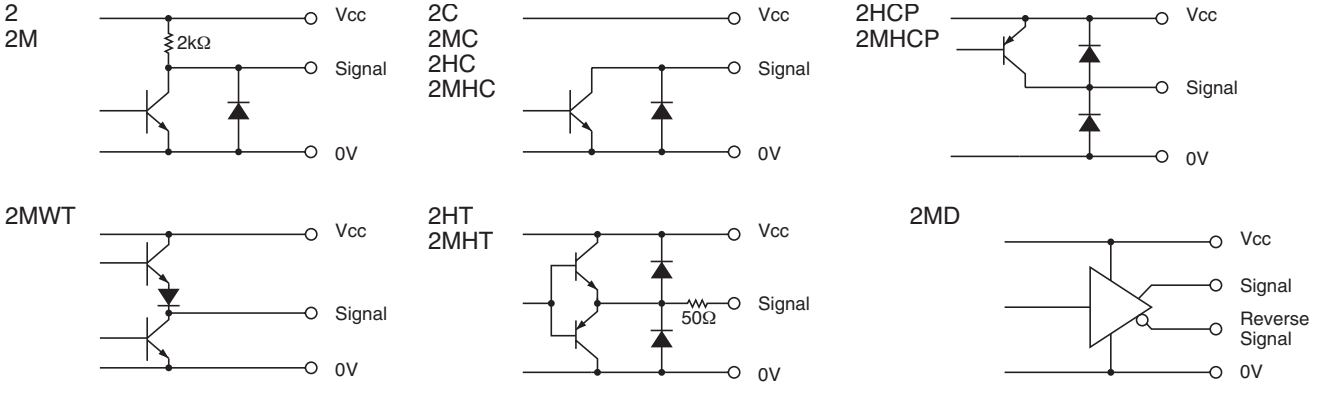
External Dimension



00 Spec

01 Spec

Circuit of Output Signal



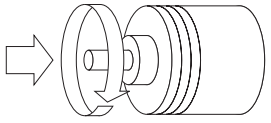
Electrical Spec.

※1) at Maximum Output Current ※2) Maximum Source Current

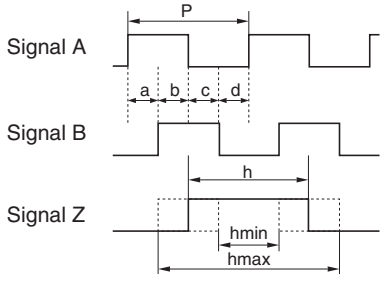
TYPE		2 • 2M	2C•2MC	2HC•2MHC	2HCP•2MHCP	2HT•2MHT	2MD	2MWT
Supply Voltage		DC4.5 ~ 13.2 V		DC10.8 ~ 26.4 V			DC4.5~5.5V (C-MOS)	DC 4.75~30V
Requirement		90 mA Max	70 mA Max		100 mA Max	90 mA Max	70 mA Max (C-MOS)	60 mA Max
Output Voltage	"H"	Within –1 Power Volt	———		Within –1※2 Power Volt	Within –3 Power Volt	2.5 V or More	Within –2.5 Power Volt
	"L" ※1	0.5 V Max			———	3 V Max	0.5 V Max	0.4 V Max
Maximum Output Current		20 mA MAX				40 mA MAX	20 mA MAX	30 mA MAX
Rise & Fall Time		1 μs Max					200 ns Max	3 μs Max
Maximum Frequency Response		200 kHz			50 kHz	200 kHz(~5000P/R) 1 MHz (10000P/R)		100 kHz
Withstanding Voltage of Output Tr.		———	50 V MAX.		———			

Wave Form.

CW → Rotating Toward Clockwise Viewed from an Arrow



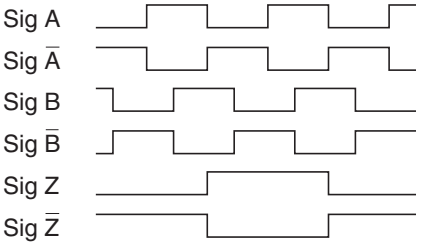
Rising point of A-Signal is always at one point while Z-Signal is at H-Level in CW.



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

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

Wave Ratio (Duty); 50 ± 25 (%)



Electrical Connections

2 **2MHC**
2M **2HCP**
2C **2MHCP**
2MC **2HT**
2HC **2MHT**

Color of Lead Wire	Description
Red	Power Source
Black	0V Common
Green or Blue	Signal A
White	Signal B
Yellow	Signal Z
Shielding Braid	NC

2MD

Color of Lead Wire	Description	Color of Lead Wire	Description
Red	Power Source	White	Signal $\overline{B}$
Black	0V Common	Gray	Signal $\overline{B}$
Green	Signal $\underline{A}$	Yellow	Signal $\underline{Z}$
Blue	Signal $\overline{A}$	Orange	Signal $\overline{Z}$
Shielding Braid	NC		

Mechanical Spec.

Starting Torque		9.8×10^{-3}N • m Max
Angular Acceleration		1×10^{5} rad/s^2
Shaft Loading	Thrust axial	49N
	Radial	78.4N
Moment of Inertia		3×10^{-6}kg • m^2
Maximum RPM		Maximum : 5000r/min Continuous : 3000r/min
Net Weight		250g Max

Environmental Spec.

Operating Temperature	–10˚C ~ +70˚C
Storage Temperature	– 30˚C ~ +85˚C
Humidity	RH 85% Max No Condensation
Vibration	10~55 Hz / 1.5mm 2 h
Shock	980m/s^2,11ms X, Y, Z Each 3 times
Degree of Protection	IP65