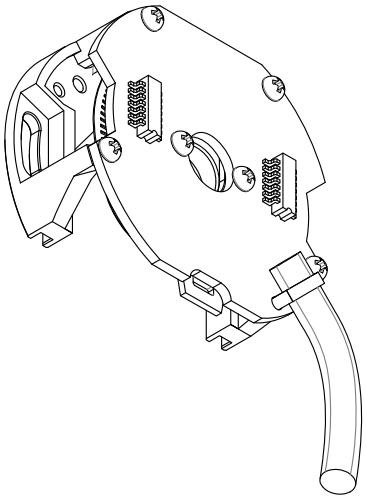
Z48 Specifications 1/4

Rotary Encoder Module (Incremental tpye,Non-bearing)

- Feature: Thin,logical compact configuration,easy to installation
- Application: Servo motor,motor,ect,for Automatic control
- External dimensions: external diameter Ø48mm,thickness 22.5mm,diameter of shaft Ø8mm
- Resolution: up to 2500P/R
- Supply voltage: DC5V; DC8-30V
- Cable length: 300mm
- Weight: about 60g

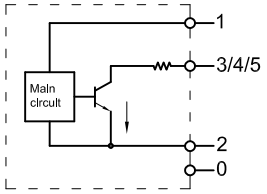
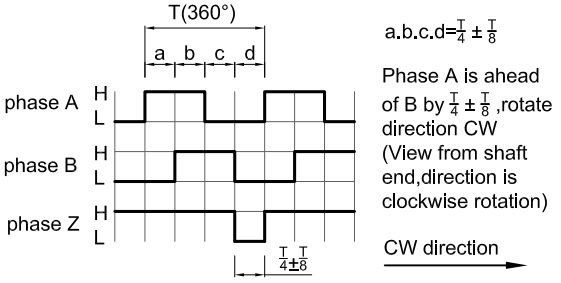
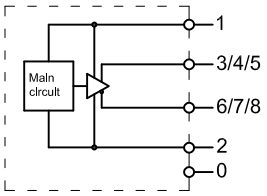
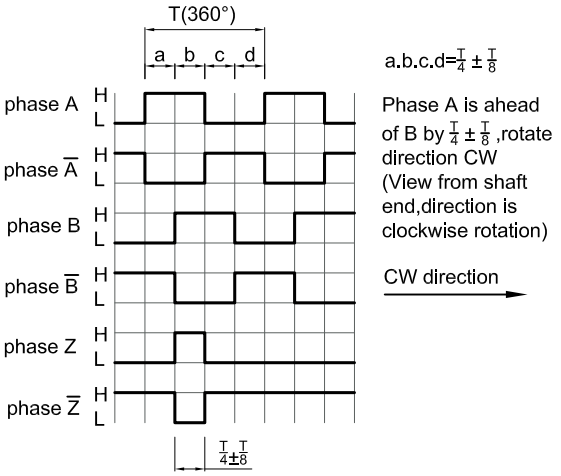
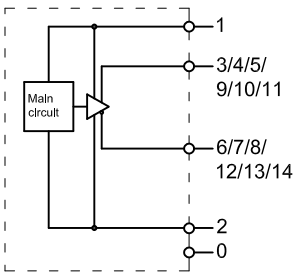
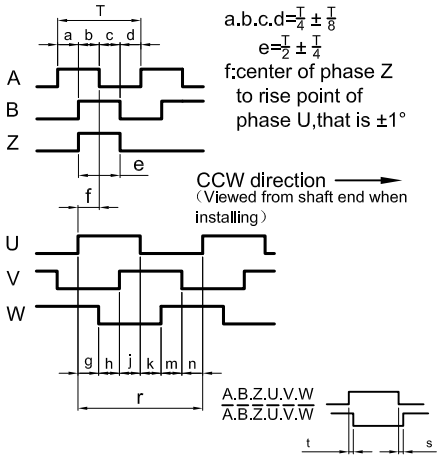


Model Guide

- Model form (filled required parameters in the box as following)
- Must choose supply voltage: DC5V; DC8-30V

Z48–	J	12	C	2500/8		
Product model series	J=Radial cable	Output phase 1=A 2=A+B 3=A+B+Z 4=A+$\overline{A}$+B+$\overline{B}$ 6=A+$\overline{A}$+B+$\overline{B}$+Z+$\overline{Z}$ 12=A+$\overline{A}$+B+$\overline{B}$+Z+$\overline{Z}$ +U+$\overline{U}$+V+$\overline{V}$+W+$\overline{W}$	Output type N=OC(NPN) C=TTL(DC5V) E=HTL(DC8-30V)	Incremental: Resolution(P/R) 50; 60; 100; 200; 256; 300; 360; 500; 512; 600; 720; 1000; 1024; 1200; 2000; 2048; 2500 Servo: Resolution/pole 1000/4; 1024/4; 1000/6; 1024/6; 1000/8; 1024/8; 2048/4; 2500/4; 2048/6; 2500/6; 2048/8; 2500/8	Diameter of shaft Blank=Ø8	Special requirement Blank=cable length 300mm Special cable length =C+number

Output Mode

Output type	Output circuit	Output wave form	Connection
OC (NPN)			0=GND 1=red=DC5V; DC8-30V 2=black=OV 3=white=A 4=green=B 5=yellow=Z
TTL HTL			0=shielding=GND 1=red=DC5V; DC8-30V 2=black=OV 3=white=A 4=green=B 5=yellow=Z 6=white/black=$\overline{A}$ 7=green/black=$\overline{B}$ 8=yellow/black=$\overline{Z}$
TTL			0=shielding=GND 1=red=DC5V 2=black=OV 3=white=A 4=green=B 5=yellow=Z 6=white/black=$\overline{A}$ 7=green/black=$\overline{B}$ 8=yellow/black=$\overline{Z}$ 9=blue=U 10=grey=V 11=pink=W 12=blue/black=$\overline{U}$ 13=grey/black=$\overline{V}$ 14=pink/black=$\overline{W}$

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Electrical Characteristics

Parameter / Output type / Item			OC(NPN)	TTL	HTL
Supply voltage			DC+5V±5%; DC8V-30V±5%	DC+5V±5%	DC8-30V±5%
Consumption current			100mA Max	120mA Max	
Allowable ripple			≤3%rms		
Top response frequency			100KHz	200KHz	300KHz
Output volume	Output current	Input	≤30mA	≤±20mA	≤±50mA
		Output	—		
	Output voltage	"H"	—	≥2.5V	≥Vcc-3 VDC
		"L"	≤0.4V	≤0.5V	≤ 1V VDC
	Load voltage		≤DC30V	—	
Rise & Fall time			Less than 2us(cable length: 2m)	Less than 1us(Cable length: 2m)	≤100ns
Mark to space ratio			45% to 55%		
Phase shift between A & B			90°±10° (low speed,frequency ≤1000Hz)		
			90°±20° (high speed,frequency >1000Hz)		
Origin motion			Low level available	—	
GND			not connect to encoder		

Mechanical Characteristics

External dimensions	External diameter Ø48mm，thickness 22.5mm
Shaft	Max Ø8mm(The following dimension can be customized)
Dimension of limiting slot	$Ø30^{+0.005}_{+0.025}$; depth 2.4mm
Slew speed	Constant 5000rpm
Environmental temperature	Operating:－20～+80℃; Storage:－25～+85℃
Environment humidity	Operating and storage:35～85%RH(noncondensing)
Material	Main body: Aluminium alloy
Cable length	300mm(with shielded cable)
Weight	About 60g

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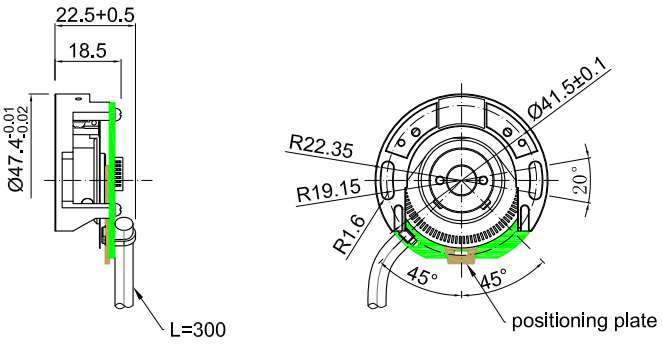
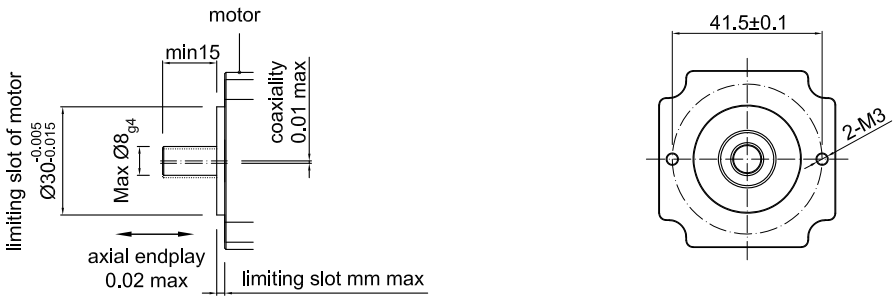
Basic Dimensions

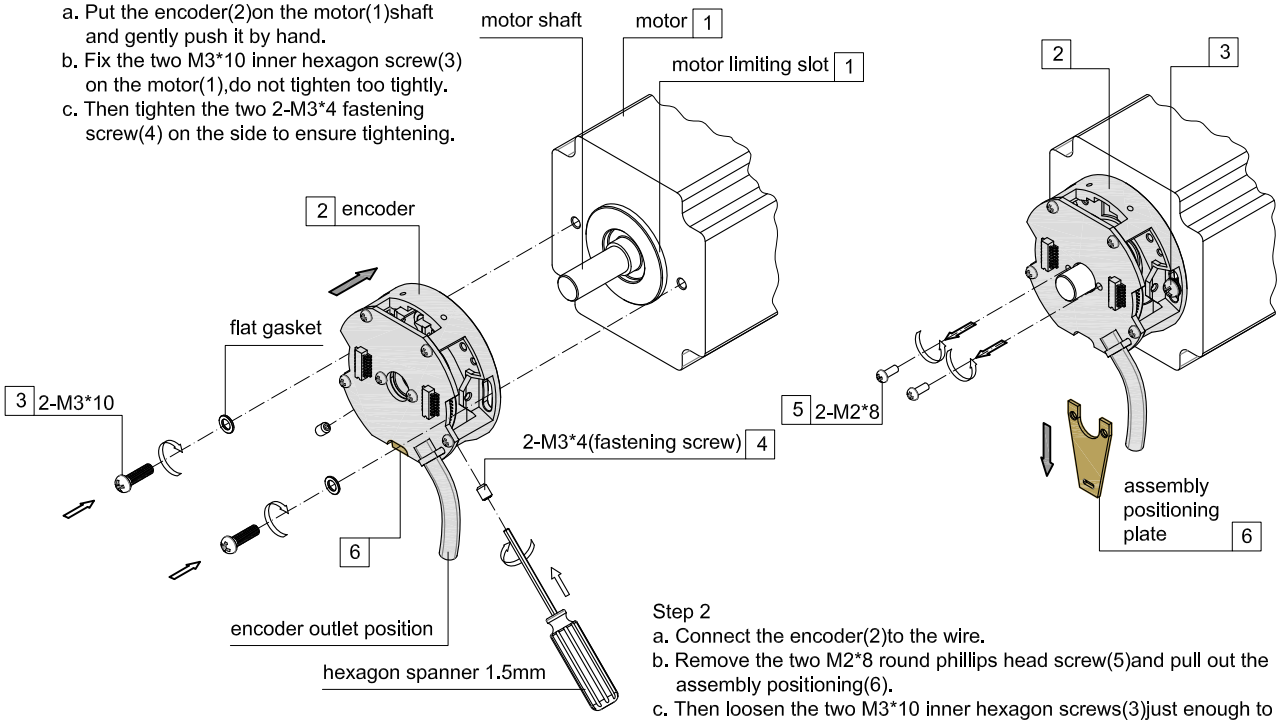


Assembling requirement



Assemblage

Step 1
a. Put the encoder(2)on the motor(1)shaft and gently push it by hand.
b. Fix the two M3*10 inner hexagon screw(3) on the motor(1),do not tighten too tightly.
c. Then tighten the two 2-M3*4 fastening screw(4) on the side to ensure tightening.



Step 2
a. Connect the encoder(2)to the wire.
b. Remove the two M2*8 round phillips head screw(5)and pull out the assembly positioning(6).
c. Then loosen the two M3*10 inner hexagon screws(3)just enough to turn the encoder(2)by hand,
d. After checking the error,turn on the power to debug the zero starting point,turn the encoder(2)by hand to align the electric zero signal, then make sure to tighten the two M3*10 inner hexagon screws(3)so that the encoder can be used.

Unit: mm