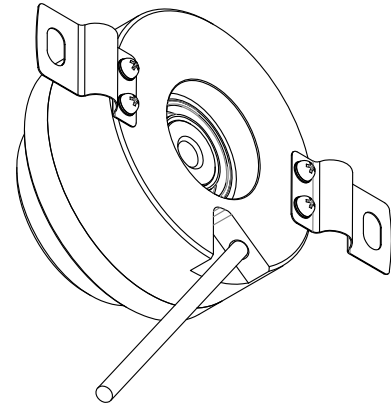


# K80

## Specifications 1/5

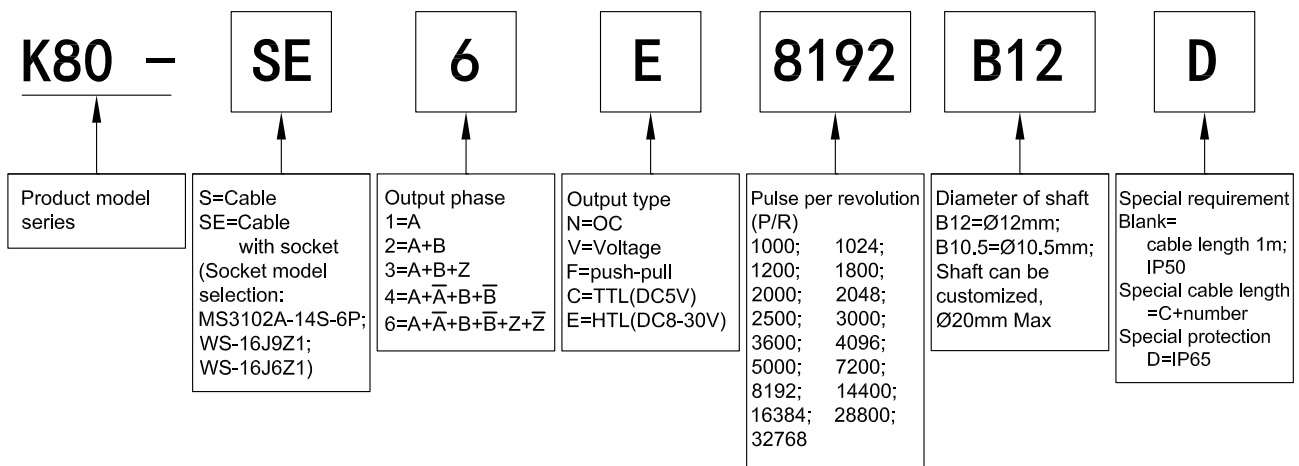
### Incremental Type (Hollow shaft, Blind hole)

- Feature: Sturdy and durable, Alternative output mode, long service life, etc
- Application: Automation control like elevator, CNC machines, packing machinery, etc
- External dimensions: external diameter  $\varnothing 80\text{mm}$ , thickness 50mm, shaft  $\varnothing 12\text{mm}$ ;  $\varnothing 10.5\text{mm}$
- Resolution: up to 32768P/R
- Supply voltage: DC5V; DC8-30V
- Protection: IP50; IP65
- Cable length: 1000mm
- Weight: about 600g



### Model Guide

- Model form (filled required parameters in the box as following)
- Must choose supply voltage: DC5V; DC8-30V
- SE cable with socket, need to choose the socket model: MS3102A-14S-6P; WS-16J9Z1; WS-16J6Z1 (pls refer to the specification 4/4)



# K80 Specifications 2/5

## Output Mode

Output type	Output circuit	Output wave form	Connection
OC		<p> <math>a.b.c.d = \frac{T}{4} \pm \frac{T}{8}</math>                      Phase A is ahead of B by <math>\frac{T}{4} \pm \frac{T}{8}</math>, rotate direction CW (View from shaft end, direction is clockwise rotation)                      CW direction <math>\rightarrow</math> </p>	0=GND 1=red=DC5V; DC8-30V 2=black=OV 3=white=A 4=green=B 5=yellow=Z
Push-Pull		<p> <math>a.b.c.d = \frac{T}{4} \pm \frac{T}{8}</math>                      Phase A is ahead of B by <math>\frac{T}{4} \pm \frac{T}{8}</math>, rotate direction CW (View from shaft end, direction is clockwise rotation)                      CW direction <math>\rightarrow</math> </p>	
Voltage		<p> <math>a.b.c.d = \frac{T}{4} \pm \frac{T}{8}</math>                      Phase A is ahead of B by <math>\frac{T}{4} \pm \frac{T}{8}</math>, rotate direction CW (View from shaft end, direction is clockwise rotation)                      CW direction <math>\rightarrow</math> </p>	
TTL HTL		<p> <math>a.b.c.d = \frac{T}{4} \pm \frac{T}{8}</math>                      Phase A is ahead of B by <math>\frac{T}{4} \pm \frac{T}{8}</math>, rotate direction CW (View from shaft end, direction is clockwise rotation)                      CW direction <math>\rightarrow</math> </p>	

### ■ Electrical Characteristics

Parameter Item	Output type		OC	Voltage	Push-pull	TTL	HTL
	Supply voltage			DC+5V±5%; DC8V-30V±5%			DC+5V±5%
Consumption current			100mA Max				
Allowable ripple			≤3%rms				
Top response frequency			100KHz			200KHz	300KHz
Output capacity	Output current	Input	≤30mA	Load resistance 2.2K	≤30mA	≤±20mA	≤±50mA
		Output	—		≤10mA		
	Output voltage	"H"	—	—	≥[(Supply voltage)-2.5V]	≥2.5V	≥V <sub>CC</sub> -3 V <sub>DC</sub>
		"L"	≤0.4V	≤0.7V(less than 20mA)	≤0.4V(30mA)	≤0.5V	≤1V V <sub>DC</sub>
	Load voltage	≤DC30V		—	—		
Rise & Fall time			Less than 2us(cable length: 2m)			Less than 1us (Cable length: 2m)	≤100ns
Insulation strength			AC500V 60s				
Insulation resistance			10MΩ				
Mark to space ratio			45% to 55%				
Phase shift between A & B			90°±10° ( frequency in low speed )				
			90°±20° ( frequency in high speed )				
Origin motion			Low level available	High level available	Low level available	—	
GND			not connect to encoder				

### ■ Mechanical Characteristics

Shaft	∅10.5mm;∅12mmShaft can be customized, ∅20mm Max
Starting torque	Less than 20mN·m
Inertia moment	Less than 25×10 <sup>-6</sup> kg·m <sup>2</sup>
Shaft load	Radial 50N; Axial 30N
Slew speed	≤2000 rpm; IP65≤1500 rpm
Bearing Life	1.5X10 <sup>9</sup> revs at rated load(100000hrs at 2500RPM)
Shell	Die cast aluminum
Weight	about 600g

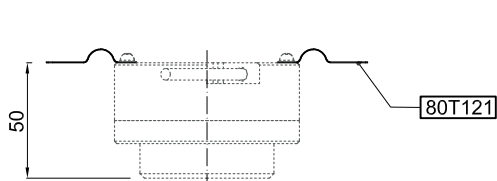
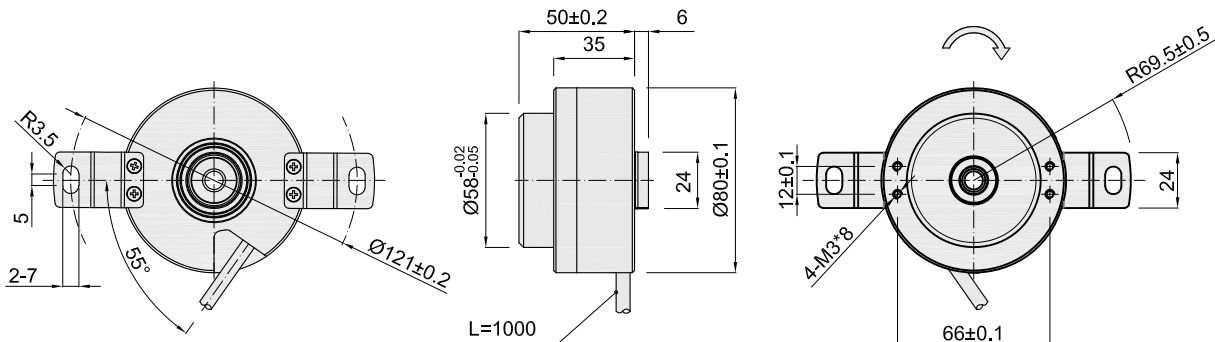
### ■ Environmental Specifications

Environmental temperature	Operating: -20~+85°C(repeatable winding cable: -10°C); Storage: -25~+90°C
Environmental humidity	Operating and storage: 35~85%RH(noncondensing)
Vibration(endure)	Amplitude 1.52mm,5~55Hz,2h for X,Y,Z direction individually
Shock(endure)	1000m/s <sup>2</sup> 11ms three times for X,Y,Z direction individually
Protection	IP50; IP65

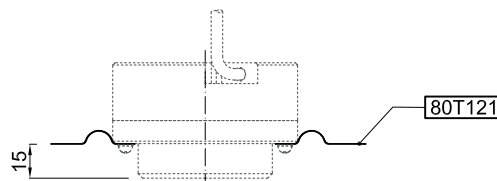
# K80 Specifications 4/5

Basic Dimensions

K80-S

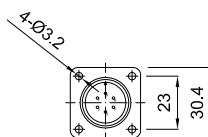
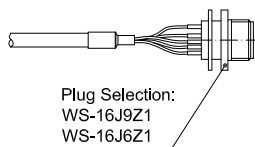
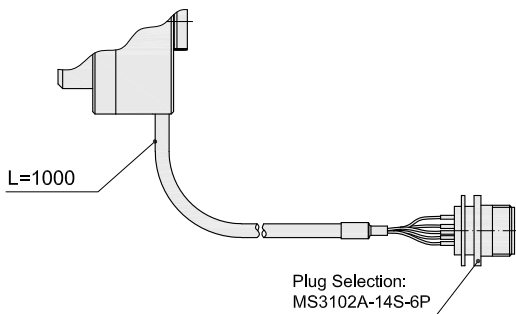


Leaf Spring Installation: 1

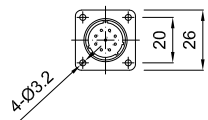


Leaf Spring Installation: 2

K80-SE

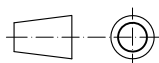


MS3102A-14S-6P  
 A=8-30VDC  
 B=OVDC  
 C=A+  
 D=A-  
 E=B+  
 F=B-



WS-16J9Z1      WS-16J6Z1  
 1=VCC            1=VCC  
 2=OVDC        2=OV  
 3=A+            3=A  
 4=B+            4=B  
 5=Z+            5=Z  
 6=A-            6=A-  
 7=B-            7=B-  
 8=Z-            8=Z-

Unit: mm

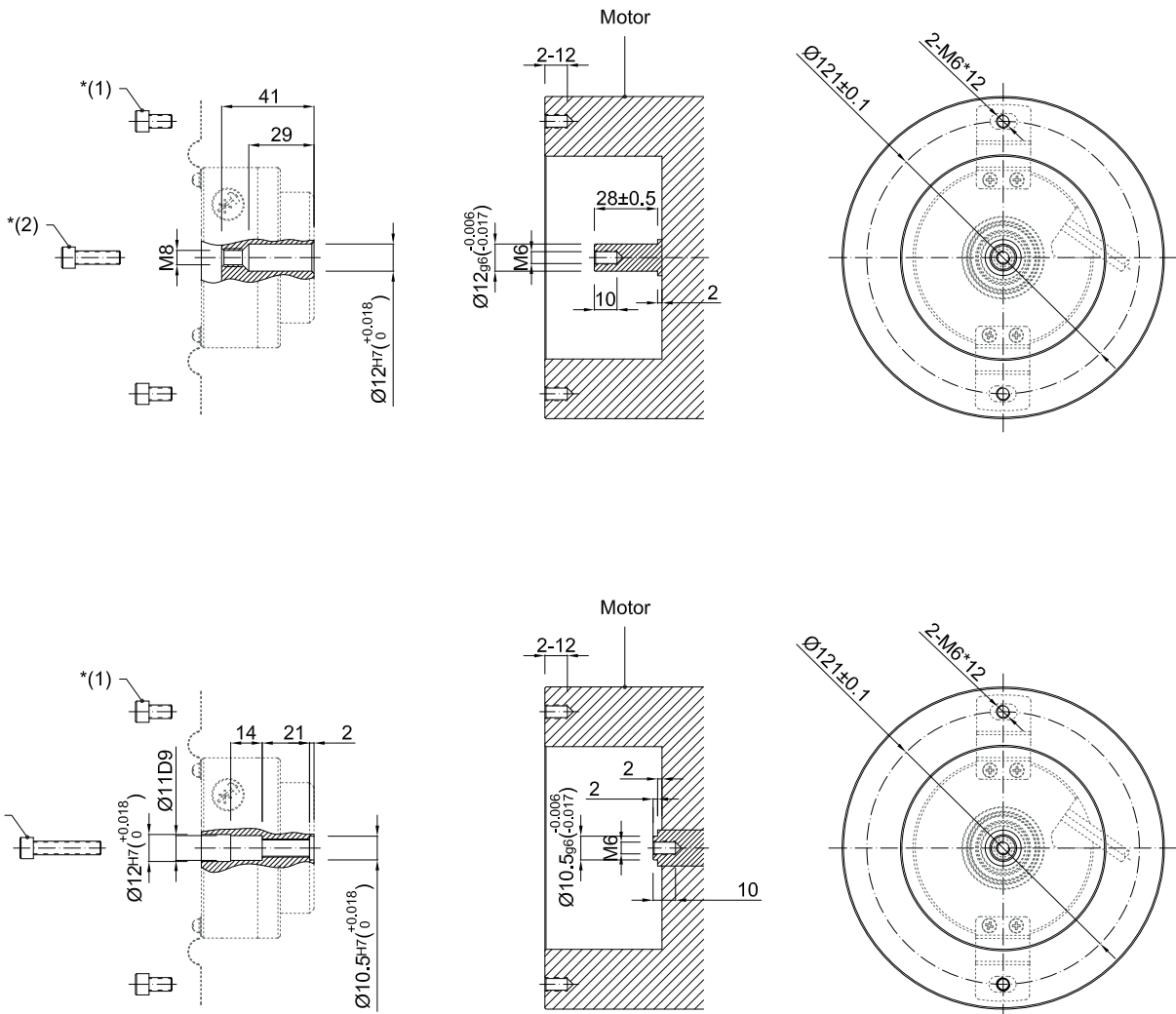


= Rotate direction of signal output shaft

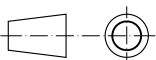
= Leaf Spring

# K80 Specifications 5/5

## Assembling requirement



Unit: mm



Note:

- \*(1): Inner hexagon screw M6\*10 with flat gasket and spring ring is recommended to use
- \*(2): Inner hexagon screw M6\*20 with flat gasket and spring ring is recommended to use
- \*(3): Inner hexagon screw M6\*30 with flat gasket and spring ring is recommended to use

About vibration

Vibration act on encoder always cause wrong pulse ,so we should pay attention to working place. More pulse per revolution , narrower groovy spacing of grating ,more effect to encoder by vibration,when rev is low or stop , vibration act on shaft or main body would cause grating vibrating ,so encoder might make wrong pulse.