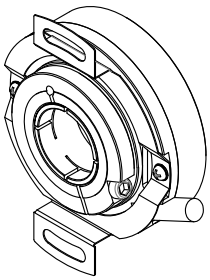
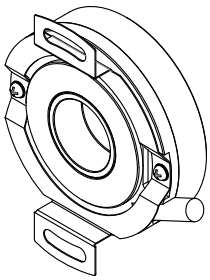
K58 Specifications 1/6

Incremental Type (Hollow shaft、through hole)

- Feature: Thin type,sturdy and durable,optional various output mode,easy to install
- Application: textile industry,motor,packing machinery,production line,etc,for auromation control
- External dimensions: external diameter Ø58mm,thickness 24mm,diameter of shaft Ø15mm;Ø16mm;Ø18mm;Ø20mm;Ø22mm (optional)
- Resolution: up to 28800P/R
- Supply voltage: DC5V; DC8-30V
- Protection: IP50
- Cable length: 1000mm
- Weight: about 150g



K58-J
(Clamping ring at prior)



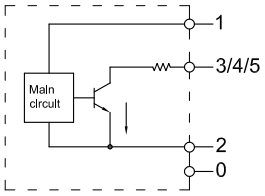
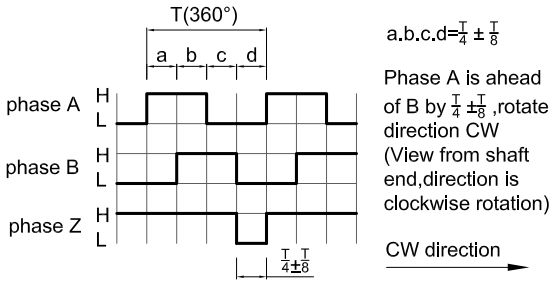
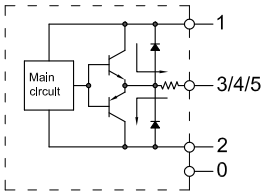
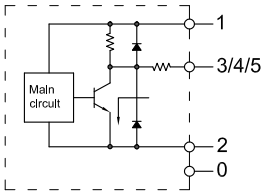
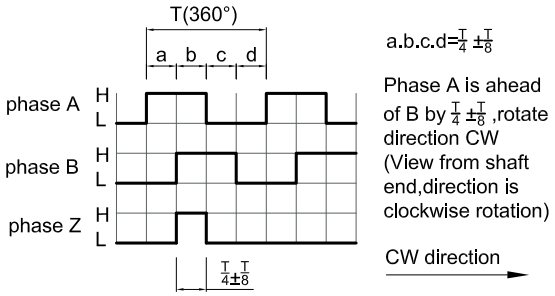
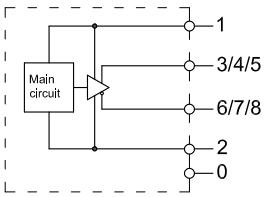
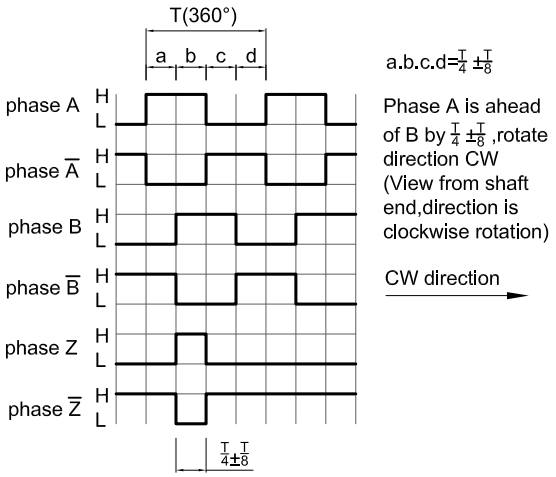
K58-J
(Clamping ring at rear)

Model Guide

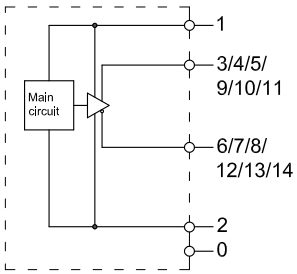
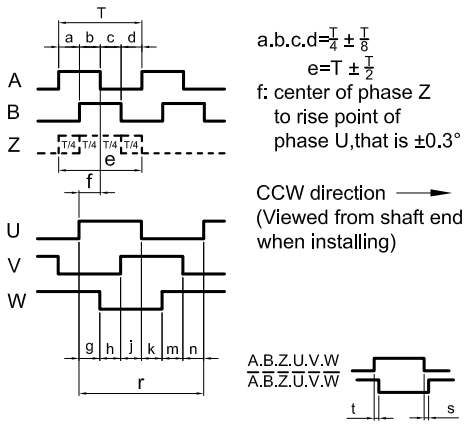
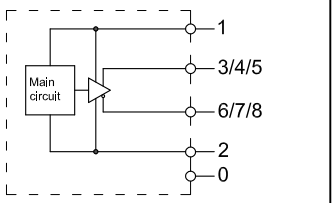
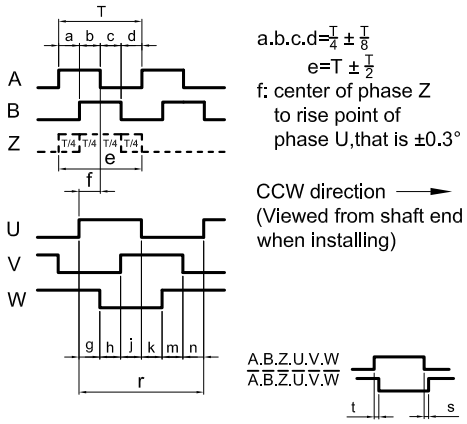
- Model form (filled required parameters in the box as following)
- Must choose supply voltage: DC5V; DC8-30V
- Must choose clamping ring at prior (BQ) or clamping ring at rear (B) when choosing diameter of shaft
- Leaf spring (pls refer to specification on page 6/6)

K58 –	J	6	E	2048	B22	
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 V=Voltage F=Push-pull C=TTL(DC5V) 26LS31 E=HTL (DC8-30V) L=TTL(DC5V) 26C31 S=TTL(DC5V) (Phase A.B.Z are back of phase U.V.W)	Incremental: Resolution(P/R) 1000; 1024; 1250; 2000; 2048; 2500; 4096; 5000; 7200; 14400; 28800 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; 4096/4; 5000/4; 4096/6; 5000/6; 4096/8; 5000/8	Diameter of shaft clamping ring at rear: B15=Ø15mm B16=Ø16mm B18=Ø18mm B20=Ø20mm B22=Ø22mm clamping ring at prior: BQ15=Ø15mm BQ16=Ø16mm BQ18=Ø18mm BQ20=Ø20mm BQ22=Ø22mm	Special requirement Blank=cable length 1m; IP50 Special cable length =C+number

■ Output Mode

Output type	Output circuit	Output wave form	Connection
OC			0=GND 1=red=DC5V; DC8-30V 2=black=OV 3=white=A 4=green=B 5=yellow=Z
Push-Pull			
Voltage			
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=$\overline{Z}$

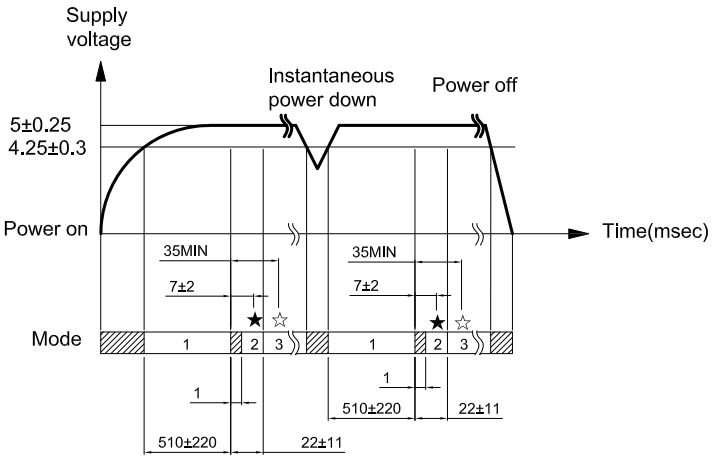
Output Mode

Output type	Output circuit	Output wave form	Connection
TTL		 a.b.c.d=$\frac{T}{4}\pm\frac{T}{8}$ e=T $\pm\frac{T}{2}$ f: center of phase Z to rise point of phase U,that is ±0.3° CCW direction ⟶ (Viewed from shaft end when installing)	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=$\overline{W}$
TTL (phase A.B.Z are back of phase U.V.W)		 a.b.c.d=$\frac{T}{4}\pm\frac{T}{8}$ e=T $\pm\frac{T}{2}$ f: center of phase Z to rise point of phase U,that is ±0.3° CCW direction ⟶ (Viewed from shaft end when installing)	

pole	g.h.j.k.m.n	r
4	30±1°	180°
6	20±1°	120°
8	15±1°	90°

No.	Function / Color	Mode 1	2	3
3	white	HZ	U	A
6	white/ black	HZ	$\overline{U}$	$\overline{A}$
4	green	HZ	V	B
7	green/ black	HZ	$\overline{V}$	$\overline{B}$
5	yellow	HZ	W	Z
8	yellow/ black	HZ	$\overline{W}$	$\overline{Z}$
1	red	DC+5V		
2	black	OV		
0	shielding	GND		

Timing Chart



Symbol signification

★: indicate position of UVW channel
☆: position to start counting ABZ channel
▨: non-using zone
HZ: high impedance

■ Electrical Characteristics

Parameter / Output type / Item			OC	Voltage	Push-pull	TTL(26LS31)	TTL(26C31)	TTL(26C31) (Phase A.B.Z are back of phase U.V.W)	HTL(HD7)
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	Load resistance 2.2K	≤30mA	≤±20mA			≤±50mA
		Output	—		≤10mA				
	Output voltage	"H"	—	—	≥[(Supply voltage) -2.5V]	≥2.5V			≥Vcc-3 VDC
		"L"	≤0.4V	≤0.7V(less than 20mA)	≤0.4V(30mA)	≤0.5V			≤ 1V VDC
	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° (low speed,frequency ≤1000Hz)						
			90°±20° (high speed,frequency >1000Hz)						
Origin motion			Low level available	High level available	Low level available	—		Low level available	—
Delay motion time *			—					510±220ms	—
GND			not connect to encoder						

* Phase A.B.Z are back of phase U.V.W when power on。

■ Mechanical Characteristics

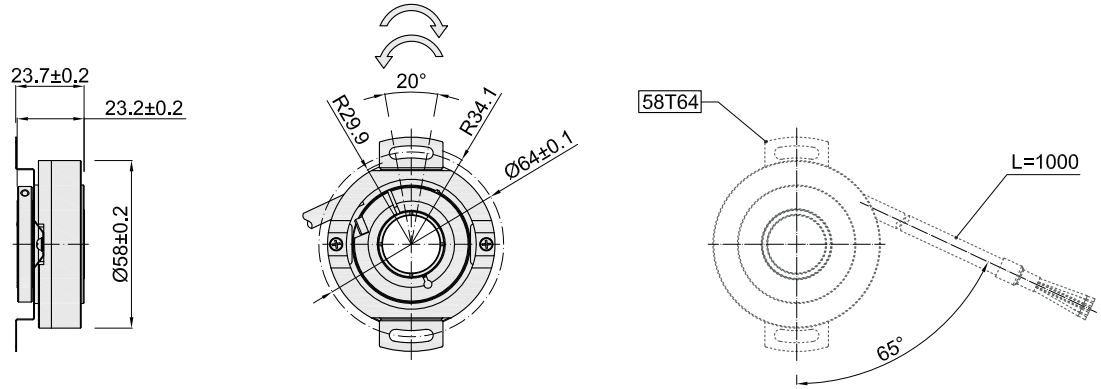
Shaft	Ø15mm; Ø16mm; Ø18mm; Ø20mm; Ø22mm(stainless steel)
Starting torque	Less than 9.8×10^{-3} N·m
Inertia moment	Less than 6.5×10^{-6} kg·m²
Shaft load	Radial 50N; Axial 30N
Slew speed	≤3000 rpm
Bearing Life	$1.5X10^{9}$ revs at rated load(100000hrs at 2500RPM)
Shell	Die cast aluminum
Weight	about 150g

■ Environmental Specifications

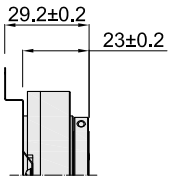
Environmental temperature	Operating:—20～+85°C(repeatable winding cable: -10°C); Storage:—25～+90°C
Environmental humidity	Operating and storage：35～85%RH(noncondensing)
Vibration(endure)	Amplitude 1.52mm,5~55Hz,2h for X,Y,Z direction individually
Shock(endure)	980m/s² 11ms three times for X,Y,Z direction individually
Protection	IP50

Basic Dimensions

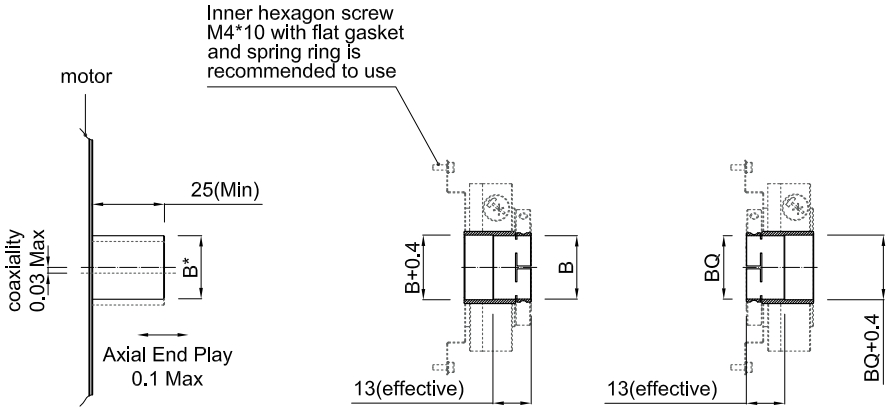
- Clamping ring at prior(BQ)



- Clamping ring at rear(B)



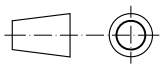
- Assembling requirement



B	BQ	B*
Ø15^{H7}		Ø15$_{g6}$
Ø16^{H7}		Ø16$_{g6}$
Ø18^{H7}		Ø18$_{g6}$
Ø20^{H7}		Ø20$_{g6}$
Ø22^{H7}		Ø22$_{g6}$

B* Motor shaft diameter tolerance

Unit: mm

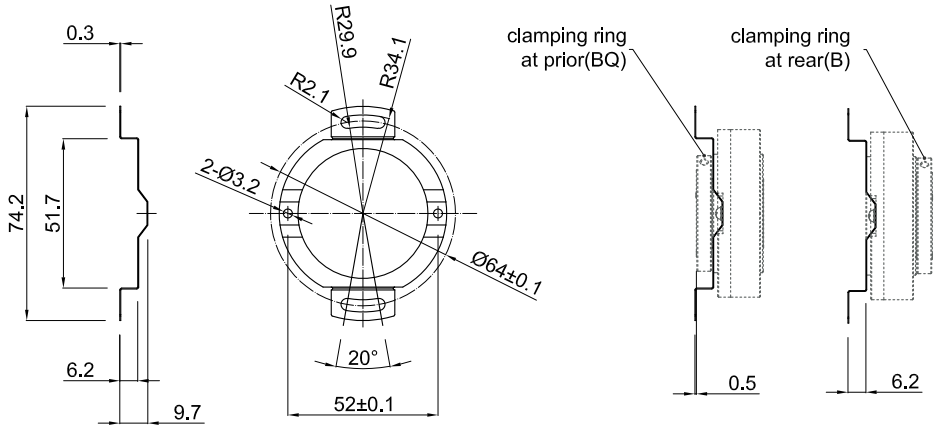
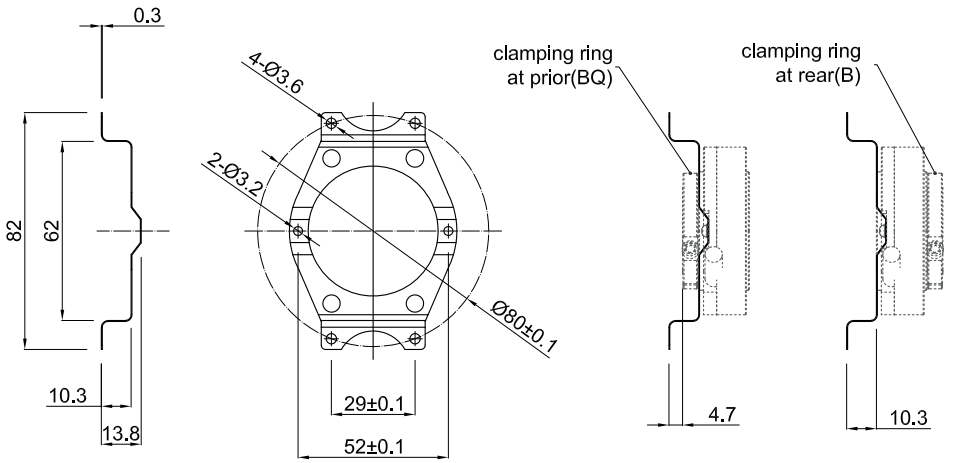


58T64 = Leaf Spring

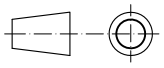
= Rotate direction of incremental signal output shaft

= Rotate direction of servo signal output shaft

Accessory (Leaf spring)

58T64 Standard	
58T80 purchase additionally The leaf spring can be mounted on the arched surface of the motor cover	

Unit: mm



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。