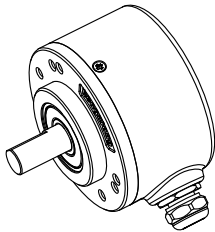


S50

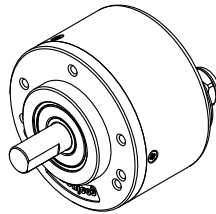
Specifications 1/5

Incremental Type (Solid shaft)

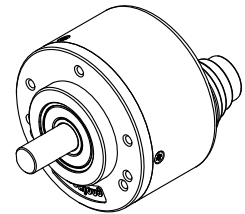
- Feature: sturdy and durable, optional various output mode, long service life, low price, etc
- Application: textile industry, packing machinery, production line, etc, for automation control
- External dimensions: external diameter $\varnothing 50\text{mm}$, thickness 30mm, diameter of shaft 8mm (D type)
- Resolution: up to 23040P/R
- Supply voltage: DC5V; DC8-30V
- Protection: IP50; IP65
- Cable length: 1000mm
- Weight: about 190g



S50-T



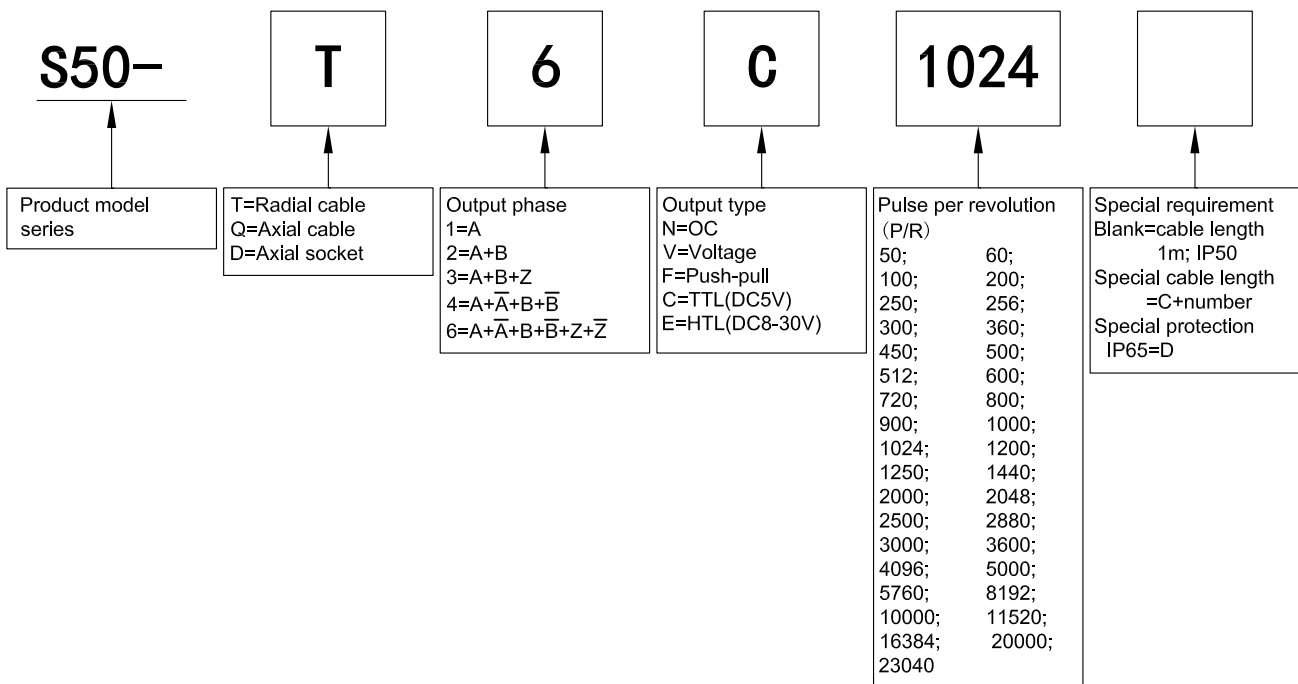
S50-Q



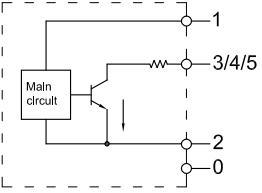
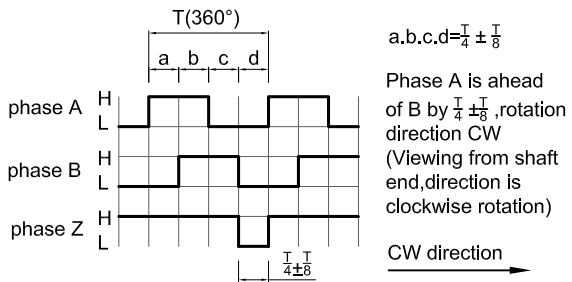
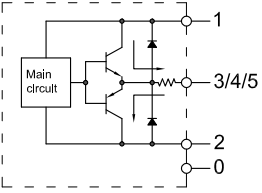
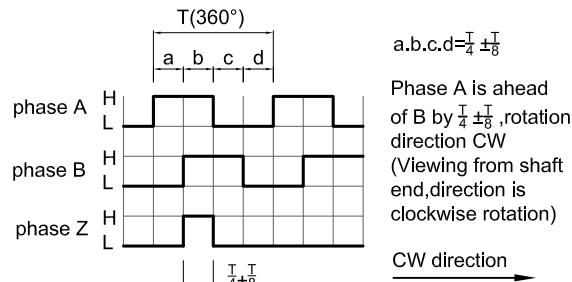
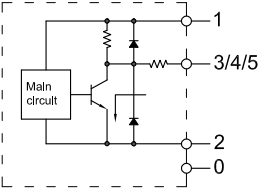
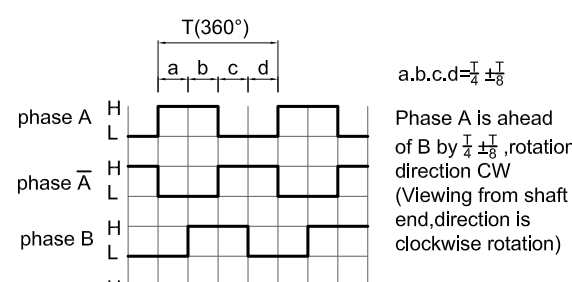
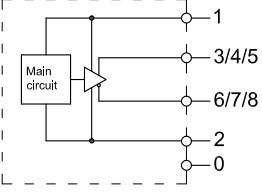
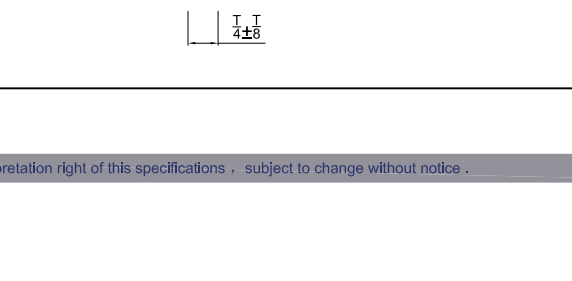
S50-D

Model Guide

- Model form (filled required parameters in the box as following)
- Must choose supply voltage: DC5V; DC8-30V
- If need coupling and bracket, please purchase additionally (accessory at specifications 5/5)



Output Mode

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

■ Electrical Characteristics

Parameter Item	Output type	OC		Voltage		Push-pull		TTL		HTL			
Supply voltage		DC+5V±5%; DC8V-30V±5%						DC+5V±5%		DC8-30V±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 _{CC} -3 V _{DC}		
		"L"	≤0.4V		≤0.7V(less than 20mA)		≤0.4V(30mA)		≤0.5V		≤1V V _{DC}		
	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	∅8mm D type(stainless steel)
Starting torque	Less than 5×10^{-3} N·m
Inertia moment	Less than 3×10^{-6} kg·m ²
Shaft load	Radial 40N; Axial 20N
Slew speed	≤5000 rpm; IP65≤3000 rpm
Bearing Life	1.5×10^9 revs at rated load(100000hrs at 2500RPM)
Shell	Aluminium alloy
Weight	about 190g

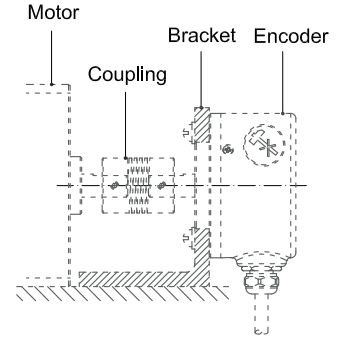
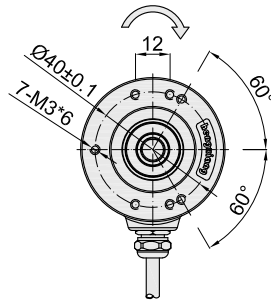
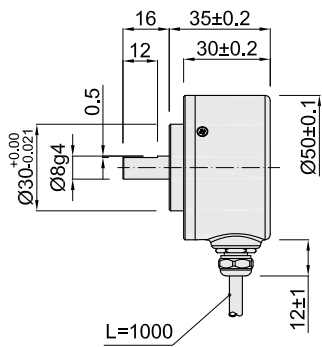
■ Environmental Specifications

Environmental temperature	Operating: -20~+90°C(repeatable winding cable: -10°C); Storage: -25~+100°C
Environmental humidity	Operating and storage: 35~85%RH(noncondensing)
Vibration(endure)	Amplitude 0.75mm,5~55Hz,2h for X,Y,Z direction individually
Shock(endure)	490m/s ² 11ms three times for X,Y,Z direction individually
Protection	IP50; IP65

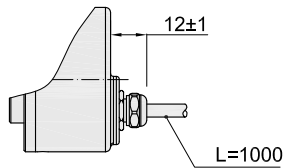
S50 Specifications 4/5

Basic Dimensions

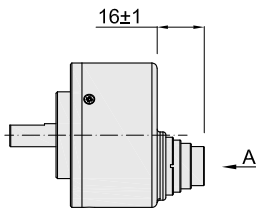
- S50-T



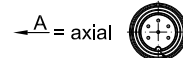
- S50-Q



- S50-D

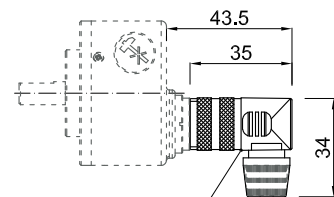


Socket mode: binder(682 series)



- Pin 1=DC
- 2=OV
- 3=A
- 4=B
- 5=Z
- 6=A
- 7=B
- 8=Z

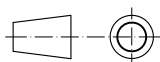
interface position



Plug mode: binder(682 series)

Output cable offered by client or purchase separately

Unit: mm



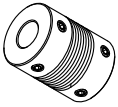
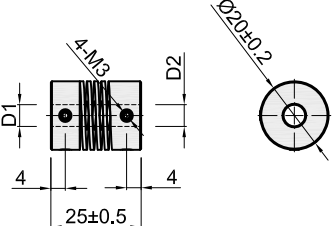

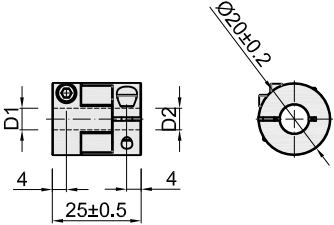
Rotate direction of signal output shaft

S50

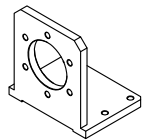
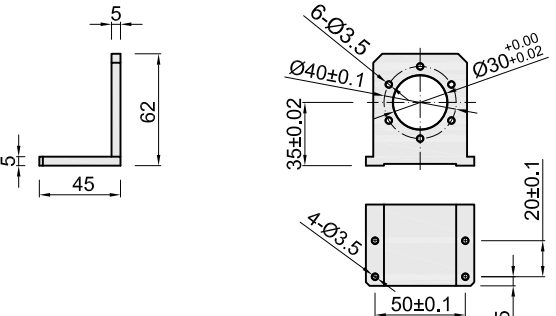
Specifications 5/5

■ Accessory(Need purchase additionally)

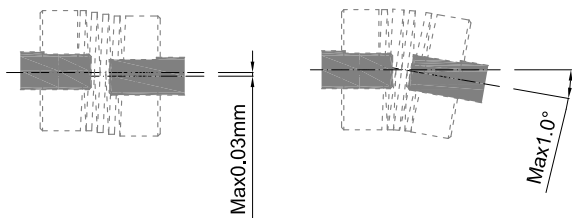
● Coupling

H series spring coupling (general accuracy, or choose M series for higher accuracy) 6H8 No:8700022 8H8 No:8700023 8H10 No:8700007			Model	D1	D2
			6H8	$\text{Ø}6^{+0.01}_{+0.03}$	$\text{Ø}8^{+0.01}_{+0.03}$
			8H8	$\text{Ø}8^{+0.01}_{+0.03}$	
			8H10		$\text{Ø}10^{+0.01}_{+0.03}$
material: aluminium alloy					
M series oldham coupling 6M8 No:8700038 8M8 No:8700039 8M10 No:8700040			Model	D1	D2
			6M8	$\text{Ø}6^{+0.01}_{+0.03}$	$\text{Ø}8^{+0.01}_{+0.03}$
			8M8	$\text{Ø}8^{+0.01}_{+0.03}$	
			8M10		$\text{Ø}10^{+0.01}_{+0.03}$
material: aluminium alloy					

● Bracket

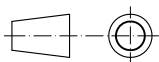
50L30 No:3500165		
material: aluminium alloy		

■ Assembling requirement



Notice : The radial runout of motor shaft should be less than 0.03mm, and the angle should be less than 1.0°.

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.