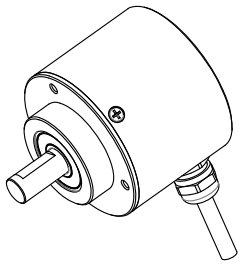
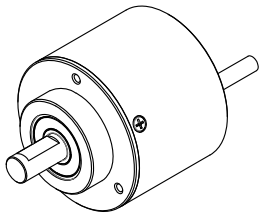
S58 Specifications 1/6

Incremental Type(Solid shaft)

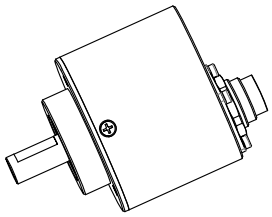
- Feature: Over temperature alarm,Overload protection,with Sense Vcc,Sturdy and durable
- Application: elevator industry,textile industry,packing machinery,etc for automation control
- External dimensions: external diameter Ø58mm,thickness 46mm,shaft 10mm(D type)
- Resolution: up to 23040P/R
- Supply voltage: DC5V; DC10-24V; DC8-30V
- Protection: IP50; IP65
- Cable length: 1000mm
- Weight: about 420g



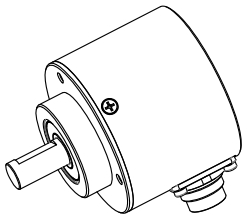
S58-T



S58-Q



S58-D



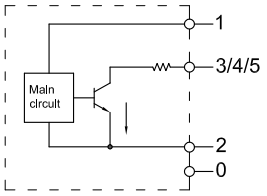
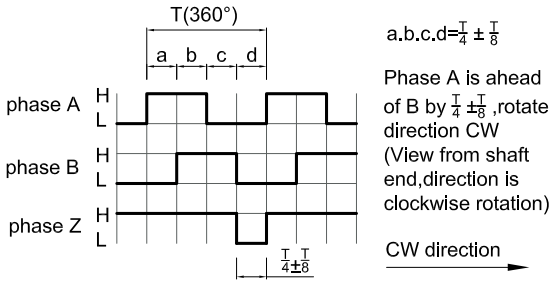
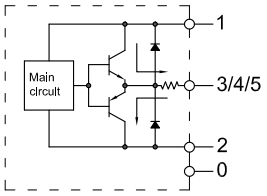
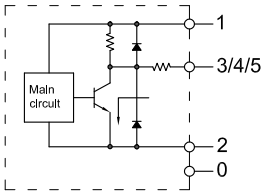
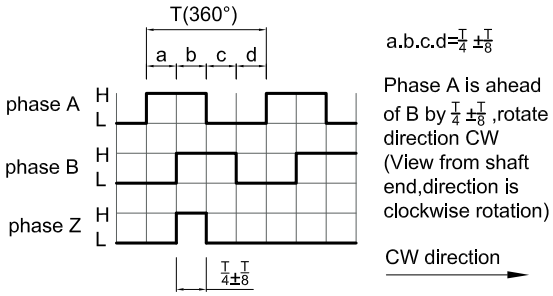
S58-C

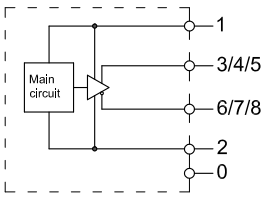
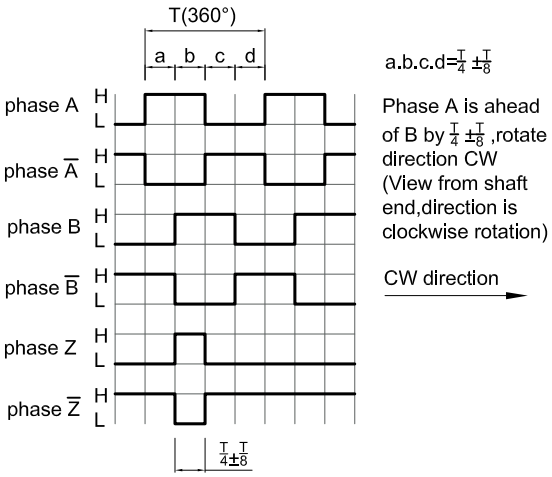
Model Guide

- Model form (filled required parameters in the box as following)
- Must choose supply voltage: DC5V; DC10-24V; DC8-30V
- If need coupling, please purchase additionally (Please refer to accessory at specifications 6/6)

S58–	Q	6	A	2500	D
Product model series	T=Radial cable Q=Axial cable D=Axial socket C=Radial socket	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+$\overline{Z}$	Output type N=OC V=Voltage F=Push-pull C=TTL(DC5V) E=HTL(DC8-30V) A=Push-Pull (Alarm/Sense DC10-24V)	Resolution(P/R) 50; 60; 100; 200; 250; 256; 300; 360; 450; 500; 512; 600; 720; 800; 900; 1000; 1024; 1200; 1250; 1440; 2000; 2048; 2500; 2880; 3000; 3600; 4096; 5000; 5760; 8192; 10000; 11520; 16384; 20000; 23040	Special requirement Blank=cable length 1m; IP50 Special cable length =C+number Special protection IP65=D

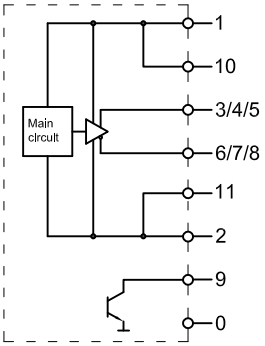
■ Output Mode

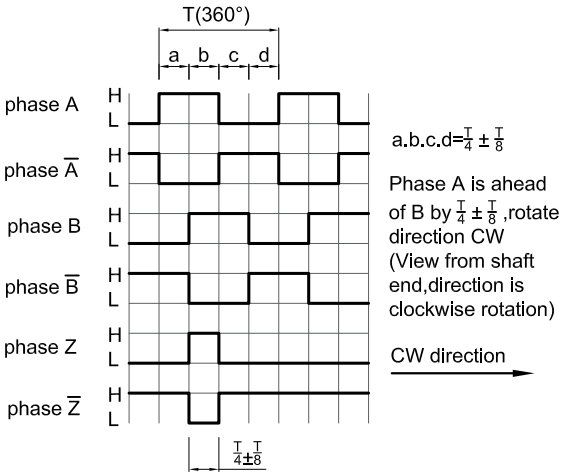
<table>
<tr><th>Output type</th><th>Output circuit</th><th>Output wave form</th><th>Connection</th></tr>
<tr><td>OC</td><td rowspan="2"> 
</td><td rowspan="2"> 
</td><td rowspan="3">0=GND
1=red=DC5V;
DC8-30V
2=black=OV
3=white=A
4=green=B
5=yellow=Z</td></tr>
<tr><td>Push-Pull</td><td> 
</td></tr>
<tr><td>Voltage</td><td> 
</td><td> 
</td></tr>
<tr><td>TTL

HTL</td><td> 
</td><td> 
</td><td>0=shielding=GND
1=red=DC5V;
DC8-30V
2=black=OV
3=white=A
4=green=B
5=yellow=Z
6=white/black=Ā
7=green/black=B̄
8=yellow/black=Z̄</td></tr>
</table>

Output Mode

Push-Pull
(with Alarm/Sense)
DC10-24V



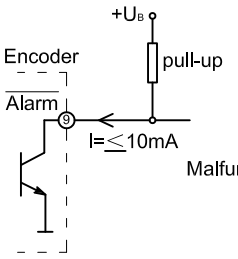


a.b.c.d=$\frac{T}{4}\pm\frac{T}{8}$

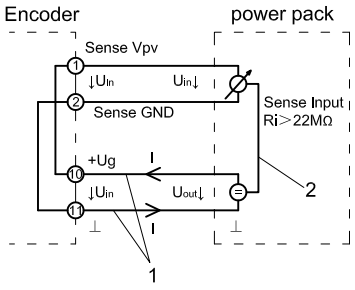
Phase A is ahead of B by $\frac{T}{4}\pm\frac{T}{8}$,rotate direction CW (View from shaft end,direction is clockwise rotation)

CW direction

Output-Alarm



Output	NPN-Open collctor
Output load max	5mA/24V at UB=DC10-24V
Output level	Output active(failure condition)：L≤DC0.7V Output inactive:high impedance(if necessary: get H-level by an external pull-up resistor)
Malfunction indication time	≥20ms
Function	-Overtemperature -Overload(e.g due to short circuit) -Voltage range DC1V＜U＜DC4V; -Voltage drop on the supply lines



The sense wires enable measuring of the actual encoder supply voltage(compensates for voltage drops due to supply current and cable resistance).

Due to the voltage drop in the cables and the voltage supply,the encoder input voltage Uin is less than the power pack output voltage U_{out}.
The present input voltage Uin is now output to the Sense Vcc and Sense GND cables and returns as data to the power pack.
The input resisance R on the power pack should amount to at least22MΩ,so that no voltage drop occurs on these cables.
In case of power packs with sense input,it is now possible to readjust the output voltage Uout automatically.

1. Voltage drop due to long cable lengths
2. Automatic readjustment of the output voltage (only for power packs with sense input)

0=shielding=GND
1=B=red=DC10-24V
2=C=black=OV
3=D=white=A
4=E=green=B
5=F=yellow=Z
6=G=white/black=$\overline{A}$
7=H=green/black=$\overline{B}$
8=I=yellow/black=$\overline{Z}$
9=K=blue=$\overline{Alarm}$
10=L=brown=Sense VCC
11=M=gray=Sense OV

■ Electrical Characteristics

Parameter / Output type / Item			OC	Voltage	Push-pull	Push-Pull (with Alarm/Sense)	TTL	HTL
Supply voltage			DC+5V±5%; DC8V-30V±5%			DC10-24V±5%	DC+5V±5%	DC8-30V±5%
Consumption current			100mA 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	—		
GND			not connect to encoder					

■ Mechanical Characteristics

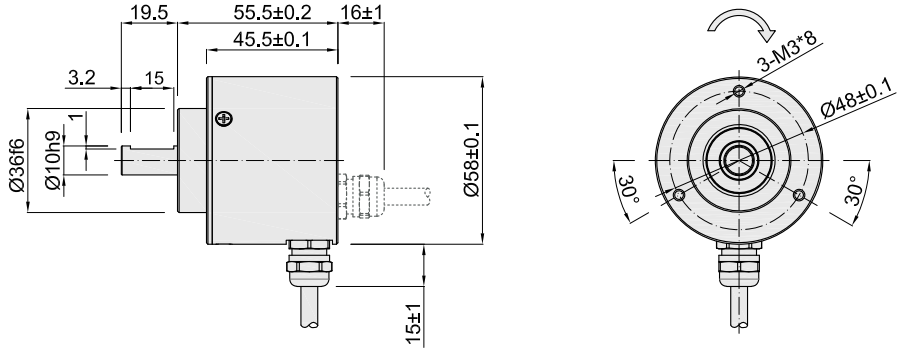
Shaft	Ø10mm D type(stainless steel)
Starting torque	Less than 10mN·m
Inertia moment	Less than 3×10^{-6} kg·m²
Shaft load	Radial 60N; Axial 40N
Slew speed	≤6000 rpm; IP65≤3000 rpm
Bearing Life	$1.5X10^{9}$ revs at rated load(100000hrs at 2500RPM)
Shell	Die cast aluminum
Weight	about 420g

■ Environmental Specifications

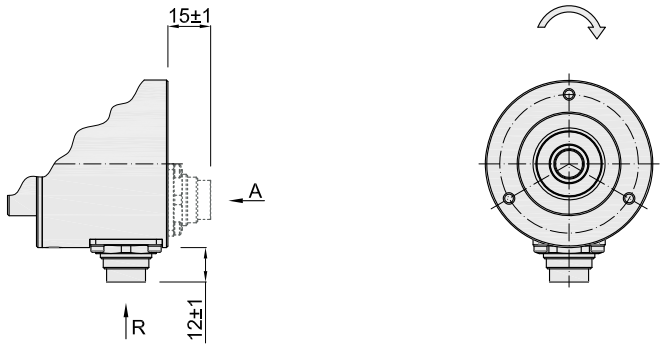
Environmental temperature	Operating: —20～+80°C(repeatable winding cable: -10°C); Storage: —25～+85°C
Environmental humidity	Operating and storage: 35～85%RH(noncondensing)
Vibration(endure)	Amplitude 0.75mm,5~55Hz,2h for X,Y,Z direction individually
Shock(endure)	490m/s² 11ms three times for X,Y,Z direction individually
Protection	IP50; IP65

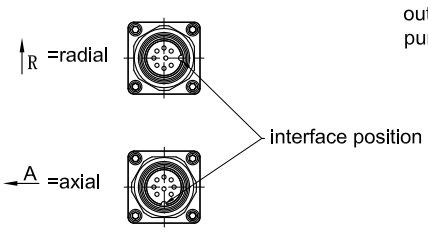
Basic Dimensions

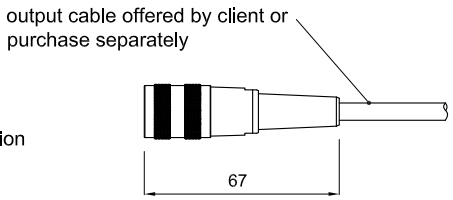
- S58-T
  S58-Q



- S58-C
  S58-D



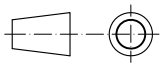


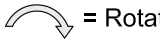


M16-8A
(with J09-8F)
1=DC
2=oV
3=A
4=B
5=$\overline{Z}$
6=$\overline{A}$
7=$\overline{B}$
8=$\overline{Z}$

M16-14A
(withJ09-14F)
B=DC10-24V
C=oV
D=A
E=B
F=$\overline{Z}$
G=$\overline{A}$
H=$\overline{B}$
I=$\overline{Z}$
K=$\overline{Alarm}$
L=Sense Vcc
M=Sense oV

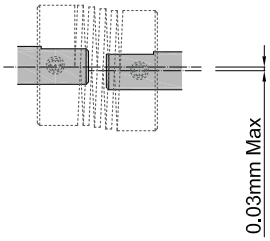
Unit: mm

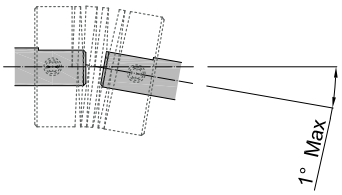




= Rotate direction of signal output shaft

Assembling requirement



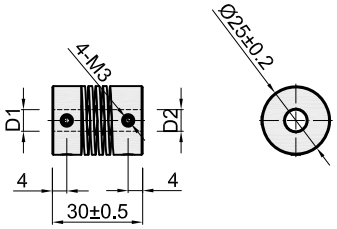


Notice : coaxiality between shaft of encoder and power shaft must be less than 0.03mm, and gradient must be less than 1°.

Accessory (Need purchase additionally)

H series spring coupling
(general accuracy, or choose M series for higher accuracy)

10H10 No:8700046
10H12 No:8700035

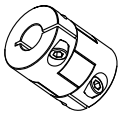


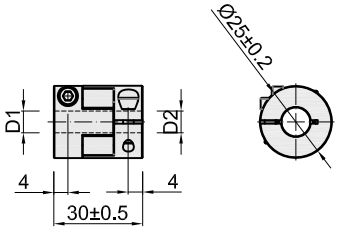
Model	D1	D2
10H10	$Ø10^{+0.01}_{+0.03}$	$Ø10^{+0.01}_{+0.03}$
10H12		$Ø12^{+0.01}_{+0.03}$

material:
aluminium alloy

M series oldham coupling

10M10 No:8700047
10M12 No:8700049

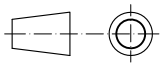




Model	D1	D2
10M10	$Ø10^{+0.01}_{+0.03}$	$Ø10^{+0.01}_{+0.03}$
10M12		$Ø12^{+0.01}_{+0.03}$

material:
aluminium alloy

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。