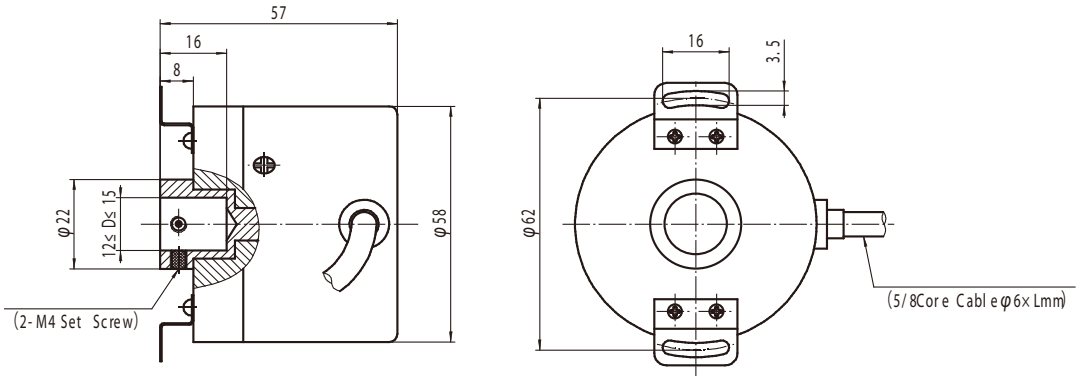
SANSHENG
SENSOR

# Product Selection Guide

## SA58H
## Applications & Features

End hollow shaft encoder with OD 58mm.
Widely used in mechanical and optical light industry.
Mutiple output options are available.
Resolutions up to 6000ppr.
Customer requirements can be customized.
Optoelectronic components with high reliability and
anti-interference ability adopted.

# Mechanical Drawing




# Electrical Specifications

| Output Type | Supply Voltage DC（V） | Current Consumption （mA） | Output Voltage （V） | | Rise Time （ns） | Fall Time （ns） | Frequency Response （kHz） |
|---|---|---|---|---|---|---|---|
| | | | $V_H$ | $V_L$ | | | |
| E（Voltage ） | 5±0. 25 | ≤ 80 | ＞3. 5 | ≤0 . 7 | ≤5 00 | ≤1 00 | 0- 300 |
| | 8- 26 | ≤1 20 | ＞VCC-2. 5 | ≤0 . 7 | ≤5 00 | ≤1 00 | 0- 300 |
| | 10-3 0 | | | | | | |
| F（Push-pull ） | 5±0. 25 | ≤ 80 | ＞3. 5 | ≤0 . 7 | ≤5 00 | ≤1 00 | 0- 300 |
| | 8- 26 | ≤1 20 | ＞VCC-2. 5 | ≤0 . 7 | ≤5 00 | ≤1 00 | 0- 300 |
| | 10-3 0 | | | | | | |
| C（Open Collector ） | 5±0. 25 | ≤ 60 | ＞VCC-2. 5 | ≤0 . 7 | ≤5 00 | ≤1 00 | 0- 300 |
| | 8- 26 | | | | | | |
| | 10-3 0 | | | | | | |
| L（Line Driver） | 5±0. 25 | ≤1 00 | ＞3. 5 | ≤0 . 7 | ≤2 00 | ≤2 00 | 0- 300 |
| A（Wide Voltage Line Driver ） | 8- 26 | ≤ 60 | ＞VCC-2. 5 | ≤0 . 7 | ≤5 00 | ≤1 00 | 0- 300 |
| | 10-3 0 | | | | | | |

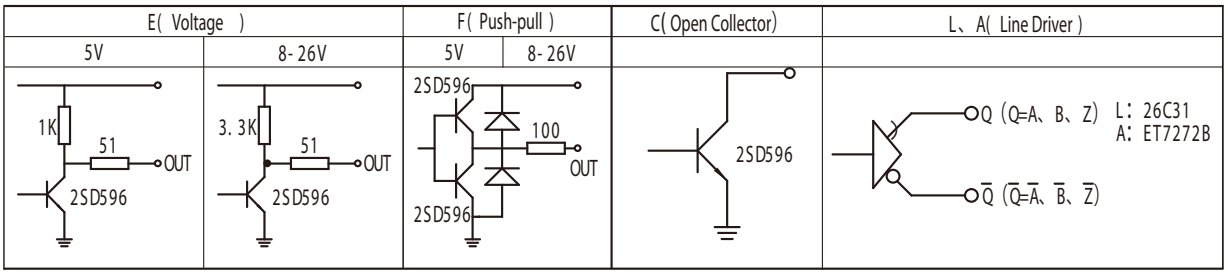
# Mechanical Specifications

| Max. Speed （r/m in） | Start Torque（25 ℃） （N. M） | Max. Load on Shaft （ N ） | | Moment of Inertia （$kgm^2$） | Weight （kg） |
|---|---|---|---|---|---|
| | | Radial | Axial | | |
| 6000 | $1*10^{-3}$ | 30 | 20 | $4*10^{-6}$ | ≈0.28 |

# Enviromental Specifications

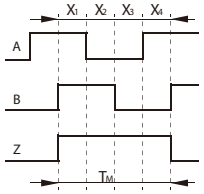
| | | | |
|---|---|---|---|
| Operating Temp.（℃） | -20 ～+85 | Impact Resistance （$m/s^2$） | 50（ 3 times on x,y,z direction, each time last for 6ms ） |
| Storage Temp.（℃） | -30 ～ +95 | Anti-vibration （$m/s^2$） | 20（10 ～200Hz 2 hours on X,Y,Z direction ） |
| Relative Humidity | 35% ～ 85%RH No Condensition | Protection Class | Common IP54 |

# Output Circuits

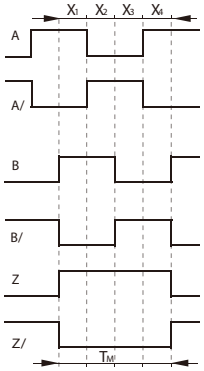



Note: C,F output is shorted to ground pretection diode

# Output Waveform




C, E, F Output




L,A Output

Wave Ratio : X1+X2=0.5T±0.1T X2+X3=0.5T±0.1T

Phase Different : Xn≥0.125T (n=1,2,3,4)

Absolute Angle Error : ≤0.2T

Cycle Error : ≤0.05 T

T=360° / N (N= lines count per revolution)

Width of Z signal

1、Tm=1T±0. 5T Tm=nT± 0.1 T (n≥ 2)

The phase relation of Z signal and A,B signal is not stipulated.

2、Tm=0.5T±0.25T Tm=0.25T± 0.125T

The rising edge of the Z-channel signal is aligned with the rising edge of the B-channel signal

# Electrical Connections

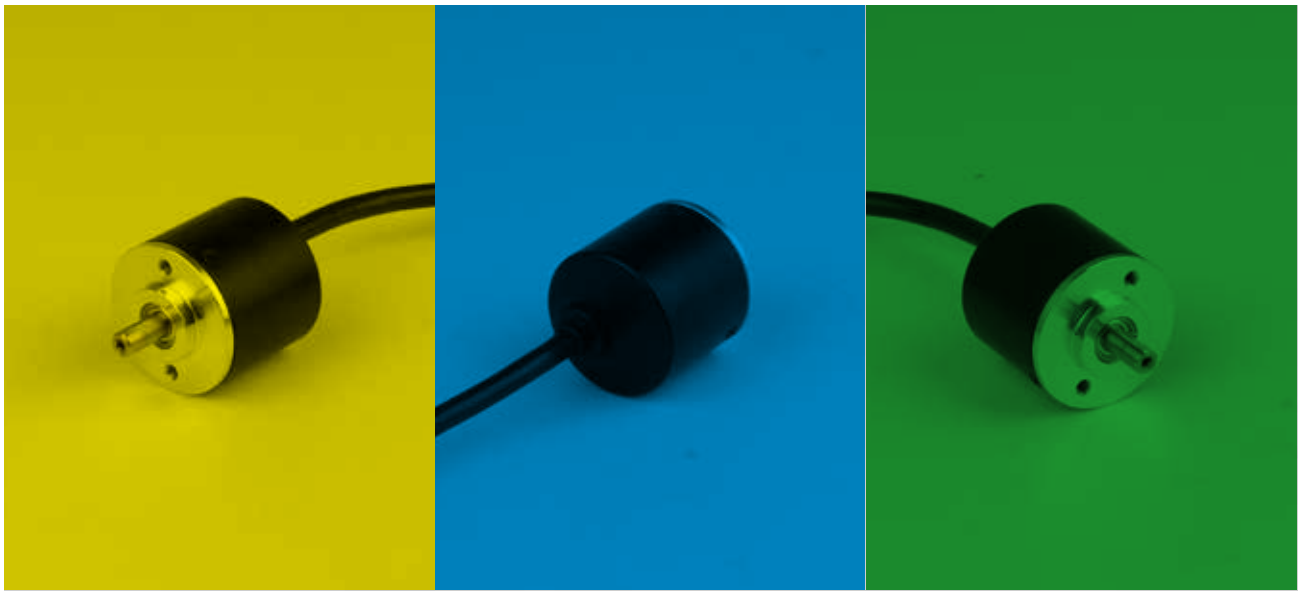
| Cable Color | Red | Black | Green | Brown | White | Gray | Yellow | Orange | Shield |
|---|---|---|---|---|---|---|---|---|---|
| E (Voltage)<br>F (Push-pull)<br>C (Open Collector) | Vcc | 0 V | A | | B | | Z | | G |
| L、A (Line Driver) | Vcc | 0 V | A | A/ | B | B/ | Z | Z/ | G |

# Order Information

| S Product Class | A Product Type | 58 Outer Diameter | H Shaft Type | 8 Shaft Diameter | G Termination |
|---|---|---|---|---|---|
| S:Common | Incremental | Φ58mm | H:End Hollow Shaft | Φ8mm<br>Φ10mm Φ12mm<br>Φ14mm Φ15mm | G:Dustproof Radial Cable<br>J:Waterproof Radial Cable<br>E:Dustproof Axial Cable<br>K:Waterproof Axial Cable<br>9C:9 Pin aviation connector<br>10C:10 Pin aviation connector |

| 1M Cable Length | 1 Supply Voltage | C Output Type | 100 Resolution (can be customized) | B utput Signal | M Index Signal |
|---|---|---|---|---|---|
| Standard1M<br>0.3M-10M | 1:DC5V<br>2:DC8-26V<br>3:DC10-30V | E:Voltage<br>F:Push-Pull<br>C:Open Collector<br>L:Line Driver<br>A:Wide Voltage Line Driver | 100\120\200\300\360\400\500\600<br>720\800\900\960\1000\1024\1200<br>1440\1500\1600\1800\2000\2048<br>2400\2500\3000\3600\4000\4096<br>5000\6000 | A: A phase signal<br>B: 90° phase different A、B signals output | M:Z signal |

E.g：SA58H8-G1M1C-100BM



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