



SANSHENG
SENSOR



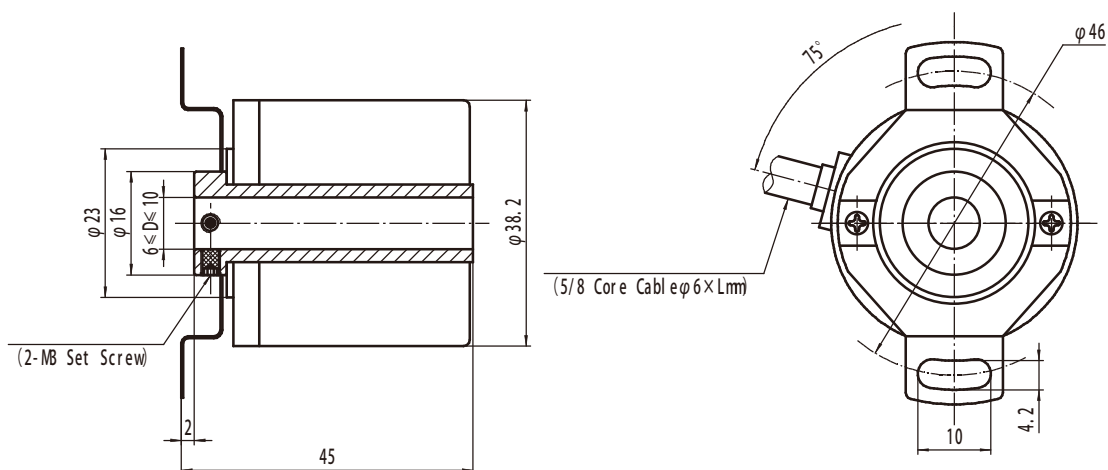
Product Selection Guide

SA38T Applications & Features

SA38T is suitable for precision working environment.
Through-hole design between 6mm-8mm.
Resolution up to 5000 pulses.
Special requirements can be customized.
Optoelectronic devices with high reliability.
Long life, anti-interference ability, wide temperature range.



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/min)	Start Torque(25 ℃) (N. M)	Max. Load on Shaft (N)		Moment of Inertia (kgm ²)	Weight (kg)
		Radial	Axial		
6000	1*10 ⁻³	25	15	4*10 ⁻⁶	≈0.135

Enviromental Specifications

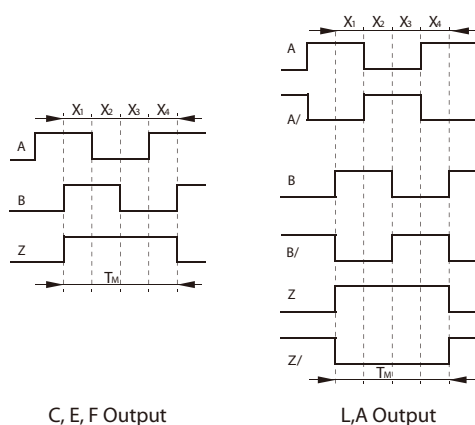
Operating Temp. (°C)	-20 ~ +85	Impact Resistance (m/s ²)	50 (3 times on x,y,z direction, each time last for 6ms)
Storage Temp. (°C)	-30 ~ +95	Anti-vibration (m/s ²)	20 (10 ~ 200Hz 2 hours on X,Y,Z direction)
Relative Humidity	35% ~85%RH No Condensation	Protection Class	Common IP54

Output Circuits

E(Voltage)		F(Push-pull)		C(Open Collector)	L、A(Line Driver)
5V	8-26V	5V	8- 26V		

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

Output Waveform



Wave Ratio : $X1 + X2 = 0.5T \pm 0.1T$ $X2 + X3 = 0.5T \pm 0.1T$

Phase Different : $X_n \geq 0.125T$ ($n=1,2,3,4$)

Absolute Angle Error : $\leq 0.2T$

Cycle Error : $\leq 0.05 T$

$$T = 360^\circ / N \text{ (N= lines count per revolution)}$$

Width of Z signal

$$1、T_m = 1T \pm 0.5T \quad T_m = nT \pm 0.1T \quad (n \geq 2)$$

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

2、 $T_m = 0.5T \pm 0.25T$ $T_m = 0.25T \pm 0.125T$

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

Electrical Connections

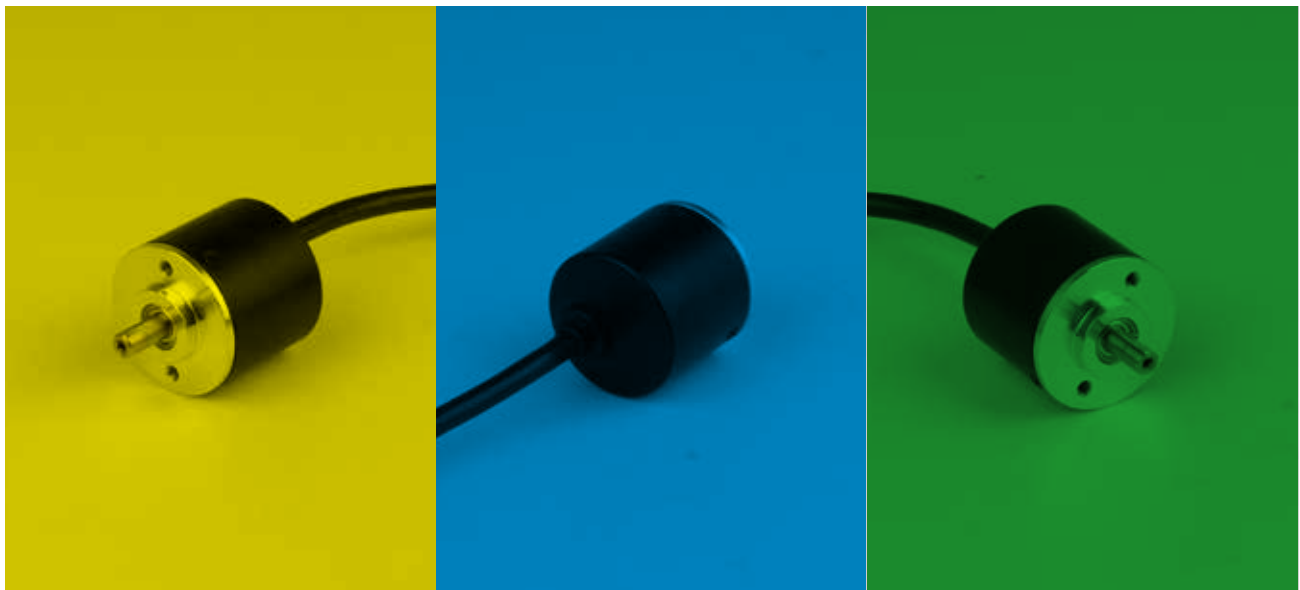
Cable Color	Red	Black	Green	Brown	White	Gray	Yellow	Orange	Shield
E (Voltage) F (Push-pull) C (Open Collector)	Vcc	0 V	A		B		Z		G
L、A (Line Driver)	Vcc	0 V	A	A/	B	B/	Z	Z/	G

Order Information

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S Product Class	A Product Type	38 Outer Diameter	T Shaft Type	6 Shaft Diameter	G Termination
S:Common	Incremental	Φ38mm	T:Hollow Shaft	Φ6mm Φ8mm	G:Dustproof Radial Cable J:Waterproof Radial Cable E:Dustproof Axial Cable K:Waterproof Axial Cable
1M Cable Length	2 Supply Voltage	C Output Type	100 Resolution (can be customized)	B Output Signal	M Index Signal
Standard 1M 0.3M-10M	1:DC5V 2:DC8-26V 3:DC10-30V	E:Voltage F:Push-Pull C:Open Collector L:Line Driver A:Wide Voltage Line Driver	30\60\100\120\127\128\150\200\250\256 300\360\400\500\512\600\640\720\800 900\960\1000\1200\1250\1440\1500 1600\1800\2000\2048\2500\2540\2560 3000\3600\4000\5000	A:A phase signal B:90° phase different A、B signal	M:Z signal

E.g: SA38T8-G1M1C-100BM



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