

RJS SP38/6 Series

INSTRUCTION FOR USERS OF ROTARY ENCODER

※**CAUTIONS:** Users of rotary encoder should observe following instructions before they touch the encoder.

PRECAUTIONS FOR HANDLING

1. Isolate the encoder from shock and vibration.
2. Keep the encoder away from dust, oil, water, high or low temperature and corrosive materials. These situations may cause the damage of the encoder and a personal injury.
3. Any modification of the encoder is prohibited. A modified encoder is not a subject to the warranty.

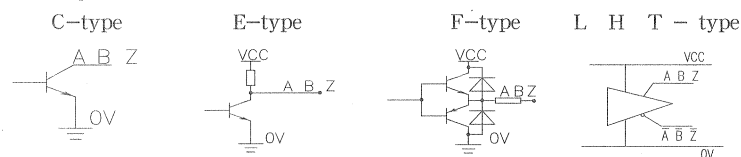
※Definition Of Models and types

SP 38 / 6 -1024 B Z - 05	L	G	2
Solid Shaft	Supply Voltage	Output form:	Cable model
Outer diameter 38mm	05: +5V	C: Open Collector	G: Side entry cable
Shaft size 6mm	or 8~30:	E: Voltage	E: Back entry cable
Resolution 1024P/R	+8~+30V	F: Complimentary	
B: Two Singal A&B		L: Line Driver 26LS31	
A: Single Singal A		H: Line Driver MC3487	
Zero Z		T: Line Driver ET7272	
Negative Zero N			
			Wire length 2mm

※Number of Pulses

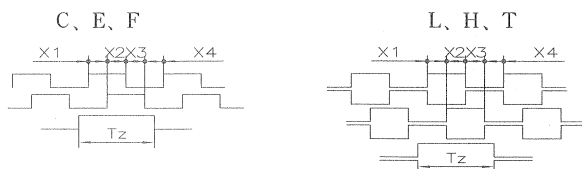
10	20	30	50	60	100	120	125	150	180	200	250	256	300	360	400	500	512
600	720	800	900	1000	1024	1200	1250	1500	1800	2000	2048	2400	2500				
3000	3600	Other number of pulses on request.															

※Output Circuit



※Output Waveforms

Open collector, Voltage output, Complimentary Line driver



The waveforms from viewed from the coupled plate and clockwise rotation.

Waveforms ratio:

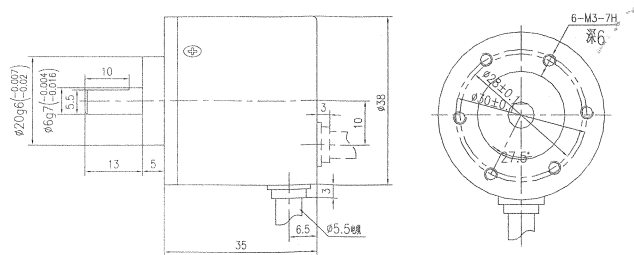
$$X_1 + X_2 = 0.5T \pm 0.1T$$

$$X_2 + X_3 = 0.5T \pm 0.1T$$

Phase shift : $X_n \geq 0.2T$ $n=1,2,3,4$ ($T=360/N$ N : The rotation of the shaft output number of pulses)

Signal Width of Z: $T_z = 1T \pm 0.3T$

※External dimension (Unit in mm)



※Features and Applicaton

Small size, low cost General model

High resolution max.3600P/R

Wide ranging power source, DC+5V Or DC+8~+30V

Industrial application, Measuring instruments.

※Electrical Spec

Output type	L、H-type	C、E、F - type	T-type
Supply Voltage	+5V \pm 5%	+5V or +8~30V	+5V or +8~30V
Current Consumption	\leq 150mA	\leq 60mA	\leq 150mA
Load current	20mA	30mA	20mA
Voltage Output(VH)	\geq 2.5V	\geq VCC*70%	\geq VCC*70%
Voltage Output(VL)	\leq 0.5V	\leq 0.5V	\leq 0.5V
Rising / falling time	\leq 100ns	\leq 1 μ s	\leq 100ns
Max.Response Frequency	150KHz	150KHz	150KHz

※Mechanical Spec

shaft Radial Load	≤20N
shaft Axial Load	≤10N
Starting Torque	≤1X10 ⁻³ N.m
Max. Rotating Speed	6000r/min
Moment of inertia	20g/cm ²
Angular Acceleration	1X10 ⁴ rad/s ²
Net Weight	Approx 0.1Kg

※Environmental Spec

Shock resistance	1000m/s ² , 6ms
Vibration resistance	100m/s ² , 10~200Hz
Operating Temp:	-10℃ ~ +70℃
Storage Temp:	-20℃ ~ +80℃
Ambient Humidity	≤RH80%
Protection class	IP50

※Connection Table

Wire colour	Red	Black	Green	White	Yellow	Brown	Grey	Orange	Shield
L,H,T Type	+ V	0V	SIG A	SIG B	SIG Z	SIG \bar{A}	SIG \bar{B}	SIG \bar{Z}	G
C,E,F Type	+ V	0V	SIG A	SIG B	SIG Z				G

※INSTRUCTION FOR INSTALLATION

The Mechanical Spec.

- 1.The encoder shaft is not wanted the rigidity to link by the shaft with user, Please use elasticity to connection the board Socket.
- 2.The encoder should be fixed on the motor axis,and attention to coaxial degree requirement of encoder and motor axis.
- 3.During the installation, Please pay attention to the shaft load that the ware was permitted.

The Electrical Spec.

1. The supply voltage should be kept within the required range. it may cause the damage of the encoder.
2. A shielded cable should be used for encoder output connection. The cable should be isolated from AC power lines to avoid motor interference.
3. The mistake distribution can damage the internal, when the distribution, The wirings of the rotary encoder should be connected according to color codes of wires and electrical connections.
4. Please not wind encoder output line together or the same pipeline transmits with the motive force thread etc. We should also unsuitably put in the nearby use of distributor.

※Quality assurance

If the encoder does not function properly within 18 months of the delivering date due its poor quality, it will be repaired or replaced by the producer for free only when customer has strictly followed the regulations for maintenance and operation.