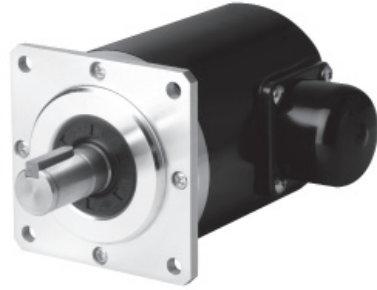


Autonics

ROTARY ENCODER(INCREMENTAL TYPE)

E68S15 SERIES

M A N U A L



Thank you very much for selecting Autonics products.
For your safety, please read the following before using.

Caution for your safety

※Please keep these instructions and review them before using this unit.

※Please observe the cautions that follow.

Warning Serious injury may result if instructions are not followed.

Caution Product may be damaged, or injury may result if instructions are not followed.

※The following is an explanation of the symbols used in the operation manual.

Caution: Injury or danger may occur under special conditions.

Warning

1. In case of using this unit with machinery(Ex: nuclear power control, medical equipment, ship, vehicle, train, airplane, combustion apparatus, safety device, crime/disaster prevention equipment, etc) which may cause damages to human life or property, it is required to install fail-safe device.

It may cause a fire, human injury or damage to property.

Caution

1. Do not drop water or oil on this unit.

It may cause damage or malfunction.

2. Please observe the rated voltage.

It may shorten the life cycle or damage to the product.

3. Please check the polarity of power and wrong wiring.

It may cause burst or damage by a fire to the product.

4. Do not short circuit the load.

It may cause burst or damage by a fire to the product.

Ordering information

E68S	15	1024	6	L	5
Series	Shaft diameter	Revolution	Output phase	Output	Power supply
Diameter ∅68mm Shaft type	∅15mm	500, 600, 1024	6: A, \bar{A} , B, \bar{B} , Z, \bar{Z}	L: Line Driver output	5VDC ±5%

※The above specifications are subject to change and some models may be discontinued without notice.

Specifications

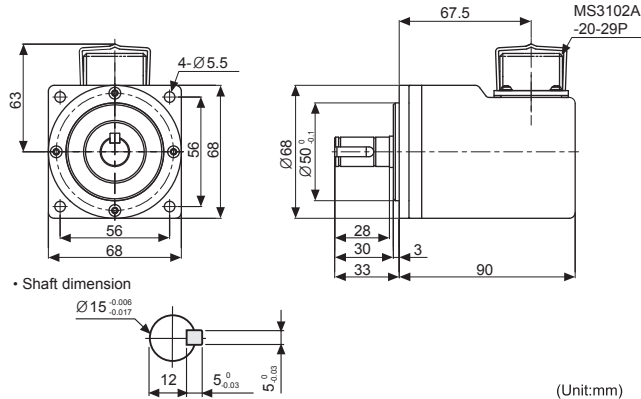
Item	Diameter ∅68mm Shaft type Incremental Rotary encode	
Model	E68S15-□□□□-□-L-5	
Resolution(P/R)	(※ 1) 500, 600, 1024 P/R	
Electrical specification	Output phase	A, \bar{A} , B, \bar{B} , Z, \bar{Z} phase
	Phase difference of output	Output between A and B phase: $\frac{T}{4} \pm \frac{T}{8}$ (T=1 cycle of A phase)
	Control output (Line Driver output)	●Low \Rightarrow Load current: Max. 20mA, Residual voltage: Max. 0.5VDC ●High \Rightarrow Load current: Max. -20mA, Residual voltage: Max. 2.5VDC
	Response time(Rise, Fall)	Max. 0.5(Cable: 1m, I sink=20mA)
	Power supply	5VDC ± 5% (Ripple P-P: Max. 5%)
	Max. Response frequency	180kHz
	Current consumption	Max. 50mA (disconnection of the load)
	Insulation resistance	Min. 100M Ω (at 500VDC megger) (Between all terminals and case)
	Dielectric strength	750VAC 50/60Hz for 1minute (Between all terminals and case)
	Connection	Connector connection: MS3102A20-29P
Mechanical specification	Starting torque	1.5kgf·cm(Max. 0.15N·m)
	Moment of inertia	Radial: 20kgf, Thrust: 10kgf
	Max. allowable revolution	(※ 2) 6,500rpm
Vibration	1.5mm amplitude at frequency of 10 to 55Hz(for 1 min.) in each of X, Y, Z directions for 2 hours	
Shock	Max. 50G	
Environ-ment	Ambient temperature	-10 to 70°C, Storage: -25 to 85°C
	Ambient humidity	35 to 85%RH, Storage: 35 to 90%RH
Insulation type	IP65(IEC standard)	
Unit weight	Approx. 550g	

※ 1: The number of pulse, output type not indicated in the resolution is available to order.

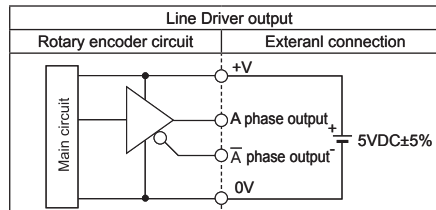
※ 2: Make sure that max. response revolution should be lower than or equal to max. allowable revolution when selecting the resolution. [Max. response revolution(rpm) = $\frac{\text{Max. response frequency} \times 60 \text{ sec.}}{\text{revolution}}$]

※ The temperature or humidity mentioned in Environment indicates a non freezing or condensation environment.

Dimensions

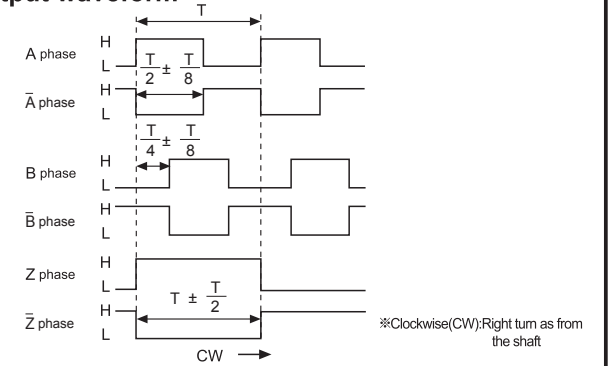


Control output diagram

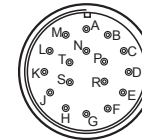


※ All output circuits are same A, \bar{A} , B, \bar{B} , Z, \bar{Z} phase.

Output waveform



Connections



Pin No.	Connection	Pin No.	Connection
A	A phase	K, M	0V
B	Z phase	N	\bar{A} phase
C	B phase	P	\bar{Z} phase
D, F, G, J, L, S	N C	R	\bar{B} phase
E, H	5VDC	T	Shield(F.G.)

※ N-C: Not Connected.

※ E and H terminals, K and M terminals are connected internally.

Caution for using

1. Installation

① This unit consists of precision components. If you drop this unit, it may lose the function.

Please treat this product carefully.

② For the installation, please check the assembly dimension of counterpart then try not to occur the offset between key and the object.

③ When you install this unit, if eccentricity and deflection angle on it are larger, load is applied to the shaft. It may broken the unit or shorten the life cycle of this unit.

2. Environment

Please do not use this unit with below environment, or it may cause malfunction.

① Place where this unit or component may be damaged by strong vibration or impact.

② Place where strong magnet field or electric noise occur.

③ Place where there is a lot of flammable or corrosive gas and dust.

④ Place where strong acids or alkali is near by.

⑤ Place where there is the direct ray of the sun.

⑥ Place where there is over the rated temperature or humidity.

3. Vibration and Impact

① Do not put strong impact when insert coupling into shaft.

② Fix the bracket tightly when mounting this unit to avoid malfunction by residual vibration.

4. Connector cable

① If wiring the connector cable of the encoder with high voltage line or power cable in the same conduit, it may cause a malfunction or mechanical trouble. Please wire it separately or use separated conduit.

② When the power source is Switching power, it may cause surge. Install a surge absorber in power line and wire it should be shorter in order not to be influenced by noise.

③ Use SIL attached Twist Pair wire for cable lead or extension.

④ Shield wire must be grounded (F.G.).

※ It may cause malfunction if above instructions are not followed.

Major products

- Photoelectric sensors
- Fiber optic sensors
- Door sensors
- Door side sensors
- Area sensors
- Proximity sensors
- Pressure sensors
- Rotary encoders
- Connector/Sockets
- Switching mode power supplies
- Control switches/Lamps/Buzzers
- I/O Terminal Blocks & Cables
- Stepper motors/drivers/motion controllers
- Graphic/Logic panels
- Field network devices
- Laser marking system(Fiber, CO₂, Nd:YAG)
- Laser welding/soldering system
- Temperature controllers
- Temperature/Humidity transducers
- SSR/Power controllers
- Counters
- Timers
- Panel meters
- Tachometer/Pulse(Rate) meters
- Display units
- Sensor controllers

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