

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. When use this unit for controlling highly affective equipment to human or properties. (Medical instrument, Vehicles, Train, Airplane, combustion apparatus, entertainment, etc.), it requires installing a fail safety device.**
It may cause serious human injury or a fire, property.

Caution

- 1. Do not drop water or oil on this unit.**
It may cause damage or miscontrol due to malfunction.
- 2. Please observe voltage rating.**
It may shorten the life cycle or damage to the product.
- 3. Please check the polarity of power and wrong wiring.**
It may result in damage to this unit.
- 4. Do not short circuit the load.**
It may result in damage to this unit.

Ordering information

E68S	15	1024	6	L	5
Series	Shaft diameter	Revolution	Output phase	Output	Power supply
Diameter ϕ 68, Shaft type	ϕ 15mm	1024 P/R	6 : A, \bar{A} , B, \bar{B} , Z, \bar{Z}	L : Line Driver output	5VDC \pm 5%

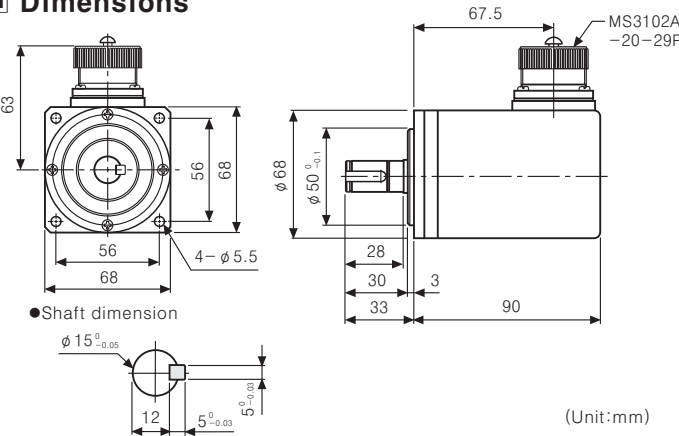
※The above specification are changeable without notice anytime.

Specifications

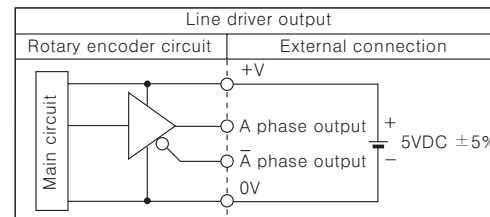
Item	Diameter ϕ 68mm shaft type Incremental Rotary encoder	
Model	E68S15 -□□□□-□-L-5	
Resolution(P/R)	1024 P/R(Not indicated type is available to customize)	
Electrical specification	Output phase	A phase, \bar{A} phase, B phase, \bar{B} phase, Z phase, \bar{Z} phase
	Phase difference of output	Output between A and B phase: $\frac{T}{4} \pm \frac{T}{8}$ (T=1 cycle of A phase)
	Control output	• Low \Rightarrow Load current: Max. 20mA, Residual voltage: Max. 0.5VDC • High \Rightarrow Load current: Max. -20mA, Output voltage: Min. 2.5VDC
	Response time (Rise, Fall)	Max. 0.5 μ s (Cable:1m, I sink = 20mA)
	Power supply	5VDC \pm 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 between all terminals and case)
	Dielectric strength	750VAC 50/60Hz for 1 minute (Between all terminals and case)
	Connection	Connector connection : MS3102A20-29P
Mechanical specification	Starting torque	1.5kgf \cdot cm (Max. 0.15N \cdot m)
	Moment of inertia	Radial : 20kgf, Thrust : 10kgf
	Max. allowable revolution	(Note1) 6,500rpm
Vibration	1.5mm amplitude at frequency of 10 ~ 55Hz in each of X, Y, Z directions for 2 hours	
Shock	Max. 50G	
Ambient temperature	-10 ~ 70°C (at non-freezing status), Storage: -25 ~ 85°C	
Ambient humidity	35~85%RH, Storage: 35~90%RH	
Protection	IP64 (IEC standard)	
Weight	Approx. 550g	

※(Note1) Max. allowable revolution \geq Max. response revolution
 [Max. response revolution (rpm) = $\frac{\text{Max. response frequency}}{\text{Resolution}} \times 60 \text{ sec}$]
 Please select the resolution to make lower max. revolution than max. allowable revolution.

Dimensions

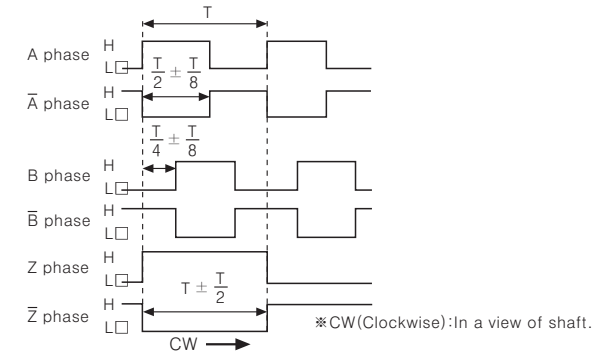


Control output diagram

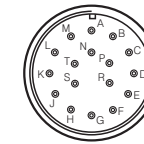


※All output circuit is the same A, \bar{A} , B, \bar{B} , Z, \bar{Z} phase.

Output waveform



Connections



※N.C : Not Connected.
 ※E and H terminals, K and M terminals are connected internally.

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

Caution for using

- 1. Installation**
 - ①This unit is consisted of precision components. Therefore please treat this product carefully.
 - ②For the installation, please check the assembly dimension of mate target, then try not to occur the offset between them.
 - ③When you install this unit, if eccentricity and deflection angle on it are larger, it may shorten the life cycle of this unit.
- 2. Environment**
 - Please do not use this unit with below environment, it results in malfunction.
 - ①Place where this unit or component may be damaged by strong vibration or impact.
 - ②Place where strong magnet field or electric noise are occurred.
 - ③Place where is beyond of rating temperature or humidity.
- 3. Vibration and Impact**
 - ①Do not put strong impact when insert coupling into shaft.
 - ②Please fix bracket firmly when mount it in order to avoid malfunction by residual vibration.
- 4. Wire connection**
 - ①If use the cable of encoder and high voltage line or power cable in the same conduit, it may cause a malfunction or mechanical trouble. Please wire separately or use separated conduit.
 - ②When the power source is a Switching power, please install the surge absorber in power line and wire should be shorter in order not to be influenced by noise.
 - ③Use SIL attached Twist Pair wire for cable lead or extension.
 - ④Please connect shield wire to terminal of F.G.

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

Major products

- PROXIMITY SENSOR ■ PHOTOELECTRIC SENSOR ■ AREA SENSOR
- FIBER OPTIC SENSOR ■ DOOR/DOOR SIDE SENSOR ■ PRESSURE SENSOR
- ROTARY ENCODER ■ COUNTER
- TIMER ■ TEMPERATURE CONTROLLER
- TEMPERATURE/HUMIDITY TRANSDUCER
- PANEL METER
- TACHO/LINE SPEED/PULSE METER
- DISPLAY UNIT
- SENSOR CONTROLLER
- SWITCHING POWER SUPPLY
- GRAPHIC PANEL
- 5-PHASE STEPPING MOTOR & DRIVER & CONTROLLER
- LASER MARKING SYSTEM(CO₂, Nd:YAG)

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