

Magnetic absolute Rotary encoder (MA Series)

- ※ The magnetic encoder is very durable because it does not use optical components.
- ※ It is an encoder of reliable and excellent quality that is applicable to the automated control industry.
- ※ The above specifications are subject to change without notice.

Ordering Information

※ The **PA66-GF15** is a lightweight material with very high stiffness, excellent wear resistance, very high strength, and resistance to oil and fuel applied to the aviation, automobile and machine industries.

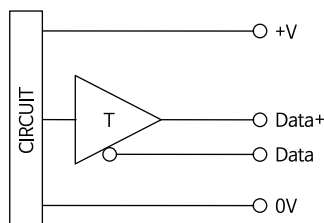
Connections

■ SS| Line driver output

- ※ Unused wires must be insulated.
- ※ The encoder and shield cable must be grounded (F.G.).
- ※ F.G. (Frame Ground) must be grounded separately.

Control output diagram

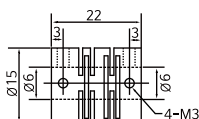
■ SS| Line driver Clock input



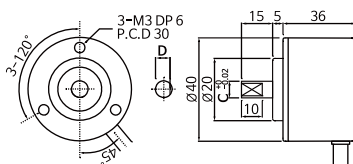
※ SSI Line driver input, output level: 3.3VDC ~ 5VDC

Dimensions

■ Coupling: MA40S6

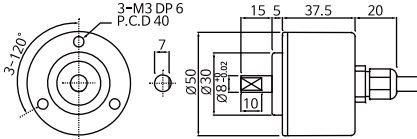
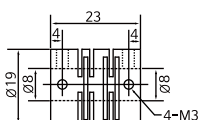


■ MA40S: Outside diameter $\varnothing 40\text{mm}$ ※Unit:mm



	C	D
MA40S6	Ø6	5
MA40S8	Ø8	7

■ Coupling: MA40S8, MA50S8 ■ MA50S: Outside diameter Ø50mm

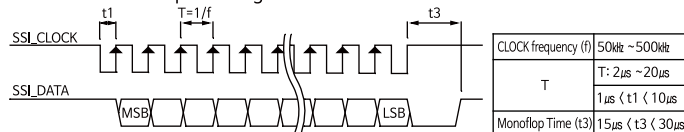


Specifications

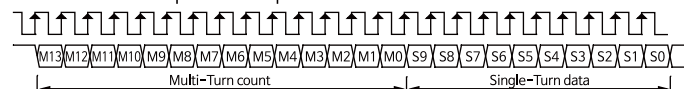
- ※ Select resolution to satisfy Max. allowable revolution $\geq$ Max.response revolution
- ※ Max.response revolution (rpm) = (Max.response frequency / resolution) X 60 sec

Output Waveform

■ SSI Line driver output timing chart



■ SSI Line driver output data output



Clock input bit	Data output	Data output bit	Clock input bit	Data output	Data output bit
1	Multi-Turn count	13bit(MSB)	15	Single-Turn data	9bit(MSB)
2		12bit	16		8bit
3		11bit	17		7bit
4		10bit	18		6bit
5		9bit	19		5bit
6		8bit	20		4bit
7		7bit	21		3bit
8		6bit	22		2bit
9		5bit	23		1bit
10		4bit	24		0bit(LSB)
11		3bit			
12		2bit			
13		1bit			
14		0bit(LSB)			

※ **Multi -Turn:** Rotations,
Single-Turn: Resolution of 1 revolution

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Single-Turn: Resolution of 1 revolution

Cautions during use

■ 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 there is a lot of flammable or corrosive gases.
- 3) Place where strong magnet field or electric noise occurs.
- 4) Place where strong acids or alkali near and direct ray of the sun.

■ Cautions during installation

- 1) Do not load overweight on the shaft.
- 2) Do not put strong impact when insert a coupling into shaft.
- 3) If the coupling error (parallel misalignment, angular misalignment) between the shaft increases while installation, the life cycle of the coupling and the encoder can be shorten.
- 4) Do not connect, repair, or inspect the unit while connected to a power source.
- 5) If a big impact or strong vibration applies to the product it may cause pulse errors.

■ Wire Connection

- 1) Do not pull out the wire with over 20N strength after fixing the unit and wiring the cable.
- 2) If wire encoder cable with high voltage line or power cable in the same conduit, it may cause a malfunction or mechanical problem. Please wire it separately or use separated conduit.

■ **Fail-safe device must be installed when using the unit with machinery that may cause serious injury or substantial economic loss.**

- 1) medical equipment, ship, vehicle, railways, aircraft, safety equipment, etc
2) Failure to follow this instruction may result in personal injury, economic loss or fire