

Rotary Magnetic Absolute Encoder

# CE36M series

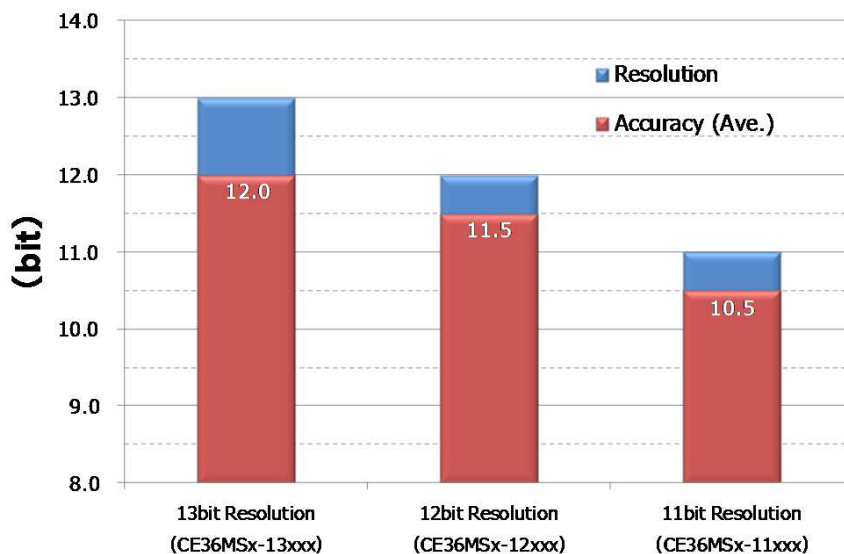


**Provides High Accuracy to minimize the system error with MIDORI interpolation error compensation method.**

- High Accuracy : Resolution 13 bit. Accuracy 11 bit.
- Excellent Repeatability :  $\pm 1$  LSB
- High Speed Update Period : max. 24KHz
- Various Serial Data Output : RS-422 compatible, supports serial interface, ASI, SSI.
- Extreme Environment Resistance: High vibration & shock, High operating Temp., EMC and IP67.

■ High Accuracy

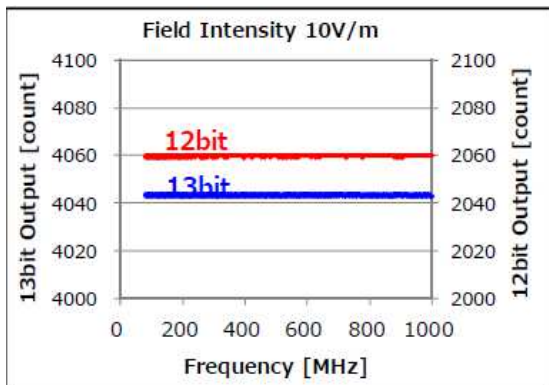
**Resolution vs. Accuracy**



■ Environmental Performance

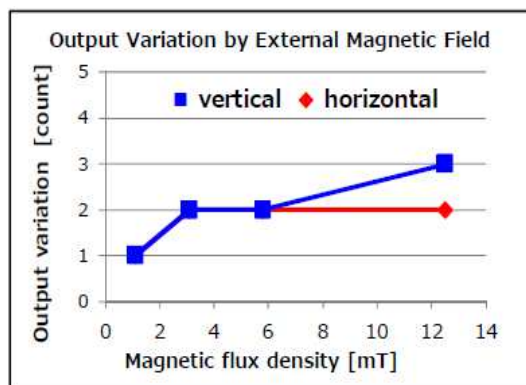
RF immunity (IEC61000-4-3)

→ Less influenced by electromagnetic wave

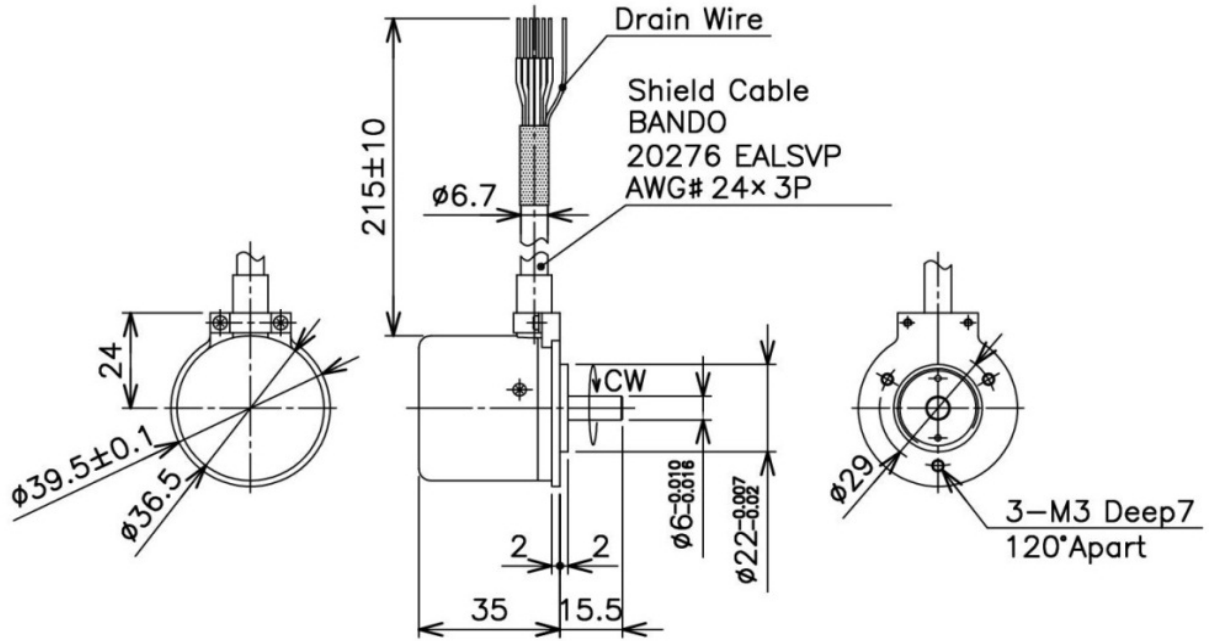


Influence of External Magnetic Field

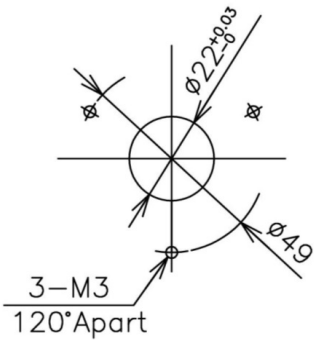
(Static Magnetic Field 0-12mT)



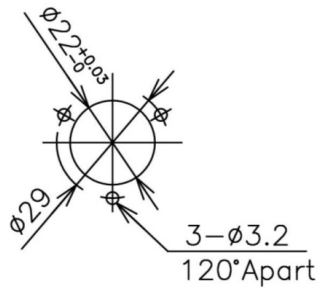
■ Dimension (mm)



■ Mounting (mm)

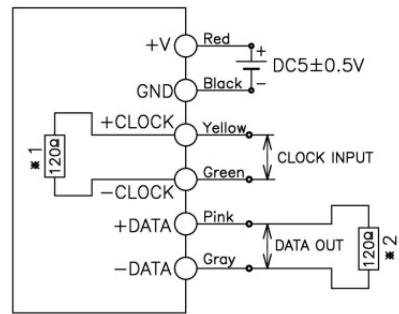


<Servo Mount>



<Screw Mount>

【Schematic】



- Red,Black,Pink,Gray,Yellow,and Green indicate harness colors.
- \* 1 mark shows a internal terminating resistance.
- \* 2 mark shows a terminating resistance for user side.

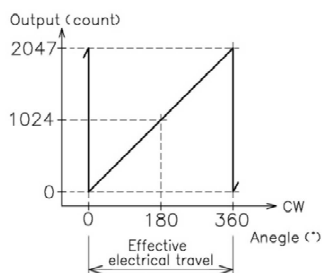
【Signal and Connection】

Wire Color	Red	Black	Pink	Gray	Yellow	Green
ASI Format	+V	GND	+DATA	-DATA	N.C <sup>*1</sup>	N.C <sup>*1</sup>
SSI Format	+V	GND	+DATA	-DATA	+CLOCK	-CLOCK

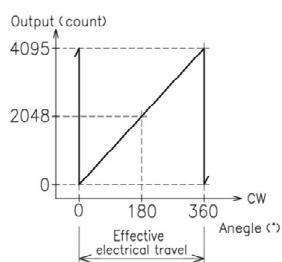
\* 1 N.C: No Connect

【Output Characteristics】

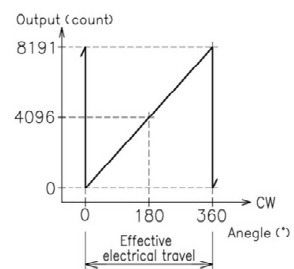
Resolution 11bit



Resolution 12bit



Resolution 13bit



### 【Specifications】

Resolution	11bit per rev.	12bit per rev.	13bit per rev.
Accuracy over Full Scale	±0.2%FS (9bit equivalent)	±0.1%FS (10bit equivalent)	±0.05%FS (11bit equivalent)
Internal Position Update Period	24.4kHz	12.2kHz	6.1kHz
Power Supply	DC5±0.5 V		
Current Consumption	Max. 150mA		
Max. Physical Speed	10,000 rpm		
Operating Temp. Range	-20~+80°C		
Output	Interface	RS-422	
	Format	ASI, SSI	
Thrust Load Tolerance	Static:70N/Dynamic:3.5N		
Radial Load Tolerance	Static:70N/Dynamic:3.5N		
Life	10 Mil. cycle Min.		
Vibration	200 m/s <sup>2</sup> (IEC60068-2-6)		
Shock	1,000 m/s <sup>2</sup> (IEC60068-2-27)		
EMC	(EMS) IEC61000-6-2		
	(EMI) IEC61000-6-4		
IP Rating	IP50/IP67 (ISO60529)		
Mass	0.1 kg		

### 【Serial Communication Format】

Interface : RS-422

Format : ASI

Format mode	ASI1	ASI2	ASI3
Baud rate [kbps]	19.2	230.4	921.6
Frame rate [ms] Update Period : 6.1kHz	41.96	5.24	1.32
Frame rate [ms] Update Period : 12.2kHz	20.98	2.62	0.66
Frame rate [ms] Update Period : 24.4kHz	10.49	1.31	0.33
Start bit	1bit		
Data length	8bit		
Parity bit	Not available		
Stop bit	1bit		

Format : SSI

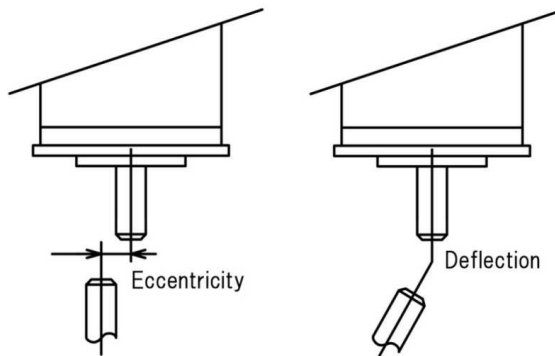
Format mode	SSI1		SSI2		SSI3	
Data size[bit]	16		24		32	
Clock frequencies [kHz]	100	2000	100	2000	100	2000
Inter-message gap [ms]	0.21	0.21	0.21	0.21	0.21	0.21
Frame rate [ms]	0.18	0.03	0.26	0.03	0.34	0.04

**[Allowable of shaft displacement]**

Recommending coupling

Maker	Part No.	Dimension (mm)	Allowable error	
			Deflection (±deg.)	Eccentricity (±mm)
MIKI PULLEY	SFC-010DA2	Φ19	1	0.11
	SFC-020DA2	Φ26	1	0.15
	SFC-030DA2	Φ29	1	0.16

Note: Please use flexible coupling for connecting with other side shaft.

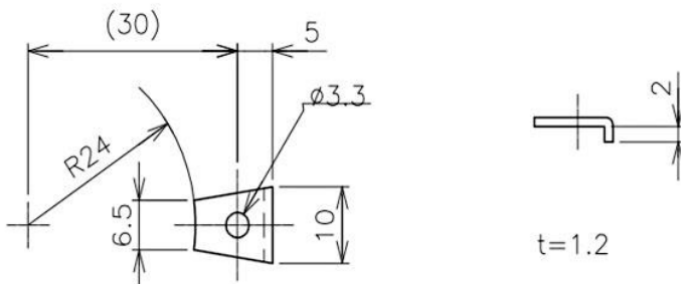


**[CE36M Series Model Number Designation]**



**■ Supplied Accessories(mm)**

Mounting Cleats : 3 pcs



**■ Handling Instruction**

- This Product is impossible to measure resistance value as a variable resistor.
- This product may be influenced from external magnetic field.
- Use this sensor in the place where is protected from ESD.
- Please use flexible coupling for connecting with other side shaft.  
 Mounting error of both shafts would be cause of life reduction.  
 Do not connect rigidly both shafts. It may apply excessive load on encoder shaft and would be cause of damage to encoder bearing.