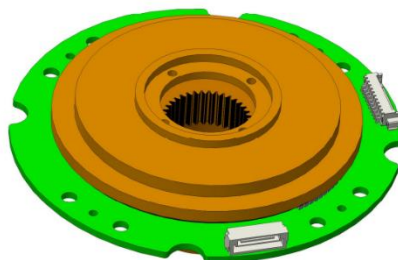


Magnetic rotary absolute position encoder

Product series: EAS-023

Product part number: EAS-023-G

Version: Ver1.2.1



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1. Description

EAS series product is an absolute linear position detection magnetic encoder. The sensor can be used in a movement control system to detect the position, speed of the system.

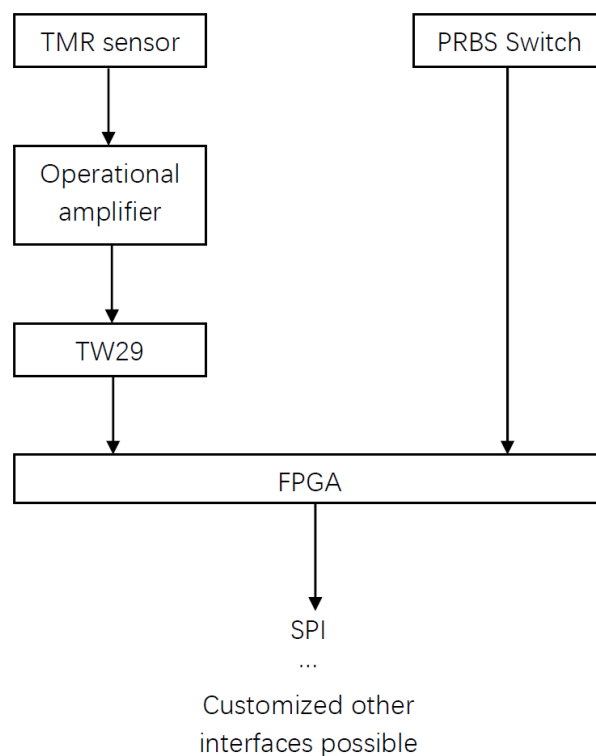
The sensor uses non-contact detection method based on TMR magnetic sensing technology. The magnetic scale has two magnetic tracks (incremental and absolute tracks).

The sensor has build-in signal processing circuit, and a digital output of BISS format.

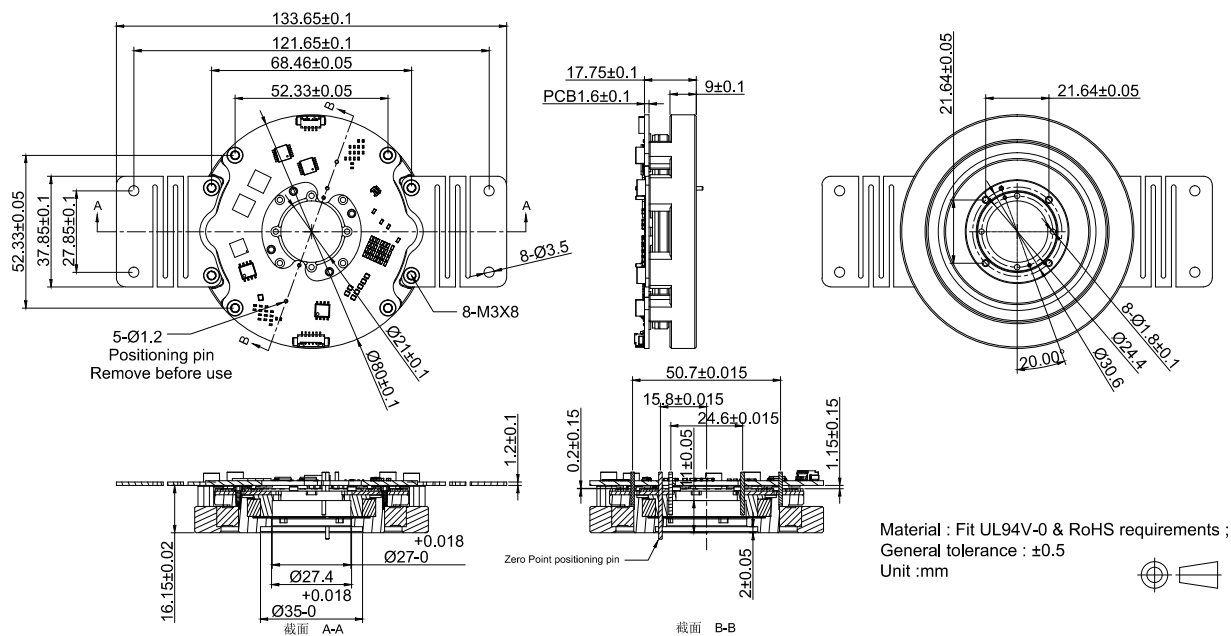
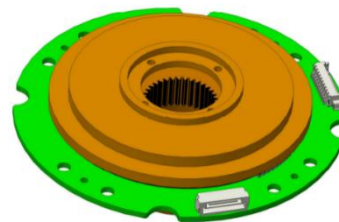
EAS series product has the following features:

- True absolute value system
- Absolute position dual track system
- Customized sensor chips
- The system is self-calibrating
- Resolution up to 24 bits
- The repeatability is 7 arc seconds
- Absolute positioning accuracy 15 arc seconds
- SPI interface

2. Product part number



3. EAS-023-G Dimensions



4. Electrical characteristic

4.1 Electrical connection

Lead	NAME
1	V _{CC}
2	GND
3	SPI _{SCK}
4	SPI _{SS}
5	SPI _{MISO}
6	SPI _{MOSI}

4.2 General parameter

Operating and storage temperature	−40°C to +105°C (Note: The operating temperature of the diode on the encoder is −40°C to +85°C)
Humidity	70%Rh
External magnetic field (thickness direction)	±100 mT
Shock (dependent on installation)	100 g
Vibration (dependent on installation)	80 g

4.3 Environmental parameter

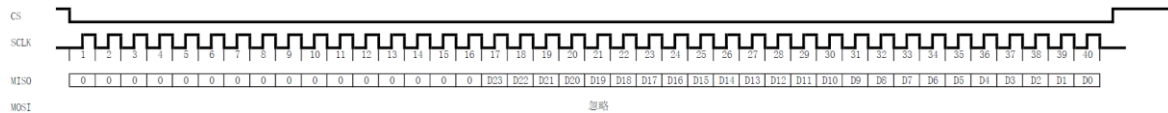
Supply voltage	4.75V~5.25V
Current	100 mA~150 mA
Connector	6-pin
Start-up time	100 ms
ESD (HBM)	HBM, Class 2, ±2 kV

4.4 System parameter

Parameter	Unit	Min	Typ	Max	Comment
Resolution	bit		24		
Maximum speed	RPM		10000		
Repeatability	arcsec		±7		
Absolute position error	arcsec		±15		
Input bandwidth	kHz			18	
Noise	°		±0.0005		

5. SPI protocol interface

SPI timing diagram



1、Using SPI MODE0 communication mode, the upper computer sends 48 SCLK;

2、BIT1~BIT8: Obligate

3、BIT9~BIT16: Encoder status bits

BIT9: Obligate

BIT10: Obligate

BIT11: Obligate

BIT12:flash_crc_error

BIT13:magic_error

BIT14:temp_alarm

BIT15:chip_fflt

BIT16: prbs_error

4、BIT17~BIT40: Encoder data bits

5、BIT41~BIT48: CRC check bit, XOR value for the first 5 bytes

Communication parameters

Parameter	Symbol	Min	Max
Clock cycles	t_{CL}	400 ns	
Clock frequency	f_{CL}		2.5 MHz

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