

Magnetic linear position encoder

Product series: EAS-010

Product part number: EAS-010B-A

Version: Ver1.0.0



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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.

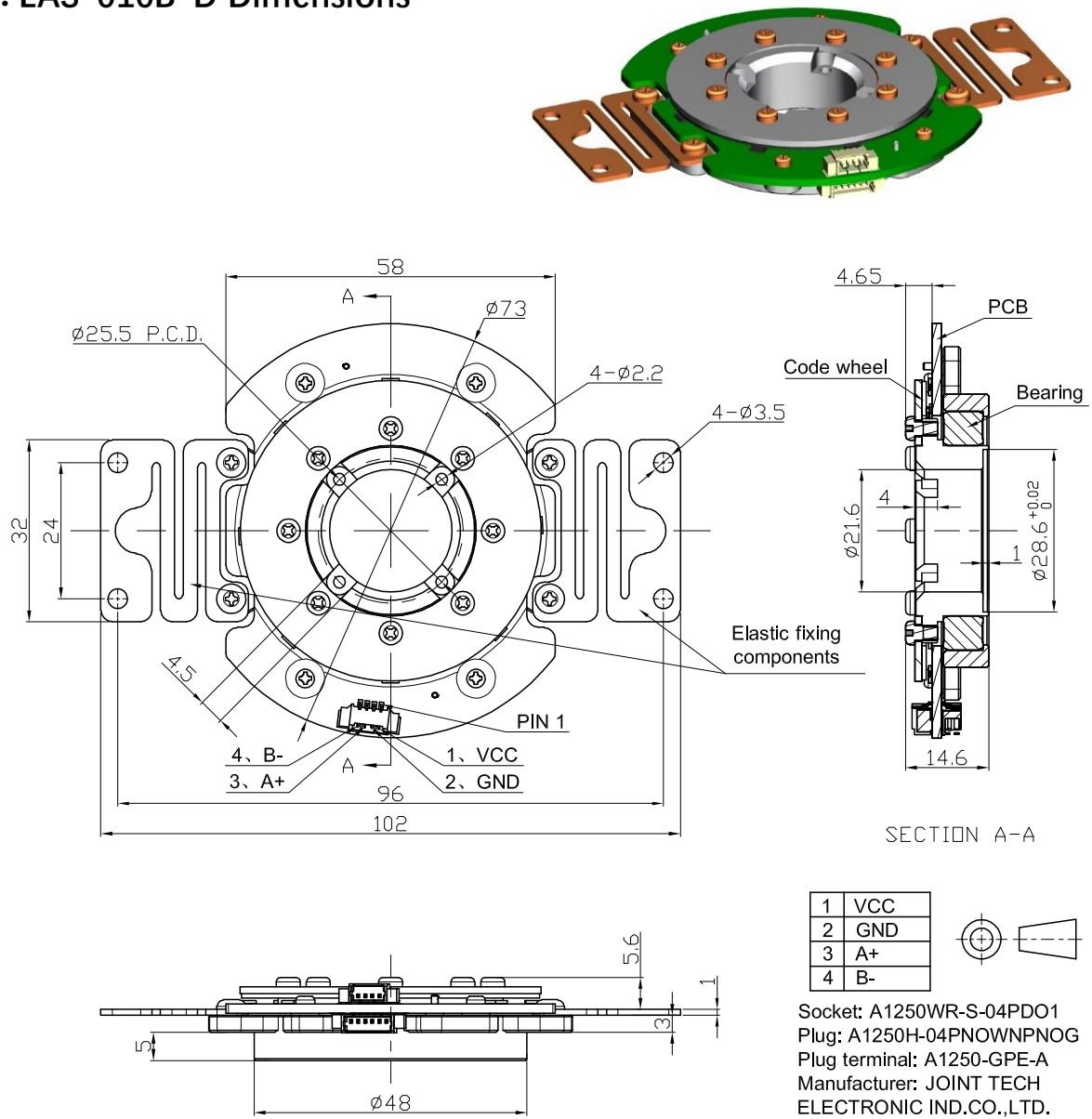
The sensor uses non-contact detection method based on TMR magnetic sensing technology. The magnetic scale has two magnetic tracks (incremental and absolute tracks).

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 5 arc seconds
- Absolute positioning accuracy 10 arc seconds
- BISS interface

2. EAS-010B-D Dimensions



3. Electrical characteristic

3.1 Electrical connection

Lead	NAME
1	VCC
2	GND
3	A+
4	B-

3.2 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

3.3 Environmental parameter

Supply voltage	4.75V~5.25V
Current	100 mA~150 mA
Connector	8-pin
Start-up time	100 ms
ESD (HBM)	HBM, Class 2, ±2 kV

3.4 System parameter

Parameter	Unit	Min	Typ	Max	Comment
Resolution	bit		24		
Maximum speed	RPM		10000		
Repeatability	arcsec			±5	
Absolute position error	arcsec			±10	
Input bandwidth	kHz			18	
Noise	°		±0.0005		

4. RS485 protocol interface

4.1 Communication interface

Communication parameter	
Baud rate	2.5M
Baud rate	8bits
Parity check	无
Stop bit	1(8N1)

4.2 Frame format

Command frame (Upper computer → Encoder)

Frame length: 4 bytes

Byte sequence number	Byte 0
Value (Hex)	02
Explanation	Fixed value

Command frame (Encoder → Upper computer)

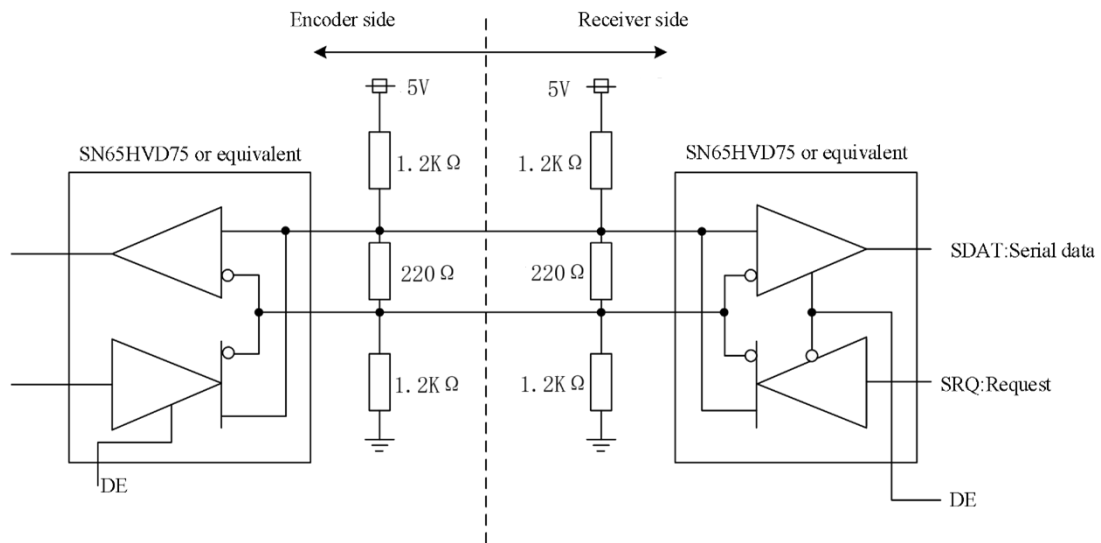
Frame length : 6 bytes

Digit number	Byte 0	Byte 1	Byte 2-4	Byte 5
Value(Hex)	02	-	-	-
Explanation	Fixed value	Status bit	Single lap position	CRC check value

Digit Explanation

Digit number	Explanation
Byte 0	Fix by 02
Byte 1	Encoder status bit7: Reserve bit6: Reserve bit5: Reserve bit4: flash_crc_error bit3: magic_error bit2: Reserve bit1: Reserve bit0: prbs_error
Byte 2-4	Byte2: Low: Byte3: Mid Byte4: High
Byte 5	The XOR value of the first 5 bytes

The circuit diagrams for the sending and receiving interfaces are illustrated as shown in Figure 4-2.



pic 4-2 Example of transmit and receive interface circuits

When the encoder transmits data, do not send any requests to the encoder. If any requests are sent to the encoder in error during this period, the encoder's interface circuit may be interrupted. In addition to transmitting data, the encoder is always in receive mode.

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