EMA-1409

MAGNETIC
ABSOLUTE ROTARY ENCODER
WITH SSI INTERFACE

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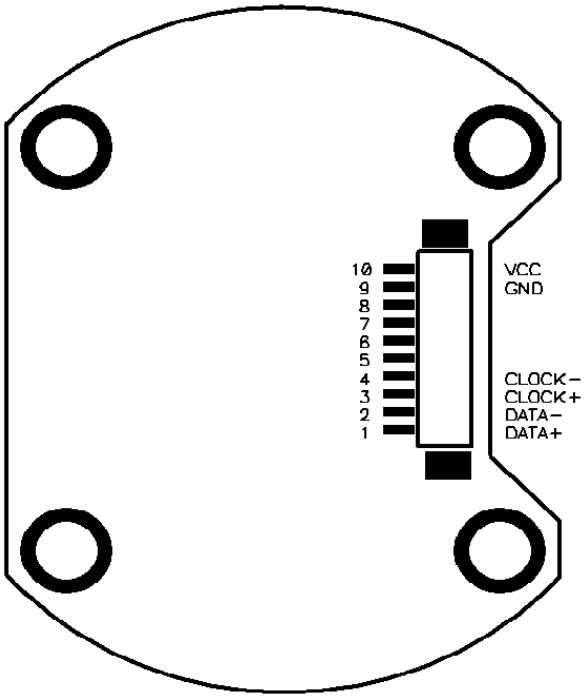
IDENTIFICATION

Type of the encoder:	EMA-1409
Supply voltage:	5 V DC +/- 10%
Current consumption:	200 mA
Mechanical dimensions:	50×50×25 mm
Weight:	150 g
Resolution per revolution (2^14):	16384 (0 ... 0x3FFF)
Absolute value range (32 absolute revolutions):	524288 (0 ... 0x7FFFF)
SSI data:	25 bits (24 data bits + 1 parity bit)
Maximum SSI clock frequency:	400 kHz

1 CONNECTOR PIN ASSIGNMENT

1	DATA+
2	DATA-
3	CLOCK+
4	CLOCK-
9	GND
10	VCC

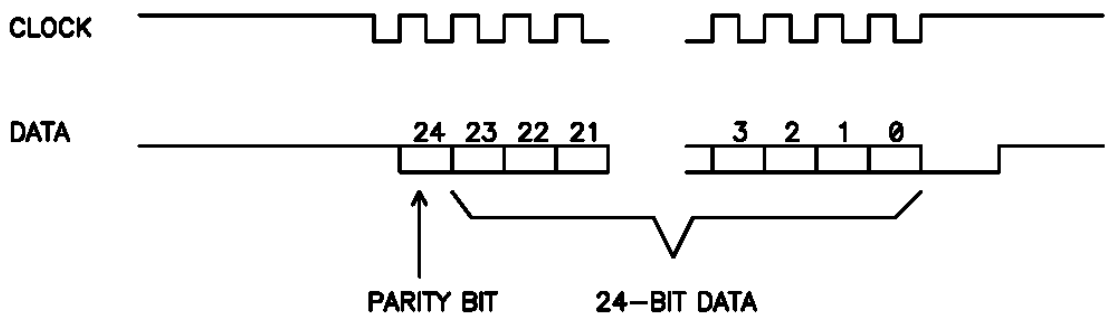


2 ENCODER INTERFACE

The encoder communicates with the receiving electronics via SSI interface. The CLOCK+/- and DATA+/- signal pairs are connected to the coupled electronics via RS-422 line receiver and line transmitter.

The clock signal must be provided by the receiving electronics. Its maximum value is 400 kHz.

The process of data transmission begins with starting the CLOCK signal series. In response, the encoder sends the current data bit by bit through the data line, for each clock cycle. The encoder completes the absolute data value with an even parity bit (bit 25).



3 PARAMETERIZING THE ENCODER

The number of the teeth of the gear counting the full revolutions is 32.

The value of one revolution is 2^14 = 16384 (0x4000)

There is absolute travel measurement up to 32 full revolutions.

The value range of the full absolute travel is 0 .. 524287 (0x0 .. 0x7FFFF) (19 bits)

For example, parameterization of the NCT control for a 5 mm ballscrew is as follows:

N512 Multiply = 5 x 10^6

N513 Divide = 2^14

N524 EnDatResolution = 19