NANOS Instruments GmbH

New!

Linear Encoder

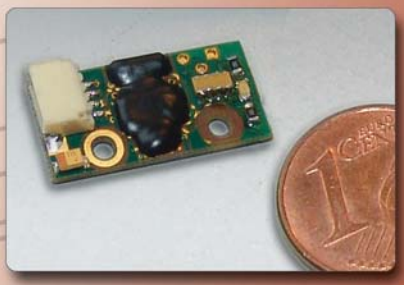
Incremental position measuring system

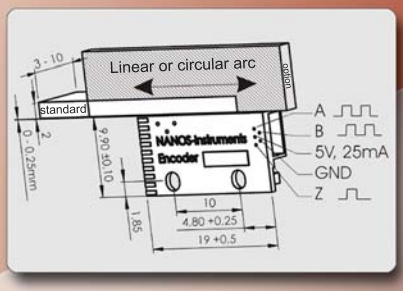
Our smallest and extremely compact linear encoder represents a robust position measuring system. The magnetic sensor principle is insensitive against contaminations or slightly mis-alignment. The integrated and balanced electronic can be purchased with a resolution to 61nm.

The incremental encoder has got the chanels A, B and Z as 5 Volt-TTL-Logic until 4 MHz. The encoder sensor has integrated an error feedback, that allows a safety operation and an assembly in seconds. The fitting- and operating tolerance is, due to the electronic, very large in all directions (+/- 0,12mm, +/- 5°). The measurements amount only 10 x 19 x 2,5mm (with plug 4mm, index 8mm).

The magnetic scale can be installed in two directions. Special length can be produced beside the standard length. On this occasion a length of 10 to 300 millimeters is possible.

This encoder can be screwed directly on the Piezo LEGS® motor.





specifications

resolution	250 / 122 / 61 nm
velocity	up to 250 mm/s
smallest fitting dimension	10 x 19 x 2,5 mm
magnetic scale	up to 300 mm
supply voltage	5V, 25 mA
temperature range	-25 bis 100 °C

- low size
- high resolution
- large fitting tolerance
- starting up in seconds
- cost-effective quantities
- error control
- ready calibrated

Piezo LEGS® is a trade-mark from *PiezoMotor*

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Order-code

ENCODER -500 -13 -250 -ABN -3 -50 -M -0 (standard)

Division
Interpolation-factor
Minimum-flank-distance
Index-equipment
Equipment-option plug
Length of scale
Indexposition
Mounting-kit

Explanation

Division : ***500 1000***

500µm corresponds to the division on the scale and the division of the sensor. This is interpolated with 13Bit for example to get a resolution of 61nm. The interpolation precision (per division) amounts +/- 0,15%. 1000µm division on request! The advantage lies in the major operating distance of 0-0,5mm.

Interpolation-factor : ***10 11 12 13 250 500 1000 2000***

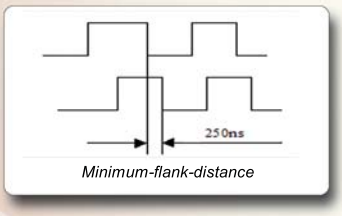
The corresponding interpolation-factor has to be specified to get the desired resolution. The standard is 13Bit, 10-13 are binary, 250-2000 are decimal divisors. The smaller the divisor, the higher the maximum measuring velocity and the coarser the resolution.

Minimum-flank-distance [ns] : ***250 500 1000 1500 2000 . . . 25000 [ns]***

The parameter limits the maximum output-speed of the A/B incremental-signal. It is used to avoid counting-mistakes, if the conductor or your counter are not able to convert theses frequencies, or not to steal the performance of the processor.

Index-equipment : ***AB ABN***

In case of ABN is the Hall-sensor, which recognizes the index lable, equipped. The signal is synchronized with the AB-track.



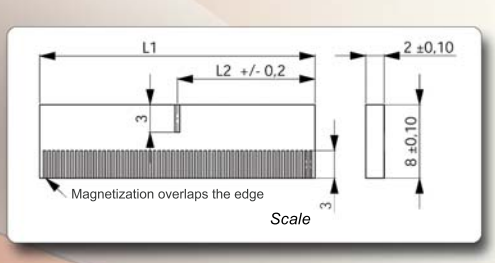
Minimum-flank-distance

Equipment-option plug : ***0 1 2 3***

0 = solder lug, diameters 0,3mm
1 = 4-pole lying JST SM04B
2 = 4-pole standing JST BM04B
3 = 5-pole standing (ABN) JST BM05B

Length of scale L1 [mm] : ***30 50 80 100 X***

The measurements amount 8 x 2 x L1
X=Special lenght against extra charge,
Material: ferrite-ceramics



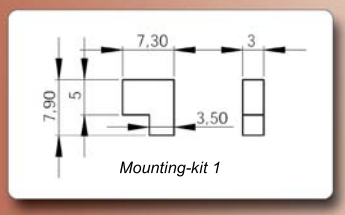
Scale

Index-position : ***M R***

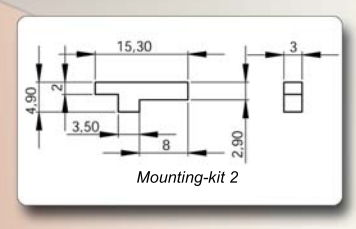
On the scale are two positions for the index by default.
M = middle (L2=L1/2);
R = right (L2=3mm)

Mounting-kit : ***0 1 2***

0 = without
1 = PiezoLegs - AB
2 = PiezoLegs - ABN



Mounting-kit 1



Mounting-kit 2