

Series **EMIX23**



Incremental Magnetic Linear Encoder
 μm High Resolution

EMIX23 Incremental, μm - High Resolution Linear Encoder

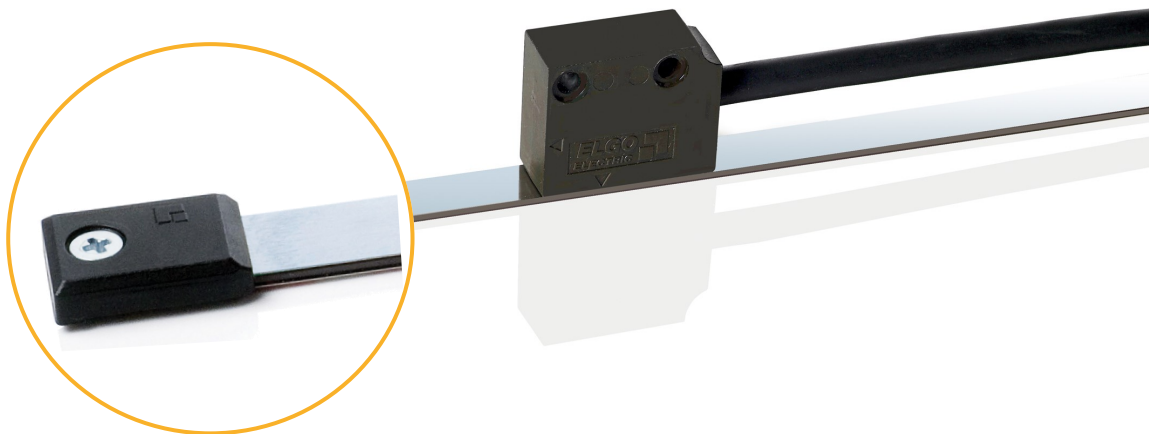
General: Based on the proven EMIX2 measuring system, the high resolution linear encoder EMIX23 was developed and offers two considerable advantages: EMIX23 is available in many different resolutions. In spite of its small dimensions, the translator is integrated in the sensor head. The installation of the sensor can also be done vertically. This must be mentioned when ordering. (Option L)

Function principle: Integrated in the sensor head are the magneto-resistive measuring bridges as well as the interpolation circuit and the output drivers. The bridge generates the distance depending count pulses for the signal processing electronic. The gap between sensor and tape must not be larger than 0,8 mm.

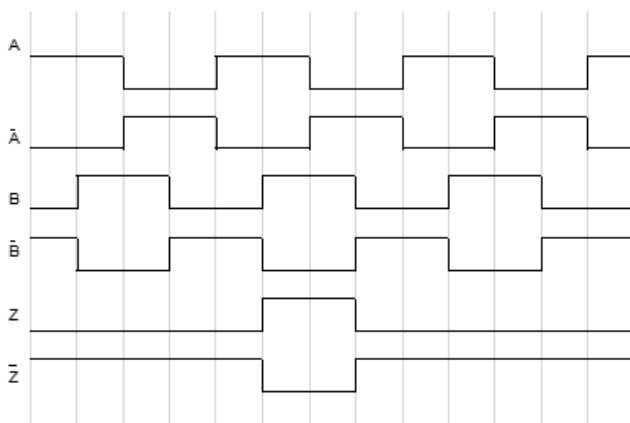
The sensor head has an eight wire cable, which is highly flexible and suitable for tug chains. It consists of twisted pair wires and is shielded.

Essential Features:

- High resolution sensor technology (1 μm)
- Predestined for control technology applications
- Wear free measuring principle
- Contactless position scanning
- Allowed distance between sensor and tape: 0.1 ... 0.8 mm
- Resistant against dust, dirt and water
- Differential 5 V-TTL or 10... 30 V-HTL output levels
- With index pulse (periodically) or free definable reference pulse
- Resolution = 0.001 mm (at 4 edge triggering)
- Repeat accuracy +/- 0.001 mm
- Small sensor head with integrated translator circuit
- Distance monitoring LED available (option)
- Speed-proportional square wave outputs



Pulse diagram:



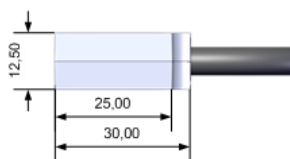
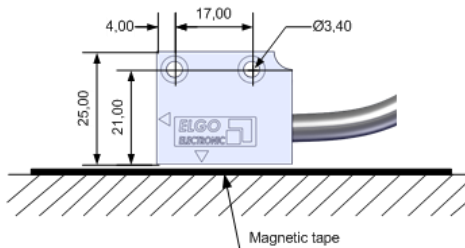
The channels A and B are 90 ° phases shifted

The output of the pulse occurs periodically every 2mm

Technical specifications:

Measuring principle	Incremental
Signal output	Speed proportional
Resolution	0.001 mm (at four edge triggering)
Repeating accuracy	+/- 0.001 mm
System accuracy in μm at 20 °C	+/- (20 + 20 x L) (L = measuring length in meter)
Distance tape/sensor	0.8 mm
Supply voltage VDC	5 VDC or 10... 30 VDC
Tolerance/ supply voltage	5 VDC: +/- 2,5 %, ripple +/- 25 mV 10 ... 30 VDC: +/- 10 %, ripple < 5 %
Consumption	5 VDC: max. 200 mA 10... 30 VDC: max. 150 mA
Translator circuit internal/external	internal
Output levels	5 V-TTL line driver or 10... 30 V-HTL
Output channels	A, A', B, B', Z, Z'
Output characteristic	push-pull, durable short circuit proof
Output frequency per channel	max. 1 MHz
Output current	20 mA
Operating speed	2.0 m/s
Index pulse	Periodically output of channel Z and Z'
Maximum cable length	5 V / 5 V-TTL = 10 m 10-30 V / 10-30 V = 30 m
Minimum bending radius of the sensor cable	60 mm
Operating temperature	-10... +70 °C (25... +85 °C) on request
Store temperature	-25... +85 °C
Max. Humidity	95 %, not condensing
Mechanical sensor data	
Sensor housing	Zinc die cast
Protection class	IP67
Dimensions sensor head	L x W x H = 30 mm x 12.5 mm x 25 mm
Installation position	Horizontally (standard) or vertically (Option L)
Mechanically guided	no

Sensor dimensions:



Order reference:

For orders, please use the following order code:

EMIX23 - - - - -

A version

- 000 ELGO standard
- 001 First special version

B Signal cable length (in XX.X m)

- 01.5 1.5 m (standard cable length)

C Resolution

- 0001 0.001 mm (standard)

D Supply / output level

- 00 10-30 VDC / 10-30 V-HTL
- 01 10-30 VDC / 5 V-TTL line driver
- 11 5 VDC / 5V-TTL line driver

E Options

- D1 Connection D-SUB9 pol.
(Pin-configuration ELGO standard)
- D3 Round plug for SKA-1 connection
- L Vertical sensor position (PCB and sensor)*
- R Single reference signal on active sensor area
- E = LED > green LED = reading distance is ok
red LED = reading distance is not ok**

* Option L cannot be combined with Option R

** Currently only available for the version with 5 VDC power supply / 5 V-TTL output levels

Example:

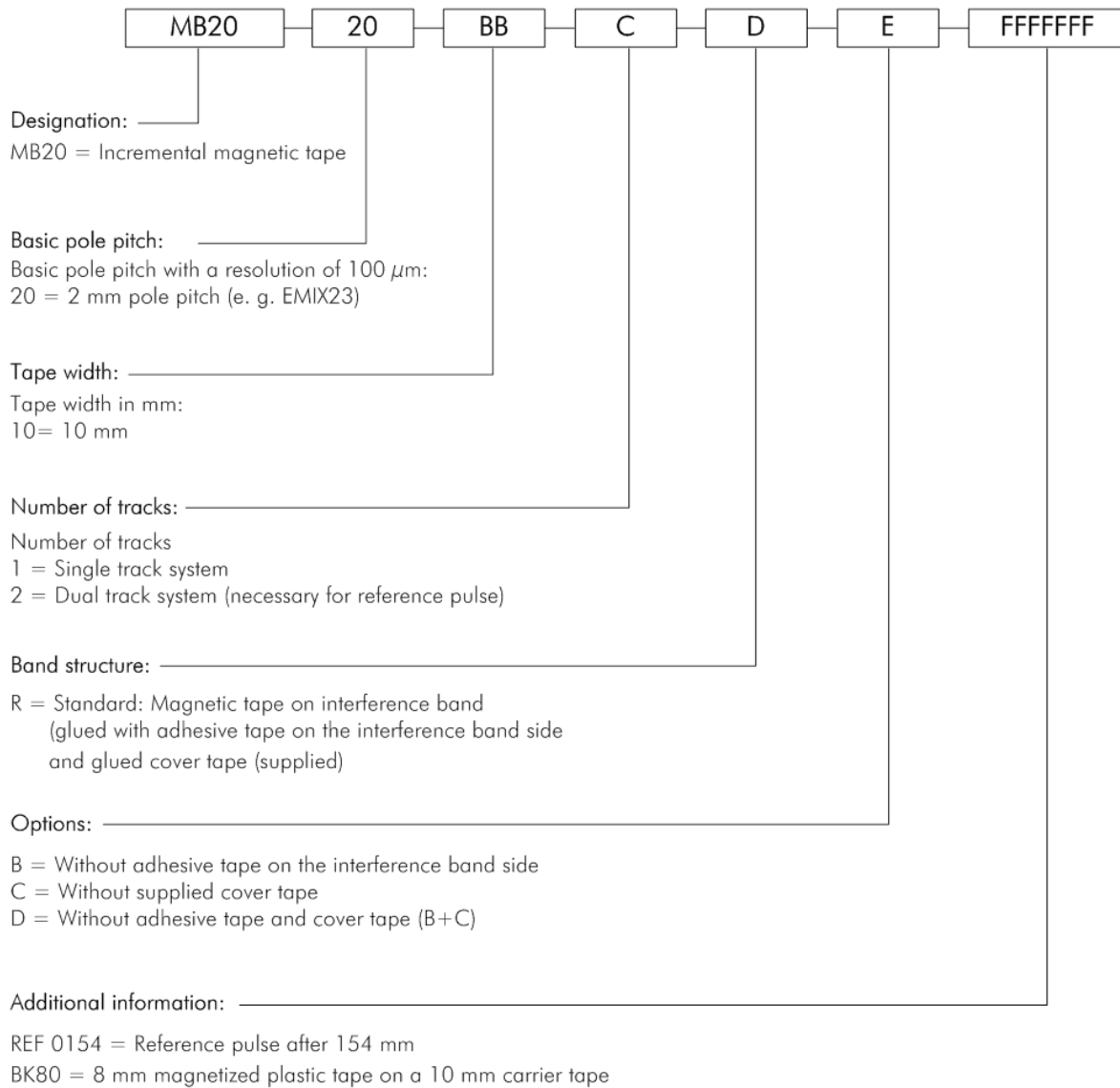
EMIX23 - 000 - 01.5 - 0001 - 00 - D1
A A A - B B . B - C C C C - D D - E E

EMIX23 ELGO Standard, with 1.5 m signal cable length, a resolution of 0.001 mm, 10-30 VDC power supply / 10-30 V-HTL output levels, and connections via 9-pin D-SUB connector (ELGO standard).

Your order:

EMIX23 - - - - -

Type designation Magnetic Tape:



Accessories:

Type designation:

FW20.70
FS-1000
AP-1.0
End cap
End cap set
FBK80
AFBK80
POSU

Description:

Guide carriage EMIX23
Guide rail (without magnetic tape)
Cover profile
1 end cap (10 mm) for magnetic tape (Order No. 731031000)
2 end caps (10 mm) + two M3 screws (Order No. 731031002)
Guide profile for magnetic tape type BK80
Connecting profile to connect FBK80
Magnetic magnifying glass 15 x 15 mm

