

# ***DMIX1 / DMIX3***



Magnetic Incremental Linear Encoders with 1.00 mm resolution and freely selectable reference pulse (DMIX3)

## DMIX1 / 3 Magnetic Linear Encoder with 1.00 mm resolution

**General:** The *DMIX1* is an incremental magnetic length measuring system. The sensor technology and translator are placed in two different housings (sensor in sensor head and translator unit in external SUB-D connector). The magnetic tape can also be fixed into a guide rail with the provided adhesive tape. The *DMIX1* can be installed up to a maximum distance of 10.0 mm to the magnetic tape. As signal channels A, A', B, B', Z, Z' are available.

**DMIX3:** The sensor technology and translator are placed in one housing. The index signals are available as an index- or reference signal.

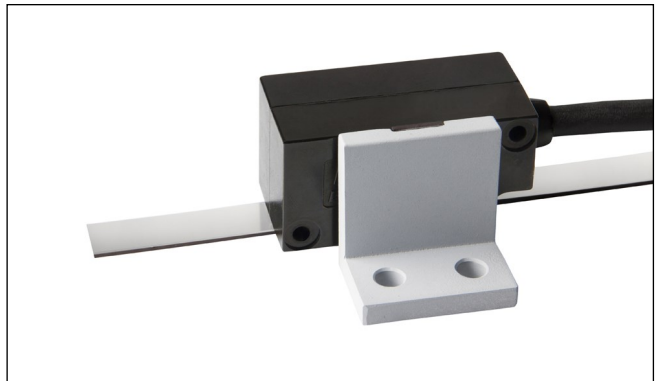
### Product Features:

- Direct contact free measurement
- The distance between sensor and magnetic tape can vary between 0.1 and 10.0 mm
- Measuring length theoretical unlimited
- Resolution up to 1.00 mm
- Repeat accuracy +/- 1 increment
- Very robust against pollution
- With freely selectable reference pulse (only DMIX3)

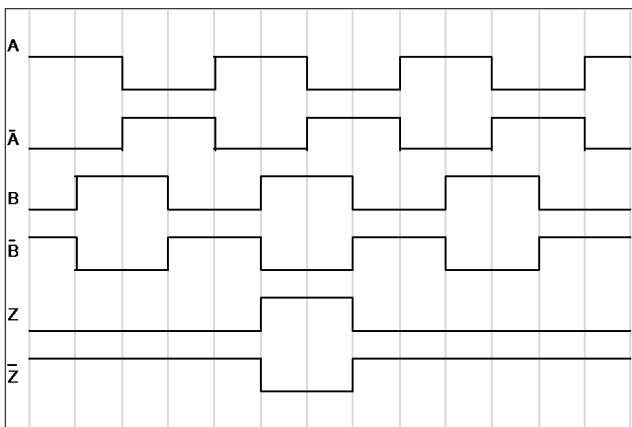
DMIX1



DMIX3



### Pulse diagram:



The channels A, B, A', B' are 90° phase-shifted.

### DMIX1:

The index pulses output occurs periodically every 16 mm.

### DMIX3:

The output of the index pulse carried out periodically every 16 mm, or as a one-time reference impulse respectively an inverted reference impulse.

## Technical Data:

Mechanical Data	
Measuring principle	incremental
Repeat accuracy	+/- 1 increment
System accuracy in $\mu\text{m}$ at 20 °C	+/- (1000 $\mu\text{m}$ + 20 $\mu\text{m}$ x L) L = effective measuring length in meters
Distance from sensor to magnetic tape	max. 10 mm
Pole pitch	16 mm
Material sensor housing	zinc die-cast
Housing dimensions DMIX1	L x W x H = 30 x 10 x 15 mm
Housing dimensions DMIX3	L x W x H = 50 x 24 x 26 mm
Required magnetic tape	MB20-160-10-1-R
Measuring length	theoretically unlimited
Cable connection DMIX1	D-SUB connector 9-pin
Cable connection DMIX3	open cable ends
Weight DMIX1	Sensor + D-SUB connector = approx. 40 g without cable
Weight DMIX3	approx. 60 g without cable
Cable	ca. 60 g per meter
Environment Conditions	
Storage temperature	-25 ... +85 °C
Operation temperature	-10 ... +70 °C (-25 ... +85 °C on request)
Protection class DMIX1	Sensor IP67 / translator circuit: IP40
Protection class DMIX3	IP40 (optionally IP65)
Humidity	max. 80 %, non-condensing
Electrical Data	
Power supply	10 - 30 VDC / 5 VDC
Periodic and random deviation	10 - 30 V: < 10 % 5 V: +/- 25 mV
Current consumption	10 - 30 VDC: max. 150 mA 5 VDC: max. 200 mA
Output signals DMIX1	A/A', B/B', Z/Z', push/pull, durable short-circuit-proof
Output signals DMIX3	A/A', B/B', Z/Z' or REF/REF', push/pull, durable short-circuit-proof
Output levels	10 ... 30 V-HTL / 5 V-TTL
Resolution(4 edge triggering)	1 mm
Index pulse	16 mm periodically
Output frequency / channel	max. 20 kHz
Movement speed	max. 20 m/s
Sensor cable DMIX1	drag chain suitable, length max.: 30 m, cable wires: 6 x 0,08 mm <sup>2</sup> bending radius: min. 60 mm
Sensor cable DMIX3	drag chain compliant, length max.: 30 m, cable wires: 2 x 0,75 mm <sup>2</sup> or 6 x 0,14 mm <sup>2</sup> bending radius: min. 60 mm

## Accessories:

**MB20-160-10-1-R1** Magnetic tape for DMIX

**Magnetic tape end cap 10 mm - set** 2 end caps (10 mm) and 2 x M3 screws; additional fixation in the radial and linear area, as well as a protection of the magnetic tape ends  
*Order No. 731031002*

**Magnetic tape end cap 10 mm** 1 end cap (10 mm)  
*Order No. 731031000*

## Order reference:

For orders please use the following order code:

DMIX1/3 -  $\bar{A} \bar{A} \bar{A} - \bar{B} \bar{B} \bar{B} - \bar{C} \bar{C} \bar{C} \bar{C} - \bar{D} \bar{D} - \bar{E} - \bar{F}$

### A SN-Number

000 ELGO standard

001 First special version

### B Signal cable length (in XX.X meter)

01.5 1.5 m (standard length)

(other cable lengths on request)

### C Resolution

1000 1.00 mm (at 4-edge triggering)

### D Supply / output levels

00 10-30 VDC / 10-30 VDC

01 10-30 VDC / 5 V-TTL line driver

11 5 VDC / 5 V-TTL line driver

### E Reference pulse

R Reference pulse\*

### F Option

V Sealed version\*

\* Only with DMIX3 available

Example:

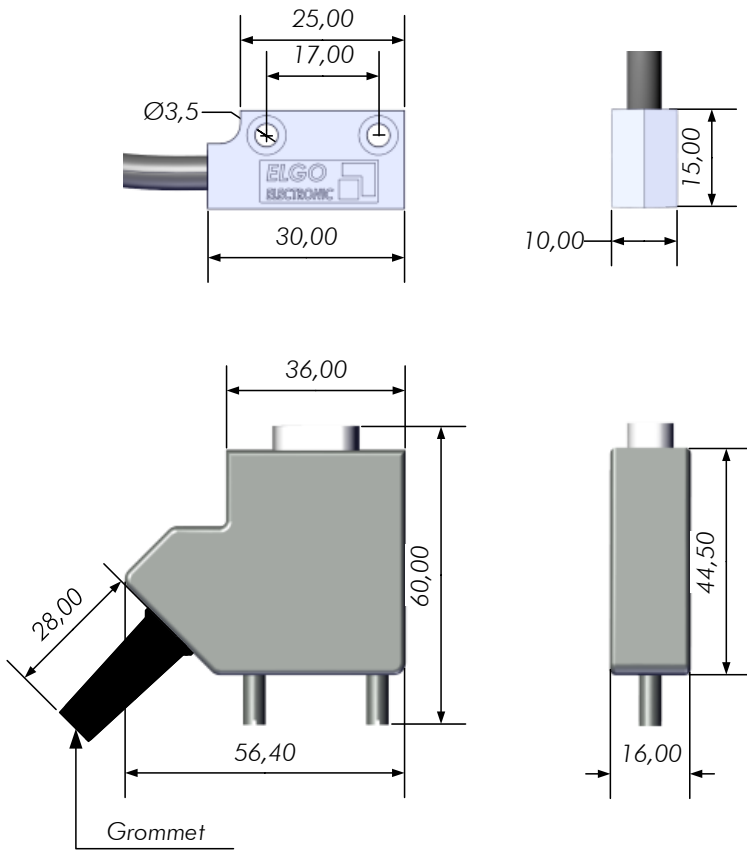
DMIX3 - 000 - 01.5 - 1000 - 01 R  
A A A - B B . B - C C C C - D D - E

DMIX3 ELGO standard, with 1.5 m signal cable, 1.00 mm resolution, 10-30 VDC power supply / 5 V-TTL line driver output levels and with a freely selectable reference pulse.

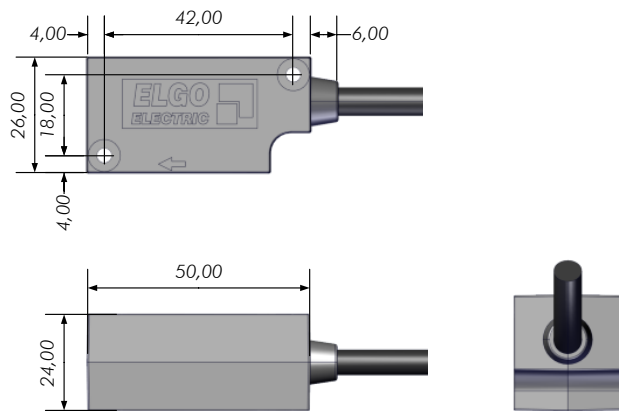
Your order:

DMIX -  $\bar{A} \bar{A} \bar{A} - \bar{B} \bar{B} \bar{B} - \bar{C} \bar{C} \bar{C} \bar{C} - \bar{D} \bar{D} - \bar{E} - \bar{F}$

### Dimensions DMIX1:



### Dimensions DMIX3:



### Dimensions of the Mounting angle for Reference pulse:

