SERIES LMIX22
Magnetic incremental linear encoder with selectable resolution and optional reference signal

- With periodic index pulse or optional reference pulse
- Distance between sensor / magnetic tape of up to 2.0 mm
- Differential HTL or TTL Line Driver outputs
- Various resolutions at 4 edge triggering available (specified by order)
- Repeat accuracy +/- 1 increment
- Small sensor with integrated evaluation electronic (translator)
- Speed proportional output of the square wave signals
**General**

Based on the proven LMIX2 linear encoder system, the linear encoder LMIX22 was developed and offers two considerable advantages:

1. LMIX22 is available in many different resolutions
2. With optional reference pulse via magnetic angle (SN-007) or via a second magnetic tape track (SN-027)

Despite the small dimensions the evaluation electronic (translator) is integrated in the sensor head. Optionally, a vertically mountable LMIX22 variant is available. This must be specified as option “L” with the order.

Please note the following when ordering option “L”: The position of the internal sensor board is displaced by 90°. So a horizontal mounting, respectively sensing is no longer possible!

**Version LMIX22-007**

Instead of a periodical index pulse (channels Z / Z’), a single reference pulse (channels R / R’) occurs at the position where the magnet angle MW-007 (accessorial part) is installed. See also graphical overview on last page.

**Version LMIX22-027**

Instead of a periodical index pulse (channels Z / Z’), a single reference pulse (channels R / R’) occurs at a desired position of the magnetic tape. In this case, a dual track magnetic tape (type MB20-50-10-2) must be used. The desired reference pulse position can be ordered by using the type designation of the magnetic tape. See also graphical overview on last page.

**Installation LMIX22**

![Diagram of LMIX22 installation](image)

**Installation magnetic angle MW-007 (Option 007)**

The magnetic angle must be centered to an arbitrary pole change (alignment by using the provided pole searcher film).
**Technical specifications**

**LMIX22**

### Mechanical Data

- **Measuring principle**: Incremental
- **Repeat accuracy**: +/- 1 Increment
- **Signal output**: Speed proportional
- **System accuracy in μm at 20°C**: 
  - \(\pm (25\, \mu m + 20\, \mu m) \times L\) (L = measuring length in meter)
- **Distance from sensor to magnetic tape**: max. 2.0 mm
- **Sensor housing material**: Zinc die-cast
- **Maximum length of wire**: 
  - 5 V/5 V-TTL = 10 m
  - 10 - 30 V / 10-30 V = 30 m
  - 10 - 30 V / 5 V-TTL = 50 m
- **Weight**: ca. 35 g without cable; cable approx. 60 g/m

### Electrical Data

- **Supply voltage**: 5 VDC or 10…30 VDC
- **Residual ripple**: 10 - 30 VDC: < 10 %
- **Power input**: 5 VDC: max. 200 mA
  - 10 … 30 VDC: max. 150 mA
- **Speed**: max. 4 m/s (at 10 μm resolution)
- **Output level**: TTL Line Driver or HTL
- **Output frequency per channel at 10 μm resolution**: 
  - TTL: max. 100 kHz at 4.0 m/s
  - HTL: max. 100 kHz at 4.0 m/s
- **Output current per channel**: 20 mA
- **Reference pulse R / R’ (versions 007 & 027)**
  - LMIX22-007: Output at position of the magnetic angle.
  - LMIX22-027: Output at defined position of an additional magnetic tape track.
- **Index pulse Z / Z’**: periodically every 5 mm

### Environment Conditions

- **Storage temperature**: -25 … +85 °C
- **Operation temperature**: -10 … +70 °C (-25 … +85 °C on request)
- **Humidity**: max. 95 %, non-condensing
- **Protection class**: IP67

### Dimensions

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**Order reference**

For orders, please use the following order code:

- **LMIX22**
  - A A A - B B - C C C C - D D - E E E

#### A Version

- 000 = ELGO Standard
- 001 = First special version
- 007 = Reference pulse with magnetic angle (MW-007)
- 027 = Reference pulse on second magnetic tape track

#### B Signal cable length

- in XX m (1.5 m Standard)

#### C Resolution in μm

- 2N50 = 2.5
- 3N12 = 3.125
- 0005 = 5
- 0010 = 10
- 0020 = 20
- 0025 = 25
- 0040 = 40
- 0050 = 50
- 0100 = 100
- 0125 = 125
- 0200 = 200
- 0625 = 625

#### D Supply / Output level

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

#### E Options

- (Multiple nominations possible)
  - D1 = Connection D-SUB 9pol (standard)
  - D2 = Connection D-SUB 9pol (18-50 pin assignment)
  - D3 = Connection plug (Mix pin assignment)
  - L = Vertical position

**For Example:**

- **LMIX22**
  - 0 0 0 - 0 1 . 5 - 2 N 5 0 - 0 0 - 0 0 0 0 0 0 - D 1
  - A A A - B B - C C C C - D D - E E E

ELGO standard LMIX22 with 1.5 m sensor cable, 2.5 μm resolution, 10-30 VDC power supply / HTL output levels and standard connection by 9 pin D-SUB.

- **Your order:**
  - LMIX22 - A A A - B B - C C C C - D D - E E E

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Versions and differences

**Standard 000:**
Standard, without reference pulse (single track tape)
Magnetic tape: MB20-50-10-1-R

**Version 007:**
Reference pulse from magnetic angle (single track tape)
Magnetic tape: MB20-50-10-1-R

**Version 027:**
Reference pulse from magnetic tape (dual track tape required)
Magnetic tape: MB20-50-10-2-R-REF0154 (example position)

Accessories

- **MB20-50-10-1-R**
  Single track magnetic tape for LMIX22-000 and LMIX22-007
- **MB20-50-10-2-R**
  Dual track magnetic tape for LMIX22-007 (with reference pulse track).
- **MW-007**
  1 magnetic angle with reference pulse for special version LMIX22-007
  (Article No. 733282100)
- **End cap 10 mm**
  1 end cap (10 mm) for magnetic tape
  (Article No. 731031000)
- **End cap set 10 mm**
  2 end caps (10 mm) and two M3 screws, additional fixation in the radial
  and linear area as well as a protection of the magnetic tape
  (Article No. 731031002)
- **AP1.0**
  Aluminum cover profile
- **FW2070**
  Guide carriage for LMIX22
- **FS2050-000-XXXX**
  Guide rail for LMIX22 (incl. magnetic tape)
- **FS-1000**
  Guide rail without magnetic tape
- **FBK80**
  Guide rail for magnetic tape BK80
- **AFBK80**
  Connection profile for the connection of FBK80
- **POSU**
  Magnetic magnifying glass 15 x 15 mm