

LIMAX2M NEO

Magnetic Absolute Shaft Information System



- Absolute measurement for hoisting heights up to 130 m
- Resolution: 62.5 / 125 / 250 / 500 or 1000 μm
- Insensitive to dirt, smoke and humidity
- Travel speed up to 4 m/s
- Diverse interfaces available
- No referencing necessary
- Easy and flexible to install
- Vertical installation of the magnetic tape
- Wear-free, contactless and noiseless measuring principle

LIMAX2M NEO - Magnetic Absolute Shaft Information System

General:

The absolute shaft information system **LIMAX2M NEO** with its significant advantages is a particularly affordable, non-sensitive and easy-to-install alternative to conventional shaft information systems. Due to the absolute measurement principle, referencing is not required after commissioning.

LIMAX2M NEO is able to cover lifting heights up to 130 meters and speeds up to 4 m/s.

The **2M** in the type designation stands for "Mini" and means the smallest sensor design of the LIMAX2 series. **NEO** stands for new generation. With its low space requirement, **LIMAX2M NEO** is also ideally suited for retrofitting and modernization of existing elevator systems.

A simple and flexible mounting ensures quick installation or replacement of the measuring system.

Magnetic Tape:

For measurement of the lift position, the sensor requires an absolute coded magnetic tape of the type **AB20-80-10-1-R-D-15-BK80**, which carries the unique position information as a magnetic code. The magnetic tape is mounted free-hanging in the shaft by using an ELGO mounting set (see accessories on the last page). At the lower end, the tape is tensioned while it is guided along the cabin by a plastic guidance at the sensor. The actual measurement resp. scanning is basically contactless. The guidance merely serves to keep the correct distance to the sensor.

Available Interfaces:

For communication with the lift control, an interface can be defined with the order (see type designation). Available are CANopen and SSI interfaces with different protocols resp. encoding. CAN interface is also available with galvanic isolation. In connection with the mounting angle the LIMAX2 can be replaced. Customer-specific solutions are also available on request.

Status LEDs:

The **LIMAX2M NEO** sensor has 3 status LEDs which serve for various messages, e. g. operational readiness or error states of the system, magnetic tape and interface.

Connections:

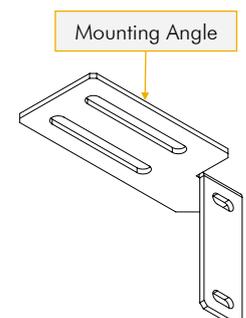
By default the **LIMAX2M NEO** sensor is supplied with a RJ45 female connector and without a signal cable (cable outlet bottom). **LIMAX2M NEO** is also optionally with IP55 and M12 round connector available (cable outlet on bottom). Depending on the interface selected, the circular connector is designed as a 5- or 8-pin connector. Various cables with the appropriate round connector (on the sensor side) and on the customer side with open cable ends or a 9-pin D-SUB connector can be ordered separately as an accessory.

Sensor Installation:

In order to mount the sensor to the lift cabin, the mounting angle kit **LIMAX2M NEO MW SET** must be used, which is available as an ELGO accessory. This mounting kit includes two screws with sliding nuts which can be inserted into the mounting groove of the sensor housing in order to fix the angle to the sensor housing. With the remaining long holes, the unit can be fastened on the cabin roof. The tape guidance at the sensor permanently ensures the correct distance between magnetic tape and sensor. **LIMAX2M NEO** in combination with **LIMAX2M MW1** can replace the LIMAX2 without changing the magnetic tape.

Magnetic Tape Installation:

For elevator applications, the magnetic tape is attached free hanging to the upper end of the shaft and is tensioned at the lower end of the shaft by tension spring. Several mounting sets are available for the tape installation, which contain different components depending on the respective requirements. All variants and their order designations are summarized in the table "Accessories" on the last page. Available are various mounting sets as well for central guided cabins as for backpack-guided systems.



LIMAX2M NEO- Magnetic Absolute Shaft Information System

Technical Data:

Mechanical Data

Measuring principle	absolut
Repeat accuracy	± 1 increment
System accuracy in µm at 20 °C	± (1000 + 50 x L) L = Measuring length in meters
Distance sensor / tape	the correct distance is guaranteed by guidance
Housing material	aluminium
Housing dimensions	L x W x H = 247 x 54 x 27 mm
Required magnetic tape	AB20-80-10-1-R-D-15-BK80
Basic pole pitch (tape)	8 mm
Max. measuring length	130 m
Connections	standard: RJ45 optional: M12 round connector (5- or 8-pin depends on interface type)
Sensor cable	accessorial part
Weight	approx. 320 g without cable cable: approx. 60 g per meter

Electrical Data

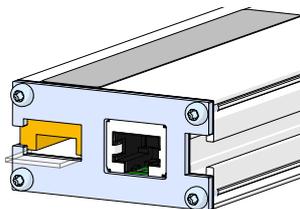
Power supply voltage	10 ... 30 VDC
Residual ripple	<200 mVpp
Current consumption	max. 200 mA
Interface (order-specific)	CANopen (CiA 406 or CiA 417), SSI gray code
Resolution	1.0 mm
Operating speed	max. 4 m/s
Cycle time	1 ms

Environmental conditions

Storage temperature	-25 ... +85 °C
Operating temperature	-10 ... +70 °C (-25 ... +85 °C on request)
Operating altitude	max. 3000 m above sea level
Humidity	95 %, non-condensing
Protection class	IP53 (standard) IP55 (on request)

Option RJ45:

Pin	CAN	SSI
1	CAN-H	DAT-
2	CAN-L	DAT+
3	CAN-GND	GND
4	N.C.	CLK-
5	N.C.	CLK+
6	N.C.	VCC
7	GND	GND
8	VCC	VCC



Type Designation:

LIMAX2M - $\overline{\text{A}} \overline{\text{A}} - \overline{\text{B}} \overline{\text{B}} \overline{\text{B}} - \overline{\text{C}} \overline{\text{C}} \overline{\text{C}} \overline{\text{C}} - \overline{\text{D}} \overline{\text{D}} \overline{\text{D}} \overline{\text{D}} - \overline{\text{E}} \overline{\text{E}} \overline{\text{E}} \overline{\text{E}}$

A Version

- 10 = Standard ELGO Batscale
- 20 = Standard ELGO Electronic

B Signal cable length

- CON = no cable, connector on device (standard)

C Resolution

- 62N5 = 62,5 µm (SSI - interface)
- 0500 = 500 µm (CAN - interface)
- 1000 = 1000 µm (CAN - interface)

D Interface

- COX = CANopen [special profile, separately defined by version no.]
- CO0 = CANopen [encoder Profile DS406]
- CO1 = CANopen [elevator Profile DS417]
- SSGX = SSI [special protocol, separately defined by version no.]
- SSG0 = SSI [25-bit gray code / Position]

*Other interfaces on request

CAUTION:

1. Assembly of CAN-load resistor is selectable
2. SSI interfaces are basically terminated by 120R

CAN- interface	Without galvanic isolation	With galvanic isolation (G)
With termination 120R (T)	CO0T (Standard)	CN0TG
Without termination	CO0	CN0G
With termination 120R (T)	CO1T (Standard)	CO1TG
Without termination	CO1	CO1G

E Options

- M12M = 5- resp. 8-pin M12 round connector (IP55)
[5 or 8 pins resp. assignment depends on the type of selected interface]
- RJ45 = RJ45 socket (IP53)

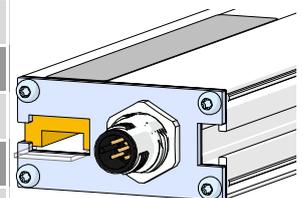
Order example:

LIMAX2M - 2 0 - CON - 10 0 0 - CO0T - RJ45
A A - B B B - CCCC - DDDD - EEEE

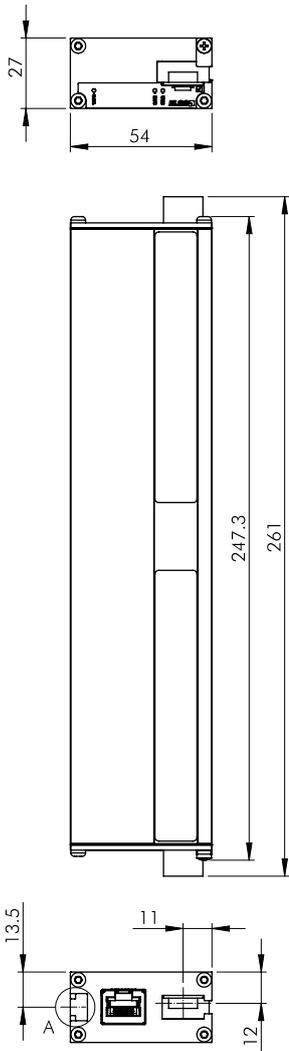
ELGO standard LIMAX2M NEO without cable, with 1 mm resolution, CANopen interface [encoder Profile DS406] and RJ45 connector

Option M12M:

Pin	CAN - 5-pol.	SSI - 8-pol.
1	CAN-GND	GND
2	VCC	VCC
3	GND	CLK+
4	CAN-H	CLK-
5	CAN-L	DAT+
6	-	DAT-
7	-	N.C.
8	-	N.C.

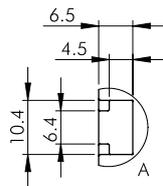
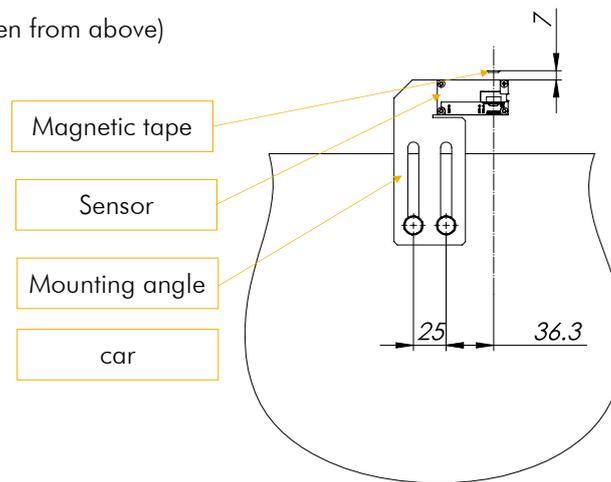


Dimensions of LIMAX2M NEO:



Sensor with mounting angle:

(seen from above)



Accessories for LIMAX2M NEO:

Order designation	Description
LIMAX2M NEO MW SET	LIMAX2M NEO mounting angle for attachment to the lift cabin and replacement of LIMAX2
AB20-80-10-1-R-D-15-BK80	Magnetic tape for LIMAX2M NEO, absolute coding, single track system
LIMAX MKF	Mounting set for suspended installation with dowel
LIMAX MKB	Mounting set for suspended installation with guiding rails and rail holder
LIMAX RMS	Mounting set for suspended installation with crossbeam for standard layout
LIMAX RMS 90	Mounting set for suspended installation with crossbeam for Rucksack-layout
CABLE-LIMAX2M-M12F5-03.0	LIMAX2M signal cable, 3 m (standard length) sensor side CAN & RS485 assignment customer side open cable ends
CABLE-LIMAX2M-M12F5-03.0-D9M	LIMAX2M signal cable, 3 m (standard length) sensor side CAN & CANopen assignment customer side 9-pin D-SUB
CABLE-LIMAX2M-M12F8-03.0	LIMAX2M signal cable, 3 m (standard length) sensor side CAN & RS422 assignment customer side with open cable ends
CABLE-LIMAX2M-M12F8-03.0-D9M1	LIMAX2M signal cable, 3 m (standard length) sensor side CAN & CANopen assignment customer side 9-pin D-SUB
CABLE-LIMAX2M-RJ45-03.0	LIMAX2M signal cable, in 3,0 m (standard length) Sensor side RJ45 connector customer side open cable ends

*) other lengths on request

