

Shaft copying systems

Sensor – Ants Safe	LES02	Safe position detection
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The sensor Ants LES02 is an extremely robust, compact and contactless measuring system. With a resolution of 0.5 mm and a travel speed of up to 8 m/s, absolute position values of the elevator car are determined slip-free via a non-contact measuring principle.

In combination with the PSU02 evaluation unit, numerous elevator and safety functions can be implemented as the **Kübler Safe-System LES02/PSU02**.



Features and benefits

- **Safe position and speed detection**

The SIL3-certified measuring system consisting of sensor and code band provides speed information in addition to the absolute position values.

- **100 % slip-free**

Mounting on, next to or underneath the lift car always provides direct position feedback without the effect of possible slippage of the suspension means.

- **Maximum compactness**

With its compactness, the sensor is not only easy to install, but can also be integrated into the tightest installation spaces. Even in glass lifts, it blends in very well with the overall appearance of the lift system.

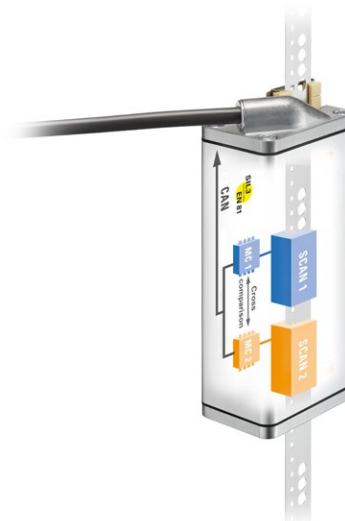
- **Digitization of elevator systems**

In combination with the PSU02 evaluation unit, numerous elevator and safety functions can be implemented. The digitization of elevator systems saves time and costs.

Functional principle LES02

The sensor Ants LES02 consists of two independently operating detection systems. SCAN1 and SCAN2 are measured sections detected via the micro controllers MC1 and MC2.

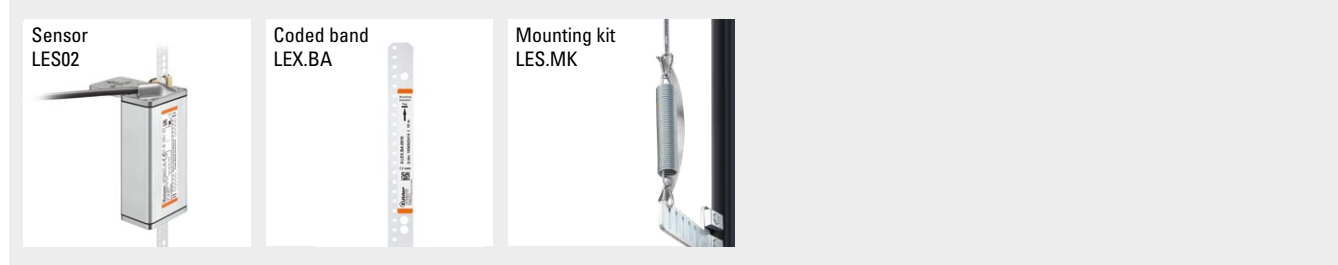
The micro controllers compare the recorded data with each other (internal cross comparison) and then transmit the safe speed data, position data and error information via a common channel as a proprietary CAN protocol.



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Required components for the use of the LES02 sensor



Order code 8.LES02.X11X.1111

Sensor Type a b c d

- a** Type of mounting
1 = with mounting plate
2 = without mounting plate (T-slot mounting)
 - b** Interface / supply voltage
1 = CAN / 10 ... 30 V
 - c** Type of connection
1 = cable, 3 m [9.84'], open cable end
A = cable, special lengths, shielded, open cable end *)
 - d** Interface profile
11 = CAN (1-channel), proprietary
- *) Special lengths on request: 5 m, 7 m, 10 m
order code expansion .XXXX = length in dm
ex.: 8.LES02.111A.1111.0050 (for cable length 5 m)

Order code 8.LEX.BA.XXXX

Coded band, absolute Type a

- a** Measuring lengths
XXXX = lengths in meters
(max. length = 392 m)
- Standard lengths
0010 = 10 m
0015 = 15 m
0020 = 20 m
0025 = 25 m
0030 = 30 m
0040 = 40 m
0050 = 50 m
0060 = 60 m
0070 = 70 m
0080 = 80 m
0090 = 90 m
0100 = 100 m
0392 = 392 m
- Intermediate lengths
< 100 m as from 5 pieces
> 100 m on request
- Stock types
8.LEX.BA.0010 (10 m)
8.LEX.BA.0015 (15 m)
8.LEX.BA.0020 (20 m)
8.LEX.BA.0025 (25 m)
8.LEX.BA.0030 (30 m)
8.LEX.BA.0035 (35 m)
8.LEX.BA.0040 (40 m)
8.LEX.BA.0392 (392 m)

Mounting kit 8.LES.MK.0001

LES.MK

Mounting kit for sensor Ants LES02

Accessories Order no.

EMC - Shield terminal For an EMC-compliant installation of the cable **8.0000.4G06.0312**

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Technical data

Mechanical characteristics	
Code	absolute, 16 bit
Max. measuring length	392 m
Speed	certified 8 m/s ¹⁾ functional 12 m/s ²⁾
Resolution	certified 1 mm functional 0.5 mm
Accuracy	±1 mm
Type of connection	cable 3 m with open end further lengths up to max. 10 m on request
Weight	550 g [19.4 oz]
Housing (material)	aluminum
Dimensions	L x W x H 126 x 55 x 37 mm [4.96 x 2.17 x 1.46"]

Electrical characteristics	
Supply voltage	10 ... 30 V DC
Reverse polarity protection	yes
Power consumption	max. 100 mA
Interfaces	CAN proprietär

Environmental conditions	
Protection acc. to EN 60529	IP54
Humidity	< 90 % (non condensing)
Working temperature	-10 °C ... +70 °C [+14 °F ... +158 °F]
Storage temperature	-15 °C ... +80 °C [+5 °F ... +176 °F]
Air pressure (operating altitude)	800 ... 1013 hPA (up to 2000 m above NN)

Safety characteristics	
Classification	SIL3
PFH_d value	< 10 ⁻⁸ h ⁻¹
Mission time / Proof test interval	20 years

Technical data coded band LEX.BA	
Material	V2A spring-loaded stainless steel, chamfered edges
Dimensions	16 x 0.4 mm [0.63 x 0.016"]
Max. length	392 m
Weight	50 g / m [1.76 oz/m]
Thermal expansion	16 x 10 ⁻⁶ / K between 20 °C ... 100 °C

Standards / Directives / Certificates		
Standards	standards for elevators	EN 81-20/21/50
UL compliant	in accordance with	File no. E498900
CE compliant	in accordance with	
	EMC Directive	2014/30/EU
	RoHS Directive	2011/65/EU
	Elevator Directive	2014/33/EU

Terminal assignment Ants LES02

Interface	Type of connection	Cable				
1 CAN	1, A	Signal:	+V	0 V / GND	CAN_H	CAN_L
		Core color:	BN	WH	GN	YE

- +V: Supply voltage +V DC
- 0 V: Supply voltage ground GND (0 V)

1) Bezug ist die Nenngeschwindigkeit der Aufzugsanlage.
2) Bei > 12 m/s geht der Sensor in den Fehlermodus.

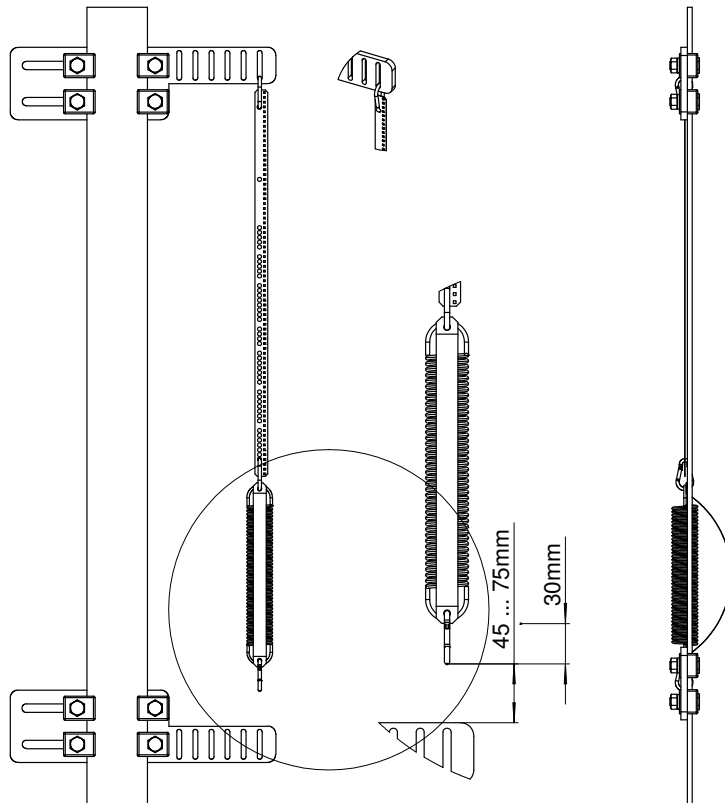
Sensor – Ants Safe

LES02

Safe position detection

Technology in detail

Coded band fastening with Mounting Kit LES.MK



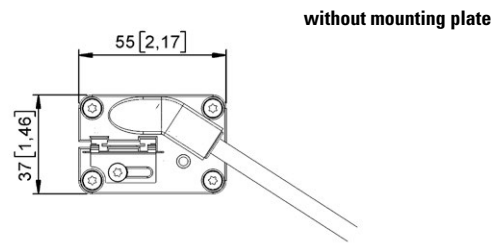
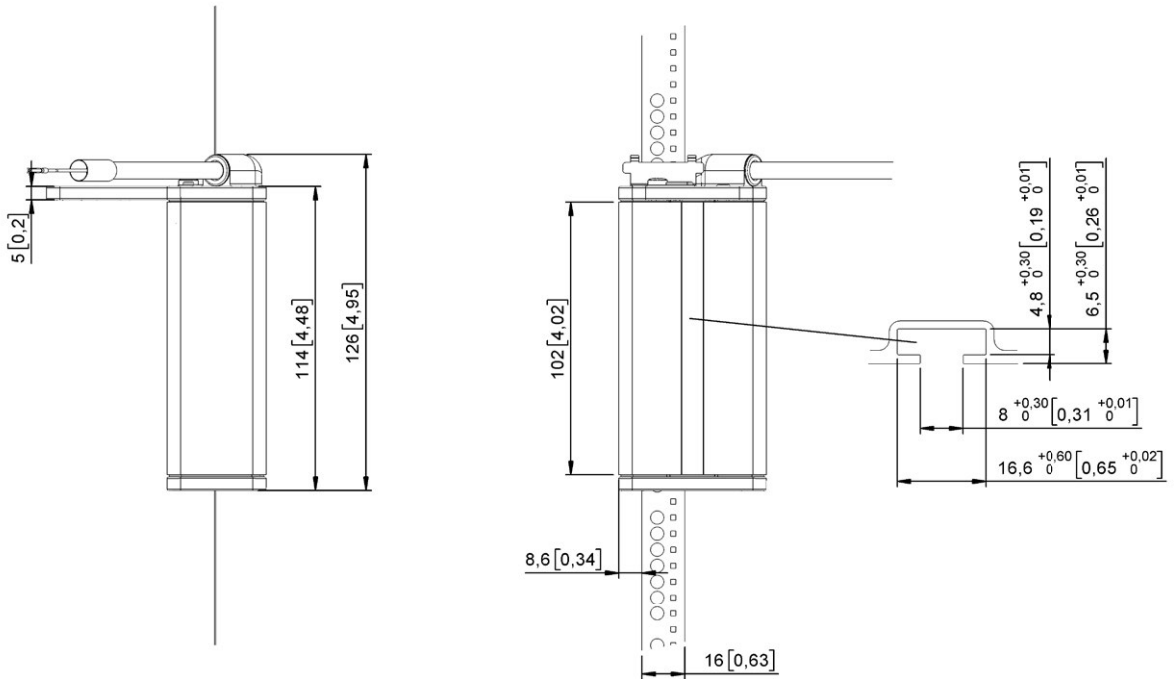
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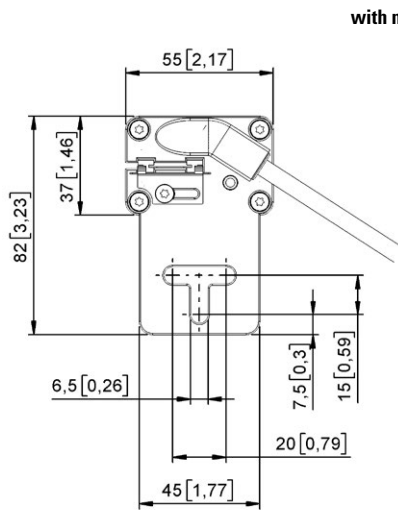
Dimensions

Dimensions in mm [inch]

Sensor



without mounting plate



with mounting plate