**Sensor – Ants Safe** | **LES02** | **Safe position detection**

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**.

To the 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.

## Required components for the use of the LES02 sensor

Sensor
LES02

Coded band

Mounting kit
LES.MK

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| Sensor – Ants Safe | LES02 | Safe position detection |
|---|---|---|

## Order code Sensor

| 8.LES02 | . | X | 1 | 1 | X | . | 11 | 11 |
|---|---|---|---|---|---|---|---|---|
| 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 *)

*) 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)

**d** *Interface profile*
11 = CAN (1-channel), proprietary

## Order code Coded band, absolute

| 8.LEX.BA | . | XXXX |
|---|---|---|
| Type | | a |

**a** *Measuring lengths*
XXXX = lengths in meters (max. length = 392 m)

*Standard lengths*

| | | |
|---|---|---|
| 0010 = 10 m | 0040 = 40 m | 0090 = 90 m |
| 0015 = 15 m | 0050 = 50 m | 0100 = 100 m |
| 0020 = 20 m | 0060 = 60 m | 0392 = 392 m |
| 0025 = 25 m | 0070 = 70 m | Intermediate lengths < 100 m as from 5 pieces, |
| 0030 = 30 m | 0080 = 80 m | > 100 m on request |

*Stock types*

| | |
|---|---|
| 0010 = 10 m | 0030 = 30 m |
| 0015 = 15 m | 0040 = 40 m |
| 0020 = 20 m | 0392 = 392 m |
| 0025 = 25 m | |

## Mounting kit LES.MK

8.LES.MK.0001

To the data sheet >

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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## Sensor – Ants Safe | LES02 | Safe position detection

### 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<br>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<br>(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<br>between 20 °C ... 100 °C |

#### Standards / Directives / Certificates

| | | |
|---|---|---|
| **Standards** | standards for elevators | EN 81-20/21/50 |
| | EMC emission | EN 12015 |
| | EMC immunity | EN 12016 |
| | vibration resistance | EN 60068-2-6 / EN 81-50, 5.6.3.1 |
| | shock resistance | EN 60068-2-27 / EN 81-50, 5.6.3.1 |
| | environmental conditions | EN 60068-2-14 / EN 81-50, 5.6.3.2 |
| **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 |
| **UKCA compliant** in accordance with | | |
| | EMC Regulations | S.I. 2016/1091 |
| | RoHS Regulations | S.I. 2012/3032 |
| | Lifts Regulations | S.I. 2016/1093 |

### Terminal assignment Ants LES02

| Interface | Type of connection | Cable | | | | |
|---|---|---|---|---|---|---|
| 1<br>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.

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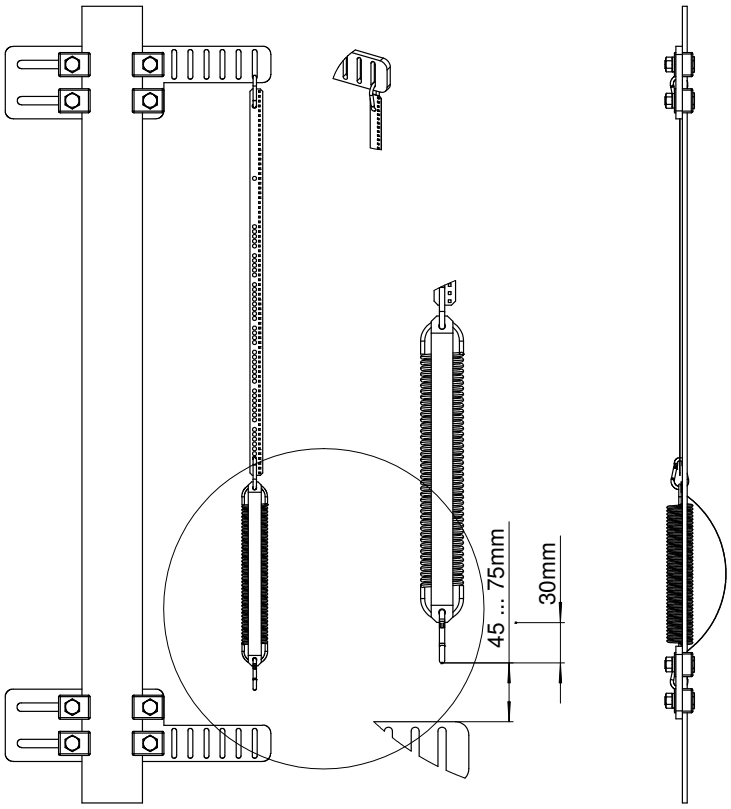
| Sensor – Ants Safe | LES02 | Safe position detection |
|---|---|---|

## Technology in detail

**Coded band fastening with Mounting Kit LES.MK**





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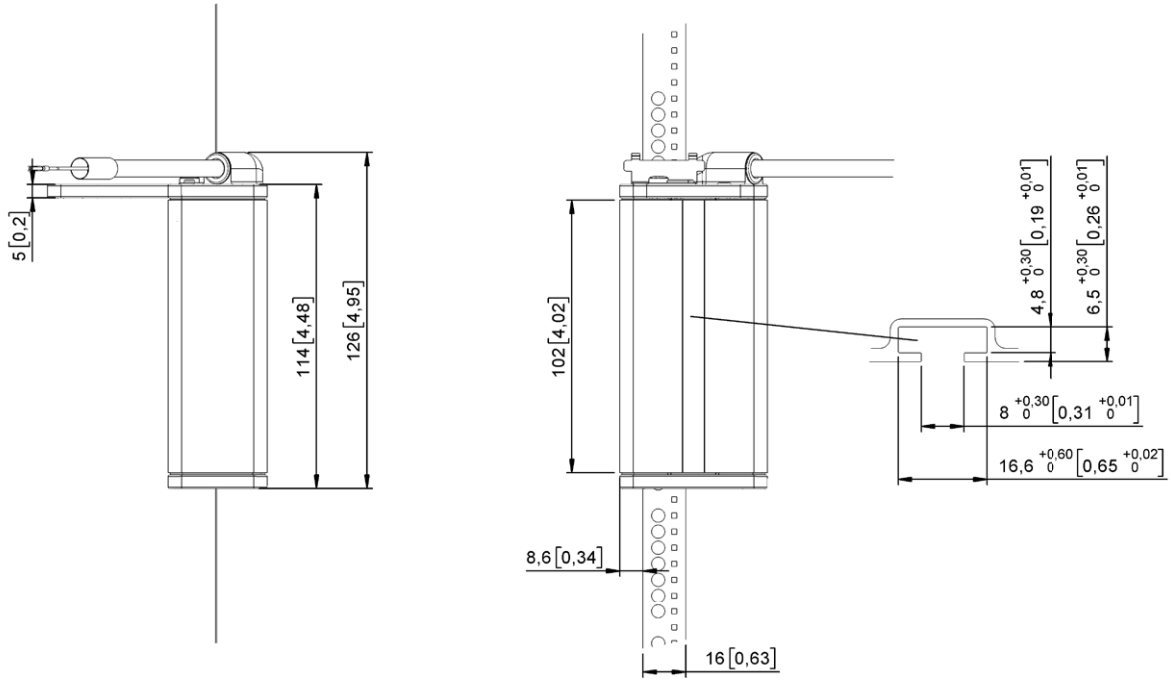
**Sensor – Ants Safe** | **LES02** | **Safe position detection**

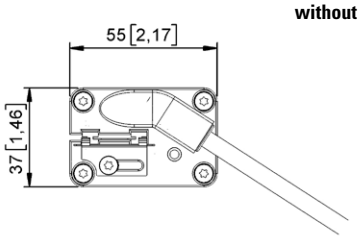
## Dimensions

Dimensions in mm [inch]

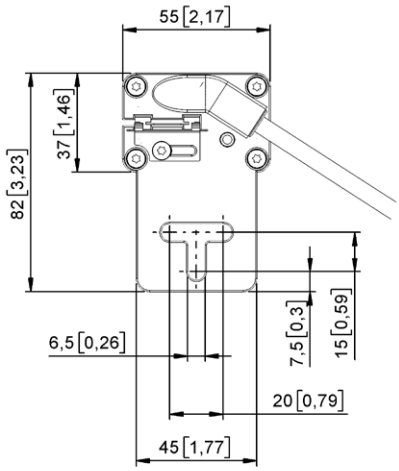
### Sensor




**without mounting plate**




**with mounting plate**

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