Sensor – Ants Safe | **LES03** | **Safe position and speed detection**



The sensor Ants LES03 is an extremely robust, compact and non-contact measuring system. With a resolution of 0.5 mm and a travel speed of up to 8 m/s, both absolute position values and the speed of the elevator car are determined slip-free via a non-contact measuring principle.

In combination with the Safe Gear Trigger SGT02, mechanical overspeed govenors can be replaced as the **Kübler Safe-System LES03/SGT02**.

To the Safe-System LES03/SGT02 >

In the **Kübler Safe-System LES03/SGT02/PSU02**, a large number of additional safety functions are realized by the evaluation unit PSU02.

To the Safe-System LES03/SGT02/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.
- **Teaching the rated speed**
  By means of configuration strips, the sensor can be easily taught to the respective rated speed of the elevator system.
- **Electronic overspeed governor**
  In combination with the SGT02 as a safe system, the traditional mechanical overspeed governor can be replaced.

Functional principle LES03

The sensor Ants LES02D 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 LES03 sensor

Sensor LES03



Configuration strip CS



Coded band LEX.BA



Mounting kit LES.MK



Order code Sensor

8.LES03	.	X ⓐ	1	1 ⓑ	X ⓒ	.	11 ⓓ	1 ⓔ	1	.	0000
Type											

ⓐ *Type of mounting*
1 = with mounting plate
2 = without mounting plate (T-slot mounting)

ⓑ *Interface / supply voltage*
1 = CAN / 10 ... 30 V

ⓒ *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.LES03.111A.1111.0000.**0050** (for cable length 5 m)

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

ⓔ *Rated speed of the elevator system*
1 = not preset
The rated speed must be taught in once with the „Configuration strip".
The speed for the installation mode is preset with 0.3 m/s.

Order code Configuration strip

8.CS	.	1111	.	XXXX ⓐ
Type				

To the data sheet >

ⓐ *Rated speed*
XXXX = cm/s

Ex.: 8.CS.1111.0160 (for 1.6 m/s)

Order code Coded band, absolute

8.LEX.BA	.	XXXX ⓐ
Type		

ⓐ *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 LES.MK

8.LES.MK.0001

To the data sheet >

Mounting kit for sensor Ants LES03

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 | LES03 | Safe position and speed detection

Technical data

Mechanical characteristics

Code		absolute, 16 bit
Max. measuring length		392 m
Speed	certified	8 m/s [1]
Resolution	certified functional	1 mm 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“]

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

Electrical characteristics

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

Standards / Directives / Certificates

Standards	standards for elevators	EN 81-20/21/50
CE compliant in accordance with		
	EMC Directive	2014/30/EU
	RoHS Directive	2011/65/EU
	Elevator Directive	2014/33/EU

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)

Terminal assignment Ants LES03

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)

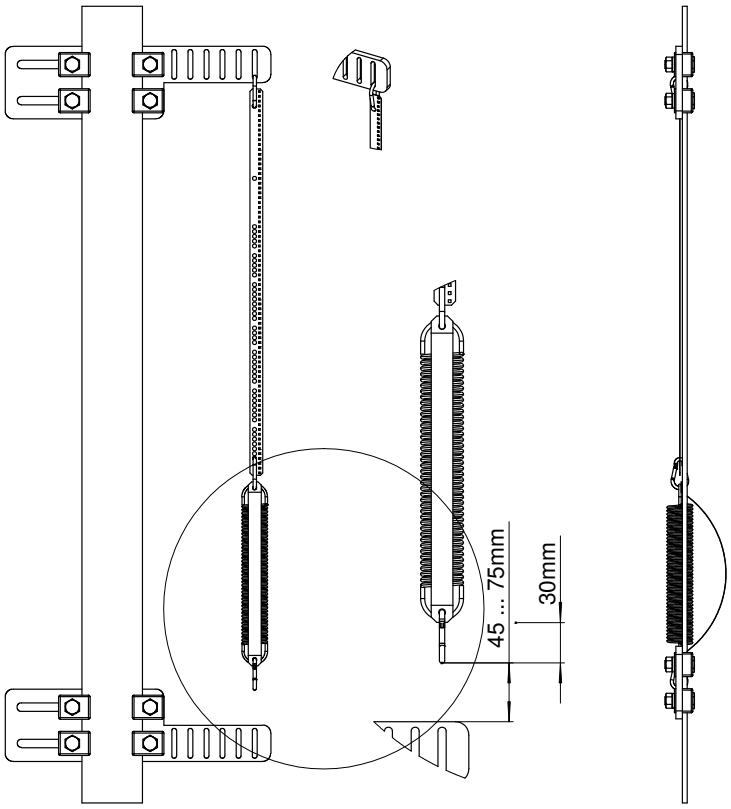
1) Reference is the nominal speed of the elevator facility.
2) The sensor switches to error mode for speeds > 12 m/s.

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Technology in detail

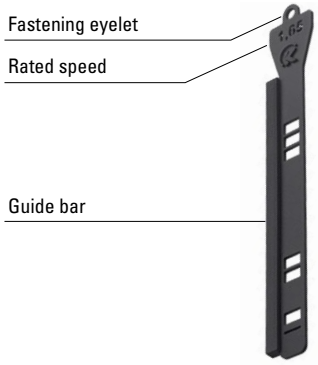
Coded band fastening with Mounting Kit LES.MK



Teach-in of the rated speed via configuration strips

The configuration strip for the respective rated speed is inserted into the LES03 sensor during commissioning. An LED visualizes the respective taught-in rated speed with a flashing pattern. In this way, the certifying agency can also validate the configuration at any time.





Corresponding configuration strips are available for different rated speeds.



Can be assembled into sets by means of fastening eyelet



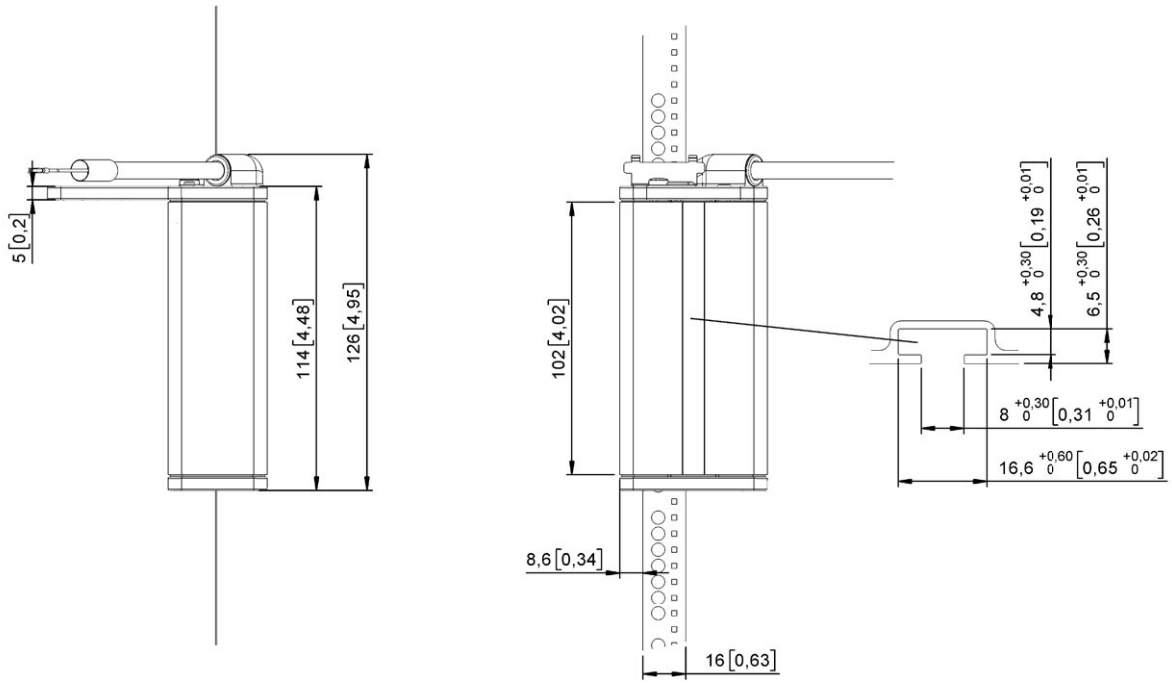
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Sensor – Ants Safe | **LES03** | **Safe position and speed detection**

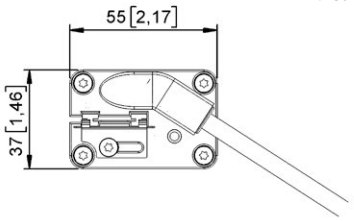
Dimensions

Dimensions in mm [inch]

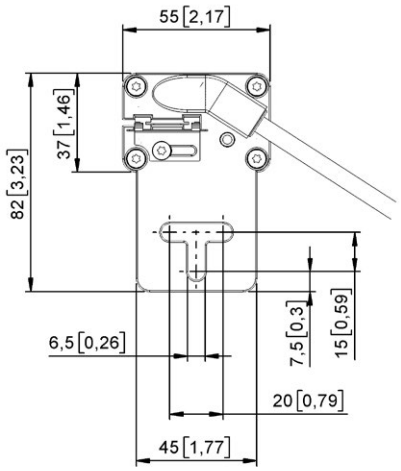
Sensor



without mounting plate



with mounting plate



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