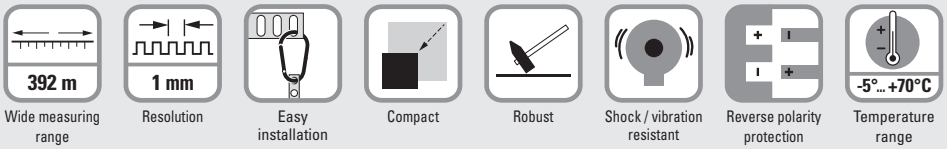
Absolute shaft copying system | LEB01 | Measuring range up to 392 m Absolute position measurement

LEB01 is an extremely robust, compact and non-contact measuring system. Elevator car absolute position values are measured slip-free with a resolution of 1 mm and a traverse speed of 5 m/s. Additional components such as magnetic switches are no longer needed. Especially the easy mounting reduces installation time, thus contributing to overall costs reduction.



Characteristics

- Absolute position measurement.
- Measuring length up to 392 m.
- Extremely robust and compact.
- Stainless steel code tape.
- Simple mounting.
- Non-contact measuring system.

Benefits

- 100% slip-free thanks to absolute position measurement directly on the elevator car.
- Elimination of additional sensors in the elevator shaft (magnetic switches).
- Highest elevator availability - no referencing required in case of power failure.
- Costs reduction thanks to lower installation and maintenance requirements.
- Suitable for tight installation spaces.
- Robust design for long service life.

Order code Sensor

8.LEB01	.	X	11	X
Type		ⓐ		ⓑ

ⓐ *Interface*
3 = CANopen LIFT (DS417)
4 = SSI

ⓑ *Type of connection*
1 = cable, 5 m [16.40'], 4-pin, shielded, open cable end (for CANopen)
3 = cable, 5 m [16.40'], 6-pin, shielded, open cable end (for SSI)

Optional on request
- other interfaces

Stock type
8.LEB01.3111

Order code Code tape, absolute

8.LEX.BA	.	XXXX
Type		ⓐ

ⓐ *Measuring lengths*
XXXX = lengths in meters
lengths from 30 m available in 10 m steps, max. 392 = 0392
lengths < 30 m – only standard lengths or stock types can be ordered

Standard lengths
0010 = 10 m
0020 = 20 m
0030 = 30 m
0050 = 50 m
0070 = 70 m
0100 = 100 m

Stock types
0010 = 10 m
0015 = 15 m
0020 = 20 m
0025 = 25 m

Accessories		Order no.
Mounting kit, absolute shaft copying system	for LEB01	**8.LEB.MK.0001**

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Technical data

Mechanical characteristics sensor LEB01

Code		absolute, 16 bit
Max. measuring length		392 m
Speed		5 m/s
Resolution		1 mm
System accuracy		±1 mm
Repeat accuracy / relative accuracy		±1 mm
Type of connection		cable 5 m with open end
Max. acceleration		49.1 m/s² (5 G)
Weight		500 g [17.64 oz]
Housing (material)		aluminum
Dimensions	L x W x H	135 x 45 x 33 mm [5.31 x 1.77 x 1.30“]

Electrical characteristics sensor LEB01

Power supply	10 ... 30 V DC ±10%
Reverse polarity protection	yes
Interfaces	SSI, CANopen Lift DS417 (other on request)

Environmental conditions sensor LEB01

Protection acc. to EN60529	IP30
Humidity	< 90 % (non condensing)
Working temperature	-5°C ... +70°C [+23°F ... +158°F]
Storage temperature	-10°C ... +70°C [+14°F ... +158°F]
Air pressure (operating altitude)	800 ... 1013 hPA (up to 2000 m above NN)

Technical data tape 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

Technical data mounting kit LEB.MK

Dimensions	see manual
Material	see manual

Standards / Directives / Certificates

Standards		
	safety rules for elevators	EN81.20, EN81.50
	EMV emission	EN12015
	EMV immunity	EN12016
	vibration resistance	EN60068-2-6
	shock resistance	EN60068-2-27
	environmental conditions	EN60068-2-14
Directives		
	low voltage directive	2014/35/EU
	EMV directive	2014/30/EU
	elevator directives	2014/33/EU
	RoHs directive	2011/65/EU
CE compliant		Yes

Interface characteristics CANopen Lift (standard factory setting)

Bitrate	250 kbit/s
Identifier	0x18C
Node ID	0x04
Eventtimer	10 ms
Resolution	1 mm
Heartbeat	500 ms
Terminated	yes

Interface characteristics SSI (standard factory setting)

Data transfer	in slave mode double data transmission
Resolution	0.25 mm
Data length	25 bit + 1 power failure bit (Low)
MSB	first
Code	gray
Clock rate	max. 200 kHz
Monoflop time	min. 500 µs

A position value must be read by the SSI master over 52 pulses.
1 ... 25: MSB first absolute position in gray code
26: Data low (PFB)
27 ... 51: Second transmission (see 1-25)
52: Data Low (PFB)

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Terminal assignment

Interface	Type of connection	Cable				
3 CANopen Lift (DS417)	1	Signal:	+V	0 V / GND	CAN_H	CAN_L
		Core color:	BN	WH	GN	YE

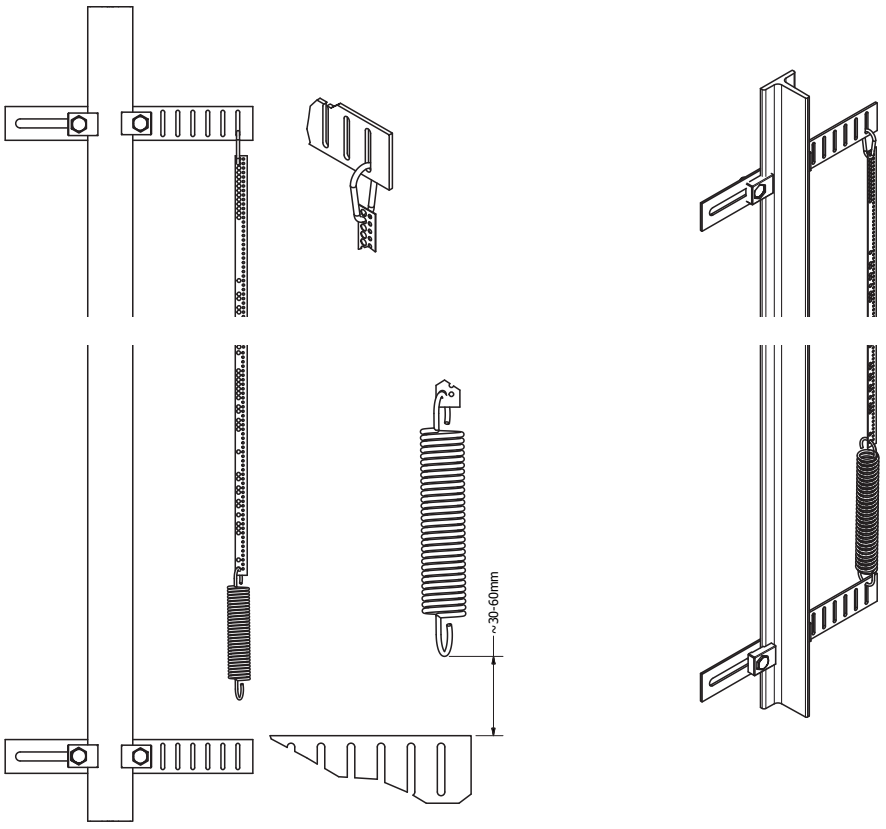
Interface	Type of connection	Cable						
4 SSI	3	Signal:	+V	0 V / GND	C+	C-	D+	D-
		Core color:	BN	WH	GN	YE	GY	PK

+V: Power supply +V DC
0 V: Power supply ground GND (0 V)
C+, C-: Clock signal
D+, D-: Data signal

Technology in detail

Code tape fastening

LEB01 stands out in particular for its ease of installation. This saves time and costs.



Elevator functions	Standards	Base sensor
Calibration trip	-	√
Inspection operation switch (top & bottom)	EN 81-20	√
Direct drive in - depending on complete drive module / frequency converter	-	√
Switchover or shutoff points definition	-	√
Overspeed inspection drive	EN 81-20	√

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Dimensions

Dimensions in mm [inch]

Sensor