

## Linear measuring system **LIMES L1**



### Your benefit

#### Magnetic sensor

- Not affected by dust, shavings, humidity
- Resolution up to 0.025 mm
- speed-proportional signal output
- periodical point of reference

#### Magnetic band

- for easy mounting
- resistant to humidity, fluid and oil

### Product features

- protection class IP 67 of the magnetic sensor
- working temperature  $-10 \dots +70 \text{ }^\circ\text{C}$
- supply voltage 24 V DC and 5 V DC
- speed up to 25 m/s

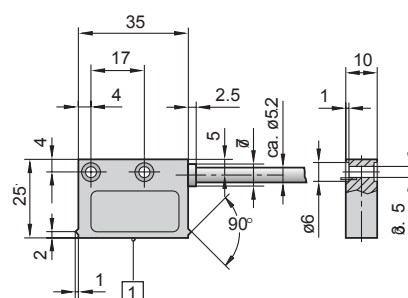
### Technical data magnetic sensor **LIMES L1**:

Supply voltage:	24 V DC $\pm 20 \%$ or 5 V DC $\pm 5 \%$
Connection / cable length:	flying leads/2 m cable
Output circuit:	push pull or line-driver*
Output signal:	inverted
Reference signal:	index periodical
Resolution:	0.025 mm on quadruple evaluation
Max speed:	25 m/s
Power consumption:	max. 70 mA
Output signals:	A, B, A, $\bar{A}$ , B, $\bar{B}$ , I, $\bar{I}$
Gap sensor / magnetic band:	0.1 ... 1.0 mm
Adjusting tolerance:	lateral offset: $\pm 1 \text{ mm}$ ; angle offset $\pm 3^\circ$
System accuracy:	$\pm (0.05 + 0.01 \times L) \text{ mm}$ , L: length in [m] at T = 20 °C
Repeat accuracy	$\pm 1$ increment
Jitter:	< 15% for sensor/magnetic band gap 0,5 mm
Interference protection class:	3, to IEC 801
Humidity:	100 % rF, condensation permissible
Temperature ranges:	working temperature: $-10 \dots +70 \text{ }^\circ\text{C}$ storage temperature: $-30 \dots +80 \text{ }^\circ\text{C}$
Shock resistance:	200 g/6 ms
Vibration resistance	10 g/50 Hz
Protection class:	IP67 according to DIN 40050 (housing)
Housing:	Plastic, green
Cable:	PUR 8x0,1 mm <sup>2</sup> shielded, may be used in trailing cable installations

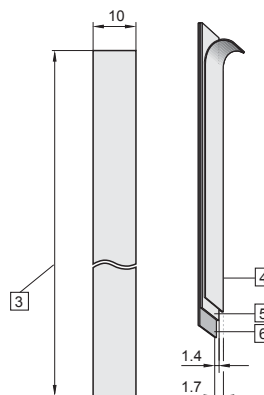
\* For line driver (RS 422) output terminal resistance are to be used  $\geq 470 \text{ } \Omega$ hm to prevent thermal stress.

### Technical data magnetic band **LIMES B1**:

Pole gap	2 mm from pole to pole
Dimensions:	Width: 10 mm; Thickness: 1.7 mm with masking tape
Temperature coefficient:	$(11 \pm 1) \times 10^{-6} / \text{K}$
Temperature ranges:	working temperature: $-20 \dots +70 \text{ }^\circ\text{C}$ storage temperature: $-40 \dots +70 \text{ }^\circ\text{C}$
Mounting:	adhesive joint
Measuring:	0.1 m (to get optimal measuring results the magnetic band should be about 0.1 m longer than the desired measuring length.)



1 active measuring



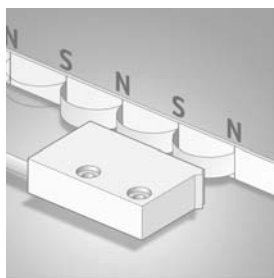
3 length L, max. 90 m

4 masking tape

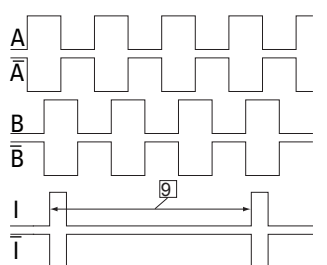
5 magnetic band

6 carrier band

### Functional principle:

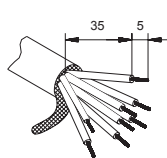


### Signal figures



9 periodical index signal (all 2 mm) the logical allocation A, B and I-signal can change

### Connection:



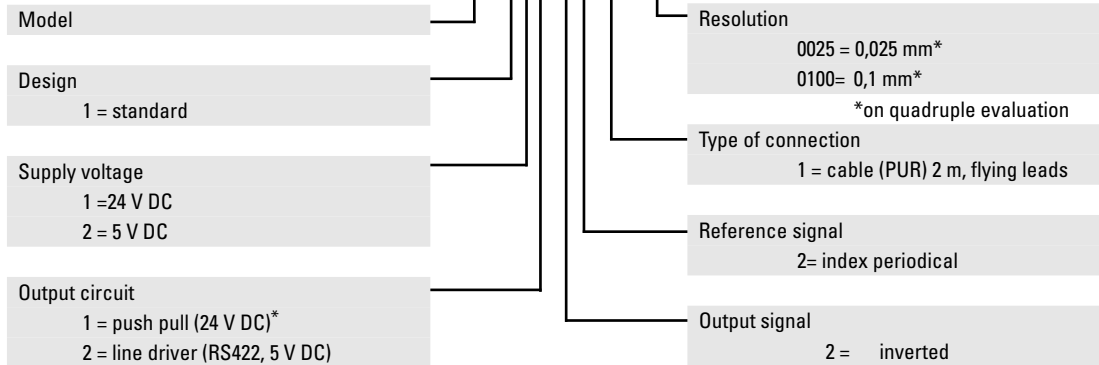
### Inverted signal with index signal

Signal	Colour
GND	black
$U_B$	brown
A	red
B	orange
$\bar{A}$	yellow
$\bar{B}$	green
I	blue
$\bar{I}$	violet

## Linear measuring system **LIMES L1**

Order code magnetic sensor **LIMES L1**:

**8.L1.1XX.2211.XXXX**

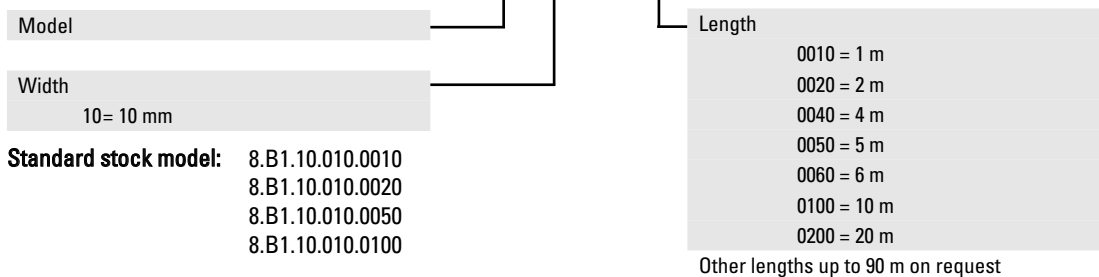


\* only with 24 V DC power supply

**Standard stock model:** 8.L1.111.2211.0025  
8.L1.111.2211.0100  
8.L1.112.2211.0025  
8.L1.122.2211.0100  
8.L1.122.2211.0025

Order code magnetic band **LIMES B1**

**8.B1.10.010.XXXX**



**Standard stock model:** 8.B1.10.010.0010  
8.B1.10.010.0020  
8.B1.10.010.0050  
8.B1.10.010.0100

## Display 571 for **LIMES L1**



### Your benefit

- AC and DC supply voltage in one unit  
24 V DC/115/230 V AC
- Programmable measurement functions:  
frequency, speed, cycle time as well as  
many count and timing functions.
- Display may be adjusted using  
scaling-features
- easy programming with 2 keys
- Large 15 mm high LED-display, 6 digit, with  
adjustable brightness

### Product feature

- Fast count input for our **LIMES L1** lineare  
measurement system (100 kHz)
- Version with 2 optocoupler outputs  
as liwith
- Version with scaling adjusted output, reso-  
lution 14 Bit, 0 ... 10 V,  
0 ... -10 V, 0 ... 20 mA oder 4 ... 20 mA
- Version with serial interface RS232/485
- 48 x 96mm DIN-housing, IP 65

## Linear measuring system **LIMES L2**



### Your benefit

#### Magnetic sensor

- resolution 0.005 mm
- Not affected by dust, shavings, humidity
- speed-proportionally signal output
- periodical point of reference

### Magnetic band

- for easy mounting
- resistant to humidity, fluid and oil

#### Product features

- protection class IP 67 of the magnetic sensors
- working temperature -10 ... +70 °C
- supply voltage 24 V DC and 5 V DC
- speed to 14 m/s

### Technical data magnet sensor L2:

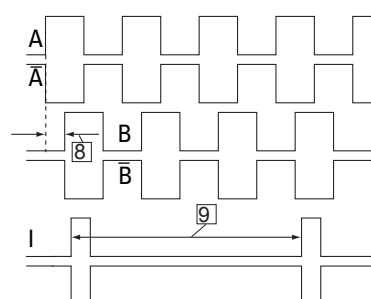
Supply voltage:	24 V DC $\pm 20\%$ or 5 V DC $\pm 5\%$
Connection / cable length:	flying leads/2 m cable
Output circuit:	push pull or line-driver*
Pulse interval:	1 $\mu\text{s}$ (edge interval) that meets 4 $\mu\text{s}$ /period
Resolution:	0.005 mm (0.02 mm) on quadruple evaluation
Max. speed:	Resolution 0,02 mm: 14,5 m/s; resolution 0.005 mm: 3.5 m/s
Input frequency of the evaluation electronics:	min. 250 kHz
Output signal:	inverted
Reference signal:	index periodical
Power consumption :	max. 70 mA
Output signals:	A, $\bar{A}$ , B, $\bar{B}$ , I, $\bar{I}$
Gap sensor / magnetic band:	0.1 ... 2.0 mm, reference signal
Adjusting tolerance:	lateral offset: $\pm 1$ mm ; angle offset $\pm 3^\circ$
System accuracy:	$\pm (0.025 + 0.01 \times L)$ mm, length L in [m], at T = 20 °C
Repeat accuracy:	$\pm 1$ increment
Interference protection class:	3, to IEC 801
Humidity:	100 % rF, condensation permissible
Temperature ranges:	working temperature: -10 ... +70 °C storage temperature: -30 ... +80 °C
Protection class:	IP67 according to DIN 40050 (housing)
Housing:	A - plastic, black
Cable:	PUR 8x0,1 mm <sup>2</sup> shielded, may be used in trailing cable installations

\* For Line driver (RS422) output terminal resistance are to be used  $\geq 470$  Ohm to prevent thermal stress

### Technical data magnetic band B2:

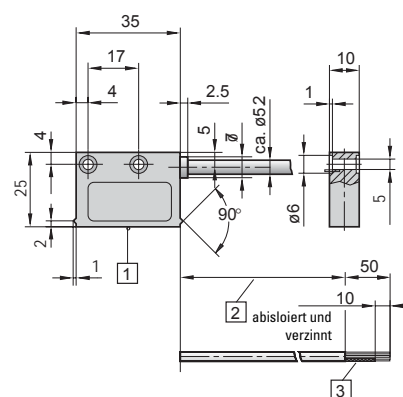
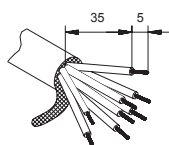
Pole gap	5 mm from pole to pole
Dimensions:	Width 10 mm; Thickness: 1.7 mm inkl. masking tape
Temperature coefficient:	$(11 \pm 1) \times 10^{-6}/\text{K}$
Temperature ranges:	working temperature: -20 ... +70 °C storage temperature: -40 ... +70 °C
Mounting:	adhesive joint
Measuring:	0.1 m (to receive an optimal result of measurement, the magnetic band should be ca 0.1 m longer than the desired measuring length)

### Signal figures

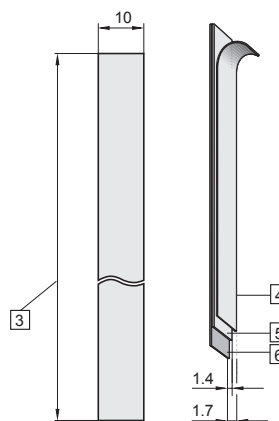


- 9] periodical index signal (all 5 mm)  
The logical allocation A, B und I-signal can change
- 8] pulse interval

### Connection:



- 1] active measuring surface
- 2] cable lengths
- 3] braided screen, twisted and tinned



- 3] length L, max. 90 m
- 4] masking tape
- 5] magnetic band
- 6] carrier band

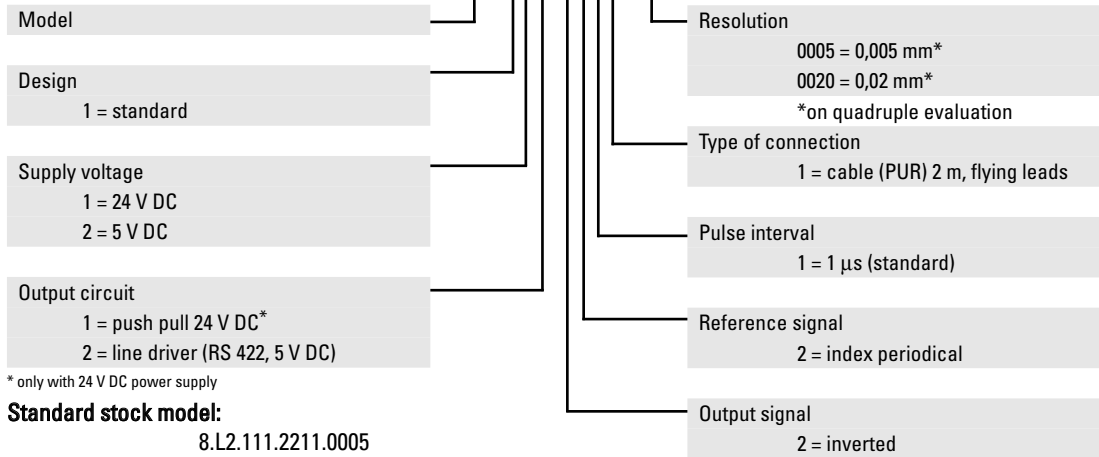
### Inverted signal with index signal

Signal	Colour
GND	black
$U_B$	brown
A	red
B	orange
$\bar{A}$	yellow
$\bar{B}$	green
I	blue
$\bar{I}$	violet

## Linear measuring system **LIMES L2**

Order code magnetic sensor **LIMES L2:**

**8.L2.1XX.2211.00XX**



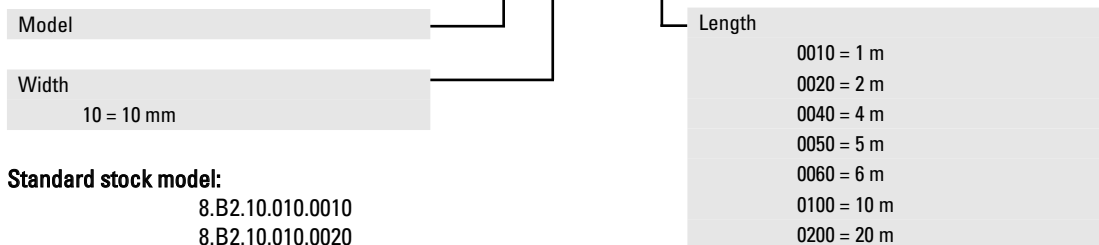
\* only with 24 V DC power supply

**Standard stock model:**

- 8.L2.111.2211.0005
- 8.L2.111.2211.0020
- 8.L2.112.2211.0005
- 8.L2.122.2211.0020
- 8.L2.122.2211.0005

Order code magnetic band **LIMES B2:**

**8.B2.10.010.XXXX**

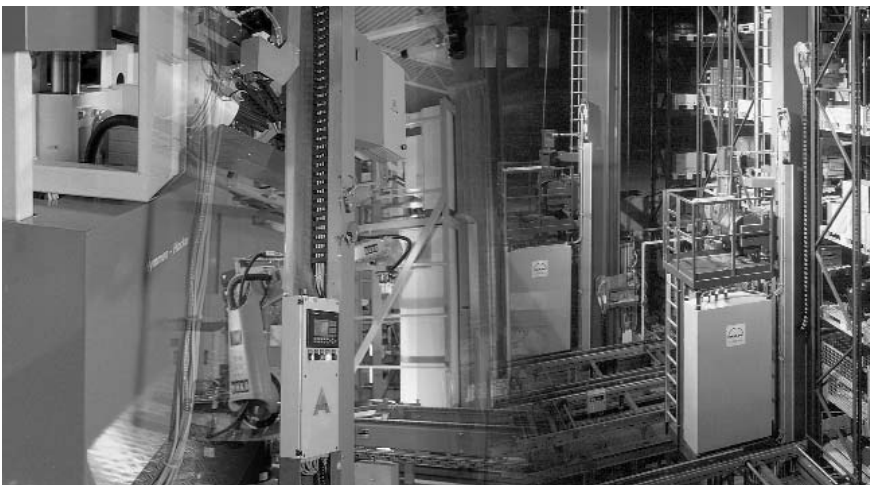


**Standard stock model:**

- 8.B2.10.010.0010
- 8.B2.10.010.0020
- 8.B2.10.010.0050
- 8.B2.10.010.0100

Other lengths up to 90 m on request

### Our **LIMES** measuring system in operation



**Note:**

The internal conversion module can generate rapid counting pulses whose length is limited by the pulse interval. The follower electronic must be adjusted accordingly. Ask our technical support for more details.