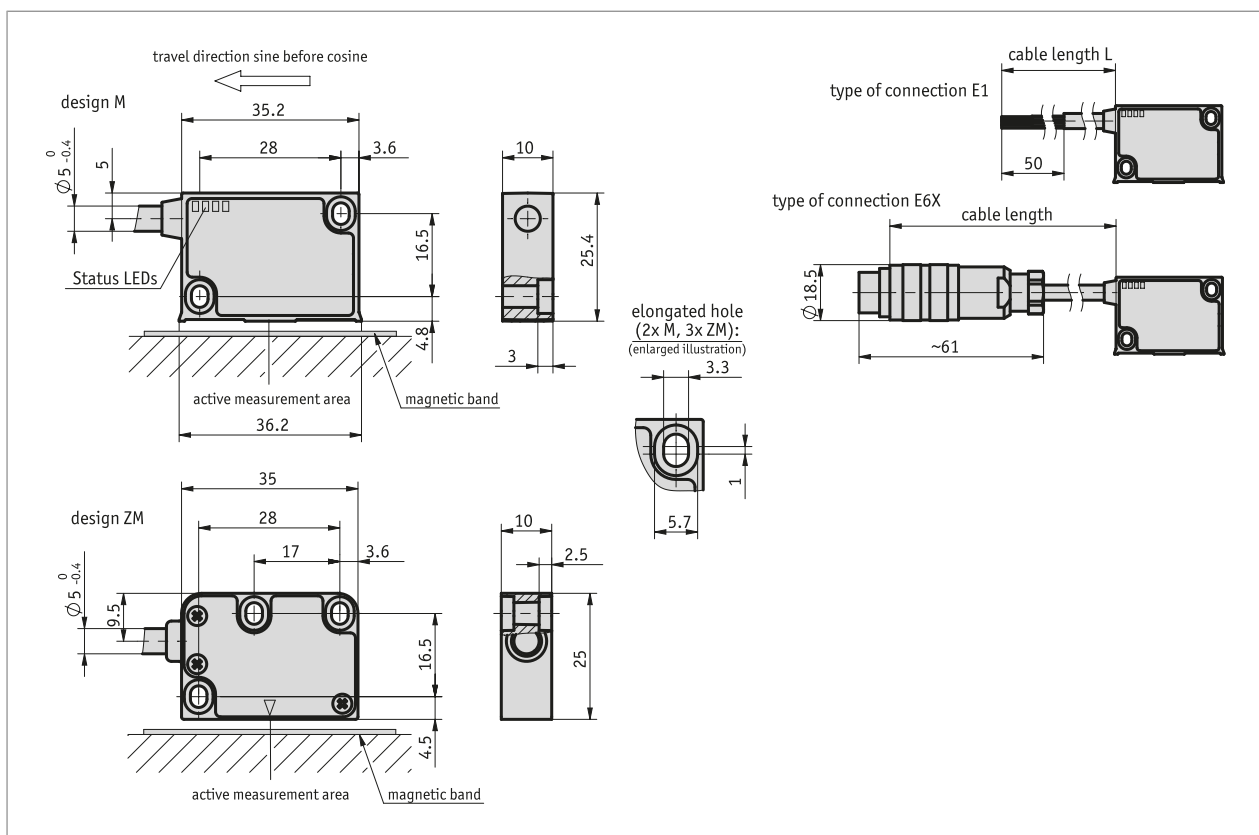


### Profile

- Repeat accuracy max.  $\pm 1 \mu\text{m}$
- LED status display
- Works with MB100/1 magnetic tape
- Works with MBR100 magnetic tape ring
- Reading distance  $\leq 0.4 \text{ mm}$
- Signal period  $1000 \mu\text{s}$
- Output circuit sin/cos 1 V<sub>SS</sub>
- Robust metal housing



### Mechanical data

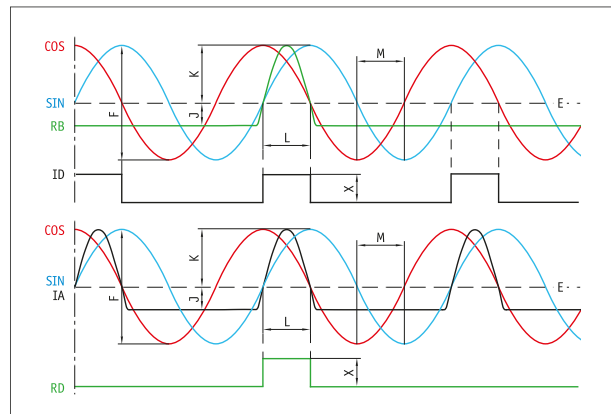
Feature	Technical data	Additional information
Housing	zinc die-cast/aluminum	M design
	zinc die-cast	ZM design
Sensor/band reading distance	0.1 ... 0.4 mm	0, IA, ID reference signal
	0.1 ... 0.2 mm	reference signal RB, RD
Sensor/ring reading distance	0.1 ... 0.4 mm	0, IA, ID reference signal
	0.1 ... 0.2 mm	reference signal RB, RD
Cable sheath	PUR, suitable for drag-chain use	6, 8-core $\varnothing 5_{-0.4}$ mm
Cable bending radius	5x cable diameter	static
	7.5x cable diameter	dynamic
Service life of cable	>5 Million cycles	Under the following test conditions: travel 4.5 m travel speed 3 m/s acceleration $5 \text{ m/s}^2$ ambient temperature $20 \text{ }^\circ\text{C} \pm 5 \text{ }^\circ\text{C}$ .

### Electrical data

Feature	Technical data	Additional information
Operating voltage	10.5 ... 30 V DC	reverse polarity protection
	5 V DC ±5 %	no reverse polarity protection
Current consumption	<25 mA at 24 V DC	
	<50 mA at 5 V DC	
Output signals	sin, /sin, cos, /cos, index, /index	
Output voltage	1 V <sub>PP</sub> ±10 % at 0 ... 70 °C	120 Ω terminal resistance
Output impedance	0 Ω, (R <sub>load</sub> > 75 Ω)	short-circuit proof
Signal period	1000 μm	
Offset voltage	2.5 V, ±100 mV	sine/cosine mean to GND (10.5 ... 30 V DC)
	UB/2 ±100 mV	sine/cosine mean to GND (5 V DC)
Phasing	90° ±1°, ±3° (20 kHz)	sin/cos
	45°, sin/cos	reference signal is symmetric around the positive intersection point of the sin/cos signals (phase 45°)
Real-time requirement	speed-proportional signal output	
Type of connection	open cable end	
	plug connector	7/8-pole

### ■ Signal image

- E: Reference voltage 2.5 V
- F: 1 V<sub>SS</sub> ±10 %
- J: ≥0.2 V
- K: ≥0.3 V
- L: 100° ±20 %
- M: 90° ±1.0° / ±3° (25 kHz)
- X: 1 V<sub>SS</sub>



### System data

Feature	Technical data	Additional information
Linearity deviation	±2 μm at T <sub>0</sub> = 20° C	0.2 mm sensor/strip reading distance
Repeat accuracy	1 μm	
Measuring range	∞	
Circumferential speed	≤20 m/s	sin/cos
Travel speed	≤20 m/s	sin/cos

### Ambient conditions

Feature	Technical data	Additional information
Ambient temperature	-10 ... 70 °C	
Storage temperature	-30 ... 80 °C	
Relative humidity	100 %	condensation admissible
EMC	EN 61000-6-2	interference resistance / immission
	EN 61000-6-4	emitted interference / emission
Protection category	IP67	EN 60529
Shock resistance	500 m/s <sup>2</sup> , 11 ms	EN 60068-2-27
Vibration resistance	200 m/s <sup>2</sup> , 50 Hz ... 2 kHz	EN 60068-2-6

### pin assignment

#### ■ without reference signal

Signal	E1	E6X
GND	black	1
sin	red	2
/sin	orange	3
cos	yellow	4
/cos	green	5
+UB	brown	6
nc		7

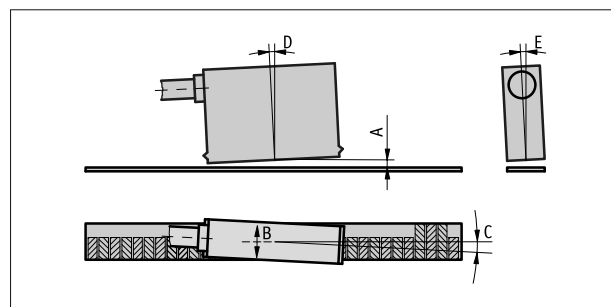
#### ■ with reference signal

Signal	E1	E6X
sin	red	1
cos	yellow	2
index	blue	3
+UB	brown	4
GND	black	5
/sin	orange	6
/cos	green	7
/index	violet	8

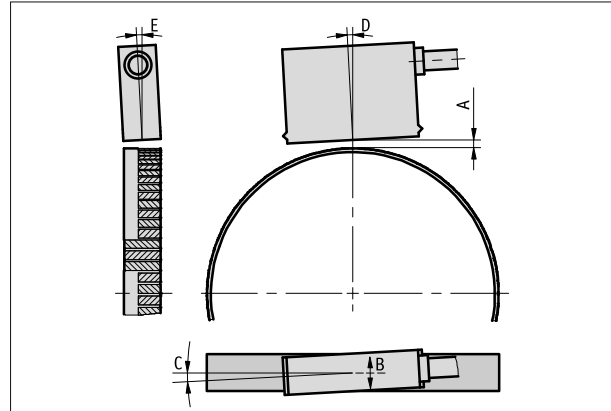
### Hint for mounting

For systems with reference points on the magnetic tape please take care that sensor and strip are correctly aligned (see picture).

Reference signal	O, I	R
A, Sensor/tape reading distance	$\leq 0.4$ mm	$\leq 0.2$ mm
B, Lateral offset	$\pm 2$ mm	$\pm 0.5$ mm
C, Alignment error	$\pm 3^\circ$	$\pm 3^\circ$
D, Longitudinal inclination	$\pm 1^\circ$	$\pm 1^\circ$
E, Lateral inclination	$\pm 3^\circ$	$\pm 3^\circ$



(Sensor representation symbolic)



(Sensor representation symbolic)

### Order

#### ■ Ordering information

One or more system components are required:

Magnetic tape MB100/1  
Magnetic band ring MBR100

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#### ■ Ordering table

Feature	Ordering data	Spezifikation	Additional information		
Operating voltage	A <table border="1"><tr><td>10</td></tr><tr><td>5</td></tr></table>	10	5	10.5 ... 30 V DC 5 V DC $\pm 5\%$	
10					
5					
design	B <table border="1"><tr><td>M</td></tr><tr><td>ZM</td></tr></table>	M	ZM	metal housing with status LEDs metal housing without status LEDs	
M					
ZM					
Type of connection	C <table border="1"><tr><td>E1</td></tr></table>	E1	open cable end		
E1					

Feature	Ordering data	Spezifikation	Additional information
	E6X	bullet connector without mating connector cable extension on request	
Cable length	D ...	1.0 ... 20.0 mm, in steps of 1 mm others on request	
reference signal	E	without	
	IA	periodic index (analog)	index signal every 1 mm
	ID	periodic index (digital)	index signal every 1 mm
	RB	fixed, tape side (analog)	
	RD	fixed, tape side (digital)	

### ■ Order key

LE100/1 -  -  -  -  -

A      B      C      D      E



#### Scope of delivery:

LE100/1, Fastening set, Quick Start Guide



#### Accessories you can find:

Installation tool ZB3054

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