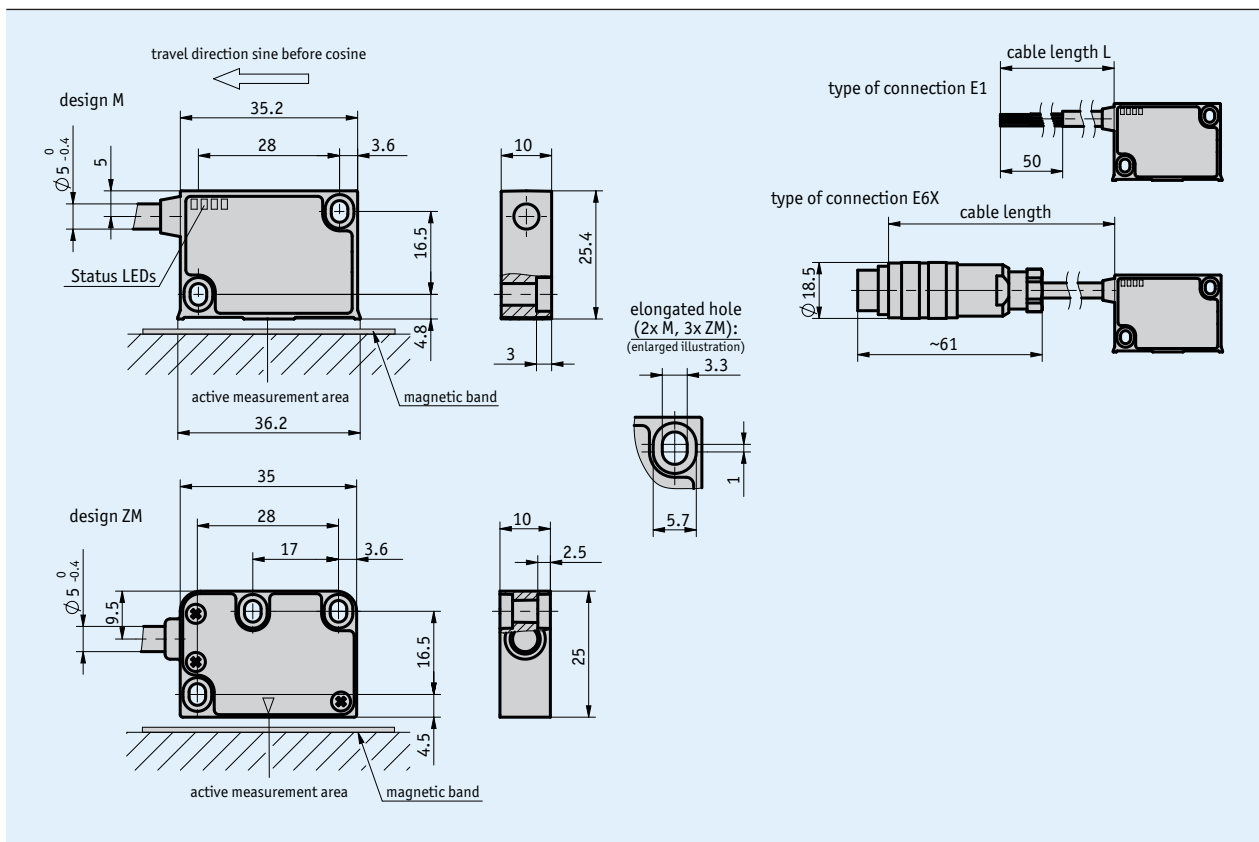


## Profile

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



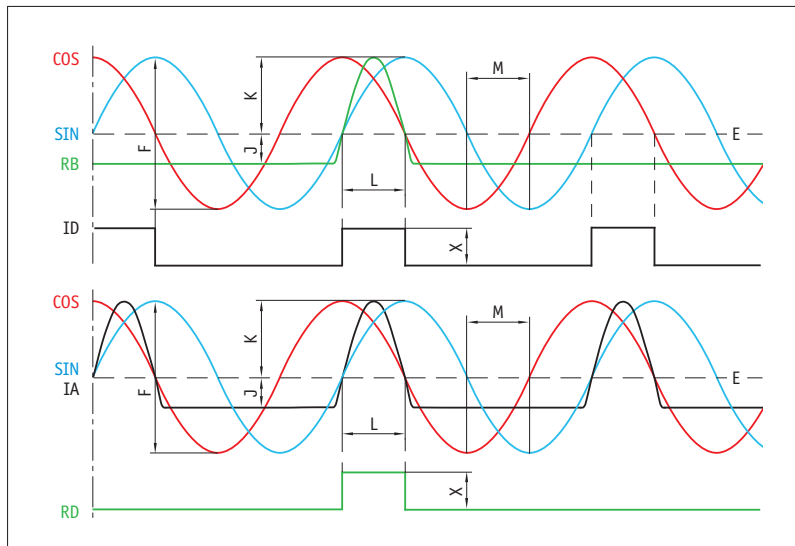
## Mechanical data

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	reference signal O, IA, ID
	0.1 ... 0.2 mm	reference signal RB, RD
Cable sheath	PUR, suitable for drag-chain use	6, 8-wire $\phi_{5-0.4} \text{ mm}$

## Electrical data

Feature	Technical data	Additional information
Operating voltage	10.5 ... 30 V DC	reverse polarity protected
	5 V DC $\pm 5\%$	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> $\pm 10\%$	at 0 ... 70 °C, 120 $\Omega$ terminal resistance
Output impedance	0 $\Omega$ (R <sub>Load</sub> > 75 $\Omega$ )	short-circuit proof
Signal period	1000 $\mu$ m	
Offset voltage	2.5 V, $\pm 100$ mV	sine/cosine mean to GND (10.5 ... 30 V DC)
	UB/2 $\pm 100$ mV	sine/cosine mean to GND (5 V DC)
Phasing	90° $\pm 1^\circ$ , $\pm 3^\circ$ (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 pattern



E: Reference voltage 2.5 V  
 F: 1 V<sub>SS</sub>  $\pm 10\%$   
 J:  $\geq 0.2$  V  
 K:  $\geq 0.3$  V  
 L: 100°  $\pm 20\%$   
 M: 90°  $\pm 1.0^\circ$  /  $\pm 3^\circ$  (25 kHz)  
 X: 1 V<sub>SS</sub>

## System data

Feature	Technical data	Additional information
System accuracy	10 $\mu$ m	at TU = 20 °C; with MB100/1 accuracy class 10 $\mu$ m
Repeat accuracy	1 $\mu$ m	
Measuring range	$\infty$	
Travel speed	$\leq 20$ 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

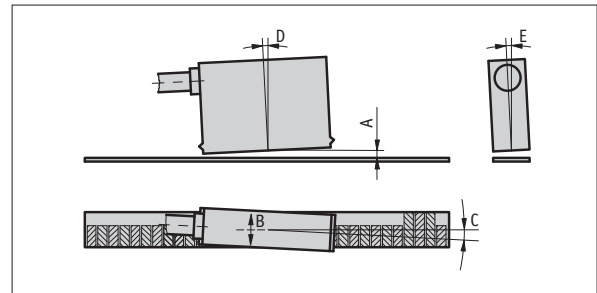
■ With reference signal

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	≤0.4 mm	≤0.2 mm
B, Lateral offset	±2 mm	±0.5 mm
C, Alignment error	±3°	±3°
D, Longitudinal inclination	±1°	±1°
E, Lateral inclination	±3°	±3°



(symbolic sensor representation)

### Order

■ Ordering information

One or more system components are required:  
Magnetic band MB100/1

[www.siko-global.com](http://www.siko-global.com)

■ Ordering table

Feature	Ordering data	Specification	Additional information
Operating voltage	10	10.5 ... 30 V DC	
	5	5 V DC ±5 %	
Design	M	metal housing with status LEDs	
	ZM	metal housing without status LEDs	
Type of connection	E1	open cable end	
	E6X	bullet connector without mating connector	
		cable extension on request	
Cable length	...	1 ... 20 m, in steps of 1 m	
		others on request	
Reference signal	O	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



Scope of delivery: LE100/1 linear, Mounting instructions, Fastening set