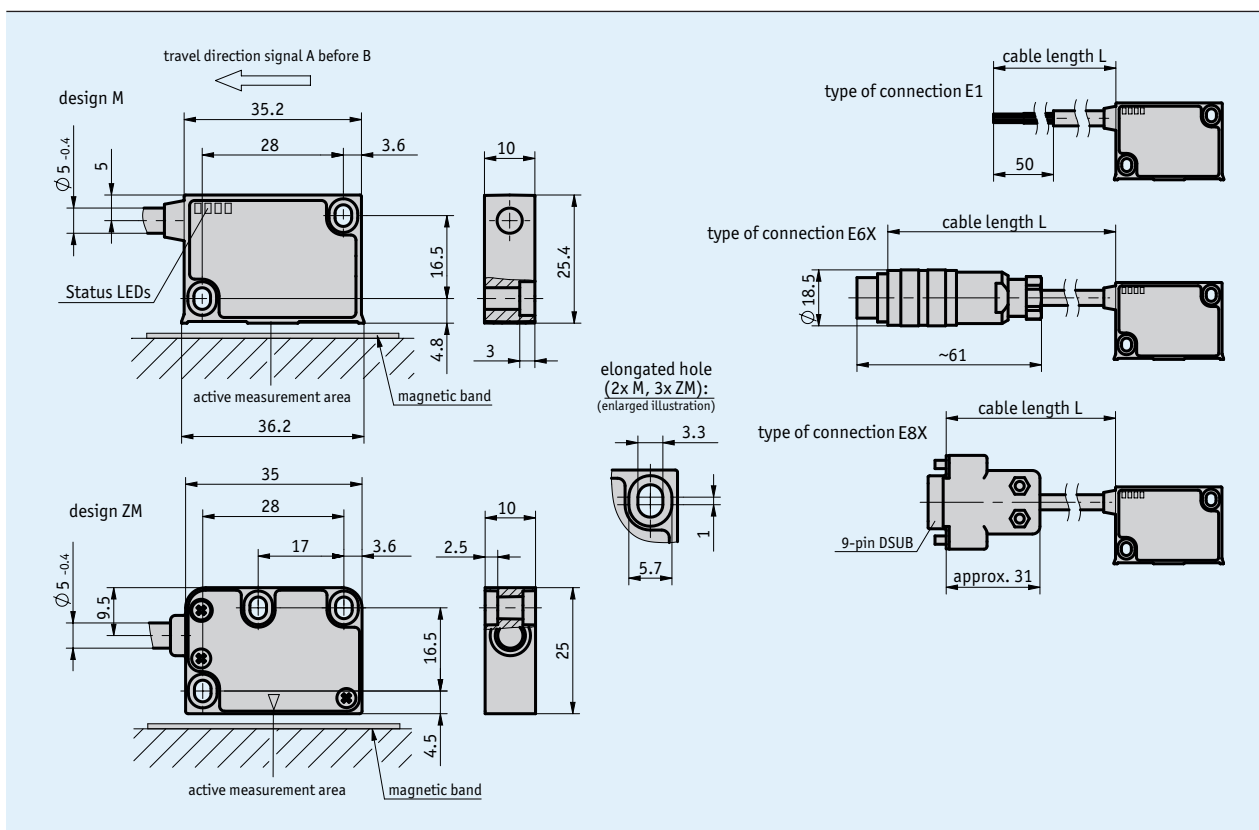


## Profile

- Max. resolution 0.2  $\mu\text{m}$
- Repeat accuracy  $\pm 1 \mu\text{m}$
- Status LED display
- Reading distance  $\leq 0.4 \text{ mm}$
- Robust metal housing



## Mechanical data

Feature	Technical data	Additional information
Housing	zinc die-cast / aluminum	M design: aluminum front cover
	zinc die-cast	ZM design
Sensor/band reading distance	0.1 ... 0.4 mm	O, I reference signals
	0.1 ... 0.2 mm	RB reference signal
Cable sheath	PUR suitable for drag-chain use	6, 8-wire $\varnothing 5_{-0.4} \text{ mm}$
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 range 4.5 m travel speed 3 m/s acceleration 5 m/s <sup>2</sup> ambient temperature 20 °C $\pm 5$ °C

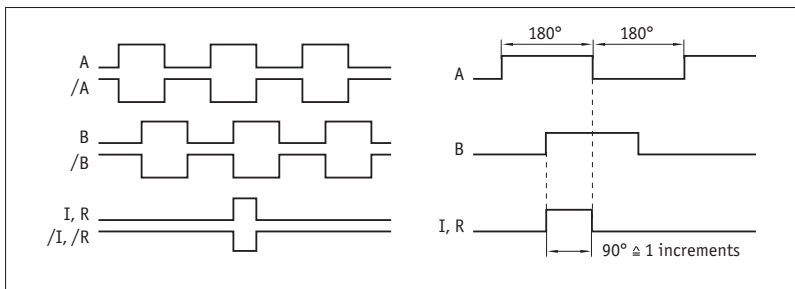
## Travel speed

Resolution [μm]	Travel speed Vmax [m/s]				
	0.2	0.64	0.32	0.16	0.08
	1	3.20	1.60	0.80	0.40
	2	6.40	3.20	1.60	0.80
	5	16.00	8.00	4.00	2.00
Pulse interval [μs]	0.25	0.50	1.00	2.00	2.00
Counting frequency [kHz]	1000.00	500.00	250.00	125.00	125.00

## Electrical data

Feature	Technical data	Additional information
Operating voltage	6.5 ... 30 V DC	reverse polarity protected
	4.75 ... 6 V DC	no reverse polarity protection
Current consumption	<25 mA	unloaded
Output circuit	LD (RS422)	
Output signals	A, /A, B, /B, I, /I or R, /R	
Output signal level high	>2.5 V	
Output signal level low	<0.5 V	
Latency	1.5 μs	
Pulse width of reference signal	1 or 4 increment(s)	
Real-time requirement	speed-proportional signal output	
Type of connection	open cable end	
	plug connector	7/8-pole
	D-Sub	9-pole

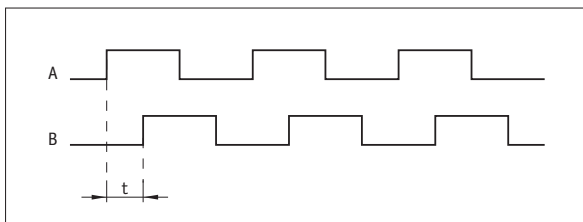
## Signal pattern



**!** The logical condition of signals A and B is not defined in reference to the index signal I or the reference signal R. It can deviate from the signal form.

**!** Reference or index signal with 4 increments (360°) signal length is only valid from the 5th counting step onwards. A corresponding delay should be taken into consideration after switching on the operating voltage.

## Pulse interval



### Example: Pulse interval t = 1 μs

(i. e., the downstream unit must be able to process 250 kHz)

$$\text{Formula for counting frequency} = \frac{1}{1 \mu\text{s} \times 4} = 250 \text{ kHz}$$

## System data

Feature	Technical data	Additional information
Resolution	0.2, 1, 2, 5 μm	
Linearity deviation	±2 μm	at T <sub>U</sub> = 20° C, reading distance 0.2 mm
Repeat accuracy	±1 μm	
Measuring range	∞	
Travel speed	depending on resolution and pulse interval	see table

## 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	100 m/s <sup>2</sup> , 5 ... 150 Hz	EN 60068-2-6

## Pin assignment

### ■ Inverted without reference signal

Signal	E1	E6X	E8X
A	red	1	1
B	orange	2	2
nc		3	3
+UB	brown	4	4
GND	black	5	5
/A	yellow	6	6
/B	green	7	7
nc			8
nc			9

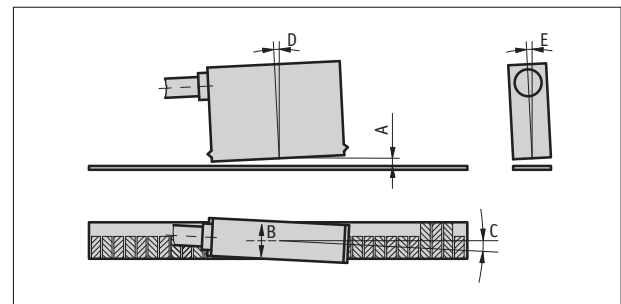
### ■ Inverted with reference signal

Signal	E1	E6X	E8X
A	red	1	1
B	orange	2	2
I,R	blue	3	3
+UB	brown	4	4
GND	black	5	5
/A	yellow	6	6
/B	green	7	7
/I, /R	violet	8	8
nc			9

## 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	$\pm 3^\circ$	$\pm 3^\circ$



Symbolic 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	6.5 ... 30 V DC	A voltage drop is to be expected with increasing cable length. This must be taken into account in the electrical design.
	11	4.75 ... 6 V DC	
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	
	E8X	D-SUB 9-pole without mating connector	
		cable extension on request	
Cable length	...	1 ... 20 m, in steps of 1 m	
		others on request	
Reference signal	0	without	index signal every 1 mm
	I	periodic index	
	RB	fixed reference	
Resolution	...	0.2, 1, 2, 5	
		others on request	
Pulse interval	...	0.25, 0.5, 1.00, 2.0	
		others on request	

### Order key

MSK1000 -  -  -  -  -  -  -

A      B      C      D      E      F      G

*Scope of delivery: MSK1000, Mounting instructions, Fastening set*

**Accessories:**  
Installation tool ZB3054

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