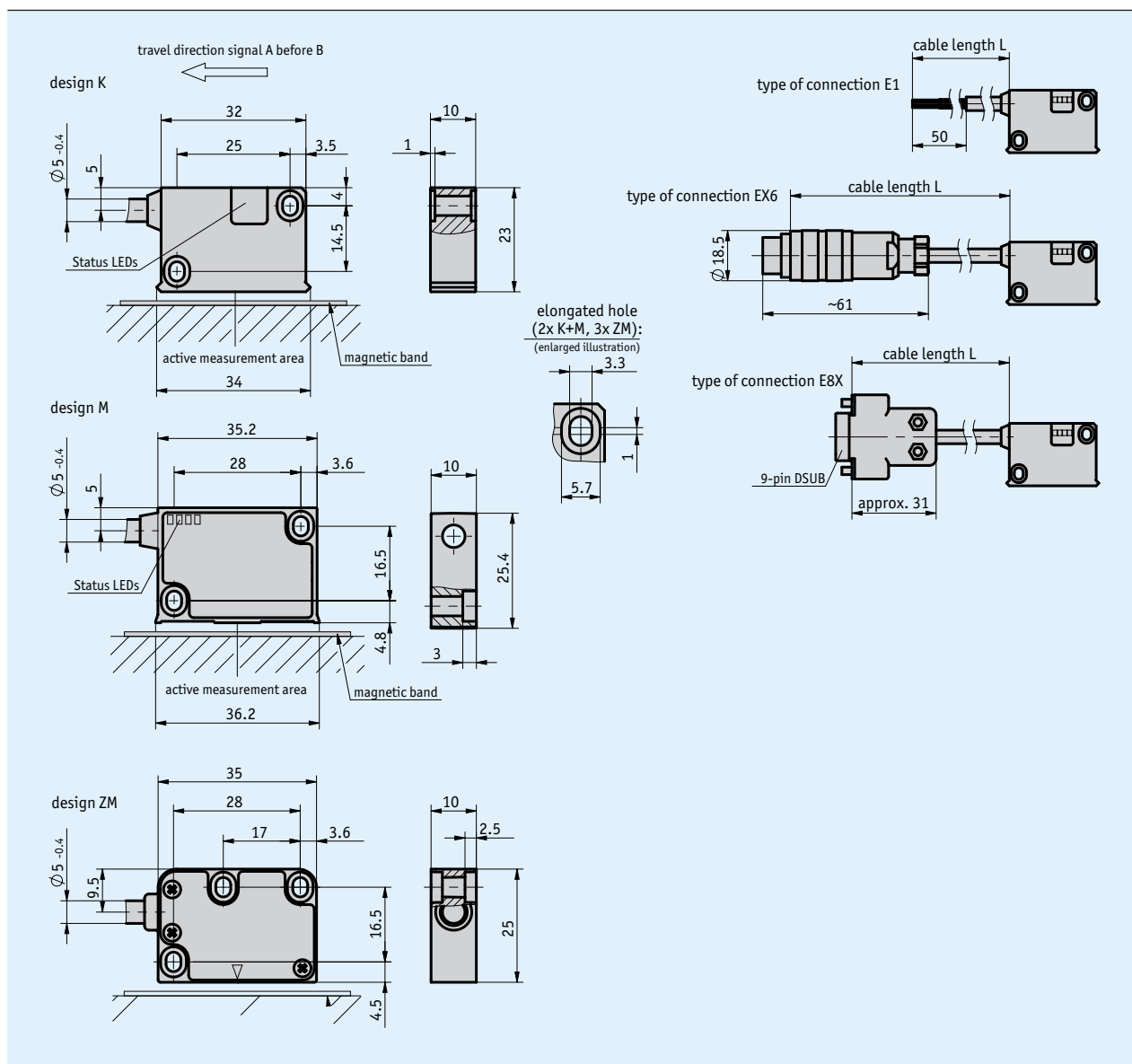


Profile

- Max. resolution 1 μm
- Repeat accuracy $\pm 0.01\text{ mm}$
- Status LED display
- Works with magnetic tape MB500/1
- Reading distance $\leq 2\text{ mm}$



Mechanical data

Feature	Technical data	Additional information
Housing	synthetic material ABS black	K design
	zinc die-cast/aluminum	M design, aluminum front cover
	zinc die-cast	ZM design
Sensor/band reading distance	0.1 ... 2 mm	O, I reference signals
	0.1 ... 1.5 mm	R reference signal
Cable sheath	PUR, suitable for drag-chain use	6, 8-wire $\varnothing 5_{-0.4}^0$ mm

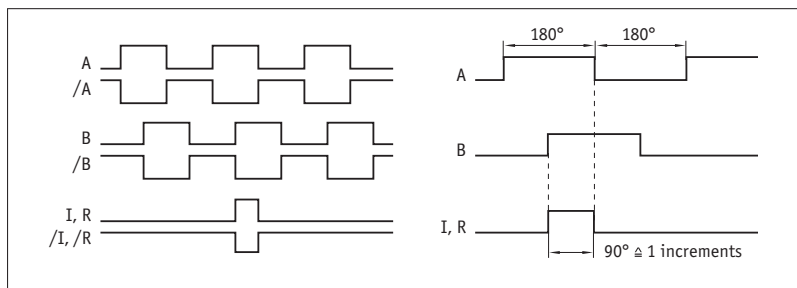
Travel speed

		Travel speed Vmax [m/s]									
Resolution [mm]	0.001	4.00	3.20	1.60	0.80	0.32	0.20	0.10	0.05	0.03	0.01
	0.005	20.00	16.00	8.00	4.00	1.60	1.00	0.50	0.25	0.13	0.06
	0.010	25.00	25.00	16.00	8.00	3.20	2.00	1.00	0.50	0.25	0.12
	0.025	25.00	25.00	25.00	20.00	8.00	5.00	2.50	1.25	0.63	0.30
	0.050	25.00	25.00	25.00	25.00	16.00	10.00	5.00	2.50	1.25	0.61
	0.100	25.00	25.00	25.00	25.00	25.00	20.00	10.00	5.00	2.50	1.21
Pulse interval [μs]		0.20	0.25	0.50	1.00	2.50	4.00	8.00	16.00	32.00	66.00
Counting frequency [kHz]		1250.00	1000.00	500.00	250.00	100.00	62.50	31.25	15.63	7.81	3.79

Electrical data

Feature	Technical data	Additional information
Operating voltage	6.5 ... 30 V DC	reverse polarity protected
	4.75 ... 6 V DC	without reverse polarity protection
Current consumption	<25 mA	at 24 V DC, unloaded
	<75 mA	loaded
Output circuit	PP, LD (RS422)	
Output signals	A, /A, B, /B, I, /I bzw. R, /R	
Output signal level high	>UB - 2.5 V	PP
	>2.5 V	LD
Output signal level low	<0.8 V	
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

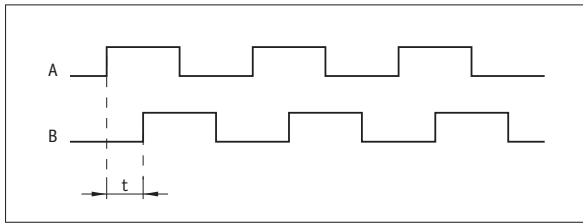
Signal pattern



! 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 $t = 1 \mu\text{s}$

(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	0.001, 0.005, 0.01, 0.025, 0.05, 0.1 mm	
System accuracy	$\pm (0.025 + 0.01 \times L)$ mm, L in m	
Repeat accuracy	$\pm 10 \mu\text{m}$	
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 ² , 11 ms	EN 60068-2-27
Vibration resistance	100 m/s ² , 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

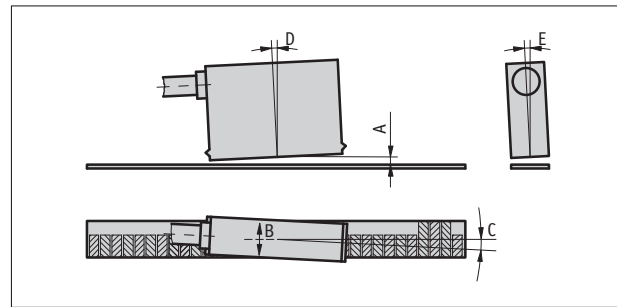
■ Inverted with reference signal

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	0, I	R
A, Sensor/tape reading distance	≤2 mm	≤1.5 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 representation

Order

Ordering information

one or more system components are required:

Magnetic band MB500/1

www.siko-global.com

Ordering table

Feature	Ordering data	Specification	Additional information
Operating voltage	10	6.5 ... 30 V DC	
	11	4.75 ... 6 V DC	
Design	K	plastic housing	
	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-pin without mating connector	
		extension cables on request	
Cable length	...	01.0 ... 20 m, in steps of 1 m	
		others on request	
Output circuit	PP	push-pull	
	LD	Line Driver	
Reference signal	0	without	
	I	periodic index	index signal every 5 mm
	R	fixed reference	
Resolution	...	0.001, 0.005, 0.01, 0.025, 0.5, 0.1	
		others on request	
Pulse interval	...	0.2, 0.25, 0.5, 1.00, 2.5, 4, 8, 16, 32, 66	

Order key

MSK5000 linear - A - B - C - D - E - F - G - H

Scope of delivery: MSK5000 linear, Mounting instructions, Sensor fastening set