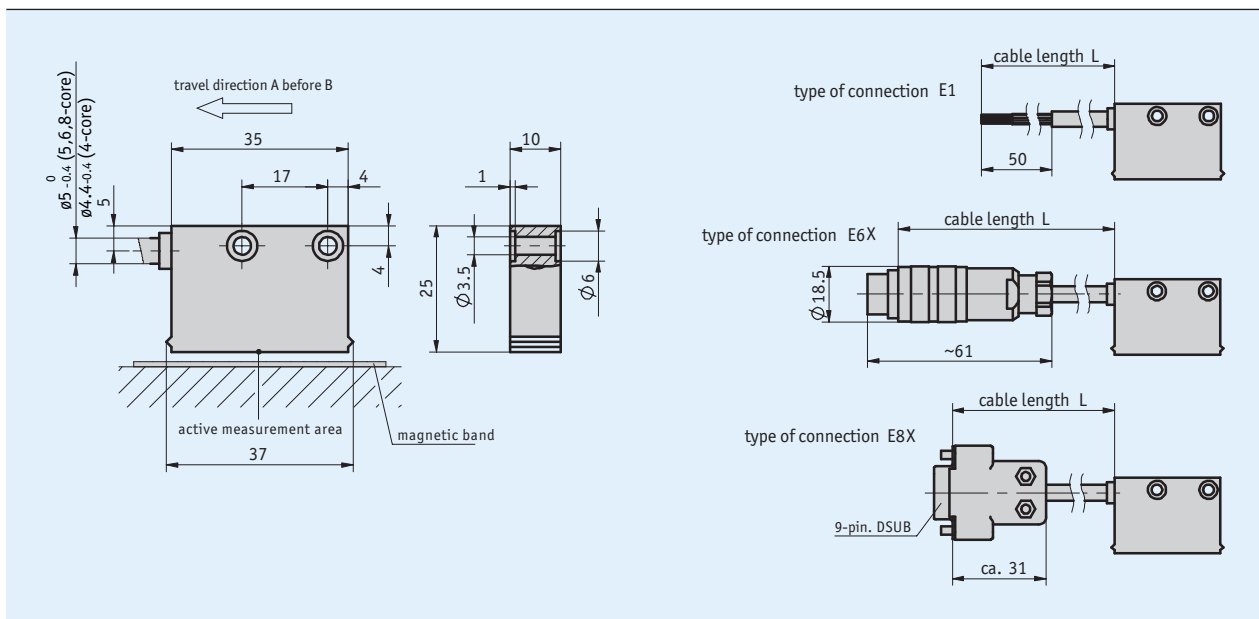
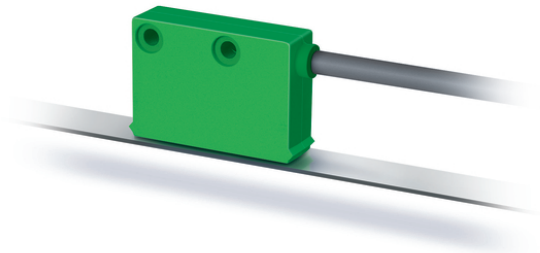


## Profile

- Max. resolution 25  $\mu\text{m}$
- max. resolution 0.045° with MR200 or MBR200 (100 poles)
- Repeat accuracy  $\pm 0.025\text{ mm}$
- Repeat accuracy of  $\pm 1$  increment
- Works with magnetic tape MB200/1
- Works with MR200 magnetic ring, MBR200 magnetic tape ring
- Reading distance  $\leq 1\text{ mm}$
- Reading distance  $\leq 0.8\text{ mm}$
- Max. 4600 pulses/revolution with MBR200 (230 poles)



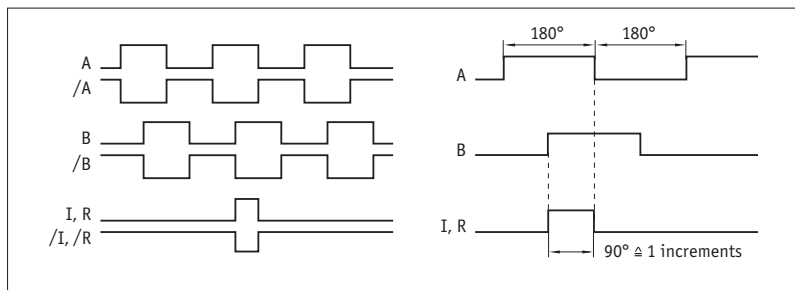
## Mechanical data

Feature	Technical data	Additional information
Housing	green plastic	
Sensor/band reading distance	0.1 ... 1 mm	0, I reference signals
	0.1 ... 0.4 mm	R reference signal
Sensor/ring reading distance	0.1 ... 0.8 mm	0, I reference signals
	0.1 ... 0.4 mm	R reference signal
Cable sheath	PUR suitable for drag-chain use	4-wire $\varnothing 4.4_{-0.4}\text{ mm}$ ; 5, 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

## Electrical data

Feature	Technical data	Additional information
Operating voltage	24 V DC ±20 %	reverse polarity protected
	5 V DC ±5 %	no reverse polarity protection
Current consumption	<20 mA	at 24 V DC, off-load
	<75 mA	loaded
Output circuit	PP, LD (RS422), TTL	PP only with 24 V
Output signals	A, A/, B, B/, I, I/, R, R/	quadrature signal
Output signal level high	>UB - 2.5 V	PP
	>2.5 V	LD
	>2.4 V	TTL
Output signal level low	<0.8 V	PP
	<0.5 V	LD
	<0.4 V	TTL
Jitter	<15 %	0.5 mm reading distance
Pulse width of reference signal	1 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.

## System data

Feature	Technical data	Additional information
Resolution	0.025, 0.05, 0.1, 0.5 mm	
Scaling factor	1, 5, 10, 20	
System accuracy	±(0.05 + 0.01 x L) mm, L in m	at T <sub>U</sub> = 20 °C
	±0.1°	at T <sub>U</sub> = 20 °C
Repeat accuracy	±1 increment(s)	
Measuring range	∞	
Circumferential speed	≤25 m/s	≤2 m/s referencing speed
Travel speed	≤25 m/s	≤2 m/s referencing speed

## 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

■ Not inverted without reference signal

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

■ Inverted with reference signal

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

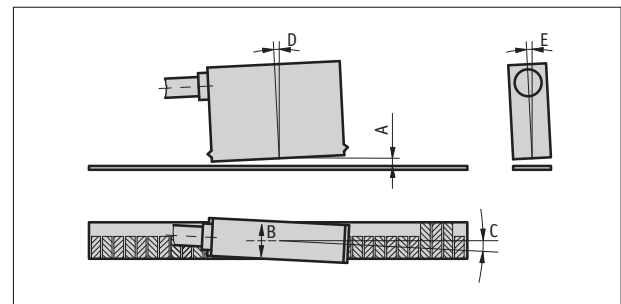
■ Inverted without reference signal

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

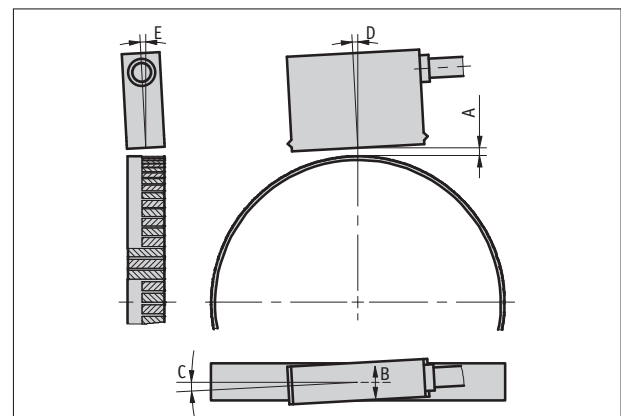
### Hint for mounting

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

Reference signal	O, I linear	O, I radial	R
A, Sensor/tape reading distance	$\leq 1 \text{ mm}$	$\leq 0.8 \text{ mm}$	$\leq 0.4 \text{ mm}$
B, Lateral offset	$\pm 2 \text{ mm}$	$\pm 2 \text{ mm}$	$\pm 0.5 \text{ mm}$
C, Alignment error	$\pm 1^\circ$	$\pm 1^\circ$	$\pm 1^\circ$
D, Longitudinal inclination	$\pm 1^\circ$	$\pm 1^\circ$	$\pm 1^\circ$
E, Lateral inclination	$\pm 3^\circ$	$\pm 3^\circ$	$\pm 3^\circ$



symbolic sensor representation



symbolic sensor representation

## Order

### ■ Ordering information

One or more system components are required:

Magnetic band MB200/1  
Magnetic ring MR200  
Magnetic band ring MBR200

www.siko-global.com  
www.siko-global.com  
www.siko-global.com

### ■ Ordering table

Feature	Ordering data	Specification	Additional information
Operating voltage	4	24 V DC ±20%	
	5	5 V DC ±5%	
Type of connection	E1	open cable end	
	E6X	bullet connector without mating connector	
	E8X	D-SUB 9-pole without mating connector	
		cable extensions on request	
Cable length	...	1 ... 20 m, in steps of 1 m	
		others on request	
Output circuit	PP	push-pull	only with operating voltage 4
	LD	LineDriver	
	TTL	TTL	only with non-inverted output signal, cable length ≤5 m
Output signal	NI	not inverted	
	I	inverted	
Reference signal	O	without	
	I	periodic index	index signal every 2 mm
	R	fixed reference	
Linear resolution/ radial scaling factor	...	0.025/20, 0.05/10, 0.1/5, 0.5/1	
		others on request	

### ■ Order key

MSK210 -  -  -  -  -  -  -  -  -

A                      B                      C                      D                      E                      F                      G

*Scope of delivery: MSK210, Mounting instructions, Fastening set*