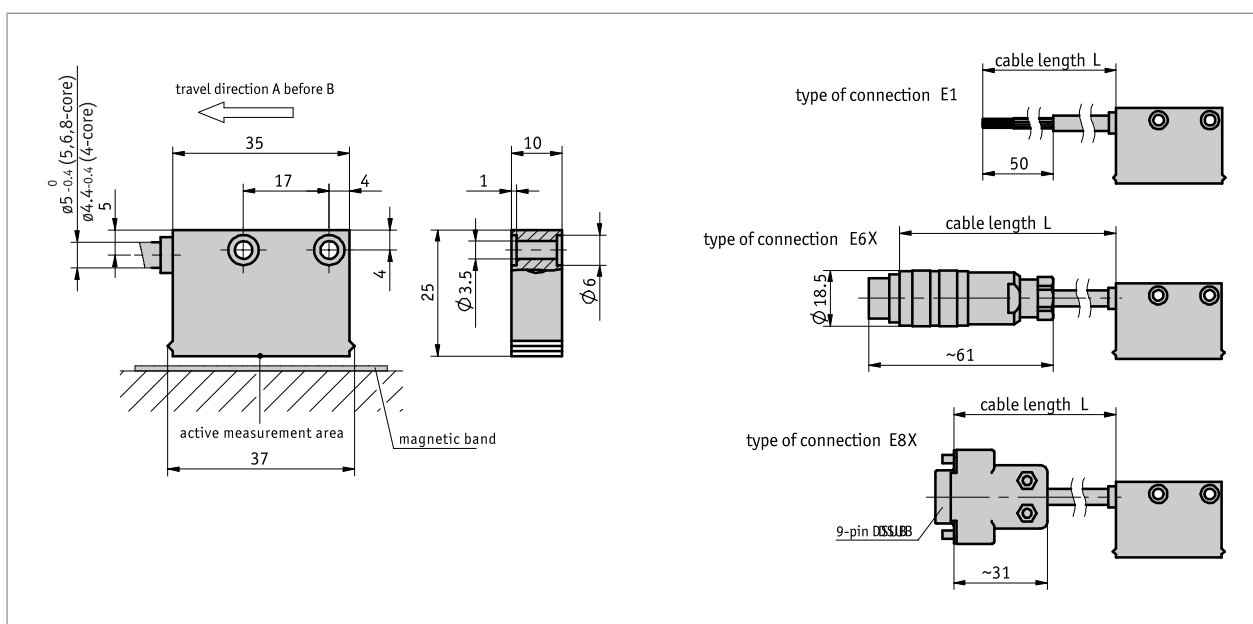
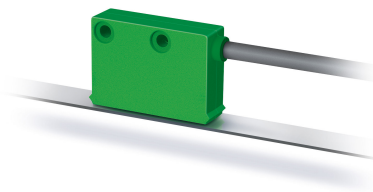


### Profile

- Max. resolution 25 µm
- max. resolution 0.045° with MR200 or MBR200 (100 poles)
- Repeat accuracy ±0.025 mm
- Repeat accuracy ±1 increment
- Works with magnetic tape MB200/1
- Works with MR200 magnetic ring, MBR200 magnetic tape ring
- Reading distance ≤1 mm
- Reading distance ≤0.8 mm
- Max. 4600 pulses/revolution with MBR200 (230 poles)



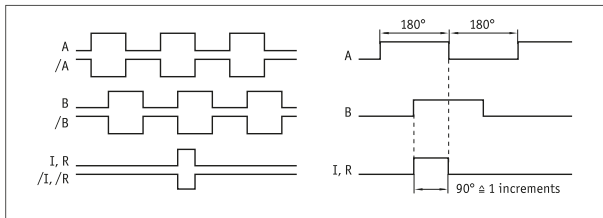
### Mechanical data

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-core $\varnothing$ 4.4-0.4 mm; 5, 6, 8-core $\varnothing$ 5.0-0.4 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 m/s <sup>2</sup> ambient temperature 20 °C ±5 °C.

### Electrical data

Feature	Technical data	Additional information
Operating voltage	24 V DC $\pm 20\%$	reverse polarity protection
	5 V DC $\pm 5\%$	no reverse polarity protection
Current consumption	<20 mA at 24 V DC	unloaded
	<75 mA	loaded
Output circuit	PP, LD (RS422), TTL	PP only at 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
Latency	1.5 $\mu\text{s}$	
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 image



**!** 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	
	64	
System accuracy	$\pm(0.05 + 0.01 \times L)$ mm, L in m at $T_U = 20^\circ\text{C}$	
Repeat accuracy	$\pm 1$ Increment(s)	
Measuring range	$\infty$	
Circumferential speed	$\leq 25$ m/s	$\leq 2$ m/s referencing speed
Travel speed	$\leq 25$ m/s	$\leq 2$ m/s referencing speed

### Ambient conditions

Feature	Technical data	Additional information
Ambient temperature	-10 ... 70 $^\circ\text{C}$	
Storage temperature	-30 ... 80 $^\circ\text{C}$	
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 $\text{m/s}^2$ , 11 ms	EN 60068-2-27
Vibration resistance	<100 $\text{m/s}^2$ , 5 ... 150 Hz	EN 60068-2-6

### pin assignment

#### ■ Not inverted with reference signal

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

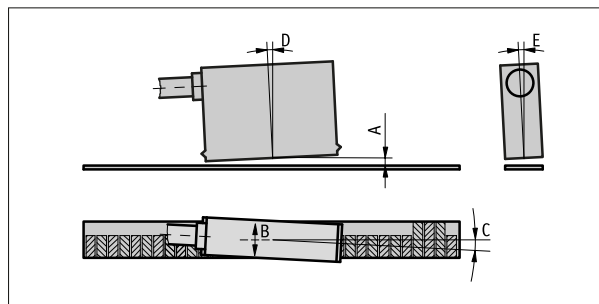
#### ■ Inverted with reference signal

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

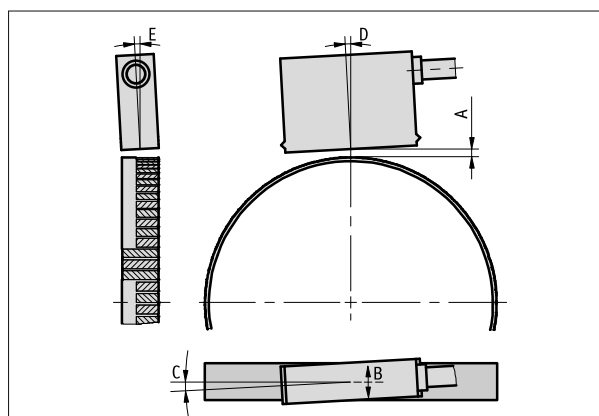
### Hint for mounting

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 linear	O, I radial	R
A, Sensor/tape reading distance	≤1 mm	≤0.8 mm	≤0.4 mm
B, Lateral offset	±2 mm	±2 mm	±0.5 mm
C, Alignment error	±1°	±1°	±1°
D, Longitudinal inclination	±1°	±1°	±1°
E, Lateral inclination	±3°	±3°	±3°



(Sensor representation symbolic)



(Sensor representation symbolic)

### Order

#### ■ Ordering information

One or more system components are required:  
Magnetic tape MB200/1

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

# Magnetic sensor MSK210

Incremental, digital interface, resolution 25 µm

Magnetic ring MR200  
Magnetic band ring MBR200

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

## ■ Ordering table

Feature	Ordering data	Spezifikation	Additional information
Operating voltage	<b>A</b> 4 5	24 V DC ±20% 5 V DC ±5%	A voltage drop is to be expected with increasing cable length. This must be taken into account in the electrical design.
Type of connection	<b>B</b> E1 E6X E8X	open cable end bullet connector without mating connector D-SUB 9-pole without mating connector extension cables on request	
Cable length	<b>C</b> ...	02.0 ... 20 m, in intervals of 1 m others on request	
Output circuit	<b>D</b> PP LD TTL	push-pull LineDriver TTL	only with operating voltage 4 only with non-inverted output signal, cable length ≤5 m
output signal	<b>E</b> NI I	not inverted inverted	
reference signal	<b>F</b> 0 I R	without periodic index fixed reference	index signal every 2 mm
linear resolution/ radial scaling factor	<b>G</b> ...	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, Fastening set, Installation Instructions