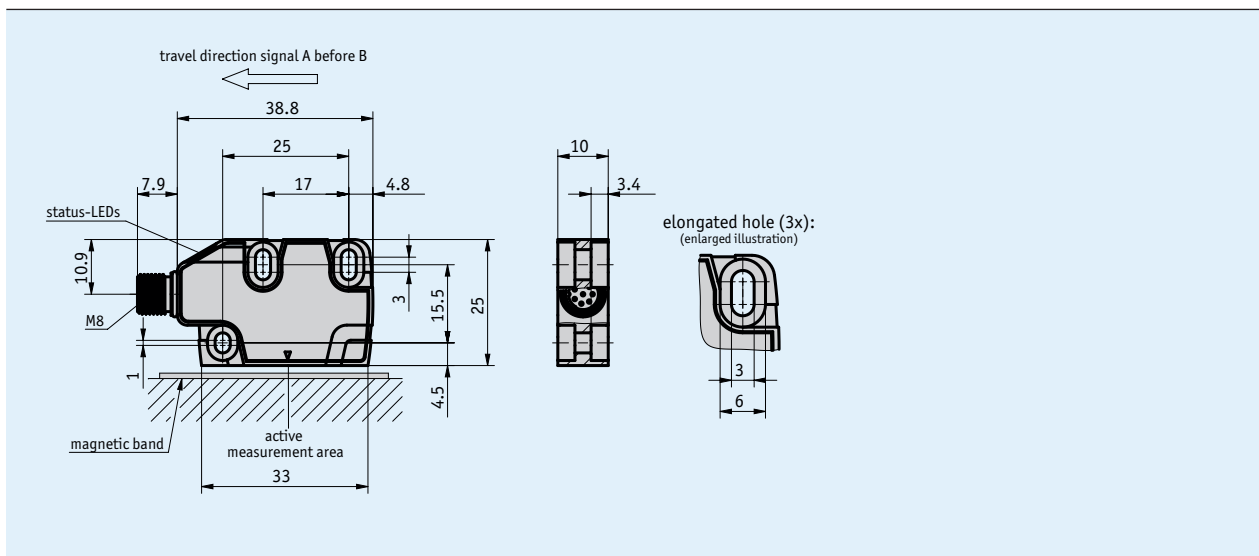
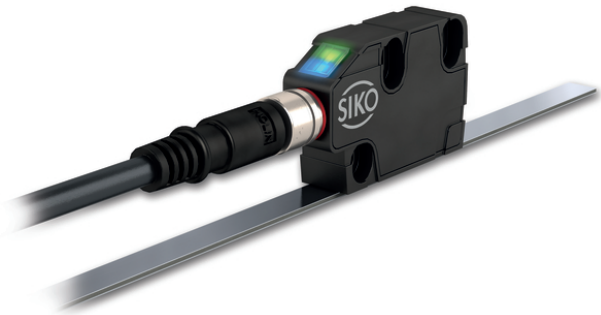


Profile

- Max. resolution 1 μm
- Max. 200000 pulses/revolution in combination with MR500 or MBR500 (160 poles)
- Repeat accuracy ±0.005 mm
- Status LED with integrated distance monitoring
- Works with magnetic tape MB500/1, MR500, MBR500
- Reading distance ≤2 mm
- Sensor connection can be plugged with KV1C cable extension
- Output circuit PP, TTL, LD (depending on the operating voltage)



Mechanical data

Feature	Technical data	Additional information
Housing	black synthetic material	
Sensor/band reading distance	0.1 ... 2 mm	reference signal I
	0.1 ... 1.5 mm	Reference signal R
Sensor/ring reading distance	0.1 ... 2 mm	reference signal I
	0.1 ... 1.5 mm	reference signal R

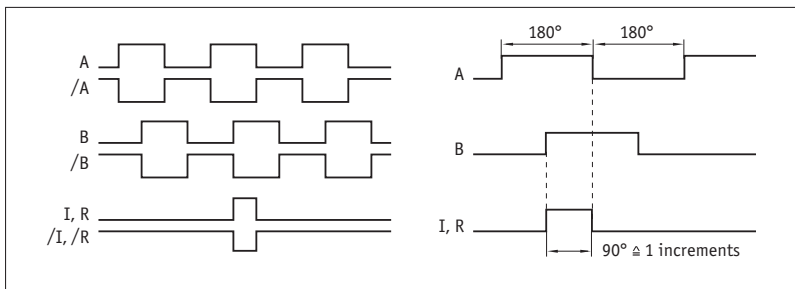
Travel/peripheral speed

Resolution/ Scaling factor	Travel/peripheral speed Vmax [m/s]										
	0.001/1250	4.00	3.20	1.60	0.80	0.32	0.20	0.10	0.05	0.03	0.01
	0.005/250	20.00	16.00	8.00	4.00	1.60	1.00	0.50	0.25	0.13	0.06
	0.01/125	25.00	25.00	16.00	8.00	3.20	2.00	1.00	0.50	0.25	0.12
	0.025/50	25.00	25.00	25.00	20.00	8.00	5.00	2.50	1.25	0.63	0.30
	0.05/25	25.00	25.00	25.00	25.00	16.00	10.00	5.00	2.50	1.25	0.61
	0.1/12.5	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

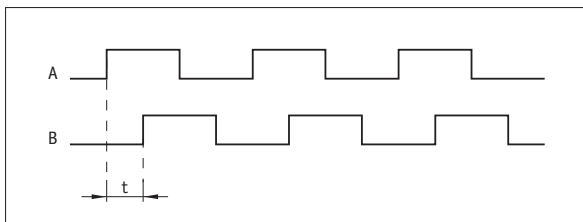
Feature	Technical data	Additional information
Operating voltage	4.75 ... 30 V DC	reverse polarity protected
Current consumption	<25 mA	at 24 V DC, off-load
	<75 mA	at 24 V DC; loaded
Output circuit	PP	with operating voltage 4.75 ... 30 V DC
	TTL, LD (RS422)	with operating voltage 4.75 ... 6 V DC
Output signals	A, /A, B, /B, I, /I, R, /R	
Output signal level high	>UB - 2.5 V	PP
	>2.5 V	LD
Output signal level low	<0.8 V	
Index marks	periodic, fixed, flexible	
Pulse width of reference signal	1 or 4 increment(s)	
Real-time requirement	speed-proportional signal output	
Type of connection	plug connector	8-pole, 1x pin

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.

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
Pole length	5 mm	
Resolution	0.001, 0.005, 0.01, 0.025, 0.05, 0.1 mm	
Scaling factor	12.5, 25, 50, 125, 250, 1250	
System accuracy	± (0.025 + 0.01 × L) mm, L in m	
	±0.1°	
Repeat accuracy	±5 μm	
Measuring range	∞	
Circumferential speed	depending on resolution and pulse interval	see table
Travel speed	depending on resolution and pulse interval	see table

Ambient conditions

Feature	Technical data	Additional information
Ambient temperature	-40 ... 85 °C	
Storage temperature	-40 ... 85 °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, with mating connector mounted
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

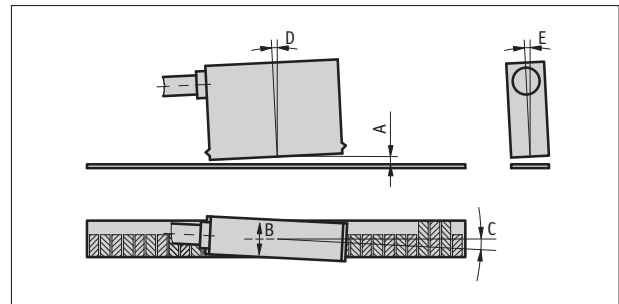
■ in connection with KV1C cable extension

Signal	4-core	5-core	6-core	8-core
A	red	red	red	red
B	orange	orange	orange	orange
I, R		blue		blue
+UB	brown	brown	brown	brown
GND	black	black	black	black
/A			yellow	yellow
/B			green	green
/I, /R				violet

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	≤ 2 mm	≤ 1.5 mm
B, Lateral offset	± 2 mm	± 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 MB500/1

Magnetic ring MR500

Magnetic band ring MBR500

Cable extension KV1C

www.siko-global.com

www.siko-global.com

www.siko-global.com

on request

Ordering table

Feature	Ordering data	Specification	Additional information
Reference signal	I	periodic index	
	R	fixed reference	
Linear resolution/ radial scaling factor	...	0.001/1250, 0.005/250, 0.010/125, 0.025/50, 0.050/25, 0.1/12.5	
		others on request	
Pulse interval	...	0.2, 0.25, 0.5, 1, 2.5, 4, 8, 16, 32, 66	
		others on request	

Order key

MSC500 - - -
A B C

Scope of delivery: MSC500, Mounting instructions, Fastening set