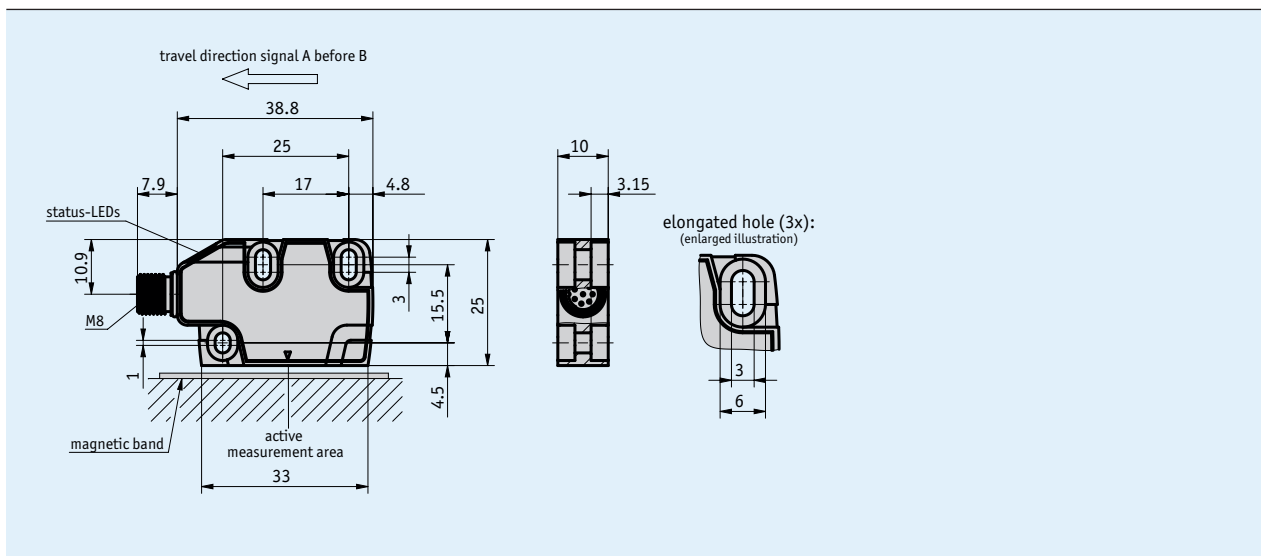
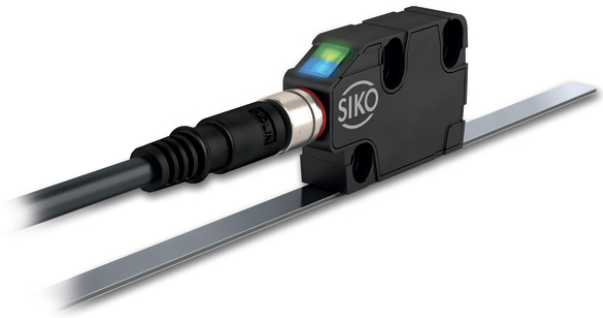


Profile

- Max. resolution 1 μm
- Max. 200000 pulses/revolution in combination with MR500 or MBR500 (160 poles)
- Repeat accuracy $\pm 0.005\text{ mm}$
- Status LED with integrated distance monitoring
- Works with magnetic tape MB500/1, MR500, MBR500
- Reading distance $\leq 2\text{ mm}$
- Sensor connection can be plugged with KV1C cable extension
- Output circuit PP, TTL, LD (depending on the operating voltage)
- Optionally with reference point R or flexible reference marks FR



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
	0.4 ... 1 mm	reference signal FR
Sensor/ring reading distance	0.1 ... 2 mm	reference signal I
	0.1 ... 1.5 mm	reference signal R

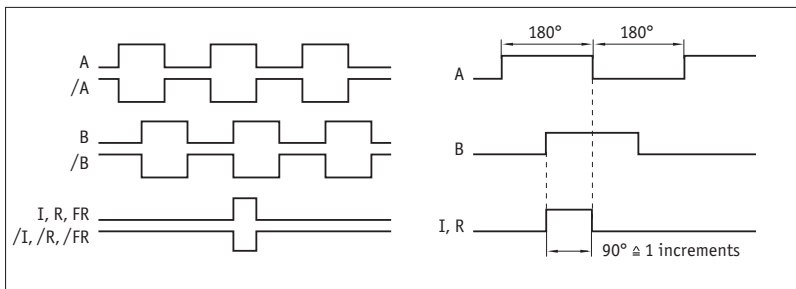
Travel/peripheral speed

Resolution/ Scaling factor	Travel/peripheral speed V_{max} [m/s]									
	4.00	3.20	1.60	0.80	0.32	0.20	0.10	0.05	0.03	0.01
0.001/1250	20.00	16.00	8.00	4.00	1.60	1.00	0.50	0.25	0.13	0.06
	25.00	25.00	16.00	8.00	3.20	2.00	1.00	0.50	0.25	0.12
	25.00	25.00	25.00	20.00	8.00	5.00	2.50	1.25	0.63	0.30
	25.00	25.00	25.00	25.00	16.00	10.00	5.00	2.50	1.25	0.61
	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

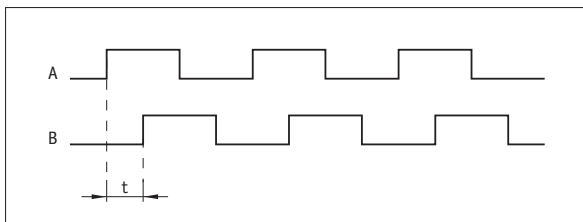
Feature	Technical data	Additional information
Operating voltage	4.75 ... 30 V DC	reverse polarity protected
Current consumption	<30 mA	at 24 V DC, off-load
	<75 mA	at 24 V DC; loaded
Output circuit	PP	with operating voltage 4.75 ... 30 V DC
	TTL, LD (RS422)	with operating voltage 4.75 ... 6 V DC
Output signals	A, /A, B, /B, I, /I, R, /R, FR, /FR	
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 61326-1	industrial requirement, emission limit class B
Protection category	IP67	EN 60529, with mating connector mounted
Shock resistance	≤500 m/s ² , 11 ms	EN 60068-2-27, half-sine, 3 axes (+/-), each 3 shocks
Vibration resistance	≤100 m/s ² , 10 ... 2000 Hz	EN 60068-2-6, 3 axes, each 10 cycles

Pin assignment

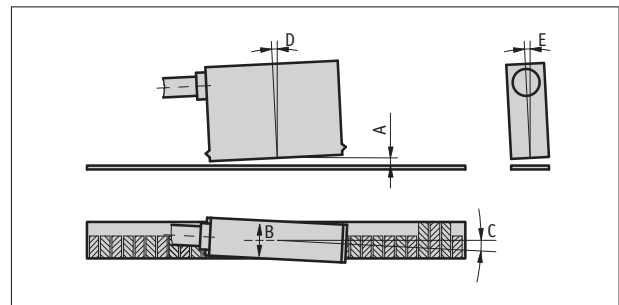
■ in connection with KV1C cable extension

Signal	4-core	5-core	6-core	8-core
A	red	red	red	red
B	orange	orange	orange	orange
I, R, FR		blue		blue
+UB	brown	brown	brown	brown
GND	black	black	black	black
/A			yellow	yellow
/B			green	green
/I, /R, /FR				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	I	R	FR
A, Sensor/tape reading distance	≤2 mm	≤1.5 mm	0.4 ... 1 mm
B, Lateral offset	±2 mm	±0.5 mm	±0.5 mm
C, Alignment error	±3°	±3°	±3°
D, Longitudinal inclination	±1°	±1°	±1°
E, Lateral inclination	±3°	±3°	±3°



Symbolic representation

Order

Ordering information

One or more system components are required:

Magnetic band MB500/1

www.siko-global.com

Magnetic ring MR500

www.siko-global.com

Magnetic band ring MBR500

www.siko-global.com

Cable extension KV1C

www.siko-global.com

Ordering table

Feature	Ordering data	Specification	Additional information
Reference signal	I	periodic index	
	R	fixed reference	
	FR	flexible reference	
Linear resolution/ radial scaling factor	...	B	0.001/1250, 0.005/250, 0.010/125, 0.025/50, 0.050/25, 0.1/12.5
			others on request
Pulse interval	...	C	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, Quick Start Guide, Fastening set

Accessories:
Flexible reference mark

Order key 88436