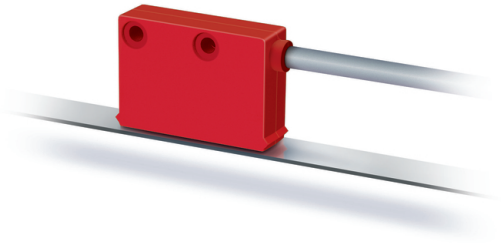
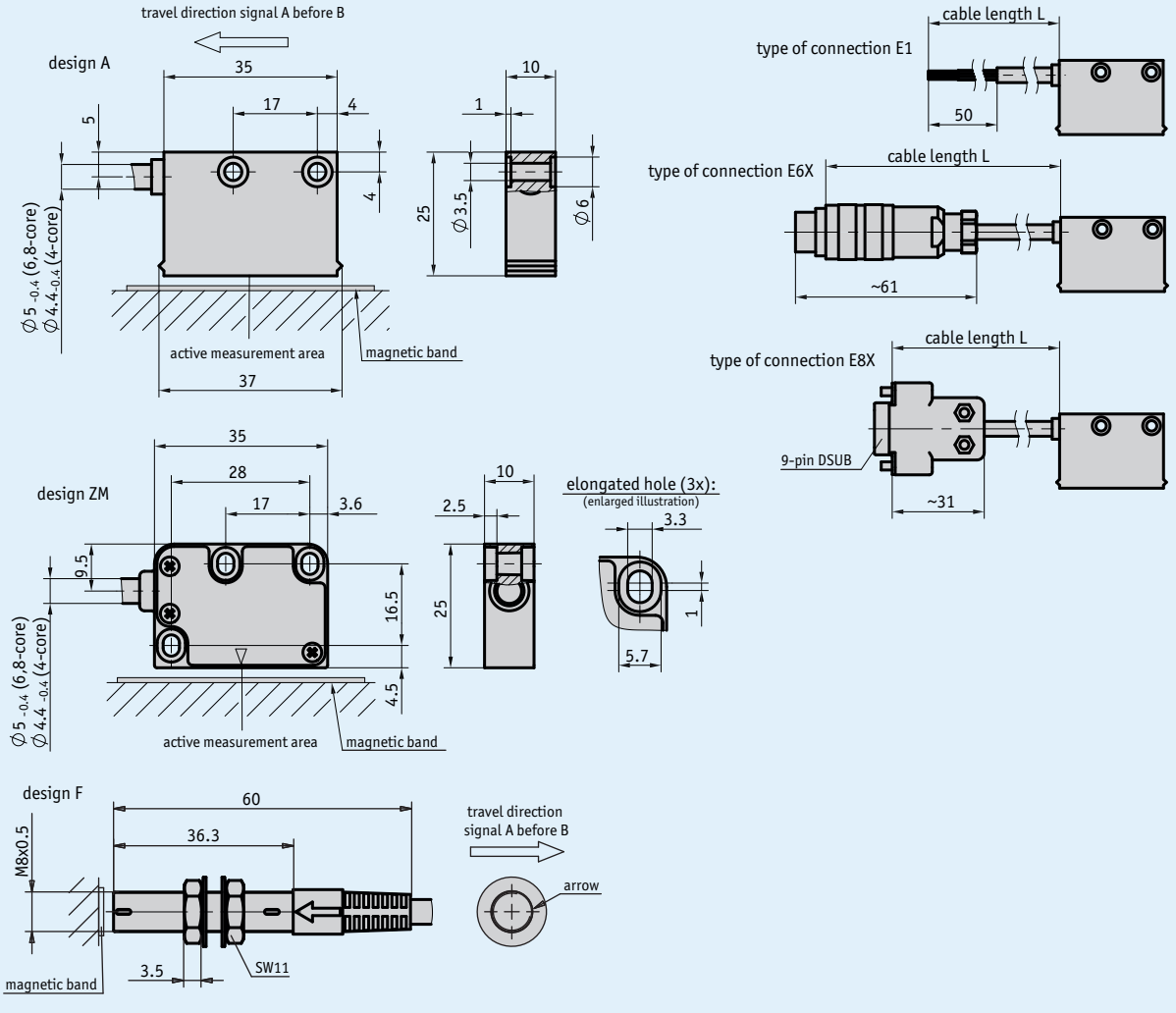
Profile

- Max. resolution 12.5 µm
- max. resolution 0.006° with MR320 or MBR320 (250 poles)
- Repeat accuracy ±0.04 mm
- Repeat accuracy of ±1 increment
- Works with MB320/1 magnetic tape, MRI01 or MR320 magnetic ring, MBR320 magnetic tape ring
- Reading distance ≤2 mm
- Max. 16000 pulses/revolution in combination with MR320 or MBR320 (250 poles)
- Optionally with reference point R or flexible reference marks FR





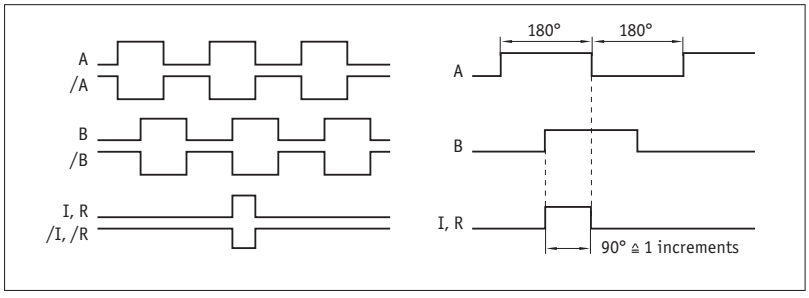
Mechanical data

Feature	Technical data	Additional information
Housing	red plastic	A design
	steel	F design
	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
	0.4 ... 1 mm	FR reference signal
Sensor/ring reading distance	0.1 ... 2 mm	O, I reference signals
	0.1 ... 1 mm	R reference signal
Cable sheath	PUR suitable for drag-chain use	4-wire ø4.4$_{-0.4}$ mm; 5, 6, 8-wire ø5$_{-0.4}$ 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 range 4.5 m travel speed 3 m/s acceleration 5 m/s^2 ambient temperature 20 °C ±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, 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, FR, /FR	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	0.04, 0.05, 0.08, 0.1, 0.16, 0.2, 0.8 mm	
Scaling factor	1, 4, 5, 8, 10, 16, 20, 64	
System accuracy	±(0.1 + 0.01 x L) mm, L in m	at T_U = 20 °C
	±0.1°	at T_U = 20 °C
Repeat accuracy	±1 increment(s)	
Measuring range	∞	
Circumferential speed	≤25 m/s	≤3.2 m/s referencing speed
Travel speed	≤25 m/s	≤3.2 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^2, 11 ms	EN 60068-2-27
Vibration resistance	100 m/s^2, 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

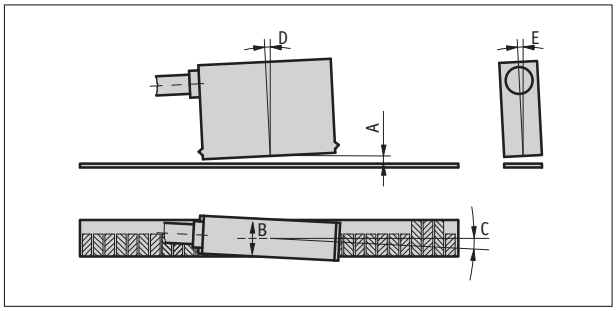
Inverted without reference signal

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

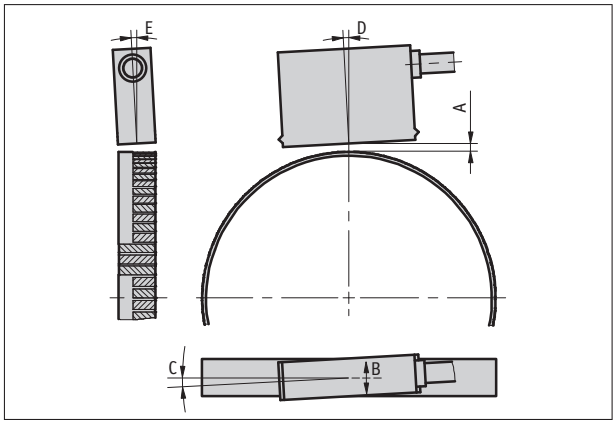
Hint for mounting

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

Reference signal	O, I	R	FR
A, Sensor/tape reading distance	≤2 mm	≤1.5 mm	0.4 ... 1.0 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 sensor representation



symbolic sensor representation

Order

Ordering information

One or more system components are required:

Magnetic band MB320/1	www.siko-global.com
Magnetic ring MR320	www.siko-global.com
Magnetic band ring MBR320	www.siko-global.com
Magnetic ring MRI01	www.siko-global.com

Ordering table

Feature	Ordering data		Specification	Additional information
Operating voltage	4	A	24 V DC ±20 %	reverse polarity protected
	5		5 V DC ±5 %	
Design	A	B	rectangular	
	ZM		metal housing without status LEDs	not for operating voltage 4 and output circuit LD
	F		round	only with NI output signal, 0 reference signal and scaling factor 8
Type of connection	E1	C	open cable end	
	E6X		bullet connector without mating connector	
	E8X		D-SUB 9-pole without mating connector	
			extension cables on request	
Cable length L	...	D	1.0 ... 20 m, in steps of 1 m	
			others on request	
Output circuit	PP	E	push-pull	only operating voltage 4
	LD		Line-Driver	
	TTL			only with non-inverted output signal, ≤ 5 m cable length
Output signal	NI	F	not inverted	
	I		inverted	only with A or ZM design and I or R reference signal
Reference signal	0	G	without	
	I		periodic index	only with A or ZM design, index signal every 3.2 mm
	R		fixed reference	only with A or ZM design, not with scaling factor 1
	FR		flexible reference	only for ZM design and MB320/1 magnetic tape
Linear resolution/ radial scaling factor	...	H	0.0125/64, 0.04/20, 0.05/16, 0.08/10, 0.1/8, 0.16/5, 0.2/4, 0.8/1	
			others on request	

Order key

MSK320 - [A] - [B] - [C] - [D] - [E] - [F] - [G] - [H]

Scope of delivery: *MSK320, Mounting instructions, Fastening set*

Accessories:

Installation aid ZB3054	*www.siko-global.com*
Flexible reference mark	*Order key 88434*