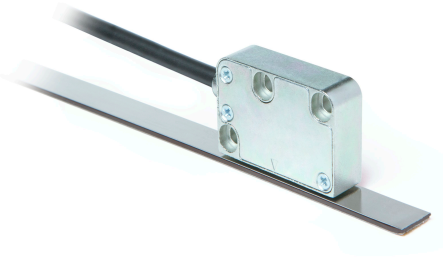
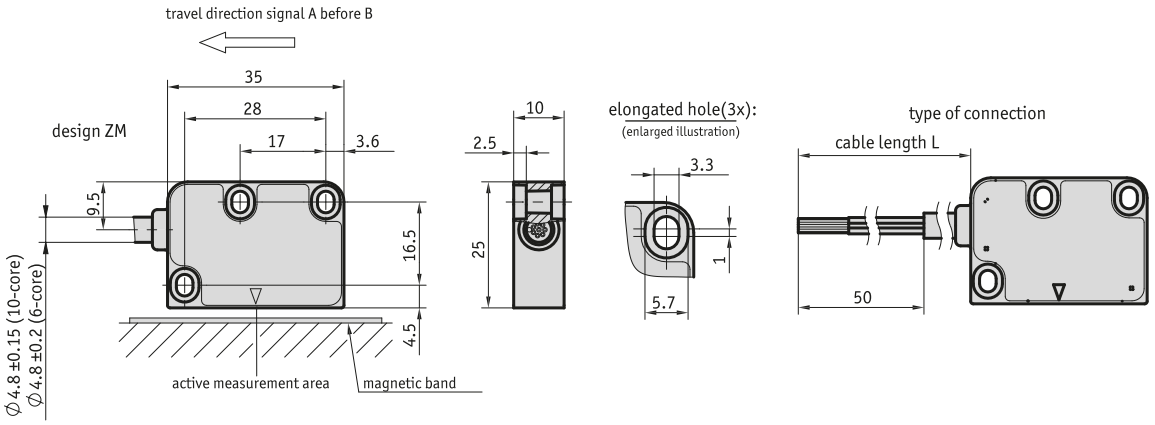
Magnetic sensor MSK320R

Incremental, redundant signal outputs, scaling factor selectable

Profile

- Enhanced safety owing to independent output channels
- 2 magnetic sensors and 2 signal conditioners in one sensor head
- Works with MB320/1 magnetic tape, MRI01 or MR320 magnetic ring, MBR320 magnetic tape ring
- Reading distance ≤2 mm
- Repeat accuracy ±1 increment
- extensive application temperature range of -40 ... 85° C
- Cost advantage by installation of one MSK320R sensor instead of two MSK320 sensors





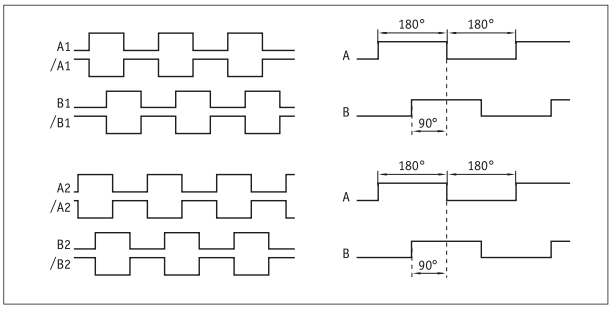
Mechanical data

Feature	Technical data	Additional information
Housing	zinc die-cast	ZM design
Sensor/band reading distance	0.1 ... 2 mm	0 reference signals
Sensor/ring reading distance	0.1 ... 2 mm	0 reference signals
Cable sheath	PUR, suitable for drag-chain use	10-core, ø4.8 ±0.15 mm

Electrical data

Feature	Technical data	Additional information
Operating voltage	4.5 ... 30 V DC	reverse polarity protection
Current consumption	<20 mA at 24 V DC	unloaded
	<75 mA	loaded
Output circuit	PP, LD (RS422)	PP only with 4.5 ... 30 V DC and LD only with 4.5 ... 6 V DC
Output signals	A1, /A1, B1, B/1, A2, /A2, B2, /B2	quadrature signal
Output signal level high	>UB -2.5 V	PP
	>2.5 V	LD
Output signal level low	<0.8 V	PP
	<0.5 V	LD
Pulse width of reference signal	1 Increment(s)	
Real-time requirement	speed-proportional signal output	
Type of connection	open cable end	

Signal image



The logic state of signals A1/B1 relating to signals A2/B2 is not defined. The phasing A1/B1 and A2/B2 may deviate from the signal pattern.

System data

Feature	Technical data	Additional information
Resolution	0.0125, 0.025, 0.05, 0.1, 0.2, 0.4, 0.8 mm	each channel configurable
Scaling factor	1, 2, 4, 8, 16, 32, 64	each channel configurable
Linearity deviation	±30 µm at T_U = 20° C	1 mm sensor/strip reading distance
Repeat accuracy	±1 Increment(s)	
Measuring range	∞	
Circumferential speed	≤25 m/s	
Travel speed	≤25 m/s	

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	immunity requirement of industrial applications, emission limit class B
Protection category	IP67	EN 60529
Shock resistance	500 m/s², 11 ms	EN 60068-2-27
Vibration resistance	<100 m/s², 5 ... 150 Hz	EN 60068-2-6

pin assignment

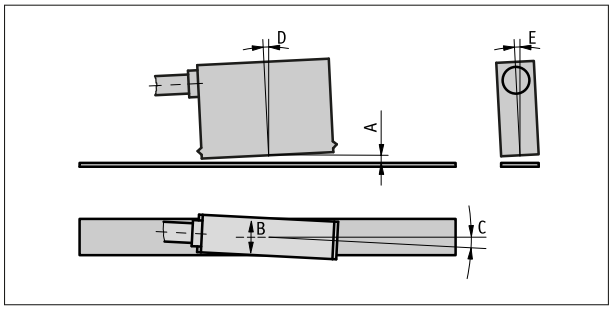
inverted

Signal	Cable color
+UB	brown
GND	black
A1	red
B1	orange
/A1	yellow
/B1	green
A2	blue
B2	violet
/A2	white
/B2	gray

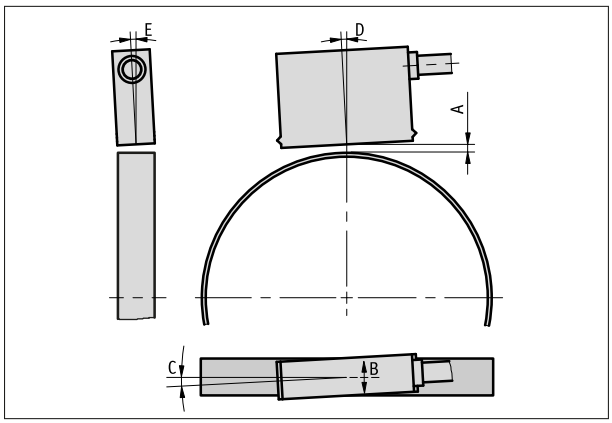
Hint for mounting

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

A, Sensor/ring reading distance	≤2 mm
B, Lateral offset	±2 mm
C, Alignment error	±3°
D, Longitudinal inclination	±1°
E, Lateral inclination	±3°



(Sensor representation symbolic)



(Sensor representation symbolic)

Order

Ordering information

One or more system components are required:

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

Ordering table

Feature	Ordering data		Spezifikation	Additional information
Cable length	A	00.1	0.1 m	
		...	01.0 ... 20.0 m, in intervals of 1 m	A voltage drop is to be expected with increasing cable length. This must be taken into account in the electrical design.
resolution linear/ scaling factor radial a1/b1	B	...	0.0125/64, 0.025/32, 0.05/16, 0.1/8, 0.2/4, 0.4/2, 0.8/1	
			others on request	
resolution linear/ scaling factor radial a2/b2	C	...	0.0125/64, 0.025/32, 0.05/16, 0.1/8, 0.2/4, 0.4/2, 0.8/1	
			others on request	

Order key

MSK320R - E1 - [A] - I - 0 - [B] - [C]

Scope of delivery:
MSK320R, Installation Instructions