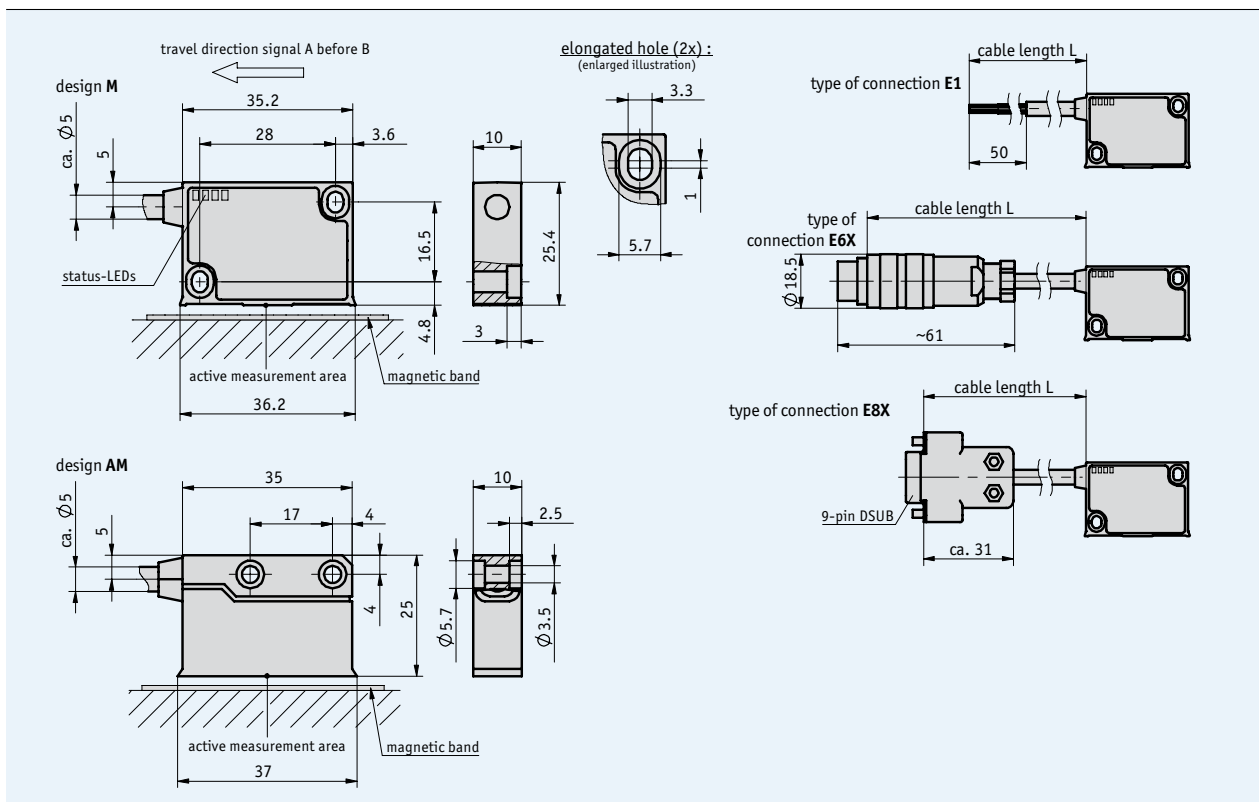


Profile

- Max. resolution 0.2 μm
- Repeat accuracy $\pm 1 \mu\text{m}$
- Max. sensor/band reading distance 0.4 mm
- Status LED display
- Robust metal housing



5.1



Mechanical data

Feature	Technical data	Additional information
Scale embodiment	MB100	
System accuracy	$\pm 10 \mu\text{m}$	accuracy class 10 μm with MB100
Repeat accuracy	max. $\pm 1 \mu\text{m}$	
Sensor/band reading distance	0.1 ... 0.4 mm 0.1 ... 0.2 mm	with reference signals 0, I with reference signal RB
Travel speed	depends on resolution and pulse interval	see table
Housing	zinc die-cast	aluminum front cover, anodized blue
Sensor cable	PUR	drag chain-compatible
Operating temperature	$-10 \dots +70 \text{ }^\circ\text{C}$	
Storage temperature	$-30 \dots +80 \text{ }^\circ\text{C}$	
Humidity	100 % rh	condensation permitted
Protection category	IP67	
Vibration resistance	10 g/50 Hz	
Max. measuring length	infinite	in steps of 90 m

Travel speed

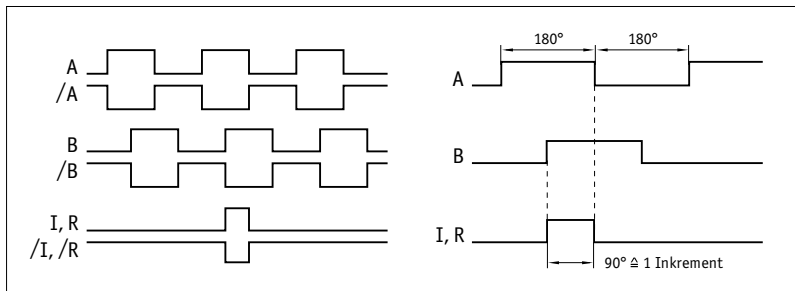
Resolution (μm)	Travel speed V_{max} (m/s)				
	0.2	0.64	0.32	0.16	0.08
1	3.20	1.60	0.80	0.40	
2	6.40	3.20	1.60	0.80	
5	16.00	8.00	4.00	2.00	
Pulse interval (μs)	0.25	0.50	1.00	2.00	
Counting frequency (kHz)	1000.00	500.00	250.00	125.00	

Electrical data

Feature	Technical data	Additional information
Operating voltage	6.5 V DC ... 30 V DC 4.75 V DC ... 6 V DC	reverse-polarity protection on UB no reverse-polarity protection on UB
Current consumption	<25 mA	without load
Type of connection	flying leads round connector D-SUB 9-pin	
Output circuit	LD (RS422)	
Output signals	A, /A, B, /B, I, /I, or R, /R	
Pulse width of reference signal	1 or 4 increments	
Resolution	0.2, 1, 2, 5 μm	
Interference protection class	3	IEC-61000-6-2
Real-time requirement	real-time signal processing	
Signal level high	>2.5 V	
Signal level low	<0.5 V	

5.1

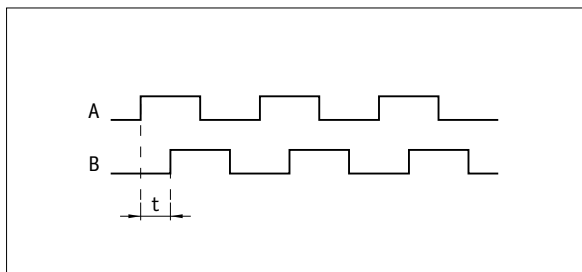
Signal forms



! 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.

! Reference or index signal with 4 increments (360°) signal length is only valid from the 5th counting step onwards. A corresponding delay should be taken into consideration after switching on the operating voltage.

Pulse interval



Example: Pulse interval $t = 1 \mu s$
(i.e., the downstream unit must be able to process 250 kHz)

$$\text{Formula for input frequency} = \frac{1}{1 \mu s \times 4} = 250 \text{ kHz}$$

Pin assignment

■ without index signal

Signal	E1	E6X	E8X
A	red	1	1
B	orange	2	2
+UB	brown	4	4
GND	black	5	5
/A	yellow	6	6
/B	green	7	7
N.C.		3	3, 8, 9

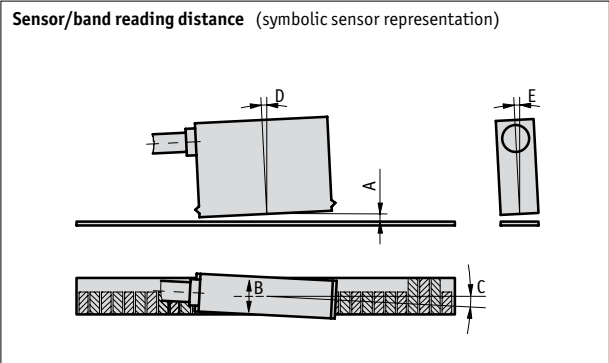
■ with index signal

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
N.C.			9

Mounting note

On systems with reference points on the magnetic band, please ensure the correct alignment of the sensor and band (see diagram).

Reference signal	O, I	RB
A, Sensor/band reading distance	max. 0.4 mm	max. 0.2 mm
B, Lateral offset	max. ±2 mm	max. ±0.5 mm
C, Misalignment	<±3°	<±3°
D, Longitudinal tilt	<±1°	<±1°
E, Lateral tilt	<±3°	<±3°



Order

Order note

The internal translation module can generate fast counting pulses. The pulse length is limited by the pulse interval. The follow-up electronic system must be coordinated accordingly, if necessary select the pulse interval previously.

Order table

Feature	Order data	Specifications	Additional information
Operating voltage	10	6.5 ... 30 V DC	
	11	4.75 ... 6 V DC	
Design	M	metal housing with status LEDs	
	AM	metal housing without status LEDs	
Type of connection	E1	flying leads, 2 m cable	
	E6X	round connector without mating connectors	
	E8X	D-SUB 9-pin without mating connectors	
		cable extensions on request	
Cable length L	...	1 ... 20 m, in steps of 1 m	
		others on request	
Reference signal	0	without	
	I	index periodic	
	RB	fixed reference, scanning on band side	
Resolution in μm	...	0.2, 1, 2, 5	
Pulse interval in μs	...	0.25, 0.5, 1, 2	
		others on request	

Order code

MSK1000 - - - - - - -

A B C D E F G

Scope of delivery: MSK1000, User information, Allen fastening screws M3 x 14 mm ISO 4762, lock washers M3 DIN 7980, strain relief for sensor cable, distance gage 0.2 mm

Additional information:

Short Description, Technical Details
Product Overview

Page 14 cont.
Page 4 cont.