Profile

- Max. resolution up to 0.2 µm
- Repeat accuracy of ±1 µm
- Max. sensor/band reading distance 0.4 mm
- Status LED display
- Robust metal housing
- Two integrated limit switches, lateral scanning
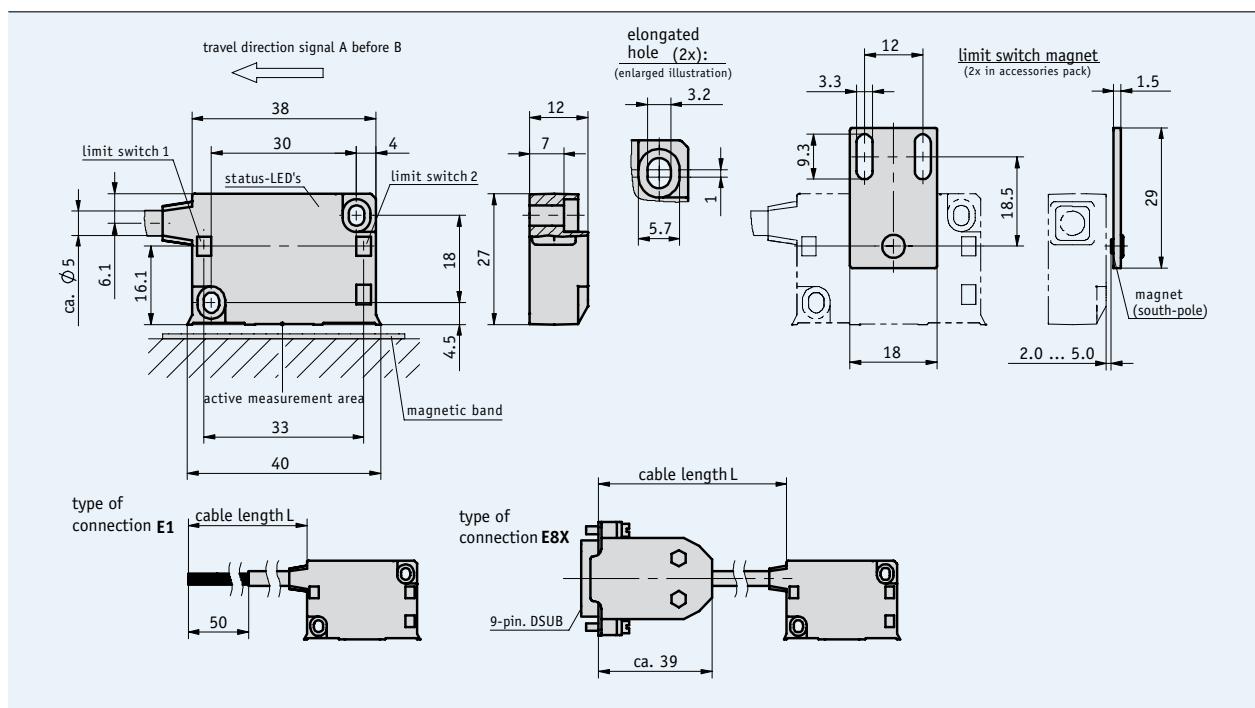
Mechanical data

Feature	Technical data	Additional information
Scale embodiment	MB100	
System accuracy	±10 µm	
Repeat accuracy	max. ±1 µm	
Sensor/band reading distance	0.1 … 0.4 mm	with reference signals 0, I
	0.1 … 0.2 mm	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 … +70 °C	
Storage temperature	–30 … +80 °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**

		Travel speed V max. (m/s)			
Resolution (μm)	**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
Count. 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	reverse-polarity protection on UB
	4.75 V DC … 6 V DC	no reverse-polarity protection on UB
Current consumption	<25 mA	without load
Type of connection	flying leads	
	D-SUB 15-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	

■ **Signal forms**
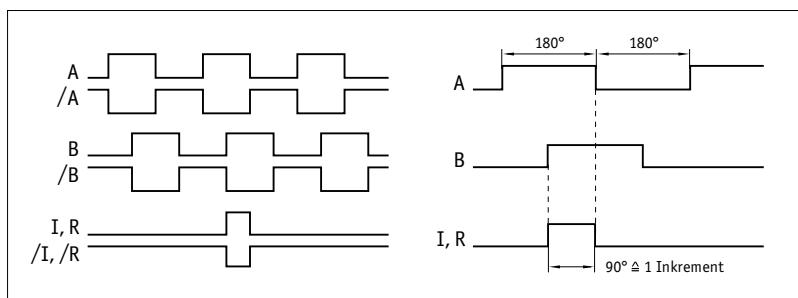
⚠ *The logical condition of signals A and B is not defined in reference to the index signal I or the reference signal R. It can deviate from the signal form.*

⚠ *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**
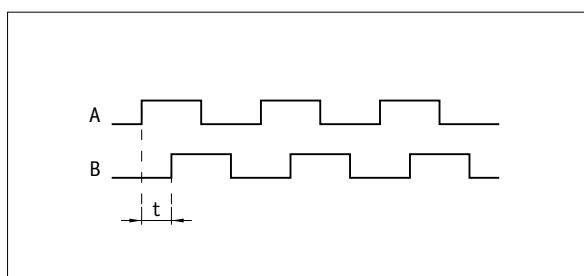
Example: Pulse interval t = 1 μs
(i.e., the downstream system must be able to process 250 kHz)

Formula for counting frequency $= \dfrac{1}{1\,\mu s \times 4} = 250\ kHz$

Pin assignment

■ without index signal

signal	E1	E8X
L1	blue	1
L2	violet	2
/B	green	5
B	orange	6
A	red	7
/A	yellow	8
GND	black	10
+UB	brown	12
Screen		14
N.C.		3,4,9,11,13,15

■ with index signal

signal	E1	E8X
L1	gray	1
L2	white	2
/I, /R	violet	3
I,R	blue	4
/B	green	5
B	orange	6
A	red	7
/A	yellow	8
GND	black	10
+UB	brown	12
Screen		14
N.C.		9,11,13,15

Mounting instruction

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°

Sensor/band reading distance (symbolic sensor representation)
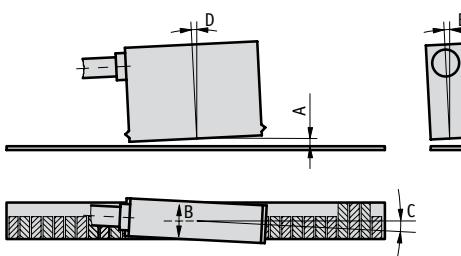
Order

- **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	A	6.5 … 30 V DC	
	11		4.75 … 6 V DC	
Type of connection	E1	B	flying leads	
	E8X		D-SUB 15-pin without mating connectors	
			cable extensions on request	
Cable length L	…	C	1 … 20 m, in steps of 1 m	
			others on request	
Reference signal	0	D	without	
	I		index periodic	
Resolution in µm	…	E	0.2, 1, 2, 5	
Pulse interval in µs	…	F	0.25, 0.5, 1, 2	

- **Order code**

MSK1100 – ☐ – ☐ – ☐ – ☐ – ☐ – ☐
         A   B   C   D   E   F

Scope of delivery: *MSK1100, 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, 2x release magnets for limit switch*