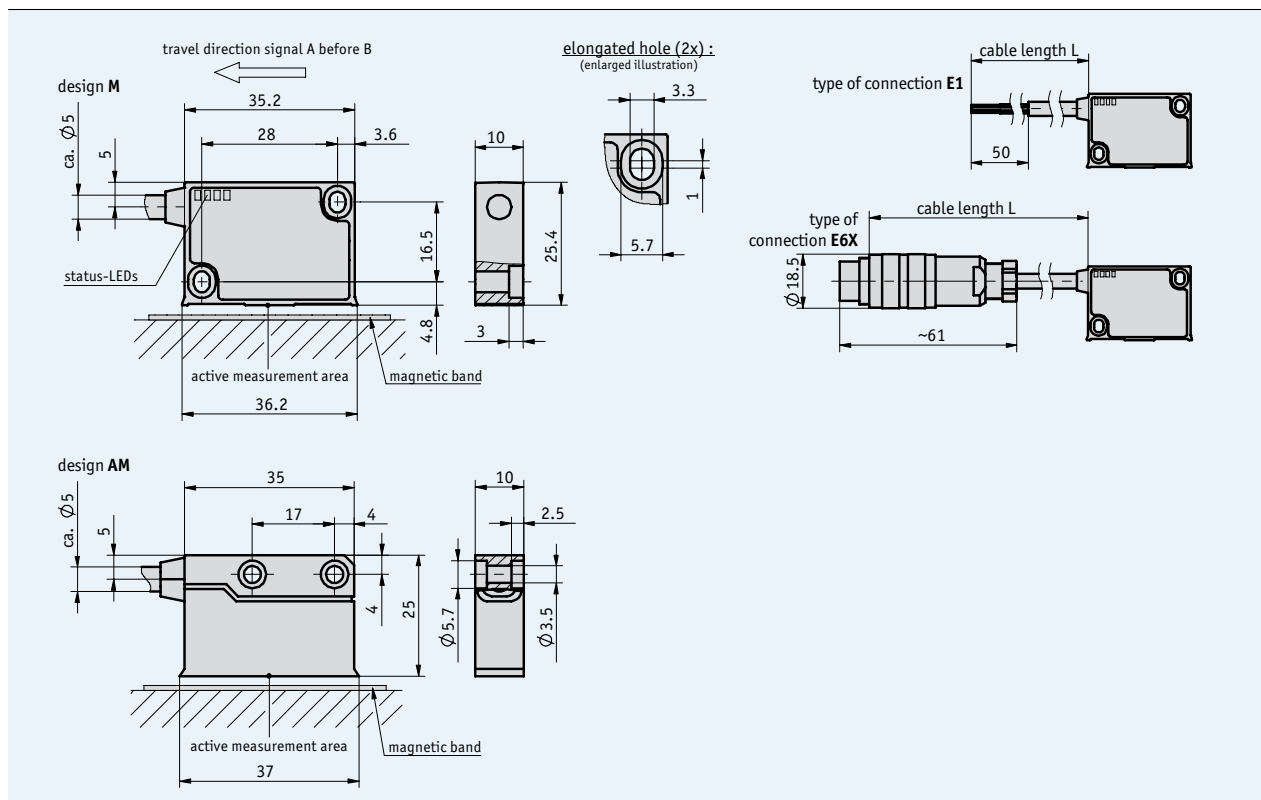


Profile

- Repeat accuracy max. $\pm 1 \mu\text{m}$
- Output circuit sin/cos 1 V_{SS}
- Signal period 1 mm
- Status LED display
- Robust metal housing



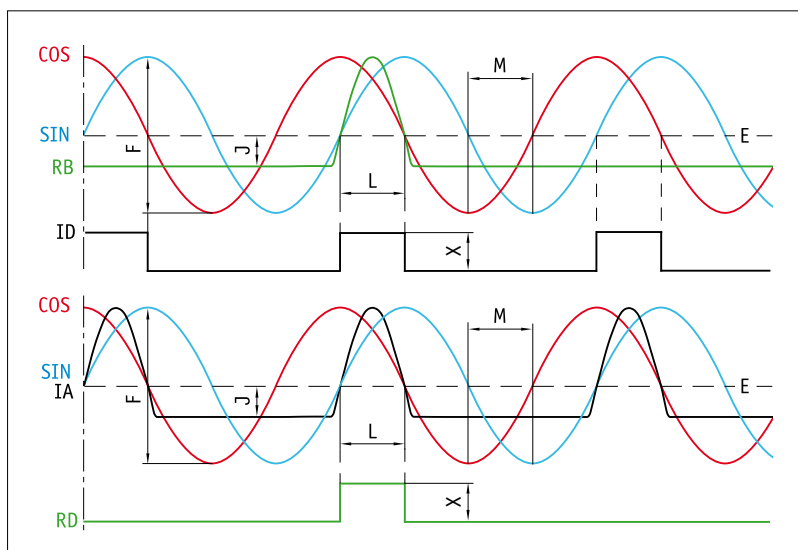
Mechanical data

Feature	Technical data	Additional information
Scale embodiment	MB100	
System accuracy	$\pm 10 \mu\text{m}$	accuracy class $10 \mu\text{m}$ only 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 signal 0, IA, ID with reference signal RB, RD
Travel speed	max. 20 m/s	5 m/s with reference signal RB
Housing	zinc die-cast	
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	$<200 \text{ m/s}^2$ (50 ... 2000 Hz)	

Electrical data

Feature	Technical data	Additional information
Operating voltage	10.5 ... 30 V DC 5 V DC $\pm 5\%$	reverse-polarity protection on UB no reverse-polarity protection on UB
Current consumption	<25 mA <50 mA	with 24 V with 5 V
Type of connection	flying leads round connector	
Output circuit	1 V _{SS}	
Output signals	sin, cos, /sin, /cos, I, /I, or R, /R	
Pulse width of reference signal	see the drawing of the signal shape	
Interference protection class	3	according to IEC 801
Real-time requirement	real-time signal processing	
Signal amplitude	1 V _{SS} $\pm 10\%$	at 0-70 °C with RA = 120 Ohm to 1 kOhm
Output impedance	0 Ohm (Rload >75 Ohm), short-circuit-proof	
Offset sine/cosine	2.5 V ± 100 mV UB/2 ± 100 mV	
Phasing sine/cosine	90° $\pm 1^\circ$; < $\pm 3^\circ$ (20 kHz)	
Phasing reference signal	sin 45°, cos 135°	
Signal period	1000 μ m	

Signal forms



E: reference voltage 2.5 V
F: 1 V_{SS} $\pm 10\%$
J: ≥ 0.2 V
L: 100° $\pm 20^\circ$
M: 90° $\pm 1.0^\circ$ / < $\pm 3^\circ$ (25 kHz)
X: 1 V_{SS}

5.1

Pin assignment

without reference signal

signal	E1	E6X
GND	black	1
sin	red	2
/sin	orange	3
cos	yellow	4
/cos	green	5
+UB	brown	6
N.C.		7

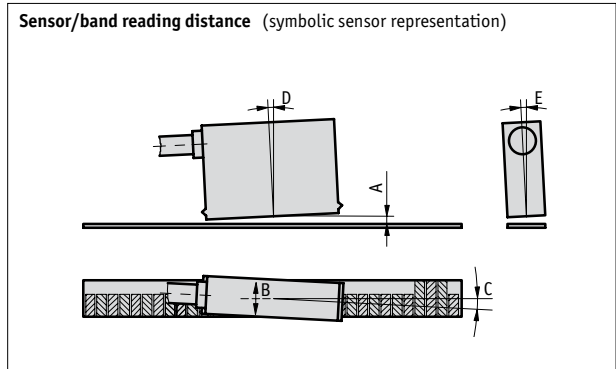
with reference signal

signal	E1	E6X
sin	red	1
cos	yellow	2
index	blue	3
+UB	brown	4
GND	black	5
/sin	orange	6
/cos	green	7
/index	violet	8

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, ID	RB, RD
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**

For the “AM” design feature with reference signal “O”, a special version, SA09, is available on request. Housing connected to screen, twisted-pair sensor cable.

■ **Order table**

Feature	Order data	Specifications	Additional information
Operating voltage	10	10.5 ... 30 V DC	
	5	5 V DC ±5 %	
Design	M	metal housing with status LEDs	
	AM	metal housing without status LEDs	
Type of connection	E1		
	E6X		cable extensions on request
Cable length L	...	1 ... 20 m, in steps of 1 m	
		others on request	
Reference signal	O	without	
	IA	index periodic (analog)	index signal every 1 mm
	ID	index periodic (digital)	index signal every 1 mm
	RB	fixed, band side (analog)	
	RD	fixed, band side (digital)	

■ **Order code**



Scope of delivery: LE100/1, 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

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Page 4 cont.