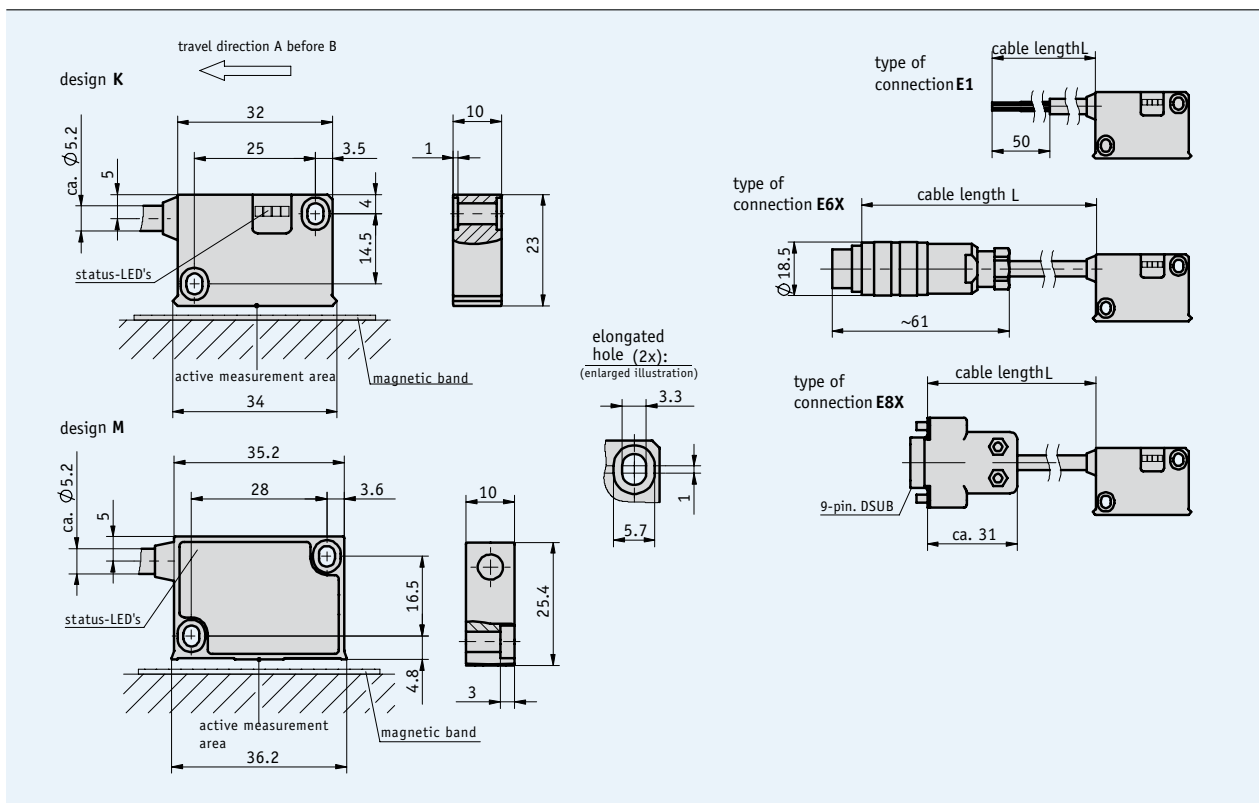


Profile

- Max. resolution up to 262 500 pulses/revolution in combination with MR500 and MBR500 (188 poles)
- Max. 800 000 increments/revolution with 4-fold evaluation for MR500 and MBR500 (188 poles)
- Repeat accuracy of ± 1 increment
- Status LED display



Mechanical data

Feature	Technical data	Additional information
Scale embodiment	MR500 MBR500	
System accuracy	±0.1°	
Repeat accuracy	max. ±10 µm	
Sensor/ring reading distance	0.1 ... 2 mm 0.1 ... 1.5 mm	with reference signals O, I with reference signal R
Circumferential speed	depends on resolution and pulse interval	see table
Housing	plastic, black	
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	

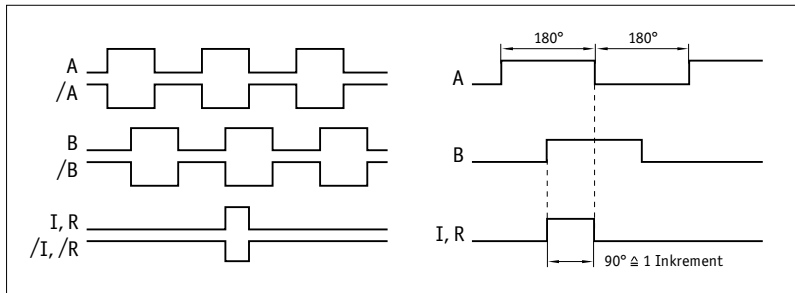
■ Circumferential speed

Scaling factor	circumferential speed V_{max} (m/s)									
	1250	250	125	50	25	12.5	4.00	1.60	0.80	0.32
1250	4.00	20.00	25.00	25.00	25.00	25.00	0.20	8.00	4.00	1.60
250	20.00	8.00	16.00	20.00	25.00	25.00	0.10	1.00	1.60	0.32
125	25.00	16.00	8.00	3.20	2.00	1.00	0.05	0.50	0.25	0.10
50	25.00	25.00	20.00	8.00	5.00	2.50	0.03	1.25	0.63	0.03
25	25.00	25.00	25.00	16.00	10.00	5.00	0.01	2.50	1.25	0.01
12.5	25.00	25.00	25.00	25.00	20.00	10.00	0.01	5.00	2.50	0.01
Pulse interval (µs)	0.20	0.50	1.00	2.50	4.00	8.00	16.00	32.00	66.00	
Counting frequency (kHz)	1250.00	500.00	250.00	100.00	62.50	31.25	15.63	7.81	3.79	

Electrical data

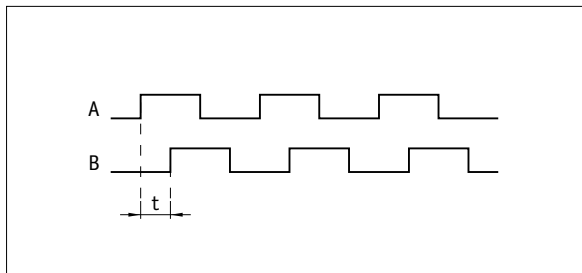
Feature	Technical data	Additional information
Operating voltage	6.5 V DC ... 30 V DC 4.75 V DC ... 6 V DC	reverse-polarity protection on UB no reverse-polarity protection on UB
Current consumption	<25 mA	no load
Type of connection	flying leads round connector D-SUB 9-pin	
Output circuit	PP LD	
Output signals	A, /A, B, /B, option: I, /I or R, /R	
Max. pulses/revolution	max. 40000 pulses/revolution	
Pulse width of reference signal	1 or 4 increments	
Scaling factor	1250, 250, 125, 50, 25, 12.5	
Interference protection class	3	IEC-61000-6-2
Real-time requirement	real-time signal processing	
Signal level high	>UB - 2.5 V >2.5 V	with PP with LD
Signal level low	<0.8 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.

■ Pulse interval



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

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

Pin assignment

■ inverted 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

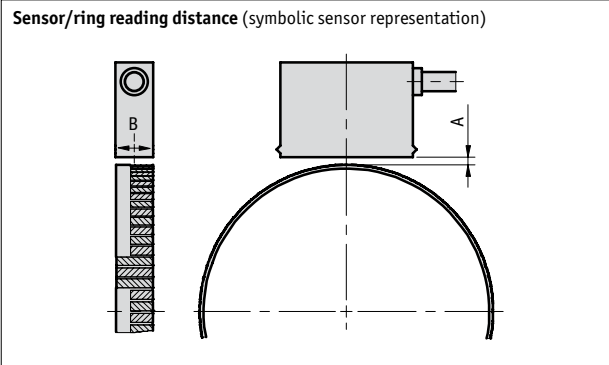
■ inverted with index signal

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 instruction

On systems with reference points on the magnetic ring, please ensure the correct alignment of the sensor and band.

Reference signal	O, I	R
Sensor/band reading distance A	max. 2 mm	max. 1.5 mm
Lateral offset B	max. ±2 mm	max. ±0.5 mm



Order

Order table

Feature	Order data	Specifications	Additional information
Operating voltage	10	6.5 ... 30 V DC	
	11	4,75 ... 6 V DC	
Design	K	plastic housing	
	M	metal housing	
Type of connection	E1	flying leads	
	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	
Output circuit	PP	push-pull	only operating voltage 10
	LD	line driver	
Reference signal	O	without	
	I	index periodic	
	R	fixed reference	
Scaling factor	...	12.5, 25, 50, 125, 250, 1250	
Pulse interval in µs	...	0.2, 0.5, 1, 2.5, 4, 8, 16, 32, 66	

Order code

MSK5000 - - - - - - - -

A B C D E F G H

Scope of delivery: MSK5000, User information, Allen fastening screws M3 x 14 mm ISO 4762, lock washers M3 DIN 7980, strain relief for sensor cable, distance gage 0.8 mm

Additional information:

Short Description, Technical Details
Product Overview

Page 136 cont.
Page 4 cont.