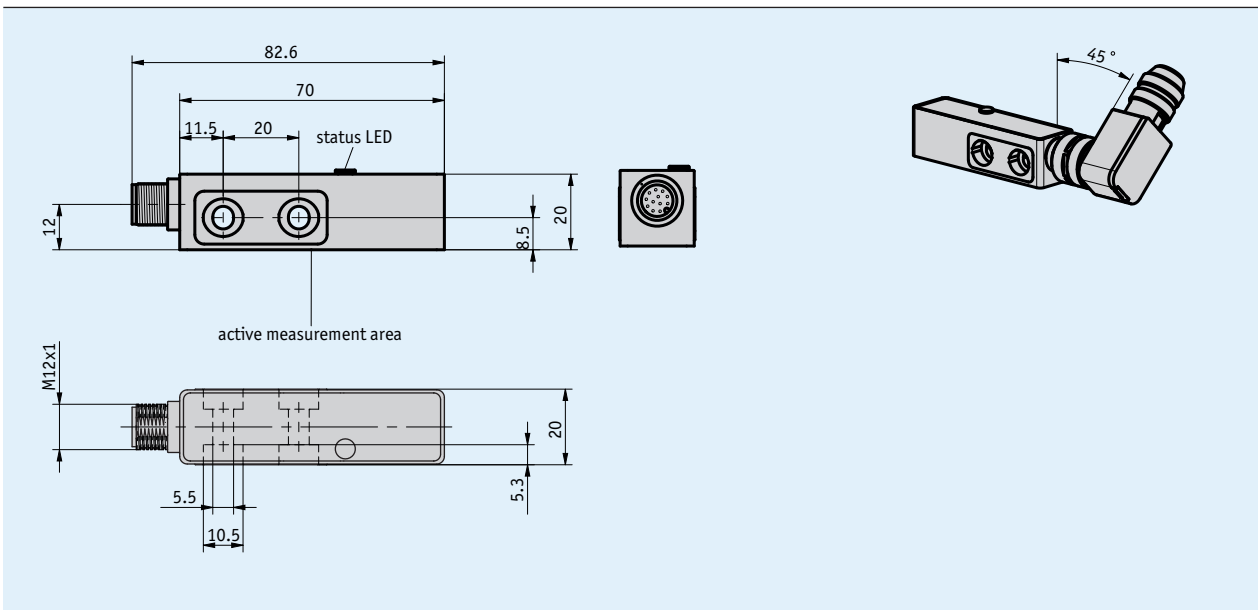


Profile

- Max. resolution 0.0014° (MRAC501) or 4.88 μm
- Repeat accuracy of 0.0014° (MRAC501) or 4.88 μm
- System accuracy ±0.06° (MRAC501) or ±0.03 mm
- SSI output circuit, RS485 (absolute), optional LD (incremental)
- Signal period 5 mm
- Status LEDs for diagnosis



Mechanical data

Feature	Technical data	Additional information
Housing	zinc die-cast	
Sensor/ring reading distance	≤0.2 mm	

Electrical data

Feature	Technical data	Additional information
Operating voltage	4.5 ... 30 V DC	
Power input	<1.5 W	
SSI clock speed input	≤750 kHz	depending on cable length
Output circuit	without, LD (RS422)	
Interface	SSI, RS485	
Cycle time	≤30 μs	
Type of connection	M12 plug connector (A-coded)	12-pole, 1x pin

System data

Feature	Technical data	Additional information
Pole length	5 mm	
Resolution	4.88 μm 0.0014°	at MRAC501-256 pole
Scaling factor	7, 8, 9, 10 Bit	absolute
	7, 8, 9, 10 Bit	incremental
System accuracy	$\pm 0.06^\circ$ $\pm 0.03 \text{ mm}$	at $T_{\text{U}} = 20^\circ\text{C}$
Repeat accuracy	$\pm 0.0014^\circ$ $\pm 0.005 \text{ mm}$	at $T_{\text{U}} = 20^\circ\text{C}$
Measuring range	360°	single-turn
Circumferential speed	$\leq 5 \text{ m/s}$	absolute

■ Circumferential speed, incremental

		Circumferential speed [m/s]									
Incremental scaling	7 Bit	25.00	15.63	7.81	3.13	1.95	0.98	0.49	0.24	0.12	
	8 Bit	19.53	7.81	3.91	1.56	0.98	0.49	0.24	0.12	0.06	
	9 Bit	9.77	3.91	1.95	0.78	0.49	0.24	0.12	0.06	0.03	0.03
	10 Bit	4.88	1.95	0.98	0.39	0.24	0.12	0.06	0.03	0.01	0.01
Pulse interval [μs]		0.2	0.5	1	2.5	4	8	16	32	66	
Counting frequency [kHz]		1250	500	250	100	62.5	31.25	15.63	7.81	3.79	

Ambient conditions

Feature	Technical data	Additional information
Ambient temperature	-30 ... 85 °C	
Storage temperature	-40 ... 85 °C	
Relative humidity	100 %	condensation admissible
EMC	EN 61000-6-2 EN 61000-6-4	interference resistance / immission emitted interference / emission
Protection category	IP67	EN 60529, mating connector mounted
Shock resistance	500 m/s^2 , 11 ms	EN 60068-2-27
Vibration resistance	100 m/s^2 , 5 ... 150 Hz	EN 60068-2-6

Pin assignment

■ Without LD

SSI	RS485	PIN
nc	nc	1
D+	DÜA	2
D-	DÜB	3
T-	nc	4
+UB	+UB	5
nc	nc	6
nc	nc	7
nc	nc	8
nc	nc	9
config	config	10
T+	nc	11
GND	GND	12

■ With LD

SSI	RS485	PIN
nc	nc	1
D+	DÜA	2
D-	DÜB	3
T-	nc	4
+UB	+UB	5
/A	/A	6
A	A	7
/B	/B	8
B	B	9
config	config	10
T+	nc	11
GND	GND	12

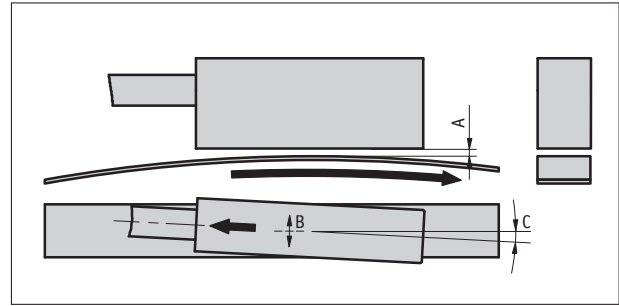
Hint for mounting

When mounting sensor and magnetic ring, please be careful to align both system components correctly.

A, Sensor/ring reading distance (active measurement area)	≤0.2 mm
B, Lateral offset	±1.5 mm
C, Alignment error	<±0.5°



Further assembly instructions for the MSAC501 magnetic sensor can be found in the MBAC501 magnetic band data sheet



Symbolic sensor representation

Order

Ordering information

One or more system components are required:

Magnetic ring MRAC501
Magnetic band MBAC501

www.siko-global.com
www.siko-global.com



When ordering the system components please take care that the same code size is used

Ordering table

Feature	Ordering data	Specification	Additional information
Code size	7	7 bits	
	8	8 Bit	
	9	9 Bit	
	10	10 bits	
	11	11 bits	
absolute scaling	7	7 Bit	
	8	8 Bit	
	9	9 Bit	
	10	10 Bit	
Interface	RS485	SIKONETZ3	
	SSI	SSI	
Output circuit	LD	LineDriver	
	0	without	
incremental scaling	7	7 Bit	only with LD
	8	8 Bit	only with LD
	9	9 Bit	only with LD
	10	10 Bit	only with LD
Pulse interval	...	0.2, 0.5, 1.0, 2.5, 4.0, 8.0, 16.0, 32.0, 66.0 in µs	only with LD

Order key

MSAC501 - - - - - - -

Scope of delivery: distance gage, Mounting instructions, MSAC501