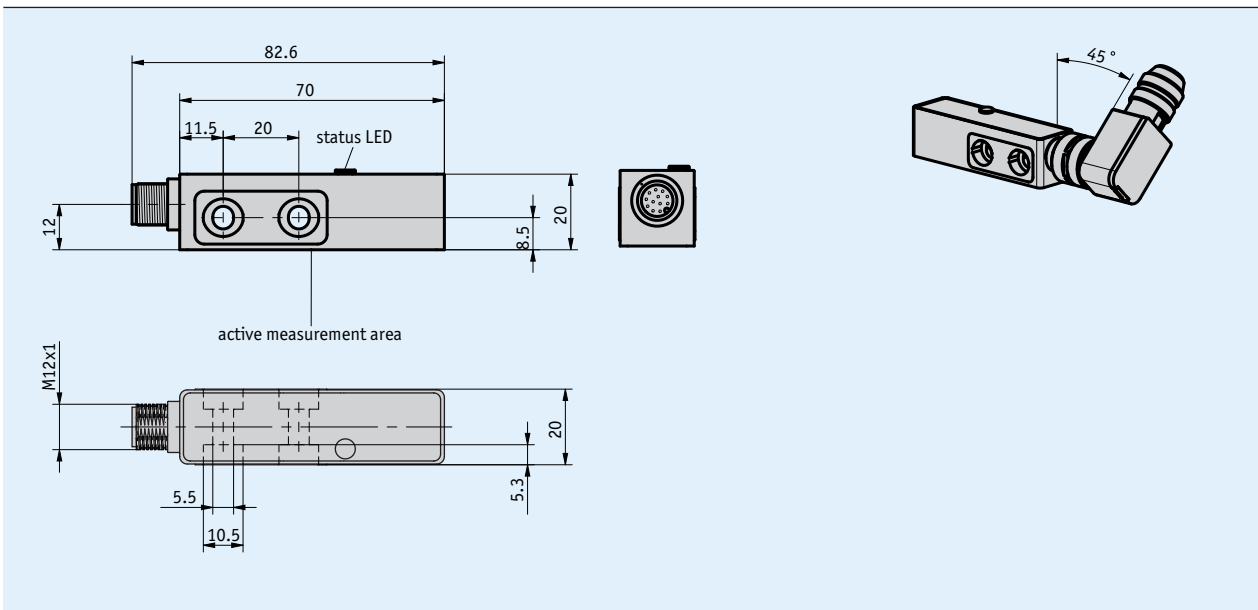


Profile

- 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	
	10 Bit	4.88	1.95	0.98	0.39	0.24	0.12	0.06	0.03	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

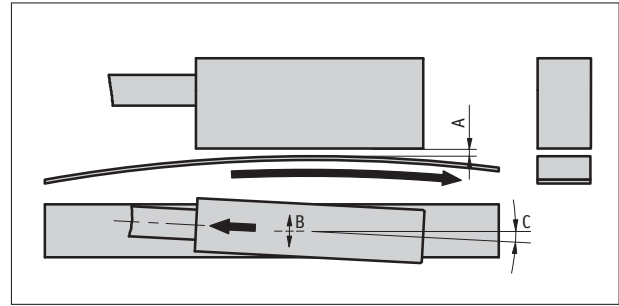
■ With LD

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°



Symbolic sensor representation

Order

Ordering information

One or more system components are required:

- Magnetic ring MRAC501
- Magnetic band MBAC501

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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