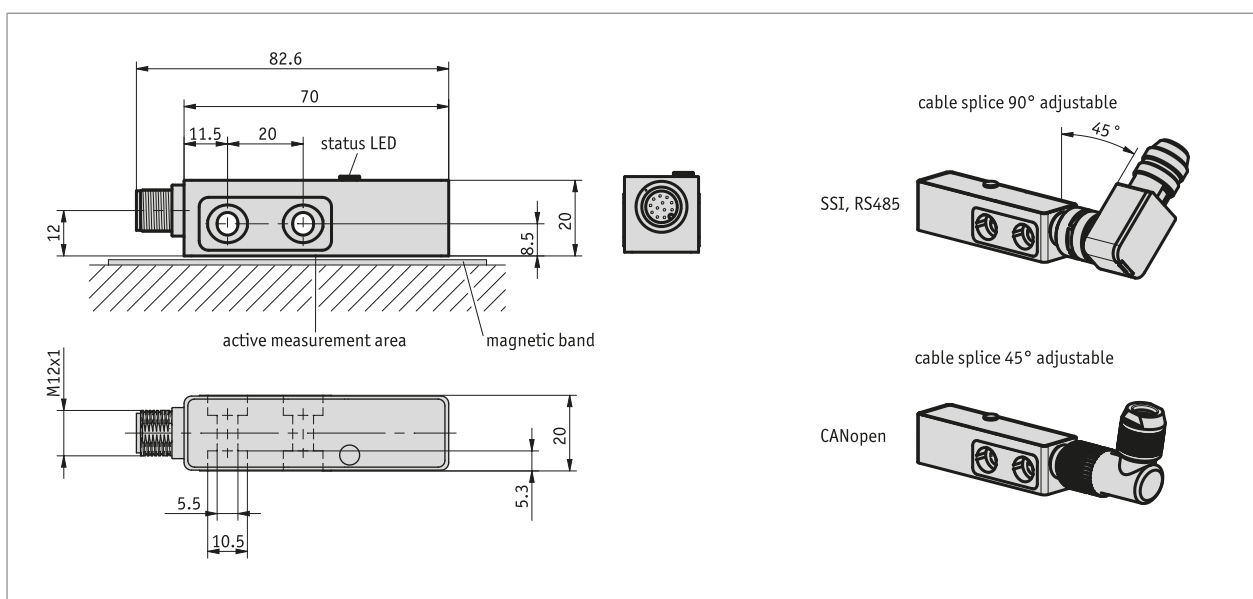


### Profile

- Max. resolution of 5  $\mu\text{m}$  absolute, 1  $\mu\text{m}$  incremental
- Repeat accuracy of 0.005 mm
- SSI, RS485, CANopen output circuits
- Additional incremental signals LD as an option (SSI, RS485)
- Reading distance  $\leq 1.3$  mm
- Max. measuring length 10240 mm
- Status LEDs for diagnosis
- Industry 4.0 ready



### Mechanical data

Feature	Technical data	Additional information
Housing	zinc die-cast	
Sensor/band reading distance	$\leq 1.3$ mm	

### Electrical data

Feature	Technical data	Additional information
Operating voltage	4.5 ... 30 V DC	reverse polarity protection
Power input	1.5 W	
SSI clock speed input	$\leq 750$ kHz	depending on cable length
Output circuit	without, LD (RS422)	
Interface	SSI, RS485	
	CANopen	spec. 2.0A, DS 301, DS 406, ISO 11898
Baud rate	0.05 ... 1 Mbit/s	CANopen
Cycle time	$< 25$ $\mu\text{s}$	SSI/RS485
	$< 40$ $\mu\text{s}$	CANopen
Type of connection	M12 plug connector (A-coded)	12-pole, 1x pin
	M12 plug connector (A-coded)	5 poles, 1x pin (CANopen)

### System data

Feature	Technical data	Additional information
Resolution	5, 10 $\mu\text{m}$	absolute
	10 $\mu\text{m}$	absolute, CANopen factory setting, reconfigurable to 5 $\mu\text{m}$
	1, 5, 10 $\mu\text{m}$	incremental
System accuracy	$\pm(0.02 + 0.03 \times L)$ mm, L in m at $T_U = 20^\circ\text{C}$	
Repeat accuracy	$\leq 5 \mu\text{m}$ , $\pm 1$ digit at $T_U = 20^\circ\text{C}$	
Measuring range	$\leq 10240$ mm	
Travel speed	$\leq 5$ m/s	absolute
	see table	incremental

#### Travel speed incremental

Resolution [mm]	Travel/circumferential speed $V_{\text{max}}$ [m/s]								
	0.001	0.005	0.010	0.020	0.032	0.050	0.100	0.200	0.320
4.00	1.60	0.80	0.32	0.20	0.10	0.05	0.03	0.01	
20.00	8.00	4.00	1.60	1.00	0.50	0.25	0.13	0.06	
25.00	16.00	8.00	3.20	2.00	1.00	0.50	0.25	0.13	
Pulse interval [ $\mu\text{s}$ ]	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

### Ambient conditions

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

### pin assignment

#### SSI, RS485 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

#### SSI, RS485 with LD

SSI	RS485	PIN
nc	nc	1
T+	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

#### CANopen

Signal	PIN
CAN_GND*	1
+UB	2
GND*	3
CAN_H	4
CAN_L	5

\* CAN\_GND internally connected to GND

### Industry 4.0

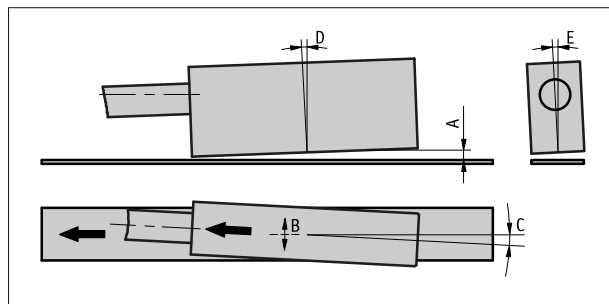
In most cases, data exchange with the magnetic encoders is limited to the exchange of process data. In addition to the process data, intelligent drives provide additional information that can be evaluated for condition monitoring up to predictive maintenance:

Process data	Smart Value	Smart Function
Actual position	--	Plausibility monitoring
Speed		

### Hint for mounting

When mounting sensor and magnetic tape, please be careful to align both system components correctly. The arrow marks on the tape and sensor must point in the same direction when mounting the components.

A, Sensor/tape reading distance	≤1.3 mm
B, Lateral offset	±3 mm
C, Alignment error	±1.5°
D, Longitudinal inclination	±1°
E, Lateral inclination	±4°



(Sensor representation symbolic)

### Order

#### ■ Ordering information

One or more system components are required:

Magnetic tape MBA501

[www.siko-global.com](http://www.siko-global.com)

#### ■ Ordering table

Feature	Ordering data	Spezifikation	Additional information
Interface	A RS485 SSI CAN	SIKONETZ3 SSI, RS422 CANopen	
absolute resolution	B 5 10	5 μm 10 μm	CANopen factory setting
Output circuit	C 0 LD	without LD LD, RS422 incremental	only with SSI, RS485
incremental resolution	D 1 5 10	1 μm 5 μm 10 μm	only with LD output circuit only with LD output circuit only with LD output circuit
Pulse interval	E ...	0.2, 0.5, 1.0, 2.5, 4.0, 8.0, 16.0, 32.0, 66.0 in μs	

#### ■ Order key

MSA501 -  -  -  -  -  - S

A
B
C
D
E

**Scope of delivery:**

MSA501, Fastening set, Installation Instructions

**Accessories you can find:**

Cable extension KV12S2	<a href="http://www.siko-global.com">www.siko-global.com</a>
Profile rail PSA	<a href="http://www.siko-global.com">www.siko-global.com</a>
Overview, Mating connector	<a href="http://www.siko-global.com">www.siko-global.com</a>
Mating connector, CANopen, 5-pole, angle socket	Order key 83006
Mating connector, CANopen, 5-pole, socket	Order key 84109
Mating connector, SSI, RS485, 12-pole, socket	Order key 85277
Mating connector, SSI, RS485, 12-pole, angular socket	Order key 85278