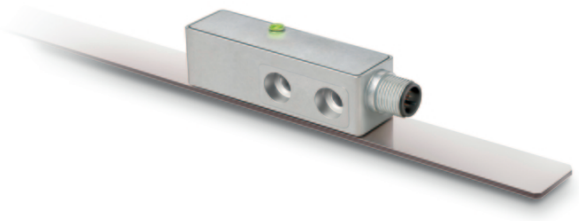
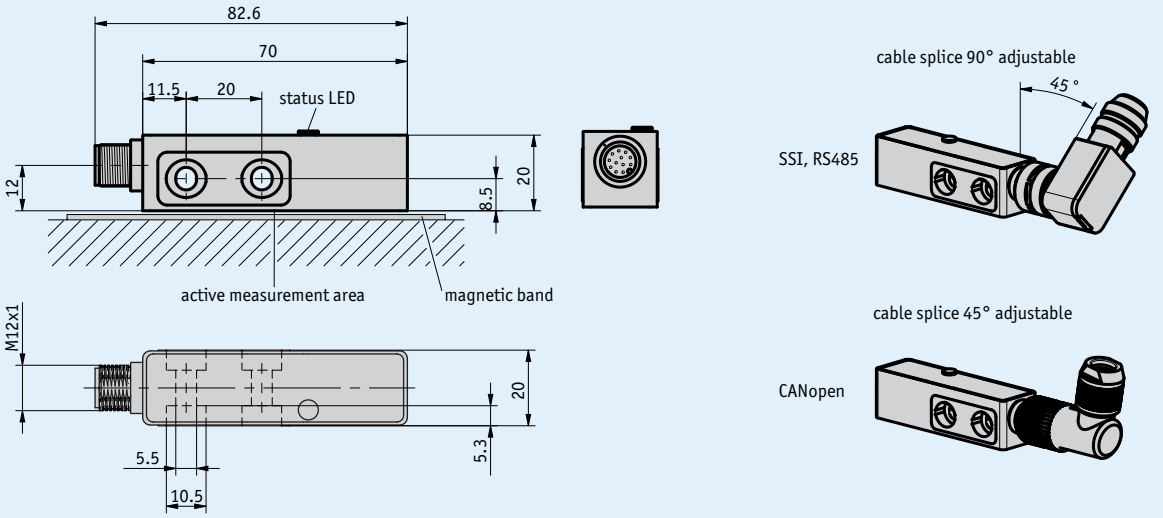
Profile

- Max. resolution of 5 µm absolute, 1 µm incremental
- Repeat accuracy of 0.005 mm
- SSI, RS485, CANopen output circuits
- Additional incremental signals LD as an option (SSI, RS485)
- Reading distance ≤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	≤1.3 mm	

Electrical data

Feature	Technical data	Additional information
Operating voltage	4.5 ... 30 V DC	reverse polarity protected
Power input	<1.5 W	
SSI clock speed input	≤750 kHz	depending in 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 µs	SSI/RS485
	<40 µs	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 µm	absolute
	10 µm	absolute, CANopen factory setting, reconfigurable to 5 µm
	1, 5, 10 µm	incremental
System accuracy	±(0.02 + 0.03 x L) mm, L in m	bei T_U = 20 °C
Repeat accuracy	≤5 µm; ±1 digit	at T_U = 20 °C
Measuring range	≤10240 mm	
Travel speed	≤5 m/s	absolute
	see table	incremental

Travel speed incremental

		Travel speed Vmax [m/s]								
Resolution [mm]	**0.001**	4.00	1.60	0.80	0.32	0.20	0.10	0.05	0.03	0.01
	0.005	20.00	8.00	4.00	1.60	1.00	0.50	0.25	0.13	0.06
	0.010	25.00	16.00	8.00	3.20	2.00	1.00	0.50	0.25	0.13
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

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	interference resistance / immission
	EN 61000-6-4	emitted interference / emission
Protection category	IP67	EN 60529, mating connector mounted
Shock resistance	500 m/s², 11 ms	EN 60068-2-27
Vibration resistance	100 m/s², 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
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

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

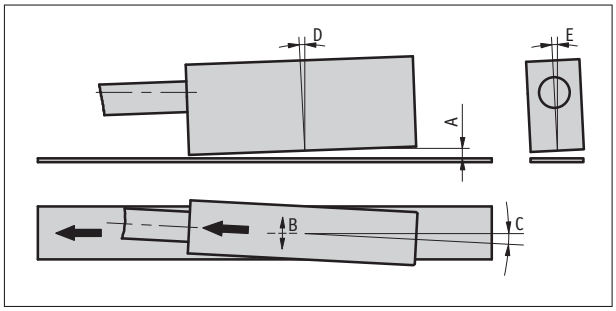
In most cases, data exchange with the magnetic encoders is limited to the exchange of process data. In addition to the process data, intelligent drives provide additional information that can be evaluated for condition monitoring up to predictive maintenance:

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

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 tilt	±1°
E, Lateral tilt	±4°



symbolic sensor representation

Order

Ordering information

One or more system components are required:

Magnetic band MBA501 www.siko-global.com

Ordering table

Feature	Ordering data		Specification	Additional information
Interface	RS485	A	SIKONETZ3	
	SSI		SSI, RS422	
	CAN		CANopen	
Absolute resolution	5	B	5 µm	
	10		10 µm	CANopen factory setting
Output circuit	0	C	without LD	
	LD		LD, RS422 incremental	only with SSI, RS485
Incremental resolution	1	D	1 µm	only with LD output circuit
	5		5 µm	only with LD output circuit
	10		10 µm	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, Mounting instructions, Fastening set*

Accessories:

Profile Rail PSA	*www.siko-global.com*
Cable extension KV12S2	*www.siko-global.com*
Mating Connector Overview	*www.siko-global.com*
Mating connector, SSI, RS485, 12-pole, socket	*Order key 85277*
Mating connector, SSI, RS485, 12-pole, angular socket	*Order key 85278*
Mating connector, CANopen, 5-pole, socket	*Order key 84109*
Mating connector, CANopen, 5-pole, angle socket	*Order key 83006*