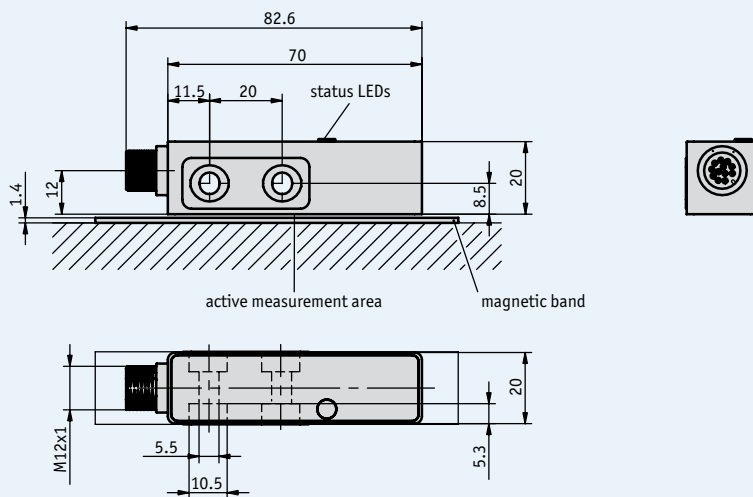


# Magnetic Sensor MSA501

## Absolute, SSI interface, resolution 1 $\mu\text{m}$

### Profile

- Max. resolution of 5  $\mu\text{m}$  absolute, 1  $\mu\text{m}$  incremental
- Repeat accuracy of 0.005 mm
- SSI, RS485 output circuits  
Additional incremental signals LD as an option
- Max. sensor/band reading distance 1.3 mm
- Max. measuring length 10.24 m
- status LEDs for diagnosis



### Mechanical data

Feature	Technical data	Additional information
Scale embodiment	MBA501	
Auflösung	absolute 0.005, 0.01 mm incremental 0.001, 0.005, 0.01 mm	
System accuracy	$\pm(0.03 \times L)$ mm, L in m	at $T_U = 20\text{ }^\circ\text{C}$
Repeat accuracy	max. 0.005 mm	at $T_U = 20\text{ }^\circ\text{C}$
Sensor/band reading distance	max. 1.3 mm	
Travel speed	max. 5 m/s incremental, see travel speed table	
Housing	zinc die casting	
Connector	12-pin, M12	
Operating temperature	-30 ... +85 $^\circ\text{C}$	
Storage temperature	-40 ... +85 $^\circ\text{C}$	
Humidity	100 % rh	condensation permitted
Protection category	IP67	only with mating plug
Max. measuring length	max. 10.24 m	

Travel speed

Resolution (mm)	Travel speed $V_{\text{max}}$ (m/s)										
	0.001	0.005	0.010	4.00	8.00	16.00	32.00	64.00	128.00	256.00	512.00
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		

Electrical data

Feature	Technical data	Additional information
Operating voltage	4.5 ... 30 V DC	
Power input	<1.5 W	
Type of connection	round connector on the housing	
Output circuit	SSI, RS485 (absolute) LD (RS422, incremental)	
EMV	EN-61000-6-2, EN61000-6-4	
SSI clock rate	<925 kHz	depending on cable length
Cycle time	<25 $\mu\text{s}$	

Pin assignment

without LD

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

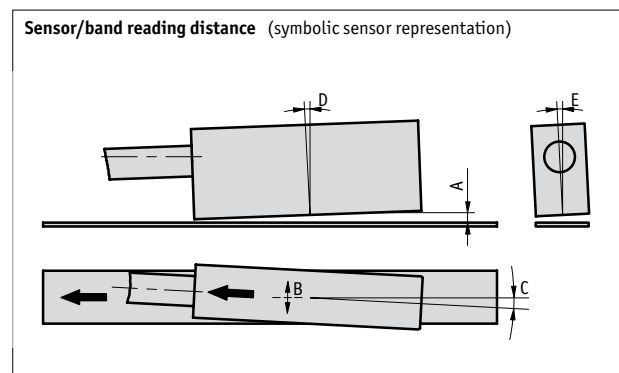
with LD

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

Mounting instruction

When installing the sensor and magnetic band, always ensure that both system components are correctly aligned. The arrows marked on the band and sensor must point in the same direction during installation

A, Sensor/band reading distance	max. 1.3 mm
B, Lateral offset	max. $\pm 3.0$ mm
C, Misalignment	$< \pm 1.5^\circ$
D, Longitudinal tilt	$< \pm 1.0^\circ$
E, Lateral tilt	$< \pm 4^\circ$



**Order**

■ **Order note**

This sensor is sold in Switzerland and Austria under the product name "AMSA501".

Feature	Order data	Specifications	Additional information
Interface	RS485	SIKONETZ3	
	SSI <b>A</b>	RS422	
Resolution absolute	5	0.005 mm	
	10 <b>B</b>	0.01 mm	
Output circuit	0	without LD	
	LD <b>C</b>	RS422 incremental	
Resolution incremental only with output circuit LD	1	0.001 mm	
	5 <b>D</b>	0.005 mm	
	10	0.01 mm	
Pulse interval in µs	... <b>E</b>	0.2, 0.5, 1, 2.5, 4, 8, 16, 32, 66	

■ **Order table**

MSA501 -  -  -  -  -  -

**Scope of delivery:** MSA501, User information, distance gage 0.5 mm

➔ **Accessories:**

Mating connectors Page 176  
Cable extension KV12S2 Page 180

**Additional information:**

Short Description, Technical Details Page 46 cont.  
Product Overview Page 4 cont.