

MAGNETIC SCALE



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Series MXS2

Key-Features:

- Measurement ranges up to 8165 mm
- BiSS & SSI interface
- Resolution up to 1 μm
- Unaffected by dust, debris or liquids, IP67
- Operating temperature range from -25 °C to +85 °C
- Error bit output
- Large mounting tolerances
- Additional incremental output for speed feedback

TECHNICAL DATA

Sensor MXS2

Measurement range	[mm]	up to 8165 (Tape length -55 mm)				
Resolution	[μm]	1	2	5	10	50
Sensor linearity max.	[μm]	± 2		± 5	± 10	± 50
Repeat linearity		± 1 increment				
Output circuits		absolute: SSI, BiSS-C incremental: NPN (AB)				
Position refresh (absolute)	[μs]	33				
Counting frequency (incremental)		see table below				
Power supply	[VDC]	+5 $\pm 5\%$				
Power consumption	[W]	max. 1				
Protection electrical		against short-circuit				
EMC		according to EN 61000-6-2 level 3				
Shock		250 g, 6 ms according to CEI EN 60068-2-27				
Vibrations		10 g, 5-2000 Hz according to CEI EN 60068-2-6				
Protection class		IP67				
Operating temperature range	[$^{\circ}\text{C}$]	-25...+85				
Storage temperature range	[$^{\circ}\text{C}$]	-40...+100				
Housing material		anticorrosive, UNI EN AW-6082				
Electrical connection		Hi-flex cable with open wires or cable with connector M12, 8 pins				
Gap between sensor/tape	[mm]	0.1... 0.6				
Travel speed (mechanical)	[m/s]	max. 10				

Resolution [μm]	Max. travel speed [m/s]*	Max. counting frequency [kHz]	Length of data word	Max. number of information
50	7	73	19 bits	18 bits (262143)
10	7	350	21 bits	20 bits (1048575)
5	7	580	22 bits	21 bits (2097151)
2	1.8	580	23 bits	22 bits (4194303)
1	1.4	580	24 bits	23 bits (8388607)

* min. edge distance = 0.25 μs (4 MHz). Double speed possible with reduced sensor linearity ($\pm 4 \mu\text{m}$)

Magnetic Tape WBA2

Length	[mm]	max. 8220		
Protection class		IP67		
Operating temperature range	[$^{\circ}\text{C}$]	-40...+120		
Storage temperature range	[$^{\circ}\text{C}$]	-40...+120		
Thermal expansion coefficient	[K^{-1}]	$16 * 10^{-6} / \text{K}$		
Pol pitch	[mm]	2		
Accuracy class	[$\mu\text{m}/\text{m}$]	± 40		

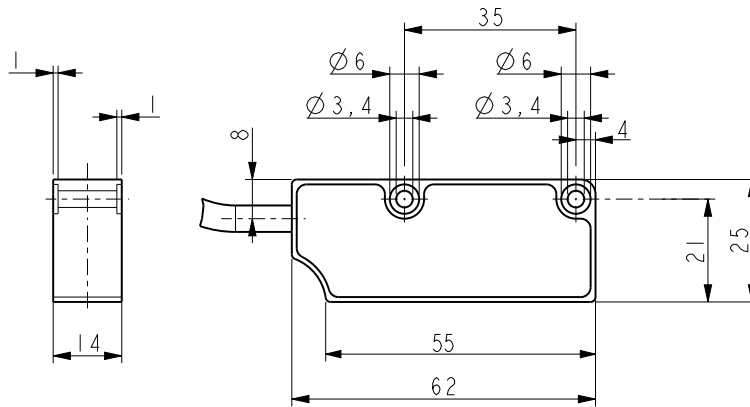
Magnetic Tape WBA2 Chemical Resistance Information

Acetone	••	Kerosene	•	Seawater	••
Acetylene	••	Ketone	•••	Steam heat	•
Antifreeze (Glacial acetic acid)	•	Mineral / Motor oil	•	Thinner	•••
Benzene	•••	Petrol	••	Turpentine	••
Heptane	•••				

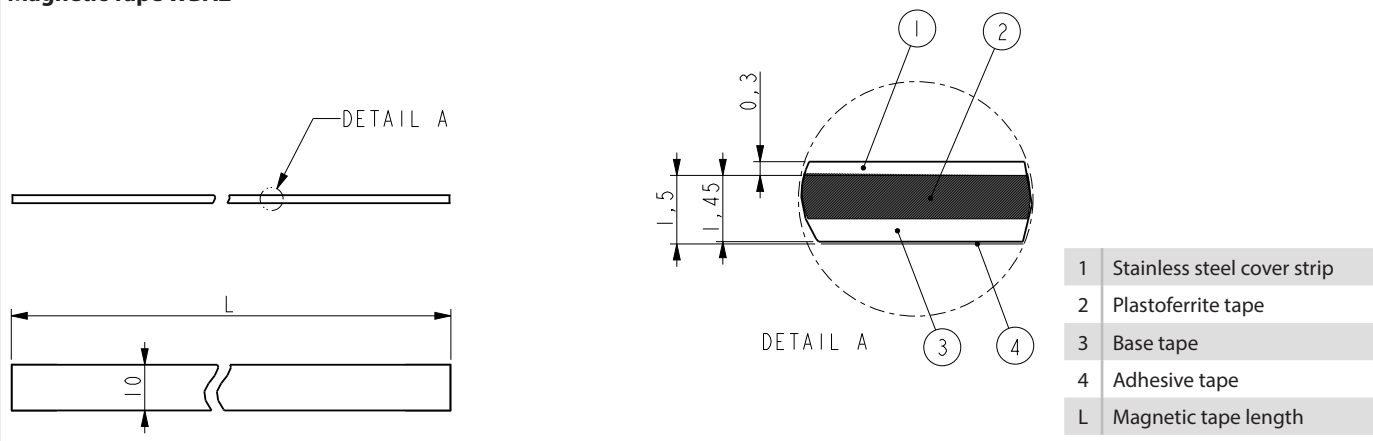
• No effect or low effect •• Low to Medium effect ••• Strong effect

TECHNICAL DRAWING

Sensor MXS2



Magnetic Tape WBA2



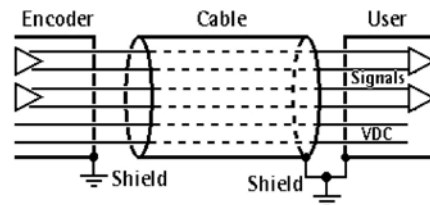
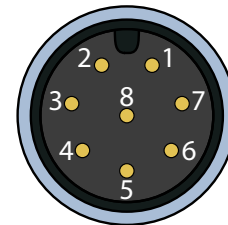
ELECTRICAL CONNECTION

Signals	cable output	connector output	K8PXM-S-M12 ¹ cable colour
0 VDC	BK	1	WH
+5 VDC ±5%	RD	2	BN
Clock IN + / MA +	YE	3	GN
Clock IN - / MA -	BU	4	YE
Data OUT + / SLO +	GN	5	GY
Data OUT - / SLO -	OG	6	PK
A ²	WH	7	BU
B ²	GY	8	RD
Shielding	Shield	Case	Shield

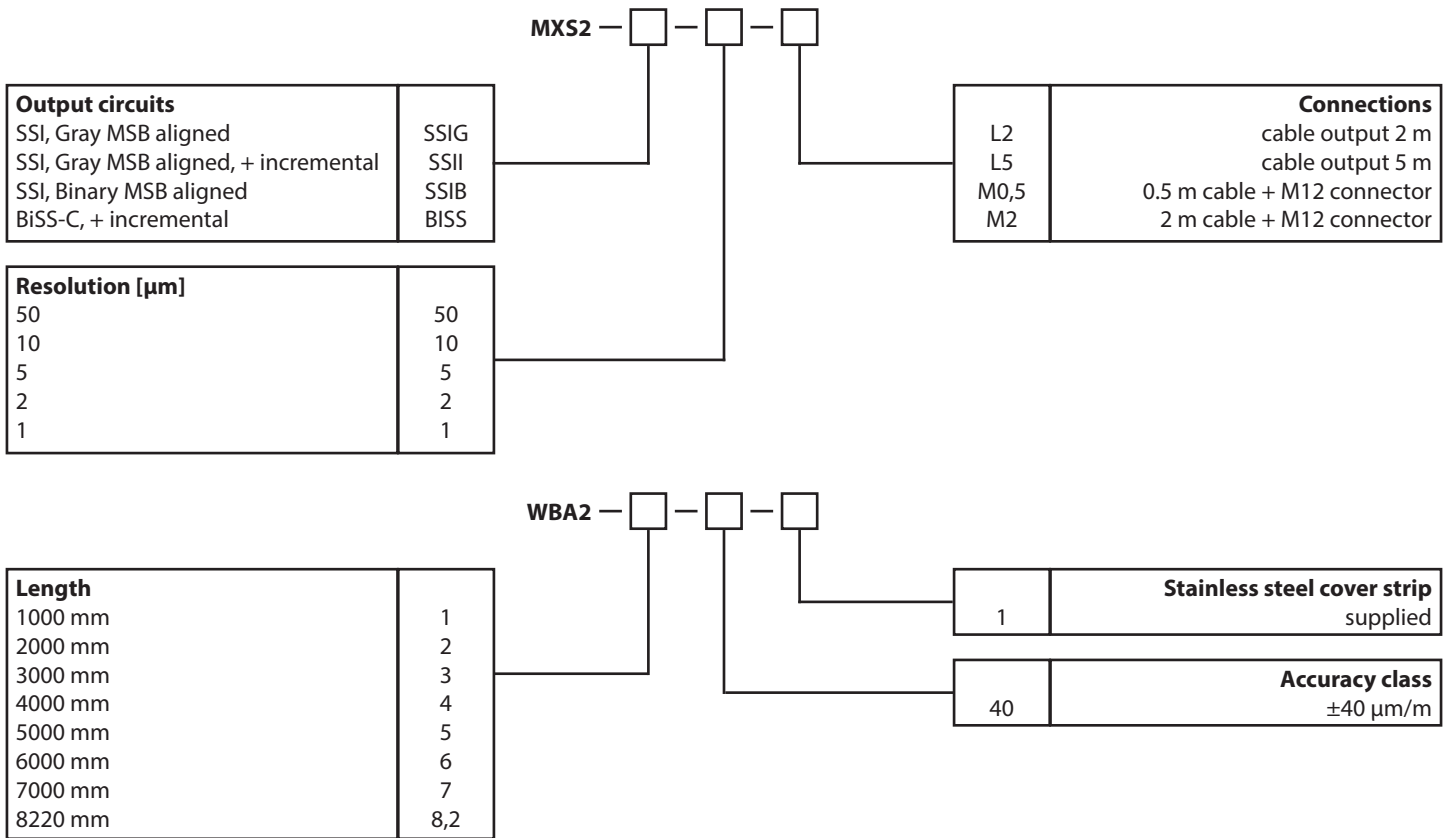
¹ See "accessories" page 4. X is cable length in m, e.g. cable length 2 m = K8P2M-S-M12.

² Incremental signals provided in specific versions only, see order code. NPN o.c., +5Vdc ±5%, max. I_{out} = 40 mA

Connector output, M12, male



ORDER CODE



ACCESSORIES

Cables and connectors

D8-G-M12-S	mating connector M12, 8 pins, straight
D8-W-M12-S	mating connector M12, 8 pins, angular
K8P2M-S-M12	2 m, connector straight, M12, 8 pins, IP67
K8P5M-S-M12	5 m, connector straight, M12, 8 pins, IP67
K8P10M-S-M12	10 m, connector straight, M12, 8 pins, IP67

Subject to change without prior notice.

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