

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]	50, 10, 5, 2 or 1
Sensor linearity	[μm]	max. ± 2
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		anticorodal, 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

Counting frequency (incremental)

Resolution [μm]	Max. travel speed [m/s]*	Max. counting frequency [kHz]
50	7	73
10	7	350
5	7	580
2	1.8	580
1	1.4	580

* 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}]	$16 \cdot 10^{-6} / \text{K}$
Pol pitch	[mm]	2 mm
Accuracy class	[$\mu\text{m}/\text{m}$]	± 40

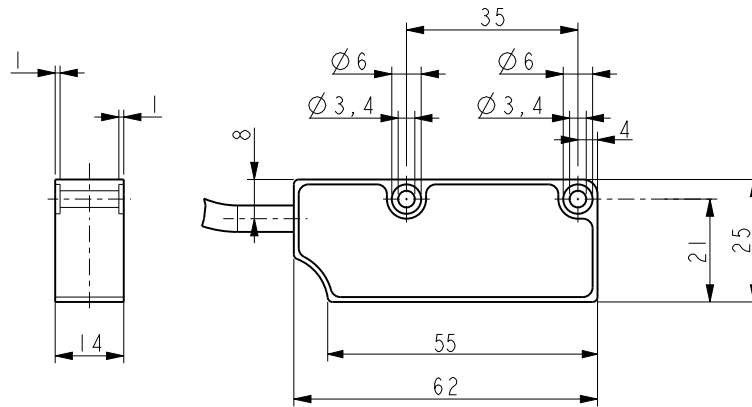
Magnetic Tape WBA2 Chemical Resistance Information

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

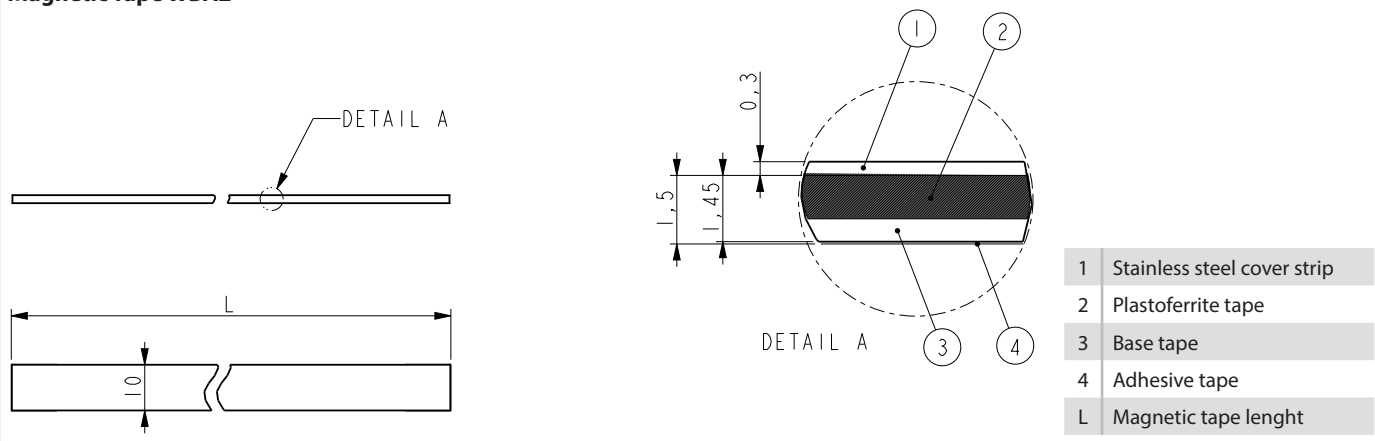
• No effect or low effect •• Low to Medium effect ••• Strong effect

TECHNICAL DRAWING

Sensor MXS2



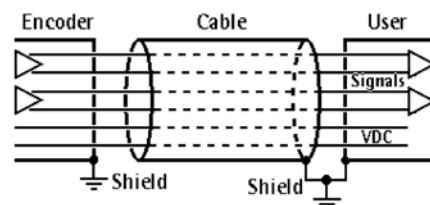
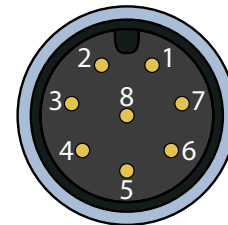
Magnetic Tape WBA2



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

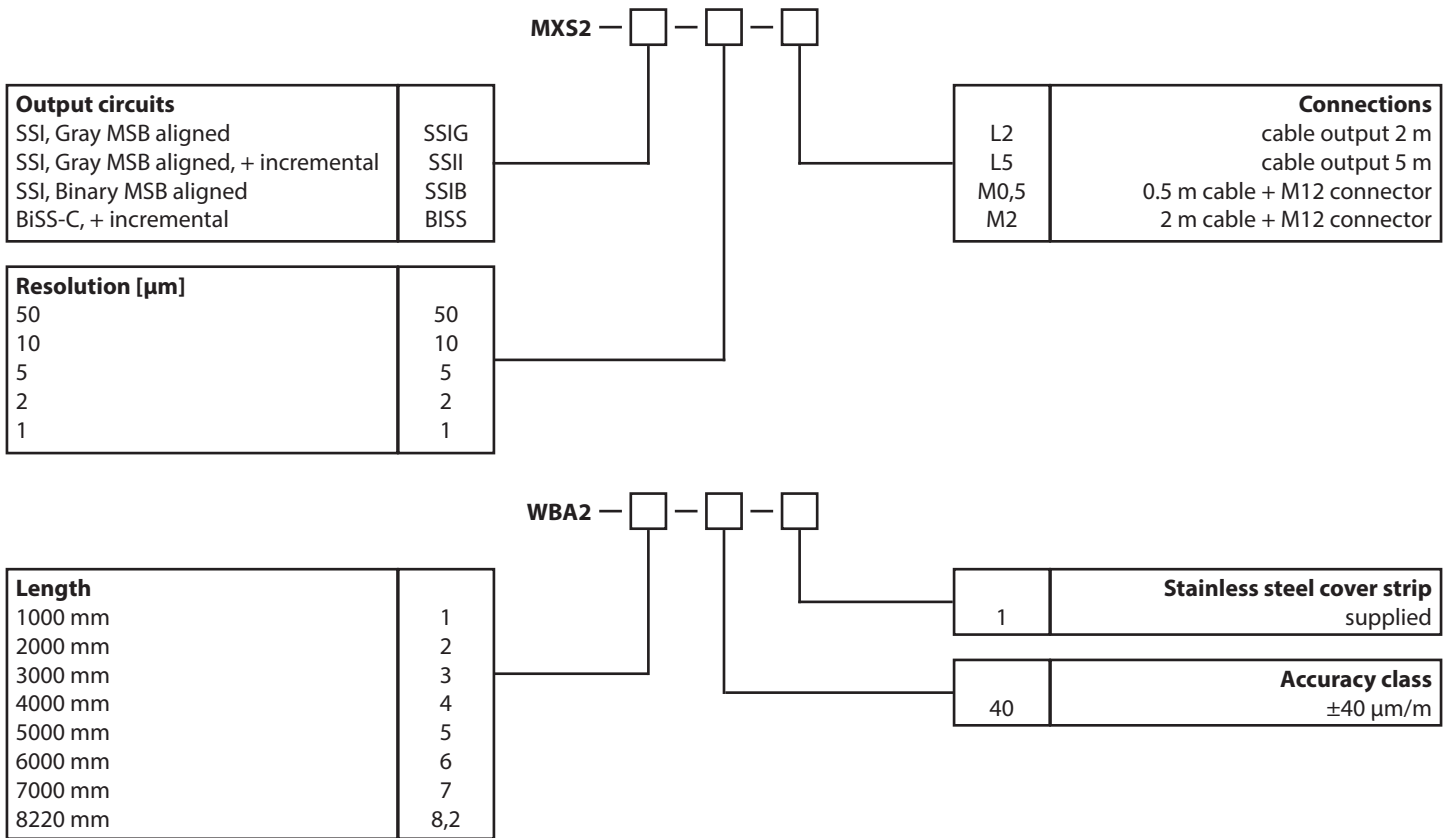
Connector output, M12, male



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

ORDER CODE



ACCESSORIES

Cables and connetors

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.

WayCon Positionsmesstechnik GmbH
email: info@waycon.de
internet: www.waycon.biz

WayCon

Positionsmesstechnik

Head Office
Mehlbeerenstr. 4
82024 Taufkirchen
Tel. +49 (0)89 67 97 13-0
Fax +49 (0)89 67 97 13-250

Office Köln
Auf der Pehle 1
50321 Brühl
Tel. +49 (0)2232 56 79 44
Fax +49 (0)2232 56 79 45