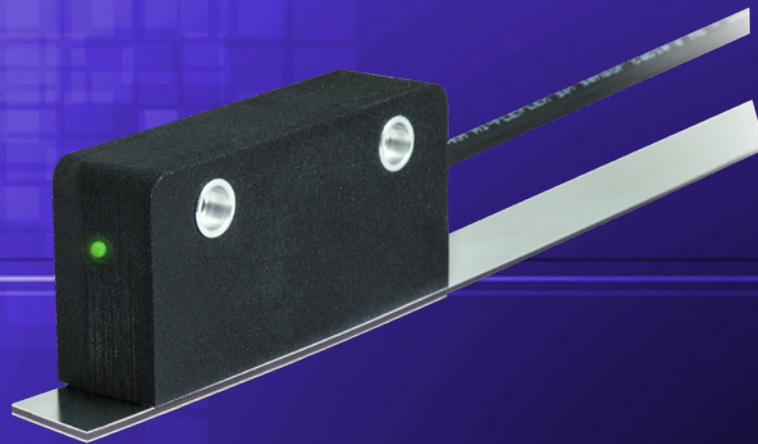


# MAGNETIC SCALE



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## Series MXAX and MXAZ

### Key-Features:

- Measurement ranges up to 1250 mm
- Cost effective non-contacting absolute encoder
- Analog output: 4...20 mA, 0...10 V
- Teachable resolution
- IP68
- Self-diagnostics on tape distance & integrity
- Operating temperature range from -25°C to +85°C

## TECHNICAL DATA

	Sensor MXAX	Sensor MXAZ
Measurement range	max. 600 mm (Tape length - 80 mm)	max. 1250 mm (Tape length - 80 mm)
Resolution	teachable	
Sensor linearity	max. $\pm 2 \mu\text{m}$	
Repeat linearity	$\pm 1$ increment	
Output	4...20 mA, 0...10 V	
Position refresh	100 $\mu\text{s}$	
Power supply	13...30 VDC	
Power consumption	max. 1 W	
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	IP68	IP68 (IP69K on request)
Operating temperature range	-25...+85 °C	
Storage temperature range	-40...+100 °C	
Housing material	Macromelt OM 646-EN	
Electrical connection	Hi-flex cable with open wires or cable with connector M12 8 pins	
Gap between sensor/tape	0.1...2 mm	
Travel speed (mechanical)	max. 5 m/s	
Function	Teach-in of output range	

	Magnetic Tape WBAX	Magnetic Tape WBAZ
Length	max. 680 mm	max. 1330 mm
Protection class	IP67	
Operating temperature range	-40...+120°C	
Storage temperature range	-40...+120°C	
Thermal expansion coefficient	$16 * 10^{-6} / \text{K}$	
Accuracy class	$\pm 35 \mu\text{m/m}$	

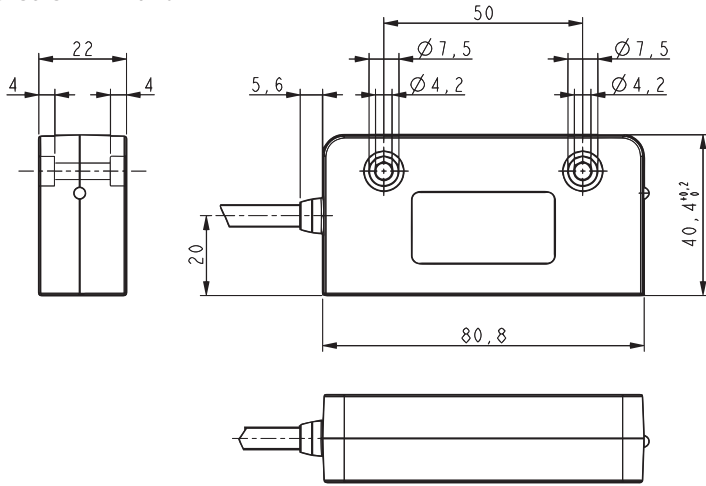
### Magnetic Tapes WBAX and WBAZ Chemical Resistance Information

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

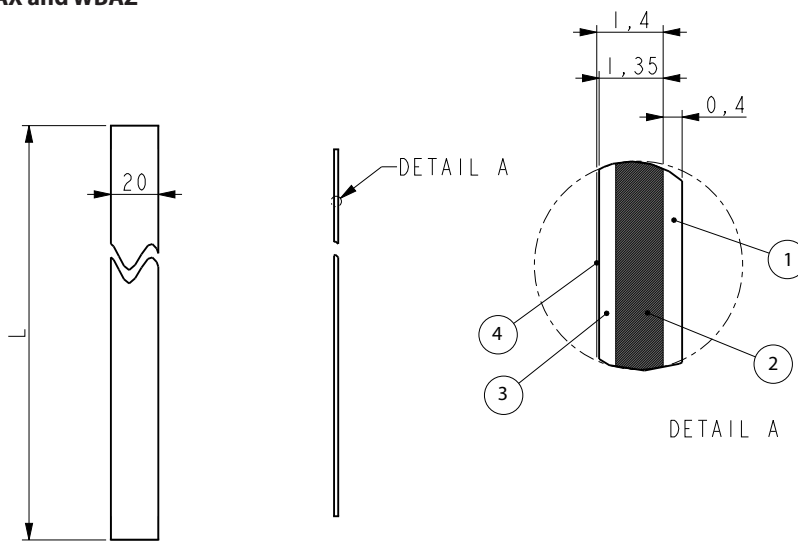
### Sensors MXAX and MXAZ



#### Diagnostic LED

ON	The sensor is running properly, there are no active errors
Blinking at high frequency (100 ms ON / 100 ms OFF)	Machine data parameters error
Blinking slowly (500 ms ON / 500 ms OFF)	Flash memory error
Blinking very slowly (1 s ON / 1 s OFF)	Error of the sensors while reading the magnetic tape
Single flash (200 ms ON / 1 s OFF)	The sensor is installed too far from the magnetic tape, the installation does not comply with the tolerance values between the sensor and the tape
Double flash (200 ms ON twice / 1 s OFF)	Several errors are active in the same time

### Magnetic Tape WBAX and WBAZ

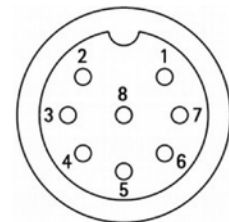


- 1 Stainless steel cover strip
- 2 Plastoferrite tape
- 3 Base tape
- 4 Adhesive tape
- L Magnetic tape length

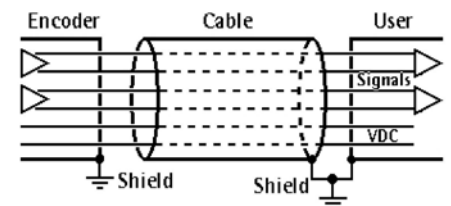
## ELECTRICAL CONNECTION

Signals 0...20 mA	Signals 0...10 V	cable output	connector output	K8PXM-S-M12 <sup>1</sup> cable colour
0 VDC Power Supply		Black	1	White
13...30 VDC		Red	2	Brown
0 VDC analog		Yellow	3	Green
START		Blue	4	Yellow
+I out	+V out	Green	5	Grey
STOP		Orange	6	Pink
not connected		White	7	Blue
FAULT	not connected	Grey	8	Red
Shielding		Shield	Case	Shield

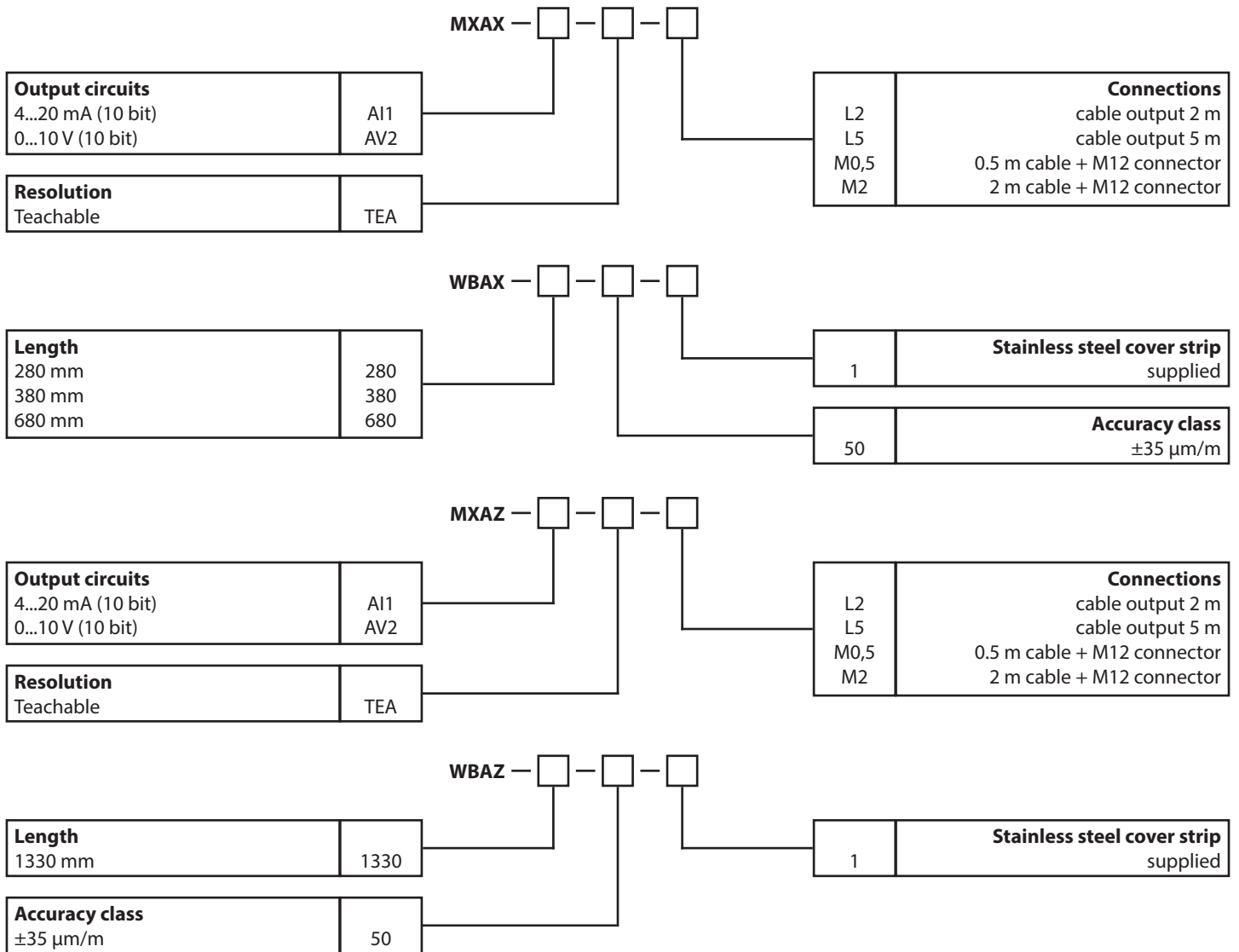
#### connector output, M12, male



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



## ORDER CODE



## ACCESSORIES

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

Subject to change without prior notice.

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