

# MAGNETIC SCALES

Links to further documents for this series:

[Installation guide sensor MXI51](#)

[Installation guide magnetic tape](#)



## MXI51 SERIES

### Key-Features:

- Measurement ranges up to 100 m
- Linearity up to  $\pm 10 \mu\text{m}$
- Resolution up to  $0.5 \mu\text{m}$
- Output: HTL/TTL
- Unaffected by dust, debris or liquids
- Protection class IP67
- Operating temperature range from  $-25 \text{ }^\circ\text{C}$  to  $+85 \text{ }^\circ\text{C}$

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## TECHNICAL DATA SENSOR MXI51

Measurement range	[m]	up to 99.99 (magnetic tape length -10 mm)					
Linearity max.		±10 µm			±25 µm	±50 µm	
Repeatability		±1 increment					
Resolution	[µm]	0.5	1	5	10	25	50
Counting frequency	[kHz]	3333					
Output type		Line Driver, Push-Pull					
Output signal		AB0, /AB0					
Edge distance	[µs]	0.3					
Supply	[VDC]	+5 ±5 % (Line Driver) or 10...30 (Push-Pull)					
Current consumption max.	[mA]	70					
Connection		Hi-flex cable with open wires or cable with connector M12, 8 pins					
Protection class		IP67					
Operating temperature	[°C]	-25...+85					
Storage temperature	[°C]	-40...+100					
Storage temperature		250 g, 6 ms according to CEI EN 60068-2-27					
Shock resistance		10 g, 5...2000 Hz according to CEI EN 60068-2-6					
Vibration resistance		yes (except 5 VDC version)					
Short-circuit protection		yes					
EMC		according to EN 61000-6-2 level 3					
Gap between sensor and tape	[mm]	0.1...2					
Travel speed	[m/s]	1.67	3.33	16	25		
Housing		die cast aluminium, UNI EN AC-46100					

## TECHNICAL DATA MAGNETIC TAPE WB50

Length	[m]	max. 100	
Accuracy class	[µm/m]	±85 µm/m or ±35 µm/m (up to 30 m)	
Polar pitch	[mm]	5	
Protection class		IP67	
Operating temperature	[°C]	-25...+85	
Storage temperature	[°C]	-40...+100	
Thermal expansion coefficient	[1/K]	0.000016	

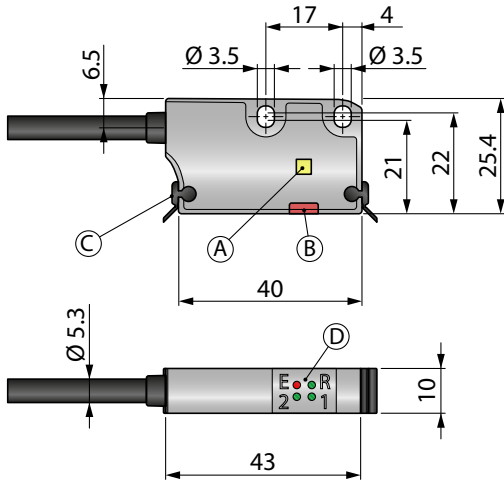
## CHEMICAL RESISTANCE MAGNETIC TAPE WB50

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

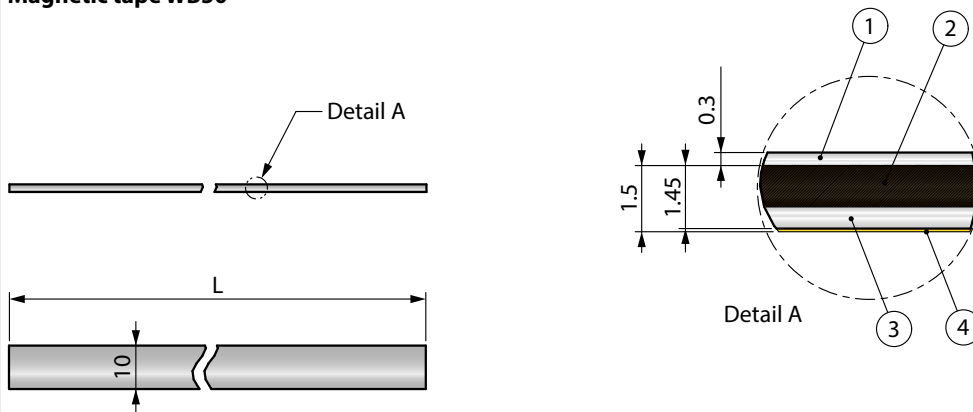
## TECHNICAL DRAWING

### Sensor MXI51



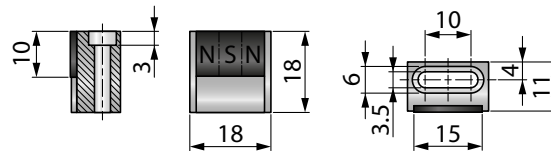
<b>A</b>	Reference sensor for versions R
<b>B</b>	Incremental sensor
<b>C</b>	Dust wipers (not included in delivery)
	Diagnostic LEDS
<b>D</b>	E: Gap/Speed error (red) R: Reference detection (green) 1: Power On (green) 2: No function

### Magnetic tape WB50



<b>1</b>	Stainless steel protective strip
<b>2</b>	Plastroferrite tape
<b>3</b>	Base tape
<b>4</b>	Adhesive tape
<b>L</b>	Magnetic tape length

### Reference magnet WKM-1309-5



## ELECTRICAL CONNECTION

Function	Cable output	Connector output	Connection cable K8P...
GND <sub>Supply</sub>	BK	Pin 1	WH
+V	RD	Pin 2	BN
A	YE	Pin 3	GN
/A	BU	Pin 4	YE
B	GN	Pin 5	GY
/B	OG	Pin 6	PK
0 <sup>1)</sup>	WH	Pin 7	BU
/0 <sup>1)</sup>	GY	Pin 8	RD
Shield	Shield	Housing	Shield

<sup>1)</sup> only available with reference options I (index) and R (reference)

### Connector, M12 (male)

