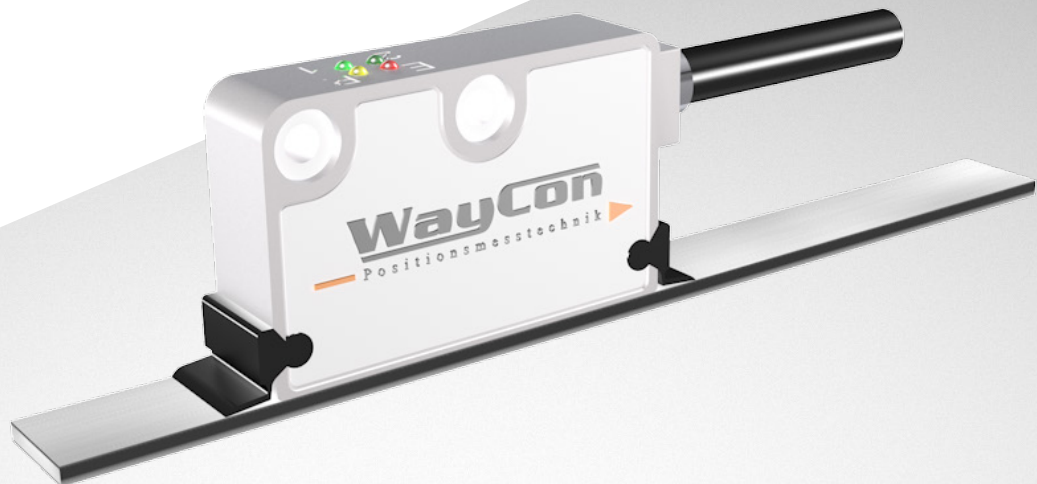


MAGNETIC SCALES

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 $+85 \text{ }^\circ\text{C}$

Content

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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	

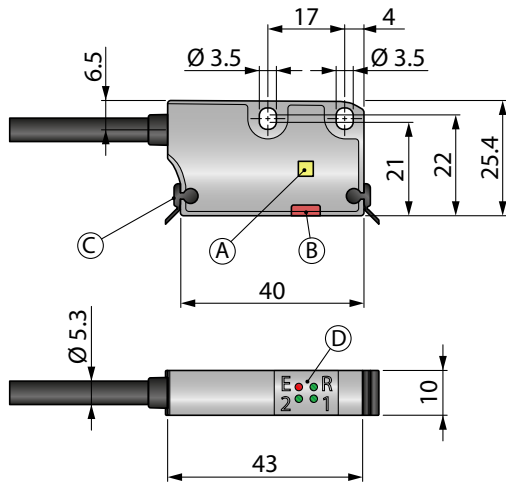
CHEMICAL RESISTANCE MAGNETIC TAPE WB50

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

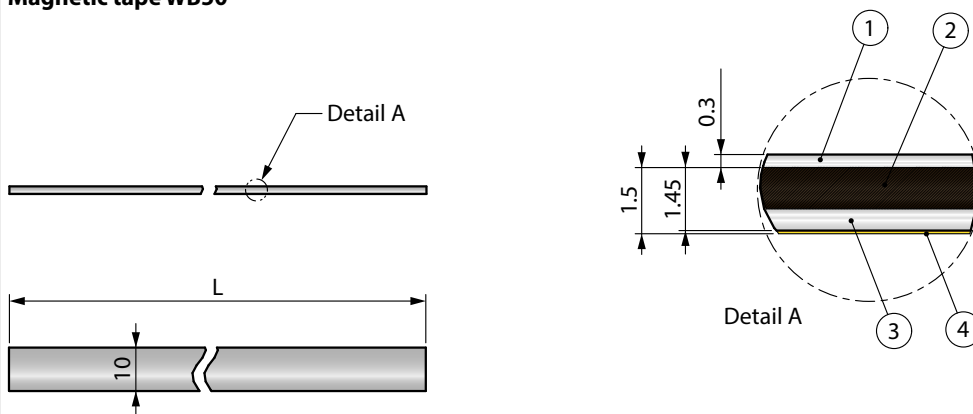
TECHNICAL DRAWING

Sensor MXI51



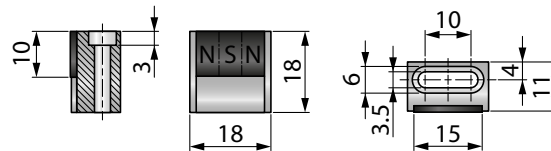
A	Reference sensor for versions R
B	Incremental sensor
C	Dust wipers (not included in delivery)
	Diagnostic LEDS
D	E: Gap/Speed error (red) R: Reference detection (green) 1: Power On (green) 2: No function

Magnetic tape WB50



1	Stainless steel protective strip
2	Plastroferrite tape
3	Base tape
4	Adhesive tape
L	Magnetic tape length

Reference magnet WKM-1309-5

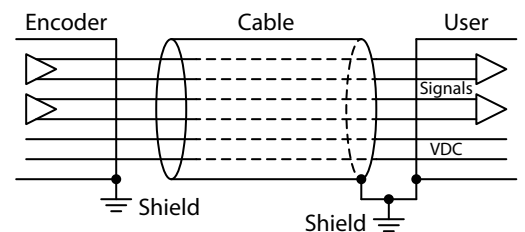
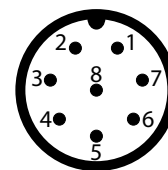


ELECTRICAL CONNECTION

Function	Cable output	Connector output	Connection cable K8P...
GND _{Supply}	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 ¹⁾	WH	Pin 7	BU
/0 ¹⁾	GY	Pin 8	RD
Shield	Shield	Housing	Shield

¹⁾ only available with reference options I (index) and R (reference)

Connector, M12 (male)



ORDER CODE SENSOR MXI51

MXI51 - [] - [] - [] - [] - H

Output signal	
Push-Pull (AB, /AB) (HTL)	YC-2
Line Driver (AB, /AB) (TTL)	L-1

Resolution	
0.5 µm	05
1 µm	1
5 µm	5
10 µm	10
25 µm	25
50 µm	50

Connection	
L2	Cable output 2 m
L5	Cable output 5 m
L10	Cable output 5 m
M0,5	Cable 0.5 m + M12 connector
M2	Cable 2 m + M12 connector

Reference	
N	Without
I	Every 5 mm
R	1 reference point ¹⁾

¹⁾ Accessory WKM-1309-5 necessary

ORDER CODE MAGNETIC TAPE WB50

WB50 - [] - [] - []

Length	
Up to 100 m	X ¹⁾

¹⁾ length in meters
measurement range = length - 10 mm

1	Stainless steel protective strip Supplied
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Accuracy class	
100	±85 µm/m
50	±35 µm/m (up to 30 m)

ACCESSORIES

Cable with connector (female) M12, 8 poles, shielded, IP67

K8P2M-S-M12	2 m, straight connector
K8P5M-S-M12	5 m, straight connector
K8P10M-S-M12	10 m, straight connector

Additional accessories

WKM-1309-2 ¹⁾	Reference magnet for options R and T
KIT WIPERS ¹⁾	Dust wipers (10 pcs)

¹⁾ not included in the scope of delivery of the sensor

Digital displays for sensors with HTL output, 2 channel

WAY-DX-S	touch screen, supply: 18...30 VDC
WAY-DX-AC	touch screen, supply: 115...230 VAC

For more information and options please refer to the [WAY-DX data sheet](#).

Mating connector (female) M12, 8 poles, for self assembly

D8-G-M12-S	straight connector
D8-W-M12-S	angular connector

Digital displays for sensors with HTL or TTL output, 2 channel

WAY-DXM-S	touch screen, supply: 18...30 VDC
WAY-DXM-AC	touch screen, supply: 115...230 VAC

For more information and options please refer to the [WAY-DXM data sheet](#).

Subject to change without prior notice.

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