

Code <b>ST03</b>	Project <b>A43</b>	Release <b>A</b>	Title <b>TECHNICAL DATASHEET</b>
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## MAGNETIC SENSOR MTR M

### GENERAL FEATURES

- Miniaturized MAGNETIC SENSOR MTR.
- Remote INTERPOLATION UNIT.
- MAGNETIC BAND MP200 consisting of a magnetic strip, which is polarized at regular distances of 2+2 mm and supported by a stainless steel tape. Extremely easy to mount on the operating machine.



### MECHANICAL AND ELECTRICAL FEATURES

<b>MECHANICAL</b> <ul style="list-style-type: none"> <li>• Die-cast transducer.</li> <li>• Double fixing system transducer with M4 screw thread or with M3 through screws.</li> <li>• Wide mounting tolerances.</li> </ul>			Code MTR M																																		
			<b>Reference signal</b> constant pitch every 2 mm*** (C)																																		
<b>ELECTRICAL</b> <ul style="list-style-type: none"> <li>• Very flexible power cable.</li> <li>• High stability of the signals.</li> <li>• For applications where max. speed exceeds 1m/s, the use of a "special cable" is requested.</li> </ul>			<b>Pole pitch</b> 2+2 mm																																		
			<b>Resolution</b> 1000 - 500 - 100 - 50 - 25 - 10 - 5 - 1 μm																																		
<b>CABLE (standard length 2 m)</b>			<b>Accuracy**</b> ± 15 μm																																		
			<b>Repeatability</b> ± 1 increment																																		
<table border="1"> <thead> <tr> <th>Minimum bending radius 60 mm</th> <th colspan="2">8 CORES Ø 5.3 mm</th> </tr> </thead> <tbody> <tr> <td><b>CONNECTION</b></td> <td><b>LINE DRIVER</b></td> <td><b>PUSH-PULL</b></td> </tr> <tr> <td>GREEN</td> <td>A</td> <td>A</td> </tr> <tr> <td>ORANGE</td> <td><math>\bar{A}</math></td> <td></td> </tr> <tr> <td>WHITE</td> <td>B</td> <td>B</td> </tr> <tr> <td>SKY BLUE</td> <td><math>\bar{B}</math></td> <td></td> </tr> <tr> <td>BROWN</td> <td>Z</td> <td>Z</td> </tr> <tr> <td>YELLOW</td> <td><math>\bar{Z}</math></td> <td></td> </tr> <tr> <td>RED</td> <td>V +</td> <td>V +</td> </tr> <tr> <td>BLUE</td> <td>V -</td> <td>V -</td> </tr> <tr> <td>SHIELD</td> <td></td> <td></td> </tr> </tbody> </table>			Minimum bending radius 60 mm	8 CORES Ø 5.3 mm		<b>CONNECTION</b>	<b>LINE DRIVER</b>	<b>PUSH-PULL</b>	GREEN	A	A	ORANGE	$\bar{A}$		WHITE	B	B	SKY BLUE	$\bar{B}$		BROWN	Z	Z	YELLOW	$\bar{Z}$		RED	V +	V +	BLUE	V -	V -	SHIELD			<b>Cable</b> 8 cores	
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<b>Output signals</b> LINE DRIVER / PUSH-PULL			<b>Max. measuring frequency</b> 300 kHz																																		
			<b>Sensor - magnetic band gap</b> see drawings																																		
<b>Power supply</b> 5 ÷ 28 Vdc ± 5%			<b>Current consump. without load</b> 60 mA <sub>MAX</sub>																																		
			<b>Current consumption with load</b> <ul style="list-style-type: none"> <li>140 mA<sub>MAX</sub> (with 5 V and Zo = 120 Ω)</li> <li>115 mA<sub>MAX</sub> (with 12 V and Zo = 1.2 kΩ)</li> <li>90 mA<sub>MAX</sub> (with 28 V and Zo = 1.2 kΩ)</li> </ul>																																		
<b>Phase displacement</b> 90° ± 5° electrical			<b>Max. speed</b>																																		
			<b>Vibration resistance</b> 1.2 m/s (MTR M1) / 12 m/s (MTR M10)																																		
<b>Shock resistance</b> 300 m/s <sup>2</sup> [55 ÷ 2000 Hz]			<b>Phase displacement</b> 1000 m/s <sup>2</sup> (11 ms)																																		
			<b>Protection class</b> IP 67 DIN 40050/IEC 529																																		
<b>Operating temperature</b> 0° ÷ 50°C			<b>Storage temperature</b> -20° ÷ 80°C																																		
			<b>Relative humidity</b> 100% (not condensed)																																		
<b>Weight (sensor + interpolator)</b> 50 g			<b>Electrical protections</b> inversion of power supply polarity and short-circuits on output port																																		
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\* Cable extension with power supply conductor section of 0.5 mm<sup>2</sup>.

\*\* In order to obtain this accuracy value, it is necessary to respect the alignment tolerance values prescribed by Manufacturer. Better accuracy results can be obtained by reducing the gap between the sensor and the magnetic band.

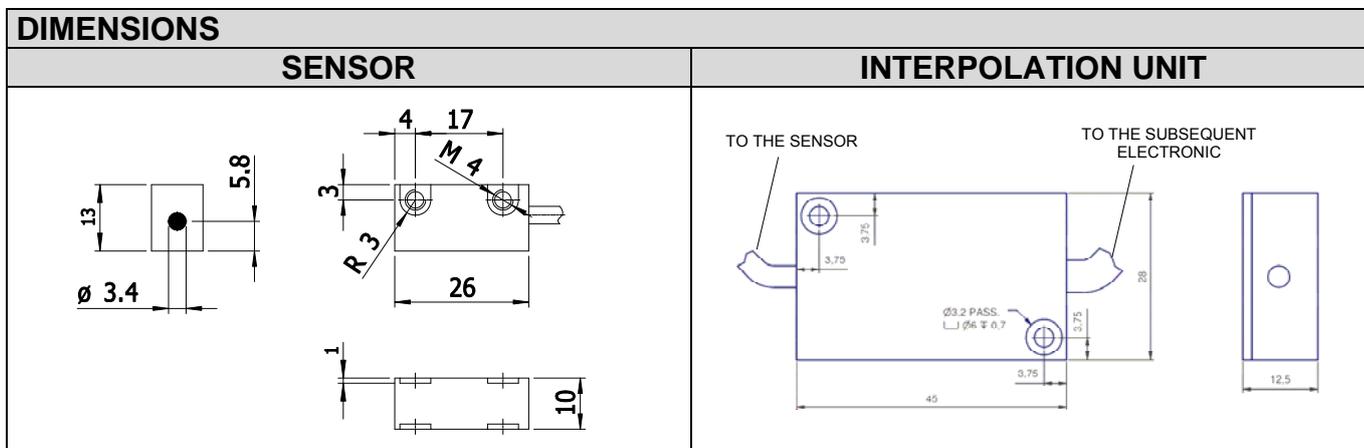
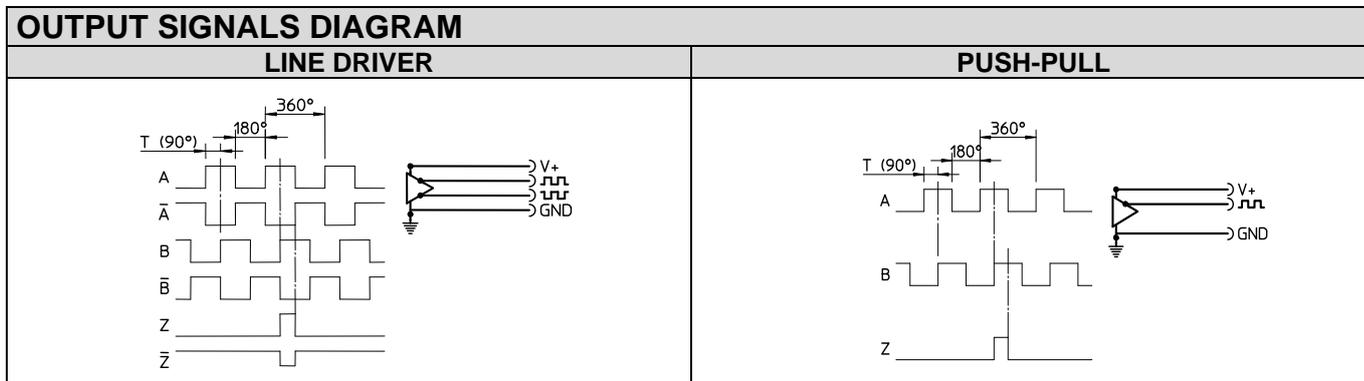
\*\*\* Except for model 1K (resolution 1000 μm), having constant pitch every 4mm.

### ORDERING CODE

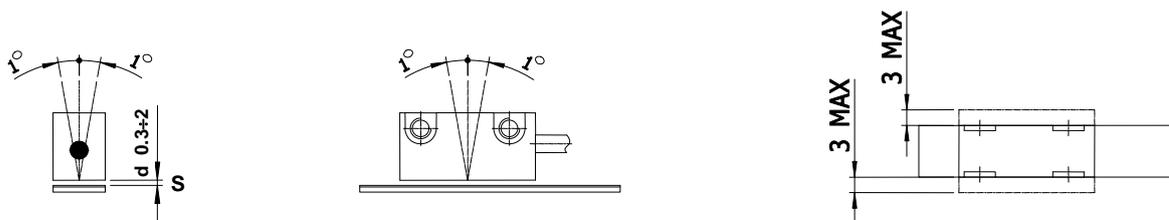
MODEL	PITCH	RESOLUTION	ZERO MARKER	POWER SUPPLY	OUTPUT	CABLE	CONNECTION
<b>MTR</b>	<b>M</b>	<b>10</b>	<b>C</b>	<b>528V</b>	<b>L</b>	<b>M02/N</b>	<b>SC</b>
MTR	M = 2+2mm	1 = 1μm 5 = 5μm 10 = 10μm 1K = 1000μm	C = constant pitch	528V = 5-28V	L = LINE DRIVER	M01/N = 1m M02/N = 2m M10/N = 10m	SC = without conn. C3 = C3 C4 = C4

Example  **MAGNETIC SENSOR MTR M10C 528VL M02/N SC**

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### ALIGNMENT TOLERANCES SENSOR-STRIP



S(mm)	MP200	MP200+CV103	MP200+SP202
d(mm)	0.3 + 2	1.7 <sub>MAX</sub>	1.2 <sub>MAX</sub>

d → distance between sensor and top side of S

INSTALLATION AND HANDLING		
<p><b>RECOMMENDED MAGNETIC BAND FIXING</b></p> <ol style="list-style-type: none"> <li>Remove grease from the surfaces by using alcohol and give a finishing touch by using a dry cloth.</li> <li>Fix the magnetic band.</li> <li>Fix the cover strip.</li> </ol> <p>After 48 hours the best adhesion will be obtained.</p>	<p><b>WHAT TO AVOID</b></p> <ol style="list-style-type: none"> <li>All mechanical reworks (cutting, drilling, face milling etc.).</li> <li>All modifications of the body of slider.</li> <li>All mishandling.</li> <li>Impacts and external stress.</li> <li>Exposure to external magnetic fields.</li> </ol>	