



- **Direct measurement of linear displacement, angle of rotation, rotational speed**
- **Non-contact measurement, no wearing parts**
- **Resolution max 1µm**
- **High interpolation accuracy**
- **Measurement length up to 30 m.**
- **The distance between the sensor and the tape is 1mm**
- **Insensitive to dirt, dust, water IP67**
- **High resistance to shocks, vibrations, pressure**
- **Anodized aluminum housing**
- **Mounting with 2 M3 screws**

The MSI-20 magnetic sensor together with the MT20 tape or magnetic wheel creates an incremental measuring system designed for direct measurement of linear displacement, rotation and rotational speed. The measurement is non-contact and does not have any wearing parts (bearings, seals, etc.). The sensor can be mounted up to 1 mm from the tape or wheel. It is completely insensitive to dirt, dust, water and oil. The output is a quadrature signal, 2 channels shifted in phase by 90 degrees.

Magnetic encoders are an excellent solution in harsh environments, including woodworking, stone processing, metalworking, textiles, printing, packaging, plastics processing, automation and assembly systems, laser / water cutting, electronic assembly equipment, etc.

Technical data:

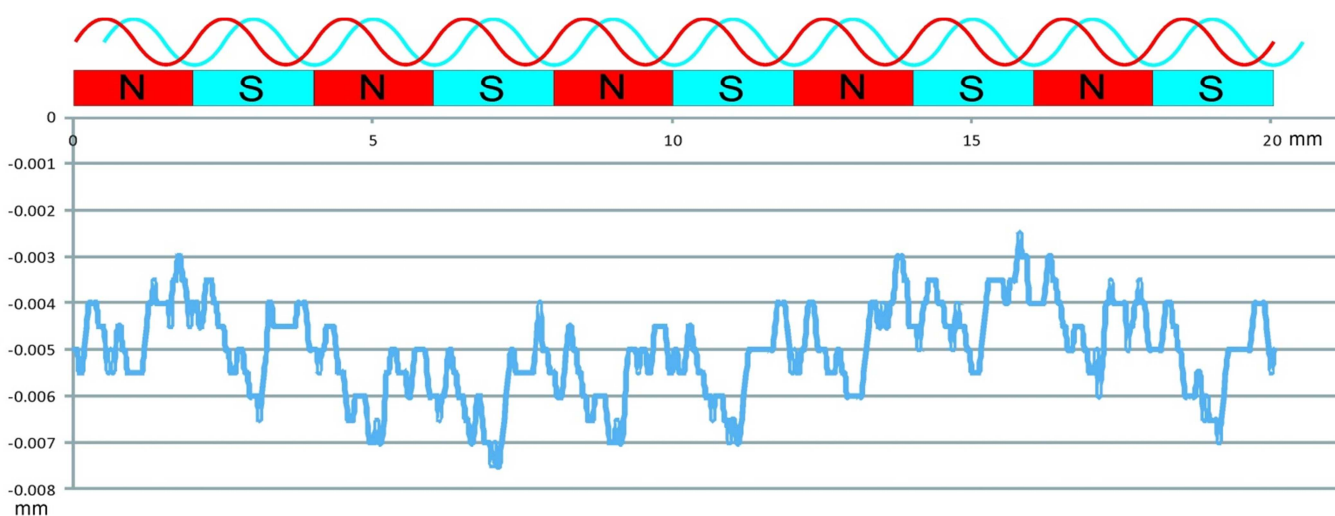
Power	7-30 V DC	
Current consumption	< 20mA	
Output load	70mA	
Resolution (um)	1 , 2 , 4 , 5 , 10 standard , 25 , 50	
Interpolatotion factor	2000, 1000, 500, 400, 200 standard, 80, 40	
Sensor interpolation error	Typ. 3 um , max. 5 um	
Max speed	1um-0,7m/s , 2um-1,4m/s , 4um-2,8m/s	
Max speed	5um-3m/s , 10um-7m/s , 25um-4,38m/s , 50um-4,38m/s	
Cable	PUR , 2m standard (other on request)	
Output type	Push-Pull , Line Driver	
Signals	A, A/, B, B/, I, I/	
Indeks	every 2 mm	
Sensor-tape distance	0,1 – 1 mm (above this value, the interpolation error increases)	
Accuracy measurment system (sensor+tape) in um 20°C	Depends on the accuracy class of the tape used	
	A5	$\pm (5 + 5 \times L)$ L – measuring length in meters
	A10	$\pm (5 + 10 \times L)$ L – measuring length in meters
	A20	$\pm (5 + 20 \times L)$ L – measuring length in meters
	A40	$\pm (5 + 40 \times L)$ L – measuring length in meters

ORDERING:

MSI-20-resolution in um

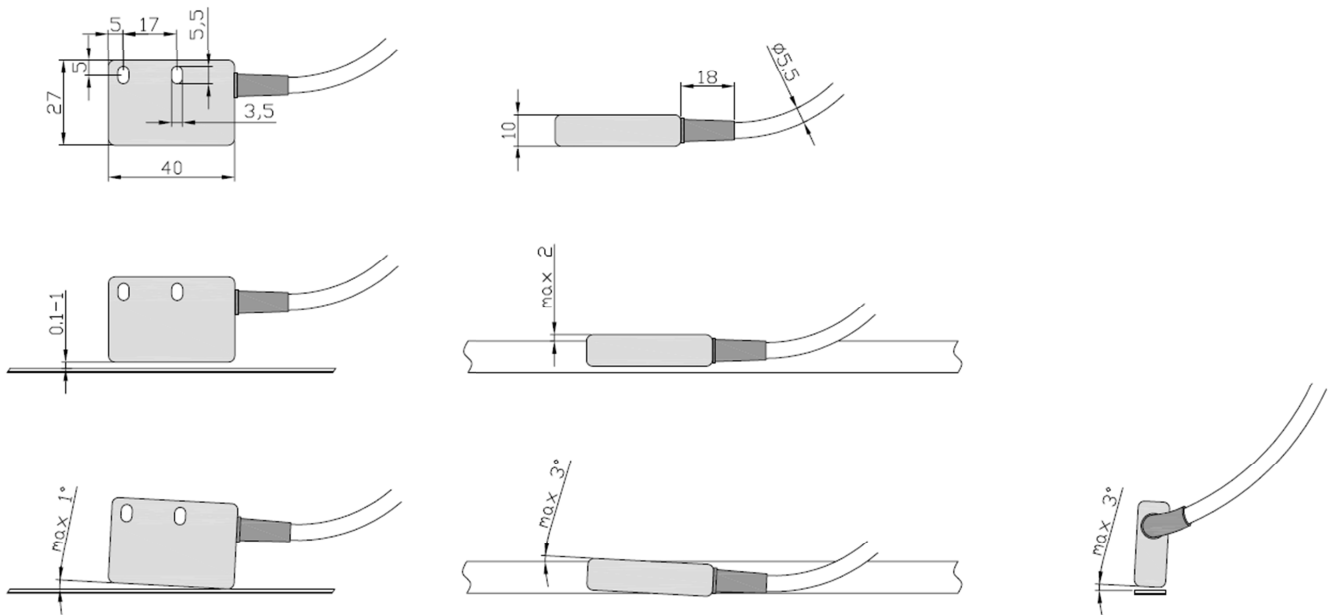
(MSI-20-10 means sensor with a resolution 10 um (0,01mm))

Graph of the sensor interpolation error over a period

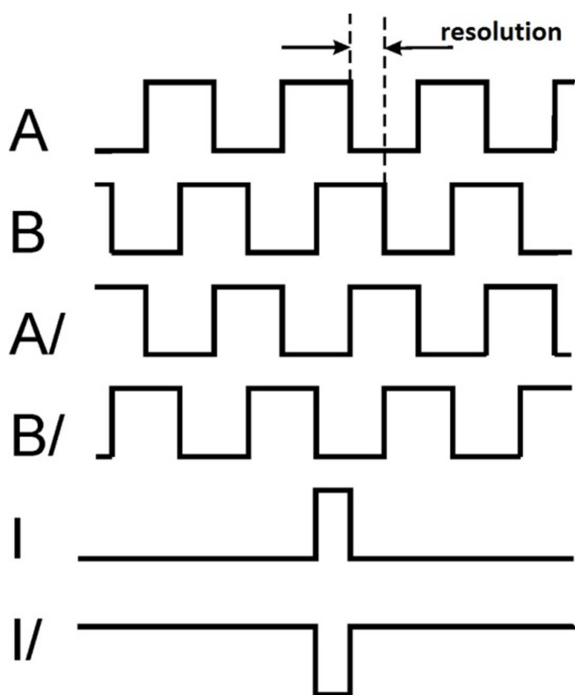


20mm section (10 poles 2mm). Measurement every 0.04 mm (500 points).

Dimensions and assembly deviations:



Output signals:



Function	Color
+ V DC	Red
- V DC	Blue
A	Yellow
A/	Brown
B	Green
B/	Pink
I	White
I/	Grey