



- **Direct measurement of linear displacement, angle of rotation, rotational speed**
- **Non-contact measurement, no wearing parts**
- **Resolution max 1 um**
- **Wide range of supply voltage 4-30 V DC**
- **High interpolation accuracy**
- **Measurement length up to 20 m.**
- **The distance between the sensor and the tape is 1 mm**
- **Insensitive to dirt, dust, water IP67**
- **High resistance to shocks, vibrations, pressure**
- **Anodized aluminum housing**
- **Polyurethane belt chip scrapers**
- **Optional cable in a metal conduit**
- **LED diode indicating incorrect signal level**
- **Mounting with 2 M3 screws**

The MSI-21 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 | 4-30 V DC | |
| Current consumption | < 20mA | |
| Output load | 70mA | |
| Resolution (um) | 1 , 2 , 4 , 5 , 10 standard , 25 , 50 | |
| Interpolation factor | 2000, 1000, 500, 400, 200 standard , 80, 40 | |
| Sensor interpolation factor | 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 | 2 mm | |
| Distance sensor-tape | 0,1–1 mm (above this value, the interpolation error increases) | |
| Accuracy measurement system (sensor+tape) in um in 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-21 - A - B - C**

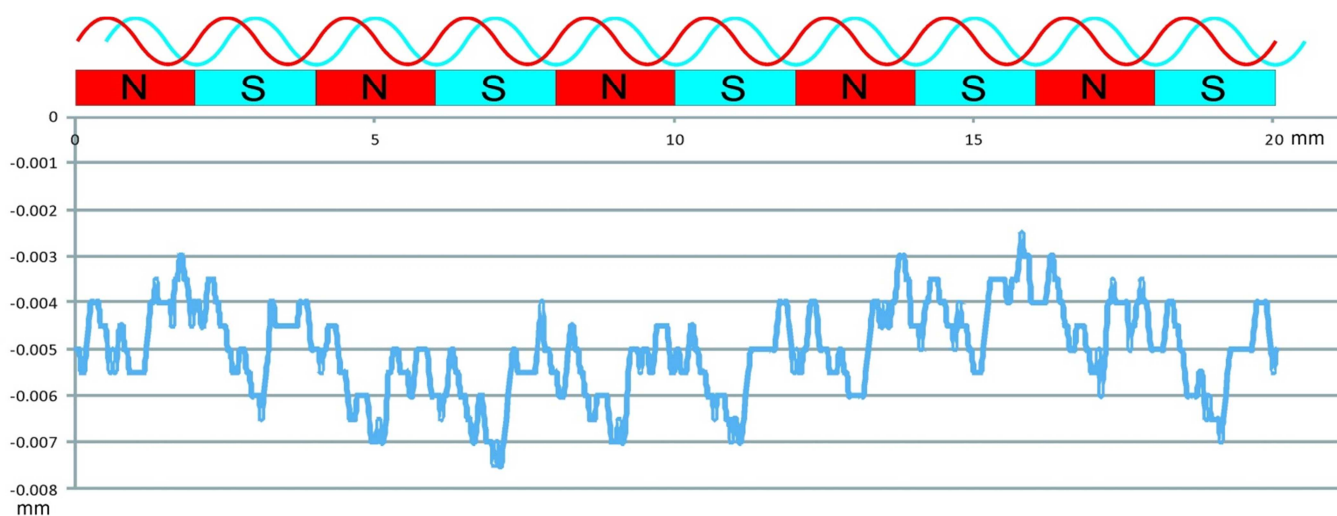
A – resolution in um (1 , 2 , 4 , 5 , 10 standard , 25 , 50)

B - scrapers (1 – with scrapers; 0 – without scrapers)

C - metal conduit (1 – with metal conduit; 0 – without metal conduit)

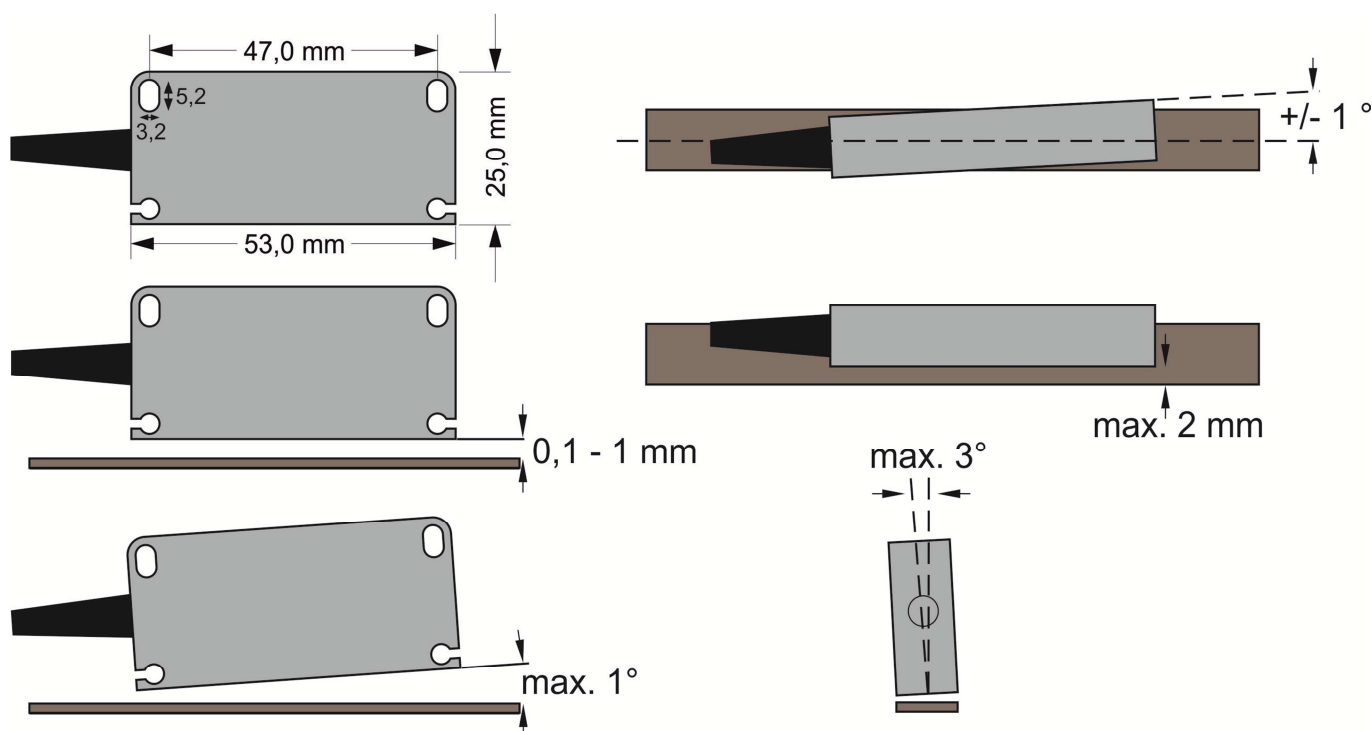
MSI-21 - 10 - 0 - 0 means sensor with resolution 10 um (0,01mm) without scrapers and without metal conduit

Graph of the sensor interpolation error over a period

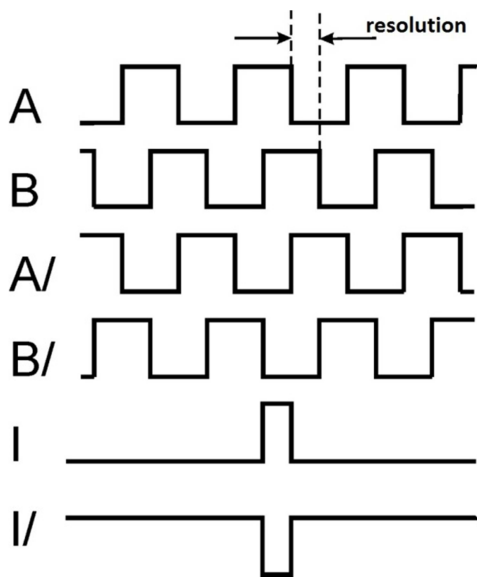


20mm section (10 poles 2mm). Measurement every 0.04 mm (500 points).

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 |