



### Model Number

**MNI20N**

Magnetic, Non Contact

### Features

- **Cost-effective, bearing-free rotary encoder for rotational speed measurement**
- **Simple installation**
- **Operating display verifies function**
- **Up to 7200 pulses**
- **High degree of protection (IP67)**
- **Robust and flexible magnetic rings**

### Description

The magnetic incremental encoder MNI20 is an exceptionally robust measurement system in the smallest space. Its highly compact encapsulated housing gives the sensor its high resistance to harsh environmental conditions. The installation-friendly design reduces the installation time considerably.

## Technical data

### General specifications

|                |                   |
|----------------|-------------------|
| Detection type | magnetic sampling |
| Pulse count    | max. 5000         |

### Functional safety related parameters

|                                |        |
|--------------------------------|--------|
| MTTF <sub>d</sub>              | 1093 a |
| Mission Time (T <sub>M</sub> ) | 20 a   |
| Diagnostic Coverage (DC)       | 0 %    |

### Indicators/operating means

|           |                   |
|-----------|-------------------|
| LED green | Operating display |
|-----------|-------------------|

### Electrical specifications

|                                       |                                     |
|---------------------------------------|-------------------------------------|
| Operating voltage U <sub>B</sub>      | 10 ... 30 V DC<br>5 V DC for RS-422 |
| No-load supply current I <sub>0</sub> | max. 55 mA                          |

### Output

|                             |  |
|-----------------------------|--|
| Output type                 | push-pull, incremental or RS-422, incremental  |
| Voltage drop U <sub>d</sub> | ≤ 2.5 V (< 2.5 V)  |
| Load current                | max. per channel 30 mA , short-circuit protected (max. per channel 20 mA, conditionally short-circuit proof) |
| Output frequency            | max. 800 kHz   |

### Connection

|       |  |
|-------|--|
| Cable | Ø4.7 mm, 8 x 0.128 mm <sup>2</sup> , 2 m |
|-------|--|

### Standard conformity

|                      |  |
|----------------------|--|
| Degree of protection | DIN EN 60529, IP67                     |
| Climatic testing     | DIN EN 60068-2-30                      |
| Emitted interference | EN 61000-6-4:2007/A1:2011              |
| Noise immunity       | EN 61000-6-2:2005                      |
| Shock resistance     | DIN EN 60068-2-27, 200 g, 6 ms         |
| Vibration resistance | DIN EN 60068-2-6, 40 g, 10 ... 2000 Hz |

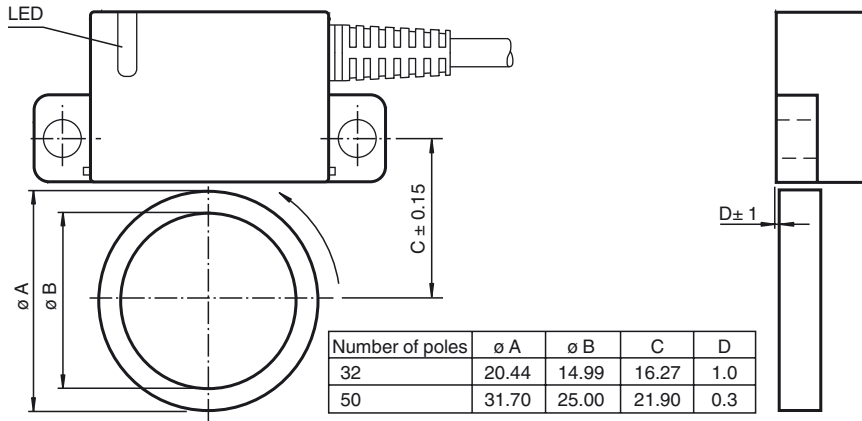
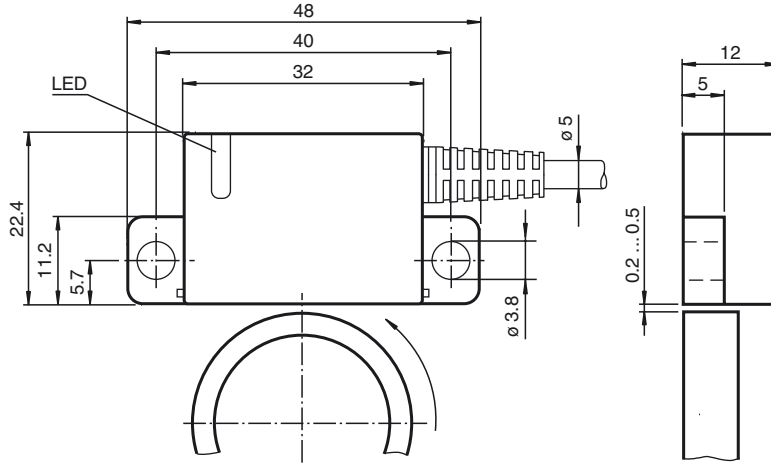
### Ambient conditions

|                       |                                |
|-----------------------|--------------------------------|
| Operating temperature | -25 ... 85 °C (-13 ... 185 °F) |
| Storage temperature   | -25 ... 85 °C (-13 ... 185 °F) |

### Mechanical specifications

|                  |                              |
|------------------|------------------------------|
| Material         |                              |
| Housing          | PA                           |
| Cable            | PUR                          |
| Magnetic ring    | PA , Plastic-coated ferrite  |
| Mass             | approx. 190 g                |
| Rotational speed | max. 20000 min <sup>-1</sup> |

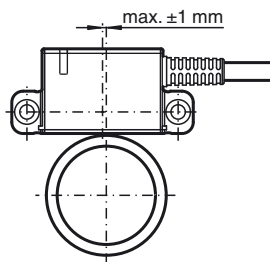
Dimensions



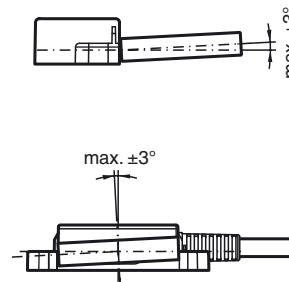
Installation



Shaft displacement



Angular displacement

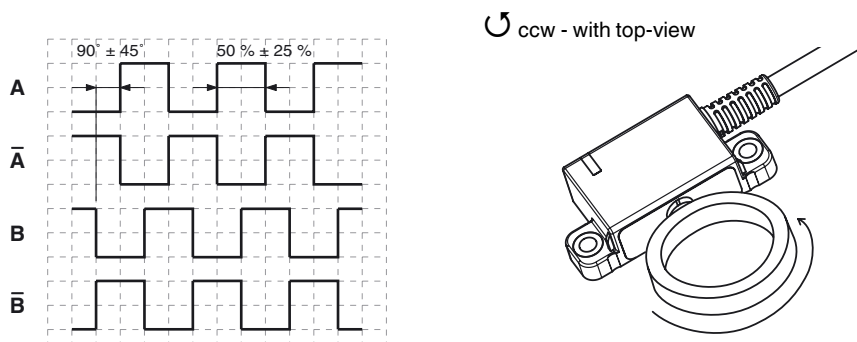


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**Electrical connection**

| Signal          | Cable, 8-core |
|-----------------|---------------|
| GND             | White         |
| +U <sub>b</sub> | Brown         |
| A               | Green         |
| B               | Grey          |
| $\bar{A}$       | Yellow        |
| $\bar{B}$       | Pink          |
| n. c.           | Blue          |
| n. c.           | Red           |
| Screen          | -             |

**Signal outputs**



**LED-Indicators**

| LED status | Description   |
|------------|---|
| Green On   | Sensor ready for operation. Supply voltage applied and magnetic wheel is detected.  |
| LED Off    | Possible reason:<br><ul style="list-style-type: none"> <li>Supply voltage drop or no supply voltage</li> <li>Magnetic wheel not detectable (e. g. too large gap)</li> </ul> |

**Order code**

M N I 2 0 N - - - - - K 2 4 N - - - - -

**Version**  
**MNI** Magnetic principle, Non-contact, Incremental

**Housing material**  
**N** Plastic

**Magnetic ring specifications**  
**OTB2** Ø15 mm, 32 poles, pulse count: 32, 64, 128, 256, 512, 800, 1024, 1600, 3200  
**OH02** Ø25 mm, 50 poles, pulse count: 50, 100, 500, 1000, 1250, 1600, 2400, 2500, 5000

**Connection type**  
**K2** PUR cable, 4 x 2 x 0.128 mm<sup>2</sup>, 2m

**Signal output**  
**4** A + B and  $\bar{A} + \bar{B}$

**Output type**  
**1** 10 V ... 30 V, push-pull  
**6** 5 V, RS 422

**Temperature**  
**N** normal

**Pulse count** see magnetic ring specifications

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