Safety
System operation assumes knowledge of the assembly instructions. The following symbols are used:

Indicates a hazardous situation which, if not avoided, may result in minor or moderate injuries.

Indicates a situation which, if not avoided, may lead to property damage.

Indicates a user action.

Indicates a user tip.

Warnings
Connect the power supply, the display/output device in accordance with the safety regulations for electrical equipment.

> Danger of injury by electric shock
> Damage to or destruction of the sensor

The power supply may not exceed the specified limits.

> Damage to or destruction of the sensor
> Avoid banging and knocking the sensor
> Protect the cable against damage.
> Failure of the measuring device

Intended Use
The eddyNCDT 3001 is designed for use in industrial areas. It is used for displacement, distance, thickness and movement measurement and for position measuring of parts or machine components.

The system must be used in such a way that no persons are endangered or machines and other material goods are damaged in the event of malfunction or total failure of the system.

Take additional precautions for safety and damage prevention in case of safety-related applications.

Technical Data
Model DT3001-

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<td>SMR</td>
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Pin Assignment

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<tr>
<td>Pin</td>
<td>Description</td>
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<tr>
<td>1</td>
<td>+ 24 V supply</td>
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<tr>
<td>2</td>
<td>Displacement signal</td>
</tr>
<tr>
<td>3</td>
<td>Earth</td>
</tr>
<tr>
<td>4</td>
<td>Assigned internally</td>
</tr>
<tr>
<td>5</td>
<td>gray</td>
</tr>
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</table>

Installation and Assembly
No sharp or heavy objects should be allowed to affect the cable sheath or the sensor cable, the supply cable and the output cable.

Check all plug-in connections for firm seating before starting operation.

Construction: The front part of the sensor with encapsulated coil consists of electrically non-conducting materials.

In the radial direction metal parts in the vicinity may behave similar to the measuring object, rendering the measurement result inaccurate. Please note this by selection of material for sensor mounting and their setup.
Measuring Range and Output Characteristics

For each sensor a minimum distance to the measurement object must be maintained. This avoids a measurement uncertainty due to the sensor pressing on the measurement object and mechanical damage to the sensor/measurement object.

Installation Conditions

The relative size of the measuring object to the sensor has effects on the linearity deviation for eddy current sensors. Ideally, the measuring object size is at least 4 times the sensor diameter.

Fig. 3 Start of measuring range (SMR), the smallest distance between sensor face and measuring object

Fig. 4 Assembly, dimensions in mm (not to scale)

Fig. 5 Linearity deviation depending on distance A

Measuring and output characteristics are subject to variation of ±0.2% of reading or ±0.2 mm in the measuring range.

SMR
Sensor
Target

Displacement signal
Measuring range
50 %

SMR

A = 25 mm Fe
A = 30 mm Fe
A = 16 mm Al
A = 16 mm Fe
A = 30 mm Al
A = 20 mm Fe
A = 20 mm Al

Fe = iron
Al = aluminum

Measuring range in mm
2.00
1.00
0.50

-20
-10
0
5

Measurement uncertainty in µm
-20
-10
0
5

1.0
2.00

A = 20 mm Al
A = 25 mm Fe
A = 25 mm Al
A = 30 mm Fe

Disclaimer

All components of the device have been checked and tested for functionality in the factory. However, should any defects occur due to careful quality control, these shall be transferred to MICRO-EPSILON or to your distributor / retailer.

MICRO-EPSILON undertakes no liability whatsoever for damage, loss or costs caused by or related in any way to the product, in particular consequential damage, e.g. due to:
- non-observance of these instructions / this manual,
- improper use or improper handling (in particular due to improper installation, commissioning, operation and maintenance) of the product, repairs or modifications by third parties,
- the use of force or other handling by unqualified persons.

This limitation of liability also applies to defects resulting from normal wear and tear (e.g., to wearing parts) and in the event of non-compliance with the specified maintenance intervals (if applicable).

MICRO-EPSILON is exclusively responsible for repairs. It is not permitted to make unauthorized structural and / or technical modifications or alterations to the product.

In the interest of further development, MICRO-EPSILON reserves the right to modify the design.

In addition, the General Terms of Business of MICRO-EPSILON shall apply, which can be accessed under Legal details | Micro-Epsilon.