

Safety

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

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

NOTICE Indicates a situation that may result in property damage if not avoided.

➔ Indicates a user action.

i Indicates a tip for users.

Warnings

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

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

NOTICE

The supply voltage must not exceed the specified limits.

- > Damage to or destruction of the sensor
- Avoid shocks and impacts to the sensor.
- > Damage to or destruction of 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 only be operated within the limits specified in the technical data. 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-	U4-A-SA	U4-M-SA	U4-A-Cx	U4-M-Cx
Measuring range	4 mm			
Start measuring range (SMR)	0.4 mm			
Minimum target size	Ø 48 mm, flat			
Target material	Aluminum	Steel	Aluminum	Steel
Output	0.5 ... 9.5 V		0.5 ... 4.5 V	
Power supply	12 ... 32 V / 0.5 W			
Protection class	IP 67 (connected)		IP 67	
Connection	connector 5-pin M12		integrated cable, 5-pin, length 3/6/9m	
Operating temperature	0 ... +70 °C (32 ... +158 °F)			
Storage temperature	-20 ... +80 °C (-4 ... +176 °F)			
Humidity	5 - 95 % (non-condensing)			

Pin Assignment

DT3001-SA			PCx/5	DT3001-Cx	
Pin	Description	Color	Color	Description	
1	+ 24 V supply	brown	brown	+ 24 V supply	
2	Displacement signal	white	green	Displacement signal	
3	GND	blue	white	GND	
4	Assigned internally	black	yellow	Assigned internally	
5		gray	gray		


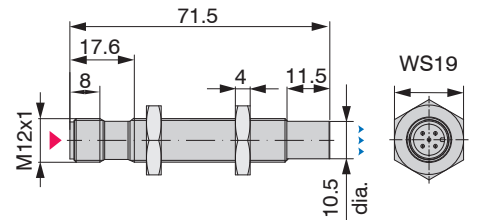


Fig. 1 Male connector side



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.

i 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.

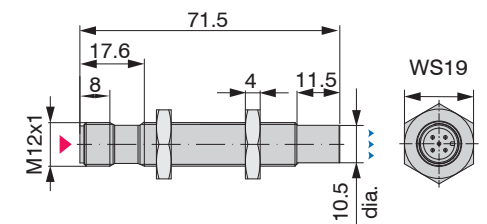


Fig. 2 DT3001-SA, dimensions in mm (not to scale)

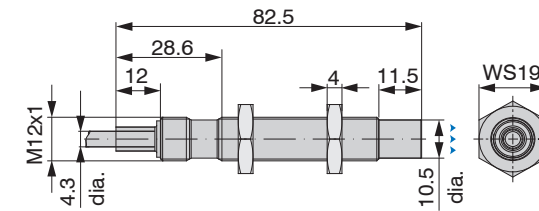


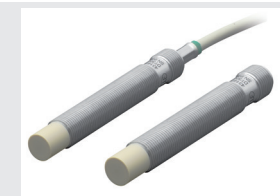
Fig. 3 DT3001-Cx, dimensions in mm (not to scale)

▲▲▲ Measuring direction

▲ Male connector side



Assembly Instructions
eddyNCDT 3001
DT3001-U4



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.

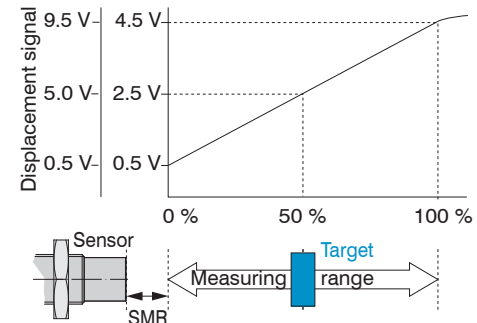


Fig. 4 Start of measuring range (SMR), the smallest distance between sensor face and measuring object

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.

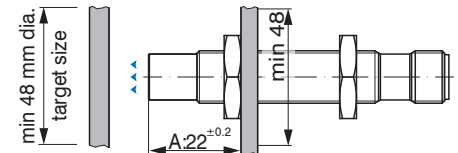


Fig. 5 Assembly, dimensions in mm (not to scale)

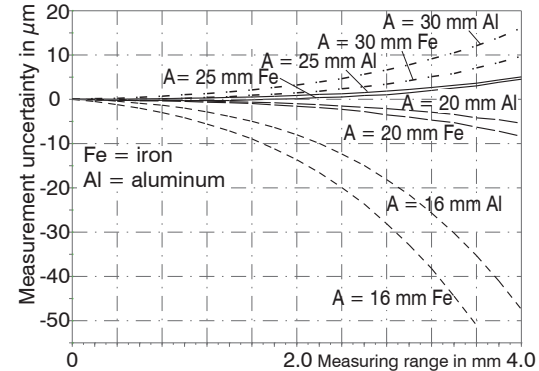


Fig. 6 Measurement uncertainty on distance A and target material

Disclaimer

All components of the device have been checked and tested for functionality in the factory. However, should any defects occur despite careful quality control, these shall be reported immediately 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 <https://www.micro-epsilon.com/impressum/>.

For translations into other languages, the German version shall prevail.

Decommissioning, Disposal

In order to avoid the release of environmentally harmful substances and to ensure the reuse of valuable raw materials, we draw your attention to the following regulations and obligations:

- Remove all cables from the sensor and/or controller.
- Dispose of the sensor and/or the controller, its components and accessories, as well as the packaging materials in compliance with the applicable country-specific waste treatment and disposal regulations of the region of use.
- You are obliged to comply with all relevant national laws and regulations

For Germany / the EU, the following (disposal) instructions apply in particular:

- Waste equipment marked with a crossed garbage can must not be disposed of with normal industrial waste (e.g. residual waste can or the yellow recycling bin) and must be disposed of separately. This avoids hazards to the environment due to incorrect disposal and ensures proper recycling of the old appliances.
- A list of national laws and contacts in the EU member states can be found at https://ec.europa.eu/environment/topics/waste-and-recycling/waste-electrical-and-electronic-equipment-weee_en. Here you can inform



yourself about the respective national collection and return points.

- Old devices can also be returned for disposal to MICRO-EPSILON at the address given in the imprint at <https://www.micro-epsilon.com/impressum/>.
- We would like to point out that you are responsible for deleting the measurement-specific and personal data on the old devices to be disposed of.
- Under the registration number WEEE-Reg.-Nr. DE28605721, we are registered at the foundation Elektro-Altgeräte Register, Nordostpark 72, 90411 Nuremberg, as a manufacturer of electrical and/or electronic equipment.

MICRO-EPSILON MESSTECHNIK GmbH & Co. KG
Königbacher Straße 15
94496 Ortenburg / Germany
Tel. +49 (0) 8542 / 168-0 / Fax +49 (0)8542 / 168-90
e-mail info@micro-epsilon.com
www.micro-epsilon.com

Your local contact: www.micro-epsilon.com/contact/worldwide/

X9771328-B012092MSC