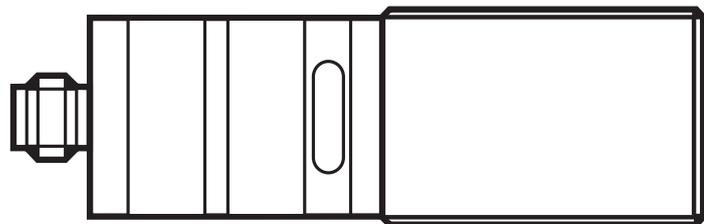


Operating instructions  
Optical distance sensor

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**OID20x**

11474458 / 00 11 / 2024



# Contents

1 Preliminary note.....	3
1.1 Symbols used .....	3
1.2 Warning signs used .....	3
2 Safety instructions .....	3
3 Functions and features .....	5
3.1 Applications .....	5
4 Installation.....	5
4.1 Installation conditions .....	5
5 Electrical connection.....	5
6 Setting / Operation.....	6
7 IO-Link .....	7
7.1 General information .....	7
7.2 Device-specific information.....	7
7.3 Parameter setting tools.....	7
8 Maintenance, repair and disposal.....	7

# 1 Preliminary note

## 1.1 Symbols used

▶ Instruction

> Reaction, result

[...] Designation of pushbuttons, buttons or indications

→ Cross-reference



Important note

Non-compliance can result in malfunctions or interference.



Information

Supplementary note.

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## 1.2 Warning signs used

### **WARNING**

Warning of serious personal injury.

Death or serious irreversible injuries may result.

## 2 Safety instructions

- Please read this document prior to set-up of the unit. Ensure that the product is suitable for your application without any restrictions.
- Improper or non-intended use may lead to malfunctions of the unit or to unwanted effects in your application. That is why installation, electrical connection, set-up, operation and maintenance of the unit must only be carried out by qualified personnel authorised by the machine operator.
- In case of malfunction of the unit please contact the manufacturer. If the unit is tampered with and/or modified, any liability and warranty is excluded.
- The unit conforms to the standard EN 61000-6-4. The unit may cause radio interference in domestic areas. If interference occurs, the user must take appropriate remedial actions.

## **⚠ WARNING**

Visible laser light; laser protection class 2.

Use of controls or adjustments other than those specified herein may result in hazardous radiation exposure. Damage to the retina is possible.

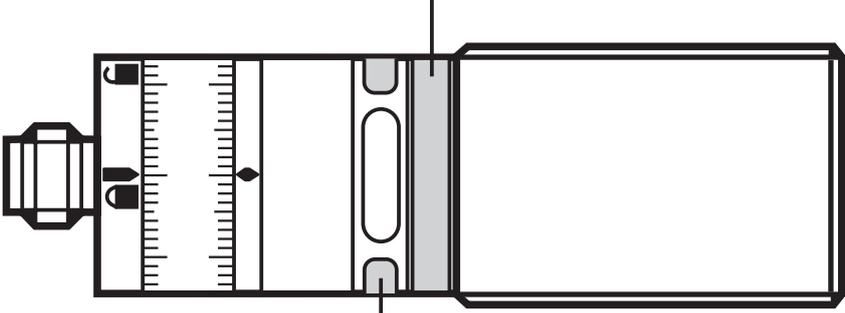
- ▶ Do not stare into the laser beam!
- ▶ Apply the enclosed labels (laser warning) in the immediate vicinity of the unit.
- ▶ Adhere to the caution and warning notes on the product label.
- ▶ Use the enclosed label for the power supply cable.
- ▶ EN/IEC 60825-1 : 2007 and EN/IEC 60825-1 : 2014

Complies with 21 CFR 1040.10 except for conformance with IEC 60825-1 Ed. 3., as described in Laser Notice No. 56, dated May 8, 2019.

## Label for supply cable

<b>ATTACH TO CABLE</b>	<b>WARNING:</b>
	<b>CLASS 2 LASER PRODUCT</b> <b>DO NOT STARE INTO BEAM</b> <b>- AVOID EXPOSURE</b> <b>- UNPLUG CONNECTOR TO</b> <b>EXTINGUISH LASER BEAM</b>
ifm electronic gmbh	D-45128 Essen

## Product label

 	AVOID EXPOSURE LASER RADIATION EMITTED FROM THIS APERTURE	 <b>CAUTION</b>	LASER RADIATION DO NOT STARE INTO BEAM max. POWER $\leq 4,0$ mW, PULSE 1,3 ns, $\lambda = 650$ nm	 	CLASS 2 LASER PRODUCT 21 CFR PART 1040 IEC 60825-1:2014	
						
POWER	OID2xx	CLASS 2 LASER PRODUCT	www.ifm.com	CE	TS AA 1301	OUT

## 3 Functions and features

The unit is used as an optical distance sensor.

### 3.1 Applications

- The optical distance sensor measures distances between 0.03 and 2 m.
- It has a background suppression of up to 20 m.
- The switching outputs are complimentary.



The distance between the sensor and the background must be limited to max. 20 m by the customer. Otherwise the measured value may be ambiguous. → 4.1 Installation conditions

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## 4 Installation

### 4.1 Installation conditions

- ▶ Install the unit so that the object to be detected is within a measuring range of 0.03...2 m.

Any object between the set switch point and a distance of 20 m from the sensor is suppressed.



Reflecting objects in the direct beam path of the sensor - also in the range > 20 m – are to be avoided by the customer. Otherwise the measured values may be ambiguous.

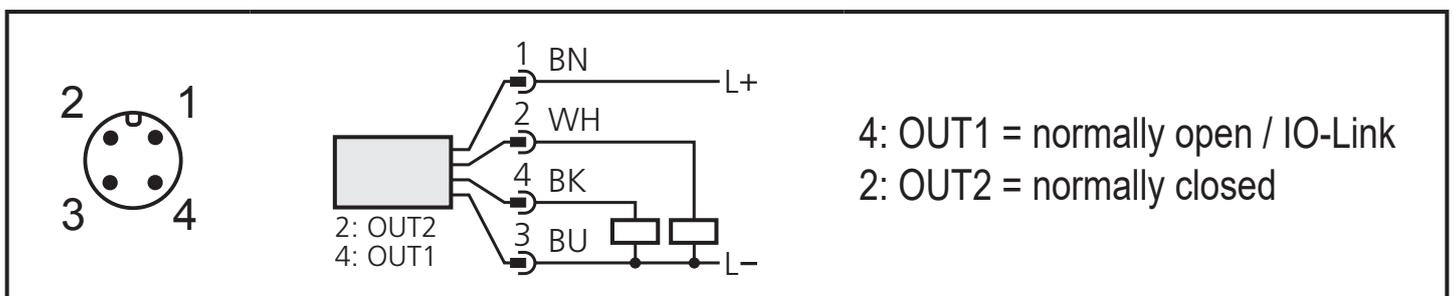
## 5 Electrical connection



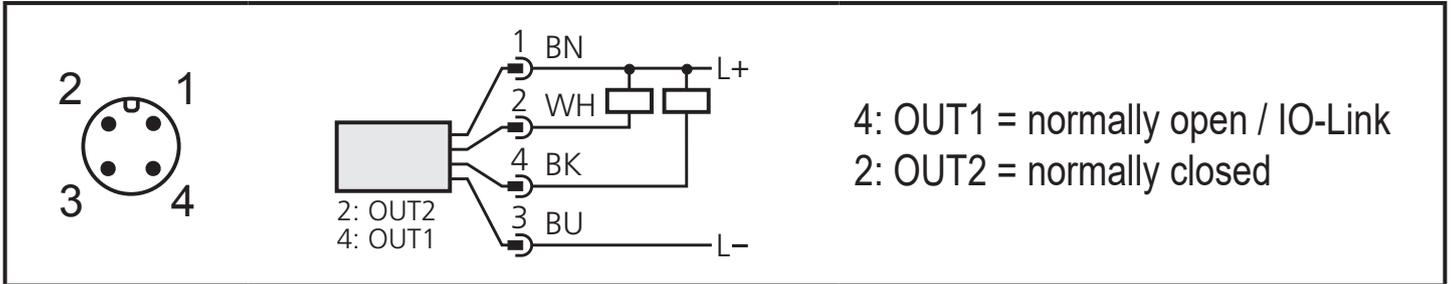
The unit must be connected by a qualified electrician.

- ▶ The national and international regulations for the installation of electrical equipment must be adhered to.
  - ▶ Ensure voltage supply according to EN 50178, SELV, PELV.
- ▶ Disconnect power.
- ▶ Connect the unit as follows:

### DC PNP



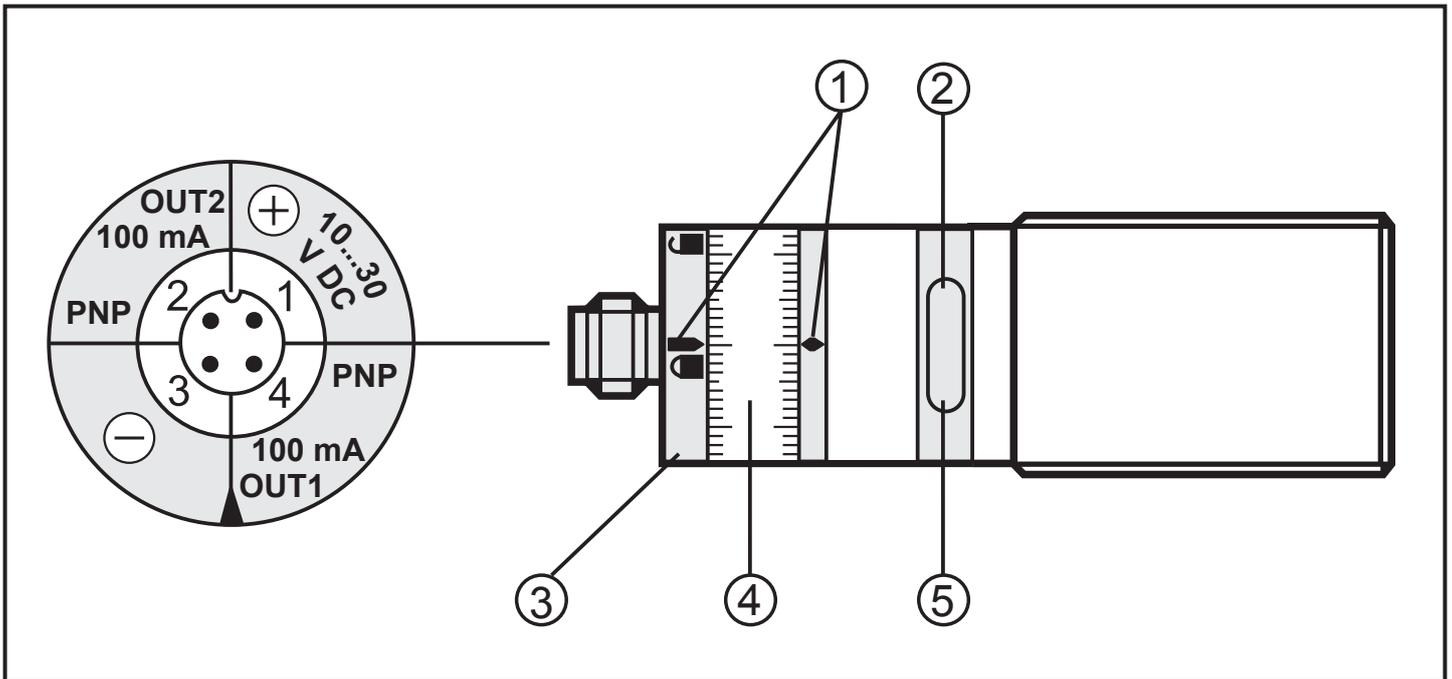
## DC NPN



Core colours of ifm sockets:

1 = BN (brown), 2 = WH (white), 3 = BU (blue), 4 = BK (black)

## 6 Setting / Operation



1: Setting marks

2: Yellow LED: Set1 value reached, output = ON

3: Locking ring

4: Setting ring (manually adjustable after unlocking)

5: Green LED: supply voltage O.K.

- To obtain the setting accuracy: Set the ring to the maximum value, then set the requested value.

► After mounting, wiring and programming check whether the unit operates correctly.



Lifetime of a laser diode: 50,000 hours

# 7 IO-Link

## 7.1 General information

This unit has an IO-Link communication interface which requires an IO-Link-capable module (IO-Link master) for operation.

The IO-Link interface enables direct access to the sensor values and parameters and provides the possibility to set the parameters of the unit during operation.

In addition communication is possible via a point-to-point connection with a USB adapter cable.

You will find more detailed information about IO-Link at [www.ifm.com](http://www.ifm.com).

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## 7.2 Device-specific information

You will find the IODDs necessary for the configuration of the IO-Link unit and detailed information about sensor values, diagnostic information and parameters in the overview table at [www.ifm.com](http://www.ifm.com).

## 7.3 Parameter setting tools

You will find all necessary information about the required IO-Link hardware and software at [www.ifm.com](http://www.ifm.com).

# 8 Maintenance, repair and disposal

Faulty sensors must only be repaired by the manufacturer.

- ▶ Keep the front lens of the sensor free from soiling.
- ▶ After use dispose of the unit in an environmentally friendly way in accordance with the applicable national regulations.
- ▶ Do not try to open the module enclosure. There are no user-serviceable components inside.