The optoNCDT 1900 sensor is an optical system for measurements with micrometer accuracy. Pay attention to correct handling during mounting and application. The following information is intended to safeguard the efficient and effective use of the sensor (mounting, wiring, cable handling, etc.) on the surface. Changes of any kind are not permitted.

### Measuring Range, Start Measuring Range

Sweeping with oscillations may lead to incorrect results. This can be avoided if the laser spot is directed perpendicularly onto the surface of the target. Other reflective materials (detergents, cooling emulsions) may be avoided. Avoid constant exposure of the sensor to splashes of water. Avoid exposure of sensor to aggressive media (detergents, cooling emulsions). The sensor must only be operated within the limits specified in the technical data, see operating manual.

### Mounting

Mounting is done with 2 screws type M4 or through bores for M3 with the screws from the accessories.

### Pin Assignment

- **Pin 1**: Supply voltage +11...+15 VDC
- **Pin 2**: Supply voltage –5...–10 VDC
- **Pin 3/4**: Switching input, 3 mA
- **Pin 5/6**: Switching input, 3 mA
- **Pin 7**: Laser on/off
- **Pin 8**: AGND
- **Pin 9**: Digital output (current source), selectable input or output depending on synchronization
- **Pin 10**: Analog output
- **Pin 11**: Non-contact laser sensor with shield
- **Pin 12**: Direct fastening (symmetric) internally terminated with 120 Ohm RS422 - Input
- **Pin 13**: Direct fastening (symmetric) externally terminated
- **Pin 14**: Pin 15: 2nd digital output, selectable input or output depending on synchronization

### Pin Assignment (Symmetrically Internalized)

- **Pin 15**: Pin 16**: Supply voltage +11...+15 VDC
- **Pin 17/18**: Supply voltage –5...–10 VDC
- **Pin 19**: Switching input, 3 mA
- **Pin 20**: Switching input, 3 mA
- **Pin 21**: Analog output
- **Pin 22**: Digital output (current source), selectable input or output depending on synchronization
- **Pin 23**: Digital output
- **Pin 24**: Non-contact laser sensor with shield
- **Pin 25**: Direct fastening (symmetric) internally terminated with 120 Ohm
- **Pin 26**: Direct fastening (symmetric) externally terminated
- **Pin 27**: Pin 28**: Supply voltage +11...+15 VDC
- **Pin 29/30**: Supply voltage –5...–10 VDC
- **Pin 31**: Switching input, 3 mA
- **Pin 32**: Switching input, 3 mA
- **Pin 33**: Analog output
- **Pin 34**: Digital output (current source), selectable input or output depending on synchronization
- **Pin 35**: Digital output
- **Pin 36**: Non-contact laser sensor with shield
- **Pin 37**: Direct fastening (symmetric) internally terminated with 120 Ohm
- **Pin 38**: Direct fastening (symmetric) externally terminated

### Laser Safety

The optoNCDT 1900 operates with a semiconductor laser with a wavelength of 670 nm (visible/red) or 850 nm (infrared). Operators of the laser must be trained as per the relevant regulations. Further safety regulations must be followed. If any laser safety standards are completed, the user must ensure that additional safety standards are applied.

### Laser Class 2

The sensors fall within laser class 2. The laser beam is operated in a pulsed mode, the maximum optical power is ≤ 1 mW. The pulse frequency depends on the adjusted measuring rate (0.25 ... 10 kHz). The sensors fall within laser class 3R. The laser is operated on a pulsed mode, the maximum optical power is ≤ 5 mW. The pulse frequency depends on the adjusted measuring rate (0.25 ... 10 kHz).

### Warnings

- **Avoid contact with the sensor cable during operation.**
- **Avoid contact with the sensor cable during installation.**
- **Avoid contact with the sensor cable during measurement.**
- **Avoid contact with the sensor cable during cleaning.**
- **Avoid contact with the sensor cable during maintenance.**
- **Avoid contact with the sensor cable during transportation.**

### Proper Environment

- **Temperature range:** 0 ... 50°C (32 ... 122°F)
- **Humidity:** 5 ... 95%, non-condensing
- **Ambient pressure:** Atmospheric pressure

### Assembly Instructions

**optoNCDT 1900 / 1900LL**
**Switch on the Laser**

- Type 1: Laser off
- Type 2: Laser on
- Type 3: Laser off

**Analog Output**

- Current output 4...20 mA or Voltage output 0...5 V or 0...10 V
- Connect the input to GND to trigger the function.

**Multi-Function Input**

- The multi-function input monitors the input signals. The user can set whether the input is active or not. The user can also set the input as an input or output. The input signals can be used to trigger other functions or to control the sensor.

**Quick Guide**

- Mount the sensor and connect the components.

**RSD2 Converter with USB Converter IF001/USB**

- Connects the sensor to a PC/notebook via a USB converter. Connect the sensor to the PC/notebook via a USB converter. Connect the sensor to the PC/notebook via a USB converter.

**Initial Operation**

- Connect the sensor to a PC/notebook via a USB converter. Connect the sensor to the PC/notebook via a USB converter.

**Access via Web Interface**

- The web interface enables the user to access the sensor's functions and parameters. The user can access the sensor's functions and parameters.

**Select a Measuring Rate**

- Defines which interface is used for output of measured values. Parallel output of measured values via multiple channels is not possible. RS22 and analog output cannot be operated simultaneously.

**Save the Settings**

- The program searches for connected ILD1900 sensors on available interfaces. The program searches for connected ILD1900 sensors on available interfaces. The program searches for connected ILD1900 sensors on available interfaces.

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**Sensor Supply by Peripheral**

- Sensor supply by peripheral is disconnected from power supply only.

**Short Circuit Protection**

- 7 mA

**Pinout**

- Pin 1: GND
- Pin 2: Vcc
- Pin 3: Rx +
- Pin 4: Rx -
- Pin 5: Tx +
- Pin 6: Tx -
- Pin 7: Vout

**Specifications**

- Voltage output 0...5 V or 0...10 V
- Analog Output

**Switch on the Laser**

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- Type 3: Laser off

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