**Proper Environment**
- Protection class: IP 65 (applies only when the sensor cable is plugged in)
- Optical inputs are excluded from protection class. Contamination leads to impairment or failure of the function.
- Operating temperature: 0 °C ... 50 °C (+32 up to +104 °F)
- Storage temperature: -20 °C ... 70 °C (-4 up to +158 °F)
- Humidity: 5 - 95% (non-condensing)
- Ambient pressure: Atmospheric pressure

**Sensor Mounting, Dimensions**
The optoNCDT 1750 is an optical sensor with microscopic accuracy for measurement. Pay attention to careful handling during mounting and operation.

- Mount the sensor only to the existing holes on a flat surface. Clamps of any kind are not permitted.
- Use three M4 screws to mount the sensor. The bearing surface surrounding the fastening holes (through-holes) are slightly reamed.

**Measure Range, Start of Measure Range**
- Mount the sensor only to the existing holes on a flat surface. Clamps of any kind are not permitted.
- Do not exceed torques. The laser beam must be directed perpendicularly onto the surface of the target. In case of misalignment it is possible that the measurement results will not always be accurate.

- The following warning labels are attached to the cover (front and rear side) of the sensor housing:
  - Avoid shock and vibration to the sensor. Protect the sensor cable against damage.
  - The optoNCDT 1750 sensors operate with a semiconductor laser with a wavelength of 670 nm. Do not deliberately look into the laser beam. The laser beam must be directed perpendicularly onto the surface of the target. In case of misalignment it is possible that the measurement results will not always be accurate.

**Pin Assignment**
- **Signal**
  - **Ph**: Description
  - **U+**: Supply voltage (11 ... 30 VDC)
  - **U-**: Supply voltage (11 ... 30 VDC)
  - **GND**: System ground supply, switch signals (Laser on/off, Zero, Limits)
  - **Uin**: Current voltage Digital value 1
  - **sync**: Symmetrical synchronous output (Master) or input (Slave)
  - **Rx -**: Termination resistor 120 Ohm switchable, output or input depends on selected synchronous mode
  - **Rx +**: Termination resistor 120 Ohm switchable, output or input depends on selected synchronous mode
  - **AGND**: Reference potential for analog output
  - **VDD**: +U
  - **VSS**: -U

**Mounting**
- Mount the sensor only to the existing holes on a flat surface. Clamps of any kind are not permitted.
- Use three M4 screws to mount the sensor. The bearing surface surrounding the fastening holes (through-holes) are slightly reamed.

**Supply Voltage**
- **Nominal values**: 24 V DC (11 ... 30 V DC ± 10 %)
- **Use with supply voltage for measurement in surroundings only. MICRO-EPSILON recommends using an optional available power supply unit U52002 for the sensor**

**Warnings**
- Avoid unnecessary laser radiation to be exposed to the human body. Switch off the sensor for clean- ing and maintenance, for system maintenance and repair if the sensor is integrated into a system.
- Avoid unnecessary laser radiation to be exposed to the human body. Switch off the sensor for cleaning and maintenance, for system maintenance and repair if the sensor is integrated into a system.

**Assemblies**
- The optoNCDT 1750 system operates with a semiconductor laser with a wavelength of 670 nm (wavelength: 670 nm) or 405 nm (wavelength: 405 nm). The following warning labels are attached to the cover (front and rear side) of the sensor housing:

**Proper Use**
- The optoNCDT 1750 system is designed for use in industrial and laboratory areas. It is used for measuring displacement, distance and position as well as in process quality control and dimensional testing.
- The following warning labels are attached to the cover (front and rear side) of the sensor housing:

**CAUTION**
- Never deliberately look into the laser beam! Consciously close your eyes or turn away immediately if the laser beam should hit your eyes.
RS422 Connection with USB Converter IF2001/USB

Cross the lines for connections between sensor and PC.

1. Disconnect or connect the D-sub connection between RS422 and USB converter when the sensor is disconnected from power supply only.

Sensor

Sensor cable – connector

End device (converter) type IF2001/USB from MICRO-EPSILON

Tx – (Pin 2)

Target within measuring range

Type 3

Rx – (Pin 4)

Rx + (Pin 3)

End device (converter)

Meaning

Tx + (Pin 1)

Midrange

Labeling

Laser beam is switched off

Laser off

Error

Interface

Target within the midrange

GND (Pin 9)

Uout

In range

Quick Guide

Components

Mount the sensor and connect the components.

Source

Cable/Supply

Interface

Access via Web Interface

In the top navigation bar, you will find the interface for programming the sensor. The sensor now appears in the web browser. The sensor is active and supplies measurement values. The ongoing measurement can be operated by means of function buttons in the area Measurement chart.

Start with a medium measuring rate. Select a measuring rate from the list. Confirm with Start. Comissioning

Connect the sensor to a PC/notebook via a RS422 connector (e.g. Modbus Protocol or Internet Explorer) on a PC/notebook.

Select the desired sensor. Click on the button: Open Web Interface.

You need a web browser (e.g. Mozilla Firefox or Internet Explorer) on a PC/notebook.

Select a Measuring Rate

Go to the menu Settings > data recording > Measuring rate.

Start with a medium measuring rate. Select a measuring rate from the list. Confirm with Apply.

Select an Interface

Go to the menu Settings > output > output interface.

Defines which interface is used for output of measured values. A parallel output or measured values via multiple cables is not possible. RS422 and analog output cannot be operated simultaneously.

Place target

Position the target (measurement object) as much as possible in the midrange.

Accurate placement of the target is best achieved by starting with a low measuring rate. The sensor supplies measurement values. In the Measurement chart, you will find the position of the target in the sensor.

Laser off

Select the desired sensor. Click on the button: Open Web Interface.

You need a web browser (e.g. Mozilla Firefox or Internet Explorer) on a PC/notebook.

Select a Measuring Rate

Go to the menu Settings > data recording > Measuring rate.

Start with a medium measuring rate. Select a measuring rate from the list. Confirm with Apply.

Select an Interface

Go to the menu Settings > output > output interface.

Defines which interface is used for output of measured values. A parallel output or measured values via multiple cables is not possible. RS422 and analog output cannot be operated simultaneously.

While using the web interface, the output is switched off via RS422.

Place target

Position the target (measurement object) as much as possible in the midrange.

Select a Measuring Rate

Go to the menu Settings > data recording > Measuring rate.

Start with a medium measuring rate. Select a measuring rate from the list. Confirm with Apply.

Select an Interface

Go to the menu Settings > output > output interface.

Defines which interface is used for output of measured values. A parallel output or measured values via multiple cables is not possible. RS422 and analog output cannot be operated simultaneously.

While using the web interface, the output is switched off via RS422.

Place target

Position the target (measurement object) as much as possible in the midrange.

Access via Web Interface

In the top navigation bar you will find the interface for programming the sensor. The sensor is active and supplies measurement values. The ongoing measurement can be operated by means of function buttons in the area Measurement chart.