Mounting

Bolt connection
Direct fastening

Dimensions in mm (inches)

Pin Assignment

Signal | Pin | Cable Color | Description
---- | ---- | -------- | ------------------
GND  | 14  | Blue    | Power supply (Signal: Laser on/off, Zero, Limits)
ILD  | 13  | Red-blue| Output voltage (symmetric) internally terminated with 120 Ohm (non-condensing)
SMR  | 12  | Red     | Laser operates when pin 3 is connected to GND
MR   | 11  | Gray    | Laser on/off, Zero, Limits
SMR  | 10  | Gray-pink| Laser on/off, Zero, Limits
MR   | 9   | Gray    | Laser on/off, Zero, Limits
ILD  | 8   | Brown   | Laser on/off, Zero, Limits
Rx+  | 7   | Black   | Laser on/off, Zero, Limits
Rx-  | 6   | Red     | Laser on/off, Zero, Limits
Rx+  | 5   | Green   | Laser on/off, Zero, Limits
Rx-  | 4   | Green   | Laser on/off, Zero, Limits
Sync+ | 3 | Gray-pink| Programmable switching behavior: RS-422, RS-485, multi-channel
Sync - | 2 | Gray-pink| Programmable switching behavior: RS-422, RS-485, multi-channel
Rx+  | 1 | Gray-pink| Programmable switching behavior: RS-422, RS-485, multi-channel
Rx-  | 0 | Gray-pink| Programmable switching behavior: RS-422, RS-485, multi-channel

Assembly Instructions

The optoNCDT 1900 sensor is an optical system for measurements with micrometer accuracy. The sensor is qualified for drag chain use. One end of the cable has a molded cable connector, the other end has braids qualified for drag chain use.

Intended Use

The optoNCDT 1900 system is designed for use in industrial and laboratory areas. It is used for displacement measurement, distance and position as well as in process quality control and dimensional testing. The sensor must only be operated within the limits specified in technical data, see operating instructions, Chap. 3. The sensor 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 sensor. Take additional precautions for safety and damage prevention for safety-related applications. Avoid unnecessary laser radiation to be exposed to the human body. Switch off the sensor for cleaning and maintenance, for laser anywhere within the field of view. Laser and laser system components have laser safety class 2 according to EN 60825-1 and CDRH. Use of controls or adjustments or performance of procedures other than those specified may cause damage to or destruction of the sensor.

Laser Safety

The ILD1900 sensors operate with a semiconductor laser with a wavelength of 670 nm (red). The ILD1900 sensors fall within laser class 2. The sensor is operated on a pulsed mode, the maximum optical power is 1 mW. Operation of the laser is indicated visually by LED status indicator and upon damage to the sensor.

Laser Warning sign on the sensor housing

Laser label on the sensor cable
Switch on the Laser

Connect the input to GND to trigger the function.

The laser remains off as long as pin 3 is not electrically connected with pin 14.

Connect to the Laser

The laser output can be continuously operated in short-circuit operation without load resistor. This would lead to thermal overload and thus to an automatic overload cut-off of the output.

Current output ≤ 0.5 A / 20 mA

Voltage output ≤ 30 V DC

Sensor supply by peripheral adapter cable, white

Quick Guide

Components

Mount the sensor and connect the components.

Source: Cable(Supply)

Interface

Multi-Function Input

The multi-function input enables triggering, zero setting/mastering and teaching. The function depends on the programming of the input and on the timing of the input signal.

The inputs are not electrically isolated. The maximum switching frequency is 10 kHz. The current output may not be continuously operated in short-circuit operation without load resistor. This would lead to thermal overload and thus to an automatic overload cut-off of the output.

Current output ≤ 0.5 A / 20 mA

Voltage output ≤ 30 V DC

Sensor supply by peripheral adapter cable, white

RS422 Connection with USB Converter IF2001/USB

Cross the lines for connections between sensor and PC.

* Disconnect or connect the 9-pin sub-connection between RS422 and USB converter when the sensor is disconnected from power supply only.

Connect the sensor to a PC/notebook via a RS422 connector.

Connect the supply voltage.

Mount the sensor and connect the components.

Sensor TOOLTIP

Select an Interface

Select the desired sensor. Click on the button "Select sensor".

Select the SensorTool. Click on the button "Start program".

Start the program SensorTool.

The program searches for connected ILD1900 sensors on available interfaces.

If you need a web browser compatible with HTML5 on a PC/notebook.

Select a Measuring Rate

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

The program searches for connected ILD1900 sensors on available interfaces.

Access via Web Interface

Interactive web pages for programming the sensor now appear 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."

In the top navigation bar other functions (settings, measurement chart etc.) are available. The appearance of the websites can change dependent on the functions. Each page contains descriptions of parameters and tips for filling the website.

Select a Measuring Rate

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

Choose a measuring rate. Select a measuring rate from the list. Confirm with Apply.

Select an Interface

Go to the menu "Settings > output > output interface."

Select the connection interface. Different interfaces is used for output of measured values. Parallel output of measured values via multiple channels 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 (measuring object) as much as possible in the midrange.

The State LED on the sensor indicates the position of the target to the sensor.

Position the target as much as possible in the midrange. While using the web interface, the output is switched off via RS422.