**Membrane Keys, LED's**

**Measurement mode (normal operation):**
- Sets the analog output to the value for the midrange, i.e. 5 VDC or 12 mA.
- Pressing the zero key again resets the function.
- Switching the sensor to setup mode.
- Pressing and holding the setup key for longer than 5 seconds, overwrites all the parameter values with the factory settings (default values).

**Setup mode** (**[gray-pink]** key activated):
- zero key: For running through the levels and parameters.
- relais key: To open the selection list and select the value of the parameter in sequence.
- entry key: For saving the selected parameter value and returning to measurement mode without changing the parameters.

**Power Supply**
- Nominal voltage: 10 VDC (±0.02 VDC, max. 120 mA).
- Use only power supply devices: MICRO-PS200.

**Inputs and Outputs**
- **[green]** supply PS2020 for the sensor.
- The switching inputs for laser on/off and setting masters/mid-point are similarly released, the laser is deactivated.
- The sensor may only be operated within the limits specified in the technical data, see instruction manual.
- The switching inputs for laser on/off and setting masters/mid-point are similarly deactivated, the sensor returns to measurement mode.

**Assembly Instructions**
- optoNCDT 1700 sensors operate with a semiconductor laser with a wavelength of 670 nm (vis point). The optoNCDT1700 is designed for use in industrial areas. It is used for measuring displacement, distance, position and elongation for in-process quality control and dimensional testing.

**Warnings**
- Connect the power supply in accordance to the safety regulations for electrical equipment. The power supply may not exceed the specified limits.
- Avoid continuous exposure to the sensor. Avoid exposure to aggressive materials (washing agents, degreasing liquids or acids) on the sensor. Shield the sensor only to those holes on a flat surface. Clamps of any kind are not permitted.
- Damage to or destruction of the sensor.
- Avoid shock and vibration to the sensor. Protect sensor cable against damage.
- Damage to or destruction of the system, failure of the measuring device.

**Tolerances**
- ±0.5 mA.
- ±0.2 V.
- Avoid excessive internal pressure (washing agents, degreasing liquids or acids) on the sensor. Shield the sensor only to those holes on a flat surface. Clamps of any kind are not permitted.

**Label Information**
- LASER RADIATION
- λ = 670 nm
- P≤1 mW;
- IEC 60825-1: 2014
- Never deliberately look into the laser beam! Consciously close your eyes or turn away immediately if the laser beam should hit your eye.

**Product Information**
- IEC label for ILD 1700-x, only.
- Never deliberately look into the laser beam! Consciously close your eyes or turn away immediately if the laser beam should hit your eye.
Quick Guide
Components, Typical Application with Analog Output
PC1700-x
PS2020
SPS
230 VAC
PE
N L
4 ... 20 mA
0 ... 10 V
A
D
Target
Laser On/Off
Components, Typical Application with RS422 and IF2008
IF2008
PC1700-x/IF2008
Target
Switching on the Power Supply Respectively PC
Switch on power supply respectively PC after completion of wiring.
The initialization including the info string transmission takes up to 10 seconds. Within this period, the sensor neither executes nor replies commands.
To be able to produce reproducible measurements the sensor typically requires a start-up time of 20 minutes.
Change Measurement Value Output
Change the output type with the function/enter and select/zero keys.
Measurement mode
Current output
4 ... 20 mA
Voltage output
0 ... 10 VDC
RS422
LED state
flashes green
red (flashes)
LED output red green
Save
function
enter
select
zero
select
zero
select
zero
Function
Change Measurement Value Output

Place Target
Place the target in the midrange, if possible.
The State LED on sensor indicates the position of target to the sensor.
LED Color Meaning
State
off Laser beam is switched off.
green Sensor in operation, target in measuring range
yellow Target is in midrange.
red Target out of range, too low reflection
Operating Mode
Change the operating mode of the sensor.
Error-Mode
(error control, factory setting)
Switching output 1
Switching output 2
Measurement value
EMR
Switching output 1
Switching output 2
Error output
inactive
The switching output 1 is activated (conducting to GND),
when the target is outside the measuring range,
- there is no target present
- or if the target is unsuitable (too dark, polished metal, insufficiently reflective).
Function
- Setting mid-point
- No limit control
Switch-Mode (limit control)
The following 4 values are used:
- Upper limit (UL),
- Lower limit (LL),
- Upper hysteresis value (UH),
- Lower hysteresis value (LH).
Function
- Mastering
- Limit control
Please refer to the instruction manual for factory settings to the limit and hysteresis values.
Switching Outputs
The transistor T is conductive in the active state. The switching outputs are short-circuit-proof.
To reset the short-circuit protection:
- Clear the external short circuit,
- switch off the sensor and switch on again or
- send the software command "Reset" to the sensor.
The two limit outputs may also be actuated in parallel as window comparator (OK/Not OK separation).

You will find informations on display and signal processing units online at: www.micro-epsilon.com/accessories/index.html.
You can read more information about the sensor in the instruction manual. You will find these online at www.micro-epsilon.de/download/manuals/man--optoNCDT-1700--en.pdf or on the delivered CD.