More Precision

**optoNCDT 1750** // Universal laser displacement sensor
The optoNCDT 1750 is a powerful laser triangulation sensor which is used in high speed, precise measurements in industrial applications. New evaluation algorithms and enhanced components provide highest accuracy and dynamics. The high-performance optical system generates a small light spot onto the target which enables to even detect smallest components reliably.

The pigtail cable and the internal controller reduce the sensor installation effort to a minimum. Due to its extremely compact size, the sensor can also be integrated into restricted installation spaces. The optoNCDT 1750 provides a real-time surface compensation feature (RTSC) which compensates for the amount of reflection from the target surface during continuous exposure and in real-time. The exposure time or the amount of light produced by the laser is optimally matched to the reflection characteristics of the target surface which enables reliable measurements even on changing surfaces.

**Highest precision for industrial applications**

Different output signals enable to integrate the sensor into plant or machine control systems. As well as analog voltage and current outputs, a digital RS422 interface provides distance information from the sensor. Due to the selectable setting and evaluation possibilities, the optoNCDT 1750 meets the requirements for use in industrial applications with high dynamics.

**Unique ease of use, individual results**

All optoNCDT 1750 models are operated using an intuitive web interface. The settings for the measurement task can be quickly selected using predefined presets. Using the ‘Standard’, ‘Changing surfaces’ (from Q4 2017) and ‘Material with penetration’ (from Q4 2017) settings, precise measurement results are easily achieved without any complex optimization. The quality slider enables the sensor to be adapted to static and dynamic processes.

Up to eight user-specific sensors settings can be stored and exported in the setup management. Loading these individual sensor settings enables extremely fast parameter set up e.g. for high volume applications. The optoNCDT offers an extended web interface which provides many additional functions. The video signal display, the signal peak selection and a freely adjustable signal averaging enable the experienced user to optimize the measurement task. The ROI function (region of interest) allows e.g. for interfering signals in the background to be filtered out.
### Measuring range
- 2mm, 10mm, 20mm, 50mm, 100mm, 200mm, 500mm, 750mm

### Start of measuring range
- 24mm, 30mm, 40mm, 45mm, 70mm, 70mm, 200mm, 200mm

### Midrange
- 25mm, 35mm, 50mm, 70mm, 120mm, 170mm, 450mm, 575mm

### End of measuring range
- 26mm, 40mm, 60mm, 95mm, 170mm, 270mm, 700mm, 950mm

### Linearity
- ≤ ±0.08% FSO
- ≤ ±0.06% FSO
- ≤ ±0.08% FSO
- ≤ ±0.07% FSO
- ≤ ±0.09% FSO

### Repeatability
- 0.1µm
- 0.4µm
- 0.8µm
- 2µm
- 4µm
- 8µm
- 20µm
- 30µm

### Measuring rate
- Continuously adjustable between 0.3 ... 7.5kHz
- Adjustable in 6 steps: 7.5kHz / 5kHz / 2.5kHz / 1.25kHz / 625Hz / 300Hz

### Light source
- Semiconductor laser <1mW, 670nm (red)

### Permissible ambient light
- (with 2.5kHz) 10,000lx

### Laser safety class
- Class 2 according to DIN EN 60825-1 : 2015-07

### Spot diameter
- SMR 80µm, 110µm, 320µm, 570µm, 740µm, 1300µm, 1500µm
- MMR 35µm, 50µm, 45µm, 55µm, 60µm, 1300µm, 1500µm
- EMR 80µm, 110µm, 320µm, 570µm, 700µm, 1300µm, 1500µm

### Temperature stability
- 0.025% FSO/°C
- 0.01% FSO/°C

### Operating temperature
- 0°C ... +50°C

### Storage temperature
- -20°C ... +70°C

### Control inputs/outputs
- 1x HTL/TTL Laser on/off;
- 1x Multifunction input Trigger in / slave in / zero setting / mastering / teach
- 1x RS422 synchronization input (trigger in, sync in, master/slave, master/slave alternating)

### Measurement value output
- Analog: 4...20mA, 0 - 5V / 0 - 10V, 16bit, freely scalable within the measuring range
- Digital: RS422 / 18bit

### Operation
- Select & function buttons for interface selections, mastering (zero), teach, presets, quality slider, frequency selection, factory settings
- Web interface: Application-specific presets; peak selection, video signal; freely selectable averaging possibilities, data reduction; setup management

### Power supply
- 11-30V DC, 24V P < 3W

### Sensor cable
- Standard: 0.25m pigtail with 14-pole ODU connector
- Option: Extension: 3 / 10m

### Synchronization
- Possible for simultaneous or alternating measurements

### Protection class
- IP65

### Vibration
- 2g / 20 Hz ... 500Hz

### Shock
- 15g / 6ms

### Weight (with 25cm cable)
- approx. 550g
- 600g

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**FSO** = Full Scale Output; The specified data apply to a white, diffuse reflecting surface (reference: ceramics)

1) based on digital output

2) Connection to PC via IF2001/USB (optionally available)

SMR = Start of measuring range; MMR = Midrange; EMR = End of measuring range
The universal laser sensor for industry & automation

**optoNCDT 1750**

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<th>MR</th>
<th>SMR</th>
<th>α</th>
<th>φ</th>
<th>ε</th>
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<th>B</th>
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Connector (sensor side)

Connector (sensor cable)