1. Warnings
Connect the power supply and the display-/output device in accordance with the safety regulations for electrical equipment. The power supply may not exceed the specified limits.

> Danger of injury, damage or destruction of the sensor
Avoid shock and vibration to the sensor. Avoid continuous exposure to dust and spray on the sensor. Avoid exposure to aggressive materials (e.g. washing agent, penetrating liquids or similar) on the sensor.

> Damage to or destruction of the sensor
Read the detailed instruction manual before operation of the sensor. You will find this online at www.micro-epsilon.com or on the provided CD.

2. Notes on CE Identification
The following applies to the scanCONTROL 2750:
EU directive 2004/108/EC and EU directive 2011/65/EC, “RoHS” category 9
Products which carry the CE mark satisfy the requirements of the quoted EU directives and the European standards (EN) listed therein. The EC declaration of conformity is kept available according to EC regulation, article 10 by the authorities responsible at MICRO-EPSILON MESSTECHNIK GmbH & Co. KG
Königbacher Str. 15 94496 Ortenburg / Germany

3. Proper Environment
- Protection class: IP 65
- Operating temperature: 0 to +50 °C (+32 to +122 °F), by free circulation of air
- Storage temperature: -20 to +70 °C (-4 to +158 °F)
- Humidity: 5 - 95 % (non condensing)
- Vibration: DIN EN 600068-2-6 (sine shaped)
- Mechanical shock: DIN EN 60068-2-28

4. Standard Equipment scanCONTROL 2750
- 1 Sensor scanCONTROL 2750 with integrated controller
- 1 Power supply cable PC2700-4.5, length 4.5 m; ODU round connector and free cable ends
- 1 scanCONTROL Demo-CD with drivers, programs and documentation
- 1 Sensor inspection log / assembly instructions
- 1 Bag of accessories with one ODU male connector 6-pin (RS422), S31BQC-P06MF-6000 and two protective caps for ODU female connector (6- or 8-pin)

7. System Requirements scanCONTROL Software
- Windows 7 (32 bit and 64 bit), Windows 8 (32 bit and 64 bit)
- Pentium III ≥ 800 MHz / 512 MB RAM
- Screen resolution: 1024x768

8. Quick Start: Commissioning, Software
Install the software.
- Please insert the scanCONTROL Demo CD in the CD-ROM device. Follow the dialog through the installation process.
  A. Reading of installation help
  B. Installation of software
  C. Further informations in the online documentation

Mount the sensor according to the installation instructions.
Connect the sensor to the PC or the Ethernet / FireWire cable.
Connect the sensor with subsequent display and monitoring units.
Connect the sensor to the power supply.
The connectors for the operating voltage, switching signals, FireWire and Ethernet are fitted with push-pull locking.

Connect the shield of the power supply cable to the PE protective earth conductor of the main power supply. Close plug-in connections not needed with the supplied protective caps for ODU sockets. Switch on the power supply (24 VDC).
Pull apart at the grip to release the connection.

On the left side you can adjust the settings for your measurement task, the right side shows the profile data and information about the measurement.

10. How to Access Profile Data
Profile data of scanCONTROL can be accessed via:
- GigEVision and GenCam for digital cameras via Ethernet
- DCAM standard v.1.30 for digital cameras via FireWire interface
- SDK for fast application integration (C, C++ and others)
For details refer to the enclosed online manuals.

11. Further Information
Please refer to:
- the enclosed online manual
- the section “Status and Error Messages” and “Notes” in the scanCONTROL Configuration Tools manual.
You will find details in the separate programs in the respective instruction manuals or in the instruction manual of this sensor, Chap. 6.2. You will find the instruction manuals online or on the provided CD.

www.micro-epsilon.com
MICRO-EPSILON Messtechnik GmbH & Co. KG
Königbacher Str. 15
94496 Ditzingen / Germany, Tel. +49 (0) 85 42 /168-0
5. Laser Class

The scanCONTROL 2750 sensors operate with a semiconductor laser having a wavelength of 658 nm (visible). The laser operation is indicated visually by the LD on the sensor.

Laser Class 2M

scanCONTROL 2750 sensors with a maximum laser power up to 10 mW are classified in Laser Class 2M (3M).

The following information labels are fitted to the sensor housing (front and rear side). If both information labels are hidden in the installed state, the user must ensure that additional labels are fitted at the point of installation.

Cautions

- Laser radiation may cause damage to the eyes.
- Do not look into the laser beam.
- The laser has to be disconnected and the protective glasses must be used during measurements.
- Laser product classification:
  - Class 3B Laser Product
  - IEC 60825-1: 2008-05

- In case of doubt, always consider the laser radiation as a hazardous radiation.
- Laser radiation warning label: (Point to the eye). 
- The Laser Class 3B Laser Product. Laser radiation according to IEC 60825-1, (max. 65 W; P< 10^(-6) W cm^-2 at the Infinite Working Distance).
- The Laser Class 3B Laser Product. Laser radiation according to IEC 60825-1, (max. 15 W; P< 10^(-6) W cm^-2 at the Infinite Working Distance).
- The Laser Class 3B Laser Product. Laser radiation according to IEC 60825-1, (max. 4 W; P< 10^(-6) W cm^-2 at the Infinite Working Distance).
- The Laser Class 3B Laser Product. Laser radiation according to IEC 60825-1, (max. 1 W; P< 10^(-6) W cm^-2 at the Infinite Working Distance).
- The Laser Class 3B Laser Product. Laser radiation according to IEC 60825-1, (max. 0.6 W; P< 10^(-6) W cm^-2 at the Infinite Working Distance).

Laser Class 3B

scanCONTROL 2750 sensors with a maximum laser power up to 20 mW are classified in Laser Class 3B (IIIB).

Injury to the eye or the skin via laser radiation! Consciously close your eyes or turn away if the laser radiation impinges on the eye or the skin.

Class 3B (IIIB) lasers are not subject to notification and a laser protection officer is not required.

Lasers of Class 2M are not subject to notification and a laser protection officer is not required.

The laser area has to be made recognizable and everlasting.

The Laser Class 3B Laser Product. Laser radiation according to IEC 60825-1, (max. 65 W; P< 10^(-6) W cm^-2 at the Infinite Working Distance).

The Laser Class 3B Laser Product. Laser radiation according to IEC 60825-1, (max. 15 W; P< 10^(-6) W cm^-2 at the Infinite Working Distance).

The Laser Class 3B Laser Product. Laser radiation according to IEC 60825-1, (max. 4 W; P< 10^(-6) W cm^-2 at the Infinite Working Distance).

The Laser Class 3B Laser Product. Laser radiation according to IEC 60825-1, (max. 1 W; P< 10^(-6) W cm^-2 at the Infinite Working Distance).

The Laser Class 3B Laser Product. Laser radiation according to IEC 60825-1, (max. 0.6 W; P< 10^(-6) W cm^-2 at the Infinite Working Distance).

The Laser Class 3B Laser Product. Laser radiation according to IEC 60825-1, (max. 0.3 W; P< 10^(-6) W cm^-2 at the Infinite Working Distance).

The Laser Class 3B Laser Product. Laser radiation according to IEC 60825-1, (max. 0.1 W; P< 10^(-6) W cm^-2 at the Infinite Working Distance).

The Laser Class 3B Laser Product. Laser radiation according to IEC 60825-1, (max. 0.03 W; P< 10^(-6) W cm^-2 at the Infinite Working Distance).

The Laser Class 3B Laser Product. Laser radiation according to IEC 60825-1, (max. 0.01 W; P< 10^(-6) W cm^-2 at the Infinite Working Distance).

6. Connections, LED Displays

LED “laser on” Green: Laser on Note: The “status” LED flashes green during data transmission and short for laser on/off.

LED “state” Green: Measurement: Data transmission Red: Flashing: Error code

The state LED indicates different error conditions by flashing. If no flashing occurs for several seconds, no error has occurred.

Power supply (Power)

The sensors are available in two versions: Sockets on the top side or on the rear side.

Laser Class 3B 3M (IIIB)

The power supply is also possible using the FireWire connection cable. If both voltages (1394 and Ethernet) are present, the higher voltage always takes over the supply of the sensor.

- A power supply via free colors in the FireWire connection cable is possible if these wires are connected in the PC (Pin 1 to –8. 30 V DC, typical 12 V DC, Pin 2 to ground on the FireWire connector).

-Use the recommended FireWire connection cable.

Connection Diagram

The RS232 port can be used with either of the following configurations:

- RS232: Loading of programs and transmitting of measurement results.
- Synchronization: Synchronization resp. triggering using switching signals.

Sensor of Laser Class 3B need an external key switch to switch off the laser.

Use a serial key switch inside the control circuit to switch off the laser. You will find details for the wiring in the instruction manual, Chap. 5.2.4.

A power supply via free colors in the FireWire connection cable is possible if these wires are connected in the PC (Pin 1 to –8. 30 V DC, typical 12 V DC, Pin 2 to ground on the FireWire connector).

- Use the recommended FireWire connection cable.

External laser switching

Series LLT2750-d(003), LLT2750-d(004), LLT2750(005) and LLT2750(006) sensors offer this function.

- Sensors of Laser Class 3B (IIIB) need an external key switch to switch off the laser.

- Use a serial key switch inside the control circuit to switch off the laser. You will find details for the wiring in the instruction manual, Chap. 5.2.4.

RS422, Synchronization

Pin no. Assignment connector “RS422”

<table>
<thead>
<tr>
<th>Pin</th>
<th>Assignment connector “RS422”</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RX1 CH1</td>
</tr>
<tr>
<td>2</td>
<td>RX2 CH2</td>
</tr>
<tr>
<td>3</td>
<td>TX2 CH2</td>
</tr>
<tr>
<td>4</td>
<td>TX1 CH1</td>
</tr>
<tr>
<td>5</td>
<td>GND2</td>
</tr>
<tr>
<td>6</td>
<td>GND1</td>
</tr>
</tbody>
</table>

The Pin numbers refer to the scanCONTROL 2750 unit. Micro-Epsilon recommends the use of the interface cable Scan2700-4.5 RS422 from Micro-Epsilon, compatible to the RS422 to USB converter. All outputs and inputs are designed symmetrically. Internal terminating resistors 120 Ohm.

- The sensors supports an automatic, sensor adapted IP address in the link-local-net (169.254.x.x). There is no collision testing affected.
- The sensor supports DHCP protocol. This setting is activated by default and has priority over the retrieval in the link-local-net.
- Prior to the retrieval in the link-local-net, a fixed IP address can be used.
- Use the “Ethernet Configurator” software provided on the CD in order to make the sensor settings described above.

- The sensor supports as either a Firewire version or Ethernet version.

Firewire connection, standard link to PC

Pin no.

<table>
<thead>
<tr>
<th>Color</th>
<th>Name</th>
<th>Name</th>
<th>Name</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>white</td>
<td>+24 V_FireWire</td>
<td>+24 V_FireWire</td>
<td>+24 V_FireWire</td>
<td>+24 V_FireWire</td>
</tr>
<tr>
<td>blue</td>
<td>+24 V_FireWire</td>
<td>+24 V_FireWire</td>
<td>+24 V_FireWire</td>
<td>+24 V_FireWire</td>
</tr>
<tr>
<td>black or blue</td>
<td>+24 V_FireWire</td>
<td>+24 V_FireWire</td>
<td>+24 V_FireWire</td>
<td>+24 V_FireWire</td>
</tr>
</tbody>
</table>

The power supply is also possible using the FireWire connection cable. If the power supply needed is present in the PC with sufficient current intensity. When both voltages (1394 and power) are present, the higher voltage always takes over the supply of the sensor.

External laser switching

Series LLT2750-d(003), LLT2750-d(004), LLT2750(005) and LLT2750(006) sensors offer this function.

- Sensors of Laser Class 3B (IIIB) need an external key switch to switch off the laser.

- Use a serial key switch inside the control circuit to switch off the laser. You will find details for the wiring in the instruction manual, Chap. 5.2.4.

RS422, Synchronization

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- Prior to the retrieval in the link-local-net, a fixed IP address can be used.
- Use the “Ethernet Configurator” software provided on the CD in order to make the sensor settings described above.

- The sensor is supplied as either a Firewire version or Ethernet version.

- Use the recommended FireWire connection cable.