



Assembly Instructions

scanCONTROL 3000/BL / 3050/BL

1. Warnings

Connect the power supply and the display-/output device according to the safety regulations for electrical equipment. The power supply must not exceed the specified limits.

> Risk of injury, damage to or destruction of the sensor

Avoid shocks and impacts to the sensor. Avoid continuous exposure to dust and spray on the sensor. Avoid exposure of sensor to aggressive materials (detergents, cooling emulsions).

> Damage to or destruction of the sensor

Read the detailed instruction manual before operating the sensor. You will find this manual on the provided CD or online at www.micro-epsilon.com.

2. Notes on CE Identification

The following applies to the scanCONTROL 30xx/BL:

- EU Directive 2014/30/EU
- EU Directive 2011/65/EU, „RoHS“ category 9

The sensor is designed for use in industry and satisfies the requirements.

The sensor fulfills the specifications of the EMC requirements, if the instructions in the manual are followed.

3. Proper Environment

- Protection class: IP 67
- Operating temperature: 0 to +45 °C (+32 to +113 °F), by free circulation of air
- Storage temperature: -20 to +70 °C (-4 to +158 °F)
- Humidity: 5 - 95 % (non condensing)

4. Scope of Delivery of scanCONTROL 30xx/BL

- 1 Sensor scanCONTROL 30xx/BL with integrated controller
- 1 Multifunction cable PCR2600/2900-5, length 5 m; for power supply, trigger and RS422; screw connector and free cable ends
- Calibration final inspection / assembly instructions
- 2 protective caps
- scanCONTROL Software-CD with drivers, programs and documentation

5. Laser Safety

The scanCONTROL 30xx/BL sensors operate with a semiconductor laser having a wavelength of 405 nm (visible/blue). The laser operation is indicated visually by the LED on the sensor.

Laser Class 2M

scanCONTROL 30xx/BL sensors with a maximum laser power up to 10 mW are classified in Laser Class 2M (IIM). Attache the following warning labels to the cover (front side) of the sensor housing. The laser warning labels for Germany have already been applied. Those for other non German-speaking countries an IEC standard label is included in delivery and the versions applicable to the user's country must be applied before the equipment is used for the first time.



Laser label and
warning label acc. to
IEC 60825-1



Laser label
acc. to IEC 60825-1
for USA only

- i** If the information labels are hidden in the installed state, the user must ensure that additional labels are fitted at the point of installation.



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

- i** Laser areas must be marked durably and clearly, if the laser beam runs through a work or traffic area. Class 2M laser devices are not subject to reporting and a laser protection officer is not required.

6. Connections, LED Displays

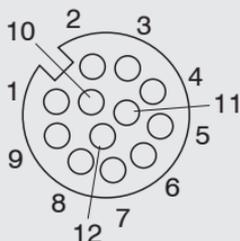
1 2



1 Multifunction port (Power supply, IO)
2 Ethernet port

Multifunction Port

Designation	Sensor connector Pin	Cable color PCR2600/2900-x	Notes
+Ub	9	red	+ 11 V - 30 V DC (rated value 24 V); max. 5 W
GND	2	blue	0 V
+Laser on/off	3	white	available with SI option
-Laser on/off	1	brown	
RS422	12	red-blue	RS422 input respectively output
/RS422	11	gray-pink	
GND RS422	10	purple	Ground connection RS422
In1	4	green	Switching input In1
In2	6	yellow	Switching input In2
In3	8	gray	Switching input In3
In4	5	pink	Switching input In4
GND-In	7	black	Ground connection In
Screen	Housing	black	Not electrically connected to GND



GND: galvanically isolated from IN1, 2, 3, 4, RS422, Laser on/off

Laser on/off: Input galvanically isolated from GND, IN1...4, RS422

IN1, IN2, IN3, IN4, RS422: Inputs galvanically isolated from GND and Laser on/off

12-pin screw connector, view on solder pin side (cable)

RS422, Synchronization

The RS422 connection (Pin 11 and 12 of the multifunction port) can be used with either of the following configurations:

- RS422 (half-duplex): Load user modes, sensor control and transmit measurement results (Modbus RTU or ASCII-Format).
- Synchronization/trigging: Synchronization respectively triggering using switching signals.

Trigger, Encoder, Mode Switching

The switching inputs of the multifunction port can either be used for encoder-, trigger input or for loading previously stored user modes.

The signal levels are switchable for all switching inputs between LLL (TTL logic) and HLL (HTL logic):

- LLL level: Low 0 V ... 0.8 V, high 2.4 V ... 5 V, internal pull-up/down switchable resistor 10 k Ω
- HLL level: Low 0 V ... 3 V, high 11 V ... 24 V (permitted to 30 V), internal pull-up/down switchable resistor 10 k Ω
- Pulse duration: $\geq 5 \mu\text{s}$

External Laser Switching

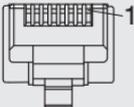
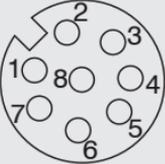
The sensors of the scanCONTROL 30xx/BL-SI series offer this function.

 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. 5.2.6.

With standard sensors, connecting the supply voltage activates the laser light source in the sensor.

Ethernet Connection, Standard Connection to PC

RJ45 connector		8-pin. screw connector (sensor side)		
Pin no.	Color stranded hook-up wire SCR2600/2900-x	Pin no.	10BaseT, 100BaseTX	1000BaseT
1	white (orange)	5	Tx+	D1+
2	orange	6	Tx-	D1-
3	white (green)	8	Rx+	D2+
4	blue	1		D3+
5	white (blue)	2		D3-
6	green	7	Rx-	D2-
7	white (brown)	3		D4+
8	brown	4		D4-
	View on pin side male cable connector		View on solder pin side (cable) screw connector (A-coded)	

- The sensor supports an automatically, sensor-adapted IP address in the link-local-net (169.254.x.x). No collision detection is implemented. This is also the default setting.
- The sensor supports DHCP. This setting is activated by default and has priority over the retrieval in the link-local-net.
- The sensor scanCONTROL 30xx/BL supports Power over Ethernet.

NOTICE

If the sensor is connected to a network adapter/switch that is capable of POE and if you also use the power supply of the multifunction port, these two power supplies have to be galvanically isolated.

> Damage of the sensor and/or the Ethernet card!

- A fixed IP address can be assigned.

➡ Use the program “SensorFinder“ delivered on the CD, to make the above-described sensor settings.

LED Displays

	LED Laser	LED Data	LED Error
	Yellow: Laser on	Green: Measurement is active Green, flashes: Data transmission is active	Red, flashes: Error code, see operating instructions Chap. 11.
	The Data LED flashes green, long during active transmission and short for controller accesses.		

7. System Requirements

scanCONTROL Configuration Tools

The following minimum system specification is necessary:

- Windows 7 (32 bit and 64 bit), Windows 8 or 8.1 (32 bit and 64 bit), Windows 10 (32 bit and 64 bit)
- 1-GHz or faster (32 bit and 64 bit) processor / 1 GB RAM
- Screen resolution: 1024 x 768

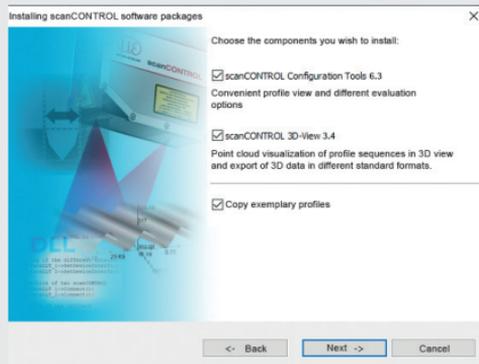
scanCONTROL 3D-View

The following minimum system specification is necessary:

- Windows 7 (64 bit), Windows 8 or 8.1 (64 bit), Windows 10 (64 bit)
- 1-GHz or faster (64 bit) processor
- 1 GB RAM
- Screen resolution: 1024 x 768
- Graphic Card/GPU with OpenGL 3.1 or higher

8. Quick Start: Commissioning, Software

➔ Install the software.



Please insert the scanCONTROL Software CD in the CD-ROM device. Follow the dialog through the installation process.

A. Reading of installation help

B. Installation of software

C. Further information in the online documentation

➔ Mount the sensor according to the installation instructions.

➔ Connect the sensor to the PC via the Ethernet cable.

➔ Connect the sensor to display or monitoring units.

➔ Connect the sensor to the power supply.

The connectors for Ethernet and the multifunction port are fitted with a screw connector.

➔ Loosen the screws before you remove the connector from the socket.

➔ Connect the shield of the power supply cable to the PE protective earth conductor of the main power supply. Close unused connection plugs with the provided protective caps. Switch on the power supply (24 VDC).

i Only connect the sensor to the peripheral equipment, if it is disconnected from the power supply, i.e. only when the operating voltage is switched off. The sensor needs a warm-up time of typically 20 minutes for high precision measurements.

➔ Please wait until the scanCONTROL device is recognized by the PC.

This may take a few seconds.

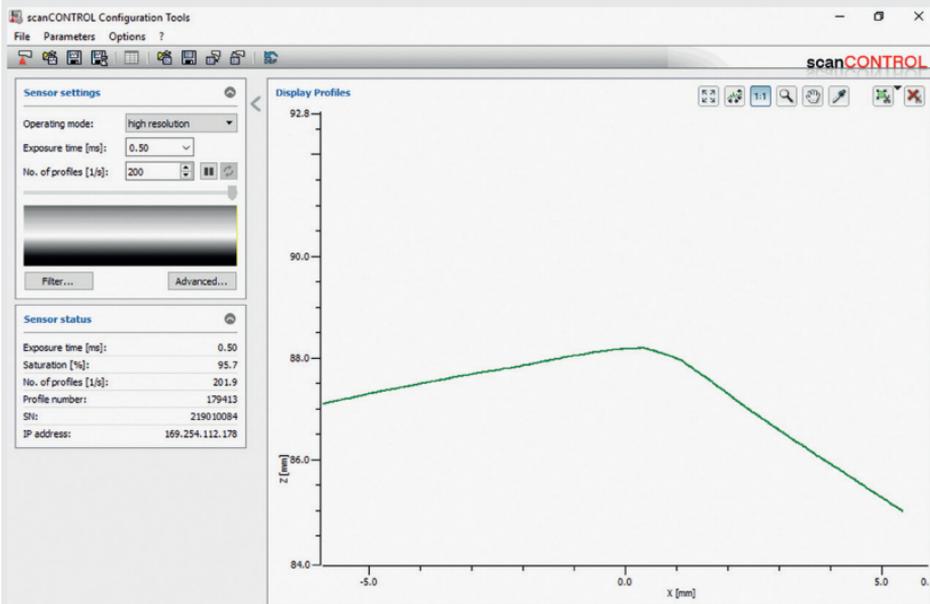
Now you can operate the scanCONTROL measurement system with the scanCONTROL software packages.

i Operating a scanCONTROL sensor via Ethernet may require a modification of the IP settings of the PC/sensor or a modification of the firewall settings, see Chap. 5.2.5 of instruction manual.

9. First Profile

▶ Now start the scanCONTROL Configuration Tools software. Click on “Display Profiles” in the main window.

If the software shows the error message “No scanCONTROL found” in the status line, please check the Ethernet connection between scanCONTROL and PC.



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 GenICam for digital cameras via Ethernet interface
- SDK for fast application integration (C, C++, C# and others)

For details how to access profile data refer to the enclosed online manual.

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 to 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 Ortenburg / Germany, Tel. +49 (0) 85 42/1 68-0



X9771399-A011069SWE